Work Order # 1896929

Design-Build RFP for

B-1372 HVAC, FP, and Architectural Upgrades

NAPS UH B-1372

Naval Station, Newport, RI

Part 1 Proposal Forms and Documents

Refer to Solicitation Documents.

END.

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00 00 00 GENERAL REQUIREMENTS

1.1 Definitions

As used throughout the contract, the following terms have the meaning set forth below: Contracting Officer (KO): The individual designated to administer the contract. Throughout this contract this individual will be responsible and possess the authority to act on behalf of the Government with respect to the specific contract.

Contracting Officer Representative (COR): The individual designated by the Contracting Officer as the authorized representative of the Contracting Officer. The COR is responsible for monitoring performance and technical management of the effort required and should be contacted regarding questions or problems of a technical nature.

Contract: Contract or task order.

Contractor: The term Contractor refers to both the prime Contractor and all subcontractors, whether in contract with the Prime Contractor or other subcontractors at any tier, including the Designer of Record.

Designer of Record (DOR): Licensed architect/engineer working as subcontractor to or partner with prime Contractor who provides design for this contract.

Quality Control (QC): Contractor's system to control the quality of design, material, equipment and construction.

Quality Assurance (QA) Program: Government's program to evaluate the effectiveness of the Contractor's quality control. The Government's QA Program is not a substitute for the Contractor's QC Program.

Federal Holidays: New Year's Day, Martin Luther King Jr. Day, President's Day, Memorial Day, Juneteenth National Independence Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day.

Where conflicts exist in this document describing the actions necessary to meet requirements, the methods or procedures needed to satisfy the requirements should be those which are the strictest, expending the greatest amount of time, effort, and expense.

1.2 Accessibility

Provide barrier-free design in accordance with UFC 1-200-01 DoD Building Code.

1.3 Changes

No oral statement by any person other than the Contracting Officer, as provided in the Federal Acquisition Regulation (FAR) clause 52.243-5 entitled, "CHANGES AND CHANGED CONDITIONS," will in any manner or degree modify or otherwise affect the terms of this contract.

1.4 No Waiver by the Government

The failure of the Government in any one or more instances to insist upon strict performance to any of the terms of this contract or to exercise any option herein conferred is not to be construed as a wavier or relinquishment to any extent of the right to assert or rely upon such terms or options on any future occasion.

1.5 Equitable Adjustments

a. Whenever the Contractor submits a claim for equitable adjustment under a clause which provides for equitable adjustment of the contract, such claim must include all types of adjustments in the total amounts to which the clause entitles the Contractor, including, but not limited to, adjustment arising out of delays or disruptions.

b. Except as the parties may otherwise expressly agree, the Contractor must be deemed to have waived: (1) any adjustments to which he otherwise might be entitled under the clause where such claim fails to request such adjustments; and (2) any increase in the amount of equitable adjustments additional to those requested in its claim.

c. If required by the Contracting Officer, the Contractor agrees to execute a release, in form and substance satisfactory to the Contracting Officer, as part of the supplemental agreement setting forth the aforesaid equitable adjustment. The Contractor further agrees that such release will discharge the Government, including its officers, agents, and employees, from any further claims, including, but not limited to, further claims arising out of delays or disruptions caused by the aforesaid change.

1.6 Warranty

Warrant all materials and work for not less than one year after final acceptance of the work, except as otherwise indicated in this RFP. If required to provide remedial repair of previously installed work due to latent defect or unacceptable work performance, warrant the repaired work for one year after the completion and acceptance of the repair. For warranted items, furnish the manufacturer’s original written warranty accompanied by a copy of the supplier's receipt showing place of purchase, telephone number of supplier, address, delivery order number if applicable, and ticket number.

01 11 00 SUMMARY OF WORK

SUMMARY: This is a Design-Build that will replace or repair several components of the building to include the following. Other repairs or replacements necessitated by the execution of the features below shall also be included as part of the project.

1) Replacement of Roof top mechanical equipment, eight (8) make-up air units and seventeen (17) exhaust fans. The designer will verify the various make-up and exhaust flow rates to and from all the supported spaces and reduce if possible and beneficial to the government. Care must be taken to avoid affecting the existing roof warranty and minor repairs are to be expected around the equipment curbs.

2) Replacement of the thermostats in the berthing spaces (174) and several others in common spaces, to be verified by the designer. Currently, these thermostats do not communicate with

the existing building automation system (BAS). The new system will include other supporting controllers and components to enable communication between the new thermostats and the BAS.

3) Hallways will receive a wainscoting system including a top and mid rail and base cove to enhance the resiliency of the walls. The wall coverings will be approximately five (5) feet tall. A commercial product will be identified later in this document. The wall above this installation will be repainted.

4) Replace 2' x 2' ceiling tiles, approximately 14,500 FT2, in the hallways and several common spaces defined later in this document.

5) Remove the existing southside entrance door, complete, and replace with new door, hardware, and completely rebuilt structural framing.

6) Removal of existing vinyl Floor tiles, approximately 10,800 square feet (mostly in the hallways) to be replaced with Luxury Vinyl Tiles (LVT). The designer will propose several borders and other embellishments with tiles of other colors.

7) Remove existing ceramic tiles on the quarterdeck (about 1,200 FT2) and replace with a heavy-use quality wood grain tile system to be described later in this document.

8) Remove existing carpeting and tiles in 6 offices (approximately 350 FT2 each) and replace with the same heavy-use quality wood grain tile system being installed in the Quarterdeck. These locations will be defined later in this document.

9) Replace all treads in the south stairwell in navy blue. Repair and repaint existing wainscoting system and paint remaining surface in the stairwell.

10) Install electronic CAC card readers for accessing the two main doors at the south stairwell and quarterdeck.

11) Install mechanical cipher locks, with key back-ups, on all berthing space doors throughout the building.

12) Replace smoke detectors in berthing spaces (174) and in a few other locations.

13) Replacement of the existing Fire Alarm Control Panel (FACP) and relocating with a new FACP to the Quarterdeck next to the existing public address (PA) Panel. New panel will continue to allow the PA system to use the existing Fire Protection system speakers. Other existing devices, (pull stations, strobes, annunciators, etc.) will be re-used if possible. This item will be presented as an option.

1.0 Protection of Government Property

Take special care to protect Government property. Return areas damaged as a result of construction under this contract to their original condition. In addition to FAR 52.236-9, Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements, perform the following:

a. Remove or alter existing work or facilities in such a manner as to prevent injury or damage to any portion of the existing work or facilities that remain.

b. Repair or replace portions of existing work altered during construction operations to match existing or adjoining work, as approved by the Contracting Officer. At the completion of operations, existing work must be in a condition equal to or better than that

which existed before new work started.

c. Preserve the natural resources in accordance with the approved environmental protection plan prepared in accordance with UFGS 01 57 19 Temporary Environmental Controls.

01 14 00 WORK RESTRICTIONS

1.1 Work Hours, Access and Passes

All Contractor employees, including subcontractors, subcontractors' employees, suppliers, and suppliers' employees are required to comply with the Installation Security Requirements regarding personnel, vehicle, and equipment security passes and access to the jobsite. Nothing in the contract is to be construed in any way to limit the authority of the Commanding Officer to prescribe new, or to enforce existing security regulations governing the admission or exclusion of persons and their conduct while aboard the station, including but not limited to, the rights of search of all persons and vehicles aboard the station.

Coordinate with the Contracting Officer for specific security and access requirements.

a. Access to Buildings / Occupied Buildings: The Contractor may work in or around existing occupied buildings. The Contractor is responsible, via the Contracting Officer, to obtain access to building and facilities and arrange for them to be opened and closed. Do not enter the building(s) without prior approval of the Contracting Officer. Keep the existing buildings and their contents secure at all times. Provide temporary closures as required to maintain security. Contract personnel will not be permitted in security-regulated buildings or areas unless cleared by the Security Officer.

b. Passes and Badges: Contractor employees and representatives performing work under this contract are required to be either United States citizens or documented legal residents (status verified by prime contractor). All Contractor employees must obtain the required employee and vehicle passes. Each employee is required to wear the Government issued badge over the front of the outer clothing. Failure to obtain security and base access passes must not be a cause for contract performance time extension. The Contractor is required to immediately turn in all terminated employee's badges to the issuing office. Obtain access to Navy installations through participation in the Defense Biometrics Identification System (DBIDS). Requirements for Contractor employee registration, and transition for employees currently under Navy Commercial Access Control System (NCACS), are available at https://www.cnic.navy.mil/Operations-and-Management/Base-Support/DBIDS/ [https://www.cnic.navy.mil/Operations-and-Management/Base-Support/DBIDS/]. No fees are associated with obtaining a DBIDS credential. Participation in the DBIDS is not mandatory, and Contractor personnel may apply for One-Day Passes at the Base Visitor Control Office to access an installation. Registration for DBIDS includes: Present a letter or official award document (i.e. DD Form 1155 or SF 1442) from the Contracting Officer, that provides the purpose for access, to the base Visitor Control Center representative.

c. Present valid identification, such as a passport or Real ID Act-compliant state driver's license

d. Provide completed SECNAV FORM 5512/1 to the base Visitor Control Center representative to obtain a background check. This form is available for download at https://www.cnic.navy.mil/Operations-and-Management/Base-Support/DBIDS/

e. Upon successful completion of the background check, the Government will complete the DBIDS enrollment process, which includes Contractor employee photo, finger prints,

base restriction and several other assessments

f. Upon successful completion of the enrollment process, the Contractor employee will be issued a DBIDS credential, and will be allowed to proceed to worksite

DBIDS Eligibility Requirements: Throughout the length of the contract, the Contractor employee must continue to meet background screen standards. Periodic background screenings are conducted to verify continued DBIDS participation and installation access privileges. DBIDS access privileges will be immediately suspended or revoked if at any time a Contractor employee becomes ineligible. An adjudication process may be initiated when a background screen failure results in disqualification from participation in the DBIDS, and Contractor employee does not agree with the reason for disqualification. The Government is the final authority. DBIDS Notification Requirements: Immediately report instances of lost or stolen badges to the Contracting Officer. Immediately collect DBIDS credentials and notify the Contracting Officer in writing under the following circumstances:
(1) An employee has departed the company without having properly returned or surrendered their DBIDS credentials.
(2) There is a reasonable basis to conclude that an employee, or former employee, might pose a risk, compromise, or threat to the safety or security of the Installation or anyone therein.

g. Contractor Vehicles: All vehicles must display a valid state license plate and safety inspection sticker, if applicable, and must be maintained in good repair. The company name must be displayed in a clearly visible manner and size on each Contractor vehicle used in the course of work. [Registration, proof of insurance and driver's licenses are required to obtain a station vehicle pass.]

h. Work Hours: Unless otherwise indicated, work will be located on a Government compound, military installation, or station. Contractor work hours are between 0730 and 1600 Monday through Friday. Obtain advance approval from the Contracting Officer for Contractor personnel to be on site outside normal working hours. Notify the Contracting Officer at least 48 hours in advance to obtain approval for access to the jobsite or work outside of normal working hours or on Saturday, Sunday, and Federal Holidays.

i. Contractor Personnel: Provide the Contracting Officer the name(s) of the supervisory person(s) authorized to act for the Contractor. Provide, and update as required, a list of the key personnel for the Contractor and subcontractors including addresses and telephone numbers for use in the event of an emergency.

j. Contractor employees must conduct themselves in a proper, efficient, courteous and businesslike manner. Remove from the site any individual whose continued employment is deemed by the Contracting Officer to be contrary to the public interest or inconsistent with the best interests of National Security.

1.2 Security Requirements

All security requirements apply to all subcontractors and suppliers associated with this contract. [Special or extraordinary security requirements are identified herein.] Comply with the following [in addition to special or extraordinary security requirements]:

a. Do not publicly disclose any information concerning any aspect of the materials or services relating to this contract, without prior written approval of the Contracting Officer.

b. Do not disclose or cause to be disseminated any information concerning the operations of the activity's security or interrupt the continuity of its operations.

c. Do not disclose any information to any person not entitled to receive it. Failure to

safeguard any classified information that may come to the Contractor or any person under his control, may subject the Contractor, his agents or employees to criminal liability under 18 U.S.C., Sections 793 and 798.

d. Direct to the Contracting Officer and or Installation Security Officer for resolution all inquiries, comments or complaints arising from any matter observed, experienced, or learned as a result of or in connection with the performance of this contract, the resolution of which may require the dissemination of official information.

e. Coordinate photography requirements with the Contracting Officer. Some areas restrict or prohibit photographing Government property.

f. Escorts are required, unless otherwise allowed by the NAPS command, during work in berthing spaces.

Deviations from or violations of any of the provisions of this paragraph, will, in addition to all other criminal and civil remedies provided by law, subject the Contractor to immediate termination for default and withdrawal of the Government's acceptance and approval of employment of the individuals involved.

01 20 00 PRICE AND PAYMENT PROCEDURES

1.1 Data Required

This Contract requires the use of a cost-loaded Network Analysis Schedule (NAS). Schedule of Prices must not be used with cost-loaded Network Analysis Schedule (NAS). Use Earned Value Report derived from cost-loaded NAS within 15 calendar days of notice of award, prepare and deliver to the Contracting Officer an Earned Value Report as directed by the Contracting Officer. Provide a detailed breakdown of the Contract price, giving quantities for each of the various kinds of work, unit prices, and extended prices. Indirect activities (e.g., meetings, presentations, submittals, surveys, haul road or storage yard maintenance, dust control, security) will not be cost-loaded. Evenly distribute the costs across the associated construction activities. Contractor overhead and profit including salaries for field office personnel, if applicable, must be proportionately spread over all pay items and not included as individual pay items.

1.1.1 Payment Instructions

Payments will not be made until the Earned Value Report from the cost-loaded NAS has been submitted to and accepted by the Contracting Officer. For design phase progress payment(s), the Schedule of Prices or Earned Value Report from the Cost Loaded CPM must include detailed design activities and general (summarized) approach for the construction phase(s) of the project. The Schedule of Prices or Earned Value Report must be fully developed with detailed construction line items as design progresses. The complete design and construction Schedule of Prices or Earned Value Report must be submitted and accepted prior to starting construction work.

1.1.3 Contract Cost Breakdown

The Contractor must furnish within 30 days after the date of Notice to Proceed, and prior to the submission of its first partial payment estimate, a breakdown of its single job pay item or items which will be reviewed by the Contracting Officer as to propriety of distribution of the total cost to the various accounts. Any unbalanced items as between early and late payment items or other discrepancies will be revised by the Contracting Officer to agree with a reasonable cost of the work

included in the various items. This Contract cost breakdown will then be utilized as the basis for progress payments to the Contractor.

1.1.4 Contract Modifications

In conjunction with the Contract Clause DFARS 252.236-7000 Modification Proposals-Price Breakdown, and where actual ownership and operating costs of construction equipment cannot be determined from Contractor accounting records, base equipment use rates upon the applicable provisions of the EP 1110-1-8.

1.2 Contractor Invoices

Contractor requests for payment must conform and will be processed in accordance with the requirements of FAR 52.232-5 and FAR 52.232-27.

a. Content of Invoice: Requests for payment in accordance with the terms of the contract must consist of the following: in accordance with NFAS Clause 5252.232-9301, documents must be provided as attachments in Wide Area Workflow (WAWF). The maximum size limit per attachment is less than 2 megabytes, but there are no limits on the number of attachments. If a document cannot be attached to WAWF due to system or size restrictions it must be provided as instructed by the contracting officer.

   Monthly invoices and supporting forms for work performed through the anniversary award date of the Contract must be submitted to the Contracting Officer within 5 calendar days of the date of invoice. For example, if Contract award date is the 7th of the month, the date of each monthly invoice must be the 7th and the invoice must be submitted by the 12th of the month.

   1. Contractor's Invoice on NAVFAC Form 7300/30, must show, in summary form, the basis for arriving at the amount of the invoice.
   2. Contractor's Estimate for Voucher/ Contract Performance Statement on NAVFAC Form 7300/31 furnished by the Government, showing in detail: the estimated cost, percentage of completion, and value of completed performance for each of the construction categories stated in this contract. Use NAVFAC LANT Form 4-330/110 (New 7/84) on NAVFAC Atlantic contracts when a Monthly Estimate for Voucher is required.
   3. Affidavit to accompany invoice (LANTDIV NORVA Form 4-4235/4 (Rev. 5/81)).
   4. Updated copy of submittal register.
   5. Updated copy of progress schedule. Furnish as specified in "FAR 52.236-15, Schedules for Construction Contracts."
   6. Contractor Safety Self Evaluation Checklist (original)
   7. Final release (for final payment only). Final invoice must be accompanied by the certification required by DFARS 252.247.7023 TRANSPORTATION OF SUPPLIES BY SEA, and the Contractor's Final Release.

b. Payment:
   1. Payment will be made on Contractor's submission of itemized requests and will be subject to reduction for overpayments or increased for underpayments from previous payments. The Government may withhold payment or reduce payments for the following:
      a. Defects in material or workmanship.
      b. Claims the Government may have against the Contractor under or in connection with this contract.
      c. Contractor's failure to submit an updated schedule.
      d. Payroll violations.
      e. Unless otherwise adjusted, repayment to the Government upon demand

for overpayments made to the Contractor.

2. Payments may be made for materials, stored off construction sites, under the following conditions:

a. Materials to be considered for progress payment prior to installation must be located and stored within 20 miles by streets and roads of the construction site.

b. Materials adequately insured and protected from theft and exposure. Payment requests for offsite materials must include the consent of surety.

c. Materials not susceptible to deterioration or physical damage in storage or in transit to the job site are acceptable for progress payments. Items such as steel, machinery, pipe and fittings and electrical cable are acceptable, but items such as gypsum board; glass, insulation and wall covering are not.

d. Materials in transit to the job or storage site are not acceptable for payment.

e. Conditions specified in FAR 52.232-5(b) Payments Under Fixed Price Construction Contracts.

1.3 Budget Management

The Contractor must be responsible for budget management throughout the entire project. It is the intent of the Government to partner with the Contractor to maximize project value while strictly controlling contract modifications and maintaining overall fiscal control. When required, develop a Budget Management System for each phase of the design.

01 30 00 ADMINISTRATIVE REQUIREMENTS

1.1 Supervision

The Contractor must have a superintendent fluent in English [and host nation language] on the job site during working hours.

The Superintendent must have a minimum of 5 years of experience as a Superintendent on previous projects of similar size and complexity. The Superintendent may [not] serve as the Site Safety and Health Officer. Provide a Superintendent Resume for the proposed on-site Project Superintendent describing experience with references and qualifications to the Contracting Officer for approval. The Contracting Officer reserves the right to interview the proposed on-site Project Superintendent at any time in order to verify the submitted qualifications.

For the positions of Superintendent and SSHO, a single person may fill that role. Any person filling these roles shall meet all requirements for both roles. If the Contractor is unable to find an individual with the appropriate qualifications for these two roles, the contractor will provide a second individual at no additional cost. The role of QC manager will be provided by a separate individual. These 2 or 3 people assigned shall be full time and shall have no other duties assigned."

1.2 Required Insurance

Within 15 calendar days after award, furnish the Contracting Officer a Certificate of Insurance as evidence of the following insurance coverage amounts not less than the amount specified below in accordance with FAR Clause 52.228-5 Insurance Work On A Government Installation:

a. Comprehensive General Liability: $500,000 per occurrence.

b. Automobile Liability: $200,000 per person, $500,000 per occurrence for bodily injury; $20,000 per occurrence for property damage.

c. Worker's Compensation: As required by Federal and State Worker's compensation and

occupational disease and other laws.

d. Employer's Liability Coverage: $100,000, except in states where worker's compensation may not be written by private carriers.

e. Others as required by state law.

f. Above insurance coverages are to extend to Contractor personnel operating Government owned equipment and vehicles.

g. The Certificate of Insurance must provide for 30 calendar days written notice to the Contracting Officer by the insurance company prior to cancellation or material change in policy coverage.

For projects which require removal of asbestos containing materials the Asbestos Contractor is required to provide occurrence-based liability insurance with asbestos coverages in an amount not less than $1,000,000 and must name the Government and Private Qualified Person (PQP) as additional insureds.

1.3 Post Award Kick-Off Meeting (PAK)

Prior to commencement of design, and within 21 calendar days of award, meet with representatives of the Contracting Officer, installation and client to present the concept design for discussion and acceptance. The project team will develop a mutual understanding relative to the approved proposal, safety program, environmental permits and requirements, quality control procedures, and design and construction schedule. During the meeting, Contractor must propose and gain acceptance for any critical path work activities requiring advance submittal and approval. If the contract includes work on any fire protection system, including fire alarm and mass notification systems, the Contractor and the appropriate DOR must meet with the NAVFAC Fire Protection Engineer (FPE) to establish clear expectations of fire protection requirements of the project.

The Contractor's key personnel must attend including the Project Manager, Superintendent, Site Safety and Health officer, Construction Quality (CQ) Manager, Design Quality Control (DQC) Manager, Designer of Record (DOR), and major subcontractors.

1.4 Pre-Design Meeting

Separate from the PAK and separate from the Pre-Construction Conference, meet with the Naval Station Newport Engineering Staff and Customer to review design requirements, design deliverables, design schedule and required Code compliance.

1.5 Pre-Construction Conference

Prior to construction or demolition, meet with representatives of the Contracting Officer to discuss and develop mutual understanding relative to administration of the safety programs, environmental issues, safety of building occupants and surrounding area, hazardous materials, waste disposal, construction QC procedures, construction schedule, labor provisions and other construction phase contract procedures.

1.6 NAVFAC Red Zone Meeting (NRZ)

Participate in NAVFAC Red Zone (NRZ) meetings with the Contracting Officer to identify strategies to ensure the project is carried to expeditious closure and turnover to the client. The Contracting Officer will provide a template to the Contractor to use to develop a NRZ Checklist.

Revise the template to include critical work activities and their planned completion dates based on the project scope of work and schedule. Discuss any progress changes with items listed on the NRZ Checklist during regularly scheduled NRZ Meetings beginning approximately at 75% stage of construction prior to project completion.

01 31 23.13 20 ELECTRONIC CONSTRUCTION AND FACILITY SUPPORT CONTRACT MANAGEMENT SYSTEM (eCMS)

Utilize the Naval Facilities Engineering Systems Command's (NAVFAC's) Electronic Construction and Facility Support Contract Management System (eCMS) for the transfer, sharing, and management of electronic technical submittals and documents. The web-based eCMS is the designated means of transferring technical documents between the Contractor and the Government. Paper media or email submission, including originals or copies, of the documents are not permitted unless identified within the contract. All government contracting specialist/officer, legal, and command communications will remain the same. For additional information, see UFGS Section 01 31 23.13 20 Electronic Construction and Facility Support Contract Management System for required use of eCMS.

01 32 17.00 20 COST-LOADED NETWORK ANALYSIS SCHEDULES

Develop and implement a design and construction schedule in accordance with UFGS 01 32 17.00 20. The cost-loaded Network Analysis Schedule (NAS) is a tool to manage the project, both for Contractor and Government activities. The NAS will also be used to report progress and evaluate time extensions and provide the basis for progress payments. All progress payment amounts will be derived from and tied to the cost loaded schedule activities. The Contractor shall use the Critical Path Method (CPM) and the Precedence Diagram Method (PDM) to satisfy time and cost applications. For consistency, when scheduling software terminology is used in this section, the terms in Primavera's scheduling programs are used. Provide all items listed in paragraph REQUIRED TABULAR REPORTS AND NATIVE P6 XER FILES with baseline and other NAS submittal.

Before preparing the Project Baseline Schedule, and prior to the start of work, meet with the Contracting Officer to discuss the proposed schedule and the requirements of this section. Propose projected data dates for monthly update schedules for the project as well as each commissioning milestone and incorporate each monthly update submittal into submittal register. Discuss required forms, terminology, and submittal requirements of this section and other requirements related to schedule management for this contract. Use the NAVFAC-provided Preliminary Scheduling Meeting Guideline in the completion of the intended mutual understanding. The Contractor is responsible for scheduling procurement, Contractor quality control and construction, acceptance testing and training.

01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES

1.1 Construction submittals are to be Contractor-QC approved, except those listed below:

a. DOR Approval required for:
   1. Fire Protection related submittals
   2. All Interior Architectural components (floor/ceiling tiles, wall cladding, doors etc.)
   3. All HVAC equipment (AHUs, X-Fans, etc.)
   4. All HVAC Controls components (Controllers, Sensors, etc.)

b. Government Approval required for:

   1. Government approved submittals as required by UFGS specification sections

edited by the DOR or other submittals identified later in this document.

1.2 Submit the following construction submittals, approved by the DOR, to the Government for surveillance:

a. Submit fire protection related submittals pertaining to spray-applied fire proofing and fire stopping, exterior fire alarm reporting systems, interior fire alarm & detection systems, and fire suppression systems including fire pumps and standpipe systems.

b. Submit roofing submittals pertaining to materials and systems used to make up the roof system repairs required that are associated with the replacement of roof top equipment maintain care not to void the new roof warranty that began less than a year ago.

c. Submit HVAC Testing, Adjusting, and Balancing required submittals as described in later parts of this document.

d. Submit Performance Verification and Acceptance Testing required by IBC or this RFP as is required by the installation of additional controls for equipment operation and data collection, also described later in this document.

e. Submit all Interim Special Inspection Reports on a bi-weekly basis until work requiring special inspections is complete. Submit all Structural Observation Reports and the Final Report of IBC Special Inspections.

1.3 Construction Submittal Process

Provide to the Government submittals as listed. See Section 01 33 10.05 20 Design Procedures for specific design and construction submittal format and approval and surveillance requirements. Design drawings may be prepared more like shop drawings to minimize construction submittals after final designs are approved. Therefore, the Contractor is encouraged to prepare and submit with the design drawings, appropriate connection, fabrication, layout, and product specific drawings.

a. QC Plan, prior to Design/Construction (may be phased).

b. Construction submittals, prior to construction, approved in accordance with QC Plan, the DOR or QC Specialist is the approving authority for submittals unless otherwise indicated.

c. Sustainability Action Plan (and Sustainability Notebook when required) in accordance with 01 33 29 Sustainability Requirements and Reporting.

d. DOR-approved construction submittals identified for Government surveillance (typically Fire Protection system and Life Safety submittals). Stamp the submittals "FOR SURVEILLANCE ONLY." Submit Surveillance submittals to the Government prior to starting work for that item. Submittals required for surveillance will be returned only if corrective actions are required.

e. Safety Data Sheets (SDS) as applicable.

f. Baseline Schedule: due prior to PAK.

g. Environmental Protection Plan, prior to start of the work.

h. Contractor Safety Self-Evaluation Checklist.

i. Accident Reports - submit if incidence occurs.

j. Accident Prevention Plan and Activity Hazard Analysis: Submit prior to construction.

k. Cost-Loaded Network Analysis Schedule prior to construction.

l. Record Drawings, due at Beneficial Occupancy

m. Operation and Maintenance Information: Due prior to testing as applicable, no later than 30 calendar days before Beneficial Occupancy.

n. Licenses and Permits: Per this section and others to follow.

o. DD Form 1354:

Prepare a Draft and Interim DD Form 1354, TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY, in accordance with UFC 1-300-08. Coordinate the identification of appropriate asset construction categories with the Contracting Officer and the Real Property Accounting Officer.

1) Draft DD Form 1354. DOR must determine applicable real property assets broken out by construction categories and submit a "Draft DD Form 1354" for Government approval as a part of the Design Analysis included with the Prefinal Design submittal. "Draft DD Form 1354" must include all quantities and units of measure, but does not require cost breakdown. The Real Property Accountable Officer (RPAO) will provide the first draft of the DD1354 to the contractor with RPUIDs and CCNS on it.

2) Interim DD Form 1354. Contractor must coordinate with the DOR and update the Draft DD Form 1354 submission to include any additional assets, improvements, or alterations that occurred during construction. Use the Draft DD Form 1354 [and the UFGS Section 01 20 00 Price and Payment Procedures] to identify costs. The costs and quantities must align with the RPUID and unit of measures listed on the RPAO's draft 1354. Submit the final draft Interim DD Form 1354 to the Government for approval 30 days prior to the Beneficial Occupancy Date (BOD). If modifications to the Interim DD Form 1354 are required by the Government, the corrected version must be submitted prior to the BOD.

3) When documenting demolition work, the DD Form 1354 must list the quantitative data associated with this work as a negative value to show the cost should be deleted from the Navy asset data store. Coordinate with the Installation Real Property POC to assist in determining the negative value for demolition work. There are two ways to account for the demolition portion of the project and to document the reduction of real property: (1) attach an Authorization for Demolition form 18 (Service-specific) to the DD Form 1354 to document category codes and quantities of demolished real property. These should be listed separately from constructed/transferred item numbers; or, (2) indicate, as additional DD Form 1354 item numbers, all demolished real property facility numbers and category codes using negative numbers (shown in parenthesis) for units of measure, and in block 18 indicate N/A for costs. Disposal cost within the footprint of the project is added into total construction cost of new facility prompting the demolition.]

p. Construction Submittals:

1) In addition to the design submittals noted in Section 01 33 10.05 20, construction submittals will be required. The list of required submittals will be generated from the Contractor-prepared specifications and indicated in the submittal register.

2) Shop drawing submissions will be governed by UFGS 01 33 00.05 20 Construction Submittal Procedures, available on the Whole Building Design website (www.wbdg.org). Contractor must assume a 15 day review period, and provide 2 hard copies of all submittals (in addition to electronic submittals) to be submitted to the FEAD Design Manager.

1.4 Organization Responsibilities

Stamp each sheet of each submittal with QC certifying statement or approving statement, except that data submitted in bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only. Sign certifying statement or approval statement. The person signing certifying statements must be QC organization member, and the signatures must be in original ink; stamped signatures are not acceptable. Retain a copy of approved submittals at project site, including Contractor's copy of approved samples.

a. When approving authority is Contracting Officer, QC organization will certify submittals, assure proper signatures, and forward to Contracting Officer with the following certifying statement:
"*I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with contract Number (insert contract number here), is in compliance with the contract documents, can be installed in the allocated spaces, and is submitted for Government approval.*
Certified by QC Manager _____, Date _____"

b. When the Approving Authority is the Designer of Record, the DOR must approve, professionally stamp, sign, and date submittals. DOR stamp on construction submittals or submission of design documents that include construction submittals indicates DOR approval for construction. QC organization must certify submittals, assure proper signatures, and forward to Contracting Officer with the following certifying statement:
"*I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with contract Number (insert contract number here), is in compliance with the contract requirements, can be installed in the allocated spaces, and is submitted for DOR approval.*
RFP Part Four and Part Five Submittals:
Approved by DOR _____, Date _____
Certified by QC Manager _____, Date _____"

1.5 Operations and Maintenance Information (OMSI)

Provide Operation and Maintenance Manuals for all equipment, warranties, product data, training, etc. Provide 5 hard copies and also provide electronically (PDF and bookmarked).

1.6 Licenses and Permits

Obtain all appointments, licenses, and permits required to perform work under this contract at no additional expense to the Government. See "Permits Record of Decision" (PROD) form for list of permits. Comply with all applicable federal, state, and local laws, and base regulations and procedures. Provide evidence of such permits and licenses to the Contracting Officer before work commences and at other times as requested by the Contracting Officer (see FAR 52.236-7, *Permits and Responsibilities*). Coordinate permit applications with Navy or local environmental office.

The contractor must submit a complete PROD form with the first design submittal package. A blank PROD form can be obtained from the NAVFAC Design-Build website at the following link http://www.wbdg.org/FFC/NAVFAC/NDBM/ST/PROD_Form.doc . Contractor must determine correct permit fees and pay said fees. Copies of all permits, permit applications, and the completed PROD form must be forwarded to the Government's Civil Reviewer and Environmental

Reviewer.

Contractor is exclusively responsible for his full compliance with patent laws and must affirm that the company is licensed to use equipment and processes the company employs in this project.

1.7 Record Drawings

The as-built modifications must be accomplished by electronic drafting methods on the Contractor-originated DWG design drawings to create a complete set of record drawings. For each record drawing, provide CAD drawing identical to signed Contractor-originated PDF drawing that incorporate modifications to the as-built conditions. After all as-built conditions are recorded on the DWG files, produce a PDF file of each individual record drawing in conformance with FC 1-300-09N. Electronic signatures are not required on record drawings.

01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES

1.1 Summary

This section includes requirements for contractor-originated design documents and design submittals.

1.2 Reference Standards

This RFP references published standards, the titles of which can be found in the Unified Master Reference List (UMRL) on the Whole Building Design Guide at the Unified Facilities Guide Specification (UFGS) Website . The publications referenced form a part of this specification to the extent referenced.

The advisory provisions of all codes, requirements, and standards are mandatory; substitute words such as "must" or "required" for words such as "shall", "should", "may", or "recommended," wherever they appear. The results of these wording substitutions incorporate these code and standard statements as requirements. Reference to the "authority having jurisdiction" is interpreted to mean Contracting Officer or Contracting Officer Representative. Comply with the required and advisory portions of the current edition of the standard at the time of contract solicitation.

Provide work in compliance with the following design standards and codes, as a minimum. Government standards listed in this RFP take precedence over industry standards. The following list of codes and standards is not comprehensive and is augmented by other codes and standards referenced and cross-referenced in the RFP. Refer to Parts 3 and 4 for specific requirements within other UFC's.

a. U.S. Department of Defense (DoD) Unified Facilities Criteria (UFC)

UFC 1-200-01	DoD Building Code
UFC 1-200-02	High Performance and Sustainable Building Requirements
UFC 1-300-08	Criteria for Transfer and Acceptance of DoD Real Property
FC 1-300-09N	Navy and Marine Corps Design Procedures
UFC 3-560-01	Electrical Safety, O&M
UFC 3-600-01	Fire Protection Engineering

UFC 3-810-01N	Navy and Marine Corps Environmental Engineering for Facility Construction

b. UFC 1-200-01: UFC 1-200-01 DoD Building Code is a hub document that provides general building requirements and references other critical UFCs. A reference to UFC 1-200-01 in the RFP document requires compliance with the Tri-Service Core UFCs. Refer to the UFC 1-200-01 for a complete list of all applicable Tri-Service Core UFCs at website location https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc . Contractor-originated design documents must provide a project design that complies with the Request For Proposal (RFP), FC 1-300-09N, UFC 1-200-01, UFC 3-810-01N, the Core UFCs, and other UFC's listed above.

1.3 Design Requirements

a. Provide design documents that include basis of design, design drawings and design specifications, reports and submittal register in accordance with FC 1-300-09N Navy and Marine Corps Design Procedures.

b. Design is the work necessary to ensure functionality, quality, and safety for critical facets of the project. Special coordination requirements such as for phone, LAN and cable, are included herein.

c. Part 3 contains the project description, functional and performance requirements, scope items, and expected quality levels that exceed Part 4. Part 4 identifies design criteria, verification requirements, and performance and quality requirements of products.

d. Provide professional registration and design signing and stamping requirements per requirements of FC 1-300-09N Design Procedures. Interior Designers must be NCIDQ certified per UFC 3-120-10 Interior Design. The design effort must be overseen by a Design Quality Control (DQC) Manager who will ensure that the design meets the requirements of this RFP. The DQC Manager will prepare a DQC Plan describing how the design process will ensure conformance to the RFP.

e. Provide a Contractor-originated design specification that in conjunction with the drawings, demonstrates compliance with requirements of the RFP. The specified products, materials, systems, and equipment that are approved by the DOR; submitted to the Government by the Contractor; and reviewed by the Contracting Officer must be used to construct the project. Prescriptive specification sections contained in RFP Part 5 must become a part of the Contractor-originated specification without modification. The Contractor must prepare design specifications that include a UFGS specification for each product, material, or system on the project. Organize the specifications using Construction Specification Institute (CSI) MasterFormat™ . Provide project specifications to include the following:
   1. Provide the specification cover sheet with the professional seal and signature of the lead licensed architect or engineer of the project design team. Indicate the Contractor's company name and address on the specification coversheet.
   2. Table of contents for entire specification.
   3. Individual UFGS specification sections for each product, material, and system required by the RFP. Edit UFGS sections in accordance with RFP Part 3 and 4.
   4. If proprietary information is provided or required, include a coversheets for the product, material, or system information that is being proprietarily specified. This information must comply with the related UFGS specification.
   5. If proprietary information is provided or required, include highlighted and annotated Catalog Cuts, Manufacturer's Product Data, Tests, Certificates, Manufactures information and letters for each product, material, or system that is

being proprietary specified.

6. Coordinated submittal register for all products, materials and systems with each design submittal. Provide a cumulative register that identifies the design and construction submittals required by each design package along with previous design submittals. The DOR must assist in developing the submittal register by determining which submittal items are required to be approved by the DOR. Complete all fields in the final submittal register in order to obtain Government approval of the final design.

f. Identification of Manufacturer's Product Data Used as Specifications: Provide complete and legible catalog cut sheets, product data, installation instructions, operation and maintenance instructions, warranty, and certifications for products and equipment for which final material and equipment choices have been made. Indicate, by prominent notation, each product that is being submitted including optional manufacturer's features, and indicate where the product data shows compliance with the RFP. Attach this product data to the end of the applicable UFGS specification section that specifies the material.

g. Specification Software: Submit the final specification source files in either MS Word or SpecsIntact with a Submittal Register generated in Excel or SpecsIntact.

h. Submit design drawings or sketches, calculations and manufacturer's data to demonstrate compliance with contract requirements. The Contractor is encouraged to prepare design drawings more like shop drawings to minimize construction submittals.

i. Provide electronic and hard copy amounts indicated below of design submittal package to the following reviewers 21 calendar days to the in-progress review meeting. 65%, pre-final and Final Design submissions will be one hard copy of full size and half size plans, Specifications and the Basis of Design in addition to the full submission sent electronically.

	DELIVERABLE	FEAD/ ROICC	IPT	PWO	USER
	Design Development	1			
	65% Design Submission (Plans and Specifications)	1			
	Calculations	1			
	Design Quality Control (DQC) Documentation	1			
	Basis of Design (65%)	1			
	Pre-Final Design (Plans and Specifications)	1			
	Basis of Design (Final)	1			
	Drawings and Sketches	1			
	Specifications and Manufacturer’s Cut Sheets	1			
	Quality Control Review – (Plans and Specifications)	1			
	Calculations (if revisions were incorporated)	1			
	Draft DD Form 1354	1			
	Design Quality Control (DQC) Documentation	1			
	Stamped Final Design (for Construction)	1			

j. The final design submittal must be professionally signed and sealed by the DOR and forwarded to the Contracting Officer prior to the start of construction. Separated final

design packages will only be considered for Government review and approval during the Post Award Kick-off Meeting.

4. Drawings shall include at a minimum:
   a. Plan view for each floor H) for Architectural, Mechanical, and Electrical. Architectural, Mechanical, Electrical may be combined on one floor plan.
   b. Mechanical equipment schedule
   c. Mechanical details
   d. Electrical schedules and panel schedules where relevant
   e. Electrical details where relevant
   f. Architectural details
5. To minimize drawings, not every room requires a detail. Details can be “typical.”
6. Plan views shall show pathways for control lines, and locations of new controllers and thermostats.
7. PROVIDE DESIGN SUBMISSIONS AS FOLLOWS:
a. 65% Design Development
b. Pre-Final Design
c. Final Design / Issued for Construction
8. Electronic submission: Provide all .dwg files as well as PDF files for all drawings, and all other submissions including the BOD and Specifications.

1.4 Order of Precedence

The contract consists of the solicitation, the approved proposal, and the final design. In the event of conflict or inconsistency between any of the below described portions of the conformed contract, precedence must be given in the following order:

a. Any portions of the proposal or final design that exceed the requirements of the solicitation.
   1. Any portion of the proposal that exceeds the final design.
   2. Any portion of the final design that exceeds the proposal.
   3. Where portions within either the proposal or the final design conflict, the portion that most exceeds the requirements of the solicitation has precedence.

b.. The requirements of the solicitation, in descending order of precedence:
   1. Standard Form 1442, Price Schedule, and Davis Bacon Wage Rates.
   2. Part 1 - Contract Clauses.
   3. Part 2 - General Requirements.
   4. Part 3 - Project Program Requirements.
   5. Part 6 - Attachments (excluding Concept Drawings).
   6. Part 5 - Prescriptive Specifications exclusive of performance specifications.
   7. Part 4 - Performance Specifications exclusive of prescriptive specifications.
   8. Part 6 - Attachments (Concept Drawings).

c. Government review or approval of any portion of the proposal or final design does not relieve the Contractor from responsibility for errors or omissions with respect thereto.

01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS

Develop and implement a safety program in accordance with UFGS 01 35 26 and EM-385-1-1 Safety and Health Requirements Manual.

1.1 Ergonomics Considerations During Design

Design facilities, processes, job tasks, tools and materials to reduce or eliminate work-related

musculoskeletal (WMSD) injuries and risk factors in the workplace. Design maintenance access to reduce WMSD risk factors to the lowest level possible. In addition to requirements included in this contract, design must incorporate the requirements of MIL-STD-1472F.

01 45 00 QUALITY CONTROL

Establish and maintain a quality control program as described herein.

1.1 Quality Control Plan

Submit a QC Plan for Government review and acceptance prior to the start of construction. Submit the QC Manager's resume for approval prior to all other administrative submittals with the exception of bonds and insurance. The QC plan must include the following:

a. NAMES, QUALIFICATIONS and RESPONSIBILITIES: For each person in the QC organization (design and construction).

b. OUTSIDE ORGANIZATIONS: Outside organizations, including architectural and consulting engineering firms and a description of the services these firms will provide.

c. INITIAL SUBMITTAL REGISTER (DESIGN & CONSTRUCTION): Include submittal reviewer, estimated date of delivery, and identify which design submittals require Government approval prior to construction, and which construction submittals require DOR or Government approval prior to construction.

d. TESTING LABORATORIES: Accredited laboratories as applicable.

e. TESTING PLAN AND LOG: Tests required, referenced by specification paragraph number requiring the test, frequency, and person responsible for each test.

f. LIST OF DEFINABLE FEATURES: A Definable Feature of Work (DFOW) is a task, which is separate and distinct from other tasks, and has the same control requirements and work crews.

g. COMMUNICATION PLAN: Provide a plan for key decisions and possible problems the Contractor and Government may encounter during the design phase of the project. Communication Plan must indicate the frequency of design meetings and what information is covered in those meetings, key design decision points tied to the Network Analysis Schedule and how the DOR plans to include the Government in those decisions, peer review procedures, interdisciplinary coordination, design review procedures, and comment resolution.

h. SPECIAL INSPECTIONS: Provide a list of Special Inspections, testing, approvals, certifications, observations, and quality assurance plans as prescribed in Chapter 17 of IBC.

1.2 Quality Control Manager Qualifications

Appoint a Quality Control Manager responsible for the QC program. The Superintendent may [not] serve as the Quality Control Manager on this project. The QC Manager must have a minimum 5 years of combined experience as a Project Superintendent, QC Manager, inspector, Project Manager, Project Engineer or Construction Manager on previous projects of similar size and complexity. The QC Manager must possess a current certificate showing successful completion of the NAVFAC Contractor Quality Management (CQM) Training.

1.3 Quality Control Manager Responsibilities

a. Participate in the Post Award Kick-off, Partnering, Design Development and Coordination Meetings and Production Meetings.

b. Ensure that no construction begins before the DOR has signed and stamped the design for that segment of work, and design and construction submittals are approved as required by the QC Plan.

c. Immediately stop any work that does not comply with contract plans and specifications, and direct the removal and replacement of any defective work.

d. Prepare QC Reports.

e. Hold weekly QC meetings with DOR, Superintendent and Government technical team; participation must be suitable for the phase of work.

f. Ensure that safety inspections are performed. Attend weekly Toolbox meetings.

g. Maintain submittal log.

h. Maintain updated as-built drawings on site.

i. Maintain testing plan and log. Ensure that all testing is performed per contract.

j. Maintain deficiency log on site, noting dates deficiency identified, and date corrected.

k. Certify and sign statement on each invoice that all work to be paid under the invoice has been completed in accordance with contract requirements.

l. Perform Punch-out and Pre-final inspections, and participate in Final Inspections. Establish list of deficiencies; correct prior to the Final inspection.

m. Ensure that all required keys, operation and maintenance manuals, warranty certificates, and the As-built drawings are submitted to the Contracting Officer.

n. If Commissioning is part of work, engage Commissioning Authority (CxA), coordinate their oversight of Contractor's work and verify CxA's performance in accordance with UFGS section 01 45 00.

1.4 Three Phases of Quality Control

Utilize the Three Phases of Quality Control process consisting of:

a. Preparatory Phase: Review all applicable documents for compliance with all applicable laws, codes, regulations, and the requirements of the contract, including contract drawings and specifications. Determine requirements for testing and certification. Review submittal approvals for materials, equipment, shop drawings, and applicable methods of construction and installation. Include all Preparatory Phase items, along with the Preparatory Phase Checklist and, in the QC Report.

b. Initial Phase: Observe and inspect the initial portion of the work performed under a DFOW to establish the quality of the workmanship, resolve conflicts in construction, ensure that testing is done and certified as required, and to check all work procedures to ascertain the work is in conformance with required safety requirements. Record and report nonconforming work and work not of acceptable quality and requiring correction or

rework. Include all Initial Phase items, along with initial phase checklist and, in the QC Report.

c. Follow-Up Phase: Occurs at the completion of each DFOW.& Ensure the work is in compliance with contract requirements, quality of workmanship for all work is maintained, and all work performed meets safety requirements. Include all Follow-Up Phase items, including date, in the QC Report.

1.5 Contractor Production Report

Prepare Daily Production Reports on forms furnished for this purpose. Submit reports to the Contracting Officer by 10:00 am the following day. Reports must include:

a. Worker hours by classification, move-on and move-off of construction equipment furnished by the prime, subcontractor or the Government, and materials and equipment delivered to the site.

b. Safety meetings, checks and inspections.

c. Disposition of Construction Waste Material: Per Waste Management Plan and per Environmental Protection Plan.

01 50 00 TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS

1.1 Contractor Work Site

Limit use of the premises for work and for storage of material and equipment associated with the contract. Unless otherwise specified or separately agreed to, Government owned material handling equipment, transportation equipment or general tools will not be available for Contractor's use. Clean work area daily and after completion of the work, removing all loose debris and disposing of all non-permanent materials in accordance with the contractor's Waste Management Plan.

a. Temporary Facilities: The Contractor may provide his own office facilities; coordinate and obtain advance approval from the Contracting Officer. Provide and maintain suitable sanitary facilities within the construction limits of the contract. Dispose of sanitary waste in accordance with the applicable laws, and local regulation.

b. Contractor-Furnished Equipment: Equipment is subject to the inspection and approval of the Contracting Officer, prior to and during the life of the contract. All equipment and vehicles must display readily visible Contractor identification markings. Relocate stored Contractor equipment which may interfere with operations of the Government or with others on-site.

c. Contractor-furnished Material: Protect and secure products stored at this site.

1. All replacement units, parts, components, and materials to be used in the maintenance, repair and alteration of facilities and equipment must be new and compatible with the existing equipment on which it is to be used, and must comply with applicable Government, commercial, or industrial standards such as Underwriter's Laboratories, Inc., and National Electrical Manufacturers Association.
2. In addition, submit a current certificate recognized by the State or local authority that states the Contractor has completed at least 10 hours of training in backflow preventer installations.

d. The Contractor Lay-Down Area will be designated after the contractor advises the government of the area needed.

1.2 Temporary Utilities

a. The Government will provide water and power in reasonable quantities for this project only.

b. All labor, material, and equipment necessary to affect temporary utility tie-ins, including transformers if necessary, will be at the expense of the Contractor and under the surveillance of the Contracting Officer.

c. The Contractor will be responsible for any damages to Government, private or public facilities and property that may result from the installation and removal of these temporary utility tie-ins. Corrections and repairs will be made at the Contractor's expense.

d. The actual location and installation of the temporary tie-in, together with any interruptions of utilities systems, must be identified and approved by the Contracting Officer prior to execution. Notify the COR and Station Utilities 15 calendar days prior to any tie-ins.

e. Permanent utility systems, when indicated, will be available for tie-in.

f. Telephone and Data Service: Make arrangements with local telephone company, NMCI and other pertinent base communication departments.

g. Maintain utility services to existing facilities surrounding the site at all times during construction.

h. Contractor must provide and certify back flow preventers on all connections to the potable water supply system. Government personnel will install the BFP

i. [Backflow preventers must have a certificate of full approval from [FCCCHR-USC, University of Southern California, attesting that the design, size, and make of each backflow preventer has satisfactorily passed the complete sequence of performance testing and evaluation for the respective level of approval. Certificate of Provisional Approval will not be acceptable.

01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS

1.1 Unforeseen Hazardous Conditions

Do not disturb hazardous materials and report condition immediately to the Contracting Officer potentially hazardous conditions that are uncovered or the Contractor becomes aware of that have not been identified in the RFP. This includes hazardous components and materials and contamination (see UFC 3-810-01N Navy and Marine Corps Environmental Engineering for Facility Construction for more information).& This includes conditions that are not only hazardous to humans but wildlife, marine life and the environment. Stop work in the area of the questionable material or condition until identification and direction is provided.

1.2 Environmental Protection Requirements

The Contractor must complete and submit evidence of completion of the Environmental Compliance Assessment Training and Tracking (ECATTS) program. For more detailed information on ECATTS see UFGS 01 57 19.

The DOR must edit and submit UFGS 01 57 19 Temporary Environmental Controls and comply with state and local regulations within the edited UFGS section.

1.3 Asbestos

An asbestos survey report of the existing facilities was prepared and is included in Part 6 to support this project. The asbestos survey has been provided to show the location and conditions of regulated asbestos containing materials (RACM). Prior to starting work, verify the location of RACMs and obtain additional survey data required to and provide a comprehensive final design. The existence, size, and location of the RACMs are not guaranteed by the survey report provided. Verify the location of all RACMs prior to construction.

1.4 Soils

While earthworks are not expected to be a part of this project, the Base Soil Management Plan will be provided upon request.

01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

Develop a Waste Management Plan that identifies all recyclable material and disposal methods for all material. Contractor must reduce, recycle or salvage as much waste material as possible with a goal of diverting at least 60% of construction waste from landfill. Address waste reduction, recycling and salvage as part of the waste management plan. Report volume or weight of disposed and recycled materials. Report destination of debris diverted from disposal. The Contractor is responsible for removing and disposing of all waste materials generated. Consider all material recyclable or reusable, unless clearly demonstrated the material requiring disposal is waste material.

Submit Construction Waste Management Plan for Government approval within 45 calendar days after contract award. The plan must be approved prior to the start of construction or demolition. Manage demolition debris/waste or deconstruction materials in accordance with the approved construction waste management plan. An approved construction waste management plan will not relieve the Contractor of responsibility for compliance with applicable environmental regulations or meeting project cumulative waste diversion requirement. Ensure all subcontractors receive a copy of the approved Construction Waste Management Plan. The plan demonstrates how to meet the project waste diversion requirement.

The Waste Management Plan must include:

a. Names of individuals responsible for waste management and waste management tracking, along with roles and responsibilities on the project.

b. Actions that will be taken to reduce solid waste generation, including coordination with subcontractors to ensure awareness and participation.

c. Description of the regular meetings to be held to address waste management.

d. Description of the specific approaches to be used in recycling/reuse of the various materials generated, including the areas on site and equipment to be used for processing, sorting, and temporary storage of materials.

e. Name of landfill and/or incinerator to be used.

f. Identification of local and regional re-use programs, including non-profit organizations such as schools, local housing agencies, and organization that accept used materials such as material exchange networks and resale stores. Include the name, location, phone number for each re-use facility identified, and provide a copy of the permit or license for each facility.

g. List of specific materials, by type and quantity, that will be salvaged for resale, salvaged and reused on the current project, salvaged and stored for reuse on a future project, or recycled. Identify the recycling facilities by name, address, and phone number.

h. Identification of materials that cannot be recycled or reused with an explanation or justification, to be approved by the Contracting Officer.

i. Description of the means by which any materials identified in item (g) above will be protected from contamination.

j. Description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site).

k. Copy of training plan for subcontractors and other services to prevent contamination by co-mingling materials identified for diversion and waste materials.

l. ALL SCRAP METAL SHALL BE DELIVERED TO THE SCRAP METAL YARD NEAR BLDG. A-63, NAVAL STATION NEWPORT. THIS INCLUDES HVAC EQUIPMENT. ALL DEMOLISHED HVAC EQUIPMENT SHALL BE PROPERLY EVACUATED OF REFRIGERANT IN ACCORDANCE WITH NAVSTA INSTRUCTION 5090.10C ODS PRIOR TO DELIVERY TO THE SCRAP METAL YARD.

01 78 00 CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM E1971 (2005; R 2011) Standard Guide for Stewardship for the Cleaning of Commercial and Institutional Buildings

GREEN SEAL (GS) GS-37 (2017) Cleaning Products for Industrial and Institutional Use

U.S. DEPARTMENT OF DEFENSE (DOD) FC 1-300-09N (2014; with Change 6, 2021) Navy and Marine Corps Design

1.2 DEFINITIONS

1.2.1 As-Built Drawings

As-built drawings are the marked-up drawings, maintained by the Contractor on-site, that depict actual conditions and deviations from the Contract Documents. These deviations and additions may result from coordination required by, but not limited to: contract modifications; official responses to submitted Requests for Information (RFI's); direction from the Contracting Officer; design that is the responsibility of the Contractor, and differing site conditions. Maintain the as-

builts throughout construction as red-lined hard copies on site. These files serve as the basis for the creation of the record drawings.

1.2.2 Record Drawings

The record drawings are the final compilation of actual conditions reflected in the as-built drawings.

1.3 SOURCE DRAWING FILES

Request the full set of electronic drawings, in the source format, for Record Drawing preparation, after award and at least 30 days prior to required use.

1.3.1 Terms and Conditions

Data contained on these electronic files must not be used for any purpose other than as a convenience in the preparation of construction drawings and data for the referenced project. Any other use or reuse is at the sole risk of the Contractor and without liability or legal exposure to the Government. The Contractor must make no claim and waives to the fullest extent permitted by law, any claim or cause of action of any nature against the Government, its agents or sub consultants that may arise out of or in connection with the use of these electronic files. The Contractor must, to the fullest extent permitted by law, indemnify and hold the Government harmless against all damages, liabilities or costs, including reasonable attorney's fees and defense costs, arising out of or resulting from the use of these electronic files.

These electronic CAD drawing files are not construction documents. Differences may exist between the CAD files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic CAD files, nor does it make representation to the compatibility of these files with the Contractor hardware or software. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished Source drawing files, the signed and sealed construction documents govern. The Contractor is responsible for determining if any conflict exists. Use of these Source Drawing files does not relieve the Contractor of duty to fully comply with the contract documents, including and without limitation, the need to check, confirm and coordinate the work of all contractors for the project. If the Contractor uses, duplicates or modifies these electronic source drawing files for use in producing construction drawings and data related to this contract, remove all previous indicia of ownership (seals, logos, signatures, initials and dates).

1.4 SUBMITTALS

Government approval is required for all submittals. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data
Warranty Management Plan
Warranty Tags
Final Cleaning
Spare Parts Data

SD-08 Manufacturer's Instructions
Posted Instructions

SD-10 Operation and Maintenance Data
Operation and Maintenance Manuals

SD-11 Closeout Submittals

As-Built Drawings
Record Drawings
As-Built Record of Equipment and Materials
Warranted Equipment and Materials

1.5 SPARE PARTS DATA

Submit two copies of the Spare Parts Data list.

a. Indicate manufacturer's name, part number, and stock level required for test and balance, pre-commissioning, maintenance and repair activities. List those items that may be standard to the normal maintenance of the system.

1.6 WARRANTY MANAGEMENT

1.6.1 Warranty Management Plan

Develop a warranty management plan which contains information relevant to FAR 52.246-21 Warranty of Construction. At least 30 days before the planned pre-warranty conference, submit one set of the warranty management plan. Include within the warranty management plan all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan narrative must contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below must include due date and whether item has been submitted or was accomplished. Submit warranty information, made available during the construction phase, to the Contracting Officer for approval prior to each monthly pay estimate. Assemble approved information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period must begin on the date of project acceptance and continue for the full product warranty period. Conduct a joint 4 month and 9 month warranty inspection, measured from time of acceptance; with the Contractor, Contracting Officer and the Customer Representative. The warranty management plan must include, but is not limited to, the following:

a. Roles and responsibilities of personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.

b. For each warranty, the name, address, telephone number, and e-mail of each of the guarantor's representatives nearest to the project location.

c. A list and status of delivery of Certificates of Warranty for extended warranty items, including roofs, HVAC balancing, pumps, motors, transformers, and for commissioned systems, such as fire protection and alarm systems, sprinkler systems, and lightning protection systems.

d. Warranted Equipment and Materials list for each warranted equipment, item, feature of construction or system indicating:

(1) Name of item.
(2) Model and serial numbers.
(3) Location where installed.
(4) Name and phone numbers of manufacturers or suppliers.
(5) Names, addresses and telephone numbers of sources of spare parts.
(6) Warranties and terms of warranty. Include one-year overall SECTION 01 78 00 Page 3 Unaccompanied Housing B1313 & B1314 HVAC Repairs warranty of construction, including the starting date of warranty of construction. Items which have warranties longer than one year must

be indicated with separate warranty expiration dates.
(7) Cross-reference to warranty certificates as applicable.
(8) Starting point and duration of warranty period.
(9) Summary of maintenance procedures required to continue the warranty in force.
(10) Cross-reference to specific pertinent Operation and Maintenance manuals.
(11) Organization, names and phone numbers of persons to call for warranty service.
(12) Typical response time and repair time expected for various warranted equipment.

e. The plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.

f. Procedure and status of tagging of equipment covered by warranties longer than one year.

g. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty or safety reasons.

1.6.2 Performance Bond

The Performance Bond must remain effective throughout the construction and warranty period.

a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.

c. Following oral or written notification of required construction warranty repair work, respond in a timely manner. Written verification will follow oral instructions. Failure to respond will be cause for the Contracting Officer to proceed against the Contractor.

1.6.3 Pre-Warranty Conference

Prior to contract completion, and at a time designated by the Contracting Officer, meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. At this meeting, establish and review communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty In connection with these requirements and at the time of the Contractor's quality control completion inspection, furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point SECTION 01 78 00 Page 4 Unaccompanied Housing B1313 & B1314 HVAC Repairs of contact must be located within the local service area of the warranted construction, be continuously available, and be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

1.6.4 Warranty Tags

At the time of installation, tag each warranted item with a durable, oil and water resistant tag approved by the Contracting Officer. Attach each tag with a copper wire and spray with a silicone waterproof coating. Also, submit two record copies of the warranty tags showing the layout and

design. The date of acceptance and the QC signature must remain blank until the project is accepted for beneficial occupancy. Show the following information on the tag:

- Type of product/material
- Model number
- Serial number
- Warranty period from/to
- Responsible contractor POC information
- Any other applicable information

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 AS-BUILT DRAWINGS

Provide and maintain two black line print copies of the PDF contract drawings for As-Built Drawings. Maintain the as-builts throughout construction as red-lined hard copies on site and red-lined PDF files. Submit As-Built Drawings 30 days prior to Beneficial Occupancy Date (BOD).

3.1.1 Markup Guidelines

Make comments and markup the drawings complete without reference to letters, memos, or materials that are not part of the As-Built drawing. Show what was changed, how it was changed, where item(s) were relocated and change related details. These working as-built markup prints must be neat, legible and accurate as follows:

a. Use base colors of red, green, and blue. Color code for changes as follows:

(1) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes.
(2) Deletions (Red) - Over-strike deleted graphic items (lines), lettering in notes and leaders.
(3) Additions (Green) - Added items, lettering in notes and leaders.

b. Provide a legend if colors other than the "base" colors of red, green, and blue are used.

c. Add and denote any additional equipment or material facilities, service lines, incorporated under As-Built Revisions if not already shown in legend.

d. Use frequent written explanations on markup drawings to describe changes. Do not totally rely on graphic means to convey the revision.

e. Use legible lettering and precise and clear digital values when marking prints. Clarify ambiguities concerning the nature and application of change involved.

f. Wherever a revision is made, also make changes to related section views, details, legend, profiles, plans and elevation views, schedules, notes and call out designations, and mark accordingly to avoid conflicting data on all other sheets.

g. For deletions, cross out all features, data and captions that relate to that revision.

h. For changes on small-scale drawings and in restricted areas, provide large-scale inserts, with

leaders to the applicable location.

i. Indicate one of the following when attaching a print or sketch to a markup print:

1) Add an entire drawing to contract drawings
2) Change the contract drawing to show changes on the drawing.
3) Provided for reference only to further detail the initial design.

j. Incorporate all shop and fabrication drawings into the markup drawings.

3.1.2 As-Built Drawings Content

Show on the as-built drawings, but not limited to, the following information:

a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, show by offset dimensions to two permanently fixed surface features the end of each run including each change in direction on the record drawings. Locate valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Also record the average depth below the surface of each run.

b. The location and dimensions of any changes within the building structure.

c. Layout and schematic drawings of electrical circuits and piping.

d Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

e. Changes in details of design or additional information obtained from working drawings specified to be prepared or furnished by the Contractor; including but not limited to shop drawings, fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment, and foundations.

f. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

g. Changes or Revisions which result from the final inspection.

h. Where contract drawings or specifications present options, show only the option selected for construction on the working as-built markup drawings.

i. If borrowed material for this project is from sources on Government property, or if Government property is used as a spoil area, furnish a contour map of the final borrow pit/spoil area elevations.

j. Systems designed or enhanced by the Contractor, such as HVAC controls,

fire alarm, fire sprinkler, and irrigation systems.

k. Changes in location of equipment and architectural features.

l. Modifications and compliance with FC 1-300-09N procedures.

m. Actual location of anchors, construction and control joints, etc., in concrete.

n. Unusual or uncharted obstructions that are encountered in the contract work area during construction.

o. Location, extent, thickness, and size of stone protection particularly where it will be normally submerged by water.

3.2 OPERATION AND MAINTENANCE MANUALS

Provide project operation and maintenance manuals as specified in Section 01 78 23

OPERATION AND MAINTENANCE DATA. Provide two hard copies plus electronic copies of the Operation and Maintenance Manual files. Submit to the Contracting Officer for approval within 30 calendar days of the Beneficial Occupancy Date (BOD). Update and resubmit files for final approval at BOD.

3.3 CLEANUP

Provide final cleaning in accordance with ASTM E1971 and submit copies of the listing of completed final clean-up items. Leave premises "broom clean." Comply with GS-37 for general purpose cleaning and bathroom cleaning. Use only nonhazardous cleaning materials, including natural cleaning materials, in the final cleanup. Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition. Replace filters of operating equipment and comply with the Indoor Air Quality (IAQ) Management Plan. Clean debris from roofs, gutters, downspouts and drainage systems. Sweep paved areas and rake clean landscaped areas. Remove waste and surplus materials, rubbish and construction facilities from the site. Recycle, salvage, and return construction and demolition waste from project in accordance with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.

-- End of Section --

01 78 23 OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for all submittals. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-10 Operation and Maintenance Data
Training Plan
Training Outline
Operation And Maintenance Manual

SD-11 Closeout Submittals
Training Video Recording
Training Plan
Record Drawings

1.2 OPERATION AND MAINTENANCE MANUAL MEDIA

Assemble Operation and Maintenance Manual into an electronically bookmarked file using the most current version of Adobe Acrobat or similar software capable of producing PDF file format. Provide electronic submission via email or DOD SAFE, so that each one contains operation, maintenance and record files, project record documents, and training videos. Include a complete bookmarked operation and maintenance directory.

1.2.1 O&M Manual Tabbed Hard Copy

Provide a hard copy of the O&M manual upon completion of the project. Provide tabs for each section and subsection for ease of navigation by the user.

1.3 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Provide the O&M data packages specified in individual technical sections. O&M Data Packages are one of the components of the O&M Manual. The information required in each type of data package follows:

1.3.1 Package Quality

Documents must be fully legible. Operation and Maintenance data must be consistent with the manufacturer's standard brochures, schematics, printed instructions, general operating procedures, and safety precautions.

1.3.2 Data Package 1

a. Safety precautions and hazards
b. Cleaning recommendations
c. Maintenance and repair procedures
d. Warranty information
e. Extended warranty information
f. Contractor information
g. Spare parts and supply list

1.3.3 Data Package 2

a. Safety precautions and hazards
b. Normal operations
c. Environmental conditions
d. Lubrication data
e. Preventive maintenance plan, schedule, and procedures
f. Cleaning recommendations
g. Maintenance and repair procedures
h. Removal and replacement instructions
i. Spare parts and supply list
j. Parts identification
k. Warranty information
l. Extended warranty information
m. Contractor information

1.3.4 Data Package 3

a. Safety precautions and hazards
b. Operator prestart
c. Startup, shutdown, and post-shutdown procedures
d. Normal operations
e. Emergency operations
f. Environmental conditions
g. Operating log
h. Lubrication data
i. Preventive maintenance plan, schedule, and procedures
j. Cleaning recommendations
k. Troubleshooting guides and diagnostic techniques
l. Wiring diagrams and control diagrams
m. Maintenance and repair procedures
n. Removal and replacement instructions
o. Spare parts and supply list
p. Product submittal data
q. O&M submittal data
r. Parts identification

s. Warranty information
t. Extended warranty information
u. Testing equipment and special tool information
v. Testing and performance data
w. Contractor information
x. Field test reports

1.3.5 Data Package 4

a. Safety precautions and hazards
b. Operator prestart
c. Startup, shutdown, and post-shutdown procedures
d. Normal operations
e. Emergency operations
f. Operator service requirements
g. Environmental conditions
h. Operating log
i. Lubrication data
j. Preventive maintenance plan, schedule, and procedures
k. Cleaning recommendations
l. Troubleshooting guides and diagnostic techniques
m. Wiring diagrams and control diagrams
n. Repair procedures
o. Removal and replacement instructions
p. Spare parts and supply list
q. Repair work-hours
r. Product submittal data
s. O&M submittal data
t. Parts identification
u. Warranty information
v. Extended warranty information
w. Personnel training requirements
x. Testing equipment and special tool information
y. Testing and performance data
z. Contractor information
aa. Field test reports

1.3.6 Data Package 5
a. Safety precautions and hazards
b. Operator prestart
c. Start-up, shutdown, and post-shutdown procedures
d. Normal operations
e. Environmental conditions
f. Preventive maintenance plan, schedule, and procedures
g. Troubleshooting guides and diagnostic techniques
h. Wiring and control diagrams
i. Maintenance and repair procedures
j. Removal and replacement instructions
k. Spare parts and supply list
l. Product submittal data
m. Manufacturer's instructions
n. O&M submittal data
o. Parts identification
p. Testing equipment and special tool information
q. Warranty information
r. Extended warranty information

s. Testing and performance data
t. Contractor information
u. Field test reports

1.3.7 Changes to Submittals

Provide manufacturer-originated changes or revisions to submitted data if a component of an item is so affected subsequent to acceptance of the O&M Data. Submit changes, additions, or revisions required by the Contracting Officer for final acceptance of submitted data within 30 calendar days of the notification of this change requirement.

PART 2 PRODUCTS

Not Used

3.1 TRAINING

Prior to acceptance of the facility by the Contracting Officer for Beneficial Occupancy, provide comprehensive training for the systems and equipment specified in the technical specifications. The training must be targeted for the Facilities Management Specialist, building maintenance personnel, and applicable building occupants. Instructors must be well-versed in the particular systems that they are presenting. Address aspects of the Operation and Maintenance Manual submitted in accordance with Section 01 78 00 CLOSEOUT SUBMITTALS. Training must include classroom or field lectures based on the system operating requirements. The location of classroom training requires approval by the Contracting Officer.

3.1.1 Training Plan

Submit a written training plan to the Contracting Officer for approval at least 60 calendar days prior to the scheduled training. Training plan must be approved by the Quality Control Manager (QC) prior to forwarding to the Contracting Officer. Also, coordinate the training schedule with the Contracting Officer and QC. Include within the plan the following elements:

a. Equipment included in training
b. Intended audience
c. Location of training
d. Dates of training
e. Objectives
f. Outline of the information to be presented and subjects covered including description
g. Start and finish times and duration of training on each subject
h. Methods (e.g. classroom lecture, video, site walk-through, actual operational demonstrations, written handouts)
i. Instructor names and instructor qualifications for each subject
j. List of texts and other materials to be furnished by the Contractor that are required to support training
k. Description of proposed software to be used for video recording of training sessions.

3.1.2 Training Content

The core of this training must be based on manufacturer's recommendations and the operation and maintenance information. The QC is responsible for overseeing and approving the content and adequacy of the training. Spend 95 percent of the instruction time during the presentation on the OPERATION AND MAINTENANCE DATA. Include the following for each system training presentation:

a. Start-up, normal operation, shutdown, unoccupied operation, seasonal changeover, manual

operation, controls set-up and programming, troubleshooting, and alarms.
b. Relevant health and safety issues.
c. Discussion of how the feature or system is environmentally responsive. Advise adjustments and optimizing methods for energy conservation.
d. Design intent.
e. Use of O&M Manual Files.
f. Review of control drawings and schematics.
g. Interactions with other systems.
h. Special maintenance and replacement sources.
i. Tenant interaction issues.

3.1.3 Training Outline

Provide the Operation and Maintenance Manual Files (Bookmarked PDF) and a written course outline listing the major and minor topics to be discussed by the instructor on each day of the course to each trainee in the course. Provide the course outline 14 calendar days prior to the training.

3.1.4 Training Video Recording

Record classroom training session(s) on video. Provide to the Contracting Officer two copies of the training session(s) in DVD video recording format. Capture within the recording, in video and audio, the instructors' training presentations including question and answer periods with the attendees. The recording camera(s) must be attended by a person during the recording sessions to assure proper size of exhibits and projections during the recording are visible and readable when viewed as training.

3.1.5 Unresolved Questions from Attendees

If, at the end of the training course, there are questions from attendees that remain unresolved, the instructor must send the answers, in writing, to the Contracting Officer for transmittal to the attendees, and the training video must be modified to include the appropriate clarifications.

3.1.6 Validation of Training Completion

Ensure that each attendee at each training session signs a class roster daily to confirm Government participation in the training. At the completion of training, submit a signed validation letter that includes a sample record of training for reporting what systems were included in the training, who provided the training, when and where the training was performed, and copies of the signed class rosters. Provide two copies of the validation to the Contracting Officer, and one copy to the Operation and Maintenance Manual Preparer for inclusion into the Manual's documentation.

3.1.7 Quality Control Coordination

Coordinate this training with the QC in accordance with Section 01 45 00 QUALITY CONTROL.

3.2 SUBMITTAL SCHEDULING

3.2.1 Operation and Maintenance Manual, Final Submittal

Submit completed Operation and Maintenance Manual Files (Bookmarked PDF). The Final submittal is due at BOD. Any discrepancies discovered during the Government's review of the Prefinal submittal, including the Field Verification, must be corrected prior to the Final submission.

-- End of Section --

Part 3 Statement of Work / Project Program

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B20 Exterior Closure
C10 Interior Construction
C30 Interior Finishes
D30 HVAC
D40 Fire Protection Systems
D50 Electrical Power and Lighting
F20 Selective Building Demo

1.0 PROJECT DESCRIPTION

This is a design-build project that will:

1) Replacement of Roof top mechanical equipment, eight (8) make-up air units and seventeen (17) exhaust fans. The designer will verify the various make-up and exhaust flow rates to and from all the supported spaces and reduce if possible and beneficial to the government. Care must be taken to avoid affecting the existing roof warranty and minor repairs are to be expected around the equipment curbs.

2) Replacement of the thermostats in the berthing spaces (174) and several others in common spaces, to be verified by the designer. Currently, these thermostats do not communicate with the existing building automation system (BAS). The new system will include other supporting controllers and components to enable communication between the new thermostats and the BAS.

3) Hallways will receive a wainscoting system including a top and mid rail and base cove to enhance the resiliency of the walls. The wall coverings will be approximately five (5) feet tall. A commercial product will be identified later in this document. The wall above this installation will be repainted.

4) Replace 2’ x 2’ ceiling tiles, approximately 14,500 FT2, in the hallways and several common spaces defined later in this document.

5) Remove the existing southside entrance door, complete, and replace with new door, hardware, and completely rebuilt structural framing.

6) Removal of existing vinyl Floor tiles, approximately 10,800 square feet (mostly in the hallways) to be replaced with Luxury Vinyl Tiles (LVT). The designer will propose several borders and other embellishments with tiles of other colors.

7) Remove existing ceramic tiles on the quarterdeck (about 1,200 FT2) and replace with a heavy-use quality wood grain tile system to be described later in this document.

8) Remove existing carpeting and tiles in 6 offices (approximately 350 FT2 each) and replace

with the same heavy-use quality wood grain tile system being installed in the Quarterdeck. These locations will be defined later in this document.

9) Replace all treads in the south stairwell in navy blue. Repair and repaint existing wainscoting system and paint remaining surface in the stairwell.

10) Install electronic CAC card readers for accessing the two main doors at the south stairwell and quarterdeck.

11) Install mechanical cipher locks, with key back-ups, on all berthing space doors (174) throughout the building.

12) Replace smoke detectors in berthing spaces (174) and in several other locations.

13) Remove the Gamewell notification system and replace it with a radio transmitter notification system that is becoming the norm at the base.

14) Relocate the existing Fire Alarm Control Panel (FACP) to the Quarterdeck as an option. Replace the existing FACP and relocate with a new FACP to the Quarterdeck next to the existing public address (PA) Panel as an option. New panel will continue to allow the PA system to use the existing Fire Protection system speakers as the current FACP does now. Other existing devices, (pull stations, strobes, annunciators, etc.) will be re-used if possible. These items will be presented as an option for proposal pricing by the contractor.

2.0 PROJECT OBJECTIVES

Perform the tasks above in a timely manner while minimizing disruption to the mission of the Command, the Naval Academy Preparatory School (NAPS). Strive to provide them with the highest quality possible in form and function while also meeting all the requirements set forth here.

2.1 APPLICABLE CODES AND STANDARDS

In addition to the codes and standards listed in Part 4, the design and construction must be in accordance with the latest revision/edition of the following referenced codes and standards. The term "Latest Revision/Edition" is defined as the version as of the project award date.

1. Applicable Unified Facilities Guide Specifications (UFGS), which may be found on www.wbdg.org
2. Applicable Unified Facilities Criteria (UFC), which may be found on www.wbdg.org
3. International Building Code, International Mechanical Code, International Plumbing Code.
4. Local Naval Station Newport Codes and Instructions (refer to Part 2 and Part 6):

2.2 EXISTING SITE CONDITIONS

The site is located in the center of Naval Station Newport in the Coddington Point area. Refer to existing building drawings; building is steel frame construction with masonry walls and consists primarily of berthing spaces but also some other common spaces.

6.0 ENGINEERING SYSTEMS REQUIREMENTS (ESR)

B20 Exterior Closure
C10 Interior Construction
C30 Interior Finishes
D30 HVAC
D40 Fire Protection Systems
D50 Electrical Power and Lighting
F20 Selective Building Demo

B20 EXTERIOR ENCLOSURE

B2030 EXTERIOR DOORS

Provide a solid steel door assembly at the south stairwell entrance. Exterior doors and frames

must be non-corroding prefinished in the Navy-blue color as is existing. Provide exterior doors meeting thermal performance required by the relevant UFC. By ASTM A250.8 (SDI 100) Doors must meet the requirements of performance level A for 1,000,000 cycles.

Door hardware finish must be stainless steel. A “CAC” reader will be installed at this door and the quarterdeck door to read personal government issued ID cards and open upon the entry of a 4-digit PIN code, much like the doors at NUWC.

C10 INTERIOR CONSTRUCTION

C1010 PARTITIONS

Fixed Partitions
Provide fixed interior hallway partitions with surface treatments to enhance wall durability and match floor tile patterns discussed later. A “Chair-Rail” system will be approximately feet high (or less as the design proceeds) with a top and center rail and integral base cove. The remaining gypsum board wall above shall be repainted in a color scheme as described later. The floor tiles, chair-rail, and gypsum board wall will have colors that enhance the overall floor/wall system aesthetics in typical Navy themed colors in conjunction with the new floor tiles. Further wall coverings requirements are described as follows (“Koroseal” is a product that has been successfully used on the base in similar applications but other products of equal or better quality that meet the requirements below will be acceptable):

Wall Protection Systems:

Semi-Rigid Protective Wallcoverings to include corner and edge guards. Also required is a top-rail, mid-rail, and integral base cove.

Include wood blocking and grounds as recommended by the manufacturer

SUBMITTALS

A. Product data indicating compliance with specified requirements.

B. Shop drawings showing methods of attachment to substrate.

C. Samples: For selection of color, pattern, and surface texture.

1. 12 inch (300 mm) long samples of each type of wall and corner guard required. Include examples of joinery, corners, and field splices.

2. 7 inch x 9 inch (175mm x 225 mm) samples of each rigid sheet or panel type wall surface protection material required.

QUALITY ASSURANCE

A. Fire Performance Characteristics: Comply with ASTM E 84 for the fire performance characteristics indicated below. Identify components with markings from testing and inspection organization.

1. Flame Spread: 25 or less.

2. Smoke Developed: 450 or less.

B. Single Source Responsibility: Obtain wall surface protection system components from a single source.

C. Deliver materials in original factory wrappings and containers, clearly labeled with manufacturer and brand name.

D. Store materials in original undamaged packages and containers inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.

1. Maintain room temperature within the storage area between 60° F (16° C) and 80° F (27° C) during the period plastic materials are stored. Keep materials out of direct sunlight to avoid excessive surface temperatures.

2. Store rigid plastic corner guard, wall guard, and handrail covers in a horizontal position for a minimum of 72 hours, or until the plastic material attains the ambient room installation temperature of between 65° F (18° C) and 75° F (24° C).

PROJECT CONDITIONS

A. Maintain ambient temperature within building at not less than 65° F (18° C) or greater than 75° F (24° C) for a minimum of 72 hours prior to beginning of installation.

B. Do not install wall surface protection system components until the space is enclosed, weatherproof and climate controlled.

C. Do not install semi-rigid wall protection systems until temperature is stable and permanent lighting is in place.

MAINTENANCE

A. Maintenance Instructions: Include precautions against cleaning materials and methods that may be detrimental to finishes and performance.

B. Replacement Materials: Minimum 5% of each type, color, and pattern of wall surface protection materials and components. Include accessory components as required. Replacement materials shall be from the same production run as installed materials. Package with protective coverings and appropriate labels.

MATERIALS SEMI-RIGID PROTECTIVE WALLCOVERINGS

A. Plastic Sheet Wallcovering Material: Textured, chemical-and stain-resistant, high-impact, acrylic modified vinyl plastic sheets, thickness as indicated. Comply with specified requirements of ASTM D 256 for impact resistance and ASTM E 84 for flame spread and smoke developed characteristics.

Color and/or Pattern: As selected by Architect from the manufacturer's full range of standard colors and textures

B. Semi-Rigid Laminated Sheet Wallcovering: Semi-rigid, embossed, impact-resistant capped vinyl-plastic sheets. Comply with Class I/A fire performance characteristics and be chemical-and stain-resistant.

1. Traffic Patterns Series: Polyvinyl fluoride film-capped Sheet Thickness: 0.030 inch (0.76 mm) thick.

2. Pattern and/or Color: As selected.

MATERIALS CORNER AND EDGE GUARDS

A. Surface-Mounted, Resilient Plastic Corner Guards:

1. Cover: Rigid, impact-resistant plastic, nominal 0.078 inch (1.9 mm) thick, in dimensions and profiles indicated.

2. Retainer: a. Continuous, one-piece, extruded aluminum retainer, nominal 0.062 inch

(1.6 mm) thick.

3. 2 inch (50 mm); Corner Radius: 1/4 inch (6.35 mm).

3. Accessories: Prefabricated aluminum retainer with concealed splices, mounting hardware, and other accessories as required.

End caps:

(1) Match plastic cover color.

(2) Field adjustable for close alignment with snap-on plastic covers.

(3) Color: As selected to match wallcoverings

C1020 INTERIOR DOORS

Remove interior berthing and common space door locksets and replace with mechanical cipher locks with keyed back-up, including replacing the door and frame, if necessary. Provide the services of a Certified Door Hardware Consultant to prepare the door hardware schedule.

C30 INTERIOR FINISHES

C3020 FLOOR FINISHES

Provide floor finish materials to meet the following requirements;

a. Hallways and adjoining common spaces: Replace existing 12” x 12” floor tiles with larger Luxury Vinyl Tiles (LVT) of at least nominal 20” x 20” with narrower tiles along the borders of the wall with a separate color defined later. Approximately 10,000 FT2

b. South Stairwell: Replace all floor treads in like kind and style.

c. Quarterdeck and 6 berthing spaces converted to office spaces: Install a floor system, approximately 3,000 FT2. The intent is to make these floors resemble the deck of a wooden ship. Flooring system of equal or better quality to Coretec Galveston Oak pattern will be acceptable.

C3030 CEILING FINISHES

Replace existing ceiling tiles in like kind and style with 24 inch by 24 inch by 5/8 inch minimum thickness

suspended acoustic panel ceiling system. Approximately 14,500 FT2 (to be verified by the contractor)

C3040 INTERIOR COATINGS AND SPECIAL FINISHES

Paint gypsum board hallway walls above the new chair-rail system in agreed upon Navy themed colors to be compatible with floor tiles and chair-rail system.

D30 HVAC

HVAC System Requirements
Provide new roof-top mechanical equipment and confirm flow rates in the make-up air systems meet the requirements of the design. Replace designated thermostats in berthing and common spaces and install intermediate supervisory controllers in the telecom room on each floor and other components to enable equipment and space temperatures to be transmitted to the Building Automation System.

Provide the highest sea-coast coating that can withstand the greatest amount of salt fog spray testing on the hot water and chilled water coils in the make-up air systems. Exterior surfaces of the make-up air units and exhaust fans, as well as their surfaces exposed to the air stream shall also have a phenolic or other protective coating capable of withstanding the same salt spray for test.

D3060 CONTROLS AND INSTRUMENTATION

HVAC Controls

Project will enable the new thermostats to communicate FCU equipment and temperature data to the Building Automation System via new and existing supervisory and other controllers to the building switch and then to the graphical user interface in Building 1, CC, the public works building. Surface mounted raceways for the new control cables are allowed in the rooms but not the hallways. All controls equipment will be by Johnson Controls. The subcontractor for the controls system installation and commissioning will be a Johnson Controls certified installer and will be a first-tier sub-contractor to the prime contractor.

D3070 SYSTEMS TESTING AND BALANCING

Ensure the air flows in the make-up air systems meet the requirements of the design and the specified equipment capacity.

D40 FIRE PROTECTION SYSTEMS

SYSTEM DESCRIPTION

Provide an integrated fire alarm and mass notification system capable of notifying building occupants inside the facility.

GENERAL SYSTEM REQUIREMENTS

Provide working space around all equipment. Provide all required fittings, connections and accessories required for a complete and usable system. Install equipment in accordance with the criteria of PTS section D40 and the manufacturer’s recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "must".

All Design Documents, (i.e. Building Code/Life Safety Analysis, plans, specifications, and calculations) developed for Section D40 must be prepared by, or under the supervision of the design/build contractor's Qualified Fire Protection Engineer, the Fire Protection Designer of Record (FPDOR).

Installation drawings, shop drawings or working plans, calculations, other required pre-construction documentation and as-built drawings must be prepared by, or under the direct supervision of a National Institute for Certification in Engineering Technologies (NICET) engineering technician as specified below. NICET engineering technicians must hold a current certification as an engineering technician in the field of Fire Protection Engineering Technology with minimum Level IV certification in the appropriate subfield.

Provide training for the active systems consisting of two (2) eight (8)-hour sessions to accommodate all shifts of the base fire department and allow for rescheduling for unforeseen fire department responses.

D4010 FIRE ALARM AND DETECTION SYSTEMS

Provide a new fire alarm panel to replace the existing fire alarm panel. Provide an integrated fire alarm and mass notification systems capable of notifying building occupants inside the facility. Provide a complete, electrically supervised, addressable intelligent, manual and automatic, annunciated fire alarm and detection system throughout the facility. Provide a voice evacuation type system that also serves as a mass notification system. Provide integrated systems capable of notifying building occupants by means of tones, strobes, textural messaging, prerecorded and live voice announcements. Provide a fire alarm control panel capable of handling a minimum of 500 individually identified sensors within the main control panel. Provide a remote annunciator with alarm acknowledge, alarm silence, and reset functions. The remote annunciator must be located as directed by the Contracting Officer in conjunction with the cognizant NAVFAC Fire Protection Engineer and will be relocated from its existing position in the south stairwell to the quarterdeck.

Re-use if possible, existing speakers for combined mass notification/fire alarm systems/ public announcement system.

All new fire alarm mass notification system circuits must be Class A. Provide new circuits as required for new equipment. Existing fire alarm circuits can remain. All fire alarm mass notification system wiring must be installed in rigid conduit or EMT.

Provide new addressable photoelectric smoke detectors. Smoke detectors in sleeping rooms must have sounder bases. Sounder bases must be powered by the fire alarm panel and must produce a 520hz tone only within the sleeping room where smoke is sensed.

Provide electromagnetic door holders which release doors upon fire alarm signals on commonly propped-open doors like stairwell doors and laundry room doors. Coordinate quantity and location with NAVFAC Fire Protection Engineer.

Remove the existing Gamewell transmitter and provide a new AES Intellinet radio transmitter compatible with existing AES equipment to transfer fire alarm, supervisory and trouble conditions to base dispatch and the Regional Dispatch Center in Norfolk. New AES radio transmitter must be installed adjacent to the fire alarm control panel.

D50 ELECTRICAL

The electrical design must comply with the design criteria specified in UFC 3-501-01, *Electrical Engineering*, and its referenced documents.

All electrical work shall comply with applicable UFCs and the National Electric Code.

D5030 COMMUNICATIONS & SECURITY

Telecommunications Systems

Public Address and Intercommunications Systems

Re-utilize the existing Public Address system with speakers in all the berthing and common spaces that is integral to and uses speakers that are integral to the current Fire Protection System and will be used with the newly installed Fire Alarm Control Panel and other new and re-utilized system components.

F20 SELECTIVE BUILDING DEMOLITION

Remove all existing roof-top mechanical equipment and leave mechanical and electrical connections in such a way as to facilitate reconnecting to new equipment. Remove the designated room and common space thermostats and leave connections to the Fan Coil Units for reconnection. Remover hallway and common space floor tiles and ensure the surface is flat and ready for the new tiles. Remove the south stairwell exit door and appropriate structural components to prepare the opening for a new door. Remove the existing Fire Alarm Control Panel. Remove existing designated door locksets for replacement with new mechanical cipher locks. Turn over all scrap metal to the Scrap Metal Year near Bldg. A-63 Naval Station Newport.

SPARES

The following spares will be required of redundant items. If the government gives any of these spares to the contractor to effectuate a warranty repair (to expedite the repair), the contractor will provide a replacement of that unit back to the government.

Thermostats: 3 Units

Fire Protection Devices: (speakers, detectors, etc.) 2 Units of each type

Floor tiles: 10 of each color/style of tile

Quarterdeck tiles: 10 FT2 or 10 units

Ceiling Tiles: 10 full tiles

Hallway wall coverings: 12 lineal feet of the entire system including 3 corner and 3 other (45°) guards

Stairway treads: Sufficient material to replace two treads

Mechanical cipher locks: 3 Units

Other components as agreed to by the government

--END--

Part 4 Minimum Materials, Engineering and Construction Requirements

1.0 GENERAL REQUIREMENTS

The requirements indicated here are minimum performance requirements. More specific project functional and performance requirements, scope items and expected quality levels over and above the standards in Part 4 are identified in Part 3 of the Request for Proposal or Basic Ordering Agreement. The Contractor is encouraged to exceed the minimum requirements. The Contractor's performance evaluation will be based in part on enhancements to materials, engineering, design and construction provided for the contract that exceed minimum requirements.

Part 4 is a general section. Not all items in Part 4 will be required for this project. See Part 3 for project-specific requirements. See "Contract and Order of Precedence" paragraph in Part 2 for relationships between all parts of the RFP.

In general, unless otherwise indicated, provide all labor, equipment and materials necessary to complete the work required for the contract. All work must be in conformance with all applicable referenced criteria, construction standards, laws and regulations, including applicable building fire and life safety codes.

Recycled Materials Considerations:

An Affirmative Procurement Program has been established within the Federal government to promote the purchase of products containing recovered materials. This program promotes the purchase of products containing materials recovered from the solid waste stream. The intent is to conserve resources and reduce solid waste by developing markets for recycled products and encouraging manufacturers to produce quality recycled content products. Use products that meet or exceed the EPA guideline standards for recovered content as required by the Federal Acquisition Regulations (FAR). Availability lists of manufacturers and EPA research on product usage are on the Construction Criteria Base (CCB) at www.wbdg.org/ccb/ccb.php under Documents Library, NAVFAC Criteria. A partial list of products containing recycled materials for possible use is as follows:

- Rock Wool Insulation
- Fiberglass Insulation
- Cellulose Insulation
- Floor Tiles
- Reprocessed and Consolidated Latex Paint
- Acoustical Ceiling Tile
- Gypsum Wallboard

1.1 MATERIALS AND METHODS OF CONSTRUCTION

Only new materials and equipment are to be installed in the work. All materials, equipment and appliances must be of the current manufacturers' products. Do not use obsolete or discontinued materials, equipment and appliances, except that construction materials containing recycled content as described in Paragraph 1 of this Part that completely comply with all materials specifications

found elsewhere in this Part may be used.

1.2 APPLICABLE CODES AND STANDARDS

The design and construction must be in accordance with established construction practices, and the latest revision/edition of the following referenced codes and standards. The term "Latest Revision/Edition" is defined as the version as of the project award date. References are available at www.wbdg.org/ndbm/. The advisory provisions of all codes and standards is mandatory, as though the word "must" had been substituted for "should" wherever it appears. Reference to the "authority having jurisdiction" is to be construed to mean "Contracting Officer". Comply with the required and advisory portions of the current edition of the standard at the time of contract award. All work must comply with UFC 1-200-01, *General Building Requirements*, and IBC 2009 or later edition as modified by applicable NFPA Standard as well as codes and standards listed in RFP Part 2.

1.3 LOCATION-SPECIFIC CODES AND STANDARDS

See Parts 2, 3, and 5. Comply with Naval Station Newport requirements:

•Naval Station Newport Soil Management Plan

•Naval Station Newport Instruction 5090.221B Soil Erosion and Sediment Control

•Naval Station Newport Instruction 5090.10C Ozone Depleting Substances

•Naval Station Newport Instruction 5090.9C Lead Paint Program

(Available upon request if deemed to be applicable)

1.4 DISCREPANCIES

When discrepancies in the referenced standards and the contract requirements occur, the more stringent requirements govern. The word "should" in all NFPA publications is to be interpreted as a requirement. The Authority Having Jurisdiction in the interpretation of the codes and standards, and approving the exceptions allowed in the referenced standards, is the Contracting Officer, and the parties designated by the Contracting Officer.

2.0 PERFORMANCE TECHNICAL SPECIFICATIONS

Note: The paragraph numbers used correspond with the numbers used in UNIFORMAT II/Work Breakdown Structures (WBS) as listed in the Whole Building Design Guide, Navy Design Build Master, accessible at this website: www.wbdg.org/ndbm .

SECTION B. SHELL

B20 EXTERIOR ENCLOSURE

B2030 EXTERIOR DOORS

Exterior doors must be heavy duty insulated steel doors and frames for service access. Provide door frames with welded corners. Use heavy-duty overhead holder and closer to protect doors from wind damage. Steel must have G60 galvanized coating in accordance with ASTM A 924/A 924M and

ASTM A 653/A 653M when the job site is located within 300 feet from a body of salt water. Provide commercial quality, coating Class A zinc coating in accordance with ASTM A591 for other steel or steel skin hollow metal doors at other locations. Provide kickplates on the inside face of all exterior doors. Weather-protect all exterior doors and related construction with low infiltration weatherstripping and sealants. Provide threshold with offset to stop water penetration while maintaining accessibility compliance. Conform to the design criteria of ASCE 7. See the hardware schedule for door hardware requirements.

Where doors separate conditioned spaces from non-conditioned spaces, provide doors exceeding current EnergyStar criteria. For storefront entrances, provide thermally broken door framing and insulating glazing with whole-assembly U-value of 0.67 or less. Provide doors exceeding requirements of ASHRAE 90.1, Table 5.5 for project climate zone.

1. **Steel Doors**: Exterior doors must comply with ANSI A250.8-1998 (SDI-100). Hardware preparation must be in accordance with ANSI A250.6. Doors must be hung in accordance with ANSI A115.16.

   Doors Required:

   a. Standard Duty Doors - Level 1, MSG # 20 (IP 0.032", 0.8 mm), physical performance Level C, Model 1 or 2.2) Heavy Duty Doors - MSG # 18 (IP 0,042", 1 mm), physical performance Level B, Model 1 or 2.3) Extra Heavy Duty Doors - Level 3, MSG #16, (0.053", 1.3 mm) physical performance Level A, Model 1, 2, or 3.4) Maximum Duty Doors - Level 4 (IP 0.067", 1.6 mm), physical performance Level A, Model 1 or 2.

   b. Insulated steel doors and frames are required for entrances to buildings and may also be specified as a Contractor's option to Level 1 standard hollow metal doors. Do not use wood doors for exterior doors, unless they are fully protected from the elements, an exterior grade species, and specially finished. If wood doors are used, provide in accordance with Standard Design-Build Performance Technical Specification Paragraph B203001 2.

2. **Standard Steel Frames**: ANSI A 250.8. Form frames with welded corners for installation in exterior walls. Form stops and beads of 20 gage steel. Frames must be set in accordance with ASTM A250.11. Anchor all frames with a minimum of three jamb anchors and base steel anchors per frame, zinc-coated or painted with rust-inhibitive paint, not lighter than 18 gage. Mortar infill frames in masonry walls and infill with gypsum board compound at each jamb anchor in metal frame walls. Only use surface exposed bolted anchors in concrete walls.

3. **Door and Frame Finishes**: a) Exterior Doors, Factory-Primed and Field Painted Finish - Doors and frames must be factory primed with a rust inhibitive coating as specified in ANSI A250.8. Factory prime doors on six sides of the door; b) Exterior Doors Galvanized Finish -- Must be Commercial Quality, Coating Class A, zinc coating in accordance with ASTM A 591 when facility is located further than 91 meters (300 feet) from the ocean. When facility is located within 91 meters (300 feet) of the ocean, provide G60 galvanized coating in accordance with ASTM A 924/A 924M and ASTM A 653/A 653M.

4. **Upward Acting Doors**: Upward acting doors must be capable of withstanding the design wind loading of ASCE 7. Provide galvanized steel tracks not lighter than 14 gage for 50 mm (2 inch) tracks and not lighter than 12 gage for 75 mm (3 inch) track. Provide a positive locking device and cylinder lock with two keys on manually operated doors.

5. **Overhead and Roll-up Doors**: Large exterior overhead and roll-up doors system must consist of manual or automatic exterior doors and door assemblies.

6. **Rolling Service Doors and Grilles**: Coiling overhead doors must have minimum 22 gage thermal insulated slats. Electric operators must have three-button switches conforming to NEMA MG 1, NEMA ICS 1, and NEMA ICS 2, and auxiliary hand chain operation, weather-stripping and wind-locks. Doors must be capable of withstanding the design wind loading of ASCE 7 and still operate normally. Finish of the door must be hot-dipped galvanized with a painted finish.

7. **Sectional Overhead Doors**: Sectional overhead doors must conform to NAGDM 102, Residential or Commercial or Industrial door standards. If doors are electrically operated, pushbuttons must be full-guarded to prevent accidental operation, and include limit switches to automatically stop doors at the fully open and closed positions. Limit switch positions must be readily adjustable.

8. **Hardware**: Provide the services of a Certified Door Hardware Consultant to prepare the door hardware schedule.

   Provide all new hardware with satin chrome finish throughout. Hardware must be commercial grade, suitable for the operational requirements and in compliance with life safety code and handicapped accessibility requirements, similar in quality to the hardware shown in C1020 Interior Doors and Hardware below.

   Coordination: Provide a master keying system compatible with the existing base system. Provide an emergency access key box for exterior door fireman key access. Coordinate with the local authority and the Contracting Officer to determine the local requirements for hardware, keying and master keying.

SECTION C. INTERIORS

C10 INTERIOR CONSTRUCTION

C1010 PARTITIONS

1. **Fixed Partitions**: wood frame; light gage steel frame; concrete masonry complying with ACI 530.1/ASCE 6/TMS 602 and associated ASTM Standards; or cast-in-place concrete complying with UFC 1-200-01, *General Building Requirements*, ACI 117 and ACI 301/301M. In addition, interior partitions must comply with tables for sound isolation and noise reduction in Chapter 1, "Architectural Graphic Standards". Include a statement of adherence to the applicable criteria.

   Gypsum board/stud partitions may be standard gypsum board, moisture resistant, or impact resistant. Use cement board in showers and other wet areas. Reinforce points where doorknobs can strike a wall and anchorage points for wall mounted equipment.

2. **Demountable or Removable Partitions**: Must be of materials allowed by code and shall be anchored firmly to the structure to carry their own weight as well as impact forces and seismic lateral forces. Sound Transmission Class (STC) rating and Impact Isolation Class (IIC) rating shall be in accordance with ASTM E 90 or ASTM E 413 for frequency data, and

shall meet the requirements of the intended use in Part 3. Most of the components and hardware must be provided by a single manufacturer and on the manufacturer's current GSA price list. The product must be included on the NAVFAC Selection Tool for Movable Walls.

3. **Glazed Partitions and Interior Windows**: Must be of the materials allowed by IBC, and must comply with fire and smoke separation requirements. Provide safety glazing and fire resistant rating where they are required.

C1020 INTERIOR DOORS

1. **Wood Doors**: Stile and rail wood doors must be WDMA I.S.6A-01, premium or custom grade, heavy duty or extra heavy duty. Flush wood doors must be WDMA I.S.1A-04, premium or custom grade, heavy duty or extra heavy duty; or WDMA I.S.-97 (PC-5 5-ply particleboard core or SCLC-5 5-ply structural composite lumber core). Doors adjacent to paneling or millwork must comply with corresponding AWI millwork grade. Provide interior fire doors in rated walls.

2. **Steel doors**: Must be ANSI A 250.8, Level 1, (occasional use, low abuse types such as closet doors without locks); Level 2, (low use, moderate abuse types such as office/storeroom doors); Level 3, (moderate use, high abuse types such as BEQ sleeping room doors); Level 4, (high use, high abuse types such as corridors, stairways, assembly spaces, and main entry doors), with a physical performance level of 'A'. Maximum door undercut must not exceed 19 mm (3/4 inch).

3. **Sound Insulated Doors and Frames**: Utilize Sound Insulated Doors and Frames with sound control weatherstripping in rooms requiring wall assemblies to be sound insulated with a Sound Transmission Class (STC) rating as required. The STC rating for the door and frame assembly must be not less than the wall assembly STC rating.

4. **Aluminum Doors and Frames**: Provide swing-type aluminum doors and frames complete with framing members, transoms, side-lites, and accessories. Fabricate of ASTM B 221, Alloy 6063-TS for extrusions.

5. **Steel Door Frames**: ANSI A 250.8. Form frames with welded corners for installation in masonry partitions and knock-down field assembled corners for installation in metal stud and GWB partitions. Install frames in accordance with SDI 105. Form stops and beads with 20 gauge steel.

   Provide a minimum of three jamb anchors and base steel anchors per frame, zinc-coated or painted with rust-inhibitive paint, not lighter the 18 gauge. Secure frames to previously installed concrete or masonry with expansion bolts in accordance with SDI 11-F. Provide mortar infill of frames in masonry walls, and gypsum board compound infill at each jamb anchor in metal frame walls.

6. **Fire doors**: Provide in conformance with NFPA 80 an NFPA 105. Fire doors and frames must bear the label of UL, FM or WHI attesting to the rating required. Door and frame assemblies must be tested for conformance per NFPA 252 or UL 10B (for neutral pressure) or UL 10C (for positive pressure). Wood fire doors must also comply with ASTM E 152.

   Provide stainless steel astragals complying with NFPA 80 for fire-rated assemblies and

NFPA 105 for smoke control assemblies.

7. **Interior Door Hardware**: Provide the services of a certified door hardware consultant to prepare the door hardware schedule. Unless otherwise noted, interior doors include latch, hinges, door stops and door silencers. Provide closers and kick plates for fire-rated, corridor, stairway and high-use non-residential doors.
   a. **Hinges** - BHMA A156.1, Grade 1, 108 x 108 mm (4 1/2 x 4 1/2 inches) with non-removable pin or anti-friction bearing hinges.
   b. **Locks and Latches** - For non-residential buildings use Series 1000, Operational Grade 1, Security Grade 2 for stairways, building entrances, corridors, assembly spaces, and other high use interior doors. Use Series 4000, Grade 1 for non-residential locations not using Series 1000 hardware. For residential buildings use Series 4000, Grade 2 for interior doors. a) Mortise Locks and Latches - BHMA A 156.13, Series 1000, Operation Grade 1, Security Grade 2. b) Bored Locks and Latches - BHMA A 156.2, Series 4000, Grade 1, or Grade 2.
   c. **Exit Devices** - BHMA A 156.3, Grade 1. Provide touch bars in lieu of conventional crossbars and arms. Use manufacturer's integral touch bars in aluminum storefront doors.
   d. **Card Key Access** - Provide card key type access units for specialized entries. Provide lithium battery powered, magnetic stripe keycard locksets that are ANSI/BHMA A156.13, Series 1000, Grade 1, mortise or ANSI/BHMA A156.2, Series 4000, Grade 1, cylindrical locks, tamper resistant, UL listed with 25 mm (1 inch) throw deadbolt, 19 mm (3/4-inch) throw latch bolt, auxiliary dead-locking latch, and 68.75 mm (2-3/4 inch) backset.

      Provide hardware keying compatible with the existing base-wide keying system. Replacement interchangeable cores must be compatible with the Best Lock system.
   e. **Key Cabinet**: Provide a Key Cabinet with 30% over capacity.

C30 INTERIOR FINISHES

C3010 WALL FINISHES

Unless otherwise noted in the RFP, primary wall finish is painted gypsum wall board. Provide fire resistive construction and finishes for fire separation between areas of the building in accordance with the latest adopted version of the IBC, and NFPA 101. Provide water resistant cementitious board at floors and walls of tubs and showers.

1. **Ceramic Tile**: Provide ceramic tile wall systems as defined in the Tile Council of America (TCA) handbook for ceramic tile installation and materials for the service requirements listed. Provide installation and materials in accordance with ANSI A108/A118 series standards, except do not use organic adhesives. Provide manufacturer's full range of colors and styles. Tile must be a minimum of one grade above base grade. Coordinate with ceramic bath accessories for modularity. Include all trim pieces, caps, stops, and returns to complete installation.

2. **Wallcovering**: Vinyl wallcovering must conform to ASTM F793, Category V Type II, 371 g to 624 g (13.1 to 22 ounces) total weight per square yard and width of 1370 mm (54 inches). Provide ASTM F793, Category VI, Type III, 624 g (22 ounces) and above to cover rough textured walls such as masonry. High performance fabric wallcovering must be woven or non-woven Class A, fire resistive material, a minimum of 1219 mm (48 inches) wide, with a soil repellent finish and a minimum of 340 g (12 ounces) per square yard

exclusive of backing. "Tackable" wall covering must be "self-healing" from tack penetration through the covering into the substrate. Acoustical wallcovering must be textured, woven or non-woven, Class A fire resistive material with an acrylic backing, a minimum of 1219 mm (48 inches) wide and a minimum of 454 g (16 ounces) per square yard. The material must have an NRC rating of .15 on gypsum board in accordance with ASTM C423. Do not install wall covering on interior face of exterior walls.

C3020 FLOOR FINISHES

Provide new flooring materials as required. All flooring materials, adhesives, finish coats, sealers and mortar materials must meet or exceed EPA requirements for toxic substance content restrictions and air quality requirements; and meet or exceed fire protection requirements, such as smoke and flame spread requirements. When laying broadloom carpets and resilient flooring, use the widest sheet materials available to avoid or minimize the number and extent of seams. When seams are required, locate seams at infrequent traffic areas. Contractor is required to submit seam layout to Contracting Officer for approval prior to installation.

1. **Ceramic Tile**: Provide ceramic tile floor systems as defined in the Tile Council of America (TCA) handbook for ceramic tile installation and materials for the service requirements listed. Provide installation and materials in accordance with ANSI A108/A118 series standards, except do not use organic adhesives. Provide manufacturer's full range of colors and styles. Tile must be a minimum of one grade above base grade.Provide ceramic or porcelain tile with a minimum breaking strength of 202kg (300 pounds), ASTM C648, and a maximum absorption rate of 0.5%, ASTM C373. Tile must have a minimum coefficient of friction (wet and dry) of 0.6, ASTM C1028.

2. **Resilient Flooring**: Meet or exceed applicable ABA Accessibility Standards horizontal requirements. Install flooring per manufacturer's recommended methods and adhesives. Provide manufacturers full line of color and pattern selections, including multi-color patterns. Linoleum Sheet or Tile Flooring must be 2.5 mm (0.10 inch) gage; minimum 250 psi static load limit, ASTM F970; and with multi-color pattern and color extending throughout thickness, ASTM F2034, Type I. Resilient homogeneous vinyl sheet flooring must be commercial quality, 2.0 mm (0.080 inch) overall gage, with minimum 1.6 mm (.066 inch) thick wear layer, protective urethane finish, ASTM F1303, Type II, Grade 1, Class A. Resilient vinyl composition tile must be commercial grade, 3 mm (.125 inch) gage, ASTM F1066, Comp. 1, Class 2, through pattern.

3. **Carpet**: Carpet manufacturers and installers must be experienced, established and in good standing with the industry. Carpet, broadloom or tile must be installed per the Carpet & Rug Institute's recommendations. Carpet must be tufted, textured loop, cut/loop or tip sheared, a minimum of 26 oz. face weight, minimum density of 6600, 100% premium branded yarn- or solution-dyed, Type 6 or 6.6 continuous hollow filament nylon. Carpet must be multi-color and patterned for soil and wear hiding properties. Carpet must have high performance backing warranted against zippering, edge raveling and delamination, be anti-static and anti-microbial. Carpet must meet Flammability ratings; generate less than a 450 rating, ASTM E662; meet the Critical Radiant Flux Classification of not less than 0.45 W/sq. cm., ASTM E648. Where indicated in the room requirements, provide attached polyurethane cushion or separate polyurethane cushion for double stick pad installations, ASTM 1667 and ASTM 3676.

4. **Wall Base**: Provide porcelain or ceramic tile base for porcelain or ceramic tile floor. Provide solid, through color preformed rubber or vinyl base for carpeted/resilient flooring areas. Provide a sealant between base and floor finish in all wet areas.

C3030 CEILING FINISHES

Unless otherwise noted in the room requirements, acoustical ceiling panels must be 24 inch by 24 inch, with a minimum light reflectance of .75, Class A, flame spread 25 or less and smoke development of 50 or less, ASTM E84. Acoustical ceiling panels must have minimum 60% recycled content and conform to ASTM E1264. Panels must have a factory-applied standard washable painted finish or Type IV with factory-applied plastic membrane-faced vinyl, Form: 1, 2 or 3. Provide square edge except as noted.

Unless otherwise noted in the room requirements for entrance lobby, restrooms and showers, provide a painted, suspended gypsum board ceiling. Exposed structural systems shall be painted.

C3040 PAINTING

All painting and coating materials must be low VOC, comply with local air quality control laws and regulations; and conform to the Master's Painters Institute's (MPI) *Architectural, Interior Systems Manual* and the MPI's *Maintenance and Repainting Manual* recommendations for paint systems, surface preparation and applications.

Provide minimum of one prime coat and two finish coats. The prime coat must not be combined with texture or other coatings. Seal and prime all surfaces to cover underlying stains or discoloration that may affect finish paint. Finish coats must provide full coverage of undercoats and substrates. All walls and ceilings in wet area must have semi-gloss paint. All wood or metal cased openings, door trims and casings, window trims and casing, and other finish trims must have semi-gloss paint. All interior walls and ceilings must have satin or eggshell finish. For previously painted surfaces, prime all surfaces to ensure compatibility of finish coats. Do not paint prefinished surfaces except as noted.

Provide Institutional Low Odor/Low VOC Latex paint or High-Performance Architectural Latex systems as defined and approved by the MPI Systems Manual for the various substrates required to be painted.

Paint/Color Selection: Provide paint systems tested to "Detailed Performance Level" standard as defined by MPI. Paints must be readily available for purchase in standard colors.

SECTION D. SERVICES

D30 HEATING, VENTILATION AND AIR CONDITIONING (HVAC) SYSTEMS

The HVAC systems must comply with the latest edition of the International Mechanical Code, International Plumbing Code, ASHRAE Standards, National Electrical Code, National Fire Protection Association Publications, International Building Code, and California Title 24 or ASHRAE 90.1 energy efficiency standards (the more stringent of the two) unless otherwise specified in Part 3. All equipment, appliances, ductwork and accessories must comply with applicable codes and standards. The Contractor must certify that the installation is in conformance with the applicable codes and standards at the completion of the contract, prior to final invoice being processed and final acceptance. Provide Energy Star rated equipment where available. Provide equipment with performance in excess of Energy Star requirements where specified.

1. **Equipment Clearance**: Provide working space around all equipment. Provide all required fittings, connections and accessories required for a complete and usable system. All

equipment shall be installed in accordance with the manufacturer's recommendations. Where the word "should" is used in manufacturer's instructions, substitute the word "shall".

2. **Material and Equipment Qualifications**: All materials and equipment must have been in satisfactory commercial or industrial use for 2 years prior to the bid opening. The 2-year use must include applications of equipment and materials under similar circumstances and of similar sizes. The product must have been for sale on the commercial market through advertisements, manufacturer's catalogs, or brochures during the 2-year period.

3. **Motors**: Single-phase fractional-horsepower alternating-current motors must be high efficiency types corresponding to the applications listed in NEMA MG 11. Select polyphase motors based on high efficiency characteristics relative to the applications listed in NEMA MG 10. Additionally, all polyphase squirrel-cage medium induction motors with continuous ratings must meet or exceed energy efficient ratings per Table 12-10 of NEMA MG 1. Provide controllers for 3-phase motors rated 0.75 kW (1 hp) and above with phase voltage monitors designed to protect motors from phase loss and over/under-voltage. Provide means to prevent automatic restart by a time adjustable restart relay. For packaged equipment, the manufacturer must provide controllers including the required monitors and timed restart. Provide reduced voltage starters for all motors 25 hp and larger.

4. **Equipment Support**: Provide housekeeping pads and vibration isolators under all floor-mounted equipment.

5. **Coatings**: When required in Part 3, provide chiller and air handler coils with copper tube/copper fin coil construction or immersion applied, baked phenolic or other approved coating. Field applied coatings are not acceptable. Mechanical equipment casings must have painted finishes that pass a salt-spray test conducted per ASTM B117 for duration of at least 3000 hours.

6. **Equipment Insulation**: Provide insulation on all chilled water equipment. Insulate hot and chilled water pumps and equipment suitable for the temperature and service in rigid block, semi-rigid board, or flexible unicellular insulation to fit as closely as possible to equipment. Provide vapor retarders for chilled water applications.

7. **Acoustical considerations**: Noise levels in all areas served (supply, return, and exhaust) by a mechanical system must comply with ASHRAE Design Guidelines for HVAC related background sound in rooms as indicated in the lasted ASHRAE Fundamentals Handbook. The RC-rating method must be utilized.

D3030 COOLING GENERATING SYSTEMS

1. **Coils**: If coatings are indicated in Part 3, provide with copper tube/copper fin construction or immersion applied, baked phenolic or other approved coating that passes the 3000-hour salt spray resistance test using ASTM B117 procedure. Field applied coatings are not acceptable.

D3040 DISTRIBUTION SYSTEMS

1. **Ductwork**: All ductwork must be provided in accordance with the latest SMACNA guidelines. Flexible duct lengths must not exceed 5 feet. Provide galvanized sheet metal ducts except for special exhaust systems and the following:
   a. For fume hood exhaust, kitchen hood exhaust, and dishwasher exhaust, provide stainless steel ductwork.
   b. For shower area exhausts, provide aluminum or stainless steel ductwork and sloped to drain provisions. After the shower exhaust is mixed with a volume of general exhaust air equal to 200% of the shower exhaust rate, standard galvanized construction may be used.
   c. Internal insulation-lined ductwork is prohibited in all areas. For ductwork located exterior to the building, provide externally insulated systems with sheet metal cladding. Provide external thermal insulation for all ductwork. Insulate ductwork in concealed spaces with blanket flexible mineral fiber. Insulate ductwork in Mechanical Rooms and exposed locations with rigid mineral fiber insulation. Provide insulation with factory applied all-purpose jacket with integral vapor retarder. In exposed locations, provide a jacket with white surface suitable for painting. Flame spread/smoke developed rating for all insulation shall not exceed 25/50. Minimum insulation thickness must be the minimum thickness required by ASHRAE 90.1. Insulate the backs of all supply air diffusers with blanket flexible mineral fiber insulation.
   d. The ductwork must be sealed with an approved duct sealer and in accordance with SMACNA standards. If leakage testing is indicated in part 3, the duct leakage must not exceed 2%.
   e. Provide manual volume dampers in each branch take-off from the main duct to control air quantity. Dampers must conform to SMACNA DCS. Dampers must be installed in accessible locations.

2. **Fire Dampers**: Fire dampers must be rated per UL 555. Fire dampers must be dynamic type rated for closure against a moving airstream. Provide fire dampers that do not intrude into the air stream when in the open position.

3. **Piping**:
   a. Provide insulated steel piping for sizes 4 inches and larger and insulated copper piping for sizes less than 4 inches for water supply and return piping to serve the HVAC equipment throughout the facility.
   b. Provide system flushing and start-up for water systems.
   c. Oil piping: ANSI/ASTM A53 or A106 piping with associated ASME fittings or ASTM B88, type L or M copper tubing with ASME B16.26 flared fittings or compression type fittings.

4. **Exhaust Fans and Ducts**:
   a. **General: Exhaust** fans must be sized to move the volume of air required to comply with International Mechanical Code for the areas requiring exhaust.
   b. **Bathroom, restrooms and Utility Room Exhaust Fans:** Exhaust fans must be sized to give not less than 10 air changes per hour in the space to be ventilated. Fans must have a maximum sound level of 3 sones and be separately switched from light.
   c. **Flues:** When required, provide new Type B, U.L. listed, double wall flues. Flue installation must be in accordance with the International Mechanical Code.

5. **Air handling units**: Modular construction, double wall air handling units with minimum of 25 mm (1 inch) casing insulation. Provide ARI 430 certified fans and ARI certified coils. Provide stainless steel, positive draining condensate drain pan. For 100% outside air units provide capability for cooling, heating, dehumidification and reheat.

D3060 CONTROLS AND INSTRUMENTATION

1. **General**: Provide stand-alone or distributed direct digital controls, as required in Part 3.

2. **Distributed Direct Digital Controls (DDC)**: DDC hardware must be UL-916 rated. Use controllers in a distributed control manner. Controllers must be stand alone with an internal clock and modem. Provide sufficient memory for each controller to support required control, communication, trends, alarms, and messages. Provide communications ports for controller to controller interface and on-site interface. When providing a partial DDC system or connecting to an existing DDC system, provide a laptop computer with all necessary software for user interface.

D3070 SYSTEMS TESTING AND BALANCING

All HVAC water and air systems, both new and retrofit, must be TABed in accordance with NEBB or AABC standards. As part of any TAB air balancing effort, acceptable air quantity variations must be 0 to -10% for exhaust systems and 0 to +10% for supply air systems.

D40 FIRE PROTECTION

Provide new or extend existing Automatic Fire Sprinkler systems, Smoke and Heat detection systems, Fire Alarm and Mass Notification systems as required. The work for fire sprinklers, fire alarm, smoke detection, and heat detection must be provided by contractors licensed to perform such work.

Project Requirements: Prior to the start of design, the Designer of Record must meet with the Government's Fire Protection Engineer to determine the extent and types of fire protection required**.**

D4010 FIRE ALARM AND DETECTION

Fire alarm system includes manual stations, system smoke detectors, duct smoke detectors, heat detectors, audio/visual alarms, connection to basewide fire alarm monitoring, electrical supervision of fire pump controllers, and electrical supervision of all sprinkler system alarm and supervisory devices as required.

D50 ELECTRICAL

D5010 ELECTRICAL SERVICE & DISTRIBUTION

Provide interior electrical wiring, fixtures, switches, outlets, and apparatus in accordance with applicable codes and standards. The electrical system must conform to NFPA 70. Power and lighting circuits must be separate.

1. **Wiring**: All wiring must be in electrical metal conduits and must be concealed except in the industrial spaces and at locations indicated in Part 3. No conductors are permitted to be smaller than No. 12 AWG, copper wires. Wiring below slab or underground must be in Schedule 40 PVC with ground wire. Exposed conduits on the exterior of the building are prohibited. Provide a ground conductor for each circuit; conduits must not be used as the sole means of grounding. Cable assembly Types AC, MC, or MI and flat conductors may

only be used in locations allowed by UFC 3-520-01. Circuit breakers must be bolt-on type. Series rated circuit breakers and fusible panelboards must not be used.

SECTION F. SPECIAL CONSTRUCTION AND DEMOLITION

F10 SPECIAL CONSTRUCTION AND DEMOLITION

F2020 HAZARDOUS COMPONENT ABATEMENT

1. Paint Related Work: Perform work which requires the disturbance of paint that have been determined to contain all or any of the following: lead, cadmium and chromium in accordance with the edited UFGS 02 83 00, Lead Remediation.

SECTION Z10 GENERAL PERFORMANCE TECHNICAL SPECIFICATION

Z10 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

Z10 1.1 NARRATIVE

All Performance Technical Specification (PTS) sections must be used in conjunction with all parts of the Design Build (D/B) Request for Proposal (RFP) to determine the full requirements of this solicitation. This PTS section provides general requirements for the other PTS sections of this RFP and is used in conjunction with the other PTS sections.

Refer to Part 2 Section 01 33 10.05 20, *Design Submittal Procedures* for the Order of Precedence of the RFP Parts. Requirements listed in the Project Program take precedence over the PTS sections requirements; therefore, requirements identified in the Project Program eliminate options related to that requirement in the PTS sections.

Z10 1.2 DESIGN GUIDANCE

Provide work in compliance with the following design standards and codes, as a minimum. Government standards listed in this RFP take precedence over industry standards.

The PTS Sections reference published standards, the titles of which can be found in the *Unified Master Reference List (UMRL)* on the Whole Building Design Guide website. The publications referenced form a part of this specification to the extent referenced. The publications are referred to in the section text by the basic designation only. Industry standards, codes, and Government standards referenced in the section text, and not found in the UMRL, are listed at the beginning of the PTS sections.

The advisory provisions of all referenced codes, standards, and specifications must be mandatory; substitute words such as "must", or "required" for words such as "should", "may", or "recommended," wherever they appear. The results of these wording substitutions incorporate these code and standard statements as requirements. Reference to the "authority having jurisdiction" for variance from criteria must be interpreted to mean the "Chief Engineer, NAVFAC" and for contractual obligations on this project must be interpreted to mean the "Contracting Officer".

Comply with the required and advisory portions of the current edition of the standard at the time of contract award.

The following list of codes and standards is not comprehensive and is augmented by other codes and standards referenced and cross-referenced in the RFP.

Z10 1.2.1 INDUSTRY CODES

INTERNATIONAL BUILDING CODE (IBC) as modified by UFC 1-200-01. UFC 1-200-01 applies the IBC to the project and references other commercial standards and UFC criteria that become part of the contract.

Z10 1.2.2 INDUSTRY REQUIREMENTS

WHOLE BUILDING DESIGN GUIDE (WBDG)

WHOLE BUILDING DESIGN GUIDE, Ensure Occupant Safety and Health (Systems Safety Engineering) at https://www.wbdg.org/do/secure/occupant-safe

Z10 1.2.3 GOVERNMENT STANDARDS

Z10 1.2.3.1 UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (UFC 1-200-01 is a hub document that provides general building requirements and references other critical UFCs. A reference to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs listed therein.)
UFC 1-200-02	High Performance and Sustainable Building Requirements
FC 1-300-09N	Navy and Marine Corps Design Procedures

Z10 1.2.3.2 FEDERAL STANDARDS

Architectural Barriers Act Standards with DEPSECDEF Memorandum 31 Oct 2008, "Access for People with Disabilities"

Occupational Safety and Health Administration (OSHA)

Z10 1.3 MATERIALS AND EQUIPMENT REQUIREMENTS IDENTIFICATION

Z10 1.3.1 MATERIALS STANDARD

Refer to the Project Program for identification of Government Furnished Equipment.

The equipment items must be supported by service organizations that are convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

Materials, equipment, fixtures, and other appurtenances must comply with applicable Underwriters Laboratories, (UL) Inc., American National Standards Institute, Inc., and

National Electrical Manufacturer's Association standards or applicable standards of a similar independent testing organization. All materials must be new and must bear the label of Underwriters Laboratories whenever standards have been established and label service is normally and regularly furnished by the agency. All equipment provided must be listed and labeled suitable for the specified purpose, environment, and application and installed in accordance with manufacturer’s recommendations. Insulation must be asbestos free.

Z10 1.3.2 EQUIPMENT NAMEPLATE IDENTIFICATION

Each item of equipment must have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place. The nameplate of the distributing agent will not be acceptable.

Z10 1.3.3 FIELD-APPLIED NAMEPLATES

Provide laminated plastic nameplates for each piece of equipment. Each nameplate must identify the function and, when applicable, the number designation of that piece of equipment as used in the design documents. Provide melamine plastic nameplates, 0.125 inch (3 mm) thick, white with black center core.

Z10 1.4 COMMISSIONING

Commission the building systems identified in Part 3 Chapter 2.0 "Project Objectives", paragraph titled "Building Commissioning". Refer to Part 2 Section 01 45 00, *Quality Control* for the Commissioning Authority's required qualifications and responsibilities and comply with UFGS 01 91 00.15, *Building Commissioning* modified as necessary to include all applicable systems included in the final design. Test reports must be certified by the Commissioning Authority (CA), that work is in compliance with requirements of the RFP.

Z10 1.5 PERFORMANCE VERIFICATION AND ACCEPTANCE TESTS

Verification of satisfactory construction and system performance must be via Performance Verification Testing, Acceptance Tests, and submittal of test reports certified by the Designer of Record (DOR), that work is in compliance with requirements of the RFP. The Government reserves the right to witness all Performance Verification and Acceptance Tests, review data, and request other such additional inspections and repeat tests as necessary to ensure that the work and provided services conform to the stated requirements. Contractor must pay the cost of all testing.

Refer to each PTS section to identify Performance Verification and Acceptance Testing required by the work specified in that PTS section.

Z10 1.6 SUBMITTALS

Contractor's design submittals that combine design and construction submittals, must jointly comply with Part 2 Sections 01 33 00.05 20, *Construction Submittal Procedures* and 01 33 10.05 20, *Design Submittal Procedures*. Contractor's construction submittals that are submitted separate from the design submittals must comply with Part 2 Section 01 33 00.05 20, *Construction Submittal Procedures*.

Refer to "Construction Quality Control" in Part 2 Sections 01 33 00.05 20, *Construction Submittal Procedures* and 01 45 00, *Quality Control* to define reviewing and approving Authority of design and construction submittals.

Utilize the same materials and equipment that are approved and provided for an initial facility design, on all follow-on facilities that use the same design within this contract. Once the initial

facility design is approved by the Government, the Contractor must obtain Government approval to change materials and equipment when designing and constructing follow-on facilities utilizing the same design.

Z10 1.6.1 DESIGN SUBMITTALS

Submit design submittals in accordance with Part 2 Section 01 33 10.05 20, *Design Submittal Procedures*, FC 1-300-09N, *Navy and Marine Corps Design Procedures*, and other discipline-specific guidelines listed in the applicable PTS sections.

Part 2 Section 01 33 10.05 20, *Design Submittal Procedures* requires the use of UFGS sections in the development of the Contractor originated specification. The Designer of Record (DOR) must edit the UFGS sections for the project and submit the edited specification as a part of the design submittal. The DOR must edit the UFGS as follows:

(1) Prepare UFGS Specifications as part of the project specification,

(2) Delete only portions of the UFGS specification that are not applicable to the project,

(3) Edit only the bracketed choices that are within the UFGS specification text,

(4) Edit blank bracketed options to include requirements that exercise prudence and adherence to acceptable industry standards,

(5) Comply with the directions, directives, and requirements of all UFGS Criteria Notes. The UFGS Criteria Notes are typically bordered on the top and bottom by a line of asterisks to highlight their location.

(6) If proprietary information is provided or required to streamline the construction submittal process, include proprietary information in the edited UFGS sections and added to the end of each UFGS section. Confirm that the proprietary products, materials, and systems listed in the specifications are in compliance with the requirements of the RFP.

Z10 1.6.2 CONSTRUCTION SUBMITTALS

Submit for approval to the Designer of Record (DOR), construction submittals, product data, manufacturer's information, shop drawings, and test reports on all materials and systems installed in the project, unless the DOR designates submittal for QC approval. Refer to each PTS section for further construction submittal requirements relating to the work identified in that particular PTS section. Some PTS sections reference UFGS sections that will require more construction submittals for DOR approval than is stated above. Refer to Part 2 Section 01 33 00.05 20 for the list of construction submittals reserved for Government Approval and Government Surveillance.

--End of Section--

PART FIVE - PRESCRIPTIVE SPECIFICATIONS

NONE

Part 6 – ATTACHMENTS

1) Physical extents and new Ceiling Tiles, Floor Tiles, Chair Rails, and Thermostats for the:
    a. First Floor – A-101
    b. Second Floor – A-102
    c. Third Floor – A-103
2) Thermostat and controller cable connections, A-601
3) Mechanical Drawings (56 sheets)
4) HVAC controls drawings (35 sheets)
5) Roof-Top Photos and Equipment Schedules, M-901
6) Fire Protection Drawings (17 sheets)
7) Basement Controls Plan
8) Building Asbestos Survey

-- End of Section --

SYM	DESCRIPTION	DATE	APPR

NAVFAC

PRELIMINARY
NOT FOR CONSTRUCTION

SEAL

A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

NAVAL STATION NEWPORT

SATISFACTORY TO DATE MM/DD/YY

DES -- DRW -- CHK --

PM/DM --

BRANCH MANAGER --

CHIEF ENG/ARCH --

FIRE PROTECTION --

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - NEWPORT

NAVAL FACILITIES ENGINEERING COMMAND - MID ATLANTIC
NAVAL STATION - NEWPORT, RI

NAVAL STATION NEWPORT, RI

1372 HVAC, FP, ARCH REPAIRS

NEWPORT, RI

FIRST FLOOR

SCALE: AS-SHOWN

EPROJECT NO.: #######

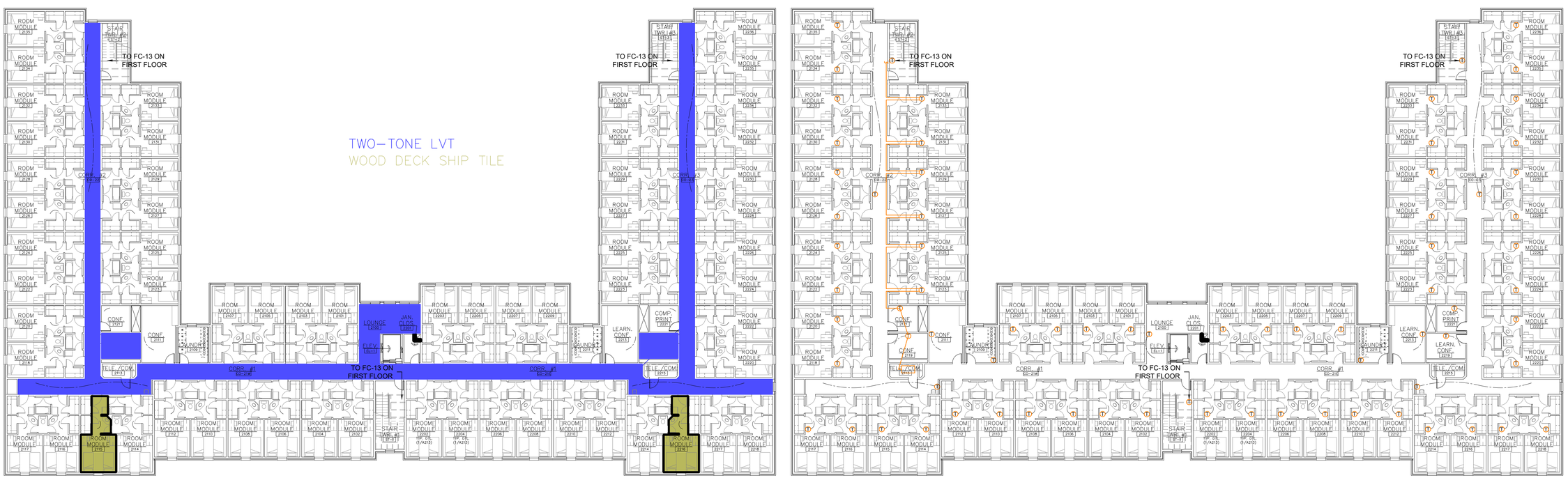
CONSTR. CONTR. NO.: ######-##-#-####

NAVFAC DRAWING NO.: ##

SHEET 01 OF #

ATT-1a

DRAWFORM REVISION: 07 AUG 2018



SYM	DESCRIPTION	DATE	APPR

NAVFAC

PRELIMINARY
NOT FOR CONSTRUCTION

SEAL

A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

NAVAL STATION NEWPORT

SATISFACTORY TO DATE MM/DD/YY

DES -- DRW -- CHK --

PM/DM --

BRANCH MANAGER --

CHIEF ENG/ARCH --

FIRE PROTECTION --

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - NEWPORT

NAVAL FACILITIES ENGINEERING COMMAND - MID ATLANTIC
NAVAL STATION - NEWPORT, RI

NAVAL STATION NEWPORT, RI

1372 HVAC, FP, ARCH REPAIRS

NEWPORT, RI

SECOND FLOOR

SCALE: AS-SHOWN

EPROJECT NO.: #######

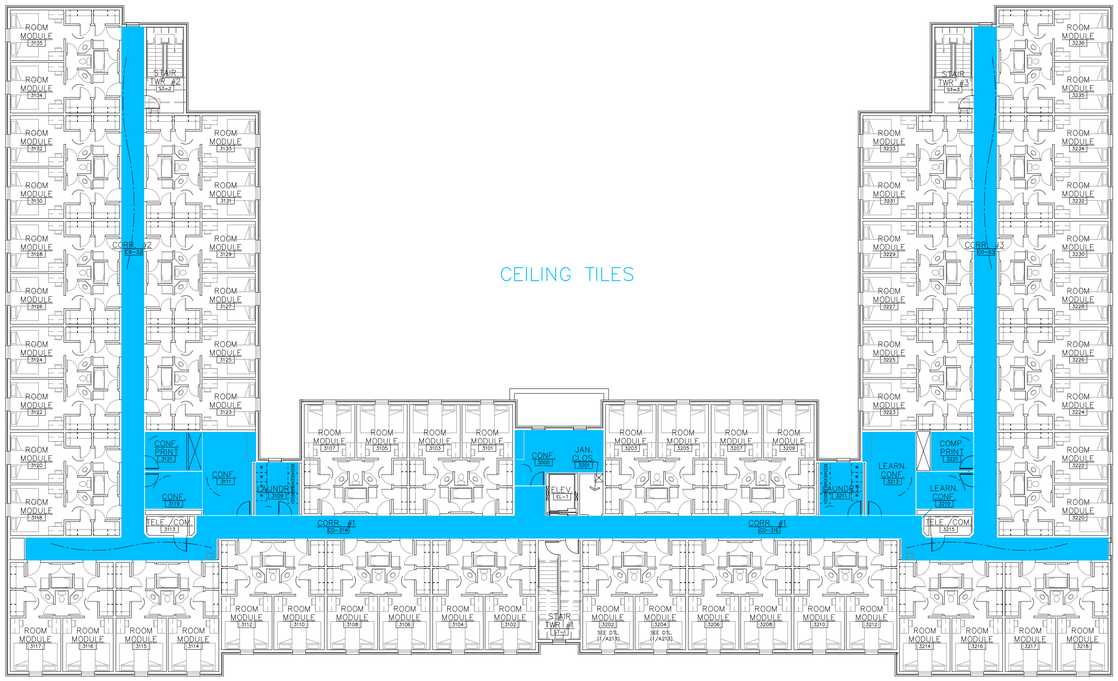
CONSTR. CONTR. NO.: ######-##-#-####

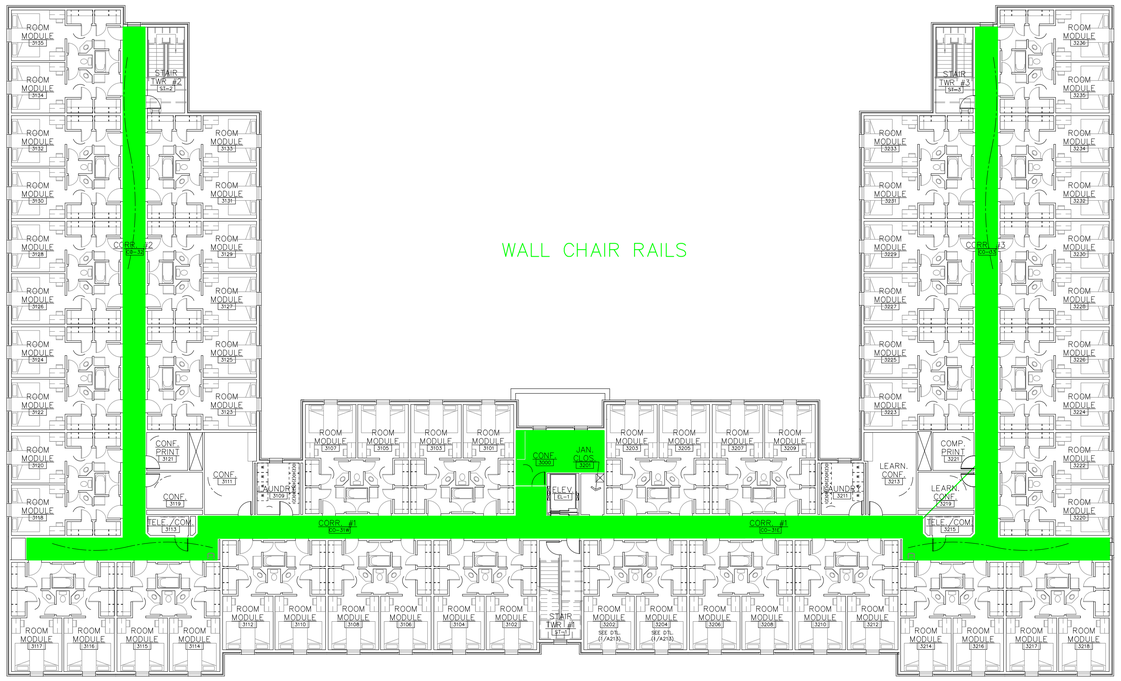
NAVFAC DRAWING NO.: ##

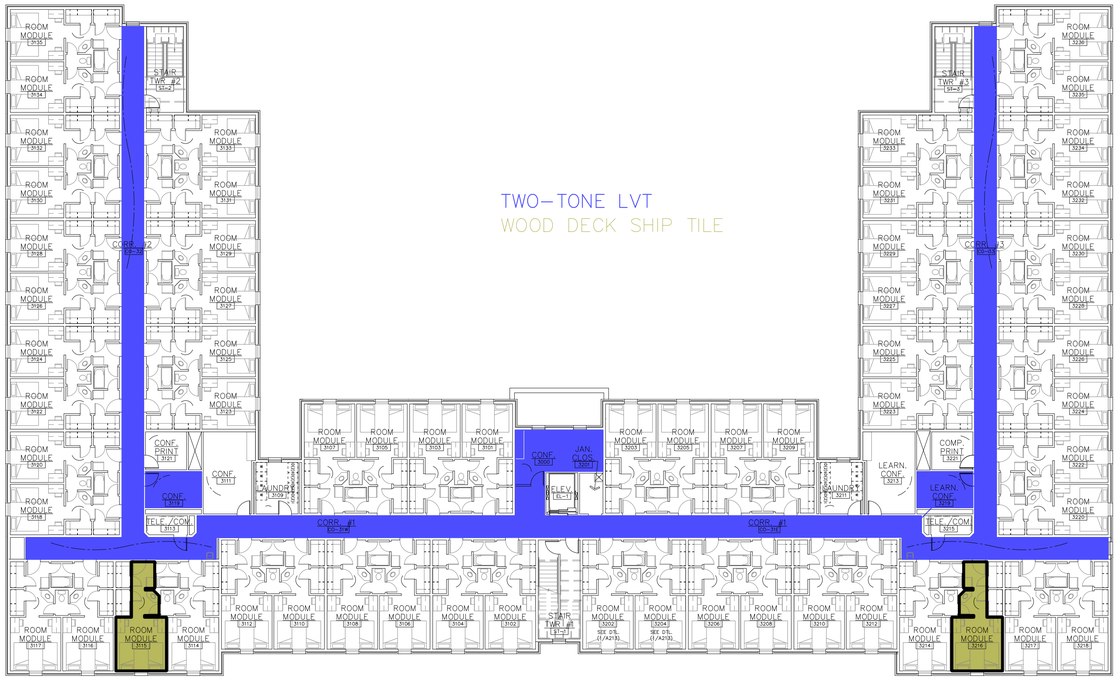
SHEET 02 OF #

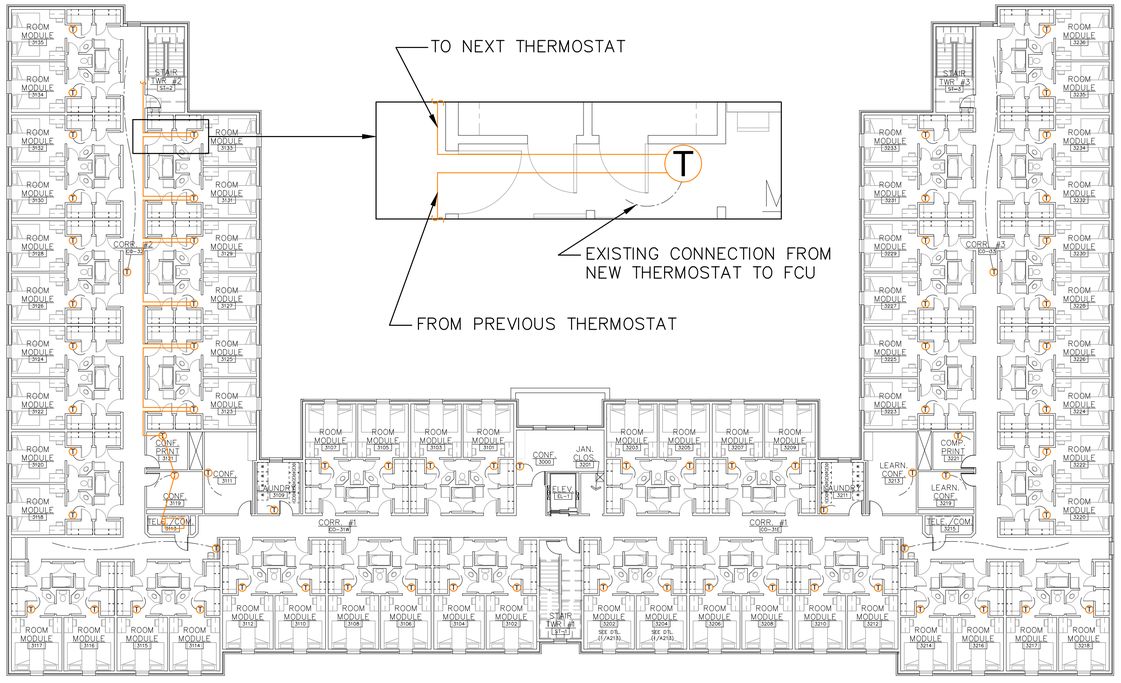
ATT-1b

DRAWFORM REVISION: 07 AUG 2018









SYM	DESCRIPTION	DATE	APPR

NAVFAC

PRELIMINARY
NOT FOR CONSTRUCTION

SEAL

A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

NAVAL STATION NEWPORT

SATISFACTORY TO DATE MM/DD/YY

DES -- DRW -- CHK --

PM/DM --

BRANCH MANAGER --

CHIEF ENG/ARCH --

FIRE PROTECTION --

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - NEWPORT

NAVAL FACILITIES ENGINEERING COMMAND - MID ATLANTIC
NAVAL STATION - NEWPORT, RI

NAVAL STATION NEWPORT, RI

1372 HVAC, FP, ARCH REPAIRS

NEWPORT, RI

THIRD FLOOR

SCALE: AS-SHOWN

EPROJECT NO.: #######

CONSTR. CONTR. NO.: ######-##-#-####

NAVFAC DRAWING NO.: ##

SHEET 03 OF #

ATT-1c

DRAWFORM REVISION: 07 AUG 2018

Supervisory Controller (Tele/Com room 1115)

West Path	T-Stat count	East Path	T-Stat count
Conf 1121	1	Conf 1113	1
Conf 1123	1	Laun 1111	1
room 1125	1	room 1109	1
room 1127	1	room 1107	1
room 1129	1	room 1205	1
room 1131	1	room 1207	1
room 1133	1	room 1209	1
room 1135	1	room 1211	1
room 1137	1	Laun 1213	1
room 1136	1	Conf 1215	1
room 1134	1	Conf 1221	1
room 1132	1	Conf 1223	1
room 1130	1	room 1225	1
CO-12	1	room 1227	1
room 1128	1	room 1229	1
room 1126	1	room 1231	1
room 1124	1	room 1233	1
room 1122	1	room 1235	1
room 1120	1	room 1237	1
room 1119	1	room 1236	1
room 1118	1	room 1234	1
room 1116	1	room 1232	1
room 1114	1	room 1230	1
CO-11 W	1	CO-13	1
room 1112	1	room 1228	1
room 1110	1	room 1226	1
room 1108	1	room 1224	1
room 1106	1	room 1222	1
Med 1102	1	room 1220	1
Conf 1202	1	room 1219	1
room 1206	1	room 1218	1
room 1208	1	room 1216	1
room 1210	1	room 1214	1
room 1212	1	CO-11 E	1
	34		34

Supervisory Controller (Tele/Com room 2113)

West path	T-Stat count	East Path	T-Stat count
room 2119	1	room 2111	1
room 2121	1	room 2109	1
room 2123	1	room 2107	1
room 2125	1	room 2105	1
room 2127	1	room 2103	1
room 2129	1	room 2101	1
room 2131	1	Lounge 2100	1
room 2133	1	room 2203	1
room 2135	1	room 2205	1
room 2134	1	room 2207	1
room 2132	1	room 2209	1
room 2130	1	room 2211	1
room 2128	1	room 2213	1
CO-22	1	room 2219	1
room 2126	1	room 2221	1
room 2124	1	room 2223	1
room 2122	1	room 2225	1
room 2120	1	room 2227	1
room 2118	1	room 2229	1
room 2117	1	room 2231	1
room 2116	1	room 2233	1
room 2115	1	room 2236	1
room 2114	1	room 2235	1
CO-21 W	1	room 2234	1
room 2112	1	room 2232	1
room 2110	1	room 2230	1
room 2108	1	CO-23	1
room 2106	1	room 2228	1
room 2104	1	room 2226	1
room 2102	1	room 2224	1
room 2202	1	room 2222	1
room 2204	1	room 2220	1
room 2206	1	room 2218	1
room 2208	1	room 2217	1
room 2210	1	room 2216	1
room 2212	1	room 2214	1
	36	CO-21 E	1
			37

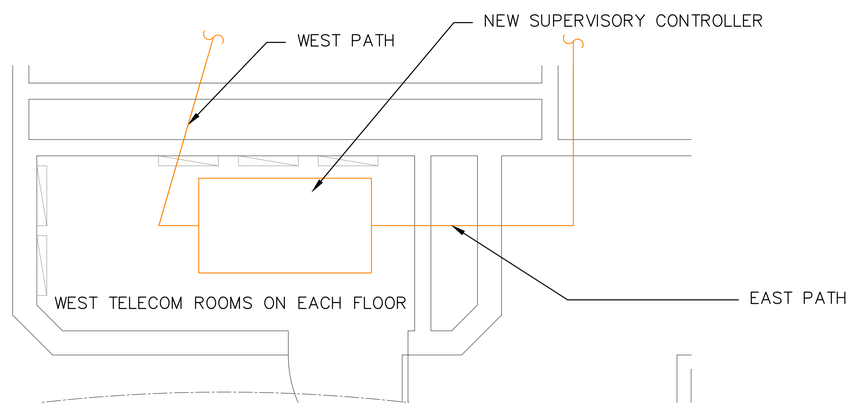
Supervisory Controller (Tele/Com room 3113)

West path	T-Stat count	East Path	T-Stat count
room 3119	1	room 3111	1
room 3121	1	room 3109	1
room 3123	1	room 3107	1
room 3125	1	room 3105	1
room 3127	1	room 3103	1
room 3129	1	room 3101	1
room 3131	1	room 3000	1
room 3133	1	room 3203	1
room 3135	1	room 3205	1
room 3134	1	room 3207	1
room 3132	1	room 3209	1
room 3130	1	room 3211	1
room 3128	1	room 3213	1
CO-32	1	room 3219	1
room 3126	1	room 3221	1
room 3124	1	room 3223	1
room 3122	1	room 3225	1
room 3120	1	room 3227	1
room 3118	1	room 3229	1
room 3117	1	room 3231	1
room 3116	1	room 3233	1
room 3115	1	room 3236	1
room 3114	1	room 3235	1
CO-31 W	1	room 3234	1
room 3112	1	room 3232	1
room 3110	1	room 3230	1
room 3108	1	CO-33	1
room 3106	1	room 3228	1
room 3104	1	room 3226	1
room 3102	1	room 3224	1
room 3202	1	room 3222	1
room 3204	1	room 3220	1
room 3206	1	room 3218	1
room 3208	1	room 3217	1
room 3210	1	room 3216	1
room 3212	1	room 3214	1
	36	CO-31 E	1
			37

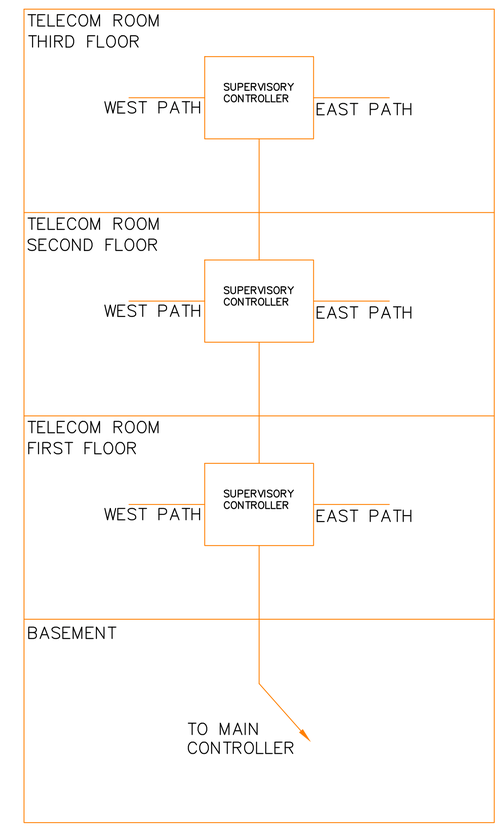
NOTES:

1. MOUNT NEW SUPERVISORY CONTROLLERS IN TELECOM ROOMS.
2. DETAIL SHOWN BELOW IS TYPICAL FOR ALL 3 FLOORS REPRESENTING SUGGESTED NEW CABLE PATHWAYS TO NEW THERMOSTATS.
3. DIFFERENCE IN NUMBER OF THERMOSTATS PER PATHWAY (EAST AND WEST) NOT TO EXCEED 5.
4. SEE ATTACHMENT 1A, 1B, 1C FOR NEW CABLE PATHWAYS THROUGHOUT EACH FLOOR.

B1 SUGGESTED CABLE PATHWAYS
Scale: N.T.S.



A2 TYPICAL TELECOM ROOM
Scale: N.T.S.



A5 SUPERVISORY CONTROLLER CONNECTION PATH
Scale: N.T.S.

SYM	DESCRIPTION	DATE	APPR

NAVFAC

PRELIMINARY NOT FOR CONSTRUCTION

SEAL

A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY: NAVAL STATION NEWPORT

SATISFACTORY TO DATE MM/DD/YY

DES -- DRW -- CHK --

PM/DM --

BRANCH MANAGER --

CHIEF ENG/ARCH --

FIRE PROTECTION --

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND - MID ATLANTIC
PUBLIC WORKS DEPARTMENT – NEWPORT
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL STATION – NEWPORT, RI
NAVAL STATION NEWPORT, RI
NEWPORT, RI
1372 HVAC, FP, ARCH REPAIRS
SUGGESTED THERMOSTAT CABLE PATHS

SCALE: AS–SHOWN

EPROJECT NO. #######

CONSTR. CONTR. NO. #####-##-#-####

NAVFAC DRAWING NO. ##

SHEET 04 OF ##

ATT-2

DRAWFORM REVISION: 07 AUG 2018

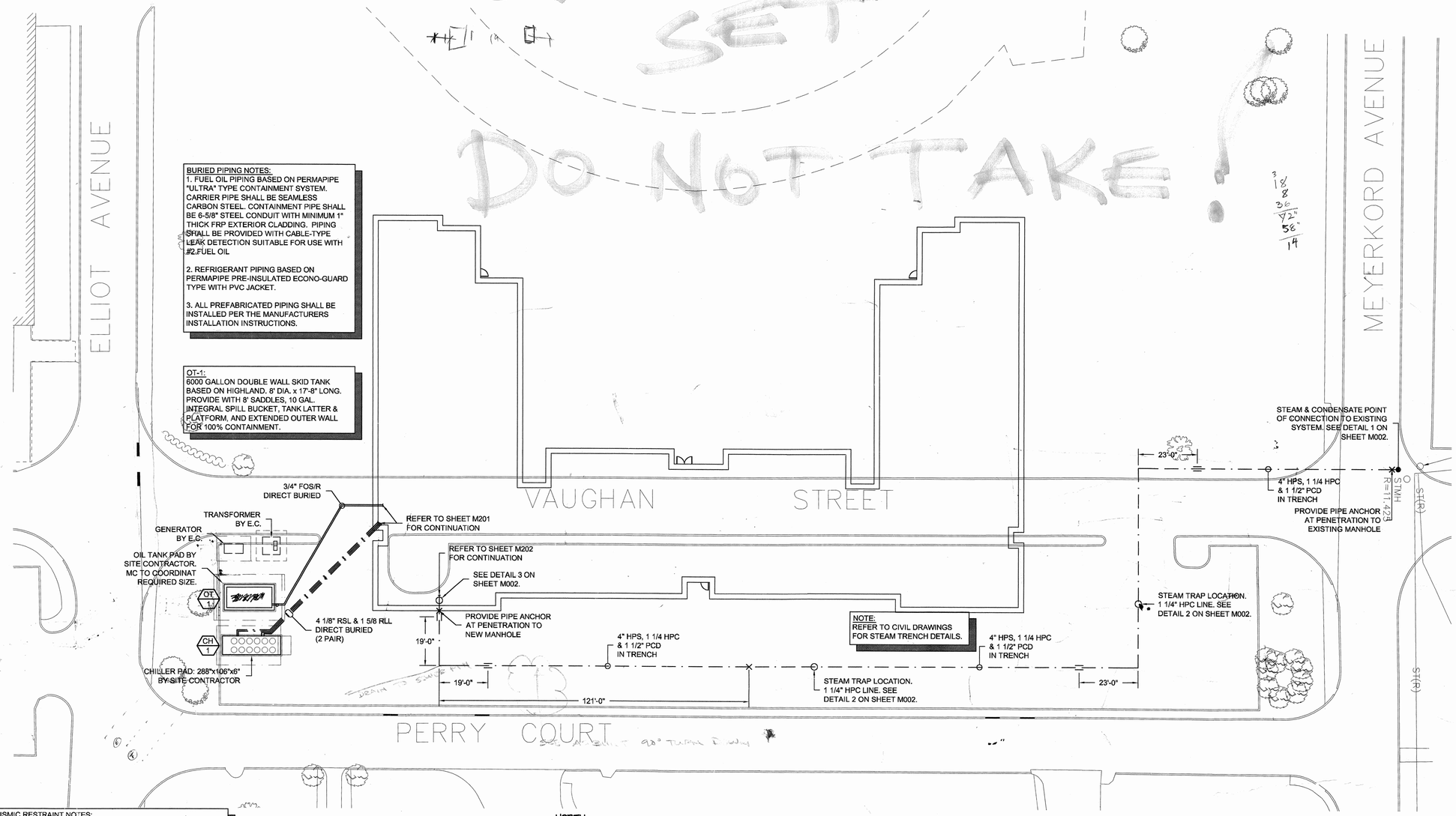
OFFICE SET
DO NOT TAKE!

BURIED PIPING NOTES:
1. FUEL OIL PIPING BASED ON PERMAPIPE "ULTRA" TYPE CONTAINMENT SYSTEM. CARRIER PIPE SHALL BE SEAMLESS CARBON STEEL. CONTAINMENT PIPE SHALL BE 6-5/8" STEEL CONDUIT WITH MINIMUM 1" THICK FRP EXTERIOR CLADDING. PIPING SHALL BE PROVIDED WITH CABLE-TYPE LEAK DETECTION SUITABLE FOR USE WITH #2 FUEL OIL

2. REFRIGERANT PIPING BASED ON PERMAPIPE PRE-INSULATED ECONO-GUARD TYPE WITH PVC JACKET.

3. ALL PREFABRICATED PIPING SHALL BE INSTALLED PER THE MANUFACTURERS INSTALLATION INSTRUCTIONS.

OT-1:
6000 GALLON DOUBLE WALL SKID TANK BASED ON HIGHLAND. 8' DIA. x 17'-8" LONG. PROVIDE WITH 8' SADDLES, 10 GAL. INTEGRAL SPILL BUCKET, TANK LATTER & PLATFORM, AND EXTENDED OUTER WALL FOR 100% CONTAINMENT.



1 M001 MECHANICAL SITE PLAN
SCALE: 1:250

SEISMIC RESTRAINT NOTES:
1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.

2. THIS CONTRACTOR SHALL ENGAGE A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE JURISDICTION OF THIS PROJECT TO REVIEW THE ENTIRE INSTALLATION TO DETERMINE ALL SEISMIC RESTRAINT REQUIREMENTS AND METHODS. CONTRACTOR SHALL SUBMIT A REPORT OUTLINING THE STRUCTURAL ENGINEER'S REVIEW AS WELL AS SEISMIC RESTRAINT SHOP DRAWINGS AND SUPPORTING CALCULATIONS PREPARED BY THE PROFESSIONAL STRUCTURAL ENGINEER FOR REVIEW BY THE ARCHITECT.

3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.

SYM.	DESCRIPTION	DATE	APPR.

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 996
Bethlehem Pike Office
Ambler, PA 19002
Tel (267) 765-7600
Fax (267) 765-0564
info@edsgroup.com

SEAL

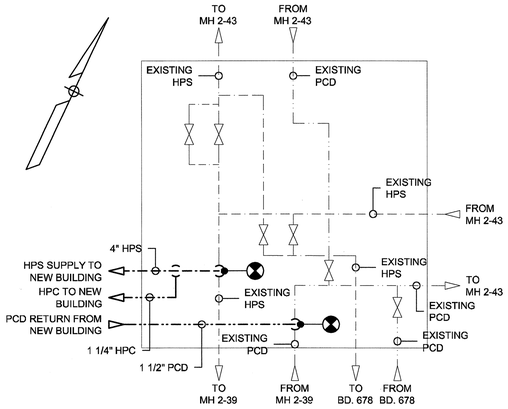
APPROVED
ACTIVITY – SATISFACTORY TO
DATE
APPROVED
FOR EFA FOR COMMANDER NAVFAC
DATE

A/E | EFD
DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

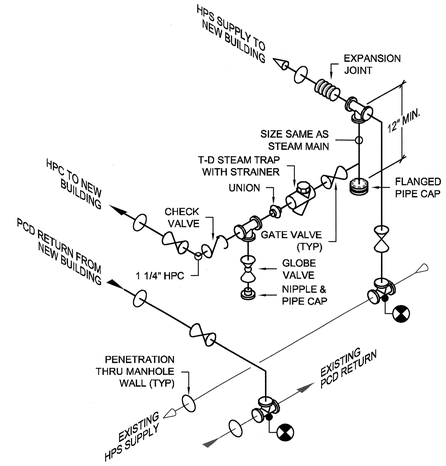
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL SITE PLAN

CODE ID. NO. 80091 | SIZE D
SCALE: 1:250
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO.
N62472-03-C-0006
NAVFAC DRAWING NO.
2225681
SHEET 1 OF 46
M001
DRAWFORM REVISION FE8912

FOR CONSTRUCTION SUBMITTAL 03-25-05



MANHOLE 2-42 SCHEMATIC

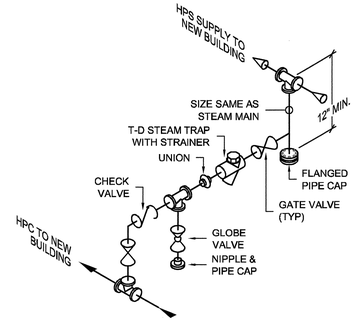


NEW SERVICES TIE-IN DETAIL

1 M002 STEAM & CONDENSATE TIE-IN DETAIL AT MANHOLE 2-42

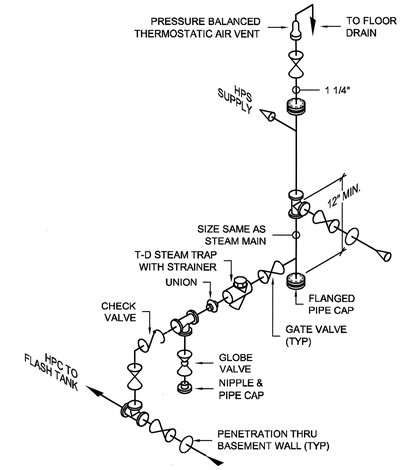
SCALE: NONE

NOTE:
ACCESS REQUIRED TO STEAM TRAP LOCATION FOR START-UP & STEAM TRAP TESTING.



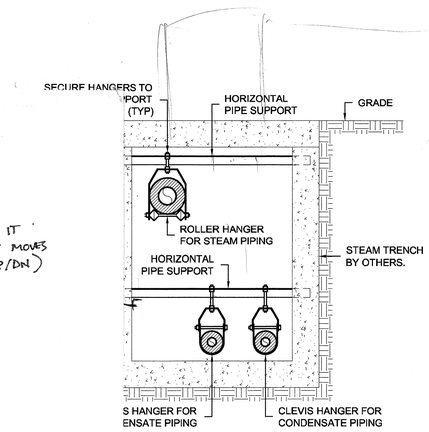
2 M002 HIGH PRESSURE STEAM TRAP DETAIL

SCALE: NONE



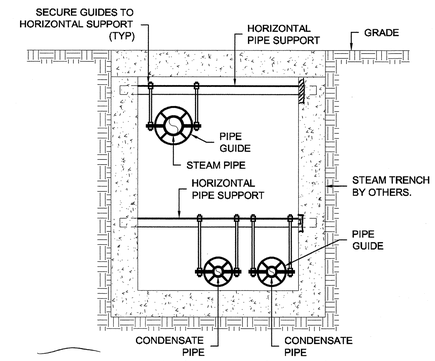
3 M002 STEAM MAIN END LINE DETAIL

SCALE: NONE



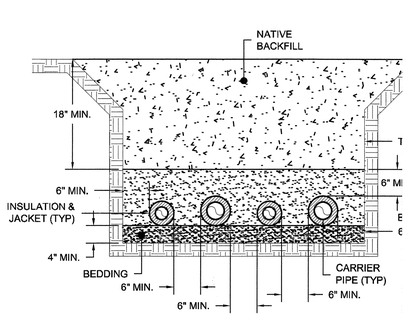
AM & CONDENSATE
NG SUPPORT DETAIL

NE



7 M002 STEAM & CONDENSATE PIPING GUIDE DETAIL

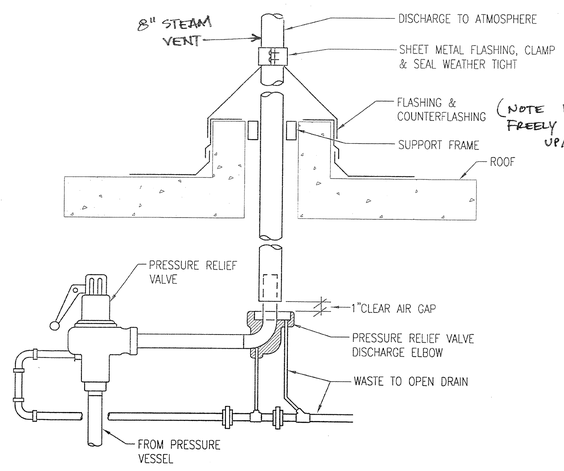
SCALE: NONE



NOTE:
PIPING, TRENCH & FILL SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE THRUST & ANCHOR BLOCKS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

4 M002 BURIED REFRIGERANT PIPING DETA

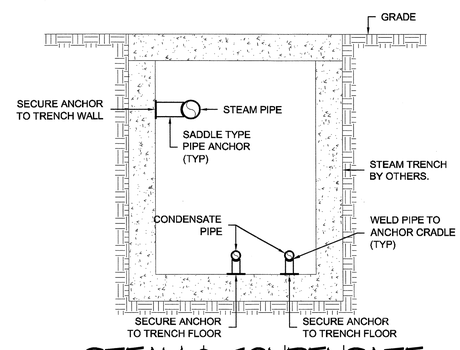
SCALE: NONE



PRESSURE RELIEF VENT DETAIL

SCALE:NONE

15720-10



8 M002 STEAM & CONDENSATE PIPING ANCHOR DETAIL

SCALE: NONE

LAST USED: MP31106
L:\CADRAWS\DETAILS\15720-10
P-W-MP

	DATE	DESCRIPTION
		STAL

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 998
141 Industrial Park
Lester, Pennsylvania
Tel (401) 783-7600
Fax (401) 783-3564
eds@korte-inc.com

SEAL

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ACTIVITY – SATISFACTORY TO

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REVIEW
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CHIEF ARCH./ ENGR.

DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

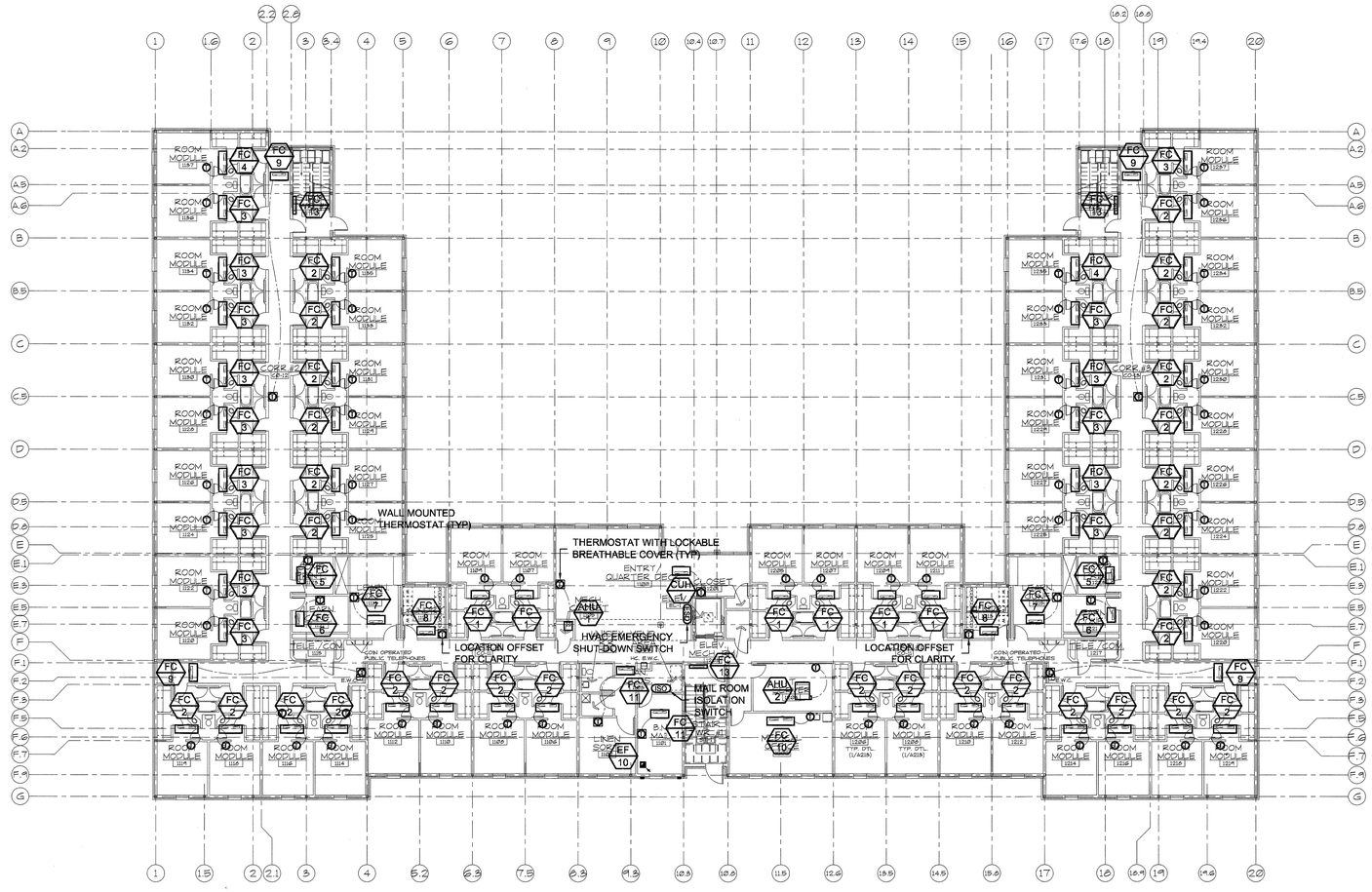
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT
NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL SITE DETAILS

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 | SIZE D
SCALE: 1:250
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225722
SHEET 2 OF 46

M002

DRAWFORM REVISION FEBRUARY



NORTH

1 / M101

FIRST FLOOR MECHANICAL EQUIPMENT PLAN

SCALE: 1/16" = 1'-0"

SEISMIC RESTRAINT NOTES:

1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
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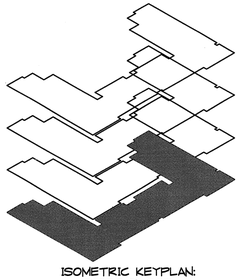

ISOMETRIC KEYPLAN: FIRST FLOOR

16 8 0 FEET 16 32

GRAPHIC SCALE: 1/16" = 1'-0"

STAL	DESCRIPTION	BY

KORTE — A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 980
1111 Industrial Drive
Stevensville, MI 49127
Tel (401) 783-7600
Fax (401) 783-7604
info@desig-serv.com

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ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA

NAVAL STATION NEWPORT
NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS

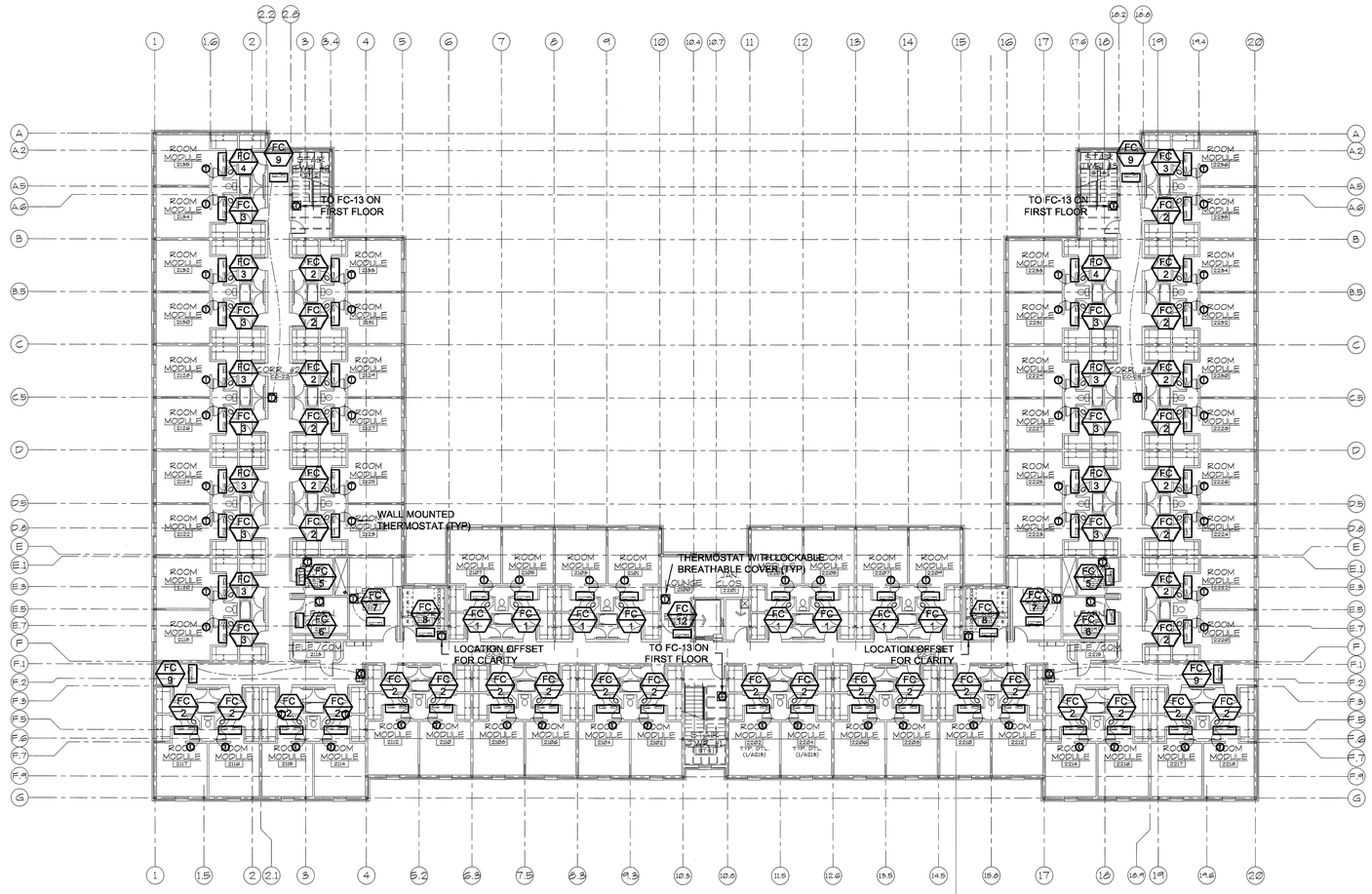
MECHANICAL FIRST FLOOR EQUIPMENT PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: 1/16" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225682	
SHEET 3 OF 46	

M101

DRAWFORM REVISION FEB/99



NORTH

1 M102

SECOND FLOOR MECHANICAL EQUIPMENT PLAN

SCALE: 1/16" = 1'-0"

SEISMIC RESTRAINT NOTES:

1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
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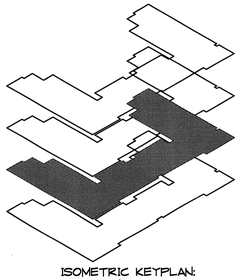

ISOMETRIC KEYPLAN: SECOND FLOOR

16 8 0 FEET 16 32

GRAPHIC SCALE: 1/16" = 1'-0"

NO.	DESCRIPTION	DATE	APPR.

KORTE — A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 380
141 Market Place
Middletown, DE 19709
Tel (302) 793-7333
Fax (302) 793-7334
info@designs-services.com

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ACTIVITY – SATISFACTORY TO

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FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

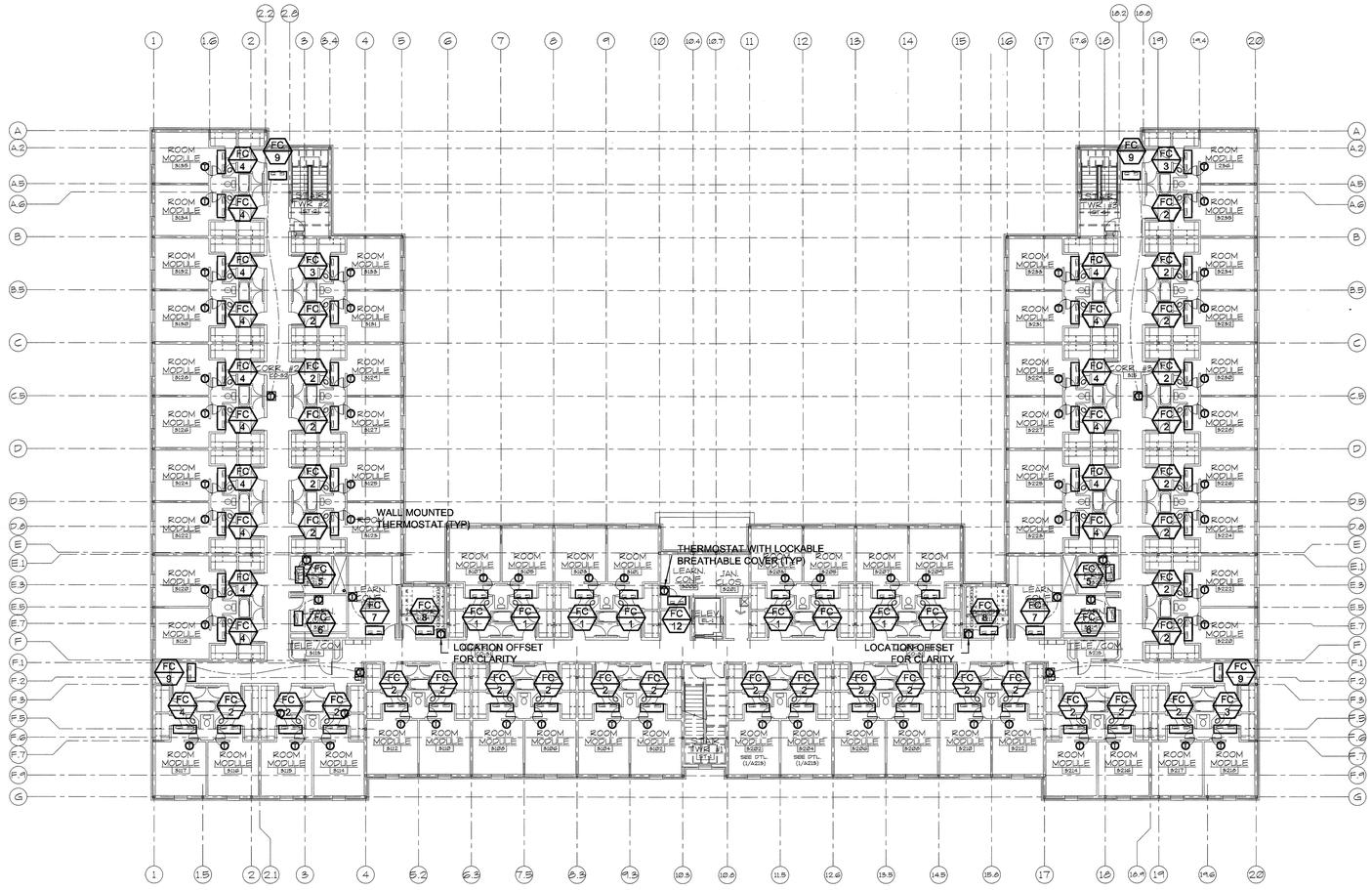
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
LESTER ENGINEERING FIELD ACTIVITY NORTHEAST PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL SECOND FLOOR EQUIPMENT PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: 1/16" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225683	
SHEET 4 OF 46	

M102

DRAWFORM REVISION FEBRUARY 2001



NORTH

1 M103

THIRD FLOOR MECHANICAL EQUIPMENT PLAN

SCALE: 1/16" = 1'-0"

SEISMIC RESTRAINT NOTES:

1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
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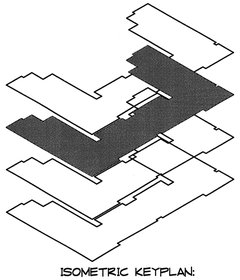
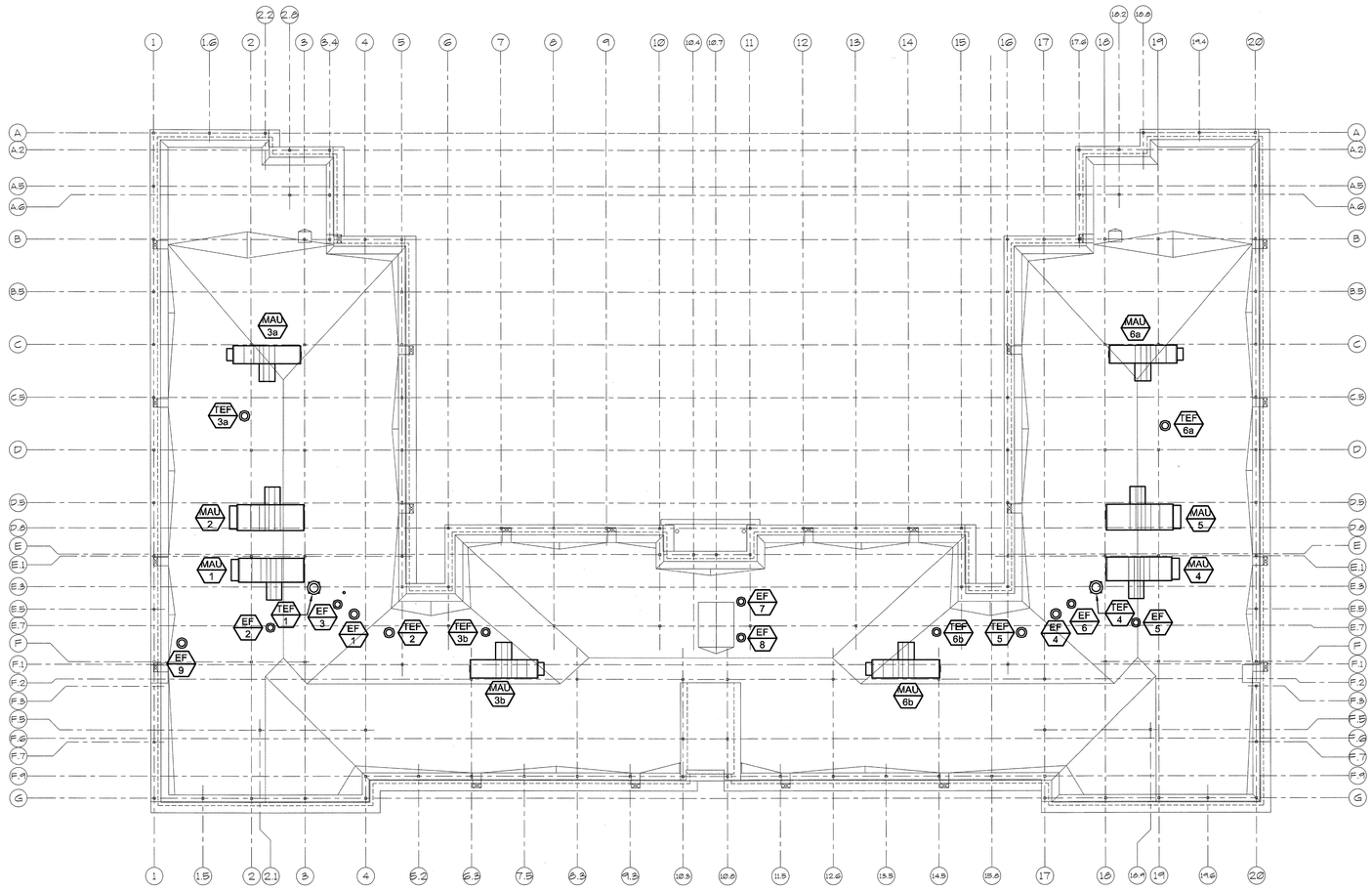


ISOMETRIC KEYPLAN: THIRD FLOOR

16 8 0 FEET 16 32

GRAPHIC SCALE: 1/16" = 1'-0"



NORTH

1 M104

ROOF MECHANICAL EQUIPMENT PLAN

SCALE: 1/16" = 1'-0"

SEISMIC RESTRAINT NOTES:

1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
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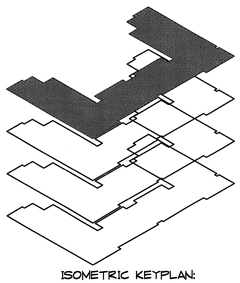

ISOMETRIC KEYPLAN: ROOF

16 8 0 FEET 16 32

GRAPHIC SCALE: 1/16" = 1'-0"

SYM.	DESCRIPTION	DATE	APPR.

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 981
101 Industrial Drive
Greenville, IN 47876
Tel (812) 923-8411
Fax (812) 923-7992
engineering-services.com

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FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.

DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

FOR CONSTRUCTION SUBMITTAL: 03-25-05

DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
NAVAL FACILITIES ENGINEERING COMMAND
LESTER PENNSYLVANIA

NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
NEWPORT, RI

BACHELOR'S ENLISTED QUARTERS

MECHANICAL ROOF EQUIPMENT PLAN

CODE ID. NO. 80091 | SIZE D

SCALE: 1/16" = 1'-0"

EFD NO.

EFA PROJ. NO.

SPEC. NO. 04-03-0006

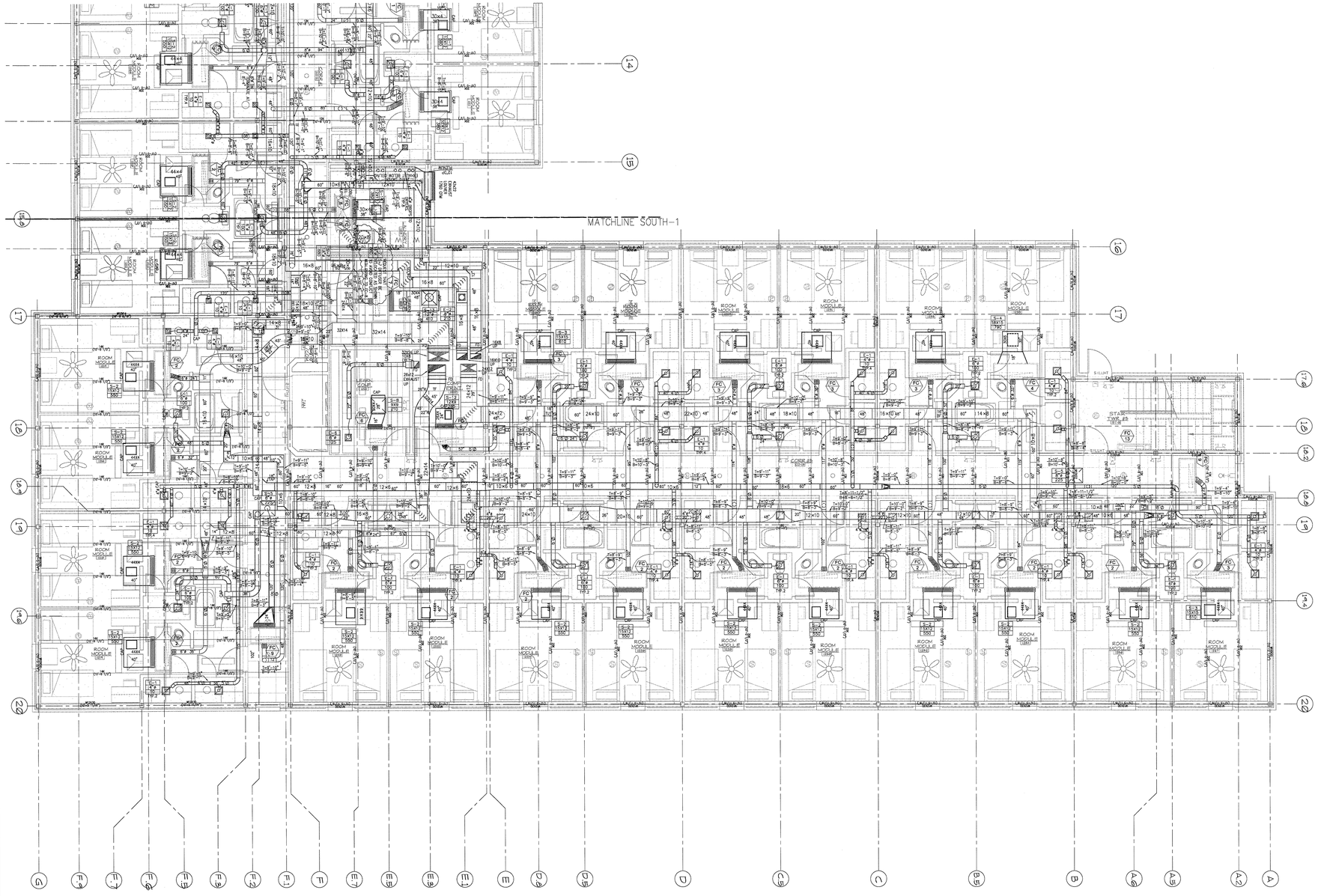
CONSTR. CONTR. NO. N62472-03-C-0006

NAVFAC DRAWING NO. 2225685

SHEET 6 OF 46

M104

DRAWFORM 50-



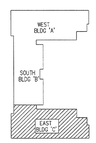
HUGHES
SHEET METAL, INC.

469 ALDEN STREET
FALL RIVER, MA 02723
TEL: (508) 678-3311
FAX: (508) 677-9565

PCD DRAFTING
PROFESSIONAL COORDINATION DRAWINGS FOR THE CONSTRUCTION TRADES
25 CARON ROAD
BEDFORD, NH 03110
TEL: 603.488-1773 FAX: 603.218.8970

NOTES:

1. THIS DRAWING IS TO AID IN THE PROCESS OF MECHANICAL INSTALLATION AND SHOULD BEREVIEWED BY THE MECHANICAL CONTRACTOR PRIOR TO FINAL DISTRIBUTION
2. ALL DUCT SIZES AND ELEVATIONS ARE TO BARE METAL. NO THERMAL INSULATION TAKEN INTO CONSIDERATION. PLEASE ALLOW TWO INCHES AROUND DUCT FOR CONNECTIONS, HANGERS AND INSULATION
3. ALL BRANCH DUCT TO HAVE VOLUME DAMPERS
4. ALL FINAL CONNECTIONS TO BE FIELD VERIFIED
5. ALL CEILING HEIGHTS AND DIFFUSER LOCATIONS TO BE REVIEWED BY ARCHITECT AND ENGINEER



REV.	DESCRIPTION	DATE

DEPT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST

OWNER

NAVAL ACADEMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS

PROJECT

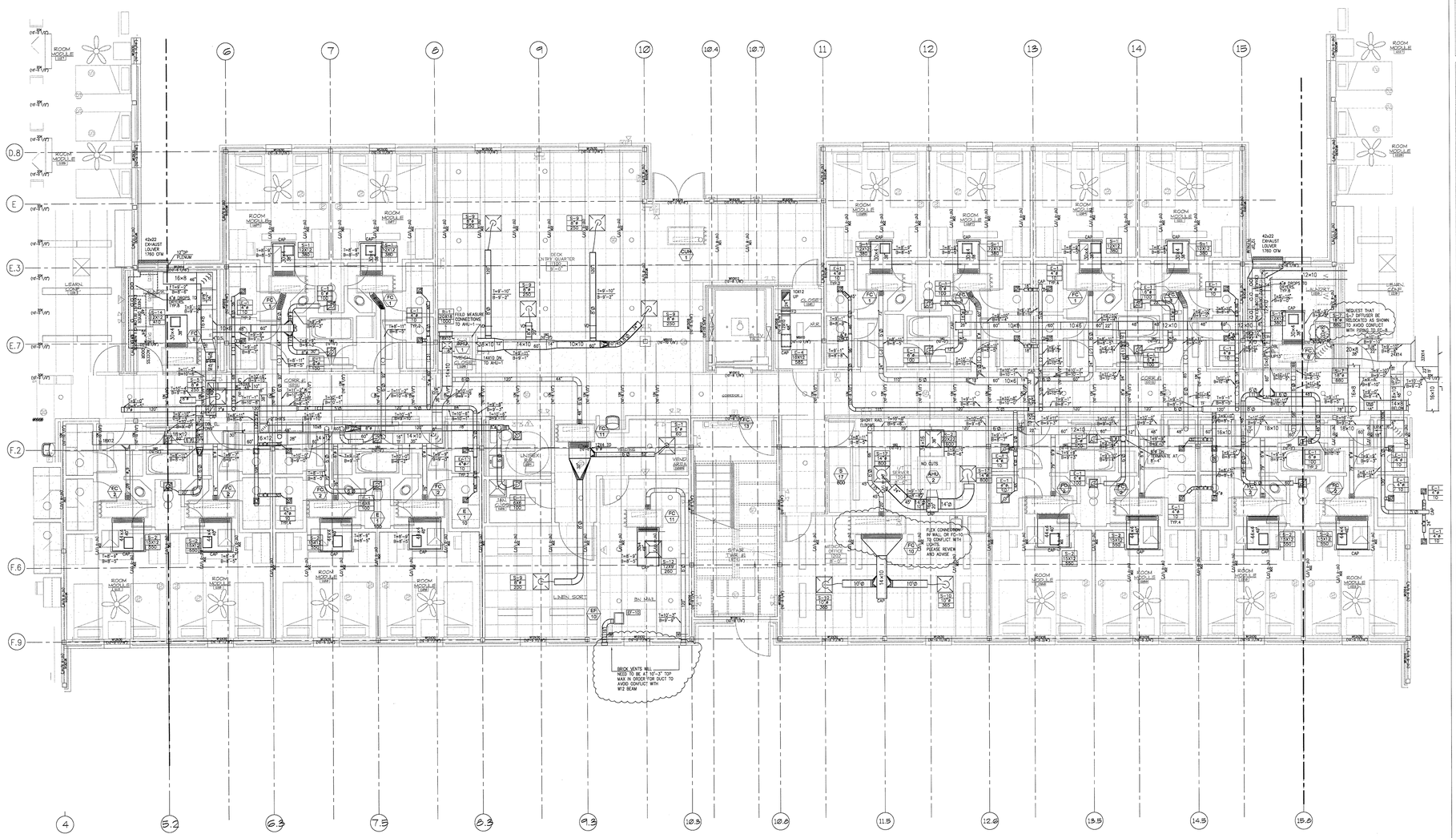
1ST FLOOR PART PLAN
EAST

DRAWING TITLE

ENGR: KORTE
DWG BY: DJB
SCALE: 1/4"=1'-0"
DATE: 09/02/05

EAST-1

DRAWING NUMBER



HUGHES
SHEET METAL, INC.

469 ALDEN STREET
FALL RIVER, MA 02723
TEL: (508) 678-3311
FAX: (508) 677-9565

PCD DRAFTING
PROFESSIONAL COORDINATION DRAWINGS
FOR THE MECHANICAL, PLUMBING TRADES
25 DAVIS ROAD
BEDFORD, NH 03110
TEL 603.488-1713 FAX 603.218.6320

NOTES:

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3. ALL BRANCH DUCT TO HAVE VOLUME DAMPERS
4. ALL FINAL CONNECTIONS TO BE FIELD VERIFIED
5. ALL CEILING HEIGHTS AND DIFFUSER LOCATIONS TO BE REVIEWED BY ARCHITECT AND ENGINEER

REV.	DESCRIPTION	DATE
1	COORD CHANGES	08/12/05

DEPT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST

OWNER

NAVAL ACADEMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS

PROJECT

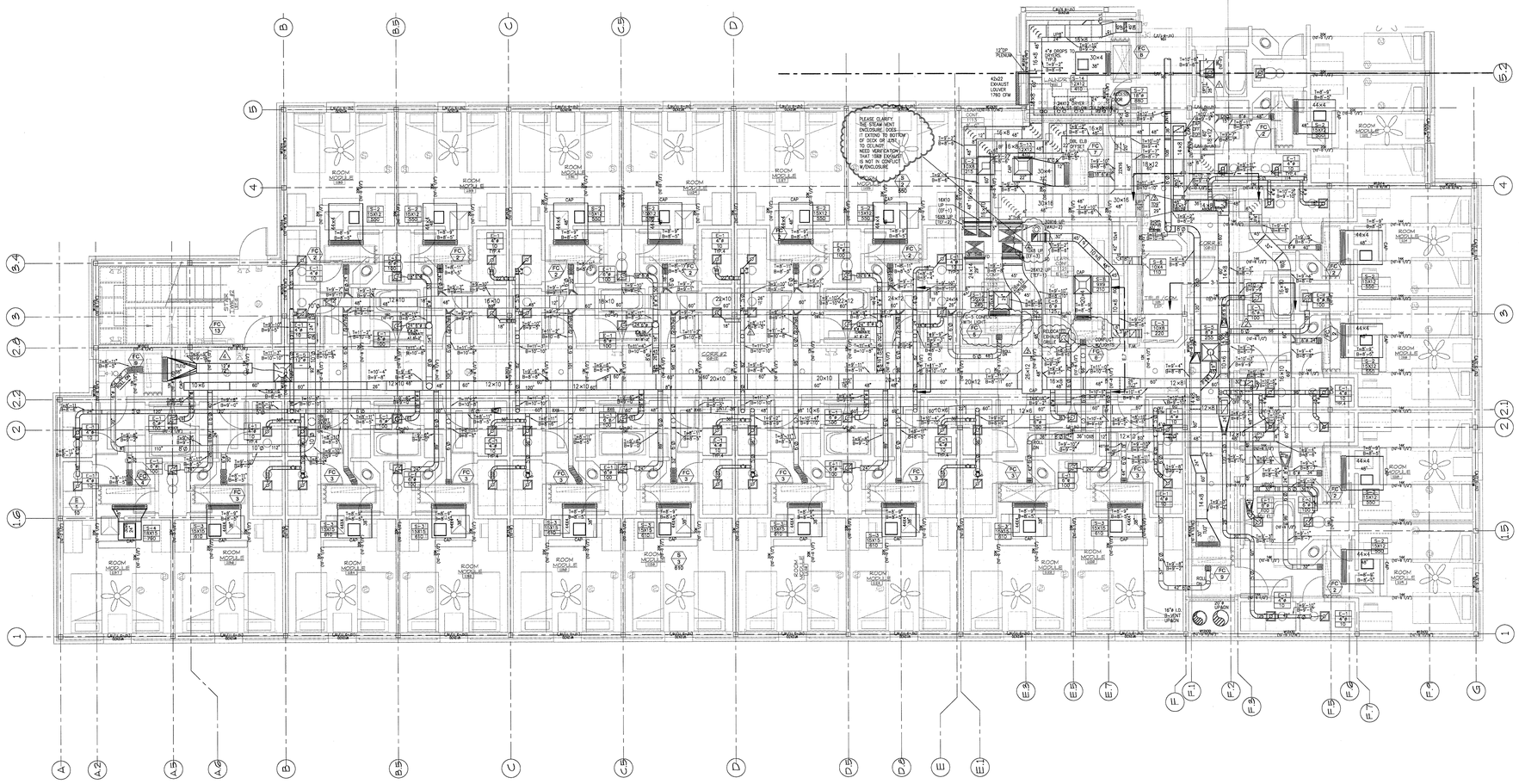
1ST FLOOR PART PLAN
SOUTH

DRAWING TITLE

ENGR: KORTE
DWG BY: DJB
SCALE: 1/4"=1'-0"
DATE: 7/11/05

SOUTH-1

DRAWING NUMBER



HUGHES
SHEET METAL, INC.

469 ALDEN STREET
FALL RIVER, MA 02723
TEL: (508) 678-3311
FAX: (508) 677-9565

PCD DRAFTING
PROFESSIONAL COORDINATION DRAWINGS FOR THE CONSTRUCTION TRADES
25 CARON ROAD
BEDFORD, NH 03110
TEL: 603-488-7715 FAX: 603.218.8320

NOTES:

1. THIS DRAWING IS TO AID IN THE PROCESS OF MECHANICAL INSTALLATION AND SHOULD BEREVIEWED BY THE MECHANICAL CONTRACTOR PRIOR TO FINAL DISTRIBUTION
2. ALL DUCT SIZES AND ELEVATIONS ARE TO BARE METAL. NO THERMAL INSULATION TAKEN INTO CONSIDERATION. PLEASE ALLOW TWO INCHES AROUND DUCT FOR CONNECTIONS, HANGERS AND INSULATION
3. ALL BRANCH DUCT TO HAVE VOLUME DAMPERS
4. ALL FINAL CONNECTIONS TO BE FIELD VERIFIED
5. ALL CEILING HEIGHTS AND DIFFUSER LOCATIONS TO BE REVIEWED BY ARCHITECT AND ENGINEER

REV.	DESCRIPTION	DATE
1	COORD CHANGES	06/29/05
2	COORD CHANGES	07/21/05
3	COORD CHANGES	07/28/05
4	COORD CHANGES	08/12/05

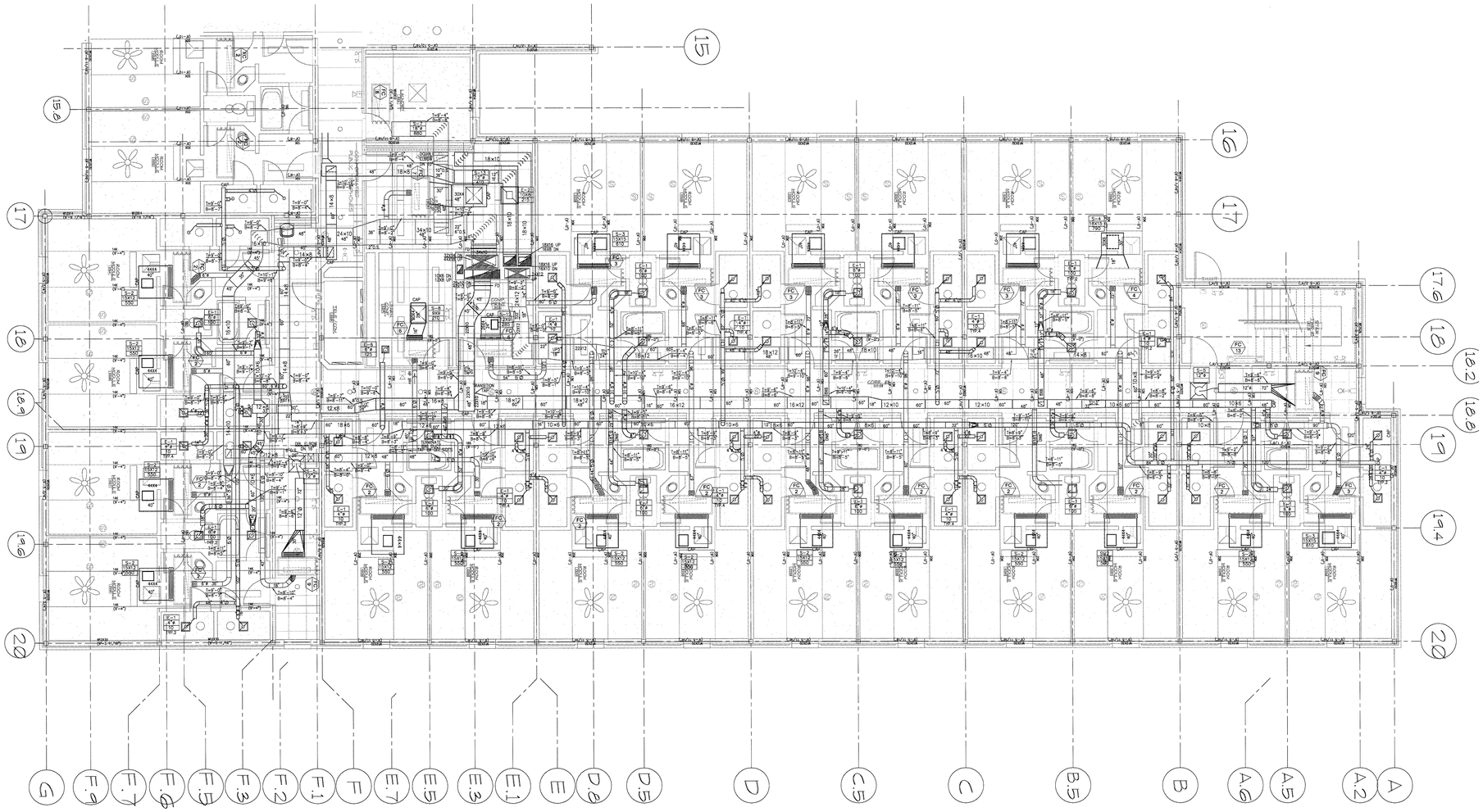
OWNER: DEPT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST

PROJECT: NAVAL ACADEMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS

DRAWING TITLE: **1ST FLOOR PART PLAN**
WEST
AREA 'A'

ENGR: KORTE
DWG BY: DJB
SCALE: 1/4"=1'-0"
DATE: 06/27/05

DRAWING NUMBER: WEST-1



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FALL RIVER, MA 02723
TEL: (508) 678-3311
FAX: (508) 677-9565

PCD DRAFTING
PROFESSIONAL COORDINATION DRAWINGS FOR THE CONSTRUCTION TRADES
25 CARON ROAD
NEWPORT, RI 02840
TEL: 603.488-1715 FAX: 603.218.8970

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REV.	DESCRIPTION	DATE

DEPT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST

OWNER

NAVAL ACADEMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS

PROJECT

2ND FLOOR PART PLAN
EAST

DRAWING TITLE

ENGR: KORTE

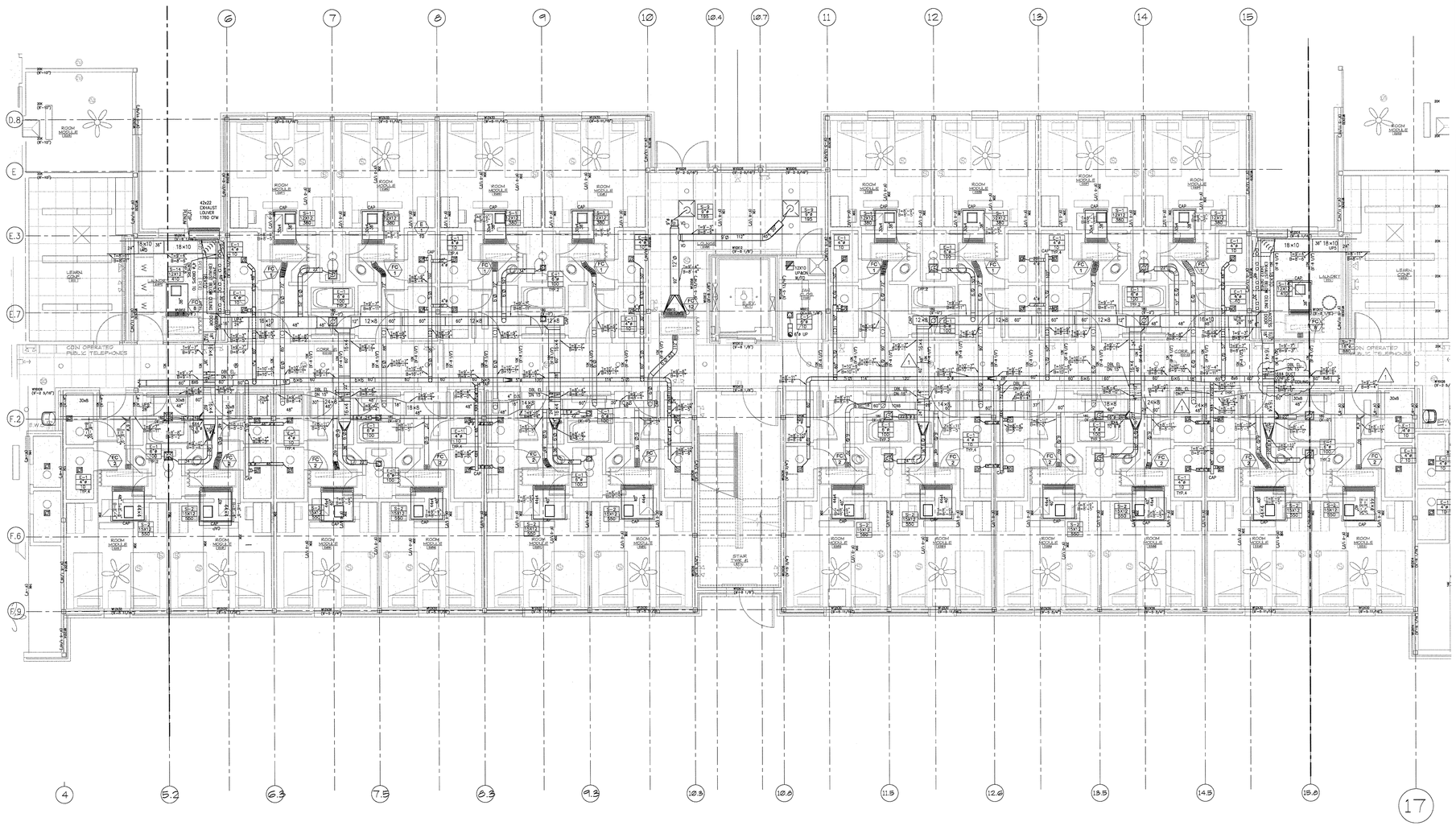
DWG BY: DJB

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

DATE: 09/14/05

EAST-2

DRAWING NUMBER



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469 ALDEN STREET
FALL RIVER, MA 02723
TEL: (508) 678-3311
FAX: (508) 677-9565

FCD DRAFTING
PROFESSIONAL COORDINATION DRAWINGS
FOR THE MECHANICAL TRADES
23 OWEN ROAD
BEDFORD, NH 03110
TEL 603.488-1775 FAX 603.218.6320

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REV.	DESCRIPTION	DATE
2	COORD. CHANGES	08/18/05

DEPT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST

OWNER

NAVAL ACADEMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS

PROJECT

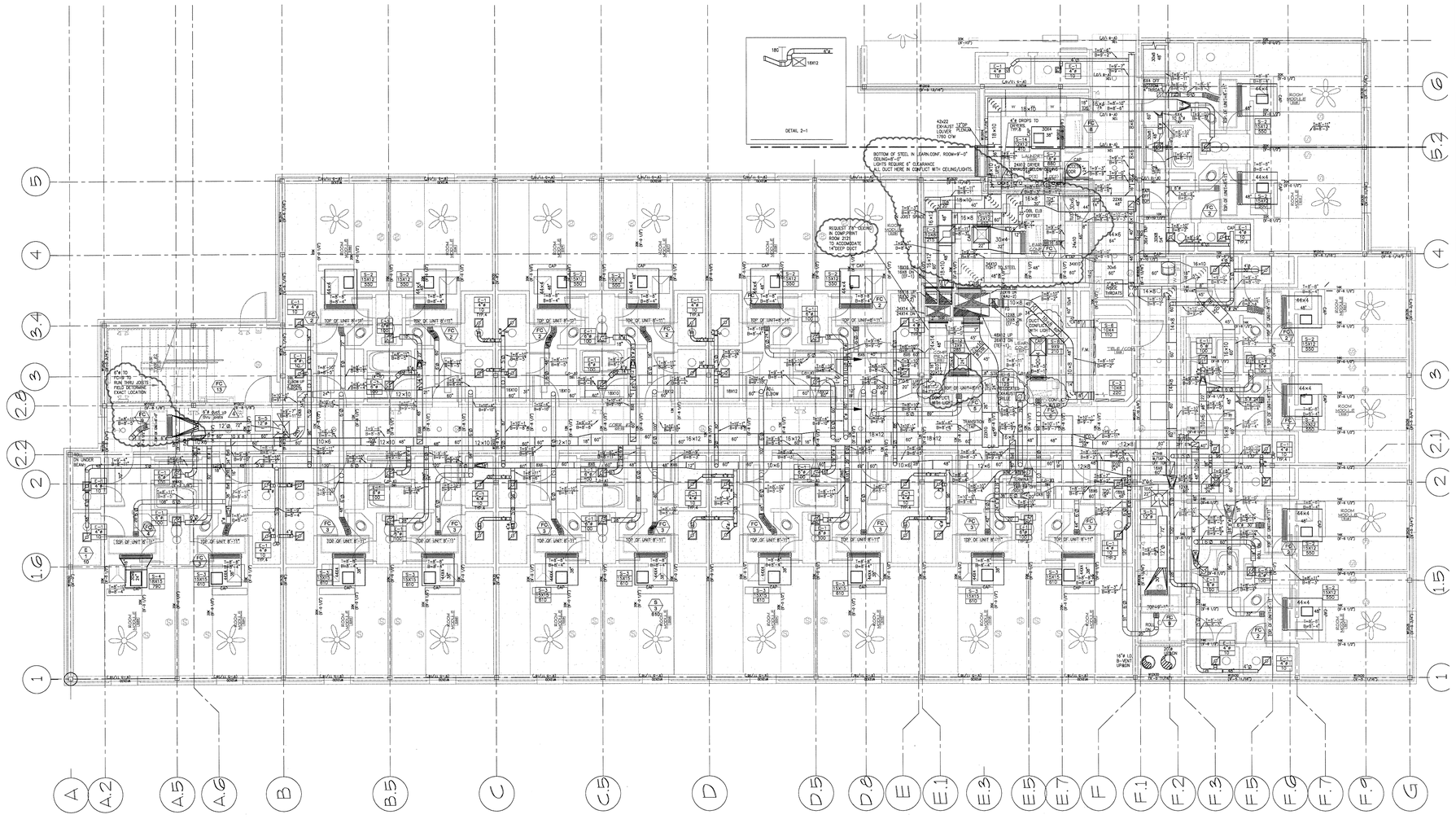
2ND FLOOR PART PLAN
SOUTH

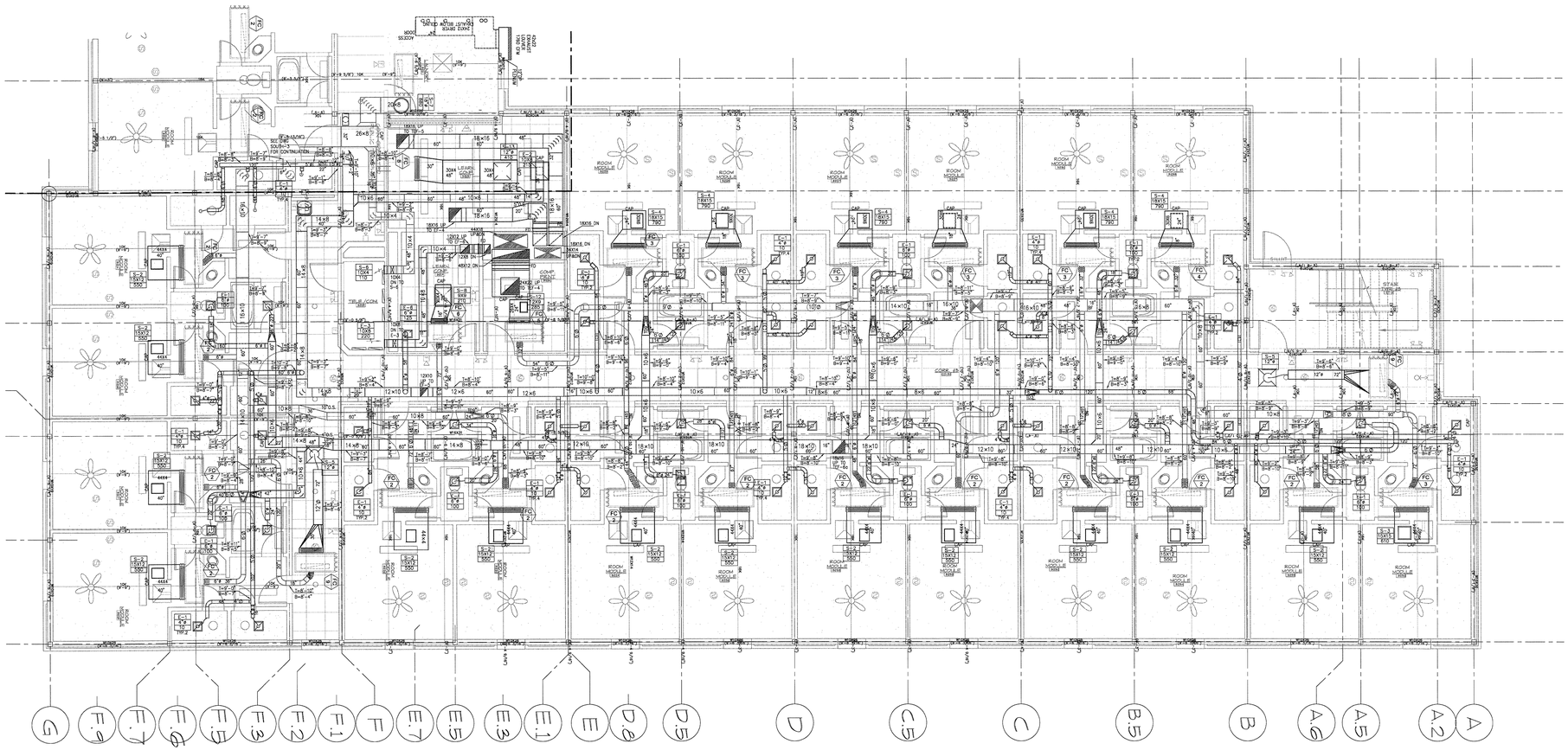
DRAWING TITLE

ENGR: KORTE
DWG BY: DJB
SCALE: 1/4"=1'-0"
DATE: 8/11/05

SOUTH-2

DRAWING NUMBER


DETAIL 2-1
BOTTOM OF STEEL IN LEARN.CONF. ROOM=9'-0"
CEILING=8'-0"
LIGHTS REQUIRE 6" CLEARANCE
ALL DUCT HERE IN CONFLICT WITH CEILING/LIGHTS.
REQUEST 24" CLEARANCE IN COMP.PRINT ROOM 222 TO ACCOMODATE 14"DEEP DUCT
6"x 10 YOUR TO RUN THRU JOISTS FIELD DETERMINE EXACT LOCATION
42x22 EXHAUST 22"DIA LOUVER PLENUM 1750 CFM
16"x 10 B-VENT UPWDN
TOP OF UNIT=8'-11"
TOP OF UNIT=8'-10"
TOP OF UNIT=8'-9"
TOP OF UNIT=8'-7"
TOP OF UNIT=8'-5"
TOP OF UNIT=8'-3"
TOP OF UNIT=8'-1"
TOP OF UNIT=8'-0"
TOP OF UNIT=7'-11"
TOP OF UNIT=7'-10"
TOP OF UNIT=7'-9"
TOP OF UNIT=7'-7"
TOP OF UNIT=7'-5"
TOP OF UNIT=7'-3"
TOP OF UNIT=7'-1"
TOP OF UNIT=7'-0"
TOP OF UNIT=6'-11"
TOP OF UNIT=6'-10"
TOP OF UNIT=6'-9"
TOP OF UNIT=6'-7"
TOP OF UNIT=6'-5"
TOP OF UNIT=6'-3"
TOP OF UNIT=6'-1"
TOP OF UNIT=6'-0"
TOP OF UNIT=5'-11"
TOP OF UNIT=5'-10"
TOP OF UNIT=5'-9"
TOP OF UNIT=5'-7"
TOP OF UNIT=5'-5"
TOP OF UNIT=5'-3"
TOP OF UNIT=5'-1"
TOP OF UNIT=5'-0"
16"x 10 B-VENT UPWDN
CIRCUIT SLAB SOFFIT
ROOM MODULE 1287
ROOM MODULE 1288
ROOM MODULE 1289
ROOM MODULE 1290
ROOM MODULE 1291
ROOM MODULE 1292
ROOM MODULE 1293
ROOM MODULE 1294
ROOM MODULE 1295
ROOM MODULE 1296
ROOM MODULE 1297
ROOM MODULE 1298
ROOM MODULE 1299
ROOM MODULE



HUGHES
SHEET METAL, INC.

469 ALDEN STREET
FALL RIVER, MA 02732
TEL: (508) 678-3311
FAX: (508) 677-9565

PCD DRAFTING
PROFESSIONAL COORDINATION DRAWINGS FOR THE CONSTRUCTION TRADES
BOX 1
BEDFORD, NH 03110
TEL. 603.488-1715 FAX. 603.218.8970

NOTES:

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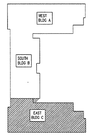


REV.	DESCRIPTION	DATE

DEPT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST

OWNER

NAVAL ACADEMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS

PROJECT

3RD FLOOR PART PLAN
EAST

DRAWING TITLE

ENGR: KORTE

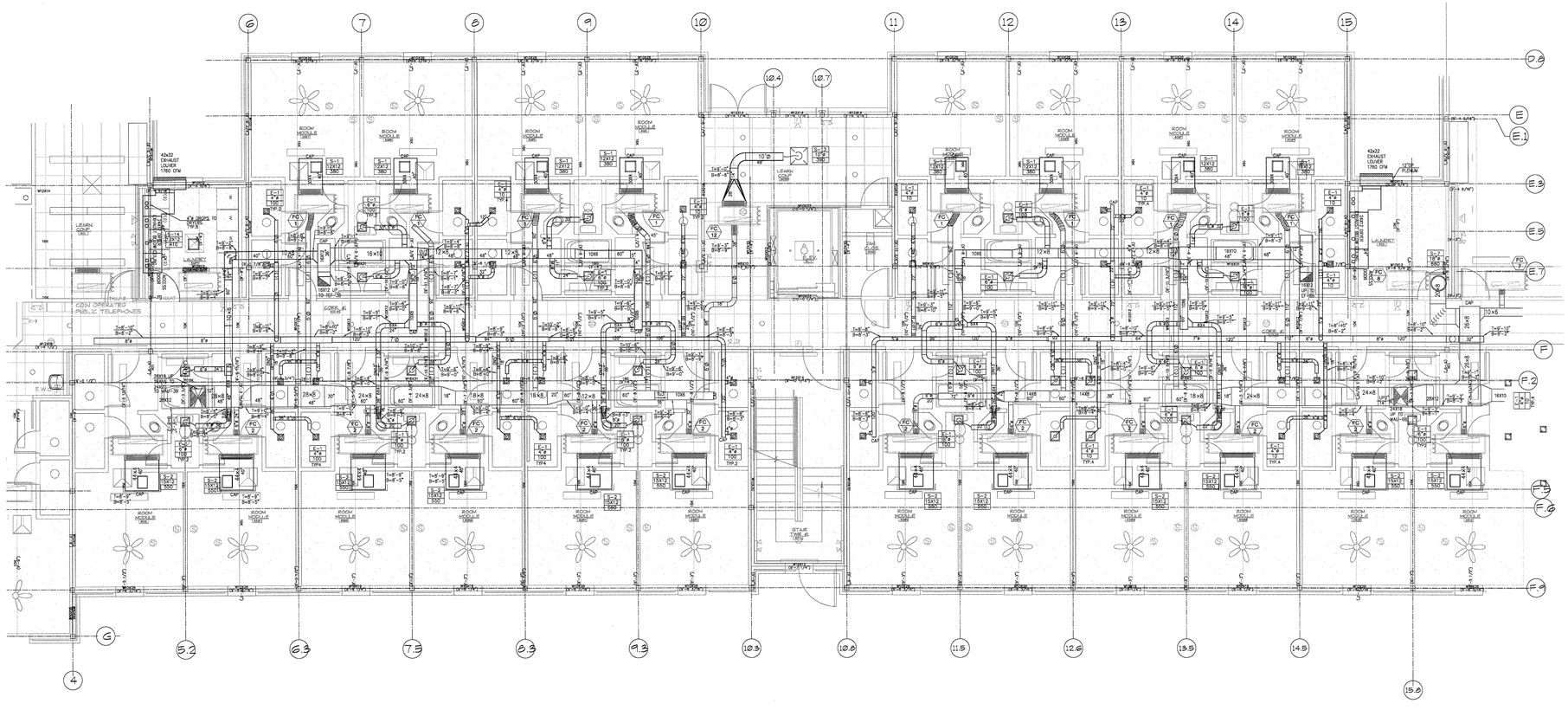
DWG BY: DJB

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

DATE: 09/19/05

EAST-3

DRAWING NUMBER



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25 CARON ROAD
BEDFORD, NH 03110
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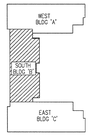


REV.	DESCRIPTION	DATE

DEPT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST

OWNER

NAVAL ACADEMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS

PROJECT

3RD FLOOR PART PLAN
SOUTH

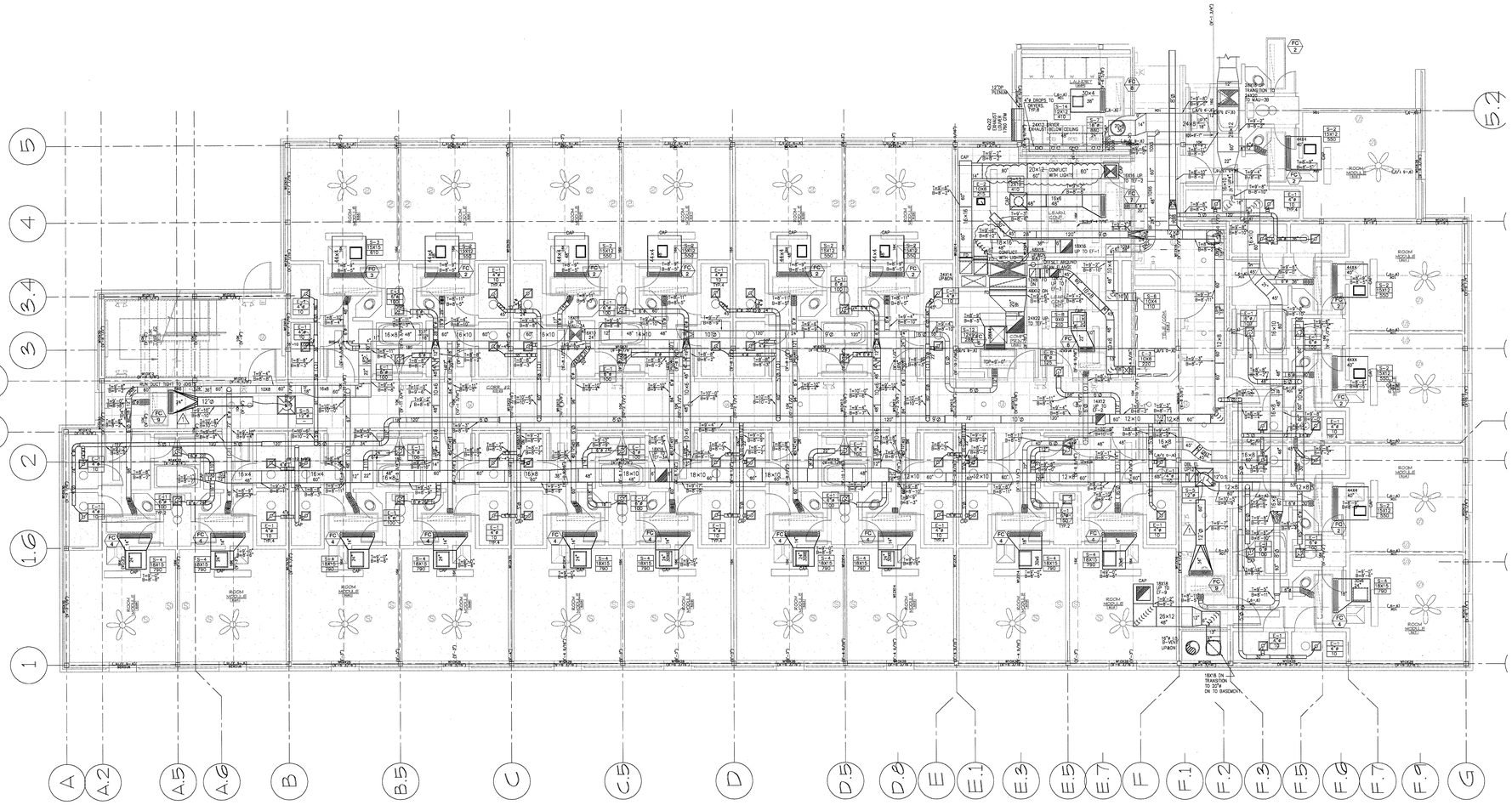
DRAWING TITLE

ENGR: KORTE | DWG BY: DJB

SCALE: 1/4"=1'-0" | DATE: 8/19/05

SOUTH-3

DRAWING NUMBER


5
4
3.4
3
2.8
2.2
2
1.6
1
A
A.2
A.5
A.6
B
B.5
C
C.5
D
D.5
D.6
E
E.1
E.3
E.5
E.7
F
F.1
F.2
F.3
F.5
F.6
F.7
F.9
G
5.2
ROOM MODULE 1910
ROOM MODULE 1911
ROOM MODULE 1912
ROOM MODULE 1913
ROOM MODULE 1914
ROOM MODULE 1915
ROOM MODULE 1916
ROOM MODULE 1917
ROOM MODULE 1918
ROOM MODULE 1919
ROOM MODULE 1920
ROOM MODULE 1921
ROOM MODULE 1922
ROOM MODULE

Tom Maran

From: Larry D. Swartz [larrys@notkin.us]
Sent: Tuesday, November 15, 2005 5:01 PM
To: Jay Korte
Cc: Floyd Hollenkamp; Tom Martin; Tom Maran; Lucas Rives
Subject: RE: Hallway Fan coil Units

Attachments: beq-revised-plans.zip

beq-revised-plans.zip (7 MB)

Jay:

In response to the Hallway Fan coil unit issue. I think we should go ahead and use the fresh air duct for providing additional air to the corridors to maintain good ventilation in these areas.

In order to provide a clear concept I have marked up a set of floor plans indicating the new ductwork and diffusers required. In addition the reconfigurations for the FCU boxes on the ends of the corridors.

We are supplying a small amount in the overall scheme of ventilation directly from the fresh air duct (Less than 20% of the total airflow to the corridor). What this will do is IMPROVE indoor air quality with I believe only minor if any temperature complaints.

See the attached scanned drawings for my recommendations.

LARRY D. SWARTZ, PE

Partner

direct 206.267.4904

notkin

mechanical engineers

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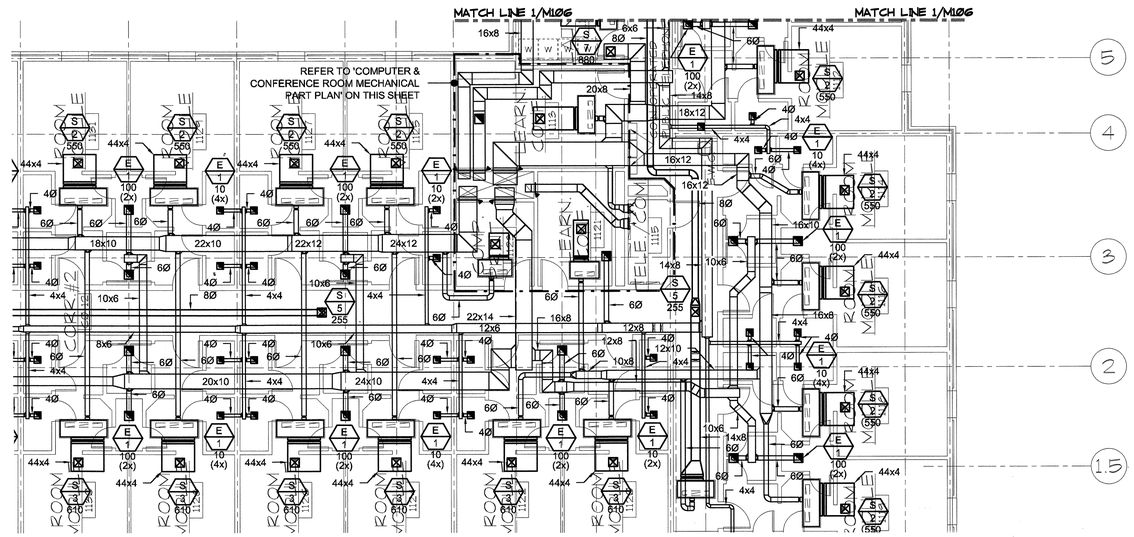
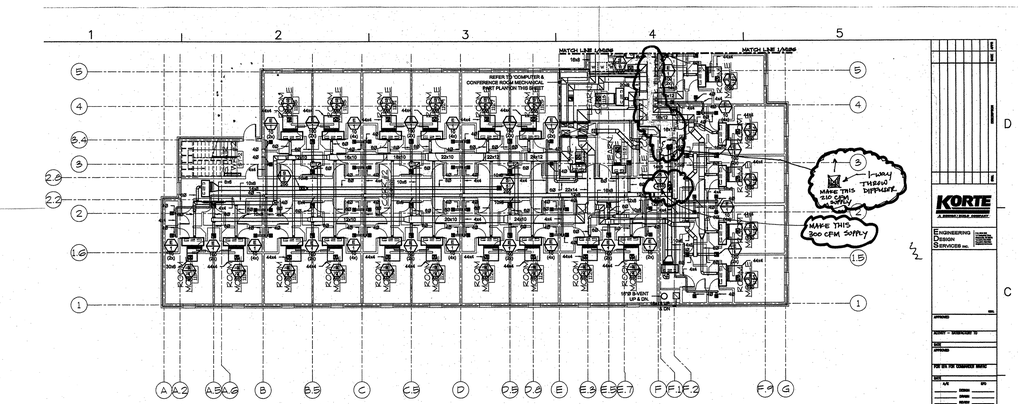
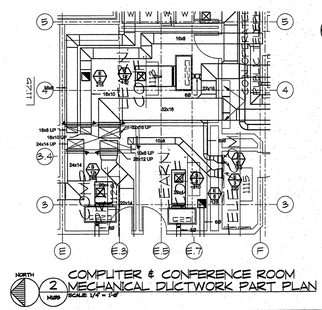
-----Original Message-----
From: Jay Korte [mailto:jay.korte@korteco.com]
Sent: Wednesday, November 02, 2005 9:53 AM
To: Larry D. Swartz
Cc: Floyd Hollenkamp; tmartin.rendlakeplbg@starband.net; Tom Maran; Lucas Rives
Subject: Fw: Hallway Fan coil Units

This becomes an assessment of risk for Korte. Dan said he would not stand in our way, but if it caused apparent problems during the first year he would look to us to solve the situation. This would be similar to any other aspect of the design.

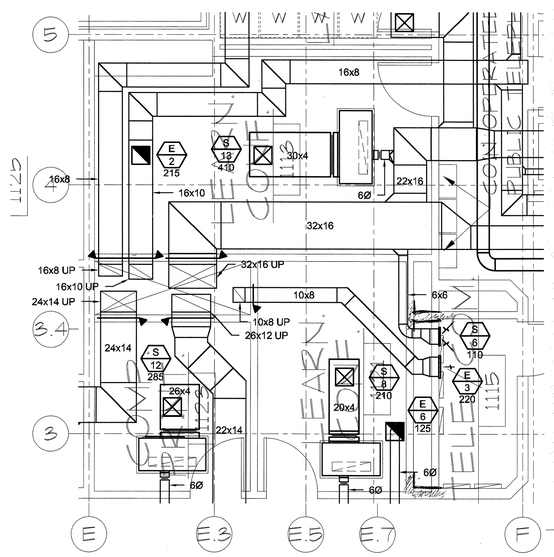




NORTH 1 M105 PARTIAL FIRST FLOOR MECHANICAL DUCTWORK PLAN
SCALE: 1/8" = 1'-0"



NORTH 2 M105 COMPUTER & CONFERENCE ROOM MECHANICAL DUCTWORK PART PLAN
SCALE: 1/4" = 1'-0"

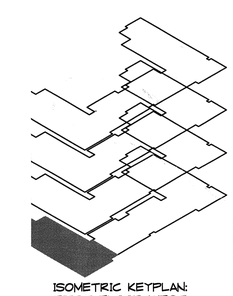


NORTH 2 M105 COMPUTER & CONFERENCE ROOM MECHANICAL DUCTWORK PART PLAN
SCALE: 1/4" = 1'-0"

DAMPER NOTE:
VOLUME DAMPERS SHALL BE PROVIDED AS REQUIRED TO FACILITATE BALANCING. AT A MINIMUM VOLUME DAMPERS SHALL BE LOCATED AT ALL DUCT BRANCH TAKE-OFFS. ALL DAMPERS SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

AND METHODS. CONTRACTOR SHALL SUBMIT A REPORT OUTLINING THE STRUCTURAL ENGINEER'S REVIEW AS WELL AS SEISMIC RESTRAINT SHOP DRAWINGS AND SUPPORTING CALCULATIONS PREPARED BY THE PROFESSIONAL STRUCTURAL ENGINEER FOR REVIEW BY THE ARCHITECT.

3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.



ISOMETRIC KEYPLAN: FIRST FLOOR WEST

8 4 0 FEET 8 16
GRAPHIC SCALE: 1/8" = 1'-0"

4 2 0 FEET 4 8
GRAPHIC SCALE: 1/4" = 1'-0"

KORTE — A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 580
1-1 Industrial Drive
Stonerville, NI 08876
Phone (973) 765-0000
Fax (973) 765-0004
engineering-service.com

APPROVED
ACTIVITY – SATISFACTORY TO
DATE
APPROVED
FOR EFA FOR COMMANDER NAVFAC
DATE
A/E EFD
DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

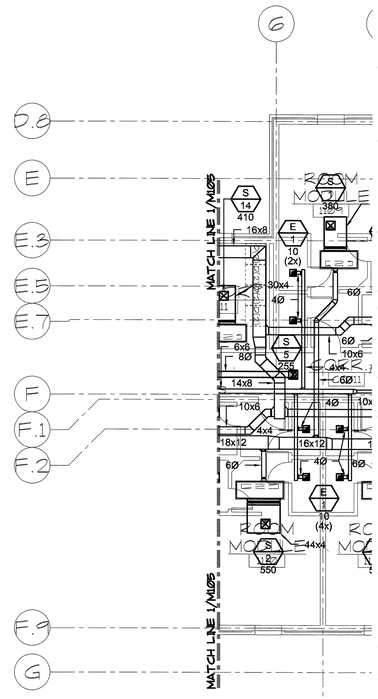
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
NEWPORT, RI
BACHELOR'S ENLISTED QUARTERS
MECHANICAL FIRST FLOOR DUCTWORK PLAN

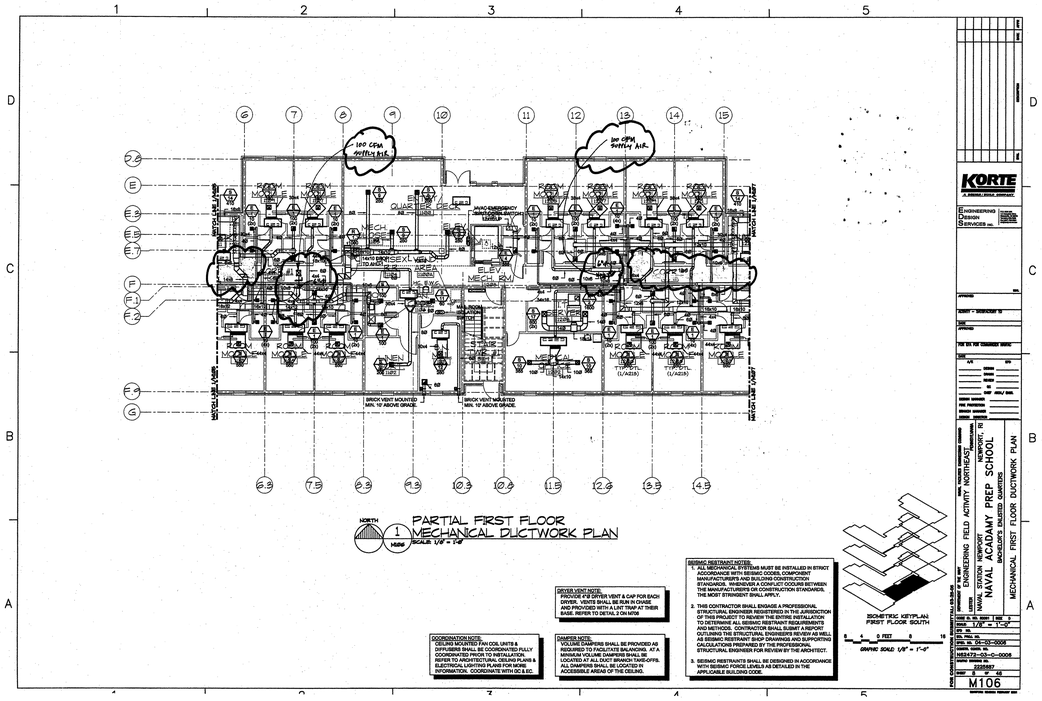
CODE ID. NO. 80091	SIZE D
SCALE: 1/8" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225686	
SHEET 6 OF 46	

M105

FOR CONSTRUCTION SUBMITTAL 03-25-05

DRAWFORM REVISION FEBRUARY 2001



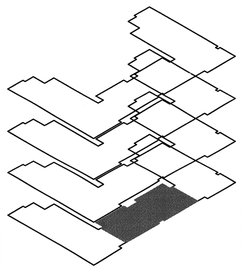


NORTH 1 M106 PARTIAL FIRST FLOOR MECHANICAL DUCTWORK PLAN
SCALE: 1/8" = 1'-0"

ISOMETRIC KEYPLAN FIRST FLOOR SOUTH

GRAPHIC SCALE: 1/8" = 1'-0"

NORTH 1 M106 PARTIAL FIRST FLOOR MECHANICAL DUCTWORK PLAN
SCALE: 1/8" = 1'-0"



ISOMETRIC KEYPLAN FIRST FLOOR SOUTH

8 4 0 FEET 8 16

GRAPHIC SCALE: 1/8" = 1'-0"

DRYER VENT NOTE:
PROVIDE 4"Ø DRYER VENT & CAP FOR EACH DRYER. VENTS SHALL BE RUN IN CHASE AND PROVIDED WITH A LINT TRAP AT THEIR BASE. REFER TO DETAIL 2 ON M706

COORDINATION NOTE:
CEILING MOUNTED FAN COIL UNITS & DIFFUSERS SHALL BE COORDINATED FULLY COORDINATED PRIOR TO INSTALLATION. REFER TO ARCHITECTURAL CEILING PLANS & ELECTRICAL LIGHTING PLANS FOR MORE INFORMATION. COORDINATE WITH GC & EC.

DAMPER NOTE:
VOLUME DAMPERS SHALL BE PROVIDED AS REQUIRED TO FACILITATE BALANCING. AT A MINIMUM VOLUME DAMPERS SHALL BE LOCATED AT ALL DUCT BRANCH TAKE-OFFS. ALL DAMPERS SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

SEISMIC RESTRAINT NOTES:
1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
2. THIS CONTRACTOR SHALL ENGAGE A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE JURISDICTION OF THIS PROJECT TO REVIEW THE ENTIRE INSTALLATION TO DETERMINE ALL SEISMIC RESTRAINT REQUIREMENTS AND METHODS. CONTRACTOR SHALL SUBMIT A REPORT OUTLINING THE STRUCTURAL ENGINEER'S REVIEW AS WELL AS SEISMIC RESTRAINT SHOP DRAWINGS AND SUPPORTING CALCULATIONS PREPARED BY THE PROFESSIONAL STRUCTURAL ENGINEER FOR REVIEW BY THE ARCHITECT.
3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.

FOR CONSTRUCTION SUBMITTAL: 03-25-05

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER, PENNSYLVANIA
NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
NEWPORT, RI
BACHELOR'S ENLISTED QUARTERS
MECHANICAL FIRST FLOOR DUCTWORK PLAN

CODE ID. NO. 60091	SIZE D
SCALE: 1/8" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225687	
SHEET 8 OF 46	
M106	

DRAWFORM REVISION FEBRUARY 2001

STAL	DESCRIPTION	DATE	APPR

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 380
141 Bluebirds Drive
Shawsville, PA 18376
Phone (610) 760-7500
Fax (610) 760-7504
info@desig-serv.com

SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

DATE

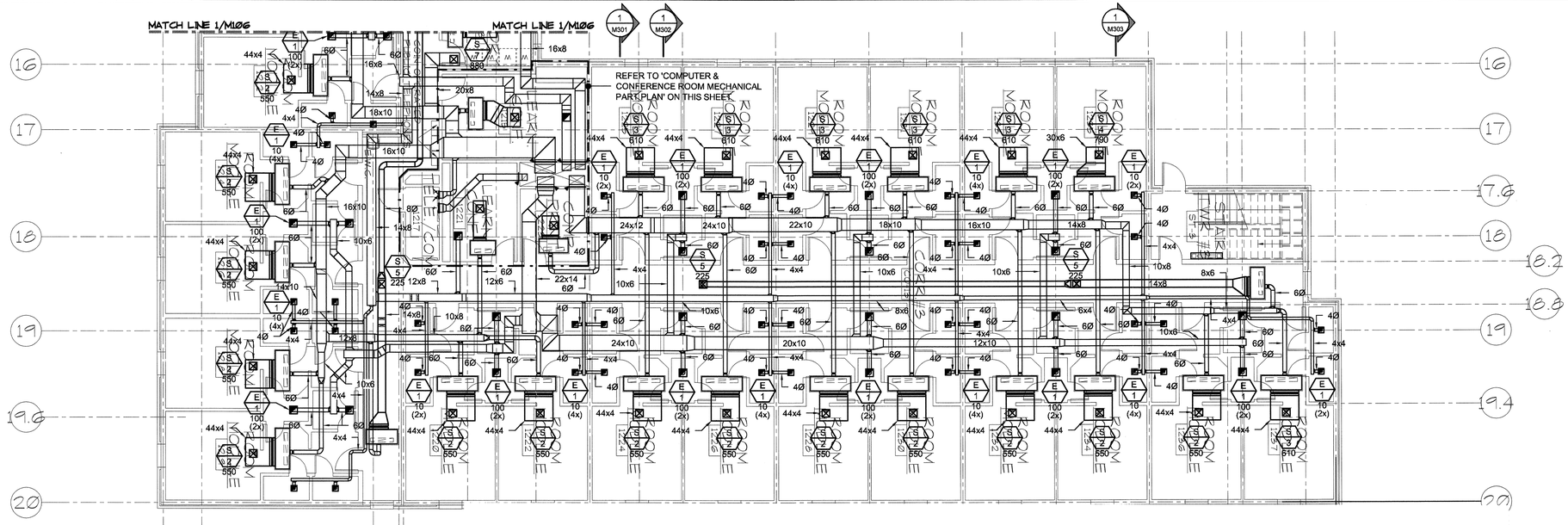
APPROVED

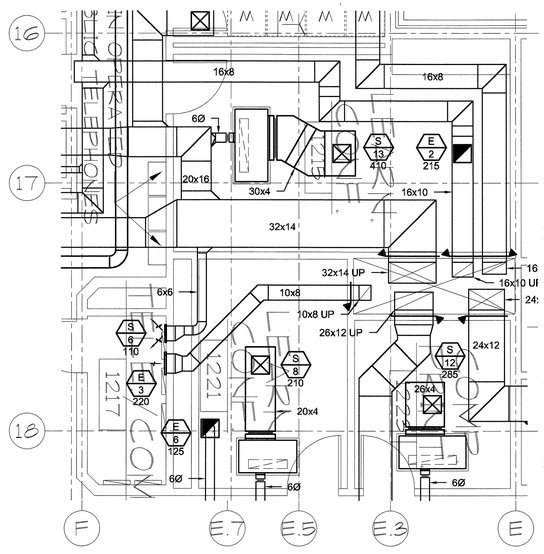
FOR EFA FOR COMMANDER NAVFAC

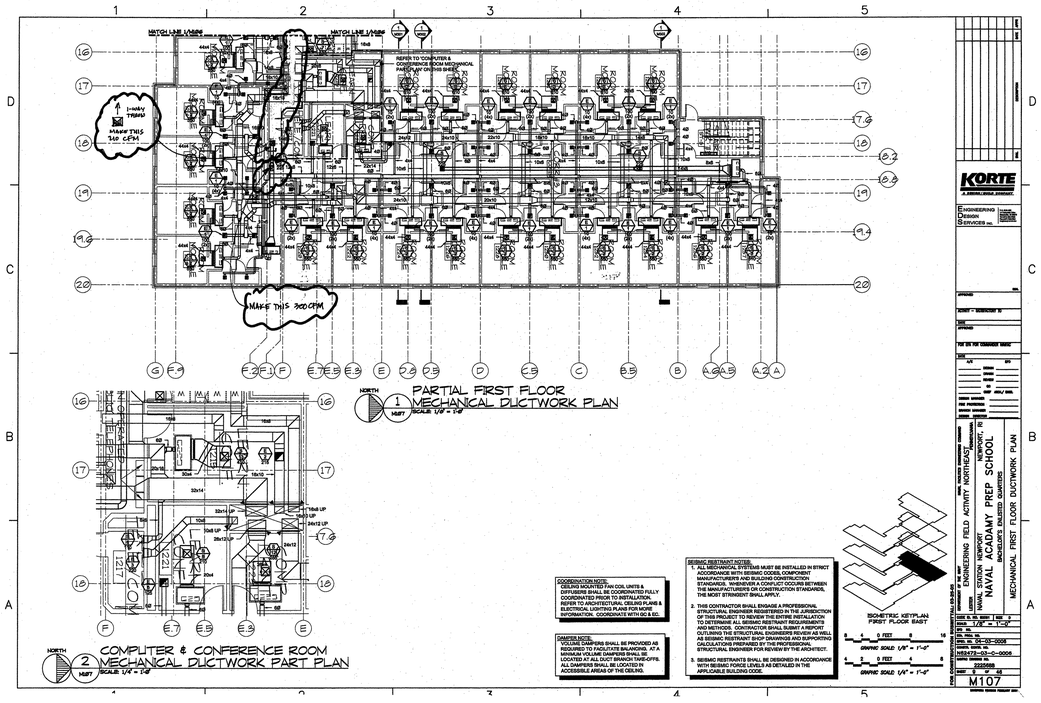
DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR



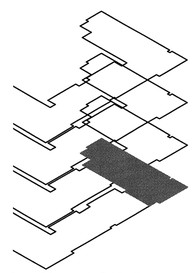




COORDINATION NOTE:
CEILING MOUNTED FAN COIL UNITS & DIFFUSERS SHALL BE COORDINATED FULLY COORDINATED PRIOR TO INSTALLATION. REFER TO ARCHITECTURAL CEILING PLANS & ELECTRICAL LIGHTING PLANS FOR MORE INFORMATION. COORDINATE WITH GC & EC.

DAMPER NOTE:
ALL MOTORIZED DAMPERS SHALL BE PROVIDED AS REQUIRED TO FACILITATE BALANCING. AT A MINIMUM VOLUME DAMPERS SHALL BE LOCATED AT ALL DUCT BRANCH TAKE-OFFS. ALL DAMPERS SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

SEISMIC RESTRAINT NOTES:
1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S, MANUFACTURERS AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURERS OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
2. THIS CONTRACTOR SHALL ENGAGE A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE JURISDICTION OF THIS PROJECT TO REVIEW THE ENTIRE INSTALLATION TO DETERMINE ALL SEISMIC RESTRAINT REQUIREMENTS TO DETAILS. CONTRACTOR SHALL SUBMIT A REPORT OUTLINING THE STRUCTURAL ENGINEERS REVIEW AS WELL AS SEISMIC RESTRAINT SHOP DRAWINGS AND SUPPORTING CALCULATION BEARING THE SEAL OF THE PROFESSIONAL STRUCTURAL ENGINEER FOR REVIEW BY THE ARCHITECT.
3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.



ISOMETRIC KETPLAN:
FIRST FLOOR EAST

0 FEET 8 16
GRAPHIC SCALE: 1/8" = 1'-0"

4 2 0 FEET 4 8
GRAPHIC SCALE: 1/4" = 1'-0"

NORTH

2 M107 COMPUTER & CONFERENCE ROOM MECHANICAL DUCTWORK PART PLAN

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

APPR	DATE	DESCRIPTION	STAL

KORTE
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ENGINEERING DESIGN SERVICES INC.
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info@desig-services.com

SEAL

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DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E	EFD
	DESIGN
	DRAWN
	REVIEW
	QC
	CHIEF ARCH./ ENGR.
DESIGN MANAGER	
FIRE PROTECTION	
BRANCH MANAGER	
DESIGN DIRECTOR	

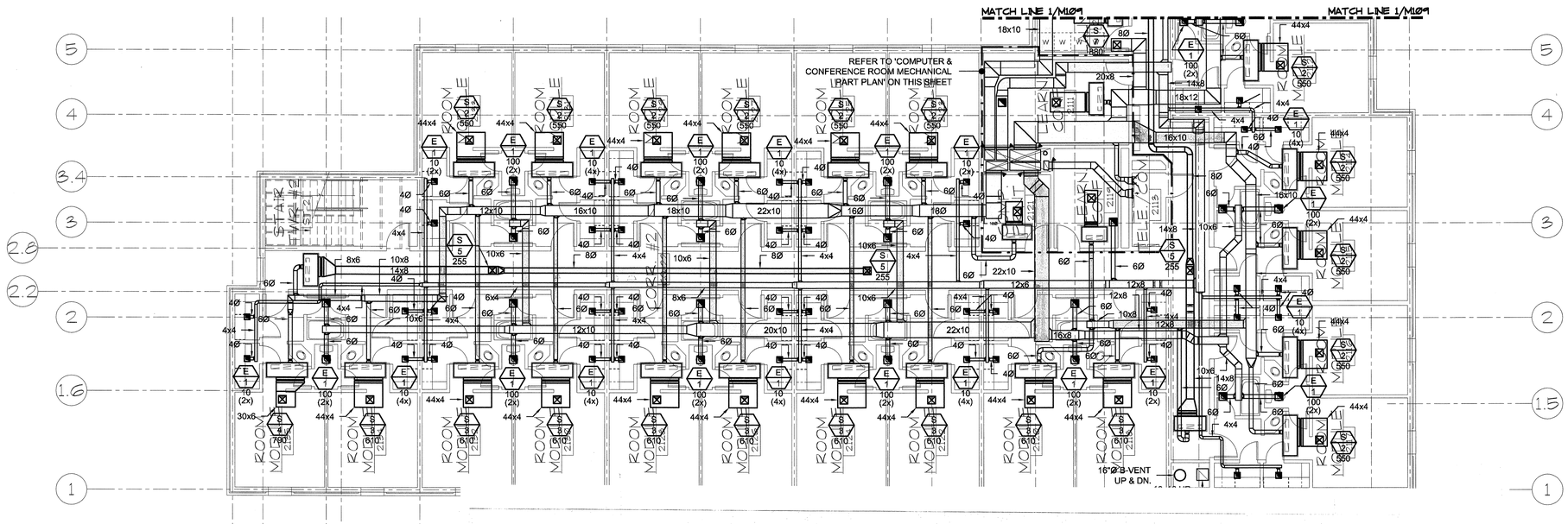
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL FIRST FLOOR DUCTWORK PLAN

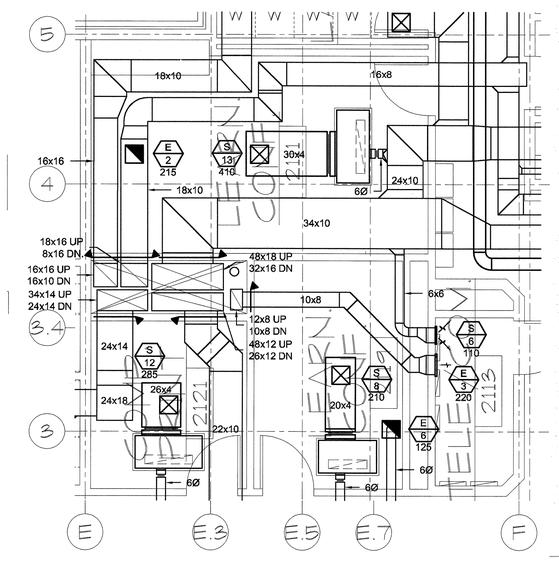
CODE ID. NO. 80091	SIZE D
SCALE: 1/8" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225688	
SHEET 9 OF 46	

M107

FOR CONSTRUCTION SUBMITTAL: 03-25-05

DRAWFORM REVISION FEBRUARY 2001

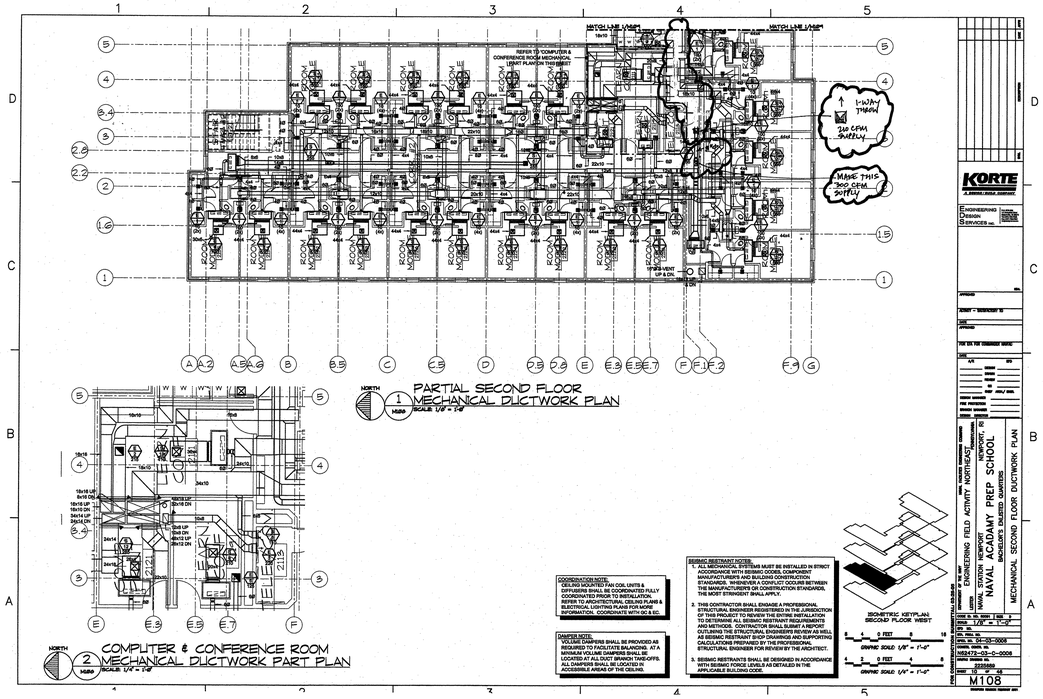




NORTH

2 COMPUTER & CONFERENCE ROOM MECHANICAL DUCTWORK PART PLAN

M108 SCALE: 1/4" = 1'-0"



NORTH

1 PARTIAL SECOND FLOOR MECHANICAL DUCTWORK PLAN

M108 SCALE: 1/8" = 1'-0"

NORTH

2 COMPUTER & CONFERENCE ROOM MECHANICAL DUCTWORK PART PLAN

M108 SCALE: 1/4" = 1'-0"

COORDINATION NOTE:
CEILING MOUNTED FAN COIL UNITS & DIFFUSERS SHALL BE COORDINATED FULLY WITH ARCHITECT PRIOR TO INSTALLATION. REFER TO ARCHITECTURAL CEILING PLANS & ELECTRICAL LIGHTING PLANS FOR MORE INFORMATION. COORDINATE WITH GC & EC.

DAMPER NOTE:
VOLUME DAMPERS SHALL BE PROVIDED AS REQUIRED TO FACILITATE BALANCING. AT A MINIMUM VOLUME DAMPERS SHALL BE LOCATED AT ALL DUCT BRANCH TAKE-OFFS. ALL DAMPERS SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

SEISMIC RESTRAINT NOTES:
1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE SEISMIC CODES, THE BUILDING CONSTRUCTION STANDARDS, THE MORE STRINGENT SHALL APPLY.
2. THIS CONTRACTOR SHALL ENGAGE A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE JURISDICTION OF THIS PROJECT TO REVIEW THE ENTIRE INSTALLATION TO DETERMINE ALL SEISMIC RESTRAINT REQUIREMENTS AND METHODS. CONTRACTOR SHALL SUBMIT A REPORT SEALED BY THE STRUCTURAL ENGINEER, INCLUDING AS WELL AS SEISMIC RESTRAINT SHOP DRAWINGS AND SUPPORTING CALCULATIONS PREPARED BY THE PROFESSIONAL STRUCTURAL ENGINEER FOR REVIEW BY THE ARCHITECT.
3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.

ISOMETRIC KETPLAN: SECOND FLOOR WEST

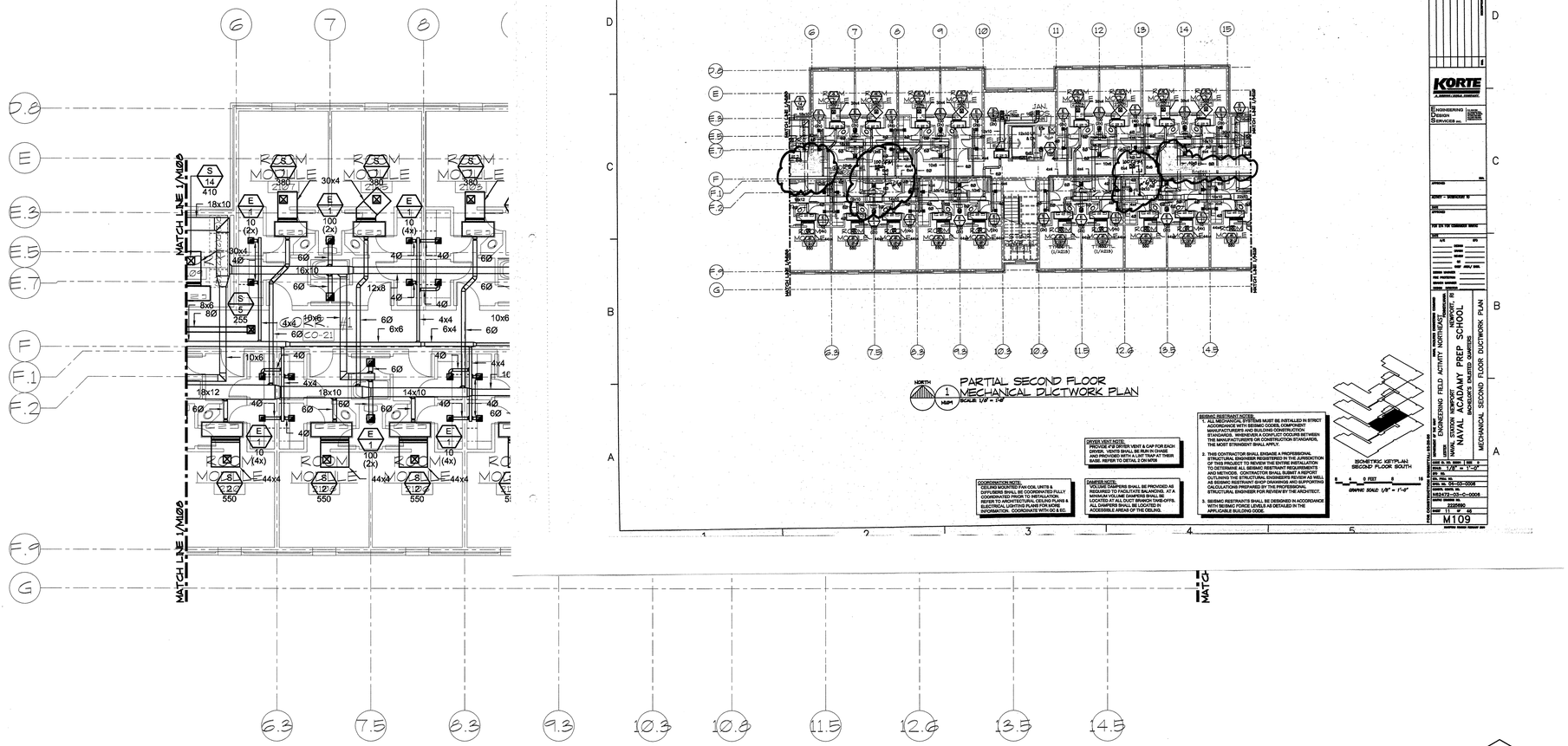
4 0 FEET 8 16
GRAPHIC SCALE: 1/8" = 1'-0"

4 2 0 FEET 4 8
GRAPHIC SCALE: 1/4" = 1'-0"

VOLUME DAMPERS SHALL BE PROVIDED AS REQUIRED TO FACILITATE BALANCING. AT A MINIMUM VOLUME DAMPERS SHALL BE LOCATED AT ALL DUCT BRANCH TAKE-OFFS. ALL DAMPERS SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

CALCULATIONS PREPARED BY THE PROFESSIONAL STRUCTURAL ENGINEER FOR REVIEW BY THE ARCHITECT.

3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.



NORTH

1 M109

PARTIAL SECOND FLOOR MECHANICAL DUCTWORK PLAN

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

DRYER VENT NOTE:
PROVIDE 4"Ø DRYER VENT & CAP FOR EACH DRYER. VENTS SHALL BE RUN IN CHASE AND PROVIDED WITH A LINT TRAP AT THEIR BASE. REFER TO DETAIL 2 ON M706

COORDINATION NOTE:
CEILING MOUNTED FAN COIL UNITS & DIFFUSERS SHALL BE COORDINATED FULLY COORDINATED PRIOR TO INSTALLATION. REFER TO ARCHITECTURAL CEILING PLANS & ELECTRICAL LIGHTING PLANS FOR MORE INFORMATION. COORDINATE WITH GC & EC.

DAMPER NOTE:
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SEISMIC RESTRAINT NOTES:
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3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.

ISOMETRIC KEYPLAN:
SECOND FLOOR SOUTH

8 4 0 FEET 8 16

GRAPHIC SCALE: 1/8" = 1'-0"

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info@korte-design.com

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ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.

DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

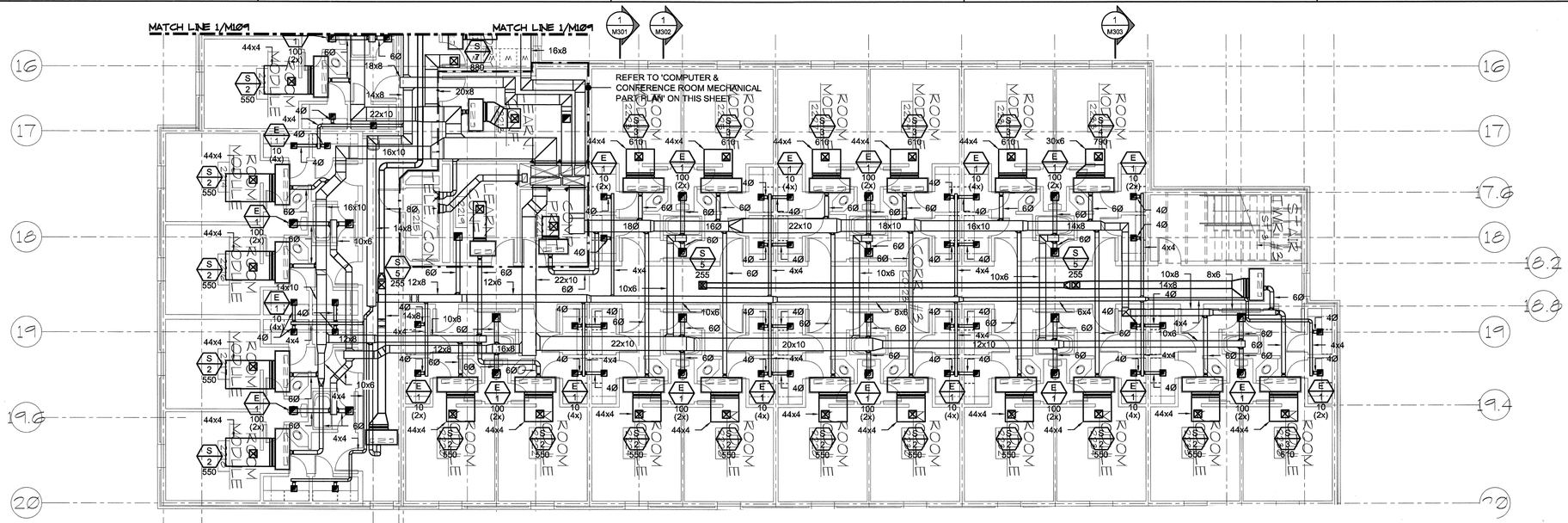
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL SECOND FLOOR DUCTWORK PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 | SIZE D
SCALE: 1/8" = 1'-0"
STD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225690
SHEET 11 OF 46

M109

DRAWFORM REVISION FEBRUARY 2001


MATCH LINE 1/M109
MATCH LINE 1/M109
REFER TO 'COMPUTER & CONFERENCE ROOM MECHANICAL PART PLAN' ON THIS SHEET
ROOM MODULE 2215
ROOM MODULE 2217
ROOM MODULE 2219
ROOM MODULE 2221
ROOM MODULE 2223
ROOM MODULE 2225
ROOM MODULE 2227
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ROOM MODULE 2231
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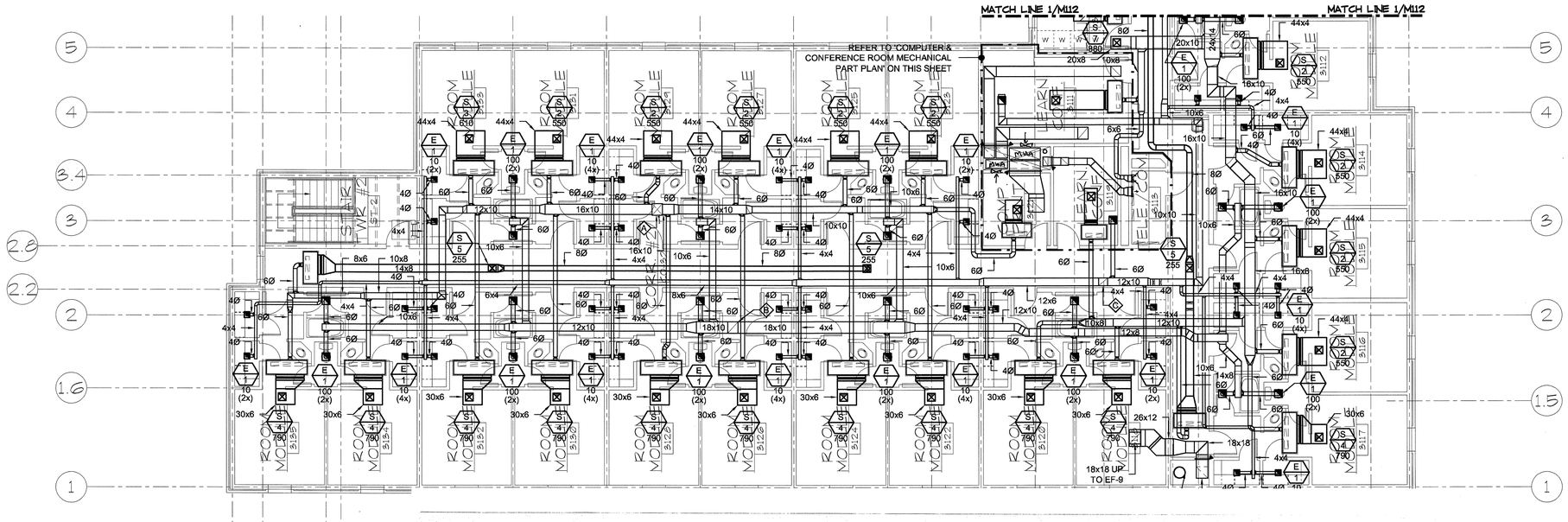
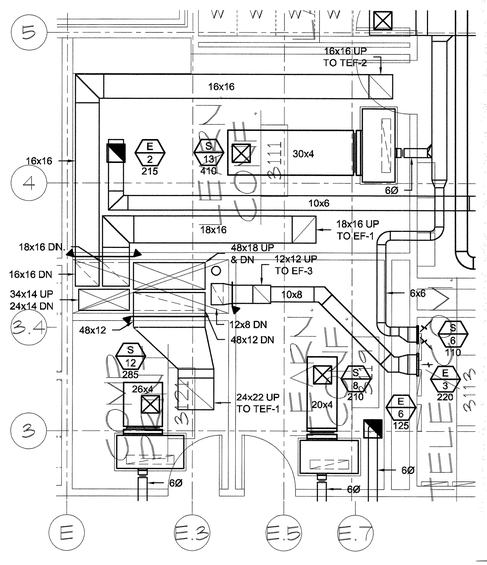
ROOM MODULE 2235
ROOM MODULE 2237
ROOM MODULE 2239
ROOM MODULE

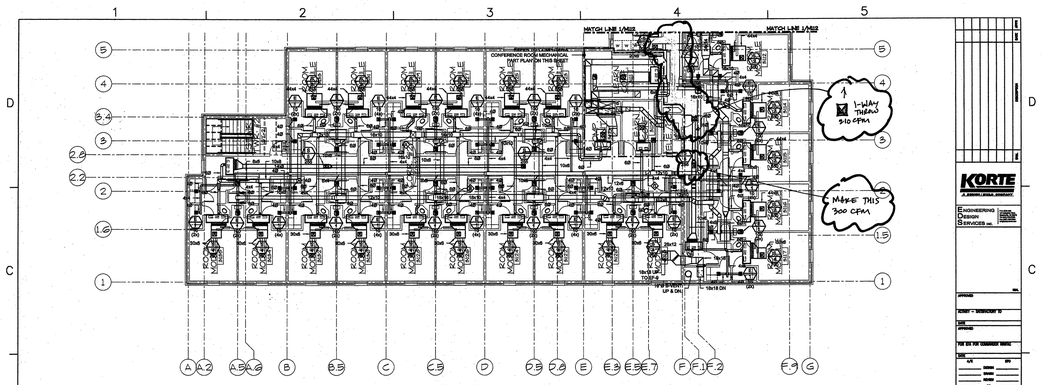




NORTH 2 M111

COMPUTER & CONFERENCE ROOM MECHANICAL DUCTWORK PART PLAN

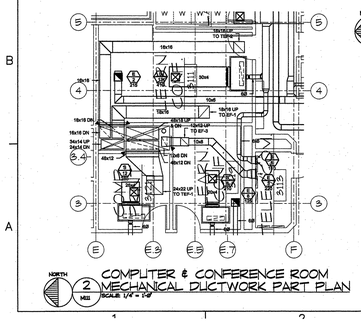
SCALE: 1/4" = 1'-0"



NORTH 1 M112

PARTIAL THIRD FLOOR MECHANICAL DUCTWORK PLAN

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



NORTH 2 M111

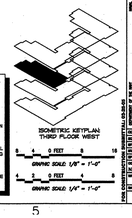
COMPUTER & CONFERENCE ROOM MECHANICAL DUCTWORK PART PLAN

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

COORDINATION NOTE:
CONFIRM ACCESSIBILITY FOR COIL UNITS & DEVICES AND SHALL BE ACCOMODATED FULLY. COORDINATED PRIOR TO INSTALLATION. REFER TO ARCHITECTURAL CEILING PLANS & ELECTRICAL LIGHTING PLANS FOR MORE INFORMATION. COORDINATE WITH GC & SC.

DAMPER NOTE:
VOLUME DAMPERS SHALL BE PROVIDED AS REQUIRED TO FACILITATE BALANCING. AT A MINIMUM VOLUME DAMPERS SHALL BE LOCATED AT ALL DUCT BRANCH TAKE-OFFS. ALL DAMPERS SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

SEISMIC RESTRAINT NOTES:
1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S OR CONSTRUCTION STANDARDS, WHICHEVER IS CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
2. THIS CONTRACTOR SHALL ENGAGE A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE JURISDICTION OF THIS PROJECT TO REVIEW THE ENTIRE INSTALLATION TO DETERMINE ALL SEISMIC REQUIREMENTS AND LIMITATIONS. CONTRACTOR SHALL ALSO SUBMIT THE ENTIRE INSTALLATION TO STRUCTURAL ENGINEER AS WELL AS SEISMIC RESTRAINT SHOP DRAWINGS AND SUPPORTING CALCULATIONS PREPARED BY THE PROFESSIONAL STRUCTURAL ENGINEER FOR REVIEW BY THE ARCHITECT.
3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.



ISOMETRIC KEYPLAN: THIRD FLOOR WEST

8 4 0 FEET 8 16
GRAPHIC SCALE: 1/8" = 1'-0"
4 2 0 FEET 4 8
GRAPHIC SCALE: 1/4" = 1'-0"

KEYED NOTES:
1. 18x16 UP TO MAU-3a.
2. 18x16 UP TO TEF-3a.
3. 14x12 UP TO EF-2.

VOLUME DAMPERS SHALL BE PROVIDED AS REQUIRED TO FACILITATE BALANCING. AT A MINIMUM VOLUME DAMPERS SHALL BE LOCATED AT ALL DUCT BRANCH TAKE-OFFS. ALL DAMPERS SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

CALCULATIONS PREPARED BY THE PROFESSIONAL STRUCTURAL ENGINEER FOR REVIEW BY THE ARCHITECT.

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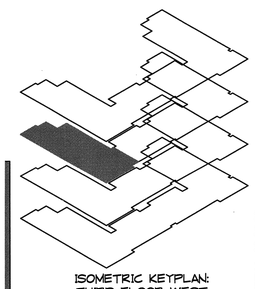

ISOMETRIC KEYPLAN: THIRD FLOOR WEST

8 4 0 FEET 8 16
GRAPHIC SCALE: 1/8" = 1'-0"
4 2 0 FEET 4 8
GRAPHIC SCALE: 1/4" = 1'-0"

MARK	DATE	DESCRIPTION	APPR.

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P.O. BOX 980
141 Industrial Drive
Gloucester, NJ 08016
Phone (856) 182-1000
Fax (856) 182-0844
info@esdesignservices.com

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ACTIVITY – SATISFACTORY TO

DATE

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FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.

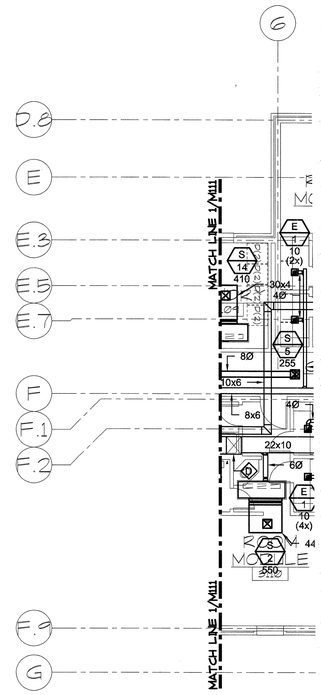
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

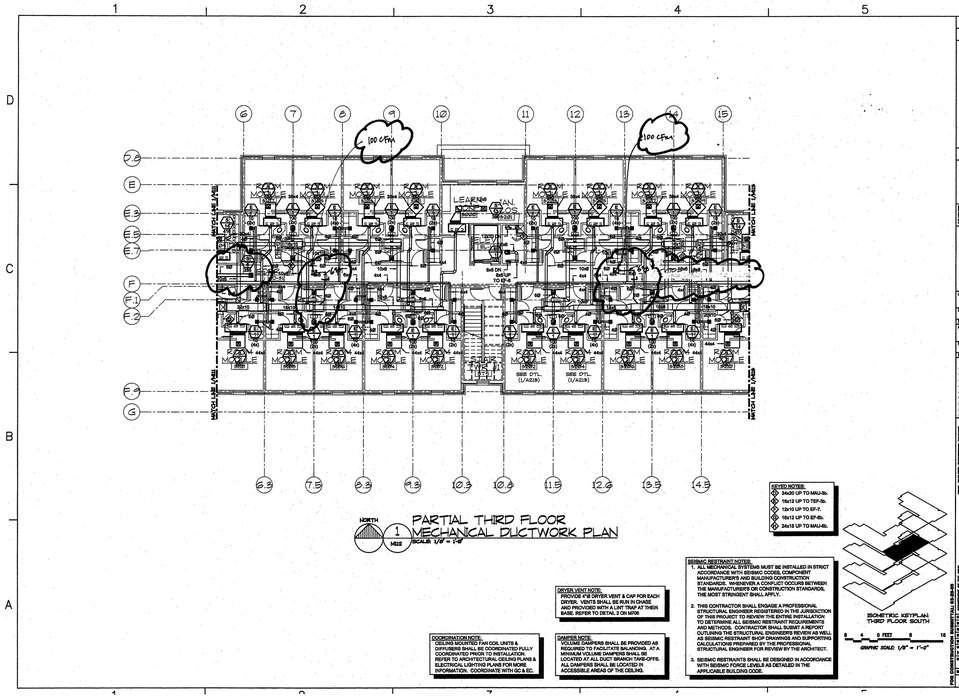
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT
NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL THIRD FLOOR DUCTWORK PLAN

CODE ID. NO. 80091 SIZE D
SCALE: 1/8" = 1'-0"
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225692
SHEET 13 OF 46
M111

FOR CONSTRUCTION SUBMITTAL: 03-25-05

DRAWFORM REVISION FEBRUARY 2001





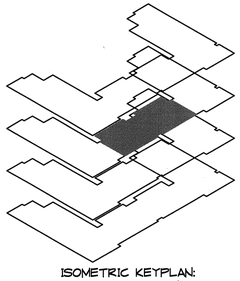
PARTIAL THIRD FLOOR MECHANICAL DUCTWORK PLAN

NORTH — 1 / M112

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

KEYED NOTES:

- D 24x20 UP TO MAU-3b.
- E 16x12 UP TO TEF-3b.
- F 12x10 UP TO EF-7.
- G 16x12 UP TO EF-6b.
- H 24x18 UP TO MAU-6b.



ISOMETRIC KEYPLAN: THIRD FLOOR SOUTH

8 4 0 FEET 8 16

GRAPHIC SCALE: 1/8" = 1'-0"

SEISMIC RESTRAINT NOTES:

1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
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3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.

DRYER VENT NOTE:
PROVIDE 4"Ø DRYER VENT & CAP FOR EACH DRYER. VENTS SHALL BE RUN IN CHASE AND PROVIDED WITH A LINT TRAP AT THEIR BASE. REFER TO DETAIL 2 ON M706

COORDINATION NOTE:
CEILING MOUNTED FAN COIL UNITS & DIFFUSERS SHALL BE COORDINATED FULLY COORDINATED PRIOR TO INSTALLATION. REFER TO ARCHITECTURAL CEILING PLANS & ELECTRICAL LIGHTING PLANS FOR MORE INFORMATION. COORDINATE WITH GC & EC.

DAMPER NOTE:
VOLUME DAMPERS SHALL BE PROVIDED AS REQUIRED TO FACILITATE BALANCING. AT A MINIMUM VOLUME DAMPERS SHALL BE LOCATED AT ALL DUCT BRANCH TAKE-OFFS. ALL DAMPERS SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

STA.	DESCRIPTION	DATE	APPR.

KORTE — A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 980
141 Industrial Drive
Statesville, N. 28679
Tel (877) 750-0584
Fax (877) 750-0586
engineering-inc@korte.com

SEAL

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ACTIVITY – SATISFACTORY TO

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FOR EFA FOR COMMANDER NAVFAC

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DESIGN
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CHIEF ARCH./ ENGR.

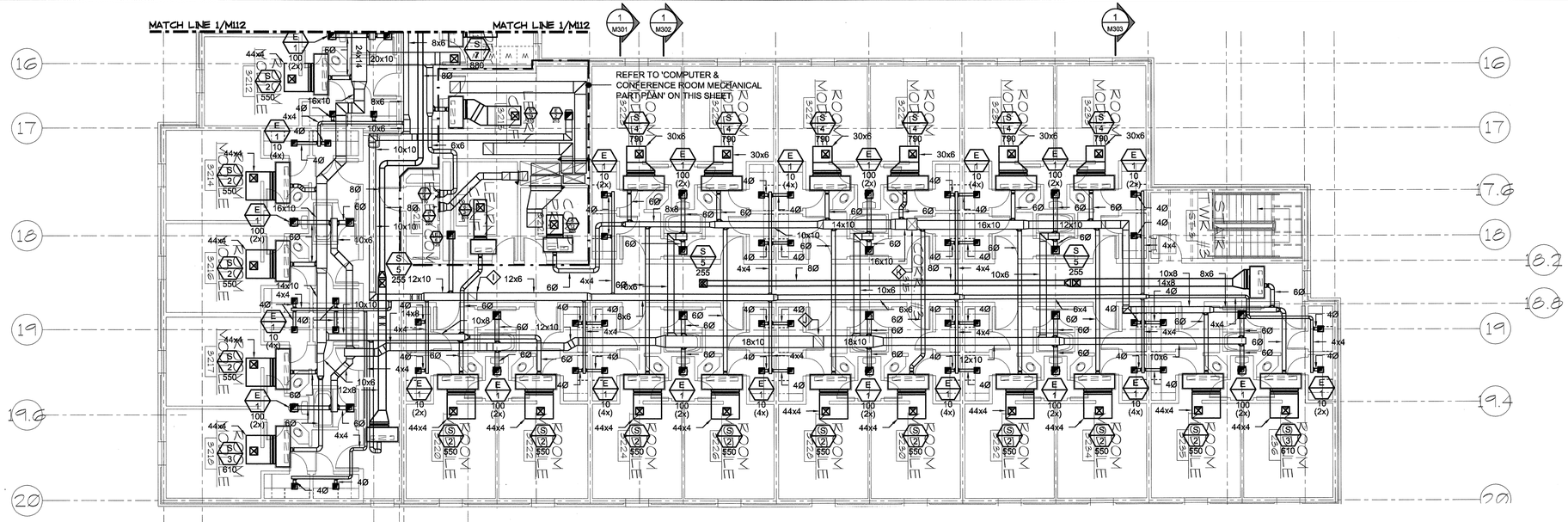
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

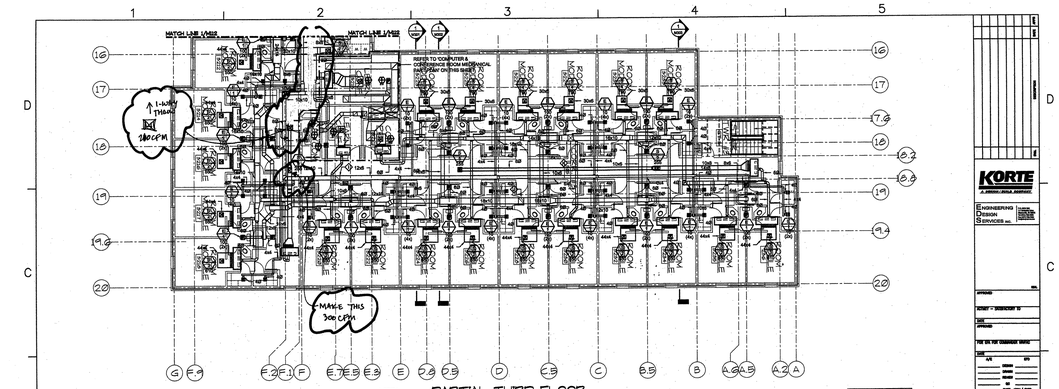
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
NEWPORT, RI PENNSYLVANIA
LESTER
NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL THIRD FLOOR DUCTWORK PLAN

CODE ID. NO. 80091 | SIZE D
SCALE: 1/8" = 1'-0"
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225693
SHEET 14 OF 46
M112

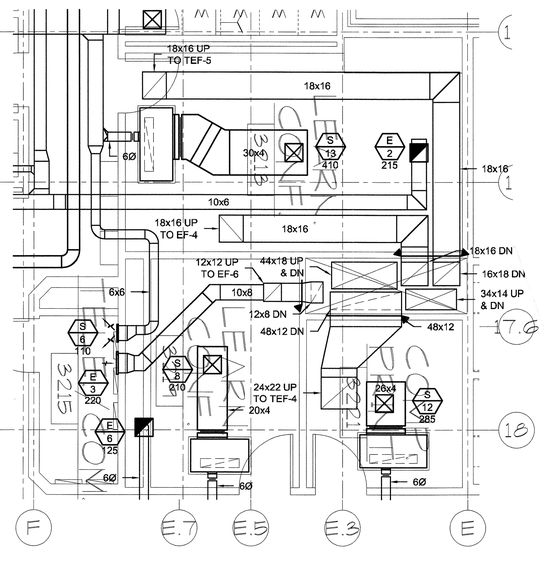
FOR CONSTRUCTION SUBMITTAL: 03-25-05

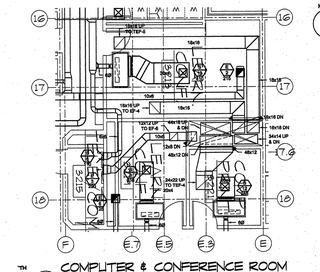
DRAWFORM REVISION FEBRUARY 2001





PARTIAL THIRD FLOOR MECHANICAL DUCTWORK PLAN
1 M113 SCALE: 1/8" = 1'-0"





COMPUTER & CONFERENCE ROOM MECHANICAL DUCTWORK PART PLAN
2 M113 SCALE: 1/4" = 1'-0"

COMPUTER & CONFERENCE ROOM MECHANICAL DUCTWORK PART PLAN
NORTH 2 M113 SCALE: 1/4" = 1'-0"

REVISED NOTES:
1. 12x10 UP TO EF-6.
2. 16x18 UP TO TEF-6a.
3. 16x18 UP TO MAU-6a.

COORDINATION NOTES:
CEILING MOUNTED FAN COIL UNITS & DIFFUSERS SHALL BE COORDINATED FULLY COORDINATED PRIOR TO INSTALLATION. REFER TO ARCHITECTURAL CEILING PLANS & ELECTRICAL LIGHTING PLANS FOR MORE INFORMATION. COORDINATE WITH DCS & EC.

DAMPER NOTES:
BRANCH DAMPERS SHALL BE PROVIDED AS REQUIRED TO FACILITATE BALANCING. AT A MINIMUM VOLUME DAMPERS SHALL BE LOCATED AT ALL DUCT BRANCH TAKE-OFFS. ALL DAMPERS SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

SEISMIC RESTRAINT NOTES:
1. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.
2. THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE JURISDICTION OF THE PROJECT TO PREPARE SHOP DRAWINGS AND TO DETERMINE ALL SEISMIC RESTRAINT REQUIREMENTS AND METHODS. CONTRACTOR SHALL SUBMIT A REPORT OUTLINING THE STRUCTURAL ENGINEERS REVIEW AS WELL AS SEISMIC RESTRAINT SHOP DRAWINGS AND SUPPORTING CALCULATIONS STAMPED AND SIGNED BY THE STRUCTURAL ENGINEER FOR REVIEW BY THE ARCHITECT.
3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.

ISOMETRIC KEYPLAN THIRD FLOOR EAST

GRAPHIC SCALE: 1/8" = 1'-0"

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

M113

REQUIRED TO FACILITATE BALANCING. AT A MINIMUM VOLUME DAMPERS SHALL BE LOCATED AT ALL DUCT BRANCH TAKE-OFFS. ALL DAMPERS SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

STRUCTURAL ENGINEER FOR REVIEW BY THE ARCHITECT.

3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.

MARK	DATE	DESCRIPTION	INIT.

KORTE
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P.O. BOX 680
141 Brookline Drive
Greenville, SC 29605
Tel (864) 292-1000
Fax (864) 292-1004
engineering@korte.com

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DESIGN
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REVIEW
QC
CHIEF ARCH./ ENGR.

DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA

NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
NEWPORT, RI
BACHELOR'S ENLISTED QUARTERS

MECHANICAL THIRD FLOOR DUCTWORK PLAN

CODE ID. NO. 80091 | SIZE D
SCALE: 1/8" = 1'-0"
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225694
SHEET 15 OF 46

M113

FOR CONSTRUCTION SUBMITTAL 03-25-05

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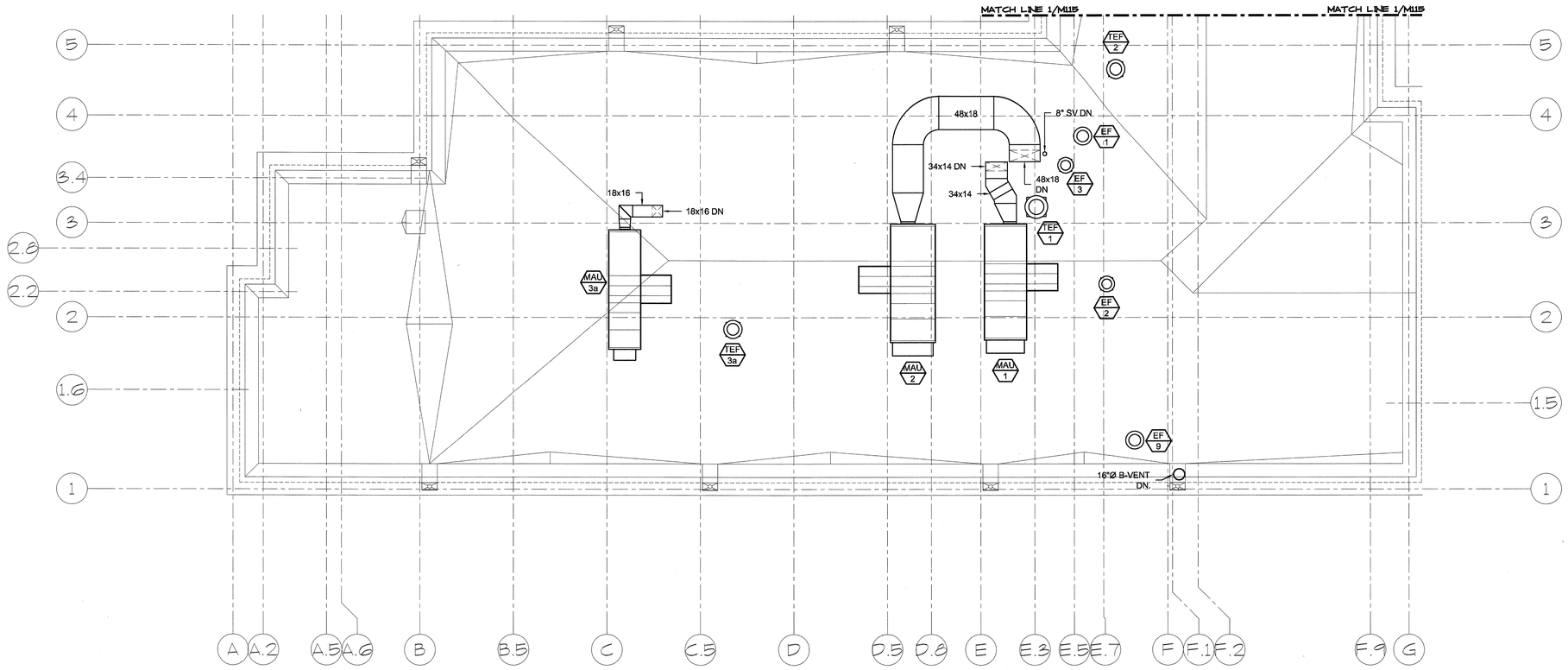

NORTH

1 / M114 PARTIAL ROOF MECHANICAL PLAN

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

SEISMIC RESTRAINT NOTES:

1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
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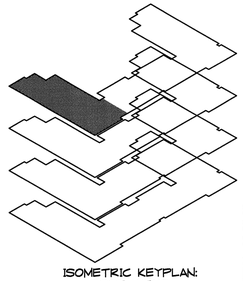
DUCTWORK NOTE:

EXTERIOR DUCTWORK SHALL BE INSULATED WITH MIN. 2" THICK RIGID INSULATION. DUCTWORK & INSULATION SHALL BE COVERED & SEALED WEATHER TIGHT USING EPDM.



ISOMETRIC KEYPLAN: ROOF WEST

8 4 0 FEET 8 16

GRAPHIC SCALE: 1/8" = 1'-0"

APPR	DATE	DESCRIPTION	SYM.

KORTE — A DESIGN / BUILD COMPANY

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info@designservices.com

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DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA

NAVAL STATION NEWPORT
NEWPORT, RI

NAVAL ACADAMY PREP SCHOOL

BACHELOR'S ENLISTED QUARTERS

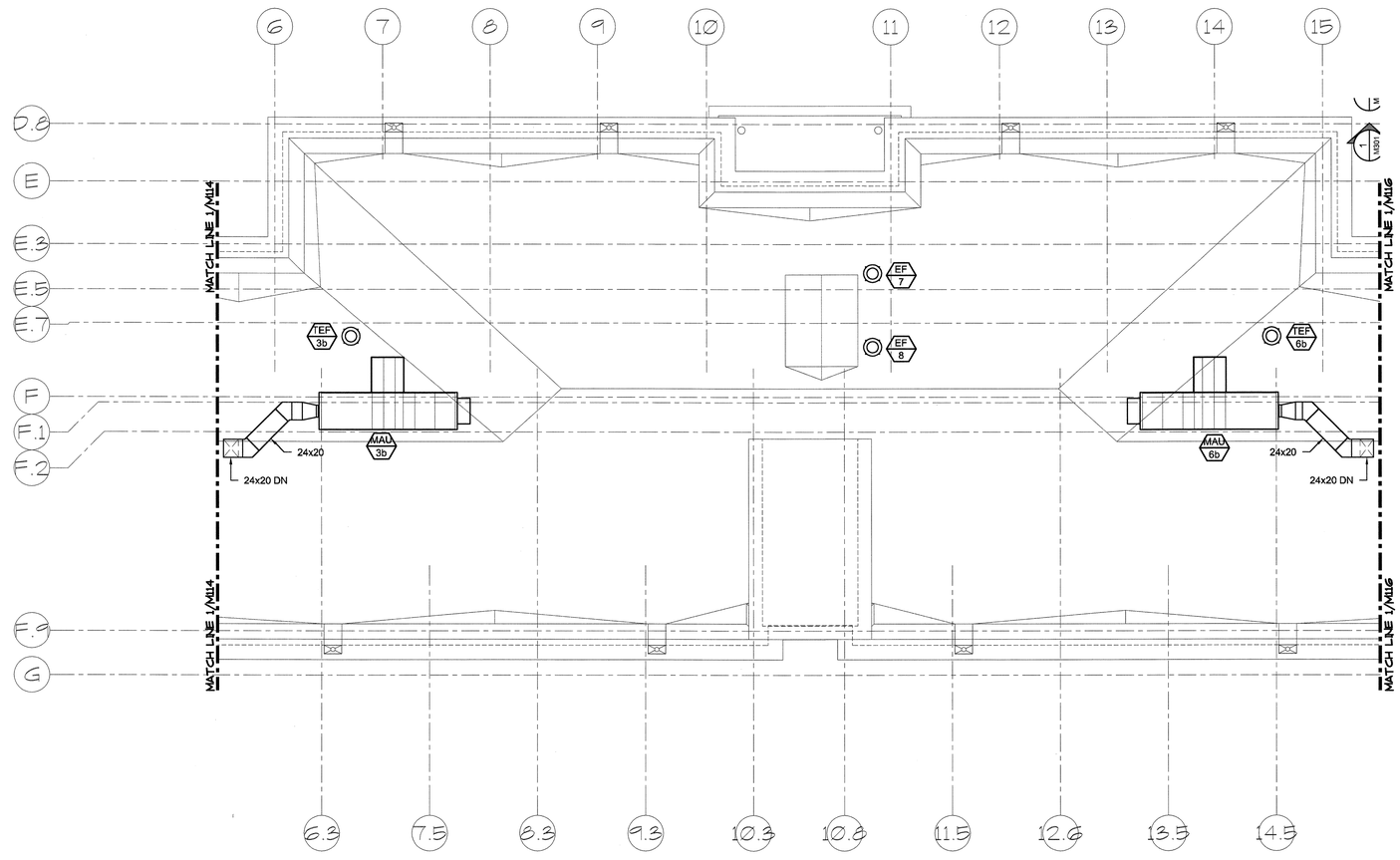
MECHANICAL ROOF PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: 1/8" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225695	
SHEET 16 OF 46	

M114

DRAWFORM REVISION FEBRUARY 2001



NORTH

1 M115

PARTIAL ROOF MECHANICAL PLAN

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

SEISMIC RESTRAINT NOTES:

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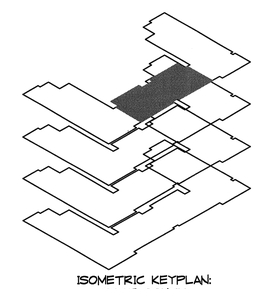

ISOMETRIC KEYPLAN: ROOF SOUTH

8 4 0 FEET 8 16

GRAPHIC SCALE: 1/8" = 1'-0"

MARK	DATE	DESCRIPTION	APPR

KORTE
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Stevensville, MI 49085
Phone (269) 429-9414
Fax (247) 783-7484
info@eds-g-inc.com

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DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

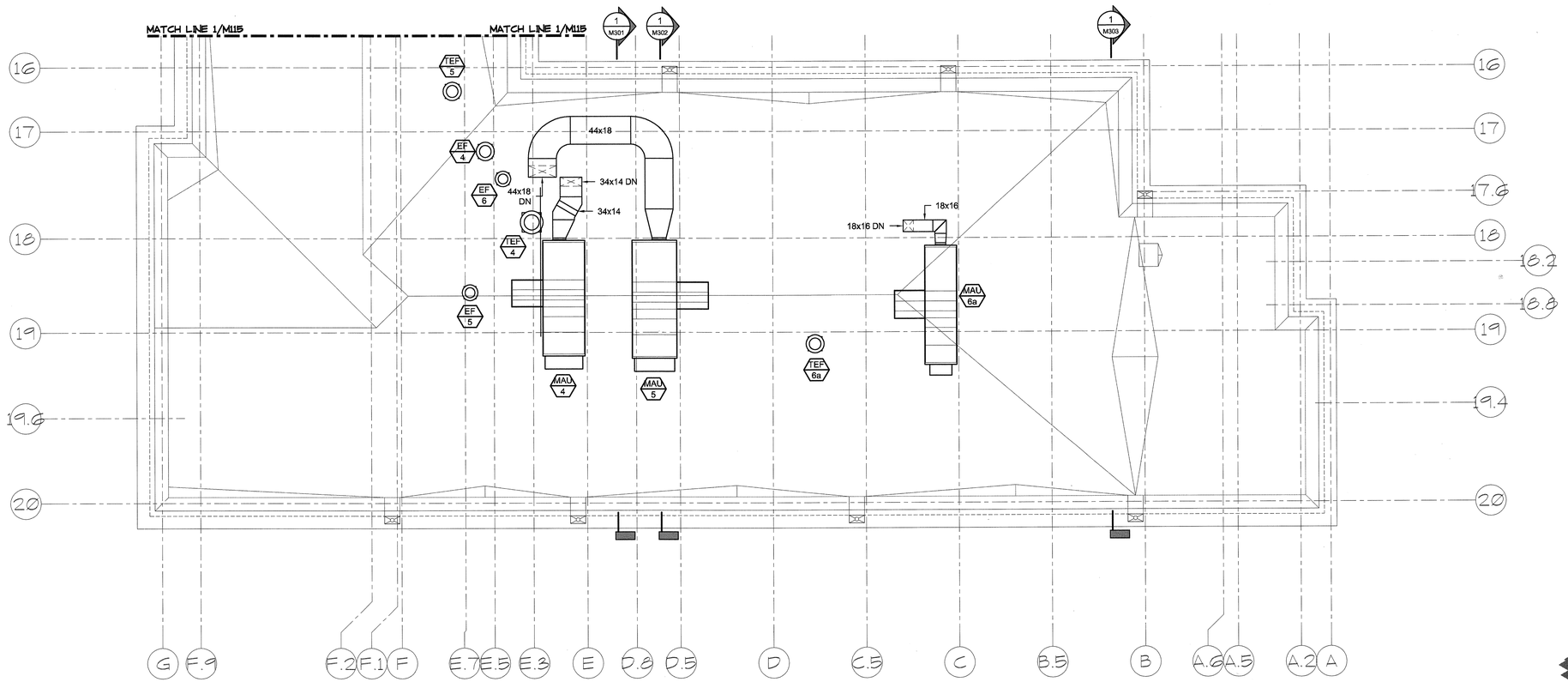
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST
PENNSYLVANIA
DEPARTMENT OF THE NAVY
LESTER
NAVAL STATION NEWPORT
NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL ROOF PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 SIZE D
SCALE: 1/8" = 1'-0"
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225696
SHEET 17 OF 46

M115

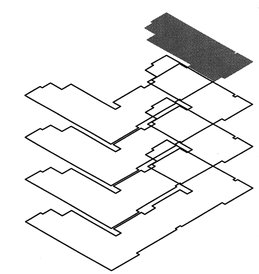
DRAWFORM REVISION FEBRUARY 2001



NORTH

1 M116 PARTIAL ROOF MECHANICAL PLAN

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



ISOMETRIC KEYPLAN: ROOF EAST

8 4 0 FEET 8 16

GRAPHIC SCALE: 1/8" = 1'-0"

SEISMIC RESTRAINT NOTES:

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DUCTWORK NOTE:

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SYM.	DESCRIPTION	DATE	APPR

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 180
Warwick, Rhode Island
Telephone: (401) 785-7000
Fax: (401) 785-7008
engdesig@korte.com

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REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA

NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
NEWPORT, RI

BACHELOR'S ENLISTED QUARTERS

MECHANICAL ROOF PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE 1/8" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225697	
SHEET 18 OF 46	

M116

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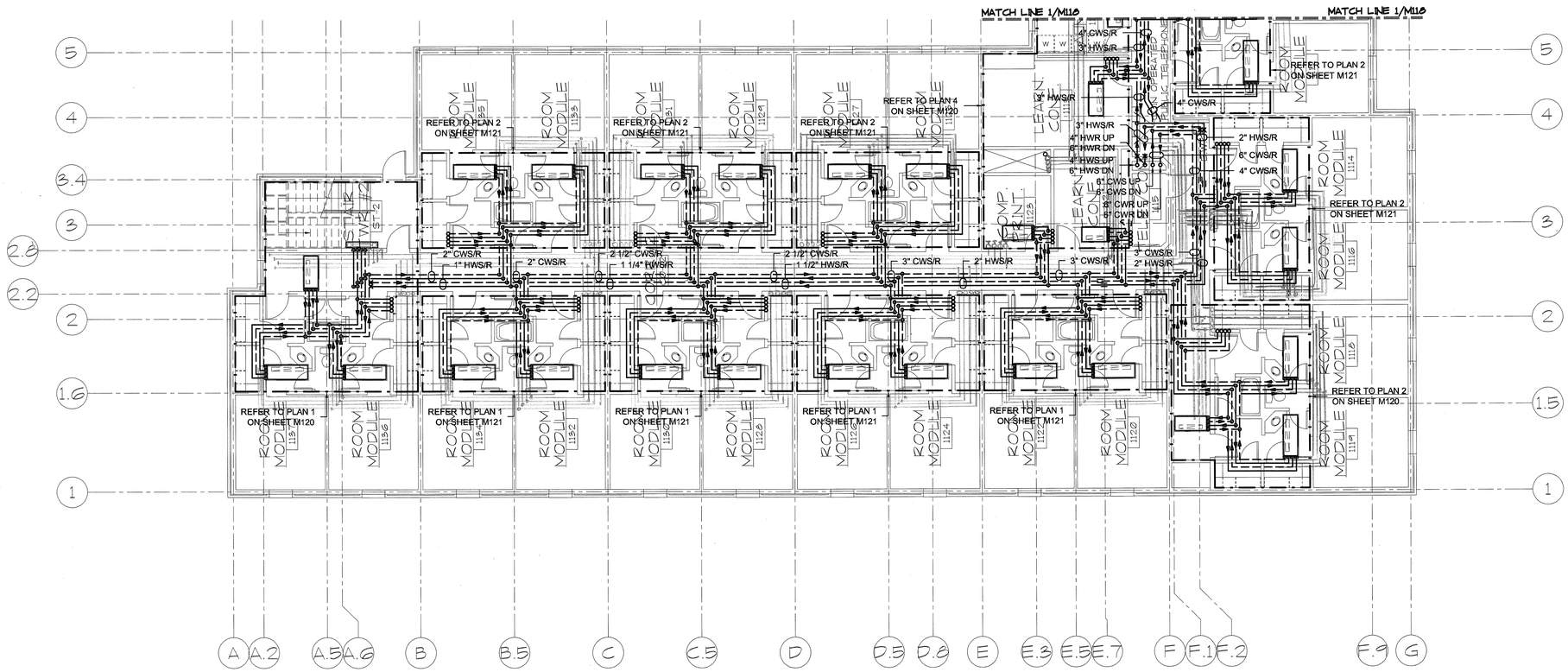
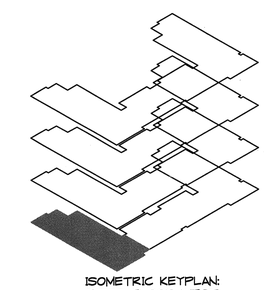


NORTH

1 / M117

PARTIAL FIRST FLOOR MECHANICAL PIPING PLAN

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



ISOMETRIC KEYPLAN: FIRST FLOOR WEST

8 4 0 FEET 8 16

GRAPHIC SCALE: 1/8" = 1'-0"

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1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
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3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.

VALVE NOTE:

ISOLATION VALVES SHALL BE PROVIDED AT ALL SUPPLY PIPING BRANCHES OFF OF THE MAINS. ISOLATION & BALANCING VALVES SHALL BE PROVIDED AT ALL RETURN PIPING BRANCHES OFF THE MAINS. ALL VALVES SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

SYM.	DESCRIPTION	DATE	APPR.

KORTE
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info@edsgroup-ri.com

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DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER, PENNSYLVANIA
NAVAL STATION NEWPORT
NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL FIRST FLOOR PIPING PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: 1/8" = 1'-0"	
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SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225698	
SHEET 19 OF 46	
M117	

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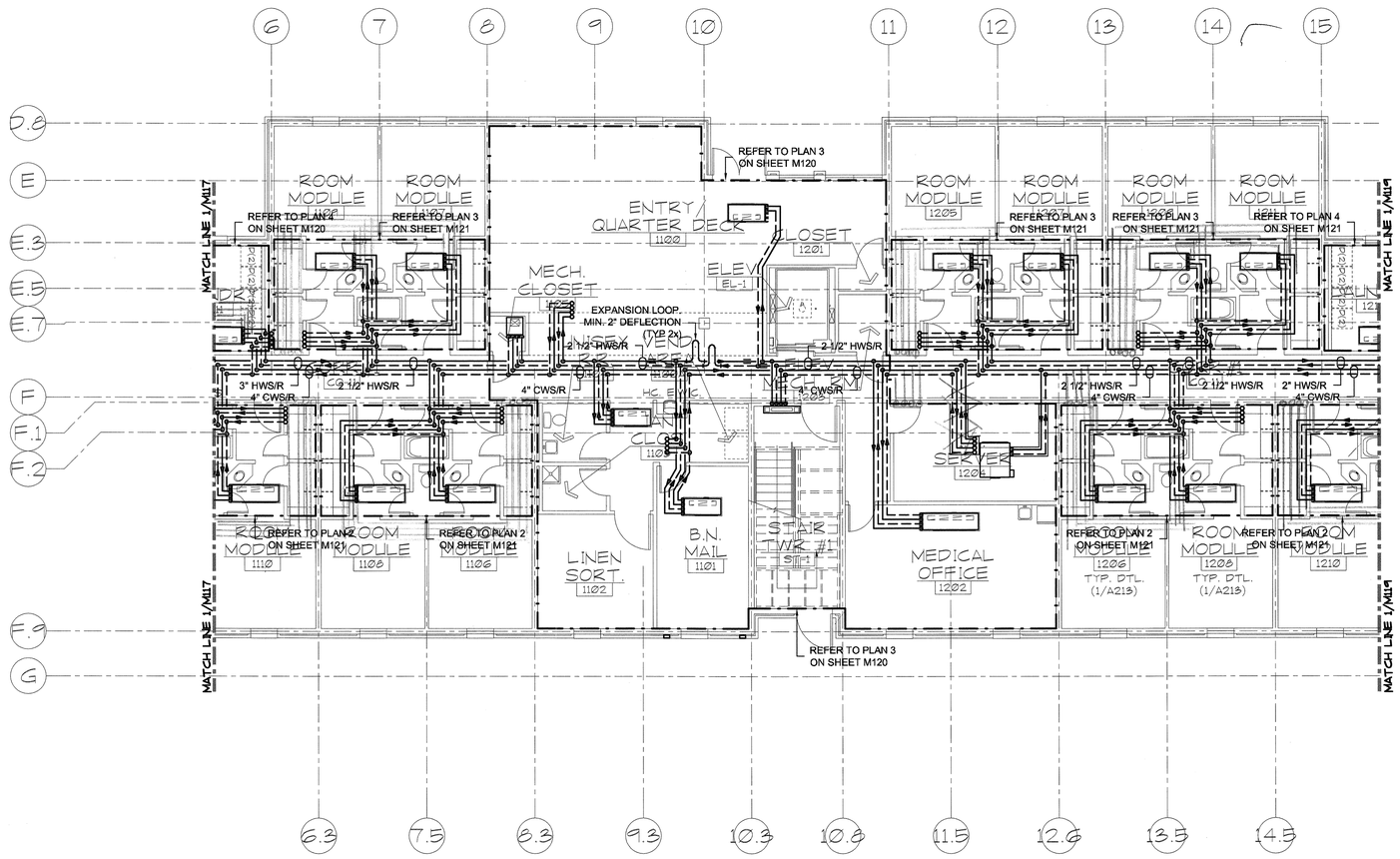

NORTH

1 M118

PARTIAL FIRST FLOOR MECHANICAL PIPING PLAN

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

SEISMIC RESTRAINT NOTES:

1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
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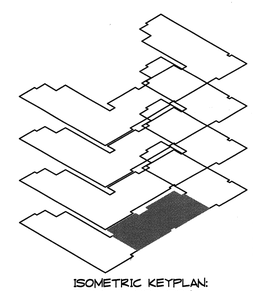

ISOMETRIC KEYPLAN: FIRST FLOOR SOUTH

8 4 0 FEET 8 16

GRAPHIC SCALE: 1/8" = 1'-0"

SYM.	DESCRIPTION	DATE	APPR.

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engineering@korte.com

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DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA

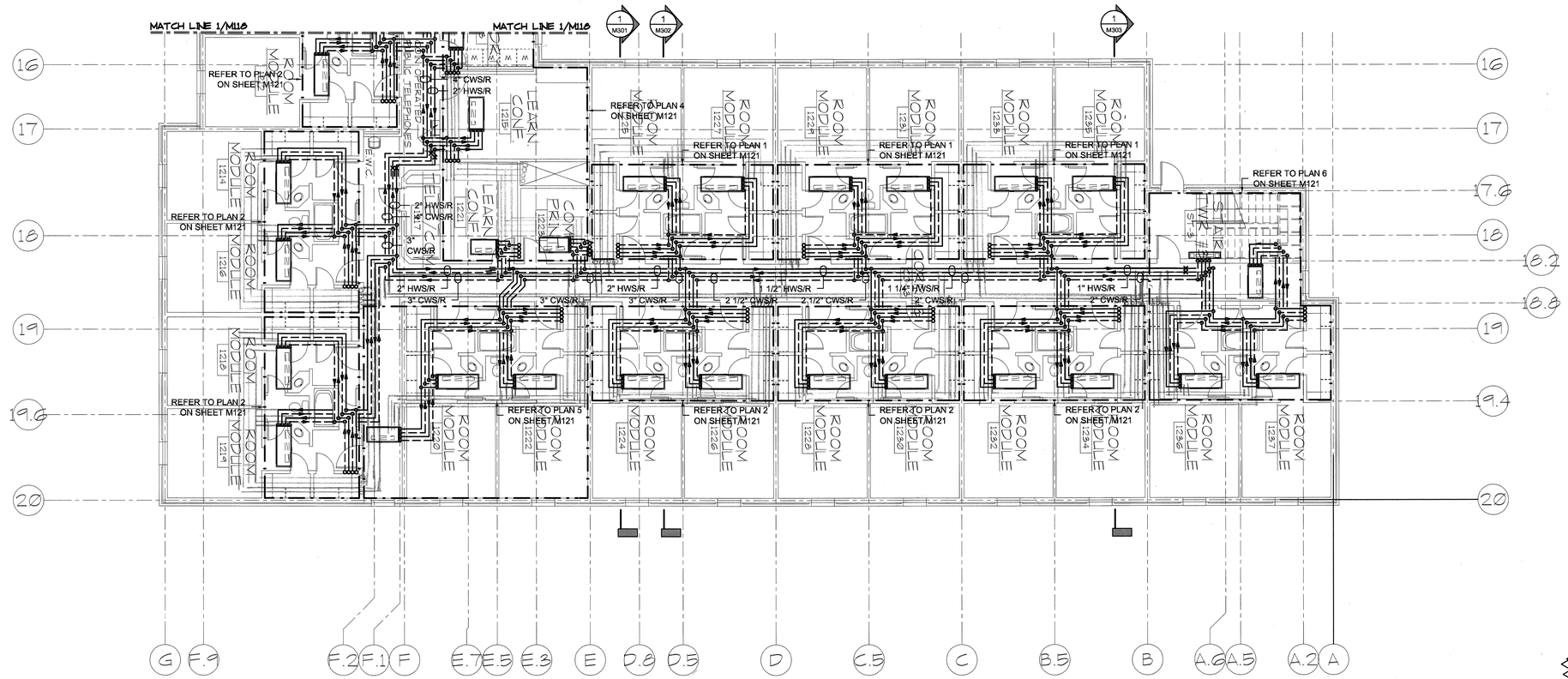
NAVAL STATION NEWPORT
NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS

MECHANICAL FIRST FLOOR PIPING PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 | SIZE D
SCALE: 1/8" = 1'-0"
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225699
SHEET 20 OF 46
M118

DRAWFORM REVISION FEBRUARY 2001



NORTH

1 M119 PARTIAL FIRST FLOOR MECHANICAL PIPING PLAN

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

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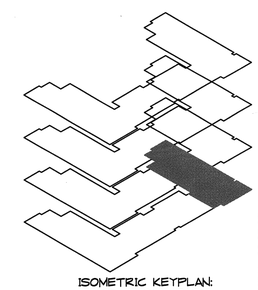

ISOMETRIC KEYPLAN: FIRST FLOOR EAST

8 4 0 FEET 8 16

GRAPHIC SCALE: 1/8" = 1'-0"

SYM.	DESCRIPTION	DATE	APPR

KORTE — A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 580
513 Bryan Street
Wilmington, NC 28402
Tel (910) 763-7600
Fax (910) 763-7604
korte@eds-service.com

SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR ESA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL FIRST FLOOR PIPING PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: 1/8" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225700	
SHEET 21 OF 46	
M119	

DRAWFORM REVISION FEBRUARY 2001

SEISMIC RESTRAINT NOTES:

1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
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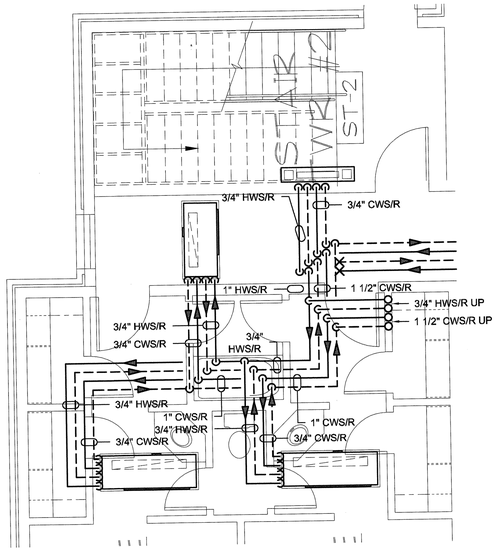
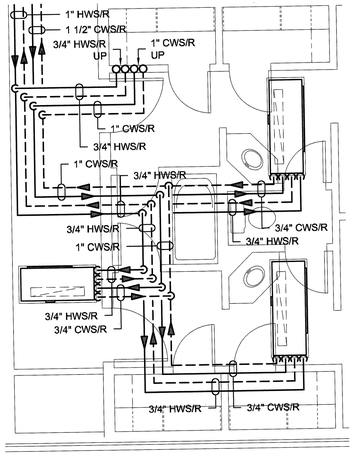
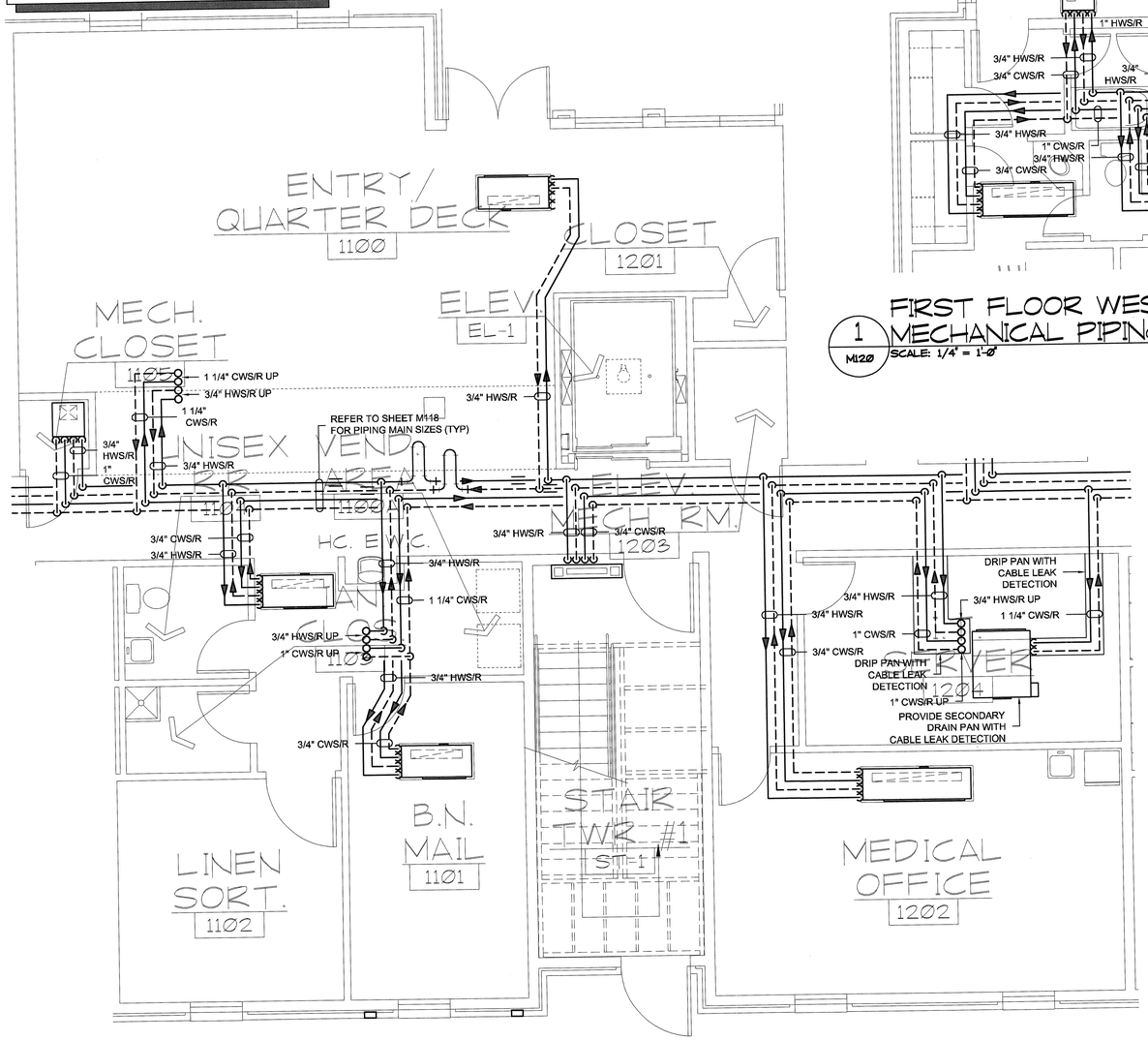


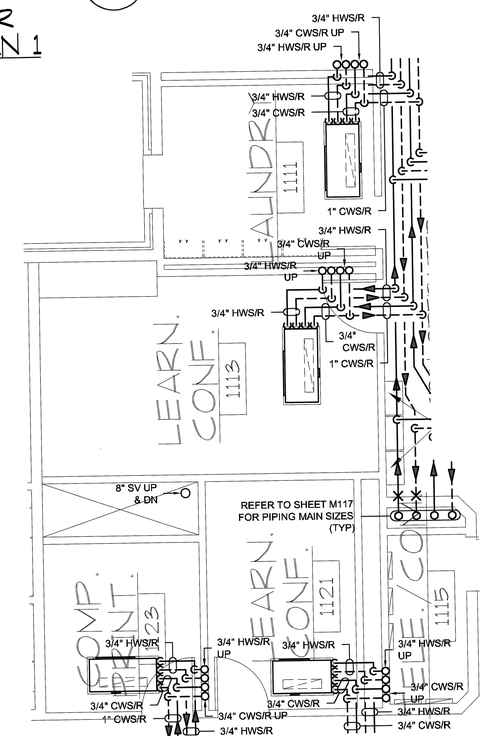
1 M120 FIRST FLOOR WEST CORRIDOR MECHANICAL PIPING PART PLAN 1
SCALE: 1/4" = 1'-0"



2 M120 FIRST FLOOR WEST CORRIDOR MECHANICAL PIPING PART PLAN 2
SCALE: 1/4" = 1'-0"



3 M120 FIRST FLOOR QUARTER DECK MECHANICAL PIPING PART PLAN
SCALE: 1/4" = 1'-0"



4 M120 FIRST FLOOR WEST COMMON AREA MECHANICAL PIPING PART PLAN
SCALE: 1/4" = 1'-0"

4 2 0 FEET 4 8
GRAPHIC SCALE: 1/4" = 1'-0"

			DATE	APPR
			DESCRIPTION	
			STAL	

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 980
111 Bellevue Drive
Stratford, NJ 08084
Phone (856) 783-1000
Fax (877) 753-7554
engdesgn-services.com

SEAL

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NAVAL STATION NEWPORT
NEWPORT, RI
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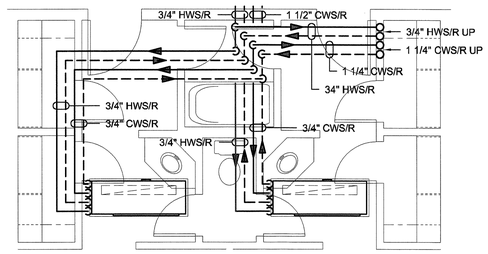
BACHELOR'S ENLISTED QUARTERS

MECHANICAL FIRST FLOOR PIPING PART PLANS

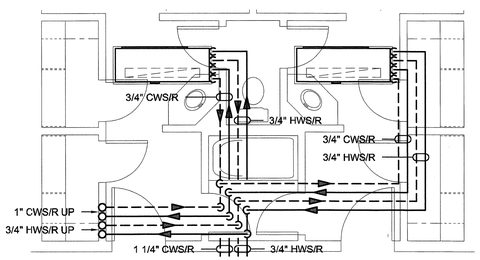
FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: 1/8" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225701	
SHEET 22 OF 46	
M120	

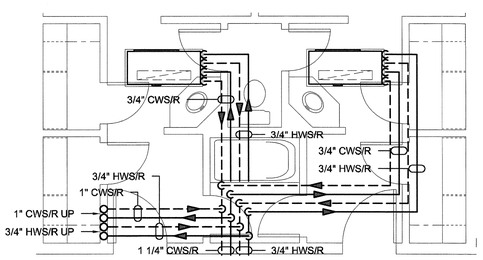
DRAWFORM REVISION FEBRUARY 2001



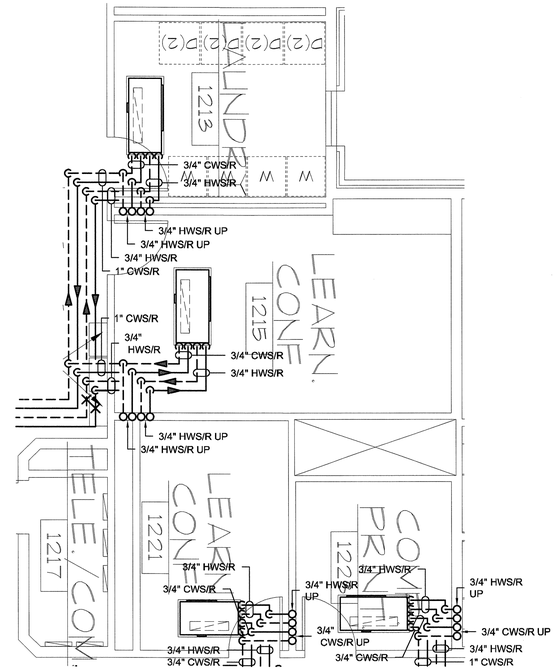
1 M121 MODULE PIPING PART PLAN 1
SCALE: 1/4" = 1'-0"



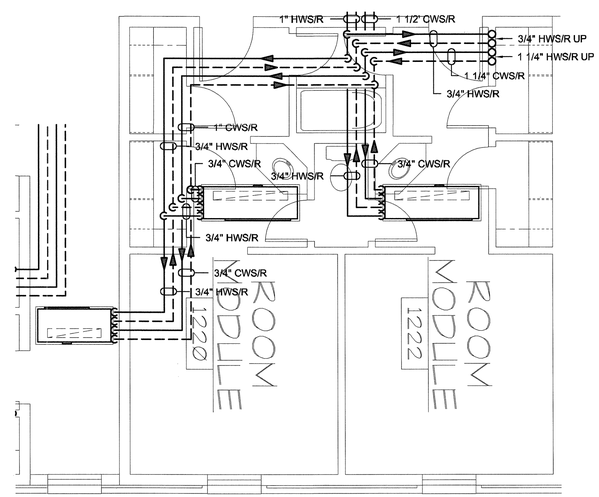
2 M121 MODULE PIPING PART PLAN 2
SCALE: 1/4" = 1'-0"



3 M121 MODULE PIPING PART PLAN 3
SCALE: 1/4" = 1'-0"



4 M121 FIRST FLOOR EAST COMMON AREA MECHANICAL PIPING PART PLAN
SCALE: 1/4" = 1'-0"



5 M121 FIRST FLOOR EAST CORRIDOR MECHANICAL PIPING PART PLAN 2
SCALE: 1/4" = 1'-0"

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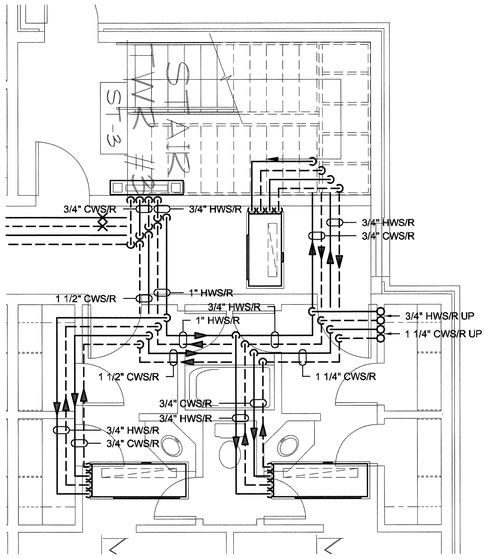
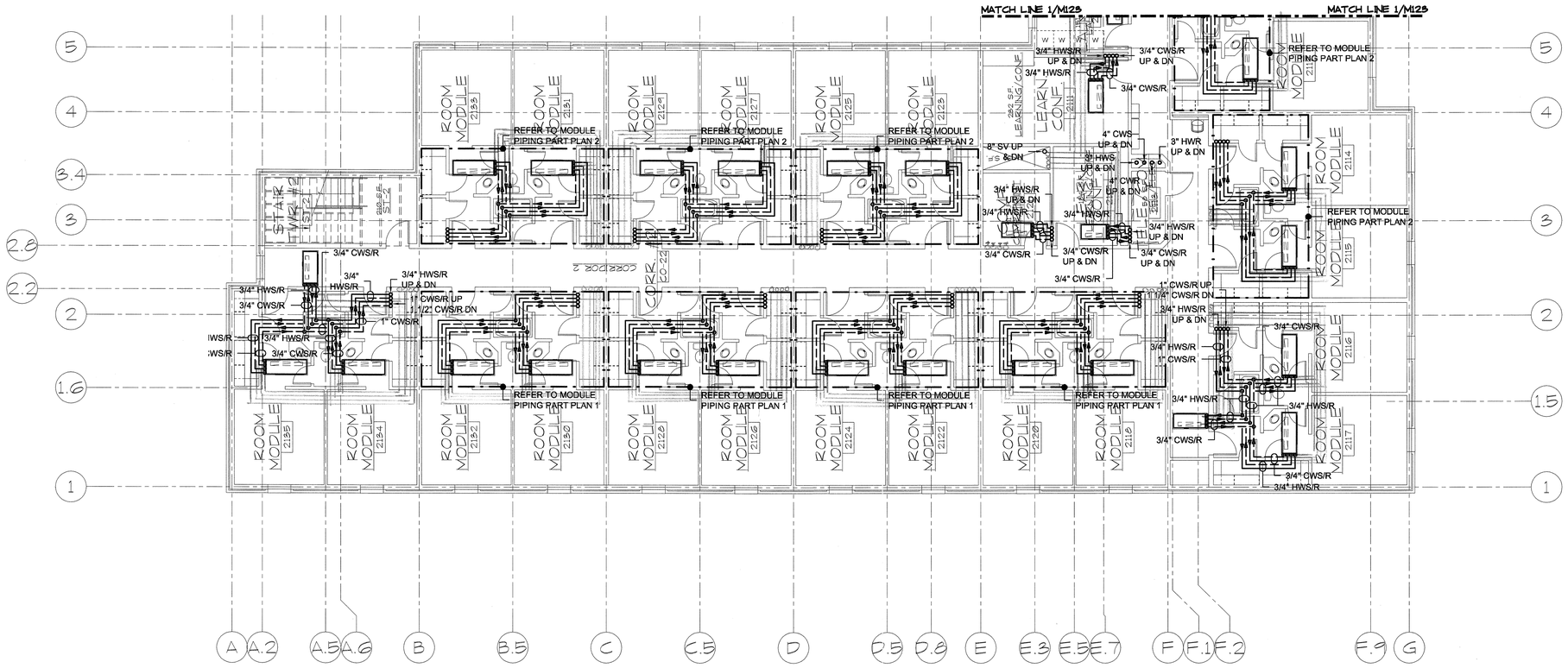


6 M121 FIRST FLOOR EAST CORRIDOR MECHANICAL PIPING PART PLAN 1
SCALE: 1/4" = 1'-0"

4 2 0 FEET 4 8
GRAPHIC SCALE: 1/4" = 1'-0"

		DESCRIPTION	DATE	APPR


MATCH LINE 1/M125
MATCH LINE 1/M125
ROOM MODULE 2135
ROOM MODULE 2131
ROOM MODULE 2129
ROOM MODULE 2127
ROOM MODULE 2125
ROOM MODULE 2123
LEARNING CONC.
ROOM MODULE 2111
ROOM MODULE 2114
ROOM MODULE 2115
ROOM MODULE 2116
ROOM MODULE 2117
ROOM MODULE 2135
ROOM MODULE 2134
ROOM MODULE 2132
ROOM MODULE 2130
ROOM MODULE 2128
ROOM MODULE 2126
ROOM MODULE 2124
ROOM MODULE 2122
ROOM MODULE 2120
ROOM MODULE 2118
STAIR 1/S-2
CORRIDOR 2
CORR. CO-22
REFER TO MODULE PIPING PART PLAN 2
REFER TO MODULE PIPING PART PLAN 1
3/4" CWS/R
3/4" HWS/R
3/4" HWS/R UP & DN
1" CWS/R UP
1 1/2" CWS/R DN
1" CWS/R
8" SV UP & DN
4" CWS UP & DN
3" HWS UP & DN
4" CWR UP & DN
3" HWR UP & DN
1" CWS/R UP
1 1/4" CWS/R DN
3/4" HWS/R UP & DN
3/4" CWS/R UP & DN
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3/4" CWS/R UP & DN
3/4" CWS/R UP & DN
3/4" H

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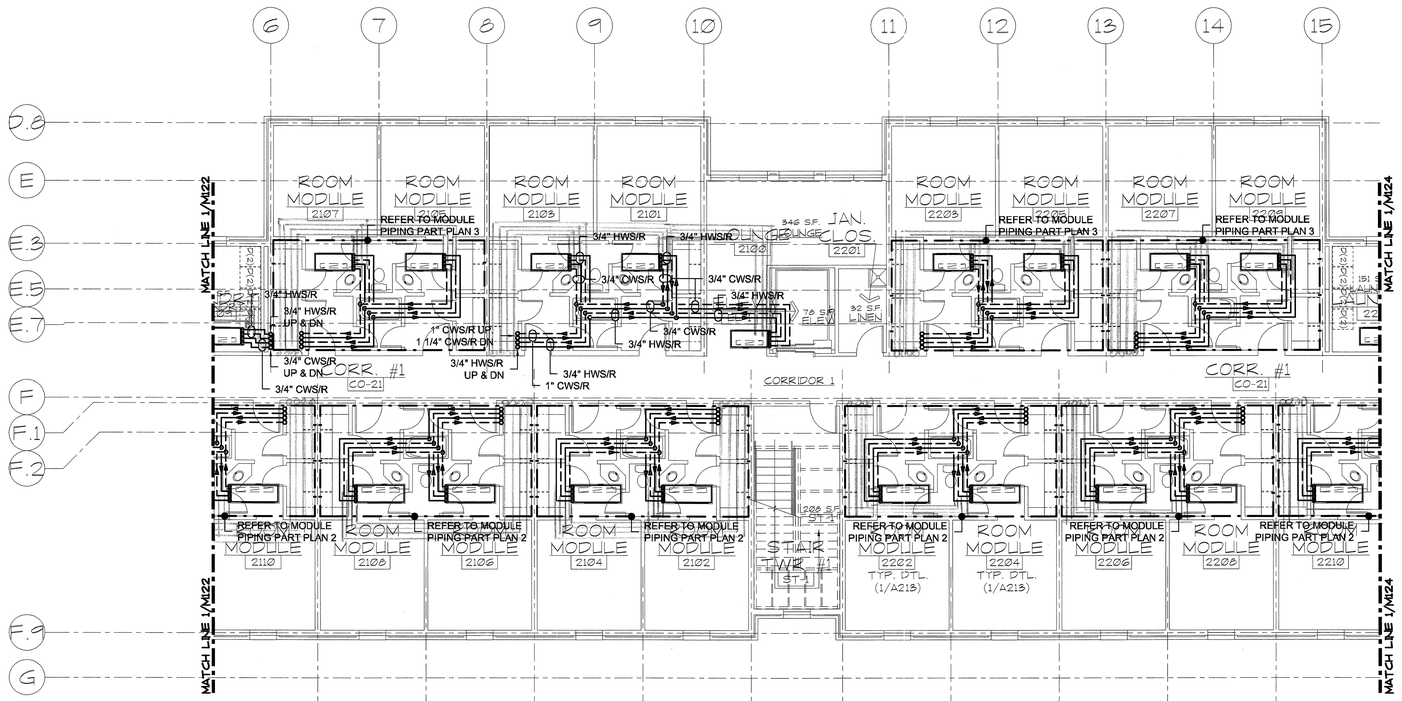
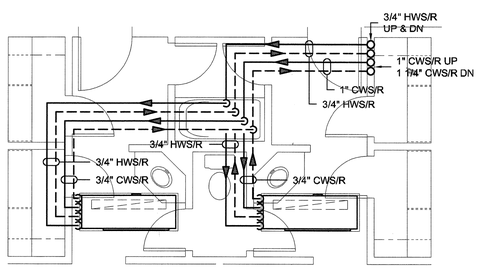
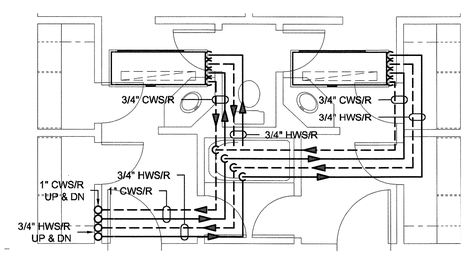


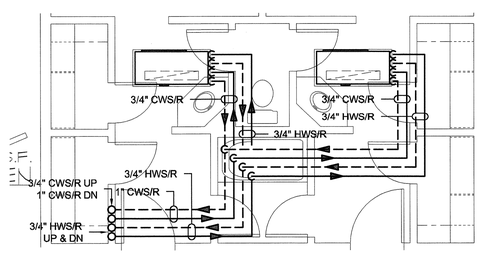
NORTH 1 M123 PARTIAL SECOND FLOOR MECHANICAL PIPING PLAN
SCALE: 1/8" = 1'-0"



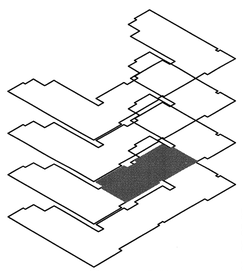
NORTH 2 M123 MODULE PIPING PART PLAN 1
SCALE: 1/4" = 1'-0"



NORTH 3 M123 MODULE PIPING PART PLAN 2
SCALE: 1/4" = 1'-0"



NORTH 4 M123 MODULE PIPING PART PLAN 3
SCALE: 1/4" = 1'-0"



ISOMETRIC KEYPLAN: SECOND FLOOR SOUTH

8 4 0 FEET 8 16
GRAPHIC SCALE: 1/8" = 1'-0"

4 2 0 FEET 4 8
GRAPHIC SCALE: 1/4" = 1'-0"

SYM.	DESCRIPTION	DATE	APPR.

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 380
141 Industrial Drive
Stevensville, MI 49127
Phone (269) 429-9414
Fax (269) 429-9564
info@eds-g-inc.com

SEAL

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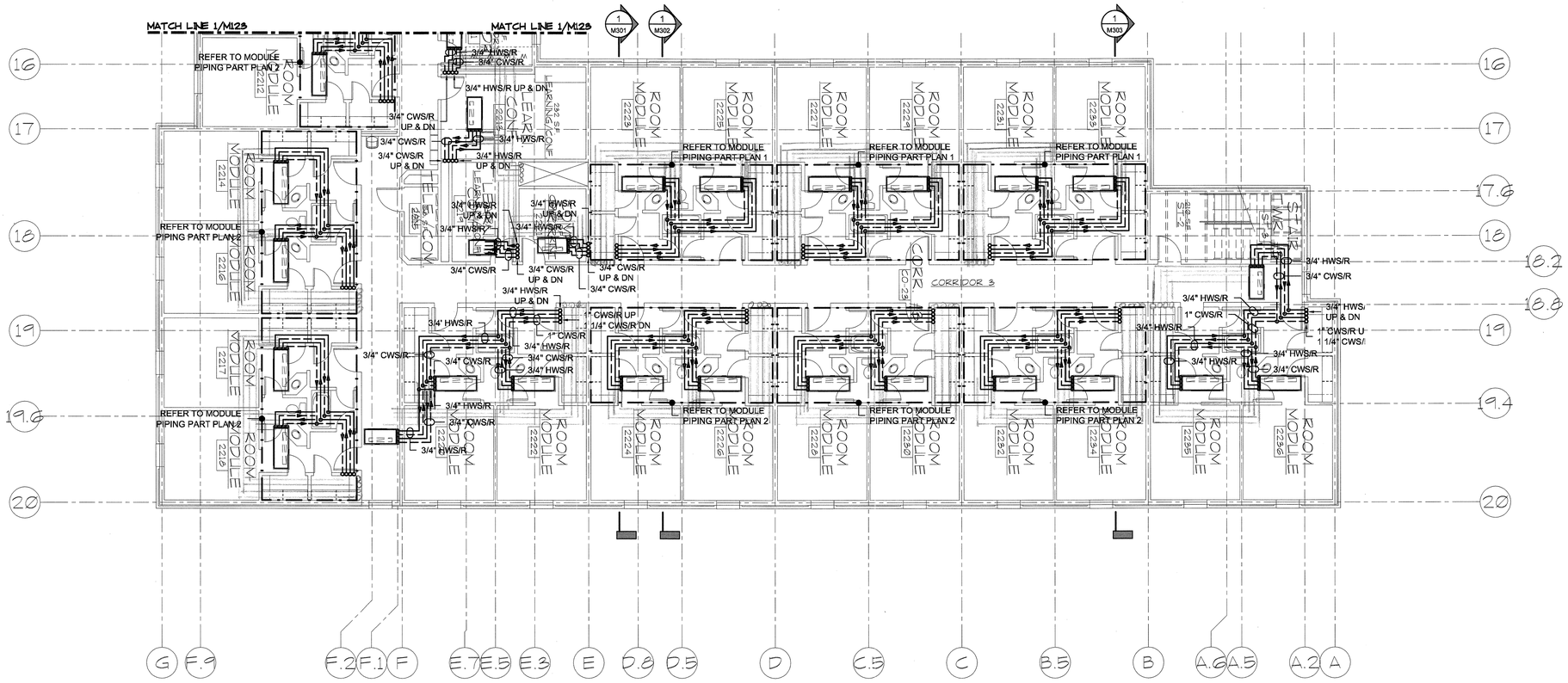
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL SECOND FLOOR PIPING PLAN

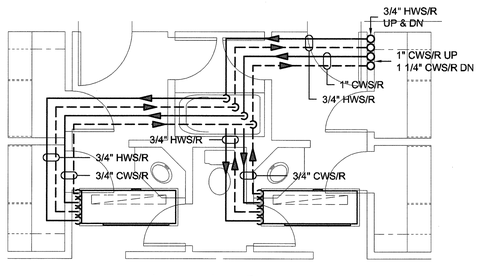
FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 SIZE: D
SCALE: 1/8" = 1'-0"
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225704
SHEET 25 OF 46
M123

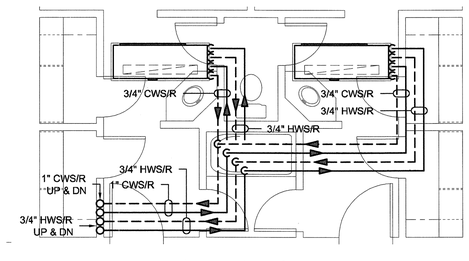
DRAWFORM REVISION FEBRUARY 2001



NORTH 1 M124 PARTIAL SECOND FLOOR MECHANICAL PIPING PLAN
SCALE: 1/8" = 1'-0"



NORTH 2 M124 MODULE PIPING PART PLAN 1
SCALE: 1/4" = 1'-0"



NORTH 3 M124 MODULE PIPING PART PLAN 2
SCALE: 1/4" = 1'-0"

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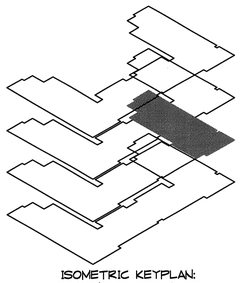

ISOMETRIC KEYPLAN: SECOND FLOOR EAST

8 4 0 FEET 8 16
GRAPHIC SCALE: 1/8" = 1'-0"

4 2 0 FEET 4 8
GRAPHIC SCALE: 1/4" = 1'-0"

APPR	DATE	DESCRIPTION	STAL

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 580
Lester, PA 19029
Media, PA 19063
Tel (610) 783-7909
Fax (610) 783-7908
engdes@ix.netcom.com

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MECHANICAL SECOND FLOOR PIPING PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

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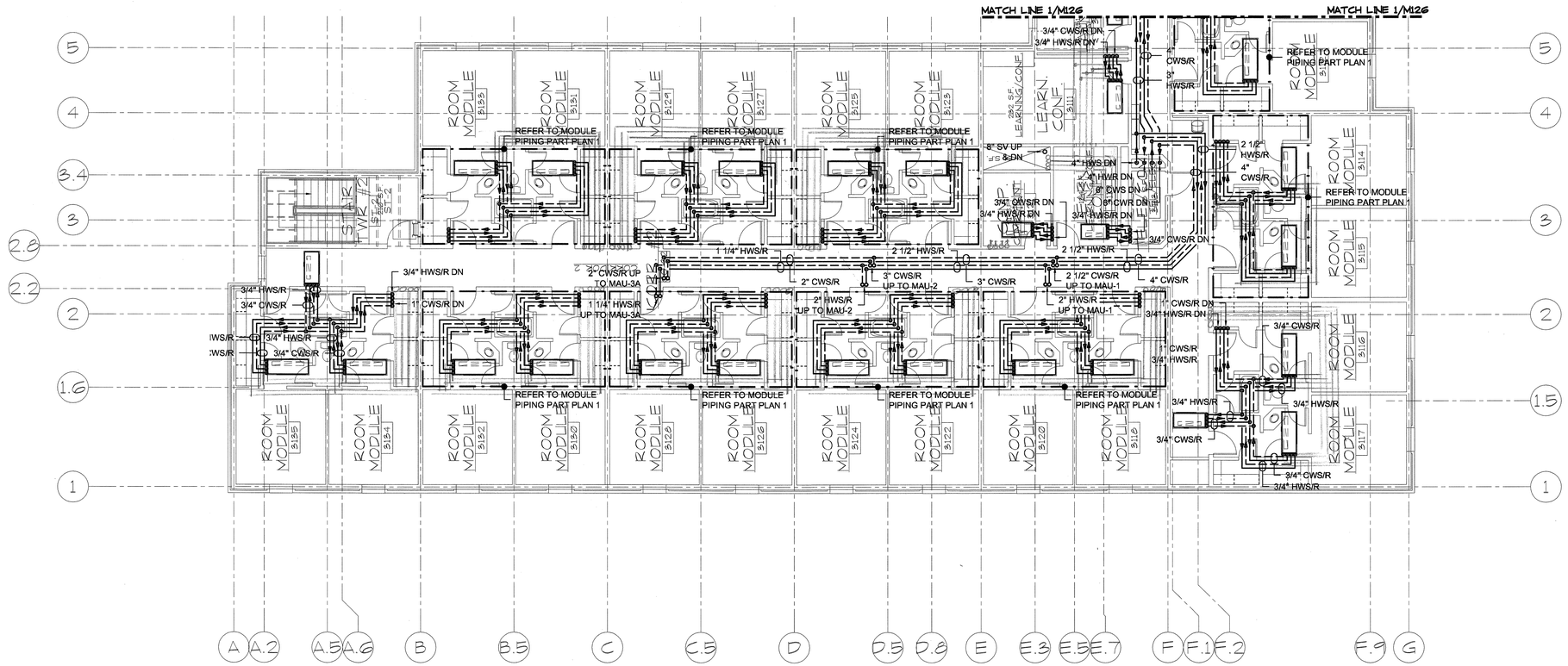
NAVFAC DRAWING NO. 2225705	
SHEET 26 OF 46	

M124

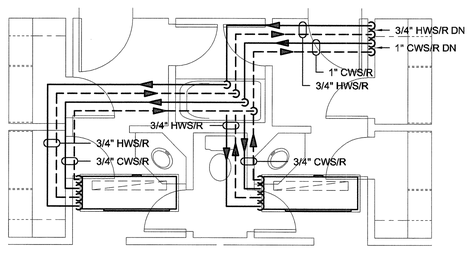
DRAWFORM REVISION FEBRUARY 2001



NORTH

1 M125 PARTIAL THIRD FLOOR MECHANICAL PIPING PLAN

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



NORTH

2 M125 MODULE PIPING PART PLAN 1

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

VALVE NOTE:
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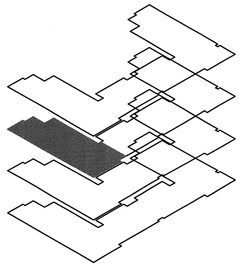

ISOMETRIC KEYPLAN: THIRD FLOOR WEST

8 4 0 FEET 8 16
GRAPHIC SCALE: 1/8" = 1'-0"

4 2 0 FEET 4 8
GRAPHIC SCALE: 1/4" = 1'-0"

SYM.	DESCRIPTION	DATE	APPR.

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111 BOUGHT DRIVE
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Phone (401) 789-9700
Fax (401) 789-7884
info@edsinc-ne.com

SEAL

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FOR EFA FOR COMMANDER NAVFAC
DATE

A/E	EFD
	DESIGN
	DRAWN
	REVIEW
	QC
	CHIEF ARCH./ ENGR.
	DESIGN MANAGER
	FIRE PROTECTION
	BRANCH MANAGER
	DESIGN DIRECTOR

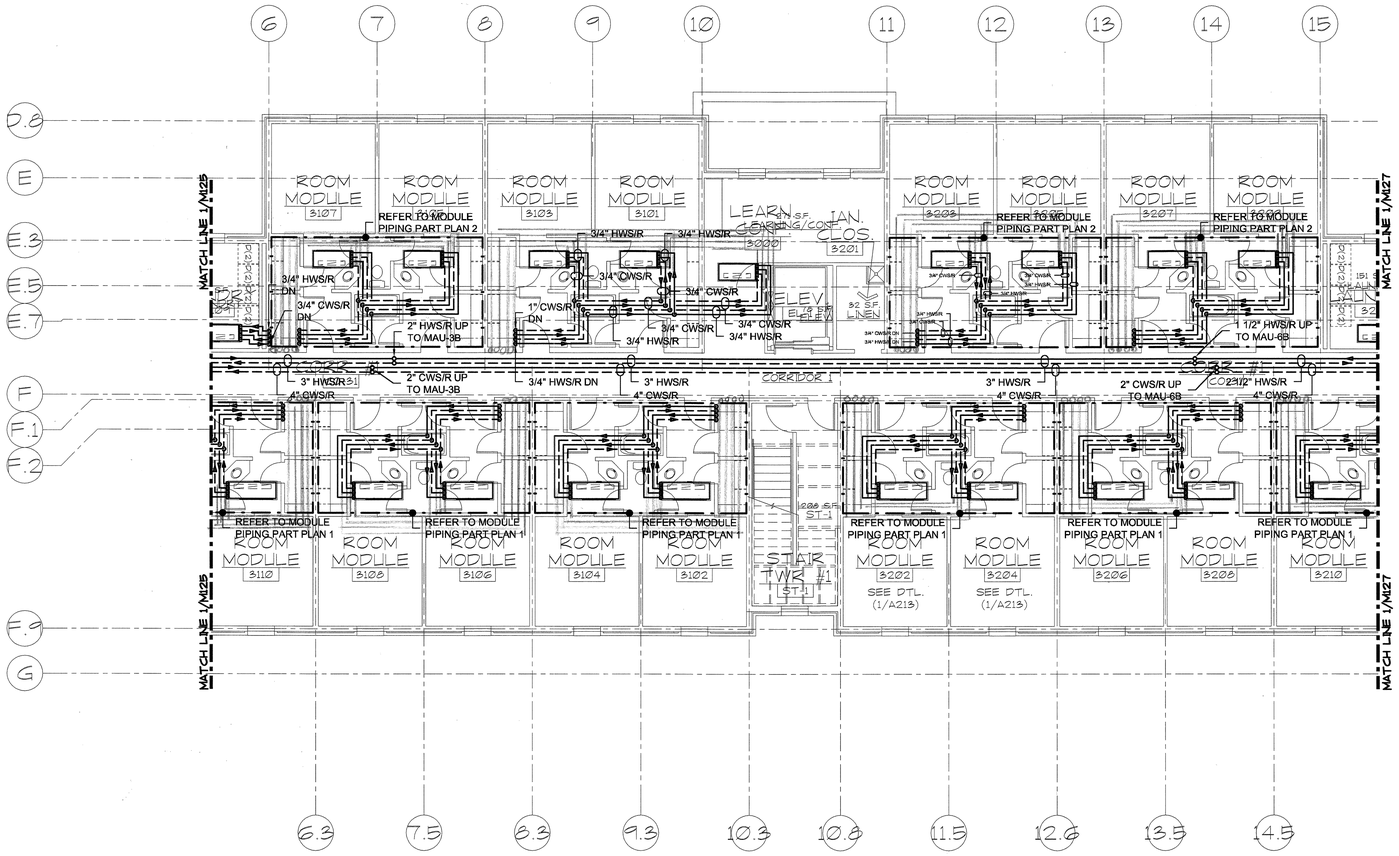
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL THIRD FLOOR PIPING PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: 1/8" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225706	
SHEET 27 OF 46	

M125

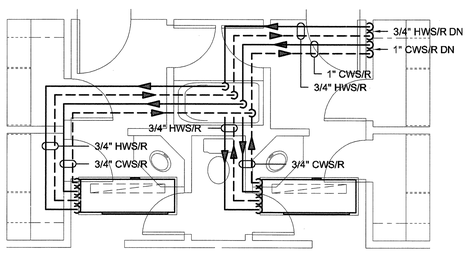
DRMWFORM REVISION FEBRUARY 2001



NORTH

1 / M126 PARTIAL THIRD FLOOR MECHANICAL PIPING PLAN

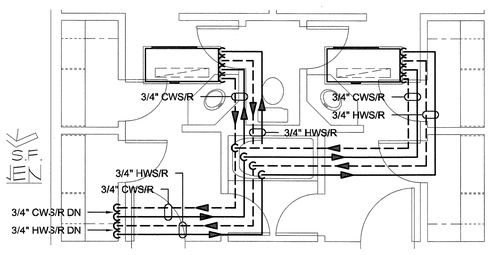
SCALE: 1/8" = 1'-0"



NORTH

2 / M126 MODULE PIPING PART PLAN 1

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



NORTH

3 / M126 MODULE PIPING PART PLAN 2

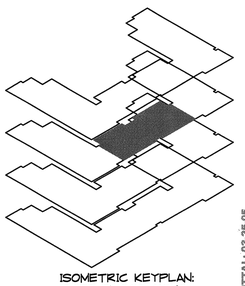
SCALE: 1/4" = 1'-0"

VALVE NOTE:

ISOLATION VALVES SHALL BE PROVIDED AT ALL SUPPLY PIPING BRANCHES OFF OF THE MAINS. ISOLATION & BALANCING VALVES SHALL BE PROVIDED AT ALL RETURN PIPING BRANCHES OFF THE MAINS. ALL VALVES SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

SEISMIC RESTRAINT NOTES:

1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
2. THIS CONTRACTOR SHALL ENGAGE A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE JURISDICTION OF THIS PROJECT TO REVIEW THE ENTIRE INSTALLATION TO DETERMINE ALL SEISMIC RESTRAINT REQUIREMENTS AND METHODS. CONTRACTOR SHALL SUBMIT A REPORT OUTLINING THE STRUCTURAL ENGINEER'S REVIEW AS WELL AS SEISMIC RESTRAINT SHOP DRAWINGS AND SUPPORTING CALCULATIONS PREPARED BY THE PROFESSIONAL STRUCTURAL ENGINEER FOR REVIEW BY THE ARCHITECT.
3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.



ISOMETRIC KEYPLAN: THIRD FLOOR SOUTH

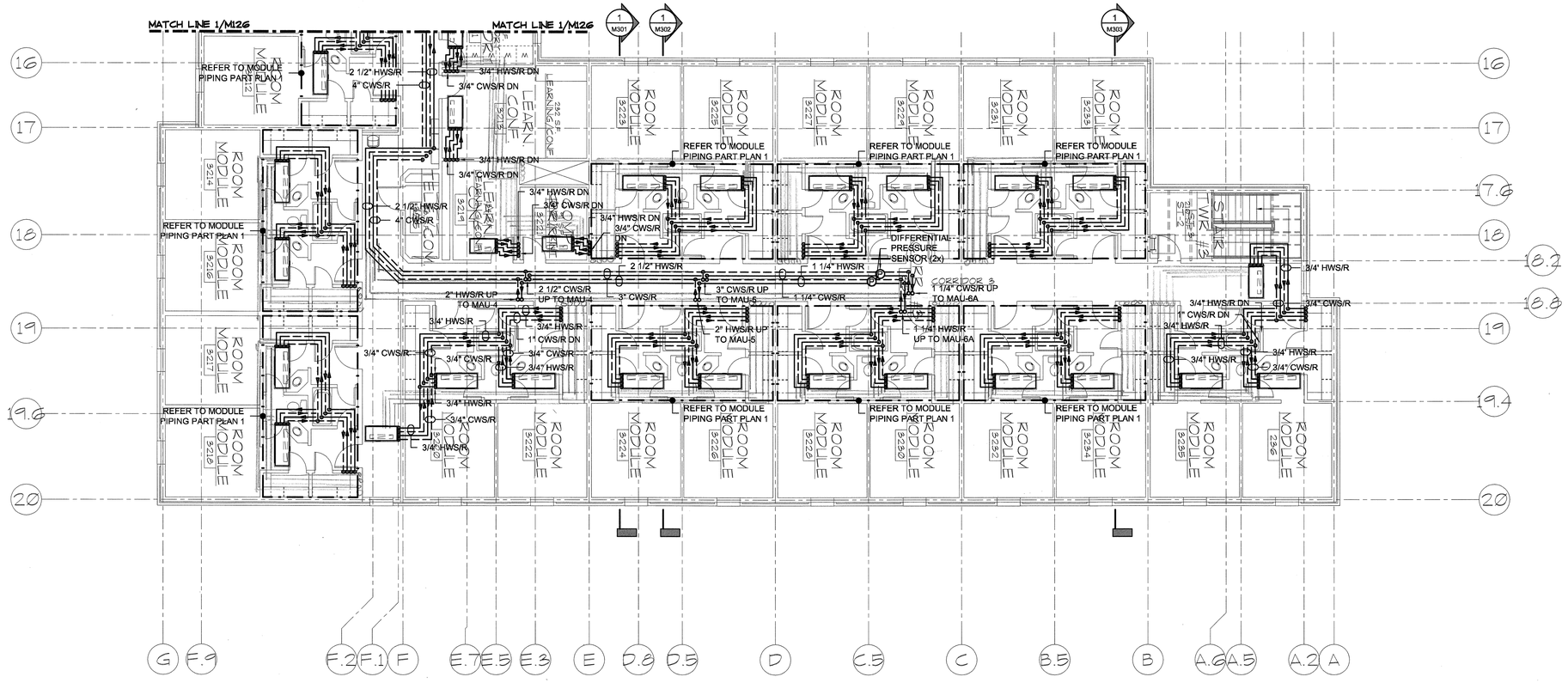
8 4 0 FEET 8 16

GRAPHIC SCALE: 1/8" = 1'-0"

4 2 0 FEET 4 8

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

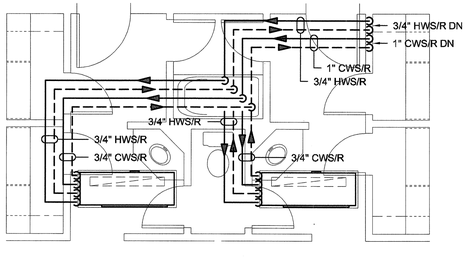
| | | |



NORTH

1 / M127 PARTIAL THIRD FLOOR MECHANICAL PIPING PLAN

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



NORTH

2 / M127 MODULE PIPING PART PLAN 1

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

VALVE NOTE:
ISOLATION VALVES SHALL BE PROVIDED AT ALL SUPPLY PIPING BRANCHES OFF OF THE MAINS. ISOLATION & BALANCING VALVES SHALL BE PROVIDED AT ALL RETURN PIPING BRANCHES OFF THE MAINS. ALL VALVES SHALL BE LOCATED IN ACCESSIBLE AREAS OF THE CEILING.

SEISMIC RESTRAINT NOTES:

1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
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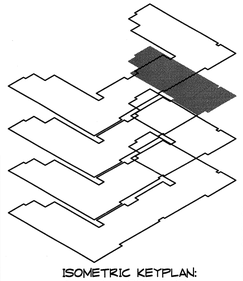


ISOMETRIC KEYPLAN: THIRD FLOOR EAST

8 4 0 FEET 8 16

GRAPHIC SCALE: 1/8" = 1'-0"

4 2 0 FEET 4 8

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

MARK	DATE	DESCRIPTION	SYM.	APPR.

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 980
341 Bulgarie Drive
Stevensville, MD 21666
Phone (410) 643-7000
Fax (410) 643-7004
info@edsg-ne.com

SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

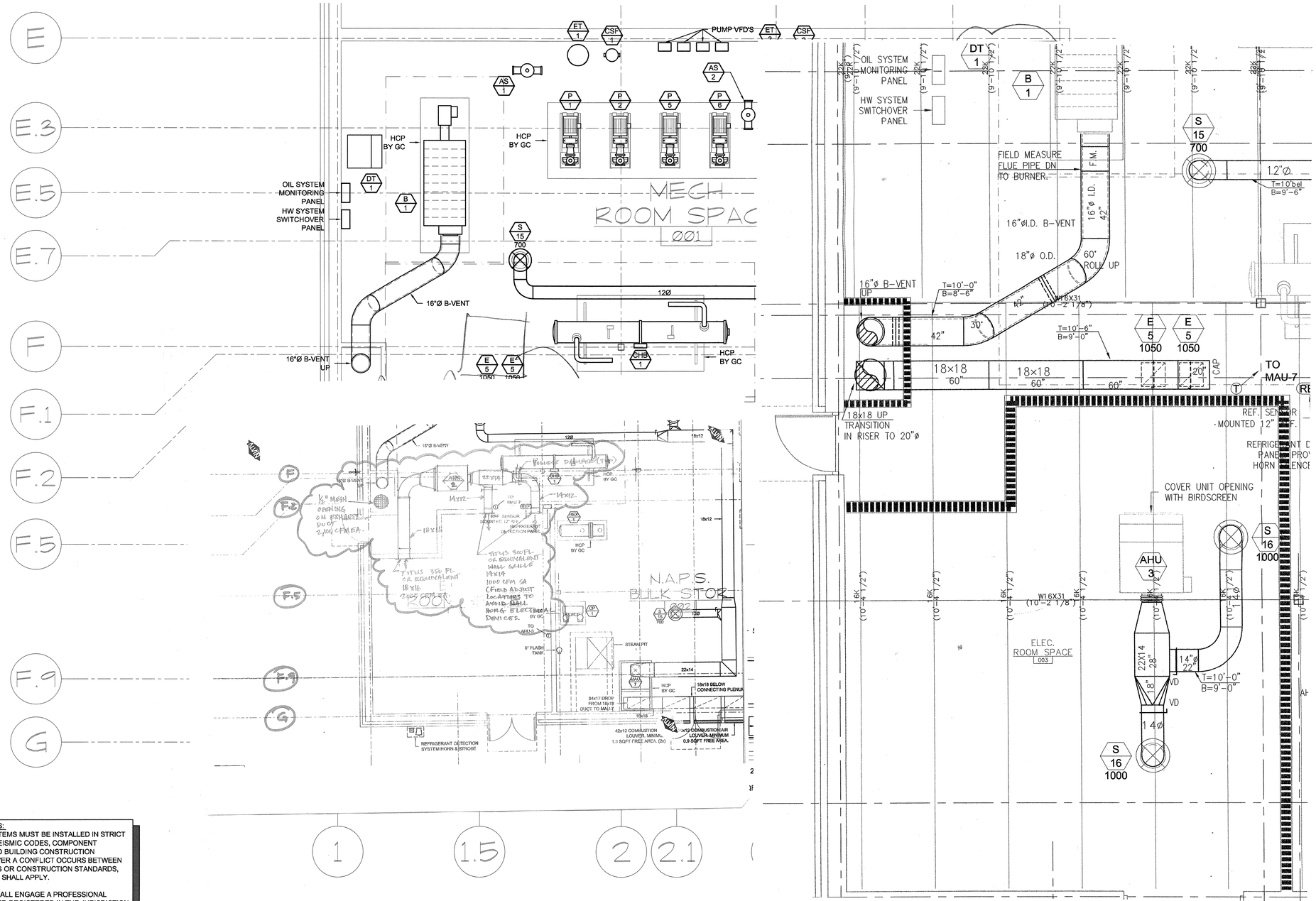
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL THIRD FLOOR PIPING PLAN

FOR CONSTRUCTION SUBMITTAL 03-25-05

CODE ID. NO. 80091 SIZE D
SCALE: 1/8" = 1'-0"
EFD NO.
STA PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225708
SHEET 29 OF 46

M127

DRAWFORM REVISION FEBRUARY 2001



SEISMIC RESTRAINT NOTES:

1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
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3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.

NORTH

1 / M201 BASEMENT MECHANICAL DUCTWORK PLAN

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

APPR	DATE	DESCRIPTION	STAL

KORTE — A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.

P.O. BOX 380
141 Industrial Drive
Blacksville, W. 26505
Phone (304) 592-3000
Fax (304) 592-3006
engineering-services.com

SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.

DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND

DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA

NAVAL STATION NEWPORT
NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS

MECHANICAL BASEMENT DUCTWORK PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

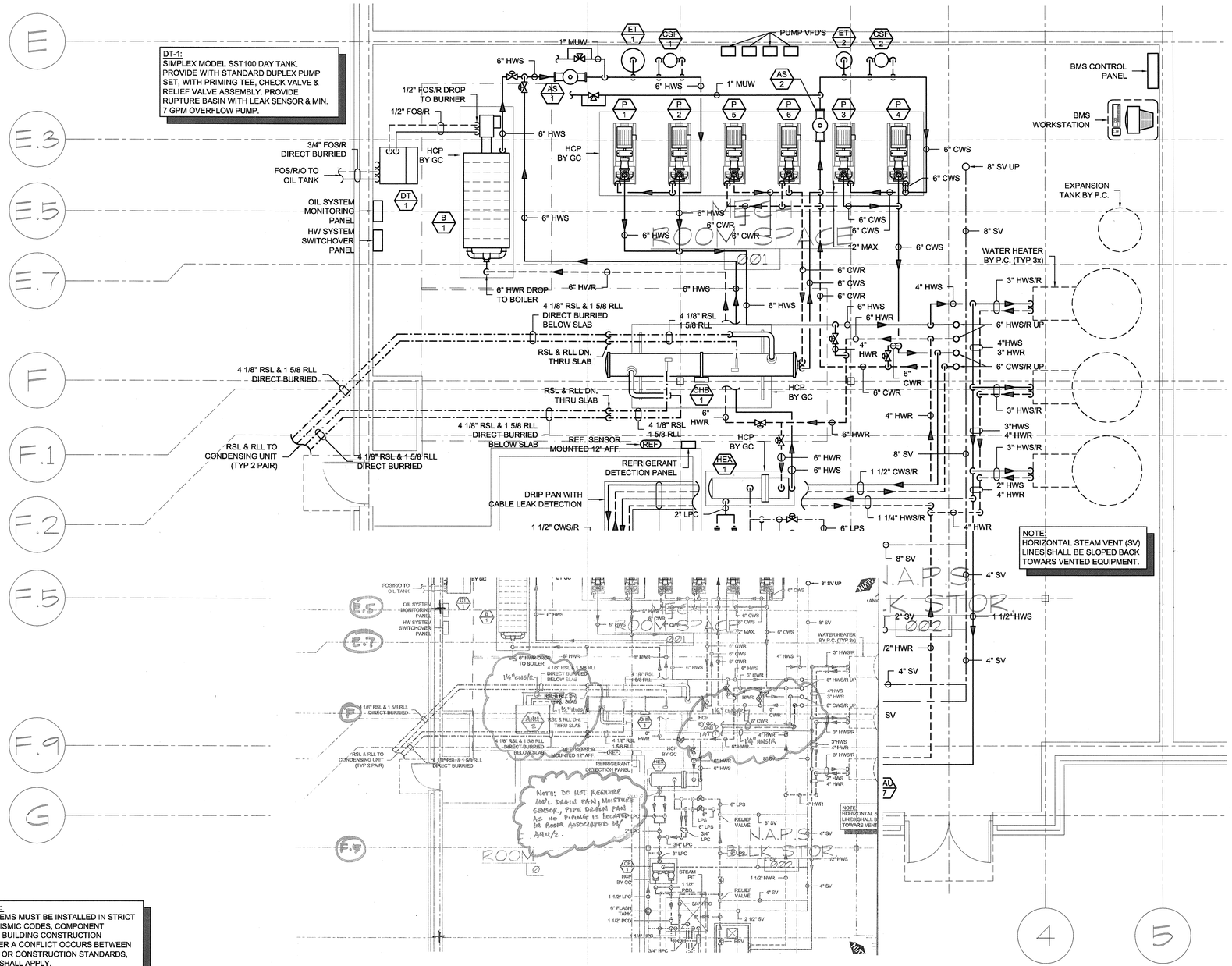
CODE ID. NO. 80091	SIZE D
SCALE: 1/4" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225709	
SHEET 30 OF 46	

M201

DRAWFORM REVISION FEBRUARY 2001

DT-1:
SIMPLEX MODEL SST100 DAY TANK. PROVIDE WITH STANDARD DUPLEX PUMP SET, WITH PRIMING TEE, CHECK VALVE & RELIEF VALVE ASSEMBLY. PROVIDE RUPTURE BASIN WITH LEAK SENSOR & MIN. 7 GPM OVERFLOW PUMP.

DRAIN NOTE:
ALL EQUIPMENT DRAINS, OVERFLOWS, & RELIEFS SHALL BE PIPED TO THE NEAREST FLOOR DRAIN UNLESS OTHERWISE NOTED.



SEISMIC RESTRAINT NOTES:

1. ALL MECHANICAL SYSTEMS MUST BE INSTALLED IN STRICT ACCORDANCE WITH SEISMIC CODES, COMPONENT MANUFACTURER'S AND BUILDING CONSTRUCTION STANDARDS. WHENEVER A CONFLICT OCCURS BETWEEN THE MANUFACTURER'S OR CONSTRUCTION STANDARDS, THE MOST STRINGENT SHALL APPLY.
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3. SEISMIC RESTRAINTS SHALL BE DESIGNED IN ACCORDANCE WITH SEISMIC FORCE LEVELS AS DETAILED IN THE APPLICABLE BUILDING CODE.

NORTH

1 / M202 BASEMENT MECHANICAL PIPING PLAN
SCALE: 1/4" = 1'-0"

4 2 0 FEET 4 8
GRAPHIC SCALE: 1/4" = 1'-0"

SYM.	DESCRIPTION	DATE	APPR.

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 981
141 Delaware Drive
Blackwood, NJ 08012
Tel: (856) 232-2345
Fax: (856) 232-7594
info@edsgroup-korte.com

SEAL

APPROVED
ACTIVITY – SATISFACTORY TO
DATE
APPROVED
FOR EFA FOR COMMANDER NAVFAC
DATE

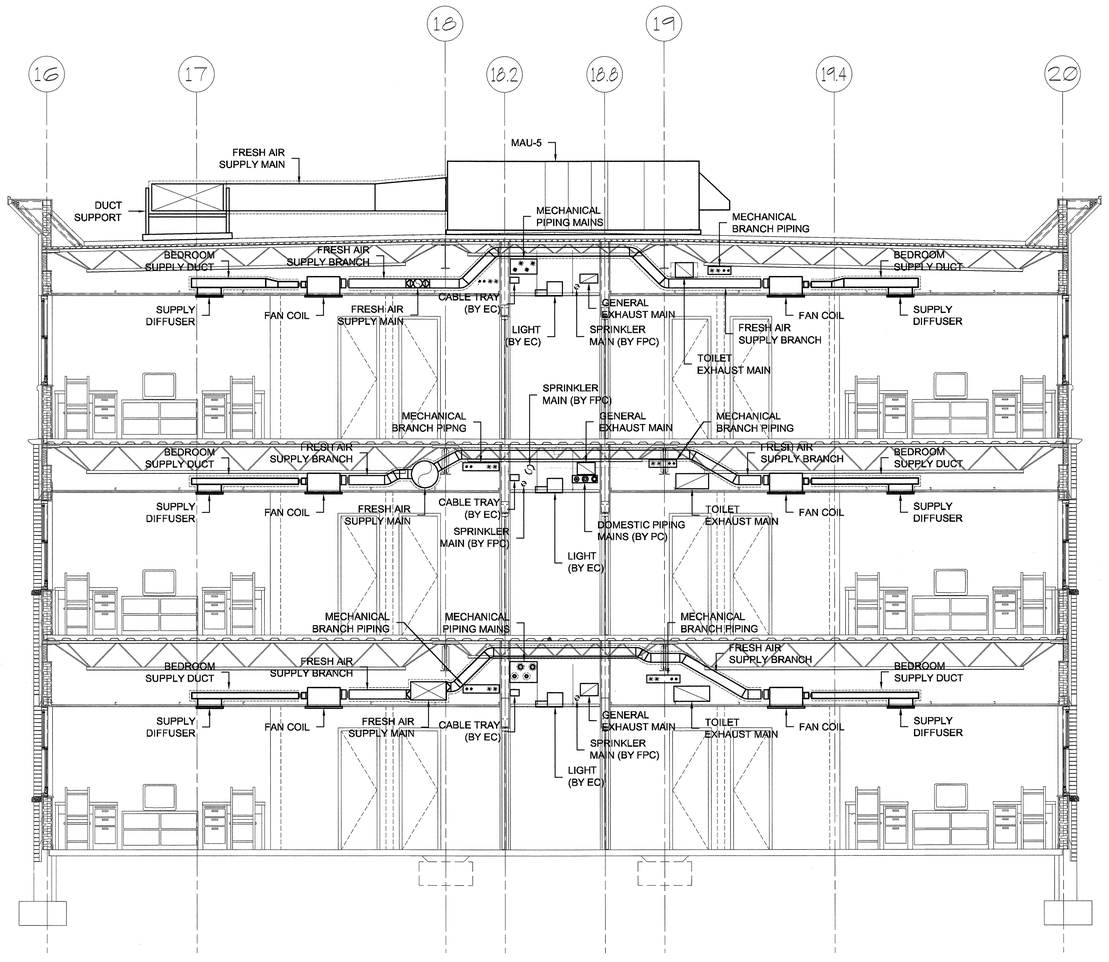
A/E	EFD
	DESIGN
	DRAWN
	REVIEW
	QC
	CHIEF ARCH./ ENGR.
	DESIGN MANAGER
	FIRE PROTECTION
	BRANCH MANAGER
	DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL BASEMENT PIPING PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: 1/4" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225805	
SHEET 31 OF 46	
M202	

DRAWFORM REVISION FEBRUARY 2001



1 M301

MECHANICAL SECTION

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

4 2 0 FEET 4 8

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

APPR.	DATE	DESCRIPTION	TYPE

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 380
341 Mountain Drive
Gatlinburg, TN 37738
Phone (423) 436-7000
Fax (423) 765-7484
info@desig-serv.com

SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

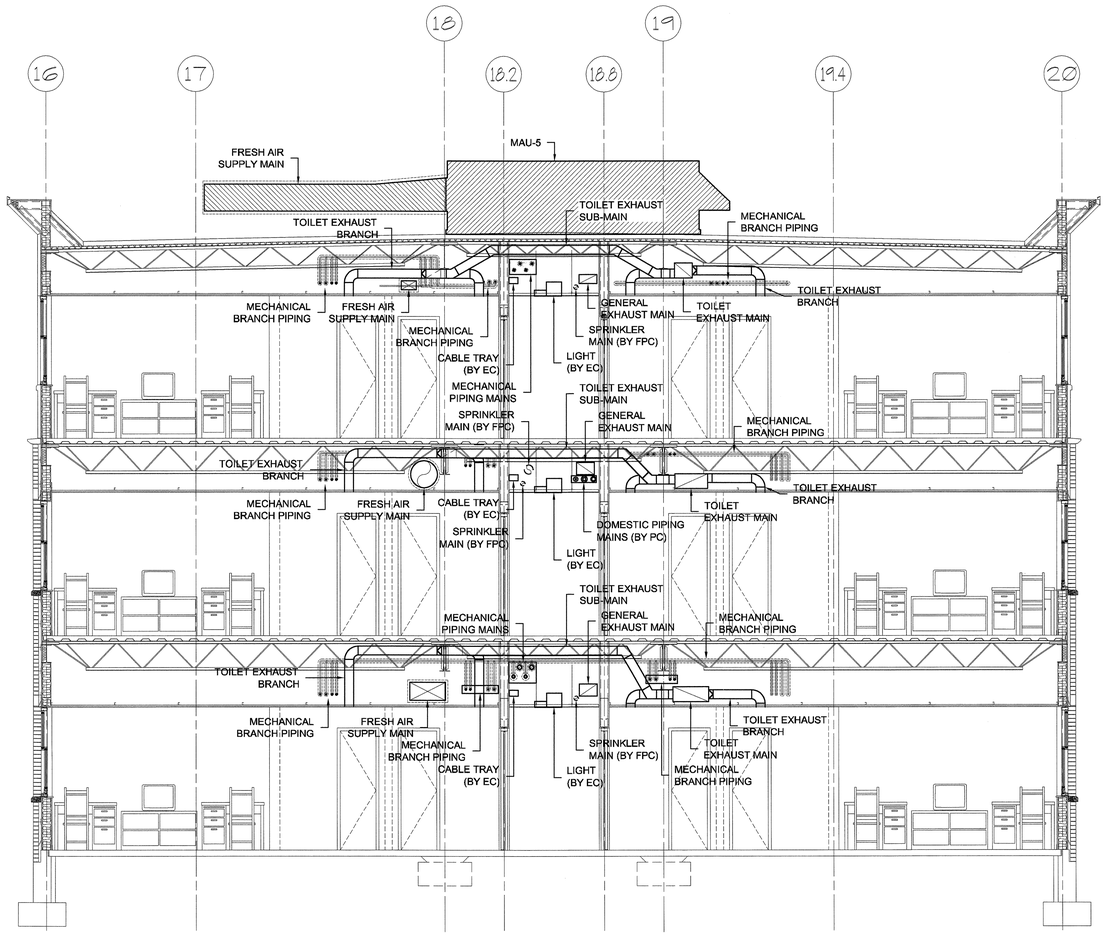
FOR CONSTRUCTION SUBMITTAL: 03-25-05

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL SECTIONS

CODE ID. NO. 80091	SIZE: D
SCALE: 1/4" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225710	
SHEET 32 OF 46	

M301

DRAWFORM REVISION FEBRUARY 2001



1 / M302 MECHANICAL SECTION

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

4 2 0 FEET 4 8

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

			APPR
		DATE	
		DESCRIPTION	
			STAL

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 985
1-1 Industrial Drive
Stevensville, MI 32676
Phone (401) 792-7000
Fax (401) 792-7094
designers@korte.com

SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.

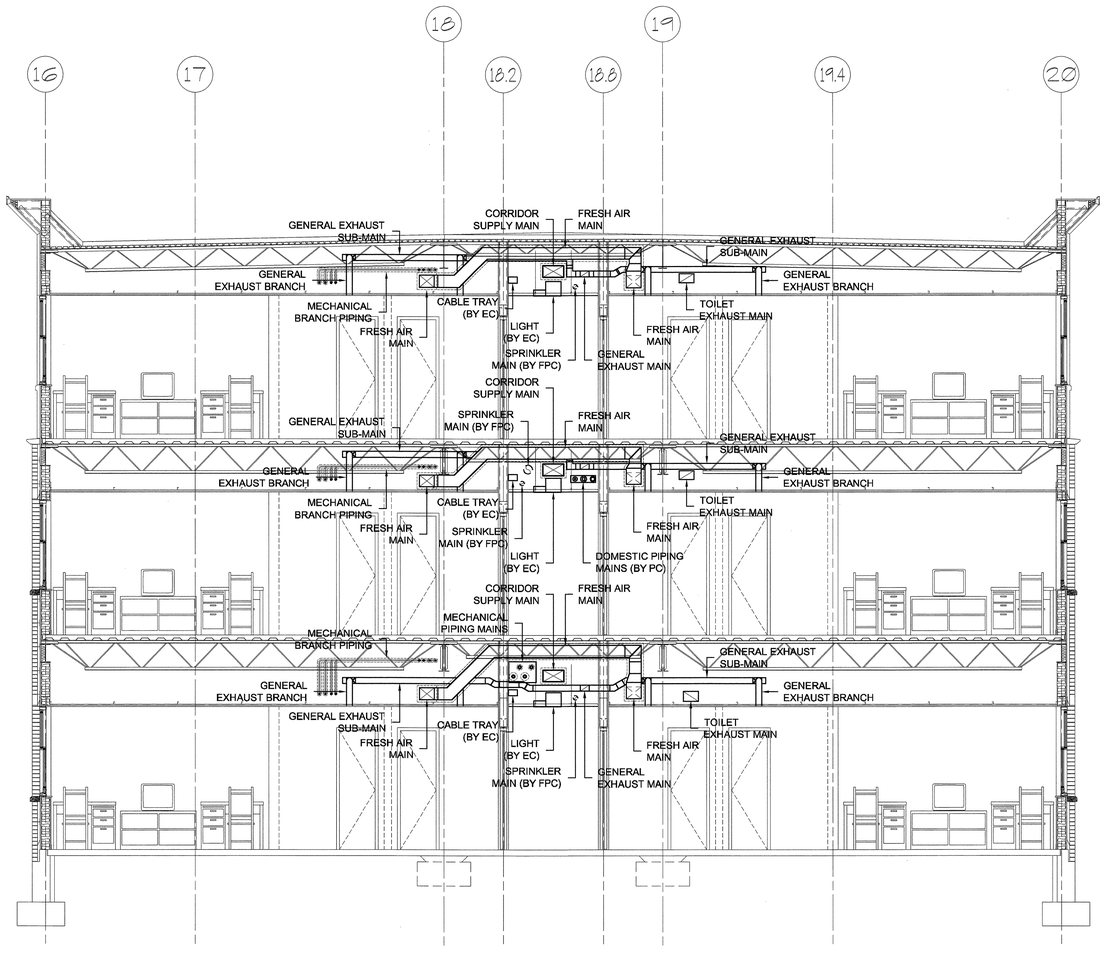
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL SECTIONS

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: 1/4" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225711	
SHEET 33 OF 46	
M302	

DRAWFORM REVISION FEBRUARY 2001



1 / M303 MECHANICAL SECTION

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

4 2 0 FEET 4 8

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

APPR	DATE	DESCRIPTION	SYM.

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 985
141 Industrial Drive
Bristol, RI 02809
Tel (401) 253-2000
Fax (401) 253-2964
info@desig-serv.com

SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.

DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

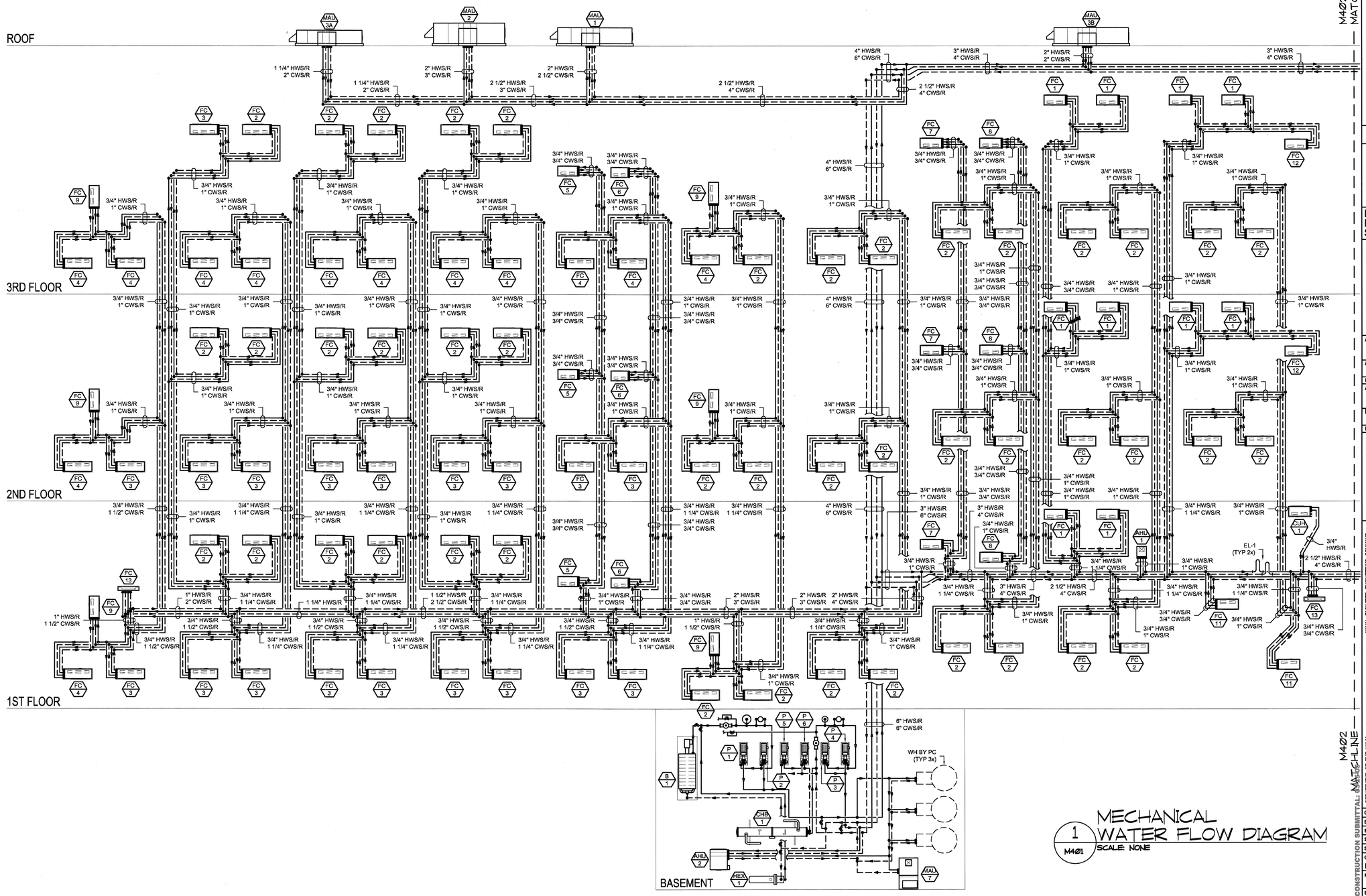
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL SECTIONS

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: 1/4" = 1'-0"	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225712	
SHEET 34 OF 46	
M303	

DRAWFORM REVISION FEBRUARY 2001

NOTE:
REFER TO SHEETS M117 THROUGH M127 & M201 FOR ADDITIONAL INFORMATION REGARDING PIPE LAYOUT & SIZING.



1 MECHANICAL WATER FLOW DIAGRAM
M401 SCALE: NONE

DATE	APPR.	DESCRIPTION	STAL

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 980
111 Industrial Drive
Statesville, NC 28687
Phone (704) 872-7551
Fax (704) 872-7552
info@eds-group-usa.com

SEAL

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ACTIVITY – SATISFACTORY TO
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REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

FOR CONSTRUCTION SUBMITTAL: M402 MATCHLINE

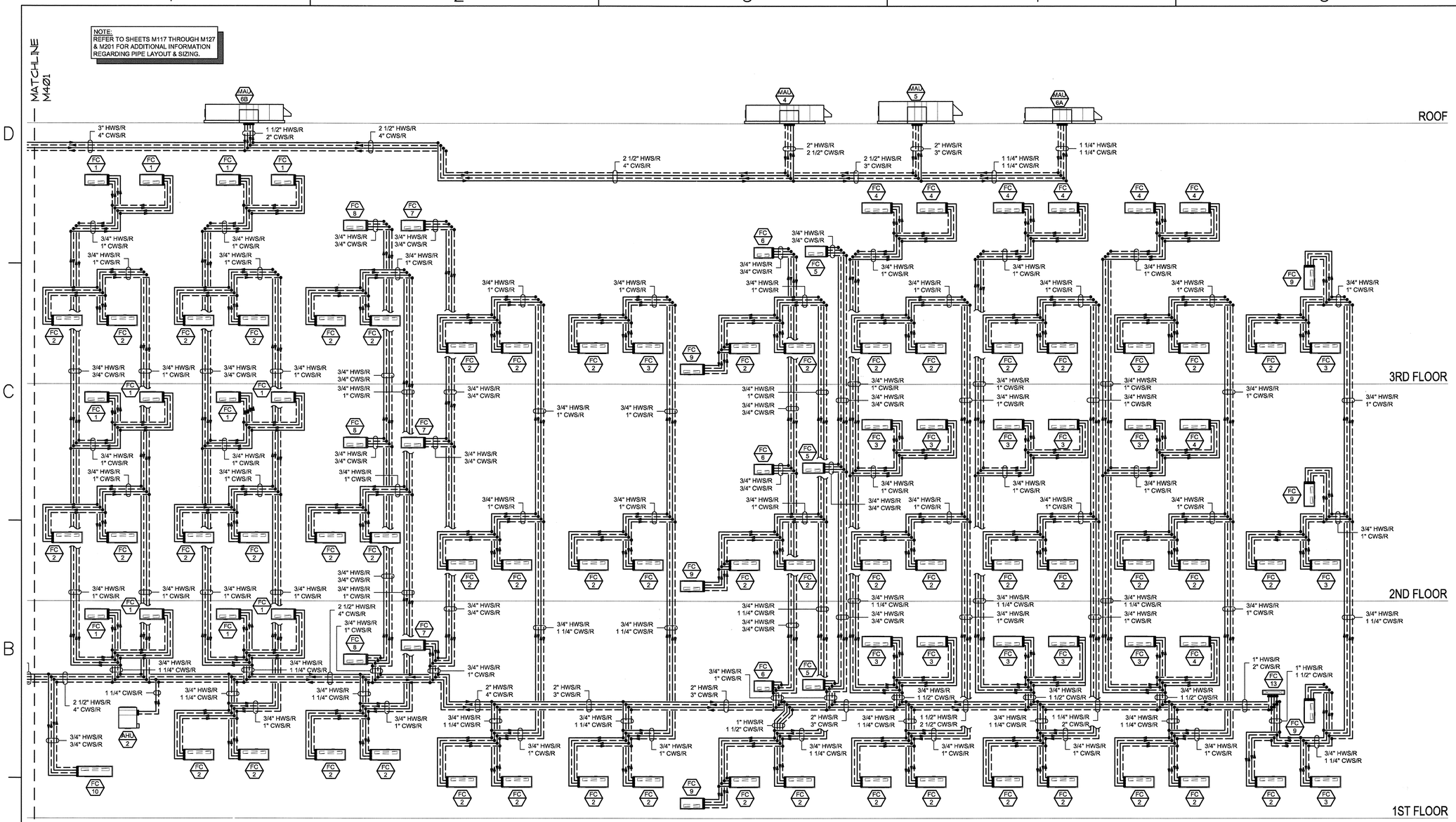
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL WATER FLOW DIAGRAM

CODE ID. NO. 80091 SIZE D
SCALE: NONE
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225713
SHEET 35 OF 46

M401

DRAWFORM REVISION FEBRUARY 2001

NOTE:
REFER TO SHEETS M117 THROUGH M127 & M201 FOR ADDITIONAL INFORMATION REGARDING PIPE LAYOUT & SIZING.



1 M402 MECHANICAL WATER FLOW DIAGRAM
SCALE: NONE

MARK	DATE	DESCRIPTION	INITIAL

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 580
1-11 Industrial Drive
Stratford, NJ 08084
Phone (856) 783-1000
Fax (856) 783-0564
engineering@korte.com

SEAL

APPROVED
ACTIVITY – SATISFACTORY TO
DATE
APPROVED
FOR EFA FOR COMMANDER, NAVFAC
DATE

A/E	EFD
	DESIGN
	DRAWN
	REVIEW
	QC
	CHIEF ARCH./ ENGR.
	DESIGN MANAGER
	FIRE PROTECTION
	BRANCH MANAGER
	DESIGN DIRECTOR

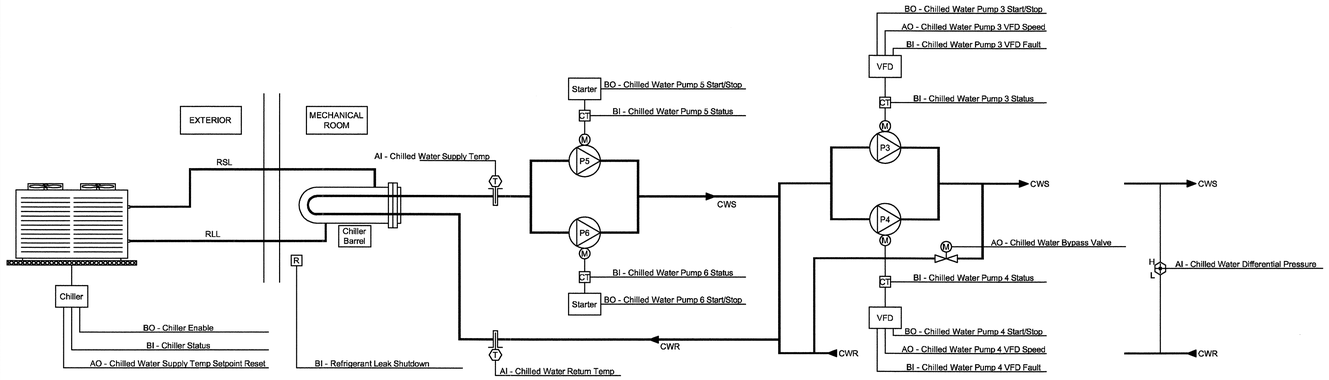
NAVAL FACILITIES ENGINEERING COMMAND
NORTHEAST PENNSYLVANIA
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY
LESTER
NAVAL STATION NEWPORT
NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL WATER FLOW DIAGRAM

FOR CONSTRUCTION SUBMITTAL 03-25-05

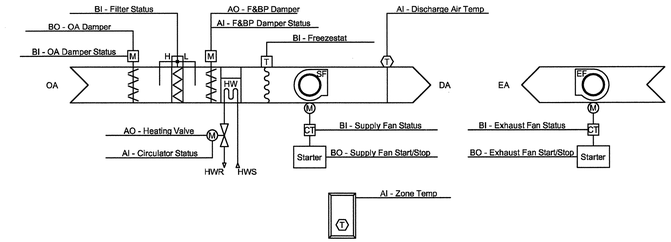
CODE ID. NO. 80091	SIZE D
SCALE: NONE	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2227514	
SHEET 36 OF 46	

M402

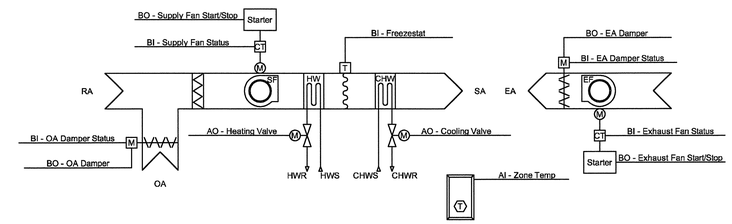
DRAWFORM REVISION FEBRUARY 2001



1 M501 CHILLED WATER SYSTEM CONTROL DIAGRAM
SCALE: NONE



3 M501 MACHINE ROOM MAKE-UP AIR UNIT & EXHAUST FAN CONTROL DIAGRAM
SCALE: NONE



4 M501 MAIL ROOM FAN COIL & EXHAUST FAN CONTROL DIAGRAM
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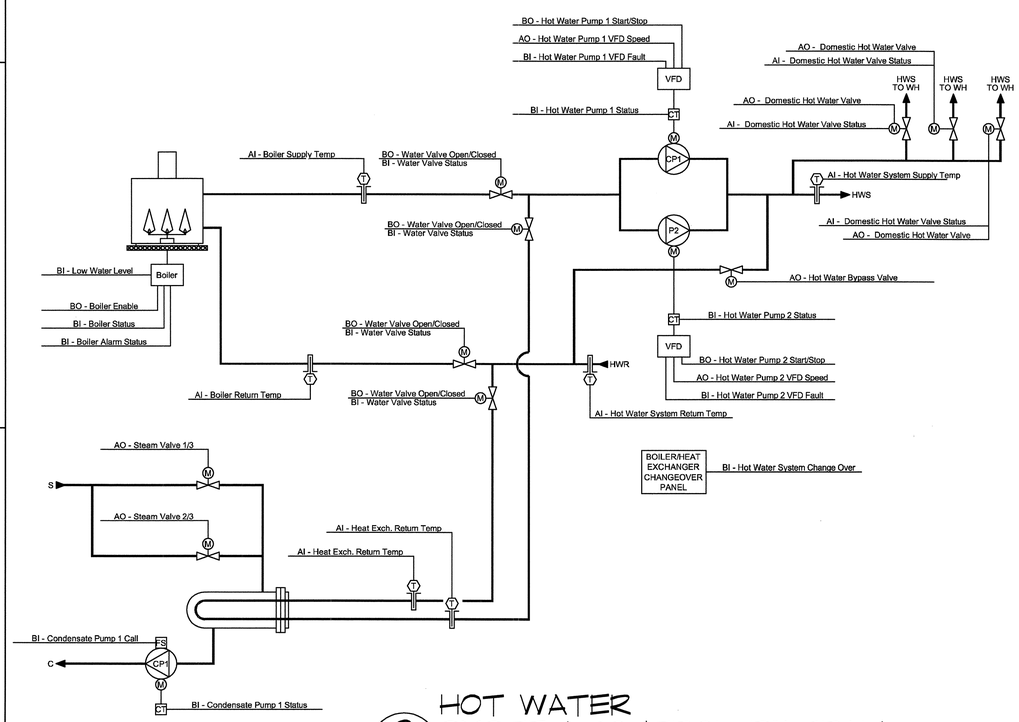

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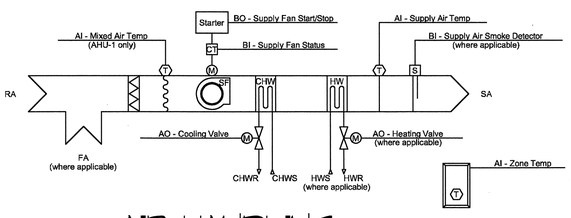

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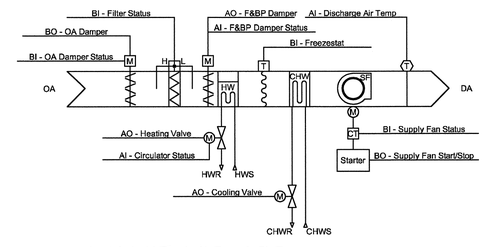

6 M501 MAKE-UP AIR UNIT CONTROL DIAGRAM
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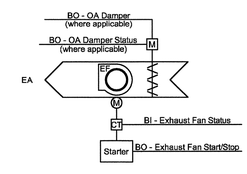

7 M501 EXHAUST FAN CONTROL DIAGRAM
SCALE: NONE

APPR.	DATE	DESCRIPTION	SYM.

KORTE
A DESIGN / BUILD COMPANY

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SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

FOR CONSTRUCTION SUBMITTAL: 03-25-05

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER, PENNSYLVANIA
NAVAL STATION NEWPORT, NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL CONTROLS DIAGRAMS

CODE ID. NO. 80091 | SIZE D
SCALE: NONE
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225715
SHEET 37 OF 46

M501

DRAWFORM REVISION FEBRUARY 2001

A. Tie in to Campus Energy Management System
New Building Management System shall be tied into and capable of communicating with existing campus wide Energy Management System using Johnson Controls N2 protocol. Provide any gateways required for translation of information.

B. Air Cooled Chiller System
BLDG #1
Chiller - Run Conditions:
The chiller shall be enabled to run whenever it is commanded to be enabled by the chiller manager program. The chiller shall run subject to its own internal safeties and controls.

Emergency Shutdown:
The chiller shall shut down and an alarm generated upon receiving an emergency shutdown signal status.

Refrigerant Detection:
The chiller shall shut down and an alarm generated upon receiving a refrigerant leak detection status.

Chilled Water Pump Lead/Standby Operation:
The two chilled water pumps shall run anytime the chiller is called to run. The chilled water pump shall also run for freeze protection whenever the outside air temperature is less than a user definable setpoint (adj.).

The lead pump shall start prior to the chiller being enabled and shall stop only after the chiller is disabled. The pump(s) shall therefore have:
- A user adjustable delay on start.
- AND a user adjustable delay on stop.

The delay times shall be set appropriately to allow for orderly chilled water system start-up, shutdown and sequencing.

The two pumps shall operate in a lead/standby fashion.
- The lead pump shall run first.
- On failure of the lead pump, the standby pump shall run and the lead pump shall turn off.

The designated lead pump shall rotate upon one of the following conditions (user selectable):
- manually through a software switch
- if pump runtime (adj.) is exceeded
- daily
- weekly
- monthly

Alarms shall be provided as follows:
- Chilled Water Pump 1
  - Failure: Commanded on, but the status is off.
  - Running in Hand: Commanded off, but the status is on.
  - Runtime Exceeded: Status runtime exceeds a user definable limit.
- Chilled Water Pump 2
  - Failure: Commanded on, but the status is off.
  - Running in Hand: Commanded off, but the status is on.
  - Runtime Exceeded: Status runtime exceeds a user definable limit.
- Lead Chilled Water Pump Failure: The lead pump is in failure and the standby pump is on.

Chiller:
The chiller shall be enabled a user adjustable time after pump statuses are proven on. The chiller shall therefore have a user adjustable delay on start.

The delay time shall be set appropriately to allow for orderly chilled water system start-up, shutdown and sequencing.

The chiller shall run subject to its own internal safeties and controls.

Alarms shall be provided as follows:
- Chiller Failure: Commanded on, but the status is off.
- Chiller Running in Hand: Commanded off, but the status is on.
- Chiller Runtime Exceeded: Status runtime exceeds a user definable limit.

Chilled Water Supply Temperature Setpoint:
The chilled water supply temperature setpoint shall reset based on outside air temperature.

As outside air temperature drops from 75°F (adj.) to 50°F (adj.) the chilled water supply temperature setpoint shall reset upwards from 45°F (adj.) to 52°F (adj.).

Chilled Water Temperature Monitoring:
The following temperatures shall be monitored:
- Chilled water supply.
- Chilled water return.

Alarms shall be provided as follows:
- High Chilled Water Supply Temp: If the chilled water supply temperature is greater than 55°F (adj.).
- Low Chilled Water Supply Temp: If the chilled water supply temperature is less than 38°F (adj.).

C. Chilled Water Loop Pumps
Chilled Water Pump System - Run Conditions:
The chilled water pumps shall be enabled whenever:
- Commanded by BMS

Chilled Water Pump Lead/Lag Operation:
The two pumps shall operate in a lead/lag fashion.
- The lead pump shall run first.
- On failure of the lead pump, the lag pump shall run and the lead pump shall turn off.

The designated lead pump shall rotate upon one of the following conditions (user selectable):
- manually through a software switch
- if pump runtime (adj.) is exceeded
- daily
- weekly
- monthly

Alarms shall be provided as follows:
- Chilled Water Pump 1
  - Failure: Commanded on, but the status is off.
  - Running in Hand: Commanded off, but the status is on.
  - Runtime Exceeded: Status runtime exceeds a user definable limit.
  - VFD Fault.
- Chilled Water Pump 2
  - Failure: Commanded on, but the status is off.
  - Running in Hand: Commanded off, but the status is on.
  - Runtime Exceeded: Status runtime exceeds a user definable limit.
  - VFD Fault.
- Lead Chilled Water Pump Failure: The lead pump is in failure and the standby pump is on.

Chilled Water Differential Pressure Control:
The controller shall measure chilled water differential pressure and modulate the chilled water pump VFD to maintain its chilled water differential pressure setpoint. The following setpoints are recommended values. All setpoints shall be field adjusted during the commissioning period to meet the requirements of actual field conditions.

The controller shall modulate chilled water pump speeds to maintain a chilled water differential pressure of 12lbf/in2 (adj.). The VFDs minimum speed shall not drop below 20 % (adj.).

On dropping chilled water differential pressure, the VFDs shall stage on and run to maintain setpoint as follows:
- The controller shall modulate the lead VFD to maintain setpoint.

On rising chilled water differential pressure, the VFD and bypass valve shall operate as follows:
- The lead VFD shall modulate to the minimum speed. Upon reaching minimum speed if the differential pressure continues to rise the bypass valve shall modulate to maintain differential pressure setpoint. Shutdown of chilled water pump shall be available at BMS when bypass valve reaches a given percentage.

Alarms shall be provided as follows:
- High Chilled Water Differential Pressure: If the chilled water differential pressure is 25 % (adj.) greater than setpoint.
- Low Chilled Water Differential Pressure: If the chilled water differential pressure is 25 % (adj.) less than setpoint.

D. Heat Exchanger/Boiler Changeover Sequence
Spring Changeover (Heat Exchanger to Boiler):
Upon activation of the changeover switch indicating that the campus steam system has been disabled, the following shall occur.
- Both Steam Heat Exchanger control valves shall close.
- Hot water pumps will continue to run for a predetermined amount of time (adj.)
- After the pumps have run for the predetermined time, the pumps shall be disabled.
- Once the pumps have been proven de-energized at the BMS, the motorized boiler isolation valves shall open and, once proven, the motorized heat exchanger isolation valves shall close.
- The boiler and pumps shall be enabled once the heat exchanger valves have been proven closed.

Fall Changeover (Boiler to Heat Exchanger):
Upon activation of the changeover switch indicating that the campus steam system has been enabled, the following shall occur.
- Hot water pumps will continue to run for a predetermined amount of time. (adj.)
- After the pumps have run for the predetermined time, the pumps shall be disabled
- Once the pumps have been proven de-energized at the BMS, the motorized heat exchanger isolation valves shall open and, once proven, the motorized boiler isolation valves shall close.
- The heat exchanger control valves and pumps shall be enabled once the boiler valves have been proven closed.

E. Heat Exchanger
Heat Exchanger System Run Conditions:
The heat exchanger system shall be enabled to run whenever:
- Steam from central plant is available (see heat exchanger/boiler changeover sequence)

To prevent short cycling, the heat exchanger shall run for and be off for minimum adjustable times (both user definable).

Hot Water Supply Temperature Setpoint:
The hot water supply temperature setpoint shall be a fixed setpoint of 180°F (adj.).

Alarms shall be provided as follows:
- High Hot Water Supply Temp: If greater than 200°F (adj.).
- Low Hot Water Supply Temp: If less than 100°F (adj.).

Heat Exchanger Steam Valves - Hot Water Control:
The controller shall measure the hot water supply temperature and modulate the two steam valves (1/3 and 2/3 valves) open/closed simultaneously in sequence to maintain its setpoint.

The steam valves shall be enabled whenever:
- The heat exchanger is called to run.
- AND hot water supply temperature is below setpoint.

The steam valves shall close whenever the hot water supply temperature rises from 190°F to 200°F (adj.).

Condensate pump run conditions:
The condensate pump shall be enabled year round. Lead/Lag pumps shall run subject to internal float and controls.

Alarms shall be provided as follows:
- Lead pump failure

F. Single Boiler System
Boiler Enable:
The boiler shall be enabled when the boiler system is commanded on. The boiler shall be enabled after pump status is proven on and shall run subject to its own internal safeties and controls as well as the following:
- Refrigerant alarm status is negative.
- Machine room make up air unit status is on.
- Machine room exhaust fan is status off.

Alarms shall be provided as follows:
- Boiler Failure: Commanded on, but the status is off.
- Boiler Running in Hand: Commanded off, but the status is on.
- Boiler Runtime Exceeded: Status runtime exceeds a user definable limit.

Hot Water Supply Temperature Setpoint:
The boiler shall maintain a hot water supply temperature setpoint as determined by its own internal controls (provided by others).

Primary Hot Water Temperature Monitoring:
The following temperatures shall be monitored:
- Primary hot water supply.
- Primary hot water return.

Alarms shall be provided as follows:
- High Primary Hot Water Supply Temp: If greater than 200°F (adj.).
- Low Primary Hot Water Supply Temp: If less than 100°F (adj.).

Boiler Safeties:
The following safeties shall be monitored:
- Boiler alarm.
- Low water level.

Alarms shall be provided as follows:
- Boiler alarm.
- Low water level alarm.

G. Hot Water Pump System
Hot Water Pump Run Conditions:
The hot water pump shall be enabled from continuously and shall run subject to safeties, changeover sequence and alarm.

Hot Water Pump Lead/Lag Operation:
The two hot water pumps shall operate in a lead/lag fashion.
- The lead pump shall run first.
- On failure of the lead pump, the lag pump shall run and the lead pump shall turn off.
- On decreasing hot water differential pressure, the lag pump shall stage on and run in unison with the lead pump to maintain hot water differential pressure setpoint.

The designated lead pump shall rotate upon one of the following conditions (user selectable):
- manually through a software switch
- if pump runtime (adj.) is exceeded
- daily
- weekly
- monthly

Alarms shall be provided as follows:
- Hot Water Pump 1
  - Failure: Commanded on, but the status is off.
  - Running in Hand: Commanded off, but the status is on.
  - Runtime Exceeded: Status runtime exceeds a user definable limit.
  - VFD Fault.
- Hot Water Pump 2
  - Failure: Commanded on, but the status is off.
  - Running in Hand: Commanded off, but the status is on.
  - Runtime Exceeded: Status runtime exceeds a user definable limit.
  - VFD Fault.
- Lead Hot Water Pump Failure: The lead pump is in failure and the standby pump is on.

Hot Water Differential Pressure Control:
The controller shall measure hot water differential pressure and modulate the hot water pump VFD to maintain its hot water differential pressure setpoint.

The following setpoints are recommended values. All setpoints shall be field adjusted during the commissioning period to meet the requirements of actual field conditions.

The controller shall modulate hot water pump speeds to maintain a hot water differential pressure of 12lbf/in2 (adj.). The VFDs minimum speed shall not drop below 20 % (adj.).

On dropping hot water differential pressure, the VFDs shall stage on and run to maintain setpoint as follows:
- The controller shall modulate the lead VFD to maintain setpoint.

On rising hot water differential pressure, the VFD and bypass valve shall operate as follows:
- The lead VFD shall modulate to the minimum speed. Upon reaching minimum speed if the differential pressure continues to rise the bypass valve shall modulate to maintain differential pressure setpoint. Shutdown of hot water pump shall be available at BMS when bypass valve reaches a given percentage.

Alarms shall be provided as follows:
- High Hot Water Differential Pressure: If 25 % (adj.) greater than setpoint.
- Low Hot Water Differential Pressure: If 25 % (adj.) less than setpoint.

G. Exhaust Fan - On/Off
Run Conditions - Scheduled:
The fan shall run according to a user definable schedule.

Exhaust Air Damper (Where Applicable):
The exhaust air damper shall open anytime the unit runs and shall close anytime the unit stops. The exhaust air damper shall close 30 sec (adj.) after the fan stops.

Alarms shall be provided as follows:
- Damper Failure: Commanded open, but the status is closed.
- Damper in Hand: Commanded closed, but the status is open.

Damper Status:
The fan shall be enabled after the damper status has proven.

Fan Status:
The controller shall monitor the fan status.

Alarms shall be provided as follows:
- Fan Failure: Commanded on, but the status is off.
- Fan in Hand: Commanded off, but the status is on.
- Fan Runtime Exceeded: Fan status runtime exceeds a user definable limit (adj.).

H. Makeup Air Unit
Run Conditions - Scheduled:
The unit shall run according to a user definable time schedule in the following modes:

- Occupied Mode: The unit shall maintain
  - A 65°F (adj.) cooling setpoint
  - A 55°F (adj.) heating setpoint.

Alarms shall be provided as follows:
- High discharge air Temp: If the temperature is greater than the cooling setpoint by a user definable amount (adj.).
- Low discharge air Temp: If the temperature is less than the heating setpoint by a user definable amount (adj.).

Discharge Air Setpoint Adjust:
The building manager shall be able to adjust the discharge temperature heating and cooling setpoints at the front end. Provide OA reset capabilities.

Emergency Shutdown:
The unit shall shut down and generate an alarm upon receiving an emergency shutdown signal.

Freeze Protection:
The unit shall shut down and generate an alarm upon receiving a freezestat status.

Outside Air Damper:
The outside air damper shall open anytime the unit runs and shall close anytime the unit stops. The supply fan shall start only after the damper status has proven the damper is open. The outside air damper shall close 4sec (adj.) after the supply fan stops.

Alarms shall be provided as follows:
- Outside Air Damper Failure: Commanded open, but the status is closed.
- Outside Air Damper in Hand: Commanded closed, but the status is open.

Supply Fan:
The supply fan shall run anytime the unit is commanded to run. To prevent short cycling, the supply fan shall have a user definable (adj.) minimum runtime, unless shutdown on safeties.

Alarms shall be provided as follows:
- Supply Fan Failure: Commanded on, but the status is off.
- Supply Fan in Hand: Commanded off, but the status is on.

Cooling Coil Valve Control:
The controller shall measure the discharge air temperature and modulate the control valve to maintain its cooling setpoint.

The cooling shall be enabled whenever:
- Outside air temperature is greater than 60°F (adj.).
- AND the fan status is on.

The cooling coil valve shall open to 100 % (adj.) whenever the freezestat is on.

Heating Coil Control Valve:
The control valve shall modulate from 0 % open when the outside air temperature is 65°F (adj.) to 100 % open when the outside air temperature is 40°F (adj.).

The control valve shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the fan status is on.

The heating coil control valve shall open to 100 % (adj.) whenever the freezestat is on.

Heating Coil Face and Bypass:
The controller shall measure the discharge air temperature and modulate the face and bypass damper to maintain its heating setpoint.

The damper shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the fan status is on.

The heating coil face and bypass damper shall open to 100 % bypass (adj.) whenever the freezestat is on.

Zone Temperature Setpoint Adjust:
The building manager shall be able to adjust the zone temperature heating setpoints at the front end. Provide OA reset capabilities.

Emergency Shutdown:
The unit shall shut down and generate an alarm upon receiving an emergency shutdown signal.

Freeze Protection:
The unit shall shut down and generate an alarm upon receiving a freezestat status.

Outside Air Damper:
The outside air damper shall open anytime the unit runs and shall close anytime the unit stops. The supply fan shall start only after the damper status has proven the damper is open. The outside air damper shall close 4sec (adj.) after the supply fan stops.

Alarms shall be provided as follows:
- Outside Air Damper Failure: Commanded open, but the status is closed.
- Outside Air Damper in Hand: Commanded closed, but the status is open.

Supply/Exhaust Fan:
The supply fan shall run anytime the unit is commanded to run.

Status shall be reported to the front end as follows:
- Supply Fan Status and Speed
- Exhaust Fan Status and Speed

Alarms shall be provided as follows:
- Supply Fan Failure: Commanded on, but the status is off.
- Exhaust Fan Failure: Commanded on, but the status is off.

Heating Coil Control Valve:
The control valve shall modulate from 0 % open when the outside air temperature is 65°F (adj.) to 100 % open when the outside air temperature is 40°F (adj.).

The control valve shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the fan status is on.

The heating coil control valve shall open to 100 % (adj.) whenever the freezestat is on.

Heating Coil Face and Bypass:
The controller shall measure the zone temperature and modulate the face and bypass damper to maintain its heating setpoint.

The damper shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the fan status is on.

The heating coil face and bypass damper shall open to 100 % bypass (adj.) whenever the freezestat is on.

Zone Temperature:
The controller shall monitor the zone temperature and modulate face and bypass damper accordingly.

Alarms shall be provided as follows:
- High Zone Temp: If the zone temperature is greater than 120°F (adj.).
- Low Zone Temp: If the zone temperature is less than 40°F (adj.).

Filter Status:
The controller shall monitor the filter status.

Alarms shall be provided as follows:
- Filter Change Required: Filter differential pressure exceeds a user definable limit (adj.).

Refrigerant Leak Status:
The controller shall monitor the refrigerant lead detector.

Alarms shall be provided as follows:
- Refrigerant leak detected.

I. Room Fan Coil Unit Control
Run Conditions:
The Room fan coil units shall be provided with a stand alone electronic thermostat with occupancy sensor, door switch and automatic changeover control. Occupancy shall be determined via door switch and occupancy sensor.

- Occupied Mode: The unit shall maintain
  - A 74°F (adj.) cooling setpoint
  - A 70°F (adj.) heating setpoint.
  - Occupied limits shall be Summer 70°F /Winter 80°F
- Unoccupied: The unit shall maintain
  - A 77°F (adj.) cooling setpoint
  - A 67°F (adj.) heating setpoint.

Supply Fan/Control Valve:
Upon a call for cooling or heating, the fan shall be energized and the control valve shall modulate to satisfy the occupied/unoccupied setpoint

K. Cabinet Unit Heater
Run Conditions - Continuous:
The unit shall be enabled continuously and shall maintain a heating setpoint of 70°F (adj.).

Alarms shall be provided as follows:
- Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable amount (adj.).

Fan:
The fan shall run anytime the zone temperature drops below heating setpoint, unless shutdown on safeties.

Heating Coil Valve:
The controller shall measure the zone temperature and modulate the heating coil valve to maintain its heating setpoint.

The heating shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the zone temperature is below heating setpoint.
- AND the fan is on.

L. Air Handling Units
Run Conditions - Scheduled:
The unit shall run according to a user definable time schedule in the following modes:

- Occupied Mode: The unit shall maintain
  - A 74°F (adj.) cooling setpoint
  - A 70°F (adj.) heating setpoint.
- Unoccupied Mode (night setback): The unit shall maintain
  - A 77°F (adj.) cooling setpoint.
  - A 67°F (adj.) heating setpoint.

Alarms shall be provided as follows:
- High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable amount (adj.).
- Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable amount (adj.).

Fans:
The fan shall run anytime the unit is commanded to run, unless shutdown on safeties.

Cooling Coil Valve:
The controller shall measure the zone temperature and modulate the cooling coil valve to maintain its cooling setpoint.

The cooling shall be enabled whenever:
- Outside air temperature is greater than 60°F (adj.).
- AND the zone temperature is above cooling setpoint.
- AND the fan is on.

Heating Coil Valve (where applicable):
The controller shall measure the zone temperature and modulate the heating coil valve to maintain its heating setpoint.

The heating shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the zone temperature is below heating setpoint.
- AND the fan is on.

Fan Status:
The controller shall monitor the fan status.

Alarms shall be provided as follows:
- Fan Failure: Commanded on, but the status is off.
- Fan in Hand: Commanded off, but the status is on.
- Fan Runtime Exceeded: Fan status runtime exceeds a user definable limit (adj.).

M. Machinery Room Exhaust/ Make Up Air
AHU/EF Run Conditions - Non-Alarm Heat Exchanger Enabled:
The units shall run continuously at LOW SPEED

AHU/EF Run Conditions - Non-Alarm Boiler Enabled:
The units shall run continuously at LOW SPEED. Prior to boiler firing, the exhaust fan shall be disabled. Once boiler completes firing the exhaust fan shall be enabled.

AHU/EF Run Conditions - Alarm Heat Exchanger Enabled:
Upon sensing a refrigerant leak at the refrigerant leak detector, the AHU and EF serving the machinery room shall be indexed to HIGH SPEED. Alarm shall be sounded locally and at front end.

AHU/EF Run Conditions - Alarm Boiler Enabled:
Upon sensing a refrigerant leak at the refrigerant leak detector, the AHU and EF serving the machinery room shall be indexed to HIGH SPEED and boiler shall be immediately disabled. Alarm shall be sounded locally and at front end.

The unit shall maintain
- A 60°F (adj.) heating setpoint.
- Cooling is not available.

Alarms shall be provided as follows:
- High Zone Temp: If the temperature is greater than the heating setpoint by a user definable amount (adj.).

Zone Temperature Setpoint Adjust:
The building manager shall be able to adjust the zone temperature heating setpoints at the front end. Provide OA reset capabilities.

Emergency Shutdown:
The unit shall shut down and generate an alarm upon receiving an emergency shutdown signal.

Freeze Protection:
The unit shall shut down and generate an alarm upon receiving a freezestat status.

Outside Air Damper:
The outside air damper shall open anytime the unit runs and shall close anytime the unit stops. The supply fan shall start only after the damper status has proven the damper is open. The outside air damper shall close 4sec (adj.) after the supply fan stops.

Alarms shall be provided as follows:
- Outside Air Damper Failure: Commanded open, but the status is closed.
- Outside Air Damper in Hand: Commanded closed, but the status is open.

Supply/Exhaust Fan:
The supply fan shall run anytime the unit is commanded to run.

Status shall be reported to the front end as follows:
- Supply Fan Status and Speed
- Exhaust Fan Status and Speed

Alarms shall be provided as follows:
- Supply Fan Failure: Commanded on, but the status is off.
- Exhaust Fan Failure: Commanded on, but the status is off.

Heating Coil Control Valve:
The control valve shall modulate from 0 % open when the outside air temperature is 65°F (adj.) to 100 % open when the outside air temperature is 40°F (adj.).

The control valve shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the fan status is on.

The heating coil control valve shall open to 100 % (adj.) whenever the freezestat is on.

Heating Coil Face and Bypass:
The controller shall measure the zone temperature and modulate the face and bypass damper to maintain its heating setpoint.

The damper shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the fan status is on.

The heating coil face and bypass damper shall open to 100 % bypass (adj.) whenever the freezestat is on.

Zone Temperature:
The controller shall monitor the zone temperature and modulate face and bypass damper accordingly.

Alarms shall be provided as follows:
- High Zone Temp: If the zone temperature is greater than 120°F (adj.).
- Low Zone Temp: If the zone temperature is less than 40°F (adj.).

Filter Status:
The controller shall monitor the filter status.

Alarms shall be provided as follows:
- Filter Change Required: Filter differential pressure exceeds a user definable limit (adj.).

Refrigerant Leak Status:
The controller shall monitor the refrigerant lead detector.

Alarms shall be provided as follows:
- Refrigerant leak detected.

N. Mail Room System
Run Conditions - Scheduled:
The unit shall run according to a user definable time schedule in the following modes:

- Occupied Mode: The unit shall maintain
  - A 74°F (adj.) cooling setpoint
  - A 70°F (adj.) heating setpoint.
- Unoccupied Mode (night setback): The unit shall maintain
  - A 77°F (adj.) cooling setpoint.
  - A 67°F (adj.) heating setpoint.

Alarms shall be provided as follows:
- High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable amount (adj.).
- Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable amount (adj.).

Fans:
The dedicated exhaust and supply fans shall run anytime the unit is commanded to run, unless shutdown on safeties.

Cooling Coil Valve:
The controller shall measure the zone temperature and modulate the cooling coil valve to maintain its cooling setpoint.

The cooling shall be enabled whenever:
- Outside air temperature is greater than 60°F (adj.).
- AND the zone temperature is above cooling setpoint.
- AND the fan is on.

Heating Coil Valve:
The controller shall measure the zone temperature and modulate the heating coil valve to maintain its heating setpoint.

The heating shall be enabled whenever:
- Outside air temperature is less than 65°F (adj.).
- AND the zone temperature is below heating setpoint.
- AND the fan is on.

Fan Status:
The controller shall monitor the supply and exhaust fan status.

Alarms shall be provided as follows:
- Fan Failure: Commanded on, but the status is off.
- Fan in Hand: Commanded off, but the status is on.

Emergency Shutdown:
The unit shall shut down and generate an alarm upon receiving an emergency shutdown signal.

Freeze Protection:
The unit shall shut down and generate an alarm upon receiving a freezestat status.

Outside Air Damper:
The outside air damper shall open anytime the unit runs and shall close anytime the unit stops. The supply fan shall start only after the damper status has proven the damper is open. The outside air damper shall close 4sec (adj.) after the supply fan stops.

Alarms shall be provided as follows:
- Outside Air Damper Failure: Commanded open, but the status is closed.
- Outside Air Damper in Hand: Commanded closed, but the status is open.
- Exhaust Air Damper Failure: Commanded open, but the status is closed.
- Exhaust Air Damper in Hand: Commanded closed, but the status is open.

O. Domestic Hot Water Control Valves
Hot Water Control Valve:
The controller shall measure the storage tank temperature and modulate the hot water valve to maintain its temperature setpoint as sensed by tank temperature sensor.

Provide the following status at the front end:
- Tank Temperature
- Valve Position

Alarms shall be provided as follows:
- Low Tank Temperature: If the tank temperature is less than the setpoint by a user definable amount (adj.).
- High Tank Temperature: If the tank temperature is greater than the setpoint by a user definable amount (adj.).
- Control Valve Failure: Commanded open, but the status is closed.
- Control Valve in Hand: Commanded closed, but the status is open.

P. Emergency HVAC Shutdown Button
An emergency system shutdown button shall be provided to shut down the entire HVAC system upon activation. In addition a button shall be provided for the Mail Room (mail room only) as indicated on the plans. Button shall be provided with protective cover to avoid accidental depression.

- Entire Building: Emergency Shutdown Button shall disable air distribution throughout the building in order to prevent the spread of airborne contaminants. This Emergency Shutdown shall also be available at the Front End. Upon activation, an alarm shall be sent to the BMS.
- Mailroom: An Emergency Shutdown Button shall disable the dedicated fan coil unit and exhaust fan. The motorized isolation dampers shall be closed. This Emergency Shutdown shall also be available at the Front End. Upon activation, an alarm shall be sent to the BMS.

SYM.	DESCRIPTION	DATE	APPR.

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 980
141 Industrial Drive
Statesville, NC 28687
Phone (704) 873-7201
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SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E | EFD
DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS

MECHANICAL CONTROLS SEQUENCES

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 | SIZE D
SCALE: NONE
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2226120
SHEET 38 OF 46
M502

DRAWFORM REVISION FEBRUARY 2001

ROOF TOP AIR HANDLING UNIT SCHEDULE (BASED ON TRANE)

SYMBOL	MODEL	SIZE	TOTAL CFM	O.A. CFM	ESP (IN)	FAN RPM	COOLING DATA											HEATING DATA								ELECT
							TOTAL MBH	SENSIBLE MBH	EDB °F	EWB °F	LDB °F	LWB °F	APD	EWT °F	LWT °F	GPM	WPD	MBH	EDB °F	LDB °F	APD	EWT °F	LWT °F	GPM	WPD	HP
MAU-1	TSCX	08	3560	3560	0.50	1479	202.3	126.1	87.0	72.0	55.0	54.7	1.18"	45.0	55.0	40.3	7.2'	193.0	10.0	60.0	0.25"	180.0	160.0	19.3	3.2'	5
MAU-2	TSCX	14	7345	7345	0.70	2176	376.1	242.8	87.0	72.0	57.1	56.7	1.25"	45.0	55.0	75.0	3.3'	398.3	10.0	60.0	0.25"	180.0	160.0	39.8	6.2'	10
MAU-3a	TSCX	03	1780	1780	0.35	2021	101.1	63.0	87.0	72.0	55.0	54.7	1.51"	45.0	55.0	20.2	4.4'	96.5	10.0	60.0	0.41"	180.0	160.0	9.6	8.4'	3
MAU-3b X	TSCX	08	3655	3655	0.50	1619	207.7	129.7	87.0	72.0	55.0	54.7	1.25"	45.0	55.0	41.4	7.6'	198.2	10.0	60.0	0.26"	180.0	160.0	19.8	3.3'	5
MAU-4	TSCX	08	3560	3560	0.50	1479	202.3	126.1	87.0	72.0	55.0	54.7	1.18"	45.0	55.0	40.3	7.2'	193.0	10.0	60.0	0.25"	180.0	160.0	19.3	3.2'	5
MAU-5	TSCX	12	6520	6520	0.70	2079	372.0	230.9	87.0	72.0	55.0	54.6	1.38"	45.0	55.0	74.1	6.7'	353.6	10.0	60.0	0.23"	180.0	160.0	35.3	4.8'	10
MAU-6a X	TSCX	03	1780	1780	0.35	2021	101.1	63.0	87.0	72.0	55.0	54.7	1.51"	45.0	55.0	20.2	4.4'	96.5	10.0	60.0	0.41"	180.0	160.0	9.6	8.4'	3
MAU-6b	TSCX	08	3330	3330	0.50	1551	188.1	117.9	87.0	72.0	55.0	54.8	1.19"	45.0	55.0	37.5	5.3'	180.6	10.0	60.0	0.21"	180.0	160.0	18.0	2.8'	5

31,530

NOTES:
1. REFER TO DETAILS ON SHEET M703 FOR UNIT CONFIGURATION.
2. PROVIDE WITH ROOF CURB, DOUBLE WALL CONSTRUCTION & EXTERNAL PIPING SERVICE MODULE.
3. PROVIDE WITH PREMIUM EFFICIENCY MOTOR, INTERNAL SPRING ISOLATORS, STARTER & DISCONNECT.
4. REFER TO ELECTRICAL PLANS FOR DISCONNECT RATINGS AND COORDINATE WITH EC.
5. PROVIDE WITH SMOKE DETECTOR TO BE WIRED BY EC. LOCATE PER NFPA & MANUFACTURERS RECOMMENDATIONS.
6. PROVIDE WITH SEISMICALLY RATED ROOF CURB.

FAN COIL UNIT SCHEDULE (BASED ON AIRTHERM)

SYMBOL	MODEL	SIZE	CFM	OA CFM	ESP	COOLING DATA										HEATING DATA				ELECTRICAL DATA			NOTES
						TOTAL MBH	SENSIBLE MBH	EDB °F	EWB °F	LDB °F	LWB °F	EWT °F	LWT °F	GPM	WPD	EDB °F	EWT °F	GPM	WPD	POWER	RPM	VOLTAGE	
FC-1	CR-B	41	380	120	0.1	6.7	5.6	70.0	61.0	56.1	54.9	45.0	55.0	1.4	1.5	67.0	180.0	0.5	0.3	79 W	1060	277/1/60	1,4,5,6,8,9,10
FC-2	CR-B	61	550	120	0.1	8.6	7.5	70.0	61.0	57.3	55.7	45.0	55.0	1.7	0.6	67.0	180.0	0.5	0.1	101 W	1060	277/1/60	1,4,5,6,8,9,10
FC-3	CR-B	61	610	120	0.1	9.2	8.1	70.0	61.0	57.6	55.9	45.0	55.0	1.9	0.7	67.0	180.0	0.5	0.1	335 W	1320	277/1/60	2,4,5,6,8,9,10
FC-4	CR-B	61	800	120	0.1	10.8	9.7	70.0	61.0	58.5	56.4	45.0	55.0	2.2	0.9	67.0	180.0	0.5	0.1	335 W	1570	277/1/60	3,4,5,6,8,9,10
FC-5	CR-B	31	285	20	0.1	5.4	4.5	72.0	62.0	57.0	55.0	45.0	55.0	1.1	0.9	67.0	180.0	0.5	0.3	80 W	1060	277/1/60	1,4,5,6,8,9,10
FC-6	CR-B	21	210	125	0.1	2.3	1.8	65.0	60.0	56.9	56.3	45.0	55.0	0.5	0.2	66.0	180.0	0.5	0.3	71 W	1010	277/1/60	1,4,5,6,8,9,10
FC-7	CR-B	41	410	215	0.1	6.5	4.6	67.0	61.0	56.4	55.6	45.0	55.0	1.3	1.4	62.0	180.0	0.5	0.3	235 W	1280	277/1/60	2,4,5,6,8,9,10
FC-8	CR-B	41	410	0	0.1	9.1	7.7	75.0	63.0	57.2	55.6	45.0	55.0	1.1	2.4	70.0	180.0	0.5	0.3	235 W	1280	277/1/60	2,4,5,6,8,9,10
FC-9	CR-B	41	510	80	0.2	9.7	8.9	74.0	62.0	57.6	55.6	45.0	55.0	2.0	2.7	69.0	180.0	0.5	0.3	235 W	1605	277/1/60	3,4,5,6,8,9,10
FC-10	CR-B	81	730	100	0.2	13.8	11.9	73.0	62.0	57.6	55.6	45.0	55.0	2.8	1.7	68.0	180.0	0.5	0.1	585 W (2)	1225	277/1/60	2,4,5,6,8,9,10
FC-11	CR-B	41	250	75	0.2	5.3	4.6	72.0	61.0	54.5	53.6	45.0	55.0	1.1	1.0	68.0	180.0	0.5	0.3	79 W	950	277/1/60	4,5,6,8,9,10
FC-12	CR-B	41	390	125	0.2	8.0	7.2	74.0	62.0	56.5	54.9	45.0	55.0	1.6	1.9	68.0	180.0	0.5	0.3	235 W	1280	277/1/60	2,4,5,6,8,9,10
FC-13	F	41	420	0	FD	8.5	7.6	74.0	62.0	56.8	55.1	45.0	55.0	1.6	1.9	68.0	180.0	0.5	0.3	79 W	1060	277/1/60	1,4,5,6,7,8,10

NOTES:
1. BASED ON STANDARD MOTOR AT HIGH SPEED.
2. BASED ON HI-STATIC MOTOR AT MEDIUM SPEED.
3. BASED ON HI-STATIC MOTOR AT HIGH SPEED.
4. BASED ON 4 PIPE SYSTEM. NO. 1 COOLING COIL & AUX HEATING COIL.
5. REFER TO PIPING PLANS FOR COIL CONNECTION SIDE.
6. PROVIDE WITH SEA COAST COATING ON COOLING & HEATING COILS.
7. PROVIDE WITH END POCKETS & 14 GA. CONSTRUCTION.
8. MINIMUM MOTOR POWER FACTOR SHALL BE 0.96.
9. PROVIDE 6"Ø OA INLET.
10. PROVIDE WITH DISCONNECT. REFER TO ELECTRICAL PLANS FOR RATINGS AND COORDINATE WITH EC.

AIR HANDLING UNIT SCHEDULE (BASED ON TRANE)

SYMBOL	MODEL	CFM	OA	ESP	COOLING DATA										HEATING DATA					ELECTRICAL DATA				NOTES
					TOTAL MBH	SENSIBLE MBH	EDB °F	EWB °F	LDB °F	LWB °F	EWT °F	LWT °F	GPM	WPD	MBH	EDB °F	EWT °F	GPM	WPD	POWER	RPM	MCA	VOLTAGE	
AHU-1	10MB-3HW	1000	40%	0.3	25.9	20.6	74.0	62.0	54.9	54.4	45.0	53.6	6.0	4.8'	57.8	67.0	180.0	2.0	1.0'	1/5	HIGH	4.5	120/1/60	1,2,3,9
AHU-2	BCHC-036	1600	0%	0.5	46.6	38.8	74.0	62.0	51.9	51.8	45.0	55.0	9.3	7.5'	NOT USED					1	1700	2.25	460/3/60	1,4
AHU-3	BCHC-054	2000	0%	0.3	70.0	51.4	80.0	67.0	56.7	55.8	45.0	55.0	14.5	1.6'	86.2	60.0	180.0	8.3	1.1'	1	1750	NA	460/3/60	1,2,4
MAU-7	MCCB-006	2100	100%	0.5	NOT USED										150.0	9.0	180.0	15.0	3.4'	1 1/2	1750	NA	460/3/60	1,2,5,6,7,8

NOTES:
1. PROVIDE WITH DISCONNECT. REFER TO ELECTRICAL PLANS FOR RATINGS & COORDINATE WITH EC.
2. PROVIDE WITH SEA COAST COATING ON COOLING & HEATING COILS.
3. MINIMUM MOTOR POWER FACTOR SHALL BE 0.96.
4. PROVIDE WITH PREMIUM EFFECIENCY MOTOR.
5. PROVIDE WITH DOUBLE WALL CONSTRUCTION & MOUNTING RAIL.
6. PROVIDE WITH DUAL SPEED MOTOR WITH 1/3 SPEED REDUCTION, INTERNAL SPRING ISOLATORS & STARTER.
7. PROVIDE WITH SMOKE DETECTOR TO BE WIRED BY EC. LOCATE PER NFPA & MANUF. RECOMMENDATIONS.
8. REFER TO DETAILS ON SHEET M703 FOR UNIT CONFIGURATION.
9. BASED ON FIRST CO.

EXHAUST FAN SCHEDULE (BASED ON GREENHECK)

SYMBOL	MODEL	TYPE	DRIVE	CFM	ESP (IN)	FAN RPM	MOTOR DATA			NOTES
							POWER	RPM	VOLTAGE	
EF-1	GB-131	ROOF	BELT	1840	0.95	1657	3/4	1725	460/3/60	1,2,3,6
EF-2	GB-101HP	ROOF	BELT	960	0.60	2443	3/4	1725	460/3/60	1,2,3,6
EF-3	HB-101HP	ROOF	BELT	660	0.45	1781	1/4	1725	277/1/60	1,3,4,7
EF-4	GB-161HP	ROOF	BELT	1880	0.95	1498	3/4	1725	460/3/60	1,2,3,6
EF-5	GB-101HP	ROOF	BELT	960	0.60	2443	3/4	1725	460/3/60	1,2,3,6
EF-6	HB-101HP	ROOF	BELT	660	0.45	1781	1/4	1725	277/1/60	1,3,4,7
EF-7	GB-101HP	ROOF	BELT	585	0.45	1642	1/4	1725	277/1/60	1,3,4,7
EF-8	GB-071	ROOF	BELT	200	0.40	1316	1/6	1725	115/1/60	1,3,4,7
EF-9	GB-131	ROOF	BELT	2100	0.40	1615	1/2	1725	460/3/60	1,2,3,5
EF-10	SP-B150	CEILING	DIRECT	150	0.30	1050	129 W	1050	115/1/60	1,4
TEF-1	GB-180HP	ROOF	BELT	4000	0.80	1578	2	1725	460/3/60	1,2,3
TEF-2	GB-161HP	ROOF	BELT	1700	0.70	1328	3/4	1725	460/3/60	1,2,3
TEF-3a	GB-161HP	ROOF	BELT	2000	0.70	1484	1	1725	460/3/60	1,2,3
TEF-3b	GB-101HP	ROOF	BELT	1000	0.50	2482	3/4	1725	460/3/60	1,2,3
TEF-4	GB-180HP	ROOF	BELT	4000	0.80	1578	2	1725	460/3/60	1,2,3
TEF-5	GB-161	ROOF	BELT	1800	0.55	924	1/2	1725	460/3/60	1,2,3
TEF-6a	GB-161HP	ROOF	BELT	2000	0.70	1484	1	1725	460/3/60	1,2,3
TEF-6b	GB-101HP	ROOF	BELT	1000	0.50	2482	3/4	1725	460/3/60	1,2,3

27,500

NOTES:
1. PROVIDE WITH DISCONNECT. REFER TO ELECTRICAL PLANS FOR RATINGS.
2. PROVIDE WITH PREMIUM EFFECIENCY MOTOR.
3. PROVIDE WITH ROOF CURB WITH CURB SEAL.
4. MINIMUM MOTOR POWER FACTOR SHALL BE 0.96.
5. PROVIDE DUAL SPEED MOTOR WITH 1/3 RPM REDUCTION.
6. PROVIDE WITH GRAVITY BACKDRAFT DAMPER IN CURB.
7. PROVIDE WITH MOTORIZED DAMPER IN CURB.

CABINET UNIT HEATER SCHEDULE (BASED ON AIRTHERM)

SYMBOL	MODEL	CFM	ESP (IN)	MBH	EAT °F	LAT °F	EWT °F	GPM	WPD	MOTOR DATA			NOTES
										HP	RPM	VOLTAGE	
CUH-1	CR-B-41	400	FD	17.6	70.0	109.9	180.0	0.5	0.23"	79 W	1060	277/1/60	1,2,3,4

NOTES:
1. BASED ON STANDARD MOTOR AT HIGH SPEED & #1 COIL.
2. PROVIDE WITH DISCONNECT. REFER TO ELECTRICAL PLANS FOR RATINS AND COORDINATE WITH EC.
3. PROVIDE WITH SEA COAST COIL COAING.
4. MINIMUM MOTOR POWER FACTOR SHALL BE 0.96.

HYDRONIC SPECIALTIES SCHEDULE

SYMBOL	MODEL	SERVES SYSTEM	SYSTEM EXPANSION (GAL)	ACCEPTANCE (GAL)	TANK VOLUME (GAL)	GPM	LOSS (FT.)	NOTES
ET-1	CA-300	HEATING	35.5	79	76	NA	NA	1,3
ET-2	CX-30	COOLING	0.63	5	8	NA	NA	1,4
AS-1	VSR800	HEATING	NA	NA	NA	464	1.4	2,5
AS-2	VSR1000	COOLING	NA	NA	NA	701	1.6	2,5

NOTES:
1. BASED ON TACO.
2. BASED ON SPIROVENT.
3. FULL ACCEPTANCE TYPE TANK.
4. LIMITED ACCEPTANCE TYPE TANK.
5. LOSS BASED ON 4 FPM INLET VELOCITY.

Page ~~1 of 2~~

Tom Maran

From: Glen MArkey [gmarkey@edesignservice.com]
Sent: Friday, October 14, 2005 2:29 PM
To: Tom Maran; Lucas Rives
Cc: "William Mayer"
Subject: FW: NAPS-BEQ - Chilled water lines
Attachments: Piping Rev.pdf

Tom,

Pending approval by the Navy, the following revisions are proposed to address field coordination issues.

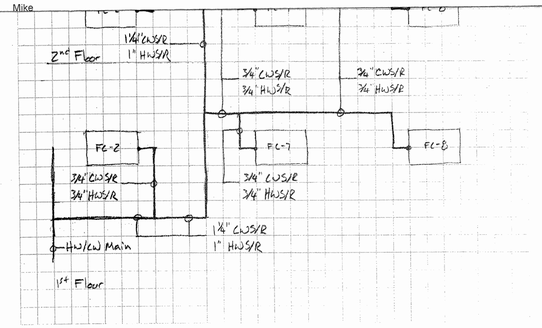
FC-5 in the computer print room shall be deleted. FC-6 in the learning/conference room shall be replaced by FC-2 as scheduled on sheet M601. A 12x6 branch duct from the new FC-2 shall serve the diffuser in the computer print room. Provide duct volume dampers for balancing. 14x8 metalaire model RHE sidewall transfer grilles shall be provided connecting the two rooms. The transfer grills shall be placed in the wall dividing the rooms below the ceiling.

The piping shall be revised as proposed below. Refer to the attached sketch for pipe sizes.

If there are any questions let me know.

Thanks,

Mike



2. PORIVDE WITH DISCONNECT. REFER TO ELECTRICAL PLANS FOR RATINGS AND COORDINATE WITH EC.
3. PROVIDE WITH SOUND ATTENUATING COMPRESSOR BLANKET.
4. PROVIDE WITH SINGLE POINT POWER CONNECTION.
5. PROVIDE LOW AMBIENT CONTROLS.
6. PROVIDE SEA-COAST COATING ON CONDENSER FINS.
7. PROVIDE ONBOARD MANUFACTURER'S DDC CONTROLS.

AIR DEVICE SCHEDULE (BASED ON METALAIRE)

SYMBOL	MODEL	TYPE	THROW	CFM	SIZE	NOTES
S-1	5000-2	LOUVERED	3	380	12x12	1
S-2	5000-2	LOUVERED	3	550	15x12	1
S-3	5000-2	LOUVERED	3	610	15x15	1
S-4	5000-2	LOUVERED	3	790	18x15	1
S-5	5000-6	LOUVERED	2	255	9x9	2,3,5
S-6	H4004-1	SIDEWALL	DOUB. DEF.	110	10x4	1,2
S-7	7600R-1	PERFORATED	NA	880	18Ø	1,2,6
S-8	5000-6	LOUVERED	4	210	9x9	2,3
S-9	5000-6	LOUVERED	4	195-250	9x9	2,3,5
S-10	5000-6	LOUVERED	4	365	12x12	2,3,5
S-11	5000-6	LOUVERED	4	60	6x6	2,3,5
S-12	5000-6	LOUVERED	4	260-285	12x9	2,3
S-13	5000-6	LOUVERED	4	390-410	12x12	2,3
S-14	5000-2	LOUVERED	4	410	12x12	1
S-15	3000-1	ROUND	NA	700	16Ø	1,2,4
S-16	3000-1	ROUND	NA	1000	20Ø	1,2
S-17	5000-6	LOUVERED	4	800	18x18	2,3,5
R-1	RHE-1	SIDEWALL	NA	1000	20x18	1
R-1	RH-7	CEILING	NA	1600	22x22	3
E-1	RHE-1	CEILING	NA	10-100	6x6	1,2,4
E-2	RH-7	CEILING	NA	215	10x8	2,3
E-3	RHE-1	SIDEWALL	NA	220	10x8	1,2
E-4	RHE-1	CEILING	NA	585	16x12	1
E-5	RHE-1	CEILING	NA	1050	22x18	1
E-6	RH-7	CEILING	NA	125	8x8	2,3

NOTES:
1. PROVIDE WITH SURFACE MOUNTING FRAME.
2. PROVIDE WITH INTEGRAL DAMPER IN NECK.
3. PROVIDE 24x24 LAY-IN PANEL.
4. PROVIDE WITH ALUMINUM CONSTRUCTION.
5. PROVIDE SQUARE-TO-ROUND TRANSITION.
6. RETURN GRILLE USED AS SUPPLY.

BASED ON TACO)

TOR DATA RPM	VOLTAGE	NOTES
1760	460/3/60	1,2,3,5,6,7
1760	460/3/60	1,2,3,5,6,7
1760	460/3/60	1,2,4,5,6,7
3450	4160/3/60	4,5,8,9,10

D COORDINATE WITH EC.

PUT TO BMS.

SED ON TACO)

STEAM PSI	LB/HR	NOTES
10	6560	1,2,3

SMITH)

ELECTRICAL DATA HP	VOLTAGE	NOTES
1 1/2	460/3/60	1,2,3,4

R.

RICAL DATA MOP	VOLTAGE	NOTES
600	460/3/60	1,2,3,4,5,6,7

MARK	DATE	REVISION	TITLE

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APPROVED
ACTIVITY – SATISFACTORY TO
DATE
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FOR EFA FOR COMMANDER NAVFAC
DATE

A/E EFD
DESIGN
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CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER, PENNSYLVANIA
DEPARTMENT OF THE NAVY
NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
NEWPORT, RI
BACHELOR'S ENLISTED QUARTERS
MECHANICAL SCHEDULES

FOR CONSTRUCTION SUBMITTAL: 03-25-05

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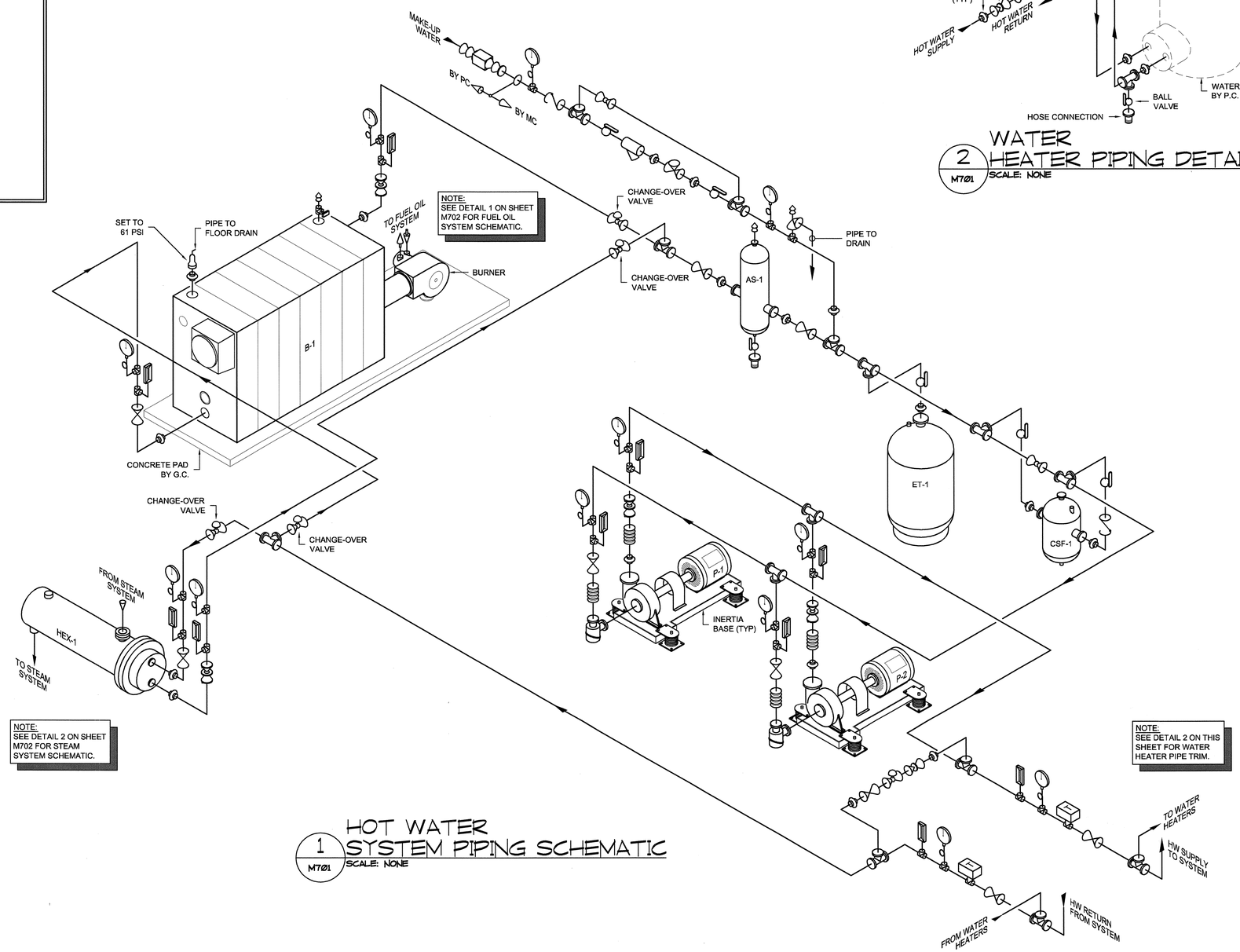
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225716
SHEET 39 OF 46
M601

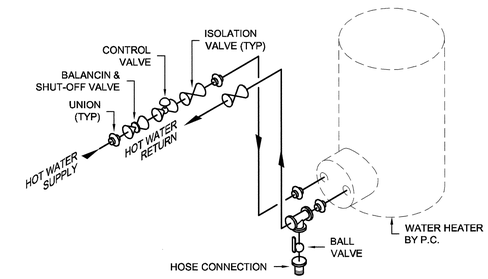
DRAWFORM REVISION FEBRUARY 2001

FIXTURE LEGEND

GENERAL VALVES	GENERAL ACCESSORIES
GATE VALVE	UNION
FULL PORT BALL VALVE	PRESSURE GAUGE
GLOBE VALVE	TEMPERATURE GAUGE
BALANCING/SHUT-OFF VALVE	SENSOR
SOLENOID VALVE	AUTOMATIC AIR VENT
TRIPLE DUTY VALVE	MANUAL AIR VENT
CONTROL VALVE	VACUUM BREAKER
3-WAY CONTROL VALVE	TEST TEE
EXPANSION VALVE	STRAINER
PRESSURE REDUCTING VALVE	VIBRATION ISOLATION
CHECK VALVE	HOSE CONNECTION
THROTLING VALVE	SUCTION DIFFUSER
BACKFLOW PREVENTION VALVE	
BOILER RELIEF VALVE	
RELIEF/SAFETY VALVE	



1 M701 HOT WATER SYSTEM PIPING SCHEMATIC
SCALE: NONE



2 M701 WATER HEATER PIPING DETAIL
SCALE: NONE

APPR	DATE	DESCRIPTION	STAL

KORTE — A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 980, 141 Industrial Drive, Bridgeville, PA 15017, Telephone (412) 221-1000, Fax (412) 262-7994, esd@korte-services.com

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APPROVED
ACTIVITY – SATISFACTORY TO
DATE
APPROVED
FOR EFA FOR COMMANDER NAVFAC
DATE
A/E EFD
DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

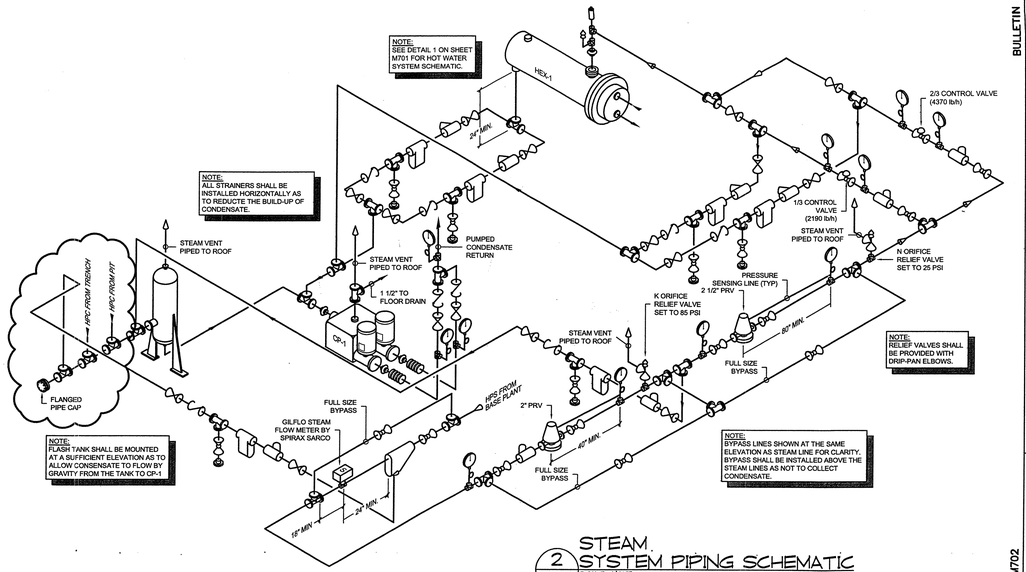
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL DETAILS

CODE ID. NO. 80091	SIZE D
SCALE: NONE	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225717	
SHEET 40 OF 46	

M701

DRAWFORM REVISION FEBRUARY 2001

FOR CONSTRUCTION SUBMITTAL 03-25-05



2 STEAM SYSTEM PIPING SCHEMATIC
M702 SCALE: NONE

REFER TO DWG. M702

BULLETIN NO. 6

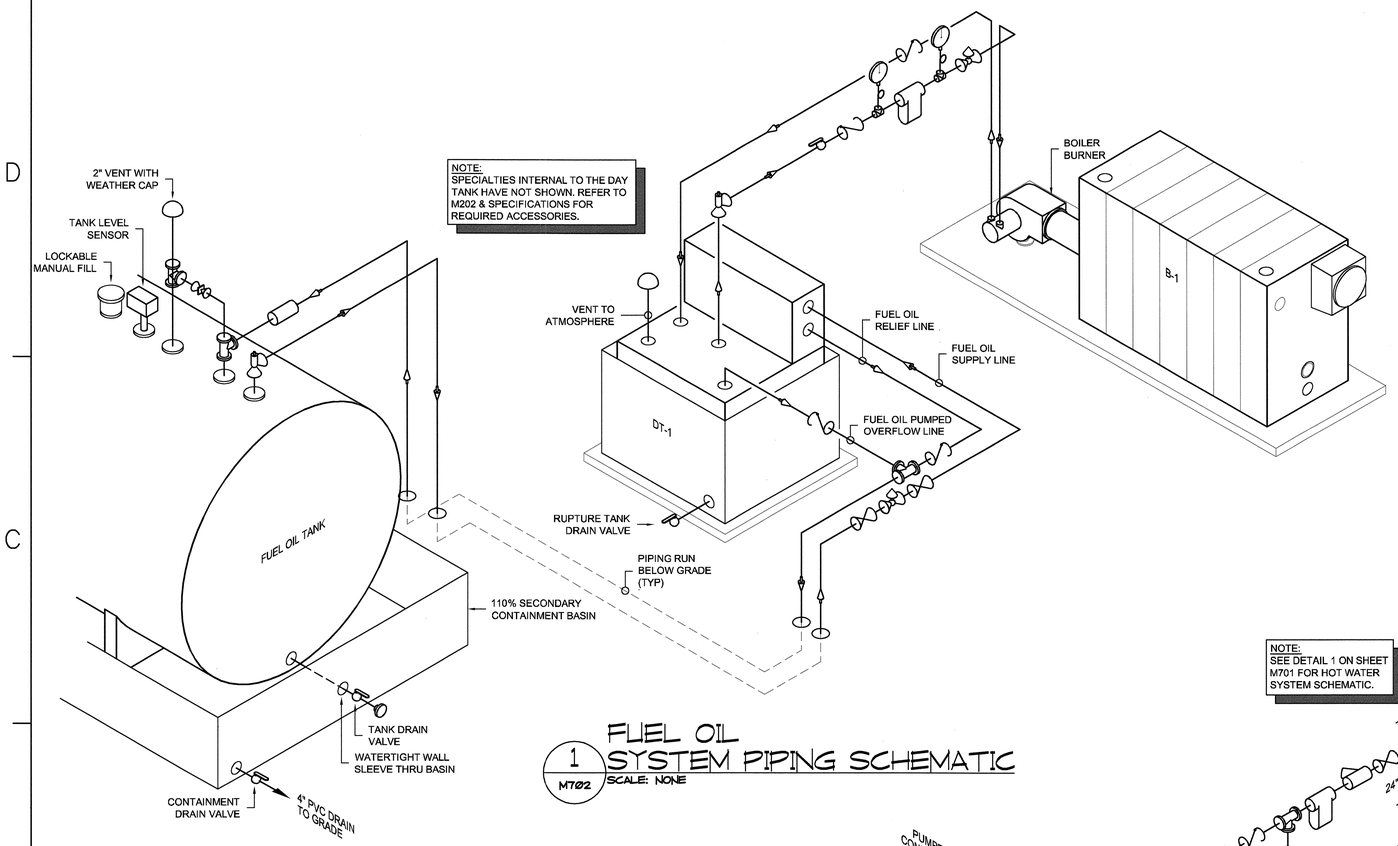
SKETCH NO.: SKM-17

DRAWN BY: MFM
CHECKED BY: WTM
SCALE: AS NOTED
PROJ.# 03270GN
DATE: 10-3-05

BEQ - NEWPORT

STEAM SYSTEM PIPING SCHEMATIC REVISION

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 68
Gibbsboro Road & Highway
Gibbsboro, N.J. 08026
Phone (856) 768-9300
Fax (856) 768-3084

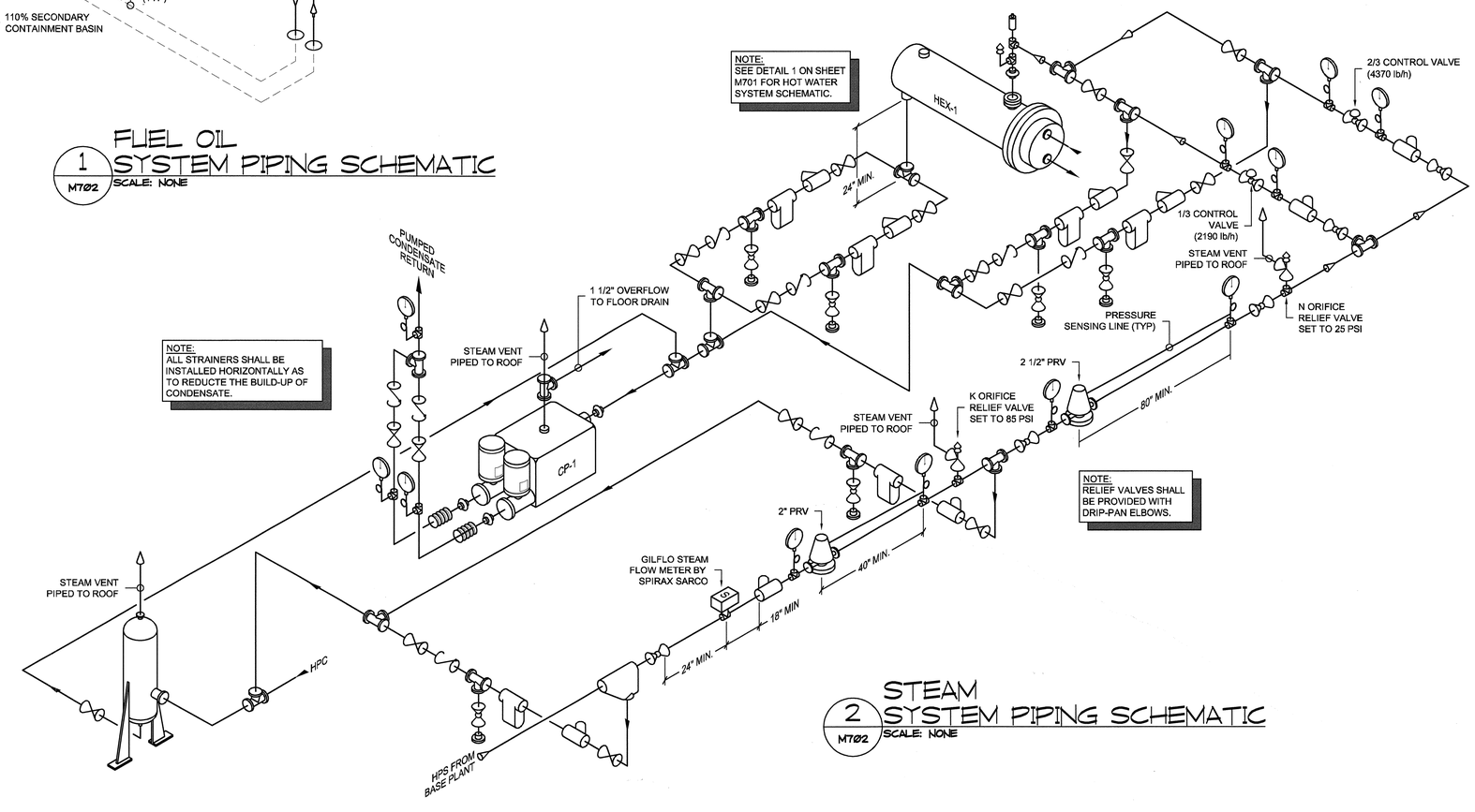


NOTE:
SPECIALTIES INTERNAL TO THE DAY TANK HAVE NOT SHOWN. REFER TO M202 & SPECIFICATIONS FOR REQUIRED ACCESSORIES.

1 M702 FUEL OIL SYSTEM PIPING SCHEMATIC
SCALE: NONE

FIXTURE LEGEND

GENERAL VALVES	GENERAL ACCESSORIES	FUEL OIL ACCESSORIES
GATE VALVE	UNION	30 MESH STRAINER
FULL PORT BALL VALVE	PRESSURE GAUGE	FUSIBLE FIRE SHUT-OFF VALVE
GLOBE VALVE	TEMPERATURE GAUGE	ANTI-SIPHON VALVE
BALANCING/SHUT-OFF VALVE	SENSOR	OIL FILTER
SOLENOID VALVE	AUTOMATIC AIR VENT	**STEAM ACCESSORIES**
TRIPLE DUTY VALVE	MANUAL AIR VENT	F&T STEAM TRAP
CONTROL VALVE	VACUUM BREAKER	STEAM LOSS DETECTOR
3-WAY CONTROL VALVE	TEST TEE	STEAM SEPERATOR
EXPANSION VALVE	STRAINER	STEAM PRESSURE REDUCTING VALVE
PRESSURE REDUCTING VALVE	VIBRATION ISOLATION	
CHECK VALVE	HOSE CONNECTION	
THROTLING VALVE	SUCTION DIFFUSER	
BACKFLOW PREVENTION VALVE	NIPPLE & PIPE CAP	
BOILER RELIEF VALVE		
RELIEF/SAFETY VALVE		



NOTE:
SEE DETAIL 1 ON SHEET M701 FOR HOT WATER SYSTEM SCHEMATIC.

NOTE:
ALL STRAINERS SHALL BE INSTALLED HORIZONTALLY AS TO REDUCTE THE BUILD-UP OF CONDENSATE.

NOTE:
RELIEF VALVES SHALL BE PROVIDED WITH DRIP-PAN ELBOWS.

2 M702 STEAM SYSTEM PIPING SCHEMATIC
SCALE: NONE

APPR.	DATE	DESCRIPTION	SYM.

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 589
141 Industrial Drive
Statesville, NC 28687
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Fax (704) 872-7004
info@edsinc.com

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DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL DETAILS

FOR CONSTRUCTION SUBMITTAL 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: NONE	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225718	
SHEET 41 OF 46	
M702	

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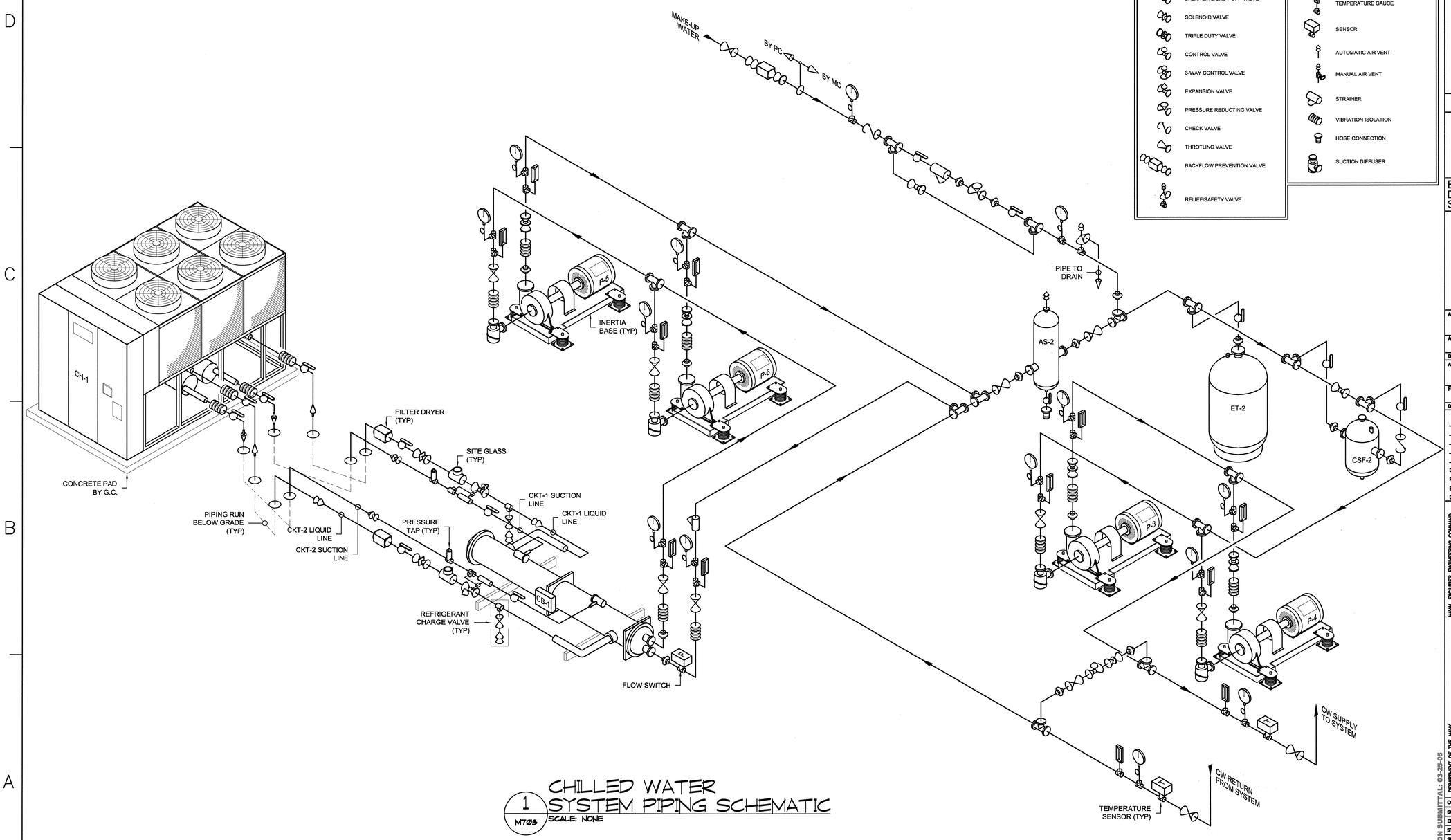

1 M703 CHILLED WATER SYSTEM PIPING SCHEMATIC
SCALE: NONE

FIXTURE LEGEND

GENERAL VALVES	GENERAL ACCESSORIES
GATE VALVE	UNION
FULL PORT BALL VALVE	PRESSURE GAUGE
GLOBE VALVE	TEMPERATURE GAUGE
BALANCING/SHUT-OFF VALVE	SENSOR
SOLENOID VALVE	AUTOMATIC AIR VENT
TRIPLE DUTY VALVE	MANUAL AIR VENT
CONTROL VALVE	STRAINER
3-WAY CONTROL VALVE	VIBRATION ISOLATION
EXPANSION VALVE	HOSE CONNECTION
PRESSURE REDUCTING VALVE	SUCTION DIFFUSER
CHECK VALVE	
THROTLING VALVE	
BACKFLOW PREVENTION VALVE	
RELIEF/SAFETY VALVE	

SYM.	DESCRIPTION	DATE	APPR.

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 560
141 Industrial Drive
Stevensville, MI 49096
Phone (269) 429-9414
Fax (269) 429-9416
info@edsinc-service.com

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FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
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ENGINEERING FIELD ACTIVITY NORTHEAST
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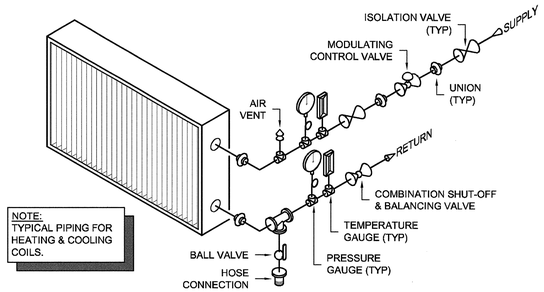
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL DETAILS

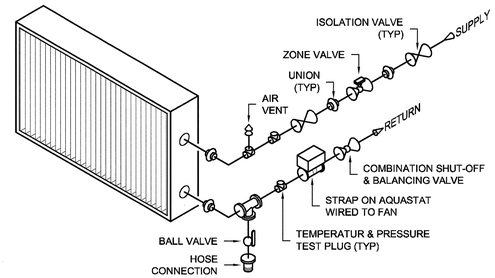
FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: NONE	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2226121	
SHEET 42 OF 46	
M703	

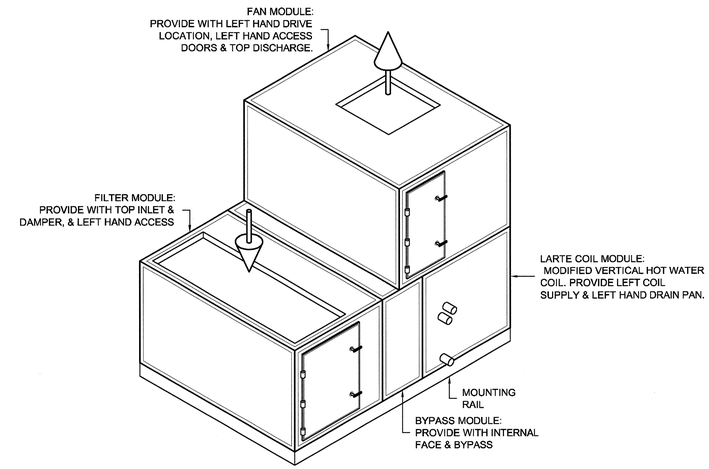
DRAWFORM REVISION FEBRUARY 2001



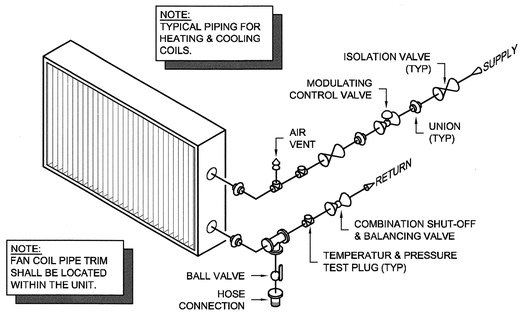
1 M704 MAKE-UP AIR UNIT COIL PIPING DETAIL
SCALE: NONE



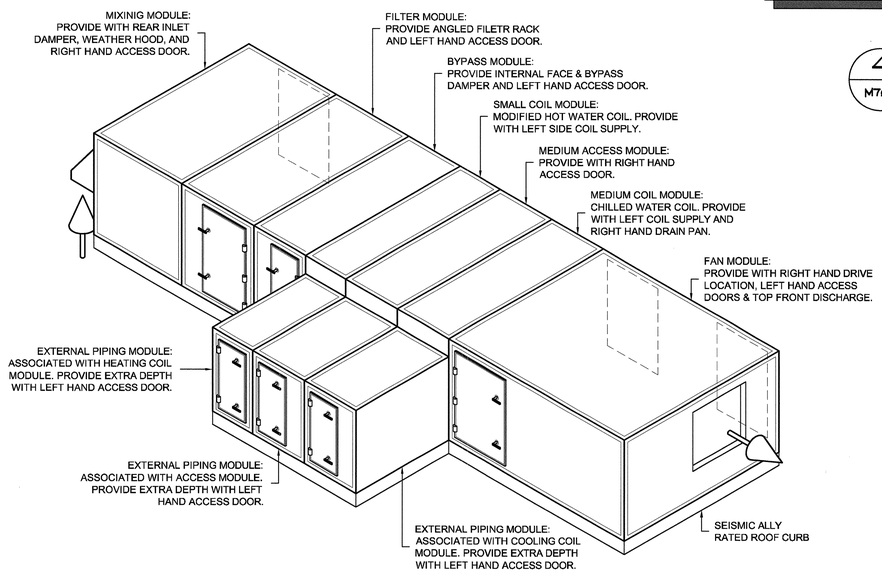
2 M704 CABINET UNIT HEATER PIPING DETAIL
SCALE: NONE



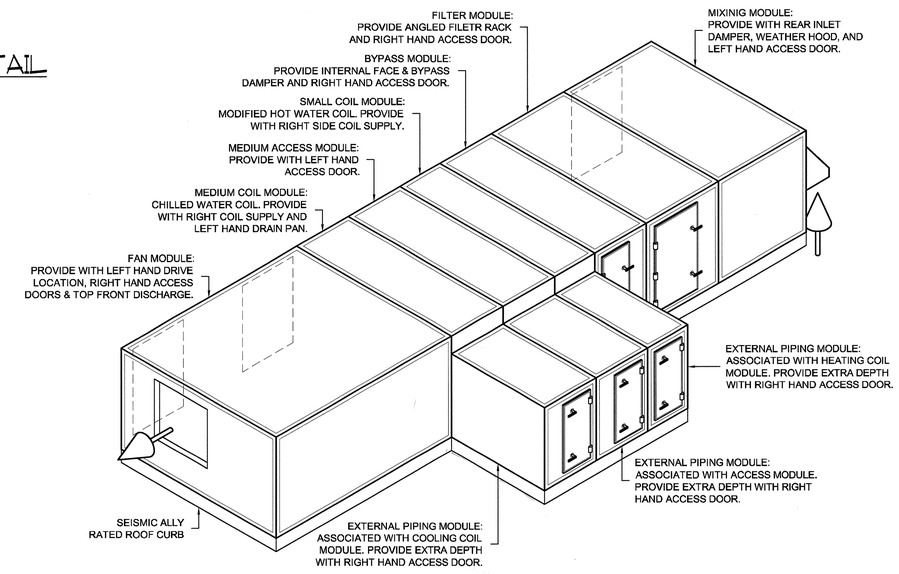
3 M704 MAKE-UP AIR UNIT 7 DETAIL
SCALE: NONE



4 M704 FAN COIL PIPING DETAIL
SCALE: NONE



5 M704 MAKE-UP AIR UNIT 1, 3A, 3B & 5 DETAIL
SCALE: NONE



6 M704 MAKE-UP AIR UNIT 2, 4, 6A, 6B DETAIL
SCALE: NONE

SYM.	DESCRIPTION	DATE	APPR

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A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 985
1000 Bellevue Ave
Warwick, RI 02818
Tel (401) 785-0909
Fax (401) 785-0966
engineering@korte.com

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BRANCH MANAGER	
DESIGN DIRECTOR	

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LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL DETAILS

FOR CONSTRUCTION SUBMITTAL 03-25-05

CODE ID. NO. 80091	SIZE D
SCALE: NONE	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225719	
SHEET 43 OF 43	
M704	

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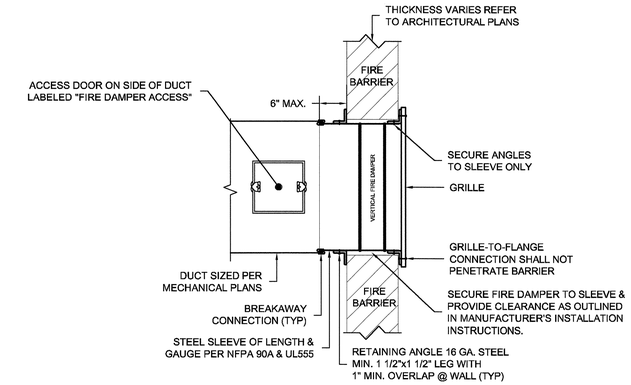
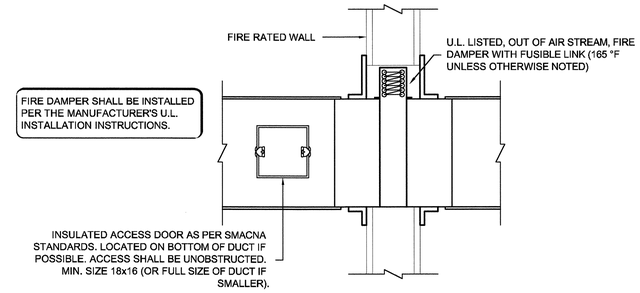


1. INSTALL FIRE DAMPERS IN ACCORDANCE WITH NFPA 90A, UL555, DAMPER MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND REQUIREMENTS INDICATED ABOVE. WHERE REQUIREMENTS ARE IN CONFLICT, THE MORE STRINGENT WILL GOVERN.
2. FIRE DAMPER SUBMITTAL SHALL INCLUDE THE FOLLOWING: PRODUCT DATA, U.L. INSTALLATION INSTRUCTIONS, & INSTALLATION DETAILS SPECIFIC TO PROJECT CONDITIONS.
3. A COPY OF THE SUBMITTAL SHALL BE KEPT AT THE JOBSITE AND DISTRIBUTED TO PERTINENT SUBCONTRACTORS, INCLUDING, BUT NOT LIMITED TO DRYWALL AND MASONRY CONTRACTORS.

1 VERTICAL FIRE DAMPER WITH GRILLE DETAIL
M705 SCALE: NONE

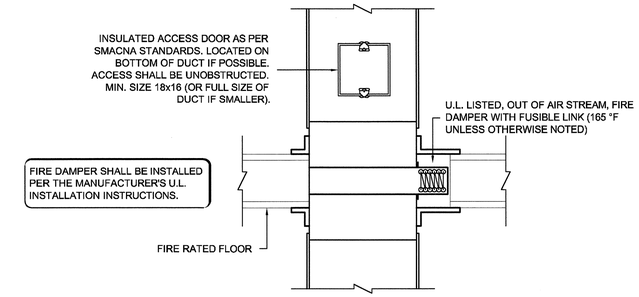


FIRE DAMPER SUBMITTAL SHALL INCLUDE THE FOLLOWING:

1. PRODUCT DATA.
2. U.L. INSTALLATION INSTRUCTIONS.
3. INSTALLATION DETAILS SPECIFIC TO PROJECT CONDITIONS.

A COPY OF THE SUBMITTAL SHALL BE KEPT AT THE JOBSITE AND DISTRIBUTED TO PERTINENT SUBCONTRACTORS, INCLUDING, BUT NOT LIMITED TO DRYWALL AND MASONRY CONTRACTORS.

2 VERTICAL FIRE DAMPER DETAIL
M705 SCALE: NONE

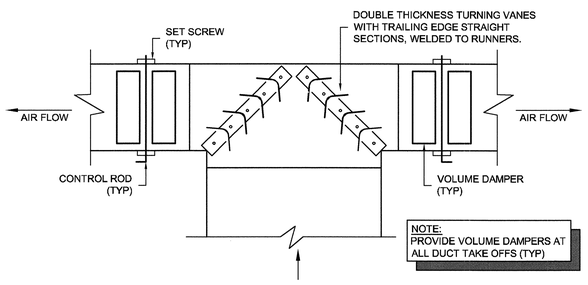


FIRE DAMPER SUBMITTAL SHALL INCLUDE THE FOLLOWING:

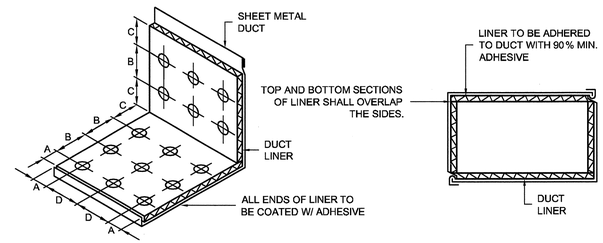
1. PRODUCT DATA.
2. U.L. INSTALLATION INSTRUCTIONS.
3. INSTALLATION DETAILS SPECIFIC TO PROJECT CONDITIONS.

A COPY OF THE SUBMITTAL SHALL BE KEPT AT THE JOBSITE AND DISTRIBUTED TO PERTINENT SUBCONTRACTORS, INCLUDING, BUT NOT LIMITED TO DRYWALL AND MASONRY CONTRACTORS.

3 HORIZONTAL FIRE DAMPER DETAIL
M705 SCALE: NONE



4 DUCT TEE DETAIL
M705 SCALE: NONE

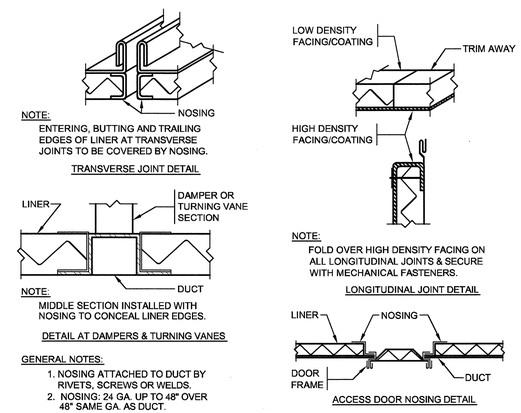


NOTES:

1. METAL FASTENERS SHALL BE OMARK INSUL-PINS DURO DYNE FASTENERS OR GRIP NAILS
2. GRIP NAILS SHALL BE INSTALLED BY "GRIPNAIL AIR HAMMER" OR BY AUTOMATIC FASTENER EQUIPMENT
3. ENDS OF LINER SHALL BE BUTTED FIRMLY TOGETHER
4. LINED DUCTWORK SHALL ALSO BE PROVIDED WITH EXTERIOR INSULATION
5. SEE "DUCT LINER NOSING DETAIL"

VELOCITY	DIMENSIONS			
	A	B	C	D
0-2500 FPM	3"	12"	4"	18"
2501-6000 FPM	3"	6"	4"	16"

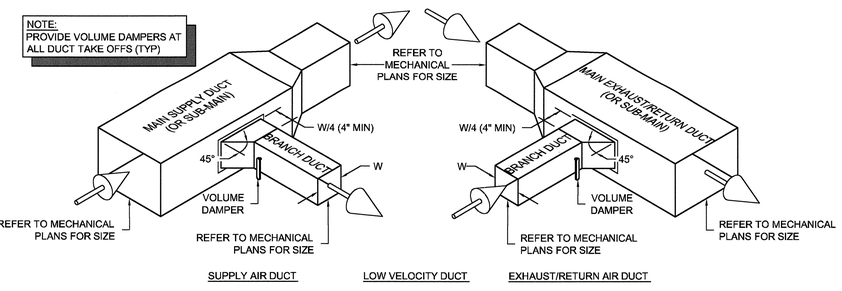
5 DUCT LINER DETAIL
M705 SCALE: NONE



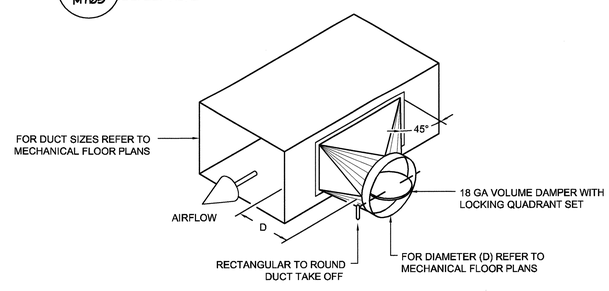
GENERAL NOTES:

1. NOSING ATTACHED TO DUCT BY RIVETS, SCREWS OR WELDS.
2. NOSING: 24 GA. UP TO 48" OVER 48" SAME GA. AS DUCT.

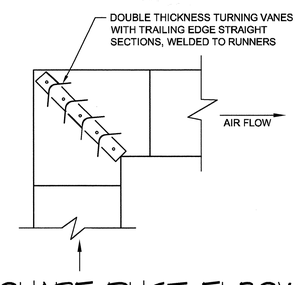
6 LINER NOSING DETAIL
M705 SCALE: NONE



7 BRANCH DUCT CONNECTIONS
M705 SCALE: NONE



8 ROUND DUCT TAKE-OFF
M705 SCALE: NONE



9 SQUARE DUCT ELBOW
M705 SCALE: NONE

APPR	DATE	DESCRIPTION	STAL

KORTE — A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 985
141 Bulgarie Drive
Stevensville, MD 21666
Phone (410) 643-7800
Fax (410) 700-7994
eng@esi-services.com

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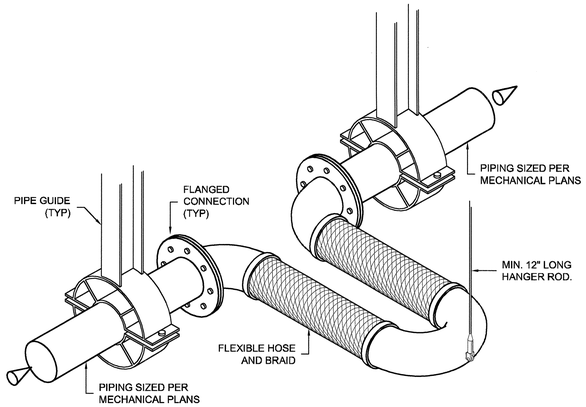
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL DETAILS

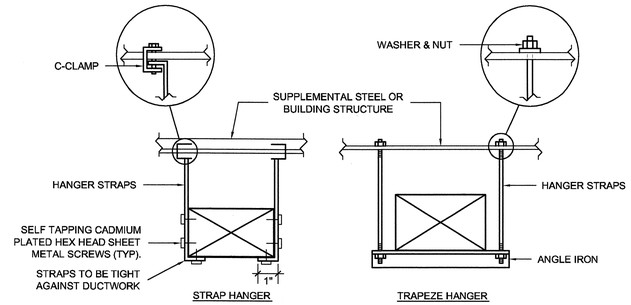
FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 SIZE D
SCALE: NONE
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225720
SHEET 44 OF 46
M705

DRAWFORM REVISION FEBRUARY 2001



1 EXPANSION LOOP DETAIL
M706 SCALE: NONE

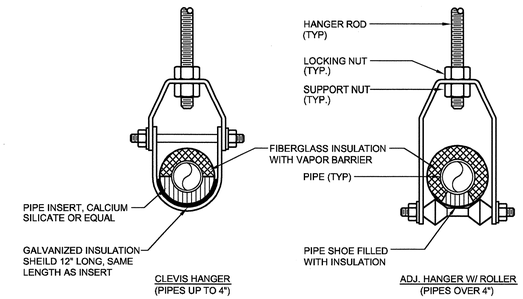


NOTE:
NO POP RIVETS ALLOWED, USE SELF-TAPPING SHEETMETAL SCREWS ONLY.

HANGER SIZES*			
MAX. SIDE	HANGER	HORIZONTAL SUPPORT ANGLE	MAXIMUM SPACING
30"	1"x18" GAUGE STRAP	NONE REQUIRED	10'-0"
36"	1/4" ROD	1-1/2"x1-1/2"x1/8"	8'-0"
48"	1/4" ROD	2"x2"x1/8"	8'-0"
60"	5/16" ROD	2"x2"x1/8"	8'-0"
84"	3/8" ROD	2"x2"x1/8"	8'-0"

* FOR RECTANGULAR DUCTS

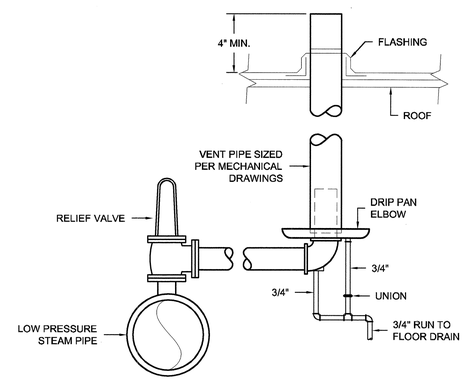
2 DUCT HANGER DETAIL
M706 SCALE: NONE



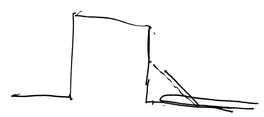
NOTE:
REFER TO SPECIFICATIONS FOR HANGER ROD SPACING.

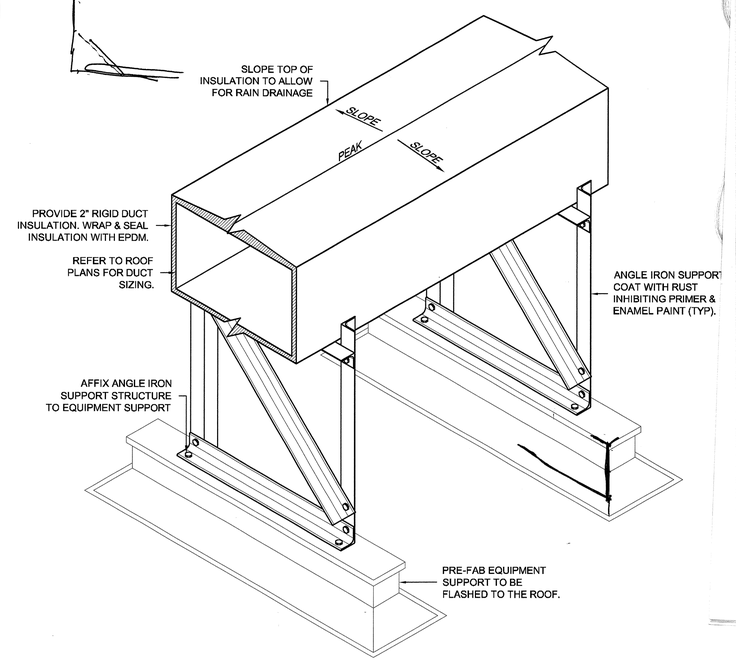
HANGER SIZES	
PIPE SIZE	ROD SIZE
UP TO 2"	3/8"
2-1/2" - 3"	1/2"
4" - 5"	5/8"
6" - 8"	3/4"

INSERT SIZES	
PIPE SIZE	LENGTH
1-1/2"- 2-1/2"	10"
3" - 6"	12"
8" - 10"	16"
12" AND OVER	22"

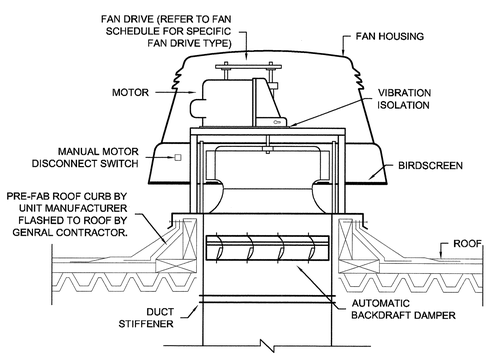


4 DRIP PAN ELBOW DETAIL
M706 SCALE: NONE



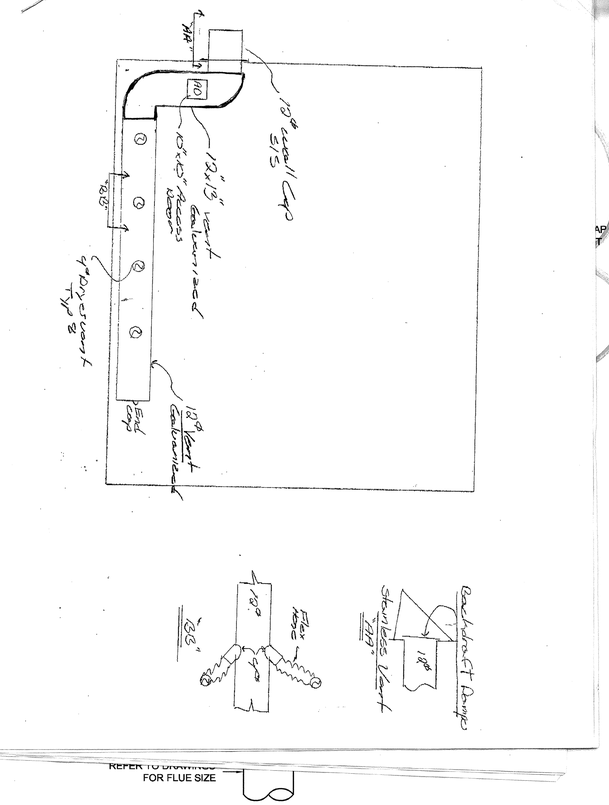


7 EXTERIOR DUCT SUPPORT DETAIL
M706 SCALE: NONE



6 ROOF EXHAUST FAN DETAIL
M706 SCALE: NONE

09/19/2005 10:57 5086779565 PAGE 02/02



8 FLUE TERMINATION DETAIL
M706 SCALE: NONE

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 980
511 Broadway Drive
Scranton, PA 18505
Tel (401) 785-7000
Fax (401) 785-7004
engineering-services.com

APPR	DATE	DESCRIPTION	STAL

APPROVED
ACTIVITY – SATISFACTORY TO
DATE
APPROVED
FOR EFA FOR COMMANDER NAVFAC
DATE
A/E EFD
DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL DETAILS

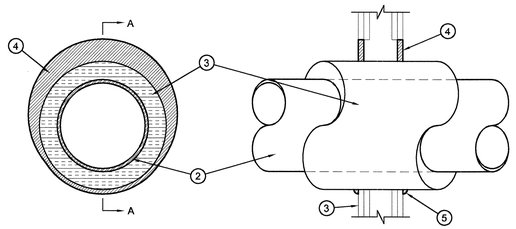
CODE ID. NO. 80091 SIZE D
SCALE: NONE
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225721
SHEET 46 OF 46
M706
DRAWFORM REVISION FEBRUARY 2001

FOR CONSTRUCTION SUBMITTAL: 03-25-05

U.L. SYSTEM NO. WL5029

METAL PIPE THROUGH GYPSUM/STUD WALL

F RATING = 1 & 2 HR (SEE ITEM 1)
T RATING = 1/2, 3/4, & 1-3/4 HR (SEE ITEM 3)



SECTION A-A

1. Wall Assembly -- The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.
   B. Wallboard, Gypsum* - 5/8 in. thick, 4 ft wide, with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 18-5/8 in. The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Through Penetrants -- One metallic pipe, conduit or tubing to be centered within the firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe - Nom 12 in diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Conduit - Nom 4 in. diam (or smaller) electrical metallic tubing or steel conduit.
   C. Copper Tubing - copper tubing.
   D. Copper Pipe - Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.

3. Pipe Covering* -- Nom 1, 1-1/2 or 2 in. thick hollow cylindrical heavy density (min 3.5 pcf) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory - applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The hour T Rating of the firestop system is dependent on the hourly fire rating of the wall assembly in which it is installed, the size and type of through penetrant and the pipe covering thickness, as shown in the table below:

WALL ASSEMBLY RATING (hr)	TYPE * (SEE ITEM 2)	THROUGH PENETRANT MAX. DIA. (in)	PIPE COVERING THICKNESS (in)	ANNULAR SPACE		T RATING (hr)
				MINIIMUM (in)	MAXIMUM (in)	
1	A or B	4	1	0	1-1/2	1/2
1	C or D	2	1 or 1-1/2	0	1-1/2	1/2
1	A or B	4	1-1/2	0	1-1/2	1
1	A	12	2	0	1-7/8	3/4
1	C or D	6	2	0	1-7/8	1
2	A or B	4	1	0	1-1/2	1
2	C or D	4	1 or 1-1/2	0	1-1/2	1
2	C or D	6	2	0	1-7/8	1
2	A or B	4	1-1/2	0	1-1/2	1-3/4
2	A	12	2	0	1-7/8	1-1/2
2	C or D	6	2	0	1-7/8	1

4. Fill Void or Cavity Material* -- Sealant - Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall for 1 or 2 hr walls, respectively. At the point contact location between pipe covering and gypsum wallboard, a min 1/2 in. diam bead of fill material shall be applied at the pipe covering/gypsum wallboard interface on both surfaces of wall.

*Bearing the UL Classification Marking

1 MT07 PIPING FIRESTOP DETAIL

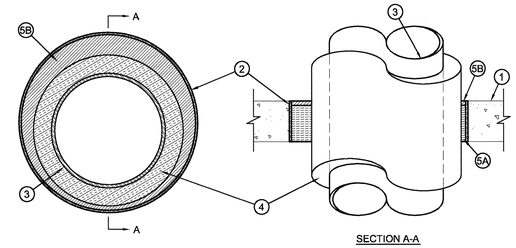
SCALE: NONE

NOTE: DETAIL BASED ON HILTI. FIRE STOPPING SHALL BE INSTALLED PER THE MANUFACTURER'S U.L. LISTING & INSTALLATION INSTRUCTIONS.

U.L. SYSTEM NO. CAJ5091

METAL PIPE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F RATING = 2 HR
T RATING = 1 HR



SECTION A-A

1. Floor or Wall Assembly --Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 19-1/2 in.

2. Metallic Sleeve -- Nom 20 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.

3. Through Penetrants -- One metallic pipe or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or tubing may be used:
   A. Steel Pipe Nom 12 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Copper Pipe Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.
   C. Copper Tubing Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.

4. Pipe Covering -- Nom 2 in. thick hollow cylindrical heavy density (min 3.5 pcf) glass fiber units jacketed on the outside with an all-service jacket. Longitudinal joints sealed with metal fasteners or factory-applied, self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space between the insulated pipe and the edge of the periphery of the opening shall be min 1/2 in. to a max 2-1/4 in.

5. Firestop System -- The firestop system shall consist of the following:
   A. Packing Material -- Min 4 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.
   B. Fill, Void or Cavity Material* -- Sealant Min 1/2 in. thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.

*Bearing the UL Classification Mark

2 MT07 PIPING FIRESTOP DETAIL

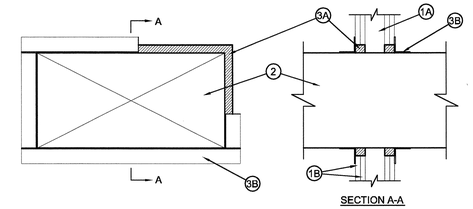
SCALE: NONE

NOTE: DETAIL BASED ON HILTI. FIRE STOPPING SHALL BE INSTALLED PER THE MANUFACTURER'S U.L. LISTING & INSTALLATION INSTRUCTIONS.

U.L. SYSTEM NO. WL7040

METAL DUCT THROUGH GYPSUM/STUD WALL

F RATING = 1 & 2 HR (SEE ITEM 1 & 3)
T RATING = 0 HR



SECTION A-A

1. Wall Assembly -- The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the Fire Resistance Directory and shall include the following construction features:
   A. Studs -- Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. Additional framing members shall be used to completely frame around opening.
   B. Gypsum Board* -- Nom 5/8 in. thick with square or tapered edges. The gypsum wallboard type, number of layers and sheet orientation shall be as specified in the individual Wall and Partition Design Number. Max area of opening is 1300 in. with the dimension of 50 in. hourly F rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Steel Duct -- Nom 24 in. by 48 in. (or smaller) No. 24 gauge (or heavier) galv steel duct to be installed within the firestop system. The annular space shall be min 0 (point contact) in. to a max 2 in. Duct to be rigidly supported on both sides of the wall assembly.

3. Firestop System -- The firestop system shall consist of the following:
   A. Fill, Void or Cavity Material*--Sealant Min 5/8 in. thickness of fill material applied within annulus flush with both surfaces of wall. At point contact location, a min 1/2 in. diam bead of fill material shall be applied to the wall/duct interface on both surfaces of wall.
   B. Steel Retaining Angle No. 18 MSG (0.048 in.) galv steel angles cut to fit contour of duct with a 2 in. overlap on the duct and a min 1 in. overlap on the gypsum board assembly on both sufaces of wall. 2 in. leg of angle secured to duct with min No. 8 by 3/4 in. long sheet metal screws, spaced a max of 6 in. OC. When bead of fill material is used at joint contact locations, angles shall be installed prior to full material curing.

*Bearing the UL Classification Mark

3 MT07 DUCTWORK FIRESTOP DETAIL

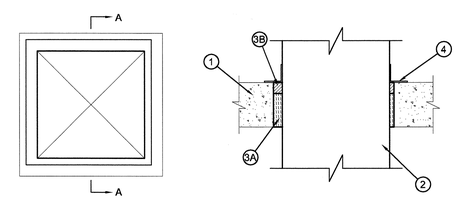
SCALE: NONE

NOTE: DETAIL BASED ON HILTI. FIRE STOPPING SHALL BE INSTALLED PER THE MANUFACTURER'S U.L. LISTING & INSTALLATION INSTRUCTIONS.

U.L. SYSTEM NO. CAJ7051

METAL DUCT THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F RATING = 3 HR
T RATING = 1 HR



SECTION A-A

1. Floor or Wall Assembly -- Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any Underwriters Laboratories Inc. Classified Concrete Blocks*. Max area of opening is 1024 in. sq. with a max dimension of 32 in.

2. Steel Duct -- Nom 30 by 30 in. (or smaller) No. 24 gauge (or heavier) galv steel duct. One steel duct to be positioned within the firestop system. The annular space shall be min 1/4 in. to a max 1-3/4 in. Duct to be rigidly supported on both sides of floor or wall assembly.

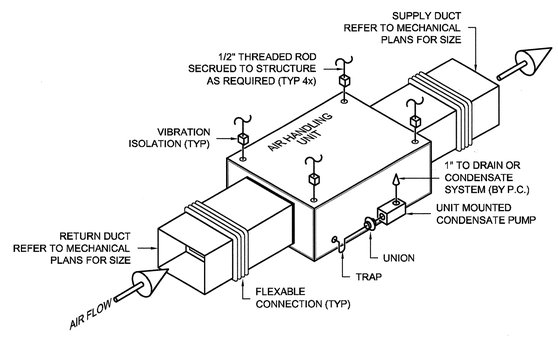
3. Firestop System -- The firestop system shall consist of the following:
   A. Packing Materials - Min 3-1/2 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening as a permanent form between the bare steel duct and the periphery of the opening . Packing material to be recessed from top surface of floor or both surfaces of wall as required to accommodate the required thickness of fill material.
   B. Fill, Void or Cavity Material* - Sealant - Min 1 in. thickness of fill material applied within annulus, flush with top surface of floor or both surfaces of wall.

4. Steel Retaining Angle -- Nom 2 in. by 2 in. by No. 16 gauge (or heavier) steel angles attached to all four sides of the steel duct on the top surface or both surfaces of the wall. The angles shall be attached with No. 8 (or larger) steel sheet metal screws spaced max of 1 in. from each end and a max of 3 in. OC.
   *Bearing the UL Classification Marking

4 MT07 DUCTWORK FIRESTOP DETAIL

SCALE: NONE

NOTE: DETAIL BASED ON HILTI. FIRE STOPPING SHALL BE INSTALLED PER THE MANUFACTURER'S U.L. LISTING & INSTALLATION INSTRUCTIONS.



5 MT07 HANGING AIR HANDLING UNIT DETAIL

SCALE: NONE

APPR	DATE	DESCRIPTION	TYPE

KORTE
A DESIGN / BUILD COMPANY

ENGINEERING DESIGN SERVICES INC.
P.O. BOX 980
141 Bridgeline Drive
Tiverton, RI 02878
Phone (401) 624-2009
Fax (401) 625-0564
info@desig-ser-inc.com

SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
MECHANICAL DETAILS

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 SIZE D
SCALE: NONE
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO.
N62472-03-C-0006
NAVFAC DRAWING NO.
2225723
SHEET 46 OF 46
M707

DRAWFORM REVISION FEBRUARY 2001

NSN - Naval Academy Prep School

Bachelor's Enlisted Quarters

Automatic Temperature Controls

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ATC-2A	HW System Points Schedule	ATC-6A	AHU Points Schedule
ATC-2B	HW System Wiring Detail	ATC-6B	AHU Controller Detail
ATC-2C	HW System Controller Detail	ATC-7	Room Module FCU Detail
ATC-3	CHW System Detail	ATC-8	FCU Detail
ATC-3A	CHW System Points Schedule	ATC-9	FCU Rm 1101 Detail
ATC-3B	CHW System Wiring Detail	ATC-9A	FCU Rm 1101 Points Schedule
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ATC-4D	UNT-Points Schedule	ATC-12	Damper Schedule
ATC-5	MAU-7 Detail	ATC-13	First Floor Plan
ATC-5A	MAU-7 Points Schedule	ATC-13A	Second Floor Plan
ATC-5B	MAU-7 Wiring Detail	ATC-13B	Third Floor Plan

NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER:	SCALE:	DRAWN BY:	P. Braga
0000	NTS	APPROVED BY:	W. Roskowski

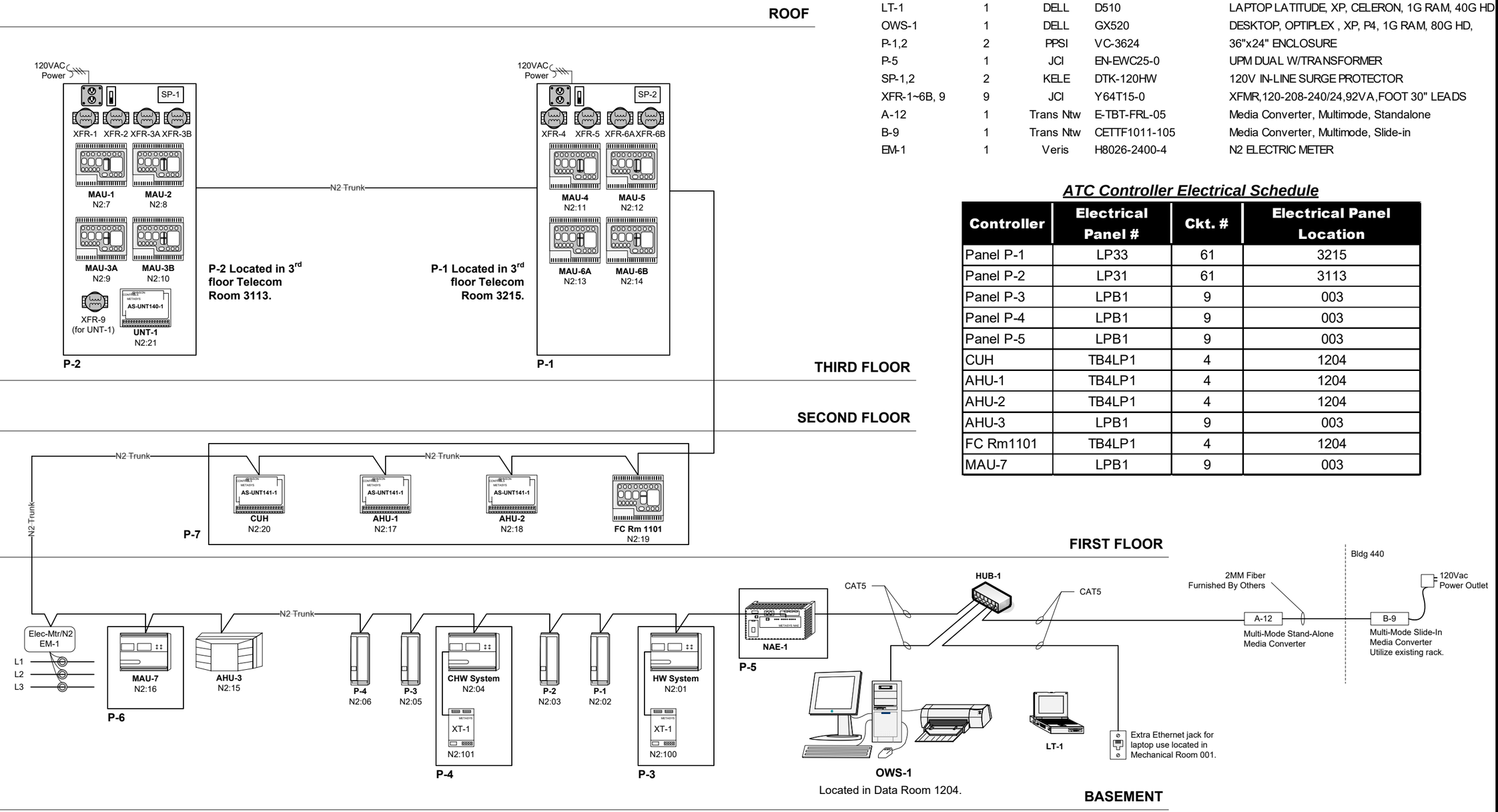
FILE: **Table of Contents.vsd: Contents**

DATE: 07/05/06 DRAWING NUMBER: **Contents**

Desig.	Qty.	Mfg.	Part #	Description
NAE-1	1	JCI	MS-NAE3511-1	NAE, W/ N2, 24VAC, INTERNAL MODEM
	1	KELE	DTK-120HW	120V IN-LINE SURGE PROTECTOR
LT-1	1	DELL	D510	LAPTOP LATITUDE, XP, CELERON, 1G RAM, 40G HD
OWS-1	1	DELL	GX520	DESKTOP, OPTIPLEX , XP, P4, 1G RAM, 80G HD,
P-1,2	2	PPSI	VC-3624	36"x24" ENCLOSURE
P-5	1	JCI	EN-EWC25-0	UPM DUAL W/TRANSFORMER
SP-1,2	2	KELE	DTK-120HW	120V IN-LINE SURGE PROTECTOR
XFR-1~6B, 9	9	JCI	Y64T15-0	XFMR,120-208-240/24,92VA,FOOT 30" LEADS
A-12	1	Trans Ntw	E-TBT-FRL-05	Media Converter, Multimode, Standalone
B-9	1	Trans Ntw	CETTF1011-105	Media Converter, Multimode, Slide-in
EM-1	1	Veris	H8026-2400-4	N2 ELECTRIC METER

ATC Controller Electrical Schedule

Controller	Electrical Panel #	Ckt. #	Electrical Panel Location
Panel P-1	LP33	61	3215
Panel P-2	LP31	61	3113
Panel P-3	LPB1	9	003
Panel P-4	LPB1	9	003
Panel P-5	LPB1	9	003
CUH	TB4LP1	4	1204
AHU-1	TB4LP1	4	1204
AHU-2	TB4LP1	4	1204
AHU-3	LPB1	9	003
FC Rm1101	TB4LP1	4	1204
MAU-7	LPB1	9	003



Communications Riser

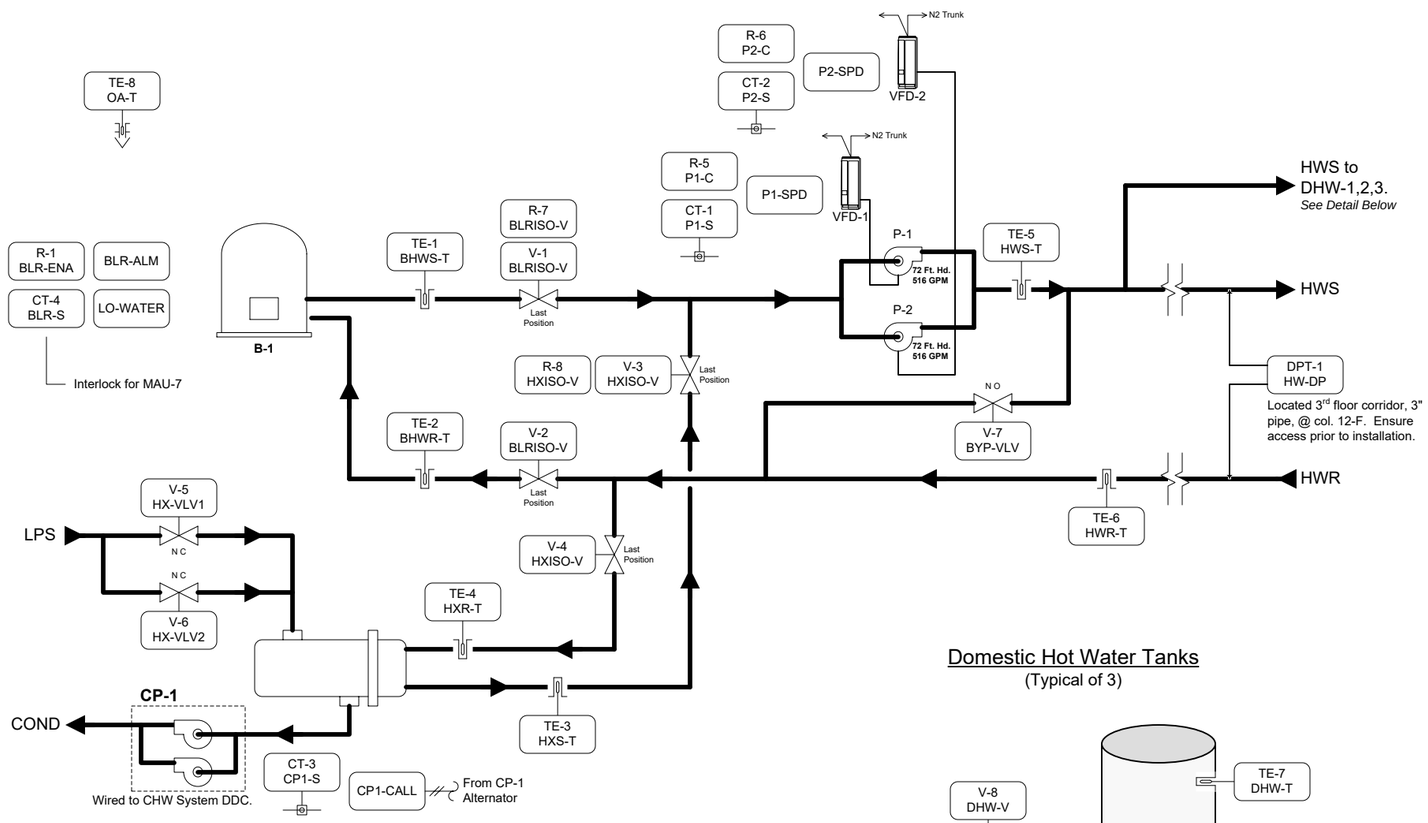
NO.	Date	Revision Record

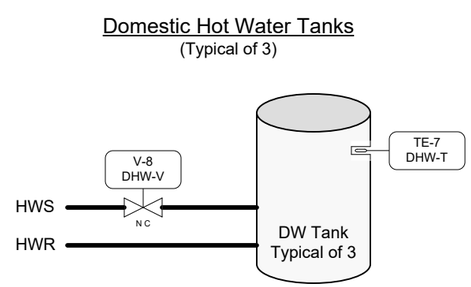
Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

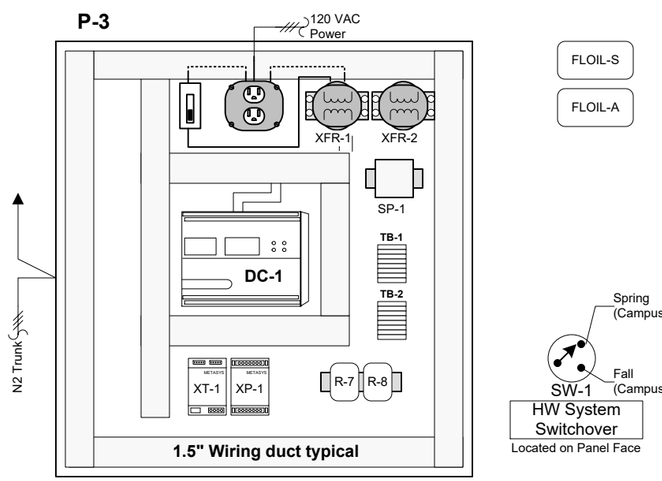
Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

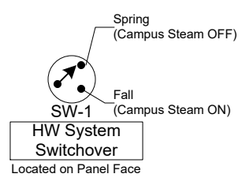
JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **Communications Riser.vsd**		
DATE: 09/05/06	DRAWING NUMBER:	**ATC-1**







DX Panel Details



HW System Detail

Sequence of Operations – continued.
On a rise in differential pressure the lead pump VFD will modulate to minimum speed. If differential pressure continues to be high, the bypass valve (V-7) modulates to maintain setpoint.
Lead pump is rotated per a weekly schedule.

Domestic HW Heater
DHW valve modulates to maintain DHW tank temperature setpoint, typical for each tank.

Alarms: The following alarms will be generated at the workstation:
1. If HW supply temperature rises above 200°F or falls below 100°F, @ TE-5.
2. Pumps P-1,2 – Status (on or off) does not match commanded value.
3. Hi & Lo DHW tank temperature.
4. Boiler low water and general alarm.
5. Pump P-1 or P-2 VFD fault – from N2 connection.
6. Hi/Lo differential pressure alarms for DPT-1
7. If domestic water valve position does not match commanded value (within 10%).

Desig.	Qty.	Mfg.	Part #	Description
Panel Devices:				
DC-1	1	JCI	DX-9100-8454	CNTRLR,DIG,DX,8AI,8AO,6BO,8BI
	1	JCI	DX-9100-8990	CNTRLR,DIG,DX,MTG BASE
P-3	1	PPSI	VC-3624	36"x24" ENCLOSURE
R-7, 8	2	VERIS	VMD2B-F24A	DPDT 15A RELAY, 24VAC, LED, PTT
	2	VERIS	VBD2B-F	RELAY SOCKET
SP-1	1	KELE	DTK-120HW	120V IN-LINE SURGE PROTECTOR
SW-1	1	KELE	ASW210	SWITCH,1N.O., MAINTAINED CONTACT
XFR-1,2	2	JCI	Y64T15-0	XFMR,120-208-240/24,92VA,FOOT 30IN LEADS
XT-1	1	JCI	XT-9100-8304	CNTRLR,DIG,DX EXTENSION MODULE
XP-1	1	JCI	XP-9102-8304	CNTRLR,DIG,DX EXPN MOD,6AI,2AO
XP-2	1	JCI	XP-9104-8304	CNTRLR,DIG,DX EXPN MOD,4BI,4BO
Field Devices:				
CT-1,2	2	VERIS	H904	SW,CURR,4-135A,SELF-CALIB,0.1A@30V,SPLIT
CT-3,4	2	VERIS	H600	CURRENT SWITCH, MINI, SPLIT, FIXED
DPT-1	1	VERIS	PWLX03S	DIFF PRES XDUCER,LCD,0-50PSIG
R-1,5,6	3	VERIS	V100	10AMP SPDT 10-30VAC/DC/120VAC
TE-1~7	9	JCI	TE-631AP-1	SENSOR,T-NI,0.1%
	9	JCI	WZ-1000-5	WELL
TE-8	1	JCI	TE-6313P-1	SENSOR,T-NI,0.1%,3IN OAT
V-1~8	10	JCI		SEE VALVE SCHEDULE
VFD-1,2	2	JCI	VS015411A-NP60	VSD,15HP,480V,TYPE-1,BYPASS,3RD CONT,N2

Sequence of Operations
The heating system is enabled year round.
Heat Exchanger/Boiler Changeover:
Spring Changeover (Heat Exchanger to Boiler): Upon the activation of switch, SW-1, on panel P-1, indicating that the campus heat system has been disabled the following will occur:
Both steam heat exchanger valves control valves (V-5&6) will modulate closed. HW pumps (P-1&2) will continue to run for 15 minutes before being disabled. Once the pumps have been proven off the boiler isolation valves (V-1&2) open. Once proven open, the heat exchanger isolation valves (V-3&4) close. The boiler & lead pump are enabled once the heat exchanger valves (V-3&4) are proven closed.

Fall Changeover (Boiler to Heat Exchanger): Upon the activation of switch, SW-1, indicating that the campus heat system has been enabled the following will occur:
Boiler is disabled. HW pumps (P-1&2) will continue to run for 15 minutes before being disabled. Once the pumps have been proven off the heat exchanger isolation valves (V-3&4) open. Once proven open the boiler isolation valves (V-1&2) close. The lead pump is enabled once boiler isolation valves (V-1&2) are proven closed and then the HX is enabled.

Heat Exchanger:
The Heat Exchanger is enabled whenever HW flow is sensed from P-1 or P-2 current sensing switch and the isolation valve end switches indicate that there is HW flow through the HX. Heat exchanger 1/3 steam valve (V-5) & 2/3 steam valve (V-6) modulate together to maintain hot water supply temperature of 180°F (adj.) at TE-4. On a rise in temperature, the reverse will occur. If HW temperature rises above 200degf for 15 minutes, the valves V-5 & V-6 will close until temperature drops below 180degf.
Condensate pump runs continuously from it's factory furnished control panel. If a pump status is not indicated with in 45 seconds after a call to run is sensed, an alarm is sent to the DDC system (see CT-3 and R-7).

Boiler:
The boiler is enabled by the DDC system and cycles on it's internal controls and safeties to maintain hot water supply temperature setpoint (adjustable on the boiler). The boiler is only allowed to run after proof of HW flow (via current sensing switch), isolation valve end switches (V-1&2) indicate there is flow through the boiler, MAU-7 is running, the refrigerant alarm is Normal, and EF-9 is proven off.

HW Pumps:
Pumps run in a lead/lag sequence. If lead pump fails, lag pump is enabled and lead pump is disabled. Pumps' VFD modulates to maintain hot water differential pressure setpoint. If lead pump can not maintain the differential pressure setpoint the lag pump will run in unison with lead pump to do so. HW pumps runtimes will be calculated and displayed to reset monthly.

NO.	Date	Revision Record

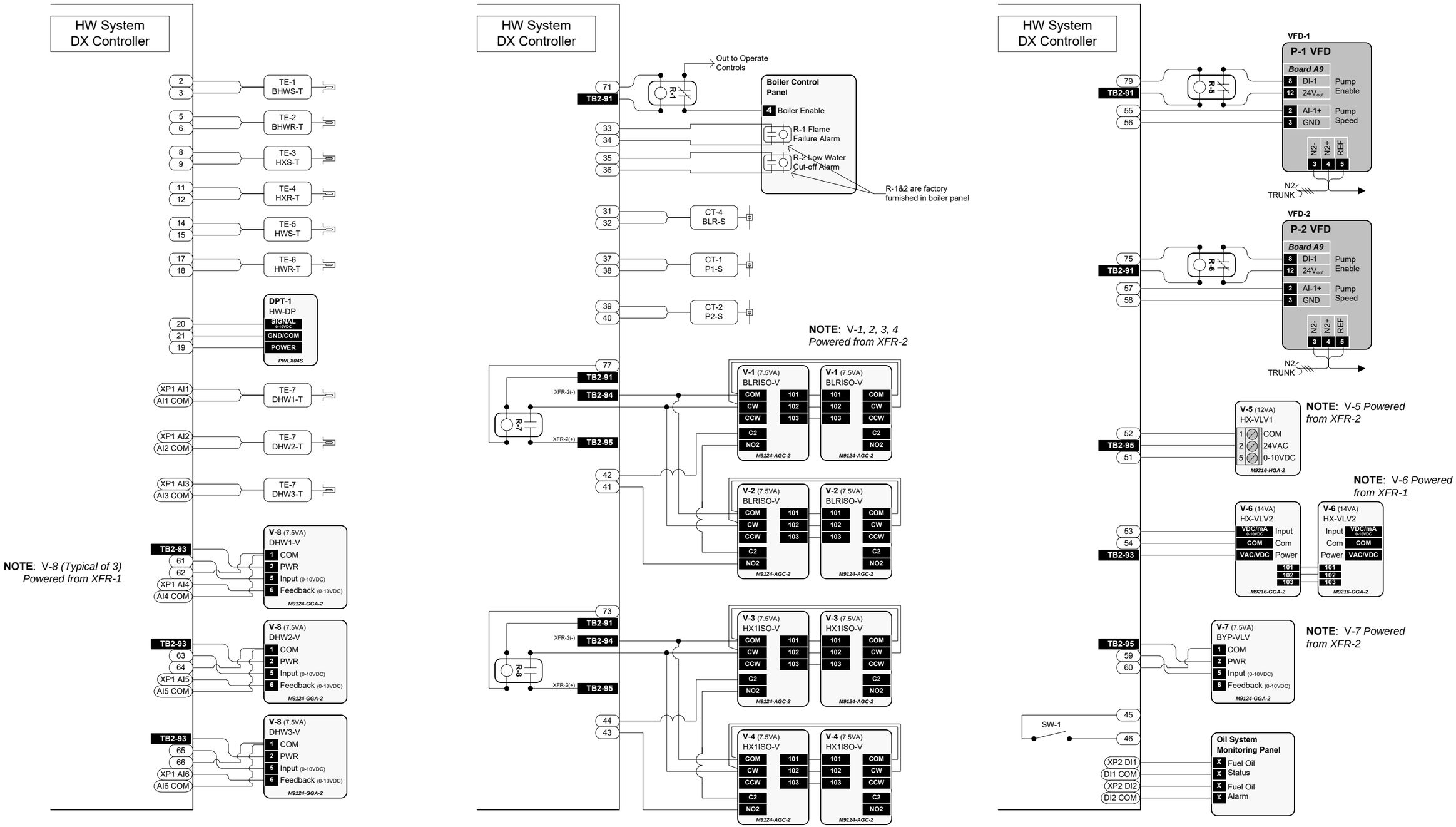
Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **HW System.vsd**		
DATE: 08/08/06	DRAWING NUMBER:	**ATC-2**

Submittal		Point Information			Controller Information							Intermediate Device		Field Device			
Tag	Point Type	System Name	Object Name	Expanded ID	Controller Type	Trunk Nbr	Trunk Addr.	Cable Destination Bay/Terminal	DO Type	Module Type	Panel	Device	Location	Wiring /Tubing	Device	Location	Comment
		HW System			DX9100						P-3						Power to Controller
		HW System			DX9100	1	1				P-3						N2 Trunk
	DO-3	HW System	BLR1-ENA	Boiler 1 Enable	DX9100	1	1	DO-3			P-3	V100		2/18	24VAC Out (NC)		
	DO-4	HW System	BLRISO-V	Boiler Isolation Valves	DX9100	1	1	DO-4			P-3			2/18	24VAC Out		
	DO-5	HW System	HXISO-V	Heat Exchanger Iso Valves	DX9100	1	1	DO-5			P-3			2/18	24VAC Out		
	DO-6	HW System	P1-C	Pump 1 Command	DX9100	1	1	DO-6			P-3	V100		2/18	24VAC Out (NC)		
	DO-7	HW System	P2-C	Pump 2 Command	DX9100	1	1	DO-7			P-3	V100		2/18	24VAC Out (NC)		
	DO-8	HW System			DX9100	1	1	DO-8			P-3						
	DI-1	HW System	BLR-S	Boiler Firing Status	DX9100	1	1	DI-1			P-3			2/18	H600 CT (NO)		
	DI-2	HW System	BLR-ALM	Boiler Alarm	DX9100	1	1	DI-2			P-3			2/18	Status (NO)		
	DI-3	HW System	LO-WATER	Boiler Lo-Water Alarm	DX9100	1	1	DI-3			P-3			2/18	Status (NO)		
	DI-4	HW System	P1-S	Pump 1 Status	DX9100	1	1	DI-4			P-3	H904		2/18	Status (NO)		
	DI-5	HW System	P2-S	Pump 2 Status	DX9100	1	1	DI-5			P-3	H904		2/18	Status (NO)		
	DI-6	HW System	BLRISO-S	Boiler Iso Valve Status	DX9100	1	1	DI-6			P-3			2/18	M9124 Aux Contact		
	DI-7	HW System	HXISO-S	HX Iso Valve Status	DX9100	1	1	DI-7			P-3			2/18	M9124 Aux Contact		
	DI-8	HW System	SWITCH	Spring / Fall Switchover	DX9100	1	1	DI-8			P-3			2/18	Status (NO)		
	AI-1	HW System	BHWS-T	Boiler HW Supply Temp	DX9100	1	1	AI-1			P-3			2/18	TE-6300		
	AI-2	HW System	BHWR-T	Boiler HW Return Temp	DX9100	1	1	AI-2			P-3			2/18	TE-6300		
	AI-3	HW System	HXS-T	Ht Exchanger Supply Temp	DX9100	1	1	AI-3			P-3			2/18	TE-6300		
	AI-4	HW System	HXR-T	Ht Exchanger Return Temp	DX9100	1	1	AI-4			P-3			2/18	TE-6300		
	AI-5	HW System	HWS-T	HW Supply Temp	DX9100	1	1	AI-5			P-3			2/18	TE-6300		
	AI-6	HW System	HWR-T	HW Return Temp	DX9100	1	1	AI-6			P-3			2/18	TE-6300		
	AI-7	HW System	HW-DP	HW Differential Pressure	DX9100	1	1	AI-7			P-3			3/18	PWLX03S		
	AI-8	HW System			DX9100	1	1	AI-8			P-3						
	AO-1	HW System	HX-VLV1	Heat Exchanger 1/3 Valve	DX9100	1	1	AO-1			P-3			3/18	0-10VDC		
	AO-2	HW System	HX-VLV2	Heat Exchanger 2/3 Valve	DX9100	1	1	AO-2			P-3			3/18	0-10VDC		
	AO-9	HW System	P1-SPD	Pump 1 Speed	DX9100	1	1	AO-9			P-3			2/18	0-10VDC		
	AO-10	HW System	P2-SPD	Pump 2 Speed	DX9100	1	1	AO-10			P-3			2/18	0-10VDC		
	AO-11	HW System	BYP-VLV	Bypass Valve	DX9100	1	1	AO-11			P-3			3/18	0-10VDC		
	AO-12	HW System	DHW1-V	DHW Tank 1 Valve	DX9100	1	1	AO-12			P-3			3/18	0-10VDC		
	AO-13	HW System	DHW2-V	DHW Tank 2 Valve	DX9100	1	1	AO-13			P-3			3/18	0-10VDC		
	AO-14	HW System	DHW3-V	DHW Tank 3 Valve	DX9100	1	1	AO-14			P-3			3/18	0-10VDC		
		HW System			XT9100						P-3						
		HW System			XT9100	1	100				P-3						
	XT1AI1	HW System	DHW1-T	DHW Tank 1 Temp	XP9102	1	100	AI-1			P-3			2/18	TE-6300		
	XT1AI2	HW System	DHW2-T	DHW Tank 2 Temp	XP9102	1	100	AI-2			P-3			2/18	TE-6300		
	XT1AI3	HW System	DHW3-T	DHW Tank 3 Temp	XP9102	1	100	AI-3			P-3			2/18	TE-6300		
	XT1AI4	HW System	DHW1-VS	DHW Tank 1 Valve Status	XP9102	1	100	AI-4			P-3			2/18	0-10VDC Feedback		
	XT1AI5	HW System	DHW2-VS	DWH Tank 2 Valve Status	XP9102	1	100	AI-5			P-3			2/18	0-10VDC Feedback		
	XT1AI6	HW System	DHW3-VS	DHW Tank 3 Valve Status	XP9102	1	100	AI-6			P-3			2/18	0-10VDC Feedback		
	XT1AO7	HW System			XP9102	1	100	AO-7			P-3						
	XT1AO8	HW System			XP9102	1	100	AO-8			P-3						
	XT2DI1	HW System	FLOIL-S	Fuel Oil Status	XP9104	1	100	DI-1			P-3			2/18	Contact (NO)		
	XT2DI2	HW System	FLOIL-A	Fuel Oil Alarm	XP9104	1	100	DI-2			P-3			2/18	Contact (NO)		
	XT2DI3	HW System			XP9104	1	100	DI-3			P-3						
	XT2DI4	HW System			XP9104	1	100	DI-4			P-3						
	XT2DO5	HW System			XP9104	1	100	DO-5			P-3						
	XT2DO6	HW System			XP9104	1	100	DO-6			P-3						
	XT2DO7	HW System			XP9104	1	100	DO-7			P-3						
	XT2DO8	HW System			XP9104	1	100	DO-8			P-3						



Wiring Detail I

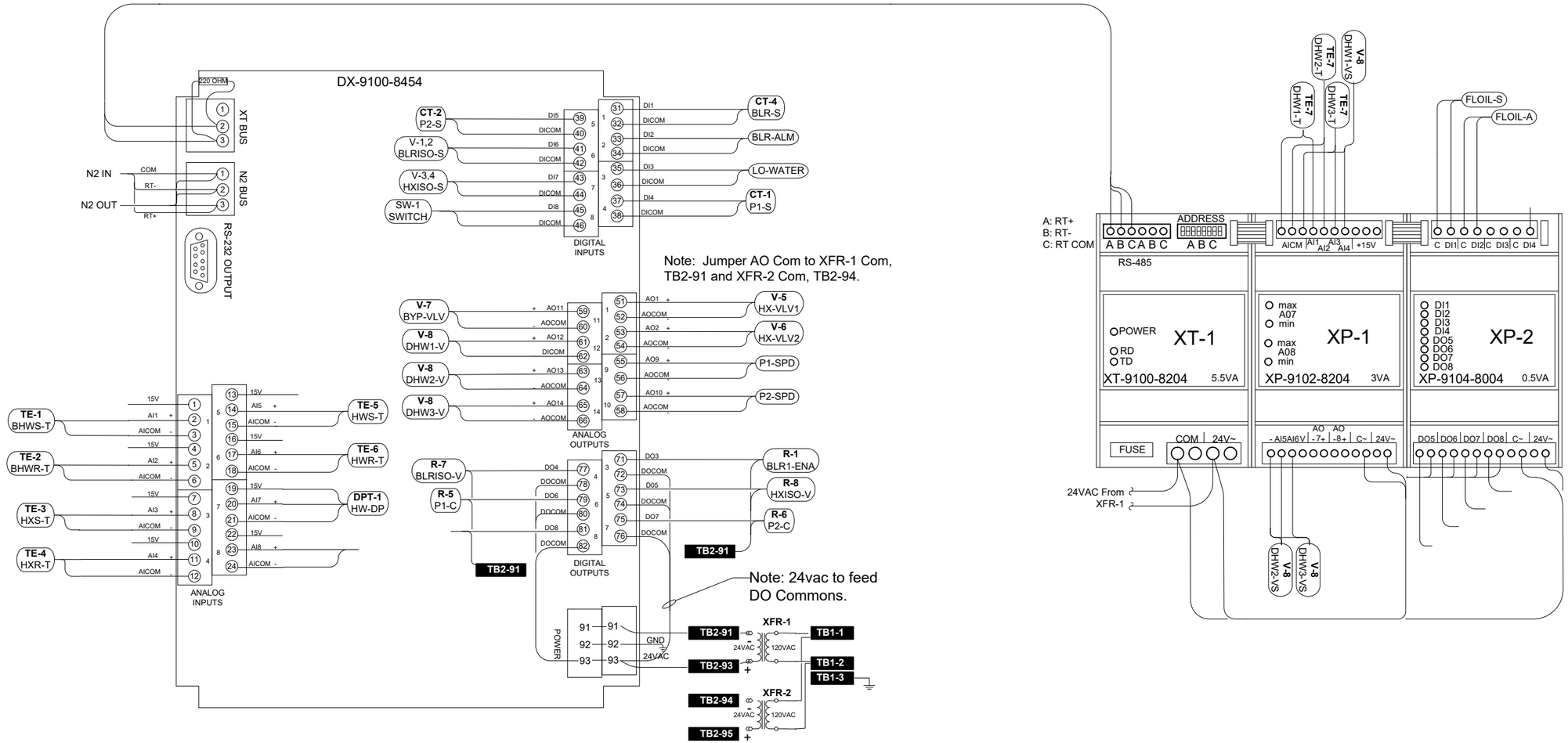
NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

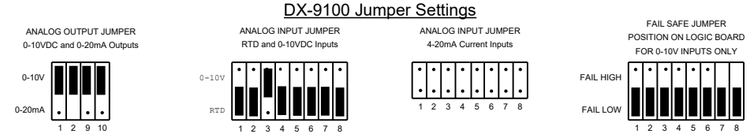
Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER:	SCALE:	DRAWN BY:	P. Braga
0000	NTS	APPROVED BY:	W. Roskowski
FILE: **HW System.vsd**			
DATE: 08/08/06	DRAWING NUMBER:	**ATC-2B**	



DX-9100 Jumper Settings



Installation Notes:

1. 120VAC power requires 3rd-wire grounding to building ground. Do not use conduit as ground.
2. The DX master and the last XT require 220 ohm E.O.L. resistors if the XT-Bus is greater than 330 feet. Only the DX-9100 requires an E.O.L. resistor if the bus is less than 330 feet in length.
3. If shielded wire is used to connect devices, terminate the shield to conduit or enclosure wall and tape back at the device.

DX Controller Detail

NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
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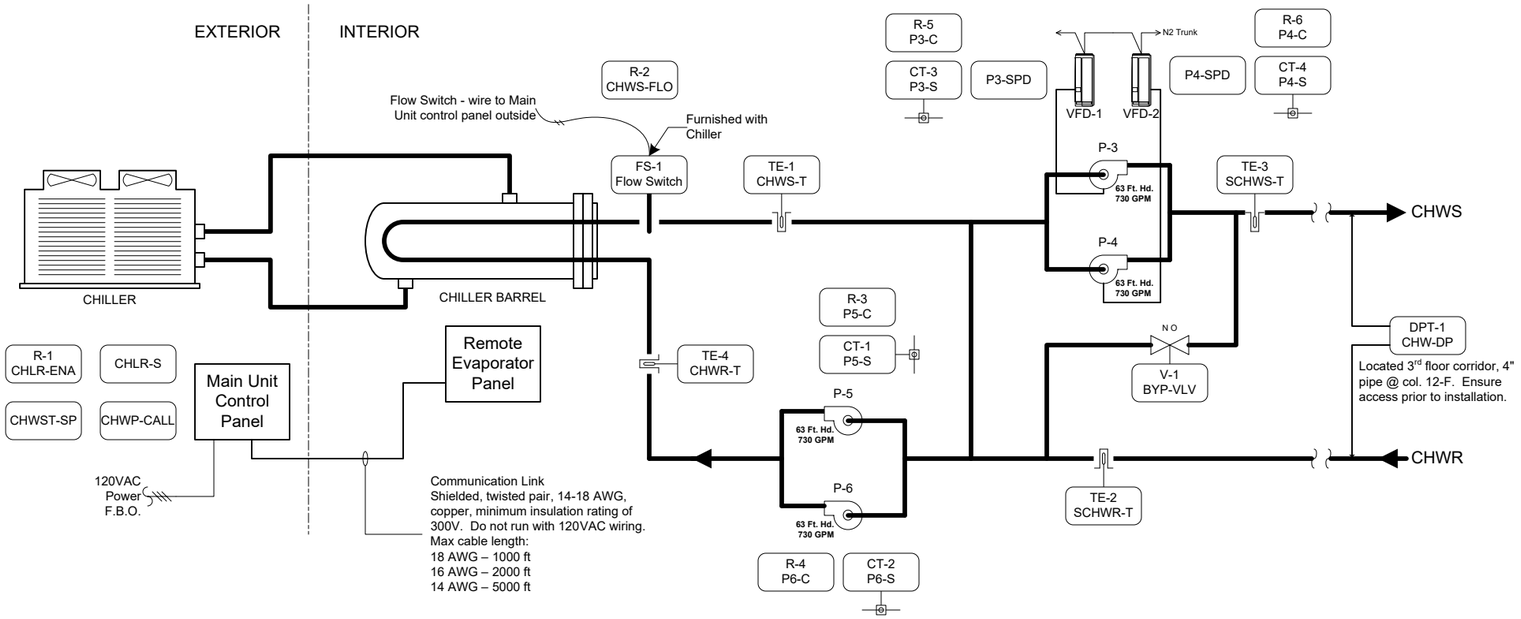
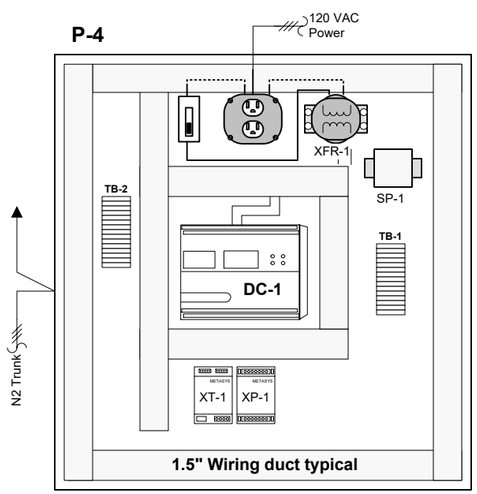
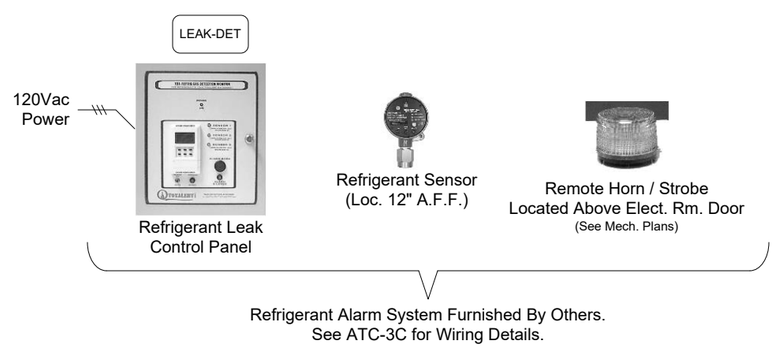
Newport, RI

JOB NUMBER:	SCALE:	DRAWN BY:	P. Braga
0000	NTS	APPROVED BY:	W. Roskowski
FILE: **HW System.vsd**			
DATE: 08/08/06	DRAWING NUMBER:	**ATC-2C**	





DX Panel Details



Desig.	Qty.	Mfg.	Part #	Description
Panel Devices:				
DC-1	1	JCI	DX-9100-8454	CNTRLR,DIG,DX,8AI,8AO,6BO,8BI
	1	JCI	DX-9100-8990	CNTRLR,DIG,DX,MTG BASE
P-4	1	PPSI	VC-3624	36"x24" ENCLOSURE
SP-1	1	KELE	DTK-120HW	120V IN-LINE SURGE PROTECTOR
XFR-1	1	JCI	Y64T15-0	XFMR,120-208-240/24,92VA,FOOT 30IN LEADS
XT-1	1	JCI	XT-9100-8304	CNTRLR,DIG,DX EXTENSION MODULE
XP-1	1	JCI	XP-9104-8304	CNTRLR,DIG,DX EXPN MOD,4DI,4DO
Field Devices:				
CT-1,2	2	VERIS	H600	CURRENT SWITCH MINI, SPLIT FIXED
CT-3,4	2	VERIS	H904	SW,CURR,4-135A,SELF-CALIB,0.1A@30V,SPLIT
DPT-1	1	VERIS	PWLX03S	DIFF PRES XDUCER,LCD,0-50PSIG
FS-1	1		F.B.O.	CHW FLOW SWITCH
R-1~6	6	VERIS	V100	10AMP SPDT 10-30VAC/DC/120VAC
TE-1~4	4	JCI	TE-6312P-1	SENSOR,T-NI,0.1%,8IN WELL
V-1	1	JCI		SEE VALVE SCHEDULE
VFD-1,2	2	JCI	VS020411A-NP600	VSD,20HP,480V,TYPE-1,BYPASS,3RD CONT,N2

Sequence of Operations

The chilled water system is enabled whenever the outdoor air temperature is greater then 50degf (set point is adjustable via the DDC system). The chiller runs subject to its own internal safeties and controls. The chiller is locked out from operation until flow is indicated at CT-1 or CT-2. A CHW pump call is monitored from the chiller's control panel to enable P-5 or P-6. CHW pumps P-5&6 are also enabled for freeze protection when outside air falls below setpoint and they run in a lead/lag fashion. Upon CHW system startup, the lead secondary pump (P-3or4) is enabled, as described below. Then the chiller is enabled at relay R-1. The chiller's internal controls call for a chilled water pump at relay R-7 before allowing it to start. The DDC system monitors R-7 and enables the lead pump (P-5 or P-6). If lead pump is enabled and status is not indicated within 30 seconds the lag pump will be enabled and an alarm will be generated at the workstation. Lead CHW pump is selected via a weekly schedule. Chilled water flow switch is wired directly to chiller's control panel to allow the chiller to start.

The chiller will run to maintain CHW supply temperature and is reset from the DDC system per the following schedule:

CHWS-T	OA-T
45°F (adj.)	75°F (adj.)
52°F (adj.)	50°F (adj.)

CHW pumps P-3 & P-4 run in a lead/lag fashion and is switched via a weekly schedule. If lead pump is enabled and status is not indicated within 30 seconds the lag pump will be enabled and an alarm will be generated at the workstation. CHW pumps P-3 & P-4 VFD's modulate to maintain differential pressure setpoint at DPT-1. VFD minimum speed will not be lower than 20%. If differential pressure rises above setpoint and VFD is at minimum speed than the bypass valve (V-1) modulate open to maintain differential pressure setpoint. CHW pumps runtimes will be calculated and displayed to reset monthly.

CHW system will shutdown upon a signal from the refrigerant leak detector.

Alarms: The following alarms will generate an alarm at the workstation:

1. Pumps P-3,4,5,6 Alarm – Status (on or off) does not match DDC command.
2. If differential pressure is 25% less than or greater than setpoint.
3. If CHW supply temperature becomes greater than 55°F or lower than 38°F at TE-1.
4. Chiller alarm – monitored at R-2.
5. Refrigerant Leak Detector panel in alarm.
6. Chiller and pump(s) runtime alarm.
7. VFD Fault – P-3 & P-4 – from N2 connection.

CHW System Detail

NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
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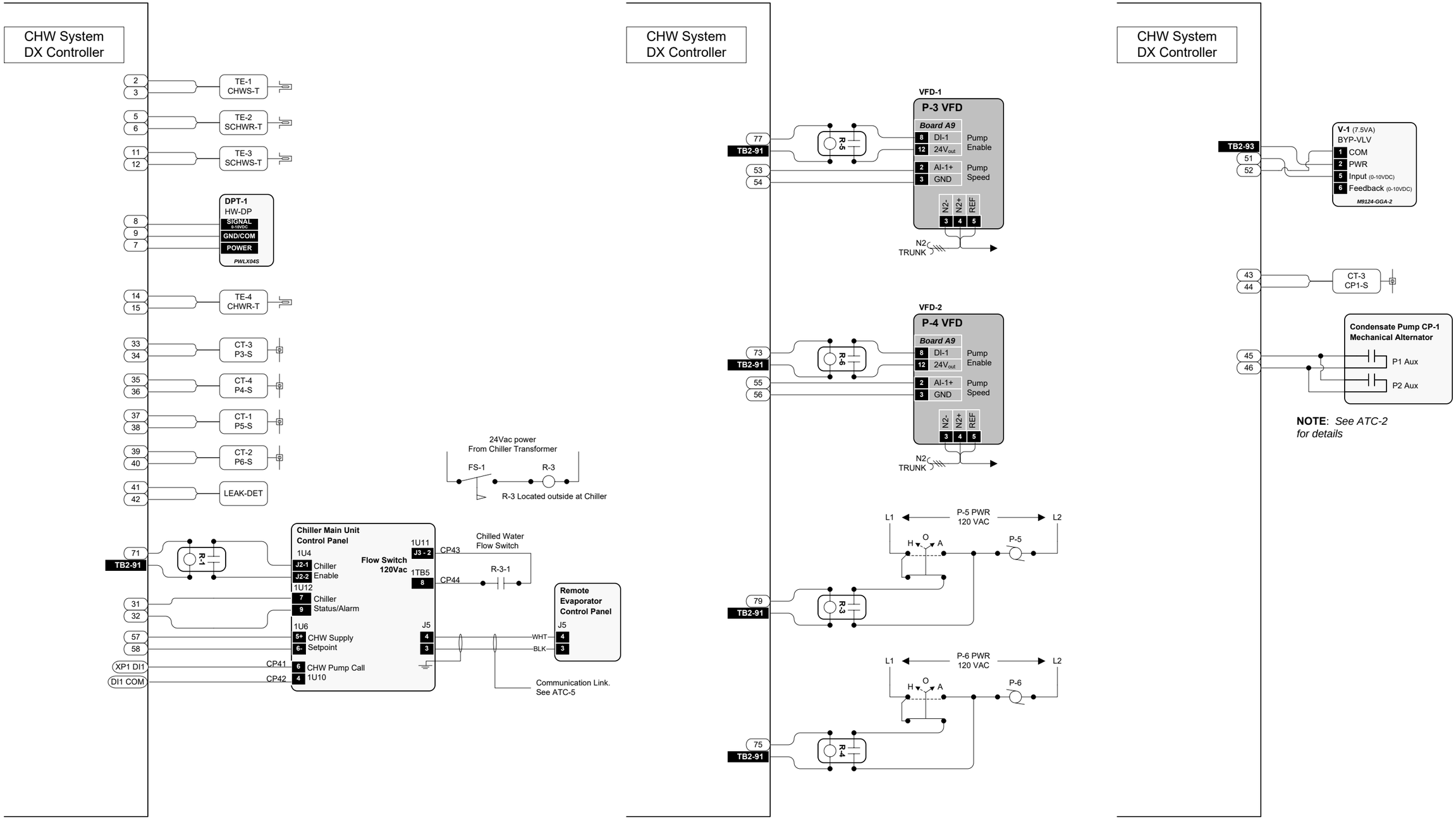
Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **CHW System Detail.vsd**		
DATE: 09/06/06	DRAWING NUMBER:	**ATC-3**

Submittal		Point Information			Controller Information							Intermediate Device		Field Device			
Tag	Point Type	System Name	Object Name	Expanded ID	Controller Type	Trunk Nbr	Trunk Addr.	Cable Destination Bay/Terminal	DO Type	Module Type	Panel	Device	Location	Wiring /Tubing	Device	Location	Comment
		CHW System			DX9100						P-4						Power to Controller
		CHW System			DX9100	1	4				P-4						N2 Trunk
	DO-3	CHW System	CHLR-ENA	Chiller Enable	DX9100	1	4	DO-3			P-4	V100		2/18	24VAC Out		
	DO-4	CHW System	P3-C	Pump 3 Command	DX9100	1	4	DO-4			P-4	V100		2/18	24VAC Out		
	DO-5	CHW System	P4-C	Pump 4 Command	DX9100	1	4	DO-5			P-4	V100		2/18	24VAC Out		
	DO-6	CHW System	P5-C	Pump 5 Command	DX9100	1	4	DO-6			P-4	V100		2/18	24VAC Out		
	DO-7	CHW System	P6-C	Pump 6 Command	DX9100	1	4	DO-7			P-4	V100		2/18	24VAC Out		
	DO-8	CHW System			DX9100	1	4	DO-8			P-4						
	DI-1	CHW System	CHLR-S	Chiller Status	DX9100	1	4	DI-1			P-4			2/18	Status (NO)		
	DI-2	CHW System	P3-S	Pump 3 Status	DX9100	1	4	DI-2			P-4	H904		2/18	Status (NO)		
	DI-3	CHW System	P4-S	Pump 4 Status	DX9100	1	4	DI-3			P-4	H904		2/18	Status (NO)		
	DI-4	CHW System	P5-S	Pump 5 Status	DX9100	1	4	DI-4			P-4	H600		2/18	Status (NO)		
	DI-5	CHW System	P6-S	Pump 6 Status	DX9100	1	4	DI-5			P-4	H600		2/18	Status (NO)		
	DI-6	CHW System	LEAK-DET	Refrigerant Leak Detector	DX9100	1	4	DI-6			P-4			2/18	Status (NO)		
	DI-7	CHW System	CP1-S	Condensate Pump Status	DX9100	1	4	DI-7			P-4	H600		2/18	Status (NO)		
	DI-8	CHW System	CP1-CALL	CP-1 Call	DX9100	1	4	DI-8			P-4			2/18	NO Contact in Ctrl Panel		
	AI-1	CHW System	CHWS-T	CHW Supply Temp	DX9100	1	4	AI-1			P-4			2/18	TE-6300		
	AI-2	CHW System	SCHWR-T	Secondary CHW Return Temp	DX9100	1	4	AI-2			P-4			2/18	TE-6300		
	AI-3	CHW System	CHW-DP	CHW Differential Pressure	DX9100	1	4	AI-3			P-4			2/18	PWLX03S		
	AI-4	CHW System	SCHWS-T	Secndry CHW Supply Temp	DX9100	1	4	AI-4			P-4			2/18	TE-6300		
	AI-5	CHW System	CHWR-T	CHW Return Temp	DX9100	1	4	AI-5			P-4			2/18	TE-6300		
	AI-6	CHW System			DX9100	1	4	AI-6			P-4						
	AI-7	CHW System			DX9100	1	4	AI-7			P-4						
	AI-8	CHW System			DX9100	1	4	AI-8			P-4						
	AO-1	CHW System	BYP-VLV	Bypass Valve	DX9100	1	4	AO-1			P-4			3/18	0-10VDC		
	AO-2	CHW System	P3-SPD	Pump 3 Speed	DX9100	1	4	AO-2			P-4			2/18	0-10VDC		
	AO-9	CHW System	P4-SPD	Pump 4 Speed	DX9100	1	4	AO-9			P-4			2/18	0-10VDC		
	AO-10	CHW System	CHWST-SP	CHW Supply Setpoint	DX9100	1	4	AO-10			P-4			2/18	VDC / mA		
	AO-11	CHW System			DX9100	1	4	AO-11			P-4						
	AO-12	CHW System			DX9100	1	4	AO-12			P-4						
	AO-13	CHW System			DX9100	1	4	AO-13			P-4						
	AO-14	CHW System			DX9100	1	4	AO-14			P-4						
		CHW System			XT9100						P-4						
		CHW System			XT9100	1	101				P-4						
	XT1DI1	CHW System	CHWP-CALL	CHW Pump Call from Chiller	XP9104	1	101	DI-1			P-4	V100		2/18	Status (NO)		
	XT1DI2	CHW System			XP9104	1	101	DI-2			P-4						
	XT1DI3	CHW System			XP9104	1	101	DI-3			P-4						
	XT1DI4	CHW System			XP9104	1	101	DI-4			P-4						
	XT1DO5	CHW System			XP9104	1	101	DO-5			P-4						
	XT1DO6	CHW System			XP9104	1	101	DO-6			P-4						
	XT1DO7	CHW System			XP9104	1	101	DO-7			P-4						
	XT1DO8	CHW System			XP9104	1	101	DO-8			P-4						



Wiring Detail I

NO.	Date	Revision Record

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116 Budlong Road
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(401) 946-1440

Korte Construction
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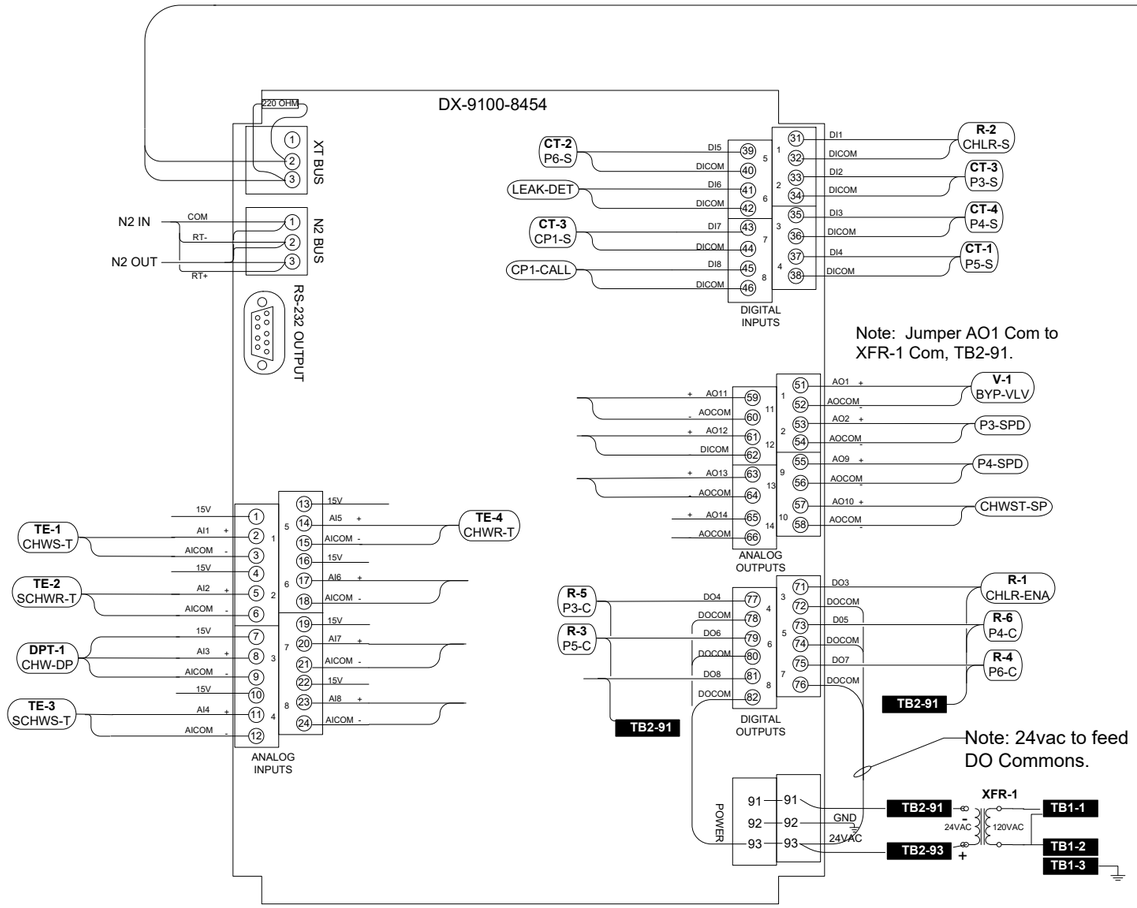
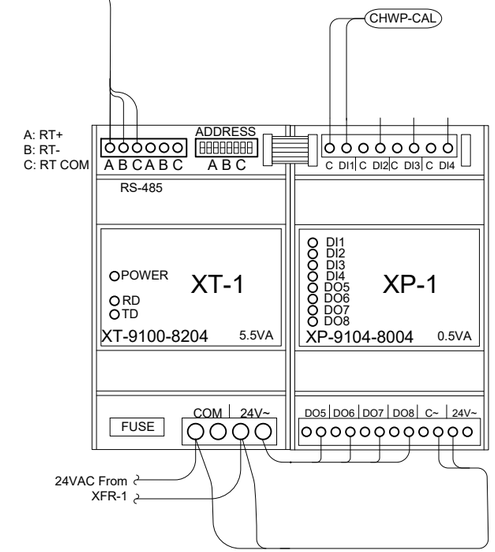
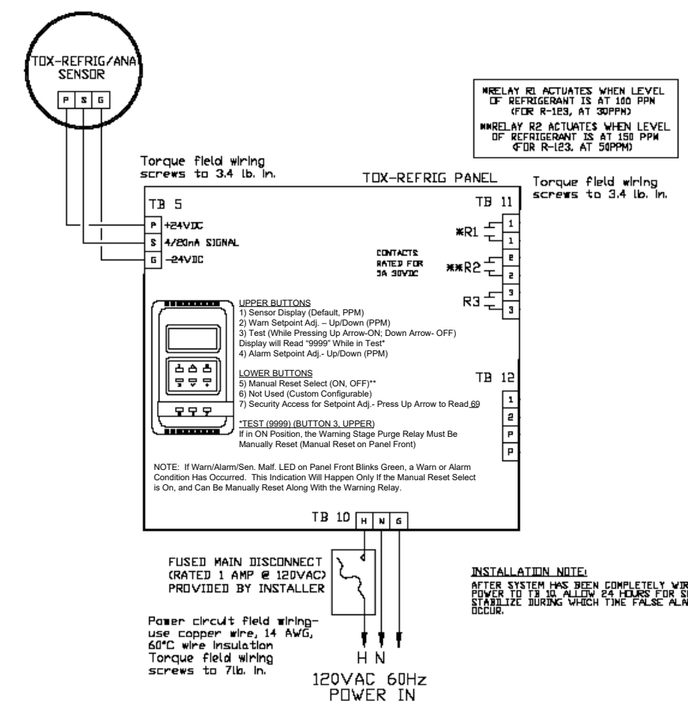
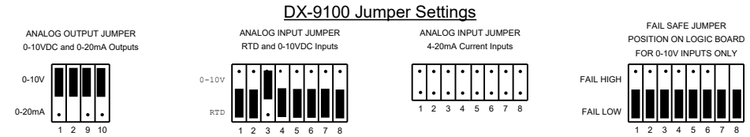
JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **CHW System Detail.vsd**		
DATE: 09/06/06	DRAWING NUMBER:	**ATC-3B**







DX-9100 Jumper Settings



Installation Notes:
1. 120VAC power requires 3rd-wire grounding to building ground. Do not use conduit as ground.
2. The DX master and the last XT require 220 ohm E.O.L. resistors if the XT-Bus is greater than 330 feet. Only the DX-9100 requires an E.O.L. resistor if the bus is less than 330 feet in length.
3. If shielded wire is used to connect devices, terminate the shield to conduit or enclosure wall and tape back at the device.

CHW System DX Controller Detail

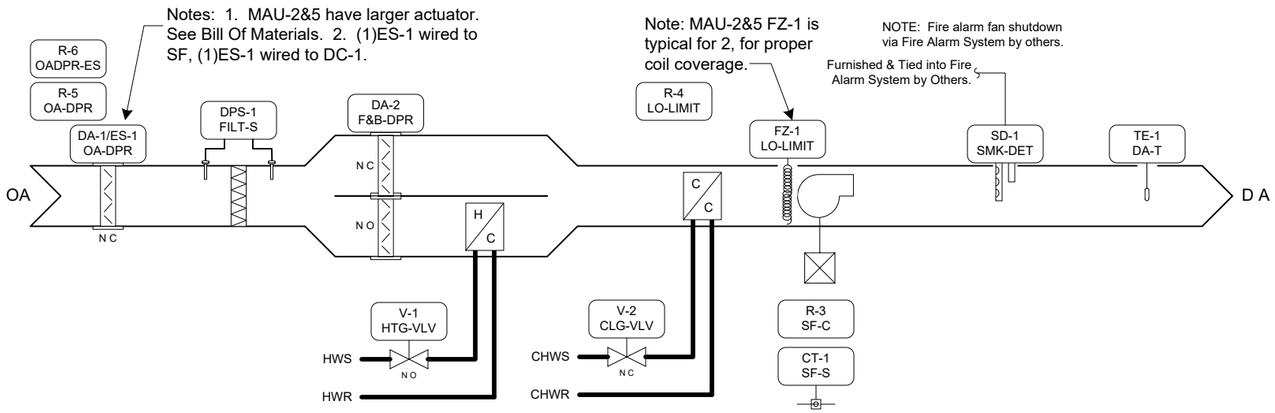
NO.	Date	Revision Record

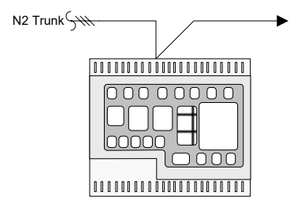
Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **CHW System Detail.vsd**		
DATE: 09/06/06	DRAWING NUMBER: **ATC-3C**	

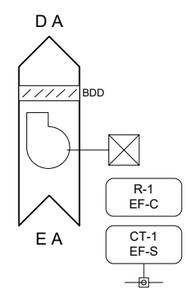




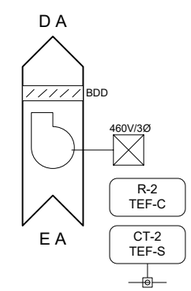
DC-1

Typical of 8. Located in Panels in 3rd floor Telecom Rooms 3113, 3215. See ATC-1.

General Exhaust
(Typ. of 4)



Toilet Exhaust
(Typ. of 8)



MAU Schedule

TAG	CFM	Assoc. TEF	Assoc. General Exhaust
MAU-1	3560	TEF-1	
MAU-2	7345	TEF-2	EF-1, 3, 8
MAU-3a	1780	TEF-3a	
MAU-3b	3655	TEF-3b	EF-2
MAU-4	3560	TEF-4	
MAU-5	6520	TEF-5	EF-4, 6
MAU-6a	1780	TEF-6a	
MAU-6b	3330	TEF-6b	EF-5

General Exhaust Fan Schedule

General Exhaust	Serves	Location	Volts	CFM	Wired to
EF-1	1st & 2nd Floor West Side	Roof	460V/3Ø	1840	MAU-2
EF-2	3rd Floor West Side	Roof	460V/3Ø	960	MAU-3a
EF-4	1st & 2nd Floor East Side	Roof	460V/3Ø	1880	MAU-5
EF-5	3rd Floor East Side	Roof	460V/3Ø	960	MAU-6a

MAU Detail
(Typ. Of 8)

Desig.	Qty.	Mfg.	Part #	Description
Panel Devices:				
DC-1	8	JCI	AS-UNT1144-0	CNTRLR,DIG,UNT,6AI,6BI,4AO,4BO
Field Devices:				
CT-1,2	20	JCI	H600	CURRENT SWITCH MINI, SPIT, FIXED
DA-1	2	JCI	M9216-BGC-2	ACT,ON/OFF,140IN#,SR,24VAC,2AUX
DA-1	6	JCI	M9210-BGC-3	ACT,ON/OFF,89IN#,SR,24VAC,2AUX
DA-2	8	JCI	M9216-GGA-2	ACT,PROP,140IN#,SR,0-10V
DPS-1	8	JCI	AFS-262	AIR FLOW SW,SPDT,0.05-2IN
	16	JCI	FTG18A-600R	SENSING TUBE KIT
FZ-1	10	JCI	A70HA-1C	STAT,LL,20FT ELEMENT, MANUAL
	30	JCI	T-6001-8	AVG ELEMENT HOLDER
R-1~6	44	VERIS	V100	10AMP SPDT 10-30VAC/DC/120VAC
TE-1	8	JCI	TE-6311P-1	SENSOR,T-NI,0.1%,8IN DUCT
V-1,2	16	JCI		SEE VALVE SCHEDULE

Sequence of Operations

MAUs provide outdoor air for fancoil units and operate on a weekly schedule. They run continuously during occupied mode and are “shutdown” during unoccupied. During “shutdown”, valves and dampers go to their “normal” position and the fan is off. When the unit is commanded to run, the outdoor air damper opens. Once proven open via damper end switch, the fan is enabled to run through hardwired interlock. Unit runs to maintain a discharge air temperature reset from outdoor air temperature per the following schedule (adjustable):

OAT = 60°F DAT Setpoint = 55°F
OAT = 0°F DAT Setpoint = 65°F

The cooling valve modulates in sequence with the face and bypass dampers to maintain discharge air temperature set point. Cooling valve remains closed when the outdoor air temperature is below 60°F or the fan is Off. The face & bypass dampers remain in the full bypass position when the outdoor air temperature is above 65°F. When the fan is off, face & bypass position for full face.

The heating valve is enabled whenever the outdoor air temperature is below 65°F and the fan is running. The heating valve modulates open based on the following reset schedule:

OA Temp	% Open
65°F	0%
40°F	100%

Whenever the freezestat senses a temperature below 38°F or the discharge air temperature at TE-1 falls below 40°F the unit will shutdown, the outdoor air damper will close, the heating & cooling valves will open 100%, and the face & bypass dampers will open 100% to the face of the heating coil. A manual reset at the freezestat (FZ-1) is required to resume normal operation. Discharge air shutdown requires a software reset at DDC system to resume normal operation.

Upon activation of the emergency shutdown button, MAUs will shutdown with the valves and dampers in their normal position.

Toilet exhaust fans and general exhaust fans will run whenever their associated MAU runs and will be off when their associated MAU is off.

Alarms:
The following alarms will be sent to the workstation:
1. If fan status (on or off) does not match DDC command.
2. Upon a freezestat trip
3. If discharge air temperature rises above 120°F or falls below 40°F.
4. Dirty filter status.
5. Supply fan damper status does not match DDC command.

NO.	Date	Revision Record

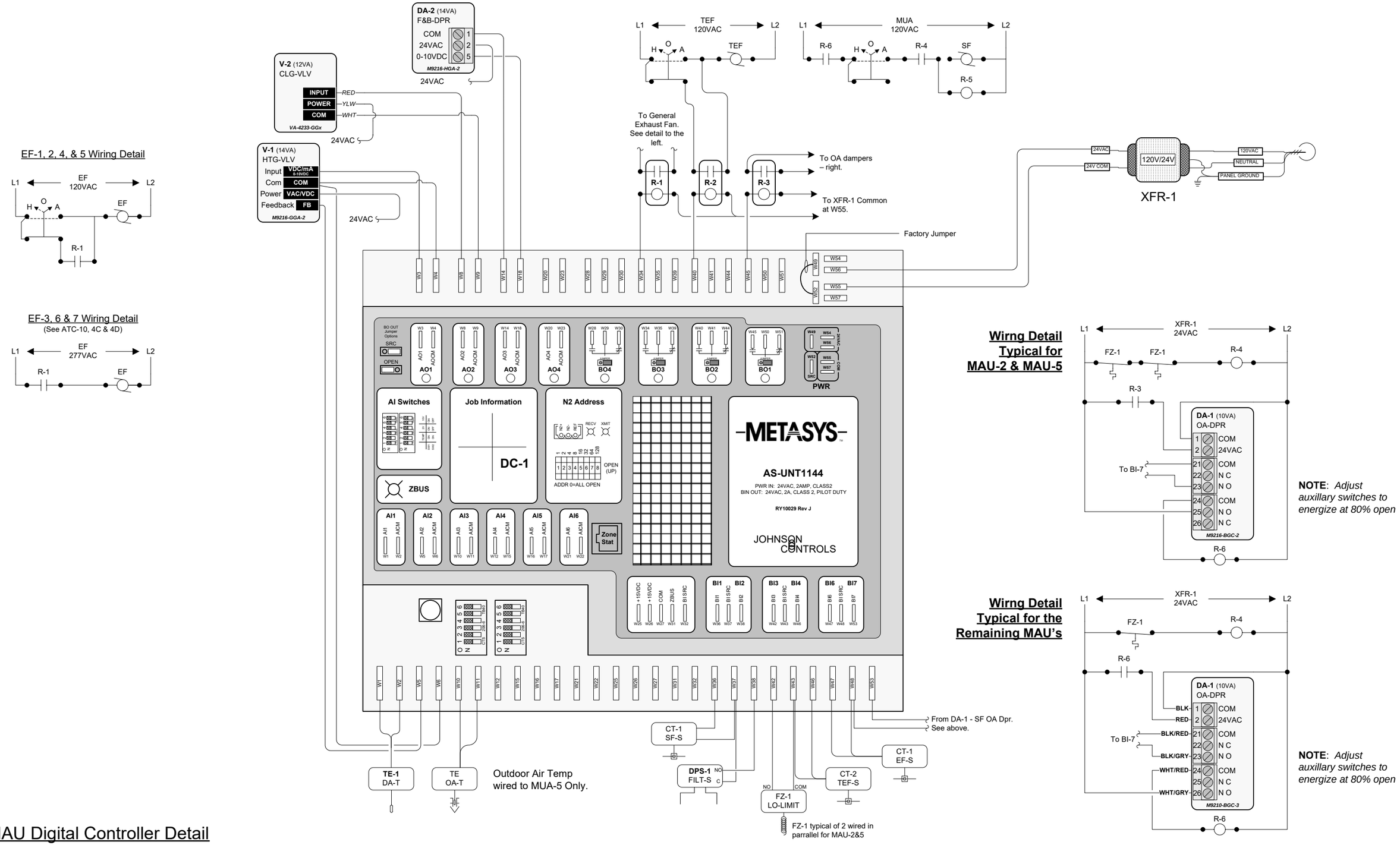
Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor’s Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **MAU Detail.vsd**		
DATE: 09/06/06	DRAWING NUMBER:	**ATC-4**

Submittal		Point Information			Controller Information							Intermediate Device		Field Device			
Tag	Point Type	System Name	Object Name	Expanded ID	Controller Type	Trunk Nbr	Trunk Addr.	Cable Destination Bay/Terminal	DO Type	Module Type	Panel	Device	Location	Wiring /Tubing	Device	Location	Comment
		MAU			UNT1100						P-1 / P-2						Power to Controller
		MAU			UNT1100	1	7~14				P-1 / P-2						N2 Trunk
	AI-1	MAU	DA-T	Discharge Air Temp	UNT1100	1	7~14	AI-1			P-1 / P-2			2/18	TE-6300		
	AI-2	MAU	HTGVLV-S	Heating Valve Status	UNT1100	1	7~14	AI-2			P-1 / P-2			2/18	M9216 Feedback (0-10V)		
	AI-3	MAU	OA-T	Outdoor Air Temp	UNT1100	1	7~14	AI-3			P-1 / P-2			2/18	TE-6300		MUA-5 Only
	AI-4	MAU			UNT1100	1	7~14	AI-4			P-1 / P-2						
	AI-5	MAU			UNT1100	1	7~14	AI-5			P-1 / P-2						
	AI-6	MAU			UNT1100	1	7~14	AI-6			P-1 / P-2						
	BI-1	MAU	SF-S	Supply Fan Status	UNT1100	1	7~14	BI-1			P-1 / P-2	H600		2/18	Contact (NO)		
	BI-2	MAU	FILT-S	Filter Status	UNT1100	1	7~14	BI-2			P-1 / P-2			2/18	AFS-262		
	BI-3	MAU	LO-LIMIT	Lo Limit Shutdown	UNT1100	1	7~14	BI-3			P-1 / P-2			2/18	A70		
	BI-4	MAU	TEF-S	Toilet Exhaust Fan Status	UNT1100	1	7~14	BI-4			P-1 / P-2	H600		2/18	Contact (NO)		
	BI-6	MAU	EF-S	Exhaust Fan Status	UNT1100	1	7~14	BI-6			P-1 / P-2	H600		2/18	Contact (NO)		
	BI-7	MAU	SFDPR-S	SF Outdoor Air Dpr Stus	UNT1100	1	7~14	BI-7			P-1 / P-2			2/18	Contact (NO)		
	AO-1	MAU	HTG-VLV	Heating Valve	UNT1100	1	7~14	AO-1			P-1 / P-2			3/18			
	AO-2	MAU	CLG-VLV	Cooling Valve	UNT1100	1	7~14	AO-2			P-1 / P-2			3/18			
	AO-3	MAU	F&B-DPR	Face & Bypass Dampers	UNT1100	1	7~14	AO-3			P-1 / P-2			3/18	M9216-HGA-2		
	AO-4	MAU			UNT1100	1	7~14	AO-4			P-1 / P-2						
	BO-1	MAU	SF-C	Supply Fan Command	UNT1100	1	7~14	BO-1			P-1 / P-2	V100		2/18	24VAC Out		
	BO-2	MAU	TEF-C	Toilet Exhaust Fan Command	UNT1100	1	7~14	BO-2			P-1 / P-2	V100		2/18	24VAC Out		
	BO-3	MAU	EF-C	Exhaust Fan Command	UNT1100	1	7~14	BO-3			P-1 / P-2	V100		2/18	24VAC Out		
	BO-4	MAU			UNT1100	1	7~14	BO-4			P-1 / P-2						



NO.	Date	Revision Record

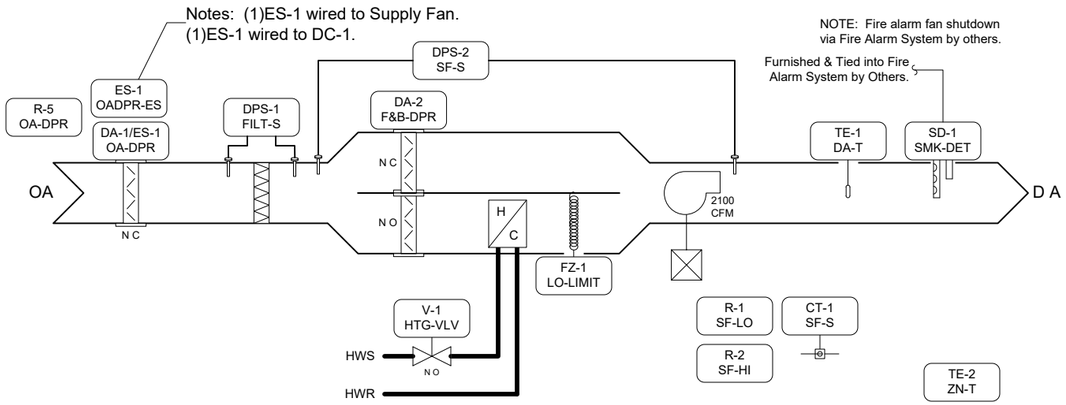
Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

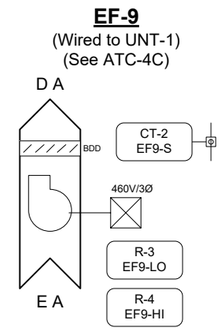
Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

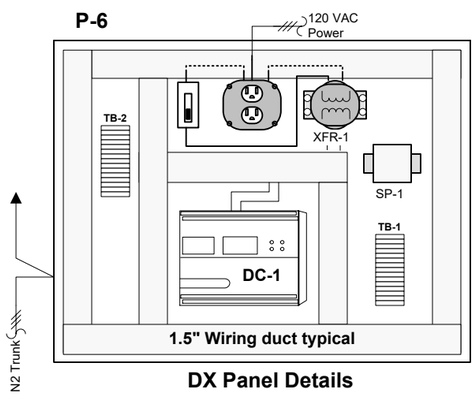
Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER:	SCALE:	DRAWN BY:	P. Braga
0000	NTS	APPROVED BY:	W. Roskowski
FILE: **MAU Detail.vsd**			
DATE: 09/06/06	DRAWING NUMBER:	**ATC-4B**	

Submittal		Point Information			Controller Information							Intermediate Device		Field Device			
Tag	Point Type	System Name	Object Name	Expanded ID	Controller Type	Trunk Nbr	Trunk Addr.	Cable Destination Bay/Terminal	DO Type	Module Type	Panel	Device	Location	Wiring /Tubing	Device	Location	Comment
		UNT-1			UNT14x						P-2						Power to Controller
		UNT-1			UNT14x	1	1				P-2						N2 Trunk
	AI-1	UNT-1			UNT14x	1	1	AI-1			P-2						
	AI-2	UNT-1			UNT14x	1	1	AI-2			P-2						
	AI-3	UNT-1			UNT14x	1	1	AI-3			P-2						
	AI-4	UNT-1			UNT14x	1	1	AI-4			P-2						
	AI-5	UNT-1			UNT14x	1	1	AI-5			P-2						
	AI-6	UNT-1			UNT14x	1	1	AI-6			P-2						
	BI-1	UNT-1	EF8-S	Exhaust Fan EF-8 Status	UNT14x	1	1	BI-1			P-2	H600		2/18	Status (NO)		
	BI-2	UNT-1	EF9-S	Exhaust Fan EF-9 Status	UNT14x	1	1	BI-2			P-2	H600		2/18	Status (NO)		
	BI-3	UNT-1			UNT14x	1	1	BI-3			P-2						
	BI-4	UNT-1			UNT14x	1	1	BI-4			P-2						
	BO-1	UNT-1	EF8-C	Exhaust Fan EF-8 Command	UNT14x	1	1	BO-1			P-2	V100		2/18	24VAC Out		
	BO-2	UNT-1	EF9-HI	Exhaust Fan EF-9 High Speed	UNT14x	1	1	BO-2			P-2	V100		2/18	24VAC Out		
	BO-3	UNT-1	EF9-LO	Exhaust Fan EF-9 Low Speed	UNT14x	1	1	BO-3			P-2	V100		2/18	24VAC Out		
	BO-4	UNT-1			UNT14x	1	1	BO-4			P-2						
	BO-5	UNT-1			UNT14x	1	1	BO-5			P-2						
	BO-6	UNT-1			UNT14x	1	1	BO-6			P-2						
	BO-7	UNT-1			UNT14x	1	1	BO-7			P-2						
	BO-8	UNT-1			UNT14x	1	1	BO-8			P-2						







DX Panel Details

Desig.	Qty.	Mfg.	Part #	Description
Panel Devices:				
DC-1	1	JCI	DX-9100-8454	CNTRLR,DIG,DX,8AI,8AO,6BO,8BI
	1	JCI	DX-9100-8990	CNTRLR,DIG,DX,MTG BASE
P-6	1	PPSI	VC-3024	30"x24" ENCLOSURE
SP-1	1	KELE	DTK-120HW	120V IN-LINE SURGE PROTECTOR
XFR-1	1	JCI	Y64T15-0	XFMR,120-208-240/24,92VA,FOOT 30IN LEADS
Field Devices:				
CT-1,2	2	JCI	H600	CURRENT SWITCH MINI, SPIT, FIXED
DA-1	1	JCI	M9210-BGC-3	ACT,ON/OFF,89IN#,SR,24VAC,2AUX
DA-2	1	JCI	M9216-GGA-2	ACT,PROP,140IN#,SR,0-10V
DPS-1,2	2	JCI	AFS-262	AIR FLOW SW,SPDT,0.05-2IN
	4	JCI	FTG18A-600R	SENSING TUBE KIT
ES-1	1	KELE	TS-460	DPR POSITION SWITCH
FZ-1	1	JCI	A70GA-1C	STAT,LL,20FT ELEMENT, AUTOMATIC
	3	JCI	TE-6001-8	AVG ELEMENT HOLDER
R-1,2,7	3	VERIS	VMD2B-F24A	DPDT,15A,24VAC, LED,PUSH TO TEST
R-3~5	2	VERIS	V100	10AMP SPDT 10-30VAC/DC/120VAC
TE-1	1	JCI	TE-6311P-1	SENSOR,T-NI,0.1%,8IN DUCT
TE-2	1	JCI	TE-6314P-1	SENSOR,T-NI,0.1%,RM
V-1	1	JCI		SEE VALVE SCHEDULE

Sequence of Operations

Normal Mode: MAU-7 runs continuously in low speed. Upon signal for unit to run the outside air damper opens. Once proven open from damper endswitch the unit will run through a hardwired interlock. EF-9 runs continuously in low speed whenever the heat exchanger is enabled or the boiler is enabled and not firing. When the boiler is firing (see R-2/BLR-S on ATC-2) EF-9 will shutdown.

Alarm 1: On an alarm from refrigerant leak detector (this has priority over normal mode) the MAU and exhaust fan will run in high speed. When refrigerant leak detector alarm has cleared, normal mode will be evaluated for control of MAU-7 and EF-9.

Alarm 2: Upon activation of the emergency shutdown button, MAU and EF-9 will shutdown with valves and dampers in their normal position. This has priority over refrigerant leak sequence and normal mode described above. When emergency shutdown button has been returned to normal position, Alarm 1 mode will be evaluated for control of MAU-7 and EF-9.

The heating valve is enabled whenever the outdoor air temperature is below 65°F and the fan is running. The heating valve modulates open based on the following reset schedule:

OA Temp	% Open
65°F	0%
40°F	100%

The face & bypass dampers modulate as required to maintain discharge air temperature (55°F to 90°F) reset from zone temperature setpoint of 60°F (htg) and 80°F (clg) adjustable at the DDC system. The face & bypass dampers are enabled whenever the outdoor air temperature is below 65°F and the fan is running, otherwise they are positioned for full coil.

Whenever the freezestat senses a temperature below 38°F the unit will shutdown, the outdoor air damper and cooling valve will close, the heating valve will open 100%, and the face & bypass dampers will open 100% to the face of coil. Freezestat (FZ-1) will automatically reset when temperature rises and the unit will resume normal operation.

Alarms:

The following alarms will be sent to the workstation:

1. If supply fan status (on or off) does not match DDC command.
2. If exhaust fan status (on or off) does not match DDC command.
3. Upon a freezestat trip
4. If discharge air temperature rises above 120°F or falls below 40°F.
5. Dirty filter status.
6. If room temperature drops below 55°F
7. Supply Fan damper tatus does not match DDC command.

Machine Room MAU-7 Detail

NO.	Date	Revision Record

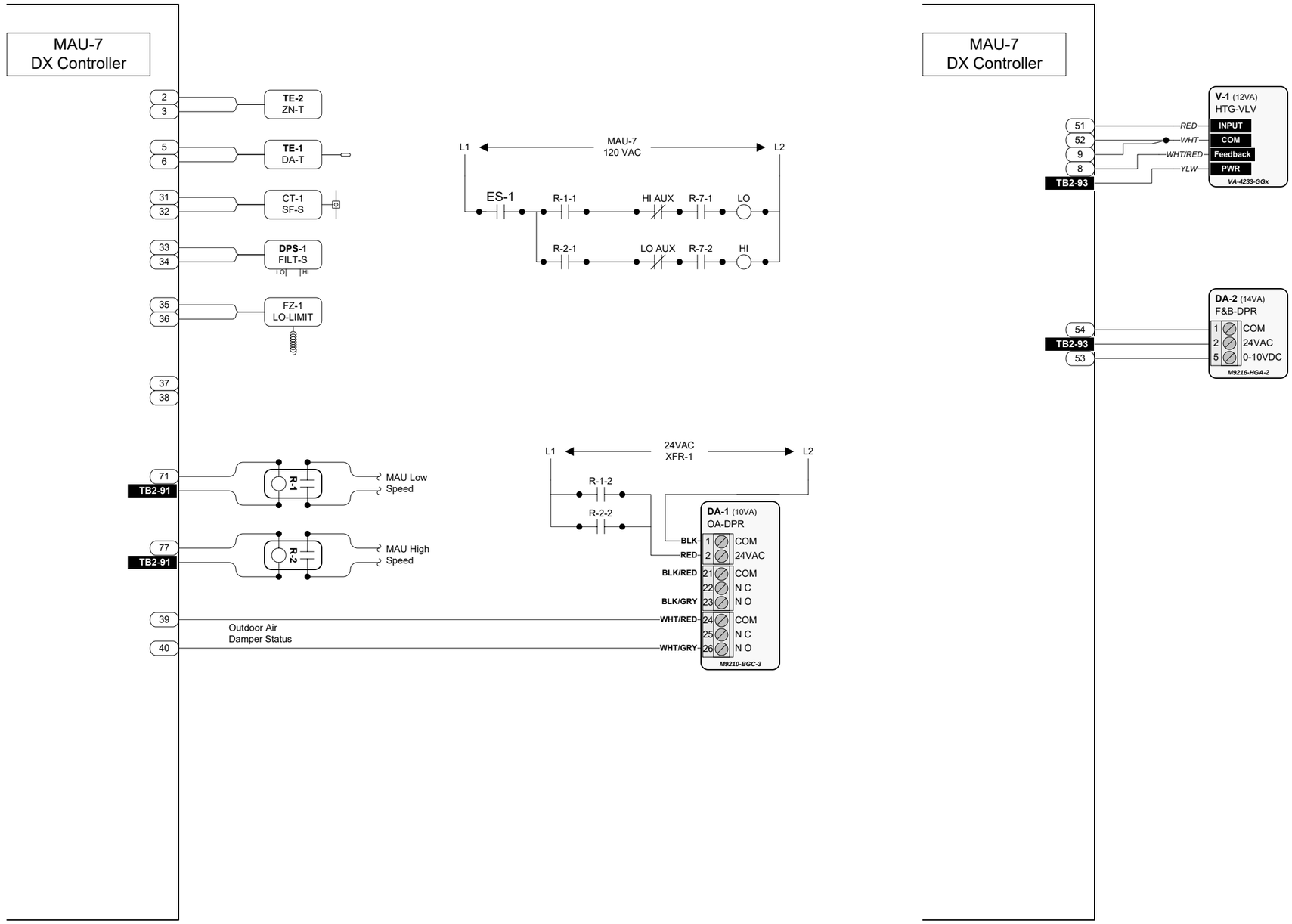
Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **Machine Rm MAU-7 Detail.vsd**		
DATE: 09/06/06	DRAWING NUMBER:	**ATC-5**

Submittal		Point Information			Controller Information							Intermediate Device		Field Device			
Tag	Point Type	System Name	Object Name	Expanded ID	Controller Type	Trunk Nbr	Trunk Addr.	Cable Destination Bay/Terminal	DO Type	Module Type	Panel	Device	Location	Wiring /Tubing	Device	Location	Comment
		MAU-7			DX9100						P-6						Power to Controller
		MAU-7			DX9100	1	4				P-6						N2 Trunk
	DO-3	MAU-7	SF-LO	Supply Fan Low Speed	DX9100	1	4	DO-3			P-6	V100		2/18	24VAC Out		
	DO-4	MAU-7	SF-HI	Supply Fan High Speed	DX9100	1	4	DO-4			P-6	V100		2/18	24VAC Out		
	DO-5	MAU-7			DX9100	1	4	DO-5			P-6						
	DO-6	MAU-7			DX9100	1	4	DO-6			P-6						
	DO-7	MAU-7			DX9100	1	4	DO-7			P-6						
	DO-8	MAU-7			DX9100	1	4	DO-8			P-6						
	DI-1	MAU-7	SF-S	Supply Fan Status	DX9100	1	4	DI-1			P-6	H600		2/18	Status (NO)		
	DI-2	MAU-7	FILT-S	Filter Status	DX9100	1	4	DI-2			P-6			2/18	AFS-262		
	DI-3	MAU-7	LO-LIMIT	Lo Limit Shutdown	DX9100	1	4	DI-3			P-6			2/18	A70HA-1C		
	DI-4	MAU-7			DX9100	1	4	DI-4			P-6						
	DI-5	MAU-7	SFDPR-S	Sup Fan Damper Status	DX9100	1	4	DI-5			P-6			2/18	Status (NO)		
	DI-6	MAU-7			DX9100	1	4	DI-6			P-6						
	DI-7	MAU-7			DX9100	1	4	DI-7			P-6						
	DI-8	MAU-7			DX9100	1	4	DI-8			P-6						
	AI-1	MAU-7	ZN-T	Zone Temperature	DX9100	1	4	AI-1			P-6			2/18	TE-6314P-1		
	AI-2	MAU-7	DA-T	Discharge Air Temperature	DX9100	1	4	AI-2			P-6			2/18	TE-6311P-1		
	AI-3	MAU-7	HTGVLV-S	Heating Valve Status	DX9100	1	4	AI-3			P-6			2/18	VA-4233 Feedback (0-10VDC)		
	AI-4	MAU-7			DX9100	1	4	AI-4			P-6						
	AI-5	MAU-7			DX9100	1	4	AI-5			P-6						
	AI-6	MAU-7			DX9100	1	4	AI-6			P-6						
	AI-7	MAU-7			DX9100	1	4	AI-7			P-6						
	AI-8	MAU-7			DX9100	1	4	AI-8			P-6						
	AO-1	MAU-7	HTG-VLV	Heating Valve	DX9100	1	4	AO-1			P-6			3/18	VA-4233 (0-10VDC)		
	AO-2	MAU-7	F&B-DPR	Face & Bypass Dampers	DX9100	1	4	AO-2			P-6			3/18	M9216-HGA-2 (0-10VDC)		
	AO-9	MAU-7			DX9100	1	4	AO-9			P-6						
	AO-10	MAU-7			DX9100	1	4	AO-10			P-6						
	AO-11	MAU-7			DX9100	1	4	AO-11			P-6						
	AO-12	MAU-7			DX9100	1	4	AO-12			P-6						
	AO-13	MAU-7			DX9100	1	4	AO-13			P-6						
	AO-14	MAU-7			DX9100	1	4	AO-14			P-6						



MAU-7 Wiring Detail

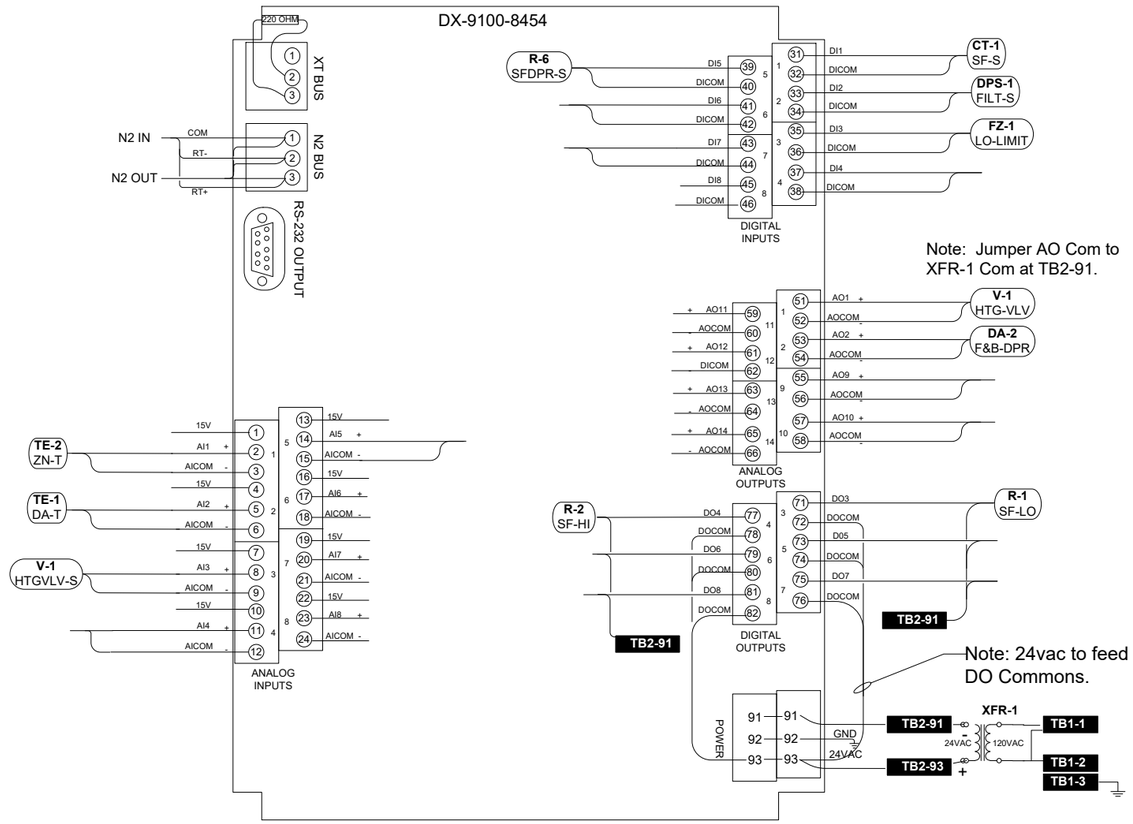
NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

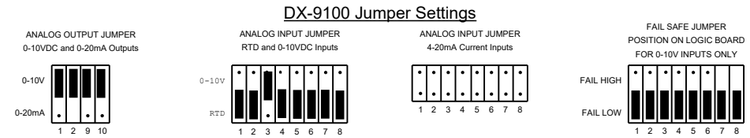
Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY:	P. Braga
		APPROVED BY:	W. Roskowski
FILE: **Machine Rm MAU-7 Detail.vsd**			
DATE: 09/06/06	DRAWING NUMBER:	**ATC-5B**	



DX-9100 Jumper Settings



Installation Notes:
1. 120VAC power requires 3rd-wire grounding to building ground. Do not use conduit as ground.
2. The DX master and the last XT require 220 ohm E.O.L. resistors if the XT-Bus is greater than 330 feet. Only the DX-9100 requires an E.O.L. resistor if the bus is less than 330 feet in length.
3. If shielded wire is used to connect devices, terminate the shield to conduit or enclosure wall and tape back at the device.

MAU-7 Controller Detail

NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
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(401) 946-1440

Korte Construction
1372T Mayercord Avenue
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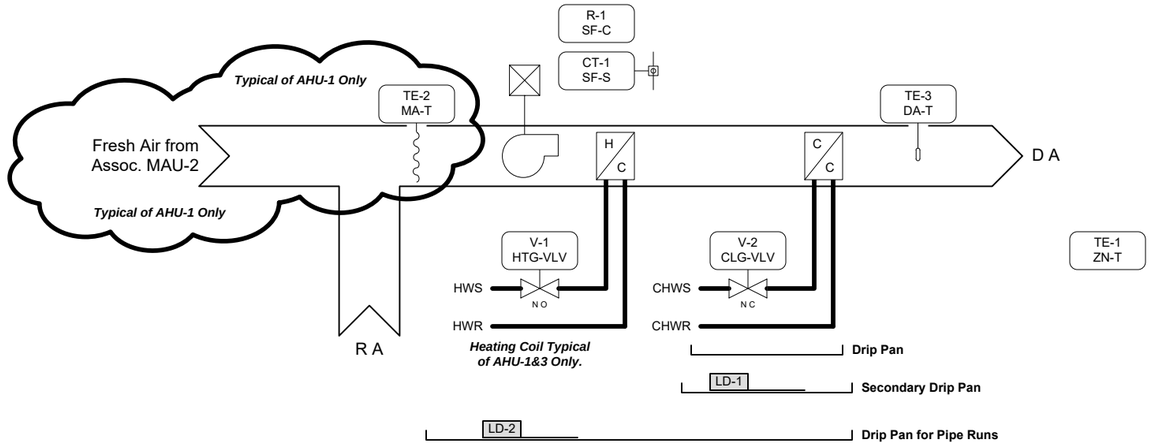
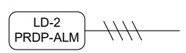
Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **Machine Rm MAU-7 Detail.vsd**		
DATE: 09/06/06	DRAWING NUMBER:	**ATC-5C**

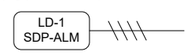


Pipe Run Drip Pan
Water Leak Detection Alarm
(Typical of 1)

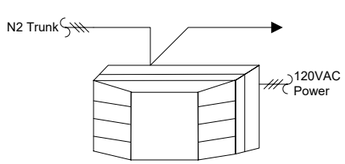


Elec Room 003 (1) Only. Located in Drip Pan for Pipe Runs

Secondary Drip Pan Water
Leak Detection Alarm
(Typical of 1)



Typical for AHU-2 Only. Located in Secondary Drip Pan.



DC-1

AHU Detail

AHU Schedule

TAG	SERVES	COMMENTS
AHU-1	Rm1100 - Entry/Quarter Deck	Fresh Air from MAU-2
AHU-2	Rm1204 - I.T. Server	No Heat, No Fresh Air
AHU-3	Rm003 - Elec Room Space	No Fresh Air

Desig.	Qty.	Mfg.	Part #	Description
CT-1	3	JCI	H600	CURRENT SWITCH MINI, SPLIT FIXED
DC-1	3	JCI	AS-UNT141-101	CNTRLR,UNT,6AI,4BI,6BO,2AO,SCR,ENC,50VA
LD-1,2	2	KELE	WD-2-T-10	11-27VAC/DC, 10' SENSOR TAPE,24VAC
R-1	3	VERIS	V100	10AMP SPDT 10-30VAC/DC/120VAC
TE-1	3	JCI	TE-67NP-2N00	SENSOR,RM,1K NI,PHONE JACK,SET-PT
TE-2	1	JCI	TE-6315P-1	SENSOR,T-NI,0.1%,8FT AVG
TE-3	3	JCI	TE-6311P-1	SENSOR,T-NI,0.1%,8IN DUCT
V-1,2	5	JCI		SEE VALVE SCHEDULE

Sequence of Operations
AHU's run on an occupied/unoccupied schedule.

Occupied: Supply fan runs continuously. The heating (where applicable) & cooling valves will modulate as required to maintain the following room temperature setpoints:

AHU-1:

Occupied Mode	
Clg. Setpoint	74°F (adj.)
Htg. Setpoint	70°F (adj.)

Unoccupied Mode	
Clg. Setpoint	77°F (adj.)
Htg. Setpoint	67°F (adj.)

AHU-2 & AHU-3:

Occupied Mode	
Clg. Setpoint	74°F (adj.)
Htg. Setpoint	70°F (adj.)

Unoccupied Mode	
Clg. Setpoint	74°F (adj.)
Htg. Setpoint	70°F (adj.)

Occupied setpoints will be adjustable at the thermostat.

Heating valve is disabled when OA-T>65°F. Cooling valve is disabled when OA-T<65°F.

Unoccupied: Heating valve is open and cooling valve is closed. Supply fan cycles on a call for heating or cooling per the above setpoints.

Emergency Shutdown:
Upon activation of the emergency shutdown button, AHU's will shutdown with the valves and dampers in their normal position.

Water Leak Detector on Drip Pan for Pipe Runs:
Upon detection of water in the drip pan from water detector (LD-2) and an alarm will be sent to the workstation. Alarm will clear once sensing tape dries out.

Water Leak Detector on Secondary Drip Pans:
Upon detection of water in the secondary drip pan of unit from water detector (LD-1) the associated AHU will shutdown and an alarm will be sent to the workstation. Alarm will clear once sensing tape dries out or the alarm is overridden at the workstation. Then the AHU will resume normal operation. The alarm override will automatically reset when the sensing tape dries out.

Alarms:
The following alarms will be sent to the workstation:
1. If fan status (on or off) does not match DDC command.
2. If discharge air temperature rises above hi-limit setpoint.
3. If discharge air temperature falls below lo-limit setpoint.
4. Supply fan runtime exceeds limit.
5. Upon detection of water in secondary drip pan.
6. Upon detection of water in drip pan for pipe runs.

NO.	Date	Revision Record

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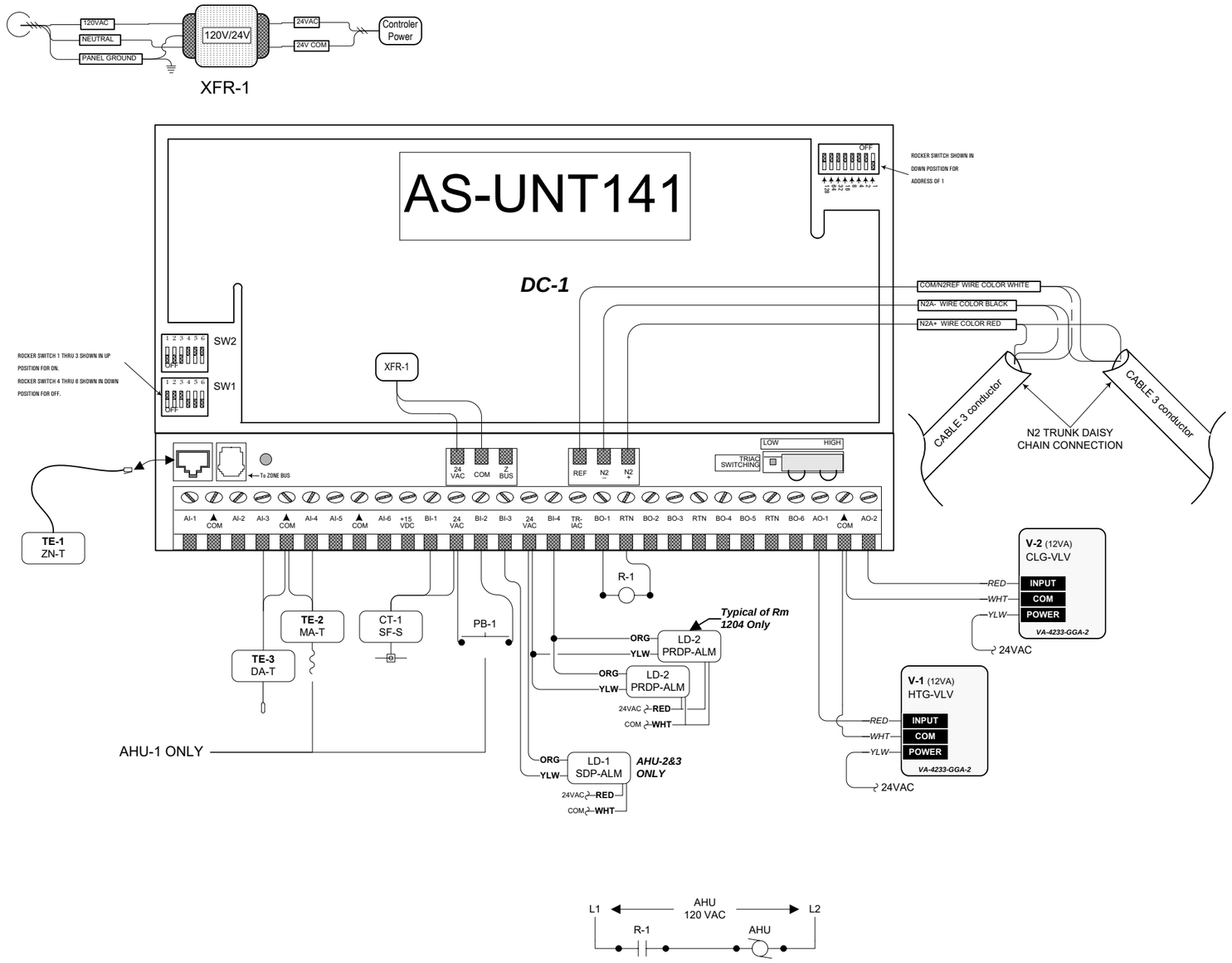
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P Braga
		APPROVED BY:
FILE: **AHU Detail.vsd**		
DATE: 09/06/06	DRAWING NUMBER:	**ATC-6**

Submittal		Point Information			Controller Information							Intermediate Device		Field Device			
Tag	Point Type	System Name	Object Name	Expanded ID	Controller Type	Trunk Nbr	Trunk Addr.	Cable Destination Bay/Terminal	DO Type	Module Type	Panel	Device	Location	Wiring /Tubing	Device	Location	Comment
		AHU			UNT14x						DC-1						Power to Controller
		AHU			UNT14x	1	17, 18, 15				DC-1						N2 Trunk
	AI-1	AHU	ZN-T	Zone Temperature	UNT14x	1	17, 18, 15	AI-1			DC-1			8/24	TE-6700		
	AI-2	AHU	ZN-SP	Zone Temp Setpoint	UNT14x	1	17, 18, 15	AI-2			DC-1				TE-6700		
	AI-3	AHU	DA-T	Discharge Air Temp	UNT14x	1	17, 18, 15	AI-3			DC-1			2/18	TE-6300		
	AI-4	AHU	MA-T	Mixed Air Temp	UNT14x	1	17, 18, 15	AI-4			DC-1			2/18	TE-6300		**Typical of AHU-1 Only**
	AI-5	AHU			UNT14x	1	17, 18, 15	AI-5			DC-1						
	AI-6	AHU			UNT14x	1	17, 18, 15	AI-6			DC-1						
	BI-1	AHU	SF-S	Supply Fan Status	UNT14x	1	17, 18, 15	BI-1			DC-1	H600		2/18	Contact (NO)		
	BI-2	AHU	EMG-SDWN	HVAC Emergency Shutdown	UNT14x	1	17, 18, 15	BI-2			DC-1			2/18	Contact (NO)		**Typical of AHU-1 Only**
	BI-3	AHU	SDP-ALM	Secondary Drip Pan Alarm	UNT14x	1	17, 18, 15	BI-3			DC-1			4/18	WD-2-T		**Typical of AHU-2 Only**
	BI-4	AHU	PRDP-ALM	Pipe Run Drip Pan Alarm	UNT14x	1	17, 18, 15	BI-4			DC-1			4/18	WD-2-T		**Typical of AHU-3 Only**
	BO-1	AHU	SF-C	Supply Fan Command	UNT14x	1	17, 18, 15	BO-1			DC-1	V100		2/18	24VAC Out		
	BO-2	AHU			UNT14x	1	17, 18, 15	BO-2			DC-1						
	BO-3	AHU			UNT14x	1	17, 18, 15	BO-3			DC-1						
	BO-4	AHU			UNT14x	1	17, 18, 15	BO-4			DC-1						
	BO-5	AHU			UNT14x	1	17, 18, 15	BO-5			DC-1						
	BO-6	AHU			UNT14x	1	17, 18, 15	BO-6			DC-1						
	AO-1	AHU	HTG-VLV	Heating Valve	UNT14x	1	17, 18, 15	AO-1			DC-1			3/18	VA-4233 (0-10VDC)		**Typical of AHU-1&3 Only**
	AO-2	AHU	CLG-VLV	Cooling Valve	UNT14x	1	17, 18, 15	AO-2			DC-1			3/18	VA-4233 (0-10VDC)		



Sensor Wire Sizes and Lengths

SENSOR TYPE	RUN LENGTH IN FEET (METERS)	WIRE SIZE
AI TEMPERATURE	500 (150)	#18 AWG
AI VOLTAGE	500 (150)	#18 AWG
BI VOLTAGE/CONTACT	500 (150)	#24 AWG to #18 AWG
SINGLE BO AT 0.1 amp	500 (150)	#18 AWG
SINGLE BO AT 0.5 amp	100 (30)	#18 AWG
ZONE BUS	500 (150)	#18 AWG
ZONE THERMOSTAT	50 (15)	8 conductor phone cable

Analog Input DIP Switch Settings

HARDWARE POINT	SWITCH		TEMP (RESTIVE INPUT)		2VDC(0 TO 2 VDC INPUT)		10 VDC (0 TO 10 VDC INPUT)	
AI 1	SW1-1	SW2-1	ON	OFF	OFF	OFF	OFF	ON
AI 2	SW1-2	SW2-2	ON	OFF	OFF	OFF	OFF	ON
AI 3	SW1-3	SW2-3	ON	OFF	OFF	OFF	OFF	ON
AI 4	SW1-4	SW2-4	ON	OFF	OFF	OFF	OFF	ON
AI 5	SW1-5	SW2-5	ON	OFF	OFF	OFF	OFF	ON
AI 6	SW1-6	SW2-6	ON	OFF	OFF	OFF	OFF	ON

AHU Controller Detail

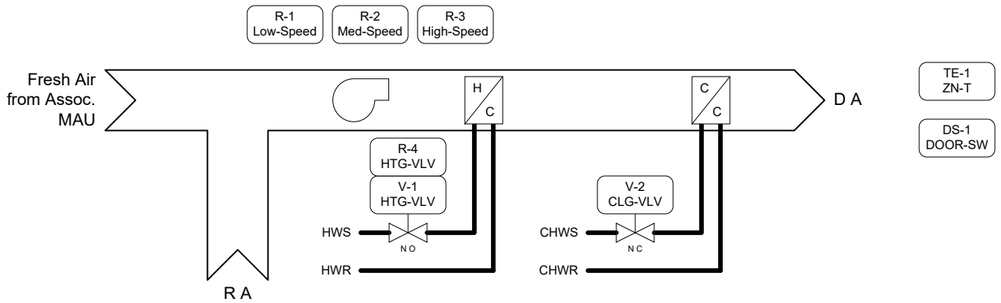
NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

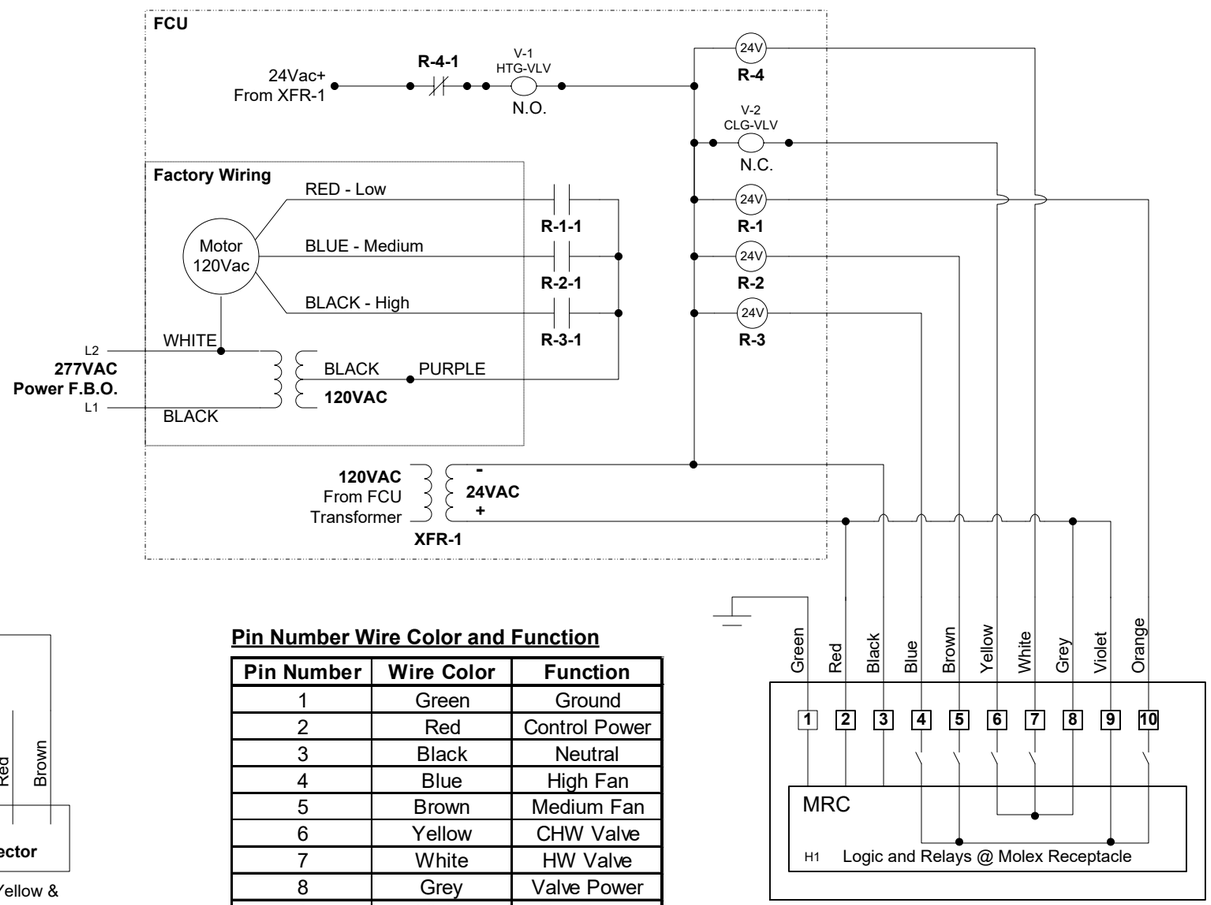
Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

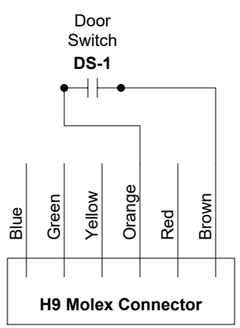
Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P Braga
		APPROVED BY:
FILE: **AHU Detail.vsd**		
DATE: 09/06/06	DRAWING NUMBER:	**ATC-6B**



Desig.	Qty.	Mfg.	Part #	Description
DS-1	174	JCI	MRC19-MDS0	MAGNETIC DOOR SWITCH
R-1	696	VERIS	V100	10AMP SPDT 10-30VAC/DC/120VAC
TE-1	174	JCI	MRC19-31000	DIGITAL STAT, 24V RELAYS
V-1,2	348	JCI		SEE VALVE SCHEDULE
XFR-1	174	JCI	Y65F13-0	XFMR, 277-480/24, 40VA, FOOT





Note: Blue, Green, Yellow & Red are not used.

Pin Number Wire Color and Function

Pin Number	Wire Color	Function
1	Green	Ground
2	Red	Control Power
3	Black	Neutral
4	Blue	High Fan
5	Brown	Medium Fan
6	Yellow	CHW Valve
7	White	HW Valve
8	Grey	Valve Power
9	Violet	Fan Power
10	Orange	Low Fan

Sequence of Operations

Fan Coil Units serving Room Modules will be controlled from a stand-alone digital thermostat, TE-1. Occupancy is determined by the status of the magnetic door switch contact and the Passive Infrared (PIR) motion detector (located onboard the thermostat, TE-1). When the door is opened, the PIR motion detector checks for motion in the room. If motion is detected, TE-1 locks into the Occupied mode. If no motion is detected for 15 minutes, then TE-1 determines the room is Unoccupied. This sequence occurs every time the door is opened.

Occupied: Room set point is adjustable at TE-1 between 70degf and 80degf. When the room temperature is at setpoint, the fan is Off. As temperature drifts from set point the fan speed increases and the heating and cooling valves cycle per the following example:

Room Temp	Setpoint	Fan Speed	Clg Valve	Htg Valve
72degf	72degf	Off	Closed	Closed
73degf	72degf	Low	Open	Closed
75degf	72degf	Medium	Open	Closed
77degf	72degf	High	Open	Closed
71degf	72degf	Low	Closed	Open
69degf	72degf	Medium	Closed	Open
67degf	72degf	High	Closed	Open

Unoccupied: Room cooling set point is set up to 77degf and heating set point is set back to 67degf. Fan remains off and valves are closed between setup and setback cooling and heating set points. Unoccupied setpoints are adjustable thru the keypad on TE-1.

Room Module FCU Detail

(Typ. Of 174)

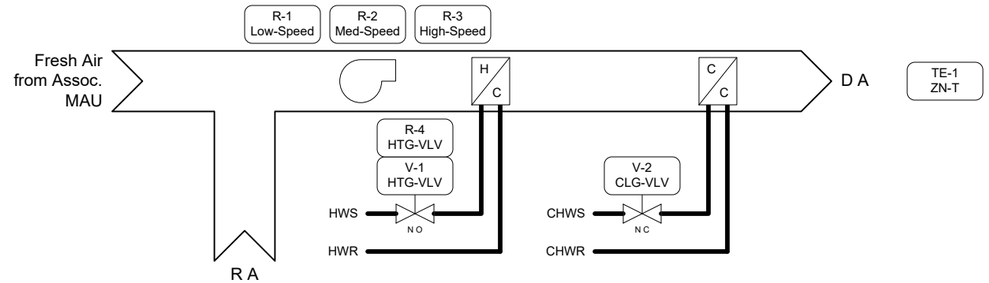
NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

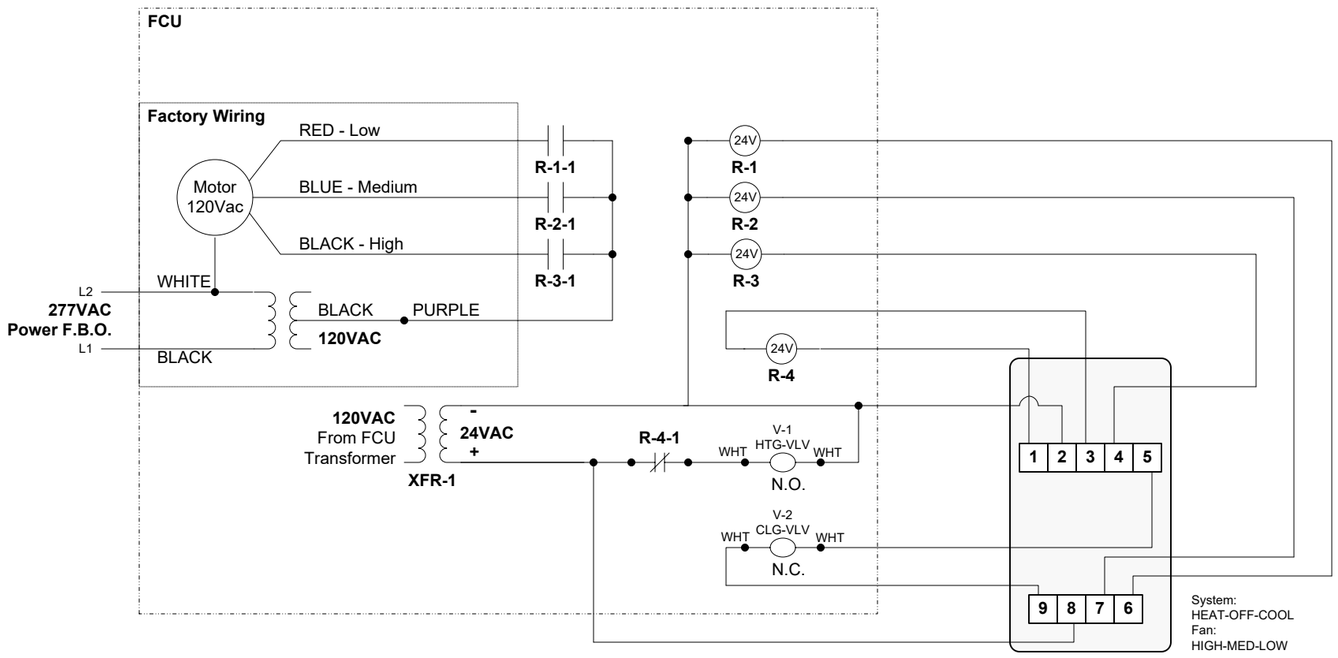
Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **Room Module FCU Detail.vsd**		
DATE: 07/05/06	DRAWING NUMBER:	**ATC-7**



Desig.	Qty.	Mfg.	Part #	Description
R-1	172	VERIS	V100	10AMP SPDT 10-30VAC/DC/120VAC
TE-1	43	JCI	T2000ACF-0C0	DIGITAL STAT, 24V RELAYS
V-1,2	86	JCI		SEE VALVE SCHEDULE
XFR-1	43	JCI	Y65F13-0	XFMR, 277-480/24, 40VA, FOOT



(TE-1) Model T2000ACC-0C0	
Terminal #	Connection
1	Heating Valve +
2	Common
3	Heating Valve Common
4	High Fan Speed
5	Cooling Valve Common
6	Low Fan Speed
7	Medium Fan Speed
8	24VAC Power
9	Cooling Valve

Room Schedule

#	Room #	Room Name	FCU Type
1	CO-12	Corr. #2	FC-9
2	CO-11	Corr. #1 East	FC-9
3	1123	Comp Print	FC-5
4	1121	Learn Conf.	FC-6
5	1113	Learn Conf.	FC-7
6	1111	Laundry	FC-8
7	1102	Linen Sort	FC-11
8	ST-1	Stair TWR-1	FC-13
9	1202	Medical Office	FC-10
10	1213	Laundry	FC-8
11	CO-11	Corr. #1 West	FC-9
12	1215	Learn Conf.	FC-7
13	1221	Learn Conf.	FC-6
14	1223	Comp Print	FC-5
15	CO-13	Corr #3	FC-9
16	CO-22	Corr #2	FC-9
17	CO-21	Corr #1 East	FC-9
18	2121	Comp Print	FC-5
19	ST-2	Stair TWR-2	FC-13
20	ST-3	Stair TWR-3	FC-13
21	2119	Learn Conf.	FC-6
22	2111	Learn Conf.	FC-7

#	Room #	Room Name	FCU Type
23	2109	Laundry	FC-8
24	2100	Lounge	FC-12
25	2211	Laundry	FC-8
26	2213	Learn Conf.	FC-7
27	2219	Learn Conf.	FC-6
28	2221	Comp Print	FC-5
29	CO-21	Corr. #1 West	FC-9
30	CO-23	Corr. #3	FC-9
31	CO-32	Corr. #3	FC-9
32	CO-31	Corr. #1 East	FC-9
33	3121	Comp Print	FC-5
34	3119	Learn Conf.	FC-6
35	3111	Learn Conf.	FC-7
36	3109	Laundry	FC-8
37	3000	Learn Conf.	FC-12
38	3211	Laundry	FC-8
39	3213	Learn Conf.	FC-7
40	3219	Learn Conf.	FC-6
41	3221	Comp Print	FC-5
42	CO-31	Corr. #1 West	FC-9
43	315	Corr. #3	FC-9

Sequence of Operations

Fan Coil Units will be controlled from a stand-alone digital thermostat.

On a call to run the supply fan energizes and the heating & cooling valves will cycle open to maintain the following room temperature set point, adjustable at the thermostat. Thermostat has Heat – Off – Cool switch and Low – Medium – High fan speed switch.

FCU Detail
(Typ. Of 43)

NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
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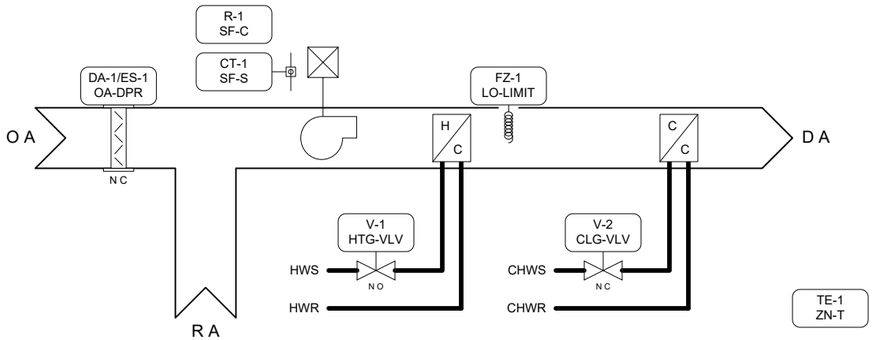
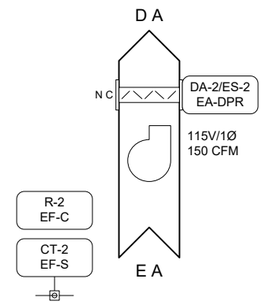
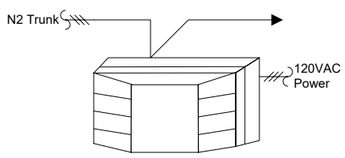
Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **FCU Detail.vsd**		
DATE: 07/05/06	DRAWING NUMBER:	**ATC-8**



EF-10





DC-1

PB-1

Located outside of Mail Room
Rm. 1101. See Mech. Drawings

Desig.	Qty.	Mfg.	Part #	Description
CT-1,2	2	JCI	H600	CURRENT SWITCH MINI, SPLIT FIXED
DA-1,2	2	JCI	M9216-BAC-2	ACT,ON/OFF,140IN#,SR,120VAC,2AUX
DC-1	1	JCI	AS-UNT1144-0	CNTRLR,DIG,UNT,6AI,6BI,4BO,4AO
	1	JCI	EN-EWC15-0	SINGLE ENCLOSURE WITH 50VA POWER
FZ-1	1	INVENSYS	TA3441	LOW LIMIT FREEZESTAT, AUTO RESET
PB-1	1	KELE	ST120SLN1-XX	PUSH BUTTON - PULL TO RELEASE, NEMA1
	1	KELE	PILNOCB	N.O. STACKABLE CONTACT BLOCK
	1	KELE	PILCLHCOV1	CLEAR HINGED COVER
R-1,2	2	VERIS	V100	10AMP SPDT 10-30VAC/DC/120VAC
TE-1	1	JCI	TE-6314P-1	SENSOR,T-NI,0.1%,RM
V-1,2	2	JCI		SEE VALVE SCHEDULE

Sequence of Operations
Mail Room Fan Coil Unit runs on an occupied/unoccupied schedule.

Occupied: Supply fan & exhaust fan runs continuously. Upon exhaust fan command to run the exhaust damper opens. Once proven open, the exhaust fan is enabled to run via hardwired interlock. Once EF status is proven via CT-2, the FCU outdoor air damper opens. Once proven open, the supply fan is enabled through hardwired interlock. The 2-position heating & cooling valves will cycle as required to maintain the following room temperature setpoints:

Occupied Mode	
Clg. Setpoint	74°F (adj.)
Htg. Setpoint	70°F (adj.)
Occupied limits shall be Summer 70°F / Winter 80°F	

Unoccupied Mode	
Clg. Setpoint	77°F (adj.)
Htg. Setpoint	67°F (adj.)

Heating valve is disabled when OA-T>65°F. Cooling valve is disabled when OA-T<65°F.

Unoccupied: Heating valve is open and cooling valve is closed. Supply fan cycles on a call for heating or cooling per the above setpoints.

Whenever the freezestat senses a temperature below 38°F the unit will shutdown, the outdoor air damper and cooling valve will close, and the heating valve will open 100%. A software reset is needed at the workstation to resume normal operation.

Emergency Shutdown:
Upon a signal from the Mailroom Ventilation Shutdown button or the Emergency Shutdown button (shown on ATC-10) the unit and exhaust fan shuts down. The heating valve opens, and the cooling valve and outdoor air damper closes.

Alarms:
The following alarms will send an alarm to the workstation:
1. If supply fan is enabled and status is not indicated within 30 seconds.
2. Upon a freezestat trip.
3. Upon an emergency shutdown signal.
4. If discharge air temperature rises above hi-limit setpoint.
5. If discharge air temperature falls below lo-limit setpoint.
6. Supply fan & Exhaust fan damper status does not match DDC command after a 30 second delay.

B.N. Mail Room Rm1101 FCU Detail

NO.	Date	Revision Record

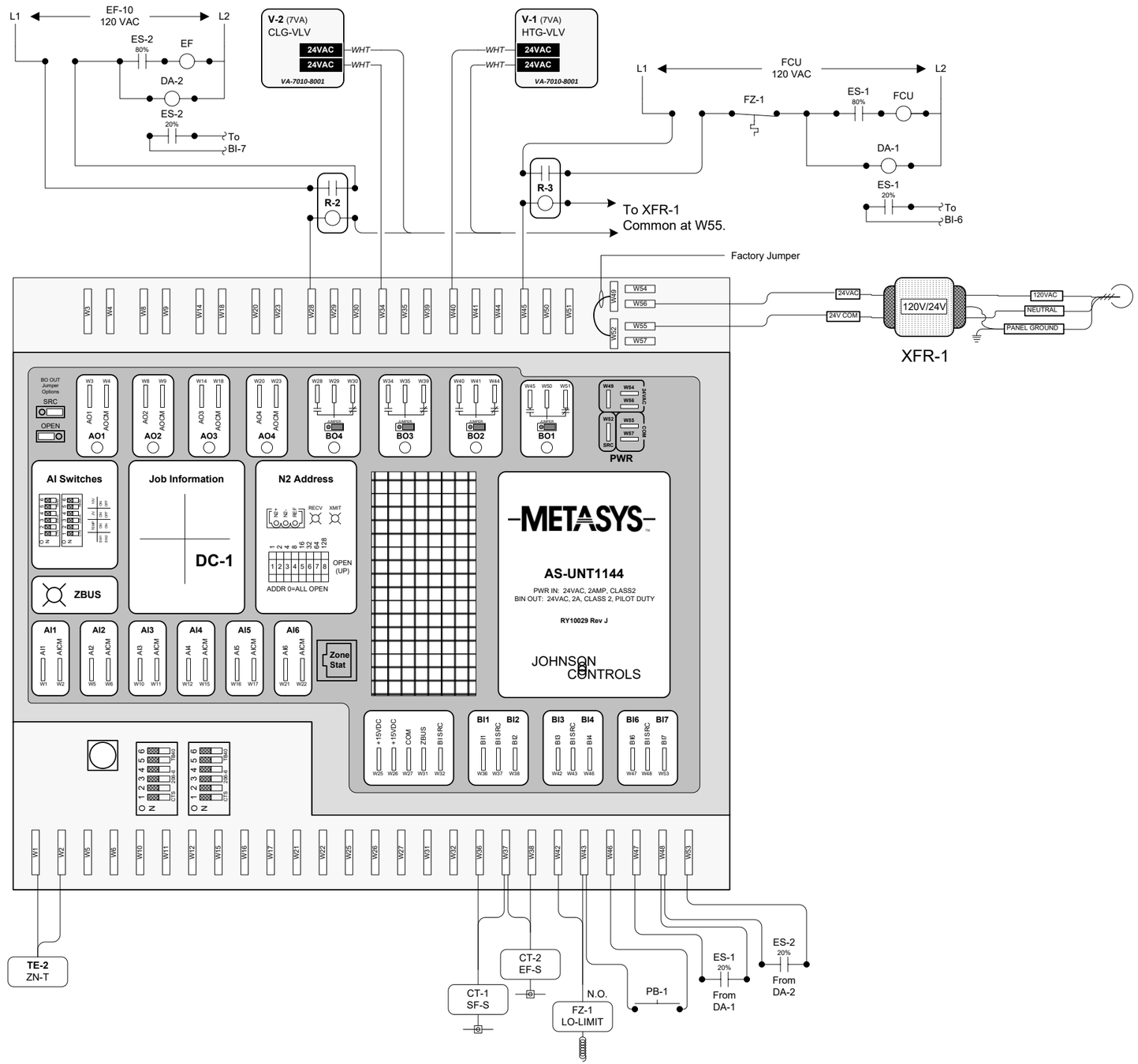
Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **Mail Room 1101 FCU Detail.vsd**		
DATE: 07/05/06	DRAWING NUMBER:	**ATC-9**

Submittal		Point Information			Controller Information							Intermediate Device		Field Device			
Tag	Point Type	System Name	Object Name	Expanded ID	Controller Type	Trunk Nbr	Trunk Addr.	Cable Destination Bay/Terminal	DO Type	Module Type	Panel	Device	Location	Wiring /Tubing	Device	Location	Comment
		FCU 1101			UNT1100						DC-1						Power to Controller
		FCU 1101			UNT1100	1	15				DC-1						N2 Trunk
	AI-1	FCU 1101	ZN-T	Zone Temperature	UNT1100	1	15	AI-1			DC-1			2/18	TE-6300		
	AI-2	FCU 1101			UNT1100	1	15	AI-2			DC-1						
	AI-3	FCU 1101			UNT1100	1	15	AI-3			DC-1						
	AI-4	FCU 1101			UNT1100	1	15	AI-4			DC-1						
	AI-5	FCU 1101			UNT1100	1	15	AI-5			DC-1						
	AI-6	FCU 1101			UNT1100	1	15	AI-6			DC-1						
	BI-1	FCU 1101	SF-S	Supply Fan Status	UNT1100	1	15	BI-1			DC-1	H600		2/18	Status (NO)		
	BI-2	FCU 1101	EF-S	Exhaust Fan Status	UNT1100	1	15	BI-2			DC-1	H600		2/18	Status (NO)		
	BI-3	FCU 1101	LO-LIMIT	Low Limit Shutdown	UNT1100	1	15	BI-3			DC-1			2/18	TA3441 (NO)		
	BI-4	FCU 1101	EMER-SD	Emergency Shutdown	UNT1100	1	15	BI-4			DC-1			2/18	Contact (NO)		
	BI-6	FCU 1101	SFDPR-S	Supply Fan Damper Status	UNT1100	1	15	BI-6			DC-1			2/18	M9216 End Switch		
	BI-7	FCU 1101	EFDPR-S	Exhaust Fan Damper Status	UNT1100	1	15	BI-7			DC-1			2/18	M9216 End Switch		
	AO-1	FCU 1101			UNT1100	1	15	AO-1			DC-1						
	AO-2	FCU 1101			UNT1100	1	15	AO-2			DC-1						
	AO-3	FCU 1101			UNT1100	1	15	AO-3			DC-1						
	AO-4	FCU 1101			UNT1100	1	15	AO-4			DC-1						
	BO-1	FCU 1101	SF-C	Supply Fan Command	UNT1100	1	15	BO-1			DC-1	V100		2/18	24VAC Out		
	BO-2	FCU 1101	HTG-VLV	Heating Valve	UNT1100	1	15	BO-2			DC-1			2/18	VA-7010 (24VAC)		
	BO-3	FCU 1101	CLG-VLV	Cooling Valve	UNT1100	1	15	BO-3			DC-1			2/18	VA-7010 (24VAC)		
	BO-4	FCU 1101	EF-C	Exhaust Fan Command	UNT1100	1	15	BO-4			DC-1	V100		2/18	24VAC Out		



FCU Controller Detail

NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

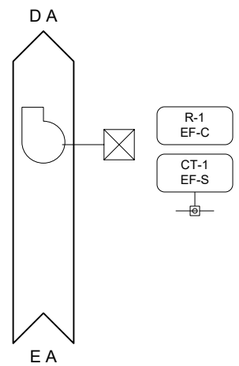
Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER:	SCALE:	DRAWN BY:	P. Braga
0000	NTS	APPROVED BY:	W. Roskowski

FILE: **Mail Room 1101 FCU Detail.vsd**

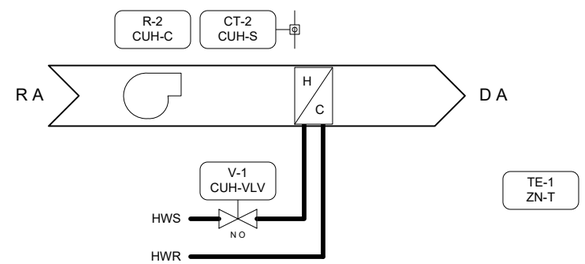
DATE: 07/05/06 DRAWING NUMBER: **ATC-9B**

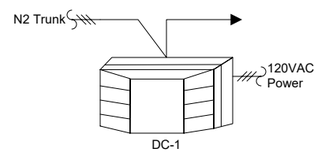
General Exhaust



Cabinet Unit Heater

Serves Entry/Quarter Deck Rm1100





Emergency HVAC Shutdown

(Wired to AHU-1)

PB-1

Located in Entry/Quarter Deck
Rm 1100. See Mech. Drawings

Exhaust Fan Schedule

Tag	Serves	Location	Wired To	Interlocked With	Volts	HP	CFM
EF-3	Telecom Rooms 3113, 2113, & 1115	Roof	MAU-1	MAU-2	277V/1Ø	1/4	660
EF-6	Telecom Rooms 3215, 2215, & 1217	Roof	MAU-4	MAU-5	277V/1Ø	1/4	660
EF-7	Elevator Machine Room 1203	Roof	MAU-3b	No Intl'k	277V/1Ø	1/4	585
EF-8	Janitors Closet Rooms 2201 & 3201	Roof	UNT-1	MAU-2	115V/1Ø	1/6	200

Note: See ATC-4B, 4C & 4D for wiring details.

Desig.	Qty.	Mfg.	Part #	Description
CT-1,2	5	JCI	H600	CURRENT SWITCH MINI, SPIT, FIXED
DC-1	1	JCI	AS-UNT141-101	CNTRLR,UNT,6AI,4BI,6BO,2AO,SCR,ENCL,50VA
PB-1	1	KELE	ST120SLN1-HS	PUSH BUTTON - PULL TO RELEASE, NEMA1
	1	KELE	PILNOCB	N.O. STACKABLE CONTACT BLOCK
	1	KELE	PILCLHCOV1	CLEAR HINGED COVER
R-1,2	5	VERIS	V100	10AMP SPDT 10-30VAC/DC/120VAC
TE-1	1	JCI	TE-6314P-1	SENSOR,T-NI,0.1%,RM
	1	JCI	GRD10A-609	LOCKABLE, BREATHABLE COVER
V-1	1	JCI		SEE VALVE SCHEDULE

Sequence of Operations

Exhaust Fans:
EF-7 will be scheduled to run continuously. EF-3, 6 & 8 are interlocked to run from the associated MAU. See ATC-4

If exhaust fan is commanded to run and status (CT-1) is not proven within 30 seconds an alarm will be generated at the workstation. If status (on or off) does not match DDC command an alarm will be generated at the workstation.

Cabinet Unit Heaters:
CUH runs anytime the zone temperature falls below setpoint. The heating valve cycles open to maintain zone temperature setpoint. The heating valve is allowed to cycle open whenever the outdoor air temp is below 65°F and the zone temperature is below setpoint and the fan is on.

If zone temperature falls below setpoint for a predetermined amount of time an alarm will be generated at the workstation.

Emergency HVAC Shutdown:
Upon activation of the emergency HVAC shutdown button the following units will shutdown and an alarm will be generated at the workstation:

1. All Make-Up Air Units (MAU)
2. Mail Room FCU and exhaust fan (also has dedicated shutdown button. See ATC-9).
3. All exhaust fans (EF) and toilet exhaust fans (TEF)
4. AHU-1 serving the quarter deck

The following units will remain active upon activation of the emergency HVAC shutdown button:

1. All FCU's except the Mail Room
2. AHU-2 and AHU-3
3. All HW/CHW pumps, boilers, heat exchangers, chiller and HW heater.

Emergency shutdown button can also be activated through software at the workstation.

Exhaust Fans & Cabinet Unit Heaters

NO.	Date	Revision Record

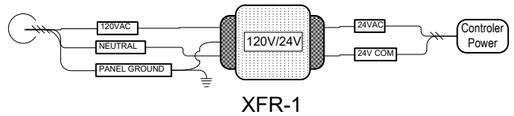
Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

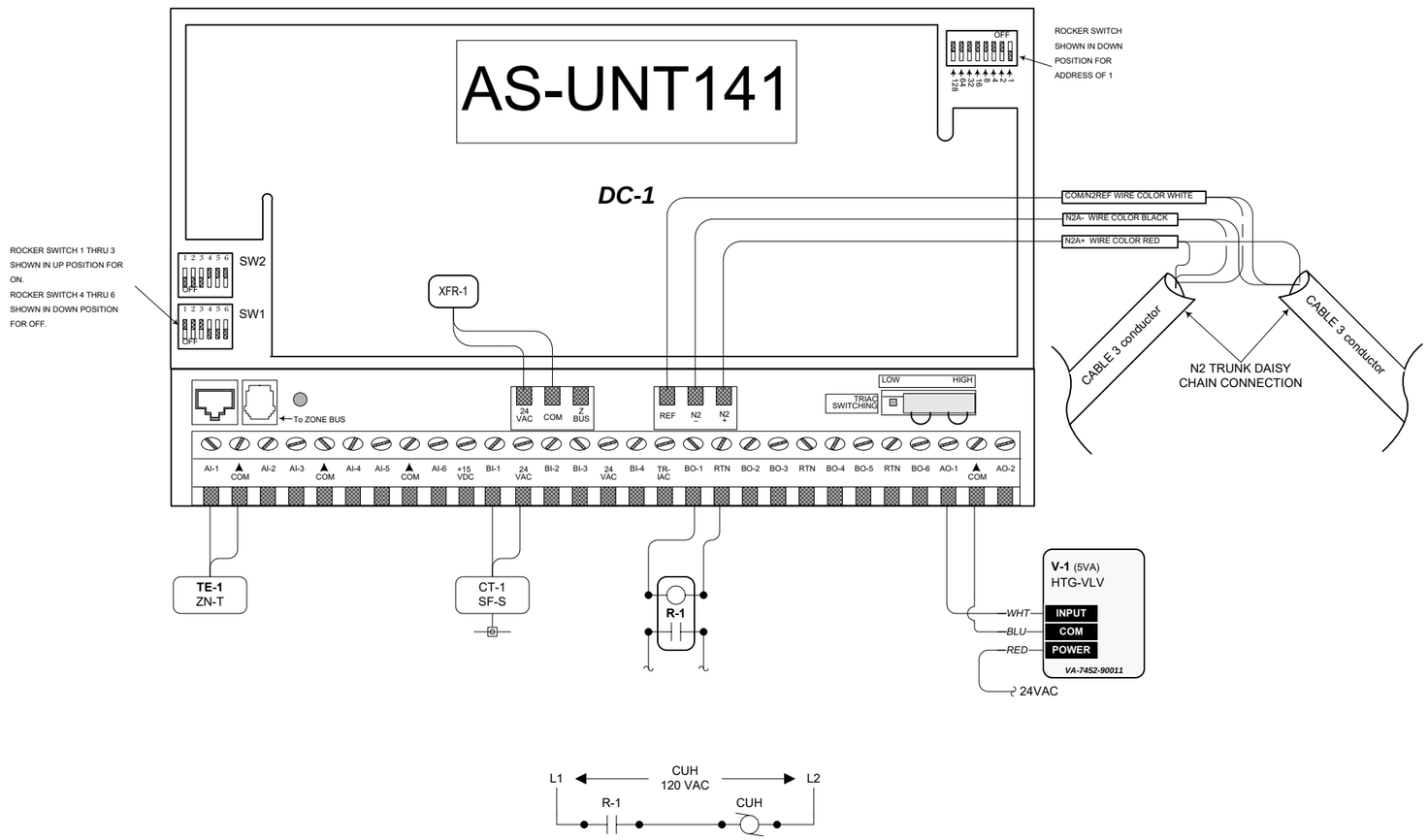
Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **EF & CUH Detail.vsd**		
DATE: 07/05/06	DRAWING NUMBER:	**ATC-10**

Submittal		Point Information			Controller Information							Intermediate Device		Field Device			
Tag	Point Type	System Name	Object Name	Expanded ID	Controller Type	Trunk Nbr	Trunk Addr.	Cable Destination Bay/Terminal	DO Type	Module Type	Panel	Device	Location	Wiring /Tubing	Device	Location	Comment
		CUH			UNT14x						DC-1						Power to Controller
		CUH			UNT14x	1	20				DC-1						N2 Trunk
	AI-1	CUH	ZN-T	Zone Temperature	UNT14x	1	20	AI-1			DC-1			2/18	TE-6300		
	AI-2	CUH			UNT14x	1	20	AI-2			DC-1						
	AI-3	CUH			UNT14x	1	20	AI-3			DC-1						
	AI-4	CUH			UNT14x	1	20	AI-4			DC-1						
	AI-5	CUH			UNT14x	1	20	AI-5			DC-1						
	AI-6	CUH			UNT14x	1	20	AI-6			DC-1						
	BI-1	CUH	CUH-S	CUH Status	UNT14x	1	20	BI-1			DC-1	H600		2/18	Contact (NO)		
	BI-2	CUH			UNT14x	1	20	BI-2			DC-1						
	BI-3	CUH			UNT14x	1	20	BI-3			DC-1						
	BI-4	CUH			UNT14x	1	20	BI-4			DC-1						
	BO-1	CUH	CUH-C	CUH Command	UNT14x	1	20	BO-1			DC-1	V100		2/18	24VAC Out		
	BO-2	CUH			UNT14x	1	20	BO-2			DC-1						
	BO-3	CUH			UNT14x	1	20	BO-3			DC-1						
	BO-4	CUH			UNT14x	1	20	BO-4			DC-1						
	BO-5	CUH			UNT14x	1	20	BO-5			DC-1						
	BO-6	CUH			UNT14x	1	20	BO-6			DC-1						
	AO-1	CUH	HTG-VLV	Heating Valve	UNT14x	1	20	AO-1			DC-1			3/18	0-10VDC		
	AO-2	CUH			UNT14x	1	20	AO-2			DC-1						





Sensor Wire Sizes and Lengths

SENSOR TYPE	RUN LENGTH IN FEET (METERS)	WIRE SIZE
AI TEMPERATURE	500 (150)	#18 AWG
AI VOLTAGE	500 (150)	#18 AWG
BI VOLTAGE/CONTACT	500 (150)	#24 AWG to #18 AWG
SINGLE BO AT 0.1 amp	500 (150)	#18 AWG
SINGLE BO AT 0.5 amp	100 (30)	#18 AWG
ZONE BUS	500 (150)	#18 AWG
ZONE THERMOSTAT	50 (15)	8 conductor phone cable

Analog Input DIP Switch Settings

HARDWARE POINT	SWITCH		TEMP (RESTIVE INPUT)		2VDC(0 TO 2 VDC INPUT)		10 VDC (0 TO 10 VDC INPUT)	
AI 1	SW1-1	SW2-1	ON	OFF	OFF	OFF	OFF	ON
AI 2	SW1-2	SW2-2	ON	OFF	OFF	OFF	OFF	ON
AI 3	SW1-3	SW2-3	ON	OFF	OFF	OFF	OFF	ON
AI 4	SW1-4	SW2-4	ON	OFF	OFF	OFF	OFF	ON
AI 5	SW1-5	SW2-5	ON	OFF	OFF	OFF	OFF	ON
AI 6	SW1-6	SW2-6	ON	OFF	OFF	OFF	OFF	ON

CUH Controller Detail

NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P. Braga
		APPROVED BY: W. Roskowski
FILE: **EF & CUH Detail.vsd**		
DATE: 07/05/06	DRAWING NUMBER:	**ATC-10B**

Valve Schedule

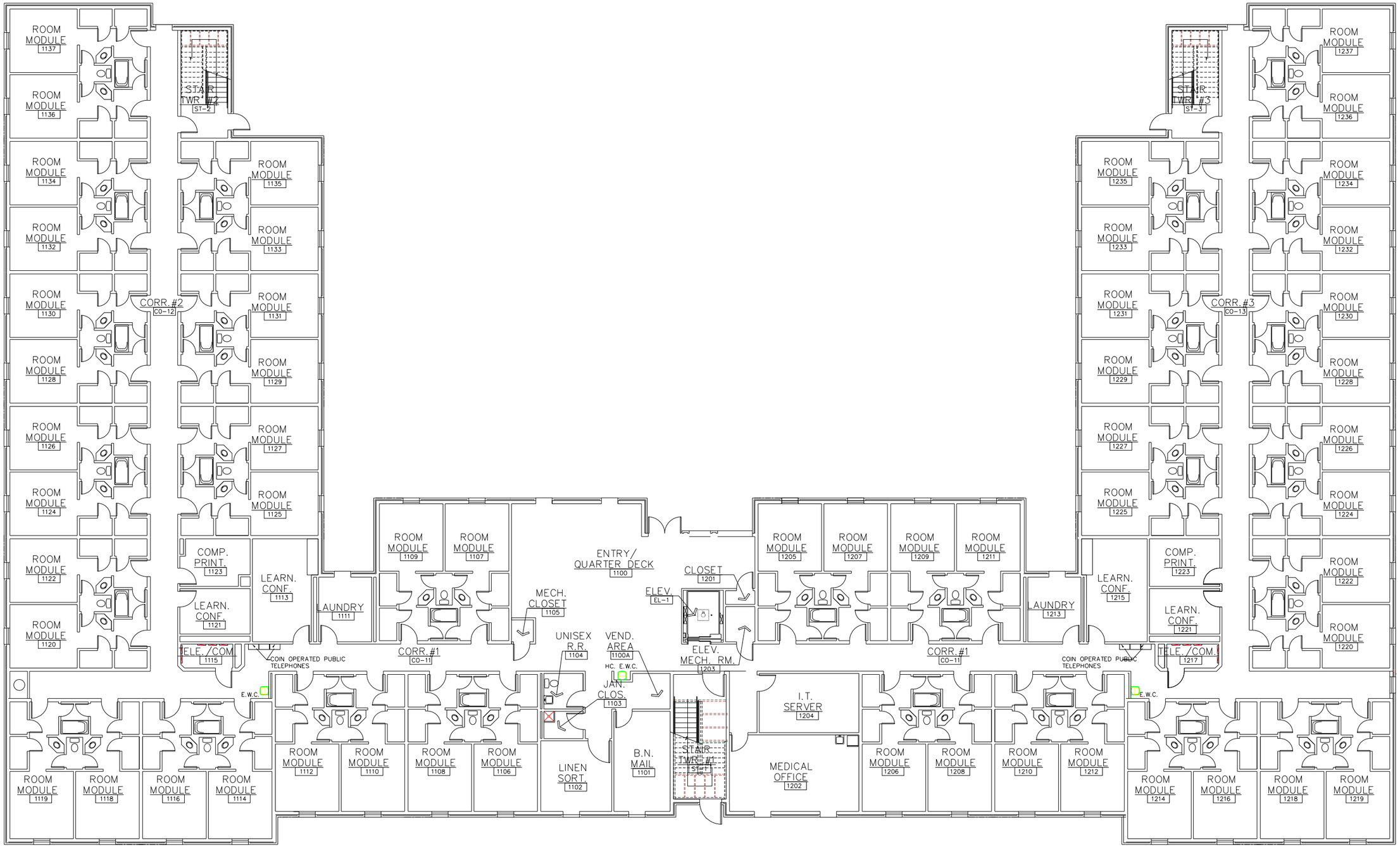
Tag			Valve Information													Actuator Information				
Item	System	Service	Qty.	Code Number	Cfg.	Fail Pos.	Pipe Size	Valve Size	Body Cfg.	Close Off	Flow	Valve Coefficient	Design Coefficient	Design Delta P	Valve Delta P	Code No.	Pilot	Type	Control Signal	Comments
Fan Coil Units (Previously Submitted & Approved)																				
1	FC-1	Hot Water	22	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
2	FC-1	Chilled Water	22	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	1.4 gpm	Cv = 2.8	Cv = 0.63	5 psi	0.3 psi	VA-7010-8001	None	Electric	24vac	
3	FC-2	Hot Water	98	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
4	FC-2	Chilled Water	98	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	1.7 gpm	Cv = 2.8	Cv = 0.76	5 psi	0.4 psi	VA-7010-8001	None	Electric	24vac	
5	FC-3	Hot Water	33	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
6	FC-3	Chilled Water	33	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	1.9 gpm	Cv = 2.8	Cv = 0.85	5 psi	0.5 psi	VA-7010-8001	None	Electric	24vac	
7	FC-4	Hot Water	21	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
8	FC-4	Chilled Water	21	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	2.2 gpm	Cv = 2.8	Cv = 0.98	5 psi	0.6 psi	VA-7010-8001	None	Electric	24vac	
9	FC-5	Hot Water	6	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
10	FC-5	Chilled Water	6	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	1.1 gpm	Cv = 2.8	Cv = 0.49	5 psi	0.2 psi	VA-7010-8001	None	Electric	24vac	
11	FC-6	Hot Water	6	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
12	FC-6	Chilled Water	6	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
13	FC-7	Hot Water	6	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
14	FC-7	Chilled Water	6	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	1.3 gpm	Cv = 2.8	Cv = 0.58	5 psi	0.2 psi	VA-7010-8001	None	Electric	24vac	
15	FC-8	Hot Water	6	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
16	FC-8	Chilled Water	6	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	1.1 gpm	Cv = 2.8	Cv = 0.49	5 psi	0.2 psi	VA-7010-8001	None	Electric	24vac	
17	FC-9	Hot Water	12	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
18	FC-9	Chilled Water	12	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	2.0 gpm	Cv = 2.8	Cv = 0.89	5 psi	0.5 psi	VA-7010-8001	None	Electric	24vac	
19	FC-10	Hot Water	1	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
20	FC-10	Chilled Water	1	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	2.8 gpm	Cv = 2.8	Cv = 1.25	5 psi	1.0 psi	VA-7010-8001	None	Electric	24vac	
21	FC-11	Hot Water	2	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
22	FC-11	Chilled Water	2	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	1.1 gpm	Cv = 2.8	Cv = 0.49	5 psi	0.2 psi	VA-7010-8001	None	Electric	24vac	
23	FC-12	Hot Water	2	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
24	FC-12	Chilled Water	2	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	1.6 gpm	Cv = 2.8	Cv = 0.72	5 psi	0.3 psi	VA-7010-8001	None	Electric	24vac	
25	FC-13	Hot Water	3	VG4270FC+7010G	2-Way	NO	0-1/2"	0-1/2"	Sweat	50 psi	0.5 gpm	Cv = 2.8	Cv = 0.22	5 psi	0.0 psi	VA-7010-8001	None	Electric	24vac	
26	FC-13	Chilled Water	3	VG4470FC+7010G	2-Way	NC	0-1/2"	0-1/2"	Sweat	50 psi	1.6 gpm	Cv = 2.8	Cv = 0.72	5 psi	0.3 psi	VA-7010-8001	None	Electric	24vac	
27	CUH-1	Hot Water	1	VG4270GC+7452G	2-Way	Last Position	0-3/4"	0-3/4"	Sweat	50 psi	0.5 gpm	Cv = 3.3	Cv = 0.22	5 psi	0.0 psi	VA-7452-90011	None	Electric	0-10vdc	
MAU's																				
28	MAU-1	Hot Water	1	VG7241NT+423GGA	2-Way	NO	2"	1-0/0"	Threaded	63 psi	19.3 gpm	Cv = 11.6	Cv = 8.63	5 psi	2.8 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
29	MAU-1	Chilled Water	1	VG7241PT+946HGA	2-Way	NC	2-1/2"	1-1/4"	Threaded	111 psi	40.3 gpm	Cv = 18.5	Cv = 18.02	5 psi	4.7 psi	M9216-HGA-2	None	Electric	0-10vdc	Linkage: M9000-500
30	MAU-2	Hot Water	1	VG7241PT+926HGA	2-Way	NO	2"	1-1/4"	Threaded	111 psi	39.8 gpm	Cv = 18.5	Cv = 17.80	5 psi	4.6 psi	M9216-HGA-2	None	Electric	0-10vdc	Linkage: M9000-500
31	MAU-2	Chilled Water	1	VG7241ST+946HGA	2-Way	NC	3"	2-0/0"	Threaded	46 psi	75.0 gpm	Cv = 46.2	Cv = 33.54	5 psi	2.6 psi	M9216-HGA-2	None	Electric	0-10vdc	Linkage: M9000-500
32	MAU-3a	Hot Water	1	VG7241LT+423GGA	2-Way	NO	1-1/4"	0-3/4"	Threaded	132 psi	9.6 gpm	Cv = 7.3	Cv = 4.29	5 psi	1.7 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
33	MAU-3a	Chilled Water	1	VG7441NT+423GGA	2-Way	NC	2"	1-0/0"	Threaded	66 psi	20.2 gpm	Cv = 11.6	Cv = 9.03	5 psi	3.0 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
34	MAU-3b	Hot Water	1	VG7241NT+423GGA	2-Way	NO	2"	1-0/0"	Threaded	63 psi	19.3 gpm	Cv = 11.6	Cv = 8.63	5 psi	2.8 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
35	MAU-3b	Chilled Water	1	VG7241PT+946HGA	2-Way	NC	2"	1-1/4"	Threaded	111 psi	40.3 gpm	Cv = 18.5	Cv = 18.02	5 psi	4.7 psi	M9216-HGA-2	None	Electric	0-10vdc	Linkage: M9000-500
36	MAU-4	Hot Water	1	VG7241NT+423GGA	2-Way	NO	2"	1-0/0"	Threaded	63 psi	19.3 gpm	Cv = 11.6	Cv = 8.63	5 psi	2.8 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
37	MAU-4	Chilled Water	1	VG7241PT+946HGA	2-Way	NC	2-1/2"	1-1/4"	Threaded	111 psi	40.3 gpm	Cv = 18.5	Cv = 18.02	5 psi	4.7 psi	M9216-HGA-2	None	Electric	0-10vdc	Linkage: M9000-500
38	MAU-5	Hot Water	1	VG7241PT+926HGA	2-Way	NO	2"	1-1/4"	Threaded	111 psi	35.3 gpm	Cv = 18.5	Cv = 15.79	5 psi	3.6 psi	M9216-HGA-2	None	Electric	0-10vdc	Linkage: M9000-500
39	MAU-5	Chilled Water	1	VG7241ST+946HGA	2-Way	NC	3"	2-0/0"	Threaded	46 psi	74.1 gpm	Cv = 46.2	Cv = 33.14	5 psi	2.6 psi	M9216-HGA-2	None	Electric	0-10vdc	Linkage: M9000-500
40	MAU-6a	Hot Water	1	VG7241LT+423GGA	2-Way	NO	1-1/4"	0-3/4"	Threaded	132 psi	9.6 gpm	Cv = 7.3	Cv = 4.29	5 psi	1.7 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
41	MAU-6a	Chilled Water	1	VG7441NT+423GGA	2-Way	NC	1-1/4"	1-0/0"	Threaded	66 psi	20.2 gpm	Cv = 11.6	Cv = 9.03	5 psi	3.0 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
42	MAU-6b	Hot Water	1	VG7241NT+423GGA	2-Way	NO	1-1/2"	1-0/0"	Threaded	63 psi	19.3 gpm	Cv = 11.6	Cv = 8.63	5 psi	2.8 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
43	MAU-6b	Chilled Water	1	VG7241PT+946HGA	2-Way	NC	2"	1-1/4"	Threaded	111 psi	40.3 gpm	Cv = 18.5	Cv = 18.02	5 psi	4.7 psi	M9216-HGA-2	None	Electric	0-10vdc	Linkage: M9000-500
44	MAU-7	Hot Water	1	VG7241LT+423GGA	2-Way	NO		0-3/4"	Threaded	132 psi	15.0 gpm	Cv = 7.3	Cv = 6.71	5 psi	4.2 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
AHU's																				
45	AHU-1	Hot Water	1	VG7241ET+423GGA	2-Way	NO	3/4"	0-1/2"	Threaded	345 psi	2.0 gpm	Cv = 1.8	Cv = 0.89	5 psi	1.2 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
46	AHU-1	Chilled Water	1	VG7441GT+423GGA	2-Way	NC	1"	0-1/2"	Threaded	173 psi	6.0 gpm	Cv = 4.6	Cv = 2.68	5 psi	1.7 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
47	AHU-2	Chilled Water	1	VG7441GT+423GGA	2-Way	NC	1-1/4"	0-1/2"	Threaded	173 psi	9.3 gpm	Cv = 4.6	Cv = 4.16	5 psi	4.1 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
48	AHU-3	Hot Water	1	VG7241GT+423GGA	2-Way	NO	1-1/4"	0-1/2"	Threaded	208 psi	8.3 gpm	Cv = 4.6	Cv = 3.71	5 psi	3.3 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
49	AHU-3	Chilled Water	1	VG7441LT+423GGA	2-Way	NC	1-1/2"	0-3/4"	Threaded	103 psi	14.5 gpm	Cv = 7.3	Cv = 6.48	5 psi	3.9 psi	VA-4233-GGA-2	None	Electric	0-10 VDC, 0(4)-20 mA	
HEX-1 1/3, 2/3 Valves																				
50	HEX-1 (1/3)	Steam	1	VG7243ST+946HGA	2-Way	NC	6"	2-0/0"	Threaded	28 psi	1764.3 lb/hr	Cv = 46.2	Cv = 42.13	10.0 psi	7.9 psi	M9216-HGA-2	None	Electric	0-10vdc	Linkage: M9000-500
51	HEX-1 (2/3)	Steam	1	VG2231VM2946GGA	2-Way	NC	6"	4-0/0"	Flanged	23 psi	3528.7 lb/hr	Cv = 150	Cv = 84.25	10.0 psi	2.7 psi	M9216-GGA-2	None	Electric	0-10vdc	Linkage: M9000-532
HEX-1 Isolation Valves																				
52	HEX-1	Hot Water	2	VF4231FA2924AGC	2-Way	Last Position		6-0/0"	Flanged	100 psi	516.0 gpm	Cv = 1160	Cv = 230.76	5 psi	0.2 psi	M9124-AGC-2	None	Electric	24vac	

Valve Schedule

Tag			Valve Information													Actuator Information				
Item	System	Service	Qty.	Code Number	Cfg.	Fail Pos.	Pipe Size	Valve Size	Body Cfg.	Close Off	Flow	Valve Coefficient	Design Coefficient	Design Delta P	Valve Delta P	Code No.	Pilot	Type	Control Signal	Comments
Boiler Isolation Valves																				
53	B-1	Hot Water	2	VF4231FA2924AGC	2-Way	Last Position		6-0/0"	Flanged	100 psi	516.0 gpm	Cv = 1160	Cv = 230.76	5 psi	0.2 psi	M9124-AGC-2	None	Electric	24vac	
HW System Bypass Valve - Valve sizing based on 1/3 pump capacity																				
54	HW System	Hot Water	1	B278+AF24MFT US	2-Way	NO	4"	3-0/0"	Threaded	100 psi	172.0 gpm	Cv = 130	Cv = 76.92	5 psi	1.75 psi	AF24 MFT US	None	Electric	0-10vdc	Function Code P10002
CHW System Bypass Valve - Valve sizing based on 1/3 pump capacity																				
55	CHW System	Chilled Water	1	VG2231VM2924GGA	2-Way	Last Position	6"	4-0/0"	Flanged	49 psi	243.3 gpm	Cv = 150	Cv = 108.81	5 psi	2.6 psi	M9124-GGA-2	None	Electric	0-10vdc	Linkage: M9000-532
Domestic Hot Water																				
56	DHW	Hot Water	3	VG2231UM+924GGA	2-Way	Last Position	3"	3-0/0"	Flanged	43 psi		Cv = 83				M9124-GGA-2	None	Electric	0-10vdc	Linkage: M9000-531
		Shading indicates Revision 1, 10/24/05, Resubmittal																		

Damper Schedule

Tag					Damper Information													*axis dimension do not mount in vertical position.	
											Duct Size		Damper Size						
Item	System	Service	Qty.	Code No.	Fail Pos.	Damper Type	Damper Operation	Blade Type	Bearing Type	Seals	W (in.)	H (in.)	W (in.)*	H (in.)	Area (ft²)	Mtg.	Comments
1	FCU	Mail Room	1	RCG06B	N.C.	RD-2000, Control	n/a	n/a	n/a	n/a	6" dia		6" dia				
2	EF-10	Mail Room	1	RCG06B	N.C.	RD-2000, Control	n/a	n/a	n/a	n/a	6" dia		6" dia				



First Floor

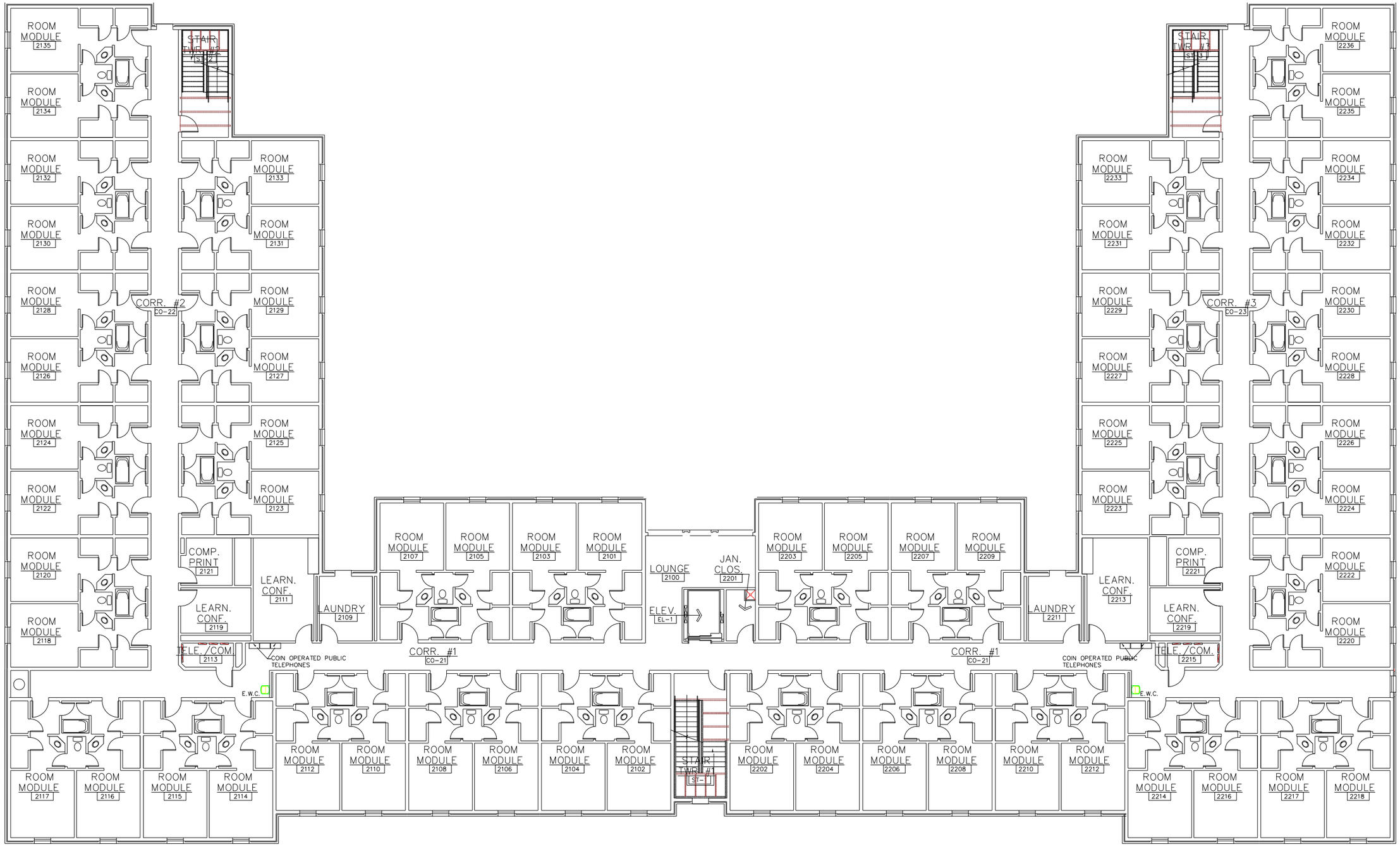
NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P Braga
		APPROVED BY:
FILE: **First Floor.vsd**		
DATE: 11/28/05	DRAWING NUMBER:	**ATC-13**



Second Floor

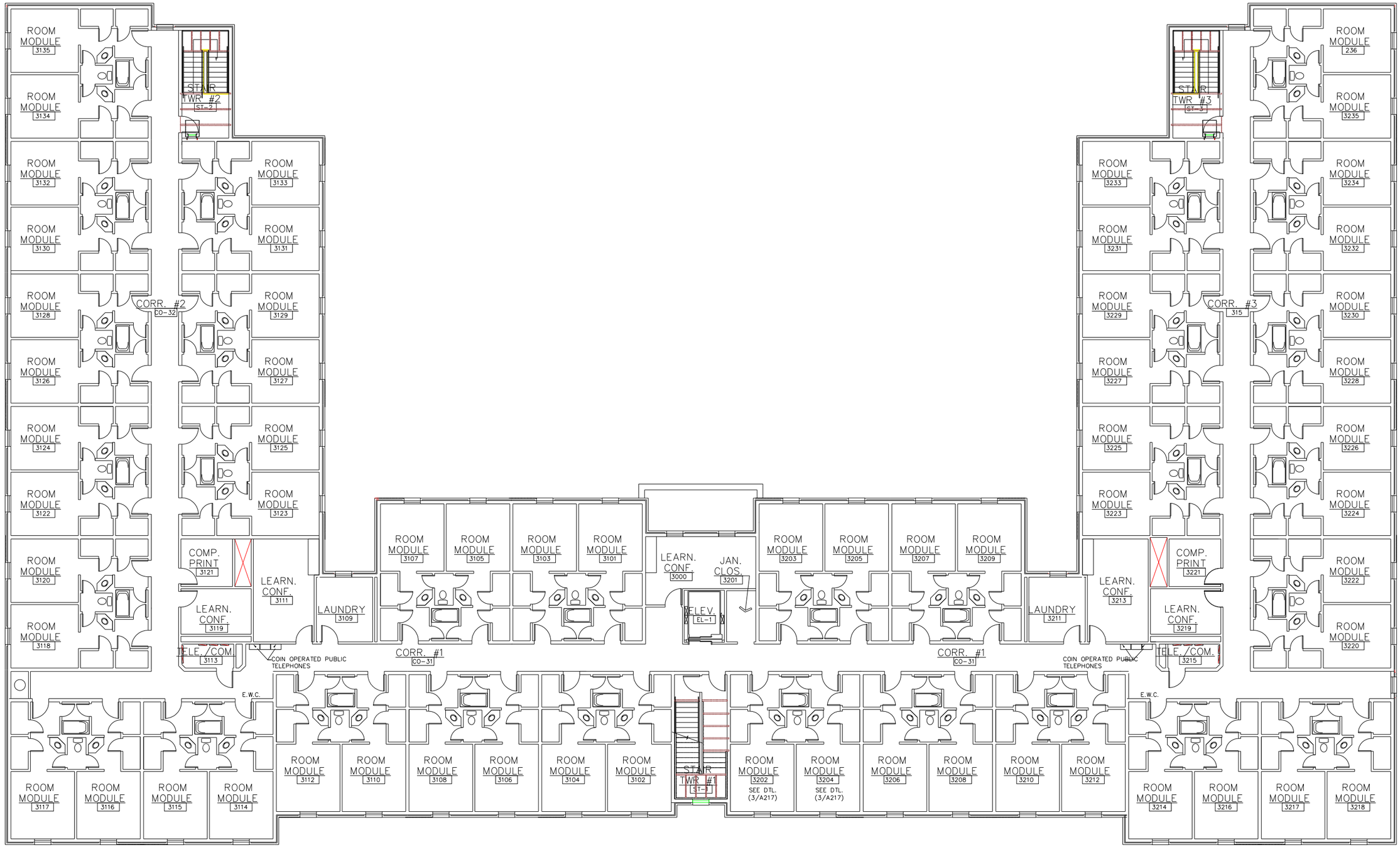
NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P Braga APPROVED BY:
FILE: **Second Floor.vsd**		
DATE: 11/28/05	DRAWING NUMBER: **ATC-13A**	



Third Floor

NO.	Date	Revision Record

Electrical Maintenance & Control, Inc.
116 Budlong Road
Cranston, Rhode Island 02920
(401) 946-1440

Korte Construction
1372T Mayercord Avenue
Newport, RI 02841

Naval Station Newport
Naval Acadamy Prep School
Bachelor's Enlisted Quarters
Newport, RI

JOB NUMBER: 0000	SCALE: NTS	DRAWN BY: P Braga
		APPROVED BY: W. Roskowski
FILE: **Third Floor.vsd**		
DATE: 11/28/05	DRAWING NUMBER:	**ATC-13B**

Search Assist

Show Never On Demand Sometimes Often

For bathrooms, ASHRAE recommends a minimum of 6 air changes per hour (ACH), with 8 ACH being ideal for better moisture control. This ensures proper ventilation and helps prevent issues like mold and foggy mirrors.

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Recommended Air Changes Per Hour for Bathrooms

General Guidelines

Bathrooms require adequate ventilation to control humidity and prevent mold growth. The recommended air changes per hour (ACH) for bathrooms typically range from 6 to 8 ACH, depending on the size and usage of the space.

Calculation of Air Changes

To calculate the necessary airflow for a bathroom, you can use the following formula:

1. **Determine Room Volume:** Measure the length, width, and height of the bathroom in feet. Multiply these dimensions to get the volume in cubic feet.
2. **Calculate Required CFM:** Use the formula: $\text{CFM} = \frac{\text{Room Volume} \times \text{Desired ACH}}{60}$

Example Calculations

BATHROOM SIZE (SQ FT)	CEILING HEIGHT (FT)	VOLUME (CU FT)	RECOMMENDED ACH	REQUIRED CFM
150	8	1,200	8	160
218	10	2,180	8	290

Additional Considerations

- **Fan Capacity:** Ensure that the bathroom fan can deliver the required CFM. Many standard fans may not meet high ACH requirements.
- **Makeup Air:** Consider how air will be replaced in the bathroom. A properly sized undercut door or additional HVAC supply may be necessary to maintain airflow.

Proper ventilation is crucial for maintaining a healthy bathroom environment.

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Ask privately

ROOF TOP AIR HANDLING UNIT SCHEDULE (BASED ON TRANE)

SYMBOL	MODEL	SIZE	TOTAL CFM	O.A. CFM	ESP (IN)	FAN RPM	COOLING DATA											HEATING DATA									ELECT
							TOTAL MBH	SENSIBLE MBH	EDB °F	EWB °F	LDB °F	LWB °F	APD	EWT °F	LWT °F	GPM	WPD	MBH	EDB °F	LDB °F	APD	EWT °F	LWT °F	GPM	WPD	HP
MAU-1	TSCX	08	3560	3560	0.50	1479	202.3	126.1	87.0	72.0	55.0	54.7	1.18"	45.0	55.0	40.3	7.2'	193.0	10.0	60.0	0.25"	180.0	160.0	19.3	3.2'	5
MAU-2	TSCX	14	7345	7345	0.70	2176	376.1	242.8	87.0	72.0	57.1	56.7	1.25"	45.0	55.0	75.0	3.3'	398.3	10.0	60.0	0.25"	180.0	160.0	39.8	6.2'	10
MAU-3a	TSCX	03	1780	1780	0.35	2021	101.1	63.0	87.0	72.0	55.0	54.7	1.51"	45.0	55.0	20.2	4.4'	96.5	10.0	60.0	0.41"	180.0	160.0	9.6	8.4'	3
MAU-3b X	TSCX	08	3655	3655	0.50	1619	207.7	129.7	87.0	72.0	55.0	54.7	1.25"	45.0	55.0	41.4	7.6'	198.2	10.0	60.0	0.26"	180.0	160.0	19.8	3.3'	5
MAU-4	TSCX	08	3560	3560	0.50	1479	202.3	126.1	87.0	72.0	55.0	54.7	1.18"	45.0	55.0	40.3	7.2'	193.0	10.0	60.0	0.25"	180.0	160.0	19.3	3.2'	5
MAU-5	TSCX	12	6520	6520	0.70	2079	372.0	230.9	87.0	72.0	55.0	54.6	1.38"	45.0	55.0	74.1	6.7'	353.6	10.0	60.0	0.23"	180.0	160.0	35.3	4.8'	10
MAU-6a X	TSCX	03	1780	1780	0.35	2021	101.1	63.0	87.0	72.0	55.0	54.7	1.51"	45.0	55.0	20.2	4.4'	96.5	10.0	60.0	0.41"	180.0	160.0	9.6	8.4'	3
MAU-6b	TSCX	08	3330	3330	0.50	1551	188.1	117.9	87.0	72.0	55.0	54.8	1.19"	45.0	55.0	37.5	5.3'	180.6	10.0	60.0	0.21"	180.0	160.0	18.0	2.8'	5
				31,530																							

NOTES:
1. REFER TO DETAILS ON SHEET M703 FOR UNIT CONFIGURATION.
2. PROVIDE WITH ROOF CURB, DOUBLE WALL CONSTRUCTION & EXTERNAL PIPING SERVICE MODULE.
3. PROVIDE WITH PREMIUM EFFICIENCY MOTOR, INTERNAL SPRING ISOLATORS, STARTER & DISCONNECT.
4. REFER TO ELECTRICAL PLANS FOR DISCONNECT RATINGS AND COORDINATE WITH EC.
5. PROVIDE WITH SMOKE DETECTOR TO BE WIRED BY EC. LOCATE PER NFPA & MANUFACTURERS RECOMMENDATIONS.
6. PROVIDE WITH SEISMICALLY RATED ROOF CURB.

EXHAUST FAN SCHEDULE (BASED ON GREENHECK)

SYMBOL	MODEL	TYPE	DRIVE	CFM	ESP (IN)	FAN RPM	MOTOR DATA			NOTES
							POWER	RPM	VOLTAGE	
EF-1	GB-131	ROOF	BELT	1840	0.95	1657	3/4	1725	460/3/60	1,2,3,6
EF-2	GB-101HP	ROOF	BELT	960	0.60	2443	3/4	1725	460/3/60	1,2,3,6
EF-3	HB-101HP	ROOF	BELT	660	0.45	1781	1/4	1725	277/1/60	1,3,4,7
EF-4	GB-161HP	ROOF	BELT	1880	0.95	1498	3/4	1725	460/3/60	1,2,3,6
EF-5	GB-101HP	ROOF	BELT	960	0.60	2443	3/4	1725	460/3/60	1,2,3,6
EF-6	HB-101HP	ROOF	BELT	660	0.45	1781	1/4	1725	277/1/60	1,3,4,7
EF-7	GB-101HP	ROOF	BELT	585	0.45	1642	1/4	1725	277/1/60	1,3,4,7
EF-8	GB-071	ROOF	BELT	200	0.40	1316	1/6	1725	115/1/60	1,3,4,7
EF-9	GB-131	ROOF	BELT	2100	0.40	1615	1/2	1725	460/3/60	1,2,3,5
EF-10	SP-B150	CEILING	DIRECT	150	0.30	1050	129 W	1050	115/1/60	1,4
TEF-1	GB-180HP	ROOF	BELT	4000	0.80	1578	2	1725	460/3/60	1,2,3
TEF-2	GB-161HP	ROOF	BELT	1700	0.70	1328	3/4	1725	460/3/60	1,2,3
TEF-3a	GB-161HP	ROOF	BELT	2000	0.70	1484	1	1725	460/3/60	1,2,3
TEF-3b	GB-101HP	ROOF	BELT	1000	0.50	2482	3/4	1725	460/3/60	1,2,3
TEF-4	GB-180HP	ROOF	BELT	4000	0.80	1578	2	1725	460/3/60	1,2,3
TEF-5	GB-161	ROOF	BELT	1800	0.55	924	1/2	1725	460/3/60	1,2,3
TEF-6a	GB-161HP	ROOF	BELT	2000	0.70	1484	1	1725	460/3/60	1,2,3
TEF-6b	GB-101HP	ROOF	BELT	1000	0.50	2482	3/4	1725	460/3/60	1,2,3
				27,500						

NOTES:
1. PROVIDE WITH DISCONNECT. REFER TO ELECTRICAL PLANS FOR RATINGS.
2. PROVIDE WITH PREMIUM EFFECIENCY MOTOR.
3. PROVIDE WITH ROOF CURB WITH CURB SEAL.
4. MINIMUM MOTOR POWER FACTOR SHALL BE 0.96.
5. PROVIDE DUAL SPEED MOTOR WITH 1/3 RPM REDUCTION.
6. PROVIDE WITH GRAVITY BACKDRAFT DAMPER IN CURB.
7. PROVIDE WITH MOTORIZED DAMPER IN CURB.

SYM	DESCRIPTION	DATE	APPR

NAVFAC

PRELIMINARY NOT FOR CONSTRUCTION

SEAL

A/E INFO.

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

NAVAL STATION NEWPORT

SATISFACTORY TO DATE MM/DD/YY

DES -- DRW -- CHK --

PM/DM --

BRANCH MANAGER --

CHIEF ENG/ARCH --

FIRE PROTECTION --

NAVAL FACILITIES ENGINEERING COMMAND

DEPARTMENT OF THE NAVY

NAVAL FACILITIES ENGINEERING COMMAND - MID ATLANTIC

PUBLIC WORKS DEPARTMENT – NEWPORT

NAVAL STATION – NEWPORT, RI

NAVAL STATION NEWPORT, RI

1372 HVAC, FP, ARCH REPAIRS

NEWPORT, RI

PHOTOS

SCALE: AS–SHOWN

EPROJECT NO.: #######

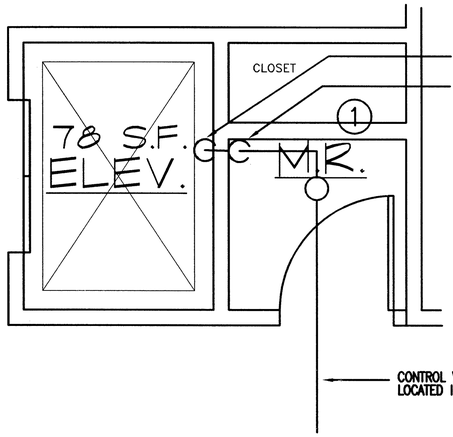
CONSTR. CONTR. NO.: ######-##-#-####

NAVFAC DRAWING NO.: ##

SHEET 05 OF #

ATT-5

DRAWFORM REVISION: 07 AUG 2018



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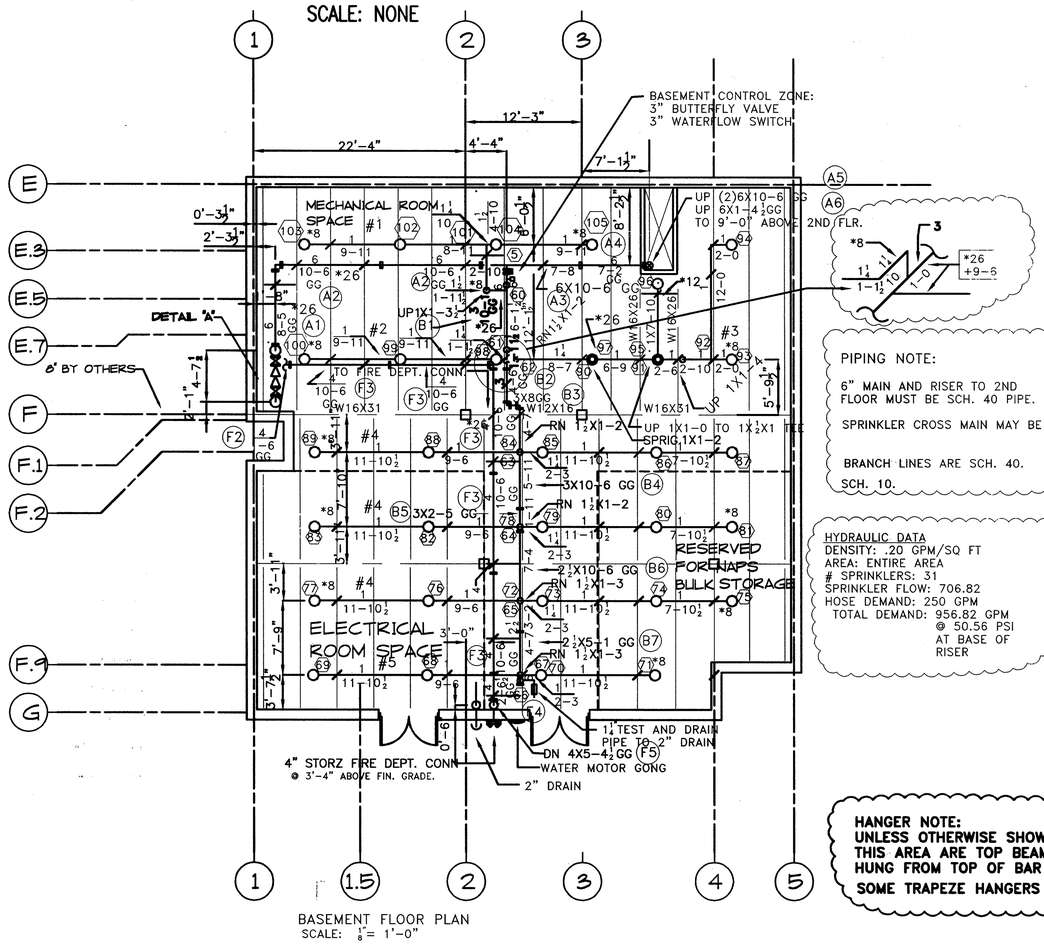
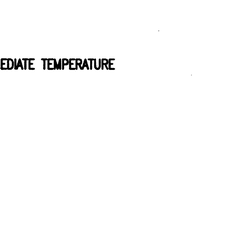
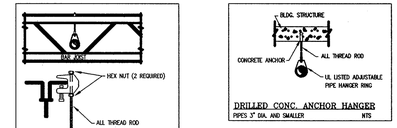


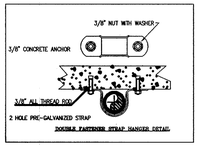
BASEMENT FLOOR PLAN
SCALE: 1/8" = 1'-0"



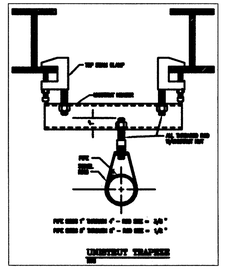
TOP BEAM CLAMP HANGER
NTS



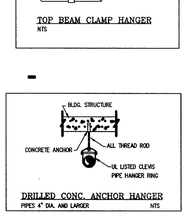
DRILLED CONC. ANCHOR HANGER
PIPES 3" DIA. AND SMALLER NTS



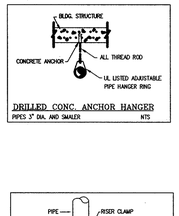
DOUBLE FASTENER STRAP HANGER DETAIL



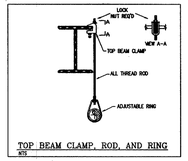
UNIFRUT TRAPEZE



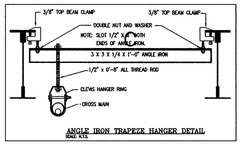
DRILLED CONC. ANCHOR HANGER
PIPES 4" DIA. AND LARGER NTS



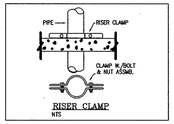
DRILLED CONC. ANCHOR HANGER
PIPES 3" DIA. AND SMALLER NTS



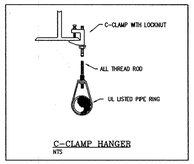
TOP BEAM CLAMP, ROD, AND RING
NTS



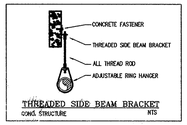
ANGLE IRON TRAPEZE HANGER DETAIL
SCALE: NTS



RISER CLAMP
NTS



C-CLAMP HANGER
NTS



THREADED SIDE BEAM BRACKET
CONC. STRUCTURE NTS

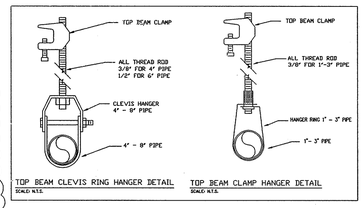
PIPING NOTE:

6" MAIN AND RISER TO 2ND FLOOR MUST BE SCH. 40 PIPE.

SPRINKLER CROSS MAIN MAY BE SCH. 10.

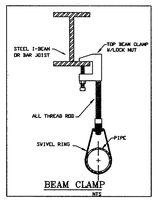
BRANCH LINES ARE SCH. 40.

HYDRAULIC DATA
DENSITY: .20 GPM/SQ FT
AREA: ENTIRE AREA
SPRINKLERS: 31
SPRINKLER FLOW: 706.82
HOSE DEMAND: 250 GPM
TOTAL DEMAND: 956.82 GPM @ 50.56 PSI AT BASE OF RISER



TOP BEAM CLEVIS RING HANGER DETAIL
SCALED N.T.S.

TOP BEAM CLAMP HANGER DETAIL
SCALED N.T.S.

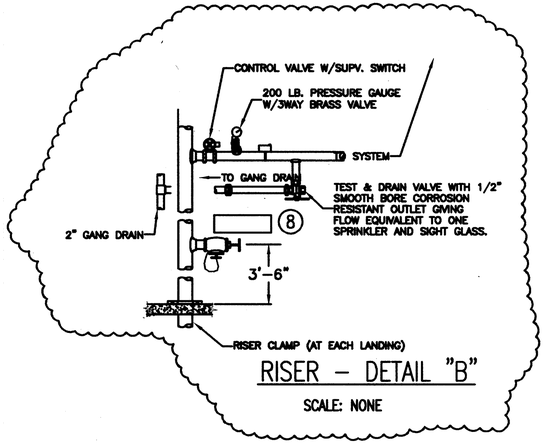


BEAM CLAMP
NTS

HANGER DETAILS

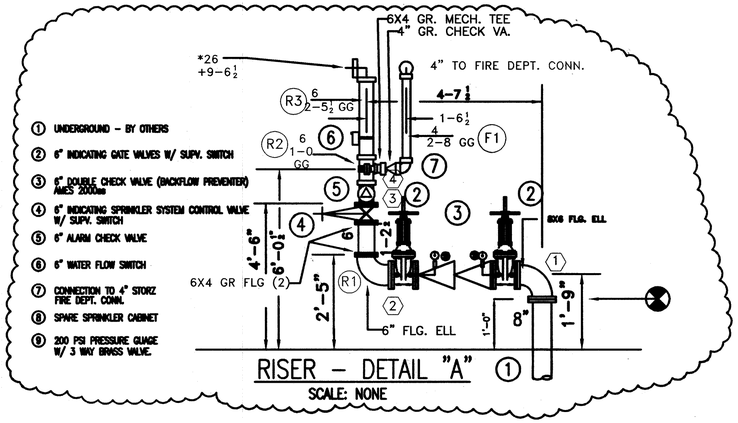
SCALE: NONE

HANGER NOTE:
UNLESS OTHERWISE SHOWN HANGERS FOR THIS AREA ARE TOP BEAM CLAMP, ROD AND RING HUNG FROM TOP OF BAR JOIST.
SOME TRAPEZE HANGERS ARE SHOWN ALSO



RISER – DETAIL "B"

SCALE: NONE



1. UNDERGROUND – BY OTHERS
2. 6" INDICATING GATE VALVES W/ SUPV. SWITCH
3. 6" DOUBLE CHECK VALVE (BACKFLOW PREVENTER) AWES 2000aa
4. 6" INDICATING SPRINKLER SYSTEM CONTROL VALVE W/ SUPV. SWITCH
5. 6" ALARM CHECK VALVE
6. 6" WATER FLOW SWITCH
7. CONNECTION TO 4" STORZ FIRE DEPT. CONN.
8. SPARE SPRINKLER CABINET
9. 200 PSI PRESSURE GUAGE W/ 3 WAY BRASS VALVE.

RISER – DETAIL "A"

SCALE: NONE

DATE	DESCRIPTION	STAL

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FOR EFA FOR COMMANDER NAVFAC
DATE

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CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

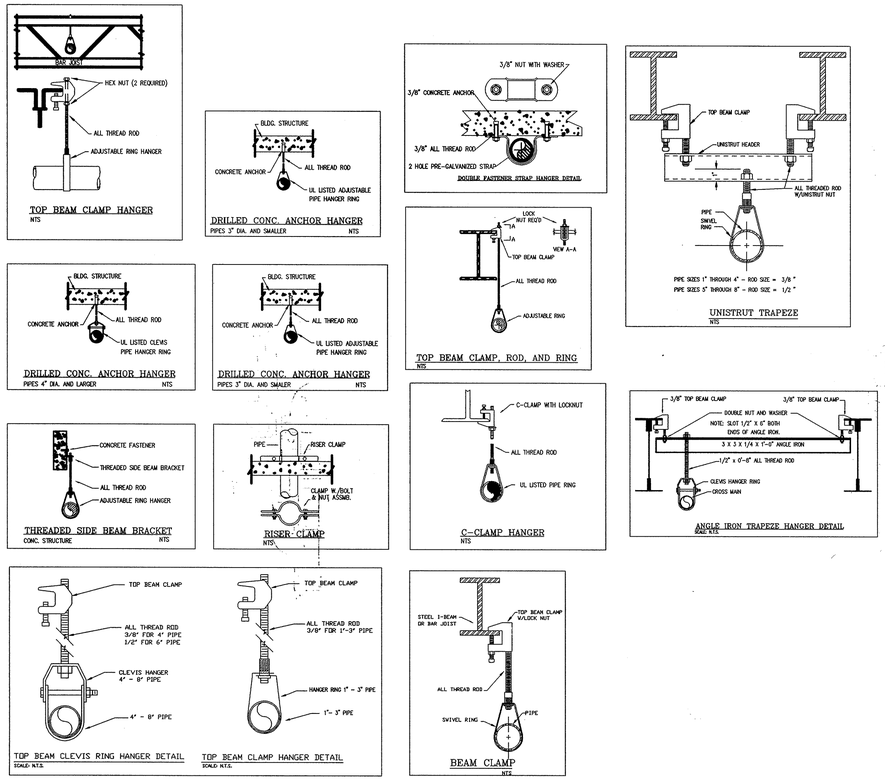
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST
PENNSYLVANIA
DEPARTMENT OF THE NAVY
LESTER
NAVAL STATION NEWPORT
NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
BASEMENT FIRE SPRINKLER PLAN

RECORD DRAWINGS - APRIL 25, 2006
FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 | SIZE D
SCALE:
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225006
SHEET 1 OF 11
FS Ø

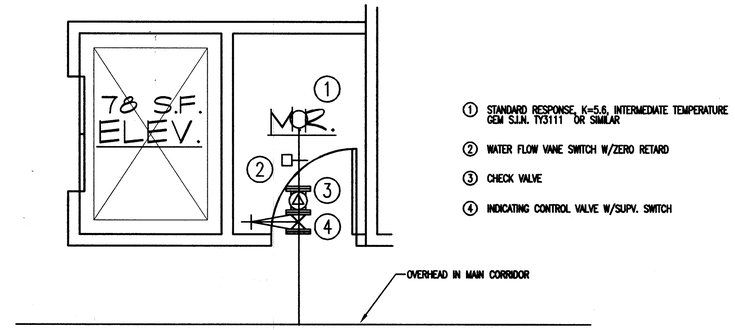
DRAWFORM REVISION FEBRUARY 2001

 NAVSTA DWG. NO. 37931-357



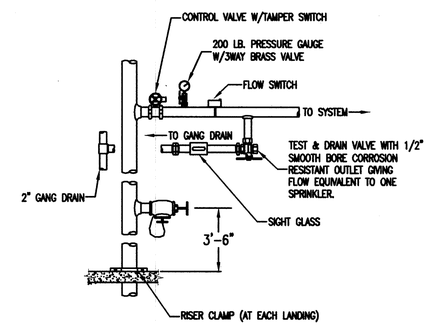
HANGER DETAILS

SCALE: NONE



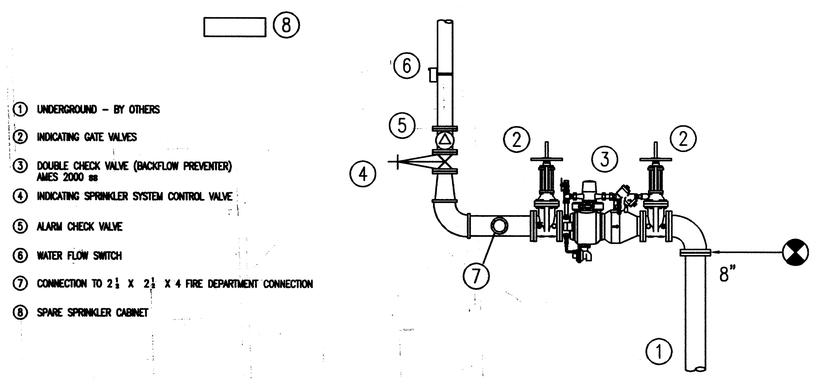
DETAIL "C"

SCALE: NONE



RISER – DETAIL "B"

SCALE: NONE



RISER – DETAIL "A"

SCALE: NONE

GENERAL NOTES

1. THE SPRINKLER CONTRACTOR SHALL DESIGN, FURNISH AND INSTALL ALL NECESSARY EQUIPMENT TO PROVIDE A COMPLETE AND OPERATIONAL AUTOMATIC FIRE SPRINKLER AND STANDPIPE SYSTEM THROUGHOUT THE ENTIRE BEQ NAPS FACILITY, LOCATED IN NAVAL STATION NEWPORT, RI, AS INDICATED ON THE CONTRACT DRAWINGS AND IN THIS SPECIFICATION.
2. IN THE EVENT THAT THERE IS A PERCEIVED DIFFERENCE BETWEEN THE SPECIFICATIONS FOR THE SYSTEM DESIGN AND THE DESIGN DRAWINGS SUBMITTED FOR THE SPECIFICATIONS, HAI SHALL BE CONSULTED FOR CLARIFICATION. IN GENERAL TERMS, THE SPECIFICATION SHALL ALWAYS TAKE PRECEDENCE OVER THESE DESIGN DRAWINGS.
3. THESE DRAWINGS ARE DIAGRAMATIC IN NATURE AND ARE NOT INTENDED TO SHOW EXACT LOCATIONS, BUT TO DEMONSTRATE THE CONFIGURATION OF MAJOR COMPONENTS. THE SPRINKLER CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY THE EXACT LOCATION OF ALL SYSTEM COMPONENTS.
4. THE SPRINKLER SYSTEM SHALL MEET THE REQUIREMENTS OF THE UNIFIED FACILITIES CRITERIA (UFC) 3-600-01, ENGINEERING FIELD ACTIVITY NORTHEAST (EFANE) FIRE PROTECTION ENGINEERING DESIGN GUIDE, REVISION 11.7 (MAY 2003), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 13-2002, AND NFPA 13R-2002 AS APPLICABLE.
5. THE STANDPIPE SYSTEMS SHALL MEET THE REQUIREMENTS OF NFPA 14-2000, EXCEPT AS MODIFIED BY THESE SPECIFICATIONS, EFANE FIRE PROTECTION ENGINEERING DESIGN GUIDE, REVISION 11.7 (MAY 2003), AND SECTION 13976 OF THE REQUEST FOR PROPOSAL DOCUMENTS.

SYM.	DESCRIPTION	DATE	APPR

KORTE
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REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER, PENNSYLVANIA

NAVAL STATION NEWPORT
NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS

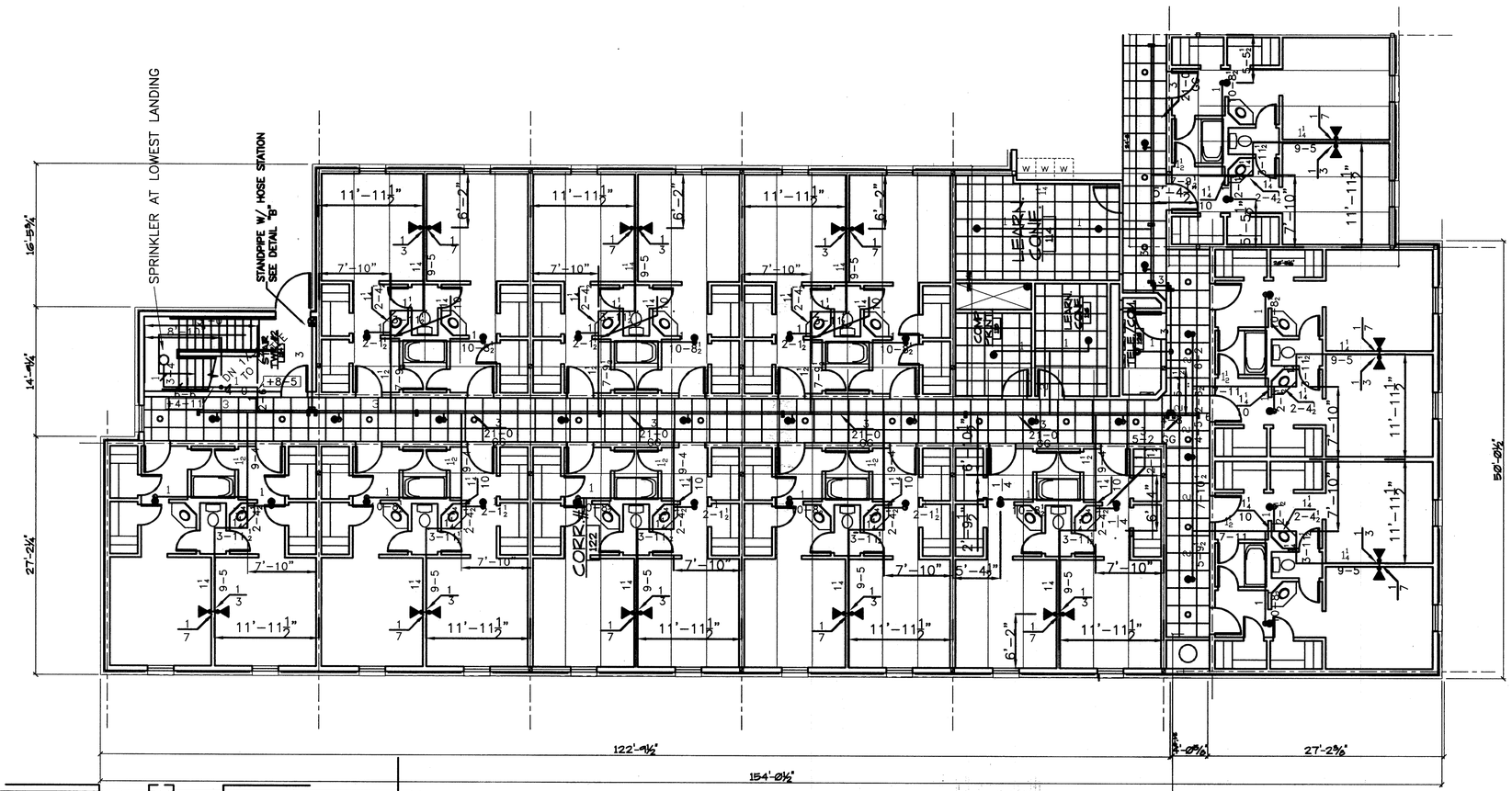
DETAILS

RECORD DRAWINGS - APRIL 25, 2006
FOR CONSTRUCTION SUBMITTAL: 03-25-05

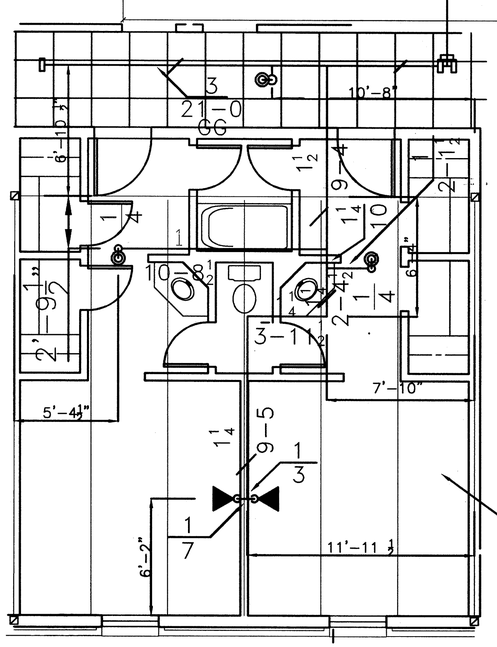
CODE ID. NO. 80091 SIZE D
SCALE:
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225007
SHEET 2 OF 11
FS-Ø.1

DRAWFORM REVISION FEBRUARY 2001

NAVSTA DWG. NO. 37932-357



PARTIAL FIRST FLOOR PLAN
SCALE: $\frac{1}{8}$" = 1'-0"



ENLARGED PLAN
(TYPICAL ROOM MODULE)
SCALE: $\frac{1}{4}$" = 1'-0"

NOTE:
SPRINKLER DROPS ARE 1 X 1½ W/1 X ½ RC.

SPRINKLER NOTES AND LEGEND

1. BRANCH LINE PIPING IS BLACK STEEL, SCHED. 40 WITH BLACK C.I. FITTINGS.
2. 3" MAINS ARE BLACK STEEL, SCHED. 10 W/ GR. ENDS AND GR. FITTINGS
3. HANGERS ARE EITHER TOP BEAM CLAMPS OR DRILLED HILTI WITH ROD AND RING.
4. ⬡ DENOTES HYDRAULIC REFERENCE POINT.
5. ● DENOTES Q.R. PENDENT SPRINKLER
6. ◀ DENOTES Q.R. PENDENT SIDEWALL SPRINKLER.

GENERAL NOTES

1. THE SPRINKLER CONTRACTOR SHALL DESIGN, FURNISH AND INSTALL ALL NECESSARY EQUIPMENT TO PROVIDE A COMPLETE AND OPERATIONAL AUTOMATIC FIRE SPRINKLER AND STANDPIPE SYSTEM THROUGHOUT THE ENTIRE BEQ NAPS FACILITY, LOCATED IN NAVAL STATION NEWPORT, RI, AS INDICATED ON THE CONTRACT DRAWINGS AND IN THIS SPECIFICATION.
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4. THE SPRINKLER SYSTEM SHALL MEET THE REQUIREMENTS OF THE UNIFIED FACILITIES CRITERIA (UFC) 3-600-01, ENGINEERING FIELD ACTIVITY NORTHEAST (EFANE) FIRE PROTECTION ENGINEERING DESIGN GUIDE, REVISION 11.7 (MAY 2003), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 13-2002, AND NFPA 13R-2002 AS APPLICABLE.
5. THE STANDPIPE SYSTEMS SHALL MEET THE REQUIREMENTS OF NFPA 14-2000, EXCEPT AS MODIFIED BY THESE SPECIFICATIONS, EFANE FIRE PROTECTION ENGINEERING DESIGN GUIDE, REVISION 11.7 (MAY 2003), AND SECTION 13976 OF THE REQUEST FOR PROPOSAL DOCUMENTS.

SYM.	DESCRIPTION	DATE	APPR.
1	REVISED FOR FIELD INSTALLATION.	9/	
2	FINAL CORRECTIONS FOR "AS BUILT" DRAWING	2.	

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FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

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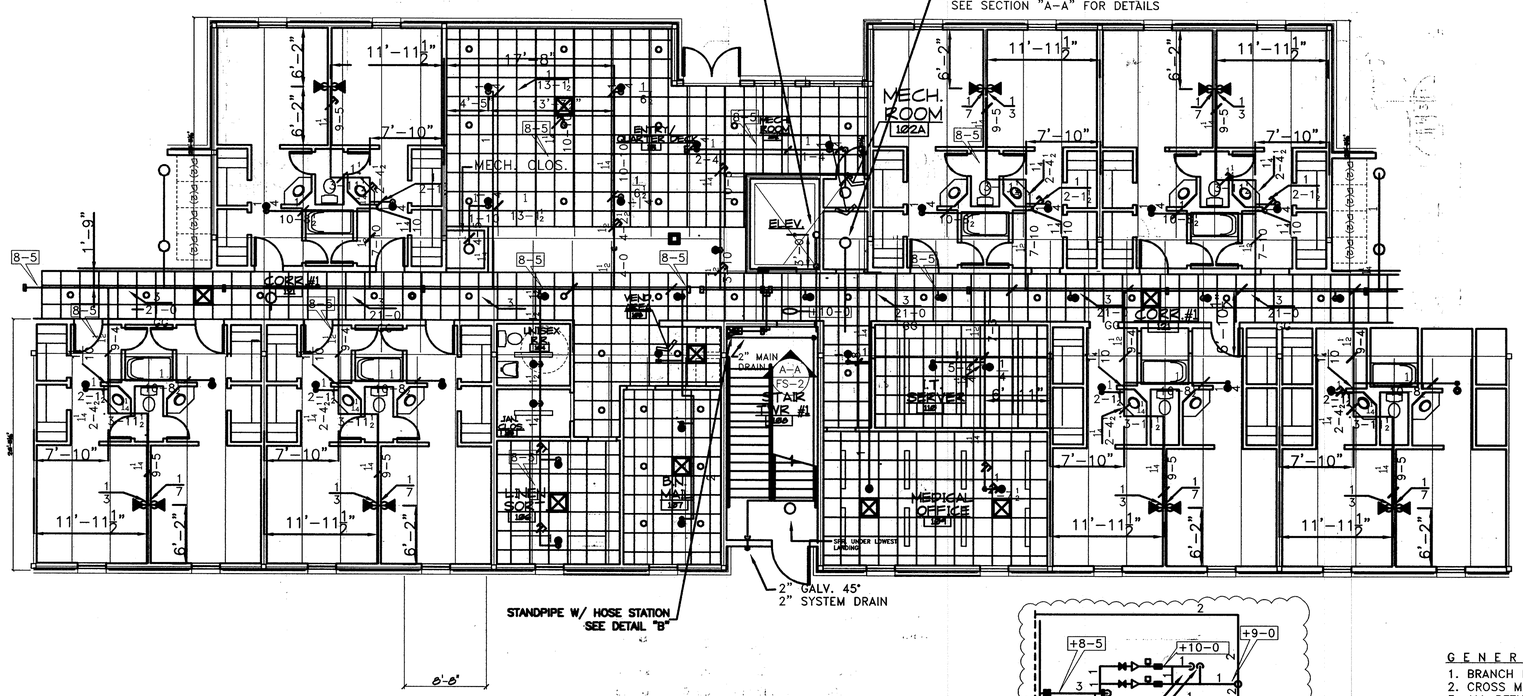
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
FIRST FLOOR FIRE SPRINKLER PLAN

RECORD DRAWINGS - APRIL 25, 2006
FOR CONSTRUCTION SUBMITTAL 03-25-05

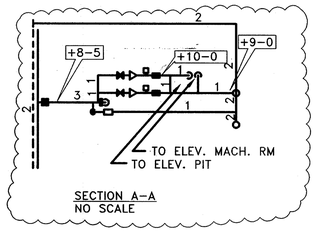
CODE ID. NO. 80091 | SIZE D
SCALE:
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225800
SHEET 5 OF 11
FS-1

DRAWFORM REVISION FEBRUARY 2001

NAVSTA DWG. NO. 37933-357



PARTIAL FIRST FLOOR PLAN
1/8" = 1'-0"



SECTION A-A
NO SCALE

GENERAL NOTES AND LEGEND

1. BRANCH LINE PIPING IS BLACK STEEL, SCH. 40.
2. CROSS MAIN PIPING (3") IS BLACK STEEL SCH. 10
3. ALL RETURN BENDS, EXCEPT AS OTHERWISE SHOWN ARE 1X0-2 UP 1X0-4 OVER.
4. MAIN DRAIN TO DISCHARGE OUTSIDE AS SHOWN.
5. ● DENOTES SEMI-RECESSED CHROME PENDENT SPRINKLER, QUICK RESPONSE
6. ◀ DENOTES PENDENT SIDEWALL SPRINKLER, QUICK RESPONSE.
7. / DENOTES TOP BEAM CLAMP, ROD AND RING
8. DENOTES DRILLED HILTI, ROD AND RING.

SYM.	DESCRIPTION	DATE	APPR.

KORTE
A DESIGN / BUILD COMPANY

SEAL:

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ACTIVITY – SATISFACTORY TO
DATE
APPROVED
FOR EFA FOR COMMANDER NAVFAC
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DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

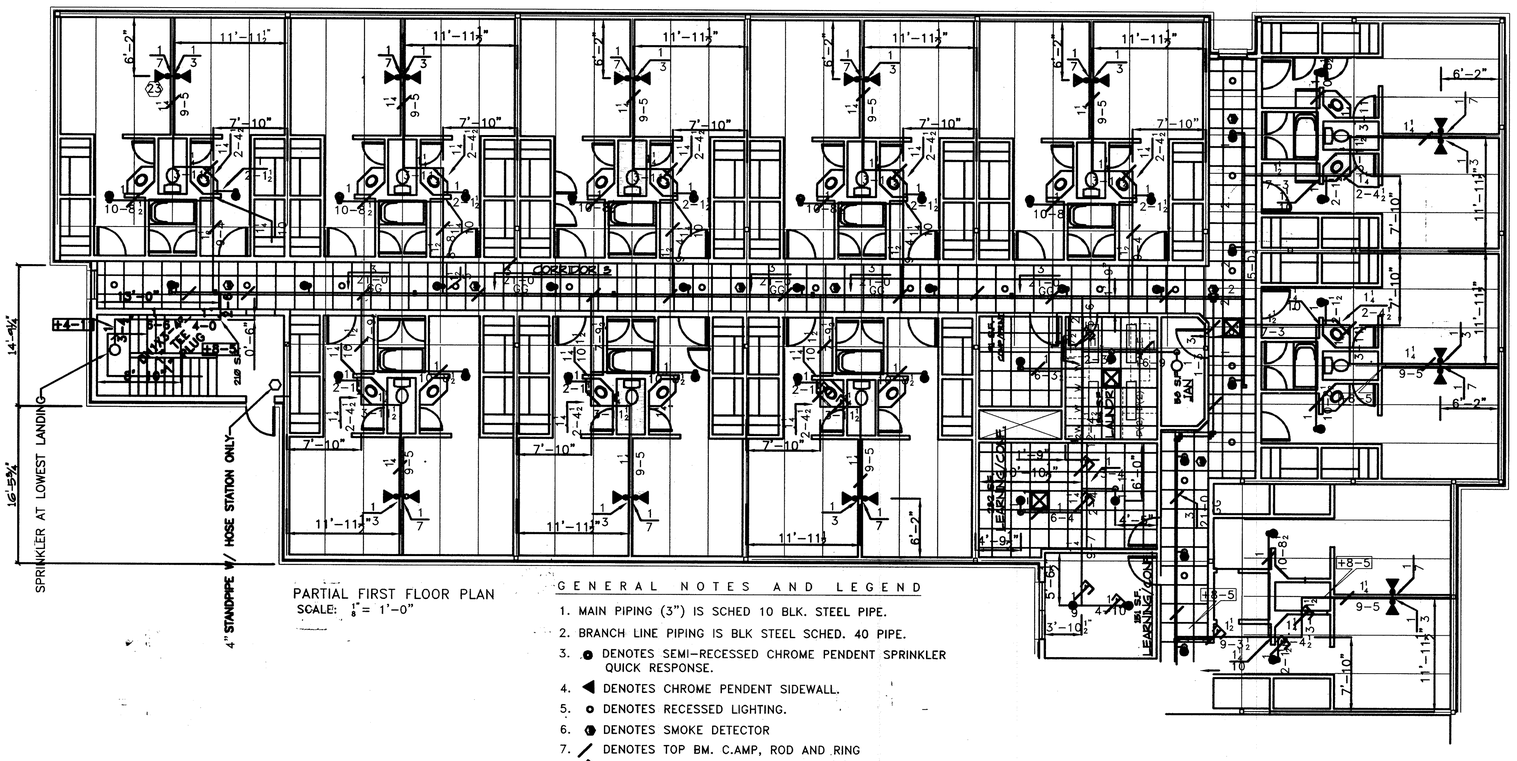
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
NEWPORT, RI
BACHELOR'S ENLISTED QUARTERS
FIRST FLOOR FIRE SPRINKLER PLAN

RECORD DRAWINGS - APRIL 25, 2006
FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 SIZE D
SCALE:
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225609
SHEET 4 OF 11
FS-2

DRAWFORM REVISION FEBRUARY 2001

NAVSTA DWG. NO. 37934-357



PARTIAL FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES AND LEGEND

1. MAIN PIPING (3") IS SCHED 10 BLK. STEEL PIPE.
2. BRANCH LINE PIPING IS BLK STEEL SCHED. 40 PIPE.
3. ● DENOTES SEMI-RECESSED CHROME PENDENT SPRINKLER QUICK RESPONSE.
4. ◀ DENOTES CHROME PENDENT SIDEWALL.
5. ○ DENOTES RECESSED LIGHTING.
6. Ⓓ DENOTES SMOKE DETECTOR
7. / DENOTES TOP BM. C.AMP, ROD AND RING
8. DENOTES DRILLED HILTI, ROD AND RING.

SYM.	DESCRIPTION	DATE	APPR.

KORTE
A DESIGN / BUILD COMPANY

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APPROVED

ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.

DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA

NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
NEWPORT, RI
BACHELOR'S ENLISTED QUARTERS

FIRST FLOOR FIRE SPRINKLER PLAN

RECORD DRAWINGS - APRIL 25, 2006
FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 | SIZE D

SCALE:

EFD NO.

STA. PROJ. NO.

SPEC. NO. 04-03-0006

CONSTR. CONTR. NO. N62472-03-C-0006

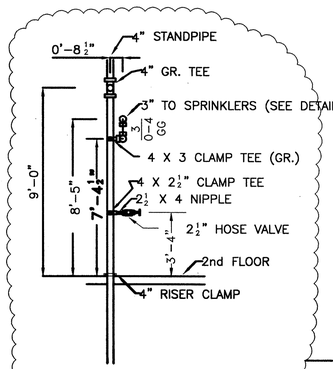
NAVFAC DRAWING NO. 2225010

SHEET 5 OF 11

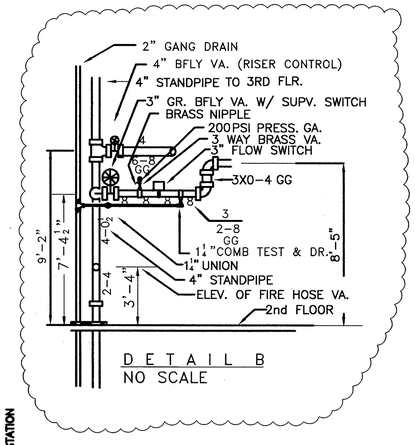
FS-3

DRAWFORM REVISION FEBRUARY 2001

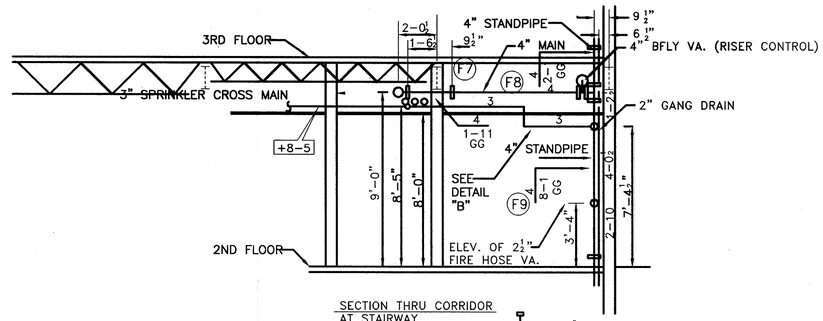
NAVSTA DWG. NO. 37935-357



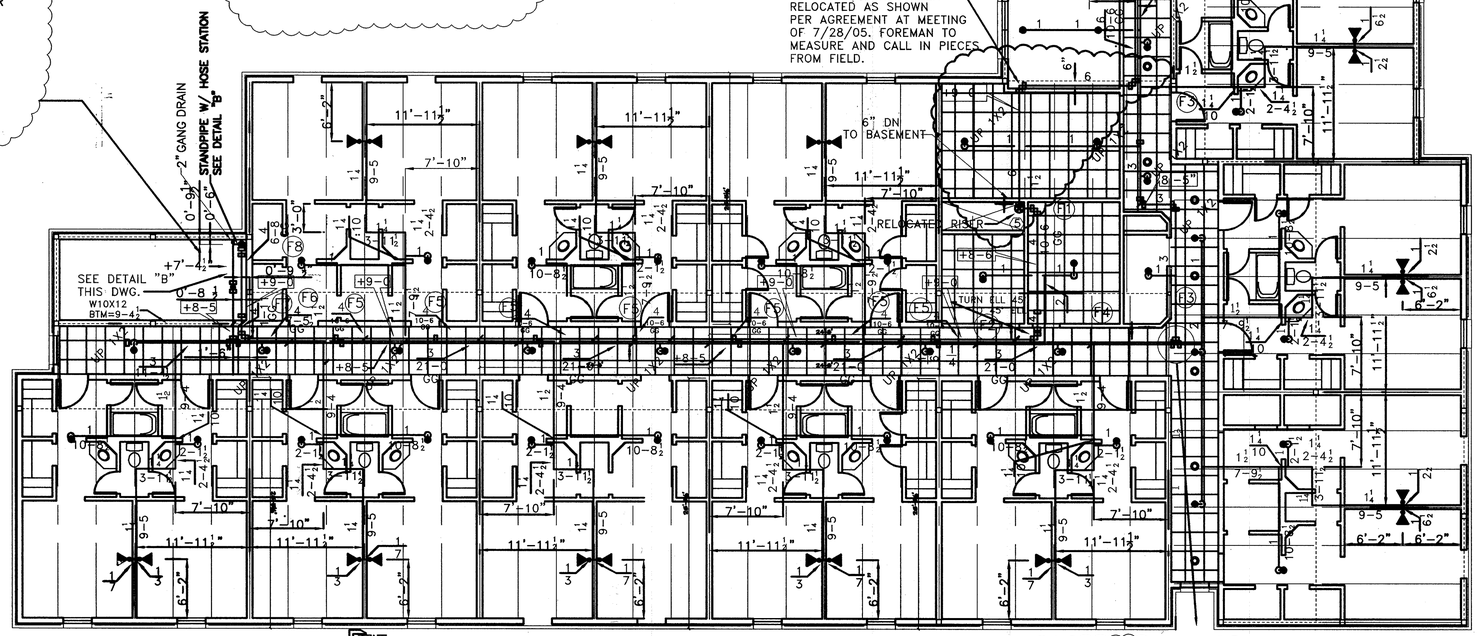
DETAIL A
NO SCALE

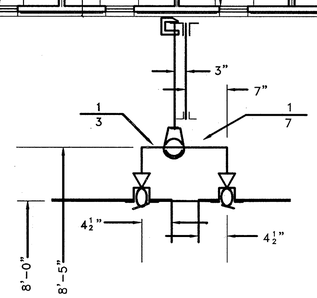


DETAIL B
NO SCALE

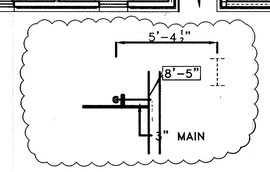


SECTION THRU CORRIDOR
AT STAIRWAY
NO SCALE





PARTIAL SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"



GENERAL NOTES

1. FIRE STANDPIPE MAINS SHALL BE BLACK STEEL SCHED 40 PIPE.
2. SPRINKLER MAINS SHALL BE BLACK STEEL SCHED 10 PIPE.
3. SPRINKLER BRANCH LINES SHALL BE BLACK STEEL SCHED. 40 PIPE.
4. — DENOTES LATERAL SWAY BRACE
5. + DENOTES 4 WAY SWAY BRACE.
6. OTHER HANGERS SHOWN ARE TOP BEAM CLAMP, ROD AND RING, HUNG FROM TOP OF BAR JOIST.
7. +9-0 DENOTES CEN. OF PIPE ABOVE FIN. FLOOR.
8. ⬡ DENOTES HYDRAULIC REFERENCE POINT.
9. ● DENOTES Q.R. PENDENT SPRINKLER.
10. ◀ DENOTES Q.R. PENDENT SIDEWALL SPRINKLER.

SYM.	DESCRIPTION	DATE	APPR.

KORTE
A DESIGN / BUILD COMPANY

SEAL

APPROVED
ACTIVITY - SATISFACTORY TO
DATE
APPROVED
FOR EFA FOR COMMANDER NAVFAC
DATE

A/E — EFD
DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

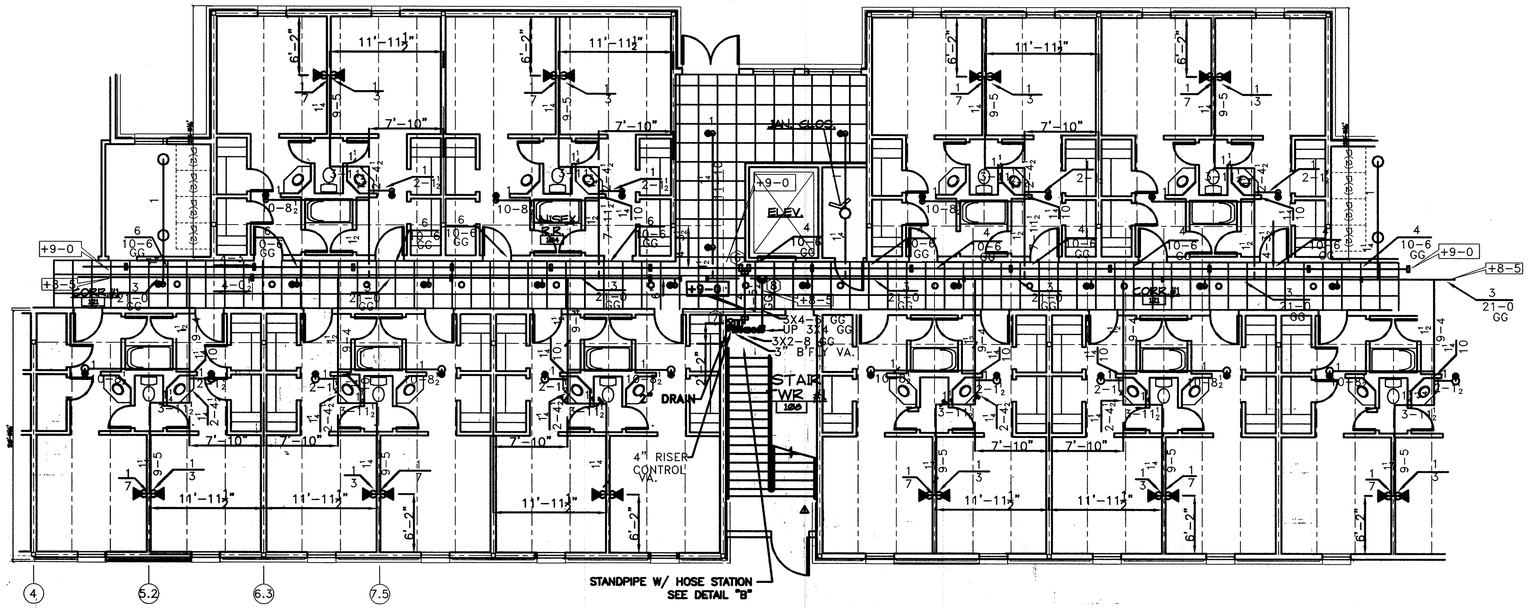
RECORD DRAWINGS - APRIL 25, 2006
FOR CONSTRUCTION SUBMITTAL: 03-25-05

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
NEWPORT, RI
BACHELOR'S ENLISTED QUARTERS
SECOND FLOOR FIRE SPRINKLER PLAN

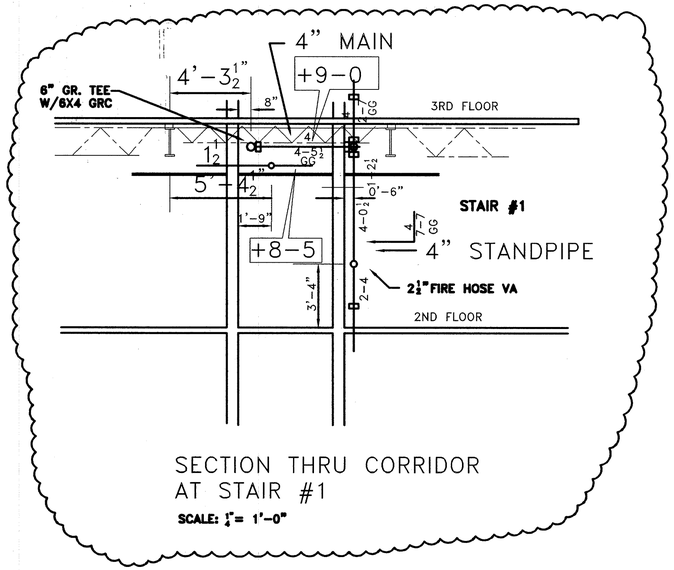
CODE ID. NO. 80091 | SIZE D
SCALE:
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225011
SHEET 6 OF 11
FS-4

DRAWFORM REVISION FEBRUARY 2001

NAVSTA DWG. NO. 37936-357



PARTIAL SECOND FLOOR PLAN
SCALE: $\frac{1}{8}$"=1'-0"



SECTION THRU CORRIDOR AT STAIR #1
SCALE: $\frac{1}{4}$"= 1'-0"

SYM.	DESCRIPTION	DATE	APPR.

KORTE
A DESIGN / BUILD COMPANY

SEAL

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DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA

NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
NEWPORT, RI
BACHELOR'S ENLISTED QUARTERS

SECOND FLOOR FIRE SPRINKLER PLAN

RECORD DRAWINGS - APRIL 25, 2006
FOR CONSTRUCTION SUBMITTAL: 03-25-05

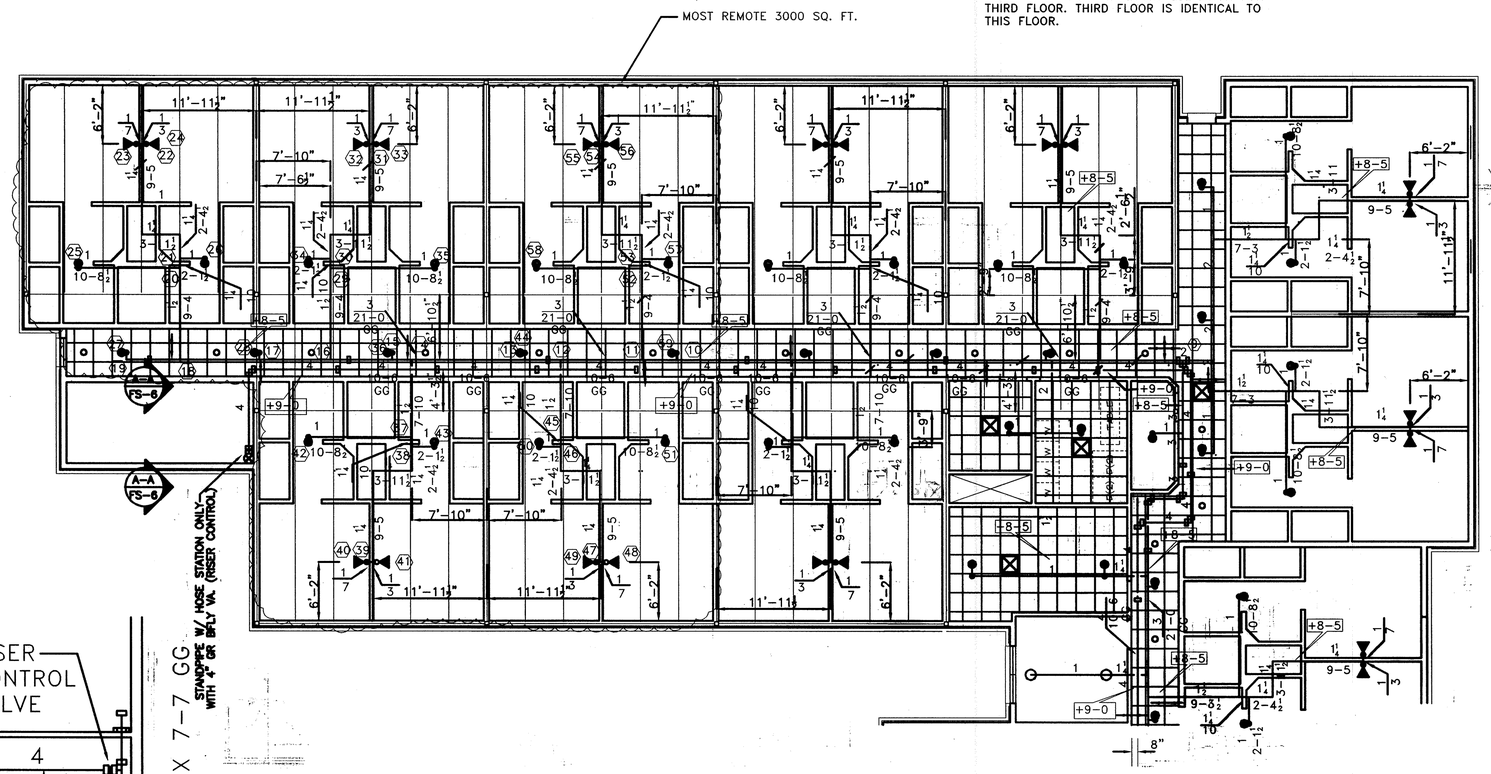
CODE ID. NO. 80091 | SIZE D
SCALE:
EFD NO.
STA. PROJ. NO.
SPEC NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225012
SHEET 7 OF 11
FS-5

DRAWFORM REVISION FEBRUARY 2001

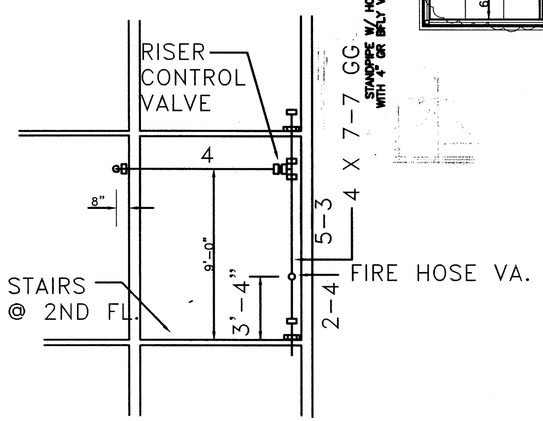
NAVSTA DWG. NO. 37937-357

HYDRAULIC DATA
DENSITY: .10 GPM/SQ FT
AREA 3000 SQ FT
SPRINKLERS FLOWING: 21
SPRINKLER FLOW: 344.18 GPM
HIOSE DEMAND: 250 GPM
TOTAL DEMAND: 594.18 @ 60.12 PSI
AT BASE OF RISER.

NOTE: THIS PROOF INCLUDES ELEVATION FOR THIRD FLOOR. THIRD FLOOR IS IDENTICAL TO THIS FLOOR.



PARTIAL SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"



SECTION A-A

GENERAL NOTES AND LEGEND

1. FIRE STANDPIPES AND MAINS ARE TO BE BLACK STEEL PIPE, SCHED. 40 WITH GROOVED FITTINGS.
2. SPRINKLER MAINS (3") ARE TO BE BLACK STEEL SCH. 10 PIPE WITH ROLLED GROOVES AND GROOVED FITTINGS.
3. SPRINKLERS, BOTH PENDENT AND SIDEWALL ARE QUICK RESPONSE.
4. ┼ DENOTES 4 WAY SWAY BRACE.
5. — DENOTES 2 WAY SWAY BRACE.
6. / DENOTES TOP BEAM CLAMP, ROD AND RING.
7. DENOTES DRILLED HILTI, ROD AND RING
8. DENOTES CHROME PENDENT SPRINKLER, QR.
9. DENOTES PENDENT SIDEWALL, QR.

SYM.	DESCRIPTION	DATE	APPR

KORTE
A DESIGN / BUILD COMPANY

SEAL

APPROVED
ACTIVITY - SATISFACTORY TO
DATE
APPROVED
FOR EFA FOR COMMANDER NAVFAC
DATE

A/E EFD
DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

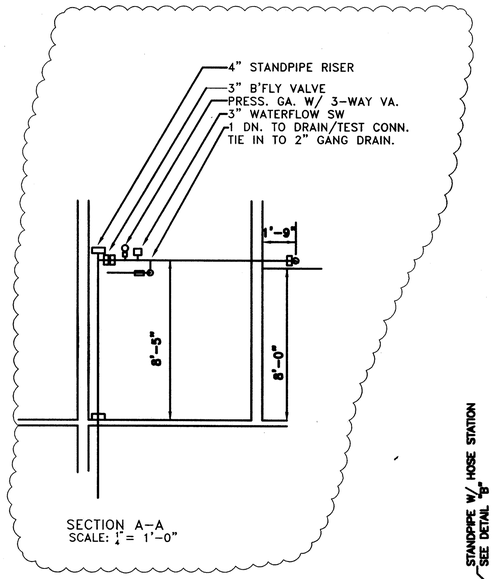
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
SECOND FLOOR FIRE SPRINKLER PLAN

RECORD DRAWINGS - APRIL 25, 2006
FOR CONSTRUCTION SUBMITTAL: 03-25-05

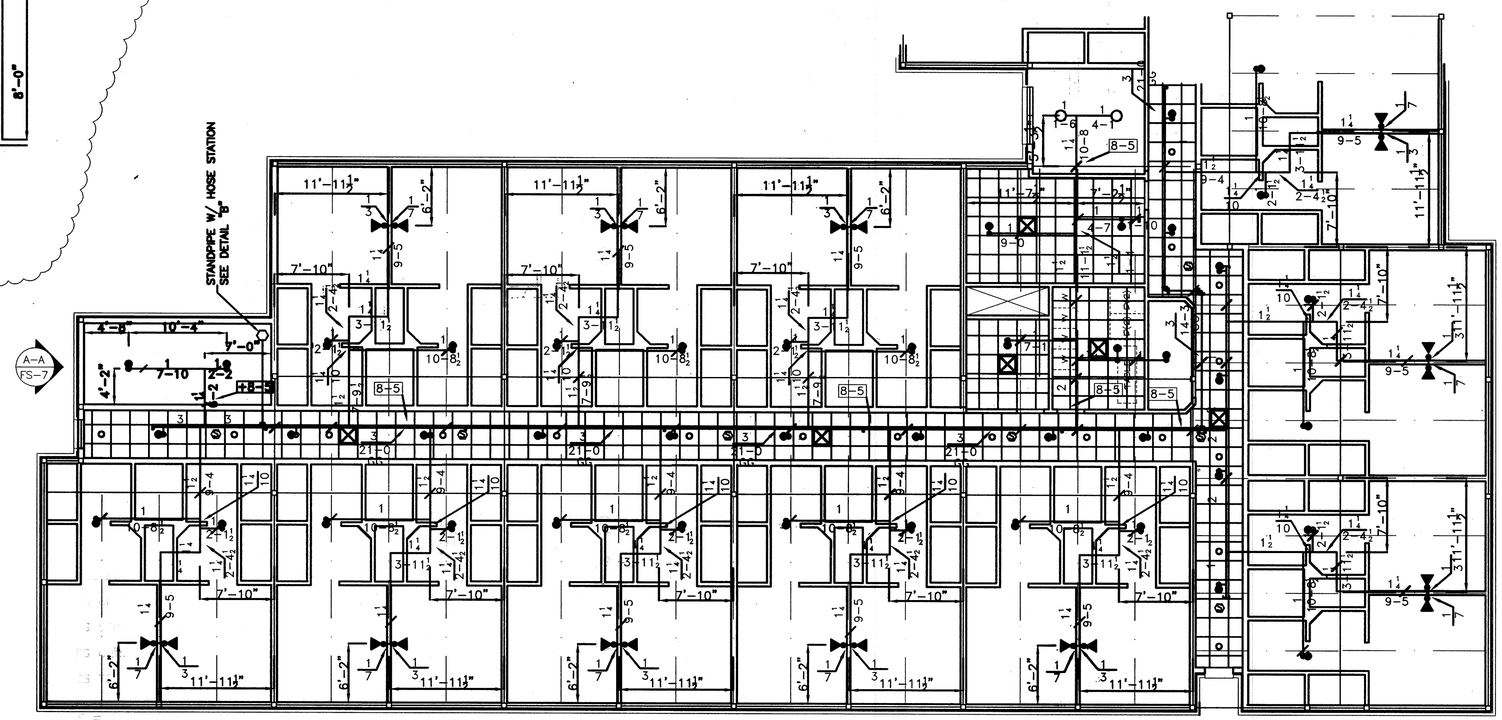
CODE ID. NO. 80091 SIZE D
SCALE:
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225613
SHEET 8 OF 11
FS-6

DRAWFORM REVISION "FEBRUARY" 2001

NAVSTA DWG. NO. 37938-357



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



PARTIAL THIRD FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES AND LEGEND

1. ALL MAINS ARE BLACK STEEL PIPE, SCHED 10.
2. ALL BRANCH LINES ARE BLACK STEEL PIPE, SCHED 40.
3. [8-5] DENOTES CEN. OF PIPE ABOVE FIN. FLR.
4. DENOTES TOP BEAM CLAMP, ROD AND RING.
5. ● DENOTES SEMI-RECESSED CHR. PEND. SPR. QR.
6. ◄ DENOTES PENDENT SIDEWALL SPR., QR.
7. ○ DENOTES RECESSED HI-HAT LIGHT.
8. ⊠ DENOTES SMOKE DETECTOR.
9. ALL CEILINGS ARE AT 8'-0" ABOVE FIN. FLOOR.

SYM.	DESCRIPTION	DATE	APPR.

KORTE
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FOR EFA FOR COMMANDER NAVFAC
DATE

A/E EFD
DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

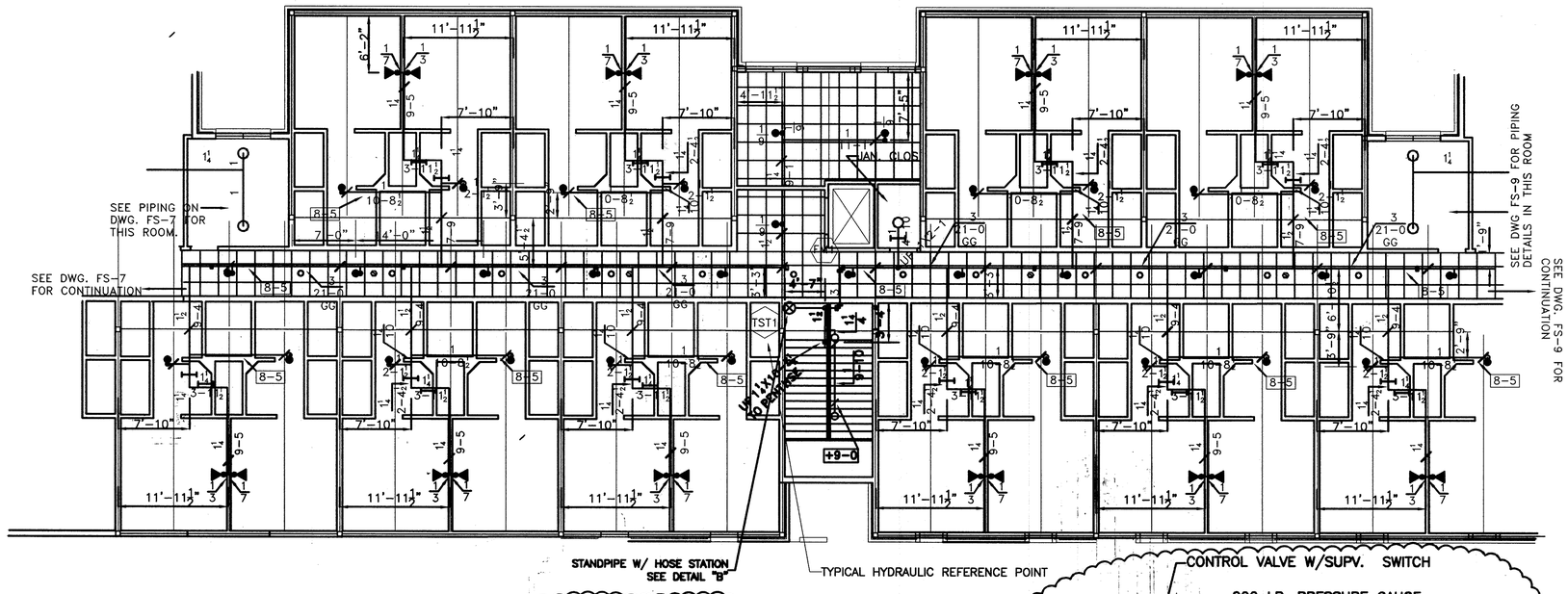
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
THIRD FLOOR FIRE SPRINKLER PLAN

RECORD DRAWINGS - APRIL 25, 2006
FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 SIZE D
SCALE:
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225614
SHEET 9 OF 11
FS-7

DRAWFORM REVISION FEBRUARY 2001

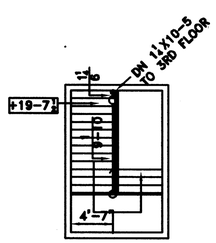
NAVSTA DWG. NO 37939-357



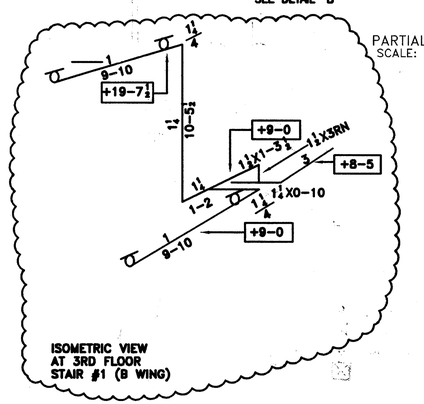
PARTIAL THIRD FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES AND LEGEND

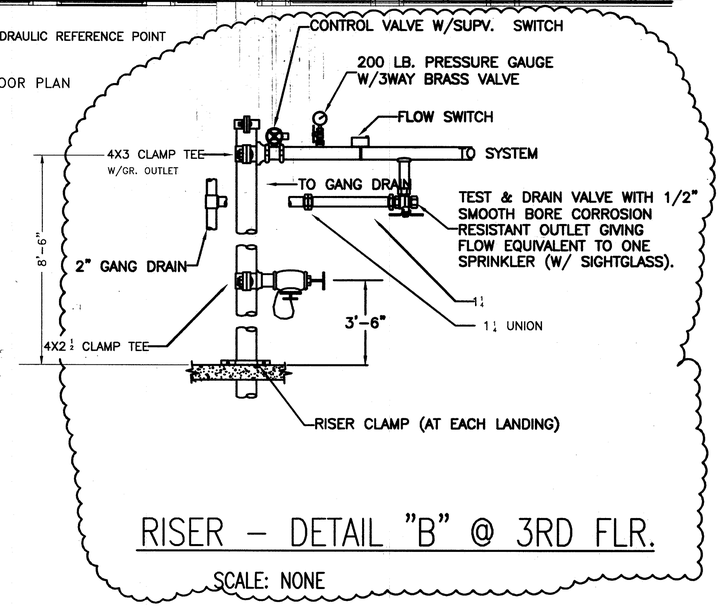
1. ALL 3" MAINS ARE SCHED. 10 BLACK STEEL PIPE.
2. ALL BRANCHLINES ARE SCHED 40 BLACK STEEL PIPE.
3. [8-5] DENOTES CENTER OF PIPE ABOVE FIN. FLOOR.
4. ● DENOTES SEMI-RECESS. CHR. PENDENT, QR
5. ◀ DENOTES CHR. PENDENT SIDEWALL.
7. / DENOTES TOP BEAM CLAMP, ROD AND RING.
8. ⊢ DENOTES TRAPESE HANGER ROD AND RING TRAPESE = 1X6-6 PE PE.



PENTHOUSE LEVEL @ STAIR #2
SCALE: 1/8" = 1'-0



ISOMETRIC VIEW AT 3RD FLOOR STAIR #1 (B WING)



RISER – DETAIL "B" @ 3RD FLR.

SCALE: NONE

SYM.	DESCRIPTION	DATE	APPR.

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DATE

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DESIGN
DRAWN
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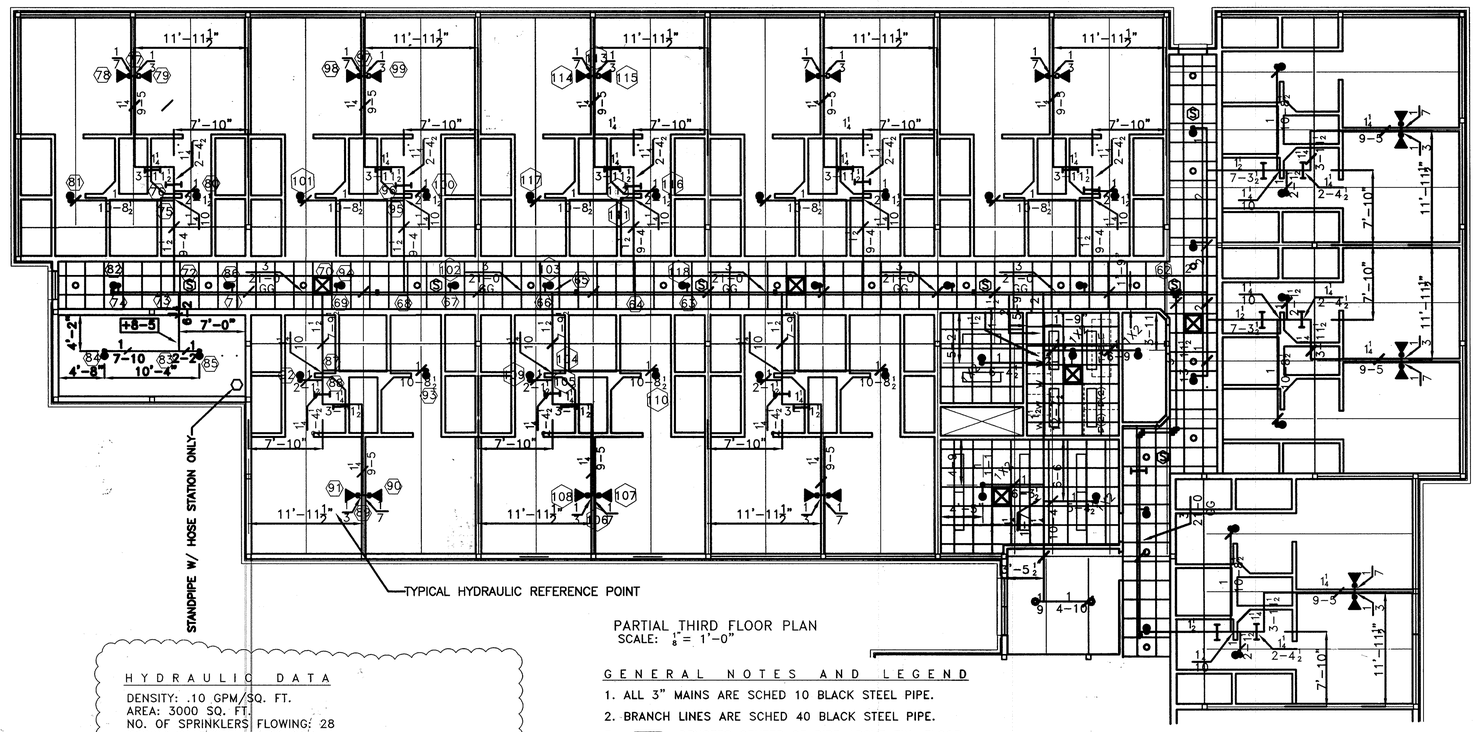
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
LESTER DEPARTMENT OF THE NAVY ENGINEERING FIELD ACTIVITY NORTHEAST PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL.
BACHELOR'S ENLISTED QUARTERS
THIRD FLOOR FIRE SPRINKLER PLAN

RECORD DRAWINGS - APRIL 25, 2006
FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 | SIZE D
SCALE:
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225815
SHEET 10 OF 11
FS-8
DRAWFORM REVISION FEBRUARY 2001

NAVSTA DWG. NO. 37940-357



PARTIAL THIRD FLOOR PLAN
SCALE: $\frac{1}{8}$" = 1'-0"

HYDRAULIC DATA

DENSITY: .10 GPM/SQ. FT.
AREA: 3000 SQ. FT.
NO. OF SPRINKLERS FLOWING: 28
SPRINKLER FLOW: 465.22 GPM
HOSE FLOW: 100 GPM AT BASE OF RISER
150 OUTSIDE HOSE
TOTAL FLOW: 565.22 @ BASE OF RISER
715.22 @ 84.56 PSI AT SUPPLY SOURCE.

GENERAL NOTES AND LEGEND

1. ALL 3" MAINS ARE SCHED 10 BLACK STEEL PIPE.
2. BRANCH LINES ARE SCHED 40 BLACK STEEL PIPE.
3. [8-5] DENOTES CENTER OF PIPE ABOVE FIN. FLOOR.
4. ● DENOTES SEMI-RECESSED CHR. PENDENT, QR.
5. ◀ DENOTES CHR. PENDENT SIDEWALL.
6. ○ DENOTES RECESSED HI HAT LIGHT.
7. ⊠ DENOTES 2X2 DIFFUSER.
8. ⬡ DENOTES HYDRAULIC REFERENCE POINT.

STA.	DESCRIPTION	DATE	APPR

KORTE
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ACTIVITY - SATISFACTORY TO

DATE

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FOR EFA FOR COMMANDER NAVFAC

DATE

A/E EFD

DESIGN
DRAWN
REVIEW
QC
CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

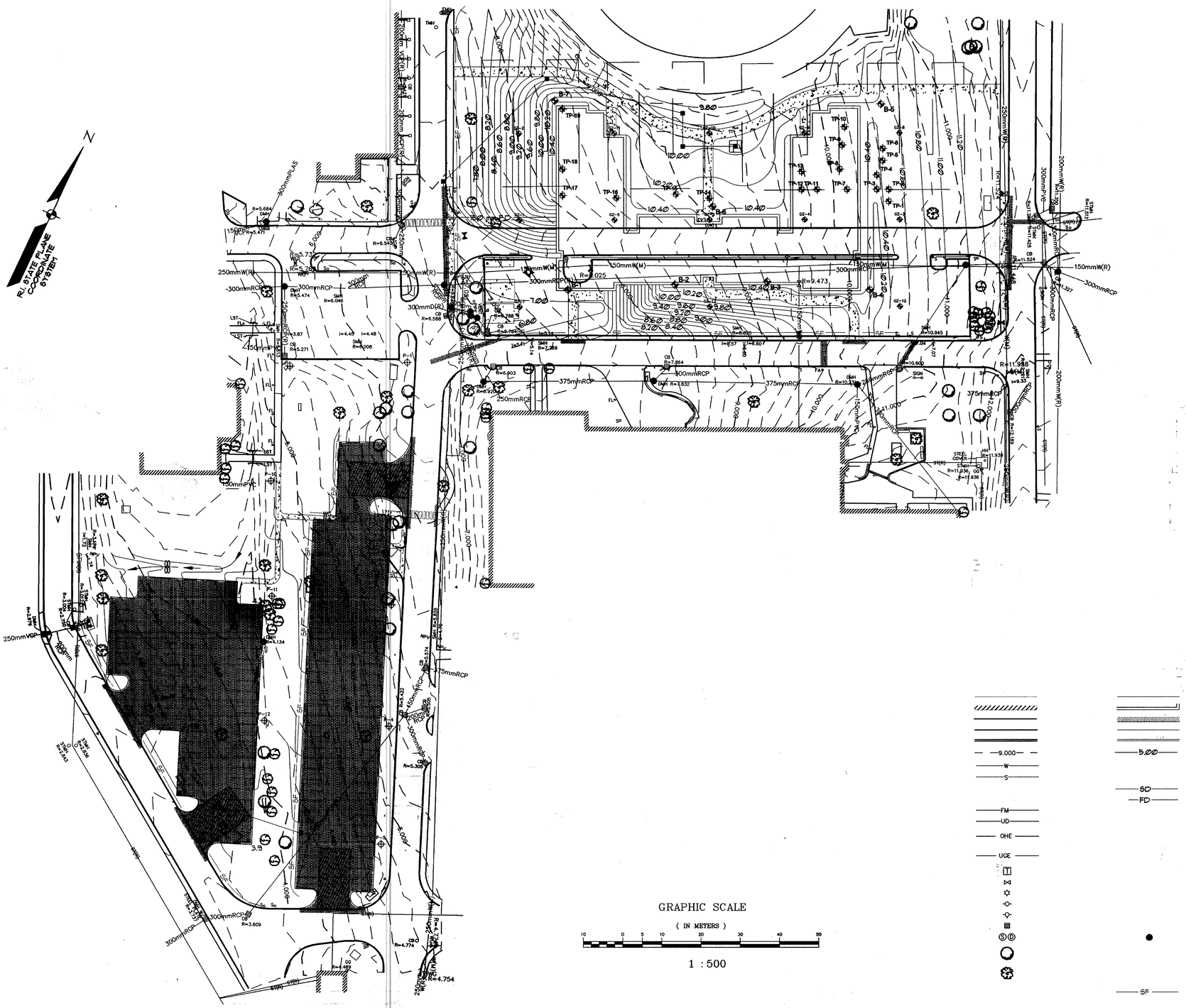
NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
THIRD FLOOR FIRE SPRINKLER PLAN

RECORD DRAWINGS - APRIL 25, 2006
FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 | SIZE D
SCALE:
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2226123
SHEET 11 OF 11
FS-9

DRAWFORM REVISION FEBRUARY 2001

NAVSTA DWG. NO. 37941-357



GRAPHIC SCALE

(IN METERS)

10 0 5 10 20 30 40 50

1 : 500

LEGEND:

B-1 BORING LOCATIONS

TP-1 TEST PIT LOCATIONS

NOTE:

REVISED 9-28-04, RELOCATED BUILDING

FIGURE 2
EXPLORATION LOCATION PLAN
NEW BEQ-NAVAL ACADEMY PREP SCHOOL
NEWPORT, RHODE ISLAND

SEPTEMBER 2004 PROJECT NO. 944-01

R.W.Gillespie & Associates, Inc
CONSULTING GEOTECHNICAL & ENVIRONMENTAL SPECIALISTS
86 Industrial Park Rd. Suite 4 Saco, Maine 04072 (207) 286-8008
Fax: (207) 286-2882 E-mail: rwg@rwg-a.com

STAL	DESCRIPTION	DATE	APPR

KORTE
A DESIGN / BUILD COMPANY

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DESIGN
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CHIEF ARCH./ ENGR.
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY NORTHEAST
LESTER PENNSYLVANIA

NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
NEWPORT, RI
BACHELOR'S ENLISTED QUARTERS

GEOTECHNACAL LOCATION PLAN

FOR CONSTRUCTION SUBMITTAL: 03-25-05

CODE ID. NO. 80091 | SIZE D

SCALE: NO SCALE

EFD NO.

STA. PROJ. NO.

SPEC. NO. 04-03-0006

CONSTR. CONTR. NO.
N62472-03-C-0006

NAVFAC DRAWING NO.
2225599

SHEET 1 OF 1

SD1

DRAWFORM REVISION FEBRUARY 2001

NAVSTA DWG. NO. 37942-357

ELEVATION No. 1
SCALE 1/8" = 1'-0"

NOTE– MAIN ROOF PITCHES SHOWN 6 IN 12.

ELEVATION No. 3
SCALE 1/8" = 1'-0"

ELEVATION No. 2
SCALE 1/8" = 1'-0"

DETAIL MAIN EAVES & PLATE
SCALE 1½" = 1'-0"

SECTION AT GIRT – MAIN BUILDING
SCALE 1½" = 1'-0"

DET. INTERMEDIATE POSTS – MAIN BLDG.
SCALE 1½" = 1'-0"

FRAMING PLAN · HALF OF BUILDING

HALF FIRST FLOOR PLAN — HALF SECOND FLOOR PLAN
SCALE 1/8" = 1'-0"

HALF FIRST FLOOR PLAN — HALF SECOND FLOOR PLAN
SCALE 1/8" = 1'-0"

SECTION (B)–(B)
SCALE 1/4" = 1'-0"

SECTION (A)–(A)
SCALE 1/8" = 1'-0"

SECTION (C)–(C)
SCALE 1/4" = 1'-0"

KEY TO ELEVATIONS
NO SCALE

REVISION BY	DATE	BRIEF DESCRIPTION	APPROVED BY

ENGINEER'S DESIGN DEPT.
DRAWN: F.R.S. / J.A.S.-J.H.C.
DESIGNED: K.J.A.
CHECKED: W.G.C.
PROJECT MGR. DATE

PUBLIC WORKS DEPT.
DESIGN / DRAWING
SYSTEMS
DATA ENTRY
CADD
RESIDENT OFFICER DATE

A.E. DRAWING NO. 392147

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS — PROVIDENCE, R.I.
ENGINEERS CONTRACT NOY 5478 DRAWING NO. 2

U.S. NAVAL OPERATING BASE, NEWPORT, R.I.
CODDINGTON POINT, NEWPORT, R.I.

BARRACKS BUILDING
U.S. TYPE
PLANS, ELEVATIONS & SECTIONS
SHEET NO. 1 OF 4

APPROVED: E.D.C. R.D. USN 2 — T.D. DRAWING NO.
OFFICER-IN-CHARGE OF CONSTRUCTION

									APPR
									DATE
									DESCRIPTION
									SYM.

KORTE
A DESIGN / BUILD COMPANY

SEAL

APPROVED
ACTIVITY – SATISFACTORY TO
DATE
APPROVED
FOR EFA FOR COMMANDER NAVFAC
DATE

A/E	EFD
DESIGN	
DRAWN	
REVIEW	
QC	
CHIEF ARCH./ ENGR.	

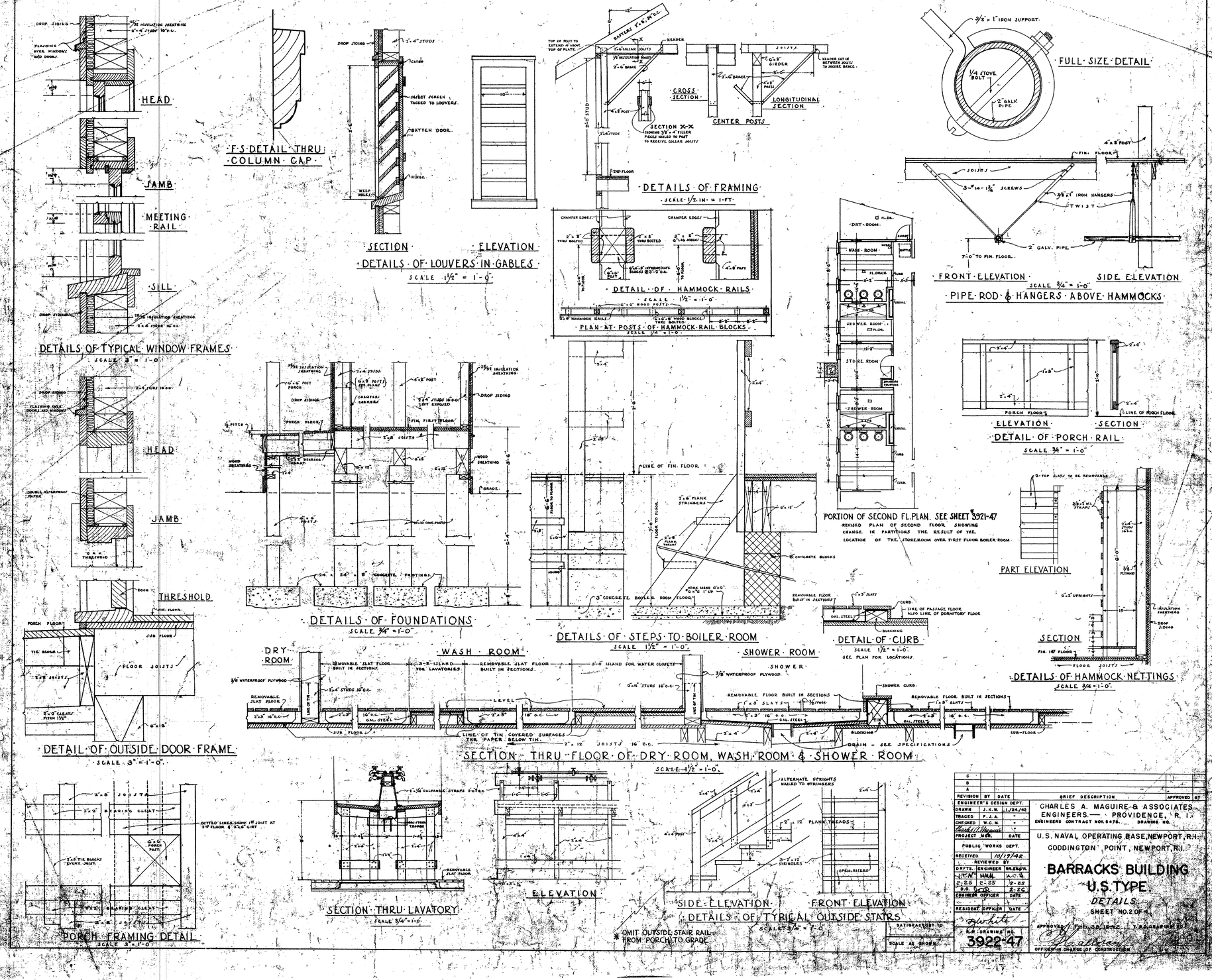
DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
LESTER PENNSYLVANIA
ENGINEERING FIELD ACTIVITY NORTHEAST
NAVAL STATION NEWPORT NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
EXISTING FOUNDATION REFERENCE DRAWINGS

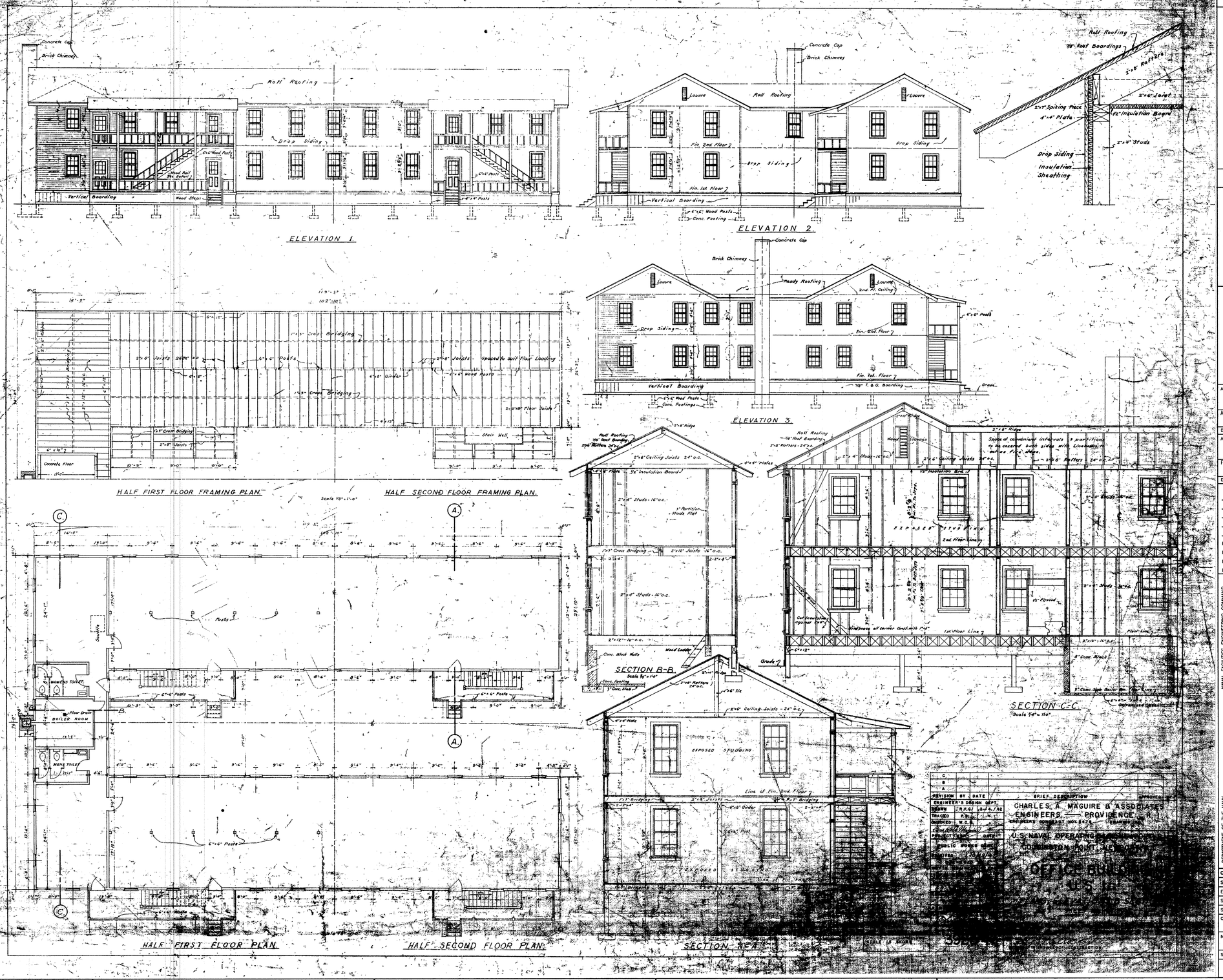
CODE ID. NO. 80091 | SIZE D
SCALE: NO SCALE
EFD NO.
STA. PROJ. NO.
SPEC. NO. 04-03-0006
CONSTR. CONTR. NO. N62472-03-C-0006
NAVFAC DRAWING NO. 2225600
SHEET X OF X
SD2

DRW/FORM REVISION FEBRUARY 2001

NAVSTA DWG. NO. 37943-357



NAVSTA DWG. NO. 37944-357



REVISION	BY	DATE	BRIEF DESCRIPTION	APPROVED
C				
B				
A				

ENGINEER'S DESIGN DEPT.

DRAWN	R.V.G.	2/4/92
TRACED	P.B.	"
CHECKED	W.G.A.	"
LEAD DESIGNER		
PROJECT ENGINEER		CHIEF
PUBLIC WORKS OFFICER		
APPROVED		

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS — PROVIDENCE, R.I.
ARCHITECTS — NEWPORT, NEW BEDFORD

U.S. NAVAL OPERATING BASE
COMMISSION POINT, NEWPORT, R.I.

OFFICE BUILDING
U.S.

KORTE
A DESIGN / BUILD COMPANY

			APPR.
			DATE
			DESCRIPTION
			SYM.

SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

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DESIGN
DRAWN
REVIEW
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CHIEF ARCH./ ENGR.

DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NORTHEAST
PENNSYLVANIA
ENGINEERING FIELD ACTIVITY
LESTER
NAVAL STATION NEWPORT
NEWPORT, RI
NAVAL ACADAMY PREP SCHOOL
BACHELOR'S ENLISTED QUARTERS
EXISTING FOUNDATION REFERENCE DRAWINGS

CODE ID. NO. 80091	SIZE D
SCALE: NO SCALE	
EFD NO.	
STA. PROJ. NO.	
SPEC. NO. 04-03-0006	
CONSTR. CONTR. NO. N62472-03-C-0006	
NAVFAC DRAWING NO. 2225602	
SHEET X OF X	
SD4	

DRAWFORM REVISION FEBRUARY 2001

NAVSTA DWG. NO. 37945-357

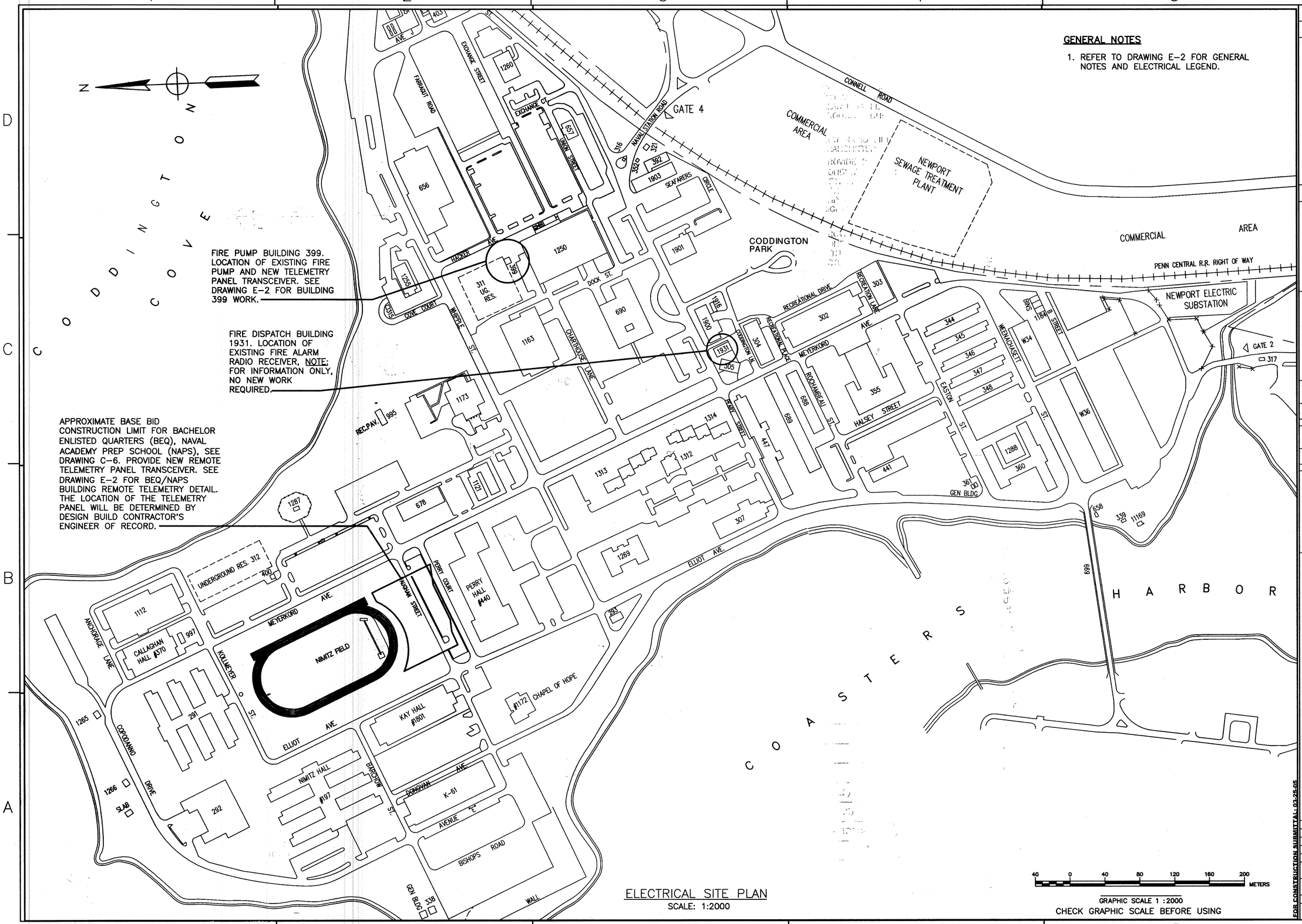
GENERAL NOTES

1. REFER TO DRAWING E-2 FOR GENERAL NOTES AND ELECTRICAL LEGEND.

FIRE PUMP BUILDING 399. LOCATION OF EXISTING FIRE PUMP AND NEW TELEMETRY PANEL TRANSCEIVER. SEE DRAWING E-2 FOR BUILDING 399 WORK.

FIRE DISPATCH BUILDING 1931. LOCATION OF EXISTING FIRE ALARM RADIO RECEIVER, NOTE: FOR INFORMATION ONLY, NO NEW WORK REQUIRED.

APPROXIMATE BASE BID CONSTRUCTION LIMIT FOR BACHELOR ENLISTED QUARTERS (BEQ), NAVAL ACADEMY PREP SCHOOL (NAPS), SEE DRAWING C-6. PROVIDE NEW REMOTE TELEMETRY PANEL TRANSCEIVER. SEE DRAWING E-2 FOR BEQ/NAPS BUILDING REMOTE TELEMETRY DETAIL. THE LOCATION OF THE TELEMETRY PANEL WILL BE DETERMINED BY DESIGN BUILD CONTRACTOR'S ENGINEER OF RECORD.



ELECTRICAL SITE PLAN
SCALE: 1:2000

40 0 40 80 120 160 200 METERS
GRAPHIC SCALE 1 : 2000
CHECK GRAPHIC SCALE BEFORE USING

SYM.	DESCRIPTION	DATE	APPR.

KORTE
A DESIGN / BUILD COMPANY

SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E	EFD
	DESIGN
	DRAWN
	REVIEW
	QC
	CHIEF ARCH./ ENGR.

DESIGN MANAGER
FIRE PROTECTION
BRANCH MANAGER
DESIGN DIRECTOR

FOR CONSTRUCTION SUBMITTAL: 03-25-05

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
LESTER ENGINEERING FIELD ACTIVITY NORTHEAST PENNSYLVANIA

NAVAL STATION NEWPORT
NAVAL ACADAMY PREP SCHOOL
NEWPORT, RI
BACHELOR'S ENLISTED QUARTERS

ELECTRICAL SITE PLAN; BLDG. 399 FIRE PUMP AUTOMATION

CODE ID. NO. 80091	SIZE D
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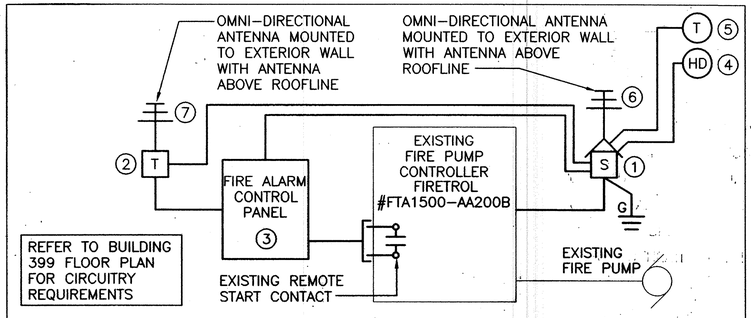
STA. PROJ. NO.	
SPEC. NO.	04-03-0006
CONSTR. CONTR. NO.	N62472-03-C-0006
NAVFAC DRAWING NO.	2221567
SHEET	1 OF 3

SD5

DRAWFORM REVISION FEBRUARY 2001

NAVSTA DWG. NO. 37946-357

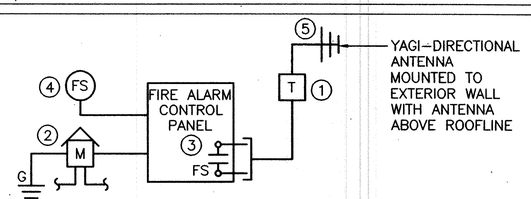


BUILDING 399 FIRE PUMP AUTOMATIC REMOTE STARTING SCHEMATIC DIAGRAM

NOT TO SCALE

BUILDING 399 FIRE PUMP AUTOMATIC REMOTE STARTING EQUIPMENT LEGEND/SCHEDULE (PROVIDE THE FOLLOWING EQUIPMENT AND SEQUENCE OF OPERATION):

1. RADIO FIRE ALARM TRANSMITTER – SIGNAL COMMUNICATIONS MODEL# 8MTJ-A-16, P/N# TBA-BNFN. (TRANSMITS SUPERVISORY SIGNALS FROM FIRE PUMP CONTROLLER AND ALARM/TROUBLE SIGNALS FROM BUILDING 399 FIRE ALARM CONTROL PANEL TO FIRE DISPATCH BUILDING). REFER TO BUILDING 399 RADIO FIRE ALARM TRANSMITTER ZONE SCHEDULE ON THIS DRAWING.
2. TELEMETRY PANEL TRANSCEIVER – REFER TO TELEMETRY PANEL DETAIL AND SCHEMATIC DIAGRAM ON DRAWING EFP-1. BUILDING 399 TELEMETRY PANEL TRANSCEIVER TO RECEIVE FLOW SWITCH SIGNAL FROM BEQ/NAPS REMOTE TELEMETRY PANEL (OR OTHER REMOTE TELEMETRY PANEL TRANSCEIVERS) AND SHALL ACTIVATE RELEASING CIRCUIT IN BUILDING 399 FIRE ALARM CONTROL PANEL WHICH SHALL START FIRE PUMP VIA FIRE PUMP CONTROLLER.
3. FIRE ALARM CONTROL PANEL U.L. LISTED FOR RELEASING SERVICE. FIRE ALARM CONTROL PANEL WILL RECEIVE FIRE PUMP START SIGNAL FROM TELEMETRY PANEL AND WILL ACTIVATE FIRE PUMP VIA REMOTE START CONTACT IN EXISTING FIRE PUMP CONTROLLER.
4. HEAT DETECTOR (SIGNALS RADIO FIRE ALARM TRANSMITTER WHEN ACTIVATED).
5. LOW TEMPERATURE ROOM THERMOSTAT (SIGNALS RADIO FIRE ALARM TRANSMITTER WHEN BUILDING 399 TEMPERATURE DROPS BELOW 40° F).
6. OMNI-DIRECTIONAL ANTENNA – SIGNAL COMMUNICATIONS #TBA-IK-11. ANTENNA COAXIAL CABLE SHALL BE RG-213 50 OHM TYPE. INSTALL CABLE IN 25mm CONDUIT (MINIMUM) AND PER MANUFACTURER'S REQUIREMENTS. ALLOW A MINIMUM OF A 51mm BENDING RADIUS FOR ANTENNA CABLE.
7. OMNI-DIRECTIONAL ANTENNA, 800/900 MHZ 6dB GAIN TYPE. ANTENNA CABLE SHALL BE LMR 400 LOW LOSS TYPE. INSTALL CABLE IN 25mm CONDUIT (MINIMUM) AND PER MANUFACTURER'S REQUIREMENTS. ALLOW OF MINIMUM OF A 51mm BENDING RADIUS FOR ANTENNA CABLE.

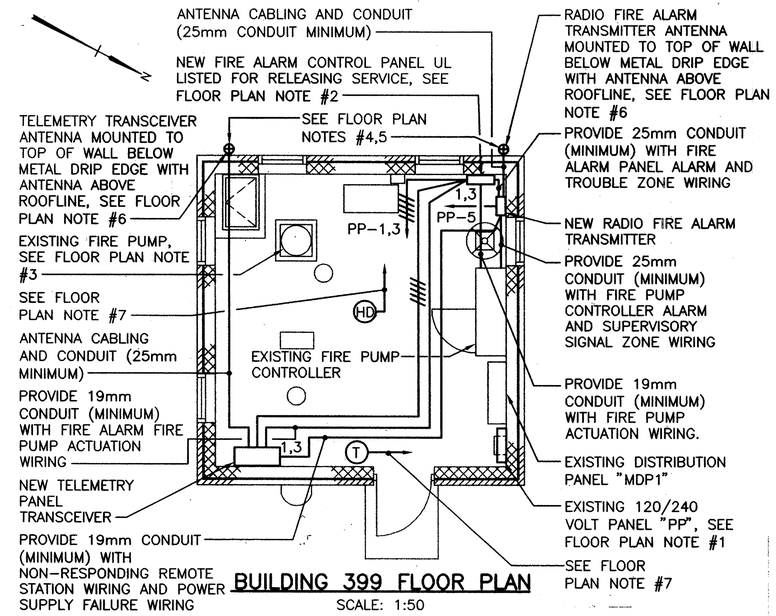


BEQ/NAPS BUILDING REMOTE TELEMETRY FIRE PUMP ACTIVATION SCHEMATIC DIAGRAM

NOT TO SCALE

BEQ/NAPS BUILDING REMOTE TELEMETRY FIRE PUMP ACTIVATION EQUIPMENT LEGEND/SCHEDULE (PROVIDE THE FOLLOWING EQUIPMENT AND SEQUENCE OF OPERATION):

1. TELEMETRY PANEL TRANSCEIVER – REFER TO TELEMETRY PANEL DETAIL AND SCHEMATIC DIAGRAM ON DRAWING EFP-1.
2. GAMEWELL TELEGRAPHIC MASTER BOX (TRANSMITS FIRE ALARM SIGNAL TO FIRE DISPATCH BUILDING).
3. BEQ/NAPS BUILDING FIRE ALARM CONTROL PANEL. ONLY SPRINKLER SYSTEM FLOW SWITCH ACTIVATION SHALL SEND SIGNAL TO TELEMETRY PANEL TO SEND FIRE PUMP REMOTE START SIGNAL TO BUILDING 399. ALL OTHER BUILDING FIRE ALARM DEVICES SHALL NOT ACTIVATE TELEMETRY PANEL.
4. SPRINKLER SYSTEM FLOW SWITCH (UPON ACTIVATION SENDS SIGNAL TO FIRE ALARM CONTROL PANEL WHICH ACTUATES TELEMETRY PANEL TRANSCEIVER TO SIGNAL BUILDING 399 FIRE PUMP TO START).
5. YAGI-DIRECTIONAL ANTENNA, GOLD ANODIZED FULLY WELDED 800/900 MHZ 6dB GAIN TYPE. ANTENNA CABLE SHALL BE LMR 400 LOW LOSS TYPE. INSTALL CABLE IN 25mm CONDUIT (MINIMUM) AND PER MANUFACTURER'S REQUIREMENTS. ALLOW A MINIMUM OF A 51mm BENDING RADIUS FOR ANTENNA CABLE.



BUILDING 399 FLOOR PLAN

SCALE: 1:50

FLOOR PLAN NOTES:

1. DISCONNECT AND REMOVE EXISTING 120/240 VOLT 6-POSITION PANEL "PP" AND PROVIDE NEW 100 AMP MCB, 120/240 VOLT, 1 PHASE, 3W. PANELBOARD. PROVIDE PANELBOARD WITH 100A-2P MAIN CIRCUIT BREAKER AND (12) 20A-1P CIRCUIT BREAKERS (CIRCUITS 1,3,5 TO BE LOCK-ON TYPE). RECONNECT EXISTING PANEL ELECTRICAL SERVICE FEEDER AND (6) 20A-1P BRANCH CIRCUITS TO NEW PANELBOARD. CUT BACK AND/OR EXTEND EXISTING BRANCH CIRCUITRY AND FEEDER AS REQUIRED FOR A COMPLETE SYSTEM.
2. CUT BACK AND CAP EXISTING 13mm COPPER PIPE IN THIS LOCATION FOR INSTALLATION OF FIRE ALARM CONTROL PANEL.
3. REFER TO BUILDING 399 FIRE PUMP AUTOMATIC REMOTE STARTING SCHEMATIC DIAGRAM ON THIS DRAWING AND PIPING CONNECTION FOR AUTOMATIC PRESSURE SWITCH ON DRAWING EFP-1 FOR FURTHER INFORMATION.
4. CORE DRILL EXISTING WALL (300MM THICK MULTI-WYTHE CONSTRUCTION) FOR INSTALLATION OF ANTENNA CABLING AND CONDUIT. PROVIDE JOINT SEAL AROUND ALL CONDUIT PENETRATIONS. JOINT SEALANT SHALL BE SINGLE-COMPONENT POLYURETHANE, COMPLYING WITH THE REQUIREMENTS OF ASTM C 920, TYPE S, GRADE NS, CLASS 25, USE NT COLOR – GRAY. SEAL THE INTERIOR AND EXTERIOR SIDES OF PENETRATIONS WATERTIGHT.
5. FASTEN ANTENNA SUPPORT BRACKET TO MASONRY WALL WITH DRIVE-IN TYPE EXPANSION ANCHOR CONSISTING OF A ZINC-PLATED CARBON STEEL DRIVE PIN CONFORMING TO AISI 1018 AND AN ALLOY EXPANDING BODY, SUITABLE FOR FASTENING IN BRICK MASONRY. ANCHOR SIZE AND QUANTITY TO SUIT ANTENNA MOUNTING BRACKET. MINIMUM ANCHOR EMBEDMENT DEPTH SHALL SUIT MANUFACTURER'S REQUIREMENTS FOR ANCHOR DIAMETER FURNISHED.
6. REFER TO TYPICAL ANTENNA MOUNTING DETAIL ON DRAWING EFP-1 FOR FURTHER INFORMATION.
7. CONNECT TO RADIO FIRE ALARM TRANSMITTER. PROVIDE ZONE WIRING IN 19mm CONDUIT (MINIMUM).

BUILDING 399 RADIO FIRE ALARM TRANSMITTER ZONE SCHEDULE

ZONE	DESCRIPTION
1	BUILDING 399 FIRE ALARM CONTROL PANEL – RELEASING PANEL ALARM (SUPERVISORY SIGNAL – ALARM)
2	BUILDING 399 – HEAT DETECTOR (ALARM)
3	BUILDING 399 FIRE ALARM CONTROL PANEL – TROUBLE
4	BUILDING 399 – LOW TEMPERATURE (TROUBLE)
5	FIRE PUMP RUNNING ALARM (SUPERVISORY SIGNAL – ALARM)
6	FIRE PUMP LOSS OF PHASE (SUPERVISORY SIGNAL – TROUBLE)
7	FIRE PUMP PHASE REVERSAL (SUPERVISORY SIGNAL – TROUBLE)
8	NON-RESPONDING REMOTE STATION (SUPERVISORY SIGNAL – TROUBLE)
9	TELEMETRY PANEL POWER SUPPLY FAILURE (SUPERVISORY SIGNAL – TROUBLE)
10–16	SPARE

GENERAL NOTES:

1. PROVIDE RIGID GALVANIZED STEEL CONDUIT FOR ALL WORK, SURFACE MOUNTED. MINIMUM SIZE SHALL BE 19mm CONDUIT.
2. INSTALL ALL WIRING AND EQUIPMENT IN ACCORDANCE TO THE NATIONAL ELECTRIC CODE. EQUIPMENT LOCATIONS AS SHOWN ON THE PLANS SHALL BE COORDINATED WITH OTHER TRADES AND EXISTING CONDITIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO ROUTE ALL WIRING TO THE DEVICES AND EQUIPMENT SHOWN ON THE PLANS AND TO PROVIDE ALL NECESSARY WIRING, RACEWAY, AND PULL BOXES TO MAKE A COMPLETE AND OPERATIONAL SYSTEM.
3. ALL 120 VOLT CIRCUITS WILL BE #10 AWG COPPER MINIMUM UNLESS OTHERWISE NOTED.
4. PROVIDE A GROUND CONDUCTOR IN EACH ELECTRICAL RACEWAY IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
5. ALL CONDUIT AND WIRE ROUTING SHOWN IS SCHEMATIC. THE CONTRACTOR WILL COORDINATE ALL ELECTRIC WORK, CONDUIT, AND WIRE ROUTING WITH HVAC/FIRE PROTECTION EQUIPMENT, PLUMBING, AND STRUCTURAL ELEMENTS.
6. THE CONTRACTOR WILL VERIFY ALL CONDUIT AND CONDUCTOR SIZES AND QUANTITIES WITH EQUIPMENT MANUFACTURERS PRIOR TO INSTALLATION.
7. BUILDING 399 IS A 5.49M± SQUARE, ONE-ROOM, SINGLE-STORY MASONRY STRUCTURE. EXTERIOR WALLS ARE 3.45M± HIGH x 300mm THICK MULTI-WYTHE CONSTRUCTION, CONSISTING OF 200mm LOAD-BEARING CMU AND 100mm FACE BRICK IN RUNNING BOND PATTERNS. ROOF CONSTRUCTION CONSISTS OF CAST-IN-PLACE CONCRETE SLAB WITH ROOF MEMBRANE. FINISHED CEILING HEIGHT = 3.05M±. FOR REFERENCE, SEE PHOTOS IN APPENDIX IN SECTION 13960.
8. MAKE ALL NEW PENETRATIONS INTO BUILDING 399 THROUGH THE WALLS. NEW ROOF PENETRATIONS ARE PROHIBITED.
9. LABORATORY TEST RESULTS INDICATED THE PRESENCE OF LEAD PAINT ON THE EXISTING FIRE PUMP PIPING (PAINTED WHITE) IN BUILDING 399. TESTING CONDUCTED UNDER US EPA-APPROVED METHOD SW-846-6010 INDICATED THE LEAD LEVEL OF THE PAINT IS 0.37% AND THE DET. LIMIT IS 0.03%. THIS IS IN EXCESS OF THE PERMISSIBLE STANDARD (0.015%) FOR LEAD-FREE PAINT UNDER THE RHODE ISLAND RULES AND REGULATIONS FOR LEAD POISONING CONTROL (R23-24.6-PB, FEBRUARY, 1993(E)).
10. ALL WORK ON DRAWINGS E-1, E-2 AND EFP-1 IS NEW UNLESS OTHERWISE NOTED. PROVIDE ALL EQUIPMENT AND OPERATIONS AS SHOWN.

ELECTRICAL LEGEND:

EXISTING FEATURES SHOWN THUS: ——— OR ———

FEATURES TO BE PROVIDED UNDER THIS CONTRACT OR EXISTING CONDITIONS TO BE MODIFIED UNDER THIS CONTRACT SHOWN THUS: ———

CONDUIT AND WIRE:

PP-1,3 — HOMERUN TO PANELBOARD "PP", CIRCUIT NUMBERS 1,3 (VIA 20A-1P C/B'S UNLESS OTHERWISE NOTED). DIAGONAL LINES INDICATE NUMBER OF #10 AWG CONDUCTORS (PHASE, NEUTRAL AND GROUND). NO DIAGONAL LINES INDICATE 2#10 & 1#10 GND, 19mm CONDUIT, UNLESS OTHERWISE NOTED. SHARED NEUTRALS ARE NOT PERMITTED.

MISCELLANEOUS:

G — 3050mm LONG X 19mm DIAMETER DRIVEN GROUND ROD AND #6 BARE COPPER GROUND WIRE CONNECTION. CONFIRM EXACT REQUIREMENTS WITH THE MANUFACTURER PRIOR TO INSTALLATION.

T — THERMOSTAT

HD — HEAT DETECTOR

FS — FLOW SWITCH

T — TELEMETRY PANEL TRANSCEIVER

S — RADIO FIRE ALARM TRANSMITTER

M — MASTER BOX

ANTENNA

CIRCUIT BREAKER

PLC — TELEMETRY PANEL TRANSCEIVER

PLUG

1 0 1 2 3 5 5 METERS

GRAPHIC SCALE 1 : 50

CHECK GRAPHIC SCALE BEFORE USING

DATE	DESCRIPTION	STAL	APPR

KORTE — A DESIGN / BUILD COMPANY

SEAL

APPROVED

ACTIVITY – SATISFACTORY TO

DATE

APPROVED

FOR EFA FOR COMMANDER NAVFAC

DATE

A/E — EFD

DESIGN

DRAWN

REVIEW

QC

CHIEF ARCH./ ENGR.

DESIGN MANAGER

FIRE PROTECTION

BRANCH MANAGER

DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND

DEPARTMENT OF THE NAVY — ENGINEERING FIELD ACTIVITY NORTHEAST — LESTER, PENNSYLVANIA

NAVAL STATION NEWPORT — NEWPORT, RI

NAVAL ACADAMY PREP SCHOOL

BACHELOR'S ENLISTED QUARTERS

ELEC. BLDG. 399 FLOOR PLAN DETAILS

FOR CONSTRUCTION SUBMITTAL 03-25-05

CODE ID. NO. 80091 | SIZE D

SCALE: NO SCALE

EFD NO.

STA. PROJ. NO.

SPEC. NO. 04-03-0006

CONSTR. CONTR. NO. N62472-03-C-0006

NAVFAC DRAWING NO. 2221568

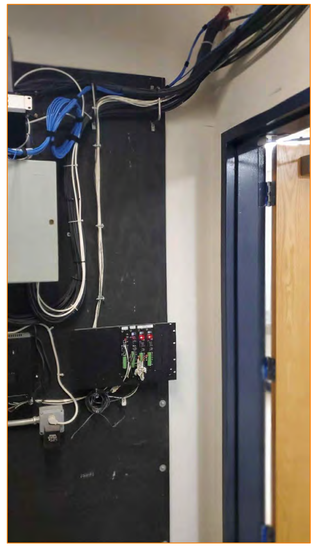
SHEET 2 OF 3

SD6

DRAWFORM REVISION FEBRUARY 2001

NAVSTA DWG. NO. 37947-357

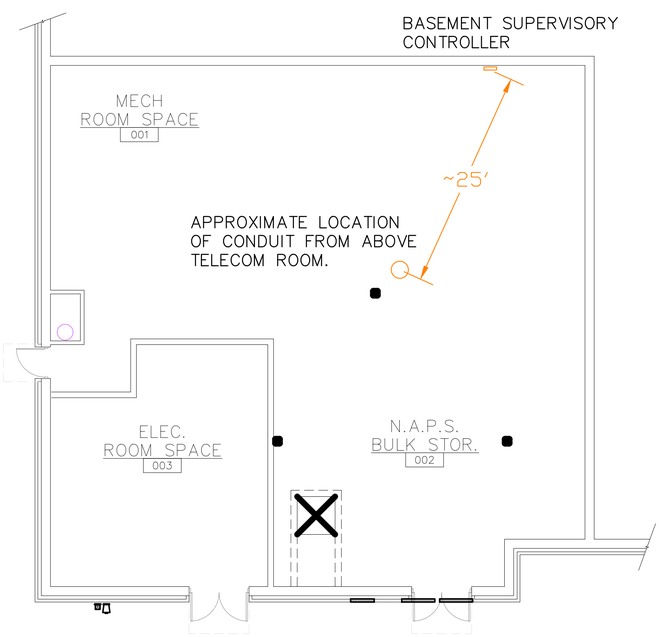
BASEMENT SUPERVISORY CONTROLLER

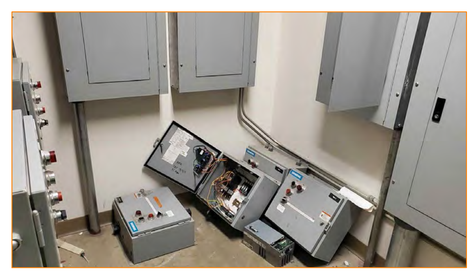


FIRST FLOOR TELECOM ROOM – POSSIBLE CONTROLLER LOCATION

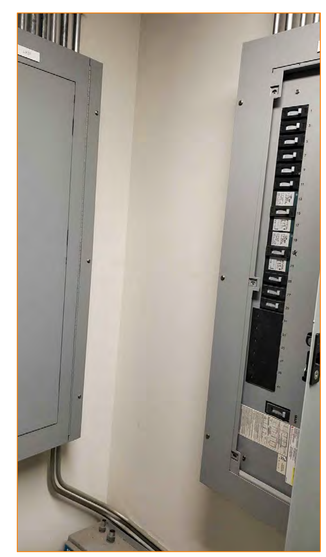
FIRST FLOOR TELECOM ROOM – POSSIBLE CONTROLLER LOCATION

SECOND FLOOR FLOOR TELECOM ROOM – POSSIBLE CONTROLLER LOCATION

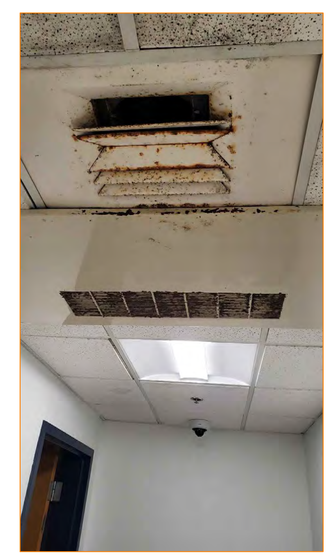




THIRD FLOOR FLOOR TELECOM ROOM – POSSIBLE CONTROLLER LOCATION



THIRD FLOOR FLOOR TELECOM ROOM – POSSIBLE CONTROLLER LOCATION



ONE OF SEVERAL FCU COVERS REQUIRING REPLACEMENT OR REPAIR

SYM	DESCRIPTION	DATE	APPR

PRELIMINARY NOT FOR CONSTRUCTION

SEAL

A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY: NAVAL STATION NEWPORT

SATISFACTORY TO DATE MM/DD/YY

DES -- DRW -- CHK --

PM/DM --

BRANCH MANAGER --

CHIEF ENG/ARCH --

FIRE PROTECTION --

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT – NEWPORT

NAVAL FACILITIES ENGINEERING COMMAND - MID ATLANTIC
NAVAL STATION – NEWPORT, RI

NAVAL STATION NEWPORT, RI

1372 HVAC, FP, ARCH REPAIRS

NEWPORT, RI

BASEMENT PLAN

SCALE: AS-SHOWN

EPROJECT NO.: #######

CONSTR. CONTR. NO.: #####-##-#-####

NAVFAC DRAWING NO.: ##

SHEET 06 OF #

ATT-7

DRAWFORM REVISION: 07 AUG 2018

ATTACHMENT 8

FINAL ASBESTOS-CONTAINING MATERIALS SURVEY
BUILDING 1372 – NAVAL ACADEMY PREPARATORY SCHOOL (NAPS)
BACHELOR ENLISTED QUARTERS (BEQ)
NAVAL STATION NEWPORT
NEWPORT, NEWPORT COUNTY, RHODE ISLAND
CDM-AECOM MULTIMEDIA JOINT VENTURE
CONTRACT NUMBER: N62470-14-D-9016
TASK ORDER: WE45

PREPARED FOR:

CDM Federal Programs Corporation
10560 Arrowhead Drive, Suite 500
Fairfax, Virginia 22030
(703) 691-6500

And

Naval Facilities Engineering Command Mid-Atlantic
Naval Station Newport

PREPARED BY:

Aerostar SES LLC
11181 St. Johns Industrial Parkway North
Jacksonville, Florida 32246
(904) 565-2820

Aerostar Project # M3010.1567.0001.17

September 28, 2018

SIGNATURE OF ENVIRONMENTAL PROFESSIONALS

This is to certify that the Final Report for the **Asbestos-Containing Materials Survey of Building 1372, Naval Academy Preparatory School (NAPS) Bachelor Enlisted Quarters (BEQ), located at Naval Station Newport, Newport, Newport County, Rhode Island,** has been examined by the undersigned.

DATE: September 28, 2018 **SIGNATURE:**

Miles Eckert
Aerostar SES LLC
RIDH Asbestos Inspector
Certification No. AAC-1004

DATE: September 28, 2018 **SIGNATURE:**

John H. Hubbard Jr., CSP, LAC
Aerostar SES LLC
Senior Project Manager
RIDH Asbestos Inspector
Certification No. AAC-1001

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SIGNATURE OF ENVIRONMENTAL PROFESSIONALS

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1.4 Findings and Results 1

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TABLE

TABLE 1 Summary of Asbestos Survey

FIGURES

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FIGURE 3 Homogeneous Area Sample Locations – Second Floor
FIGURE 4 Homogeneous Area Sample Locations – Third Floor
FIGURE 5 Homogeneous Area Sample Locations – Roof
FIGURE 6 Asbestos-Containing Materials Locations – Basement
FIGURE 7 Asbestos-Containing Materials Locations – First Floor
FIGURE 8 Asbestos-Containing Materials Locations – Second Floor
FIGURE 9 Asbestos-Containing Materials Locations – Third Floor
FIGURE 10 Asbestos-Containing Materials Locations – Roof

APPENDICES

APPENDIX A Certifications
APPENDIX B Laboratory Analytical Results
APPENDIX C Photographic Documentation

LIST OF ABBREVIATIONS

ACM	Asbestos-Containing Materials
ACT	Acoustic Ceiling Tile
Aerostar	Aerostar SES LLC
BEQ	Bachelor Enlisted Quarters
CFR	Code of Federal Regulations
DOT	Department of Transportation
EIFS	Exterior Insulation Finish System
EMSL	EMSL Analytical, Inc.
EPA	Environmental Protection Agency
EPDM	Ethylene Propylene Diene Monomer
HAs	Homogeneous Areas
HVAC	Heating, Ventilation, and Air Conditioning
NAPS	Naval Academy Preparatory School
NAVSTA Newport	Naval Station Newport
NESHAP	National Emission Standards for Hazardous Air Pollutants
NIST	National Institute of Standards and Technology
NOB	Non-friable Organically Bound
NVLAP	National Voluntary Laboratory Accreditation Program
OSHA	Occupational Safety and Health Administration
PLM	Polarized Light Microscopy
RACM	Regulated Asbestos-Containing Material
RIDH	State of Rhode Island and Providence Plantations Department of Health
TEM	Transmission Electron Microscopy
TSI	Thermal System Insulation
VFT	Vinyl Floor Tile

1.0 EXECUTIVE SUMMARY

1.1 Site Name

Building 1372
Naval Academy Preparatory School (NAPS) Bachelor Enlisted Quarters (BEQ)
Naval Station Newport
Newport, Newport County, Rhode Island

1.2 Name and Certifications of Inspector(s)

Miles Eckert
RIDH Asbestos Inspector
Certification No. AAC-1004

Dylan Hales
RIDH Asbestos Inspector
Certification No. AAC-1032

1.3 Site Description and Activities

On July 11, 2018, Aerostar SES LLC (Aerostar) conducted an Asbestos-Containing Materials (ACM) Survey of Building 1372, located at Naval Station Newport (NAVSTA Newport), Newport, Newport County, Rhode Island. The survey included all accessible areas throughout the building's exterior and interior.

1.4 Findings and Results

The following summarizes the findings throughout the building and identifies classifications of material requiring special handling:

Building	Friable ACM	Non-friable Category I ACM	Non-friable Category II ACM	Material Containing <1% Asbestos
1372 – NAPS BEQ	No	**Yes***	**Yes***	No

* Materials must be handled in accordance with 40 CFR 61 Subpart M and 29 CFR 1926.1101

State of Rhode Island and Providence Plantations Department of Health (RIDH)-licensed Asbestos Inspectors conducted an asbestos survey of Building 1372 to identify the locations, quantities, and conditions of ACMs. The asbestos survey was performed throughout all accessible areas of the building's exterior and interior.

Prior to initiation of the building assessment, Aerostar conducted a review of historical facility records to determine if information was available regarding previous surveys, asbestos abatement, or major renovations. No records of previous asbestos surveys were found or provided to Aerostar during the historical research phase. No records of major renovations were found or provided to Aerostar during the historical research phase.

A total of 23 homogeneous areas (HAs) were identified in Building 1372. Two HAs were not sampled due to the systems being energized and operational or being encased within doors and are assumed to contain asbestos until sampled, which includes gaskets and fire doors. A total of 81

samples were collected and submitted to EMSL Analytical, Inc. (EMSL) in Cinnaminson, New Jersey, for analysis by Polarized Light Microscopy (PLM). In accordance with the ASTM International Standard E2356-14, Non-friable Organically Bound (NOB) materials containing 1% or less asbestos by PLM were reanalyzed by Transmission Electron Microscopy (TEM) analysis to verify asbestos content. A total of 17 samples were reanalyzed by TEM analysis. Analytical results of the samples revealed that none of the HAs identified and sampled were found to contain asbestos by PLM or TEM.

As discussed and agreed upon with facility representatives, no samples were collected from the roof of Building 1372, because the roof consists of an Ethylene Propylene Diene Monomer (EPDM) membrane and was installed when the building was constructed in 2006. No ACMs are suspected of being present within the roof.

Removal and handling of ACMs should be conducted in accordance with the Occupational Safety and Health Administration's (OSHA) Construction Standard for Asbestos 29 Code of Federal Regulations (CFR) 1926.1101 and the Environmental Protection Agency's (EPA) Standard 40 CFR 61 Subpart M, and transportation of ACM should be conducted in accordance with the Department of Transportation (DOT) regulations outlined in 49 CFR 173.216. ACM must be disposed of at a facility permitted by the EPA and RIDH to accept asbestos.

Suspect ACMs encountered during renovation/demolition activities that are not identified in this survey should be assumed to contain asbestos or be sampled by a RIDH-licensed asbestos inspector and analyzed by an accredited laboratory.

2.0 INTRODUCTION

On July 11, 2018, Aerostar conducted an ACM survey of Building 1372, NAPS BEQ, located at NAVSTA Newport, Newport, Newport, County, Rhode Island. The survey included all accessible areas throughout the building's exterior and interior. The ACM survey was performed by RIDH-licensed Asbestos Inspectors. Copies of licenses are included in Appendix A.

2.1 Building Description

Building 1372 is a three-story structure, including a basement. The 76,531-square foot building was constructed in 2006 and is currently used as living quarters. The building construction is on a basement foundation. Exterior finishes include brick and Exterior Insulation Finish System (EIFS), aluminum windows, and an EPDM membrane roof. Interior finishes include drywall, ceramic tile, and concrete walls; drywall, metal, and suspended ceilings; and carpet, vinyl floor tile (VFT), ceramic tile, and concrete floors. The building is steel frame construction insulated with fiberglass batting. The Heating, Ventilation, and Air Conditioning (HVAC) is central and contains fiberglass ducting. Pipe runs and elbows were insulated with fiberglass lagging.

2.2 Historical Research

Prior to initiation of the building assessment, Aerostar conducted a review of historical facility records to determine if information was available regarding previous surveys, asbestos abatement, or major renovations. No records of previous asbestos surveys were found or provided to Aerostar during the historical research phase. No records of major renovations were found or provided to Aerostar during the historical research phase.

3.0 REGULATORY SUMMARY

3.1 Environmental Protection Agency

The EPA has published a list of hazardous air pollutants and promulgated the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations. Since asbestos presents a significant risk to human health as a result of air emissions from one or more source categories, it is therefore considered a hazardous air pollutant. The Asbestos NESHAP Regulation (40 CFR 61, Subpart M) addresses milling, manufacturing and fabricating operations, demolition and renovation activities, waste disposal issues, active and inactive waste disposal sites and asbestos conversion processes.

Friable ACM is defined by the Asbestos NESHAP regulations as any material containing greater than 1% asbestos as determined using the method specified in Appendix E, Subpart E, 40 CFR Part 763, Section 1, PLM, that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure (Sec. 61.141).

Non-friable ACM is any material containing greater than 1% asbestos as determined using the method specified in Appendix E, Subpart E, 40 CFR Part 763, Section 1, PLM, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure (Sec. 61.141).

The EPA also defines two categories of non-friable ACM: Category I and Category II non-friable ACM.

- Category I non-friable ACM is any asbestos-containing packing, gasket, mastic, resilient floor covering or asphalt roofing product which contains greater than 1% asbestos as determined using PLM according to the method specified in Appendix E, Subpart E, 40 CFR Part 763 (Sec. 61.141).
- Category II non-friable ACM is any material, excluding Category I non-friable ACM, containing greater than 1% asbestos as determined using PLM according to the methods specified in Appendix E, Subpart E, 40 CFR Part 763 (Sec. 61.141), that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Regulated Asbestos-Containing Material (RACM) is: (a) friable ACM, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Category I non-friable ACM must be inspected and tested for friability if it is in poor condition prior to demolition to determine whether or not it is subject to NESHAP. If the ACM is friable, it must be handled in accordance with NESHAP. Asbestos-containing packings, gaskets, resilient floor coverings and asphalt roofing materials must be removed prior to demolition only if they are in poor condition and are friable.

The NESHAP further requires that if a facility is demolished by intentional burning, all of the facility's ACM, including Category I and II non-friable ACM, must be removed prior to burning (Sec. 61.145(c)(10)).

If Category I or Category II non-friable ACM is to be sanded, ground, cut, or abraded, the material is considered RACM and the owner or operator must abide by the following (Sec. 61.145(c)(1)):

(i) Adequately wet the material during the sanding, grinding, cutting or abrading operations;
(ii) Comply with the requirements of 61.145(c)(3)(i) if wetting would unavoidably damage equipment or present a safety hazard; and
(iii) Handle asbestos material produced by the sanding, grinding, cutting, or abrading, as asbestos-containing waste material subject to the waste handling and collection provisions of Section 61.150.

Except for the following, Section 61.145(c) of the Asbestos NESHAP regulation requires that each owner or operator of a demolition or renovation activity involving RACM remove all such material from a facility being demolished or renovated before any activity begins that would break up, dislodge, or similarly disturb the material or preclude access to the material for subsequent removal.

ACM need not be removed before demolition or renovation if it:

(i) Is a Category I non-friable ACM that has not become friable;
(ii) Is on a facility component that is encased in concrete or other similarly hard material and is adequately wet whenever exposed during demolition or renovation;
(iii) Was not accessible for testing and therefore was not discovered until after demolition or renovation began and, as a result of the demolition or renovation, cannot be safely removed. If not removed for safety reasons, the exposed RACM and any asbestos-contaminated debris must be treated as asbestos-containing waste material and kept adequately wet at all times until disposed of; or
(iv) Is a Category II non-friable ACM and the probability is low that the material will become crumbled, pulverized, or reduced to powder during demolition or renovation.

3.2 Occupational Safety and Health Administration

OSHA regulates asbestos exposure during all construction work including, but not limited to, the following:

- Demolition or salvage of structures where asbestos is present;
- Removal or encapsulation of materials containing asbestos;
- Construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof, that contain asbestos;
- Installation of products containing asbestos;
- Asbestos spill/emergency cleanup; and
- Transportation, disposal, storage, containment of and housekeeping activities involving asbestos or products containing asbestos, on the site or location at which construction activities are performed.

The OSHA Standard 29 CFR 1926.1101 requires the use of engineering controls, work practices, and personal protective equipment to reduce or eliminate employee exposure to asbestos. The OSHA standard does not apply to asbestos-containing asphalt roof coatings, cements and mastics.

3.3 State of Rhode Island

The RIDH Rules and Regulations for Asbestos Control, R23-24.5-ASB, cover all asbestos related activities including but not limited to the following: Definitions, General Provisions, Asbestos Exposure Standard and Submission of Asbestos Abatement Plans, Asbestos Contractors, Abatement Plans and Owner Responsibilities, Certification of Training Courses, Competent Persons, Analytical Services and Consultants, Hazard Assessment Criteria, and NESHAP Requirements.

4.0 METHODS OF INVESTIGATION

Sampling protocols set forth by the EPA under 40 CFR 763.86 and ASTM E2356-14, *Standard Practice for Comprehensive Building Asbestos Surveys*, were generally followed during the inspection. The asbestos survey was performed by observing, touching, and sampling accessible

suspect building materials throughout the interior and exterior of the building. The purpose of this survey was to locate and identify suspect ACMs, to quantify the material, and to separate it into unique areas for further assessment. The condition and location of representative suspect materials were defined throughout the building. Based on location, material type, and functional space use, the potential for disturbance by maintenance personnel and building occupants was evaluated and reported.

Bulk asbestos sampling procedures utilized for the collection of suspect ACMs first required the establishment of a homogeneous sampling area. A homogeneous sampling area is defined as an area of material of the same type (texture and color) which was applied during the same general time period. Each individual sampling area was then examined and representative samples of suspect materials were collected. The EPA has published guidelines and recommendations pertaining to surveying and sampling for friable ACMs. The guidelines were followed during the survey where appropriate. EPA publications and current regulations mainly address friable materials, such as surface finishes and structural fireproofing. Bulk samples were collected by a RIDH-certified Asbestos Inspector and analyzed by a laboratory that maintains accreditation by the National Institute of Science and Technology (NIST) through the National Voluntary Laboratory Accreditation Program (NVLAP). The samples were analyzed by PLM with dispersion staining according to EPA Method 600/R-93/116. The PLM test is an EPA-approved analytical method for asbestos identification. The test uses the unique optical properties of mineral forms in the samples to specifically identify the various asbestos types.

In accordance with the ASTM Standard E2356-14, NOB materials found to contain 1% or less asbestos by PLM were reanalyzed by TEM analysis to verify asbestos content.

Where distinct layers were present, bulk samples were collected to represent each individual layer of the suspect material. Mastic and/or other adhesive substances were included when possible. At the time of sample collection, the inspector noted material type, approximate amount, sampling locations, and condition of the materials.

Samples were labeled with a unique alphanumeric identification system (xxxx-yy-zz). The first set of numbers (xxxx) indicates the building number assigned by the facility. The second set of numbers (yy) indicates the homogeneous area designation assigned by the asbestos inspector. The third set of numbers (zz) is the individual sample identification number. Where distinct layers were separated, a letter (A, B, C) was assigned for each additional layer analyzed by the laboratory.

The surface area of the samples was adequately wetted prior to sample collection. No visible emissions were allowed. Following sample collection, sample locations were sealed to prevent subsequent fiber release. Samples were submitted to EMSL for analysis by PLM and TEM, as appropriate. A copy of the laboratory analytical results and appropriate Chain of Custody Records is included as Appendix B.

5.0 RESULTS

RIDH-licensed Asbestos Inspectors conducted an asbestos survey of Building 1372 to identify the locations, quantities, and conditions of ACMs. The asbestos survey was performed throughout all areas of the building's exterior and interior. As discussed and agreed upon with facility

representatives, no samples were collected from the roof of Building 1372, because the roof consists of an EPDM membrane and was installed when the building was constructed in 2006. No ACMs are suspected of being present within the roof.

The following 23 HAs were identified in Building 1372:

- Gypsum Wallboard
- Joint Compound
- Acoustic Ceiling Tiles (ACT)
- Mastic Associated with Cove Base (2 types)
- VFT (3 types)
- Mastic Associated with VFT (4 types)
- Fiberglass Thermal System Insulation (TSI) Wrap Mastic
- HVAC Duct Mastic
- Caulk (3 Types)
- Carpet Mastic
- Tread Mastic (2 Types)
- EIFS
- Gaskets
- Fire Doors

Two HAs were not sampled due to the systems being energized and operational or being encased within doors and are assumed to contain asbestos until sampled. A total of 81 samples were collected and submitted to EMSL for analysis by PLM. NOB materials found to contain 1% or less asbestos by PLM analysis were reanalyzed by TEM analysis to verify asbestos content. A total of 17 samples were reanalyzed by TEM analysis. Analytical results of the samples revealed that none of the HAs identified and sampled were found to contain asbestos by PLM or TEM.

A summary of materials assumed to contain asbestos is as follows:

Material Description	Homogeneous Area ID	Location	Approximate Amount	Asbestos Type %	NESHAP Category
Gaskets	1372-18	Throughout Mechanical Piping	84 Fittings	Assumed	Non-Friable Category I
Fire Doors	1372-19	Throughout Building	10 Doors	Assumed	Non-Friable Category II

The results of the asbestos survey are detailed in Table 1. Homogeneous area sample locations are shown on Figures 1 through 5. The ACM locations are shown on Figures 6 through 10. Inspector and laboratory credentials are provided in Appendix A. Copies of the laboratory analytical results and appropriate Chain of Custody Records are included in Appendix B. Photographic Documentation is included as Appendix C.

6.0 LIMITATIONS

Aerostar has prepared this Final ACM Survey Report for CDM-AECOM Multimedia Joint Venture and NAVSTA Newport, hereafter referred to as the Clients. No ACM survey can eliminate all uncertainty. Professional judgment and interpretation are inherent in the process and uncertainty is inevitable. Even when sampling is executed with an appropriate site-specific standard of care, certain conditions present especially difficult detection problems. Such conditions may include, but are not limited to, physical limitations imposed by the location and accessibility of possible ACMs, and the limitations of assessment technologies. Only reasonably accessible areas were surveyed as part of this investigation. Aerostar is not responsible for possible ACMs that were inaccessible and/or not located, or any consequential damages as a result thereof. Measurements and sampling data only represent the site conditions at the time of the data collection. Aerostar makes no legal representations whatsoever concerning any matter including, but not limited to, ownership of any property or the interpretation of any law. Aerostar further disclaims any obligations to update the report for events taking place after the time during which the assessment was conducted.

This report is not a comprehensive site characterization and should not be construed as such. The opinions presented in this report are based upon the findings derived from the samples collected.

The scope of work performed herein was limited to asbestos sample collection and laboratory analysis of only the samples collected at the time of inspection and identification of materials containing asbestos. Aerostar has endeavored to meet what it believes is the applicable standard of care, and, in doing so, is obliged to advise the Clients of the limitations. Aerostar believes that providing information about limitations is essential to help the Clients identify and thereby manage its risks. Through additional testing, these risks can be mitigated - but they cannot be eliminated. Aerostar will, upon request, advise the Clients of the additional research opportunities available, their impact, and their cost.

As noted above, the ACM survey conducted at the referenced site and this report was prepared for the use solely by the Clients. This report shall not be relied upon by or transferred to any other party without the express written authorization of Aerostar; however, this report may be made available for informational and bidding purposes.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The following summarizes the findings throughout the building and identifies classifications of material requiring special handling:

Building	Friable ACM	Non-friable Category I ACM	Non-friable Category II ACM	Material Containing <1% Asbestos
1372 – NAPS BEQ	No	**Yes***	**Yes***	No

* Materials must be handled in accordance with 40 CFR 61 Subpart M and 29 CFR 1926.1101

A total of 23 HAs were identified in Building 1372. Two HAs were not sampled due to the systems being energized and operational or being encased within doors and are assumed to contain asbestos until sampled, which includes gaskets and fire doors. A total of 81 samples were collected and submitted to EMSL for analysis by PLM. NOB materials which were found to contain 1% or less asbestos by PLM were reanalyzed by TEM analysis to verify asbestos content. A total of 17 samples were reanalyzed by TEM analysis. Analytical results of the samples revealed that none of the HAs identified and sampled were found to contain asbestos by PLM or TEM.

As discussed and agreed upon with facility representatives, no samples were collected from the roof of Building 1372, because the roof consists of an EPDM membrane and was installed when the building was constructed in 2006. No ACMs are suspected of being present within the roof.

Gaskets are NESHAP Category I non-friable ACMs. NESHAP Category I non-friable ACMs are not required to be removed prior to demolition or renovation of the building, provided that wet-demolition practices are implemented and resulting debris from the building is properly transported to a landfill permitted for disposal of ACMs. If NESHAP Category I non-friable ACMs are in poor condition or become friable during demolition, the material must be treated as a RACM and be removed by a licensed asbestos abatement contractor and disposed of at a class one landfill prior to renovation, remodeling, or demolition of the building.

Fire doors are NESHAP Category II non-friable ACMs. NESHAP Category II non-friable ACMs should be removed by a licensed asbestos abatement contractor following OSHA Class II work activities and disposed of at a class one landfill prior to renovation, remodeling, or demolition of the building. If proper precautions and work practices are to be utilized, accompanied by wet demolition, to prevent Category II non-friable ACMs from becoming crumbled, pulverized, or reduced to powder during demolition activities, the material is not required to be removed prior to demolition.

Due to the presence of asbestos, OSHA's Asbestos Standard for the Construction Industry (29 CFR 1926.1101) must be followed. The Rhode Island Department of Health Division of Occupational and Radiological Health should be notified in writing before a local building permit is granted for any building demolition or renovation which would disturb asbestos material. Transportation of ACM should be conducted in accordance with DOT regulations outlined in 49 CFR 173.216. ACM must be disposed of at a facility permitted by the EPA and RIDH to accept asbestos.

In accordance with the OSHA Asbestos Standard for the Construction Industry (29 CFR 1926.1101), demolition of a building with ACM left in place falls under the definition of removal of installed ACM. The removal of installed ACM is either Class I or Class II asbestos work, and all applicable requirements of this standard apply. Whether such demolition is Class I asbestos work or Class II asbestos work is determined by the type of ACM left in place. If any asbestos-containing thermal system insulation or surfacing material is left installed in the building, then the work being performed is Class I asbestos work. If the ACM left installed in the building does not include any thermal system insulation or surfacing material, then the work being performed is Class II asbestos work.

Suspect ACMs encountered during renovation/demolition activities that are not identified in this survey should be assumed to contain asbestos or be sampled by a RIDH-licensed asbestos inspector and analyzed by an accredited laboratory.

TABLE

TABLE 1
SUMMARY OF ASBESTOS SURVEY
Building 1372 - Naval Academy Preparatory School (NAPS)
Bachelor Enlisted Quarters (BEQ)
Naval Station Newport
Newport, Newport County, Rhode Island

Homogeneous Area Sample ID	Material Description	Location	Approximate Amount Square Feet (SF) Linear Feet (LF)	Number of Samples Collected	% Asbestos Type	National Emission Standards for Hazardous Air Pollutants Category	Condition	Potential for Disturbance	
								Maintenance Personnel	Building Occupants
1372-1-1, 1372-1-2, 1372-1-3, 1372-1-4, 1372-1-5, 1372-1-6, 1372-1-7, 1372-1-8, 1372-1-9	Gypsum Wallboard	Throughout Portions of Interior Walls and Ceilings	155,000 SF	9	None Detected (ND)	-	Good	-	-
1372-2-1, 1372-2-2, 1372-2-3, 1372-2-4, 1372-2-5, 1372-2-6, 1372-2-7, 1372-2-8, 1372-2-9	Joint Compound	Throughout Portions of Interior Walls and Ceilings	155,000 SF	9	ND	-	Good	-	-
1372-3-1, 1372-3-2, 1372-3-3	2'x2' Acoustic Ceiling Tile (ACT) - Fissures/Pinholes	Throughout Portions of Interior	13,000 SF	3	ND	-	Good	-	-
1372-4-1*, 1372-4-2, 1372-4-3	Yellow Mastic Associated with 4" Cove Base - Navy Blue	Throughout Hallways and Portions of Interior	950 SF	3	ND *Verified by Transmission Electron Microscopy (TEM)	-	Good	-	-
1372-5-1*, 1372-5-2, 1372-5-3	Yellow Mastic Associated with 4" Cove Base - Brown	Throughout Portions of Interior	4,850 SF	3	ND *Verified by TEM	-	Good	-	-
1372-6-1*, 1372-6-2, 1372-6-3	12"x12" Vinyl Floor Tile (VFT) - Beige Speckled	Throughout First and Second Floor Hallways; and First Floor Rooms 1101, 1111, 1123, 1210, 1212, 1213, and 1223	8,750 SF	3	ND *Verified by TEM	-	Good	-	-
1372-6-1A*, 1372-6-2A, 1372-6-3A	Yellow Mastic Associated with 12"x12" VFT - Beige Speckled	Throughout First and Second Floor Hallways; and First Floor Rooms 1101, 1111, 1123, 1210, 1212, 1213, and 1223	8,750 SF	3	ND *Verified by TEM	-	Good	-	-
1372-6-1B*, 1372-6-2B, 1372-6-3B	Black Mastic Associated with 12"x12" VFT - Beige Speckled	Throughout First and Second Floor Hallways; and First Floor Rooms 1101, 1111, 1123, 1210, 1212, 1213, and 1223	8,750 SF	3	ND *Verified by TEM	-	Good	-	-
1372-7-1*, 1372-7-2, 1372-7-3	12"x12" VFT - White with Brown Specks	Room 1202	330 SF	3	ND *Verified by TEM	-	Good	-	-

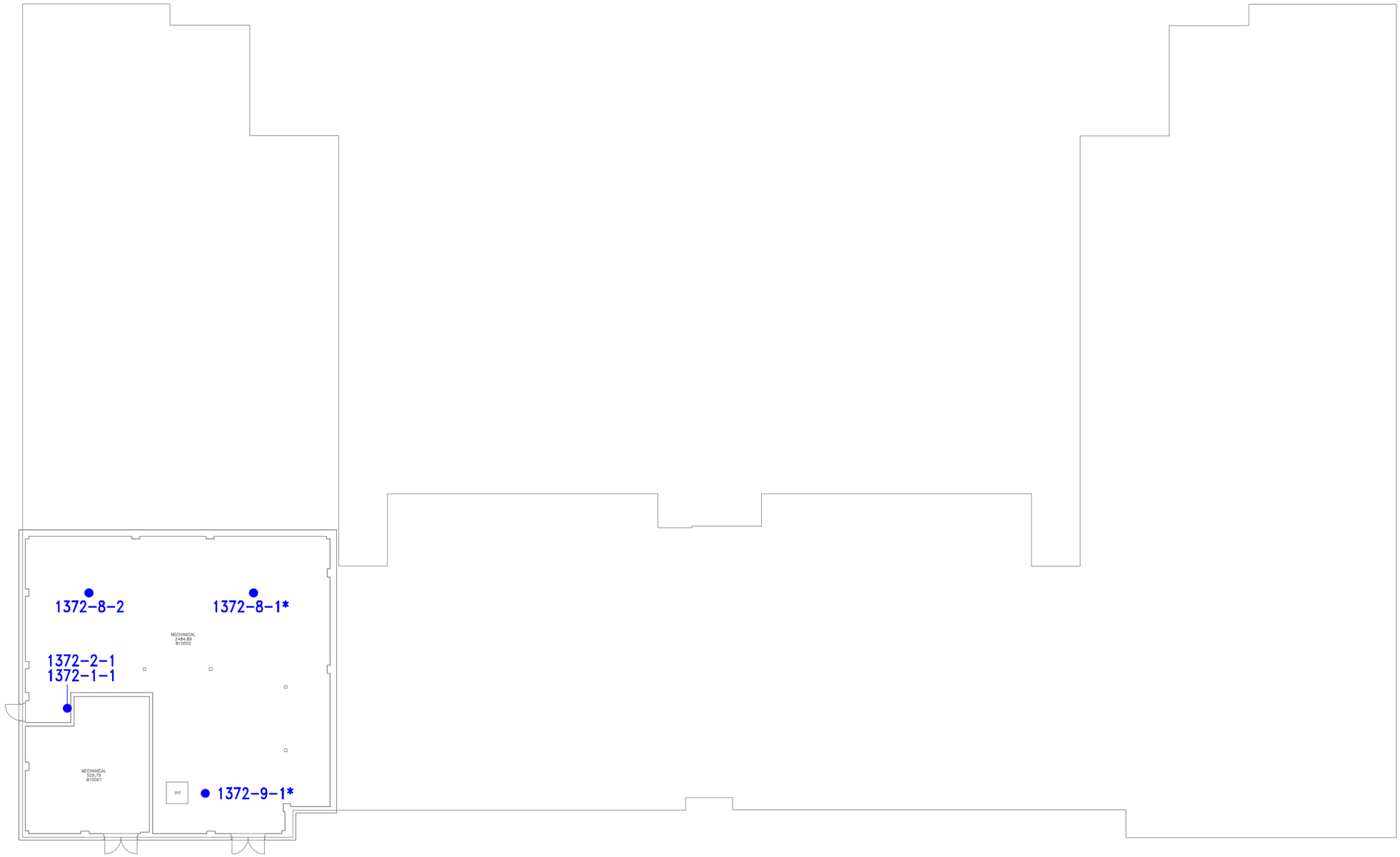
TABLE 1
SUMMARY OF ASBESTOS SURVEY
Building 1372 - Naval Academy Preparatory School (NAPS)
Bachelor Enlisted Quarters (BEQ)
Naval Station Newport
Newport, Newport County, Rhode Island

Homogeneous Area Sample ID	Material Description	Location	Approximate Amount Square Feet (SF) Linear Feet (LF)	Number of Samples Collected	% Asbestos Type	National Emission Standards for Hazardous Air Pollutants Category	Condition	Potential for Disturbance	
								Maintenance Personnel	Building Occupants
1372-7-1A*, 1372-7-2A, 1372-7-3A	Yellow/Orange Mastic Associated with 12"x12" VFT - White with Brown Specks	Room 1202	330 SF	3	ND *Verified by TEM	-	Good	-	-
1372-8-1*, 1372-8-2, 1372-8-3	Fiberglass Thermal System Insulation (TSI) Wrap Mastic - White	On Fiberglass-Insulated Piping in the Basement Mechanical Room and First Floor Mechanical Room 1105	150 SF	3	ND *Verified by TEM	-	Good	-	-
1372-9-1*, 1372-9-2, 1372-9-3	Heating, Ventilation, and Air Conditioning (HVAC) Duct Mastic - Gray	Throughout Basement and Portions of Plenum	200 SF	3	ND *Verified by TEM	-	Good	-	-
1372-10-1*, 1372-10-2, 1372-10-3	Caulk - Brown	Around Interior Windows	1,600 LF	3	ND *Verified by TEM	-	Good	-	-
1372-11-1*, 1372-11-2, 1372-11-3	Carpet Mastic - Yellow	Throughout Conference Rooms/Classrooms and Second and Third Floor Lobbies	2,300 SF	3	ND *Verified by TEM	-	Good	-	-
1372-12-1*, 1372-12-2, 1372-12-3	12"x12" VFT - Beige Mottled	Throughout Portions of Interior	37,900 SF	3	ND *Verified by TEM	-	Good	-	-
1372-12-1A*, 1372-12-2A, 1372-12-3A	Black Mastic Associated with 12"x12" VFT - Beige Mottled	Throughout Portions of Interior	37,900 SF	3	ND *Verified by TEM	-	Good	-	-
1372-13-1*, 1372-13-2, 1372-13-3	Orange Mastic Associated with Tread - Gray	Throughout Stairwells	780 SF	3	ND *Verified by TEM	-	Good	-	-
1372-14-1*, 1372-14-2, 1372-14-3	Beige Mastic Associated with Stair Tread - Gray	Throughout Stairwells	715 SF	3	ND *Verified by TEM	-	Good	-	-
1372-15-1*, 1372-15-2, 1372-15-3	Caulk - Beige	Around Exterior Windows	1,600 SF	3	ND *Verified by TEM	-	Fair	-	-
1372-16-1*, 1372-16-2, 1372-16-3	Caulk - Black	Around Interior and Exterior Doors and Expansion Joint	450 SF	3	ND *Verified by TEM	-	Fair	-	-

TABLE 1
SUMMARY OF ASBESTOS SURVEY
Building 1372 - Naval Academy Preparatory School (NAPS)
Bachelor Enlisted Quarters (BEQ)
Naval Station Newport
Newport, Newport County, Rhode Island

Homogeneous Area Sample ID	Material Description	Location	Approximate Amount Square Feet (SF) Linear Feet (LF)	Number of Samples Collected	% Asbestos Type	National Emission Standards for Hazardous Air Pollutants Category	Condition	Potential for Disturbance	
								Maintenance Personnel	Building Occupants
1372-17-1, 1372-17-2, 1372-17-3, 1372-17-4, 1372-17-5, 1372-17-6, 1372-17-7, 1372-17-8, 1372-17-9	Exterior Insulation Finish System (EIFS)	Portions of Exterior Walls	13,300 SF	9	ND	-	Good	-	-
1372-18	Gaskets	Throughout Mechanical Piping	84 Fittings	0	Assumed	Non-Friable Category (NF Cat.) I	Good	Medium	Low
1372-19	Fire Doors	Throughout Building	10 Doors	0	Assumed	NF Cat. II	Good	Medium	Low

FIGURES



LEGEND

- ● NEGATIVE ASBESTOS SAMPLE LOCATION
- ▲ POSITIVE ASBESTOS SAMPLE LOCATION
- ◆ <1% ASBESTOS SAMPLE LOCATION
- * VERIFIED BY TEM

BASEMENT

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0 20'

GENERAL NOTES

1. GASKETS (HA 1372-18) ARE ASSUMED TO CONTAIN ASBESTOS.

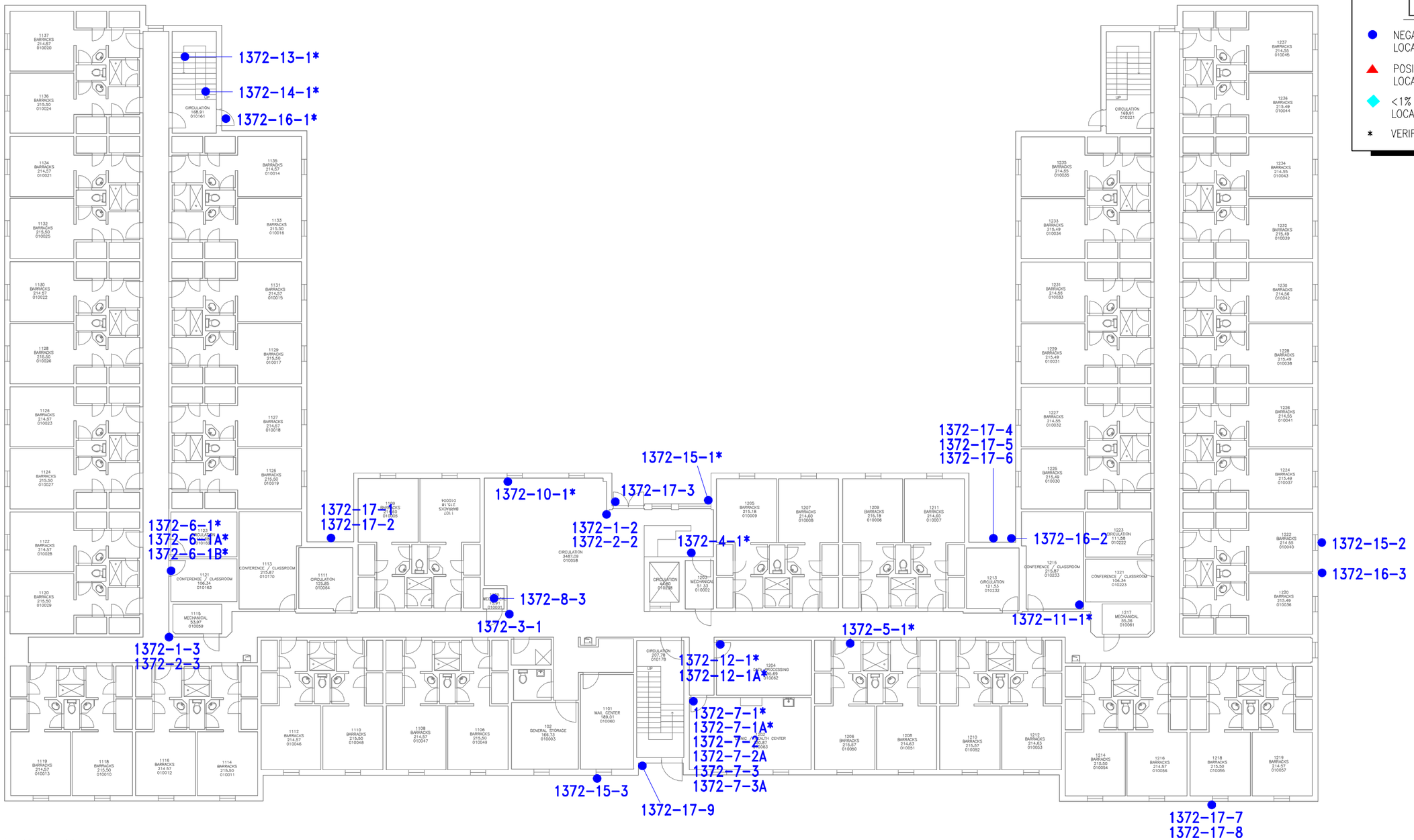
JOB: M3010.1567.0001.17

FIGURE 1. HOMOGENEOUS AREA SAMPLE LOCATIONS - BASEMENT

AerostarSES LLC

BUILDING 1372 - NAPS BEQ
NAVAL STATION NEWPORT
NEWPORT, NEWPORT COUNTY, RHODE ISLAND

SCALE: 1" = 20'-0"
DATE: JULY 2018
REVIEWED: M. ECKERT



LEGEND

- ● NEGATIVE ASBESTOS SAMPLE LOCATION
- ▲ POSITIVE ASBESTOS SAMPLE LOCATION
- ◆ <1% ASBESTOS SAMPLE LOCATION
- * VERIFIED BY TEM

GENERAL NOTES

1. FIRE DOORS (HA 1372-19) ARE ASSUMED TO CONTAIN ASBESTOS.

FIRST FLOOR

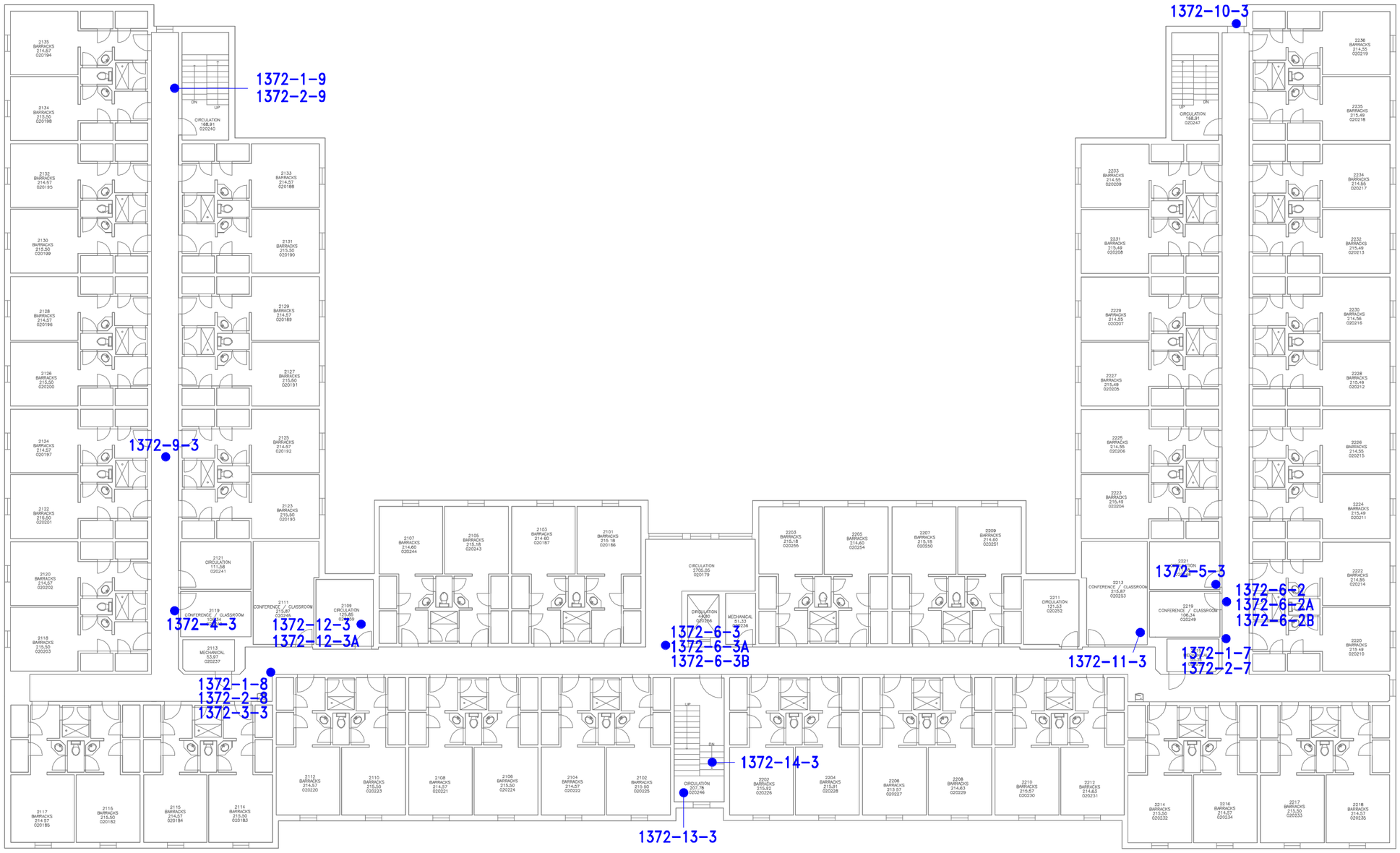
JOB: M3010.1567.0001.17

FIGURE 2. HOMOGENEOUS AREA SAMPLE LOCATIONS – FIRST FLOOR

AerostarSES LLC

BUILDING 1372 – NAPS BEQ
NAVAL STATION NEWPORT
NEWPORT, NEWPORT COUNTY, RHODE ISLAND

SCALE: 1" = 20'-0"
DATE: JULY 2018
REVIEWED: M. ECKERT



LEGEND

- ● NEGATIVE ASBESTOS SAMPLE LOCATION
- ▲ POSITIVE ASBESTOS SAMPLE LOCATION
- ◆ <1% ASBESTOS SAMPLE LOCATION
- * VERIFIED BY TEM

N
W E
S

0 20'

GENERAL NOTES

1. FIRE DOORS (HA 1372-19) ARE ASSUMED TO CONTAIN ASBESTOS.

SECOND FLOOR

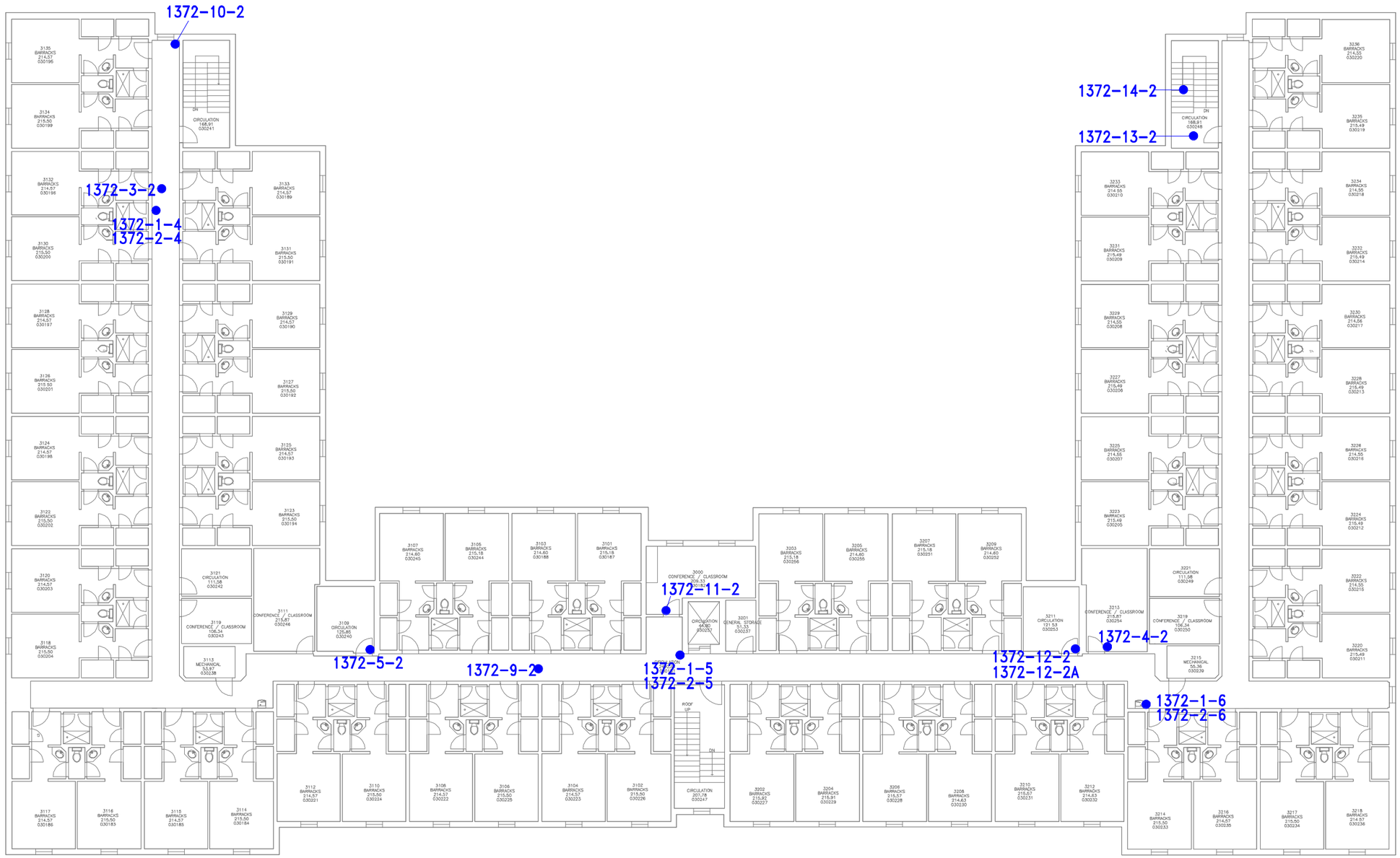
JOB: M3010.1567.0001.17

FIGURE 3. HOMOGENEOUS AREA SAMPLE LOCATIONS - SECOND FLOOR

AerostarSES LLC

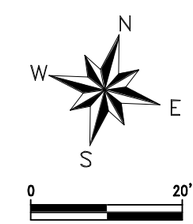
BUILDING 1372 - NAPS BEQ
NAVAL STATION NEWPORT
NEWPORT, NEWPORT COUNTY, RHODE ISLAND

SCALE: 1" = 20'-0"
DATE: JULY 2018
REVIEWED: M. ECKERT



LEGEND

- ● NEGATIVE ASBESTOS SAMPLE LOCATION
- ▲ POSITIVE ASBESTOS SAMPLE LOCATION
- ◆ <1% ASBESTOS SAMPLE LOCATION
- * VERIFIED BY TEM



GENERAL NOTES

1. FIRE DOORS (HA 1372-19) ARE ASSUMED TO CONTAIN ASBESTOS.

THIRD FLOOR

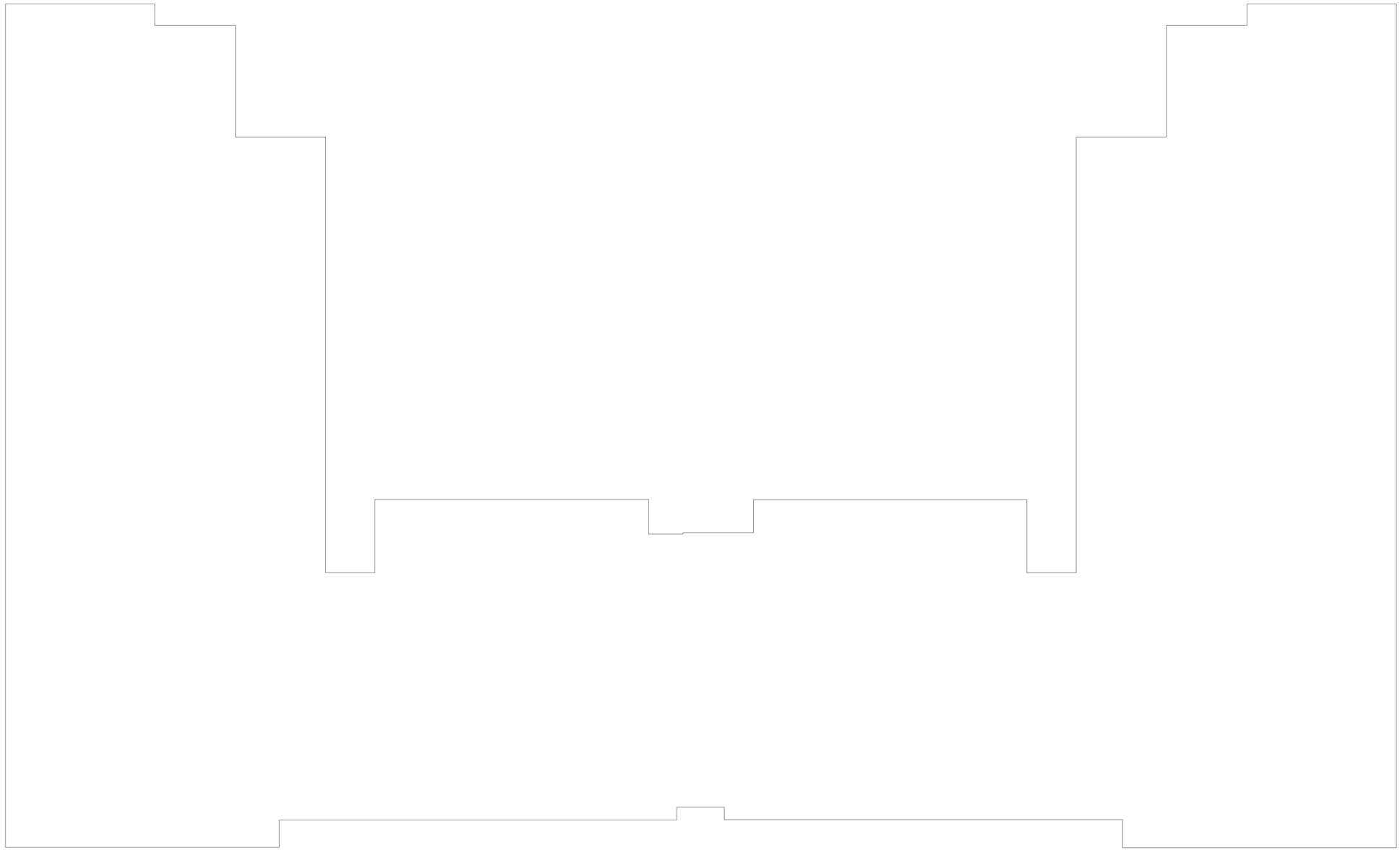
JOB: M3010.1567.0001.17

FIGURE 4. HOMOGENEOUS AREA SAMPLE LOCATIONS – THIRD FLOOR

AerostarSES LLC

BUILDING 1372 – NAPS BEQ
NAVAL STATION NEWPORT
NEWPORT, NEWPORT COUNTY, RHODE ISLAND

SCALE: 1" = 20'-0"
DATE: JULY 2018
REVIEWED: M. ECKERT



ROOF

LEGEND

- ● NEGATIVE ASBESTOS SAMPLE LOCATION
- ▲ POSITIVE ASBESTOS SAMPLE LOCATION
- ◆ <1% ASBESTOS SAMPLE LOCATION
- * VERIFIED BY TEM

N
W E
S

0 20'

GENERAL NOTES

1. BUILDING 1372 WAS CONSTRUCTED IN 2006. ROOFING MATERIALS ARE NOT SUSPECT AND NO SAMPLES WERE COLLECTED.

JOB: M3010.1567.0001.17

FIGURE 5. HOMOGENEOUS AREA SAMPLE LOCATIONS – ROOF

AerostarSES LLC

BUILDING 1372 – NAPS BEQ
NAVAL STATION NEWPORT
NEWPORT, NEWPORT COUNTY, RHODE ISLAND

SCALE: 1" = 20'-0"
DATE: JULY 2018
REVIEWED: M. ECKERT

BASEMENT

LEGEND

G GASKETS (HA 1372-18)

N
W
E
S

0 20'

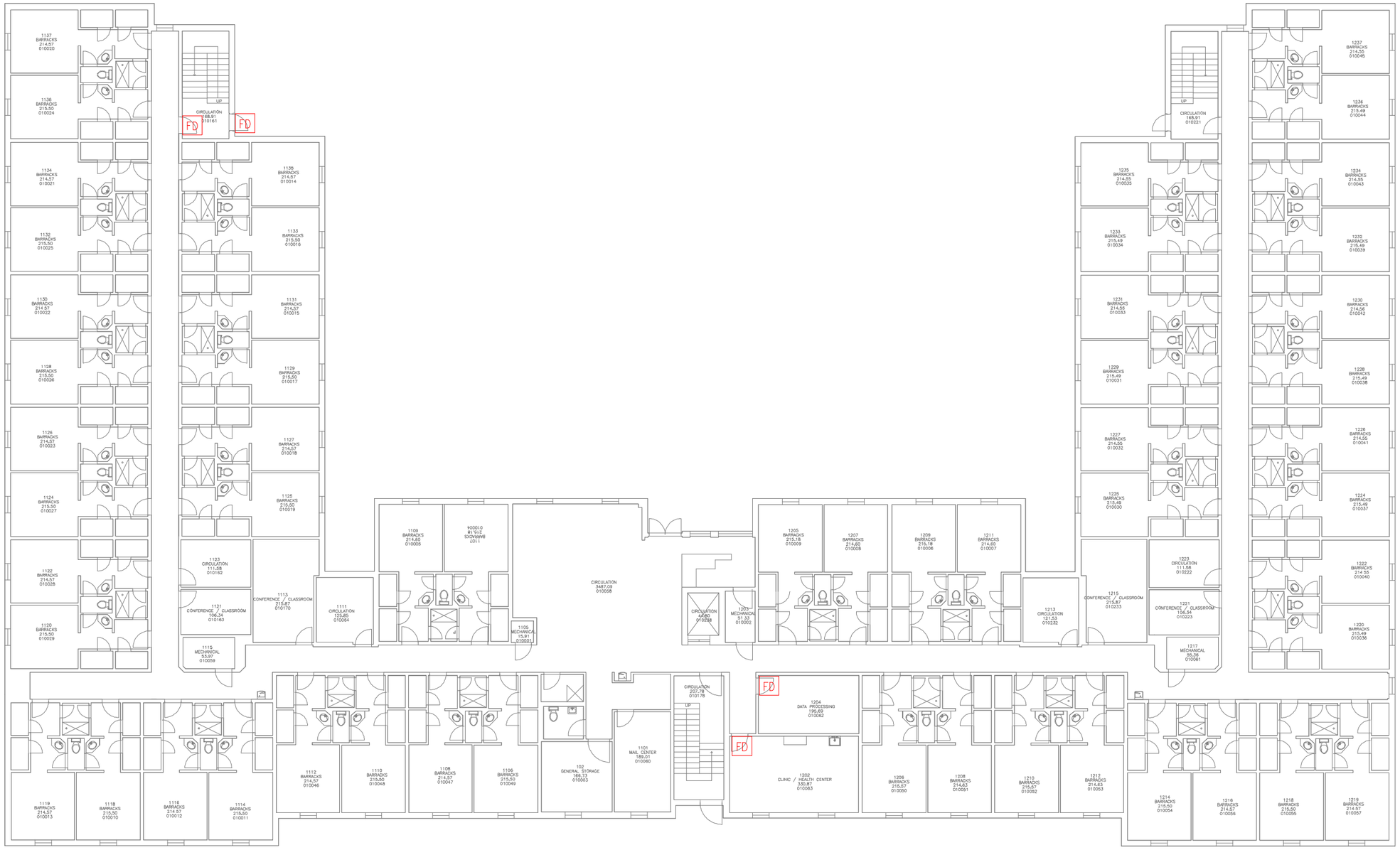
JOB: M3010.1567.0001.17

FIGURE 6. ASBESTOS-CONTAINING MATERIALS LOCATIONS - BASEMENT

AerostarSES LLC

BUILDING 1372 - NAPS BEQ
NAVAL STATION NEWPORT
NEWPORT, NEWPORT COUNTY, RHODE ISLAND

SCALE: 1" = 20'-0"
DATE: JULY 2018
REVIEWED: M. ECKERT



FIRST FLOOR

LEGEND

FD FIRE DOORS (HA 1372-19)

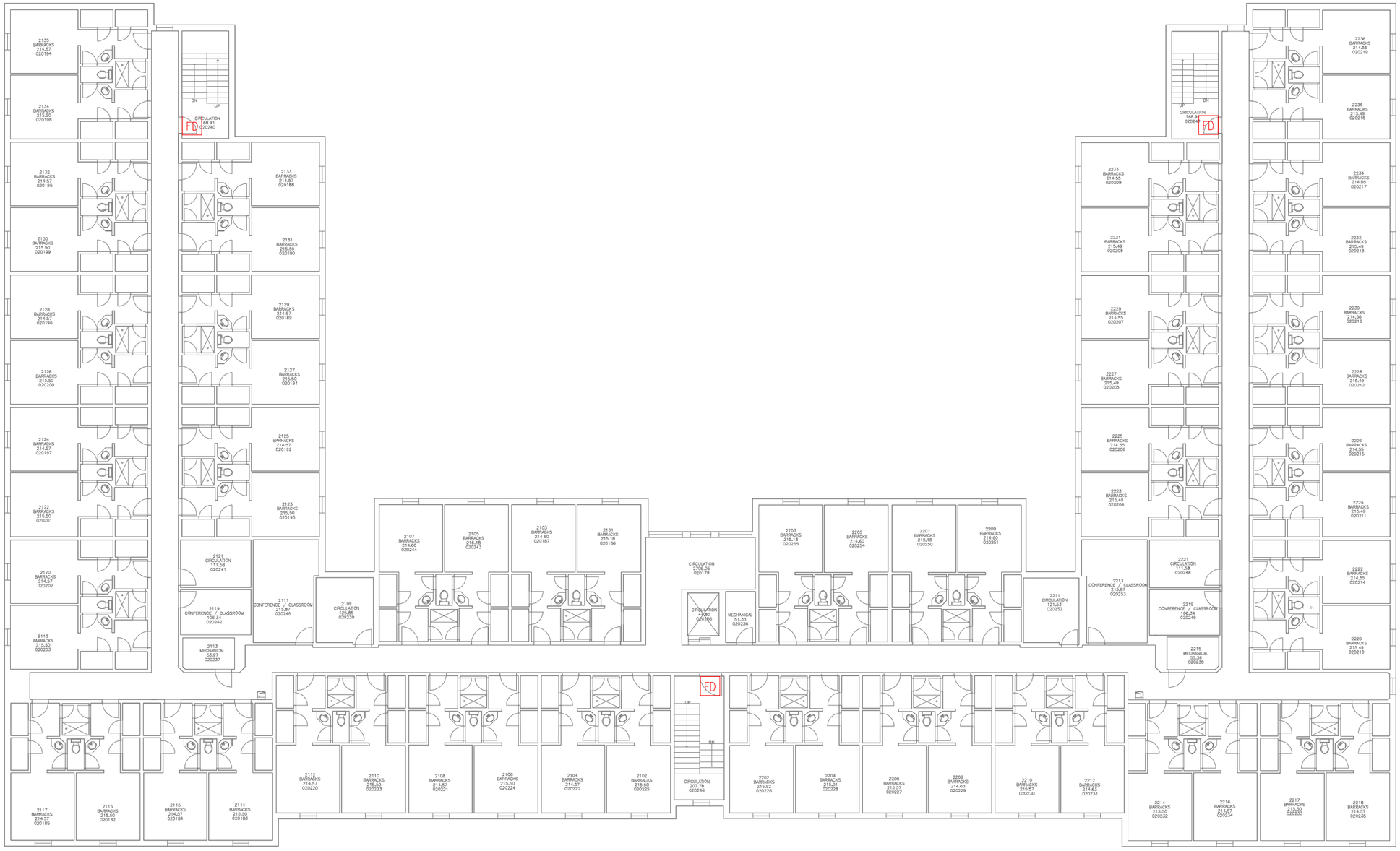
JOB: M3010.1567.0001.17

FIGURE 7. ASBESTOS-CONTAINING MATERIALS LOCATIONS - FIRST FLOOR

AerostarSES LLC

BUILDING 1372 - NAPS BEQ
NAVAL STATION NEWPORT
NEWPORT, NEWPORT COUNTY, RHODE ISLAND

SCALE: 1" = 20'-0"
DATE: JULY 2018
REVIEWED: M. ECKERT



SECOND FLOOR

LEGEND

FD FIRE DOORS (HA 1372-19)

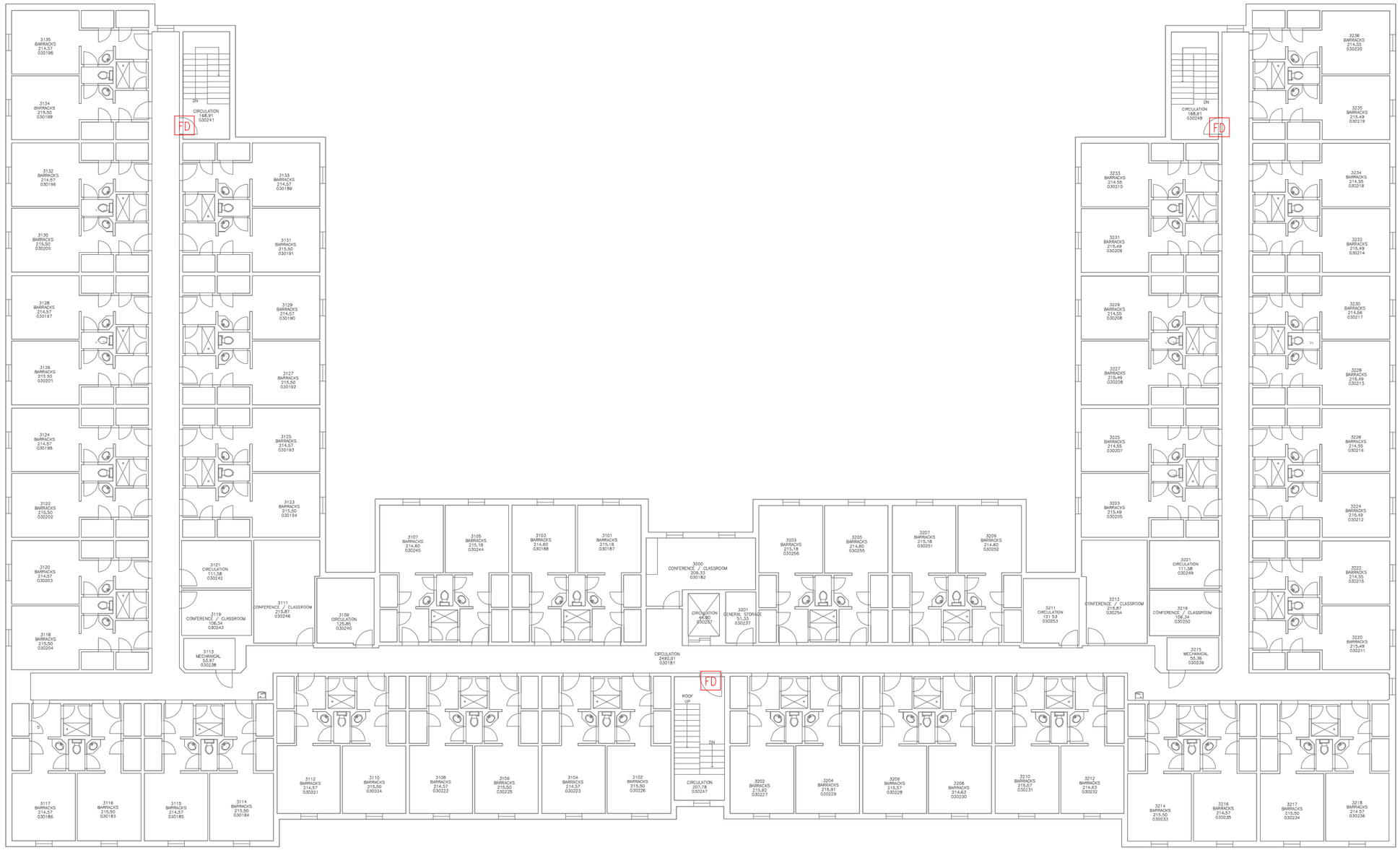
JOB: M3010.1567.0001.17

FIGURE 8. ASBESTOS-CONTAINING MATERIALS LOCATIONS - SECOND FLOOR

AerostarSES LLC

BUILDING 1372 - NAPS BEQ
NAVAL STATION NEWPORT
NEWPORT, NEWPORT COUNTY, RHODE ISLAND

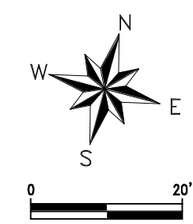
SCALE: 1" = 20'-0"
DATE: JULY 2018
REVIEWED: M. ECKERT



THIRD FLOOR

LEGEND

FD FIRE DOORS (HA 1372–19)



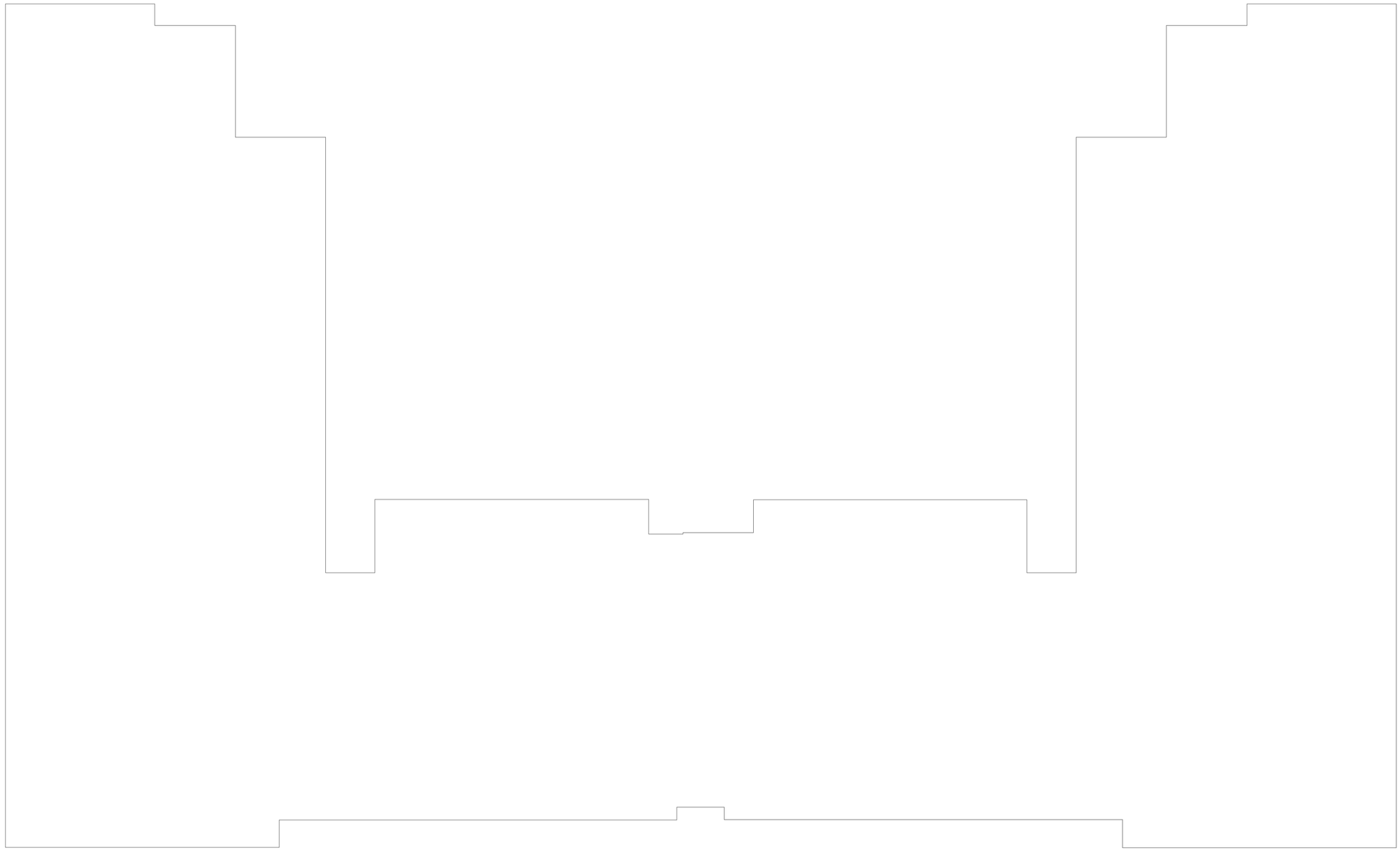
JOB: M3010.1567.0001.17

FIGURE 9. ASBESTOS–CONTAINING MATERIALS LOCATIONS – THIRD FLOOR

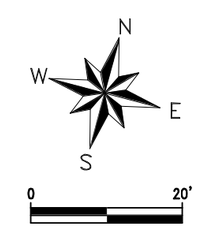
AerostarSES LLC

BUILDING 1372 – NAPS BEQ
NAVAL STATION NEWPORT
NEWPORT, NEWPORT COUNTY, RHODE ISLAND

SCALE: 1" = 20'–0"
DATE: AUGUST 2018
REVIEWED: M. ECKERT



ROOF



GENERAL NOTES

1. NO ASBESTOS-CONTAINING MATERIALS WERE IDENTIFIED THROUGHOUT THE ROOF.

JOB: M3010.1567.0001.17

FIGURE 10. ASBESTOS-CONTAINING MATERIALS LOCATIONS - ROOF

AerostarSES LLC

BUILDING 1372 - NAPS BEQ
NAVAL STATION NEWPORT
NEWPORT, NEWPORT COUNTY, RHODE ISLAND

SCALE: 1" = 20'-0"
DATE: AUGUST 2018
REVIEWED: M. ECKERT

APPENDIX A

CERTIFICATIONS

State of Rhode Island and Providence Plantations
DEPARTMENT OF HEALTH
HEALTHY ENVIRONMENT TEAM – ASBESTOS PROGRAM

CERTIFICATION

Pursuant to the Asbestos Abatement Act, Chapter 24.5 of Title 23 of the General Laws entitled "Health and Safety" as amended, and the Rules and Regulations for Asbestos Control, this Certificate is hereby issued as designated below. This Certificate is subject to all applicable rules, regulations, orders and notices of the Department of Health now or hereafter in effect and to any conditions specified below.

Certificate Holder: JOHN H HUBBARD, JR
Address: AEROSTAR SES LLC
11181 ST JOHNS INDUSTRIAL PKY N
JACKSONVILLE FL 32246

Certification Number: AAC-1001
Type of Certification: Asbestos Management Planner
Expiration Date: 02/08/2019

Except as specifically provided otherwise in this Certificate, Certificate holders shall conduct their program in accordance with statements, procedures and representations contained in the documents, including any enclosures, listed below. The Rhode Island Rules and Regulations for Asbestos Control shall govern unless the statements, representations and procedures in the Certificate Holder's application and correspondence are more restrictive than the regulations.

Raquel Barrera

Raquel Barrera
Sr. Community Program Liaison Worker
Healthy Homes and Environment

State of Rhode Island and Providence Plantations
DEPARTMENT OF HEALTH
HEALTHY ENVIRONMENT TEAM – ASBESTOS PROGRAM

CERTIFICATION

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Certificate Holder: JOHN H HUBBARD, JR
Address: AEROSTAR SES LLC
11181 ST JOHNS INDUSTRIAL PKY N
JACKSONVILLE FL 32246

Certification Number: AAC-1001
Type of Certification: Asbestos Inspector
Expiration Date: 02/08/2019

Except as specifically provided otherwise in this Certificate, Certificate holders shall conduct their program in accordance with statements, procedures and representations contained in the documents, including any enclosures, listed below. The Rhode Island Rules and Regulations for Asbestos Control shall govern unless the statements, representations and procedures in the Certificate Holder's application and correspondence are more restrictive than the regulations.

Raquel Barrera

Raquel Barrera
Sr. Community Program Liaison Worker
Healthy Homes and Environment

State of Rhode Island and Providence Plantations
DEPARTMENT OF HEALTH
HEALTHY ENVIRONMENT TEAM – ASBESTOS PROGRAM

CERTIFICATION

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Certificate Holder: JOHN H HUBBARD, JR
Address: AEROSTAR SES LLC
11181 ST JOHNS INDUSTRIAL PKY N
JACKSONVILLE FL 32246

Certification Number: AAC-1001
Type of Certification: Asbestos Project Designer
Expiration Date: 02/08/2019

Except as specifically provided otherwise in this Certificate, Certificate holders shall conduct their program in accordance with statements, procedures and representations contained in the documents, including any enclosures, listed below. The Rhode Island Rules and Regulations for Asbestos Control shall govern unless the statements, representations and procedures in the Certificate Holder's application and correspondence are more restrictive than the regulations.

Raquel Barrera

Raquel Barrera
Sr. Community Program Liaison Worker
Healthy Homes and Environment

State of Rhode Island and Providence Plantations
DEPARTMENT OF HEALTH
HEALTHY ENVIRONMENT TEAM – ASBESTOS PROGRAM

CERTIFICATION

Pursuant to the Asbestos Abatement Act, Chapter 24.5 of Title 23 of the General Laws entitled "Health and Safety" as amended, and the Rules and Regulations for Asbestos Control, this Certificate is hereby issued as designated below. This Certificate is subject to all applicable rules, regulations, orders and notices of the Department of Health now or hereafter in effect and to any conditions specified below.

Certificate Holder: MILES J ECKERT
Address: AEROSTAR SES LLC
11181 ST JOHNS INDUSTRIAL PKY N
JACKSONVILLE FL 32246

Certification Number: AAC-1004
Type of Certification: Asbestos Inspector
Expiration Date: 02/08/2019

Except as specifically provided otherwise in this Certificate, Certificate holders shall conduct their program in accordance with statements, procedures and representations contained in the documents, including any enclosures, listed below. The Rhode Island Rules and Regulations for Asbestos Control shall govern unless the statements, representations and procedures in the Certificate Holder's application and correspondence are more restrictive than the regulations.

Raquel Barrera

Raquel Barrera
Sr. Community Program Liaison Worker
Healthy Homes and Environment

State of Rhode Island and Providence Plantations
DEPARTMENT OF HEALTH
HEALTHY ENVIRONMENT TEAM – ASBESTOS PROGRAM

CERTIFICATION

Pursuant to the Asbestos Abatement Act, Chapter 24.5 of Title 23 of the General Laws entitled "Health and Safety" as amended, and the Rules and Regulations for Asbestos Control, this Certificate is hereby issued as designated below. This Certificate is subject to all applicable rules, regulations, orders and notices of the Department of Health now or hereafter in effect and to any conditions specified below.

Certificate Holder: DYLAN HALES
Address: AEROSTAR
3749 N CAUSWAY BLVD STE A
METAIRIE LA 70002

Certification Number: AAC-1032
Type of Certification: Asbestos Inspector
Expiration Date: 11/08/2018

Except as specifically provided otherwise in this Certificate, Certificate holders shall conduct their program in accordance with statements, procedures and representations contained in the documents, including any enclosures, listed below. The Rhode Island Rules and Regulations for Asbestos Control shall govern unless the statements, representations and procedures in the Certificate Holder's application and correspondence are more restrictive than the regulations.

Raquel Barrera

Raquel Barrera
Sr. Community Program Liaison Worker
Healthy Homes and Environment

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101048-0

EMSL Analytical, Inc.

Cinnaminson, NJ

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2018-07-01 through 2019-06-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Mr. Ben Ellis
Phone: 800-220-3675 Fax: 856-786-5973
Email: bellis@emsl.com
http://www.emsl.com

ASBESTOS FIBER ANALYSIS — NVLAP LAB CODE 101048-0

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code	*Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

APPENDIX B

LABORATORY ANALYTICAL RESULTS

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	041821238
Customer ID:	AERO54
Customer PO:	M3010.1567
Project ID:	

Attn:	Miles Eckert Aerostar SES LLC 11181 St. Johns Industrial Parkway North Jacksonville, FL 32246	Phone: Fax: Collected: Received: Analyzed:	(904) 565-2820 (904) 565-2830 7/11/2018 7/16/2018 7/23/2018
Proj:	M3010.1567.0001.17 / Bldg. 1372		

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 1372-1-1 ***Lab Sample ID:*** **041821238-0001**
Sample Description: Gypsum Wallboard

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Brown/White	20%	80%	None Detected	

Client Sample ID: 1372-1-2 ***Lab Sample ID:*** **041821238-0002**
Sample Description: Gypsum Wallboard

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Brown/White	15%	85%	None Detected	

Client Sample ID: 1372-1-3 ***Lab Sample ID:*** **041821238-0003**
Sample Description: Gypsum Wallboard

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Brown/White	15%	85%	None Detected	

Client Sample ID: 1372-1-4 ***Lab Sample ID:*** **041821238-0004**
Sample Description: Gypsum Wallboard

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Brown/White	20%	80%	None Detected	

Client Sample ID: 1372-1-5 ***Lab Sample ID:*** **041821238-0005**
Sample Description: Gypsum Wallboard

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Brown/White	15%	85%	None Detected	

Client Sample ID: 1372-1-6 ***Lab Sample ID:*** **041821238-0006**
Sample Description: Gypsum Wallboard

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Brown/White	20%	80%	None Detected	

Client Sample ID: 1372-1-7 ***Lab Sample ID:*** **041821238-0007**
Sample Description: Gypsum Wallboard

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Brown/White	20%	80%	None Detected	

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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	041821238
Customer ID:	AERO54
Customer PO:	M3010.1567
Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 1372-1-8 ***Lab Sample ID:*** **041821238-0008**
Sample Description: Gypsum Wallboard

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Brown/White	20%	80%	None Detected	

Client Sample ID: 1372-1-9 ***Lab Sample ID:*** **041821238-0009**
Sample Description: Gypsum Wallboard

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Brown/White	20%	80%	None Detected	

Client Sample ID: 1372-2-1 ***Lab Sample ID:*** **041821238-0010**
Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	White	0%	100%	None Detected	

Client Sample ID: 1372-2-2 ***Lab Sample ID:*** **041821238-0011**
Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	White	0%	100%	None Detected	

Client Sample ID: 1372-2-3 ***Lab Sample ID:*** **041821238-0012**
Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	White	0%	100%	None Detected	

Client Sample ID: 1372-2-4 ***Lab Sample ID:*** **041821238-0013**
Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	White	0%	100%	None Detected	

Client Sample ID: 1372-2-5 ***Lab Sample ID:*** **041821238-0014**
Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	White	0%	100%	None Detected	

Client Sample ID: 1372-2-6 ***Lab Sample ID:*** **041821238-0015**
Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	White	0%	100%	None Detected	

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EMSL Order ID:	041821238
Customer ID:	AERO54
Customer PO:	M3010.1567
Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 1372-2-7 ***Lab Sample ID:*** **041821238-0016**

Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	White	0%	100%	None Detected	

Client Sample ID: 1372-2-8 ***Lab Sample ID:*** **041821238-0017**

Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	White	0%	100%	None Detected	

Client Sample ID: 1372-2-9 ***Lab Sample ID:*** **041821238-0018**

Sample Description: Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	White	0%	100%	None Detected	

Client Sample ID: 1372-3-1 ***Lab Sample ID:*** **041821238-0019**

Sample Description: 2'x2' ACT - F/PH

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	White	80%	20%	None Detected	

Client Sample ID: 1372-3-2 ***Lab Sample ID:*** **041821238-0020**

Sample Description: 2'x2' ACT - F/PH

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	White	80%	20%	None Detected	

Client Sample ID: 1372-3-3 ***Lab Sample ID:*** **041821238-0021**

Sample Description: 2'x2' ACT - F/PH

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	White	90%	10%	None Detected	

Client Sample ID: 1372-4-1 ***Lab Sample ID:*** **041821238-0022**

Sample Description: 4"Navy Blue Cove Base Mastic - Yellow

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Yellow	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Yellow	0.0%	100%	None Detected	

Client Sample ID: 1372-4-2 ***Lab Sample ID:*** **041821238-0023**

Sample Description: 4"Navy Blue Cove Base Mastic - Yellow

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Yellow	0%	100%	None Detected	

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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	041821238
Customer ID:	AERO54
Customer PO:	M3010.1567
Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 1372-4-3 ***Lab Sample ID:*** **041821238-0024**

Sample Description: 4"Navy Blue Cove Base Mastic - Yellow

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Yellow	0%	100%	None Detected	

Client Sample ID: 1372-5-1 ***Lab Sample ID:*** **041821238-0025**

Sample Description: 4" Brown Cove Base Mastic - Yellow

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Yellow	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Yellow	0.0%	100%	None Detected	

Client Sample ID: 1372-5-2 ***Lab Sample ID:*** **041821238-0026**

Sample Description: 4" Brown Cove Base Mastic - Yellow

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Yellow	0%	100%	None Detected	

Client Sample ID: 1372-5-3 ***Lab Sample ID:*** **041821238-0027**

Sample Description: 4" Brown Cove Base Mastic - Yellow

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Yellow	0%	100%	None Detected	

Client Sample ID: 1372-6-1 ***Lab Sample ID:*** **041821238-0028**

Sample Description: 12" x 12" VFT - Beige Speckled

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Beige	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Beige	0.0%	100%	None Detected	

Client Sample ID: 1372-6-1A ***Lab Sample ID:*** **041821238-0028A**

Sample Description: Mastic - Yellow - Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Yellow	15%	85%	None Detected	
TEM Grav. Reduction	7/23/2018	Yellow	0.0%	100%	None Detected	

Client Sample ID: 1372-6-1B ***Lab Sample ID:*** **041821238-0028B**

Sample Description: Mastic - Black - Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Black	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Black	0.0%	100%	None Detected	

Client Sample ID: 1372-6-2 ***Lab Sample ID:*** **041821238-0029**

Sample Description: 12" x 12" VFT - Beige Speckled

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Beige	0%	100%	None Detected	

EMSL Analytical, Inc.

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EMSL Order ID:	041821238
Customer ID:	AERO54
Customer PO:	M3010.1567
Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 1372-6-2A ***Lab Sample ID:*** **041821238-0029A**

Sample Description: Mastic - Yellow - Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Yellow	15%	85%	None Detected	

Client Sample ID: 1372-6-2B ***Lab Sample ID:*** **041821238-0029B**

Sample Description: Mastic - Black - Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Black	0%	100%	None Detected	

Client Sample ID: 1372-6-3 ***Lab Sample ID:*** **041821238-0030**

Sample Description: 12" x 12" VFT - Beige Speckled

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Beige	0%	100%	None Detected	

Client Sample ID: 1372-6-3A ***Lab Sample ID:*** **041821238-0030A**

Sample Description: Mastic - Yellow - Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Yellow	0%	100%	None Detected	

Client Sample ID: 1372-6-3B ***Lab Sample ID:*** **041821238-0030B**

Sample Description: Mastic - Black - Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Black	0%	100%	None Detected	

Client Sample ID: 1372-7-1 ***Lab Sample ID:*** **041821238-0031**

Sample Description: 12" x 12" VFT - White w/Brown Specks

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	White	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	White	0.0%	100%	None Detected	

Client Sample ID: 1372-7-1A ***Lab Sample ID:*** **041821238-0031A**

Sample Description: Mastic - Yellow / Orange - Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Yellow/Orange	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Yellow/Orange	0.0%	100%	None Detected	

Client Sample ID: 1372-7-2 ***Lab Sample ID:*** **041821238-0032**

Sample Description: 12" x 12" VFT - White w/Brown Specks

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	White	0%	100%	None Detected	

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Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 1372-7-2A ***Lab Sample ID:*** **041821238-0032A**

Sample Description: Mastic - Yellow / Orange

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Yellow/Orange	0%	100%	None Detected	

Client Sample ID: 1372-7-3 ***Lab Sample ID:*** **041821238-0033**

Sample Description: 12" x 12" VFT - White w/Brown Specks

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	White	0%	100%	None Detected	

Client Sample ID: 1372-7-3A ***Lab Sample ID:*** **041821238-0033A**

Sample Description: Mastic - Yellow / Orange

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Yellow/Orange	0%	100%	None Detected	

Client Sample ID: 1372-8-1 ***Lab Sample ID:*** **041821238-0034**

Sample Description: Fiberglass TSI Wrap Mastic - White

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	White	16%	84%	None Detected	
TEM Grav. Reduction	7/23/2018	White	0.0%	100%	None Detected	

Client Sample ID: 1372-8-2 ***Lab Sample ID:*** **041821238-0035**

Sample Description: Fiberglass TSI Wrap Mastic - White

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	White	15%	85%	None Detected	

Client Sample ID: 1372-8-3 ***Lab Sample ID:*** **041821238-0036**

Sample Description: Fiberglass TSI Wrap Mastic - White

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	White	10%	90%	None Detected	

Client Sample ID: 1372-9-1 ***Lab Sample ID:*** **041821238-0037**

Sample Description: HVAC Duct Mastic - Gray

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Gray	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Gray	0.0%	100%	None Detected	

Client Sample ID: 1372-9-2 ***Lab Sample ID:*** **041821238-0038**

Sample Description: HVAC Duct Mastic - Gray

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Gray	0%	100%	None Detected	

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Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 1372-9-3 ***Lab Sample ID:*** **041821238-0039**

Sample Description: HVAC Duct Mastic - Gray

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Gray	0%	100%	None Detected	

Client Sample ID: 1372-10-1 ***Lab Sample ID:*** **041821238-0040**

Sample Description: Caulk - Brown

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Brown	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Brown	0.0%	100%	None Detected	

Client Sample ID: 1372-10-2 ***Lab Sample ID:*** **041821238-0041**

Sample Description: Caulk - Brown

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Brown	0%	100%	None Detected	

Client Sample ID: 1372-10-3 ***Lab Sample ID:*** **041821238-0042**

Sample Description: Caulk - Brown

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Brown	0%	100%	None Detected	

Client Sample ID: 1372-11-1 ***Lab Sample ID:*** **041821238-0043**

Sample Description: Carpet Mastic - Yellow

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Yellow	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Yellow	0.0%	100%	None Detected	

Client Sample ID: 1372-11-2 ***Lab Sample ID:*** **041821238-0044**

Sample Description: Carpet Mastic - Yellow

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/19/2018	Yellow	0%	100%	None Detected	

Client Sample ID: 1372-11-3 ***Lab Sample ID:*** **041821238-0045**

Sample Description: Carpet Mastic - Yellow

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Yellow	0%	100%	None Detected	

Client Sample ID: 1372-12-1 ***Lab Sample ID:*** **041821238-0046**

Sample Description: 12"x12" VFT - Beige Mottled

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Beige	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Beige	0.0%	100%	None Detected	

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Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 1372-12-1A ***Lab Sample ID:*** **041821238-0046A**

Sample Description: Mastic - Black - Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Black	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Black	0.0%	100%	None Detected	

Client Sample ID: 1372-12-2 ***Lab Sample ID:*** **041821238-0047**

Sample Description: 12"x12" VFT - Beige Mottled

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Beige	0%	100%	None Detected	

Client Sample ID: 1372-12-2A ***Lab Sample ID:*** **041821238-0047A**

Sample Description: Mastic - Black - Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Black	0%	100%	None Detected	

Client Sample ID: 1372-12-3 ***Lab Sample ID:*** **041821238-0048**

Sample Description: 12"x12" VFT - Beige Mottled

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Beige	0%	100%	None Detected	

Client Sample ID: 1372-12-3A ***Lab Sample ID:*** **041821238-0048A**

Sample Description: Mastic - Black - Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Black	0%	100%	None Detected	

Client Sample ID: 1372-13-1 ***Lab Sample ID:*** **041821238-0049**

Sample Description: Tread Mastic - Orange

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Orange	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Orange	0.0%	100%	None Detected	

Client Sample ID: 1372-13-2 ***Lab Sample ID:*** **041821238-0050**

Sample Description: Tread Mastic - Orange

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Orange	0%	100%	None Detected	

Client Sample ID: 1372-13-3 ***Lab Sample ID:*** **041821238-0051**

Sample Description: Tread Mastic - Orange

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Orange	0%	100%	None Detected	

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Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 1372-14-1 ***Lab Sample ID:*** **041821238-0052**

Sample Description: Stair Tread Mastic - Beige

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Beige	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Beige	0.0%	100%	None Detected	

Client Sample ID: 1372-14-2 ***Lab Sample ID:*** **041821238-0053**

Sample Description: Stair Tread Mastic - Beige

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Beige	0%	100%	None Detected	

Client Sample ID: 1372-14-3 ***Lab Sample ID:*** **041821238-0054**

Sample Description: Stair Tread Mastic - Beige

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Beige	0%	100%	None Detected	

Client Sample ID: 1372-15-1 ***Lab Sample ID:*** **041821238-0055**

Sample Description: Caulk - Beige

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Beige	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Beige	0.0%	100%	None Detected	

Client Sample ID: 1372-15-2 ***Lab Sample ID:*** **041821238-0056**

Sample Description: Caulk - Beige

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Beige	0%	100%	None Detected	

Client Sample ID: 1372-15-3 ***Lab Sample ID:*** **041821238-0057**

Sample Description: Caulk - Beige

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Beige	0%	100%	None Detected	

Client Sample ID: 1372-16-1 ***Lab Sample ID:*** **041821238-0058**

Sample Description: Caulk - Black

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Black	0%	100%	None Detected	
TEM Grav. Reduction	7/23/2018	Black	0.0%	100%	None Detected	

Client Sample ID: 1372-16-2 ***Lab Sample ID:*** **041821238-0059**

Sample Description: Caulk - Black

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Black	0%	100%	None Detected	

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Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 1372-16-3 ***Lab Sample ID:*** **041821238-0060**
Sample Description: Caulk - Black

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Black	0%	100%	None Detected	

Client Sample ID: 1372-17-1 ***Lab Sample ID:*** **041821238-0061**
Sample Description: EIFS

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Gray/Tan/Blue	20%	80%	None Detected	

Client Sample ID: 1372-17-2 ***Lab Sample ID:*** **041821238-0062**
Sample Description: EIFS

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Gray/Tan/Blue	20%	80%	None Detected	

Client Sample ID: 1372-17-3 ***Lab Sample ID:*** **041821238-0063**
Sample Description: EIFS

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Gray/Tan/Blue	20%	80%	None Detected	

Client Sample ID: 1372-17-4 ***Lab Sample ID:*** **041821238-0064**
Sample Description: EIFS

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Gray/Tan/Blue	20%	80%	None Detected	

Client Sample ID: 1372-17-5 ***Lab Sample ID:*** **041821238-0065**
Sample Description: EIFS

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Gray/Tan/Blue	20%	80%	None Detected	

Client Sample ID: 1372-17-6 ***Lab Sample ID:*** **041821238-0066**
Sample Description: EIFS

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Gray/Tan/Blue	15%	85%	None Detected	

Client Sample ID: 1372-17-7 ***Lab Sample ID:*** **041821238-0067**
Sample Description: EIFS

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Gray/Tan/Blue	15%	85%	None Detected	

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Customer ID:	AERO54
Customer PO:	M3010.1567
Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 1372-17-8 ***Lab Sample ID:*** **041821238-0068**

Sample Description: EIFS

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Gray/Tan/Blue	10%	90%	None Detected	

Client Sample ID: 1372-17-9 ***Lab Sample ID:*** **041821238-0069**

Sample Description: EIFS

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	7/20/2018	Gray/Tan/Blue	15%	85%	None Detected	

Analyst(s):

Christina Maiorana	PLM (7)
Gregory Barry	PLM (46)
Jonathan Blanfort	PLM (12)
Seri Smith	PLM (16)
Wayne Froehlich	TEM Grav. Reduction (17)

Reviewed and approved by:

Benjamin Ellis, Laboratory Manager
or Other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036

Initial report from: 07/23/201822:32:25

OrderID: 041821238

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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 041821238

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RECEIVED EMSL CINNAMINSON, NJ 18 JUL 18 AM 9:57

Company: Aerostar SES LLC	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to Is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 11181 St. Johns Industrial Parkway N.	
City: Jacksonville **State/Province:** FL	**Zip/Postal Code:** 32246 **Country:** US
Report To (Name): Miles Eckert	**Telephone #:** (904) 565-2820
Email Address: meckert@aerostar.net	**Fax #:** (904) 565-2830 **Purchase Order:** M3010.1567
Project Name/Number: M3010.1567.0001.17 Bldg. 1372	**Please Provide Results:** ☐ Fax ✓ Email ☐ Mail
U.S. State Samples Taken: RI	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PLM - Bulk (reporting limit)	TEM – Bulk
☒ PLM EPA 600/R-93/116 (<1%)	☒ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 7/11/18

Samplers Name: Miles Eckert **Samplers Signature:** [signature]

Sample #	HA #	Sample Location	Material Description
1372-1-1→9	1		Gypsum Wallboard
1372-2-1→9	2		Joint Compound
1372-3-1→3	3		2'x2' ACT - F/PH
1372-4-1→3	4		4" Navy Blue Cove Base Mastic - Yellow
1372-5-1→3	5		4" Brown Cove Base Mastic - Yellow
1372-6-1→3	6	ME	12"x12" VFT - Beige Speckled
1372-7-1→3	7		12"x12" VFT - White w/ Brown Specks
1372-8-1→3	8		Fiberglass TSI Wrap Mastic - White
1372-9-1→3	9		HVAC Duct Mastic - Gray
1372-10-1→3	10		Caulk - Brown

Client Sample # (s): 1372-1-1 - 1372-17-9 **Total # of Samples:** 69

Relinquished (Client): [signature] **Date:** 7/13/18 **Time:** 1800

Received (Lab): [signature] **Date:** 7-16-18 **Time:** 8:50am

Comments/Special Instructions:
cc: jhubbard@aerostar.net Please run TEM EPA NOB on one sample per each HA if PLM results shows None Detect, 1%, or <1% asbestos.

OrderID: 041821238

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Asbestos Bulk Building Material Chain of Custody

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Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
1372-11-1→3	11		Carpet Mastic - Yellow
1372-12-1→3	12		12"x12" VFT - Beige Mottled
1372-13-1→3	13		Tread Mastic - Orange
1372-14-1→3	14	MF	Stair Tread Mastic - Beige
1372-15-1→3	15		Caulk - Beige
1372-16-1→3	16		Caulk - Black
1372-17-1→9	17		EIFS

RECEIVED
EMSL
CINNAMINSON, NJ
18 JUL 16 AM 9:57

***Comments/Special Instructions:**
cc: jhubbard@aerostar.net Please run TEM EPA NOB on one sample per each HA if PLM results shows None Detect, 1%, or <1% asbestos.

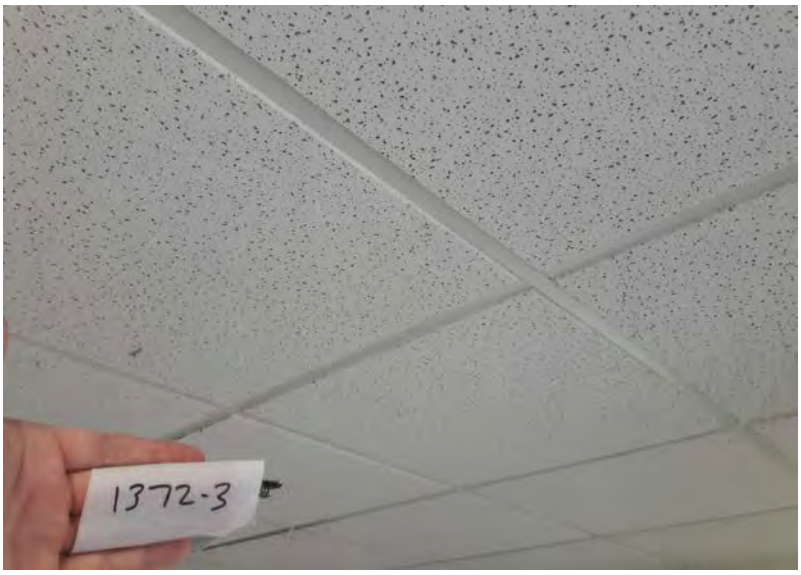
Page 2 of 2 pages

APPENDIX C

PHOTOGRAPHIC DOCUMENTATION

1) General view of Building 1372 - Naval Academy Preparatory School (NAPS) Bachelor Enlisted Quarters (BEQ), located at Naval Station Newport, Newport, Newport County, Rhode Island.

2) View of gypsum wallboard (Homogeneous Area [HA] 1372-1) and joint compound (HA 1372-2), located throughout portions of the interior of Building 1372. No asbestos was detected.

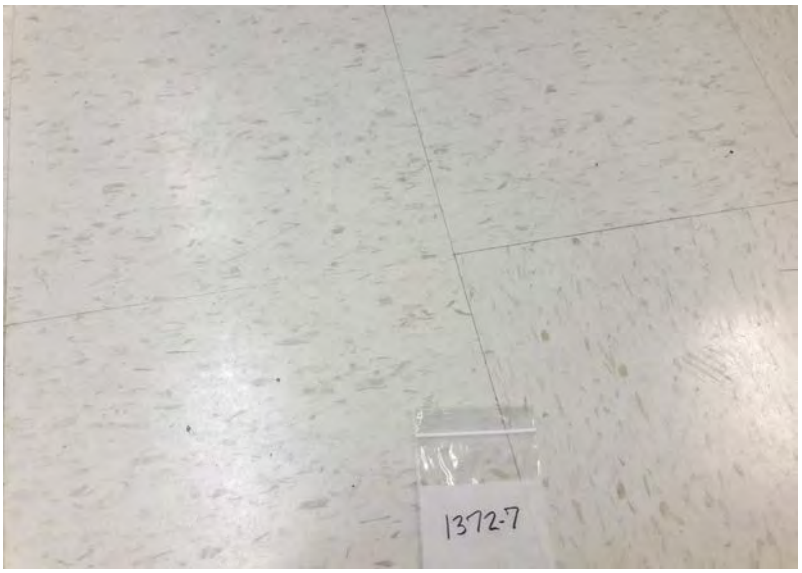


3) View of 2'x2' Acoustic Ceiling Tile (ACT) - fissures/pinholes (HA 1372-3), located throughout portions of the interior of Building 1372. No asbestos was detected.

4) View of yellow mastic associated with 4" cove base - navy blue (HA 1372-4), located throughout the hallways and portions of the interior of Building 1372. No asbestos was detected.

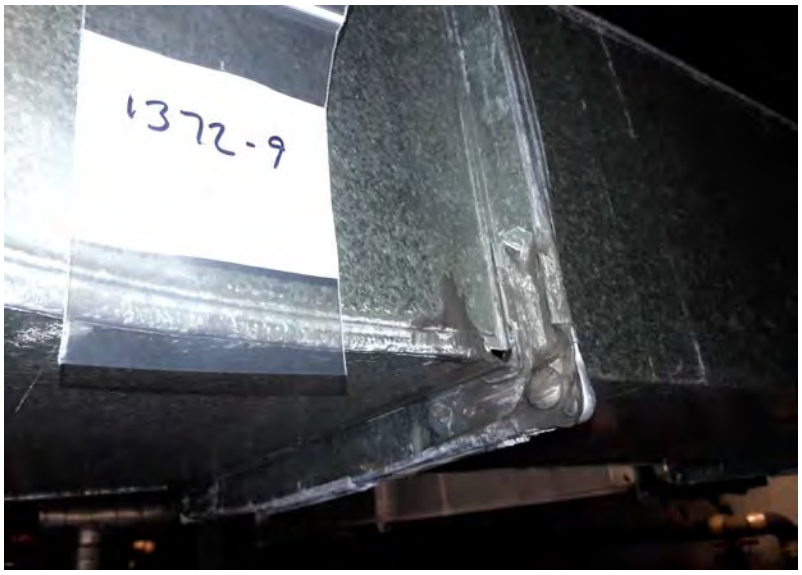
5) View of yellow mastic associated with 4" cove base - brown (HA 1372-5), located throughout portions of the interior of Building 1372. No asbestos was detected.

6) View of 12"x12" Vinyl Floor Tile (VFT) - beige speckled (HA 1372-6), associated yellow mastic (HA 1372-6A), and associated black mastic (HA 1372-6B); located throughout the First and Second Floor Hallways, and First Floor Rooms 1101, 1111, 1123, 1210, 1212, 1213, and 1223 of Building 1372. No asbestos was detected.



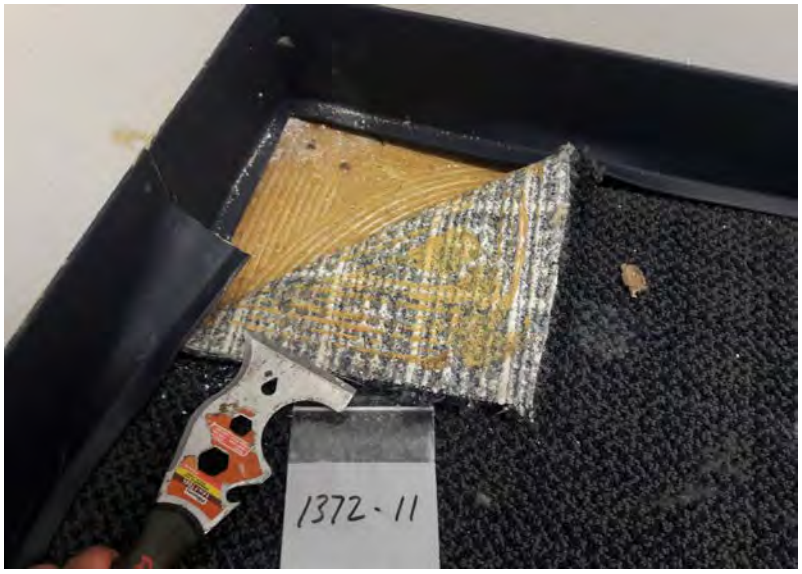
7) View of 12"x12" VFT - white with brown specks (HA 1372-7) and associated yellow/orange mastic (HA 1372-7A), located in Room 1202 of Building 1372. No asbestos was detected.

8) View of the Fiberglass Thermal System Insulation (TSI) wrap mastic - white (HA 1372-8), located on fiberglass-insulated piping in the Basement Mechanical Room and First Floor Mechanical Room 1105 of Building 1372. No asbestos was detected.



9) View of the Heating, Ventilation, and Air Conditioning (HVAC) duct mastic - gray (HA 1372-9), located throughout the Basement and portions of the Plenum of Building 1372. No asbestos was detected.

10) View of caulk - brown (HA 1372-10), located around the interior windows of Building 1372. No asbestos was detected.



11) View of carpet mastic - yellow (HA 1372-11), located throughout the Conference/Classrooms, and the Second and Third Floor Lobbies of Building 1372. No asbestos was detected.

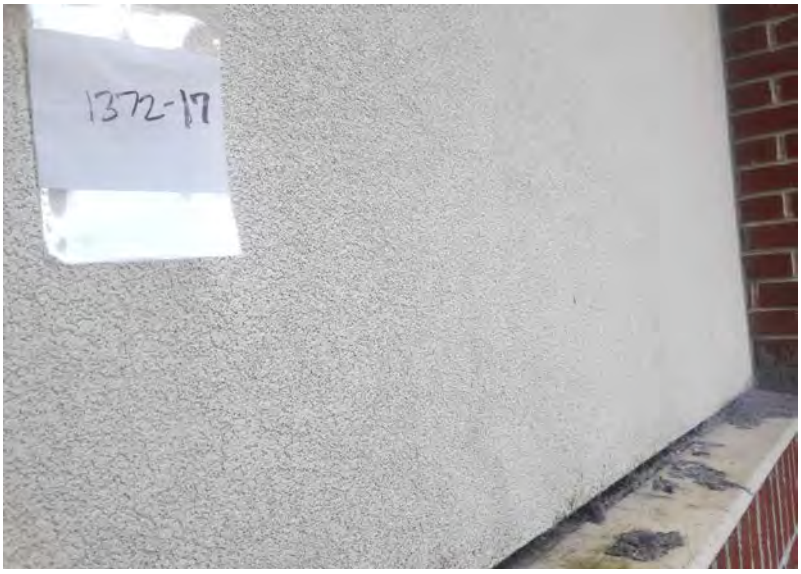
12) View of 12"x12" VFT - beige mottled (HA 1372-12) and associated black mastic (HA 1372-12A), located throughout portions of the interior of Building 1372. No asbestos was detected.

13) View of orange mastic associated with tread - gray (HA 1372-13), located throughout the stairwells of Building 1372. No asbestos was detected.

14) View of beige mastic associated with stair tread - gray (HA 1372-14), located throughout the stairwells of Building 1372. No asbestos was detected.

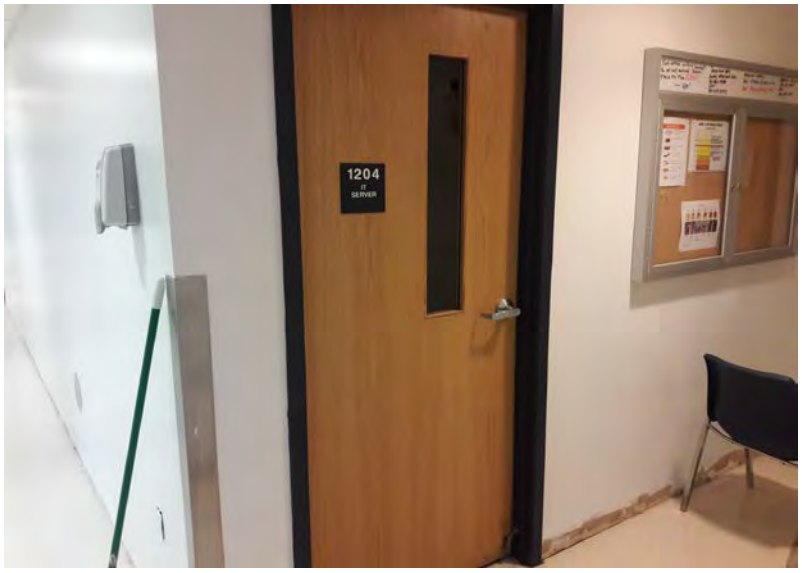
15) View of caulk - beige (HA 1372-15), located around the exterior windows of Building 1372. No asbestos was detected.

16) View of caulk - beige (HA 1372-16), located around the interior and exterior doors and expansion joint of Building 1372. No asbestos was detected.



17) View of the Exterior Insulation Finish System (EIFS) (HA 1372-17), located on portions of the exterior walls of Building 1372. No asbestos was detected.

18) Typical view of gaskets (HA 1372-18), located throughout the mechanical piping of Building 1372. The gaskets are assumed to contain asbestos.



19) Typical view of a fire door (HA 1372-19), located throughout Building 1372. The fire doors are assumed to contain asbestos.