WORK ORDER NO. 1369021

APPROPRIATION: ECIP

# P827 NEX Facilities Energy Improvements

At

**Naval Station Great Lakes**
**Great Lakes, IL**

**(P-827)**

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**Preface**

This Request for Proposal (RFP) consists of six parts.

Part 1 contains typical contractual forms, procedures, bidding instructions, bond information, clauses and wage decisions.

Part 2 contains general contract administrative and execution requirements including, but not limited to safety, design criteria & process, quality control, security, schedule, invoicing, temporary facilities, and design and construction oversight processes.

Part 2, Attachment A, contains project-specific general requirements that may either modify and/or supplement the corresponding standard paragraphs in the Part 2 "General Requirements" section.

Part 3 lists the project requirements, specific scope items, and expected quality level above and beyond those outlined in Part 4.

Part 4 contains Performance Specifications and minimum quality requirements.

Part 5, prescriptive specifications, is typically not used in this Small Project format.

Part 6 contains background project information, references, and other project-specific requirements.

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# Part 1 Proposal Forms and Documents

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# Part 2 General Requirements

PART 2

GENERAL REQUIREMENTS
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## 1.0 DEFINITIONS

As used throughout the contract, the following terms shall 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.

Contractor: The term Contractor refers to both the prime Contractor and subcontractors, 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, Independence Day; Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day.

Contract: Contract or task order.

## 2.0 ORDER OF PRECEDENCE

NFAS Clause 5252.236-9312. In the event of conflict or inconsistency between any of the below described portions of the confirmed contract, precedence shall 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 - Statement of Work/Project Program Requirements.

5) Part 6 - Attachments (excluding Concept Drawings).

6) Part 5 - Prescriptive Specifications, exclusive of performance specifications.

7) Part 4 - Minimum Materials, Engineering and Construction Requirements, exclusive of prescriptive specifications.

8) Part 6 - Attachments (including Concept Drawings).

## 3.0 POST AWARD KICKOFF 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 shall 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 shall meet with the NAVFAC Fire Protection Engineer (FPE) to establish clear expectations of fire protection requirements of the project.

The Contractor's key personnel shall attend at the expense of the Contractor. Key personnel are defined as the Project Manager, Superintendent, CQC representative(s), DOR, major subcontractors and specialized supplementary personnel.

The PAK includes partnering, held during normal work hours with the non-labor -related costs shared by both parties. Partnering is a structured process, as well as philosophy of doing business with Contractors and clients that recognizes common goals through communication and teamwork. It helps create an environment where trust and teamwork prevent disputes, foster good working relationships to everyone's benefit, and facilitate the completion of a successful contract. If included in Attachment A, a Performance Assessment Plan that provides monthly performance feedback to the Contractor, will be discussed during the partnering session.

Key personnel will meet to identify strategies to ensure the project is carried to expeditious closure and turnover to the Client. Start the turnover process at the PAK Meeting utilizing the NAVFAC Red Zone (NRZ) Checklist and convene the Facility Turnover Meetings once the project has reached approximately 75% completion or 3 to 6 months prior to Beneficial Occupancy Date (BOD), whichever comes first. The Contracting Officer's Representative will lead the meetings and guide the discussions based on an agenda provided by the Government. The Facility Turnover effort shall fill in the NRZ Checklist including Contractor, Client, and NAVFAC Checklist

Items and assign a person to be responsible for each item and a due date. The Contracting Officer's Representative will facilitate the assignment of responsibilities and fill out the NRZ Checklist. The Contracting Officer's Representative shall develop a Plan of Action and Milestones (POAM) for the completion of all Contractor, Client, and NAVFAC Checklist items.

# 4.0 DESIGN

Design is the work necessary to ensure functionality, quality, and safety for critical facets of the project. Special coordination requirements are included in Attachment A.

a. 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.

b. 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 shall be 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" shall be 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.

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.

1) UFC 1-200-01, *General Building Requirements*

2) UFC 1-300-08, *Criteria for Transfer and Acceptance of Military Real Property*

3) FC 1-300-09N, *Design Procedures*

4) UFC 3-401-01, *Mechanical Engineering*

5) UFC 3-410-01, *Heating, Ventilating, And Air Conditioning Systems*

6) UFC 3-560-01, *Electrical Safety, O&M*

7) UFC 3-600-01, *Fire Protection Engineering for Facilities*

8) UFC 3-800-10N, *Environmental Engineering for Facility Construction*

9) UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*

10) UFC 4-020-01, *Security Engineering: Facilities Planning Manual*

11) UFC 4-021-01, *Design and O & M: Mass Notification Systems*

12) UFGS 28 31 76, *Interior Fire Alarm and Mass Notification System*

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. See "Order of Precedence" paragraph in Part 2 for relationships between all parts of this RFP.

d. Provide professional registration and design signing and stamping requirements per requirements of FC 1-300-09N, *Design Procedures*.

e. See Attachment A for project-specific submittal requirements.

f. Meet sustainability requirements per UFC 1-200-02 High Performance and Sustainable Building requirements and UFGS section 01 33 29.05 20 *Sustainability Requirements for Design Build*.

# 5.0 FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS

Work shall comply with applicable criteria identified herein and Attachment A. This project shall not require the services of a Registered Fire Protection Engineer.

a. The Fire Protection work final testing shall be witnessed by the NAVFAC FPE.

# 6.0 QUALITY CONTROL

Maintain quality control for and inspect all work under the contract. The DOR, as a member of the Contractor QC organization, shall remain directly involved during the construction process. For certain projects, the Quality Control Manager, Superintendent, and Site Safety and Health Officer may be combined - see paragraphs 6 and 34 in Attachment A. Further QC requirements are identified in Attachment A.

a. Submit a QC Plan for Government review and acceptance. The QC plan shall include the following:

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

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

3) 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.

4) TESTING LABORATORIES: Accredited laboratories as applicable.

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

6) 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.

7) 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 shall 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.

b. QC Manager Responsibilities:

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

2) 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 in Attachment A and the QC Plan.

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

4) Prepare QC Reports.

5) Hold biweekly QC meetings with DOR, Superintendent and Government technical team; participation shall be suitable for the phase of work.

6) Ensure that safety inspections are performed. Attend weekly Toolbox meetings.

7) Maintain submittal log.

8) Maintain updated as-built drawings on site.

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

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

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

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

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

14) Commissioning is part of the work; the government has engaged a Commissioning Authority (CxA), coordinate with CxA's work in accordance with UFGS section 01 45 00.05 20.

c. Use the Three Phases of Control process for construction QC.

1) 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 in the QC Report.

2) 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.

3) 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.

d. The QC Manager must possess a current certificate showing successful completion of the NAVFAC Contractor Quality Management (CQM) Training.

# 7.0 SUBMITTAL PROCESS

Provide to the Government submittals as listed. See Paragraph 4, DESIGN, and Attachment A 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. Design and construction submittals, prior to construction, approved IAW QC Plan, the DOR or QC Specialist is the approving authority for submittals unless otherwise indicated in Attachment A.

c. Sustainability Action Plan in accordance with 01 33 29.05 20 Sustainability Requirements

d. DOR-approved design and construction submittals identified in Attachment A 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. Material Safety Data Sheets (MSDS) as applicable.

f. Schedule: Provide detailed design schedule and preliminary construction 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. Safety Submittals: Per Paragraph 34 and Attachment A, prior to construction.

k. Schedule of Prices, initial due 21 calendar days after award and a detailed due prior to construction.

l. ECATTS Certificates. For more detailed information on ECATTS see UFGS 01 57 19.00 20

m. Budget Management Summary: Not Used.

n. Record Drawings, due at Beneficial Occupancy

o. Operation and Maintenance Information: Per Paragraph 23, Part 2 Attachment A, and Part 4. Due prior to testing as applicable, no later than 30 calendar days before Beneficial Occupancy.

p. Licenses and Permits: Per Attachment A and Part 4.

q. DD Form 1354: For all new construction, demolition, and any construction on an existing facility that adds new parts, items, or systems that are not maintenance or repair; e.g. replacement of windows, replacement of roofs, replacement of an exterior utility, adding an AC system, adding exterior lighting, the DOR shall prepare DD Form 1354 TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY, in accordance with UFC 1-300-08, available at http://65.204.17.188/report/doc_ufc.html . Submit form for Government approval a minimum of 30 calendar days prior to final acceptance of work.

r. High Performance and Sustainable Building (HPSB) compliance checklists in accordance with UFC 1-200-02, *High Performance and Sustainable Building Requirements*.

## 8.0 SUPERVISION

The Contractor shall have a supervisor fluent in English on the job site during working hours. Additional requirements are per Attachment A.

# 9.0 SCHEDULE

Provide Design and Construction Schedule adequate for Contractor to efficiently manage project and for Government to efficiently manage QA and scheduling interfaces. Include construction phasing and any work restrictions (such as occupied spaces, special hours, potential work disruptions). Schedule shall contain DFOWs and dates for completion of each task including material procurement, and construction activities. Update the schedule at least monthly; use 3-week look-ahead for each QC meeting.

# 10.0 BUDGET MANAGEMENT

Not Used.

# 11.0 PRECONSTRUCTION CONFERENCE

Prior to construction or demolition start, 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. The Preconstruction Conference shall reinforce partnering philosophy initially established during the PAK.

# 12.0 ACCESSIBILITY

Provide barrier-free design in accordance with the requirements of the DOD Accessibility Standards and in accordance with UFC 1-200-01, *General Building Requirements*.

# 13.0 CONTRACTOR'S PRODUCTION REPORTS

Submit Contractor Production Reports on forms furnished for this purpose. Complete the reports weekly unless otherwise requested by the Contracting Officer. Reports shall 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.

d. Design and Construction Services: Including, but not necessarily limited to:

1) Check all Contract Documents for correctness and correlation. If the Contractor notes any discrepancy or ambiguity, immediately notify the COR.

2) Examine the work site as to conditions affecting the work. Field verify the site and scope of work, including but not limited to the measurement and location of all significant items required to perform the work. Failure by the Contractor to familiarize oneself with

available information regarding these conditions shall not relieve the Contractor from the responsibility of successfully completing the work.

## 14.0 SCHEDULE OF PRICES

Submit on forms furnished by the Government. The initial schedule of prices may be preliminary for construction activities until the design is developed. Include a detailed breakdown of the contract price, with quantities for each kind of work. Include General Conditions, profit, and overhead in the unit prices. Break down into design and each construction category if stated in Attachment A. The Contractor may invoice for bonds once the Government has approved the bonds, however, no other requests for payment will be processed without an approved Schedule of Prices.

## 15.0 CONTRACTOR INVOICES

Contractor requests for payment shall 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 shall consist of the following: (If NFAS Clause 5252.232-9301 is present in the contract, documents shall be provided as attachments in Wide Area Workflow (WAWF). The maximum size limit per attachment is less than 2 megabytes, but you may have an unlimited number of attachments. If a document cannot be attached to WAWF due to system or size restrictions it shall be provided as instructed by the contracting officer). If NFAS Clause 5252.232.9301 is not present in the contract, follow the invoicing instructions provided in the contract.

1) Contractor's Invoice on NAVFAC Form 7300/30, which shall show, in summary form, the basis for arriving at the amount of the invoice.

2) Contractor's Monthly Estimate for Voucher (LANTNAVFACENGCOM Form 4-4330/110 (New 7/84)), with subcontractor and supplier payment certification.

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) Network mathematical analysis.

7) Contractor Safety Self Evaluation Checklist (original)

8) Final release (for final payment only)

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) Conditions described in Attachment A.

b) Materials adequately insured and protected from theft and exposure.

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.

## 16.0 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 shall 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.

## 17.0 EXISTING UNDERGROUND UTILITIES

Verify on-site utilities and have them marked out by a utility locator service prior to the start of construction. Where existing piping, utilities, oil and gas lines, and underground obstructions of any type that are to remain are indicated in locations to be traversed by new piping, ducts, and other work provided herein, and such are not indicated or specified to be removed, the elevations of the existing utilities and obstructions shall be determined before the new work is laid closer than the nearest manhole or other structure at which an adjustment in grade could be made. Obtain required dig permits and notify the Contracting Officer 21 calendar days prior to any excavation. Refer to Attachment A for specific station requirements.

# 18.0 LICENSES / 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 shall submit a complete PROD form with the first design submittal package. A blank PROD form can be obtained at the Download Tab of Part 6 of the NAVFAC Design-Build website at the following link http://ndbm.wbdg.org/system/html/6/453 . Contractor shall determine correct permit fees and pay said fees. Copies of all permits, permit applications, and the completed PROD form shall be forwarded to the Government's Civil Reviewer. Draft copies of environmental related submittals are required to be reviewed by PWD Environmental prior to submission to applicable regulatory agencies.

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

# 19.0 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 IAW 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 shall 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 shall be new and compatible with the existing equipment on which it is to be used, and shall 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.

## 20.0 TEMPORARY UTILITIES

a. The Government will provide water and power in reasonable quantities at the prevailing rates.

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

c. The Contractor shall 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 shall 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, shall 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 shall install and certify back flow preventers on all connections to the potable water supply system.

## 21.0 ENVIRONMENTAL CONTROLS AND PROTECTION

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 3-800-10N, *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.

## 22.0 WASTE MANAGEMENT

Develop a Waste Management Plan that identifies all recyclable material and disposal methods for all material. Contractor shall reduce, recycle or salvage as much waste material as possible with a goal of diverting at least 50% 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.

## 23.0 RECORD DRAWINGS AND OPERATION & MAINTENANCE (O&M) DATA

Furnish hard copy and electronic format for all as-built and O&M information. Record drawings shall incorporate all changes to the approved final design. Provide O&M data for as-built products, materials, and equipment, including data sheets, test reports, warranties, certificates, list of spare parts suppliers for all pieces of equipment, and approved construction submittals. Refer to Attachment A.

## 24.0 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 manufacturers' 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.

## 25.0 PERFORMANCE EVALUATIONS

The evaluation will take into account all aspects of the Contractor's performance, including evaluations from Performance Assessment Plans when included in Attachment A. Performance evaluations may be completed any time during the contract. The Government will provide a copy of the performance evaluation and an opportunity to discuss the evaluation. The performance evaluations will have an impact on the award of future contracts.

## 26.0 WORK HOURS, ACCESS AND PASSES

All Contractor employees, including subcontractors, and subcontractors' employees, suppliers, and suppliers' employees shall be required to comply with the Installation Security Requirements regarding personnel, vehicle, and equipment security passes and access the jobsite. Nothing in the contract shall 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 the conduct of persons while aboard the station, including but not limited to, the rights of search of all persons or 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 shall obtain the required employee and vehicle passes. Each employee shall wear the Government issued badge over the front of the outer clothing. Failure to obtain security and base access passes shall not be a cause for contract performance time extension. The Contractor shall immediately turn in all terminated employee's badges to the issuing office.

1) Personnel will be issued appropriate identification badges when the Contractor submits, in writing on company letterhead, a list indicating that all individuals are bona fide employees. Employees shall complete questionnaires and other forms as required for security.

2) NAVY INSTALLATIONS ACCESS

(i) Commander, Navy Installations Command (CNIC), has established the Navy Commercial Access Control System (NCACS), (formally known as RAPIDGate) a standardized process for granting unescorted access privileges to vendors, contractors, suppliers, and service providers not otherwise entitled to the issuance of a Common Access Card (CAC) who seek access to and can provide justification to enter Navy installations and facilities. Visiting vendors may obtain daily passes directly from the individual Navy Installations by submitting identification credentials for verification and undergoing a criminal screening/ background check. Alternatively, if the vendor so chooses, it may voluntarily elect to obtain long-term credentials through enrollment, registration, background vetting, screening, issuance of credentials, and electronic validation of credentials through a designated independent contractor NCACS service provider. Credentials will be issued every five years and access privileges will be reviewed/renewed on an annual basis. Questions regarding the RAPIDGate system use for the CNIC NCACS Program should be addressed to info@rapidgate.com with the subject line RE: RAPIDGate System. Enrollment and cost information may be obtained by contacting RAPID Gate at http://www.rapidgate.com or calling 1-877-727-4342.

(ii) Under the NCACS, contractor personnel are vetted through a series of national and local record checks to determine whether they meet the Base's criteria for access. The determination of whether to authorize a pass (badge) is made by the Government. The badges have Radio Frequency Identification (RFID) capability, and will be scanned upon entry onto the installation. Contractor personnel department from the installation will be recorded by passive RFID receivers. Contractor personnel who have been screened and are determined to be eligible for access will be required to self register at kiosk locations which have not been determined.

(iii) The cost of the program includes a fee for the Contractor's firm and a fee per contractor employee for a one-year pass. Contractors who chose not to participate in the program will be required to obtain daily business passes at the pass office for base access.

(iv) The Contracting Officer will advise of the program's details. This will also be discussed more at the pre-performance meeting after contract award.

c. Contractor Vehicles: All vehicles shall display a valid state license plate and safety inspection sticker, if applicable, and shall be maintained in good repair. The company name shall 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.

d. Work Hours: Unless otherwise indicated, work will be located on a Government compound, military installation, or station. Contractor work hours shall be between 0630 and 1600 Monday through Friday, or as indicated in Attachment A. Obtain advance approval from the Contracting Officer for Contractor personnel to remain on site beyond normal working hours. Notify the Contracting Officer at least one week in advance to obtain approval for access to the jobsite or work outside of normal working hours or on Saturday, Sunday, and Federal Holidays.

e. 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.

f. Contractor employees shall 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.

## 27.0 SECURITY REQUIREMENTS

All security requirements apply to all subcontractors and suppliers associated with this contract. Special or extraordinary security requirements are identified in Attachment A. In addition to special or extraordinary security requirements, comply with the following:

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 Office. Some areas restrict or prohibit photographing Government property.

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.

## 28.0 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 shall provide for 30 calendar days written notice to the Contracting Officer by the insurance company prior to cancellation or material change in policy coverage. Other requirements and information are contained in Attachment A.

For projects which require removal of asbestos containing materials the Asbestos Contractor or Subcontractor, as the case may be shall provide occurrence-based liability insurance with asbestos coverages in an amount not less than $1,000,000 and shall name the Government and PQP as additional insureds.

## 29.0 PROPRIETARY RIGHTS

All field notes, design drawings, specifications, and other documents collected and produced as

part of this contract shall be considered property of the Government. These data shall not be used, in whole or part, published or unpublished, as a part of any technical or non-technical presentation without written pre-approval of the Contracting Officer.

## 30.0 GOVERNMENT FURNISHED MATERIAL AND EQUIPMENT

If applicable, the Government will furnish the materials and equipment for installation by the Contractor pursuant to contract clause FAR 52.245-2, *Government Property (Fixed Price Contracts)*. Notify the Contracting Officer in writing at least 15 calendar days before the materials and equipment are required. Pick up materials and equipment no later than 30 calendar days after such date. When materials and equipment are not picked up by the 30th day, the Contractor will be charged for storage at the prevailing rate. The Contracting Officer will specify the location of materials and equipment and the delivery location.

## 31.0 ORAL MODIFICATION

No oral statement by any person other than the Contracting Officer, as provided in the contract clause entitled, "CHANGES AND CHANGED CONDITIONS," will in any manner or degree modify or otherwise affect the terms of this contract.

## 32.0 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 shall not 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.

## 33.0 EQUITABLE ADJUSTMENTS - WAIVER AND RELEASE OF CLAIMS

a. Whenever the Contractor submits a claim for equitable adjustment under a clause which provides for equitable adjustment of the contract, such claim shall 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 shall 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. The Contractor agrees that, if required by the Contracting Officer, it shall 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 shall 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.

## 34.0 SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS

a. References: The publications listed below form a part of this specification to the extent referenced. Use current version of referenced requirements at the time of contract solicitation. The publications are referred to within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
ANSI Z359.1, *Safety Requirements for Personal Fall Arrest System, Subsystems and Components*
ANSI A10.32, *Fall Protection systems for Construction and Demolition Operations*
ANSI A10.6, *Demolition Operations*
ANSI Z9.2, *Fundamentals Governing the Design and Operation of Local Exhaust Systems*
ANSI Z88.2, *Respiratory Protection*
ANSI Z358.1, *Emergency Eyewash and Shower Equipment*

ASME INTERNATIONAL (ASME)
ASME B30.20, *Below-the-Hook Lifting Devices*
ASME B30.22, *Articulating Boom Cranes*
ASME B30.26, *Rigging Hardware*
ASME B30.3, *Construction Tower Cranes*ASME B30.5, *Mobile and Locomotive Cranes*
ASME B30.9, *Slings*
ASME B30.8, *Floating Cranes and Floating Derricks*

AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM)
ASTM Standards on Lead-Based Paint Abatement in Buildings
ASTM E 1368, *Visual Inspection of Asbestos Abatement Projects*

DEPARTMENT OF DEFENSE (DoD)
MIL-STD-1472F, Military Standard, *Human Engineering Design Criteria for Military Systems, Equipment and Facilities*
DoD-HDBK 743A, *Anthropometry of US Military Personnel*

DEFENSE LOGISTICS AGENCY (DLA)
DLA 4145.25, *Storage and Handling of Compressed Gases and Liquids in Cylinders*

EPA Standards and Documents - General
15 U.S.C. 2601 - *Toxic Substances Control Act*
EPA Title X - *The Residential Lead Based Paint Hazard Reduction Act*
EPA & HUD - *Lead Safe Work Practices*
HUD Guidelines, *Guidelines for the Evaluation and Control of Lead Based Paint Hazards in Housing*

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
NFPA 241, *Safeguarding Construction, Alteration, and Demolition Operations*
NFPA 51B, *Fire Prevention During Welding, Cutting, and Other Hot Work*
NFPA 70, *National Electrical Code*
NFPA 70E, *Electrical Safety in the Workplace*

U.S. ARMY CORPS OF ENGINEERS (USACE)
EM 385-1-1 Safety -- *Safety and Health Requirements*

UNITED FACILITIES CRITERIA (UFC)

UFC 3-560-01, *Electrical Safety, O&M*

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
29 CFR 1910 *Occupational Safety and Health Standards*
29 CFR 1910.146 *Permit-required Confined Spaces*
29 CFR 1915 *Occupational Safety and Health Standards for Shipyard Employment*
29 CFR 1926 *Safety and Health Regulations for Construction*

b. Submittals: A "G" following a submittal indicates that Government approval action is required.

1) Contractor Accident Prevention Plan (APP), comply with EM 385-1-1, Appendix A; G

2) Contractor Safety Self-Evaluation Checklist; G

3) Monthly Work-Hour Reports

4) Crane Critical Lift Plan; G

5) Accident Reports – submit if incidence occurs.

6) Activity Hazard Analyses, as applicable.

c. Weight Handling Equipment (WHE) Accident: A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; or collision, including unplanned contact between the load, crane, or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over).

d. Contractor Safety Self-Evaluation Checklist: Contracting Officer will provide a "Contractor Safety Self-Evaluation checklist" to the Contractor. Complete the checklist monthly and submit with each request for payment. A score of 90 or greater is required. Failure to submit the completed safety self-evaluation checklist or achieve a score of at least 90, will result in a retention of up to 10 percent of the voucher.

e. Regulatory Requirements: In addition to the detailed requirements included in this contract, work performed shall comply with USACE EM 385-1-1, and the laws, ordinances, criteria, rules and regulations included in Attachment A. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply. UFC 3-560-01 takes precedence over all other guidance for electrical safety.

f. Site Safety and Health Officer (SSHO) Qualifications & Duties: SSHO shall perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The assignment of the SSHO does not relieve the Contractor from the regulatory requirements governing safety responsibility. The SSHO on this project

can be the site superintendent unless otherwise indicated in Attachment A.

The SSHO shall meet the following requirements:

1) A minimum of 5 years safety work on similar projects.
2) 30-hour OSHA construction safety class or equivalent within the last 5 years.
3) An average of at least 24 hours of formal safety training each year for the past 5 years.
4) Competent person training as needed.
5) Successfully completed the Environmental Compliance Awareness Training (ECATT) Program.

In addition to duties required in EM 385-1-1 the SSHO shall perform the following:

1) Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Attach safety inspection logs to the daily production report.

2) Attend pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic progress meetings.

Failure to actively apply an acceptable safety program will result in dismissal and a project work stoppage that will remain in effect pending approval of a suitable replacement.

g. Accident Notification and Reports

1) Notify the Contracting Officer as soon as practical, but not later than four hours, after any accident meeting the definition of Recordable Injuries or Illnesses or High Visibility accidents, property damage accidents resulting in at least $2,000 in damages, or any weight handling equipment accident. The Prime Contractor will be provided an access to the Contractor Incident Reporting System (CIRS) application via a unique User ID and Password and a special link provided via email. The CIRS is used to record information about Injury/Illness events (Mishaps and Property Damage) for contractor personnel that are not listed in the ESAMS database. The Prime Contractor shall document information on the accident, such as contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident ( e.g., type of construction equipment used, PPE used). The conditions and evidence on accident site shall be preserved until the Government investigation team arrives and Government investigation is conducted.
2) For any weight handling equipment accident (including rigging gear accidents), the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the WHE Accident Report (Crane and Rigging Gear) form and provide the report to the Contracting Officer within 30 calendar days of the accident. Crane operations shall not proceed until cause is determined and corrective actions have been implemented to the satisfaction of the contracting officer. The Contracting Officer will provide a blank copy of the accident report form.
3) Monthly Work-Hour Reports: Monthly work-hour reporting to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The Contracting Officer will provide copies of any special forms.

h. Hot Work: Prior to performing "Hot Work" (e.g., welding, cutting) or operating other flame-producing/ spark-producing devices, request a written permit from the Fire Division. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. It is mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch shall be trained in accordance with NFPA 51B and remain on-site as required after completion of the task or as specified on the hot work permit.

i. Hazardous Material Use: Each hazardous material must receive approval prior to being brought onto the job site or prior to any other use in connection with this contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material.

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with USACE EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocynates, or lead-based paint are prohibited. The Contracting Officer, upon written request may consider exceptions to the use of any of the above excluded materials.

The Request for Proposal should have identified materials such as PCB, lead paint, and friable and non-friable asbestos. If material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to FAR 52.243-4, *Changes*, and FAR 52.236-2, *Differing Site Conditions*.

j. Pre-outage Coordination Meeting: Apply for utility outages at least 15 days in advance. As a minimum, include the location of the outage, utilities being affected, duration of outage and any necessary sketches. Once approved, and prior to beginning work on the utility system requiring shut down, attend a pre-outage coordination meeting with the Contracting Officer to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist.

k. Fall Hazard Protection and Prevention Program: Establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. Include company policy; identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures.

1) Fall Protection for Roofing Work: Implement all protection controls based on the type of roof being constructed and work being performed. Evaluate the roof area to be accessed for its structural integrity including weight-bearing capabilities for the projected loading.

a) A safety monitoring system is not adequate fall protection for low sloped roofs and is not authorized.

b) Work on steep-sloped roofs, including residential or housing type construction, requires a personal fall arrest system, guardrails with toe-boards, or safety nets.

2) Fall Prevention and Design: During design, consider and eliminate fall hazards encountered at the facility during maintenance evolutions whenever possible. If it is not feasible to eliminate or prevent the need to work at heights with its subsequent exposure to fall hazards, include control measures in the design to protect personnel conducting maintenance work after completion of the project. In addition to the detailed requirements included in the provisions of this contract, incorporate the requirements of 29 CFR 1910 Standards in the design (29 CFR 1915 applies for work in Shipyards).

l. Weight Handling Equipment: All handling equipment must meet the requirements of NAVFAC P-307 Section 1.7.2.

1) Crane Critical Lift Plan: Prepare and sign weight handling critical lift plans for lifts over 75 percent of the capacity of the crane or hoist (or lifts over 50 percent of the capacity of a barge mounted mobile crane's hoists) at any radius of lift; lifts involving more than one crane or hoist; lifts of personnel; and lifts involving non-routine rigging or operation, sensitive equipment, or unusual safety risks. Submit the plan 15 calendar days prior to on-site work and include the requirements of USACE EM 385-1-1, paragraph 16.C.18. as well as the following:

a) For lifts of personnel, demonstrate compliance with the requirements of 29 CFR 1926.550(g).
b) For lifts in the vicinity of overhead power lines (i.e., if any part of the crane or other machine, including the fully extended boom of a telescoping boom crane or machine, or the load could approach the distances noted in Figure 10-3 of NAVFAC P-307 during a proposed operation), demonstrate compliance to 29 CFR 1926.1408-1411.c) For barge mounted mobile cranes, barge stability calculations identifying barge list and trim based on anticipated loading; and load charts based on calculated list and trim. The amount of list and trim shall be within the crane manufacturer's requirements.

2) Provide a Certificate of Compliance for each crane entering an activity under this contract (see Contracting Officer for a blank certificate). Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the Contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance shall comply with 29 CFR 1926 and USACE EM 385-1-1 section 16 and Appendix H. The Certificate of Compliance shall state that the crane operator(s) is qualified and trained in the operation of the crane to be used. Also certify that all of its crane operators working on the DOD activity have been trained in the proper use of all safety devices (e.g., anti-two block devices). Post these certifications on the crane.

3) Notify the Contracting Officer 15 days in advance of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated. Contractor's operator shall remain with the crane during the spot check.

4) Comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Perform erection under the supervision of a designated person (as defined in ASME B30.5). Perform all testing in accordance with the manufacturer's recommended procedures.

5) Comply with ASME B30.5 for mobile and locomotive cranes, ASME B30.22 for articulating boom cranes, ASME B30.3 for construction tower cranes, and ASME B30.8 for floating cranes and floating derricks.

6) Under no circumstance make a lift at or above 90% of the crane's rated capacity in any configuration.

7) When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of USACE EM 385-1-1 section 11 and ASME B30.5 or ASME B30.22 as applicable.

8) Use cribbing when performing lifts on outriggers.

9) Position the crane hook/block directly over the load. Side loading of the crane is prohibited.

10) Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall be available for review by Contracting Officer personnel.

11) Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Contracting Officer personnel.

12) Certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).

13) Take steps to ensure that wind speed does not contribute to loss of control of the load during lifting operations. Prior to conducting lifting operations, set a maximum wind speed at which a crane can be safely operated based on the equipment being used, the load being lifted, experience of operators and riggers, and hazards on the work site. Include this maximum wind speed determination in the activity hazard analysis plan for that operation.

m. Utility Locations and Verification Prior to Excavation: Obtain appropriate digging permit from Base personnel through Contracting Officer prior to digging. All underground utilities in the work area must be positively identified by a private utility locating service in addition to any station locating service and coordinated with the station utility department. Maintain all markings during utility investigation throughout the contract. Locate utilities in accordance with Paragraph 17 and Attachment A.

Physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. Use hand digging within 0.61 m (2 feet) of a known utility. If construction is parallel to an existing utility, expose the utility by hand digging every 30.5 m (100 feet) if parallel within 1.5 m (5 feet) of the excavation.

n. Utilities Within Concrete Slabs: Utilities located within concrete slabs are extremely difficult to identify due to the reinforcing steel used in the construction of these structures. Whenever work involves concrete chipping, saw cutting, or core drilling, the existing utility location must be coordinated with station utility departments in addition to a private locating service. Outages to isolate utility systems shall be used in circumstances where utilities are unable to be positively identified. The use of historical drawings does not alleviate the contractor from meeting this requirement.

o. Conduct of Electrical Work: Follow electrical safety criteria specified in UFC 3-560-01, USACE EM 385-1-1, and NFPA 70E during the conduct of all work.

p. Work in Confined Spaces: In addition to the requirements of Section 06.I of USACE EM 385-1-1, OSHA 29 CFR 1910.146 and OSHA 29 CFR 1926.21(b)(6), comply with the following paragraphs. Any potential for a hazard in the confined space requires a permit system to be used.

1) Confined Space Signage: Provide permanent signs integral to or securely attached to access covers for permit-required confined spaces provided by this contract. Signs wording: "DANGER--PERMIT-REQUIRED CONFINED SPACE - DO NOT ENTER -" in bold letters a minimum of 25 mm (one inch) in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" shall be red and readable from 1.52 m (5 feet).

2) Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and all potential hazards are controlled or eliminated and documented. (See Section 06.I.06 of USACE EM 385-1-1 for entry procedures.) Review all hazards pertaining to the space with each employee during AHA process.

3) Forced air ventilation is required for all confined space entry operations. Maintain minimum air exchange requirements to ensure exposure to any hazardous atmosphere is kept below its' action level.

4) Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.

q. 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 shall incorporate the requirements of MIL-STD-1472F.

-- End of Section --

# Part 2 Attachment A Project-Specific General Requirements

The following requirements are project specific and may either supplement and/or modify those requirements contained in the body of Part 2, General Requirements, for Small Projects. Paragraph numbers in Part 2 correspond to paragraph numbers used in Part 2, Attachment A.

## Paragraph 3 POST AWARD KICKOFF MEETING (PAK)

Provide Informal partnering. PAK meeting shall be scheduled within 14 calendar days of award.

## Paragraph 4 DESIGN

Submit design drawings or sketches, calculations and manufacturer's data to demonstrate compliance with contract requirements.

**AutoCAD**
NAVFAC is standardized on the AutoCAD 2010 file format. A/E/C's shall submit a current set of DWG files (AutoCAD 2007 or greater) when submitting the final drawings. However, PDFs may not be made using AutoDesk's "DWG to PDF.PC3" plot driver.

Provide hard (all hard submittals shall be on minimum 30% postconsumer fiber paper, and, when 11x17 or smaller, double-sided) and electronic copies of design submittal package to the following reviewers 1 week prior to the over-the-shoulder review meeting.

Provide comprehensive, multi-discipline design packages that include design documentation for project elements, fully developed to the design stage indicated, and in accordance with FC 1-300-09N, except where specified otherwise:

a. Design Development (35%-50%) (in-progress or over-the-shoulder review) Government Progress QA, with 21 calendar day Government review time.

b. Pre-final (100%) Design Government Progress QA, with 14 calendar day Government review time.

c. Final Design Government QA, with 14 calendar day Government review time for submittals requiring Government approval prior to construction.

| SUBMITTAL | MIDLANT PM | MIDLANT DM | MIDLANT PWD GLakes | NEX Great Lakes | NEXCOM |
|---|---|---|---|---|---|
| **35% Submittal** | | | | | |
| Plans/Drawings (11"x17") | 2 | 1 | 2 | 1 | 1 |
| Basis of Design, Specifications and Manufacturer's Cut Sheets | 2 | 1 | 2 | 1 | 1 |
| Design/Construction Schedule | 2 | 1 | 2 | 1 | 1 |
| Calculations (Bound by Discipline) | 1 | 1 | 2 | | |
| PROD Form (Permits) | 1 | 1 | 2 | | |
| CD of all submitted materials in original software/electronic and pdf format | 1 | 1 | 1 | 1 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| **100% Pre-final Design Submittal** | | | | | |
| Plans/Drawings (11"x17") | 2 | 1 | 2 | 1 | 1 |
| Basis of Design, Specifications and Manufacturer's Cut Sheets | 2 | 1 | 2 | 1 | 1 |
| Design/Construction Schedule | 2 | 1 | 2 | 1 | 1 |
| Calculations (Bound by Discipline) | 1 | 1 | 2 | | |
| PROD Form (Permits) | 1 | 1 | 2 | | |
| CD of all submitted materials in original software/electronic and pdf format | 1 | 1 | 1 | 1 | |
| | | | | | |
| **Electronic Final Backcheck** | | | | | |
| CD of all submitted materials in original software/electronic and pdf format | 1 | 1 | 1 | 1 | 1 |
| **Final** | | | | | |
| Plans/Drawings (11"x17") | 2 | 1 | 2 | 1 | 1 |
| Basis of Design, Specifications and Manufacturer's Cut Sheets | 2 | 1 | 2 | 1 | 1 |
| Full Size Drawings | | | 1 | | |
| Design/Construction Schedule | 1 | 1 | 1 | 1 | 1 |
| Calculations (electronic only) | 1 | 1 | 1 | | |
| PROD form (Permits) | 1 | 1 | 2 | | |
| CD of all submitted materials in original software/electronic and pdf format | 1 | 1 | 1 | 1 | |
| | | | | | |

**Addresses:**

| | |
|---|---|
| **MIDLANT PM**<br>NAVFAC MIDLANT, NE IPT<br>Attn: Ben Danzing, PE<br>9324 Virginia Ave<br>Building Z-144, Room 214<br>Norfolk, VA 23511<br><br>**MIDLANT DM**<br>NAVFAC ATLANTIC, **Code CI46**<br>Attn: Brian Derby<br>Lafayette River Complex<br>6506 Hampton Blvd<br>Norfolk VA 23508-1278 | **PWD Great Lakes + Activity Safety/ENVR**<br>Attn: Peter Behrens<br>Installation Energy Manager<br>PWD Great Lakes<br>Building 11<br>2530 Ziegemeier Street<br>Great Lakes, IL 60088 |
| **NEX Great Lakes**<br>Walter Barbour<br>Facilities Manager<br>Navy Exchange<br>Building 3212A Mississippi Street<br>Great Lakes, IL 60088 | **NEXCOM**<br>Russell Long<br>Energy Manager<br>3280 Virginia Beach Blvd.<br>Virginia Beach, VA 23452 |

The over-the-shoulder review meeting shall be conducted in conjunction with progress meetings.

Design shall incorporate sustainability requirements as defined in UFGS section 01 33 29.05 20 Sustainability Requirements for Design Build.

1. 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 be considered for Government review and approval during the Post Award Kick-off Meeting.

2. Construction submittals are to be Contractor-approved, except those listed below:

a. Government Approval required for:

1) Fire Protection related submittals

2) HVAC Testing, Adjusting, and balancing submittals, specifically Performance Verification Testing Planand Performance Verification Testing Report.

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

a. Submit roofing submittals pertaining to materials and systems used to make up the roof system.

b. Submit Performance Verification and Acceptance Testing required by IBC or this RFP.

c. Comply with sustainability submittals per UFGS section 01 33 29.05 20 *Sustainability Requirements for Design Build*.

4. Drawing Standards

   a. Prepare, organize, and present design drawings in accordance with the requirements of FC 1-300-09N.
   b. Submit all CADD files for the final drawings on CD-ROM disks in AutoCAD 2010 format. Drawings shall be full files, uncompressed and unzipped; x-ref drawings shall be included as well (if applicable).

5. Shop Drawing Submittals
   a. In addition to the design submissions noted above, shop drawings will be required. The list of required submittals will be generated from the Contractor-prepared specifications and indicated in the submittal register.
   b. Shop drawing submissions will be governed by UFGS 01 33 00 Submittal Procedures, available on the Whole Building Design website (www.wbdg.org). Contractor shall assume a 15 day review period, and shall assume 3 hard copies of all submittals (in addition to electronic submittals) shall be submitted to FEAD Great Lakes.

## Paragraph 6 QUALITY CONTROL

The Quality Control Manager may also serve as the Site Safety and Health Officer but may not serve as the Site Superintendent or Project Manager on this project.

## Paragraph 7 SUBMITTAL PROCESSING

| | SUBMITTAL/BENCHMARK | DURATION | BENCHMARK | RECEIVED | STATUS |
|---|---|---|---|---|---|
| 1 | Quality Control Plan | | | | |
| 2 | Material Safety Data Sheets | | | | |
| 3 | Design/Construction Schedule | | | | |
| 4 | Waste Management Plan | | | | |
| 5 | Safety and Health Plan | | | | |
| 6 | Schedule of Prices | | | | |
| 7 | Record Drawings | | | | |
| 8 | eOMSI Manual in accordance with UFGS 01 78 24.05 20 – Facility Electronic Operation and Maintenance Support Information (eOMSI) | | | | |
| 9 | Licenses and Permits | | | | |
| 10 | Badge Requests | | | | |
| 11 | Statement of Acknowledgement SF 1413 | | | | |
| 12 | Demolition and Work Plan | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| 13 | Design Development Docs | | | | |
| 14 | Final Design Docs | | | | |
| 15 | Submittal Register | | | | |
| 16 | Performance/Payment Bonds | | | | |
| 17 | Environmental Protection Plan | | | | |
| 18 | Certificates of Insurance | | | | |
| 19 | DD Form 1354 | | | | |
| 20 | Sustainability Action Plan | | | | |
| 21 | NAVFAC Sustainability & Energy Data Record Card | | | | |
| 22 | ECATTS Certificates | | | | |
| 23 | Performance Verification Testing Plan | | | | |
| 24 | Performance Verification Testing Report | | | | |

## Paragraph 19 CONTRACTOR WORK SITE

Possible storage locations include mechanical room or contractor trailer. Final actual storage location shall be approved by the contracting officer.

## Paragraph 21 ENVIRONMENTAL CONTROLS AND PROTECTION

The Contractor is required to 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 19.00 20.

The DOR is required to edit and submit UFGS 01 57 19.00 20, *Temporary Environmental Controls* (January 2014), and UFGS 01 57 19.01 20 *Supplementary Temporary Environmental Controls.* The DOR must ensure state and local regulations are met within the edited UFGS section.

Asbestos Abatement and Lead Mitigation reports are provided in Part 6.

"Contractor Environmental Requirements on Naval Station Great Lakes", "Contractor Spill or Chemical Release on Naval Station Great Lakes" will be provided at the PAK.

## Paragraph 22 WASTE MANAGEMENT

Provide Waste Management Plan according to UFGS section 01 33 29.05 20 *Sustainability Requirements for Design Build*.

## Paragraph 23 RECORD DRAWINGS AND OPERATION & MAINTENANCE (O&M) DATA

Provide the Contracting Officer with one copy of reproducible half-size as-built drawings, two copies of reproducible full-size as-built drawings, and two CDs containing drawings in both PDF and AutoCAD 2010 formats (x-ref drawings shall be included if applicable), and all construction submittals.

Provide the Contracting Officer with two hard copies of reproducible O & M manuals, and two CDs containing O & M manuals in searchable PDF format.

## Paragraph 24 WARRANTY

Provide standard one (1) year warranty.

## Paragraph 26 WORK HOURS, ACCESS AND PASSES

Work (particularly work in Building 1326) may require phasing in order to accommodate ongoing NEX store operations. Design drawings for the work in the building shall indicate phasing, required clear space to execute work, and timing of phases.

## Paragraph 34 SAFETY AND OCCUPATIONAL HEALTH

The DOR is required to edit and submit UFGS 01 35 26, Governmental Safety Requirements.

**Sub-Paragraph f., Safety and Health Officer (SSHO)**

The Site Safety and Health Officer may serve also as the Superintendent or Quality Control manager providing that he/she meets requirements outlined in Part 2, Section 34.

**End of PART 2 Attachment A**

# Part 3 Statement of Work / Project Program – Building 400

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4. BUILDING REQUIREMENTS.....

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6. ENGINEERING SYSTEMS REQUIREMENTS

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A20 Basement Construction – Not Used
B10 Superstructure – Not Used
B20 Exterior Closure – Not Used
B30 Roofing
C10 Interior Construction – Not Used
C20 Stairs – Not Used
C30 Interior Finishes
D10 Conveying Systems – Not Used
D20 Plumbing
D30 HVAC
D40 Fire Protection Systems
D50 Electrical Power and Lighting – Not Used
E10 Equipment – Not Used
E20 Furnishings – Not Used
F10 Special Construction – Not Used
F20 Selective Building Demolition – Not Used
G10 Site Preparations – Not Used
G20 Site Improvements – Not Used
G30 Site Mechanical Utilities – Not Used
G40 Site Electrical Utilities – Not Used

# 1.0 PROJECT DESCRIPTION

Building 400
Project includes work to add ducted returns to existing five (5) Roof Top Units (RTU-2 through RTU-6) and update of the interface between RTUs and base EMCS.

Optional work includes upgrade of water closet and lavatory fixtures to low-flow type.

# 2.0 PROJECT OBJECTIVES

The subject project is intended to conserve resources and reduce overall operations and maintenance costs in the Navy Exchange (NEX) Facilities identified. To that end, this project will install new and modify existing equipment and systems to improve the efficiency and cost effectiveness of the facilities. The project will result in utility energy and cost savings for electricity, natural gas, water, and sewage. Naval Station Great Lakes is currently at a 23% reduction in energy intensity towards a mandated 30% goal by calendar year 2015. This project will improve the reduction percentage to achieve the mandated goal.

# 2.2 SUSTAINABLE DESIGN

Design and construct project per sustainability requirements identified in Section 01 33 29.05 20, *Sustainability Requirements For Design-Build*. Additional specific sustainability requirements are found in this document.

# 2.3 STORMWATER MANAGMENT - LOW IMPACT DEVELOPMENT (LID)

Not Applicable: This project is limited to internal renovations and maintenance.

# 3.0 SITE ANALYSIS

Drawings and additional information can be found in Part 6.

### Description

Building 400 is an exchange store consisting of a retail store, grocery, bank, barber, food court with several fast food providers, office space and warehouse space. The building is approximately 62,000 square feet. For the purposes of this project, the food court area and associated equipment was not evaluated.

### Building Systems

#### Roof Top Units

There are six Trane Voyager roof top units that serve the exchange building. They are single zone, constant volume cooling units with gas heat. They all appear to be original and are approximately 15 years old.

RTU-1: Serves the food court spaces (Not in scope of this project).
RTU-2: Serves the barber shop, Embroidery and Dry Cleaner areas
RTU-3: Serves the office and bank spaces
RTU-4: Serves the west area of the retail space and toilets off the food court

RTU-5: Serves the center area of the retail space
RTU-6: Serves the east area of the retail space.

The RTUs have stand-alone controls. The RTUs are monitored and scheduled through the base Building Management System. For available points that are monitored or controlled reference Part 6.

**Plumbing**

The building contains one set of restrooms on the west side of the building for customers of the food court and retail store and another set of restrooms on the north side of the building for the employees. There is a toilet room and hand sink in the barber shop area. Fixture counts are as follows:

- (9) Lavatories
- (10) Water Closets
- (3) Urinals
- (1) Hand Sink

There are no showers in the building.

# 4.0 BUILDING REQUIREMENTS

ECM-Mechanical

Integrate existing five (5) rooftop units, RTU-2 through 6, controls with the base Siemens EMCS. Monitor, control, alarm and trend the following points through the base EMCS:

- Individual rooftop unit Start/Stop
- Individual rooftop unit Status
- Cooling and heating mode override
- Economizer override
- Space temperature control and monitoring
- Return air temperature monitoring
- Supply air temperature control and monitoring
- Filter Status monitoring via differential pressure
- Alarms for heater failure, compressor failure, supply fan failure, freezestat, duct smoke detector,
- Scheduled occupied and unoccupied modes
- Outside air temperature reset for both occupied unoccupied modes.
- Outside air damper minimum position.
- Optimal start/stop
- Supply fan run status
- Exhaust fan run status
- Carbon dioxide levels

Extend return ductwork from rooftop units (RTU-2 through RTU-6) open-ended returns above the ceiling into the occupied space to mitigate the direct effects of the roof loads on the return air stream. Provide return grilles in ceiling directly connected to the main return ductwork above the ceiling. Approximate total supply airflows for the rooftop units are as follows: 2750 cfm (RTU-2), 6000 cfm (RTU-3), 14,000 cfm each (RTU-4, 5, & 6).

Provide carbon dioxide (CO2) control and monitoring of outside air damper at each rooftop unit through the base EMCS. Provide a CO2 sensor in the main return ductwork at each rooftop unit, and interlock CO2 sensor with the associated RTU outside air damper.

Provide all materials, personnel and equipment required to support the installation of any new duct smoke detector(s) required for the existing rooftop units. Detectors shall be wired back to the existing Fire Alarm Control Panel (FACP) located within the building. Each duct detector shall be mounted in an accessible location.

Building 400 does not currently have an HVAC Emergency Shutdown switch(es). However, switch(es) may be added as part of a future project. If switch(es) are added, verify rooftop unit fans are interlocked with the HVAC Emergency Shutdown Switch(es) to meet UFC 4-021-01 requirements.

ECM-Plumbing

**Bid Option #1**

Replace ten (10) existing water closets including china and diaphragm valves with dual flush (1.6/1.1 gpf) HET china and sensor operated piston valves. New water closets shall be of a similar style of the fixture which it is replacing.

Replace three (3) existing urinals including china and flush valves with 0.125 gpf wall hung china and piston type sensor operated flush valves. New urinals shall be of a similar style of the fixture which it is replacing.

Replace the existing aerators at nine (9) lavatories with 0.5 gpm laminar flow aerators.

ECM-Electrical

None.

# 5.0 ROOM REQUIREMENTS

Not used.

# 6.0 ENGINEERING SYSTEMS REQUIREMENTS (ESR)

A10 Foundations – Not Used
A20 Basement Construction – Not Used
B10 Superstructure – Not Used
B20 Exterior Closure – Not Used
B30 Roofing
C10 Interior Construction
C20 Stairs – Not Used
C30 Interior Finishes
D10 Conveying Systems – Not Used
D20 Plumbing
D30 HVAC
D40 Fire Protection Systems
D50 Electrical Power and Lighting – Not Used
E10 Equipment– Not Used
E20 Furnishings – Not Used

F10 Special Construction – Not Used
F20 Selective Building Demo – Not Used
G10 Site Preparations – Not Used
G20 Site Improvements – Not Used
G30 Site Civil/Mechanical Utilities – Not Used
G40 Site Electrical Utilities – Not Used

# A10 FOUNDATION
Not used

# A20 BASEMENT CONSTRUCTION
Not used

# B10 SUPERSTRUCTURE
Not used

# B20 EXTERIOR ENCLOSURE
Not used

# B30 ROOFING

The roof is a hot mopped, modified bitumen cap sheet over 3” of rigid board insulation.

Cut and patch the existing bitumen roof to make connections as required for the ducted returns.

## B3010 ROOF COVERINGS
Remove the existing roofing, where necessary, to make connections.

Properly dispose of the demolished materials in a landfill not on the military installation.

## B3020 PERFORMANCE REQUIREMENTS

Any roof patches and/or repairs shall be watertight; free of defects in materials and workmanship; free of damage, including blisters, delaminations, cuts, scratches, abrasions, and patchwork; provide for positive drainage of the roof surface area; and suitable for the climatic and service conditions of the installation.

## B3050 ROOF SPECIFICATION AND DETAILING

All work, materials, installation and details shall be in accordance with Standard Design-Build Template PTS B30 and comply with all applicable Unified Facilities Guide Specification (UFGS) materials and installation requirements. UFGS's are referenced in PTS B30 and are available at www.ccb.org . Provide for complete rough carpentry, roof insulation, roof covering, sheet metal flashing, and other components necessary to complete the installation.

Utilize the applicable UFGS for development of the roof membrane specification. Edit for application to the specific project and compliance with the RFP. Provide complete rough carpentry, roof insulation, and sheet metal flashing specification sections coordinated and compatible with the membrane specification.

All details shall be in accordance with recommendations and guidelines of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual and Construction Details and as required by the RFP.

The roof system shall comply with the applicable requirements of the International Building Code. Refer to UFC 3-110-03, *Roofing*, and UFC 3-100-10, *Architecture* for additional technical requirements for the roof system to be installed.

## B3060 ROOF DESIGNER REQUIREMENTS

Provide materials specification, installation requirements, and system detailing to include all flashings, penetrations, closures, corners, intersections, terminations, transitions, interfaces, joint, and lap conditions to provide for a watertight installation.

## B3070 QUALITY CONTROL PROGRAM

Contractor shall establish a quality control program to assure adherence to the RFP design and construction requirements and to report on the installation quality.

# C10 INTERIOR CONSTRUCTION

Not used

# C30 INTERIOR FINISHES

## C3040 INTERIOR COATINGS AND SPECIAL FINISHES

Where any new surfaces are required (i.e., due to cutting/patching for HVAC work), paint to match previously painted interior surfaces. Surfaces requiring painting may include walls, doors, trim, ceilings as well as all interior exposed metal items, to include interior grilles, registers, diffusers, access panels, and panel boxes.

# D10 CONVEYING SYSTEMS

Not used

# D20 PLUMBING

## D2010 PLUMBING FIXTURES

Provide quantity and type of plumbing fixtures required for the occupancy, use, and functions described for this facility and in accordance with the plumbing code. Provide handicapped fixtures in accordance with the referenced criteria.

**Water Closets**

Provide low-flow floor mounted dual flush valve type water closets with battery powered electronic control, 1.6/1.1 gpf piston operated flush valves in all public restroom spaces.

**Urinals**

Provide low-flow flush valve type urinals with battery powered electronic control, 0.125 gpf piston operated flush valves in all public restroom spaces.

**Lavatories**
Not used.

**Sinks**

Not Used.

**Showers**
Not Used.

**Water Coolers**
Not Used.

## D2020 DOMESTIC WATER EQUIPMENT

Not Used.

**Insulation & Identification**
Not Used.

**Specialties**
Not Used.

**Other Domestic Water Supply**
Provide piping supports in accordance with the IPC. Provide inspections, disinfection, and testing in accordance with the IPC.

## D2030 SANITARY WASTE

**Floor Drains**
Not Used.

**Sanitary & Vent Equipment**
Not Used.

## D2040 RAIN WATER DRAINAGE

Not Used.

## D2090 OTHER PLUMBING SYSTEMS

**Special Piping Systems**
Not Used

# D30 HVAC

**HVAC System Requirements**
Refer to Part 6, Miscellaneous, Waiver for waiver of CNIC mandated temperature setpoints.

## D3010 ENERGY SUPPLY

Not Used.

## D3020 HEAT GENERATING SYSTEMS

Not Used.

## D3030 COOLING GENERATING SYSTEMS

Not Used.

## D3040 DISTRIBUTION SYSTEMS

**Air Distribution, Heating & Cooling**
Provide insulated, galvanized steel return ductwork. Provide double wall, pre-insulated ductwork in public areas when exposed.

Provide steel or aluminum grilles, registers, and diffusers.

Design return ductwork and grilles to minimize pressure losses, and verify existing rooftop unit fans are capable of providing design airflow with additional pressure loss from return ductwork and grilles. Insulate all return ductwork, and insulate the metal backs (above the ceiling) on all existing supply diffusers.

## D3050 TERMINAL & PACKAGE UNITS

Not Used.

## D3060 CONTROLS AND INSTRUMENTATION

**HVAC Controls**
Provide a partial direct digital control (DDC) system which will communicate with the existing base EMCS system. The existing EMCS was manufactured by Siemens (APOGEE System). Modify existing control components as necessary to implement Mechanical ECM's indicated in Chapter 4-Building Requirements.

## D3070 SYSTEMS TESTING AND BALANCING

Provide complete Testing and Balancing (TAB) of all new and modified air distribution systems and HVAC equipment. Balance the supply and return airflows from the rooftop units along with any associated exhaust fans to produce a positive pressure in the building at minimum and maximum outside airflows. The rooftop unit exhaust fans shall be controlled to maintain a positive pressure in the building.

The government is contracting with an independent third-party commissioning firm to provide Fundamental Commissioning (Cx) to meet the requirements of NEBB Procedural Standards for Retro-Commissioning of Existing Buildings. The commissioning firm's Commissioning Authority (CxA) shall direct and coordinate Cx activities and shall report and document all results, recommendations and findings directly to the government.

Systems to be commissioned include, but are not limited to the following systems: HVAC systems, HVAC control systems, DDC systems, and Testing, Adjusting and Balancing

# D40 FIRE PROTECTION SYSTEMS

## D4010 FIRE ALARM AND DETECTION SYSTEMS

Verify operation of existing return air duct smoke detectors for RTU-2 through 6 and replace or provide new duct detectors as necessary to meet code requirements. Connect duct detectors to the existing system and test them to ensure they transmit supervisory and trouble

conditions and shut down their respective RTU's.

Maintain the existing associated interlocks and operation of the fire alarm /mass notification system protocol/ sequencing for monitoring and control functions associated with the existing equipment. Ensure compliance with UFC and NFPA criteria.

### D4020 FIRE SUPPRESSION WATER SUPPLY AND EQUIPMENT

Not Used.

### D4040 SPRINKLERS

Not Used.

### D4090 OTHER FIRE PROTECTION SYSTEMS

Not Used.

## D50 ELECTRICAL

Not Used.

## E10 EQUIPMENT

Not used

## E20 FURNISHINGS

Not used

## F10 SPECIAL CONSTRUCTION

Not used

## F20 SELECTIVE BUILDING DEMOLITION

### F2020 HAZARDOUS COMPONENT ABATEMENT

Not used.

## G10 SITE PREPARATION

Not used

## G20 SITE IMPROVEMENTS

Not used

## G30 SITE CIVIL/MECHANICAL UTILITIES

Not used

## G40 SITE ELECTRICAL UTILITIES

Not used

# Part 3 Statement of Work / Project Program – Building 1326

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A20 Basement Construction – Not Used
B10 Superstructure – Not Used
B20 Exterior Closure – Not Used
B30 Roofing
C10 Interior Construction – Not Used
C20 Stairs – Not Used
C30 Interior Finishes
D10 Conveying Systems – Not Used
D20 Plumbing
D30 HVAC
D40 Fire Protection Systems
D50 Electrical Power and Lighting
E10 Equipment – Not Used
E20 Furnishings – Not Used
F10 Special Construction – Not Used
F20 Selective Building Demolition – Not Used
G10 Site Preparations – Not Used
G20 Site Improvements – Not Used
G30 Site Mechanical Utilities – Not Used
G40 Site Electrical Utilities – Not Used

# 1.0 PROJECT DESCRIPTION

This project will provide energy improvements at Naval Station (NAVSTA) Great Lakes through a series of Energy Conservation Measures (ECMs). The project will result in utility energy and cost savings for electricity, natural gas, water, and sewage.

Building 1326
Project includes replacement of three (3) Roof Top Units (RTU-1, 2 & 3) with high efficiency units, with VAV fans; update of the interface between RTUs and base EMCS; upgrade to sinks with low flow aerators; and replacement of pendant lighting with LED fixtures.

# 2.0 PROJECT OBJECTIVES

The subject project is intended to conserve resources, and reduce overall operations and maintenance costs in the Navy Exchange (NEX) Facilities identified as part of this project. To that end, this project will install new and modify existing equipment and systems to improve the efficiency and cost effectiveness of the facilities. The project will result in utility energy and cost savings for electricity, natural gas, water, and sewage. Naval Station Great Lakes is currently at a 23% reduction in energy intensity towards a mandated 30% goal by calendar year 2015. This project will improve the reduction percentage to achieve the mandated goal.

# 2.2 SUSTAINABLE DESIGN

Design and construct project per sustainability requirements identified in Section 01 33 29.05 20, *Sustainability Requirements For Design-Build*. Additional specific sustainability requirements are found in this document.

# 2.3 STORMWATER MANAGMENT - LOW IMPACT DEVELOPMENT (LID)

Not Applicable: This project is limited to internal renovations and maintenance.

# 3.0 SITE ANALYSIS

Drawings and additional information can be found in Part 6.

### Description

Building 1326 is an exchange store consisting of a retail store, grocery, phone/internet center, food court with several fast food providers, warehouse space and MWR. The building is approximately 28,800 square feet. For the purposes of this project, the food court kitchen and MWR space, with their associated equipment was not evaluated. The RTU serving the Food Court was included per NAVFAC direction.

### Building Systems

#### Roof Top Units

There are four Trane Intellipack roof top units that serve building 1326. They are single zone, constant volume cooling units with gas heat. They all appear to be original and are approximately 15 years old.

RTU-1: Serves the retail space.
RTU-2: Serves the phone center
RTU-3: Serves the Food Court Area
RTU-4: Serves the MWR space (not in the scope of this project)

The RTUs are connected to a Trane Tracer Summit control system, which is no longer accessible, and have since been controlled via stand-alone control interface panel on each unit. The RTUs are not monitored, controlled or scheduled through the base Building Management System. The units are currently scheduled to operate in occupied mode 24/7/365. Space temperature set point can be reset at the local controller on the units, but this requires accessing the roof of the building.

**Lighting**

Interior Lighting Systems: Currently, there are approximately 215 light fixtures throughout the facility that utilize fluorescent lamps. Over half are 4-lamps 2'x4', 18-cell recessed parabolic fixtures. The remaining consists of 2- or 3-lamp 2'x4' recessed lensed troffers, 1-lamp HID pendant fixtures, 2-lamps 1'x4' recessed fixtures, 2-lamp surface mounted fixtures, and 4' industrial 2-lamp strip fixtures. Most of the linear fluorescent fixtures are equipped with standard 32WT8 lamps and generic electronic ballast.

Interior Lighting Controls: The lighting systems in most areas are controlled by timer via Enerlume /EM Fluorescent Lighting Energy Manager, wall switches or occupancy sensors.

**Plumbing**

The restrooms are located between the food court and the retail store. Fixture counts are as follows:

- (9) Lavatories
- (10) Water Closets
- (3) Urinals

A kitchen sink is in the break area behind the warehouse space. There are no showers in the building.

# 4.0 BUILDING REQUIREMENTS

<u>ECM-Mechanical</u>

Replace three (3) existing packaged rooftop units (RTU-1, 2 & 3) with high-efficiency DX cooling, gas-fired heating rooftop units. New units are to be sized to match existing heating and cooling requirements. Existing rooftop unit sizes are as follows: 25 tons nominal cooling, 375 MBH output heating each (RTU-1 & 2), 48 tons nominal cooling, 638 MBH output heating (RTU-3).

Controls shall be BAC-Net compatible and have the ability to optimize sequences including supply air reset, optimized start/stop, and equipment status monitoring in compliance with ASHRAE 90.1. Integrate rooftop unit controls with the base Siemens APOGEE EMCS. Monitor, control, alarm and trend the following points through the base EMCS:

- Individual rooftop unit Start/Stop
- Individual rooftop unit Status
- Cooling and heating mode override
- Economizer override
- Space temperature control and monitoring
- Return air temperature monitoring
- Supply air temperature control and monitoring
- Filter Status monitoring via differential pressure
- Alarms for heater failure, compressor failure, supply fan failure, freezestat, duct smoke detector.
- Scheduled occupied and unoccupied modes
- Outside air temperature reset for both occupied unoccupied modes.
- Outside air damper minimum position.
- Optimal start/stop
- Supply fan run status
- Supply fan speed
- VFD fan status
- Exhaust fan run status

Provide occupancy sensor in Telephone/Communications rooms interfaced with associated rooftop unit (RTU-2) controls. Rooftop unit shall operate in the unoccupied mode unless an occupancy sensor is activated. Once a sensor is activated, unit shall switch to the occupied mode for a scheduled period of time (2 hours-adjustable).

Provide all materials, personnel and equipment required to support the installation of any of new duct smoke detector(s) associated with the new rooftop units. Detectors shall be wired back to the existing Fire Alarm Control Panel (FACP) located within the building. Each duct detector shall be mounted in an accessible location.

Rooftop unit fans shall interface with existing HVAC Emergency Shutdown Switch for the building in accordance with UFC 4-021-01.

ECM-Plumbing

Replace break area kitchen faucet with a low flow aerator and single handled faucet.

ECM-Electrical

Remove existing interior pendant light fixtures (Quantity of 12) and replace with new pendant LED lights. Existing circuits, conduit and wire may remain in place and be reused but shall be modified as necessary to allow for new light fixtures installation. Perform lighting calculations based on actual reflectance values of room finishes and using maintenance factors calculated in accordance with IESNA. Average maintained illumination levels shall comply with UFC and NEX requirement, whichever is more stringent.

Provide all materials, personnel and equipment to support the electrical installation of the new mechanical and plumbing upgrades. Existing circuits, conduit and wire may remain in place and be reused but shall be modified as necessary to allow for new equipment installation. If new circuits are required, provide (at a minimum), new circuit breaker(s), circuit wiring, local disconnect switch, and other equipment required for a complete installation. Power shall be provided from nearest panelboard with adequate capacity. Coordinate with the Contracting Officer or their

representative to de-energize, dismantle and remove all electrical feeders, branch circuits, disconnects, and all such devices involved with the mechanical and plumbing systems being demolished. Dismantle and remove all conductors, exposed conduit, and other devices in any feeder or branch circuit back to the serving panel.

# 5.0 ROOM REQUIREMENTS

Not used.

# 6.0 ENGINEERING SYSTEMS REQUIREMENTS (ESR)

A10 Foundations – Not Used
A20 Basement Construction – Not Used
B10 Superstructure – Not Used
B20 Exterior Closure – Not Used
B30 Roofing
C10 Interior Construction – Not Used
C20 Stairs – Not Used
C30 Interior Finishes
D10 Conveying Systems – Not Used
D20 Plumbing
D30 HVAC
D40 Fire Protection Systems
D50 Electrical Power and Lighting
E10 Equipment – Not Used
E20 Furnishings – Not Used
F10 Special Construction – Not Used
F20 Selective Building Demolition – Not Used
G10 Site Preparations – Not Used
G20 Site Improvements – Not Used
G30 Site Mechanical Utilities – Not Used
G40 Site Electrical Utilities – Not Used

# A10 FOUNDATION
Not used

# A20 BASEMENT CONSTRUCTION
Not used

# B10 SUPERSTRUCTURE
Not used

# B20 EXTERIOR ENCLOSURE
Not used

# B30 ROOFING

The roof is clad mostly in an EPDM membrane, although there are some segments of medium slope, standing seam, metal panel roof. The metal and EPDM roof portions are insulated with 3.5” of rigid board insulation.Cut and patch the existing roof to make connections as required for the ducted returns and the new Roof Top Units.

## B3010 ROOF COVERINGS

Remove the existing roofing, where necessary, to make connections.

Properly dispose of the demolished materials in a landfill not on the military installation.

## B3020 PERFORMANCE REQUIREMENTS

Any roof patches and/or repairs shall be watertight; free of defects in materials and workmanship; free of damage, including blisters, delaminations, cuts, scratches, abrasions, and patchwork; provide for positive drainage of the roof surface area; and suitable for the climatic and service conditions of the installation.

## B3050 ROOF SPECIFICATION AND DETAILING

All work, materials, installation and details shall be in accordance with Standard Design-Build Template PTS B30 and comply with all applicable Unified Facilities Guide Specification (UFGS) materials and installation requirements. UFGS's are referenced in PTS B30 and are available at www.ccb.org . Provide for complete rough carpentry, roof insulation, roof covering, sheet metal flashing, and other components necessary to complete the installation.

Utilize the applicable UFGS for development of the roof membrane specification. Edit for application to the specific project and compliance with the RFP. Provide complete rough carpentry, roof insulation, and sheet metal flashing specification sections coordinated and compatible with the membrane specification.

All details shall be in accordance with recommendations and guidelines of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual and Construction Details and as required by the RFP.

The roof system shall comply with the applicable requirements of the International Building Code. Refer to UFC 3-110-03, *Roofing*, and UFC 3-100-10, *Architecture* for additional technical requirements for the roof system to be installed.

## B3060 ROOF DESIGNER REQUIREMENTS

Provide materials specification, installation requirements, and system detailing to include all flashings, penetrations, closures, corners, intersections, terminations, transitions, interfaces, joint, and lap conditions to provide for a watertight installation.

## B3070 QUALITY CONTROL PROGRAM

Contractor shall establish a quality control program to assure adherence to the RFP design and construction requirements and to report on the installation quality.

# C10 INTERIOR CONSTRUCTION

Not used

# C30 INTERIOR FINISHES

## C3040 INTERIOR COATINGS AND SPECIAL FINISHES

Where any new surfaces are required (i.e., due to cutting/patching for HVAC work), paint to match previously painted interior surfaces. Surfaces requiring painting may include walls, doors, trim, ceilings as well as all interior exposed metal items, to include interior grilles, registers, diffusers, access panels, and panel boxes.

[All finish coatings shall be as indicated in the Room Finish Schedule.]

# D10 CONVEYING SYSTEMS

Not used.

# D20 PLUMBING

## D2010 PLUMBING FIXTURES

Provide quantity and type of plumbing faucets required for the occupancy, use, and functions described and in accordance with the plumbing code.

**Water Closets**
Not Used.

**Urinals**
Not Used.

**Lavatories**
Not Used.

**Sinks**

Provide a new faucet for the existing countertop kitchen sink in the break area. Provide low-flow faucet with single handle and swing spout.

**Showers**
Not Used.

**Water Coolers**
Not Used.

## D2020 DOMESTIC WATER EQUIPMENT

Not Used.

**Insulation & Identification**
Not Used.

**Specialties**
Not Used.

**Other Domestic Water Supply**
Provide inspections, disinfection, and testing in accordance with the IPC.

## 2030 SANITARY WASTE

Not Used.

## D2040 RAIN WATER DRAINAGE

Not Used.

## D2090 OTHER PLUMBING SYSTEMS

**Special Piping Systems**
Not Used.

# D30 HVAC

**HVAC System Requirements**
Provide air conditioning and heating for spaces as indicated and for the following Design conditions:

Outside Conditions

| | | | | | |
|---|---|---|---|---|---|
| Summer | 32 | Degrees C dry bulb | Winter | -17.9 | Degrees C |
| | 89.5 | Degrees F dry bulb | | -0.2 | Degrees F |
| | 23.2 | Degrees C wet | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | bulb | | | |
| | 73.8 | Degrees F wet bulb | | | |

Inside Conditions

| | | | | | |
|---|---|---|---|---|---|
| Summer | 23.8 | Degrees C dry bulb | Winter | 20 | Degrees C |
| | 75 | Degrees F dry bulb | | 68 | Degrees F |
| | 50 | %RH | | | |

Refer to Part 6, Miscellaneous, Waiver for waiver of CNIC mandated temperature setpoints.

## D3010 ENERGY SUPPLY

Not Used.

## D3020 HEAT GENERATING SYSTEMS

Not Used.

## D3030 COOLING GENERATING SYSTEMS

Not Used.

## D3040 DISTRIBUTION SYSTEMS

Not Used.

## D3050 TERMINAL & PACKAGE UNITS

**Package units**
Provide packaged rooftop air conditioning units to condition the facility. Provide units factory assembled, designed, tested, and rated in accordance with AHRI 340/360 and have a minimum cooling efficiency of 10.8 EER. Provide factory-mounted variable frequency drive with bypass for single zone, variable air volume (VAV) supply fan operation. Provide fully modulating 0-100 percent dry bulb economizer with powered exhaust fan. Provide fully modulating gas heat controls.

## D3060 CONTROLS AND INSTRUMENTATION

**HVAC Controls**
Provide a partial direct digital control (DDC) system which will communicate with the existing base EMCS system. The existing EMCS was manufactured by Siemens (APOGEE System).

## D3070 SYSTEMS TESTING AND BALANCING

Provide complete Testing and Balancing (TAB) of all new and modified air distribution systems and HVAC equipment.

The government is contracting with an independent third-party commissioning firm to provide Fundamental Commissioning (Cx) to meet the requirements of NEBB Procedural Standards for Retro-Commissioning of Existing Buildings. The commissioning firm's Commissioning Authority (CxA) shall direct and coordinate Cx activities and shall report and document all results, recommendations and findings directly to the government.

Systems to be commissioned include, but are not limited to the following systems: HVAC systems, HVAC control systems, DDC systems, and Testing, Adjusting and Balancing.

# D40 FIRE PROTECTION SYSTEMS

## D4010 FIRE ALARM AND DETECTION SYSTEMS

Replace return air duct smoke detectors for RTU-1, 2, & 3 and as necessary to meet code requirements. Connect duct detectors to the existing system and test them to insure they transmit supervisory and trouble conditions and shut down their respective RTU's.

Maintain the existing associated interlocks and operation of the fire alarm/mass notification system protocol/sequencing for monitoring and control functions associated with the existing equipment. Ensure compliance with UFC and NFPA criteria.

## D4020 FIRE SUPPRESSION WATER SUPPLY AND EQUIPMENT

Not Used.

## D4040 SPRINKLERS

Not Used.

## D4090 OTHER FIRE PROTECTION SYSTEMS

Not Used.

# D50 ELECTRICAL

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

Panelboards shall comply with UL 67 and UL 50

Provide molded case circuit breakers in accordance with UL 489.

Fusible Disconnect Switches: Heavy Duty, Single Throw: UL 98 and NEMA KS 1, Type HD

Nonfusible Disconnect Switches: Heavy Duty, Single Throw: UL 98, Type HD.

Full-Voltage Magnetic Controllers: Full voltage, non-reversing, electrically held.

Combination Magnetic Controller: Fusible disconnecting means, and with auxiliary contacts.

## D5010 ELECTRICAL SERVICE & DISTRIBUTION

Provide an insulated equipment grounding conductor in all raceways for systems operating at greater than 50 volts.

## D5020 LIGHTING & BRANCH WIRING

All conductors shall be copper.

Provide pendant LED lighting as indicated.

All wiring shall be in electrical metal conduits and shall be concealed except in the industrial spaces and at locations indicated in Part 3. No conductors shall be smaller than No. 12 AWG, copper wires. Wiring below slab or underground shall 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 shall not be used for grounding. Use of cable assemblies Types AC, MC, or MI and flat conductors are prohibited. Circuit breakers shall be bolt-on type. Series rated circuit breakers and fusible panelboards shall not be used.

All homerun circuits must contain no more than 3 phase conductors.

## D5030 COMMUNICATIONS & SECURITY

Not Used.

## D5090 OTHER ELECTRICAL SERVICES

Not Used.

# E10 EQUIPMENT

Not used.

# E20 FURNISHINGS

Not used.

# F10 SPECIAL CONSTRUCTION

Not used.

# F20 SELECTIVE BUILDING DEMOLITION

## F2020 HAZARDOUS COMPONENT ABATEMENT

Not used.

# G10 SITE PREPARATION

Not used.

# G20 SITE IMPROVEMENTS

Not used.

# G30 SITE CIVIL/MECHANICAL UTILITIES

Not used.

# G40 SITE ELECTRICAL UTILITIES

Not used.

# Part 3 Statement of Work / Project Program – Building 3503

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G10 Site Preparations – Not Used
G20 Site Improvements – Not Used
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G40 Site Electrical Utilities – Not Used

# 1.0 PROJECT DESCRIPTION

This project will provide energy improvements at Naval Station (NAVSTA) Great Lakes through a series of Energy Conservation Measures (ECMs). The project will result in utility energy and cost savings for electricity, natural gas, water, and sewage.

Building 3503
Project includes the additional of water reclamation system onto the facility's laundry.

Optional work includes the addition of air curtains to two (2) overhead doors.

# 2.0 PROJECT OBJECTIVES

The subject project is intended to conserve resources, and reduce overall operations and maintenance costs in the Navy Exchange (NEX) Facilities identified as part of this project. To that end, this project will install new and modify existing equipment and systems to improve the efficiency and cost effectiveness of the facilities. The project will result in utility energy and cost savings for electricity, natural gas, water, and sewage. Naval Station Great Lakes is currently at a 23% reduction in energy intensity towards a mandated 30% goal by calendar year 2015. This project will improve the reduction percentage to achieve the mandated goal.

# 2.2 SUSTAINABLE DESIGN

Design and construct project per sustainability requirements identified in Section 01 33 29.05 20, *Sustainability Requirements For Design-Build*. Additional specific sustainability requirements are found in this document.

# 2.3 STORMWATER MANAGMENT - LOW IMPACT DEVELOPMENT (LID)

Not Applicable: This project is limited to internal renovations and maintenance.

# 3.0 SITE ANALYSIS

Drawings and additional information can be found in Part 6.

**Description**

Building 3503 is approximately 41,114 square feet the south most portion of an existing repurposed warehouse building, currently used as a laundry facility. The facility consists of office spaces, storage rooms, lockers, washrooms, maintenance room, compressor room, electrical room, boiler room, chemical room, shop area with tunnel washers, industrial drum dryers, dry cleaning machines, iron presses and chemical storage area.

The scope of this project is to assess the recovery of waste water from the washers.

**Building Systems**

**Washers**

The facility has the following washing/extraction machines:

(1) Milnor 30022 V6J, 50Lb washer/extractor, 104 gallons of waste water, approximately 70% hot water and 30% cold water
(1) Minor 36026 V7J, 85Lb washer/extractor, 160 gallons of waste water, approximately 70% hot water and 30% cold water
(4) Washex FVS 600, 135 lb washer/extractor, 177 gallons of waste water, approximately 70% hot water and 30% cold water (estimated).
(1) Lavatech, 5 module continuous batch tunnel washer
(1) Lavatech, 7 module continuous batch tunnel washer

# 4.0 BUILDING REQUIREMENTS

ECM-Plumbing

Provide new laundry wash water recycling system. The wash water recycling system shall draw water from both tunnel washers and all washer/extractor machines. As a minimum the system shall include wash water recovery pumps, a dirty water holding tank, initial soap and organics filter, oil and grease filter, suspended solids filter, final holding tank, UV filter, pumps, controls, and piping. The system shall be capable of processing laundry wash water and returning it to the washing machine water supply.

Provide tanks, filters, pumps, piping, controls, labor, and wiring necessary for performing all operations in connection with installation of this wash water recycling system.

The wash water recycling system should take up about 260 square feet of floor area near the existing washing machines. This floor area is available without the need to move or demolish existing equipment or furnishings. Electrical power is available within 200 linear feet of this location.

ECM-Mechanical

**Bid Option #3**

Provide air curtains above the two (2) 12’LX12’H overhead doors on the west wall (south end of the building). Air curtains to provide uniform velocity across the entire length of the discharge area. Interlock overhead door operation with the associated air curtain, and provide hand/off/auto switch to allow user to override air curtain operation in the summer.

ECM-Electrical

Provide all materials, personnel and equipment to support the electrical installation of the new mechanical and plumbing equipment. Provide (at a minimum), new circuit breaker(s), feeder/branch circuit wiring, local disconnect switch, and other equipment required for a complete installation. Where feasible, feed new equipment from existing distribution equipment located in Electrical room 127. Where there is inadequate capacity, upgrade the existing distribution equipment by providing new feeders, distribution panels, and other equipment as necessary to feed the new mechanical equipment. Coordinate new work with demolition activities to ensure adequate space for new panels, controllers and devices that are planned for the location. Verify that panels slated for new loads are in good condition and are suitable for reuse. The Contractor shall verify the presence of the grounding electrode conductor at each panel planned for reuse. Confirm that the grounding electrode system has a resistance to earth of 25 ohms or less. If the resistance reading exceeds 25 ohms, notify the Contracting Officer or their representative of discrepancies along with recommendations.

**Bid Option #3**

Provide power to air curtains as indicated in the mechanical section (Bid Option #3). Comply with the electrical requirement as mentioned in the electrical section.

# 5.0 ROOM REQUIREMENTS

Not used.

# 6.0 ENGINEERING SYSTEMS REQUIREMENTS (ESR)

A10 Foundations – Not Used
A20 Basement Construction – Not Used
B10 Superstructure – Not Used
B20 Exterior Closure
B30 Roofing – Not Used
C10 Interior Construction – Not Used
C20 Stairs – Not Used
C30 Interior Finishes
D10 Conveying Systems – Not Used
D20 Plumbing
D30 HVAC
D40 Fire Protection Systems – Not Used
D50 Electrical Power and Lighting
E10 Equipment
E20 Furnishings – Not Used
F10 Special Construction – Not Used
F20 Selective Building Demolition – Not Used
G10 Site Preparations – Not Used
G20 Site Improvements – Not Used
G30 Site Mechanical Utilities – Not Used
G40 Site Electrical Utilities – Not Used

# A10 FOUNDATION
Not used

# A20 BASEMENT CONSTRUCTION
Not used

# B10 SUPERSTRUCTURE
Not used

# B20 EXTERIOR ENCLOSURE

## B2010 EXTERIOR WALLS
Match existing concrete and masonry wall fenestration detailing.

## B2020 EXTERIOR WINDOWS
Not used

## B2030 EXTERIOR DOORS
Not used

# B30 ROOFING
Not used

# C10 INTERIOR CONSTRUCTION
Not used.

# C30 INTERIOR FINISHES

## C3040 INTERIOR COATINGS AND SPECIAL FINISHES

Where any new surfaces are required (i.e., due to cutting/patching for air curtain or water reclamation system installation), paint to match previously painted interior surfaces. Surfaces requiring painting may include walls, doors, trim, ceilings as well as all interior exposed metal items, to include interior grilles, registers, diffusers, access panels, and panel boxes.

# D10 CONVEYING SYSTEMS
Not used.

# D20 PLUMBING

## D2010 PLUMBING FIXTURES
Not Used.

## D2020 DOMESTIC WATER EQUIPMENT

Provide new laundry wash water recycling system. The wash water recycling system shall draw water from both tunnel washers and all washer/extractor machines. As a minimum the system shall include wash water recovery pumps, a dirty water holding tank, initial soap and organics filter, oil and grease filter, suspended solids filter, final holding tank, UV filter, pumps, controls, and piping. The system shall be capable of handling 125 gpm of laundry wash water.

Provide tanks, filters, pump skid(s), interconnecting piping, sensors, circuit control hardware, labor, tools, control wiring, power wiring, and equipment necessary for and incidental to performing all operations in connection with furnishing, delivery, and installation of this wash water recycling system. Components shall include but not be limited to wash water recovery pumps, a dirty water holding tank, initial soap and organics filter, oil and grease filter, suspended solids filter, final holding tank, UV filter, pumps, controls, automatic bypass, emergency stop button, and piping.

The dirty water holding tank shall be capable of containing a minimum of 1,000 gallons of hot washing machine discharge water. The transfer and process pumps and filters shall be capable of processing 125 gpm of laundry wash water. The final holding tank shall be capable of containing a minimum of 1,500 gallons of filter wash water. This tank shall also have provision for injecting oxygen into the wash water.

Pumps, controls, and a final UV filter shall be located on a skid piped and wired to the other components in order to provide a complete and operable wash water recycling system. Provide complete functional performance testing of the laundry wash water recycle system.

The government is contracting with an independent third-party commissioning firm to provide Fundamental Commissioning (Cx) to meet the requirements of NEBB Procedural Standards for Retro-Commissioning. The commissioning firm's Commissioning Authority (CxA) shall direct and coordinate Cx activities and shall report and document all results, recommendations and findings directly to the government. Systems to be commissioned include, but are not limited to the following systems: Laundry wash water recycling system.

**Insulation & Identification**
Provide insulation on new domestic water hot and cold supply, recycled wash water, and process water piping.

**Specialties**
Not Used.

**Other Domestic Water Supply**
Provide piping supports in accordance with the IPC. Provide inspections, disinfection, and testing in accordance with the IPC.

## 2030 SANITARY WASTE

Not Used.

## D2040 RAIN WATER DRAINAGE

Not Used.

## D2090 OTHER PLUMBING SYSTEMS

**Special Piping Systems**
Not Used.

## D30 HVAC

**HVAC System Requirements**
Refer to Part 6, Miscellaneous, Waiver for waiver of CNIC mandated temperature setpoints.

## D3010 ENERGY SUPPLY

Not Used.

## D3020 HEAT GENERATING SYSTEMS

Not used.

## D3030 COOLING GENERATING SYSTEMS

Not Used.

## D3040 DISTRIBUTION SYSTEMS

Not Used.

## D3050 TERMINAL & PACKAGE UNITS

**Air Curtains**
Provide factory assembled air curtain consisting of casing, motors, centrifugal fans, protective inlet screen, and discharge nozzle.

## D3060 CONTROLS AND INSTRUMENTATION

Prove hand/auto/off switch mounted on nearby wall or column for control of each air curtain.

## D3070 SYSTEMS TESTING AND BALANCING

Not used.

# D40 FIRE PROTECTION SYSTEMS

Not used.

# D50 ELECTRICAL

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

## D5010 ELECTRICAL SERVICE & DISTRIBUTION

Provide an insulated equipment grounding conductor in all raceways for systems operating at greater than 50 volts.

Panelboards shall comply with UL 67 and UL 50

Provide molded case circuit breakers in accordance with UL 489.

Fusible Disconnect Switches: Heavy Duty, Single Throw: UL 98 and NEMA KS 1, Type HD

Nonfusible Disconnect Switches: Heavy Duty, Single Throw: UL 98, Type HD.

Full-Voltage Magnetic Controllers: Full voltage, non-reversing, electrically held.

Combination Magnetic Controller: Fusible disconnecting means, and with auxiliary contacts.

### D5020 LIGHTING & BRANCH WIRING

All conductors shall be copper. All wiring shall be in electrical metal conduits and shall be concealed except in the industrial spaces and at locations indicated in Part 3. No conductors shall be smaller than No. 12 AWG, copper wires. Wiring below slab or underground shall 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 shall not be used for grounding. Use of cable assemblies Types AC, MC, or MI and flat conductors are prohibited. Circuit breakers shall be bolt-on type. Series rated circuit breakers and fusible panelboards shall not be used.

All homerun circuits must contain no more than 3 phase conductors.

### D5030 COMMUNICATIONS & SECURITY

Not Used.

### D5090 OTHER ELECTRICAL SERVICES

Not Used.

## E10 EQUIPMENT

### E1090 OTHER EQUIPMENT

**Laundry Equipment**
Refer to D2020 for details on water reclamation system and equipment.

## E20 FURNISHINGS

Not used.

## F10 SPECIAL CONSTRUCTION

Not used.

## F20 SELECTIVE BUILDING DEMOLITION

### F2020 HAZARDOUS COMPONENT ABATEMENT

Not used.

## G10 SITE PREPARATION

Not used.

## G20 SITE IMPROVEMENTS

Not used.

## G30 SITE CIVIL/MECHANICAL UTILITIES

Not used.

# G40 SITE ELECTRICAL UTILITIES

Not used.

# Part 3 Statement of Work / Project Program – Building 7626

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F20 Selective Building Demolition – Not Used
G10 Site Preparations – Not Used
G20 Site Improvements – Not Used
G30 Site Mechanical Utilities – Not Used
G40 Site Electrical Utilities – Not Used

# 1.0 PROJECT DESCRIPTION

This project will provide energy improvements at Naval Station (NAVSTA) Great Lakes through a series of Energy Conservation Measures (ECMs). The project will result in utility energy and cost savings for electricity, natural gas, water, and sewage.

Building 7626
Project includes upgrade of urinal, water closet and lavatory fixtures to low-flow type; and reprogramming of Air Handling Unit (AHU) controls and interface with base EMCS.

Optional work includes replacement of the existing air-cooled chiller; replacement of the existing domestic hot water heater with a smaller unit, sized for the current processing needs; and replacement of existing boilers with new, high efficiency condensing boilers.

# 2.0 PROJECT OBJECTIVES

The subject project is intended to conserve resources, and reduce overall operations and maintenance costs in the Navy Exchange (NEX) Facilities identified as part of this project. To that end, this project will install new and modify existing equipment and systems to improve the efficiency and cost effectiveness of the facilities. The project will result in utility energy and cost savings for electricity, natural gas, water, and sewage. Naval Station Great Lakes is currently at a 23% reduction in energy intensity towards a mandated 30% goal by calendar year 2015. This project will improve the reduction percentage to achieve the mandated goal.

# 2.2 SUSTAINABLE DESIGN

Design and construct project per sustainability requirements identified in Section 01 33 29.05 20, *Sustainability Requirements For Design-Build*. Additional specific sustainability requirements are found in this document.

# 2.3 STORMWATER MANAGMENT - LOW IMPACT DEVELOPMENT (LID)

Not Applicable: This project is limited to internal renovations and maintenance.

# 3.0 SITE ANALYSIS

Drawings and additional information can be found in Part 6.

**Description**

Building 7626 is approximately 18,580 square feet, single story building. The facility used as a photo lab/studio to take shoot, process and deliver photos. The facility consists of a photo hall, private photo rooms, processing lab, mounting and delivery rooms, processing support rooms, offices and toilet rooms. The mechanical, electrical and incoming water service, are located in rooms accessible from the outside at the rear of the building. No significant equipment is roof-mounted.

**Building Systems**

**Air Handling System**

Ventilation, heating and air conditioning is provided by a single zone, variable air volume air handling unit, serving 14 variable volume single zone terminal units with hot water reheat and 2 variable volume fan powered boxes with hot water reheat.

The air handling unit is equipped with supply fan, chilled water cooling coil, hot water heating coil, filter section and outside air economizer dampers (outside air, return air, and relief air). The return fan is an in-line duct mounted fan.

The air handling system is monitored, controlled and scheduled through the base EMCS system.

The terminal units are controlled by local room sensors equipped with occupied override push buttons.

**Chilled Water System**

The chilled water system consists of an air cooled chiller and two circulating pumps arranged in a primary pumping arrangement. The system is a constant volume, glycol system with a three way control valve at the air handling unit coil. The pumps are set up as lead/standby.

**Heating Hot Water System**

The heating hot water system consists of two hot water boilers and two circulating pumps. The system is a constant volume with a three way control valve at the air handling unit. The system is served by a glycol make up system, which is shared with the chilled water system. The circulating pumps are set up as lead/standby.

**Supply/Recirculation/Exhaust Fans**

The building is served by three exhaust fans. With the exception of the electrical room, which is a horizontal wall mounted fan, the remaining exhaust fans are ducted in-line fans.

EF-1: Serves the toilets (could not verify). The exhaust fan is an in-line fan located in the mechanical room.

EF-2: Serves the darkroom or toilets (could not verify). The exhaust fan is an in-line fan located in the mechanical room.

EF-3: Serves the electrical room. The exhaust fan is a wall mounted fan.

SF-2: Serves the mechanical room and provides combustion air for the boilers and water heater.

VF-1: Serves the photo hall. This is a recirculation fan that is energized via an occupancy sensor with manual switch override, to provide extra air circulation in the photo hall.

**Unit Heaters**

There are two unit heaters and four cabinet heaters that serve Building 7626. For the purpose of the this report, we have provided equipment identifications as follows as no equipment labels were noted in the field.

CUH-1: Serves the west entry vestibule. Heater is a ceiling recessed unit with wall mounted thermostat.

CUH-2: Serves the Photo Hall. Heater is a surface mounted unit, located above the exterior egress door with wall mounted thermostat.

CUH-3: Serves the south entry vestibule. Heater is a ceiling recessed unit with wall mounted thermostat.

CUH-4: Serves the Loading Dock. Heater is a surface mounted unit, located above the loading dock door with wall mounted thermostat.

UH-1: Mechanical Room. Heater is hot water heater, hung from the ceiling approximately 15 feet above the floor. Thermostatic control provided by a wall mounted thermostat.

UH-2: Electrical Room. Heater is an electric heater, hung from the ceiling approximately 15 feet above the floor. Thermostatic control provided by a wall mounted thermostat.

**Domestic Hot Water**

Domestic hot water for the toilet rooms and janitor's closet is provided by a gas fired 50 gallon water heater with a recirculation pump. The heater is located in the janitor's closet.

**Process Hot Water**

Process hot water is provided by a gas fired 750 MBH heater with a recirculation pump and 500 gallon storage tank. 140 °F water is produced to provide hot water to the photo chemical room and processors.

**Plumbing**

The building contains two sets of restrooms. One restroom is located at the east entrance to the building, and the other restroom is located in the center of the building. Fixture counts are as follows:

- (8) Lavatories
- (6) Water Closets
- (3) Urinals

There is one kitchen sink in the break area. There are no showers in the building.

# 4.0 BUILDING REQUIREMENTS

<u>ECM-Mechanical</u>

Provide the following control updates and modifications to the main air handling unit (AHU):

- Replace associated hot water control valve.
- Schedule occupied/unoccupied unit operation.
- Review existing Siemens EMCS programming to verify unit is operating per design sequences.
- Correct EMCS graphic to correctly represent installed equipment and devices.
- Correct filter differential pressure monitoring. Replace sensor if necessary.
- Correct equipment interlocks. When AHU supply fan is de-energized, associated return fan shall de-energized and outside air and relief air dampers shall close. Return air

damper shall move to full open position.

- Recalibrate feedback signals from VFD's serving supply and return fans to obtain stable, energy conserving operations.

**Bid Option #2**

Replace existing air-cooled, scroll chiller with a high efficiency type sized to match existing chiller size. Existing chiller size is 40 nominal tons and located on a concrete equipment pad on grade. New chiller shall fit on existing concrete pad, otherwise a new structural pad shall be provided.

**Bid Option #5**

Replace existing two boilers with two (2) modular, high efficiency, gas-fired condensing type boilers with direct venting for combustion air and flue gases. Total output capacity of the two new boilers shall be sized to match the total output capacity of the two existing boilers. Replace existing two (2) constant volume hot water pumps with two (2) variable speed pumps sized for duty/stand by operation. Provide separate inline constant volume primary pumps to each boiler if required to maintain boiler minimum system flow requirements. Replace 3-way control at the main air handling unit with a two-way control valve. Existing boiler size is 420 MBH input, 348 MBH output each, and existing hot water pumps are 2 nominal HP each.

ECM-Plumbing

Replace six (6) existing water closets including china and diaphragm valves with dual flush (1.6/ 1.1 gpf) HET china and sensor operated piston flush valves. New water closets shall be of a similar style of the fixture which it is replacing.

Replace three (3) existing urinals including china and flush valves with 0.125 gpf wall hung china and piston type sensor operated flush valves. New urinals shall be of a similar style of the fixture which it is replacing.

Replace the existing aerators at eight (8) lavatories with 0.5 gpm laminar flow aerators.

Replace break area kitchen faucet with a low flow aerator and single handled faucet.

**Bid Option #4**

Remove existing process domestic hot water system and replace with a gas-fired, condensing, direct vent, high efficiency water heater with integral storage tank and temperature mixing valve. Size water heater and associated devices to meet the current equipment load. The process uses 90 gallons per day at 107$^{o}$F.

ECM-Electrical

Provide all materials, personnel and equipment to support the electrical installation of the new mechanical and plumbing upgrades. Existing circuits, conduit and wire may remain in place and be reused but shall be modified as necessary to allow for new equipment installation. If new circuits are required, provide (at a minimum), new circuit breaker(s), circuit wiring, local disconnect switch, and other equipment required for a complete installation. Coordinate with the Contracting Officer or their representative to de-energize, dismantle and remove all electrical feeders, branch circuits, disconnects, and all such devices involved with the mechanical and plumbing systems being demolished. Dismantle and remove all conductors, exposed conduit, and other devices in any feeder or branch circuit back to the serving panel. Where feasible, feed new equipment from existing distribution equipment. Where there is inadequate capacity, upgrade the existing distribution equipment in consultation with the Contracting Officer or their representative. Provide

new feeders, distribution panels, and other equipment as necessary to feed the new mechanical equipment. Coordinate new work with demolition activities to ensure adequate space for new panels, controllers and devices that are planned for the location. Verify that panels slated for new loads are in good condition and are suitable for reuse. The Contractor shall verify the presence of the grounding electrode conductor at each panel planned for reuse. Confirm that the grounding electrode system has a resistance to earth of 25 ohms or less. If the resistance reading exceeds 25 ohms, notify the Contracting Officer or their representative of discrepancies along with recommendations.

**Bid Option #2**

Provide power to replace existing air-cooled chiller as indicated in the mechanical section (Bid Option #2). The existing unit is fed from main distribution panelboard “RDP1”, 200A/208V/3Phase circuit breaker, located in Electrical room 38B. Comply with the electrical requirement as mentioned in the electrical section.

**Bid Option #5**

Provide power to replace existing two boilers as indicated in the mechanical section (Bid Option #5). Comply with the electrical requirement as mentioned in the electrical section.

**Bid Option #4**

Provide power to replace existing process domestic hot water system as indicated in the plumbing section (Bid Option #4). Comply with the electrical requirement as mentioned in the electrical section.

# 5.0 ROOM REQUIREMENTS

Not used.

# 6.0 ENGINEERING SYSTEMS REQUIREMENTS (ESR)

A10 Foundations – Not Used
A20 Basement Construction – Not Used
B10 Superstructure – Not Used
B20 Exterior Closure – Not Used
B30 Roofing – Not Used
C10 Interior Construction – Not Used
C20 Stairs – Not Used
C30 Interior Finishes
D10 Conveying Systems – Not Used
D20 Plumbing
D30 HVAC
D40 Fire Protection Systems
D50 Electrical Power and Lighting
E10 Equipment – Not Used
E20 Furnishings – Not Used
F10 Special Construction – Not Used
F20 Selective Building Demolition – Not Used
G10 Site Preparations – Not Used
G20 Site Improvements – Not Used
G30 Site Mechanical Utilities – Not Used
G40 Site Electrical Utilities – Not Used

# A10 FOUNDATION
Not used

# A20 BASEMENT CONSTRUCTION
Not used

# B10 SUPERSTRUCTURE
Not used

# B20 EXTERIOR ENCLOSURE
Not used

# B30 ROOFING
Not used

# C10 INTERIOR CONSTRUCTION
Not used

# C30 INTERIOR FINISHES

## C3040 INTERIOR COATINGS AND SPECIAL FINISHES

Where any new surfaces are required (i.e., due to cutting/patching for HVAC work), paint to match previously painted interior surfaces. Surfaces requiring painting may include walls, doors, trim, ceilings as well as all interior exposed metal items, to include interior grilles, registers, diffusers, access panels, and panel boxes.

# D10 CONVEYING SYSTEMS
Not used

# D20 PLUMBING

## D2010 PLUMBING FIXTURES

Provide quantity and type of plumbing fixtures required for the occupancy, use, and functions described for this facility and in accordance with the plumbing code. Provide handicapped fixtures in accordance with the referenced criteria.

**Water Closets**
Provide low-flow floor mounted dual flush valve type water closets with battery powered electronic control, 1.6/1.1 gpf piston operated flush valves in restroom spaces.

**Urinals**
Provide low-flow flush valve type urinals with battery powered electronic control, 0.125 gpf piston operated flush valves in restroom spaces.

**Lavatories**
Provide new 0.5 gpm aerators on the existing faucets on the wall mounted lavatories in restroom spaces.

**Sinks**
Provide a new faucet for the existing countertop kitchen sink the break area. Provide low-flow faucet with single handle and swing spout.

**Showers**
Not Used.

**Water Coolers**
Not Used.

## D2020 DOMESTIC WATER EQUIPMENT

Provide high efficiency condensing type water heater with a minimum efficiency of 97%.

Provide natural gas fired water heater for heating and storing the required amount of domestic process hot water.

**Insulation & Identification**
Provide insulation on new or modified domestic water hot and cold supply and recirculation piping.

**Specialties**
Not Used.

**Other Domestic Water Supply**
Provide piping supports in accordance with the IPC. Provide inspections, disinfection, and testing in accordance with the IPC.

## D2030 SANITARY WASTE
Not Used.

## D2040 RAIN WATER DRAINAGE
Not Used.

## D2090 OTHER PLUMBING SYSTEMS

**Special Piping Systems**
Not Used.

# D30 HVAC

**HVAC System Requirements**
Provide air conditioning and heating for spaces as indicated and for the following Design conditions:

Outside Conditions

| | | | | | |
|---|---|---|---|---|---|
| Summer | 32 | Degrees C dry bulb | Winter | -17.9 | Degrees C |
| | 89.5 | Degrees F dry bulb | | -0.2 | Degrees F |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 23.2 | Degrees C wet bulb | | | |
| | 73.8 | Degrees F wet bulb | | | |

Inside Conditions

| | | | | | |
|---|---|---|---|---|---|
| Summer | 23.8 | Degrees C dry bulb | Winter | 20 | Degrees C |
| | 75 | Degrees F dry bulb | | 68 | Degrees F |
| | 50 | %RH | | | |

Refer to Part 6, Miscellaneous, Waiver for waiver of CNIC mandated temperature setpoints.

# D3010 ENERGY SUPPLY

Not Used.

# D3020 HEAT GENERATING SYSTEMS

**Boilers**
Provide high efficiency condensing type heating boilers with a minimum efficiency of 89% based on a 160$^{o}$F return water temperature with a 20$^{o}$F temperature rise and systems designed to allow for maximum efficiency. Provide minimum of 5:1 turndown on each boiler.

Provide variable flow pumping system.

**Equipment Thermal Insulation**
Provide Insulation for hot and chilled water pumps and equipment. Provide vapor barrier for chilled water applications.

# D3030 COOLING GENERATING SYSTEMS

**Chilled Water Systems**
Provide scroll air-cooled chiller with a minimum full load efficiency of 10.1 EER and part load efficiency (IPLV) of 13.5 EER when tested in accordance with AHRI 550/590. Existing constant volume primary pumping system shall remain.

Chiller(s) shall operate in temperatures down to 20 degrees F.

# D3040 DISTRIBUTION SYSTEMS

**Water Distribution Systems**

Provide complete, operable hot and chilled water system to serve the existing HVAC equipment throughout the facility.

**Other Distribution Systems**
Provide in-line circulating pumps.

## D3050 TERMINAL & PACKAGE UNITS

Not Used.

## D3060 CONTROLS AND INSTRUMENTATION

**HVAC Controls**
Provide a partial direct digital control (DDC) system which will communicate with the existing base EMCS system. The existing EMCS was manufactured by Siemens (APOGEE System). Modify existing control components as necessary to implement Mechanical ECM's indicated in Chapter 4—Building Requirements.

## D3070 SYSTEMS TESTING AND BALANCING

Provide complete Testing and Balancing (TAB) of all new and modified air and water distribution systems and HVAC equipment.

The government is contracting with an independent third-party commissioning firm to provide Fundamental Commissioning (Cx) to meet the requirements of NEBB Procedural Standards for Retro-Commissioning of Existing Buildings. The commissioning firm's Commissioning Authority (CxA) shall direct and coordinate Cx activities and shall report and document all results, recommendations and findings directly to the government.

Systems to be commissioned include, but are not limited to the following systems: HVAC systems, HVAC control systems, domestic hot water systems, DDC systems, and Testing, Adjusting and Balancing.

# D40 FIRE PROTECTION SYSTEMS

## D4010 FIRE ALARM AND DETECTION SYSTEMS

Maintain the existing associated interlocks and operation of the fire alarm/mass notification system protocol/sequencing for monitoring and control functions associated with the existing equipment. Ensure compliance with UFC and NFPA criteria.

## D4020 FIRE SUPPRESSION WATER SUPPLY AND EQUIPMENT

Not Used.

## D4040 SPRINKLERS

Not Used.

## D4090 OTHER FIRE PROTECTION SYSTEMS

Not Used.

# D50 ELECTRICAL

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

## D5010 ELECTRICAL SERVICE & DISTRIBUTION

Provide an insulated equipment grounding conductor in all raceways for systems operating at greater than 50 volts.

Panelboards shall comply with UL 67 and UL 50

Provide molded case circuit breakers in accordance with UL 489.

Fusible Disconnect Switches: Heavy Duty, Single Throw: UL 98 and NEMA KS 1, Type HD

Nonfusible Disconnect Switches: Heavy Duty, Single Throw: UL 98, Type HD.

Full-Voltage Magnetic Controllers: Full voltage, non-reversing, electrically held.

Combination Magnetic Controller: Fusible disconnecting means, and with auxiliary contacts.

## D5020 LIGHTING & BRANCH WIRING

All conductors shall be copper.

All wiring shall be in electrical metal conduits and shall be concealed except in the industrial spaces and at locations indicated in Part 3. No conductors shall be smaller than No. 12 AWG, copper wires. Wiring below slab or underground shall 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 shall not be used for grounding. Use of cable assemblies Types AC, MC, or MI and flat conductors are prohibited. Circuit breakers shall be bolt-on type. Series rated circuit breakers and fusible panelboards shall not be used.

All homerun circuits must contain no more than 3 phase conductors.

## D5030 COMMUNICATIONS & SECURITY

Not Used.

## D5090 OTHER ELECTRICAL SERVICES

Not Used.

# E10 EQUIPMENT

Not used.

# E20 FURNISHINGS

Not used.

# F10 SPECIAL CONSTRUCTION

Not used.

# F20 SELECTIVE BUILDING DEMOLITION

## F2020 HAZARDOUS COMPONENT ABATEMENT

Not used.

# G10 SITE PREPARATION

Not used.

# G20 SITE IMPROVEMENTS

Not used.

# G30 SITE CIVIL/MECHANICAL UTILITIES

Not used.

# G40 SITE ELECTRICAL UTILITIES

Not used.

# 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 "Order of Precedence" paragraph in Part 2 for relationships between all parts of the RFP.**

In general, unless otherwise indicated, Contractor shall provide all labor, equipment and materials necessary to complete the work required for the contract. All work shall be in conformance with all applicable referenced criteria, construction standards, laws and regulations, including applicable building and fire, 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. The contractors shall 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 http://www.ccb.org 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
- Structural Fiberboard and Laminated Paperboard
- Cement and Concrete - Coal Fly Ash
- Carpet including backings and cushions
- Floor Tiles
- Reprocessed and Consolidated Latex Paint

- Crushed Concrete Aggregate for new asphalt, concrete or subgrade
- Recycled glass for terrazzo aggregate
- Acoustical Ceiling Tile
- Gypsum Wallboard
- Steel wall studs
- Cellulose spray applied fireproofing
- HDPE Toilet Partitions

## 1.1 MATERIALS AND METHODS OF CONSTRUCTION

Only new materials and equipment shall be installed in the work. All materials, equipment and appliances shall be of the current manufacturers' products. No obsolete or discontinued materials, equipment and appliances shall be used, 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 shall 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 shall be mandatory, as though the word "shall" had been substituted for "should" wherever it appears. Reference to the "authority having jurisdiction" shall 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 to 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 Paragraph 4.0 and in Attachment A.

## 1.3 LOCATION-SPECIFIC CODES AND STANDARDS

See Part 3.

## 1.4 DISCREPANCIES

When discrepancies in the referenced standards and the contract requirements occur, the more stringent requirements shall govern. The word "should" in all NFPA publications shall 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, shall be 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 A. SUBSTRUCTURE

## A10 FOUNDATION

Foundations shall be reinforced concrete slabs-on-grade with continuous strip footings or isolated spread footings. Concrete slabs shall not be less than 4 inches in thickness and footings shall not be less than 18 inches below the lowest adjacent grade. Foundations shall be designed and constructed of reinforced concrete. All design and construction shall comply with IBC and with applicable requirements in Section B Shell. For the purposes of interpreting IBC Chapter 18, the "Owner" and "Building Official" shall mean the "Government", and the "Applicant" shall mean the "Contractor/Designer of Record".

1. **Contractor-Foundation Design**: The Designer of Record shall evaluate the RFP data, and obtain and evaluate all additional data as required to support the design and construction.

2. **Geotechnical Site Data required in Design Drawings**: The Contractor's final design drawings shall include:
   a. Notes identifying the soil allowable bearing capacity used in design.
   b. Subsurface soil information, be it Government provided or Contractor obtained, that represents subsurface conditions existing on the project site (such as boring logs, test pits, laboratory test results and groundwater observations). The locations of all borings shall be indicated on the drawings.

3. **Performance Verification and Acceptance Testing**: Verification of satisfactory construction and system performance shall be via Performance Verification Testing, as detailed in this part of the RFP.
   a. **Earthwork:** Perform quality assurance for earthwork in accordance with IBC Chapter 17. See Section G1030.

# SECTION B. SHELL

Building shell may be of any materials and design allowed by applicable codes and standards, subject to specific requirements that may be applicable to a particular activity, such as the base exterior architecture plan (BEAP) and UFC 4-010-01.

## B10 SUPERSTRUCTURES

Superstructure work includes structural frames, bearing walls, floors, roofs, roof canopies, and balcony construction. Unless otherwise specified in Part 3, superstructures may be designed and constructed using any materials or combination of different materials allowed by applicable codes and standards. All design and construction shall comply with IBC. Special inspection, testing, approvals, certifications, observations and quality assurance plans as prescribed in Chapter 17 of the IBC are required.

1. **Concrete**: All concrete shall be constructed in accordance with ACI 301. Concrete shall have a 28-day minimum compressive strength of 3,000 psi. Slump shall be between 2 and 4 inches in accordance with ASTM C143. Provide joints as required to minimize

cracking. All concrete shall be reinforced. Provide joints as required by applicable ACI standards. Unless otherwise specified in Part 3 or as indicated by the contracting officer, provide steel trowel finish for all exposed floor surfaces.

2. **Masonry**:
   a. All concrete masonry shall be constructed in accordance with ACI 530.1. Concrete masonry shall have a minimum 28-day compressive strength of 1500 psi. Concrete masonry units shall conform to ASTM C90, grade A1. Broken blocks are not allowed. Use only standard size and shape blocks. Block may be cut when necessary. Mortar shall be Type S.
   b. When used, brick shall conform to ASTM C216. In exposed construction, broken brick shall not be allowed. Standard size brick may be cut to fit job condition. Use Type S mortar.
   c. Provide metal anchors for masonry and brick, including veneer construction as required by IBC.

6. **Structural Steel**: Structural steel exposed to weathering shall be adequately protected to prevent corrosion.

7. **Steel deck**: Steel form deck shall have a G90 galvanized finish, and must have a minimum 26-gage thickness. All other steel deck shall have a G90 galvanized finish, and must have a minimum 20-gage thickness.

8. **Cold-formed metal framing**: Cold-formed steel studs, joists and track shall be galvanized with a minimum thickness of 20-gage.

9. **Wood framing**: Wood framing members shall be new lumber, unless otherwise allowed by Part 3. Timber can be Douglas Fir, Douglas Fir-Larch, Hem-Fir, Southern Pine or other structurally competent species allowed by applicable codes and standards. Wood framing shall meet the following minimum grading requirements:
   a. Studs - #3
   b. Joists and rafters- #2
   c. Beams, 4x and larger - #1
   d. Posts, 4x and larger - #1
   e. Blocking - #3
   f. Fascia, trim - #1
   g. Wood Structural Panel Sheathing (Exterior Glue)
   h. Roof - APA rated with span index of 24/0 - minimum thickness 1/2 inch
   i. Walls - APA rated with span index of 32/16 - minimum thickness 1/2 inch
   j. Flooring- APA rated with span index of 48/24 - minimum thickness 3/4 inch

# B20 EXTERIOR ENCLOSURE

## B2010 EXTERIOR WALLS

1. **Exterior Wall Performance**:
   a. **Vapor Transmission Analysis:** Perform a job specific vapor transmission analysis in accordance with ASHRAE 90.1 or WUFI. The conclusion of the analysis shall indicate the appropriate locations of needed vapor retarders, air

barriers, and anticipated dew-point locations in the exterior enclosure during different critical times of the year.

b. **Maximum Air Infiltration:** The air leak flow rate must not exceed 0.25 CFM at 75 Pa per square foot (0.076 cm 75 Pa per square meter) of building envelope area including roof or ceiling, walls and floor as provided by the DOR.

Where required in RFP Part 3, provide air barrier testing. Perform testing as described in "U.S. Army Corps of Engineers Air Leakage Test Protocol for Building Envelopes Version 3, May 11, 2012". Repair leaks and repeat testing until prescribed maximum air leak flow rate is achieved. Provide intermediate and final reports.

c. **Wind Loads:** Provide wind load calculations for exterior cladding in accordance with ASCE-7 with comparative analysis of the cladding system to be provided.

d. **Water Penetration:** No water penetration shall occur at a pressure of 39 Kg/m2 (8 psf) of fixed area when tested in accordance with ASTM E 331.

e. **Insulating Value:** Provide complete thermal envelope in accordance with ASHRAE 90.1, Chapter 5 with improvements required to meet project energy goals.

Where required in RFP Part 3, provide infrared thermal envelope performance testing. Test the building envelope using Infrared Thermography in accordance with the requirements of ASTM C1060 (latest edition) and ISO 6781. The Contracting Officer will witness the testing. Provide thermography test report including thermographs in color and a color temperature scale to define the temperature indicated by the various colors. The report shall identify the high temperature reading, the outdoor air temperature, the building indoor air temperature, and the wind speed and direction. Report to note any areas of compromise in the building envelope, and note all actions required and taken to correct those areas. Repair and repeat testing until discrepancies are demonstrated to be resolved.

2. **Masonry Veneer Exterior Wall Closure Components**: Masonry veneer shall include load bearing and non-load bearing exterior walls of the structure, and shall include colored mortar, special shapes such as sills, headers, trim units and copings of brick masonry, precast concrete, concrete masonry units, or other approved material. Utilize BIA Technical Notes to design, detail, and construct brick masonry walls. Substitute directive language in the place of BIA suggestive language. The results of these wording substitutions change this document to required procedures. The veneer shall be tied to the backup wall system with a system that allows the veneer to move independently of the backup wall system, while being structurally supported. The masonry veneer shall allow for expansion and contraction of the veneer without cracking the exterior material.

a. **Masonry Veneer Installation:** Conform to ACI 530.1 for masonry veneer installation, including cold weather construction. Antifreeze admixtures are not to be used.

b. **Mortar:** Provide factory-tinted colored mortar conforming to ASTM C270, unless DOR directs otherwise.

c. **Expansion/Control Joints:** Locate expansion/control joints and seal with proper backing material and ASTM C 920 polyurethane sealant, or preformed foam or rubberized expansion joint closure. Conform to UFC 3-100-10 and BIA Technotes 18, 18A.

d. **Brick:** shall be ASTM C216, Grade SW, type FBS, or type FBX for detail work. ASTM C67 test rating shall be "Not effloresced". Use FBA brick only for special architectural effects requiring a non-uniform size.

e. **Split Faced or Ground Faced Masonry:** ASTM C 90

f. **Cast Stone Trim Units:** Cast Stone shall meet or exceed the requirements of

ASTM C 1364.

g. **Wall Cavity:** shall Comply with the and BIA Technical Notes 21A, 21B, 21C, 28B

8. **Through-Wall Flashing Components:** Through-wall flashing with weep holes shall be incorporated in cavity wall construction. Flashing shall be 7 ounce copper flashing with a 3 ounce bituminous coating on each side or a fiberglass fabric bonded on each side of the copper sheet; 16-ounce uncoated copper, 28 gauge Type 302 or 304 stainless steel is also acceptable. 'Flexible membrane flashing, plastic or PVC-based membrane flashing is prohibited.

i. **Reinforcing in Veneer Layer:** Reinforcing in the veneer layer shall be galvanized in accordance with ASTM A 123/A123M, ASTM A153/A153M, or ASTM A653/A653M, Z275 (G90) coating, and be of sufficient size to eliminate damage to the veneer layer from wind and other live and dead loads imposed on the veneer layer.

j. **Masonry Cleaning:** Clean the masonry in accordance with manufacturer's instructions and BIA Technote 20.

3. **Metal Wall Panel Exterior Closure**

Panels shall have factory applied, baked coating to the exterior and interior of metal wall panels and metal accessories. Exterior finish topcoat shall be of 70 percent polyvinylidene fluoride (PVDF) resin with not less than 0.8 mil dry film thickness (DFT). Exterior primer shall be standard with panel manufacturer with not less than 0.8 mil dry film thickness (DFT).

Wall system and attachments shall resist wind loads as determined by ASCE 7, with a factor of safety appropriate for the material holding the anchor. Maximum deflection due to wind on aluminum wall panels shall be 1/60. Maximum deflection due to wind on steel wall panels and girts behind aluminum or steel wall panels shall be limited to 1/120 of their respective spans, except that when interior finishes are used the maximum allowable deflection shall be limited to 1/180 of their respective spans.
Conformations - Non-insulated steel or aluminum wall panels shall have configurations for overlapping adjacent sheets or interlocking ribs for securing adjacent sheets and shall be fastened to framework using concealed fasteners, or choose the option for exposed fasteners when exposed fasteners are acceptable at the installation. Length of sheets shall be sufficient to cover the entire height of any unbroken wall surface.

a. **Steel Wall Panels**:

1) Material and Coating: Form sheets from steel conforming to ASTM A 653/A 653M, Structural Grade 40, galvanized coating conforming to ASTM A 924/A 924M, Class G-90; aluminum-coated steel conforming to SAE AMS 5036; or steel-coated with aluminum-zinc alloy conforming to ASTM A 792/A 792M, except that coating chemical composition shall be approximately 55 percent aluminum, 1.6 percent silicon, and 43.4 percent zinc with minimum coating weight of 0.5 ounce per square foot.

2) Gage: Minimum 22 U.S. Standard Gage for wall panels, but in no case lighter than required to meet maximum deflection requirements specified.

b. **Aluminum Wall Panels**:

1) Material and Coating - Form sheets of Alloy 3004 or Alclad 3004 conforming to ASTM B 209 having proper temper to suit respective forming operations.

2) Thickness - Minimum 0.81 mm (0.032 inch) nominal, but in no case thinner than that required to meet maximum deflection requirements specified.

c. **Insulated Aluminum or Steel Wall Panels:** Insulated wall panels shall be

steel or aluminum factory-fabricated units with insulating core between metal face sheets securely fastened together and uniformly separated with rigid spacers. Panels shall have a factory color finish. Wall panels shall have edge configurations with interlocking ribs for securing adjacent panels. System shall utilize factory fabricated corners and trim pieces at intersections with other materials. Insulated wall panels shall be fastened to framework using concealed fasteners.

1) Insulated Steel Panels - Zinc-coated steel conforming to ASTM A 653/A 653M; or Aluminum-zinc alloy coated steel conforming to ASTM A 792/A 792M, AZ 55 coating. Uncoated wall panels shall be 0.61 mm (0.024 inch) thick minimum.

2) Insulated Aluminum Panels - Alloy conforming to ASTM B209, temper as required for the forming operation, minimum 0.81 mm (0.032 inch) thick.

4. **Stucco Exterior Wall Closure**
   a. **Portland Cement Plaster:** ASTM C150, gray Portland cement Type II with 13 mm (1/2 inch) maximum chopped alkali resistant fiberglass strands, minimum 1.5 percent by weight to cement; .68 kg (1 1/2 pounds) per sack of cement. Lime shall conform to ASTM C206, Type S. System shall utilize stainless steel or zinc corner beads, J-beads and other accessories. Unless specifically deleted, the system shall utilize an acrylic admixture or coating to give additional moisture suppression to control fungus growth.
   b. **Exterior Insulation and Finish System (EIFS):** EIMA TM 101 and 01 EIMA TM 101.86. EIFS shall be used as the non-primary or the primary exterior finish material only for projects where it is necessary to match existing EIFS.

5. **Precast Concrete Wall Panels**: ACI 211.1 and ACI 301. PCI MNL-116 or PCI MNL-117. Concrete shall have a minimum 28-day compressive strength of 281 Kg/cm2 (4000 psi). Joints shall include properly sized and placed backing material and fully loaded and tooled sealant joint of no less than 1/4 inch sealant material thickness.

6. **Other Wall Finish Systems**
   a. **Horizontal Wood Siding:** Horizontal Wood Siding: DOC PS 20, exterior, lap type, 6 inches wide, maximum practicable lengths, 11 mm (7/16 inch) thick, smooth face. All surfaces of wood siding and trim shall be shop coated with an alkyd primer.

      Species and Grades 1. Grade 1 Common spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA. 2. Grade Prime or D finish, pressure-preservative-treated hem-fir; NLGA, WCLIB, or WWPA. 3. Grade D Select (Quality) eastern white pine, eastern hemlock-balsam fir-tamarack, eastern spruce, or white woods; NELMA, NLGA, WCLIB, or WWPA. 4. Grade D Select northern white cedar; NELMA or NLGA. 5. Grade B & B, pressure-preservative-treated southern pine; SPIB.
   b. **Vinyl Siding System:** Integrally colored, vinyl siding complying with ASTM D 3679.
   c. **Manufactured Faced Panels Systems Exterior Wall Siding:** Glass Fiber Reinforced Cementitious Panels System: Siding made from fiber-cement board that does not contain asbestos fibers; complies with ASTM C 1186, Type A, Grade II; horizontal or vertical pattern in plain or beaded-edge style. Texture: Rough sawn or smooth, factory primed.

7. **Exterior Wall Backup Construction**

a. **Concrete Unit Masonry:** Provide concrete unit masonry to comply with ACI 530.1. Load-bearing units: ASTM C90, Non-load bearing- units: ASTM C129, Type I or II. Provide ground face units, split-faced units, ground-faced units, or split-ribbed units for exposed exterior walls. Provide water repellent admixture to masonry units where the exterior face of the units will not receive a waterproof coating such as paint

b. **Dampproofing:** Dampproof the cavity-facing wythe of the backup masonry using asphaltic primer according to ASTM D 41, if dampproofing is not provided by a sprayed on foam or other DOR-approved membrane insulation system.

8. **Load-Bearing Metal Framing System**
If permitted, provide load-bearing metal framing including top and bottom tracks, bracing, fastenings, and other accessories necessary for complete installation. Framing members shall have the structural properties indicated. Where physical structural properties are not indicated, they shall be as necessary to withstand all imposed loads. Design framing in accordance with AISI SG-673. Installation shall be in accordance with DOR-approved shop drawings and manufacturer's installation instructions.

9. **Exterior Studs**:

| Max. Deflection Criteria | Exterior Finish |
|---|---|
| L/360 | Cement Plaster, Wood Veneer, Synthetic Plaster, Metal Panels |
| L/600 | Brick Veneer, Stone Panels |

Wall deflections shall be computed on the basis that studs withstand all lateral forces independent of any composite action from sheathing materials. Studs abutting windows or louvers shall also be designed not to exceed 1/4-inch maximum deflection and as required in UFC 4-010-01.1) Studs - ASTM A 1003/ASTM A 1003M, Structural Grade 50, Type H minimum; provide Z180 (G60) galvanized coating in accordance with ASTM A 653/ASTM A 653M. Do not expose studs to direct moisture contact2) Bracing - Provide horizontal bracing in accordance with design calculations and AISI SG-673, consisting of, as a minimum, runner channel cut to fit between and welded to the studs.3) Sheathing - Provide sheathing to withstand structural loads imposed on the wall structure. Cover sheathing with either a 15 pound asphalt-impregnated building paper, or air barrier as required by the wall moisture analysis. Sheathing shall be one of the following: a) Plywood: C-D Grade, Exposure 1; b) Structural-Use and OSB Panels; c) Gypsum: ASTM C 79/C 79M and ASTM C 1177/C 1177M, 13 mm (1/2 inch) thick fire retardant (Type X) 15 mm (5/8 inch) thick; 1.2 meters (4 feet) wide with square edge for supports 400 mm (16 inches) o.c. with or without corner bracing of framing. Gypsum sheathing shall be faced with materials capable of resisting six months of weathering exposure without degradation of the covering or the gypsum. Seal all joints as recommended by the manufacturer.

10. **Wood Framing System**: All materials shall be kiln-dried lumber complying with DOC PS 20. Installation shall be in accordance with AF&PA T11. System shall use preservative pressure treated lumber at sill plates and other members in contact with concrete and masonry surfaces.

a. **Species and Grades:** Provide species and grades listed: 1) Grade 2 Common spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA: 2) Grade 2 Common, hem-fir; Douglas-fir; NLGA, WCLIB, or WWPA; 3) Grade 2 Common, southern pine; SPIB.

b. **Sheathing:** Sheathing shall withstand structural loads imposed on the wall structure. Cover sheathing with either a 15 pound asphalt-impregnated building paper, or air barrier as required by the wall moisture analysis. Sheathing shall be as for Metal Studs.

11. **Cast-in-place Concrete System**: Concrete construction must be in accordance with ACI 301.

12. **Insulation and Vapor Retarder**: Insulation, Vapor Retarders, and Air Barrier Systems in or on Exterior Enclosure shall include: insulation, liquid, sheet or continuous film materials installed separately in or on wall assemblies to provide resistance to heat loss/gain, and vapor penetration.
    a. **Vapor retarder:** Comply with ASTM C755. Incorporate in the exterior wall system where required by vapor transmission calculations or dew point analysis indicates the need or in conditions of high moisture exposure.
    b. **Bituminous Dampproofing:** Bituminous Dampproofing shall be ASTM D449, Type I or Type II bituminous dampproofing on the exterior surface of the interior wythe of masonry in a cavity wall (back-up wall for masonry veneer).
    c. **Building Paper:** FS UU-B-790, Type I, Grade D, Style 1.
    d. **Air Barrier:** Building wrap consisting of air barrier sheeting complying with ASTM E 1677, Type 1, not less than 3 mils thick with a permeance of not less than 575 ng/Pa x s x sq.m. (10 perms). Building wrap shall have a flame spread index of less than 25 in accordance with ASTM E 84. Provide building wrap over sheathing of wood or metal framed construction to reduce air penetration and airborne vapor penetration. Provide building wrap tape as recommended by the manufacturer for sealing all joints in the building wrap. Installation shall be in accordance with manufacturer's instructions. Air barrier installation at windows shall be in accordance with ASTM E 2112.
    e. **Insulation Systems:** Vertical and horizontal polystyrene insulation conforming to ASTM C578 or rigid polyisocyanurate board wall insulating products conforming to ASTM C591 or mineral-fiber blanket insulation conforming to ASTM C 665 shall be provided.

13. **Parapets**: Avoid parapets when possible, but when necessary, provide parapets with the same materials as the exterior wall construction. Provide scuppers and wall edge according to SMACNA.

14. **Exterior Louvers and Screens**: If required, provide louvers for Screened Equipment Enclosure or as louvers for exterior doors.

    Storm shutters shall comply with ASTM E 1996-03.

15. **Balcony Walls and Handrails**: Balcony walls to match exterior construction. Handrails to comply with the IBC and OSHA.

16. **Exterior Soffits**: Exterior soffit system.

17. **Exterior Painting and Special Finishes**; All painting and coating materials shall be low VOC. Painting practices shall comply with applicable federal, state and local laws enacted to insure compliance with Federal Clean Air Standards. Apply coating materials in accordance with SSPC PA 1. SSPC PA 1 methods are applicable to all substrates.

    All paint shall be in accordance with the Master Painters Institute (MPI) standards for the

exterior architectural surface being finished. The current MPI, "Approved Product List" which lists paint by brand, label, product name and product code as of the date of contract award, will be used to determine compliance with the submittal requirements of this specification. Provide paint systems tested to "Detailed Performance Level" standard as defined by MPI.

18. **Exterior Joint Sealant**: Sealant joint design, priming, tooling, masking, cleaning and application shall be in accordance with the general requirements of Sealants: A Professionals' Guide from the Sealant, Waterproofing & Restoration Institute (SWRI). All sealant shall conform to ASTM C 920.

19. **Sun Control Devices**: Sun control devices shall be manufactured devices to provide sun control on exterior windows and storefronts. Sun control devices shall be designed and installed to withstand the wind loads prevailing at the project site.

## B2020 EXTERIOR WINDOWS

All windows and doors in new or existing buildings, which are subject to Anti-terrorism Standards, must be blast-resistant as prescribed in UFC 4-010-01.

Unless otherwise allowed by Part 3, windows for new facilities shall be aluminum. In building additions or renovations windows shall match existing window materials. Exterior windows design, dimension, and construction shall meet or exceed the requirements for Anti Terrorism Force Protection requirements. In addition, exterior windows shall meet or exceed Energy Star requirements. The design and placement of exterior windows shall take into considerations view, natural light, privacy, and protection for the occupants of the facilities. Provide operable hardware and insect screen for exterior windows. Windows shall be fabricated by manufacturers normally involved in the manufacturing of windows and shall be of the current make and model. No obsolete or discontinued windows shall be used. Provide weather stripping, STC and IIC rating, commensurate with the intended use of the facility. Submit catalog information and manufacturer's specifications for approval by Contracting Officer prior to purchase of windows.

All window assemblies shall meet performance grade CW tested in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-08 or most current edition of this standard.

Where windows separate conditioned spaces from non-conditioned spaces, provide windows bearing NFRC energy label indicating window exceeds current EnergyStar criteria. For storefront or curtainwall systems, provide thermally broken framing and insulating glazing with whole-assembly U-value of 0.40 or less. Provide windows exceeding requirements of ASHRAE 90.1, Table 5.5 for project climate zone.

Windows shall consist of fixed and operable sash used singly and in multiples. Provide operable sash in spaces occupied by people as a minimum. Include operating hardware, non-corroding framed metal screens for operable sash, integrated blinds set between glass panels and security grilles. Provide jamb support for larger windows where recommended by manufacturer.

1. **Metal Windows**: All windows shall conform to ANSI/AAMA/WDMA 101. Metal windows with insulating glass shall have thermally broken frames and sash. Factory finish aluminum windows and provide with aluminum frame screens with aluminum mesh at operable sash, hardware and locks, and tinted glazing. Aluminum screens shall comply with ANSI/SMA 1004.

2. **Wood Windows**: Clad wood and wood windows shall consist of complete units including sash, glass, frame, weatherstripping, insect screen, and hardware. Window units shall meet the requirements of AAMA 101, except maximum air infiltration shall not exceed 0.30 CFM per linear foot of sash crack when tested under uniform static air pressure difference of 7.66 Kg/m2 (1.57 psf).

3. **Storefronts**: Provide one-story storefront system fabricated from formed and extruded aluminum and glass components for exterior use. Utilize the specific section of the Standard Design-Build Performance Technical Specifications Section B202002 for the storefront to be provided. Storefront framing shall meet or exceed the structural requirements, as measured in accordance with ANSI/ASTM E330: Design system to withstand this as a minimum and comply with design pressure established within the required ASCE 7-05 Wind Speed Calculations determined by the overall average opening within the project.

4. **Glazing**: All exterior glazing shall be insulating glass.
   a. Clear Glass - Type I, Class 1 (clear), Quality q4 (A);
   b. Heat-Absorbing Glass - ASTM 1036, Type I, Class 2 Quality q3 (select) ray frames;
   c. Wire Glass - Type II, Class 1, Form 1, Quality q8 Mesh m1 or Form 2, Quality q7;
   d. Laminated Glass - ASTM 1172, total thickness shall be nominally 6 mm (1/4 inch);
   e. Insulating Glass Units - Typically ASTM C 1036, Type I, Class 1, Quality q4, minimum 6 mm;
   f. Tempered Glass - ASTM C 1048, Kind FT (fully tempered);
   g. Patterned Glass - ASTM 1036, Type II, Class 1 (translucent), Form 3 (patterned), Quality q7 (decorative), Finish f1 (patterned one side), Pattern p2 (geometric) 5.55 mm (7/32 inch) thick.

## B2030 EXTERIOR DOORS

Exterior doors shall be heavy duty insulated steel doors and frames for service access. Door frames shall have welded corners. Use heavy-duty overhead holder and closer to protect doors from wind damage. Steel shall 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 shall comply with ANSI A250.8-1998 (SDI-100). Hardware preparation shall be in accordance with ANSI A250.6. Doors shall be hung in accordance with ANSI A115.16.
   a. Doors Required:

1) 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 dwelling units, 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 shall 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 shall 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 -- Shall 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 shall 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 shall consist of manual or automatic exterior doors and door assemblies.

6. **Rolling Service Doors and Grilles**: Coiling overhead doors shall have minimum 22 gage thermal insulated slats. Electric operators shall 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 shall be capable of withstanding the design wind loading of ASCE 7 and still operate normally. Finish of the door shall be hot-dipped galvanized with a painted finish.

7. **Sectional Overhead Doors**: Sectional overhead doors shall conform to NAGDM 102, Residential or Commercial or Industrial door standards. If doors are electrically operated, pushbuttons shall 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 shall 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 shall 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.

# B30 ROOFING

For repair of existing roofing, the cutting of the existing roof shall be kept to a minimum and, where necessary, shall be made in a clean and orderly manner to prevent the appearance of a patch.

Repair all damage to existing and new roofing caused by the work of this Contract at no additional cost to the Government. The work shall be executed in such a manner as to maintain the integrity of the existing roofing manufacturer's warranty.

1. **Pre-Roofing Conference**: Prior to beginning roofing work, the Contractor shall hold a Pre-Roofing Conference with the personnel directly responsible for the roofing systems work, as well as the roofing manufacturer's technical representative.

2. **Roof Design Assurance**: If the roofing project is significant (Significant Roof - A single or group of buildings greater than 1,400 $m^2$ (15,000 sf)), or where extenuating circumstances of the roof project such as building use, content, safety, or visibility require a roofing consultant, the Contractor shall utilize the services of a Registered Roof Consultant (RRC) certified by the Roof Consultant Institute, or a Registered Professional architect or Engineer who specializes in roofing, to approve the roof design. The roof consultant must be engaged in roofing design and roofing construction as his primary endeavor. The roof consultant shall verify in writing that the design for the project is in accordance with the current edition of *NRCA Roofing and Waterproofing Manual*, UFC's, and RFP, and standard industry practices and building codes.

   If a Roof Design Assurance Consultant is needed, consider using a Registered Roof Observer as a QC specialist.

## B3010 ROOF COVERINGS

Roof coverings and procedures shall comply with the requirements of UFC 3-110-03, *Roofing*, and NRCA, *Roofing and Waterproofing Manual*found at http://www.nrca.net/rp/technical/manual/manual.aspx as the primary NAVFAC roofing criteria. Roof selection shall comply with UFC 3-330-02A, *Design: Commentary on Roof Systems*.

Determine wind uplift using wind speed in accordance with ASCE-7.

1. **STEEP SLOPE ROOF SYSTEMS**: Steep slope systems shall be roofs with a pitch greater than 3 in 12. Steep Slope Systems are slate roofing, Asphalt Shingles, Roof Tiles, Foam Set Tiles, Metal Roof Panels (Architectural Standing Seam Metal Roofs on supported substrate), and Structural Standing Seam Metal Roof (SSSMR). Asphalt shingles can only be used for residential construction and light commercial construction.

2. **LOW SLOPE ROOF SYSTEMS**: Low slope systems shall be roofs with a pitch 3 in 12 or less. Low slope roofing systems shall be built-up asphalt roofing (aggregate surfaced, with modified bituminous components), modified bituminous membrane roofing of a minimum of 3 plies with aggregate surface or granular surface modified bitumen cap sheet, or structural standing seam metal roofing. Use epdm systems only to match existing construction.

3. **ROOF COMPONENTS**:
   a. **Insulation:** For existing structures, provide insulation in accordance with ASHRAE 90.1. For new construction, provide R-30 insulation in the ceilings, attic spaces and soffit areas for interior spaces. Injected polyurethane and Urea Formaldehyde Foam field applied shall not be used. Provide acoustical insulation above walls separating bathroom/restrooms and corridor and adjacent occupied spaces, and between offices and corridors. Insulation shall have a minimum sound attenuation rating of STC-55.

      Insulation shall be Polyisocyanurate Rigid Board Insulation , Mineral Fiber Blanket Insulation to conform to ASTM C 991, with Glass Mat Gypsum Roof Board for use above the deck or insulation conforming to ASTM C 1177/C 1177M, where necessary.

      Only on portions of the roof where the sloping of structure does not allow the minimum slopes, provide a factory tapered roof insulation system to provide positive drainage of roof system, and to include drainage around curbs, penetrations, and projections through the roof plane.

      Provide Glass Mat Protection Board meeting ASTM C 1177 for use as a thermal barrier (underlayment) or protection board for hot-mopped applications.
   b. **Vapor Retarder:**-Determine the need and location in the roof assembly for a vapor retarder. Where the mean January temperature is 40 degrees Fahrenheit or less, and the expected interior relative humidity is 45% or greater, use a vapor retarder. Otherwise, use ASHRAE 90.1 for the determination.

      1) Vapor Retarders as Integral Facing - Alloy conforming to ASTM B 209, or Vapor Retarders Separate from Insulation - Vapor retarder material shall be 10 mil polyethylene sheeting conforming to ASTM D 4397.

      2) A slip sheet is required to separate the roofing panels from the insulation facing where the facing would be in direct contact with the roofing panels. If a slip sheet is necessary for use with a vapor retarder, use a 5 lb. per 100 square feet rosin-sized, unsaturated building paper.
   c. **EPDM Rubber Boots:** Flashing devices around pipe penetrations shall be flexible, one-piece devices molded from weather-resistant EPDM rubber.
   d. **Prefabricated Curbs and Equipment Support:** Provide Prefabricated curbs and equipment supports shall be of structural quality, hot-dipped galvanized or galvanized sheet steel, factory primed and prepared for painting with mitered and welded joints. Integral base plates and water diverter crickets shall be provided.

Minimum height of curb shall be 8 inches above finish roof.

e. **Fasteners:** Shall meet all requirements of the NRCA and Factory Mutual

f. **Wood Nailers:** Wood nailers shall be pressure-preservative-treated in accordance with AWPA M2 Standards, permanently marked or branded, and installed flush with the top of the adjacent insulation board.

g. **Flashing and Sheet Metal:** Provide flashing and sheet metal work including scuppers, splash pans, and sheet metal roofing. Flashing and sheet metal shall be provided in accordance with roof manufacturer's printed installation instructions and in compliance with NRCA and SMACNA recommendations. Fabricate Flashing and sheet metal components from Copper, Lead-Coated Copper sheet, Steel Sheet, Zinc-Coated (Galvanized) - ASTM A 653/ A 653M, Stainless Steel - ASTM A 167, Type 302 or 304, 2D finish, or Pre-Finished Aluminum.

h. **Gutters and Downspouts:** Provide gutters and downspouts compatible with roofing material and finish. Concealed (interior) gutters and downspouts are prohibited. Provide splash guards at points of discharge.

i. **Roof Openings and Supports:** Provide flashings for roof openings and supports as recommended by the NRCA. Assure all penetration flashings extend minimum 200 mm (8 inches) above the finished roof surface.

j. **Roof Hatches:** Provide roof hatch where required by OSHA, and as access to roof when roof mounted equipment is used or other routine roof maintenance is required.

k. **Glazed Roof Openings:** Skylights and other glazed roof openings shall be used only to supplement interior lighting levels (generally in steep slope or vertical applications), and otherwise, are discouraged from use.

l. **Guards:** Provide rails or guards as required by the OSHA, the International Building Code or other applicable safety standards.

m. **Traffic Pads:** Provide on roof system to protect roof from foot traffic. Provide traffic pads around roof mounted mechanical equipment and underneath removable mechanical equipment access panels. Traffic pads shall be of compatible material to roof.

4. **OTHER ROOFING**

a. **Lightning Protection:** Lightning protection component penetrations and attachments shall be sealed and flashed and anchored in a permanent manner and in a manner to avoid the degradation of the watertight integrity of the roof system.

b. **Roof Drains (Existing):** Where existing roof drains are to be reused in roof replacement construction, the contractor shall provide new, compatible flashing materials, a new drain clamping ring and new bolts for anchorage. Reuse of existing clamping ring and bolts is unacceptable.

# 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, ACI 117 and ACI 301/301M. In addition, interior partitions shall 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**: shall 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.

3. **Glazed Partitions and Interior Windows**: shall be of the materials allowed by code IBC, and shall 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 shall be WDMA I.S.6A-01, premium or custom grade, heavy duty or extra heavy duty. Flush wood doors shall 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 shall comply with corresponding AWI millwork grade. Provide interior fire doors.

2. **Steel doors**: shall 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 shall 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 shall 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. Frames shall be set 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 shall bear the label of UL, FM or WHI attesting to the rating required. Door and frame assemblies shall be tested for conformance per NFPA 252 or UL 10B (for neutral pressure) or UL 10C (for positive pressure). Wood fire doors shall 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 shall 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. Touch bars shall be provided 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 shall be compatible with the Best Lock system.
   e. **Key Cabinet**: Provide a Key Cabinet with 30% over capacity.

## C1030 SPECIALTIES

1. **Compartments, Cubicles, & Toilet Partitions**: FS A-A-60003. Provide toilet compartments at multi-fixture toilet rooms of Type I, Style B-Ceiling Hung, C-Overhead Braced, or F-Overhead braced-alcove. Reinforce panels to receive partition-mounted accessories. Urinal screens shall be FS A-A-60003. Type III, Style A, floor supported and wall hung or Style D, wall hung. Wall hung urinal screens shall be secured with continuous flanges to urinal screen and wall. Steel and Plastic toilet partitions shall have a recovered materials content of 20 to 30 percent. Chrome-plated or stainless steel door

latches and coat hooks. Provide one coat hook per compartment door. Latches and hinges for handicapped compartments shall comply with UFAS & ADAAG.

2. **Toilet and Bath Accessories**: Provide toilet and bath accessories and install per ADAAG and manufacturers' requirements.

3. **Marker Boards and Tack Boards**: Provide porcelain enamel marker boards fused to a nominal 28 gauge steel sheet and tack boards of cork, with a tensile strength of at least 40 psi when tested according to ASTM F 152, with woven or vinyl covering.

4. **Identifying Devices**: All interior doors shall have an identifying device. All handicap accessible facilities shall utilize signage which meets current ADAAG requirements with regard to Braille, raised characters, finishes (contrast), size and mounting height. If room names are subject to frequent change, provide an interchangeable strip to be utilized to facilitate removal and replacement.

5. **Lockers**: Provide lockers to meet FS AA-L-00486 (Rev J), enameled steel with special bases.

6. **Shelving**: Provide steel shelving.

7. **Counters**: Provide solid plastic or plastic laminate counter tops and back splashes, AWI Custom grade.

8. **Cabinets**: Provide cabinetry and millwork items with associated accessories and hardware. Cabinetry shall be AWI premium or custom grade and have concealed hinges with adjustable standards for shelves.

9. **Casework**: Provide all built-in premanufactured metal cabinetry for specialized functions such as laboratories, libraries, medical and dental facilities. Casework shall comply with Mil Std 1691.

10. **Closets**: Provide premanufactured or millwork closets or prefabricated coat closets

11. **Fire Extinguisher Cabinets**: Provide fire extinguisher cabinets. Size and locate fire extinguisher cabinets to encase extinguisher as required by NFPA 10 & 101. Fire extinguishers will be provided by the Customer.

12. **Firestopping Penetrations**: Provide all sleeves, caulking, and flashing for firestopping penetrations.

13. **Entrance Floor Grilles and Mats**: Provide recessed pan or surface floor mats at main only or all building entrances.

14. **Ornamental Metal Work**: Provide ornamental metalwork

15. **Other Interior Specialties**: Motorized projection screen shall be wall or ceiling or

above-ceiling mounting. Pull-down projection screens shall be provided in lieu of motorized projection screens as approved by the Activity.

# C20 STAIR CONSTRUCTION

Provide interior and exterior stair construction. Stair design, materials and construction shall comply with IBC, and applicable codes and standards, including NFPA 101. Provide refuge area at top of stair in accordance with applicable Americans with Disability Act Design Guide requirements.

# C30 INTERIOR FINISHES

## C3010 WALL FINISHES

Unless otherwise noted in the RFP, primary wall finishes shall be 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 shall 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 shall 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 shall 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 shall be "self-healing" from tack penetration through the covering into the substrate. Acoustical wallcovering shall 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 shall 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 shall meet or exceed EPA requirements for toxic substance content restrictions and air quality requirements; and shall 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 shall 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 shall have a minimum coefficient of friction (wet and dry) of 0.6, ASTM C1028.

2. **Resilient Flooring**: Shall meet or exceed applicable ADA horizontal requirements, and shall be installed 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 shall 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 shall 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 shall be commercial grade, 3 mm (.125 inch) gage, FS SS-T-312B (1), Type IV, Comp. 1, Class 2, through pattern.

3. **Carpet**: Carpet manufacturer and installer shall be experienced, established and in good standing with the industry. Carpet, broadloom or tile, shall be installed per the Carpet & Rug Institute’s recommendations. Carpet shall 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 shall be multi-color and patterned for soil and wear hiding properties. Carpet shall have high performance backing warranted against zippering, edge raveling and delamination, be anti-static and anti-microbial. Carpet shall 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 shall 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 shall have minimum 60% recycled content and conform to ASTM E1264. Panels shall 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 shall 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 shall 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 shall provide full coverage of undercoats and substrates. All walls and ceilings in wet area shall have semi-gloss paint. All wood or metal cased openings, door trims and casings, window trims and casing, and other finish trim shall have semi-gloss paint. All interior walls and ceilings shall 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 shall be readily available for purchase in standard colors.

# SECTION D. SERVICES

## D10 CONVEYING Elevators and Escalators - Not used

## D20 PLUMBING

Provide plumbing fixtures, appliances, and equipment complete and usable as required by Part 3. All plumbing fixtures, appliances and equipment, piping, valves, accessories, and appurtenances shall comply with International Plumbing Code (IPC) and all other applicable codes and standards, including energy, water conservation, and local activity regulations and standards. Provide all plumbing fixtures to meet current criteria of EPA Watersense program _ http://www.epa.gov/watersense

1. **Domestic Water**: Provide ASTM B 88 Type K or L copper tubing and fittings for pipe sizes 4 inches or smaller. Provide Type L tubing above ground with solder fittings. For buried piping, use Type K tubing with solder fittings, or Chlorinated polyvinyl chloride (CPVC) Plastic pipe, fittings, and solvent cement per ASTM D 2846/D 2846M for sizes 4 inches and smaller.

   Provide mineral fiber insulation with vapor barrier on domestic water (hot and cold) supply and recirculation piping. Provide re-circulating pumps or instantaneous water heaters for hot water systems with fixtures greater than 100 ft from hot water source. Provide water hammer arrestors per PDI STD WH-210 as required for rapid water shut off scenarios. All water valves except for fixture shut off valves shall be ANSI B16.18 brass, full port ball type. All plumbing fixtures shall have separate shut off valves. All piping shall be concealed in walls, attic spaces, or in crawl spaces under floors. Provide access panels for valves behind walls. No under slab water piping is allowed. Fittings for annealed copper tubing shall conform to ANSI Bl6.22. Solder and flux shall be lead free. Exposed exterior piping is prohibited unless otherwise not practical. Provide

identification for piping and equipment.

2. **Wall Penetrations**: Piping which penetrates fire rated walls shall be completely sealed to maintain fire resistance integrity as required by Code. Penetrations through walls that are not fire rated shall be adequately supported and sealed. Pipe penetrations through exterior walls shall be sleeved, caulked with weatherproof sealant and provided with finish trim.

## D2010 PLUMBING FIXTURES

Fixtures shall be provided complete with fittings, and chromium-plated, or nickel-plated brass (polished bright or satin surface) trim. All fixtures, fittings, and trim, shall be from the same manufacturer and shall have the same finish. Access panels shall be provided for all bathtubs and showers, except at exterior and party walls and where tub or showers are back to back. Provide cleanouts in accordance with the plumbing code. Rotate or extend cleanouts required to facilitate maintenance and clearing of blockage in waste piping.

1. **Faucets**: All faucets shall be brass construction, washerless type, with seals and seats combined in one replaceable ceramic disk valve cartridge designed to be interchangeable with all lavatories, bathtubs and kitchen sinks, or having replaceable seals and seats removable either as a seat insert or as a part of a replaceable valve unit. Faucets provided shall be of the same type and manufacturer throughout the facility, unless otherwise noted. Lavatory faucets shall be U.S. Environmental Protection Agency (EPA) WatersenseÂ® certified and labeled bathroom sink faucets.

2. **Water Closets**: Water closets shall be in accordance with ANSI A112.19.2, with trim conforming to A112.19.5. Water closets shall be vitreous china and have an elongated bowl with trip lever, unlined tank, close coupled siphon jet, floor outlet with wax gasket, flange and an anti-siphon float valve. Provide white closed front seat and cover for private toilets and open front seat cover for public facilities. Water consumption shall be no greater than 1.6 gallon maximum per complete flushing cycle. Provide self-closing metering type flush valve on flush valve type water closets, unless electronic control is specified in Part 3. Maximum flush volume shall not exceed 1.28 gallon per flush (GPF) (4.8 Liter per flush (LPF)) for single function flush valves. Dual function flush valves shall provide a flush of 0.8 to 1.6 GPF (3.0 to 6.0 LPF) or 1.28 GPF (4.8 LPF) average for 2 low volume flushes and one high volume flush. Tank type water closets shall be U.S. Environmental Protection Agency (EPA) WatersenseÂ® certified and labeled toilets.

3. **Urinals**: Provide U.S. Environmental Protection Agency (EPA) WatersenseÂ® certified and labeled ceramic-type urinals.

   Non Water Use Urinals: ASME A112.19.2, white vitreous china, wall-mounted, wall outlet, non-water using, integral drain line connection, with sealed replaceable cartridge or integral liquid seal trap insert. The urinal and trap assembly shall maintain a sufficient barrier of a biodegradable immiscible liquid to provide the trap seal and inhibit the backflow of sewer gases. For urinals that use a replaceable cartridge, provide four additional cartridges for each urinal installed. Provide an additional quart of biodegradable liquid for each urinal installed. Provide ASME A112.6.1M concealed chair carriers. Installation and testing shall be in accordance with the manufacturers' recommendations. Drain lines that connect to the urinal outlet shall not be made of copper tube or pipe. Urinal design and installation shall be ADA compliant. Slope the

sanitary sewer branch line for non-water use urinals a minimum of 1/4-inch per foot. Manufacturer shall provide an operating manual and on-site training for the proper care and maintenance of the urinal.

4. **Lavatories**: Unless otherwise specified by Part 3, lavatories shall be integral to the vanity countertops. Each lavatory shall be provided with hot and cold water tempered by means of a mixing valve or combination faucet.

5. **Sinks**: ASME/ANSI A112.19.3M sink, 20 gage stainless steel with integral mounting rim, minimum dimensions of 840 mm (33 inches) wide for two compartment or 560 mm (21 inches) wide for one compartment by 560 mm (21 inches) front to rear, with ledge back and undersides coated with sound dampening material.

6. **Water Coolers**: ARI 1010, wall-mounted, bubbler style, air-cooled condensing unit, 4.20 mL per second (4.0 gph) minimum capacity, stainless steel splash receptor, double wall heat exchanger, and all stainless steel cabinet. Install in accordance with the manufacturers instructions.

7. **Showers**: Provide U.S. Environmental Protection Agency (EPA) WatersenseÂ® certified and labeled showerheads connected to concealed pipe connected to copper alloy single control type mixing valve with front access integral screwdriver stops. Anchor the mixing valves and the pipe to each showerhead in wall to prevent movement. Unless otherwise specified by Part 3, showers shall be supplied with water at a temperature no more than 110Â°F by means of a pressure balance, tempering or mixing valve.

8. **Service sinks**: ASME A112.19.1M, white enameled cast-iron or ASME A112.19.2M white vitreous china, wall mounted and floor supported by wall outlet cast-iron P-trap, minimum dimensions of 560 mm (22 inches) wide by 457 mm (18 inches) front to rear with 230 mm (9 inch) splashback, and stainless steel rim guard. Provide ASME A112.18.1M copper alloy back-mounted combination faucets with vacuum breaker and 20 mm (0.75 inch) external hose threads

9. **Mop Sinks**: Pre-cast terrazzo or ASME A112.19.2M white vitreous china floor-mounted mop sink, 914 mm x 914 mm x 305 mm (36 inches x 36 inches x 12 inches). Terrazzo shall be made of marble chips cast in white Portland cement to a compressive strength of not less than 25 mPa (3625 PSI) 7 days after casting. Provide brass body drains with nickel bronze strainers cast integral with mop sink. Provide stainless steel rim guard for mop sink. Provide chrome-plated exposed hot and cold water faucets ASME A112.15.M wall-mounted copper alloy faucets swing spout with 20 mm (3/4 inch) hose connection, vacuum breaker, and pail hook. Provide mop hanger on wall above sink suitable for four mops.

10. **Laundry Sinks**: ANSI Z124.1, plastic, two compartment, minimum dimensions of 1016 mm wide by 533 mm (40 inches wide by 21 inches) front to rear, with floor-supported steel mounting frame secured to wall. Provide ASME A112.18.1M copper alloy centerset faucets, swing spout with aerator, and stainless steel drain outlets with cup strainers, and 40 mm (1.5 inch) adjustable P-trap with drain piping to vertical vent stack.

11. **Emergency Eyewash**: ANSI Z358.1, wall-mounted self-cleaning, non-clogging eye and face wash with quick opening, full-flow valves, stainless steel eye and face wash

receptor. Provide copper alloy control valves. Pressure-compensated tempering valve is required for emergency fixtures, with leaving water temperature setpoint adjustable throughout the range 15.5 and 35 degrees C (60 to 95 degrees F) unless cold water supply meets temperature criteria.

## D2020 DOMESTIC WATER DISTRIBUTION

1. **Natural Gas or Propane Fired Storage Water Heaters**: Provide high efficiency storage type natural gas or propane fired water heaters per ANSI Z21.10.1 or ANSI Z21.10.3 meeting AGA requirements. Unit efficiency shall meet or exceed that listed in the Title-24 Standards. Water heaters shall be equipped with glass-lined steel tanks, minimum R-15 polyurethane foam insulation, replaceable anodes, and adjustable range thermostat to allow hot water settings between 43 and 71 degrees C (110 and 160 degrees F). Water heater warranty shall be a minimum of 10 years. Provide vent in accordance with NFPA 54. Provide low NOx burners that meet SCAQMD requirements. Install in accordance with manufacturer's instructions and the code. Where earthquake loads are applicable, water heater supports shall be designed and installed for seismic forces in accordance with the International Building Code.

2. **Electric Water Heaters**: Provide electric water heaters with double heating element per UL 174. Unit efficiency shall meet or exceed that listed for FEMP or ENERGYSTAR, or as listed in ASHRAE 90.1, whichever is greatest. Water heaters shall be equipped with glass-lined steel tanks, high efficiency type, insulated with polyurethane foam insulation, replaceable anodes, and adjustable range thermostat to allow hot water settings between 43 and 71 degrees C.

3. **Domestic Water Boilers**: Boilers shall be designed, tested, and installed per ASME CSD-1 (Controls and Safety Devices) and ASME BPVC (Boiler and Pressure Vessel Code). The boiler shall meet the requirements of the UL 795, NFPA 85, ANSI Z83.3, and ASME CSD. Boilers must be certified by Naval Personnel or a contractor approved by the Contracting Officer.

## D2030 SANITARY WASTE & VENT

All new sewers below concrete slab shall be solid core, minimum schedule 40 (DWV Type), ABS in accordance with ASTM 2661. New waste and vent piping above floor shall be Schedule 40 PVC (DWV Type) ASTM 2665 or ABS ASTM 2661. Use of ABS plastic pipe shall conform to the IBC and IPC. Provide pipe sizing, configurations, and cleanouts as required by the IPC. Cellular core plastic pipe is not allowed. SOVENT systems are not allowed.

## D2040 RAINWATER DRAINAGE

Below concrete slab shall be solid core, minimum schedule 40 (DWV Type), ABS in accordance with ASTM 2661. Above floor shall be cast iron hubless, or hub and spigot, or Schedule 40 PVC (DWV Type) ASTM 2665 or ABS ASTM 2661 as indicated in Part 3. Pipe materials shall conform to the IBC and IPC. Provide pipe sizing, configurations, and cleanouts as required by applicable codes and standards.

## D2090 OTHER PLUMBING SYSTEMS

**Natural Gas Piping Systems:** Exterior above grade natural gas piping shall be schedule 40 galvanized steel pipe with threaded fittings and joints. Underground exterior gas piping shall be polyethylene pipe that satisfies the requirements of NFPA 54, ASTM D2513-01, and ASME B31-8. Provide warning tape at 12 inches below grade directly above buried gas pipes. Below grade metal gas piping is prohibited. Interior gas piping shall be ASTM A 53, schedule 40 black steel with ASME B16.3 threaded fittings and joints. The use of semi-rigid tubing and flexible connectors for gas equipment and appliances is prohibited except for final connections to the equipment and appliances where they shall be provided. Provide flexible gas connections in accordance with ANSI Z21.45 and not more than 40 inches long. Provide accessible gas service with shutoff valve for all equipment. Gas piping shall conform to NFPA 54 and shall be pressure tested in accordance therewith. . Gas piping is considered a fragile utility in the content of UFC 4-010-01, *DOD Minimum Antiterrorism Standards for Buildings*.

## D30 HEATING, VENTILATION AND AIR CONDITIONING (HVAC) SYSTEMS

The HVAC systems shall 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 shall comply with applicable codes and standards. For projects located in California, also comply with California Energy Commission (CEC) efficiency rating requirements as stated in Ca. AB 970 Title 24. The Contractor shall 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 per 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 shall have been in satisfactory commercial or industrial use for 2 years prior to the bid opening. The 2-year use shall include applications of equipment and materials under similar circumstances and of similar size. The product shall 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 shall 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 as listed in NEMA MG 10. Additionally, all polyphase squirrel-cage medium induction motors with continuous ratings shall 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 shall 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 shall have painted finishes that pass a salt-spray test conducted per ASTM B117 for duration of at least 500 hours.

6. **Equipment Insulation**: Provide insulation on all chilled water equipment. Insulate hot and chilled water pumps and equipment as 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 retarder for chilled water applications.

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

## D3020 HEAT GENERATING SYSTEMS

1. **Boilers**: Boilers shall be designed, tested, and installed per ASME CSD-1 (Controls and Safety Devices) and ASME BPVC (Boiler and Pressure Vessel Code). The boiler shall meet the requirements of the UL 795, NFPA 85, ANSI Z83.3, and ASME CSD. Do not provide watertube boiler(s) for hydronic heating when size permits otherwise. Provide insulated boiler stack in accordance with manufacturer's recommendations and conform to NFPA 211 or provide pre-manufactured, multi-wall stacks complying with NFPA 54 or NFPA 58 and UL-listed. Low pressure boilers shall be equipped with one or more pressure relieving devices, adjusted and sealed to discharge at a pressure not to exceed the maximum allowable working pressure of the boiler. The combined capacity of these devices shall be such that with the fuel burning equipment installed and operating at maximum capacity, the pressure cannot rise more than 5 psi for steam boilers or 10% for water boilers above the maximum allowable working pressure of the boiler. Pressure relieving devices shall be installed as required by the referenced code, be ASME stamped and rated, and shall be installed with the valve spindle in the vertical position. Provide with manual lifting device for periodic testing. Boilers shall comply with the local air quality regulations. Boilers shall be equipped with pressure and temperature gauges as required for proper maintenance and operation. Thermometers shall also be provided at the inlet and exit of the boiler, and shall be visible to the operator from the operating area.

2. **Furnaces**: UL-listed, factory assembled, self contained, forced circulation, furnace. Provide electronic ignition system. Unit shall be design certified by AGA, GAMA efficiency rating certified, for gas furnaces and NFPA 31 for oil furnaces. Provide with cooling coil as necessary. Furnaces shall comply with the local air quality regulations.

# D3030 COOLING GENERATING SYSTEMS

1. **Chillers**: Air-cooled chillers shall be type indicated in Part 3 and meet the requirements of ARI 550/590-98. Provide control panel with the manufacturers' standard controls and protection circuits. If DDC system is required in project, provide a control interface for remote monitoring of the chiller's operating parameters, functions and alarms from the DDC control system central workstation. Provide complete start-up and operational testing of chiller equipment.

2. **Direct expansion systems**: Provide units factory assembled, designed, tested, with ducted air distribution and rated in accordance with ARI 210/240 or ARI 340/360. Refrigerant piping size shall be per the manufacturer's recommendations. Insulate refrigerant piping suction lines and condensate drain.

3. **Refrigerants**: The use of Ozone Depleting Substances (ODS) as well as the qualifications and credentials of personnel servicing equipment that contains ODS is restricted. Refrigerants shall have an Ozone Depletion Factor (ODF) of 0.055 or less. The ODF shall be in accordance with the "Montreal Protocol on Substances That Deplete the Ozone Layer", September 1987, sponsored by the United Nations Environment Program.

4. **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.

5. **Variable Refrigerant Flow (VRF) systems**: The system shall consist of VRF heat pump units, branch circuit controllers, VRF fan coil units, and associated controls. The system shall be designed to provide the facility with simultaneous heating and cooling utilizing hot gas refrigerant or sub-cooled liquid. Provide system with heat recovery. The heat pump units shall be inverter driven and shall utilize R410A refrigerant. Total capacity of the branch controllers shall be between 50% and 150% of the rated capacity. All refrigerant piping shall be sized and installed in strict compliance with the manufacturer’s requirements. Refrigerant piping shall be clean, dry, and leak free. Prior to installation all refrigerant pipes shall remain sealed. During installation and prior to filling, nitrogen shall be used to maintain cleanliness and prevent oxidation and scaling while brazing.

# D3040 DISTRIBUTION SYSTEMS

1. **Ductwork**: All ductwork shall be provided in accordance with the latest SMACNA guidelines. Flexible duct lengths shall not exceed 6 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 shall 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 shall be sealed with an approved duct sealer and in accordance with SMACNA standards. If leakage testing is indicated in part 3, the duct leakage shall not exceed 2%.

e. Provide manual volume dampers in each branch take-off from the main duct to control air quantity. Dampers shall conform to SMACNA DCS. Dampers shall be installed in accessible locations.

2. **Fire Dampers**: Fire dampers shall be rated per UL 555. Fire dampers shall 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 shall 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 shall be sized to give not less than 10 air changes per hour in the space to be ventilated. Fans shall 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 shall 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.

## D3050 TERMINAL AND PACKAGE UNITS

1. **Unit ventilators**: Unit shall be factory assembled unit ventilator capable of up to 100% outdoor air ventilation and UL-listed.

2. **Unit heaters**: ANSI Z83.8 and AGA label. Equip each heater with individually adjustable package discharge louver. Provide with thermostat.

3. **Fan coil units**: UL-Listed, factory assembled and tested fan coils, ARI 440 and ARI certified.

4. **Packaged units**:

   Factory packaged rooftop units in accordance with ARI 430 and suitable for outdoor installation. Provide with manufacturer's roof curb.

   Packaged through wall units shall be factory assembled air conditioner or heat pump and rated in accordance with ARI 310 or ARI 380 and ARI certified. Unit shall include heat and operate under the standard unit controls. Units shall be designed to allow ease of maintenance by use of a wall sleeve. Units shall have internal condensate removal (condensate shall not be externally drained).

## 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 shall be UL-916 rated. Use controllers in a distributed control manner. Controllers shall be stand alone with an internal clock and modem. The total number of I/O hardware points shall not exceed 48 in any controller. Provide sufficient memory for each controller to support required control, communication, trends, alarms, and messages. Provide communications ports for controller to controller, on-site interface, remote workstation interface, and telecommunications 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, shall be TABed in accordance with NEBB or AABC standards. As part of any TAB air balancing effort, acceptable air quantity variations shall 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 shall be provided by contractors licensed to perform such work.

**Project Requirements:** Prior to the start of design, the Designer of Record shall 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 shall include 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.

## D4020 FIRE SUPPRESSION WATER SUPPLY AND EQUIPMENT

The water supply information is provided for bidding purposes. The design point of connection to existing water supply shall require the approval of the Contracting Officer. The FPE DOR shall conduct additional flow tests after contract award prior to any design submissions. Tests shall be coordinated through the Contracting Officer.

## D4040 SPRINKLERS

Areas subject to freezing shall be provided with a dry pipe system.

# 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 shall conform to NFPA 70. Power and lighting circuits shall be separate.

1. **Wiring**: All wiring shall be in electrical metal conduits and shall be concealed except in the industrial spaces and at locations indicated in Part 3. No conductors shall be smaller than No. 12 AWG, copper wires. Wiring below slab or underground shall 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 shall not be used for grounding. Use of cable assemblies Types AC, MC, or MI and flat conductors are prohibited. Circuit breakers shall be bolt-on type. Series rated circuit breakers and fusible panelboards shall not be used.

2. **Outlet Circuits**: Lighting and convenience outlets shall be on separate circuits. Install GFI protected receptacles at all wet or damp areas. Location of outlets shall be as required by applicable codes and standards. Provide extra outlets for maintenance and service staffs in spaces such as corridors, hallways and other public spaces as identified below. All exterior outlets shall be on separate circuits, shall be GFI protected, and equipped with a cover to prevent accidental water infiltration into the devices.
   In addition to the location requirements specified by NFPA 70, locate general purpose and dedicated outlets in accordance with the following:
   a. Mechanical equipment: Provide receptacle within 7.6 m (25 ft) of mechanical equipment on the interior and exterior of buildings.
   b. Office, staff support spaces, and other workstation locations: One receptacle for each workstation with a minimum of one for every 3050 mm (10 ft) of wall space. When less than 3500 mm (10 ft) of wall at the floor line, provide a minimum of two receptacles spaced appropriately to anticipate furniture relocations. Limit loads to a maximum of four workstations per 20 amp circuit. See Appendix C, Table C1 for workstation load data.

c. Conference rooms and training rooms: One for every 3.6 m (12 ft) of wall space at the floor line. Ensure one receptacle is located next to each voice/data outlet. Provide one receptacle above the ceiling to support video projection device. Extend circuit to wall location for connection to motorized screen. When it is expected that a conference room table will be specifically dedicated to floor space in a conference room, locate a floor-mounted receptacle under the table. This receptacle may be part of combination power/communications outlet.

d. Provide power outlets throughout the building to serve all proposed equipment, including government furnished equipment, and allow for future reconfiguration of equipment layout. Provide power connections to all ancillary office equipment such as printers, faxes, plotters, and shredders. Provide dedicated circuits where warranted.

e. In each telecommunications room provide a dedicated 20 amp circuit with a receptacle adjacent to each rack or backboard for each of the following:

1) CCTV for training systems

2) CCSTV for security systems

3) CATV

4) Voice systems

5) Data systems.

f. Provide dedicated receptacles as required throughout the facility for television monitors. These outlets will typically be located at the ceiling level for wall mounted television monitors.

g. Provide dedicated receptacles as required throughout the facility for tape players and disc players.

h. Corridors: One every 15 m (50 ft) with a minimum of one per corridor.

i. Janitor's closet and toilet rooms: One GFI receptacle per closet. Provide GFI receptacles at counter height for each counter in toilets such that there is a minimum of one outlet for each two sinks.

j. Space with counter tops: One for every 1.200 m (4 ft) of countertop, with a minimum of one outlet. Provide GFI protection of outlets when located within 1.8 m (6 ft) of plumbing fixtures.

k. Building exterior: One for each wall, GFI protected and weatherproof.

l. Kitchen non-residential: One for each 3.05 m (10 ft) of wall space at the floor line. Provide GFI protection when located within 1.8 m (6 ft) of plumbing fixture.

m. Child occupied spaces (including toilets): One for every 3.6 m (12 ft) of wall space. Use child safety type such as those that require rotating an integral surface cover plate to access current. Removable caps and plugs are not acceptable.

n. All other rooms: One for every 7.6 m (25 ft) of wall space at the floor line. When 7.6 m (25 ft) or less of wall at the floor line exists in a room, provide a minimum of two receptacles spaced appropriately to anticipate furniture relocations.

o. Special purpose receptacles: Designer of Record must coordinate with the user to provide any special purpose outlets required. Provide outlets to allow connection of equipment in special use rooms.

3. **Service Entrance Equipment**: When a switchboard or switchgear is required, the Designer of Record shall utilize UFGS Section 26 23 00, *Switchboards and Switchgear*, for the project specification, and shall submit the edited specification section as a part of the design submittal for the project.

# D5020 LIGHTING & BRANCH WIRING

1. Lighting Fixtures: All lighting fixtures shall be energy conservation compact fluorescent except where indicated by Part 3.
   a. **Fluorescent Fixtures for Administrative and Commercial Spaces**: For offices, commercial and administrative spaces and facilities provide high efficiency ballast, and instant or rapid start recessed fluorescent fixtures.
   b. **Three-Way and Four-Way Switches**: Provide three-way or four-way switching of light fixtures as necessary to facilitate movement between adjacent spaces to allow efficient energy management.

2. **Exterior Lighting Fixtures for Large Open Areas**: Exterior lighting fixtures for large open areas such as parking lots, streets and playgrounds shall be energy efficient High-Intensity Discharge (HID) or compact fluorescent fixtures and shall comply with local regulations regarding low lighting levels to avoid light pollution.
   a. Photocell Overriding Switch: Provide photocell-overriding switch for all outdoor light fixtures.

# D5030 COMMUNICATIONS & SECURITY

1. **Telecommunications Systems**: Provide a horizontal distribution system including, but not necessarily limited to, all wiring, pathway systems, connector blocks, protectors for all copper service entrance pairs, terminators for all fiber optic cables, outlet boxes, telephone jacks, and data jacks cover plates in accordance with EIA/TIA standards. Provide Category 6 UTP telephone premise wiring where telephones are required.

2. **Public Address Systems**: Provide a Public Address system with speakers in all locations identified in Part 3.

3. **Intercommunications Systems**: Provide an Intercommunication System to allow two-way communications between all locations identified in Part 3.

4. **Television Systems**: Provide television systems to the extent specified in Part 3. Coordinate with the local Cable Company, Local users and Local Authority at the Activity for other specific requirements. The interior cable outlets and wiring shall be complete and ready for use. Wiring shall not be run exposed on any surface of the building.

5. **Security Systems**: Provide an Intrusion Detection System (IDS) to sense all perimeter doors and windows and the interior volume in at least two locations. System shall have 90-minute battery back-up and annunciate both locally and at the Base Security Office via a telephone dialer. System shall have entry/exit timer. Provide wall mounted keypad control at two locations.

# D5090 OTHER ELECTRICAL SERVICES

1. **Surge Protective Device (SPD)**: Provide SPD in accordance with UFC 3-501-01.

2. **Variable Frequency Drives**: When variable frequency drives are required, the Designer of Record shall utilize UFGS Section 26 29 23 20 for the project specification, and shall submit the edited specification section as a part of the design submittal for the project.

3. **Emergency Generators**: When an emergency generator is required, the Designer of Record shall utilize UFGS Section 26 32 13.00 20 for the project specification, and shall submit the edited specification section as a part of the design submittal for the project.

4. **Automatic Transfer and Bypass/Isolation Switches**: When an Automatic Transfer Switch is required, the Designer of Record shall utilize UFGS Section 26 36 23.00 20 for the project specification, and shall submit the edited specification section as a part of the design submittal for the project.

5. **Uninterruptible Power Supply (UPS) System:** When a UPS system is required, the Designer of Record shall utilize UFGS Section 26 33 53.00 20 and shall submit the edited specification section as a part of the design submittal for the project.

6. **400 Hertz Systems**: The Designer of Record shall utilize UFGS Section 26 32 26 or 26 35 43 for the project specification, and shall submit the edited specification section as a part of the design submittal for the project.

7. **Lightning Protection**: When lightning protection is required, the Designer of Record shall utilize UFGS Section 26 41 00.00 20 for the project specification, and shall submit the edited specification section as a part of the design submittal for the project.

8. **Building Photovoltaic System**

Provide a grid tied photovoltaic system including roof mounted crystalline photovoltaic panels, combiner boxes, inverters, and support structure.

Provide all labor, materials, equipment and supervision required to implement the design and to provide a fully operational system.

Provide PV modules with a 20-year limited manufacturer warranty that generates no less than 80% of the rated output under Standard Test Conditions (STC).

Provide start-up and testing utilizing certified technician. Submit startup and testing report.

The PV system hardware and services shall meet or exceed all applicable local, State and utility requirements, conform to the applicable codes and standards, and have passed the listing and qualification tests, listed below. (Comply with the most recent version of each document).

a. IEEE 1262 "Recommended Practice for Qualification of Photovoltaic Modules".

b. PowerMark certification for PV modules.

c. IEEE Standard 928-1986, Recommended Criteria for Terrestrial Photovoltaic Power Systems (PV system performance criteria).

d. IEEE 1547 Standard for Interconnecting Distributed Resources with Electric Power Systems

e. Underwriters Laboratories 1741-2001 (UL Standard for Inverters and Charge Controllers).

f. Underwriters Laboratories 1703 (UL Standard for Listing Photovoltaic Modules).

g. Certification of PV Equipment: All PV modules, inverters, and electrical components shall be required to be listed or recognized by an appropriate and recognized United States Safety Laboratory (for example: UL or ETL).

Provide a comprehensive "Photovoltaic Application Analysis" with a detailed description of system, application, site shading conditions and expected kW output of the rooftop photovoltaic applications. The analysis shall utilize the Solmetric Suneye or the Solar Pathfinder shading analyzers to analyze the effects of the existing site shading conditions. Analysis shall include estimated PV output in kWh per year. Coordinate rooftop application analysis with other equipment that is required to be placed on the roof to determine space available and proper solar orientation for photovoltaic equipment.

The contractor work responsibilities include at a minimum: system design, equipment selection, and PV system installations. System shall be individually capable of providing peak power output of at least proposed PV system size, 208 or 480 volt, 3-phase, 4-wire power.

The final System configuration shall allow automatic operation without operator intervention. System design and equipment specifications shall minimize maintenance requirements. System shall include metering that must be incorporated with current AMI network (Advanced Metering Infrastructure) and planned energy metering projects.

The inverter(s) disconnects and associated electrical equipment must be located in an area that is accessible, weather-protected, and secure from vandalism and personal injury.

Disconnects and over current devices shall be mounted in approved boxes, enclosures, or panel boards. Disconnects and switches shall be DC rated when used in DC applications. Metal enclosures and boxes shall be bonded to the grounding conductor.

At a minimum, electrical meters shall capture the following data on individual system performance (minimum solar irradiance, DC power, AC real power, AC current, AC voltage, and power factor (recommend ION 8600 for AC); ambient air temperature, PV cell temperature, kW, and kWh). This data shall be captured at hourly intervals for a minimum one year. Units of temperature, power, and current shall be in Fahrenheit, Watts, and Amps respectively.

Transformers, if required, shall have a minimum efficiency based on factory test results of not less than the efficiency indicated in 10 CFR 431, Subpart K, paragraph 431.196(b). Transformers shall be housed in a NEMA 4X enclosures.

Mounting structures shall be corrosion resistant to marine environment.

Provide permanent plaque or directory at each building service and power source identifying all other building services and power sources.

Operators manuals for each system component shall include detailed instructions on how to operate the system, programming and installation instructions, emergency operating procedures, default program values and set points, listing of field programmed variables and set points, equipment wiring diagrams, product model number, with Name, Address and Telephone number of local representative, and starting, operating, and shut down procedures. Include normal and emergency shutdown procedures, schedule of maintenance work, if any, recommended cleaning agents and methods, replacement parts list, including internal fuses, and warranty information.

Provide a formal 2-hour on-site training session instructing operators in the operation and maintenance of the new system, including operation and maintenance of inverters, disconnects and other system components. Instruct personnel in removal and installation of panels, including wiring and all connections. At the time of training the Contractor shall furnish, for the equipment specified, operation and maintenance manuals, record drawings and recommended spare parts lists identifying components adequate for competitive supply procurement for operation and maintenance of system.

# SECTION E. EQUIPMENT AND FURNISHINGS

## E10 EQUIPMENT

**Equipment and Appliances:** Provide appliances and equipment to fulfill the work for Part 3. Whenever possible, all appliances and equipment provided for the facilities in the contract shall be by the same manufacturer and shall be the current model available at the time of proposals. Discontinued makes and models are prohibited. All appliances and equipment shall comply with applicable Energy Star efficiency rating requirements and shall be rated as high efficiency models. Appliances and equipment on California projects shall comply with California Title 24 and be rated as high efficiency. All appliances shall be of the same manufacturer and shall be the same, or similar in color. Submit catalog information for approval by the Contracting Officer prior to purchasing, delivery and installation of the appliances at the job site. Equipment and appliances such as dishwashers, ice machines with drains, garbage disposers, and ovens/ranges are not considered FF&E.

## E20 FURNISHINGS

### E2010 FIXED FURNISHINGS

**Window Treatments:** Unless otherwise specified in Part 3 window treatments shall be as follows: Horizontal blinds shall be aluminum, washable, cleanable, installed in all windows except for bathroom, kitchen, and utility windows. Horizontal blinds shall be installed at all sliding glass doors. All blinds shall be screwed or securely anchored to wood backing and shall be inside mounted except at sliding glass door. Submit catalog information for approval by the Contracting Officer. Blinds shall have 1-inch aluminum slats, mounted within window opening. Blinds shall have separate tilt and height controls, metal truck, head channels, wand, and valance. Solar shades shall be woven polyester/resin coated fiberglass or polyester fabric with fade resistance and dimensional stability; with clutch or motorized roller operation. Roller shades shall be

screwed or securely anchored to wood backing and shall be inside mounted except at sliding glass door. Submit catalog information for approval by the Contracting Officer. Blinds shall have prefinished steel or aluminum roller housing and valance. Window treatments are not considered FF&E.

## E2020 MOVABLE FURNISHINGS

1. Furnishings, Fixtures and Equipment (FF&E): FF&E shall include furniture, shop equipment, audiovisual equipment (excluding motorized screens), and specialty equipment. Weapon racks, drying cages, motorized projection screens and lockers are not considered FF&E. FF&E shall be fully integrated with the building system.

   Design and provide FF&E for all areas as developed during client programming. Design an FF&E package and prepare supporting plans and procurement data in accordance with the General Interior Design Requirements UFC 3-120-10.

   The contractor shall have an NCIDQ certified Interior designer not affiliated with any furniture dealership prepare both the SID and FF&E package and participate in design charettes to develop the building floorplan. The designer must have previous experience in project types similar to this contract. As required, the contractor shall obtain services of equipment specialists to specify the audiovisual, shop, or specialty equipment. Equipment specialists shall not have any affiliation with the product specified.

   The contractor's Interior Designer shall be responsible for specifying product and installation for all FF&E for the designated facilities built under this contract, using NAVSUP Blanket Purchase Agreements, GSA federal supply schedules or other government supply sources and complying with priorities found in FAR Part 8.404.

   All fixed and movable furnishings selections shall be coordinated with Sections C10, "Interior Construction" and C30, "Interior Finishes." The FF&E shall be fully integrated with the building systems as well as the design and construction schedule.
   As an option to the contract/task order, the contractor shall be authorized to procure all FF&E with separate funding.

   a. **FF&E Package:** Provide the FF&E loose furnishings package from Government supply sources schedules according to Federal Acquisition Regulations, to include but not limited to, systems and modular furniture, training and conference furniture, seating, tables, artwork, window covering, specialty furniture and equipment, and accessories. NAVSUP Blanket Purchase Agreements (BPA) must be used whenever possible.

      The Government will provide separate funding for procurement of the FF&E package. Upon receipt of required funding, the Contractor shall be authorized by the Contracting Officer as an option to contract/task order to procure all FF&E using predominately negotiated price schedules from GSA or other Federal contracts. The amount of the modification will be the actual cost of these items from the Federal price schedules or NAVSUP BPAs, including any freight and installation charges from the furniture supplier as well as the contractor's FF&E Handling and Administration Rate (HAR). The HAR includes all of the prime contractor's effort related to storage, coordination, handling, administration of subcontractors, and all other associated costs and profit for the procurement of FF&E. The prime contractor will propose in the contract/task order solicitation the FF&E HAR. The contractor's proposed HAR may not exceed 5% of the total FF&E costs, as noted on the bid schedule. No other charges, expenses, fees, or

other markups will be authorized.

When the FF&E package is complete and accepted by the Government, the procurement option will be awarded based on the specific line items in the final package. The Government's Interior Designer will approve the final FF&E submittal. The FF&E package will be presented to the Project Manager and they will expect the Contractor to procure the FF&E exactly as specified and approved by the government Interior Designer.

Two copies of all ordering documentation shall be provided to the Contracting Officer including purchase orders and warranty information. The Contractor shall take maximum advantage of all exemptions from State and Local taxation authorities whether available to it directly or available to the contractor based on an exemption afforded the Government. The responsibility for paying applicable taxes rests with the contractor. Any state and local taxes applicable to the FF&E option will be included with the FF&E Dealer quote, if applicable.. Under regulation 1521, Construction Contractors performing work for the US Government are not required to charge the Government sales tax for the purchase of furniture. Any items purchased as building materials such as carpet are taxable. FF&E items are subject to the Buy American Act. The contractor shall not be required to secure any additional bond for the award of the FF&E option item. Any performance and payments bonds required for the FF&E option will be included in the prim contractor's FF&E HAR.

b. **Procurement and Installation:** Upon completion and Government acceptance of the design, using the Best Value Determination (BVD) method in association with the Government's Interior Design Representative, the Government will award the FF&E procurement option for the Contractor to purchase the FF&E package. The Government's Interior Designer shall provide a certification to the Contracting Officer that the process was completed. The Design-Build Contractor will receive a letter of authorization from the Contracting Officer citing the name of the furniture dealer and other information to use when accessing the Government supply sources. The FF&E package includes the installation of all furniture and furnishings as specified in the FF&E package. The installation dealer specified in the FF&E package will receive, store, if required, transport to the project site, off load, inside deliver, unpack, assemble, place/install, clean, if required, and dispose of all the trash for all furniture and furnishings. The Contractor's Interior Designer will be responsible for specifying installation services and warehousing, as required, for all collateral equipment. It is the Contractor's responsibility to coordinate the building completion, occupancy, and furniture installation dates with the installation dealer specified in the FF&E package. Any costs associated with storing or delaying furniture shipments is the responsibility of the Construction Contractor. Davis Bacon wages do not apply to the FF&E installer accessed through Government supply sources. The Contractor should anticipate providing a deposit of between 30% and 50% of the furniture costs when placing their order.

All movable furnishings shall be installed in accordance with the manufacturer's instructions and warranty requirements. All movable furnishings shall be level and aligned and all doors, drawers and accessories shall be level and aligned to open, close and otherwise operate smoothly and securely. All systems furniture shall be installed by the systems furniture manufacturer's dealer of record and not by the General Contractor.

c. **Furnishings for Special Functions:** Contractor shall coordinate shop equipment, audiovisual equipment, and specialty equipment, with the building systems.

# SECTION F. SPECIAL CONSTRUCTION AND DEMOLITION

# F10 SPECIAL CONSTRUCTION AND DEMOLITION

## F1010 SPECIAL STRUCTURES

1. Pre-Engineered Buildings

Provide the design and installation in accordance with the UFC 3-100-10, *Architecture* and UFC 3-301-01, *Structural Engineering.*

a. **Design Requirements -** The metal building manufacturer must be accredited by the International Accreditation Services (IAS) AC472. The Metal Building System design shall be in accordance with the Metal Building Manufacturers Association (MBMA) *Metal Building SystemsManual*. All structural design shall comply with the provisions of Section B10, "Superstructures", above.

b. **Additional Roof Design Requirements -** Roof Decking - In addition to any other load requirements, roof decking shall be designed to support a 91 kg (200-pound) concentrated load at mid-span on a 300 mm (12-inch) wide section of deck.

c. **Deflection -** the maximum deflection for -

1) Structural Members - main framing members shall be L/240.

2) Purlins and Roof Panels: The deflection due to live, snow, or wind shall not exceed L/180.

3) For buildings with masonry infill, limit frame sway to L/600th of building eave height.

4) Wall Panels - Maximum deflection of wall panels due to wind loads shall be L/120th of their respective spans except that when interior finishes are used the maximum allowable deflection shall be limited to L/180th of their respective spans.

d. **Wall and Roof materials -**

1) Alum/Zinc-Coated Steel Sheet: ASTM A792/ A792M, AZ 55.

2) Aluminum Sheet: Alloy 3004 Alclad conforming to ASTM B209.

3) Framing and Structural Members - Steel - ASTM A992 / A992M, ASTM A529/ A529M, ASTM A572/ A572M, or ASTM A588/ A588M.

4) Framing and Structural Members, Aluminum: ASTM B221 or ASTM C308

e. **Structural Tube:** ASTM A500 or ASTM B221.

f. **Fasteners** - Shall be compatible with the materials they are fastening to, be gasketed when exposed to weather to prevent leaks, and shall provide both shear and tensile strengths not less than 3,336 N (750 pounds) per fastener. The main fastening system shall use concealed fasteners, however, when exposed fasteners are needed, color fasteners shall be color coated to match wall/roof panels.

g. **Light Transmitting Roof Panels (Non-Insulated):** ASTM D3841, Type II, Grade 1.

h. **Insulation:** Blanket-type fiberglass insulation with a factory applied facing on one side and having a permeance rating of 0.05 or less in accordance with ASTM E96. Flame Spread Rating 75 or less, and a Smoke Developed Rating of 150 or less when tested in accordance with ASTM E84.

i. **Panel Finish -** Factory Color Finish - Provide factory applied baked coatings to the exterior and interior of metal wall panels and metal accessories. Provide exterior primer standard with panel manufacturer but not less than 0.8 mil dry film thickness (DFT). Provide PVDF exterior finish top coat of 70 percent inorganic pigments with 0.8 mil DFT. Provide factory-applied clear finish over the color topcoat and edge coating for projects within 91 meters of a water shoreline or industrial environments. Field apply 70 percent PVDF clear coat to unfinished panel edges or field cut panels. Interior finish exposed to sun or rain shall be the same coating and DFT as the exterior coating. Interior finish protected from sun or rain exposure shall receive 1.0 mil DFT coating of siliconized polyester (SMP) resin coating with organic or blended pigments and manufacturer's standard primer.

# F20 SELECTIVE BUILDING DEMOLITION

In general terms, demolition work shall include the removal and effective management and disposition of existing construction and or structures. Contractor shall take care to prevent damage to existing utilities and construction that are not scheduled for demolition. If damage occurs, the Contractor shall make repairs to the satisfaction of the Contracting Officer and at no cost to the Government. Comply with local Activity and Installation local requirements regarding demolition and removal. Unless otherwise specified in Part 3, all demolished materials and equipment must be removed from government property in accordance with applicable laws and regulations, including local Activity or Installation regulations. Selling of demolished or salvaged materials and equipment on government properties is prohibited.

**Demolition Plan and Environmental Protection Plan**: No demolition work shall take place until a Demolition Plan, Environmental Protection Plan, Safety Plan (including Activity Hazard Analysis), Asbestos Abatement Plan, and a Lead Abatement Plan have been submitted to, and approved by, the Contracting Officer. The Plans shall take into consideration, and indicate method of removal, disposition, and abatement of environmentally hazardous materials. Demolition, disposition, and abatement of hazardous materials must comply with all applicable Local, State, and Federal regulations and laws. If destructive investigation is to occur, the Contracting Officer shall approve a Destructive Investigation Plan.

When hazardous materials such as asbestos, lead paint, PCB and other hazardous materials are involved in the performance of the work, the contractor shall abate, remove and manage the hazardous materials in construction and finish materials such as insulation, flooring, wall materials, ceiling materials, roofing materials, heating, plumbing, ventilation, air conditioning equipment and installations in accordance with National as well as local Environmental Protection Laws and Regulations.

## F2020 HAZARDOUS COMPONENT ABATEMENT

1. **Asbestos in DoD Schools**: For projects that require removal or disturbance of asbestos containing materials within DoD schools, perform work in accordance with the edited UFGS 02 82 14.00 10, *Asbestos Hazard Control Activities*.

2. **Asbestos Materials**: Asbestos shall be removed, transported and managed in

accordance with the following regulations: 29 CFR 1926.1101, and 40 CFR 61-Subpart M.

Category I & II Nonfriable: Demolition of Category I & II nonfriable asbestos containing materials (approved to be left in place during building demolition) shall be performed in accordance with 40 CFR 61 - Subpart M.

3. **Lead Based Paint in Child Occupied Facilities**: For projects that require removal or disturbance of painted surfaces within a child occupied facility, perform work in accordance with the edited UFGS 02 83 19.00 10, *Lead Based Paint Hazard Abatement, Target Housing and Child Occupied Facilities.*

4. **Paint Containing Lead, Cadmium and Chromium**: Work which requires the disturbance of paint that have been determined to contain all or any of the following: lead, cadmium and chromium must be performed in accordance with: 29 CFR 1926.62, 29 CFR 1926.1126 and 29 CFR 1926.1127.

5. **Mercury & LLR Components**: Work which requires removal of mercury and LLR components shall be performed in accordance with: 29 CFR 1910.1000, 10 CFR 20, and 40 CFR 273.

6. **PCBs**: Work which requires removal of PCB containing components or materials shall be performed in accordance with 29 CFR 1910.1000, 40 CFR 761, and 40 CFR 273.

7. **Hazardous Materials Reporting**:
   a. **Daily Report**: Notify the Contracting Officer of work involving hazardous materials abatement and removal, including the quantities involved, on daily reports.
   b. **Hazardous Material Inventory Report:** The Contractor shall provide a list of all hazardous materials used on the site.

# SECTION G. BUILDING SITEWORK

# G10 SITE PREPARATIONS

1. **General Requirements**: Building site work includes site preparation, site improvements, site civil/mechanical utilities, site electrical utilities, exterior furnishings, landscaping, and irrigation. Provide site work in accordance with UFC 3-201-01, *Civil Engineering*.

2. **Project Limitations**: Prior to the start of design, the contractor shall determine the exact limit-of-work line for the project periphery, considering items such as, but not limited to, utility work, landscape re-vegetation of disturbed areas, and lay down areas. The Civil Engineer and Landscape Architect of Record shall determine limit-of-work lines. Minimize the impact of construction activity on operations and neighboring facilities.

3. **Geotechnical Data**: A geotechnical engineer shall conduct the subsurface exploration, investigation/evaluation, testing, and analysis that the Designer of Record deems necessary for the design and construction of the proposed facilities, including building

pad, structure, pavement sections, repairs, overlays, stormwater management facilities, utility structure foundations, septic systems, and other features requiring soil support.

## G1010 SITE CLEARING

1. **Existing Utilities**: When the Contractor is to work at a site that has existing utilities, the contractor is responsible for coordination with Contracting Officer and utility companies for staking out, capping, connection and relocation of any existing utility systems or traffic interruption. Notify utility locator service for area where Project is located before site clearing.

2. **Interruption**: All interruption to the existing utilities and traffic shall be coordinated with and approved by the Contracting Officer not less than 14 calendar days in advance of such interruption.

## G1020 SITE DEMOLITION & RELOCATIONS

Abandon utility systems in-place conforming to applicable codes and regulations, removing their presence from the ground surface and clearly indicating that they have been abandoned. Remove utilities underneath or within 3.0 m (10 feet) of any new facilities. Fill abandoned gravity systems with flowable fill. Fill abandoned utility system piping under pavements subject to potential vehicle loading with flowable fill.

Remove existing utility structures to 900 mm (3 feet) below existing or new adjacent grade, whichever is greater. Break up bases to permit drainage. Fill with clean sand.

Comply with the requirements of the utility provider concerning utility relocation.

## G1030 SITE EARTHWORK

The DOR shall utilize UFGS Section 31 23 00.00 20 for the project specification and shall submit the edited section as a part of the design submittal. Perform quality assurance for earthwork in accordance with UFGS Section 31 23 00.00 20. If sheeting/shoring or dewatering is required, the Contractor shall provide a registered Professional Engineer to provide excavation, sheeting, shoring, and dewatering plans and inspection of excavations and soil/groundwater conditions throughout construction. The Engineer shall be responsible for performing pre-construction and periodic site visits throughout construction to assess site conditions. The Engineer, with the concurrence of the contractor and the Contracting Officer, shall update the excavation, sheeting, shoring, and dewatering plans as construction progresses to reflect actual site conditions and shall submit the updated plan and a written report (with professional seal) at least monthly informing the Contractor and the Contracting Officer of the status of the plan and an accounting of Contractor adherence to the plan; specifically addressing any present or potential problems. The Engineer shall be available to meet with the Contracting Officer at any time throughout the contract duration.

# G20 SITE IMPROVEMENTS

Provide site improvements as required to make a useable facility that meets functional and

operational requirements, incorporates all applicable anti-terrorism, force protection and physical security requirements and blends into the existing environment.

Provide site improvements in conformance with applicable requirements of the Uniform Federal Accessibility Standards.

1. **Pavements**: For work in and adjacent to existing pavements, the Contractor is required to match the existing adjacent finish elevation, materials, paving section and texture, unless otherwise indicated in Part 3 or directed by the Contracting Officer.

   Provide pavement design and pavement section materials in accordance with UFC 3-200-10N, *Civil Engineering*.

2. **Traffic Control**: If the site work involves interference with normal vehicular and or pedestrian traffic, the Contractor shall coordinate with the authority having jurisdiction, propose and obtain approval for traffic control measures that may be required in performance of the work required by the contract.

3. **Performance Verification And Acceptance Testing**:
   a. **Subgrade Preparation:** If required by the Designer of Record, perform proof rolling. Proof rolling shall be performed in the presence of the Contracting Officer. Rutting or pumping of material shall be undercut as directed by the Contracting Officer and replaced with satisfactory soil materials as defined by the Geotechnical Engineer.
   b. **Base Course Performance Verification**: At a minimum, Contractor must perform visual performance verification. Surface shall be smooth with no ruts, sloped or crowned to not pond water.
   c. **Bituminous Concrete Pavement Performance Verification**: At a minimum, Contractor must perform visual performance verification. Finished surface shall be uniform in texture and appearance, free of defects such as cracks and creases, and be sloped or crowned so as to not pond water.
   d. **Portland Cement Concrete Pavement Performance Verification**: At a minimum, Contractor must perform visual performance verification. Finished surface shall be uniform in texture and appearance, free of defects such as cracks and spalls, and be sloped or crowned so as to not pond water.
   e. **Concrete Joint Performance Verification**: Joint sealer that fails to cure properly, or fails to bond to joint walls, or reverts to uncured state or fails in cohesion, or shows excessive air voids, blisters, or has surface defects, swells, or other deficiencies, or is not recessed within indicated tolerances shall be rejected. Remove rejected sealer, re-clean and reseal joints.

## G2040 EXTERIOR FURNISHINGS

All site furnishings shall be permanently attached to concrete pads. Site furnishings shall conform to the Base Exterior Architecture Plan (BEAP) or Installation Appearance Plan (IAP) for each Activity. If no product guidance is given, coordinate material, finish and color with architecture (fiberglass and aluminum are not acceptable) and provide to the greatest extent possible, materials with industrial recycled content, preferably from regionally local manufacturers. At a minimum, provide a trash and ash receptacle at each entry and gathering/smoking area.

## G2050 LANDSCAPING

# G30 SITE CIVIL/MECHANICAL UTILITIES

Develop the site to provide water, fire protection, sanitary sewer, storm drainage, heating, cooling and fuel distribution services that meet the requirements of each utility provider and each applicable regulatory agency that governs and issues permits for the construction and operation of these systems. Site design shall also comply with Department of Defense requirements concerning Low Impact Development (LID) per UFC 3-210-10, as well as state or local stormwater management regulations, and applicable project sustainability goals. Submit sealed calculations with narrative to the Government for civil and environmental review documenting all assumptions and which criteria governs the design.

Coordinate with the local utility providers and pay any fees or charges required to connect to their utility. Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work. Coordinate all reports, submittals, and permit applications through the Contracting Officer. The Contractor shall perform work in accordance with the obtained permits.

Provide all required fittings, connections and accessories required for a complete and usable system. All equipment shall be installed per the criteria indicated in this RFP and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "must".

## G3010 WATER SUPPLY

1. **Water System Design and Construction**: Provide the new water system and connections to the existing water system in accordance with UFC 3-230-01, *Water Supply: Storage, Distribution, and Transmission*; the utility provider's requirements; or the state waterworks' regulations; whichever is more stringent.

2. **Notifications**: Notify the utility provider of the additional demand generated by the proposed facility. Provide a copy of all correspondence with the utility provider to the Government's Civil/Mechanical Reviewer.

3. **Performance Verification And Acceptance Testing**: Provide testing on water mains and service lines in accordance with the state waterworks' regulations and the following:

   a. Ductile iron and other materials: AWWA C600.

   b. PVC: AWWA C605.
   whichever is more stringent. Do not begin testing on any section of a pipeline where concrete thrust blocks have been provided until at least 5 days after placing of the concrete.

## G3020 SANITARY SEWER

1. Sanitary System Design and Construction: Provide the new sanitary sewer system and connections to the existing sanitary sewer collection system in accordance with UFC

3-240-01, *Wastewater Collection*; the utility provider's requirements; or the state sewerage regulations; whichever is more stringent.

2. Notifications: Notify the utility provider of the additional wastewater flow generated by the proposed facility. Provide a copy of all correspondence with the utility provider to the Government Civil Reviewer.

3. Wastewater Pump Station: Where required, provide a duplex, grinder pump station in accordance with the utility provider's requirements. Provide pump station wet well of fiberglass construction. Provide adjacent valve vault of precast concrete construction.

   Provide automatic control to start and stop the pump system. Provide automatic level control by floats in accordance with the preferences of the system owner to fill and prevent overflow of the wet well. Provide an emergency pump connection.

   Provide a telephone dialer in the control panel capable of accepting up to 8 telephone numbers. At the control panel provide an alarm horn and light with battery backup. Alarms shall include high liquid wet well level; loss of main power; no flow as sensed by current sensor; and pump failure via overload or motor heat sensor trip. Provide seal failure indicator lights and elapsed time meters.

   Provide electrical connections for a portable emergency generator hook-up sized to start up and maintain the total rated running capacity of the station, including the pumps, controls, lighting, and other auxiliary equipment.

4. Performance Verification And Acceptance Testing:
   a. Sanitary Sewer Distribution System Performance Verification: Provide testing on sewer mains and laterals in accordance with the state sewerage regulations. At a minimum, perform the following:

      1) Visual Test: Remove manhole colvers and conducts a visual inspecation as follows:

         a) Inspect for visible leaks in lines or manholes.

         b) Inspect condition of grout in the interior joints of the manholes.

         c) Inspect manhole frames and covers for proper type and installation.

         d) Inspect to see if lines are free of debris.

         e) Inspect manhole benches and inverts.

         f) Check alignment and grade of gravity lines by laser or by introducing sufficient water into the line to verify the absence of sags, as directed by the Contracting Officer.

         g) Mirror test: Check each straight run of pipeline for gross deficiencies by holding a light in a manhole; it shall show a full circle of light through the pipeline when viewed from the adjoining end of line.

      2) Leakage Tests: Test lines for leakage by either infiltration tests or exfiltration tests, or by low-pressure air tests in accordance with the following:

a) Exfiltration Tests: ASTM C 969M (ASTM C 969) and perform calculations in accordance with its Appendix.

b) Low-pressure Air Tests: Pipelines: ASTM C 924M (ASTM C 924) and perform calculations in accordance with its Appendix. PVC plastic pipelines: UBPPA UNI-B-6 and perform calculations in accordance with its Appendix.

3) Cross Connection Tests: Cross connection tests shall be observed by the Contracting Officer and the utility provider's inspector.

a) Perform a tracer study from the project sewer connection to the first manhole downstream on the active sewer system. Use a nontoxic, non-staining sewer tracing dye. Testing shall continue until the dye visually confirms the design connection is appropriate. During the test, the contractor shall monitor the storm drainage system (structures and outfalls) downstream from the project for any sign of cross connection.

b) Perform a smoke test on the project sewer to verify that project storm drainage inlets or drains have not been connected to the sanitary sewer.

f. Sanitary Sewer Manholes Verification Testing: Provide testing on sanitary sewer manholes in accordance with the state sewerage regulations. At minimum, perform hydraulic testing in accordance with ASTM C 969M (ASTM C 969).

g. Wastewater Pump Station Verification Testing: Test the wastewater pump station in accordance with the state sewerage regulations. Conduct testing on discharge piping and force main in accordance with tests for water distribution mains; see G30, paragraph 1.3.2. Test pumps, controls, and alarms, in operation, under design conditions to ensure proper operation of all equipment.

## G3030 STORM SEWER

1. Storm System Design and Construction: Provide the new storm sewer system and connections to the existing storm sewer system in accordance with UFC 3-201-01, Civil Engineering; the utility provider's requirements; UFC 3-210-10, Low Impact Development; the state stormwater management laws and regulations; and applicable sustainability requirements; whichever is more stringent.The Contractor shall make necessary adjustments to the drainage design in order to avoid disruption to existing utilities and to protect existing trees to remain.Confirm that the existing receiving system has adequate capacity to receive the additional stormwater flow generated by the project.

2. Storm Sewer System Performance Verification: At a minimum, perform the following:

a. Visual Test: Remove drainage structure covers and conduct a visual inspection as follows:

1) Inspect for visible leaks in lines or structures.

2) Inspect condition of grout in the interior joints of the structures.

3) Inspect structure frames and covers for proper type and installation.

4) Inspect to see if lines are free of debris.

5) Inspect structure inverts.

6) Check alignment and grade of gravity lines by laser or by introducing sufficient water into the line to verify the absence of sags, as directed by the Contracting Officer.

7) Mirror test: Check each straight run of pipeline for gross deficiencies by holding a light in a structure; it shall show a full circle of light through the pipeline when viewed from the adjoining end of the line.

## G3060 FUEL DISTRIBUTION

**Gas Distribution System**: Refer to Section D20 for requirements.

# G40 SITE ELECTRICAL UTILITIES

## G4010 ELECTRICAL DISTRIBUTION

1. **Electrical Utilities Design and Construction**: Site electrical utilities include all exterior electrical work, including the connection to the primary distribution system. This also includes telephone and cable television supplies.

   Provide electrical overhead and underground, distribution systems in accordance with IEEE C2 (National Electrical Safety Code), NFPA 70, local utilities company requirements, and local Activity guidelines.

2. **Coordination With Local Utilities Company and Local Activity**: Service meters for electrical services shall be provided and installed in conformance with the local utilities company requirements and local activity guidelines.

3. **Substations**: When secondary unit substations are required, the Designer of Record shall utilize UFGS Section 26 11 13, *Secondary Unit Substation*, and UFGS Section 26 23 00, *Switchboards and Switchgear*, for the project specification, and shall submit the edited specification section as a part of the design submittal for the project.

4. **Transformers**: When transformers are required, the Designer of Record shall utilize UFGS Section 26 12 19.10, *Three-Phase Pad Mounted Transformers*, UFGS Section 26 12 19.20, *Single-Phase Pad Mounted Transformers*, or UFGS Section 33 71 01, *Overhead Transmission and Distribution*, for the project specification, and shall submit

the edited specification section as a part of the design submittal for the project.

5. **Switches, Controls and Devices**: When switches or control devices are required, the Designer of Record shall utilize UFGS Section 26 13 00.00 20, SF6 *Insulated Pad Mounted Switchgear*, or UFGS Section 33 71 01, *Overhead Transmission and Distribution*, for the project specification, and shall submit the edited specification section as a part of the design submittal for the project.

## G4020 EXTERIOR LIGHTING FIXTURES AND CONTROLS

1. Utilize broad spectrum (white light) sources such as metal halide, induction, SSL, and fluorescent to provide good visibility at low light levels, unless lighting is required to match existing sources. The IESNA 10th Edition Handbook has developed a methodology to apply white light.

2. Comply with ANSI/ASHRAE/IES 90.1-2007 for all exterior lighting applications and controls.

3. Comply with EPACT 2005, the exterior lighting power density must be below ASHRAE by 30% if considered a building load and 20% if considered a non-building load.

4. Provide surge protective device (SPD) at panelboards that include circuits feeding exterior lighting systems.

5. Coordinate the design and luminaire selection with the landscape designer. Such coordination should include the location of poles which may conflict with tree locations.

6. When exterior lighting is required the designer of record shall utilize UFGS Section 26 51 00 for the project specification section as part of the design submittal for the project and shall submit the edited specification section as a part of the design submittal for the project. Provide “dark-sky” compliant exterior light fixtures and design to minimize light trespass and light pollution.

## G4030 SITE COMMUNICATION & SECURITY

1. **Telephone Distribution System**: Provide all telephone distribution systems in accordance with EIA/TIA Standards, NFPA 70, and the cognizant telephone company requirements.

2. **Cable Television System**: Provide all cable television systems in accordance with NFPA 70, and the cognizant cable television company requirements and BICSI recommendations.

# Part 5
# Prescriptive Technical Specifications

## PERFORMANCE SPECIFICATIONS NOT FOUND IN UFGS STANDARD SPECIFICATIONS

## Laundry Wash Water Recycling System (Building 3503):

### PART 1 GENERAL

Section Includes: Complete and operable laundry wash water recycling system. They system shall draw water from both tunnel washers and all washer/extractor machines. As a minimum the system shall include wash water recovery pumps, a dirty water holding tank, initial soap and organics filter, oil and grease filter, suspended solids filter, final holding tank, UV filter, pumps, controls, piping and system bypass.

Work includes providing tanks, filters, pump skids, interconnecting piping, sensors, circuit control hardware, labor, tools, and equipment necessary for and incidental to performing all operations in connection with furnishing, delivery, and installation of Work.

Modifications of standard products may be required to meet features of specified products.

### PART 2 PRODUCTS

#### Recycling Equipment

A. Wash water recovery pumps capable of pumping wash water from each of the washing machine drain trenches (1 trench drain for each tunnel washer and 1 trench drain for all washer/extractors) to the initial holding tank. Each of these drain trenches shall be fitted with a device to allow the dirty wash water to pond so that the recovery pumps can operate with a float control.

B. Initial holding tank shall be capable of containing a minimum of 1,000 gallons of hot washing machine discharge water.

C. Lint shaker shall be capable of removing large solids from a 125 gpm wash water stream.

D. Soap and organics filter shall be capable of removing soaps, perfumes, and other organic material from the 125 gpm wash water stream. A minimum of 75% of dissolved organic material shall be removed from the wash water stream.

E. Oil and grease filter shall be capable of coalescing and removing small amounts of oil and grease removed from work clothes. This filter shall not be required to remove amounts of oil and grease measured above parts per million range from the wash water stream. No oil/water separator or secondary drain shall be necessary.

F. Suspended solids filter shall be a centrifugal filter capable of removing 30 micron and larger particles of dirt and heavy metals from the 125 gpm wash water stream.

G. Final holding tank shall be capable of containing a minimum of 1,500 gallons of filtered wash water. This tank shall also have provision for injecting activated oxygen into the wash water.

H. Pump and control package shall be an assembly of centrifugal transfer pumps, process pumps, supply pump, a minimum of one (1) spare pump, pump motor controllers, UV filter, automatic system bypass, system controls, and a clearly labeled emergency stop button. Sensors on tanks, piping, and filters not within this package shall be wired to the control panel within this package.

I. Water quality and chemistry shall be measured and recorded. This system shall return wash water with a pH from 6.9 to 7.6 and a hardness less than 7.0 grains per gallon back into the washing

machines. The system shall be capable of removing 75% of TOC (Total Organic Carbon) from the recycled wash water.

J. The system shall be capable of filtering and treating wash water using conventional chemistry. Bases, alkalines and other conventional chemicals shall be capable of operating in water at a temperature of 120 degrees F or less.

K. The system shall be equipped with an automatic bypass to allow all washing machines to operate on clean, potable water if the water reclaim system is not operating. The system shall be equipped with a clearly labeled push button emergency stop. Operation of this button shall stop all pumps and activate the bypass until manually reset.

L. The system shall be capable of pumping excess or overflow water to remote floor drains. Installation of local floor drains requiring underfloor work shall not be required for installation or operation of this system.

M. Interconnecting and bypass piping shall be schedule 80 PVC capable of handling water at a temperature of 120 degrees F or less.

N. Internal sensors shall measure and track daily water throughput and quality so that savings can be easily determined. A minimum of 65% of the wash water shall be recycled.

O. All skid bases shall be made of stainless steel or powder coated galvanized steel to resist corrosion.

P. All devices shall be furnished by the same company, shall be compatible, and shall be warrantied by the same company.

## PART 3 EXECUTION

### Installation

A. Locate the water tanks, filters, and pump and control package on level flooring as close to the washing machines as possible.

B. Provide quantity of level, flow, and water temperature sensors and controls required for recycling a minimum of 65% of the wash water. Wash water shall be filtered, cleaned and disinfected prior to being returned to the washing machines.

C. Provide electrical power from a panel or circuit as directed by the Owner or Owner's representative. All wiring shall be in accordance with the NEC (National Electrical Code).

D. Protect exposed wiring from sensors and controls on tanks, piping, and filters to the control panel from damage and exposure to chemical solids, liquids and vapors common to a laundry operation.

E. Install a water supply pipe with any code required backflow preventers to the automatic bypass piping inlet. Connect clean water outlet pipe(s) to the washing machine water inlet piping along with shutoff valves and any other code required devices. Install water inlet, outlet, and interconnecting piping in a neat and workmanlike manner. All piping shall be supported so that the weight of piping and valves shall not be supported by tanks, filters, or pumps. Provide isolation valves between each tank, filter, or pump so that the entire system does not have to be drained for maintenance. Pump down and drain piping shall be routed to remote floor drain(s) if one is not locally available. Installation of floor drains and/or underfloor piping shall not be required for system installation.

### Field Supervision, Startup and Testing

A. After installation of this system, equipment manufacturer shall furnish services of a competent technician to check wiring and piping between all pieces of equipment, startup system, and field test all functions to ensure that each device is functioning according to intent of design.

B. Field tests shall be performed under supervision of a factory-trained representative of equipment manufacturer and witnessed by Owner's Representative. Results of field tests shall be on manufacturer's test report forms.

C. Field tests shall include:

- Ensure that all shipping members and restraints have been removed.
- Check for damage.
- Ensure that tank and filter interiors are free of foreign materials and dirt.
- Check each system component for proper identification.
- Test all equipment, including pumps, sensors, and controls, to verify that items are free from incorrect pipe connections, unintended grounds, short circuits and open circuits, and that all equipment will operate as intended.
- Test the emergency stop button.
- Correct defects as required for full operation.
- Perform manufacturer's on site field test procedures.
- Demonstrate that all indicated functions, have been implemented.

D. The government is contracting with an independent third-party commissioning firm to provide Fundamental Commissioning (Cx) to meet the requirements of NEBB Procedural Standards for Retro-Commissioning. The commissioning firm's Commissioning Authority (CxA) shall direct and coordinate Cx activities and shall report directly to the government. This system shall be commissioned as part of this work.

# Part 6 Attachments

Part 6 contains information that will help the contractor develop a suitable design and construct without hindrance.

Miscellaneous

Building 400 Documents

Building 1326 Documents

Building 3503 Documents

Building 7626 Documents

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# Part 6 Attachments

Miscellaneous

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|---|---|
| To Mr. Hal Wandvik | From H. Shindle |
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NEXCOM
Navy Exchange Service Command

# INFORMATION BULLETIN

Published by Navy Exchange Service Command 3280 Virginia Beach Boulevard, Virginia Beach, VA 23456-5724

NEXCOM 477 (Rev 7/93)

**FACILITIES GROUP 97-03** **2 JULY 1997**

PASS TO: COMMANDING OFFICER, NAVY EXCHANGE SERVICE CENTER
NAVY EXCHANGE OFFICER
GENERAL MANAGER
FACILITY MAINTENANCE MANAGER
FACILITY MAINTENANCE OFFICER

Subj: ENERGY MANAGEMENT

1. With the recent implementation of the Navy Exchange Service Command's (NEXCOM) Energy Management Program, NEXCOM Facilities Group (Code B) has started to publish a quarterly energy related Information Bulletin. This bulletin's main focus will be to provide the Navy Exchange General Managers and Facilities Personnel with energy related guidance, technical advice, past "lessons learned", and recent energy saving success stories.

2. NEXCOM has developed worldwide NEX lighting criteria with the intent to standardize the Exchange lighting systems as well as obtain energy savings with an increased merchandise visual presentation. With approximately forty-five percent of an exchange's electric usage being consumed by lamping, energy efficient lighting fixtures will have a direct impact on an exchange's bottom line with minimal cost. This lighting criteria will be specified in all new exchange construction as well as in all interior renovations, and is as follows:

a. The design of interior and exterior lighting shall be in accordance with the IES Lighting Handbook, published by the Illuminating Engineering Society (IES). Where applicable, all fluorescent lighting shall be a 277 Volt system.

b. Lighting illumination level for each specific functional area shall have the following intensity:

| Functional Area | Intensity (Foot-candles)* |
|---|---|
| Perimeter Wall Washer (measured on wall surface) | 100-110 |
| Visual Highlighting (measured at merchandise) | 100-150 |
| General Retail Area (measured 30" A.F.F.) | 50 (Softlines), 75 (Hardlines) |

* All other functional area lighting intensities shall be based upon Military Handbook 1190.

c. Daylighting shall be considered in appropriate areas such as malls, and food courts.

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# NAVAL STATION GREAT LAKES P-827

**NOVEMBER 2013**

| FACILITY NUMBER | FACILITY NAME | FACILITY NUMBER | FACILITY NAME | FACILITY NUMBER | FACILITY NAME |
|---|---|---|---|---|---|
| 1 | NRMW HQ & NAVSTA GREAT LAKES HQ | 322 | TSC SCHOOLS & PSD HQ | 3212B | NEX FURNITURE OUTLET/WAREHOUSE |
| 1A | NAVFAC MW HQ | 325 | GAS TURBINE SYSTEMS TRAINER | 3212C | FOREST CITY OPERATIONS BLDG |
| 1H | FUTURE NAVFAC MW HQ | 328 | SWOSU MM OPER TRAINING FAC | 3215 | ARMY RESERVE RECRUITING |
| 2 | NCIS-VI MULTIMEDIA-RLSO-NLSO | 329 | SWOSU DIESEL ENGINEMAN "A" SCHOOL | 3216 | MHE MAINTENANCE FACILITY |
| 2A | DAPS-NRRI-MWR WELLNESS CENTER | 400 | NEX FLEET STORE | 3216A | RECYCLING FACILITY |
| 2B | OS "A" SCHOOL | 433 | VIS GTR (NGIS SUITES) | 3216C | PUBLIC SAFETY READY STORAGE |
| 3 | TSC HQ/CHAPEL | 434 | VIS GTR (NGIS SUITES) | 3217 | HEATING PLANT BUILDING 3217 |
| 4 | MWR GYM | 435 | VIS GTR (NGIS SUITES) | 3219 | RECYCLING CENTER |
| 4A | ARMORY | 436 | VIS GTR (NGIS SINGLE ROOMS) | 3223 | FISC-NAVFAC SUPPLY WHSE |
| 5 | MW RCC/PWD CENTRAL NAVFAC MW | 439 | NAVSTA BEQ | 3223A | FISC STORAGE SHED |
| 6 | FORMER BRIG - VACANT | 440 | MWR INDOOR SWIMMING POOL | 3303TNK | POTABLE WATER TANK |
| 10 | BEACH HOUSE | 441 | MWR FIELD HOUSE | 3311 | GOLF COURSE MAINTENANCE |
| 11 | POWER PLANT | 510 | SWOSU DC "A" SCHOOL | 3313 | NE PUMPHOUSE F/GOLF COURSE |
| 12 & 12A | WATER TREATMENT PLANT | 520 | SWOSU HT & BUDES SCHOOL | 3400 | MEPCOM/SSS/NS/NSTC/NAC/CNR |
| 13 | MARINA OPERATIONAL CENTER | 523 | SWOSU MR "A" SCHOOLS / RES TRAINING | 3402 | STANDBY GENERATOR BUILDING |
| 13C | SMALL CRAFT BERTHING WS/NCROLIFT | 525 | ENLISTED PERSONNEL CLUB | 3451 | COMMISSARY STORE |
| 26 | FFSC-MICRS-COMM-UNION | 532 | TSC BEQ USS ENTERPRISE | 3452 | NAVY EXCHANGE STORE |
| 27 | NRWM HRO-MANPOWER / USO | 533 | TSC BEQ - VACANT | 3453 | PACKAGE STORE |
| 30 | NAVSTA BEQ BOORDA HALL | 534 | TSC BEQ USS TICONDEROGA | 3501 | STORAGE WAREHOUSE AND MORE |
| 31 | NAVSTA BOQ BOORDA HALL | 535 | NAVSTA MAIN GALLY | 3502 | NAFA STORAGE FACILITY |
| 32 | NAVSTA BOQ BOORDA HALL | 590 | MCDONALD'S RESTAURANT | 3503 | NEX LAUNDRY/STORAGE WHSE |
| 33 | NAVSTA BEQ BOORDA HALL | 616 | FIRE CONTROL / DS SCHOOL | 3504 | PWD WEST SHOPS |
| 34 | NAVSTA BEQ BOORDA HALL | 617 | LEARNING CENTER / LIBRARY | 3511 | HEATING PLANT BUILDING 3511 |
| 38H | DRUG SCREENING LAB | 621 | SURF ACE COMBAT SYSTEMS CENTER | 4500RET | MAINSIDE SEW CONTAIN BASIN |
| 42 | GREAT LAKES NAVAL MUSEUM | 631 | TRSC BEQ USS NORTH CAROLINA | 5430 | GUARD HOUSE GATE 3 |
| 43H | VETERINARY TREATMENT FACILITY | 632 | TSC BEQ USS FARRAGUT | 6130 | NAVSTA GREAT LAKES VISITORS CENTER |
| 52 | NAVRES SMALL CRAFT TRAINING | 633 | TSC BEQ USS ESSEX | 6131 | SMALL ARMS MAGAZINE |
| 62 | VIS GTS - NGIS DV & SUITES | 634 | TSC BEQ USS MISSOURI | 6224 | GAS TURBINE "C" SCHOOLS |
| 68 | NAVFAC MW IT OPS / CIO OFFICE | 635 | TSC BEQ USS PREBLE | 6301 | TSC BEQ USS COLE |
| 68H | PW MAINT STORAGE - VACANT | 710 | ATHLETICS FIELD RESTROOM | 6410 | GUARD HOUSE GATE 1 (MAIN GATE) |
| 73 | ARMY ROTC MIDWEST OFFICES | 713 | POOL BATHHOUSE - VACANT | 6440 | GUARD HOUSE GATE 4 |
| 78 | FORMER RED CROSS - VACANT | 747 | POOL PUMPHOUSE - UNUSED | 6450 | GUARD HOUSE GATE 5 |
| 79H | PW HISTORIC MATERIAL STORAGE | 830 | TSC BEQ USS BONHOMME RICHARD | 6501 | AMMONIA STORAGE TANK |
| 80H | CEODD PYSICAL TRAG/POOL FAC | 831 | TSC BEQ USS WISCONSIN | 6601 | PRE-TRIAL CONFINEMENT FAC - VACANT |
| 81H | HOSP / MED STRG | 832 | TSC BEQ USS PORTER | 6802 | MILITARY WORKING DOG KENNEL |
| 87A | STEAM DIST BLDG | 833 | TSC BEQ USS FRANKLIN "A" | 7101 | RTC BEQ - USS CONSTITUTION |
| 89A-H | PICNIC/REC SHED - VACANT | 834 | TSC BEQ USS FRANKLIN "B" | 7102 | RTC BEQ - USS ROOSEVELT |
| 102 | PPV STG - GARAGES - ROOM | 835 | TSC BEQ USS MUSTIN | 7103 | RTC BEQ - USS BURKE |
| 104 | PWD MAINT SHP / OFFICE | 836 | TSC BEQ USS ENGLAND | 7104 | RTC BEQ - USS HOPPER |
| 104A | MAINT SHOP / STORE | 838 | TSC BEQ USS NEW JERSEY | 7105 | RTC BEQ - USS REUBEN JAMES |
| 106 | FIRE STATION (MAINSIDE) | 839 | TSC BEQ USS DECATUR | 7111 | RTC BEQ - USS ARIZONA |
| 110 | ROSS AUDITORIUM | 930 | USS MARLINSPIKE-SN TRAINER | 7112 | RTC BEQ - USS MARVIN SHIELDS |
| 111H | VETERINARY TREATMENT FACILITY | 933 | SEAMAN APPRENTICE TRNR BLDG | 7113 | RTC BEQ - USS TRITON |
| 112 | USPS POST OFFICE | 1007 | PRIM CARE CL - CAMP PORTER | 7114 | RTC BEQ - USS KEARSARGE |
| 122 | TSC BK-AT & QMA SCHOOLS | 1017 | DENTAL CLINIC - CAMP PORTER | 7115 | RTC BEQ - USS ENTERPRISE |
| 123 | SIGNALMAN SHACK SOUTH | 1301 | RECRUIT MEMORIAL CHAPEL | 7116 | RTC BEQ - USS KENNEDY |
| 124 | SIGNALMAN SHACK NORTH | 1313 | NFCU BRANCH OFFICE | 7117 | RTC BEQ - USS CHICAGO |
| 125 | FIRE PROTECTION BUILDING | 1314 | RTC FMR VISITORS SHELTER | 7121 | RTC SEPARATIONS USS MASON |
| 128H | STUDENT BARRACKS - VACANT | 1326 | RECRUIT NEX AND RECREATION | 7122 | USS PEARL HARBOR P-DAY BARRACKS |
| 129H | STUDENT BARRACKS - VACANT | 1405 | RECRUIT PROCESSING FACILITY | 7210 | PACIFIC FLEET DRILL HALL |
| 130H | CHARTER SCHOOL | 1410 | RECRUIT FIREFIGHTER TRAINING | 7220 | USS MIDWAY CEREMONIAL DRILL HALL |
| 131H | CLASS A STUDENT BARRACKS - VACANT | 1425 | USS INDIANAPOLIS COMBAT POOL | 7230 | ATLANTIC FLEET DRILLHALL |
| 132H | CLASS A STUDENT BARRACKS - VACANT | 1490 | AMED SERVICES BANK | 7250 | FREEDOM HALL PHYSICAL FITNESS |
| 140 | PART O'CALL CONFERENCE CENTER | 1506 | TRANSPORTATION MAINTENANCE | 7260 | USS IOWA BATTLE STATIONS |
| 150 | NAVY BAND | 1507 | VEH FUEL DISPENSING STATION | 7315 | INDOOR RANGE-USS WISCONSIN |
| 151 | MWR STORAGE - VACANT | 1511 | BSVE EQUIPMENT STORAGE | 7325 | SIMULATED ARMS MARKSMANSHIP TRAINER |
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| 154 | MWR MAINTENANCE SHOPS | 1518 | MAINTENANCE STORAGE SHEDS | 7407 | LAKE SUPERIOR TRANS SHELTER |
| 155 | MWR OFFICE & STORAGE | 1523 | USS RED ROVER MEDICAL & DENTAL | 7460 | GUARD HOUSE GATE 6 |
| 156 | CAMP BARRY MWR RESTROOMS | 1532 | RTC CLOTHING ISSUE | 7470 | GUARD HOUSE GATE 7 |
| 158 | USA COE - USAF CAP OFFICES | 1709 | UG STEAM VAULT-ABANDONED | 7480 | GATE 8 GATE HOUSE |
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| 177 | TPU HQ / BEQ | 2017 | PWD MAINTENANCE STORAGE | 7802 | COMPRESSED NATURAL GAS STA |
| 178 | HAGL HALL BEQ | 2018 | SEWAGE PUMPING STATION BLDG | 7804 | BSVE TOPSOIL STORAGE |
| 179 | NAVSTA DEPT OF PUBLIC SAFETY | 2110 | AUTO HOBBY SHOP | 7810 | POTABLE WATER TOWER |
| 180 | BOWLING CENTER | 2217 | BALL FIELD RESTROOM/FOOD SVC | 7811 | WATER DISTRIBUTION BUILDING |
| 190 | NCISC CHICAGO | 2446 | GREAT LAKES CPOA-GOAT LOCKER | 8002TNK | POTABLE WATER TANK |
| 200H | HOSPITAL - VACANT | 2500 | NAVY LODGE | 8012 | HIGH VOLTAGE ELEC STORAGE |
| 211H | BLD MISC UTL PL1 | 2630 | THRIFT STORE - CHAPLAIN SUPP | 8100 | WELCOME CENTER-FCNF/HQ/PPO |
| 215 | TSC TRAINING / CHECKIN | 2700 | CHILD DEVELOPMENT CENTER | 8150 | NEX GAS STATION FORRESTAL VILLAGE |
| 221 | PWD GREAT LAKES ENVIRONMENTAL1523 | 2712 | NEX CARWASH | 8190 | FORESTCITY COMM CTR-NRMW CYP |
| 222 | 1ST LT - PW MAINT STORAGE | 2801 | FIRE STATION (RAY STREET) | 8200 | MACG 48 VEHICLE MAINT FAC |
| 236 | PROPULSION ENGINEERING SCHOOL | 3000 | VACANT HEATING PLANT | 8201 | MACG 48 VEHICLE STORAGE FAC |
| 237 | PRIMARY CARE CLINIC | 3110 | CHILD CARE CENTER | 8290 | FORRESTAL ELEMENTARY SCHOOL |
| 238 | GAS TURBINE / ENGINEMAN "C" SC | 3200 | MACG48 | 8301 | PW SHOPS / MATL STORAGE |
| 239 | CNE LEARNING LAB | 3212A | DRMO-ARR-NEX-MWR-BH SPACES | 8400 | WILLOW GLEN GOLF CLUB HOUSE |
| 290 | NAVY FEDERAL CREDIT UNION | | | 8490 | GUARD HOUSE GATE 9 |

## Legend

**ROADS**
- PAVED
- UNPAVED
- FIXED_BRIDGE

**PARKING AREA**
- PAVED
- UNPAVED

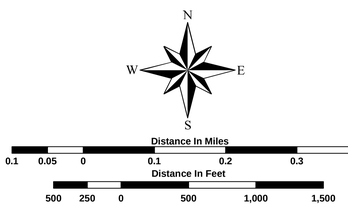
**RAILROAD**
- ABANDONED
- ACTIVE_SINGLE

**BUILDINGS**
- BUILDINGS
- 400
- 1326
- 3212B
- 3452
- 3503
- 7626
- FEDERAL HEALTH CARE
- CANOPY - PAVILION
- SLAB
- SIDEWALK
- GATE POINT
- GATE LINE
- FENCE
- WALL

**LAKES AND RIVERS**
- DRY
- PERMANENT
- WETLAND
- DRYDOCK
- HARBOR
- JETTY
- MOORING FACILITY
- BEACH

**ATHLETIC COURTS AND FIELDS**
- BASKETBALL COURT
- HOCKEY RINK
- TENNIS COURT
- VOLLEYBALL COURT
- FIELDS
- TRACK
- AMMUNITION STORAGE
- MILITARY RANGE
- MILITARY PARADE GROUND

**NAMED AREAS**
- PUBLIC PRIVATE VENTURE (PPV)
- RECRUIT TRAINING COMMAND (RTC)
- TRAINING SUPPORT COMMAND (TSC)
- HISTORIC DISTRICT
- INSTALLATION BOUNDARY




Projection: Transverse Mercator - State Plane Illinois East FIPS 1201
Geographic Coordinate System: GCS North American 1983
Datum: D North American 1983
Spheroid: GRS 1980


**For Updates or Corrections Contact:**

NAVFAC Naval Facilities Engineering Command NAVFAC MIDWEST

**NAVFAC MIDWEST, PW GREAT LAKES**
**AM BRANCH, BLDG 2016**
**Randall Gooden - (847) 688-5395 ext. 121**
**randall.gooden@navy.mil**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**DEPARTMENT OF THE NAVY**
NAVY EXCHANGE SERVICE COMMAND
3280 VIRGINIA BEACH BOULEVARD
VIRGINIA BEACH, VA 23452-5724

July 3, 2014

From: Senior Vice President, Store Operations CONUS
To: Commander, Navy Region Mid-Atlantic
Via: (1) Regional Engineer, Navy Region Mid-Atlantic

Subj: WAIVER REQUEST FOR UTILITIES SERVICES ABOVE DESIGNATED CNIC COMMON OUTPUT LEVEL STANDARDS FOR FY (INDEFINITELY)

Ref: (a) CNICINST 4000.1B

Encl: (1) NEXCOM Facilities located in CNRMA AOR

1. Navy Exchange Service Command (NEXCOM) requests Utilities Base Operating Support (BOS) services in excess of established Commander Navy Installations Command (CNIC) Common Output Level Standards (COLS) for the facilities identified in the enclosure. This is a blanket waiver request, as coordinated with CNIC N4, for all NEXCOM facilities located in Navy Region Mid-Atlantic. In accordance with reference (a), the following information is provided:

Current Situation of Affected Service Area:

a. Support Agreement Number (if applicable): DoDI 1015.15 applies

b. Current Type of Organization Funding:
( ) O&MN Fund
( ) Working Capital Fund
( X ) Nonappropriated Funds

c. Cost Accounting Code (CAC):
( X ) 8210 Steam
( X ) 8310 Electrical
( X ) 8410 Water
( X ) 8510 Sewage
( X ) 8610 Chiller Plant
( X ) 8750 Natural Gas
( X ) 8790 Compressed Air
( X ) 87H0 Delivered Fuels

Subj: WAIVER REQUEST FOR UTILITIES SERVICES ABOVE DESIGNATED CNIC COMMON OUTPUT LEVEL STANDARDS FOR FY (INDEFINITELY)

d. Special Interest Code (UT): UT

e. Current COL Level: 4

f. COL Level Requested: 1 (HVAC set points managed locally year round between 72-75 degrees)

g. Identify Funding Source: NEXCOM

h. Identify Funding Source: NEXCOM

i. Justification:

NEXCOM's mission is to provide authorized customers with quality goods and services at a savings and to support Navy Quality of Life programs. Temperature extremes in our Navy Exchanges impact customer experience, product integrity, sanitation and health standards, as well as proper equipment functionality. Combined, these factors impact NEXCOM's core mission. As a non-appropriated funded (NAF) organization, NEXCOM is responsible for paying all its utility costs at CONUS facilities. For this reason, as well as our core objectives, we are very conscious of our energy consumption and have implemented a vibrant energy management and conservation program.

Adjusting to the COL 4 setback temperatures is not consistent with providing the quality service that our Brand represents. This will affect our core mission and drive patrons from NEXCOM, where profits are returned to Navy MWR programs, to outside competitors who are making choices to conserve energy in less impactful ways. Further, this situation would create significant financial liability for NEXCOM if clothing were to become soiled because of perspiring patrons trying them on or alternatively, having to limit them from doing so.

This policy also introduces un-manageable health and sanitation concerns such as food service workers being unable to maintain sanitary conditions due to excessive perspiration. Further, the temperature settings impact store environments, making humidity standards unmanageable and cause condensation on refrigeration equipment. This creates ponding water along refrigeration areas and at refrigerated box doorways, creating slip hazards and defeating floor tile. It also exposes our stores to preventable mold growth around refrigerated boxes as a direct result of the additional moisture.

Our Navy Lodges also struggle to meet high customer expectations. Conditioned air, comfortable humidity, control of musty odors, and mold avoidance is of similar concern to that of the Navy Exchanges in order to make a pleasant lodging experience.

The above examples are not just plausible, but have actually occurred recently throughout our enterprise when either our air conditioning was not working properly or in a number of

Subj: WAIVER REQUEST FOR UTILITIES SERVICES ABOVE DESIGNATED CNIC COMMON OUTPUT LEVEL STANDARDS FOR FY (INDEFINITELY)

cases where bases aggressively implemented COL 4 prior to NEXCOM receiving interim CNIC N4 relief.

NEXCOM's anticipated total utility cost for all MIDLANT facilities, based on FY13 usage, is approximately $5.1M. We do not have enough information to calculate anticipated utility savings associated with reduction to COL 4 service, nor can we precisely quantify anticipated impact to sales and profits.

j. Requesting Activity's Financial Management Officer Endorsement: Laurie Hasten, Chief Financial Officer.

2. Point of contact for this request is NEXCOM Energy Manager, Rusty Long; 757-631-3548; Russell.long@nexweb.org

GARY KING

## NEXCOM MID ATLANTIC REGION DISTRICT FACILITIES LISTING

| INSTALLATION | | SHARED FACILITY |
|---|---|---|
| CHEATHAM ANNEX | **Building #** CAD-130 | Yes |
| CINCLANTFLT | **Building #** NH-18 | Yes |
| FCTCL DAM NECK | **Building #** 127 | Yes |
| FCTCL DAM NECK | **Building #** 154 | No |
| FCTCL DAM NECK | **Building #** 199 | Yes |
| FCTCL DAM NECK | **Building #** 226 | No |
| FCTCL DAM NECK | **Building #** 524 | Yes |
| FCTCL DAM NECK | **Building #** 572 | Yes |
| FCTCL DAM NECK | **Building #** 575 | No |
| FCTCL DAM NECK | **Building #** 586 | Yes |
| JEB LITTLE CREEK | **Building #** 121 | No |
| JEB LITTLE CREEK | **Building #** 1611 | Yes |
| JEB LITTLE CREEK | **Building #** 1612 | No |
| JEB LITTLE CREEK | **Building #** 3042 | Yes |
| JEB LITTLE CREEK | **Building #** 3082 | No |
| JEB LITTLE CREEK | **Building #** 3093 | No |
| JEB LITTLE CREEK | **Building #** 3123 | No |
| JEB LITTLE CREEK | **Building #** 3126 | No |
| JEB LITTLE CREEK | **Building #** 3334 | No |
| JEB LITTLE CREEK | **Building #** 3335 | No |
| JEB LITTLE CREEK | **Building #** 3443 | No |
| JEB LITTLE CREEK | **Building #** 3447 | No |
| JEB LITTLE CREEK | **Building #** 3600 | No |
| JEB LITTLE CREEK | **Building #** 3615 | No |
| JEB LITTLE CREEK | **Building #** 3860 | No |
| JEB LITTLE CREEK | **Building #** 3319B | No |
| MITCHEL FIELD | **Building #** 16 | No |
| NAS OCEANA | **Building #** 292 | No |
| NAS OCEANA | **Building #** 294 | No |
| NAS OCEANA | **Building #** 295 | No |
| NAS OCEANA | **Building #** 296 | No |
| NAS OCEANA | **Building #** 518 | No |
| NAS OCEANA | **Building #** 541 | No |

## NEXCOM MID ATLANTIC REGION DISTRICT FACILITIES LISTING

| INSTALLATION | | SHARED FACILITY |
|---|---|---|
| NAS OCEANA | **Building #** 542 | No |
| NAS OCEANA | **Building #** 541A | No |
| NAVSTA NORFOLK | **Building #** 8100 | Yes |
| NAVSTA NORFOLK | **Building #** C-9 | Yes |
| NAVSTA NORFOLK | **Building #** CD-1 | No |
| NAVSTA NORFOLK | **Building #** CD-10 | No |
| NAVSTA NORFOLK | **Building #** CD-11 | No |
| NAVSTA NORFOLK | **Building #** CD-13 | No |
| NAVSTA NORFOLK | **Building #** CD-14 | No |
| NAVSTA NORFOLK | **Building #** CD-16 | Yes |
| NAVSTA NORFOLK | **Building #** CEP-202 | No |
| NAVSTA NORFOLK | **Building #** CEP-76 | No |
| NAVSTA NORFOLK | **Building #** CEP-80 | No |
| NAVSTA NORFOLK | **Building #** CEP-89 | No |
| NAVSTA NORFOLK | **Building #** H-10 | Yes |
| NAVSTA NORFOLK | **Building #** Q-101 | No |
| NAVSTA NORFOLK | **Building #** Q33 | No |
| NAVSTA NORFOLK | **Building #** Q-80 | No |
| NAVSTA NORFOLK | **Building #** SDA313 | No |
| NAVSTA NORFOLK | **Building #** SDA313A | No |
| NAVSTA NORFOLK | **Building #** SP-28 | No |
| NAVSTA NORFOLK | **Building #** U-113 | No |
| NAVSTA NORFOLK | **Building #** U-126 | Yes |
| NAVSTA NORFOLK | **Building #** V-29 | Yes |
| NAVSTA NORFOLK | **Building #** V-55 | No |
| NAVSTA NORFOLK | **Building #** W-313 | Yes |
| NAVSTA NORFOLK | **Building #** X-132 | Yes |
| NETC NEWPORT | **Building #** 13 | Yes |
| NETC NEWPORT | **Building #** 15 | Yes |
| NETC NEWPORT | **Building #** 268 | Yes |
| NETC NEWPORT | **Building #** 291 | Yes |
| NETC NEWPORT | **Building #** 991 | Yes |
| NETC NEWPORT | **Building #** 1250 | No |

## NEXCOM MID ATLANTIC REGION DISTRICT FACILITIES LISTING

| INSTALLATION | | SHARED FACILITY |
|---|---|---|
| NETC NEWPORT | **Building #** 1283 | No |
| NETC NEWPORT | **Building #** 1285 | Yes |
| NETC NEWPORT | **Building #** 1354 | No |
| NETC NEWPORT | **Building #** 1901 | No |
| NETC NEWPORT | **Building #** 1903 | No |
| NEW YORK SI LODGE | **Building #** 408 | No |
| NH PORTSMOUTH VA | **Building #** 3 | Yes |
| NH PORTSMOUTH VA | **Building #** 256 | No |
| NNS PORTSMOUTH VA | **Building #** 350 | No |
| NNS PORTSMOUTH VA | **Building #** 403 | Yes |
| NNS PORTSMOUTH VA | **Building #** 1489 | No |
| NNS PORTSMOUTH VA | **Building #** 1560 | No |
| NRS SUGAR GROVE | **Building #** 30 | Yes |
| NSB NEW LONDON | **Building #** 173 | Yes |
| NSB NEW LONDON | **Building #** 428 | No |
| NSB NEW LONDON | **Building #** 484 | Yes |
| NSB NEW LONDON | **Building #** 1005 | No |
| NSB NEW LONDON | **Building #** DG50 | No |
| NSGA CHESAPEAKE | **Building #** 500 | Yes |
| NSGA CHESAPEAKE | **Building #** NW 3 | No |
| NSGA CHESAPEAKE | **Building #** NW 4 | No |
| NSPCC MECH | **Building #** 214 | Yes |
| NWS COLTS NECK | **Building #** C-12 | Yes |
| NWS COLTS NECK | **Building #** C-29 | Yes |
| NWS YORKTOWN | **Building #** 705 | Yes |
| NWS YORKTOWN | **Building #** 2072 | Yes |
| PHILADELPHIA (ASO) | **Building #** 5 | Yes |
| PNS PORTSMOUTH NH | **Building #** 168 | No |
| SARATOGA SPRINGS | **Building #** 118 | No |
| STAFF COLLEGE | **Building #** SC-400 | Yes |
| WALLOPS ISLAND | **Building #** V10 | Yes |
| NSA CRANE | **Building #** 1893 | No |
| NSA CRANE | **Building #** 2984 | No |

## NEXCOM MID ATLANTIC REGION DISTRICT FACILITIES LISTING

| INSTALLATION | | SHARED FACILITY |
|---|---|---|
| NSA CRANE | **Building #** 3280 | No |
| NTC GREAT LAKES | **Building #** 2500 | No |
| NTC GREAT LAKES | **Building #** 2712 | No |
| NTC GREAT LAKES | **Building #** 3452 | Yes |
| NTC GREAT LAKES | **Building #** 3453 | No |
| NTC GREAT LAKES | **Building #** 3503 | No |
| NTC GREAT LAKES | **Building #** 8150 | No |
| NTC GREAT LAKES | **Building #** 3212A | Yes |
| NTC GREAT LAKES | **Building #** 3212B | No |
| RTC Great Lakes | **Building #** 7626 | No |
| SerSchCom GLakes | **Building #** 400 | No |
| SerSchCom GLakes | **Building #** 1326 | Yes |

# Part 6 Attachments

Building 400 Documents

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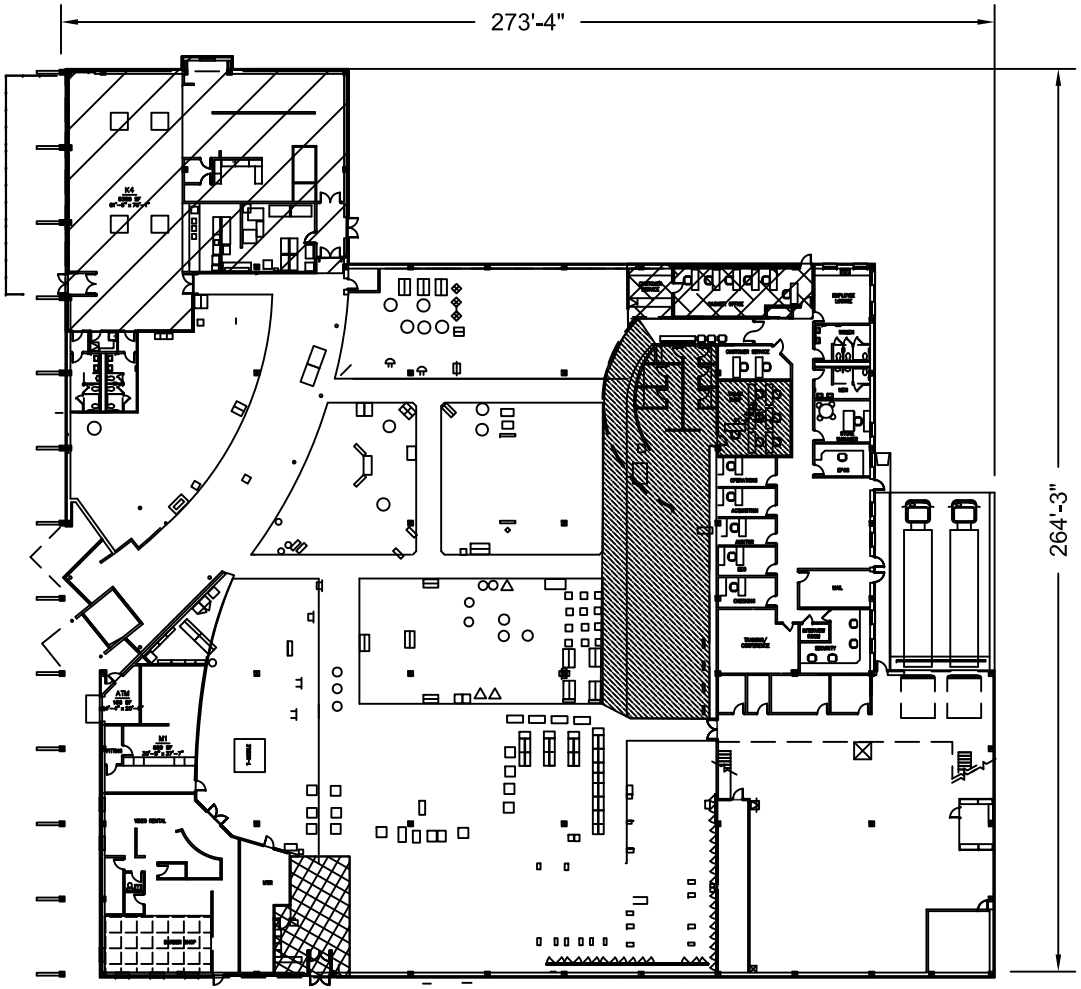



UTILIZATION

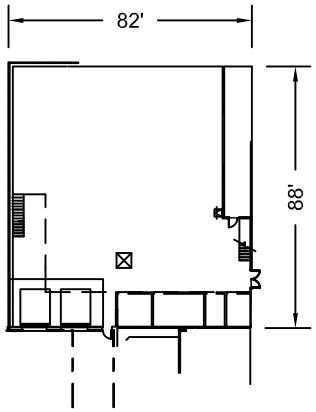
TOTAL FACILITY: 61,862 SF

TOTAL 1ST FLOOR: 56,200 SF

- N39224 74002 = 44,615 SF
- N39224 73013 = 3,840 SF
- N39224 74004 = 5,701 SF
- N39224 74009 = 484 SF
- N39224 74030 = 680 SF
- ARMED FORCES BANK 74018 = 880 SF

NOT TO SCALE

| FACILITY NUMBER: | | INSTALLATION: | UIC: | SITE: |
|---|---|---|---|---|
| 400 | NAVFAC Naval Facilities Engineering Command | NAVAL STATION GREAT LAKES IL | N00128 | GREAT LAKES MAIN SITE |




UTILIZATION

TOTAL FACILITY: 61,862 SF

TOTAL MEZZANINE FLOOR: 5,662 SF

N39224 74002 = 5,662 SF

NOT TO SCALE

| FACILITY NUMBER: | | INSTALLATION: | UIC: | SITE: |
|---|---|---|---|---|
| 400 | NAVFAC Naval Facilities Engineering Command | NAVAL STATION GREAT LAKES IL | N00128 | GREAT LAKES MAIN SITE |

# CLASS 2 PROPERTY RECORD

**FACILITY NAME** NEX FLEET STORE

**FACILITY NUMBER** 400

**REPORT DATE** 22 AUG 2013

| | | | | | |
|---|---|---|---|---|---|
| **INSTALLATION UIC** | N00128 | GREAT LAKES NAVAL STATION | **REAL PROPERTY UNIQUE ID** | | 90691 |
| **FACILITY ID** | NFA100001756753 | | **LAST UPDATED** | | 22 AUG 2013 |
| **INSTAL MGMT CLMT** | N00052 | CNI | **PROPERTY RECORD NO** | | 270183 |
| **MANPOWER BSO** | | | **FACILITY TYPE** | 2 | BUILDING |
| **OPERATIONAL STATUS** | ACT | Active | **ACTION TYPE** | 1 | ACQUISITION |
| **SPECIAL AREA** | | | **FAMILY HOUSING INDICATOR** | | N |

## LOCATION

| | | |
|---|---|---|
| **REGION** | N61040 | CNR MIDWEST |
| **COUNTRY** | USA | UNITED STATES |
| **STATE** | 17 | ILLINOIS |
| **COUNTY** | 097 | LAKE |
| **CITY** | 3595 | GREAT LAKES |
| **MAP GRID** | K30 | |
| **STREET ADDRESS** | 540 CLUVERIUS AVE | |

## DISPOSAL

| | |
|---|---|
| **CONSOLIDATED PROPERTY NO** | |
| **DISPOSAL METHOD CODE** | |
| **DISPOSAL COMPLETION DATE** | |
| **DISPOSAL CONTRACT NO** | |
| **EXCESS DECLARATION DATE** | |
| **SURPLUS DETERMINATION DATE** | |

## ACQUISITION

| | | | | |
|---|---|---|---|---|
| **ESTATE CODE** | 11 | MCON | **ACQUISITION DATE** | 01 SEP 2000 |
| **INTEREST TYPE** | FEE | U.S. Government owned property | **GOVERNMENT COST** | $ 6,520,000 |
| **LAND CCN** | 91140 | LAND - CONDEMNATION | | |
| **ACQ CONTRACT NO** | N6895098C0162 | | | |

## MAINTENANCE

| | | |
|---|---|---|
| **PREPONDERANT USER** | N39224 | NEX GREAT LAKES IL |
| **PRIME USE CAT CODE** | 74002 | LOCATION EXCHGE |
| **PRIME FAC CODE** | 7346 | EXCHANGE SALES FACILITY |
| **MNT FUND SOURCE CODE** | A | O&M, N |
| **MNT RESPONSIBILITY UIC** | N00128 | GREAT LAKES NAVAL STATION |
| **ASSET EVALUATION DATE** | 11 JUN 2010 | |
| **CURRENT PRV** | $ 14,841,826 | |
| **PRV AT EOY 12** | $ 14,841,826 | |

| **MEASUREMENTS** | **ENGLISH** | **METRIC** |
|---|---|---|
| **LENGTH** | 273.00 | 83.21 |
| **WIDTH** | 264.00 | 80.47 |
| **HEIGHT** | 30.00 | 9.14 |
| **AREA** | 61,862.00 | 5,747.17 |
| **AREA UM** | SF | M2 |

| | |
|---|---|
| **FLOOR ABOVE GROUND QUANTITY** | 1 |
| **FLOOR BELOW GROUND QUANTITY** | 0 |

## CONSTRUCTION

| | | |
|---|---|---|
| **FACILITY BUILT DATE** | 01 JUL 2000 | |
| **CONSTRUCTION TYPE** | PERM | PERMANENT |
| **HISTORIC STATUS DATE** | | |
| **HISTORIC STATUS CODE** | NEV | Not yet Evaluated |

## READINESS FACTORS

| | | | |
|---|---|---|---|
| **MDI** | 50 | **DATE** | 07 NOV 2005 |
| **CONDITION RATING** | 92 | **DATE** | 02 JUL 2013 |
| **CONFIGURATION RATING** | 100 | **DATE** | 15 AUG 2010 |
| **PHYSICAL QUALITY RATE** | 92 | | |

## UTILIZATION

| | | | | | |
|---|---|---|---|---|---|
| **UTILIZATION ID** | 2 | | | | |
| **FAC USE CCN** | 73013 ISSU/RETAIL CLOTHING/UNIFM | **SET BACK VALUE** | 4,200.00 | **DOD FAC** | 7343 |
| **FACILITY USE** | UNIFORM SHOP | **MAX VALUE** | 35,000.00 | **DOD UM** | SF |
| **USER ACTIVITY** | N39224 NEX GREAT LAKES IL | **OUTGRANT IDENTIFIER** | | **PRIMARY UM** | SF |

**CONFIGURATION**

| | AREA | | OTHER | | ALTERNATE | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **ADEQUATE** | 3,840.00 | 356.75 | | | | |
| **SUBSTANDARD** | | | | | | |
| **INADEQUATE** | | | | | | |
| **TOTAL** | 3,840.00 | 356.75 | | | | |
| **UNIT OF MEASURE** | SF | M2 | | | | |

**SUSTAINMENT FUND SOURCE** 1804 Operation and Maintenance, Navy

**SUSTAINMENT ORGANIZATION** 06 NAVY ACTIVE

**OPERATIONAL FUND SOURCE** 1804 Operation and Maintenance, Navy

**OPERATIONAL FUNDING ORG** 06 NAVY ACTIVE

## UTILIZATION

| | | | | | |
|---|---|---|---|---|---|
| **UTILIZATION ID** | 1 | | | | |
| **FAC USE CCN** | 74002 LOCATION EXCHGE | **SET BACK VALUE** | 3,500.00 | **DOD FAC** | 7346 |
| **FACILITY USE** | | **MAX VALUE** | 200,000.00 | **DOD UM** | SF |
| **USER ACTIVITY** | N39224 NEX GREAT LAKES IL | **OUTGRANT IDENTIFIER** | | **PRIMARY UM** | SF |

**CONFIGURATION**

| | AREA | | OTHER | | ALTERNATE | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **ADEQUATE** | 50,277.00 | 4,670.89 | | | | |
| **SUBSTANDARD** | | | | | | |
| **INADEQUATE** | | | | | | |
| **TOTAL** | 50,277.00 | 4,670.89 | | | | |
| **UNIT OF MEASURE** | SF | M2 | | | | |

**SUSTAINMENT FUND SOURCE** 1804 Operation and Maintenance, Navy

**SUSTAINMENT ORGANIZATION** 06 NAVY ACTIVE

**OPERATIONAL FUND SOURCE** 1804 Operation and Maintenance, Navy

**OPERATIONAL FUNDING ORG** 06 NAVY ACTIVE

## UTILIZATION

| | | | | | |
|---|---|---|---|---|---|
| **UTILIZATION ID** | 3 | | | | |
| **FAC USE CCN** | 74004 EXCHANGE / MWR FOOD SVC | **SET BACK VALUE** | 2,000.00 | **DOD FAC** | 7331 |
| **FACILITY USE** | FOOD COURT | **MAX VALUE** | 35,000.00 | **DOD UM** | SF |
| **USER ACTIVITY** | N39224 NEX GREAT LAKES IL | **OUTGRANT IDENTIFIER** | | **PRIMARY UM** | SF |

**CONFIGURATION**

| | AREA | | OTHER | | ALTERNATE | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **ADEQUATE** | 5,701.00 | 529.64 | | | | |
| **SUBSTANDARD** | | | | | | |
| **INADEQUATE** | | | | | | |
| **TOTAL** | 5,701.00 | 529.64 | | | | |
| **UNIT OF MEASURE** | SF | M2 | | | | |

**SUSTAINMENT FUND SOURCE** 1804 Operation and Maintenance, Navy

**SUSTAINMENT ORGANIZATION** 06 NAVY ACTIVE

**OPERATIONAL FUND SOURCE** 1804 Operation and Maintenance, Navy

**OPERATIONAL FUNDING ORG** 06 NAVY ACTIVE

## UTILIZATION

| | | | | | |
|---|---|---|---|---|---|
| **UTILIZATION ID** | 4 | | | | |
| **FAC USE CCN** | 74009 EXCHANGE SERVICE OUTLETS | **SET BACK VALUE** | 3,500.00 | **DOD FAC** | 7346 |
| **FACILITY USE** | EXCHANGE SERVICE OUTLETS | **MAX VALUE** | 200,000.00 | **DOD UM** | SF |
| **USER ACTIVITY** | N39224 NEX GREAT LAKES IL | **OUTGRANT IDENTIFIER** | | **PRIMARY UM** | SF |

**CONFIGURATION**

| | AREA | | OTHER | | ALTERNATE | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **ADEQUATE** | 484.00 | 44.97 | | | | |
| **SUBSTANDARD** | | | | | | |
| **INADEQUATE** | | | | | | |
| **TOTAL** | 484.00 | 44.97 | | | | |
| **UNIT OF MEASURE** | SF | M2 | | | | |

**SUSTAINMENT FUND SOURCE** 1804 Operation and Maintenance, Navy

**SUSTAINMENT ORGANIZATION** 06 NAVY ACTIVE

**OPERATIONAL FUND SOURCE** 1804 Operation and Maintenance, Navy

**OPERATIONAL FUNDING ORG** 06 NAVY ACTIVE

# CLASS 2 PROPERTY RECORD

**FACILITY NAME** NEX FLEET STORE **FACILITY NUMBER** 400

**REPORT DATE** 22 AUG 2013

## UTILIZATION

| | | | | | |
|---|---|---|---|---|---|
| **UTILIZATION ID** | 5 | | | | |
| **FAC USE CCN** | 74030 EXCHGE AUTO REPAIR STA | **SET BACK VALUE** | 2,500.00 | **DOD FAC** | 7345 |
| **FACILITY USE** | EXCHGE AUTO REPAIR STA | **MAX VALUE** | 50,000.00 | **DOD UM** | SF |
| **USER ACTIVITY** | N39224 NEX GREAT LAKES IL | **OUTGRANT IDENTIFIER** | | **PRIMARY UM** | SF |

**CONFIGURATION**

| | AREA | | OTHER | | ALTERNATE | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **ADEQUATE** | 680.00 | 63.17 | | | 10.00 | 10.00 |
| **SUBSTANDARD** | | | | | | |
| **INADEQUATE** | | | | | | |
| **TOTAL** | 680.00 | 63.17 | | | 10.00 | 10.00 |
| **UNIT OF MEASURE** | SF | M2 | | | OL | OL |

**SUSTAINMENT FUND SOURCE** 1804 Operation and Maintenance, Navy
**SUSTAINMENT ORGANIZATION** 06 NAVY ACTIVE
**OPERATIONAL FUND SOURCE** 1804 Operation and Maintenance, Navy
**OPERATIONAL FUNDING ORG** 06 NAVY ACTIVE

## UTILIZATION

| | | | | | |
|---|---|---|---|---|---|
| **UTILIZATION ID** | 6 | | | | |
| **FAC USE CCN** | 74018 BANK | **SET BACK VALUE** | 2,000.00 | **DOD FAC** | 7347 |
| **FACILITY USE** | ARMED FORCES BANK | **MAX VALUE** | 30,000.00 | **DOD UM** | SF |
| **USER ACTIVITY** | | **OUTGRANT IDENTIFIER** | AA | **PRIMARY UM** | SF |

**CONFIGURATION**

| | AREA | | OTHER | | ALTERNATE | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **ADEQUATE** | 880.00 | 81.76 | | | | |
| **SUBSTANDARD** | | | | | | |
| **INADEQUATE** | | | | | | |
| **TOTAL** | 880.00 | 81.76 | | | | |
| **UNIT OF MEASURE** | SF | M2 | | | | |

**SUSTAINMENT FUND SOURCE** 1804 Operation and Maintenance, Navy
**SUSTAINMENT ORGANIZATION** 06 NAVY ACTIVE
**OPERATIONAL FUND SOURCE** 1804 Operation and Maintenance, Navy
**OPERATIONAL FUNDING ORG** 06 NAVY ACTIVE

## OUTGRANT

| | | | |
|---|---|---|---|
| **OUTGRANT ID** | 17839 | **GRANT START DATE** | 27 SEP 2006 |
| **LESSEE NAME** | ARMED FORCES BANK | **GRANT END DATE** | 09 SEP 9999 |
| **INSTRUMENT NUMBER** | UNKNOWN | **GRANT TERM PERIOD** | 999 |
| **ORIG CONTRACT NO** | | **ANNUAL COST AMOUNT** | |
| **MAINTENANCE IND** | N | | |

## NOTES

| | |
|---|---|
| 10 OCT 2002 | Comment - SF area was verified at 56,200 sf. |
| 20 APR 2010 | Attached a Great Lakes Bulletin 16 April 2010 about a major Face Lift for the sales floor operations that is underway. (KJE) |
| 25 OCT 2010 | 2010 Asset Evaluation assigned 5,662 SF of the mezzanine to the area of Building 400 for a total of 61,862 SF. Review date was updated and a Great Lakes Bulletin article was attached on the Documents Tab highlighting the completion of the NEX Command major renovations to the store's sales spaces. (KJE) |
| 11 DEC 2012 | Attached in Document Mgmt section are Great Lakes Bulletin articles about the groundbreaking and ribboncutting of the store in 1999 and 2000 and the opening of the gasoline pumps in 2001. (KJE) |

**FACILITY NAME** NEX FLEET STORE **FACILITY NUMBER** 400

**REPORT DATE 22 AUG 2013**

## DOCUMENTS

| FILE NAME | DESCRIPTION | DOCUMENT UPLOAD DATE |
|---|---|---|
| NEX Student Store-Bldg 400 Groundbreaking-Ribboncutting.pdf | History 1999 - 2001 | 11-DEC-12 |
| NEX Bldg 400 Renovate GL Bulletin 2010 09 17.PDF | Completed NEX 400 Renovations Sep 2010 | 25-OCT-10 |
| 400 AE.pdf | Facility 400 Asset Evaluation | 16-AUG-10 |
| Bldgs 3451 - 400 Facelift GLB 2010 04 16.PDF | Building 400 FY 2010 Face Lift | 20-APR-10 |

## LOCATION DIRECTIONS TEXT

LOCATED AT THE NORTHWEST CORNER OF SAMPSON ST & CLUVERIUS AV; NORTH OF BLDG 322 AND NORTHEAST OF GATE 4

# NAVSTA GREAT LAKES

# BUILDING CONDITIONS REPORT

## FINAL: August 2012

*prepared for*

**Naval Facilities Engineering Command**
1205 Mill Road, Bldg. 850
Port Hueneme, CA 93043 – 4347

**Contract No. N62583–11-D–0533**

*prepared by*


**CH2MHill**
11818 Rock Landing Drive
Newport News, VA 23606-44230

**Sain Engineering Associates, Inc.**
100 Corporate Parkway, Suite 100
Birmingham, AL 35242

# BUILDING 400 – NEX FLEET STORE

## GENERAL DESCRIPTION

Building 400 is a retail/grocery store that is located at the north end of the Base adjacent to Gate #4. The building consists of a Subway, Taco Bell, clothing/retail store, grocery store, barber, and bank. Services and goods in this building are available to active Navy personnel. The occupancy level of the building is variable but has high retail visitor traffic. The building is a one-story steel framed with brick veneer, and a little curtain wall glass. The flat roof is covered with hot mopped modified bitumen cap sheets. On the north is a higher roof enclosing the receiving and storage area with a storage mezzanine. The mezzanine is partly open to the dock doors below. The south side of the building consists of parking lot. The east side has self-service fuel pumps and canopy at Sampson Street. The north side has a recessed truck ramp and delivery dock, near and open field. The west side of the NEX has a food service drive-up and borders the Base perimeter.

Information for this report is based on field observations, conversations with building and Base personnel and building drawings.

| | |
|---|---|
| **Building Function** | Retail Store / Grocery / Barber / Bank |
| **Year Built**<br>**Major Renovations** | 2000 |
| **Square Footage** | 61,862 |
| **Building Occupancy** | 42 Male, 92 Female |
| **Building Operational Hours** | Monday – Friday: 0800 - 2100<br>Saturday: 0800 - 2000<br>Sunday: 0900 - 1800 |
| **Date** | 12/1/2011 |
| **Observed Outside Air Temperature and Conditions** | 40°F<br>Sunny, calm |

Figure 1: NEX Fleet Store

## BUILDING ENVELOPE

The building envelope assemblies below were in good condition, unless noted otherwise.

### Walls

The building is one-story, steel framed with brick veneer on 10” metal studs. The studs are sheathed with gypsum on the outside and gypsum board finish on the inside. The stud cavities are filled with R-19 fiberglass batts. At the front of the building is a square entry feature, rotated in plan and constructed mostly of curtain wall with a sweeping shed roof. A couple of wall segments attach the typical brick veneer wall to the curtain wall. These are also 10” studs with the R-19 fill. The cladding is a direct

applied cementitious exterior finish system (DEFS, which is like EIFS, but without the rigid board insulation). There is also a little bit of wall constructed of 8" CMU with a burnished face finish at the front vestibule.

## Doors

The main entry is a vestibule with a double slide automatic door set in the side walls of burnished 8" CMU. The other primary entrances on the south and east are vestibules of anodized aluminum storefront assemblies with dual glazings. Glazings have a mild tint. Secondary entrances and utility doors are Hollow metal construction, flush face and insulated.

## Windows

The building has an expanse of curtain wall glass up front at the food court, facing south. This is partly shaded by the exterior walkway cover. As noted above in the walls section, the rotated square entry is constructed of curtain wall glass and punches up above the normal roof line. Around the building are a few square punched openings in anodized aluminum storefront frames. Most of these are fixed panes, but a couple of operable units are in the office area on the north. In most cases, whether curtain wall or punched openings, the window units are dual glazed with a mild tint. One exception is an expanse of curtain wall on the east with obscure glass. On the west is a food service drive-up window with storefront glass and a deal window. The drive up window bump-out probably gets hot in the summer time, and has several shades attached inside.

## Ceilings

Ceilings are suspended acoustical panels in a 2'x2' or 2'x4' T-bar grid. The ceiling heights vary, ranging from 11' high on the lower end up to 15' on the higher end. In the retail area, there are accents of gypsum board bulkheads and decorative ceiling transitions. The kitchens have 2'x2' ceiling tile with a washable finish. The receiving and storage area has bare structure with exposed lighting, ductwork and piping. The structure is painted a uniform white.

## Roof

The roof is a hot mopped, modified bitumen cap sheet over 3" of rigid board insulation with an estimated R value of R=15 to 19.5. The roof was in poor condition. The fine aggregate embedded in the cap sheet has washed off significantly and exposed the bitumen. The roof was reported to be scheduled for replacement.

## Flooring

The floors are mostly ceramic tile, or carpet in the public areas. The kitchens have quarry tile. The storage area has sealed concrete.

# UTILITIES

The energy use index (EUI) for this facility was 141 kBtu/ft$^2$ during FY2010 and 143 kBtu/ft$^2$ during FY2011. For the purpose of comparing this level of consumption with an "average" facility, there is a comparable building type found in ASHRAE Applications Handbook, Chapter 36 (2003 CBECS data). When compared to the EUI for building category "Retail Store," this facility will rank between the 75$^{th}$ and the 90$^{th}$ percentiles for overall energy consumption. Given the nature of the building operation and high occupancy rate, this ranking would be expected for this building.

## Electrical

The main electrical room is located in the northwest office adjacent to the office. The main circuit breaker is rated for 800 Amps at 480/277V 3-phase. There is a step-down transformer located above the ceiling in this room. The location prevented a close-up observation of the nameplate. The transformer is believed to be original to the building. It is assumed that the transformer serves 208/120V 3-phase and 1-phase equipment.

There are two (2) electric meters attached to the primary utility padmount transformer located on the northeast side of the building. The first meter, a Powerlogic, has radio capability. The meter read at the time of the survey was 349.99 kWh, .986 $kW_{max}$, with no multiplier listed. The second meter read was 269.7 kWh, .89 $kW_{max}$ with no multiplier listed.

## Natural Gas/Fuel

Adjacent to the electric meters and transformer is the natural gas service. The gas meter is an analog – rotary type. The meter read at the time of the survey was 21768625 x 100 ft$^2$. The underground natural gas service appeared in good condition.

## Water & Sewer

The underground water service enters the building in the northwest mechanical room (external entry). There were no noticeable defects associated with the water service. The water meter is a Badger rotary type. The meter read at the time of the survey was 016166 gallons.

## Alternate Energy Sources & UPS: N/A

## Process Loads

A water booster pump was located in the northwest mechanical room (external entry). According to Base personnel, the pump is only needed for a water source on the roof. The water is used for pressure washing air handler coils. There are two (2) 5 HP motors associated with this packaged unit. The unit was in like-new condition and was installed in 2006. The unit was only enabled in 2010 and the two motor runtime hours are 5,135 and 4,712 respectively. One (1) of the pump motors was operating during

the survey. There was no water needed during this time. According to the digital display, the motor was drawing 1.965 kW of demand during the survey. It is recommended that a manual switch be added with a timer so that the pumps will run for only limited times when maintenance needs are present.

There are several pop machines and beverage coolers located in Building 400. Taco Bell has one (1) beverage cooler and Subway has two (2) beverage coolers. On the exterior of the building, there are two (2) side-by-side pop machines on the east side and a single pop machine on the south side. All coolers operate as needed to maintain cool beverages regardless of space occupancy.

Subway has a small walk-in cooler. The cooler runs as needed to maintain the temperature setpoint. Taco Bell also has a small walk-in cooler along with a small freezer. Both units operate as needed to maintain the temperature setpoint.

In the grocery area of the building (northeast and east side of retail area), there are two (2) large "Zero zone" coolers and one (1) "Zero zone" freezer. The freezer setpoint was -4°F at the time of the survey while the coolers were maintaining 38°F and 42°F respectively.

On the south side of the retail area, there is a single Hussman open-face cooler. This cooler stores drinks, fruit, sandwiches and salads. There is no door on the cooler and the compressor operates almost continuously year-round to maintain the temperature setpoint. The measured temperature at the time of the survey was 38°F. It is recommended that a manually-operated thermal screen be installed to reduce the heat transfer between the cooler and the grocery space during non-occupied hours.

There is a large walk-in freezer in the warehouse area along with an adjacent cooler. Both units were operating during the survey; however the small freezer was just about empty. Walk-in refrigerated enclosures can be upgraded to make the evaporator fans more efficient.

## LIGHTING

### Interior Lighting Systems

### Fluorescent Fixtures

There are 984 fluorescent fixtures. Over half are 3-lamp 2'x4', 18-cell recessed parabolic (DCP) fixtures. There are also 2-lamp 4' strips and strips in coves, 2- or 3-lamp 2'x4' recessed lensed (RL) troffers, 2-lamp 10" recessed cans, 2-lamp 1'x4', 8-DCP fixtures, 2-lamp 2'x4', 12-DCP fixtures, 2-lamp 4' surface-mount (SM) fixtures with wrap-around (WA) lenses, 2-lamp 4' SM industrial (IND) fixtures, 2-lamp 2'x2', 9-DCP fixtures (which employ U-tubes with 1 5/8" leg spacing), 6-lamp 4' pendant-mount (PM) IND fixtures and 1-lamp 4' vanity fixtures. The lighting systems in most areas are controlled by wall switches. The warehouse and bank fixtures are controlled by passive infrared (PIR) wall-box occupancy sensors or integral PIRs that are mounted directly on the fixtures. The store area has fixtures controlled by timers. Most fixtures were in good condition, but several fixtures with wrap-around lenses (WA) had broken or cracked lenses or were missing lenses.

### Incandescent Systems

There are 48 incandescent fixtures. Over half are 1-lamp PM decorative fixtures or 1-lamp 6" recessed cans that have been retrofit with 26W screw-base (SB) CFL lamps. There are also 1-lamp PM decorative fixtures that have been retrofit with either 16W R-30 SB CFL lamps or 20W SB CFL lamps and 1-lamp track-head fixtures with either 100W A-lamps or 50W MR-16 lamps.

**HID Systems:** There are 73 1-lamp 8" recessed cans and 20 1-lamp 1'x1' fixtures, all with 150W metal halide (MH) lamps and magnetic ballasts.

### Lamping

Most of the fluorescent fixtures are equipped with standard 32W T8 lamps and generic electronic ballasts (GEB). However, the 10" recessed cans are equipped with 32W pin-base (PB) CFL lamps and magnetic ballasts.

**Light Levels:** Light levels were observed to be in the normal range for most areas as demonstrated by a measurement of 51 FC in a restroom area.

### Exterior Lighting Systems

### Conditions

The exterior lighting system consists of 24 1-lamp HID SM canopy lights and 15 1-lamp HID wall-packs, all with 70W high-pressure sodium (HPS) lamps. There are also two (2) 1-lamp HID wall-packs with 150W metal halide (MH) lamps, all with magnetic ballasts.

**Controls:** Exterior lighting is controlled by photocells.

## DOMESTIC HOT WATER

A single, natural-gas fired domestic hot water heater is located at the rear of the Taco Bell. The 96-gallon unit is rated for 199,000 Btu and was installed in 2008. The unit was in good condition. The water temperature measured nearby was 125°F. There was no circulation pump located during the survey. It is assumed that the restaurants use most of the domestic hot water, which would explain the location of the unit.

## PLUMBING SYSTEMS

The lavatories are typically fitted with single lever faucets with 2.2 GPM aerators. The 1.6 GPF floor mounted toilets have 1.6 GPF diaphragm valves. The 1.0 GPF urinals have associated diaphragm valves.

## HVAC & CONTROLS SYSTEMS

### General Description

Building 400 is primarily heated by gas-fired rooftop package units. Cooling is provided by the rooftop units DX coils. The warehouse portion of the building is heated by natural gas fired hanging unit heaters. Each rooftop unit and hanging unit heater has a dedicated control point. The hanging unit heaters are controlled by single setpoint thermostats. The rooftop units are controlled by Siemens DDC space sensors. The DDC system is connected to the Base wide EMCS system. The rooftop units and interlocked exhaust fans are remotely monitored and controlled by the DDC system. The DDC system is accessed through a front-end desktop computer located in the NAVFAC - east shop.

### Cooling/Chilled Water System: N/A

### Heating System (Steam or Hot Water): N/A

### Air Handling System (CHW Coils): N/A

### DX Systems (Packaged or Split)

There are six (6) packaged rooftop units that serve the main retail area of Building 400. All units are original to the building, which puts the age at approximately 11 years. All units were in fair condition with some rust and hail damage to the condenser fins. A fin straightener needs to be used to repair the air-cooled condenser fins. The six (6) rooftop units are all located on the roof.

Rooftop unit RTU-1 is a constant volume unit that serves the food court area. This unit provides DX cooling and direct-fired natural gas heat. RTU-1 has economizing capabilities. The unit will operate based on a start/stop schedule programmed into the Siemens DDC system. During the heating season, the unit will cycle as needed to maintain a night setback temperature. The outdoor air dampers move to a minimum position during the heating season and close during the after-hours program. The natural gas burners have modulating capability. During the first stage of cooling, the outside air dampers are modulated to maintain the space temperature setpoint. Once the return temperature rises, mechanical DX cooling is enabled and cycled as needed. RTU-1 is controlled remotely by the Siemens DDC system. The control point for this rooftop unit is located in the food court eating area between Subway and Taco Bell.

Rooftop unit RTU-2 is a constant volume unit that serves the barbershop area. This unit provides DX cooling and direct-fired natural gas heat. RTU-2 has economizing capabilities. The unit will operate based on a start/stop schedule programmed into the Siemens DDC system. During the heating season, the unit will cycle as needed to maintain a night setback temperature. The outdoor air dampers move to a minimum position during the heating season and close during the after-hours program. The natural gas burners have modulating capability. During the first stage of cooling, the outside air dampers are modulated to maintain the space temperature setpoint. Once the return temperature rises, mechanical DX cooling is enabled and cycled as needed. RTU-2 is controlled remotely by the Siemens DDC system. The control point for this rooftop unit is located in the storage space adjacent to the barbershop.

Rooftop unit RTU-3 is a constant volume unit that serves the office/bank area (north side of building). This unit provides DX cooling and direct-fired natural gas heat. RTU-3 has economizing capabilities. The unit will operate based on a start/stop schedule programmed into the Siemens DDC system. During the heating season, the unit will cycle as needed to maintain a night setback temperature. The outdoor air dampers move to a minimum position during the heating season and close during the after-hours program. The natural gas burners have modulating capability. During the first stage of cooling, the outside air dampers are modulated to maintain the space temperature setpoint. Once the return temperature rises, mechanical DX cooling is enabled and cycled as needed. RTU-3 is controlled remotely by the Siemens DDC system. The control point for this rooftop unit is located in the hallway adjacent the conference room.

Rooftop unit RTU-4 is a constant volume unit that serves the retail-west area. This unit provides DX cooling and direct-fired natural gas heat. RTU-4 has economizing capabilities. The unit will operate based on a start/stop schedule programmed into the Siemens DDC system. During the heating season, the unit will cycle as needed to maintain a night setback temperature. The outdoor air dampers move to a minimum position during the heating season and close during the after-hours program. The natural gas burners have modulating capability. During the first stage of cooling, the outside air dampers are modulated to maintain the space temperature setpoint. Once the return temperature rises, mechanical DX cooling is enabled and cycled as needed. RTU-4 is controlled remotely by the Siemens DDC system. The control point for this rooftop unit is located on a support beam in the clothing area.

Rooftop unit RTU-5 is a constant volume unit that serves the central retail area. This unit provides DX cooling and direct-fired natural gas heat. RTU-5 has economizing capabilities. The unit will operate based on a start/stop schedule programmed into the Siemens DDC system. During the heating season, the unit will cycle as needed to maintain a night setback temperature. The outdoor air dampers move to a minimum position during the heating season and close during the after-hours program. The natural gas burners have modulating capability. During the first stage of cooling, the outside air dampers are modulated to maintain the space temperature setpoint. Once the return temperature rises, mechanical DX cooling is enabled and cycled as needed. RTU-5 is controlled remotely by the Siemens DDC system. The control point for this rooftop unit is located on a support beam in the clothing area.

Rooftop unit RTU-6 is a constant volume unit that serves the retail - east area. This unit provides DX cooling and direct-fired natural gas heat. RTU-6 has economizing capabilities. The unit will operate based on a start/stop schedule programmed into the Siemens DDC system. During the heating season, the unit will cycle as needed to maintain a night setback temperature. The outdoor air dampers move to a minimum position during the heating season and close during the after-hours program. The natural gas burners have modulating capability. During the first stage of cooling, the outside air dampers are

modulated to maintain the space temperature setpoint. Once the return temperature rises, mechanical DX cooling is enabled and cycled as needed. RTU-6 is controlled remotely by the Siemens DDC system. The control point for this rooftop unit is located on the wall near the barbershop.

A small Fujitsu, mini-split air conditioner serves the warehouse office. This is a cooling only system and the condenser is located on the roof. The unit appeared in good condition as no defects were noticed during the survey. The indoor unit is ductless and has local thermostat controls.

Another Fujitsu split system heat pump is located on the roof above the barbershop. This split system serves an IT room. The unit was not operational during the survey. According to Base personnel, the unit Freon was lost and the unit does not run. The leak needs to be repaired and the unit refilled with Freon to return the system to original working condition.

Due to the high heat gain in the restaurant area of the building, there are two (2) dedicated split cooling systems (fan-coils) located above Taco Bell. These units operate essentially year round to alleviate the high ambient temperatures due to the cooking equipment. A single setpoint thermostat in the space controls the air conditioning. These units appeared in good condition.

## Radiant or H&V Units (Gas-Fired): N/A

## Special Ventilation Systems (Hood, MAU's, etc.):

Hood exhaust fans are included in the following exhaust fan section.

## Terminal Equipment (Small EFs & Unit Heaters)

There are three (3) Reznor natural gas fired hanging unit heaters in the warehouse area. These unit heaters are rated for 200,000 Btu. All three units have a dedicated single setpoint thermostat. The middle hanging unit heater in the warehouse is pointed directly at candy products. This will eventually destroy a noticeable amount of candy. It is recommended to move either the heater or product. One (1) of the units (near the overhead delivery door) was operating during the survey. The others seldom operate according to building staff.

A single electric hanging unit heater is located in the northeast mechanical room (external entry). The unit heater is controlled by a single setpoint thermostat located on the east wall of the mechanical room. There is a ceiling mounted unit heater in the main south vestibule. According to Base personnel, the unit has never operated. There have been complaints of the vestibule being too cold in the winter.

Exhaust fans below that are currently controlled by manual switches should be retro-fitted with a thermostat control. Set the thermostat at the highest possible setting. Existing thermostat-controlled exhaust fans should also have the thermostat settings changed to the highest possible setting (i.e., electrical and mechanical room fans).

Exhaust fan EF-1 is located on the roof. This exhaust fan serves the northeast warehouse area and is controlled by a switch. The unit was operating during the survey.

Exhaust fan EF-2 is located on the roof. This exhaust fan is interlocked to operate along with rooftop packaged unit RTU-2. The unit was operating during the survey.

Exhaust fan EF-3 is located on the roof. This exhaust fan is interlocked to operate along with rooftop packaged unit RTU-4. The unit was operating during the survey.

Exhaust fan EF-4 is located on the roof. This exhaust fan is interlocked to operate along with rooftop packaged unit RTU-3. The unit was operating during the survey.

Exhaust fan EF-5 is located on the roof above Taco Bell. This exhaust fan serves the cooking hood and is controlled by a switch. The unit was operating during the survey.

Exhaust fan EF-6 is located on the roof above Taco Bell. This exhaust fan serves the cooking area and is controlled by a switch. The unit was operating during the survey.

Exhaust fan EF-7 is located on the roof above the warehouse. This exhaust fan serves the warehouse and is controlled by a thermostat. The unit was not operating during the survey.

Exhaust fan EF-8 is located on the wall adjacent the northeast mechanical room. This exhaust fan serves the mechanical room and is controlled by a thermostat. The unit was not operating during the survey.

Exhaust fan EF-9 is located on the west roof. This exhaust fan serves the west electrical room and is controlled by a thermostat. The unit was not operating during the survey.

Exhaust fan EF-10 is located on the roof above the warehouse. This exhaust fan serves the electrical room and is controlled by a thermostat. The thermostat setpoint during the survey was 70°F. The unit was operating during the survey.

Exhaust fan EF-11 is located on the roof above the warehouse. This exhaust fan serves the communications room and is controlled by a thermostat. The unit was operating during the survey.

## Controls & Operational Characteristics

There is a mixture of controls in Building 400. The rooftop units and some exhaust fans are connected to the Base-wide Siemens DDC system. The DDC system is monitored and controlled remotely from the NAVFAC east shop. Other exhaust fans are controlled by either switches or thermostats. Condensing units for cooling or freezing equipment are controlled by internal controls specific to each unit and/or application.

All six (6) rooftop units along with exhaust fans EF-2, EF-3 and EF-4 are connected to the Siemens DDC system. The rooftop units are scheduled based on building hours of operation. The operational characteristics of the rooftop units are described in the packaged unit section of this report.

Exhaust fans are controlled by either a single setpoint thermostat or manual switch. Individual exhaust fan controls are described in the exhaust fan section of this report.

Sample temperature measurements were taken during the survey. Sample measurements were taken with a standard heat gun. Results of the sample space temperature measurements are found in the following table. Sampled space temperatures are believed to be a result of natural heat gain within the space and not directly related to control strategies.

| Site Temperatures | | | | |
|---|---|---|---|---|
| Device & Location | Setpoint Temperature(s) | Observed Temperatures | | Notes |
| | | Sensor Display | Measured | |
| Food Court | 68 | -- | 71 | 1 |
| Retail West | 68 | -- | 72 | 1 |
| Retail East | 68 | -- | 72 | 1 |
| Bank Conference Rm. | 68 | -- | 71 | 1 |

Notes:

1. No local control of setpoint.

THIS

PAGE

NOT

USED

**Hygieneering, Inc.** 7575 Plaza Court, Willowbrook, IL 60527
Industrial hygiene, safety and environmental consulting services (630)654-2550/FAX:(630) 789-3813

June 29, 2014

Ms. Michelle Holland, PE, PMP via E-mail: michele.holland@jacobs.com
Project Manager
Jacobs Engineering
1100 North Glebe Road, Suite 500
Arlington, VA 22201

Re: Pre Renovation HZMAT Survey Summary
Hygieneering, Inc. Project #: 2015-1738-ENV
Location: Building 400 –Naval Station Great Lakes
Navy Exchange Building
Great Lakes, Illinois

Dear Ms. Holland:

The following report summarizes the findings of the pre-renovation HAZMAT survey for suspect asbestos containing materials, suspect lead based paint, and other environmentally regulated hazardous materials at Building 400, at Naval Station Great Lakes, in Great Lakes, Illinois.

**Introduction**

Hygieneering, Inc. was retained by Jacobs Engineering to complete a survey for asbestos containing materials and lead based paint to be disturbed by planned renovation activities in Building 400 located at Naval Station Great Lakes, in Great Lakes, Illinois. In addition, a survey for the presence of other environmental hazards such as ozone depleting agents (CFCs), mercury, PCBs, solvents/chemicals, radioactive materials and universal wastes was performed.

Building 400 (PR# 270183), located at 540 Culverius Avenue in Great Lakes, Illinois, consists of a single story steel and masonry structure house the Navy Exchange Store, bank, food court and other retailers/vendors. There is a mezzanine storage area situated within the storage room of the Navy Exchange Store at the northeast portion of the building. The building was originally constructed in 2000 and is approximately 62,000 square feet in size.

The scope of the survey included a review of proposed renovation work, a visual inspection to determine the presence and location of suspect asbestos containing materials, suspect lead based paint and other environmental hazards. In addition, bulk samples from suspect asbestos containing materials and suspect lead based paint were collected and submitted for analysis by an accredited laboratory. The field work associated with the survey was conducted by Richard Zych, EPA accredited and IDPH licensed inspector, of Hygieneering, Inc. on June 2, 2015

# SECTION 1

## Scope of Work

The scope of asbestos, lead based paint and other environmental hazards survey included all areas of proposed renovation inside and on the exterior of Building 400 at Naval Station Great Lakes. The scope of renovation work was determined from information outlined in the report titled "P827 NEX Facilities Energy Improvements WON: 136902, Naval Station Great Lakes, Great Lakes, IL, NAVFAC Mid-Atlantic, Retro Commissioning and ECM Report", dated May 7, 2015 by Jacobs Engineering. The areas of renovation surveyed were limited to the navy exchange retail store, storage/warehouse, offices and roof based upon the proposed work scope. Suspect materials on the exterior and interior portions of the building were sampled including roofing materials that would be disturbed by proposed renovations. Note that the survey did not address flooring materials, or those materials which were not going to be disturbed by planned renovations. The survey included identification of suspect materials that were accessible and visible, such as those within ceiling cavities or accessible wall chases. Exploratory demolition or the disassembly of active equipment was not performed as part of the inspection.

Bulk asbestos sampling was performed and the samples collected were submitted to an accredited laboratory for analysis by polarized light microscopy (PLM). The building was occupied at the time of the surveys, and therefor energized equipment and systems were not dismantled. Analysis of bulk samples was performed by EMSL Analytical, Inc.'s laboratory located at 2225 W. Hubbard Street, in Chicago, Illinois, in accordance with the EPA Method 600/R-93/116, July 1993 utilizing polarized light microscopy (PLM) with a dispersion staining objective and by stereobinocular examination. These methods are based on the refractive index, optical properties and overall morphology of crystalline and non-crystalline substances.

The determination of lead present within paint on surfaces was completed by paint chip sampling of painted surfaces and the submission of the paint chip samples to an accredited lab. Analysis of paint chip samples for lead was performed by EMSL Analytical, Inc. located at 2225 W. Hubbard Street, Chicago, Illinois in accordance with the EPA Method 3050B*/7000B, utilizing flame atomic absorption spectroscopy.

Other potential environmental issues that may be encountered prior to the planned renovation of the structure were also inventoried. This assessment included inspections for the presence and identification of the following environmental issues being impacted by the proposed renovations:

- Suspect lead sheeting, and lead in manufactured products or application such as solder or lead-acid batteries.
- Items containing chlorofluorocarbons (CFC's), halons and/or refrigerants. These items may include air conditioning equipment, refrigeration equipment, and fire extinguishers.
- Items potentially containing mercury, such as thermostats, gauges, fluorescent light bulbs, and special electrical switches. Mercury containing items may be regulated as hazardous wastes per the Resource Conservation Recovery Act (RCRA).
- Items containing polychlorinated biphenyls (PCBs), such as electrical transformers, capacitors, fluorescent light ballasts, and certain specialty building materials. PCB containing materials must be handled in accordance with the Toxic Substances Control Act (TSCA).
- Radioactive containing materials such as self-luminous exit signs or smoke detectors.
- Underground and aboveground storage tanks.

- Hazardous chemicals/materials. Many chemicals can be classified as hazardous wastes or require special handling and disposal. Other chemicals, oils, or solvents may be classified as special wastes, and therefore require special handling for disposal or recycling.
- Miscellaneous electronic components such as computers, monitors, or televisions, which may contain heavy metals such as cadmium, chromium, and lead.

# SECTION 2

## Summary of Findings

No asbestos was found to be present within the suspect materials sampled. The attached Table 1 Summary of ACM survey results identifies the materials sampled, their location and analytical results.

Paint chip analysis utilizing flame atomic absorption for the samples collected inside the building were all reported below the analytical detection limit. The paint sampled from the cabinet/housing of the roof top units (RTUs) on the roof of the building was reported to be 0.047 % lead by weight. Therefore the paint on the RTUs is considered to be lead containing paint. The painted surfaces on the RTU exhibit signs of peeling due to exposure to weather on the exterior of building.

The other environmental concerns identified with respect to renovations, included ozone depleting agents (CFCs), including R-22 associated with RTUs, mercury containing light bulbs (low level mercury green marked) on the interior of building, mercury containing CFL bulbs, high-intensity light bulbs on interior and exterior of building, and potential PCB ballast associated with light fixtures. Thermostats being relocated were identified as non-mercury type. No suspected radioactive materials, chemicals or solvents were found that may be impacted by renovations. A detailed summary of the findings related to other environmental issues titled “Table 3 – Summary of Hazardous Materials Survey” is attached to this report.

The results of QA/QC sample analysis by an independent laboratory were in agreement with the analytical results for the split samples taken.

## SECTION 3

### Asbestos Survey Methodology

The purpose of this inspection was to identify, assess, inventory and provide approximate quantities of suspect ACM throughout each structure, facility component, or piece of equipment that is scheduled for potential renovation/demolition by We Energies. The assessment and sampling procedures for asbestos were performed in general accordance with the guidelines published by the EPA in 40 CFR Part 763 Subpart E, October 30, 1987 (Asbestos Hazard Emergency Response Act - AHERA). The U.S. EPA Guidance document 700/B-92/001, February 1992 and the OSHA Construction Standard 1926.1101, August 10, 1994, requires an AHERA sampling scheme be followed for non-school buildings. Bulk sampling was also conducted and analysis performed by NVLAP accredited laboratory utilizing Polarized Light Microscopy to determine the presence or absence of asbestos in the identified suspect ACM.

### General Organization

Before beginning the actual assessment, the inspector contacted the Jacobs Engineering and Naval Station representative(s) to discuss the facility inspection, including access, preferred inspection and sampling times, sampling procedures, a review of construction drawings, and other access/safety issues.

The study itself consisted of three major activities - visual inspection, sampling and quantification. Although these activities are listed separately, they are integrated tasks.

### Visual Inspection

The visual inspection was performed by EPA accredited/IDPH licensed inspectors. An initial building walk-through was conducted to determine the presence and condition of suspect materials which were accessible and/or exposed. Materials which were similar in general appearance were grouped into homogeneous sampling areas based upon the period of construction or installation.

### Homogeneous Material Categories (ACM)

A preliminary walk-through of the building was conducted to determine areas of materials which were visually similar in color, texture and general appearance, and which appeared to be installed at the same time. Such materials are deemed “homogeneous materials” by the EPA. During this walk-through, the locations of these homogeneous materials were also noted. Only materials which were accessible and/or exposed and suspected to contain asbestos were identified.

Following the EPA asbestos inspection protocol, each identified suspect homogeneous material was placed into one of the following EPA categories.

| | |
|---|---|
| Surfacing: | Any material sprayed or troweled onto building members. |
| Thermal System Insulation (TSI): | Materials generally applied to various mechanical systems. |
| Miscellaneous: | Any materials that do not fit either of the above categories. |

**Sampling Of Suspect Material (Asbestos)**

Once the suspect ACM's were categorized into one of the EPA ACM categories, the materials were sampled.

Suspect ACM's were sampled by EPA accredited and IDPH licensed building inspectors. Representative samples of each type of major category of homogenous material were collected following EPA Purple Book protocol.

**Condition Assessment of Suspect Material (Asbestos)**

An assessment of each suspect ACM was performed to provide the necessary information to develop appropriate response actions/recommendations. The condition, quantity, location, type and extent of damage was evaluated to prioritize each ACM into one of the three following priorities for response:

- (SD) Significantly Damaged - ACM shows damage or high potential for damage and should be removed or repaired as soon as possible to prevent exposure to asbestos.
- (D) Damaged - ACM shows signs of damage due to age, deterioration, or physical contact with potential for further damage. The ACM should be repaired or removed if the physical condition changes or if renovation or building operations will disturb the material.
- (PD) Potential for Damage - ACM shows little to no damage with a low potential for additional damage. Maintain the ACM in its current condition through an Operations and Maintenance Program. Periodically monitor the ACM for damage.
- (G) Good Condition – ACM shows little to no damage and is in generally good condition, maintain ACM in its current condition through the Operations and Maintenance Program. Periodically monitor the ACM for damage.

**Quantification**

Quantities of accessible and/or exposed building materials that were suspected of containing asbestos were estimated. This estimation was performed by taking approximate measurements in the field and reviewing available drawings. Suspect materials applied to surfaces such as floors, walls and ceilings were expressed in total square footage. All measurements should be quantified by qualified abatement contractors prior to submitting any bids for abatement and/or repair.

The quantification of identified concealed asbestos containing materials (i.e. flange gaskets) was based upon the presumption that the same construction materials and applications were utilized throughout the structure.

**Method of Analysis**

Analysis was performed via macroscopic observation and slide preparation(s) for microscopic examination and identification purposes. The samples were mounted on slides and then analyzed for asbestos (chrysotile, amosite, crocidolite, anthophyllite and actinolite/ tremolite), fibrous non-asbestos constituents (mineral wool, paper, etc.) and nonfibrous constituents. Asbestos was identified by refractive indices, morphology, color, pleochroism, birefringence, extinction characteristics and signs of elongation. The same characteristics were used to identify the non-asbestos constituents. The microscopist visually estimated relative amounts of each constituent by determining the volume of each constituent in proportion to the total volume of the sample, using a stereoscope.

Bulk samples were analyzed by Polarized Light Microscopy (PLM) with dispersion staining as described by the interim method of analysis in optical mineralogy and the currently accepted methods for the determination of asbestos in bulk samples. A suspect material is immersed in a solution of known refractive index and subjected to illumination by polarized light. The characteristic color displays which result enable mineral identification.

It should be noted that some asbestos containing building materials may not be accurately identified and/or quantified by PLM. As an example, the original fabrication of vinyl floor tiles routinely involved milling of asbestos fibers to extremely small sizes. As a result, these fibers may go undetected under the standard polarized light microscopy method. The EPA recommends Transmission Electron Microscopy (TEM) for a more definitive analysis of these materials (Federal Register Vol. 59. No. 146/August 1, 1994).

Multi-layered materials, such as plasters and floor tiles with mastic, were analyzed and reported by layers (Federal Register Vol. 59. No. 3, January 5, 1994).

As required, QA/QC samples which were split from original samples were submitted to a second accredited independent laboratory. STAT Analysis Corporation's laboratory located at 2242 West Harrison Street in Chicago, Illinois was utilized for the QA/QC analysis.

**Lead Paint Survey Methodology**

The survey conducted at the building was not a comprehensive HUD survey for the presence of lead based paint. Where applicable, representative sampling of suspected lead based paints or coatings was performed to determine the presence and concentration of lead in paints/coatings that will be disturbed during renovation and/or surfaces that had paint in poor condition within the proposed work area. During the inspection a visual assessment of general condition of the painted surface was also conducted.

**Survey Methodology for Other Environmental Hazards**

As stated, Hygieneering also inspected the property within the scope of the survey in accordance with US EPA regulations including RCRA and TSCA, state regulations, and site specific requirements for the presence of other environmental issues that may be impacted by planned renovation activities.

The inspection included a visual assessment for the presence of CFC's, halons and refrigerants, which are ozone-depleting substances; mercury containing items such as thermostats, thermometers, and other types of switches that require special handling and disposal; items and articles that may contain PCBs, such as electrical transformers, capacitors, fluorescent light ballasts and specialty paints; radioactive materials; underground and aboveground storage tanks; universal wastes; and other hazardous materials.

This report shall not be reproduced except in full, without the written permission from Hygieneering, Inc. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

Please feel free to contact me if you have any questions or if I can be of further assistance to you.

Respectfully Submitted,
**Hygieneering, Inc.**

Richard Zych
Associate Director EHS

Attachments

- Table 1 – Summary of ACM Survey Results
- Table 2 – Lead Survey results
- Table 3 – Summary of Hazardous Materials Survey
- Sample Location Drawings
- Analytical Results
- Lab Accreditation
- Inspector Certifications

Table 1
Summary of ACM Survey Results

Client: Jacobs Engineering

Building Name: Building 400 (PR# 270183)

Location: 540 Culverius Avenue, Great Lakes, Illinois

Hygieneering Project #: 2015-1738-ENV

| Material Description | Material Location | Homogeneous Area Designation | Material Condition | F/ NF | Analytical Result (Asbestos Present Y or N) | Estimated Quantity | Material Type |
|---|---|---|---|---|---|---|---|
| 2’ x 4’ Dot & Gouge Pattern Suspended Ceiling Tile | Ceilings Throughout Offices and Storefront in Building | 400-MCA | G | NF | N | N/A | M |
| Tan Tacky Sealant on RTU Panel | Corners and Seams of RTUs on Roof of Building | 400-MMA | G | NF | N | N/A | M |
| Gray Finish Asphalt Roof Membrane and Tar | Roof Field and Flashing on Building | 400-MRA | G | NF | N | N/A | M |
| Black Roof Cement Sealant | Flashing at RTUs, and Roof Penetrations for Piping and Conduits | 400-MRB | G | NF | N | N/A | M |
| Drywall, Tape and Joint Compound | Interior Walls and Soffits of Building | 400-MWA | G | NF | N | N/A | M |

Material Type Legend:
S = Surfacing Materials (spray or trowel applied building members)
T = Thermal System Insulation (materials generally applied to various mechanical systems)
M = Miscellaneous Materials (any materials which do not fit either of the above categories)
Friability: (F) = Friable (NF) = Non-Friable

Material Condition Assessment Legend:
(G) Good Condition, Monitor Condition
(PD) Potential for Damage, Monitor Condition, Repair or Remove as Necessary
(D) Damage Material, Remove or Repair as Necessary, Monitor Condition
(SD) Significantly Damaged, Removal or Replacement Recommended

Table 2
Summary of Lead Sampling Results

**Client:** Jacobs Engineering

**Building Name:** Building 400 (PR# 270183)

**Location:** 540 Culverius Avenue, Great Lakes, Illinois

**Hygieneering Project #:** 2015-1738-ENV

| Material Description | Location | Sample Number | Analytical Result (%wt) | Condition |
|---|---|---|---|---|
| Green and Gray Paint from RTU Housings | RTUs on Roof of Building | 400-AH-01 | 0.047 | Weathered; Minor Peeling |
| White Paint from Ceiling Deck | Ceiling Deck in Mezzanine Storage | 400-CD-01 | <0.010 | Localized Areas of Peeling and Flaking |
| White Paint from Drywall Finish Walls | Interior Walls in Storage Room and Electrical Room | 400-IW-01 | <0.010 | Intact |
| Red Paint/Primer on Structural Steel | Steel Columns, Beams and Roof Trusses within Building | 400-SS-01 | <0.010 | Intact |
| White Paint over Red Paint/Primer on Roof Truss | Roof Trusses in Storage Area Above Mezzanine | 400-SS-01 | <0.010 | Intact |

ppm = Parts Per Million (mg/Kg = ppm)
HUD Guidelines (1996 Revision) = 5000 ppm
CPSC Level = .06%by wt.
* According to OSHA there are no threshold levels for lead content.

Reporting Limit = 0.01% ppm

Table 3
Summary of Hazardous Materials Survey

**Client:** Jacobs Engineering

**Building Name:** Building 400 (PR# 270183)

**Location:** 540 Culverius Avenue, Great Lakes, Illinois

**Hygieneering Project #:** 2015-1738-ENV

## Ozone Depleting Agents (CFCs)

| Material Description | Equipment Type | Location | Quantity | Notes |
|---|---|---|---|---|
| Refrigerants (R-22) | Roof Top Air Handlers (RTU #4, #5, #6) | Roof of Building | 51.5 lbs Factory Charge per Air Handler (3 Units | N/A |
| Refrigerants (R-22) | Roof Top Air Handlers (RTU #3) | Roof of Building | 9.5 lbs Factory Charge per Circuit (2 Circuits on Unit) | N/A |
| Refrigerants (R-22) | Roof Top Air Handlers (RTU #2) | Roof of Building | 9.1 lbs Factory Charge | N/A |

## Mercury Containing Materials

| Material Description | Equipment Type | Location | Quantity | Notes |
|---|---|---|---|---|
| Thermostats | Wall Mount Thermostats for Space Heaters | Walls in Storage Room | N/A | NON-MERCURY |
| CFL Bulbs | BIAX Style Bulbs in Reflector Can Light Fixtures | Ceiling in Storefront | 68 Bulbs (41 Fixtures) | No Markings |
| Metal Halide Bulbs | Reflector Can Light Fixture in Ceiling of Storefront | Ceiling in Storefront | 57 Bulbs/ Fixtures | No Markings |
| 4’ Fluorescent Bulbs (Green Marked Low Mercury Type) | 4 ft. light fixtures (Variety of 2, 3 and 4, bulb troffer and strip lights | Ceilings and Soffits in Storefront, Office Area and Storage Room | 1,898 Bulbs | Green Low Level Mercury Markings or End Caps |
| 2’ U-Shape Fluorescent bulbs(Green Marked Low Mercury Type) | 2’ x 2’Troffer Light Fixtures (2 Bulbs per Fixture) | Ceiling in Storefront | 16 Bulbs (8 Fixtures) | Green Low Level Mercury Markings or End Caps |
| Bulbs in HID Lighting | Exterior Building Lighting | Above Dock and Along North Office Wall | 6 Bulbs/ Fixtures | Specific Bulb Type Not Distinguishable |

## Storage Tanks/Vessels (UST/AST)

| Material Description | Equipment Type | Location | Quantity | Notes |
|---|---|---|---|---|
| N/A | N/A | N/A | N/A | None Identified in Scope of Proposed Work |

Table 3
Summary of Hazardous Materials Survey

**Client:** Jacobs Engineering

**Building Name:** Building 400 (PR# 270183)

**Location:** 540 Culverius Avenue, Great Lakes, Illinois

**Hygieneering Project #:** 2015-1738-ENV

## PolyChlorinatedBiphenyls (PCBs)

| Material Description | Equipment Type | Location | Quantity | Notes |
|---|---|---|---|---|
| Ballast/Capacitors | Fluorescent Light Fixtures (Varying Type) | Ceilings and Soffits in Storefront, Office Area and Storage Room | 776 Fixtures | Presumed - Energized Equipment Not Accessible |
| Ballast/Capacitors | Reflector Can Light Fixture in Ceiling of Storefront | Ceiling in Storefront | 57 Fixtures | Presumed - Energized Equipment Not Accessible |
| Ballast/Capacitors | Exterior Building Lighting | Above Dock and Along North Office Wall | 6 Bulbs/ Fixtures | Presumed - Energized Equipment Not Accessible |
| Motor Capacitors | Blower Fan Motor on “Reznor” Heaters | In Mezzanine and at Loading Dock | 3 Heaters | Presumed - Energized Equipment Not Accessible |

## Radioactive Materials

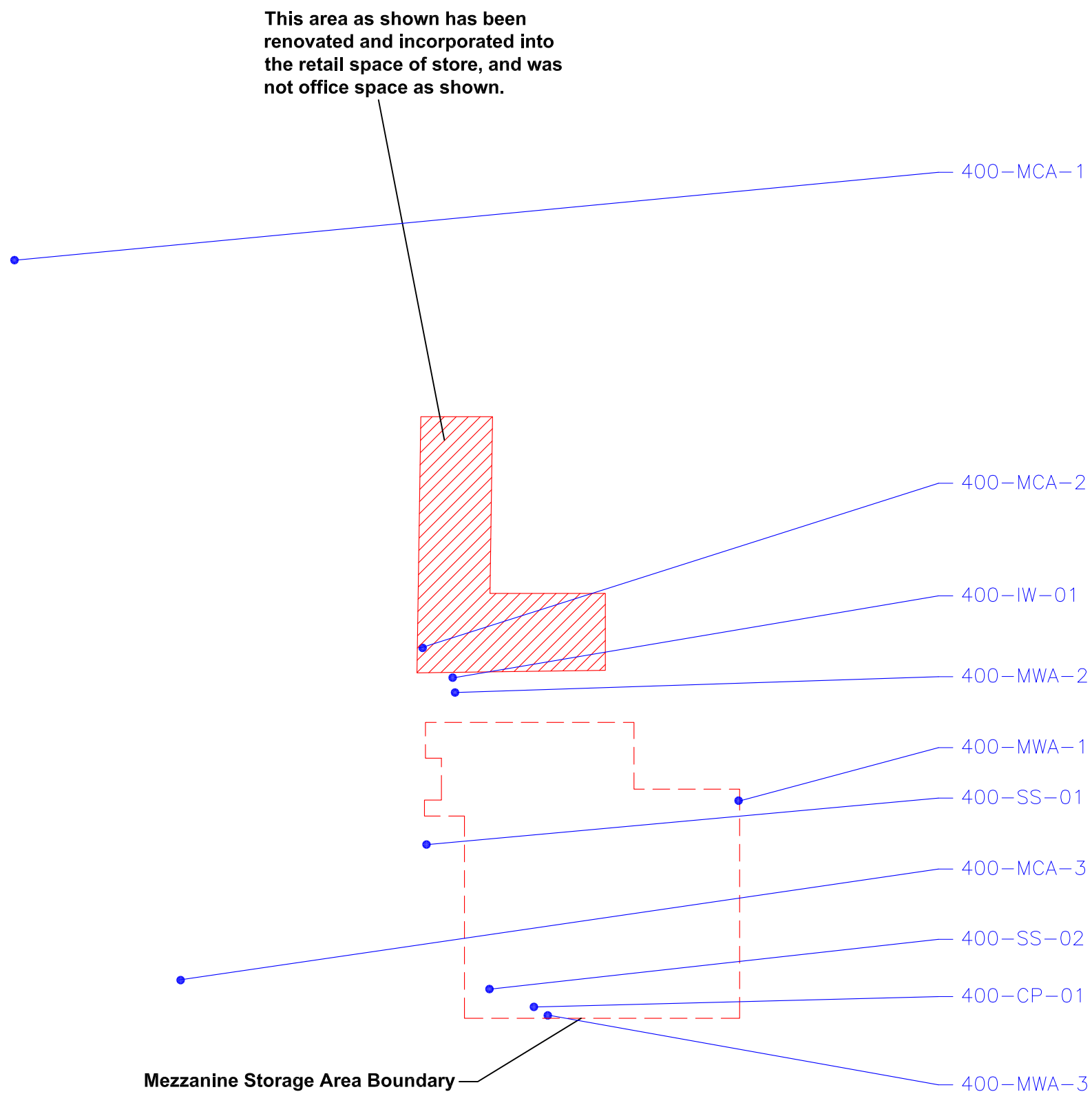
| Material Description | Equipment Type | Location | Quantity | Notes |
|---|---|---|---|---|
| N/A | N/A | N/A | N/A | None Identified in Scope of Proposed Work |

## Other Environmental Hazards

| Material Description | Equipment Type | Location | Quantity | Notes |
|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A |

**Hygieneering, Inc.**
7575 Plaza Court
Willowbrook, IL 60527
(630) 654-2550

LEGEND




ROOF PLAN

N

*Template Drawing Obtained from NAVFAC Facilty drawing for Building 400 at Installation: Naval Station Great Lakes.*

CLIENT: **Jacobs Engineering**

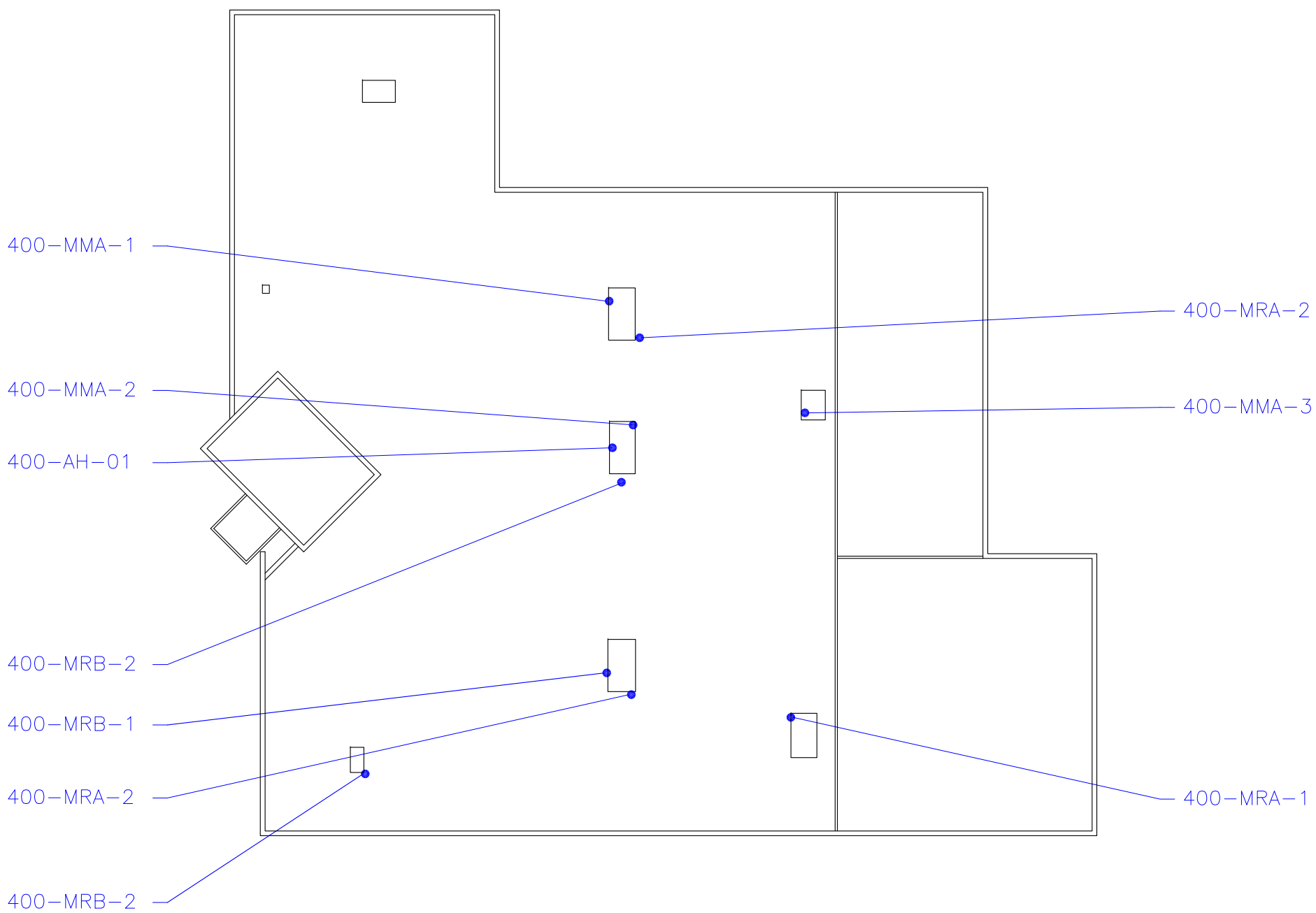
PROJECT:
**Building 400**
**Naval Station Great Lakes**
**Great Lakes, Illinois**
**Pre-Renovation HAZMAT Survey**

PROJECT NO.: **2015-1738-ENV**

SAMPLE LOCATION DRAWING:
1 OF 2

**Hygieneering, Inc.**
7575 Plaza Court
Willowbrook, IL 60527
(630) 654-2550

LEGEND




ROOF PLAN

N

CLIENT: **Jacobs Engineering**

PROJECT:
**Building 400**
**Naval Station Great Lakes**
**Great Lakes, Illinois**
**Pre-Renovation HAZMAT Survey**

PROJECT NO.: **2015-1738-ENV**

SAMPLE LOCATION DRAWING:
2 OF 2

**EMSL Analytical, Inc.**
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Phone/Fax: (773) 313-0099 / (773) 313-0139
http://www.EMSL.com chicagolab@emsl.com

| | |
|---|---|
| EMSL Order: | 261504135 |
| CustomerID: | HYGI55 |
| CustomerPO: | |
| ProjectID: | |

Attn: **Rich Zych**
**Hygieneering, Inc.**
**7575 Plaza Court**

**Willowbrook, IL 60527**

| | |
|---|---|
| Phone: | (630) 654-2550 |
| Fax: | (630) 789-3813 |
| Received: | 06/04/15 3:56 PM |
| Analysis Date: | 6/8/2015 |
| Collected: | 6/2/2015 |

Project: **2015-1738-ENV BLDG 400**

# Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

| Sample | Description | Appearance | Non-Asbestos % | Fibrous | Non-Asbestos % | Non-Fibrous | Asbestos % Type |
|---|---|---|---|---|---|---|---|
| 400-MCA-1<br>*261504135-0001* | SUSP. CT | White<br>Fibrous<br>Homogeneous | 60%<br>10%<br>HA: MCA | Cellulose<br>Min. Wool | 20%<br>10% | Perlite<br>Non-fibrous (other) | **None Detected** |
| 400-MCA-2<br>*261504135-0002* | SUSP. CT | White<br>Fibrous<br>Homogeneous | 60%<br>10%<br>HA: MCA | Cellulose<br>Min. Wool | 20%<br>10% | Perlite<br>Non-fibrous (other) | **None Detected** |
| 400-MCA-3<br>*261504135-0003* | SUSP. CT | White<br>Fibrous<br>Homogeneous | 60%<br>10%<br>HA: MCA | Cellulose<br>Min. Wool | 20%<br>10% | Perlite<br>Non-fibrous (other) | **None Detected** |
| 400-MMA-1<br>*261504135-0004* | TAN/GRAY SEALANT | Gray/Tan<br>Non-Fibrous<br>Homogeneous | HA: MMA | | 100% | Non-fibrous (other) | **None Detected** |
| 400-MMA-2<br>*261504135-0005* | TAN/GRAY SEALANT | Gray/Tan<br>Non-Fibrous<br>Homogeneous | HA: MMA | | 100% | Non-fibrous (other) | **None Detected** |
| 400-MMA-3<br>*261504135-0006* | TAN/GRAY SEALANT | Gray/Tan<br>Non-Fibrous<br>Homogeneous | HA: MMA | | 100% | Non-fibrous (other) | **None Detected** |
| 400-MRA-1-Membrane<br>*261504135-0007* | ROOT MEMBRANE AND TAR | White/Black<br>Non-Fibrous<br>Homogeneous | 5%<br>HA: MRA | Synthetic | 95% | Non-fibrous (other) | **None Detected** |

Analyst(s)

*Alice Hillegass (14)*
*Dahlia Zyhowski (7)*

James Hahn, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Chicago, IL NVLAP Lab Code 200399-0

Initial report from 06/08/2015 16:52:33

**EMSL Analytical, Inc.**
**2225 W. Hubbard Street, Chicago, IL 60612**
Phone/Fax: (773) 313-0099 / (773) 313-0139
http://www.EMSL.com chicagolab@emsl.com

| | |
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| EMSL Order: | 261504135 |
| CustomerID: | HYGI55 |
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Attn: **Rich Zych**
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**7575 Plaza Court**

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|---|---|
| Phone: | (630) 654-2550 |
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| Received: | 06/04/15 3:56 PM |
| Analysis Date: | 6/8/2015 |
| Collected: | 6/2/2015 |

Project: **2015-1738-ENV BLDG 400**

# Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

| Sample | Description | Appearance | Non-Asbestos % | Fibrous | Non-Fibrous % | Non-Fibrous | Asbestos % Type |
|---|---|---|---|---|---|---|---|
| 400-MRA-1-Tar<br>*261504135-0007A* | ROOT MEMBRANE AND TAR | White/Black<br>Non-Fibrous<br>Homogeneous<br>HA: MRA | | | 100% | Non-fibrous (other) | **None Detected** |
| 400-MRA-2-Membrane<br>*261504135-0008* | ROOT MEMBRANE AND TAR | White/Black<br>Non-Fibrous<br>Homogeneous<br>HA: MRA | 5% | Synthetic | 95% | Non-fibrous (other) | **None Detected** |
| 400-MRA-2-Tar<br>*261504135-0008A* | ROOT MEMBRANE AND TAR | Black<br>Non-Fibrous<br>Homogeneous<br>HA: MRA | | | 100% | Non-fibrous (other) | **None Detected** |
| 400-MRA-3-Membrane<br>*261504135-0009* | ROOT MEMBRANE AND TAR | Black<br>Non-Fibrous<br>Homogeneous<br>HA: MRA | 5% | Synthetic | 95% | Non-fibrous (other) | **None Detected** |
| 400-MRA-3-Tar<br>*261504135-0009A* | ROOT MEMBRANE AND TAR | Black<br>Non-Fibrous<br>Homogeneous<br>HA: MRA | | | 100% | Non-fibrous (other) | **None Detected** |
| 400-MRB-1<br>*261504135-0010* | ROOT CEMENT SEALANT | Black<br>Non-Fibrous<br>Homogeneous<br>HA: MRB | 7% | Cellulose | 93% | Non-fibrous (other) | **None Detected** |

Analyst(s)

*Alice Hillegass (14)*
*Dahlia Zyhowski (7)*

James Hahn, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Chicago, IL NVLAP Lab Code 200399-0

Initial report from 06/08/2015 16:52:33

**EMSL Analytical, Inc.**
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Attn: **Rich Zych**
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Project: **2015-1738-ENV BLDG 400**

# Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

| | | | Non-Asbestos | | | | Asbestos |
|---|---|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **%** | **Fibrous** | **%** | **Non-Fibrous** | **% Type** |
| 400-MRB-2<br>*261504135-0011* | ROOT CEMENT SEALANT | Black<br>Non-Fibrous<br>Homogeneous | 7% | Cellulose | 93% | Non-fibrous (other) | **None Detected** |
| | | | HA: MRB | | | | |
| 400-MRB-3<br>*261504135-0012* | ROOT CEMENT SEALANT | Black<br>Non-Fibrous<br>Homogeneous | 7% | Cellulose | 93% | Non-fibrous (other) | **None Detected** |
| | | | HA: MRB | | | | |
| 400-MWA-1-Drywall<br>*261504135-0013* | DRYWALL, TOPE AND JOINT COMPD | White<br>Non-Fibrous<br>Homogeneous | 10% | Cellulose | 90% | Non-fibrous (other) | **None Detected** |
| | | | HA: MWA | | | | |
| 400-MWA-1-Tape<br>*261504135-0013A* | DRYWALL, TOPE AND JOINT COMPD | | | | | | **Insufficient Material** |
| | | | HA: MWA<br>Tape not present. | | | | |
| 400-MWA-1-Joint Compound<br>*261504135-0013B* | DRYWALL, TOPE AND JOINT COMPD | White<br>Non-Fibrous<br>Homogeneous | | | 100% | Non-fibrous (other) | **None Detected** |
| | | | HA: MWA | | | | |
| 400-MWA-2-Drywall<br>*261504135-0014* | DRYWALL, TOPE AND JOINT COMPD | White<br>Non-Fibrous<br>Homogeneous | 10% | Cellulose | 90% | Non-fibrous (other) | **None Detected** |
| | | | HA: MWA | | | | |

Analyst(s)

*Alice Hillegass (14)*
*Dahlia Zyhowski (7)*

James Hahn, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Chicago, IL NVLAP Lab Code 200399-0

Initial report from 06/08/2015 16:52:33

**EMSL Analytical, Inc.**
**2225 W. Hubbard Street, Chicago, IL 60612**
Phone/Fax: (773) 313-0099 / (773) 313-0139
http://www.EMSL.com chicagolab@emsl.com

| | |
|---|---|
| EMSL Order: | 261504135 |
| CustomerID: | HYGI55 |
| CustomerPO: | |
| ProjectID: | |

Attn: **Rich Zych**
**Hygieneering, Inc.**
**7575 Plaza Court**

**Willowbrook, IL 60527**

| | |
|---|---|
| Phone: | (630) 654-2550 |
| Fax: | (630) 789-3813 |
| Received: | 06/04/15 3:56 PM |
| Analysis Date: | 6/8/2015 |
| Collected: | 6/2/2015 |

Project: **2015-1738-ENV BLDG 400**

# Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

| Sample | Description | Appearance | Non-Asbestos % Fibrous | Non-Asbestos % Non-Fibrous | Asbestos % Type |
|---|---|---|---|---|---|
| 400-MWA-2-Tape<br>*261504135-0014A* | DRYWALL, TOPE AND JOINT COMPD | | HA: MWA<br>Tape not present. | | **Insufficient Material** |
| 400-MWA-2-Joint Compound<br>*261504135-0014B* | DRYWALL, TOPE AND JOINT COMPD | White/Yellow<br>Non-Fibrous<br>Homogeneous | HA: MWA | 100% Non-fibrous (other) | **None Detected** |
| 400-MWA-3-Drywall<br>*261504135-0015* | DRYWALL, TOPE AND JOINT COMPD | White<br>Non-Fibrous<br>Homogeneous | 10% Cellulose<br>HA: MWA | 90% Non-fibrous (other) | **None Detected** |
| 400-MWA-3-Tape<br>*261504135-0015A* | DRYWALL, TOPE AND JOINT COMPD | | HA: MWA<br>Tape not present. | | **Insufficient Material** |
| 400-MWA-3-Joint Compound<br>*261504135-0015B* | DRYWALL, TOPE AND JOINT COMPD | White<br>Non-Fibrous<br>Homogeneous | HA: MWA | 100% Non-fibrous (other) | **None Detected** |

Analyst(s)

*Alice Hillegass (14)*
*Dahlia Zyhowski (7)*

James Hahn, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Chicago, IL NVLAP Lab Code 200399-0

Initial report from 06/08/2015 16:52:33



**THIS IS THE LAST PAGE OF THE REPORT.**

EMSL Analytical, Inc.
2225 W HUBBARD ST

Chicago, IL 60612
PHONE (773) 313-0099
FAX (773) 313-0139

EMSL ANALYTICAL, INC.

# Asbestos Chain of Custody

**EMSL Order Number** (Lab Use Only): 201504135

| | |
|---|---|
| **Company:** Hygieneering, Inc. | **EMSL-Bill to:** ✓ Different ☐ Same<br>If Bill to is Different note instructions in Comments** |
| **Street:** 7575 Plaza Ct. | *Third Party Billing requires written authorization from third party* |
| **City:** Willowbrook **State/Province:** IL | **Zip/Postal Code:** 60527 **Country:** United States |
| **Report To (Name):** Rich Zych | **Telephone #** 630-654-2550 |
| **Email Address** rzych@hygieneering.com | **Fax #:** 630-789-3813 **Purchase Order** |
| **Project Name/Number** 2015-1731-ENI Bldg. 400 | **Please Provide Results:** ☐ FAX ✓ E-mail ☐ Mail |
| **U S State Samples Taken:** IL | **Connecticut Samples:** ☐ Commercial ☐ Residential |

**Turnaround Time (TAT) Options* – Please Check**

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☒ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

**PCM - Air** ☐ Check if samples are from NY
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

**PLM - Bulk (reporting limit)**
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NIOSH 9002 (<1%)

**TEM - Air** ☐ 4-4.5hr TAT (AHERA only)
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

**TEM - Bulk**
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

**TEM - Water** EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

**TEM- Dust**
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

**Soil/Rock/Vermiculite**
- ☐ PLM CARB 435 - A (0.25% sensitivity)
- ☐ PLM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - C (0.01% sensitivity)
- ☐ TEM Qual. via Filtration Technique
- ☐ TEM Qual. via Drop-Mount Technique

**Other:**
- ☐

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Filter Pore Size (Air Samples):** ☐ 0.8µm ☐ 0.45µm

**Samplers Name:** Richard Zych **Samplers Signature:** Richard Zych

| Sample # | Sample Description | Volume/Area (Air) HA # (Bulk) | Date/Time Sampled |
|---|---|---|---|
| | See Attached Page with | | 6/2/15 |
| | 15 Samples | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**Client Sample # (s)** **Total # of Samples:** 15

**Relinquished (Client):** Richard Zych **Date:** 6/4/15 **Time:**

**Received (Lab):** [illegible] **Date:** 6.4.15 **Time:** 15:50 WI

**Comments/Special Instructions:** Branch

cc results to - dschneider@hygieneering.com; [illegible]@hygieneering.com; labreports@hygieneering.com
Bill To: Hygieneering, Inc. 7575 Plaza Ct., Willowbrook, IL 60527 United States
Attention: Vicky Igras Phone: 630-654-2550 Email: vigras@hygieneering.com Purchase Order

EMSL ANALYTICAL, INC.

# Asbestos Chain of Custody

**EMSL Order Number** *(Lab Use Only)*: 261504135

EMSL Analytical, Inc.
2225 W HUBBARD ST

Chicago, IL 60612
PHONE (773) 313-0099
FAX (773) 313-0139

*Additional Pages of the Chain of Custody are only necessary if needed for additional sample information*

| Sample # | Sample Description | Volume/Area (Air) HA # (Bulk) | Date/Time Sampled |
|---|---|---|---|
| 400 - MCA - 1 | Super. CT | MCA | 6/2/15 |
| 400 - MCA - 2 | ↓ | | ↓ |
| 400 - MCA - 3 | ↓ | | ↓ |
| | | | |
| 400 - MMA - 1 | Tan/Gray Sealant | MMA | ↓ |
| 400 - MMA - 2 | ↓ | | ↓ |
| 400 - MMA - 3 | ↓ | | ↓ |
| | | | |
| 400 - MRA - 1 | Roof Membrane & Tar | MRA | ↓ |
| 400 - MRA - 2 | ↓ ↓ | | ↓ |
| 400 - MRA - 3 | ↓ ↓ | | ↓ |
| | | | |
| 400 - MRB - 1 | Roof Cement Sealant | MRB | ↓ |
| 400 - MRB - 2 | ↓ ↓ | | ↓ |
| 400 - MRB - 3 | ↓ ↓ | | ↓ |
| | | | |
| 400 - MWA - 1 | Drywall, Tape & Joint Cmpd | MWA | ↓ |
| 400 - MWA - 2 | ↓ ↓ | | ↓ |
| 400 - MWA - 3 | ↓ ↓ | | ↓ |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

***Comments/Special Instructions:**
bkarrda
cc results to - dschneider@hygieneering.com [illegible]@hygieneering.com, laborparts@hygieneering.com,
Bill To: Hygieneering, Inc., 7575 Plaza Ct., Willowbrook, IL 60527, United States
Attention: Vicky Igras Phone 630-654-2550 Email vigras@hygieneering.com Purchase Order

Page 2 of 2 pages

2015-1738
Building 400

**EMSL Analytical, Inc.**
**2225 W. Hubbard Street, Chicago, IL 60612**
Phone/Fax: (773) 313-0099 / (773) 313-0139
http://www.EMSL.com chicagolab@emsl.com

| | |
|---|---|
| EMSL Order: | 261504130 |
| CustomerID: | HYGI55 |
| CustomerPO: | |
| ProjectID: | |

Attn: **Rich Zych**
**Hygieneering, Inc.**
**7575 Plaza Court**

**Willowbrook, IL 60527**

| | |
|---|---|
| Phone: | (630) 654-2550 |
| Fax: | (630) 789-3813 |
| Received: | 06/04/15 3:56 PM |
| Collected: | |

Project: **2015-1738-ENV**

# Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

| *Client Sample Description* | *Lab ID* | *Collected* | *Analyzed* | *Lead Concentration* |
|---|---|---|---|---|
| 400-AH-01* | *261504130-0001* | | 6/5/2015 | 0.047 % wt |
| | Site: GREEN & GRAY PAINT FROM RTU | | | |
| 400-CD-01 | *261504130-0002* | | 6/5/2015 | <0.010 % wt |
| | Site: WHITE PAINT FROM CEILING DECK | | | |
| 400-IW-01 | *261504130-0003* | | 6/5/2015 | <0.010 % wt |
| | Site: WHITE PAINT FROM DRYWALL | | | |
| 400-SS-01 | *261504130-0004* | | 6/5/2015 | <0.010 % wt |
| | Site: RED PAINT/PRIMER FROM STRUCTURAL STEEL | | | |
| 400-SS-02 | *261504130-0005* | | 6/5/2015 | <0.010 % wt |
| | Site: WHITE PAINT OVER RED PAINT PRIMER FROM TRUSS | | | |

*Data reported may not reach applicable analytical sensitivity due to insufficient sample weights submitted. Suggested weight for analysis is 0.2 g.

Lisa M. Odeshoo

Lisa Odeshoo, Lead Lab Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Analytical, Inc. Chicago, IL AIHA-LAP, LLC--ELLAP Accredited #102992

Initial report from 06/05/2015 14:56:00

# Lead & Metals Chain of Custody

**EMSL Order Number** *(Lab Use Only)*: 2015504130

EMSL Analytical, Inc.
Page 1
[illegible] W Huron St
Chicago, IL 60610
Phone: [illegible] 3399
Fax: [illegible]

| | |
|---|---|
| **Company:** Hygieneering, Inc. | **EMSL-Bill to:** [ ] Client [✓] Different<br>[ ] Bill to [ ] Refer to instructions or comments<br>*Third Party Billing requires written authorization from third party* |
| **Street:** 7575 Plaza Ct. | |
| **City/State/Zip:** Willowbrook, IL 60527 | |
| **Report To (Name):** Richard Zych | **Fax:** 630-789-3813 |
| **Telephone:** 630-654-2550 | **Email Address:** RZYCH @hygieneering.com |
| **Project Name/Number:** 2015-1738-ENV | |
| **Please Provide Results:** | **Purchase Order:** / **State Samples Taken:** IL |

**Turnaround Time (TAT) Options* - Please Check**

[ ] 3 Hour | [ ] 6 Hour | [ ] 24 Hour | [✓] 48 Hour | [ ] 72 Hour | [ ] 96 Hour | [ ] 1 Week | [ ] 2 Week

**Analyses completed in accordance with EMSL's Terms and Conditions located in the Price Guide*

| Matrix | Method | Instrument | Reporting Limit | Check |
|---|---|---|---|---|
| Chips [ ] mg/cm² [✓] % by wt | SW846 7000B/7420 or AOAC 974.02 | Flame Atomic Absorption | 0.01% | [✓] |
| Air | NIOSH 7082 | Flame Atomic Absorption | 4 µg/filter | [ ] |
| | NIOSH 7105 | Graphite Furnace AA | 0.03 µg/filter | [ ] |
| | NIOSH 7300 modified | ICP AES | 0.5 µg/filter | [ ] |
| Wipe* [ ] ASTM [ ] non ASTM **If no box is checked, Non-ASTM Wipe is assumed* | SW846 7000B/7420 | Flame Atomic Absorption | 10 µg/wipe | [ ] |
| | SW846 6010B or C | ICP AES | 0.5 µg/wipe | [ ] |
| TCLP | SW846 1311/7420/SW 3010 | Flame Atomic Absorption | 0.4 mg/L (ppm) | [ ] |
| | SW846 6010B or C | ICP AES | 0.1 mg/L (ppm) | [ ] |
| Soil | SW846 7000B/7420 | Flame Atomic Absorption | 40 mg/kg (ppm) | [ ] |
| | SW846 7421 | Graphite Furnace AA | 0.3 mg/kg (ppm) | [ ] |
| | SW846 6010B or C | ICP AES | 1 mg/kg (ppm) | [ ] |
| Wastewater | SM3111B or SW846 7000B/7420 | Flame Atomic Absorption | 0.4 mg/L (ppm) | [ ] |
| | EPA 200.9 | Graphite Furnace AA | 0.003 mg/L (ppm) | [ ] |
| | SW846 6010B or C | ICP AES | 1 mg/kg (ppm) | [ ] |
| Drinking Water | EPA 200.9 | Graphite Furnace AA | 0.003 mg/L (ppm) | [ ] |

| | |
|---|---|
| **Other:** | **Preservation Method (Water):** |
| **Name of Sampler:** Richard Zych | **Signature of Sampler:** Richard Zych |

| Sample # | Location | Volume/Area | Date/Time Sampled |
|---|---|---|---|
| 400-AH-01 | Green/Grey Paint from RTU | N/A | 6/2/15 |
| 400-CD-01 | White Paint from Ceiling Deck | | |
| 400-IW-01 | White Paint from Drywall | | |
| 400-SS-01 | Red Paint/Primer from Structural Steel | | |
| 400-SS-02 | White Paint over Red Paint Primer from Truss | | |

**Client Sample #'s** | **Total # of Samples:** 5

**Relinquished (Client):** Richard Zych | **Date:** 6/4/15 | **Time:**

**Received (Lab):** [illegible] | **Date:** 6/4/15 | **Time:** 3.50P WI

**Comments/Special Instructions:** cc results to: dschneider@hygieneering.com; ~~abanos~~@hygieneering.com
**Bill To:** Hygieneering, Inc. 7575 Plaza Ct., Willowbrook, IL 60527 bkarich
**Attention:** Vicky Igras **Phone:** 630-654-2550

**STAT Analysis Corporation**
*2242 West Harrison St., Suite 200, Chicago, IL 60612-3766*
*Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com*

NVLAP Lab Code 101202-0

# ASBESTOS ANALYSIS BY POLARIZED LIGHT MICROSCOPY

Method: EPA-600/M4-82-020

Hygieneering, Inc.
7575 Plaza Court
Willowbrook, IL 60527
Phone: (630) 654-2550
Fax: (630) 789-3813

| | | | |
|---|---|---|---|
| Reference: | 2015-1735-ENV | Date Received: | 06/05/2015 |
| Location: | Jacobs Engineering Bldg 400 & Bldg 3503 | Date Analyzed: | 06/12/2015 |
| Batch No.: | 319352 | Date Reported: | 06/12/2015 |
| Customer No.: | 206 | Turn Around Time: | 5 Days |

| Laboratory Sample | Customer Sample Number | Asbestos Components (%) | Non-Asbestos Components (%) |
|---|---|---|---|
| 319352001 | 400-MMA-1C | ND | Binder 99-100% |
| 319352002 | 3503-SFA-2C | ND | Glass 99-100% |

ND = Asbestos Not Detected (Not Present) NA = Not Analyzed NS = Not Submitted

Components of inhomogeneous samples are analyzed per our Standard Operating Procedure, or per customer request.

The use of the NVLAP logo does not imply endorsement by NVLAP or any agency of the US Government.

*The information contained in this report and any attachments is confidential information intended only for the use of the individual or entities named above. The results of this report relate only to the samples tested. If you have received this report in error, please notify us immediately by phone.This report shall not be reproduced, except in its entirety, unless written approval has been obtained from the laboratory. This report remains property of STAT Analysis until payment is received in full (see invoice).*

Analyzed by Name : Henry Rebateau / Microscopist



Date: 06/12/2015

**STAT** Analysis Corporation
*2242 W. Harrison, Suite 200, Chicago, Illinois 60612* *Phone: (312) 733-0551* *Fax: (312) 733-2386*
*e-mail address: STATinfo@STATAnalysis.com*

# CHAIN OF CUSTODY RECORD

Page : 1 of 1

Client: Hygieneering, Inc. - Rich Zych
Street Address: 7575 Plaza Ct
City, State, Zip: Willowbrook IL 60527
Phone: 630 654 2550
Fax: 630 789-3313
e-mail/Alt. Fax: RZych@hygieneering.com
Project Number: 2015-1735-ENV
Project Name: Jacobs Engineering
Project Location: Bldg 400 & Bldg 3503
Project Manager: Rich Zych
P.O. Number:

Turn Around: Immediate: ☐ 4 Hrs: ☐ 8 Hrs: ☐ 24 Hrs: ☐ 1 Day: ☐ 2 Days: ☐ 3 Days: ☐ 5 Days: ☒
Date Due: Time Due:
Note: Not all turn around times are available for all analysis.

**OFFICE USE ONLY BELOW:**
Batch No.: 39352
Samples Acceptable: Yes: ☒ No: ☐
Checked by (Initial/Date):
QC by (Initial/Date): 6/12/15
Reported By (Initial/Date/Time/Method):
Comments:

Relinquished by: [signature] Date/Time: 6/5/15 2400
Received by: [signature] Date/Time: 6/8/15 1440
Relinquished by: Date/Time:
Received by: Date/Time:
Relinquished by: Date/Time:
Received by: Date/Time:

| Client Sample Number/Description: | Date Taken | Time On | Time Off | Rate (lpm) | Volume (Liters) | Area Wiped (ft²) | Laboratory Sample No. | PCM Asbestos | PLM Asbestos (Bulk) | PLM Point Count | PLM Gravimetric | TEM Air Asbestos | TEM Bulk Asbestos | TEM Gravimetric Asb. | TEM Microvac Asb. | TEM Water | | Other: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 - MMX-1C (Tan/Gray Sealant) | 6/2/15 | N/A | → | | | | | | X | | | | | | | | | |
| 3503-SFA-2C ~~3503-SFA-2C~~ (White/Gray Fibrous Insulation) | 6/2/15 | N/A | → | | | | | | X | | | | | | | | | |

Comments: cc Results to: bkarich, jdscheidler, rzych@hygieneering.com
cc: Invoice to: LCARTA@hygieneering.com

STAT Analysis Corporation
*2242 West Harrison St., Suite 200, Chicago, IL 60612-3766*
*Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com*
*Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0*

June 12, 2015

Hygieneering, Inc.
7575 Plaza Court
Willowbrook, IL 60527
Telephone: (630) 654-2550
Fax: (630) 789-3813

Analytical Report for STAT Work Order: 15060250 Revision 0

RE: 2015-1738-Env, Jacobs Engineering, Bldg 400

Dear Rich Zych:

STAT Analysis received 1 sample for the referenced project on 6/5/2015 2:40:00 PM. The analytical results are presented in the following report.

All analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met AIHA, EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. Sample acceptance criteria has been met unless noted in the Case Narrative or Sample Receipt Checklist. If required, an estimate of uncertainty for the analyses can be provided. Sample results have not been corrected for contamination based on field blank or other analytical blank, unless noted in the case narrative.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Victoria Young
Project Manager

*The information contained in this report and any attachments is confidential information intended only for the use of the individual or entities named above. The results of this report relate only to the samples tested. If you have received this report in error, please notify us immediately by phone.This report shall not be reproduced, except in its entirety, unless written approval has been obtained from the laboratory. This analytical report shall become property of the Customer upon payment in full. Otherwise, STAT will be under no obligation to support, defend or discuss the analytical report.*

**STAT Analysis Corporation**
*2242 West Harrison St., Suite 200, Chicago, IL 60612-3766*
*Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATanalysis.com*
*Accreditation Numbers : IEPA ELAP 100445 ; ORELAP IL300001 ; AIHA-LAP, LLC 101160*

**Date Reported:** June 12, 2015

**Date Printed:** June 12, 2015

# ANALYTICAL RESULTS

**Client:** Hygieneering, Inc.
**Work Order:** 15060250 Revision 0
**Project:** 2015-1738-Env, Jacobs Engineering, Bldg 400

| Client ID | Additional Info | Sample ID | Matrix | Lead Result | Units | Qualifier | Analyst | Date Analyzed | Analytical Method |
|---|---|---|---|---|---|---|---|---|---|
| 400-CD-01C (White Ceiling Paint) | | 15060250-001A | Paint Chips | < 0.0095 | % | | MD | 06/08/2015 | N7082M |

**Qualifiers:**
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
* - Non-accredited parameter

**STAT** Analysis Corporation
*2242 W. Harrison, Suite 200, Chicago, Illinois 60612* *Phone: (312) 733-0551* *Fax: (312) 733-2386*
*e-mail address: STATinfo@STATAnalysis.com*

Rich Zych

# CHAIN OF CUSTODY RECORD

Page : _____ of _____

Client: HYGIENEERING INC
Street Address: 7575 Plaza Ct
City, State, Zip: Willowbrook IL 60527
Phone: 630-654-7550 cell 630 742-15
Fax: 630 754-3513
e-mail/Alt. Fax: RZych@hygieneering.com
Project Number: 2015-1733-ENV
Project Name: Jacobs Engineering
Project Location: Bldg 400 ~~4 Bld~~
Project Manager: Rich Zych
P.O. Number:

Turn Around: 4 Hrs: ☐ 8 Hrs: ☐ 24 Hrs: ☐ 1 Day: ☐ 2 Days: ☐ 3 Days: ☐ 5 Days: ☒
Date Due: _____ Time Due: _____ Note: Not all turn around times are available for all analysis.

**OFFICE USE ONLY BELOW:**
Batch No.: ~~15060249~~ 15060250
Samples Acceptable: Yes: ☒ No: ☐
Checked by (Initial/Date): W 6/12/15
QC by (Initial/Date):
Reported By (Initial/Date/Time/Method):
Comments:

Relinquished by: [signature] Date/Time: 6/5/15 2:40
Received by: [signature] Date/Time: 6/5/15 14:45
Relinquished by: Date/Time:
Received by: Date/Time:
Relinquished by: Date/Time:
Received by: Date/Time:

| Client Sample Number/Description: | Date Taken | Time On | Time Off | Rate (lpm) | Volume (Liters) | Area Wiped (ft²) | Laboratory Sample No. | Lead Air | Lead Ambient Air | Lead Based Paint | Lead Soil | Lead Drinking Water | Lead Waste Water | Lead Wipe | | TCLP Lead | TCLP RCRA Metals | | Dust NIOSH 500 | Dust NIOSH 600 | | Hexavalent Chromium | | Other: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400-CD-01C (White Ceiling Paint) | 6/2/15 | N/A | N/A | N/A | N/A | N/A | 001 | | | X | | | | | | | | | | | | | | |

Comments: Analyze by FLAA report in % weight CC: Invoice to: Laarta@hygieneering.com
cc: Results to: bkavich; dschneider; rzych@hygieneering.com

AIHA Laboratory Accreditation Programs, LLC

*acknowledges that*

# STAT Analysis Corporation

2242 West Harrison St. Suite 200, Chicago, IL 60612-3501

Laboratory ID: 101160

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

## LABORATORY ACCREDITATION PROGRAMS

| | | |
|---|---|---|
| ✓ | **INDUSTRIAL HYGIENE** | Accreditation Expires: 02/01/2016 |
| ✓ | **ENVIRONMENTAL LEAD** | Accreditation Expires: 02/01/2016 |
| ✓ | **ENVIRONMENTAL MICROBIOLOGY** | Accreditation Expires: 02/01/2016 |
| ☐ | **FOOD** | Accreditation Expires: |
| ☐ | **UNIQUE SCOPES** | Accreditation Expires: |

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

*Larry S. Pierce*
*Chairperson, Analytical Accreditation Board*

*Cheryl O. Morton*
*Managing Director, AIHA Laboratory Accreditation Programs, LLC*

Revision 13: 03/12/2013

Date Issued: 02/28/2014

# AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

**STAT Analysis Corporation**
2242 West Harrison St. Suite 200, Chicago, IL 60612-3501

Laboratory ID: **101160**
Issue Date: 02/28/2014

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

**Industrial Hygiene Laboratory Accreditation Program (IHLAP)**

**Initial Accreditation Date: 08/01/1992**

| IHLAP Scope Category | Field of Testing (FoT) | Technology sub-type/ Detector | Published Reference Method/Title of In-house Method | Method Description or Analyte *(for internal methods only)* |
|---|---|---|---|---|
| Chromatography Core | Gas Chromatography | GC/FID | NIOSH 1400 | |
| | | | NIOSH 1500 | |
| | | | NIOSH 1501 | |
| | | | NIOSH 2000 | |
| | | | NIOSH 5503 | |
| | | | OSHA 07 | |
| | | GC/ECD | NIOSH 1400 | |
| | | | NIOSH 1500 | |
| | | | NIOSH 1501 | |
| | | | NIOSH 2000 | |
| | | | NIOSH 5503 | |
| | | | OSHA 07 | |
| | GC/MS | | NIOSH 5515 | |
| Spectrometry Core | Atomic Absorption | CVAA | NIOSH 6009 | |
| | | FAA | NIOSH 7082 | |
| | Inductively-Coupled Plasma | ICP/MS | NIOSH 7300 | |
| Asbestos/Fiber Microscopy Core | Phase Contrast Microscopy (PCM) | | NIOSH 7400 | |

A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

# AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

**STAT Analysis Corporation**
2242 West Harrison St. Suite 200, Chicago, IL 60612-3501

Laboratory ID: **101160**
Issue Date: 02/28/2014

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

The EPA recognizes the AIHA-LAP, LLC ELLAP program as meeting the requirements of the National Lead Laboratory Accreditation Program (NLLAP) established under Title X of the Residential Lead-Based Paint Hazard Reduction Act of 1992 and includes paint, soil and dust wipe analysis. Air analysis is not included as part of the NLLAP.

## Environmental Lead Laboratory Accreditation Program (ELLAP)

## Initial Accreditation Date: 03/09/1998

| Field of Testing (FoT) | Method | Method Description *(for internal methods only)* |
|---|---|---|
| Paint | EPA SW-846 7420 | |
| | NIOSH 7082 | |
| Soil | NIOSH 7082 | |
| Settled Dust by Wipe | NIOSH 7082 | |
| Airborne Dust | NIOSH 7082 | |

A complete listing of currently accredited Environmental Lead laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

# AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

**STAT Analysis Corporation**
2242 West Harrison St. Suite 200, Chicago, IL 60612-3501

Laboratory ID: **101160**
Issue Date: 02/28/2014

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

## Environmental Microbiology Laboratory Accreditation Program (EMLAP)

## Initial Accreditation Date: 04/01/2004

| EMLAP Category | Field of Testing (FoT) | Method | Method Description *(for internal methods only)* |
|---|---|---|---|
| Fungal | Air - Culturable | SOP 6110 | In-house: Analysis of Non-Culturable Air Samples |
| | | SOP 6120 | In-House: Analysis of Culturable Microbiological Air Samples |
| | Bulk - Culturable | SOP 6220 | In-House: Analysis of Culturable Microbiological Swab and Bulk Samples |
| | Surface - Culturable | SOP 6220 | In-House: Analysis of Culturable Microbiological Swab and Bulk Samples |
| | Air - Direct Examination | SOP 6110 | In-house: Analysis of Non-Culturable Air Samples |
| | Bulk - Direct Examination | SOP 6210 | In-House: Analysis of Non-Culturable Microbiological Samples by Direct Examination. |
| | Surface - Direct Examination | SOP 6210 | In House: Analysis of Non-Culturable Microbiological Samples by Direct Examination. |

A complete listing of currently accredited Environmental Microbiology laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899

May 8, 2014

Dr. Lory Littlefield
HI-TEK Environmental, Inc. dba.
STAT Analysis Corporation
2242 W. Harrison
Chicago, IL 60612

NVLAP Lab Code: 101202-0

Dear Dr. Littlefield:

I am pleased to inform you that continuing accreditation for specific test methods in Bulk Asbestos Fiber Analysis (PLM) is granted to your organization under the National Voluntary Laboratory Accreditation Program (NVLAP). This accreditation is effective until June 30, 2015, provided that your organization continues to comply with accreditation requirements contained in the NVLAP Procedures.

Your Certificate of Accreditation is enclosed along with a statement of your Scope of Accreditation. You may reproduce these documents in their entirety and announce your organization's accreditation status using the NVLAP symbol and/or term in business publications, the trade press, and other business-oriented literature. Accreditation does not relieve your organization from observing and complying with any applicable existing laws and/or regulations.

We are pleased to have you participate in NVLAP and look forward to your continued association with this program. If you have any questions concerning your NVLAP accreditation, please direct them to Hazel M. Richmond, Program Manager, Laboratory Accreditation Program, National Institute of Standards and Technology, 100 Bureau Dr. Stop 2140, Gaithersburg, MD 20899-2140; (301) 975-4016.

Sincerely,

Warren R. Merkel, Chief
Laboratory Accreditation Program

Enclosure(s)

National Voluntary Laboratory Accreditation Program

# SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005


**STAT Analysis Corporation**
STAT Analysis Corporation
2242 W. Harrison
Chicago, IL 60612
Dr. Lory Littlefield
Phone: 312-733-0551 Fax: 312-733-2386
E-Mail: LLittlefield@STATAnalysis.com
URL: http://www.STATAnalysis.com


**BULK ASBESTOS FIBER ANALYSIS (PLM)** **NVLAP LAB CODE 101202-0**

| *NVLAP Code* | *Designation / Description* |
|---|---|
| 18/A01 | EPA 600/M4-82-020: Interim Method for 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 |

2014-07-01 through 2015-06-30

*Effective dates*

*For the National Institute of Standards and Technology*

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

# Certificate of Accreditation to ISO/IEC 17025:2005

**NVLAP LAB CODE: 101202-0**

## STAT Analysis Corporation

Chicago, IL

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:*

## BULK 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).*

2014-07-01 through 2015-06-30

*Effective dates*

DEPARTMENT OF COMMERCE ★ UNITED STATES OF AMERICA ★

*For the National Institute of Standards and Technology*

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899

May 8, 2014

Dr. Lory Littlefield
HI-TEK Environmental, Inc. dba.
STAT Analysis Corporation
2242 W. Harrison
Chicago, IL 60612

NVLAP Lab Code: 101202-0

Dear Dr. Littlefield:

I am pleased to inform you that continuing accreditation for specific test methods in Airborne Asbestos Fiber Analysis (TEM) is granted to your organization under the National Voluntary Laboratory Accreditation Program (NVLAP). This accreditation is effective until June 30, 2015, provided that your organization continues to comply with accreditation requirements contained in the NVLAP Procedures.

Your Certificate of Accreditation is enclosed along with a statement of your Scope of Accreditation. You may reproduce these documents in their entirety and announce your organization's accreditation status using the NVLAP symbol and/or term in business publications, the trade press, and other business-oriented literature. Accreditation does not relieve your organization from observing and complying with any applicable existing laws and/or regulations.

We are pleased to have you participate in NVLAP and look forward to your continued association with this program. If you have any questions concerning your NVLAP accreditation, please direct them to Hazel M. Richmond, Program Manager, Laboratory Accreditation Program, National Institute of Standards and Technology, 100 Bureau Dr. Stop 2140, Gaithersburg, MD 20899-2140; (301) 975-4016.

Sincerely,

Warren R. Merkel, Chief
Laboratory Accreditation Program

Enclosure(s)

National Voluntary
Laboratory Accreditation Program

# SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

**STAT Analysis Corporation**
STAT Analysis Corporation
2242 W. Harrison
Chicago, IL 60612
Dr. Lory Littlefield
Phone: 312-733-0551 Fax: 312-733-2386
E-Mail: LLittlefield@STATAnalysis.com
URL: http://www.STATAnalysis.com

**AIRBORNE ASBESTOS FIBER ANALYSIS (TEM)** **NVLAP LAB CODE 101202-0**

| *NVLAP Code* | *Designation / 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. |

2014-07-01 through 2015-06-30

*Effective dates*

*For the National Institute of Standards and Technology*

United States Department of Commerce
National Institute of Standards and Technology

# Certificate of Accreditation to ISO/IEC 17025:2005

**NVLAP LAB CODE: 101202-0**

## STAT Analysis Corporation

Chicago, IL

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:*

## AIRBORNE 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).*

2014-07-01 through 2015-06-30

*Effective dates*

*For the National Institute of Standards and Technology*

AIHA Laboratory Accreditation Programs, LLC

*acknowledges that*

# EMSL Analytical, Inc

2225 West Hubbard Street, Chicago, IL 60612

Laboratory ID: 102992

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

## LABORATORY ACCREDITATION PROGRAMS

| | | |
|---|---|---|
| ☐ | **INDUSTRIAL HYGIENE** | Accreditation Expires: |
| ✓ | **ENVIRONMENTAL LEAD** | Accreditation Expires: 09/01/2016 |
| ✓ | **ENVIRONMENTAL MICROBIOLOGY** | Accreditation Expires: 09/01/2016 |
| ☐ | **FOOD** | Accreditation Expires: |
| ☐ | **UNIQUE SCOPES** | Accreditation Expires: |

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

*Gerald Schultz, CIH*
*Chairperson, Analytical Accreditation Board*

*Cheryl O. Morton*
*Managing Director, AIHA Laboratory Accreditation Programs, LLC*

Revision 14: 03/26/2014

Date Issued: 07/31/2014

# AIHA Laboratory Accreditation Programs, LLC

## SCOPE OF ACCREDITATION

**EMSL Analytical, Inc**
2225 West Hubbard Street, Chicago, IL 60612

Laboratory ID: 102992
Issue Date: 07/31/2014

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

### Environmental Microbiology Laboratory Accreditation Program (EMLAP)

### Initial Accreditation Date: 12/01/2004

| EMLAP Category | Field of Testing (FoT) | Method | Method Description (*for internal methods only*) |
|---|---|---|---|
| **Fungal** | Air - Direct Examination | 05-TP-003.5 | Standard Operating Procedure for the Analysis of Airborne Fungal Spores, Hyphal Fragments, Pollen, Insect Fragments, Skin Fragments and Fibrous Particulate by Optical Microscopy of Spore Trap Samples |
| | Bulk - Direct Examination | M041 | Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Material from Surface Samples |
| | Surface - Direct Examination | M041 | Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Material from Surface Samples |

A complete listing of currently accredited Environmental Microbiology laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

National Voluntary
Laboratory Accreditation Program

# SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

**EMSL Analytical Inc.**
2225 West Hubbard Street
Chicago, IL 60612
Mr. James Hahn
Phone: 773-313-0099 Fax: 773-313-0139
E-Mail: jhahn@emsl.com
URL: http://www.emsl.com

**AIRBORNE ASBESTOS FIBER ANALYSIS (TEM)** **NVLAP LAB CODE 200399-0**

| *NVLAP Code* | *Designation / 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. |

2015-04-01 through 2016-03-31

*Effective dates*

*For the National Institute of Standards and Technology*



NVLAP-01S (REV. 2005-05-19)

United States Department of Commerce
National Institute of Standards and Technology

# Certificate of Accreditation to ISO/IEC 17025:2005

**NVLAP LAB CODE: 200399-0**

## EMSL Analytical Inc.

Chicago, IL

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:*

## AIRBORNE 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).*

2015-04-01 through 2016-03-31

*Effective dates*

*For the National Institute of Standards and Technology*

National Voluntary Laboratory Accreditation Program

# SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

**EMSL Analytical Inc.**
2225 West Hubbard Street
Chicago, IL 60612
Mr. James Hahn
Phone: 773-313-0099 Fax: 773-313-0139
E-Mail: jhahn@emsl.com
URL: http://www.emsl.com

**BULK ASBESTOS FIBER ANALYSIS (PLM)** **NVLAP LAB CODE 200399-0**

| *NVLAP Code* | *Designation / Description* |
|---|---|
| 18/A01 | EPA 600/M4-82-020: Interim Method for 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 |

2015-04-01 through 2016-03-31

*Effective dates*

*For the National Institute of Standards and Technology*



NVLAP-01S (REV. 2005-05-19)

United States Department of Commerce
National Institute of Standards and Technology

# Certificate of Accreditation to ISO/IEC 17025:2005

**NVLAP LAB CODE: 200399-0**

## EMSL Analytical Inc.

Chicago, IL

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:*

## BULK 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).*

2015-04-01 through 2016-03-31

*Effective dates*

*For the National Institute of Standards and Technology*

2015

# OCCUPATIONAL TRAINING & SUPPLY, INC.

7233 S. Adams Street ♦ Willowbrook, IL 60527 ♦ (630) 655-3900

# Asbestos Building Inspector Refresher

Occupational Training & Supply, Inc. certifies that

## Richard Zych

has successfully completed the Asbestos Building Inspector Refresher course and has passed the competency exam with a minimum score of 70%. The course is accredited by the Illinois Department of Public Health and Indiana Department of Environmental Management for purposes of accreditation in accordance with EPA 40 CFR 763, Asbestos Hazard Emergency response Act (AHERA) and TSCA Title II.

Course Date: 1/9/2015

Exam Date: 1/9/2015

Expiration Date: 1/9/2016

Certificate Number: BIR1501090079

Kathy DeSalvo

Kathy DeSalvo, Director

# Occupational Training & Supply, Inc.

7233 Adams Street • Willowbrook, IL 60527 • (630) 655-3900

# Lead Risk Assessor Refresher

Occupational Training and Supply, Inc. certifies that

## Richard J. Zych

**has successfully completed the 8 hour Lead Risk Assessor Refresher course**
and has passed the competency exam with a minimum score of 70%. This course is accredited by the Illinois Department of Public Health in accordance with the Illinois Lead Poisoning Prevention Code.

*Certificate: LRAR1209281664*

*Exam Date: 9/28/2012*

*Course Date: 9/28/2012*

*Expiration Date: 9/28/2015*

Kathy DeSalvo

*Kathy DeSalvo, Director*

2012

ILLINOIS DEPARTMENT OF PUBLIC HEALTH

IDPH

PROTECTING HEALTH. IMPROVING LIVES.

# ASBESTOS PROFESSIONAL LICENSE

| ID NUMBER | ISSUED | EXPIRES |
|---|---|---|
| 100 - 09339 | 3/10/2015 | 05/15/2016 |

RICHARD J ZYCH
3704 SARATOGA DRIVE
JOLIET, IL 60435

Environmental Health

| ENDORSEMENTS | TC EXPIRES |
|---|---|
| INSPECTOR | 1/9/2016 |
| PROJECT MANAGER<br>AIR SAMPLING PROFESSIONAL | 9/6/2015 |

**Alteration of this license shall result in legal action**
This license issued under authority of the State of Illinois Department of Public Health
This license is valid only when accompanied by a valid training course certificate.

# Part 6 Attachments

Building 1326 Documents

THIS

PAGE

NOT

USED

4/30/2015 Great Lakes N.T.C. 9:02 AM

Panel Point Log Report

Selected Points: B400*

Selected Panels: *

Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B400.EF2:DAY.NGT | 013 1 12 29 | ( ) | DAY | | *F* | NONE |
| B400.EF2:ROOM TEMP | 013 1 12 04 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.EF3:DAY.NGT | 013 1 14 29 | ( ) | DAY | | -N- | NONE |
| B400.EF3:ROOM TEMP | 013 1 14 04 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.EF4:DAY.NGT | 013 1 13 29 | ( ) | DAY | | -N- | NONE |
| B400.EF4:ROOM TEMP | 013 1 13 04 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.EFAN2 | 013 1 12 41 | (EFAN BARBER SHOP) | ON | | *F* | OVRD |
| B400.EFAN3 | 013 1 14 41 | (EFAN BATHROOMS ) | ON | | *A3* | OVRD |
| B400.EFAN4 | 013 1 13 41 | (EFAN OFFICE AREA) | ON | | *A3* | OVRD |
| B400.FLNC13B | -Virtual- | (BATTERY ALRM ) | OFF | | -N- | NONE |
| B400.FLNC13F | -Virtual- | (POWER FAILS ) | 91 | | -N- | NONE |
| B400.RH1:CLG STG 1 | 013 1 07 41 | ( ) | OFF | | -N- | NONE |
| B400.RH1:CLG STG 2 | 013 1 07 42 | ( ) | OFF | | -N- | NONE |
| B400.RH1:CTL STPT | 013 1 07 92 | ( ) | 71.00 | DEG F | -N- | NONE |
| B400.RH1:CTL TEMP | 013 1 07 78 | ( ) | 72.75 | DEG F | -N- | NONE |
| B400.RH1:DAY CLG STPT | 013 1 07 06 | ( ) | 71.00 | DEG F | -N- | NONE |
| B400.RH1:DAY HTG STPT | 013 1 07 07 | ( ) | 71.00 | DEG F | -N- | NONE |
| B400.RH1:DAY.NGT | 013 1 07 29 | ( ) | DAY | | -N- | OVRD |
| B400.RH1:DI 2 | 013 1 07 24 | ( ) | OFF | | -N- | NONE |
| B400.RH1:FAN | 013 1 07 46 | ( ) | ON | | -N- | NONE |
| B400.RH1:HEAT.COOL | 013 1 07 05 | ( ) | HEAT | | -N- | OVRD |
| B400.RH1:HTG STG 1 | 013 1 07 43 | ( ) | OFF | | -N- | NONE |
| B400.RH1:HTG STG 2 | 013 1 07 44 | ( ) | OFF | | -N- | NONE |
| B400.RH1:HTG STG 3 | 013 1 07 45 | ( ) | OFF | | -N- | NONE |
| B400.RH1:ROOM TEMP | 013 1 07 04 | ( ) | 72.75 | DEG F | -N- | NONE |
| B400.RH2:CLG STG 1 | 013 1 08 41 | ( ) | OFF | | -N- | NONE |
| B400.RH2:CLG STG 2 | 013 1 08 42 | ( ) | OFF | | -N- | NONE |
| B400.RH2:CTL STPT | 013 1 08 92 | ( ) | 71.00 | DEG F | -N- | NONE |
| B400.RH2:CTL TEMP | 013 1 08 78 | ( ) | 62.25 | DEG F | -N- | NONE |
| B400.RH2:DAY CLG STPT | 013 1 08 06 | ( ) | 71.00 | DEG F | -N- | NONE |
| B400.RH2:DAY HTG STPT | 013 1 08 07 | ( ) | 71.00 | DEG F | -N- | NONE |
| B400.RH2:DAY.NGT | 013 1 08 29 | ( ) | DAY | | -N- | OVRD |
| B400.RH2:DI 2 | 013 1 08 24 | ( ) | OFF | | -N- | NONE |
| B400.RH2:FAN | 013 1 08 46 | ( ) | ON | | -N- | NONE |
| B400.RH2:HEAT.COOL | 013 1 08 05 | ( ) | HEAT | | -N- | NONE |
| B400.RH2:HTG STG 1 | 013 1 08 43 | ( ) | ON | | -N- | NONE |
| B400.RH2:HTG STG 2 | 013 1 08 44 | ( ) | OFF | | -N- | NONE |
| B400.RH2:HTG STG 3 | 013 1 08 45 | ( ) | OFF | | -N- | NONE |
| B400.RH2:ROOM TEMP | 013 1 08 04 | ( ) | 62.25 | DEG F | -N- | NONE |
| B400.RH3:CLG STG 1 | 013 1 09 41 | ( ) | OFF | | *F* | NONE |

4/30/2015 Great Lakes N.T.C. 9:02 AM

Panel Point Log Report

Selected Points: B400*

Selected Panels: *

Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B400.RH3:CLG STG 2 | 013 1 09 42 | ( ) | OFF | | *F* | NONE |
| B400.RH3:CTL STPT | 013 1 09 92 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.RH3:CTL TEMP | 013 1 09 78 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.RH3:DAY CLG STPT | 013 1 09 06 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.RH3:DAY HTG STPT | 013 1 09 07 | ( ) | 70.00 | DEG F | *F* | NONE |
| B400.RH3:DAY.NGT | 013 1 09 29 | ( ) | DAY | | *F* | OVRD |
| B400.RH3:DI 2 | 013 1 09 24 | ( ) | OFF | | *F* | NONE |
| B400.RH3:FAN | 013 1 09 46 | ( ) | OFF | | *F* | NONE |
| B400.RH3:HEAT.COOL | 013 1 09 05 | ( ) | COOL | | *F* | NONE |
| B400.RH3:HTG STG 1 | 013 1 09 43 | ( ) | OFF | | *F* | NONE |
| B400.RH3:HTG STG 2 | 013 1 09 44 | ( ) | OFF | | *F* | NONE |
| B400.RH3:HTG STG 3 | 013 1 09 45 | ( ) | OFF | | *F* | NONE |
| B400.RH3:ROOM TEMP | 013 1 09 04 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.RH4:CLG STG 1 | 013 1 10 41 | ( ) | OFF | | -N- | NONE |
| B400.RH4:CLG STG 2 | 013 1 10 42 | ( ) | OFF | | -N- | NONE |
| B400.RH4:CTL STPT | 013 1 10 92 | ( ) | 71.00 | DEG F | -N- | NONE |
| B400.RH4:CTL TEMP | 013 1 10 78 | ( ) | 66.00 | DEG F | -N- | NONE |
| B400.RH4:DAY CLG STPT | 013 1 10 06 | ( ) | 71.00 | DEG F | -N- | NONE |
| B400.RH4:DAY HTG STPT | 013 1 10 07 | ( ) | 71.00 | DEG F | -N- | NONE |
| B400.RH4:DAY.NGT | 013 1 10 29 | ( ) | DAY | | -N- | OVRD |
| B400.RH4:DI 2 | 013 1 10 24 | ( ) | OFF | | -N- | NONE |
| B400.RH4:FAN | 013 1 10 46 | ( ) | ON | | -N- | NONE |
| B400.RH4:HEAT.COOL | 013 1 10 05 | ( ) | HEAT | | -N- | NONE |
| B400.RH4:HTG STG 1 | 013 1 10 43 | ( ) | ON | | -N- | NONE |
| B400.RH4:HTG STG 2 | 013 1 10 44 | ( ) | OFF | | -N- | NONE |
| B400.RH4:HTG STG 3 | 013 1 10 45 | ( ) | OFF | | -N- | NONE |
| B400.RH4:ROOM TEMP | 013 1 10 04 | ( ) | 66.00 | DEG F | -N- | NONE |
| B400.RTU.OCC.MODE:MODE | -Virtual- | ( ) | OCC1 | | -N- | NONE |
| B400.RTU.OCC.MODE:OA TEN | -Virtual- | ( ) | 0.00 | deg F | -N- | NONE |
| B400.RTU.OCC.MODE:OA TEN | -Virtual- | ( ) | 32.00 | deg F | -N- | NONE |
| B400.RTU.OCC.MODE:OCC CL | -Virtual- | ( ) | 78.80 | deg F | -N- | NONE |
| B400.RTU.OCC.MODE:OCC HT | -Virtual- | ( ) | 68.00 | deg F | -N- | NONE |
| B400.RTU.OCC.MODE:TEMP D | -Virtual- | ( ) | 0.00 | deg F | -N- | NONE |
| B400.RTU.OCC.MODE:TIME D | -Virtual- | ( ) | 0.00 | min | -N- | NONE |
| B400.RTU.OCC.MODE:VAC CL | -Virtual- | ( ) | 86.00 | deg F | -N- | NONE |
| B400.RTU.OCC.MODE:VAC HT | -Virtual- | ( ) | 53.60 | deg F | -N- | NONE |
| B400.RTU.OCC.MODE:ZN TEN | -Virtual- | ( ) | 32.00 | deg F | -N- | NONE |
| B400.RTU.OCC:MODE | -Virtual- | ( ) | OCC1 | | -N- | NONE |
| B400.RTU.OCC:OA TEMP | -Virtual- | ( ) | 0.00 | deg F | -N- | NONE |
| B400.RTU.OCC:OA TEMP STO | -Virtual- | ( ) | 32.00 | deg F | -N- | NONE |

4/30/2015 Great Lakes N.T.C. 9:02 AM

Panel Point Log Report

Selected Points: B400*

Selected Panels: *

Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B400.RTU.OCC:OCC CLG STPT | -Virtual- | ( ) | 78.80 | deg F | -N- | NONE |
| B400.RTU.OCC:OCC HTG STPT | -Virtual- | ( ) | 68.00 | deg F | -N- | NONE |
| B400.RTU.OCC:TEMP DV STOI | -Virtual- | ( ) | 0.00 | deg F | -N- | NONE |
| B400.RTU.OCC:TIME DV STOP | -Virtual- | ( ) | 0.00 | min | -N- | NONE |
| B400.RTU.OCC:VAC CLG STPT | -Virtual- | ( ) | 86.00 | deg F | -N- | NONE |
| B400.RTU.OCC:VAC HTG STPT | -Virtual- | ( ) | 53.60 | deg F | -N- | NONE |
| B400.RTU.OCC:ZN TEMP | -Virtual- | ( ) | 32.00 | deg F | -N- | NONE |
| B400.RTU1:CLG CMP 1 | 013 1 01 46 | ( ) | OFF | | *F* | NONE |
| B400.RTU1:CLG CMP 2 | 013 1 01 47 | ( ) | OFF | | *F* | NONE |
| B400.RTU1:CTL TEMP | 013 1 01 78 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.RTU1:DAY CLG STPT | 013 1 01 06 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.RTU1:DAY.NGT | 013 1 01 29 | ( ) | DAY | | *F* | OVRD |
| B400.RTU1:DMPR COMD | 013 1 01 48 | ( ) | 0.00 | PCT | *F* | NONE |
| B400.RTU1:DMPR POS | 013 1 01 49 | ( ) | 0.00 | PCT | *F* | NONE |
| B400.RTU1:FAN | 013 1 01 50 | ( ) | OFF | | *F* | NONE |
| B400.RTU1:HEAT.COOL | 013 1 01 05 | ( ) | COOL | | *F* | NONE |
| B400.RTU1:HTG CMP 1 | 013 1 01 44 | ( ) | OFF | | *F* | NONE |
| B400.RTU1:HTG CMP 2 | 013 1 01 45 | ( ) | OFF | | *F* | NONE |
| B400.RTU1:ROOM TEMP | 013 1 01 04 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.RTU1SAF | 013 1 01 50 | (RTU SAF ) | ON | | *F* | NONE |
| B400.RTU2:CLG CMP 1 | 013 1 02 46 | ( ) | OFF | | *F* | NONE |
| B400.RTU2:CLG CMP 2 | 013 1 02 47 | ( ) | OFF | | *F* | NONE |
| B400.RTU2:CTL TEMP | 013 1 02 78 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.RTU2:DAY CLG STPT | 013 1 02 06 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.RTU2:DAY.NGT | 013 1 02 29 | ( ) | DAY | | *F* | OVRD |
| B400.RTU2:DMPR COMD | 013 1 02 48 | ( ) | 0.00 | PCT | *F* | NONE |
| B400.RTU2:DMPR POS | 013 1 02 49 | ( ) | 0.00 | PCT | *F* | NONE |
| B400.RTU2:FAN | 013 1 02 50 | ( ) | OFF | | *F* | NONE |
| B400.RTU2:HEAT.COOL | 013 1 02 05 | ( ) | COOL | | *F* | NONE |
| B400.RTU2:HTG CMP 1 | 013 1 02 44 | ( ) | OFF | | *F* | NONE |
| B400.RTU2:HTG CMP 2 | 013 1 02 45 | ( ) | OFF | | *F* | NONE |
| B400.RTU2:ROOM TEMP | 013 1 02 04 | ( ) | 74.00 | DEG F | *F* | NONE |
| B400.RTU2SAF | 013 1 02 50 | (RTU SAF ) | ON | | *F* | NONE |
| B400.RTU3:CLG CMP 1 | 013 1 03 46 | ( ) | OFF | | *F* | BN15 |
| B400.RTU3:CLG CMP 2 | 013 1 03 47 | ( ) | OFF | | *F* | BN15 |
| B400.RTU3:CTL TEMP | 013 1 03 78 | ( ) | 74.00 | DEG F | *F* | BN15 |
| B400.RTU3:DAY CLG STPT | 013 1 03 06 | ( ) | 74.00 | DEG F | *F* | BN15 |
| B400.RTU3:DAY.NGT | 013 1 03 29 | ( ) | DAY | | *F* | OVRD |
| B400.RTU3:DMPR COMD | 013 1 03 48 | ( ) | 0.00 | PCT | *F* | BN15 |
| B400.RTU3:DMPR POS | 013 1 03 49 | ( ) | 0.00 | PCT | *F* | BN15 |

4/30/2015 Great Lakes N.T.C. 9:02 AM

Panel Point Log Report

Selected Points: B400*

Selected Panels: *

Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B400.RTU3:FAN | 013 1 03 50 | ( ) | OFF | | *F* | BN15 |
| B400.RTU3:HEAT.COOL | 013 1 03 05 | ( ) | COOL | | *F* | BN15 |
| B400.RTU3:HTG CMP 1 | 013 1 03 44 | ( ) | OFF | | *F* | BN15 |
| B400.RTU3:HTG CMP 2 | 013 1 03 45 | ( ) | OFF | | *F* | BN15 |
| B400.RTU3:ROOM TEMP | 013 1 03 04 | ( ) | 74.00 | DEG F | *F* | BN15 |
| B400.RTU3SAF | 013 1 03 50 | (RTU SAF ) | ON | | *F* | NONE |
| B400.RTU4:CLG CMP 1 | 013 1 04 46 | ( ) | OFF | | -N- | NONE |
| B400.RTU4:CLG CMP 2 | 013 1 04 47 | ( ) | OFF | | -N- | NONE |
| B400.RTU4:CTL TEMP | 013 1 04 78 | ( ) | 66.75 | DEG F | -N- | NONE |
| B400.RTU4:DAY CLG STPT | 013 1 04 06 | ( ) | 71.00 | DEG F | -N- | NONE |
| B400.RTU4:DAY.NGT | 013 1 04 29 | ( ) | DAY | | -N- | OVRD |
| B400.RTU4:DMPR COMD | 013 1 04 48 | ( ) | 14.80 | PCT | -N- | NONE |
| B400.RTU4:DMPR POS | 013 1 04 49 | ( ) | 0.00 | PCT | -N- | NONE |
| B400.RTU4:FAN | 013 1 04 50 | ( ) | ON | | -N- | NONE |
| B400.RTU4:HEAT.COOL | 013 1 04 05 | ( ) | HEAT | | -N- | NONE |
| B400.RTU4:HTG CMP 1 | 013 1 04 44 | ( ) | OFF | | -N- | NONE |
| B400.RTU4:HTG CMP 2 | 013 1 04 45 | ( ) | OFF | | -N- | NONE |
| B400.RTU4:ROOM TEMP | 013 1 04 04 | ( ) | 66.75 | DEG F | -N- | NONE |
| B400.RTU4SAF | 013 1 04 50 | (RTU SAF ) | ON | | -N- | NONE |
| B400.RTU5:CLG CMP 1 | 013 1 05 46 | ( ) | OFF | | -N- | NONE |
| B400.RTU5:CLG CMP 2 | 013 1 05 47 | ( ) | OFF | | -N- | NONE |
| B400.RTU5:CTL TEMP | 013 1 05 78 | ( ) | 68.75 | DEG F | -N- | NONE |
| B400.RTU5:DAY CLG STPT | 013 1 05 06 | ( ) | 71.00 | DEG F | -N- | NONE |
| B400.RTU5:DAY.NGT | 013 1 05 29 | ( ) | DAY | | -N- | OVRD |
| B400.RTU5:DMPR COMD | 013 1 05 48 | ( ) | 14.80 | PCT | -N- | NONE |
| B400.RTU5:DMPR POS | 013 1 05 49 | ( ) | 0.00 | PCT | -N- | NONE |
| B400.RTU5:FAN | 013 1 05 50 | ( ) | ON | | -N- | NONE |
| B400.RTU5:HEAT.COOL | 013 1 05 05 | ( ) | COOL | | -N- | OVRD |
| B400.RTU5:HTG CMP 1 | 013 1 05 44 | ( ) | OFF | | -N- | NONE |
| B400.RTU5:HTG CMP 2 | 013 1 05 45 | ( ) | OFF | | -N- | NONE |
| B400.RTU5:ROOM TEMP | 013 1 05 04 | ( ) | 68.75 | DEG F | -N- | NONE |
| B400.RTU5SAF | 013 1 05 50 | (RTU SAF ) | ON | | -N- | NONE |
| B400.RTU6:CLG CMP 1 | 013 1 06 46 | ( ) | OFF | | -N- | NONE |
| B400.RTU6:CLG CMP 2 | 013 1 06 47 | ( ) | OFF | | -N- | NONE |
| B400.RTU6:CTL TEMP | 013 1 06 78 | ( ) | 70.75 | DEG F | -N- | NONE |
| B400.RTU6:DAY CLG STPT | 013 1 06 06 | ( ) | 71.00 | DEG F | -N- | NONE |
| B400.RTU6:DAY.NGT | 013 1 06 29 | ( ) | DAY | | -N- | OVRD |
| B400.RTU6:DMPR COMD | 013 1 06 48 | ( ) | 25.20 | PCT | -N- | NONE |
| B400.RTU6:DMPR POS | 013 1 06 49 | ( ) | 0.00 | PCT | -N- | NONE |
| B400.RTU6:FAN | 013 1 06 50 | ( ) | ON | | -N- | NONE |

4/30/2015 Great Lakes N.T.C. 9:02 AM

Panel Point Log Report

Selected Points: B400*

Selected Panels: *

Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B400.RTU6:HEAT.COOL | 013 1 06 05 | ( ) | COOL | | -N- | OVRD |
| B400.RTU6:HTG CMP 1 | 013 1 06 44 | ( ) | OFF | | -N- | NONE |
| B400.RTU6:HTG CMP 2 | 013 1 06 45 | ( ) | OFF | | -N- | NONE |
| B400.RTU6:ROOM TEMP | 013 1 06 04 | ( ) | 70.75 | DEG F | -N- | NONE |
| B400.RTU6SAF | 013 1 06 50 | (RTU SAF ) | ON | | -N- | NONE |

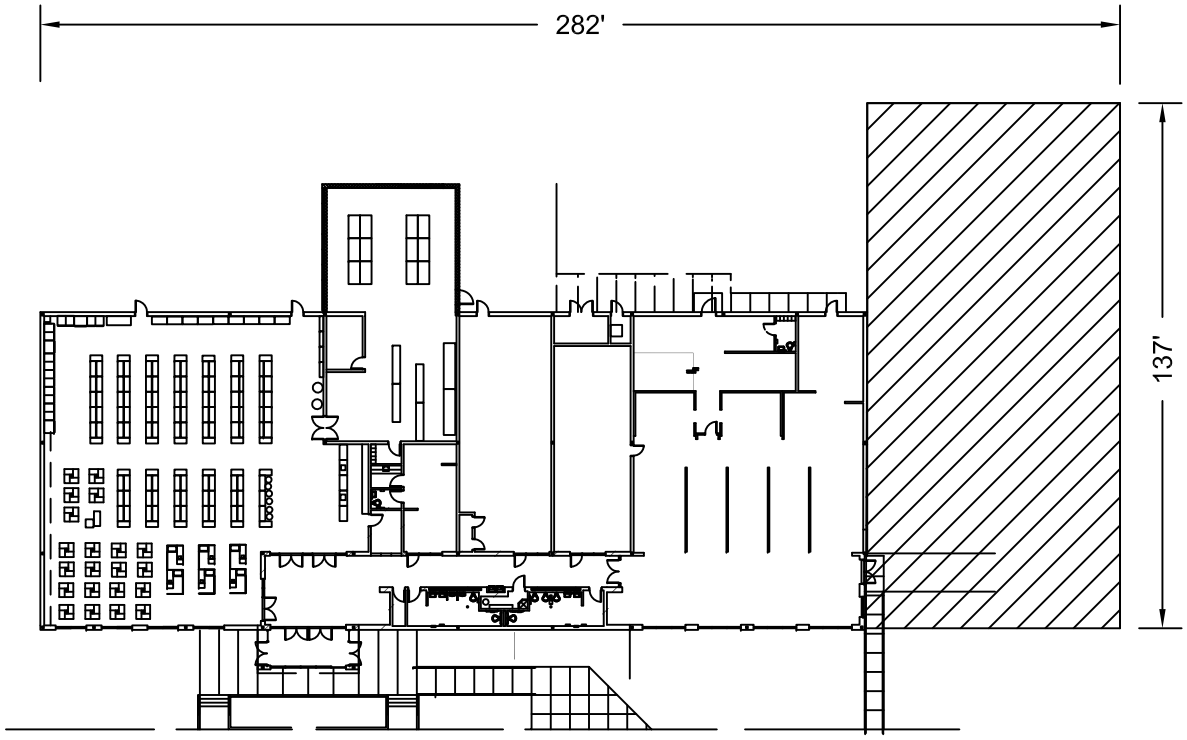
UTILIZATION

TOTAL FACILITY: 28,795 SF

TOTAL 1ST FLOOR: 28,795 SF

N0763A 74054 = 9,355SF

N39224 74009 = 19,440 SF




NOT TO SCALE

| FACILITY NUMBER: | | INSTALLATION: | UIC: | SITE: |
|---|---|---|---|---|
| 1326 | NAVFAC Naval Facilities Engineering Command | NAVAL STATION GREAT LAKES IL | N00128 | GREAT LAKES MAIN SITE |

# CLASS 2 PROPERTY RECORD

**FACILITY NAME** RECRUIT NEX AND RECREATION

**FACILITY NUMBER** 1326

**REPORT DATE 22 AUG 2013**

| | | | | | |
|---|---|---|---|---|---|
| **INSTALLATION UIC** | N00128 | GREAT LAKES NAVAL STATION | **REAL PROPERTY UNIQUE ID** | | 89597 |
| **FACILITY ID** | NFA100000666745 | | **LAST UPDATED** | | 22 AUG 2013 |
| **INSTAL MGMT CLMT** | N00052 | CNI | **PROPERTY RECORD NO** | | 203428 |
| **MANPOWER BSO** | | | **FACILITY TYPE** | 2 | BUILDING |
| **OPERATIONAL STATUS** | ACT | Active | **ACTION TYPE** | 2 | CAP IMP |
| **SPECIAL AREA** | CP | GL CAMP PORTER | **FAMILY HOUSING INDICATOR** | | N |

## LOCATION

| | | |
|---|---|---|
| **REGION** | N61040 | CNR MIDWEST |
| **COUNTRY** | USA | UNITED STATES |
| **STATE** | 17 | ILLINOIS |
| **COUNTY** | 097 | LAKE |
| **CITY** | 3595 | GREAT LAKES |
| **MAP GRID** | R18 | |
| **STREET ADDRESS** | 3010 ILLINOIS ST | |

## DISPOSAL

**CONSOLIDATED PROPERTY NO**

**DISPOSAL METHOD CODE**

**DISPOSAL COMPLETION DATE**

**DISPOSAL CONTRACT NO**

**EXCESS DECLARATION DATE**

**SURPLUS DETERMINATION DATE**

## ACQUISITION

| | | | | |
|---|---|---|---|---|
| **ESTATE CODE** | 13 | OTHER MIL | **ACQUISITION DATE** | 16 AUG 1996 |
| **INTEREST TYPE** | FEE | U.S. Government owned property | **GOVERNMENT COST** | $ 4,229,288 |
| **LAND CCN** | 91140 | LAND - CONDEMNATION | | |
| **ACQ CONTRACT NO** | N6246796C0758 | | | |

## MAINTENANCE

| | | |
|---|---|---|
| **PREPONDERANT USER** | N39224 | NEX GREAT LAKES IL |
| **PRIME USE CAT CODE** | 74009 | EXCHANGE SERVICE OUTLETS |
| **PRIME FAC CODE** | 7346 | EXCHANGE SALES FACILITY |
| **MNT FUND SOURCE CODE** | A | O&M, N |
| **MNT RESPONSIBILITY UIC** | N00128 | GREAT LAKES NAVAL STATION |
| **ASSET EVALUATION DATE** | 11 JUN 2010 | |
| **CURRENT PRV** | $ 8,022,257 | |
| **PRV AT EOY 12** | $ 8,022,257 | |

| MEASUREMENTS | ENGLISH | METRIC |
|---|---|---|
| **LENGTH** | 282.00 | 85.95 |
| **WIDTH** | 165.00 | 50.29 |
| **HEIGHT** | 20.00 | 6.10 |
| **AREA** | 28,795.00 | 2,675.14 |
| **AREA UM** | SF | M2 |

| | |
|---|---|
| **FLOOR ABOVE GROUND QUANTITY** | 1 |
| **FLOOR BELOW GROUND QUANTITY** | 0 |

## CONSTRUCTION

| | | |
|---|---|---|
| **FACILITY BUILT DATE** | 01 JUL 1996 | |
| **CONSTRUCTION TYPE** | PERM | PERMANENT |
| **HISTORIC STATUS DATE** | | |
| **HISTORIC STATUS CODE** | NEV | Not yet Evaluated |

## READINESS FACTORS

| | | | |
|---|---|---|---|
| **MDI** | 66 | **DATE** | 07 NOV 2005 |
| **CONDITION RATING** | 94 | **DATE** | 17 MAY 2013 |
| **CONFIGURATION RATING** | 100 | **DATE** | 13 JUN 2009 |
| **PHYSICAL QUALITY RATE** | 94 | | |

# CLASS 2 PROPERTY RECORD

**FACILITY NAME** RECRUIT NEX AND RECREATION **FACILITY NUMBER** 1326

**REPORT DATE** 22 AUG 2013

## UTILIZATION

| | | | | | |
|---|---|---|---|---|---|
| **UTILIZATION ID** | 1 | | | | |
| **FAC USE CCN** | 74054 MWR MIL REC CENTER | **SET BACK VALUE** | 3,000.00 | **DOD FAC** | 7417 |
| **FACILITY USE** | MWR MIL REC CENTER | **MAX VALUE** | 200,000.00 | **DOD UM** | SF |
| **USER ACTIVITY** | N0763A NAVCRUITRACOM GREAT LAKES IL | **OUTGRANT IDENTIFIER** | | **PRIMARY UM** | SF |

**CONFIGURATION**

| | AREA | | OTHER | | ALTERNATE | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **ADEQUATE** | 9,355.00 | 869.11 | | | | |
| **SUBSTANDARD** | | | | | | |
| **INADEQUATE** | | | | | | |
| **TOTAL** | 9,355.00 | 869.11 | | | | |
| **UNIT OF MEASURE** | SF | M2 | | | | |

**SUSTAINMENT FUND SOURCE** 1804 Operation and Maintenance, Navy
**SUSTAINMENT ORGANIZATION** 06 NAVY ACTIVE
**OPERATIONAL FUND SOURCE** 1804 Operation and Maintenance, Navy
**OPERATIONAL FUNDING ORG** 06 NAVY ACTIVE

## UTILIZATION

| | | | | | |
|---|---|---|---|---|---|
| **UTILIZATION ID** | 2 | | | | |
| **FAC USE CCN** | 74009 EXCHANGE SERVICE OUTLETS | **SET BACK VALUE** | 3,500.00 | **DOD FAC** | 7346 |
| **FACILITY USE** | EXCHANGE SERVICE OUTLETS | **MAX VALUE** | 200,000.00 | **DOD UM** | SF |
| **USER ACTIVITY** | N39224 NEX GREAT LAKES IL | **OUTGRANT IDENTIFIER** | | **PRIMARY UM** | SF |

**CONFIGURATION**

| | AREA | | OTHER | | ALTERNATE | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **ADEQUATE** | 19,440.00 | 1,806.04 | | | | |
| **SUBSTANDARD** | | | | | | |
| **INADEQUATE** | | | | | | |
| **TOTAL** | 19,440.00 | 1,806.04 | | | | |
| **UNIT OF MEASURE** | SF | M2 | | | | |

**SUSTAINMENT FUND SOURCE** 1804 Operation and Maintenance, Navy
**SUSTAINMENT ORGANIZATION** 06 NAVY ACTIVE
**OPERATIONAL FUND SOURCE** 1804 Operation and Maintenance, Navy
**OPERATIONAL FUNDING ORG** 06 NAVY ACTIVE

## NOTES

10 OCT 2002 Changed CatCodes and assigned SF area - this is the Recruit Exchange and Recreation center.

29 SEP 2005 Added space for NEX building warehouse expansion following BOD.

## DOCUMENTS

| FILE NAME | DESCRIPTION | DOCUMENT UPLOAD DATE |
|---|---|---|
| Asbestos_Survey_Bldg_1326_2003.04.01.pdf | bldg 1326 - Asbestos Survey | 08-MAR-13 |
| 1326 AE.pdf | Facility 1326 Asset Evaluation | 16-AUG-10 |

# NAVSTA GREAT LAKES

# BUILDING CONDITIONS REPORT

## FINAL: August 2012

*prepared for*

**Naval Facilities Engineering Command**
1205 Mill Road, Bldg. 850
Port Hueneme, CA 93043 – 4347

**Contract No. N62583–11-D–0533**

*prepared by*


**CH2MHill**
11818 Rock Landing Drive
Newport News, VA 23606-44230

**Sain Engineering Associates, Inc.**
100 Corporate Parkway, Suite 100
Birmingham, AL 35242

# BUILDING 1326 – RECRUIT NEX & RECREATION

## GENERAL DESCRIPTION

The Recruit NEX and MWR building is located inside Recruit Training Camp Porter; it is the first structure on the right after entering the camp gate on Buckley Road. The Navy Exchange (NEX) Service occupies approximately two-thirds of the facility; the Morale Welfare and Recreation (MWR) Service occupies the other one-third of the space. Navy personnel – primarily new recruits – purchase Exchange retail products and uniform supplies at the NEX. Two (2) rooms are provided with more than 115 phone cubicles and 13 Internet terminals available for personal communication. A laundry and dry cleaner's drop-off/pick-up shop is also at the front of the building. Inside the MWR recreation center are pool tables, arcade video games and personal computer terminals. There is also a small theater room, a lounge area, and MWR offices.

| | |
|---|---|
| **Building Function** | Retail sales and recreation |
| **Year Built**<br>**Major Renovations** | 1996 – original<br>2005 – warehouse expansion |
| **Square Footage** | 28,795 |
| **Building Occupancy** | NEX personnel: 12<br>NEX Visitors: 150 persons/day<br>Typically for 30-60 min. Monday - Sunday<br><br>MWR personnel: 5<br>MWR Visitors: 400-880 recruits/ mo. for distributions<br>Typically for 30-45 min. and 400-880 1-3x per week for 1-2 hours.<br>For food and recreation. |
| **Building Operational Hours** | NEX:<br>Monday – Thursday: 0800 - 2000<br>Friday – Sunday: 0900 - 2000<br><br>Food Court:<br>Friday – Sunday: 1000 - 2000<br><br>MWR:<br>Monday – Wednesday: 1700 – 2000; Thurs closed; Friday – Sunday: 0800 - 2100 |
| **Date** | 11/16/2011 |
| **Observed Outside Air Temperature and Conditions** | 37°F<br>44% RH<br>Wind NW 13 mph gusting |

Figure 1: Front, east side

The NEX Food Court is open for customers only three days in the week (Friday, Saturday and Sunday) from 1000 until 2000 hours. The MWR recreation center is open six days each week: Mondays-Wednesdays 1700-2000 hours; Fridays 1000-2100 hours; Saturdays 0800-2100 hours; and Sundays 0800-2000 hours. The hours are tailored to the activity profile of the recruits. A regularly attended recruit event is a t-shirt distribution, where each division is brought through once per month to receive printed t-shirts. Other planned events include "pizza parties" where a division gets a benefit (contingent on performance perhaps) of being treated to pizza and soda. One of these occurs a few times per month.

The single-story building has a flat roof. All HVAC equipment is located on the roof. The south side of the facility adjoins building 7626. The exterior concrete panels that make up the other sides of the building are bordered by paving or other hardscape.

Information about the building is based on field observations, conversations with Base personnel and available building drawings.

## BUILDING ENVELOPE

The building envelope assemblies below were in good condition, unless noted otherwise.

### Walls

The walls are doubled 4" metal studs having an 8" cavity. On this is a 4" EIFS with a value of R=20 from the expanded polystyrene. Drawings don't show the 8" cavities as filled with fiberglass batts, and though not necessary, insulation could be beneficial. In some locations, the building is clad with brick veneer instead of EIFS. The insulation at the brick cavities is expected to exist and have a nominal value of 1" of extruded polystyrene or R=5; however, the drawings collected do not contain this detail. The building is predominantly EIFS and the brick veneer is more of an accent. A portion of wall at the rear of the building, at the loading dock has a 3'-4' wainscot of concrete masonry and EIFS above this. At the front of the building, a gabled addition is clad in metal panels in the gable end wall.

### Doors

The main entry doors are storefront assemblies with dual glazings. Secondary exits and utility doors are insulated, hollow metal doors. Some have small vision lights.

### Windows

The windows are all storefront assemblies with dual glazings.

## Ceilings

The ceilings are principally suspended acoustical tile. In the rear of the building, storage and utility space there is bare structure. The MWR gaming room is also bare structure with exposed, painted black ductwork and lighting. An accent area near the front of the food court is treated similarly, painted white.

## Roof

The roof is clad mostly in an EPDM membrane, although there are some segments of medium slope, standing seam, metal panel roof. The metal and EPDM roof portions are insulated with 3.5" of rigid board insulation. The EPDM was mostly in good condition, but had a few small puddled areas.

Figure 2: Standing water on roof

## Flooring

The floors are mostly VCT. The kitchen contains ceramic tile.

# UTILITIES

The Energy Use Index (EUI) for this facility was 182.3 kBtu/sq.ft. during FY2010 and 201.3 kBtu/sq.ft. during FY2011. The Electricity Use Indices were 38.98 kWh/sq.ft. and 43.12 kWh/sq.ft. These indices cannot be used to evaluate energy consumption in Building 1326-MWR because the metered utilities also serve the adjoining Building 7626.

## Electrical

The underground electric service leads to the main switchgear, which is located in a dedicated utility room. The switchgear is rated at 1200 Amps. The 500kVA pad-mounted transformer on the west side of the building provides electrical service at 208/120V 3-phase. There are two (2) electric meters for the building located on the transformer; one for the NEX and one for MWR. It was not clear at the time of the survey which meter served the NEX; but this meter also serves Building 7626, which adjoins 1326. Both electric meters are General Electric Type M-90 electronic demand registers with analog and digital readouts. The readings on the two meters at the time of the survey were 52,863 (with a multiplier of 80) and 68,834 (with a multiplier of 160). The electric service is in good condition.

## Natural Gas/Fuel

The natural gas enters the building just outside Storage Room 137 at the MWR wing. There are two (2) gas meters at this location; both meters have remote read capability. The ROOTS rotary type meter is a Model 3M175 with no local readout. The diaphragm meter is an AL-800 manufactured by American Meter Company. It is equipped with local dial readout as well as remote; the meter read at the time of the survey was 3,292,600 $ft^3$. The gas service is in good condition.

## Water & Sewer

Two (2) rotary analog water meters are located in separate utility rooms for the NEX and for the MWR recreation center. Both of these meters have electronic remote read capability; connection points for hand-held reading devices are mounted on the walls just outside each meter's utility room. A 3" Badger Recordall Transmitter Turbo Model 450 is installed for the NEX. A 2" Hersey Model MHR is installed to serve the MWR recreation center. The meter reads at the time of the survey were 80590 gallons and 1881768 gallons respectively. Water services were in good condition. Sewer is present, but is not metered for the facility.

## Alternate Energy Sources & UPS: N/A

## Process Loads

Process loads for the facility consist of food service, computers, and arcade games.

There are four (4) food service vendors in the Food Court. Three of them share a walk-in freezer and a walk-in refrigerator; the fourth vendor has its own walk-in refrigeration. Food preparation equipment also includes: two (2) gas-fired deep fat fryers (150kBtu & 122kBtu); one (1) electric deep fat fryer (8kW); a pot washing machine; four (4) reach-in refrigerator/freezers; two (2) reach-in heat cabinets; one (1) rethermalizer; three-level conveyor pizza ovens; a griddle; two (2) hot wells for serving lines; two (2) 6' long refrigerated serving lines; two (2) half-height refrigerators; two (2) bread ovens (2.1kW each); two (2) bread warmers; and a counter oven. Several refrigerated drink dispensers and drink cooler boxes, as well as computer POS cash registers, are also present. Lighted and refrigerated drink boxes are also present in the NEX; these boxes appear to be active continuously.

Power for the arcade games is manually switched by the MWR management. During an audit visit when the center was unoccupied, all of the arcade games had been left on and were powered up. During another audit visit, only one (1) game and the photo booth were powered up. This inconsistency means that dependence upon manual switching for energy conservation is not as reliable as some form of simple automation. With more than 40 arcade games, if there is an average electrical energy consumption of 250W each in standby mode, it will result in at least 10kWh for every hour these games are running. The minimum unnecessary consumption is then 210kWh per weekday (21 hours unoccupied daily on Monday - Wednesday).

## LIGHTING

### Interior Lighting Systems

### Fluorescent Fixtures

There are 324 fluorescent fixtures. 30% are 3- or 4-lamp 2'x4', 18-cell recessed parabolic (DCP) fixtures. There are also 3- lamp 2'x4' recessed lensed (RL) troffers, 2-lamp 4' pendant-mount (PM) industrial (IND) fixtures, 2-lamp 6" recessed can fixtures, 1-lamp jelly jars, 2-lamp 2' indirect fixtures, 2-lamp 4' surface-mount (SM) fixtures with wrap-around (WA) lenses, 2-lamp 2'x2' RL troffers (which employ U-tubes with 6" leg spacing), 1-lamp globes, 2-lamp 1'x4', 10-DCP fixtures, 2-lamp 2'x2' RL troffers (which employ U-tubes with 1 5/8" leg spacing), 1-lamp sign fixtures and 2-lamp 4' SM fixtures with lenses. The lighting systems in most areas are controlled by wall switches. The main store area is controlled by passive infrared (PIR) wall-box occupancy sensors, restroom areas are controlled with key-switches and incandescent fixtures in the game room theater are controlled by dimmers. Several areas have fixtures that are on 24/7. Most fixtures are in good condition, but several fixtures with wrap-around lenses (WA) had broken or cracked lenses or were missing lenses.

**Incandescent Systems:** There are 43 1-lamp spotlights and eight (8) 1-lamp track lights, all with 50W halogen lamps. There are seven (7) 1-lamp sconces with 75W A-lamps.

### HID Systems

There are 14 1-lamp pendant-mount (PM) fixtures with 175W metal halide (MH) lamps and 12 1-lamp PM cans and four (4) 1-lamp 6" recessed cans, all with 70W MH lamps, all with magnetic ballasts.

### Lamping

Most of the fluorescent fixtures are equipped with standard, 32W T8 lamps and generic electronic ballasts (GEB). However, most of the 6" recessed cans and jelly jars are equipped with 26W pin-base (PB) CFL lamps, the 2' indirect fixtures are equipped with 42W PB CFL lamps and nine (9) 6" recessed cans are equipped with 32W PB CFL lamps, all with electronic ballasts.

### Light Levels

Light levels were observed to be normal in most areas, as demonstrated by a measurement of 78 FC in the main store area, 44 FC in the game room, 38 FC in the lobby hall and 23 FC in the warehouse. However, an office area measured high at 84 FC.

### Exterior Lighting Systems

### Conditions

The exterior lighting system consists of five (5) 1-lamp HID wallpacks, three with 175W MH lamps and two with 75W MH lamps and two (2) 1-lamp 6" recessed cans with 100W MH lamps, all with magnetic ballasts. There is also six (6) 1-lamp incandescent 6" recessed cans that have been retrofit with 26W screw-base (SB) CFL lamps on the front & rear exterior soffit. Fixtures are in good condition.

**Controls:** Exterior fixtures are controlled by photocells and exterior soffit fixtures are controlled by timers.

## DOMESTIC HOT WATER

There are two (2) primary domestic water heating systems with recirculating pumps and a small heater for toilets at the front of the building.

The primary domestic hot water system serving the NEX and the Food Court is comprised of a gas-fired water heater manufactured by Lochinvar, which appears to have been installed when the building was constructed in 1996. The separate storage tank was manufactured by Lochinvar in 2008 and has a 119 gallon capacity. The system is maintaining 120°F LWT. There is a leak in the pipe between the water heater and the storage tank. The inline circulating pump (B&G Series HV BN-- K50) operates continuously in order to maintain the storage tank water temperature. Another inline recirculating pump (Grundfos) operates when the return water temperature drops below 120°F in the system distribution piping.

A small electric water heater is located on a shelf in Janitor Closet 119. It serves the toilets at the front of the building. However, the thermostat is set at the lowest value and there was no hot water delivered to the toilets at the time of the survey.

A point-of-use electric water heater is located at the hand-wash sink in the Food Court food preparation area.

The primary electric water heater serving MWR is located in Storage Room 137 to serve the toilets in the Lounge and Arcade. This system, with a recirculating pump, is about one (1) year old and is in good condition. The setpoint, however, is very low and the unit is maintaining only 80°F LWT. An inline recirculating pump (B&G Size B113 K69) operates for system distribution piping.

## PLUMBING SYSTEMS

The building has common toilet rooms and fast food kitchens. There is a Subway Sandwich counter and a YUM brands combined kitchen with Taco Bell and Pizza Hut.

Of the common toilet rooms, the lavatories have 2.2 GPM aerators as well as floor mounted 1.6 GPF toilets with 1.6 GPF diaphragm flush valves. Toilets located in the front hall have IR autoflush valves. Some toilets operate closer to 3.5 GPF and may have been fitted with other diaphragms. The urinals have 1.0 GPF diaphragm flush valves. The kitchens and barber shop have 2.2 GPM dual lever faucets. A pot sink, which would not be an efficiency target, has an uncontrolled 5 GPM or more wall mount faucet.

## HVAC & Controls Systems

### General Description

The facility is conditioned with direct expansion cooling and natural gas heating. There are four (4) rooftop curb-mounted package units that are similarly configured to condition the space.

**Cooling/Chilled Water System:** N/A

**Heating System (Steam or Hot Water):** N/A

**Air Handling System (CHW Coils):** N/A

### DX Systems (Packaged or Split)

Four (4) rooftop package units provide all the space conditioning for this facility. The Trane Intellipak units are single-zone, constant-volume systems equipped with forward-curved, centrifugal, belt-drive fans for supply and for relief air. The units are equipped with scroll compressors using refrigerant R-22. As part of the factory package, each of the units has 100% outside air capability with relief fans and automatic dampers. Each unit has its own outdoor sensing device and, it is assumed, makes control decisions for economizer versus compressor cooling based on a comparison of the space return air and the outside air dry-bulb temperature conditions.

At the time of the survey, three (3) of the units were running; none of them were utilizing mechanical compressor or economizer cooling because there was no demand in the spaces served. The condition during operation, therefore, could not be determined at the time of the audit. However, observation of the unit evaporator coils on the operating units indicated that they were not thoroughly cleaned; the coils had noticeable dirt with a build-up at the outside edges that appeared to be sufficient to block airflow.

The four (4) rooftop units are equipped with natural gas-fired heaters. The RTU-1 (serving the NEX) burner is capable of 50% firing; RTU-2 is able to fire at 25%; RTU-3 is able to fire at 60%; and, RTU-1

(serving MWR) is able to fire at 60% of rated input capacities. There are two (2) zones in MWR that have electric duct heating coils. The Theater 139 has a 3kW heater and Office 141 has a 4kW heater. Both of the heaters are turned off at manual disconnect switches above the ceilings.

RTU-1 (NEX), RTU-2 and RTU-1 (MWR) are in fair condition due to their age, the lack of control flexibility, and the presence of corrosion and dirt on cabinets and components. The air filters in RTU-1 (NEX) and RTU-2 are dirty and need to be changed. The relief fans are also very dirty. The unit cooling coil in RTU-1 (NEX) is not only dirty, the aluminum fins are significantly bent. This results in an unnecessary restriction to air flow and a reduced capacity for heat transfer. RTU-3 is in poor condition. Although the air filters, the relief fan and the cooling coil are clean, the belt is broken on the supply fan drive and it does not appear to have run for quite a period of time. The Food Court, which is served by RTU-3, was observed to have extremely low space temperatures at the time of the audit. The condensate drain traps are incorrect or incomplete due to broken pipes on RTU-1 (NEX) and RTU-3. When the supply fan in a draw-through unit such as these is running in the cooling mode, an improper drain trap results in condensate being held at a high level in the cooling coil drain pan. This condition will cause escalated corrosion in the pan and, in many case, the water level will be high enough to overflow the pan rather than draining through the provided pipe connection. This can cause damage to other interior components of the unit and the collection of spilled water around the outside of the unit.

Figure 3: RTU-1 (NEX) Cooling coil damaged and dirty

Figure 4: RTU-3 improper condensate drain (similar problem with RTU-1 NEX)

## Radiant or H&V Units (Gas-Fired/HW/Steam): N/A

## Special Ventilation Systems (Hood, MAUs, etc.)

There are three (3) centrifugal roof curb-mounted exhaust fans (EF-2, 7 & 8) that serve hoods over kitchen cooking equipment. The Food Court is open only three days a week; it was not open at the time of the survey. However, EF-2 and EF-8 were running unnecessarily at the time of the survey. With RTU-

3 out of service due to a broken fan belt, when the exhaust fans are supposed to be running, makeup air for the kitchen exhaust has to be brought in via infiltration.

## Terminal Equipment (VAVs, FCUs, Small EFs, Unit Heaters, PTACs)

There are five (5) roof mounted centrifugal exhaust fans (tagged EF-1, 3, 4, 5 & 6) that serve various toilets and equipment spaces. None of these fans was running at the time of the survey. The areas served by EF-3 and EF-5 have been repurposed and do not require exhaust ventilation at the present time. However, EF-1 and EF-4 serve multiple toilets each; there were no occupancy sensing devices and no other indications that the fans operate at all under normal conditions.

The two (2) entry lobbies are each equipped with a ceiling electric unit heater. A fly fan is installed at the back door to the Food Court; it operates based on the door opening.

## Controls & Operational Characteristics

HVAC in the facility is controlled by a Trane DDC system that is no longer supported by the manufacturer. The local NAVFAC PWD technician is not able to modify or monitor the operation of the equipment. The units are enabled by the Trane building controller and their cooling/heating functions are indexed based on programs local to the individual unit controllers. At the time of the survey, the unit controllers on RTU-1 and RTU-3 were flashing to indicate a local alarm condition. RTU-1 was still running; RTU-3 was not.

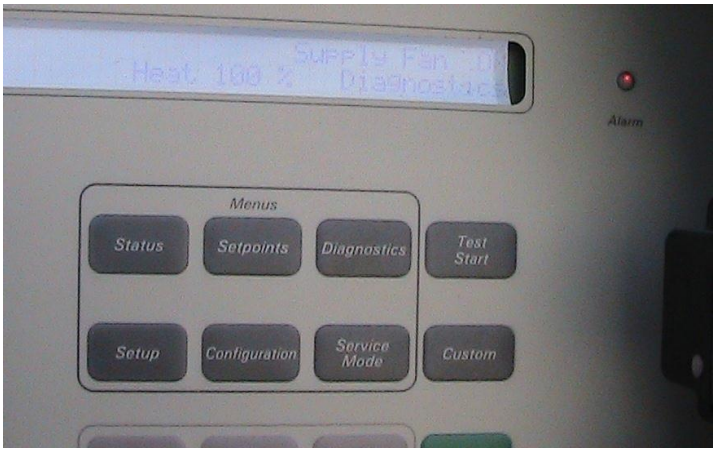



Figure 5: RTU-1 (NEX) unit controller flashing an alarm condition

Design for the controls calls for modulating relief/exhaust fan discharge dampers on all RTUs based on building pressurization control. None of the units were operating on economizer at the time of the audit; and, none of the relief/exhaust fans were running either. Building pressurization control was not, therefore, observed. This strategy is certainly a candidate for retro-commissioning. As noted above, the supply fan drive belt was broken on RTU-3; the motor was off and in alarm. Since kitchen hood exhaust fans are operating without RTU-3, building pressurization is negative in the Food Court. Also noted was the lack of an appropriate minimum setback temperature in the Food Court served by RTU-3. However,

even if there had been proper controls, the unit would not have been able to support the strategy since the fan drive was defective.

Site temperature samples were taken during the audit and are included in the table below.

| Site Temperatures | | | | |
|---|---|---|---|---|
| Device & Location | Setpoint Temperature(s) | Observed Temperatures | | Notes |
| | | Sensor Display | Measured | |
| Temp sensor in Retail Store 102 (RTU-1 NEX) | 68°F | -- | 72.3°F | |
| Temp sensor in Telephone Lounge 112 (RTU-2) | 72°F | -- | 73.9°F | |
| Temp sensor in Food Court (RTU-3) | Minimum | -- | 36.2°F | 4 |
| Temp sensor in Arcade Lounge 138 (RTU-1 MWR) | 77°F | -- | 73.5°F | 1 |
| Office 141 (duct heater) | 80°F | -- | 73°F | 2, 3 |
| Theater 139 (duct heater) | 70°F | -- | 72.5°F | 3 |

Notes:

1. Local sensor appears to be out of calibration.
2. Space temperature setpoint/offset is outside of the specified 68°F heating and 75°F cooling (1% OAT design near Great Lakes is 89.8°F).
3. Device was not properly controlling heating/cooling mode of the equipment.
4. Failed fan drive kept RTU from supporting any minimum temperature setpoint for the space.

# Asbestos Survey Report

# For

# Building 1326 – Visitors Center

**Naval Training Center**
**Great Lakes, Illinois**

**Contract No. N62467-01-D-0410**
**Task Order No. 0010**
**SOW No. 669**

**Prepared for:**

**Department of the Navy**
**Southern Division**
**Naval Facilities Engineering Command**
**Attention: Tesfa A. Abraha**
**2155 Eagle Drive**
**North Charleston, SC 29419-9010**

**Prepared by:**

**J.J. Sosa & Associates, Inc. (JJSA)**
**5811 Memorial Highway, Suite 207**
**Tampa, FL 33615-5000**

**April 2003**

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# For
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**FLAC No. EA 0000055**

**April 2003**

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## LIST OF ACRONYMS

| | |
|---|---|
| A/C | AIR CONDITIONER |
| ACBM(s) | ASBESTOS-CONTAINING BUILDING MATERIAL (S) |
| ACM(s) | ASBESTOS-CONTAINING MATERIAL (S) |
| AMO | AMOSITE |
| BLDG | BUILDING |
| BUR | BUILT-UP ROOF |
| CBS | CONCRETE BLOCK SYSTEM |
| COMP | COMPOUND |
| CRY | CHRYSOTILE |
| CT | CEILING TILE (S) |
| DECO | DECORATIVE |
| DIR | DIRECTIONAL |
| D/I | DROP-IN |
| D/W | DRYWALL |
| EXT | EXTERIOR |
| F/P | FISSURES/PINHOLES |
| HA | HOMOGENEOUS AREA |
| HVAC | HEATING, VENTILATING AND AIR CONDITIONING |
| INT | INTERIOR |
| JJSA | J.J. SOSA & ASSOCIATES, INC. |
| JT | JOINT |
| LF | LINEAR FEET |
| LT | LIGHT |
| L/F | LONG FISSURES |
| L/W | LENGTHWISE |
| N/A | NOT APPLICABLE |
| NAFD | NO ASBESTOS FIBERS DETECTED |
| NAN | NOT ANALYZED |
| NO | NUMBER |
| NSAP | NOT SAMPLED ASSUMED POSITIVE |
| O&M | OPERATION AND MAINTENANCE |
| PLM | POLARIZED LIGHT MICROSCOPY |
| QA/QC | QUALITY ASSURANCE/QUALITY CONTROL |
| RACM(s) | REGULATED ASBESTOS-CONTAINING MATERIAL (S) |
| RVF | ROLLED VINYL FLOORING |
| SF | SQUARE FEET |
| S/F | STOREFRONT |
| TSI | THERMAL SYSTEM INSULATION |
| VBB | VINYL BASEBOARD |
| VFT | VINYL FLOOR TILE |
| VTR | VENT-THROUGH-ROOF |
| W/ | WITH |
| W/I | WALK-IN |

## 1.0 EXECUTIVE SUMMARY

J.J. Sosa & Associates, Inc. (JJSA) was retained by the U. S. Department of the Navy, Southern Division (SouthDiv), Naval Facilities Engineering Command (NAVFAC) to perform a complete Asbestos Containing Materials (ACM) testing of Building 1326 at the Naval Training Center, Great Lakes, Illinois.

### 1.1 Asbestos-Containing Material Summary

The purpose of this survey is to identify ACM's in the building according to the protocols and sampling guidelines provided by your office. Table 1 at the end of this report contains the inventory and the number of samples collected during the inspection.

No ACM's were identified in Building 1326.

## 2.0 BUILDING INSPECTION INFORMATION

| | |
|---|---|
| **Building Name** | Visitors Center |
| **Building Number** | 1326 |
| **Building Square Footage** | 33,926 |
| **Year Built** | 1996 |
| **Building Type** | Metal on concrete slab |
| **# of Floors** | 1 |
| **Purpose of ACM Survey** | Pre-demolition |
| **Building Survey Date** | 2/4/03 |

## 3.0 INTRODUCTIONS

J.J. Sosa & Associates, Inc. (JJSA) was retained by the U. S. Department of the Navy, Southern Division (SouthDiv), Naval Facilities Engineering Command (NAVFAC) to perform a complete Asbestos Containing Materials (ACM) testing of Building 1326 at the Naval Training Center, Great Lakes, Illinois. This report lists the site locations and discusses the survey results.

## 4.0 ASBESTOS SURVEY FINDINGS

The ACM inspection was performed in accordance with the Navy's Asbestos Facility Inventory/Assessment Protocol (NEESA 70.2-010) and the U.S. Environmental Protection Agency's (USEPA) requirements for implementation of the Asbestos Hazard Emergency Response Act (AHERA), and the Asbestos School Hazard Abatement Reauthorization Act (ASHARA).

The inspection survey was carried out by Mr. Brian Ralston, on February 4, 2003. Appropriate certification documents are located in Appendix C of this report.

## 4.1 ACM Survey Findings

### 4.1.1 Building 1326

A total of nine homogeneous areas of suspect ACM were identified during the survey of Building 1326. Table 1 at the end of this report contains the inventory and the number of samples collected during the inspection.

The analytical results of the bulk samples collected during the site survey identified no materials with asbestos concentrations greater than 1% in Building 1326.

## 4.2 Asbestos Survey Protocol

Samples were given a unique numeric identification (i.e. 1326-1, B-2, etc.). The first four digits represents the building number followed by a number starting with “1” increasing sequentially with the last number representing the total number of samples collected for the building. Each sample location was identified on the sample location drawings.

The technique used for sampling the suspected materials was designed to minimize possible fiber release and in turn possible contamination of surrounding areas. All representative "suspect" materials sampled, were collected in accordance with the EPA's AHERA and "Guidance for Controlling Asbestos Containing Material in Buildings" (EPA 560 / 6-85-024, June 1985).

The sample location was sprayed with an amended soapy water mixture. Then, a core sample of the material was collected and properly stored in a labeled airtight bag. A chain of custody form was completed for all bulk samples collected and subsequently delivered to IATL Laboratories for analysis using Polarized Light Microscopy (PLM). IATL Laboratories utilizes dispersion staining techniques according to US EPA method 600 / M4-82-020 incorporating visual estimates of identified material percentages.

During the sampling activities, each suspect ACM was touched by the inspector to determine its friability and observed to determine the physical condition of the material. A friable material is defined as a material that can be crumbled, or reduced to powder by hand pressure. Friability of a material directly relates to a potential of the ACM to release airborne fibers. The more friable the ACM the more likely asbestos fibers will be released. The inspector assessed the suspect ACM according to their physical conditions.

Joint compound associated with gypsum wallboard system will be evaluated to determine whether the material should be classified as “joint compound” or “skim coat” per EPA’s NESHAP clarification letter published in the Federal Register on January 5, 1994.

The JJSA inspectors split the bulk samples every 20$^{th}$ sample collected. These samples were sent to another laboratory for QA/QC. The identities of the QA/QC samples were not revealed to the laboratory on the chain of custody form.

JJSA personnel utilized PPE as deemed appropriate for each sampling event. JJSA personnel utilized wet methods while collecting bulk samples.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Asbestos-Containing Materials

No ACM's were found in Building 1326.

### 5.2 Recommendations

No ACM's were found in Building 1326; therefore, Building 1326 can be demolished and waste can be disposed of as general construction debris.

**TABLE 1 - ASBESTOS SURVEY AND ASSESSMENT**

CLIENT/PROJECT NAME: NTC Great Lakes: Visitors Center - Bldg. 1326

CONSULTANT: **J. J. SOSA & ASSOCIATES, INC.**

ADDRESS: Great Lakes, Illinois

AGENCY: Naval Facilities Engineering SOUTHDIV

SURVEY DATE: 2/4/03

CONTRACT NO.: N62467-01-D-0410 SOW: 669

| ROOM/ BLDG. # | SAMPLE # | MATERIAL (TYPE) | HA | FUNCTIONAL SPACE | QUANTITY | NESHAP CLASS | TYPE & % ASBESTOS | CONDITION | DAMAGE POTENTIAL |
|---|---|---|---|---|---|---|---|---|---|
| 119 | 1326-1 | Ceiling Tile (2X4) | 1 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 116 | 1326-2 | Ceiling Tile (2X4) | 1 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 126 | 1326-3 | Ceiling Tile (2X4) | 1 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 119 | 1326-4 | White Floor Tile (12X12) | 2 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 119 | 1326-4 | Tan Mastic from 1326-4 | 2 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 118 | 1326-5 | White Floor Tile (12X12) | 2 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 118 | 1326-5 | Tan Mastic from 1326-5 | 2 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 108 | 1326-6 | White Floor Tile (12X12) | 2 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 108 | 1326-6 | Tan Mastic from 1326-6 | 2 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 163 | 1326-7 | Ceiling Tile (2X2) | 3 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 164 | 1326-8 | Ceiling Tile (2X2) | 3 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 163 | 1326-9 | Ceiling Tile (2X2) | 3 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 163 | 1326-10 | Lt. Blue Floor Tile, (12X12) | 4 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 163 | 1326-10 | Tan Mastic from 1327-10 | 4 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 163 | 1326-11 | Lt. Blue Floor Tile, (12X12) | 4 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 163 | 1326-11 | Tan Mastic from 1327-11 | 4 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 163 | 1326-12 | Lt. Blue Floor Tile, (12X12) | 4 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 163 | 1326-12 | Tan Mastic from 1327-12 | 4 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 164 | 1326-13 | Yellow Carpet Mastic | 5 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 164 | 1326-14 | Yellow Carpet Mastic | 5 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 164 | 1326-15 | Yellow Carpet Mastic | 5 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 157 | 1326-16 | Black Floor Tile (12X12) | 6 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 157 | 1326-16 | Tan/Clear Mastic from 1326-16 | 6 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 122 | 1326-17 | Black Floor Tile (12X12) | 6 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 122 | 1326-17 | Tan/Clear Mastic from 1326-17 | 6 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 101 | 1326-18 | Black Floor Tile (12X12) | 6 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 101 | 1326-18 | Tan/Clear Mastic from 1326-18 | 6 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 157 | 1326-19 | White w/Black Flecks Floor Tile (12X12) | 7 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 157 | 1326-19 | Tan Mastic from 1326-19 | 7 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 122 | 1326-20 | White w/Black Flecks Floor Tile (12X12) | 6 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 122 | 1326-20 | Tan Mastic from 1326-20 | 6 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 122 | 1326-21 | White w/Black Flecks Floor Tile (12X12) | 6 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 122 | 1326-21 | Tan Mastic from 1326-20 | 7 | Interior | N/A | NF CAT I | None Detected | Good | Low |

**TABLE 1 - ASBESTOS SURVEY AND ASSESSMENT**

CLIENT/PROJECT NAME: NTC Great Lakes: Visitors Center - Bldg. 1326

CONSULTANT: **J. J. SOSA & ASSOCIATES, INC.**

ADDRESS: Great Lakes, Illinois

AGENCY: Naval Facilities Engineering SOUTHDIV

SURVEY DATE: 2/4/03

CONTRACT NO.: N62467-01-D-0410 SOW: 669

| ROOM/ BLDG. # | SAMPLE # | MATERIAL (TYPE) | HA | FUNCTIONAL SPACE | QUANTITY | NESHAP CLASS | TYPE & % ASBESTOS | CONDITION | DAMAGE POTENTIAL |
|---|---|---|---|---|---|---|---|---|---|
| 118 | 1326-22 | Black Baseboard | 8 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 118 | 1326-22 | Off-White Mastic from 1326-22 | 8 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 118 | 1326-23 | Black Baseboard | 8 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 118 | 1326-23 | Off-White Mastic from 1326-23 | 8 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 119 | 1326-24 | Black Baseboard | 8 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 119 | 1326-24 | Off-White Mastic from 1326-23 | 8 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 118 | 1326-25 | Drywall | 9 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 118 | 1326-26 | Drywall | 9 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 118 | 1326-27 | Drywall | 9 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 119 | 1326-28 | White w/blue & Grey Flecks Floor Tile (12X12) | 2 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 119 | 1326-28 | Tan Mastic from 1326-28 | 2 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 119 | 1326-29 | White w/blue & Grey Flecks Floor Tile (12X12) | 2 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 119 | 1326-29 | Tan Mastic from 1326-29 | 2 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 118 | 1326-30 | White Ceiling Tile (2X4) | 1 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| 118 | 1326-31 | White Ceiling Tile (2X4) | 1 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| | QA/QC | 2x4' Ceiling Tiles Medium Fissures | 1 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| | QA/QC | White w/Grey Camouflage FT 12x12" | 2 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| | QA/QC | Base Board Mastic | 8 | Interior | N/A | NF CAT I | None Detected | Good | Low |
| | QA/QC | Black FT w/white flakes 12x12" | 6 | Interior | N/A | NF CAT I | None Detected | Good | Low |

**HA - Homogenous Area**
**PC - Point Count**
**SF - Square Feet**
**LF - Linear Feet**

# APPENDIX A

# J.J. SOSA & ASSOCIATES, INC.

ASBESTOS PLM LABORATORY

REQUEST FOR ANALYTICAL SERVICES AND CHAIN OF CUSTODY FORM

263/1

## ORIGINATOR INFORMATION

J.J. SOSA & ASSOCIATES, INC.
13700 SW 88TH STREET, SUITE 304
MIAMI, FLORIDA 33186-1309
PH (305) 752-9070 FAX (305) 752-9779

CLIENT NAME: Naval Facilities Engineering

CLIENT REF: ACQ23RR0410-0010

PROJECT NAME: NTC Great Lakes

LOCATION: Great Lakes, Illinois Building 1326

JJSA PROJECT NO.: 03-004A

JJSA INSPECTOR (S): Brian Ralston

FT² SURVEYED: 33,926

## ANALYSIS REQUESTED

X BULK SAMPLE ANALYSIS FOR ASBESTOS TYPE AND PERCENT BY VOLUME. 48 hour Turnaround

___ AIR SAMPLE ANALYSIS FOR FIBER PER CUBIC CENTIMETER (NIOSH 7400 EQUIVALENT).

___ OTHER _____

X STOP ANALYSIS AFTER FIRST SAMPLE IN EACH HOMOGENEOUS AREA IS FOUND TO CONTAIN 1% OR MORE ASBESTOS BY VOLUME.

## SAMPLE CUSTODY INFORMATION

| | DATE | TIME | SIGNATURE |
|---|---|---|---|
| COLLECTION | 2-4-03 | 9:30 Am | Brian K. Ralston |
| TRANSPORTATION | | | |
| LAB ACCEPTANCE | | | |

## SAMPLE INFORMATION

| ROOM NO. | SAMPLE ID NO. | DESCRIPTION/LOCATION OF MATERIAL (FL.=FLOOR CL.=CEILING W=WALL) | HA AREA | FUNCTIONAL SPACE | QUANTITY | FRIA Y/N | ABESTOS CONTENT | COND G-F-P | DIST/POT L-M-H |
|---|---|---|---|---|---|---|---|---|---|
| 119 | 1326-1 | Ceiling Tile 2x4 medium fissures/white 1656907 | 1 | Phone room | 8000 sq ft | N | | G | L |
| 116 | 1326-2 | Da " 1656908 | 1 | " " | ↓ | N | | G | L |
| 126 | 1326-3 | " 1656909 | 1 | Snack Bar | ↓ | N | | G | L |
| 119 | 1326-4 | Floor Tile 12x12 1656910 Blue & white grey flex | 2 | Phone room | 7,500 sq ft | N | | G | L |
| 118 | 1326-5 | " 1656911 | 2 | " " | ↓ | N | | G | L |
| 108 | 1326-6 | " 1656912 | 2 | Closet | ↓ | N | | G | L |

MC 2/14/03 2/11

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JJSA PROJECT NO. 03-004A PAGE 2 OF 3

| ROOM NO. | SAMPLE ID NO. | DESCRIPTION/LOCATION OF MATERIAL (FL.=FLOOR CL.=CEILING W=WALL) | | HA AREA | FUNCTIONAL SPACE | QUANTITY | FRIA Y/N | ABESTOS CONTENT | COND G-F-P | DIST/POT L-M-H |
|---|---|---|---|---|---|---|---|---|---|---|
| 163 | 1326-7 | Celing tile 2x2 | 1656913 | 3 | Photo room | 2500 sq FT | N | | G | L |
| 164 | 1326-8 | " " | 1656914 | 3 | Lounge | ↓ | N | | G | L |
| 163 | 1326-9 | " " | 1656915 | 3 | Photo room | ↓ | N | | G | L |
| 163 | 1326-10 | 12x12 light blue floor tile | 1656916 | 4 | " " | 300 sq FT | N | | G | L |
| 163 | 1326-11 | " " | 1656917 | 4 | " " | ↓ | N | | G | L |
| 163 | 1326-12 | " " | 1656918 | 4 | " " | ↓ | N | | G | L |
| 164 | 1326-13 | Yellow carpet Mastic | 1656919 | 5 | Lounge | 2200 sq FT | N | | G | L |
| 164 | 1326-14 | " " | 1656920 | 5 | Lounge | ↓ | N | | G | L |
| 164 | 1326-15 | " " | 1656921 | 5 | Lounge | ↓ | N | | G | L |
| 157 | 1326-16 | 12x12 black FT tile Flecks w/white | 1656922 | 6 | Game Room | 2000 sq FT | N | | G | L |
| 122 | 1326-17 | " " | 1656923 | 6 | Subway | ↓ | N | | G | L |
| 101 | 1326-18 | " " | 1656924 | 6 | Hallway | ↓ | N | | G | L |
| 157 | 1326-19 | 12 x 12 white Floor tile w/Black Flecks | 1656925 | 7 | Game Room | 4800 sq ft. | N | | G | L |
| 122 | 1326-20 | " " | 1656926 | 7 | Subway | ↓ | N | | G | L |
| 122 | 1326-21 | " " | 1656927 | 7 | Subway | ↓ | N | | G | L |
| 118 | 1326-22 | Black Base Board | 1656928 | 8 | Phone room | 100 LF | N | | G | L |
| 118 | 1326-23 | " " | 1656929 | 8 | Phone room | ↓ | N | | G | L |
| 119 | 1326-24 | " " | 1656930 | 8 | Phone room | ↓ | N | | G | L |
| 118 | 1326-25 | Dry wall | 1656931 | 9 | " " | 30,000 sq ft | N | | G | L |
| 118 | 1326-26 | " " | 1656932 | 9 | " " | ↓ | N | | G | L |
| 118 | 1326-27 | " " | 1656933 | 9 | " " | ↓ | N | | G | L |
| | | | | | | | | | | |
| | | | | | | | | | | |

JJSA PROJECT NO. 03-004A PAGE 3 OF 3

| ROOM NO. | SAMPLE ID NO. | DESCRIPTION/LOCATION OF MATERIAL (FL.=FLOOR CL.=CEILING W=WALL) | HA AREA | FUNCTIONAL SPACE | QUANTITY | FRIA Y/N | ABESTOS CONTENT | COND G-F-P | DIST/POT L-M-H |
|---|---|---|---|---|---|---|---|---|---|
| 119 | 1326-28 | Floor tile 12x12 white w/blue+grey flecks 1656934 | 2 | Phone Room | 7,500 sq ft | N | | G | L |
| 119 | 1326-29 | " 1656935 | 2 | " " | 7,500 sq ft | N | | G | L |
| 118 | 1326-30 | Ceiling tile 2x4 medium fissures/white 1656936 | 1 | " " | 8,000 sq ft | N | | G | L |
| 118 | 1326-31 | " 1656937 | 1 | " " | " " | N | | G | L |

**IATL** International Asbestos Testing Laboratories

16000 Horizon Way Unit 100 Mt. Laurel, NJ 08054

Telephone: 856-231-9449 Fax: 856-231-9818

# CERTIFICATE OF ANALYSIS

**Client:** J.J. Sosa & Associates, Inc.
5811 Memorial Hwy,Suite 207
Tampa FL 33615

**Report Date:** 02/11/2003
**Project:** NTC GreatLakes; Bldg.1326, 2-4-03
**Project No.:** 03-004A

## BULK SAMPLE ANALYSIS SUMMARY

**Lab No.** 1656907 **Material Description:** Tan Ceiling Tile
**Client No.:** 1326-1 **Location:** Room 119; Phone Room 2x4

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | 45 | Cellulose | 15 |
| | | 40 | Fibrous Glass | |

**Lab No.** 1656908 **Material Description:** Tan Ceiling Tile
**Client No.:** 1326-2 **Location:** Room 116; Phone Room 2x4

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | 45 | Cellulose | 15 |
| | | 40 | Fibrous Glass | |

**Lab No.** 1656909 **Material Description:** Tan Ceiling Tile
**Client No.:** 1326-3 **Location:** Room 126; Snack Bar 2x4

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | 45 | Cellulose | 15 |
| | | 40 | Fibrous Glass | |

**Lab No.** 1656910 **Material Description:** White Floor Tile
**Client No.:** 1326-4 **Location:** Tan Mastic; 12x12 Room 119; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**NIST-NVLAP No. 1165** **NY-DOH No. 11021** **AIHA Lab No. 444**

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP or any agency of the U.S. government.*

Analysis Method: EPA 600/R-93/116

**Comments:** (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation must be made by quantitative TEM.

**Analysis Performed By:** H. Sonny Robb, AIHA-AAR 4883

**Date:** FEB 11 2003

**Approved By:** Frank E. Ehrenfeld, III
Laboratory Director

**IATL** International Asbestos Testing Laboratories

16000 Horizon Way Unit 100 Mt. Laurel, NJ 08054

Telephone: 856-231-9449 Fax: 856-231-9818

# CERTIFICATE OF ANALYSIS

**Client:** J.J. Sosa & Associates, Inc.
5811 Memorial Hwy,Suite 207
Tampa FL 33615

**Report Date:** 02/11/2003
**Project:** NTC GreatLakes; Bldg.1326, 2-4-03
**Project No.:** 03-004A

## BULK SAMPLE ANALYSIS SUMMARY

**Lab No.** 1656910 **Material Description:** White Floor Tile
**Client No.:** 1326-4 **Location:** Tan Mastic; 12x12 Room 119; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan Mastic | | | | |
| From Above | | | | |

**Lab No.** 1656911 **Material Description:** White Floor Tile
**Client No.:** 1326-5 **Location:** Tan Mastic; 12x12 Room 118; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**Lab No.** 1656911 **Material Description:** White Floor Tile
**Client No.:** 1326-5 **Location:** Tan Mastic; 12x12 Room 118; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan Mastic | | | | |
| From Above | | | | |

**Lab No.** 1656912 **Material Description:** White Floor Tile
**Client No.:** 1326-6 **Location:** Tan Mastic; 12x12 Room 108; Closet

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**NIST-NVLAP No. 1165** **NY-DOH No. 11021** **AIHA Lab No. 444**

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Analysis Method: EPA 600/R-93/116

**Comments:** (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation must be made by quantitative TEM.

**Analysis Performed By:** H. Sonny Robb

**Date:** FEB 11 2003 H. Sonny Robb, AIHA-AAR 4883

**Approved By:** Frank Ehrenfeld

Frank E. Ehrenfeld, III
Laboratory Director

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# CERTIFICATE OF ANALYSIS

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5811 Memorial Hwy,Suite 207
Tampa FL 33615

**Report Date:** 02/11/2003
**Project:** NTC GreatLakes; Bldg.1326, 2-4-03
**Project No.:** 03-004A

## BULK SAMPLE ANALYSIS SUMMARY

**Lab No.** 1656912 **Material Description:** White Floor Tile
**Client No.:** 1326-6 **Location:** Tan Mastic; 12x12 Room 108; Closet

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan Mastic | | | | |
| From Above | | | | |

**Lab No.** 1656913 **Material Description:** Tan Ceiling Tile
**Client No.:** 1326-7 **Location:** Room 163; Photo Room 2x2

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | 45 | Cellulose | 20 |
| | | 35 | Fibrous Glass | |

**Lab No.** 1656914 **Material Description:** Tan Ceiling Tile
**Client No.:** 1326-8 **Location:** Room 164; Lounge 2x2

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | 45 | Cellulose | 20 |
| | | 35 | Fibrous Glass | |

**Lab No.** 1656915 **Material Description:** Tan Ceiling Tile
**Client No.:** 1326-9 **Location:** Room 163; Photo Room 2x2

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | 45 | Cellulose | 20 |
| | | 35 | Fibrous Glass | |

**NIST-NVLAP No. 1165** **NY-DOH No. 11021** **AIHA Lab No. 444**

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Analysis Method: EPA 600/R-93/116

**Comments:** (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation must be made by quantitative TEM.

**Analysis Performed By:** H. Sonny Robb, AIHA-AAR 4883

**Date:** FEB 11 2003

**Approved By:** Frank Ehrenfeld

Frank E. Ehrenfeld, III
Laboratory Director

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# CERTIFICATE OF ANALYSIS

**Client:** J.J. Sosa & Associates, Inc.
5811 Memorial Hwy,Suite 207
Tampa FL 33615

**Report Date:** 02/14/2003
**Project:** NTC GreatLakes; Bldg.1326, 2-4-03
**Project No.:** 03-004A

## BULK SAMPLE ANALYSIS SUMMARY

**Lab No.** 1656916 **Material Description:** Blue Floor Tile
**Client No.:** 1326-10 **Location:** Tan Mastic; 12x12 Room 163; Photo Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**Lab No.** 1656916 **Material Description:** Blue Floor Tile
**Client No.:** 1326-10 **Location:** Tan Mastic; 12x12 Room 163; Photo Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan Mastic | | | | |
| From Above | | | | |

**Lab No.** 1656917 **Material Description:** Blue Floor Tile
**Client No.:** 1326-11 **Location:** Tan Mastic; 12x12 Room 163; Photo Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**Lab No.** 1656917 **Material Description:** Blue Floor Tile
**Client No.:** 1326-11 **Location:** Tan Mastic; 12x12 Room 163; Photo Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan Mastic | | | | |
| From Above | | | | |

**NIST-NVLAP No. 1165** **NY-DOH No. 11021** **AIHA Lab No. 444**

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Analysis Method: EPA 600/R-93/116

**Comments:** (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation must be made by quantitative TEM.

**Analysis Performed By:** H. Sonny Robb, AIHA-AAR 4883

**Date:** FEB 11 2003

**Approved By:** Frank Ehrenfeld

Frank E. Ehrenfeld, III
Laboratory Director

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Telephone: 856-231-9449 Fax: 856-231-9818

# CERTIFICATE OF ANALYSIS

**Client:** J.J. Sosa & Associates, Inc.
5811 Memorial Hwy,Suite 207
Tampa FL 33615

**Report Date:** 02/11/2003
**Project:** NTC GreatLakes; Bldg.1326, 2-4-03
**Project No.:** 03-004A

## BULK SAMPLE ANALYSIS SUMMARY

**Lab No.** 1656918 **Material Description:** Blue Floor Tile
**Client No.:** 1326-12 **Location:** Tan Mastic; 12x12 Room 163; Photo Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**Lab No.** 1656918 **Material Description:** Blue Floor Tile
**Client No.:** 1326-12 **Location:** Tan Mastic; 12x12 Room 163; Photo Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan Mastic | | | | |
| From Above | | | | |

**Lab No.** 1656919 **Material Description:** Tan Carpet Mastic
**Client No.:** 1326-13 **Location:** Room 164; Lounge

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**Lab No.** 1656920 **Material Description:** Tan Carpet Mastic
**Client No.:** 1326-14 **Location:** Room 164; Lounge

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**NIST-NVLAP No. 1165** **NY-DOH No. 11021** **AIHA Lab No. 444**

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Analysis Method: EPA 600/R-93/116

**Comments:** (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation must be made by quantitative TEM.

**Analysis Performed By:** H. Sonny Robb, AIHA-AAR 4883

**Date:** FEB 11 2003

**Approved By:** Frank E. Ehrenfeld, III
Laboratory Director

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# CERTIFICATE OF ANALYSIS

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5811 Memorial Hwy,Suite 207
Tampa FL 33615

**Report Date:** 02/11/2003
**Project:** NTC GreatLakes; Bldg.1326, 2-4-03
**Project No.:** 03-004A

## BULK SAMPLE ANALYSIS SUMMARY

**Lab No.** 1656921 **Material Description:** Tan Carpet Mastic
**Client No.:** 1326-15 **Location:** Room 164; Lounge

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**Lab No.** 1656922 **Material Description:** BlackFloorTile;12x12
**Client No.:** 1326-16 **Location:** Tan/Clear Mastic Room 157; Game Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**Lab No.** 1656922 **Material Description:** BlackFloorTile;12x12
**Client No.:** 1326-16 **Location:** Tan/Clear Mastic Room 157; Game Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan/Clear Mastic | | | | |
| From Above | | | | |

**Lab No.** 1656923 **Material Description:** BlackFloorTile;12x12
**Client No.:** 1326-17 **Location:** Tan/Clear Mastic Room 122; Subway

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**NIST-NVLAP No. 1165** **NY-DOH No. 11021** **AIHA Lab No. 444**

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP or any agency of the U.S. government.*

Analysis Method: EPA 600/R-93/116

**Comments:** (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation must be made by quantitative TEM.

**Analysis Performed By:** H. Sonny Robb
H. Sonny Robb, AIHA-AAR 4883

**Date:** FEB 11 2003

**Approved By:** Frank Ehrenfeld

Frank E. Ehrenfeld, III
Laboratory Director

**IATL** International Asbestos Testing Laboratories

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# CERTIFICATE OF ANALYSIS

**Client:** J.J. Sosa & Associates, Inc.
5811 Memorial Hwy,Suite 207
Tampa FL 33615

**Report Date:** 02/11/2003
**Project:** NTC GreatLakes; Bldg.1326, 2-4-03
**Project No.:** 03-004A

## BULK SAMPLE ANALYSIS SUMMARY

**Lab No.** 1656923 **Material Description:** BlackFloorTile;12x12
**Client No.:** 1326-17 **Location:** Tan/Clear Mastic Room 122; Subway

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan/Clear Mastic | | | | |
| From Above | | | | |

**Lab No.** 1656924 **Material Description:** BlackFloorTile;12x12
**Client No.:** 1326-18 **Location:** Tan/Clear Mastic Room 101; Hallway

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**Lab No.** 1656924 **Material Description:** BlackFloorTile;12x12
**Client No.:** 1326-18 **Location:** Tan/Clear Mastic Room 101; Hallway

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan/Clear Mastic | | | | |
| From Above | | | | |

**Lab No.** 1656925 **Material Description:** White Floor Tile
**Client No.:** 1326-19 **Location:** Tan Mastic; 12x12 Room 157; Game Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**NIST-NVLAP No. 1165** **NY-DOH No. 11021** **AIHA Lab No. 444**

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP or any agency of the U.S. government.*

Analysis Method: EPA 600/R-93/116

**Comments:** (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation must be made by quantitative TEM.

**Analysis Performed By:** H. Sonny Robb, AIHA-AAR 4883

**Date:** FEB 11 2003

**Approved By:** Frank E. Ehrenfeld, III
Laboratory Director

**IATL** International Asbestos Testing Laboratories

16000 Horizon Way Unit 100 Mt. Laurel, NJ 08054

Telephone: 856-231-9449 Fax: 856-231-9818

# CERTIFICATE OF ANALYSIS

**Client:** J.J. Sosa & Associates, Inc.
5811 Memorial Hwy,Suite 207
Tampa FL 33615

**Report Date:** 02/11/2003
**Project:** NTC GreatLakes; Bldg.1326, 2-4-03
**Project No.:** 03-004A

## BULK SAMPLE ANALYSIS SUMMARY

* **Lab No.** 1656925 **Material Description:** White Floor Tile
**Client No.:** 1326-19 **Location:** Tan Mastic; 12x12 Room 157; Game Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan Mastic | | | | |
| From Above | | | | |

**Lab No.** 1656926 **Material Description:** White Floor Tile
**Client No.:** 1326-20 **Location:** Tan Mastic; 12x12 Room 122; Subway

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

* **Lab No.** 1656926 **Material Description:** White Floor Tile
**Client No.:** 1326-20 **Location:** Tan Mastic; 12x12 Room 122; Subway

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan Mastic | | | | |
| From Above | | | | |

**Lab No.** 1656927 **Material Description:** White Floor Tile
**Client No.:** 1326-21 **Location:** Tan Mastic; 12x12 Room 122; Subway

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**NIST-NVLAP No. 1165** **NY-DOH No. 11021** **AIHA Lab No. 444**

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP or any agency of the U.S. government.*

Analysis Method: EPA 600/R-93/116

**Comments:** (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation must be made by quantitative TEM.

**Analysis Performed By:** H. Sonny Robb, AIHA-AAR 4883

**Date:** FEB 11 2003

**Approved By:** Frank E. Ehrenfeld, III
Laboratory Director

**IATL** International Asbestos Testing Laboratories

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# CERTIFICATE OF ANALYSIS

**Client:** J.J. Sosa & Associates, Inc.
5811 Memorial Hwy,Suite 207
Tampa FL 33615

**Report Date:** 02/11/2003
**Project:** NTC GreatLakes; Bldg.1326, 2-4-03
**Project No.:** 03-004A

## BULK SAMPLE ANALYSIS SUMMARY

* **Lab No.** 1656927 **Material Description:** White Floor Tile
**Client No.:** 1326-21 **Location:** Tan Mastic; 12x12 Room 122; Subway

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan Mastic | | | | |
| From Above | | | | |

**Lab No.** 1656928 **Material Description:** BlackRubberBaseboard
**Client No.:** 1326-22 **Location:** Room 118; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| No Mastic | | | | |

**Lab No.** 1656929 **Material Description:** BlackRubberBaseboard
**Client No.:** 1326-23 **Location:** Off-White Mastic Room 118; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**Lab No.** 1656929 **Material Description:** BlackRubberBaseboard
**Client No.:** 1326-23 **Location:** Off-White Mastic Room 118; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Off-White Mastic | | | | |
| From Above | | | | |

* Not enough material received to verify results.
(EPA 600/R-93/116 Section 2.1)

**NIST-NVLAP No. 1165** **NY-DOH No. 11021** **AIHA Lab No. 444**

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP or any agency of the U.S. government.*

Analysis Method: EPA 600/R-93/116

**Comments:** (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation must be made by quantitative TEM.

**Analysis Performed By:** H. Sonny Robb
H. Sonny Robb, AIHA-AAR 4883

**Date:** FEB 11 2003

**Approved By:** Frank Ehrenfeld
Frank E. Ehrenfeld, III
Laboratory Director

**IATL** International Asbestos Testing Laboratories

16000 Horizon Way Unit 100 Mt. Laurel, NJ 08054

Telephone: 856-231-9449 Fax: 856-231-9818

# CERTIFICATE OF ANALYSIS

**Client:** J.J. Sosa & Associates, Inc.
5811 Memorial Hwy,Suite 207
Tampa FL 33615

**Report Date:** 02/11/2003
**Project:** NTC GreatLakes; Bldg.1326, 2-4-03
**Project No.:** 03-004A

## BULK SAMPLE ANALYSIS SUMMARY

**Lab No.** 1656930 **Material Description:** BlackRubberBaseboard
**Client No.:** 1326-24 **Location:** Room 119; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| No Mastic | | | | |

**Lab No.** 1656931 **Material Description:** White/Tan Sheetrock
**Client No.:** 1326-25 **Location:** Room 118; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | 20 | Cellulose | 79 |
| No Jt Compound | | 1 | Fibrous Glass | |

**Lab No.** 1656932 **Material Description:** White/Tan Sheetrock
**Client No.:** 1326-26 **Location:** Room 118; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | 20 | Cellulose | 79 |
| No Jt Compound | | 1 | Fibrous Glass | |

**Lab No.** 1656933 **Material Description:** White/Tan Sheetrock
**Client No.:** 1326-27 **Location:** Room 118; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | 20 | Cellulose | 79 |
| No Jt Compound | | 1 | Fibrous Glass | |

**NIST-NVLAP No. 1165** **NY-DOH No. 11021** **AIHA Lab No. 444**

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP or any agency of the U.S. government.*

Analysis Method: EPA 600/R-93/116

**Comments:** (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation must be made by quantitative TEM.

**Analysis Performed By:** H. Sonny Robb, AIHA-AAR 4883

**Date:** FEB 11 2003

**Approved By:** Frank E. Ehrenfeld, III
Laboratory Director

**IATL** International Asbestos Testing Laboratories

16000 Horizon Way Unit 100 Mt. Laurel, NJ 08054

Telephone: 856-231-9449 Fax: 856-231-9818

# CERTIFICATE OF ANALYSIS

**Client:** J.J. Sosa & Associates, Inc.
5811 Memorial Hwy,Suite 207
Tampa FL 33615

**Report Date:** 02/14/2003
**Project:** NTC GreatLakes; Bldg.1326, 2-4-03
**Project No.:** 03-004A

## BULK SAMPLE ANALYSIS SUMMARY

**Lab No.** 1656934 **Material Description:** White Floor Tile
**Client No.:** 1326-28 **Location:** Tan Mastic; 12x12 Room 119; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**Lab No.** 1656934 **Material Description:** White Floor Tile
**Client No.:** 1326-28 **Location:** Tan Mastic; 12x12 Room 119; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan Mastic | | | | |
| From Above | | | | |

**Lab No.** 1656935 **Material Description:** White Floor Tile
**Client No.:** 1326-29 **Location:** Tan Mastic; 12x12 Room 119; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |

**Lab No.** 1656935 **Material Description:** White Floor Tile
**Client No.:** 1326-29 **Location:** Tan Mastic; 12x12 Room 119; Phone Room

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | None Detected | None Detected | 100 |
| Tan Mastic | | | | |
| From Above | | | | |

**NIST-NVLAP No. 1165** **NY-DOH No. 11021** **AIHA Lab No. 444**

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP or any agency of the U.S. government.*

Analysis Method: EPA 600/R-93/116

**Comments:** (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation must be made by quantitative TEM.

**Analysis Performed By:** H. Sonny Robb, AIHA-AAR 4883

**Date:** FEB 11 2003

**Approved By:**

Frank E. Ehrenfeld, III
Laboratory Director

**IATL** International Asbestos Testing Laboratories

16000 Horizon Way Unit 100 Mt. Laurel, NJ 08054

Telephone: 856-231-9449 Fax: 856-231-9818

# CERTIFICATE OF ANALYSIS

**Client:** J.J. Sosa & Associates, Inc.
5811 Memorial Hwy,Suite 207
Tampa FL 33615

**Report Date:** 02/11/2003
**Project:** NTC GreatLakes; Bldg.1326, 2-4-03
**Project No.:** 03-004A

## BULK SAMPLE ANALYSIS SUMMARY

**Lab No.** 1656936 **Material Description:** Tan Ceiling Tile
**Client No.:** 1326-30 **Location:** Room 118; Phone Room 2x4

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | 45 | Cellulose | 15 |
| | | 40 | Fibrous Glass | |

**Lab No.** 1656937 **Material Description:** Tan Ceiling Tile
**Client No.:** 1326-31 **Location:** Room 118; Phone Room 2x4

| % Asbestos | Type | % Non-Asbestos Fibrous Material | Type | % Non-Fibrous Material |
|---|---|---|---|---|
| None Detected | None Detected | 45 | Cellulose | 15 |
| | | 40 | Fibrous Glass | |

**NIST-NVLAP No. 1165** **NY-DOH No. 11021** **AIHA Lab No. 444**

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP or any agency of the U.S. government.*

Analysis Method: EPA 600/R-93/116

**Comments:** (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-asbestos containing, confirmation must be made by quantitative TEM.

**Analysis Performed By:** H. Sonny Robb, AIHA-AAR 4883

**Date:** FEB 11 2003

**Approved By:** Frank E. Ehrenfeld, III
Laboratory Director

# J.J. SOSA & ASSOCIATES, INC.

ASBESTOS PLM LABORATORY

REQUEST FOR ANALYTICAL SERVICES AND CHAIN OF CUSTODY FORM

354459

## ORIGINATOR INFORMATION

| | |
|---|---|
| J.J. SOSA & ASSOCIATES, INC.<br>13700 SW 88TH STREET, SUITE 304<br>MIAMI, FLORIDA 33186-1309<br>PH (305) 752-9070 FAX (305) 752-9779 | CLIENT NAME: Naval Facilities Engineering CLIENT REF: ACQ23RR0410-0010<br>PROJECT NAME: NTC Great Lakes<br>LOCATION: Great Lakes, Illinois Building 1326 |
| JJSA PROJECT NO.: 03-004A | JJSA INSPECTOR (S): FT² SURVEYED: |

## ANALYSIS REQUESTED

X BULK SAMPLE ANALYSIS FOR ASBESTOS TYPE AND PERCENT BY VOLUME. 48 hour Turnaround

___ AIR SAMPLE ANALYSIS FOR FIBER PER CUBIC CENTIMETER (NIOSH 7400 EQUIVALENT).

___ OTHER ___

X STOP ANALYSIS AFTER FIRST SAMPLE IN EACH HOMOGENEOUS AREA IS FOUND TO CONTAIN 1% OR MORE ASBESTOS BY VOLUME.

## SAMPLE CUSTODY INFORMATION

| | DATE | TIME | SIGNATURE |
|---|---|---|---|
| COLLECTION | | | |
| TRANSPORTATION | | | |
| LAB ACCEPTANCE | 2/27/03 | 10:05 am | Earlene M. Palmer |

## SAMPLE INFORMATION

| ROOM NO. | SAMPLE ID NO. | DESCRIPTION/LOCATION OF MATERIAL (FL.=FLOOR CL.=CEILING W=WALL) | HA AREA | FUNCTIONAL SPACE | QUANTITY | FRIA Y/N | ABESTOS CONTENT | COND G-F-P | DIST/POT L-M-H |
|---|---|---|---|---|---|---|---|---|---|
| | QAQC-1 | 2x4' Ceiling tiles medium fissures | | | | N | | G | L |
| | QAQC-2 | White w/Gray camoflage FT 12x12" | 2 | | | N | | G | L |
| V18 | QAQC-3 | Base board Mastic | 8 | | 100LF | N | | G | L |
| 157 | QAQC-4 | Black FT with white flakes 12x12" | 6 | | 2,000 ft | N | | G | L |
| | | | | | | | | | |
| | | | | | | | | | |

Analytica Solutions, Inc.
12189 Pennsylvania Street
Thornton, Colorado 80241
(303) 469-8858
(800) 871-8757
Fax: (303) 469 5954

ANALYTICA SOLUTIONS
an Analytica Group Company

**RESULTS OF BULK ASBESTOS SAMPLE ANALYSIS BY POLARIZED LIGHT MICROSCOPY (PLM)**

Client: J J Sosa & Associates, Inc. LGN: 344459

Project ID: 03-004A, NTC Great Lakes Bldg. 1326, Great Lakes, Illinois Page: 1 of 1

**Sample Description:**

| Sample Number | Sample Date | Description |
|---|---|---|
| QAQC-1 | / / | 2x4' ceiling tile medium fissures [white] |
| QAQC-2* | / / | White w/grey camouflage ft 12x12" [2 parts] |
| QAQC 2 [A] | / / | [white/gray mottled floor tile] |
| QAQC-2 [B] | / / | [yellow mastic with white plaster] |
| QAQC-3* | / / | Baseboard mastic [3 parts] |

**Results of PLM Analysis:** Visual Area Estimation: Percentages Reported

| Sample Number: | QAQC-1 | QAQC 2* | QAQC-2 [A] | QAQC-2 [B] | QAQC 3* |
|---|---|---|---|---|---|
| **Asbestiform Minerals:** | | | | | |
| Amosite | | | | | |
| Anthophyllite | | | | | |
| Chrysotile | | | | | |
| Crocidolite | | | | | |
| Tremolite-Actinolite | | | | | |
| TOTAL ASBESTOS | 0 | 0 | 0 | 0 | 0 |
| **Other Fibrous Materials:** | | | | | |
| Fibrous Glass | 15.0 | | | | |
| Cellulose | 50.0 | | | | |
| Synthetics | | | | | |
| Other: | | | | | |
| Percent Nonfibrous Material | 35.0 | 100 | 100 | 100 | 100 |

* Composite analysis (multilayered sample, see individual layer analysis).

Analyst: Michael K. Scales Date: 03/03/2003

NVLAP LAB CODE 100860

"The Science of Analysis, The Art of Service"

AIHA ACCREDITED LABORATORY

Analytica Solutions, Inc.
12189 Pennsylvania Street
Thornton, Colorado 80241
(303) 469-8868
(800) 873-8707
Fax: (303) 469-8254

**RESULTS OF BULK ASBESTOS SAMPLE ANALYSIS BY POLARIZED LIGHT MICROSCOPY (PLM)**

Client: J J Sosa & Associates, Inc. — LAN: 344459

Project ID: 03-004A, NTC Great Lakes Bldg. 1326, Great Lakes, Illinois — Page: 2 of 2

**Sample Description:**

| Sample Number | Sample Date | Description |
|---|---|---|
| QAQC 3 [A] | / / | [black cove base] |
| QAQC-3 [B] | / / | [tan mastic] |
| QAQC-3 [C] | / / | [white joint compound with paint] |
| QAQC-4* | / / | Black tile with white flakes 12x12' (2 parts) |
| QAQC-4 [A] | / / | [black/white streak floor tile] |

**Results of PLM Analysis:** Visual Area Estimation: Percentages Detected

| Sample Number: | QAQC 3 [A] | QAQC-3 [B] | QAQC 3 [C] | QAQC-4* | QAQC-4 [A] |
|---|---|---|---|---|---|
| Asbestiform Minerals: | | | | | |
| Amosite | | | | | |
| Anthophyllite | | | | | |
| Chrysotile | | | | | |
| Crocidolite | | | | | |
| Tremolite-Actinolite | | | | | |
| TOTAL ASBESTOS | 0 | 0 | 0 | 0 | 0 |
| Other Fibrous Materials: | | | | | |
| Fibrous Glass | | | | | |
| Cellulose | | | | | |
| Synthetics | | | | | |
| Other: | | | | | |
| Percent Nonfibrous Material | 100 | 100 | 100 | 100 | 100 |

* Composite analysis (multi-layered sample, see individual layer analyses).

Analyst: Michael K. Scales — Date: 03/03/2003

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**Analytica Solutions, Inc.**
12189 Pennsylvania Street
Thornton, Colorado 80241
(303) 460 5866
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Fax: (303) 469 5254

ANALYTICA SOLUTIONS
an Analytical Laboratory Company

## RESULTS OF BULK ASBESTOS SAMPLE ANALYSIS BY POLARIZED LIGHT MICROSCOPY (PLM)

Client: J J Sosa & Associates, Inc. LGN: 344459

Project ID: 03-004A, NTC Great Lakes Bldg. 1326, Great Lakes, Illinois Page: 3 of

**Sample Description:**

| Sample Number | Sample Date | Description |
|---|---|---|
| QAQC 4 [B] | / / | [yellow mastic] |
| | | |
| | | |
| | | |
| | | |

**Results of PLM Analysis:** Visual Area Estimation: Percentages Detected

| Sample Number: | QAQC-4 [B] | | | | |
|---|---|---|---|---|---|
| Asbestiform Minerals: | | | | | |
| Amosite | | | | | |
| Anthophyllite | | | | | |
| Chrysotile | | | | | |
| Crocidolite | | | | | |
| Tremolite-Actinolite | | | | | |
| TOTAL ASBESTOS | 0 | | | | |
| Other Fibrous Materials: | | | | | |
| Fibrous Glass | | | | | |
| Cellulose | | | | | |
| Synthetics | | | | | |
| Other: | | | | | |
| Percent Nonfibrous Material | 100 | | | | |

* Composite analysis (multilayered sample, see individual layer analyses).

Analyst: Michael K. Scales Date: 03/03/2003

NVLAP
NVLAP LAB CODE 100663

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# APPENDIX B

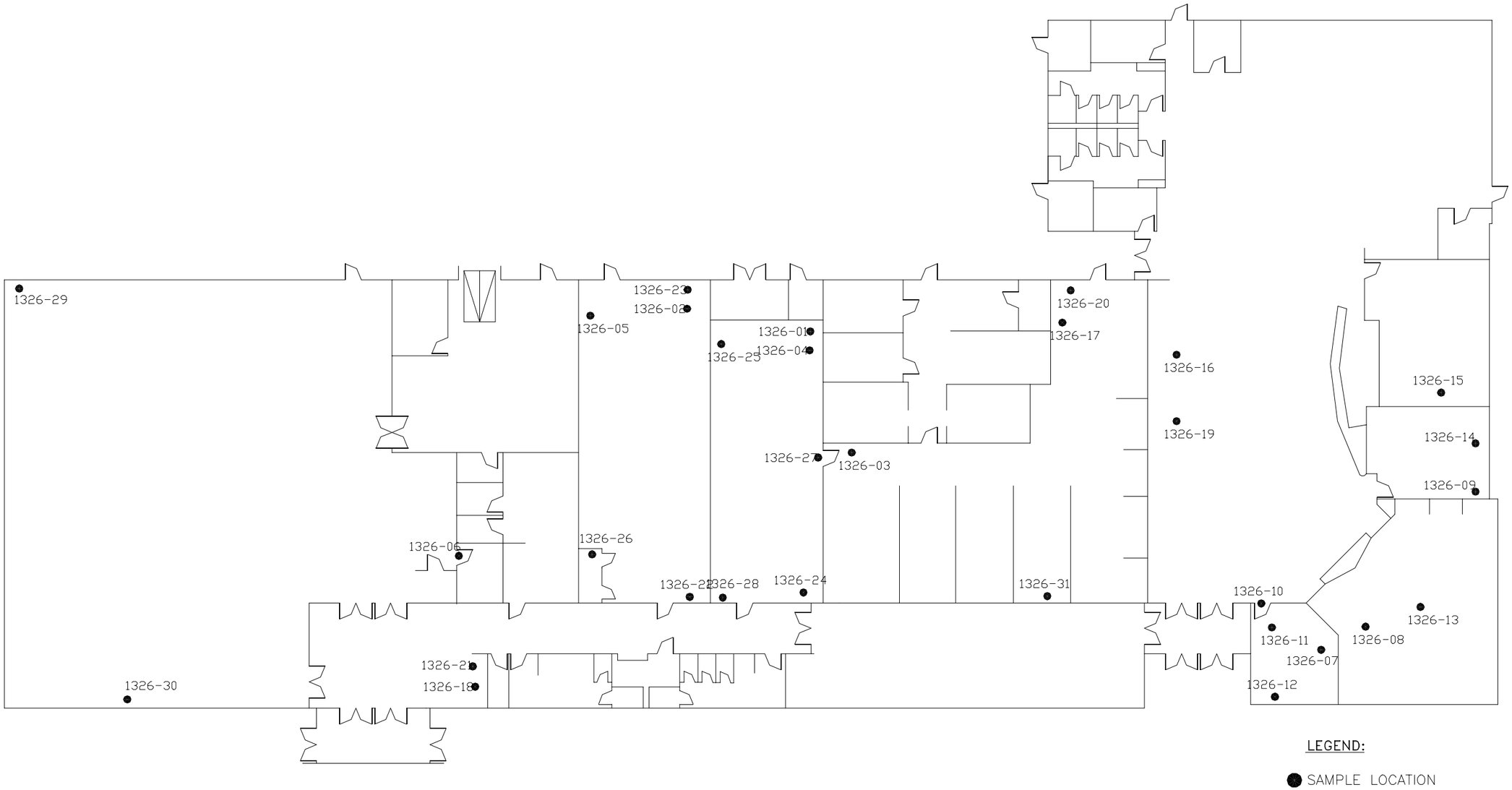


Figure 1

BUILDING 1326
FIRST FLOOR
NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS

JJSA, 2003

| | |
|---|---|
| Scale: | N.T.S. |
| Date: | 20 FEB 03 |
| Project No.: | 03-004A |
| Drawn By: | L. Pachano |
| Checked By: | J. Morales |
| Approved By: | J. Morales |
| Filename: | |

J. J. SOSA & ASSOCIATES, INC.
Engineers & Contra

PLOTTED:

# APPENDIX C

The

# American Board of Industrial Hygiene®

## ABIH®

AMERICAN BOARD OF INDUSTRIAL HYGIENE ®

organized to improve the practice of Industrial Hygiene
proclaims that

**Jose Joaquin Sosa**

having met all requirements through
education, experience, and examination,
is hereby certified in the

**COMPREHENSIVE PRACTICE**
of
**INDUSTRIAL HYGIENE**

and has the right to use the designations

**CERTIFIED INDUSTRIAL HYGIENIST**

**CIH**

CERTIFICATE 5429

December 9, 1991
date

Kenneth M. Walkingford
Chairman ABIH

5429
certificate number

Albert Hess
Secretary ABIH

# State of Illinois

A 132681

# Department of Public Health

## LICENSE, PERMIT, CERTIFICATION, REGISTRATION

The person, firm or corporation whose name appears on this certificate has complied with the provisions of the Illinois Statutes and/or rules and regulations and is hereby authorized to engage in the activity as indicated below.

JOHN R. LUMPKIN, M.D.
DIRECTOR

Issued under the authority of
The State of Illinois
Department of Public Health

| EXPIRATION DATE | CATEGORY | I.D. NUMBER |
|---|---|---|
| 05/15/2003 | 5319 | 100-09896 |

BRIAN RALSTON

PROJECT MANAGER

INSPECTOR

BUSINESS ADDRESS
ASBESTOS PROFESSIONAL LICENSE
ALTERING THIS CERTIFICATE MAY RESULT IN LEGAL ACTION
BRIAN RALSTON
518 S. ELMWOOD
OAK PARK IL 60304
THIS LICENSE IS NOT VALID IF YOUR IDPH
COURSE CERTIFICATE IS NOT CURRENT

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State of Illinois A 132681
Department of Public Health
LICENSE, PERMIT, CERTIFICATION, REGISTRATION
ASBESTOS PROFESSIONAL LICENSE

| EXPIRATION DATE | CATEGORY | I.D. NUMBER |
|---|---|---|
| 05/15/2003 | 5319 | 100-09896 |

BRIAN RALSTON

PROJECT MANAGER

INSPECTOR

THE PERSON, FIRM OR CORPORATION WHOSE NAME APPEARS ON THIS CERTIFICATE HAS COMPLIED WITH THE PROVISIONS OF THE ILLINOIS STATUTES AND/OR RULES AND REGULATIONS AND IS HEREBY AUTHORIZED TO ENGAGE IN THE ACTIVITY INDICATED ON THE FACE OF THIS CARD.

ISSUED UNDER THE AUTHORITY OF
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC HEALTH

SIGNATURE OF LICENSEE

# The American Industrial Hygiene Association

*is proud to acknowledge that*

## International Asbestos Testing Lab

Mt. Laurel, NJ

has fulfilled the requirements for and has been formally recognized by AIHA and is technically competent to perform the analyses listed in the following

**SCOPE OF ACCREDITATION**

| INDUSTRIAL HYGIENE<br>Originally Accredited: 03/01/97 | | ENVIRONMENTAL LEAD<br>Originally Accredited: 01/20/97 | | ENVIRONMENTAL MICROBIOLOGY |
|---|---|---|---|---|
| X Metals | ___Silica | X Paint Chips | X Air | ___Bacteria |
| X Asbestos PCM | X Asbestos PLM | X Dust Wipes | X Soil | ___Fungi |
| ___Organic Solvents | ___Diffusive Samples | | | |

The above named laboratory agrees to perform all analyses listed above in the scope of accreditation according to applicable policy requirements and acknowledges that continued accreditation is dependent on successful participation in the appropriate proficiency testing programs. This laboratory may be contacted to verify the current scope of accreditation, proficiency testing performance and accreditation status. Accreditation by AIHA is not a guarantee of the validity of the data generated by the laboratory.

Laboratory # 100188

Certificate # 444

Accreditation Expires: 01/20/03

*Colleen Becker*
*Chair, Analytical Accreditation Board*

*James R. Thornton, CIH, CSP*
*President, AIHA*

**NAVAL STATION GREAT LAKES IL**

**Asset Evaluation Worksheet**

| | | | |
|---|---|---|---|
| **Building # (PR#):** | **1326 (203428)** | **Facility POC:** | **Paul Vrana** |
| **Building Name:** | **RECRUIT NEX AND RECREATION** | | |
| **Installation UIC:** | **N00128** | **Site:** | **GLMS** |
| **Street Address** | **3010 ILLINOIS STREET** | **POC Phone Number:** | **847-769-6438** |
| **Occupant:** | **N39224 NEX GREAT LAKES IL** | **POC Email:** | paulvrana@nexweb.org |

| CCN | Unit Title | User Activity | Department | AE Rating | Area / Quantity | U/M | Alternate U/M |
|---|---|---|---|---|---|---|---|
| **74009** | Exchange Services Outlets | **N39224** NEX Great Lakes IL | | Adequate | 19,440 | SF | N/A |
| **74054** | MWR Military REC Center | **N0763A** NAVCRUITRACOM Great Lakes IL | | Adequate | 9,355 | SF | N/A |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | **28,795** | **SF** | |

| CCN | Def Code | Def Code Description | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | Field Visit: 061110 |

**PHOTOGRAPHS:**

**NOTES:**

AE Evaluator: Reid Planning, Inc. Email: AE@reidplanning.com Telephone: 619-281-8847



**Building 1326**

# CLASS 2 PROPERTY RECORD

**Report Date** 22 MAR 2010 13:50

| | | | | |
|---|---|---|---|---|
| **Installation** | N00128 | NAVAL STATION GREAT LAKES IL | **Property No** | 203428 |
| **Special Area** | | | **Facility No** | 1326 |
| **Instal Mgmt Clmnt** | N00052 | CNI | **Facility ID** | NFA100000666745 |
| **Claimant Code** | | | **Facility Type** | 2 BUILDING |
| **Operational Claimant** | N69292 | CFFC | **Action Type** | 2 CAP IMP |
| **Former Installation** | N00210 | NSTC GREAT LAKES IL | **Former PR No** | 203428 |
| **Facility Name** | RECRUIT NEX AND RECREATION | | **Last Updated** | 18 MAR 2010 |
| | | | **Family Housing Indicator** | N |

## Location

| | | |
|---|---|---|
| **Region** | N61040 | CNR MIDWEST |
| **Country** | US | UNITED STATES |
| **State** | 17 | ILLINOIS |
| **County** | 097 | LAKE |
| **City** | 3595 | GREAT LAKES |
| **Map Grid** | R18 | |

## Excess and Disposal

**Excess Action**
**Excess Date**
**Consolidated PR**
**Disposal Method**
**Disposal Date**
**Disp Contract No**

## Acquisition

| | | | |
|---|---|---|---|
| **Estate Code** | 13 OTHER MIL | **Acquisition Date** | 16 AUG 1996 |
| **Land CCN** | 91140 LAND - CONDEMNATION | **Government Cost** | $ 4,229,288 |
| **Acq Contract** | N6246796C0758 | | |

## Maintenance

| | | |
|---|---|---|
| **Preponderant User** | N39224 | NEX GREAT LAKES IL |
| **Prime Use CCN** | 74009 | EXCHANGE SERVICE OUTLETS |
| **Prime FAC Code** | 7346 | EXCHANGE SALES FACILITY |
| **Mnt Fund Source** | A | O&M, N |
| **Mnt Responsibility** | N00128 | NAVAL STATION GREAT LAKES IL |
| **Asset Eval Date** | ~~02 FEB 2007~~ 11 JUN 2010 | |
| **Current PRV** | $ 8,463,098 | **PRV at EOY 09** $ 8,463,098 |

## Measurements

| | English | Metric |
|---|---|---|
| **Length** | 282.00 | 85.95 |
| **Width** | 165.00 | 50.29 |
| **Height** | 20.00 | 6.10 |
| **Area** | 28,795.00 | 2,675.14 |
| **Area UM** | SF | M2 |
| **Number of Stories** | 1 | |
| **Irregular Shape Ind** | Y | |

## Construction

| | | | |
|---|---|---|---|
| **Facility Built Date** | 01 JUL 1996 | **Original Proj No** | |
| **Year Improved** | 2005 | **Current Proj No** | P-745 |
| **Constr Type** | PERM PERMANENT | **ABMP Code** | |

## Utilization

| | | | | | |
|---|---|---|---|---|---|
| **Fac Use CCN** | 74054 MWR MIL REC CENTER | **Set Back** | 3,000.00 | **DoD FAC** | 7417 |
| **Facility Use** | MWR MIL REC CENTER | **Max Val** | 200,000.00 | **DoD UM** | SF |
| **User Activity** | N0763A NAVCRUITRACOM GREAT LAKES IL | **Otg Identifier** | | **Primary UM** | SF |

| | Area | | Other | | Alternate | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **Adequate** | 9,355.00 | 869.11 | | | | |
| **Substandard** | | | | | | |
| **Inadequate** | | | | | | |
| **Total** | 9,355.00 | 869.11 | | | | |
| **Unit of Meas** | SF | M2 | | | | |

**Deficiencies** **Adq** **Sub** **Inad**

## Utilization

| | | | | | |
|---|---|---|---|---|---|
| **Fac Use CCN** | 74009 EXCHANGE SERVICE OUTLETS | **Set Back** | 3,500.00 | **DoD FAC** | 7346 |
| **Facility Use** | EXCHANGE SERVICE OUTLETS | **Max Val** | 200,000.00 | **DoD UM** | SF |
| **User Activity** | N39224 NEX GREAT LAKES IL | **Otg Identifier** | | **Primary UM** | SF |

| | **Area** | | **Other** | | **Alternate** | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **Adequate** | 19,440.00 | 1,806.04 | | | | |
| **Substandard** | | | | | | |
| **Inadequate** | | | | | | |
| **Total** | 19,440.00 | 1,806.04 | | | | |
| **Unit of Meas** | SF | M2 | | | | |

**Deficiencies** **Adq** **Sub** **Inad**

## Notes

| | |
|---|---|
| 10 OCT 2002 | Changed CatCodes and assigned SF area - this is the Recruit Exchange and Recreation center. |
| 29 SEP 2005 | Added space for NEX building warehouse expansion following BOD. |

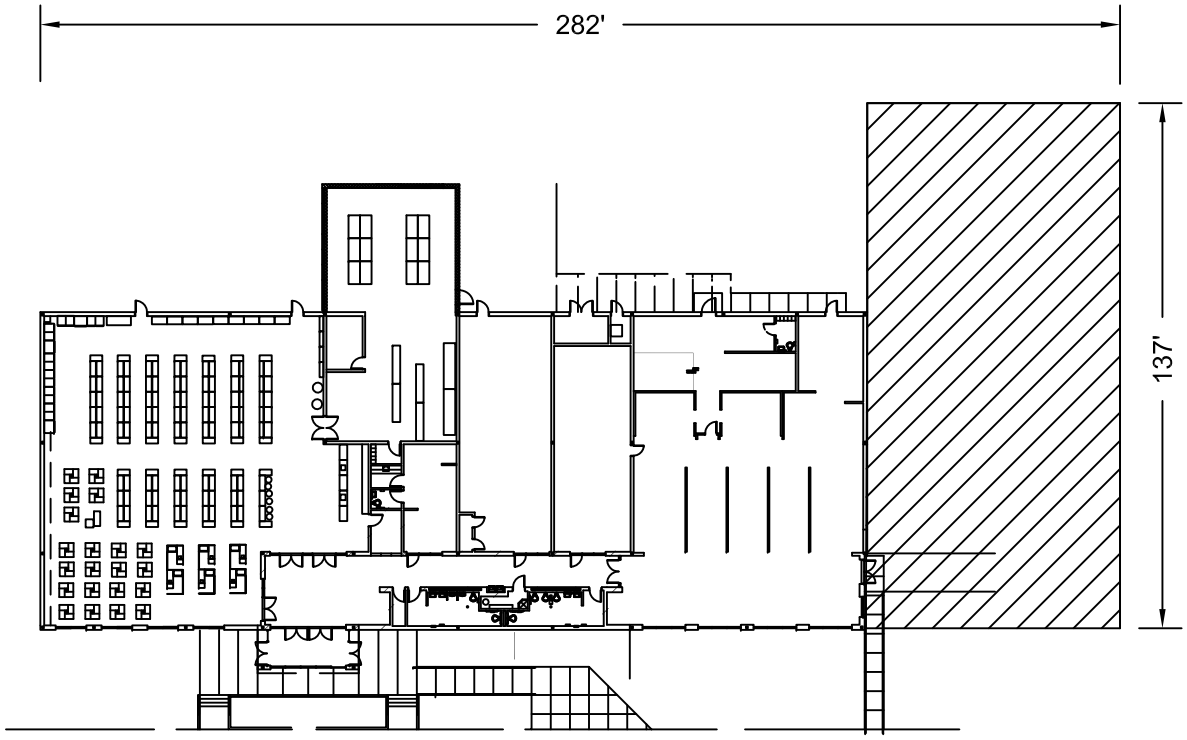
UTILIZATION

TOTAL FACILITY: 28,795 SF

TOTAL 1ST FLOOR: 28,795 SF

N0763A 74054 = 9,355SF

N39224 74009 = 19,440 SF




NOT TO SCALE

| FACILITY NUMBER: | | INSTALLATION: | UIC: | SITE: |
|---|---|---|---|---|
| 1326 | NAVFAC Naval Facilities Engineering Command | NAVAL STATION GREAT LAKES IL | N00128 | GREAT LAKES MAIN SITE |

# Part 6 Attachments

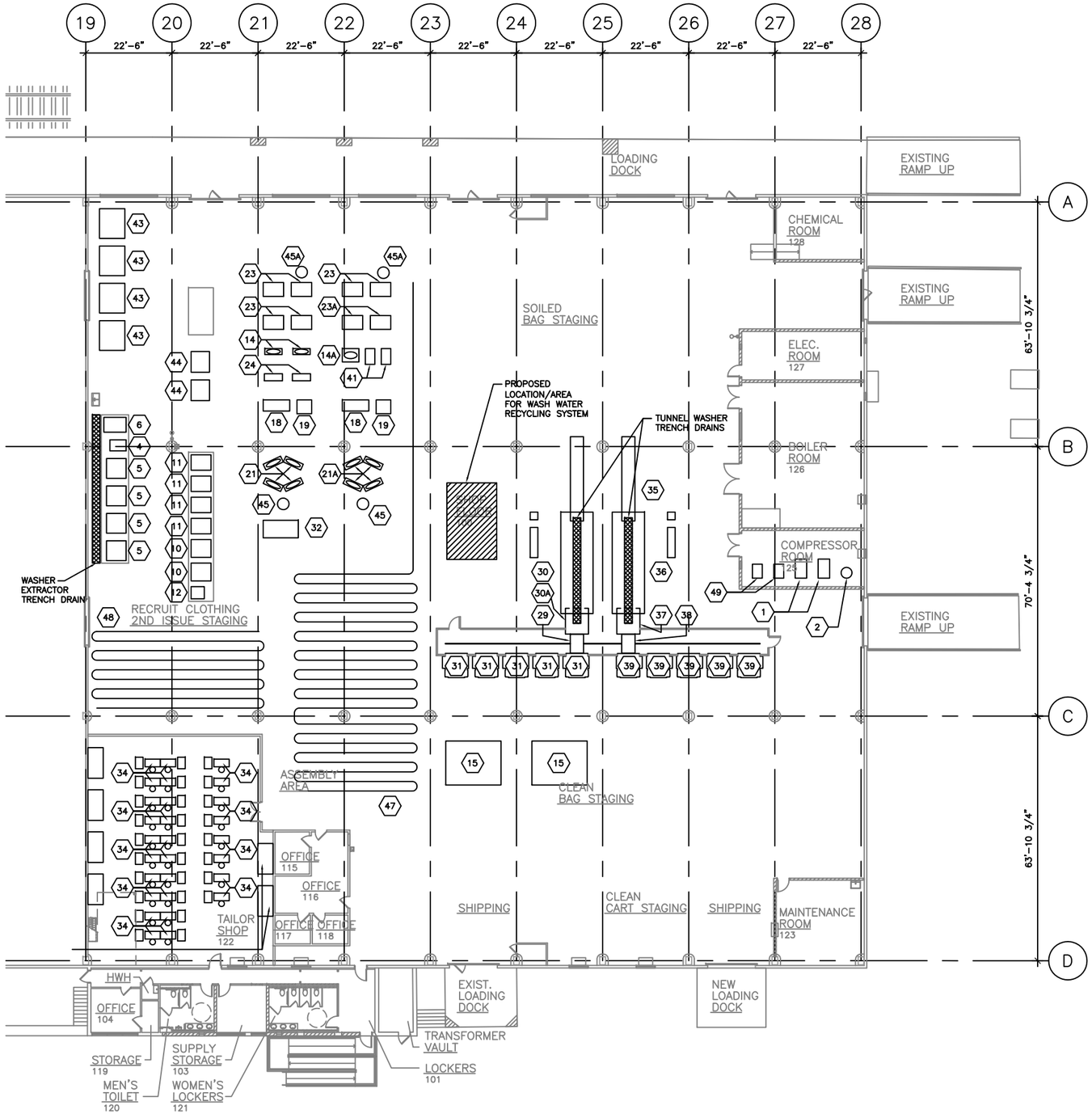
Building 3503 Documents

THIS

PAGE

NOT

USED




**1** OVERALL FIRST FLOOR EQUIPMENT LAYOUT PLAN

1/16" = 1'-0"

north

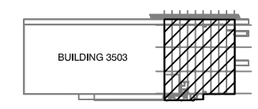
# EQUIPMENT LEGEND

REFER TO A-103 FOR EQUIPMENT UTILITY CONNECTION SCHEDULE

| ITEM NO. | QUANTITY | MANUFACTURER | MODEL NO. | DESCRIPTION | NEW | RELOCATED | REMARKS |
|---|---|---|---|---|---|---|---|
| 1 | 2 | SULLAIR | ES8-30H | 30HP ROTARY SCREW TYPE AIR COMPRESSOR | | X | |
| 2 | 1 | SPEEDAIRE | 1WD53 | 5HP 80 GAL VERTICAL AIR COMPRESSOR W/ MAGNETIC STARTER | | X | |
| 3 | 2 | - | - | HEAT EXCHANGER UNIT | (1) | (1) | SEE NOTE 2 |
| 4 | 1 | MILNOR | 30022 V6J | 50LB WASHER EXTRACTOR | X | | |
| 5 | 4 | WASHEX | FVS 600 | 135LB WASHER EXTRACTOR | X | | |
| 6 | 1 | MILNOR | 36026 V7J | 85LB WASHER EXTRACTOR | X | | |
| 7 | - | - | - | DELETED 08 MARCH, 2005 RESPONSE | - | - | |
| 8 | - | - | - | DELETED 03 NOV. 2004 MEETING | - | - | |
| 9 | - | - | - | DELETED 03 NOV. 2004 MEETING | - | - | |
| 10 | 2 | MILNOR | M170 | 170LB GAS DRYER | X | | |
| 11 | 4 | MILNOR | M130 | 120LB GAS DRYER | X | | |
| 12 | 1 | MILNOR | M55 | 50LB GAS DRYER, REVERSING | X | | |
| 13 | - | - | - | DELETED 08 MARCH, 2005 RESPONSE. | - | - | |
| 14 | 2 | CISSEL | - | STEAM SPOTTING BOARD | | X | |
| 14A | 1 | FORENTA | 461FOR | STEAM SPOTTING BOARD | | X | |
| 15 | 2 | CONTINENTAL-GIRBAU | F32118CS | STEAM IRONER 18 ROLL x 110" LONG, FEED RETURN | X | | |
| 16 | - | - | - | DELETED 03 NOV. 2004 MEETING | - | - | |
| 17 | - | - | - | DELETED 03 NOV. 2004 MEETING | - | - | |
| 18 | 2 | UNIPRESS | DAYV | DOUBLE BUCK VACUUM SHIRT PRESS | X | | |
| 19 | 2 | AJAX | ACCW-C | COLLAR AND CUFF LAUNDRY PRESS | X | | |
| 20 | | | | DELETED 03 NOV. 2004 MEETING | - | - | |
| 21 | 4 | UNIPRESS | 42X | UTILITY GARMENT LAUNDRY PRESS HOT HEAD | X | | |
| 21A | 4 | AJAX | 554 | UTILITY GARMENT LAUNDRY PRESS HOT HEAD | | X | |
| 22 | - | - | - | DELETED 03 NOV. 2004 MEETING | - | - | |
| 23 | 6 | AJAX | ADC 45 | DRY CLEANING LEGGER PRESS | X | | |
| 23A | 2 | AJAX | ADC 45 | DRY CLEANING LEGGER PRESS | | X | |
| 24 | 2 | UNIPRESS | ASF | FORM FINISHER | X | | |
| 25 | - | - | - | DELETED 03 NOV. 2004 MEETING | - | - | |
| 26 | - | - | - | DELETED 03 NOV. 2004 MEETING | - | - | |
| 27 | - | - | - | DELETED 03 NOV. 2004 MEETING | - | - | |
| 28 | - | - | - | DELETED 03 NOV. 2004 MEETING | - | - | |
| 29 | 1 | LAVATECH | - | TRANSFER CONVEYORS | | X | |
| 30 | 1 | LAVATECH | - | 7 MODULE CONTINUOUS BATCH WASHER, COMPUTER CONTROL | | X | |
| 30A | 1 | LAVATECH | - | SINGLE STAGE MEMBRANE PRESS | | X | |
| 31 | 5 | LAVATECH | - | 150 LB DRYER, GAS HEATED | | X | |
| 32 | 1 | COLMAC | CFS-90 | GARMENT FINISHER STEAM W/ LOADING CONVEYOR | | X | |
| 33 | - | - | - | DELETED 03 NOV. 2004 MEETING | - | - | |
| 34 | 28 | CHANDLER MACHINE | 600BR | SEWING MACHINE | | X | |
| 35 | 1 | LAVATEC | - | 6-POCKET LOADING, WEIGHING CONVEYOR | X | | |
| 36 | 1 | LAVATEC | - | 7 MODULE CONTINUOUS BATCH WASHER | X | | |
| 37 | 1 | LAVATEC | - | SINGLE STAGE MEMBRANE PRESS | X | | |
| 38 | 1 | LAVATEC | - | SINGLE CAKE SHUTTLE CONVEYOR | X | | |
| 39 | 5 | LAVATEC | - | DRYER, GAS HEATED, 110LB CAPACITY W/ 17-1/2" PEDESTAL | X | | |
| 40 | 1 | - | - | WATER SOFTNER | | X | SEE NOTE 4 |
| 40A | 1 | - | - | WATER SOFTNER | X | | SEE NOTE 4 |
| 41 | 2 | AJAX | ACBS-X | SLEEVERS | X | | |
| 42 | | - | - | DELETED 08 MARCH, 2005 RESPONSE. | - | - | |
| 43 | 4 | UNION | HL-880 | 75 LBS DRY-CLEANING MACHINE | X | | |
| 44 | 2 | UNION | HL-835 | 35 LBS DRY-CLEANING MACHINE | X | | |
| 45 | 2 | REMA | RP-4 | CENTRAL VAC. SYSTEM | X | | |
| 45A | 2 | REMA | RP-8 | CENTRAL VAC. SYSTEM | X | | |
| 46 | 3 | - | - | BOILERS | X | | SEE NOTE 3 |
| 47 | 1 | - | - | LAUNDRY RAIL CONVERYOR, 850 LF | - | - | SEE NOTE 5 |
| 48 | 1 | - | - | LAUNDRY RAIL CONVERYOR, 400 LF | - | - | SEE NOTE 5 |
| 49 | 2 | KAESER | TD 61 | AIR DRYER | X | | |

NOTES:

1. ALL EQUIPMENT TO BE FURNISHED BY NEXCOM AND INSTALLED BY CONTRACTOR. RELOCATED EQUIPMENT SHALL BE MOVED BY NEXCOM. RELOCATED EQUIPMENT MOVE AND NEW EQUIPMENT DELIVERY SCHEDULES SHALL BE COORDINATED BY THE CONTRACTOR WITH NEXCOM.
2. SEE PLUMBING DWGS. FOR HEAT EXCHANGER UNITS.
3. SEE MECH. DWGS. FOR BOILER INFO.
4. SEE PLUMBING DWGS. FOR WATER SOFTENER LOCATIONS.
5. LAUNDRY RAIL SYSTEM TO BE SPECIFIED AND FURNISHED BY NEXCOM AND INSTALLED BY CONTRACTOR.




KEYPLAN

north

APPROVED:
CHECKED:
DRAWN:

NOVEMBER 10, 2005
ISSUED FOR CONSTRUCTION

TENG
TENG & ASSOCIATES, INC.
ENGINEERS/ARCHITECTS/PLANNERS
205 N. MICHIGAN AVE. CHICAGO, IL 60601
TELEPHONE: 312/616-0000

RELOCATION AND RENOVATION OF NEXCOM NAVAL STATION, GREAT LAKES, ILLINOIS

OVERALL EQUIPMENT LAYOUT PLAN

DATE

ED FOR COMMANDER, NAVFAC

APPROVED

NAVFAC Naval Facilities Engineering Command

RECORD DRAWING DATE

CODE I.D. NO.

DRAWING SIZE: D

SPEC. NO.

CONSTRN. CONTR. NO.

NAVFAC DRAWING NO. 5418947

SHEET 12 OF 79

A-102

# CLASS 2 PROPERTY RECORD

**FACILITY NAME** NEX LAUNDRY/STORAGE WHSE

**FACILITY NUMBER** 3503

**REPORT DATE** 22 AUG 2013

| | | | | | |
|---|---|---|---|---|---|
| **INSTALLATION UIC** | N00128 | GREAT LAKES NAVAL STATION | **REAL PROPERTY UNIQUE ID** | | 94498 |
| **FACILITY ID** | NFA100000664989 | | **LAST UPDATED** | | 22 AUG 2013 |
| **INSTAL MGMT CLMT** | N00052 | CNI | **PROPERTY RECORD NO** | | 203157 |
| **MANPOWER BSO** | | | **FACILITY TYPE** | 2 | BUILDING |
| **OPERATIONAL STATUS** | ACT | Active | **ACTION TYPE** | 2 | CAP IMP |
| **SPECIAL AREA** | FV | GL FORRESTAL VILLAGE | **FAMILY HOUSING INDICATOR** | | N |

## LOCATION

| | | |
|---|---|---|
| **REGION** | N61040 | CNR MIDWEST |
| **COUNTRY** | USA | UNITED STATES |
| **STATE** | 17 | ILLINOIS |
| **COUNTY** | 097 | LAKE |
| **CITY** | 3595 | GREAT LAKES |
| **MAP GRID** | FF8 | |
| **STREET ADDRESS** | 3701 HURON ST | |

## DISPOSAL

| | |
|---|---|
| **CONSOLIDATED PROPERTY NO** | |
| **DISPOSAL METHOD CODE** | |
| **DISPOSAL COMPLETION DATE** | |
| **DISPOSAL CONTRACT NO** | |
| **EXCESS DECLARATION DATE** | |
| **SURPLUS DETERMINATION DATE** | |

## ACQUISITION

| | | | | |
|---|---|---|---|---|
| **ESTATE CODE** | 14 | REASSIGNMENT | **ACQUISITION DATE** | 01 DEC 1966 |
| **INTEREST TYPE** | FEE | U.S. Government owned property | **GOVERNMENT COST** | $ 997,268 |
| **LAND CCN** | 91140 | LAND - CONDEMNATION | | |
| **ACQ CONTRACT NO** | NOY76097 | | | |

## MAINTENANCE

| | | |
|---|---|---|
| **PREPONDERANT USER** | N39224 | NEX GREAT LAKES IL |
| **PRIME USE CAT CODE** | 74086 | EXCHANGE INSTALLATION WHSE |
| **PRIME FAC CODE** | 7388 | EXCHANGE WAREHOUSE |
| **MNT FUND SOURCE CODE** | A | O&M, N |
| **MNT RESPONSIBILITY UIC** | N00128 | GREAT LAKES NAVAL STATION |
| **ASSET EVALUATION DATE** | 26 SEP 2009 | |
| **CURRENT PRV** | $ 29,145,171 | |
| **PRV AT EOY 12** | $ 29,145,171 | |

| **MEASUREMENTS** | **ENGLISH** | **METRIC** |
|---|---|---|
| **LENGTH** | 611.00 | 186.23 |
| **WIDTH** | 234.00 | 71.32 |
| **HEIGHT** | 24.00 | 7.32 |
| **AREA** | 132,060.00 | 12,268.78 |
| **AREA UM** | SF | M2 |

| | |
|---|---|
| **FLOOR ABOVE GROUND QUANTITY** | 1 |
| **FLOOR BELOW GROUND QUANTITY** | 0 |

## CONSTRUCTION

| | | |
|---|---|---|
| **FACILITY BUILT DATE** | 01 JUL 1954 | |
| **CONSTRUCTION TYPE** | PERM | PERMANENT |
| **HISTORIC STATUS DATE** | 04 OCT 2010 | |
| **HISTORIC STATUS CODE** | DNE | Determined Not Eligible for Listing |

## READINESS FACTORS

| | | | |
|---|---|---|---|
| **MDI** | 46 | **DATE** | 07 NOV 2005 |
| **CONDITION RATING** | 68 | **DATE** | 21 AUG 2013 |
| **CONFIGURATION RATING** | 90 | **DATE** | 20 OCT 2009 |
| **PHYSICAL QUALITY RATE** | 68 | | |

# CLASS 2 PROPERTY RECORD

**FACILITY NAME** NEX LAUNDRY/STORAGE WHSE **FACILITY NUMBER** 3503

**REPORT DATE** 22 AUG 2013

## UTILIZATION

| | | | | | |
|---|---|---|---|---|---|
| **UTILIZATION ID** | 3 | | | | |
| **FAC USE CCN** | 73040 LAUNDRY/DRY CLEANING PLT | **SET BACK VALUE** | 2,000.00 | **DOD FAC** | 7342 |
| **FACILITY USE** | LAUNDRY/DRY CLEANING PLT | **MAX VALUE** | 60,000.00 | **DOD UM** | SF |
| **USER ACTIVITY** | N39224 NEX GREAT LAKES IL | **OUTGRANT IDENTIFIER** | | **PRIMARY UM** | SF |

**CONFIGURATION**

| | AREA | | OTHER | | ALTERNATE | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **ADEQUATE** | 45,000.00 | 4,180.64 | | | | |
| **SUBSTANDARD** | | | | | | |
| **INADEQUATE** | | | | | | |
| **TOTAL** | 45,000.00 | 4,180.64 | | | | |
| **UNIT OF MEASURE** | SF | M2 | | | | |

**SUSTAINMENT FUND SOURCE** 1804 Operation and Maintenance, Navy
**SUSTAINMENT ORGANIZATION** 06 NAVY ACTIVE
**OPERATIONAL FUND SOURCE** 1804 Operation and Maintenance, Navy
**OPERATIONAL FUNDING ORG** 06 NAVY ACTIVE

## UTILIZATION

| | | | | | |
|---|---|---|---|---|---|
| **UTILIZATION ID** | 2 | | | | |
| **FAC USE CCN** | 74086 EXCHANGE INSTALLATION WHSE | **SET BACK VALUE** | 7,000.00 | **DOD FAC** | 7388 |
| **FACILITY USE** | EXCHANGE INSTALLATION WHSE | **MAX VALUE** | 450,000.00 | **DOD UM** | SF |
| **USER ACTIVITY** | N39224 NEX GREAT LAKES IL | **OUTGRANT IDENTIFIER** | | **PRIMARY UM** | SF |

**CONFIGURATION**

| | AREA | | OTHER | | ALTERNATE | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **ADEQUATE** | 87,060.00 | 8,088.14 | | | | |
| **SUBSTANDARD** | | | | | | |
| **INADEQUATE** | | | | | | |
| **TOTAL** | 87,060.00 | 8,088.14 | | | | |
| **UNIT OF MEASURE** | SF | M2 | | | | |

**SUSTAINMENT FUND SOURCE** 1804 Operation and Maintenance, Navy
**SUSTAINMENT ORGANIZATION** 06 NAVY ACTIVE
**OPERATIONAL FUND SOURCE** NAPF Non-Appropriated Funds
**OPERATIONAL FUNDING ORG** 06 NAVY ACTIVE

## DEFICIENCIES

| CONFIGURATION | CODE | DEFINITION |
|---|---|---|
| ADEQUATE | X2 1 | FUNCTIONAL OR SPACE CRITERIA - BUILDING INTERIOR CONFIGURATION |
| **DESCRIPTION** | | |
| ADEQUATE | Z5 1 | INADEQUATE CAPACITY/COVERAGE - FACILITY COMPONENTS |
| **DESCRIPTION** | | |

## NOTES

| | |
|---|---|
| 16 DEC 2004 | 12-16-04, Deleted CBU 401 has a user of builidng space. Presently, the NEX is the only user. |
| 12 SEP 2005 | NEX is responsible for all utilities services. (KJE) |
| 17 DEC 2007 | Roof Bldg 3503 Warranty 07/13/2006 attached (DDL). |

**FACILITY NAME** NEX LAUNDRY/STORAGE WHSE **FACILITY NUMBER** 3503

**REPORT DATE 22 AUG 2013**

## DOCUMENTS

| FILE NAME | DESCRIPTION | DOCUMENT UPLOAD DATE |
|---|---|---|
| Roof 3503 Warranty.PDF | Roof Bldg 3503 Warranty | 17-DEC-07 |

## LOCATION DIRECTIONS TEXT

THIS FACILITY IS LOCATED BETWEEN HURON AND SUPERIOR STREETS, JUST SOUTH OF BUILDING 3502.

**Hygieneering, Inc.** 7575 Plaza Court, Willowbrook, IL 60527
Industrial hygiene, safety and environmental consulting services (630)654-2550/FAX:(630) 789-3813

June 29, 2014

Ms. Michelle Holland, PE, PMP via E-mail: michele.holland@jacobs.com
Project Manager
Jacobs Engineering
1100 North Glebe Road, Suite 500
Arlington, VA 22201

Re: Pre Renovation HZMAT Survey Summary
Hygieneering, Inc. Project #: 2015-1738-ENV
Location: Building 3503 –Naval Station Great Lakes
NEX Laundry/Storage Warehouse Building
Great Lakes, Illinois

Dear Ms. Holland:

The following report summarizes the findings of the pre-renovation HAZMAT survey for suspect asbestos containing materials, suspect lead based paint, and other environmentally regulated hazardous materials at Building 3503 at Naval Station Great Lakes, in Great Lakes, Illinois.

**Introduction**

Hygieneering, Inc. was retained by Jacobs Engineering to complete a survey for asbestos containing materials and lead based paint to be disturbed by planned renovation activities in Building 3503 located at Naval Station Great Lakes, in Great Lakes, Illinois. In addition, a survey for the presence of other environmental hazards such as ozone depleting agents (CFCs), mercury, PCBs, solvents/chemicals, radioactive materials and universal wastes was performed.

Building 3503 (PR# 203157), located at 3701 Huron Street in Great Lakes, Illinois, consists of a single concrete and steel structure the NEX laundry services. The building was originally constructed in 1954 and is approximately 132,060 square feet in total size for the building.

The scope of the survey included a review of proposed renovation work, a visual inspection to determine the presence and location of suspect asbestos containing materials, suspect lead based paint and other environmental hazards associated with the proposed system modifications and improvements. In addition, bulk samples from suspect asbestos containing materials and suspect lead based paint were collected and submitted for analysis by an accredited laboratory. The field work associated with the survey was conducted by Richard Zych, EPA accredited and IDPH licensed inspector, of Hygieneering, Inc. on June 2, 2015

# SECTION 1

## Scope of Work

The scope of asbestos, lead based paint and other environmental hazards survey included portions of the south end of Building 3503, at Naval Station Great Lakes, where proposed renovation to equipment and building compponents inside the building would be occurring. The scope of renovation work was determined from information outlined in the report titled "P827 NEX Facilities Energy Improvements WON: 136902, Naval Station Great Lakes, Great Lakes, IL, NAVFAC Mid-Atlantic, Retro Commissioning and ECM Report", dated May 7, 2015 by Jacobs Engineering. The areas of renovation surveyed were limited to the plumbing for laundry washing machinery, the ducts for dryers, boiler room walls and overhead doors along the west wall based upon the proposed work scope. Suspect materials on the interior portions of the building were sampled including that would be disturbed by proposed renovations. Note that the survey did not suspect materials that would not be disturbed by the proposed renovations, such as thermal system insulation on steam pipes within the building. The survey included identification of suspect materials that were accessible and visible. Exploratory demolition or the disassembly of active equipment was not performed as part of the inspection.

Bulk asbestos sampling was performed and the samples collected were submitted to an accredited laboratory for analysis by polarized light microscopy (PLM). The building was occupied at the time of the surveys, and therefor energized equipment and systems were not dismantled. Analysis of bulk samples was performed by EMSL Analytical, Inc.'s laboratory located at 2225 W. Hubbard Street, in Chicago, Illinois, in accordance with the EPA Method 600/R-93/116, July 1993 utilizing polarized light microscopy (PLM) with a dispersion staining objective and by stereobinocular examination. These methods are based on the refractive index, optical properties and overall morphology of crystalline and non-crystalline substances.

The determination of lead present within paint on surfaces was completed by paint chip sampling of painted surfaces and the submission of the paint chip samples to an accredited lab. Analysis of paint chip samples for lead was performed by EMSL Analytical, Inc. located at 2225 W. Hubbard Street, Chicago, Illinois in accordance with the EPA Method 3050B*/7000B, utilizing flame atomic absorption spectroscopy.

Other potential environmental issues that may be encountered prior to the planned renovation of the structure were also inventoried. This assessment included inspections for the presence and identification of the following environmental issues being impacted by the proposed renovations:

- Suspect lead sheeting, and lead in manufactured products or application such as solder or lead-acid batteries.
- Items containing chlorofluorocarbons (CFC's), halons and/or refrigerants. These items may include air conditioning equipment, refrigeration equipment, and fire extinguishers.
- Items potentially containing mercury, such as thermostats, gauges, fluorescent light bulbs, and special electrical switches. Mercury containing items may be regulated as hazardous wastes per the Resource Conservation Recovery Act (RCRA).
- Items containing polychlorinated biphenyls (PCBs), such as electrical transformers, capacitors, fluorescent light ballasts, and certain specialty building materials. PCB containing materials must be handled in accordance with the Toxic Substances Control Act (TSCA).
- Radioactive containing materials such as self-luminous exit signs or smoke detectors.
- Underground and aboveground storage tanks.

- Hazardous chemicals/materials. Many chemicals can be classified as hazardous wastes or require special handling and disposal. Other chemicals, oils, or solvents may be classified as special wastes, and therefore require special handling for disposal or recycling.
- Miscellaneous electronic components such as computers, monitors, or televisions, which may contain heavy metals such as cadmium, chromium, and lead.

# SECTION 2

## Summary of Findings

No asbestos was found to be present within the suspect materials sampled. The attached Table 1 Summary of ACM survey results identifies the materials sampled, their location and analytical results. The lining of the washing machinery was fiberglass insulation, and associated piping had no suspect ACM.

Paint chip analysis utilizing flame atomic absorption for the sample collected inside the building was reported be 1.1 % lead by weight. The sample was taken from angle steel at the overhead door frames. The 1.1% lead concentration classifies this paint coating as lead based paint. The painted surfaces on the exhibited minor sign of corrosion damage, but no fallen debris. Removal or disturbance of the painted surfaces should be performed by licensed and or properly trained lead workers.

No other environmental concerns were identified with respect to proposed renovation activities. Although not inventoried, it should be noted suspect hazardous materials may be present within the building outside from the currently proposed work scope.

The results of QA/QC sample analysis by an independent laboratory were in agreement with the analytical results for the split samples taken.

## SECTION 3

### Asbestos Survey Methodology

The purpose of this inspection was to identify, assess, inventory and provide approximate quantities of suspect ACM throughout each structure, facility component, or piece of equipment that is scheduled for potential renovation/demolition by We Energies. The assessment and sampling procedures for asbestos were performed in general accordance with the guidelines published by the EPA in 40 CFR Part 763 Subpart E, October 30, 1987 (Asbestos Hazard Emergency Response Act - AHERA). The U.S. EPA Guidance document 700/B-92/001, February 1992 and the OSHA Construction Standard 1926.1101, August 10, 1994, requires an AHERA sampling scheme be followed for non-school buildings. Bulk sampling was also conducted and analysis performed by NVLAP accredited laboratory utilizing Polarized Light Microscopy to determine the presence or absence of asbestos in the identified suspect ACM.

### General Organization

Before beginning the actual assessment, the inspector contacted the Jacobs Engineering and Naval Station representative(s) to discuss the facility inspection, including access, preferred inspection and sampling times, sampling procedures, a review of construction drawings, and other access/safety issues.

The study itself consisted of three major activities - visual inspection, sampling and quantification. Although these activities are listed separately, they are integrated tasks.

### Visual Inspection

The visual inspection was performed by EPA accredited/IDPH licensed inspectors. An initial building walk-through was conducted to determine the presence and condition of suspect materials which were accessible and/or exposed. Materials which were similar in general appearance were grouped into homogeneous sampling areas based upon the period of construction or installation.

### Homogeneous Material Categories (ACM)

A preliminary walk-through of the building was conducted to determine areas of materials which were visually similar in color, texture and general appearance, and which appeared to be installed at the same time. Such materials are deemed “homogeneous materials” by the EPA. During this walk-through, the locations of these homogeneous materials were also noted. Only materials which were accessible and/or exposed and suspected to contain asbestos were identified.

Following the EPA asbestos inspection protocol, each identified suspect homogeneous material was placed into one of the following EPA categories.

| | |
|---|---|
| Surfacing: | Any material sprayed or troweled onto building members. |
| Thermal System Insulation (TSI): | Materials generally applied to various mechanical systems. |
| Miscellaneous: | Any materials that do not fit either of the above categories. |

**Sampling Of Suspect Material (Asbestos)**

Once the suspect ACM's were categorized into one of the EPA ACM categories, the materials were sampled.

Suspect ACM's were sampled by EPA accredited and IDPH licensed building inspectors. Representative samples of each type of major category of homogenous material were collected following EPA Purple Book protocol.

**Condition Assessment of Suspect Material (Asbestos)**

An assessment of each suspect ACM was performed to provide the necessary information to develop appropriate response actions/recommendations. The condition, quantity, location, type and extent of damage was evaluated to prioritize each ACM into one of the three following priorities for response:

- (SD) Significantly Damaged - ACM shows damage or high potential for damage and should be removed or repaired as soon as possible to prevent exposure to asbestos.
- (D) Damaged - ACM shows signs of damage due to age, deterioration, or physical contact with potential for further damage. The ACM should be repaired or removed if the physical condition changes or if renovation or building operations will disturb the material.
- (PD) Potential for Damage - ACM shows little to no damage with a low potential for additional damage. Maintain the ACM in its current condition through an Operations and Maintenance Program. Periodically monitor the ACM for damage.
- (G) Good Condition – ACM shows little to no damage and is in generally good condition, maintain ACM in its current condition through the Operations and Maintenance Program. Periodically monitor the ACM for damage.

**Quantification**

Quantities of accessible and/or exposed building materials that were suspected of containing asbestos were estimated. This estimation was performed by taking approximate measurements in the field and reviewing available drawings. Suspect materials applied to surfaces such as floors, walls and ceilings were expressed in total square footage. All measurements should be quantified by qualified abatement contractors prior to submitting any bids for abatement and/or repair.

The quantification of identified concealed asbestos containing materials (i.e. flange gaskets) was based upon the presumption that the same construction materials and applications were utilized throughout the structure.

**Method of Analysis**

Analysis was performed via macroscopic observation and slide preparation(s) for microscopic examination and identification purposes. The samples were mounted on slides and then analyzed for asbestos (chrysotile, amosite, crocidolite, anthophyllite and actinolite/ tremolite), fibrous non-asbestos constituents (mineral wool, paper, etc.) and nonfibrous constituents. Asbestos was identified by refractive indices, morphology, color, pleochroism, birefringence, extinction characteristics and signs of elongation. The same characteristics were used to identify the non-asbestos constituents. The microscopist visually estimated relative amounts of each constituent by determining the volume of each constituent in proportion to the total volume of the sample, using a stereoscope.

Bulk samples were analyzed by Polarized Light Microscopy (PLM) with dispersion staining as described by the interim method of analysis in optical mineralogy and the currently accepted methods for the determination of asbestos in bulk samples. A suspect material is immersed in a solution of known refractive index and subjected to illumination by polarized light. The characteristic color displays which result enable mineral identification.

It should be noted that some asbestos containing building materials may not be accurately identified and/or quantified by PLM. As an example, the original fabrication of vinyl floor tiles routinely involved milling of asbestos fibers to extremely small sizes. As a result, these fibers may go undetected under the standard polarized light microscopy method. The EPA recommends Transmission Electron Microscopy (TEM) for a more definitive analysis of these materials (Federal Register Vol. 59. No. 146/August 1, 1994).

Multi-layered materials, such as plasters and floor tiles with mastic, were analyzed and reported by layers (Federal Register Vol. 59. No. 3, January 5, 1994).

As required, QA/QC samples which were split from original samples were submitted to a second accredited independent laboratory. STAT Analysis Corporation's laboratory located at 2242 West Harrison Street in Chicago, Illinois was utilized for the QA/QC analysis.

**Lead Paint Survey Methodology**

The survey conducted at the building was not a comprehensive HUD survey for the presence of lead based paint. Where applicable, representative sampling of suspected lead based paints or coatings was performed to determine the presence and concentration of lead in paints/coatings that will be disturbed during renovation and/or surfaces that had paint in poor condition within the proposed work area. During the inspection a visual assessment of general condition of the painted surface was also conducted.

**Survey Methodology for Other Environmental Hazards**

As stated, Hygieneering also inspected the property within the scope of the survey in accordance with US EPA regulations including RCRA and TSCA, state regulations, and site specific requirements for the presence of other environmental issues that may be impacted by planned renovation activities.

The inspection included a visual assessment for the presence of CFC's, halons and refrigerants, which are ozone-depleting substances; mercury containing items such as thermostats, thermometers, and other types of switches that require special handling and disposal; items and articles that may contain PCBs, such as electrical transformers, capacitors, fluorescent light ballasts and specialty paints; radioactive materials; underground and aboveground storage tanks; universal wastes; and other hazardous materials.

This report shall not be reproduced except in full, without the written permission from Hygieneering, Inc. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

Please feel free to contact me if you have any questions or if I can be of further assistance to you.

Respectfully Submitted,
**Hygieneering, Inc.**

Richard Zych
Associate Director EHS

Attachments

- Table 1 – Summary of ACM Survey Results
- Table 2 – Lead Survey results
- Table 3 – Summary of Hazardous Materials Survey
- Analytical Results
- Lab Accreditation
- Inspector Certifications

Table 1
Summary of ACM Survey Results

Client: Jacobs Engineering

Building Name: Building 3503 (PR# 203157)

Location: 3701 Huron Street, Great Lakes, Illinois

Hygieneering Project #: 2015-1738-ENV

| Material Description | Material Location | Homogeneous Area Designation | Material Condition | F/ NF | Analytical Result (Asbestos Present Y or N) | Estimated Quantity | Material Type |
|---|---|---|---|---|---|---|---|
| White Caulk Sealant | At Louvre Frame in Wall Between Laundry and Boiler Room | 3503-MMA | G | NF | N | N/A | M |
| White and Light Gray Spray-Applied Insulation | Along South Concrete Wall in Boiler Room | 3503-SFA | G | F | N | N/A | M |

Material Type Legend:
S = Surfacing Materials (spray or trowel applied building members)
T = Thermal System Insulation (materials generally applied to various mechanical systems)
M = Miscellaneous Materials (any materials which do not fit either of the above categories)
Friability: (F) = Friable (NF) = Non-Friable

Material Condition Assessment Legend:
(G) Good Condition, Monitor Condition
(PD) Potential for Damage, Monitor Condition, Repair or Remove as Necessary
(D) Damage Material, Remove or Repair as Necessary, Monitor Condition
(SD) Significantly Damaged, Removal or Replacement Recommended

Table 2
Summary of Lead Sampling Results

**Client:** Jacobs Engineering

**Building Name:** Building 3503 (PR# 203157)

**Location:** 3701 Huron Street
Great Lakes, Illinois

**Hygieneering Project #:** 2015-1738-ENV

| Material Description | Location | Sample Number | Analytical Result (%wt) | Condition |
|---|---|---|---|---|
| **Gray Paint over Red Primer** | **Steel Framing at Overhead Door Opening Along West Wall of Laundry Area** | **3503-S-01** | **1.1** | **Minor Corrosion** |

ppm = Parts Per Million (mg/Kg = ppm)
HUD Guidelines (1996 Revision) = 5000 ppm (0.5%)
CPSC Level = .06%by wt.
* According to OSHA there are no threshold levels for lead content.

Reporting Limit = 0.01% ppm

Table 3
Summary of Hazardous Materials Survey

**Client:** Jacobs Engineering

**Building Name:** Building 3503 (PR# 203157)

**Location:** 3701 Huron Street, Great Lakes, Illinois

**Hygieneering Project #:** 2015-1738-ENV

## Ozone Depleting Agents (CFCs)

| Material Description | Equipment Type | Location | Quantity | Notes |
|---|---|---|---|---|
| N/A | N/A | N/A | N/A | None Identified in Scope of Proposed Work |

## Mercury Containing Materials

| Material Description | Equipment Type | Location | Quantity | Notes |
|---|---|---|---|---|
| N/A | N/A | N/A | N/A | None Identified in Scope of Proposed Work |

## Storage Tanks/Vessels (UST/AST)

| Material Description | Equipment Type | Location | Quantity | Notes |
|---|---|---|---|---|
| N/A | N/A | N/A | N/A | None Identified in Scope of Proposed Work |

## PolyChlorinatedBiphenyls (PCBs)

| Material Description | Equipment Type | Location | Quantity | Notes |
|---|---|---|---|---|
| N/A | N/A | N/A | N/A | None Identified in Scope of Proposed Work |

## Radioactive Materials

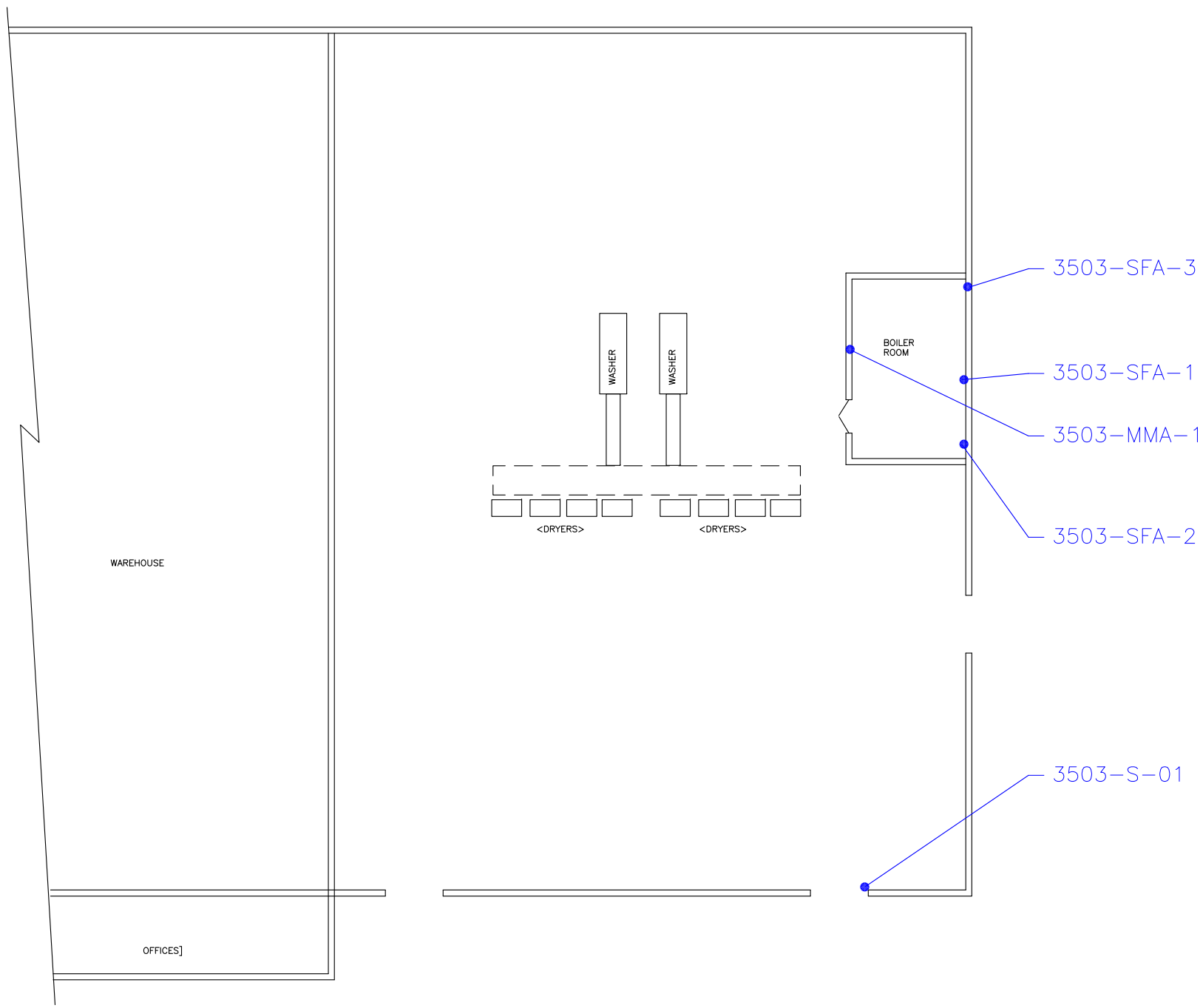
| Material Description | Equipment Type | Location | Quantity | Notes |
|---|---|---|---|---|
| N/A | N/A | N/A | N/A | None Identified in Scope of Proposed Work |

## Other Environmental Hazards

| Material Description | Equipment Type | Location | Quantity | Notes |
|---|---|---|---|---|
| N/A | N/A | N/A | N/A | None Identified in Scope of Proposed Work |

**Hygieneering, Inc.**
7575 Plaza Court
Willowbrook, IL 60527
(630) 654-2550

LEGEND




PARTIAL FLOOR PLAN N

CLIENT: **Jacobs Engineering**

PROJECT:
**Building 3503**
**Naval Station Great Lakes**
**Great Lakes, Illinois**
**Pre-Renovation HAZMAT Survey**

PROJECT NO.: **2015-1738-ENV**

SAMPLE LOCATION DRAWING:
1 OF 1

**EMSL Analytical, Inc.**
**2225 W. Hubbard Street, Chicago, IL 60612**
Phone/Fax: (773) 313-0099 / (773) 313-0139
http://www.EMSL.com chicagolab@emsl.com

| | |
|---|---|
| EMSL Order: | 261504134 |
| CustomerID: | HYGI55 |
| CustomerPO: | |
| ProjectID: | |

Attn: **Rich Zych**
**Hygieneering, Inc.**
**7575 Plaza Court**

**Willowbrook, IL 60527**

| | |
|---|---|
| Phone: | (630) 654-2550 |
| Fax: | (630) 789-3813 |
| Received: | 06/04/15 3:56 PM |
| Analysis Date: | 6/8/2015 |
| Collected: | 6/2/2015 |

Project: **2015-1738-ENV BLDG, 3503**

# Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

| | | | Non-Asbestos | | | | Asbestos |
|---|---|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **%** | **Fibrous** | **%** | **Non-Fibrous** | **% Type** |
| 3503-MMA-1<br>*261504134-0001* | WHITE CAULK SEALANT - MMA | White<br>Non-Fibrous<br>Homogeneous | | | 100% | Non-fibrous (other) | **None Detected** |
| 3503-SFA-1<br>*261504134-0002* | WHITE/GRAY SPRAY APPLIED INSULATION - SFA | White<br>Fibrous<br>Homogeneous | 98% | Min. Wool | 2% | Non-fibrous (other) | **None Detected** |
| 3503-SFA-2<br>*261504134-0003* | WHITE/GRAY SPRAY APPLIED INSULATION - SFA | White<br>Fibrous<br>Homogeneous | 98% | Min. Wool | 2% | Non-fibrous (other) | **None Detected** |
| 3503-SFA-3<br>*261504134-0004* | WHITE/GRAY SPRAY APPLIED INSULATION - SFA | White<br>Fibrous<br>Homogeneous | 98% | Min. Wool | 2% | Non-fibrous (other) | **None Detected** |

Analyst(s)

*Alice Hillegass (3)*
*Dahlia Zyhowski (1)*

James Hahn, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Chicago, IL NVLAP Lab Code 200399-0

Initial report from 06/08/2015 15:18:17



**THIS IS THE LAST PAGE OF THE REPORT.**

EMSL Analytical, Inc.
2225 W HUBBARD ST
Chicago, IL 60612
PHONE (773) 313-0099
FAX (773) 313-0139

EMSL ANALYTICAL, INC.

# Asbestos Chain of Custody

**EMSL Order Number** (Lab Use Only): 201504134

**Company** Hygieneering, Inc.
**EMSL-Bill to:** ✓ Different ☐ Same
If Bill to is Different note instructions in Comments
**Street** 7575 Plaza Ct.
*Third Party Billing requires written authorization from third party*
**City** Willowbrook **State/Province** IL **Zip/Postal Code** 60527 **Country** United States
**Report To (Name)** Rich Zych **Telephone #:** 630-654-2550
**Email Address** rzych@hygieneering.com **Fax #.** 630-789-3813 **Purchase Order.**
**Project Name/Number:** 2015-1738-ENV BLDG. 3503 **Please Provide Results:** ☐ FAX ✓ E-mail ☐ Mail
**U.S. State Samples Taken** IL **Connecticut Samples** ☐ **Commercial** ☐ **Residential**

**Turnaround Time (TAT) Options* – Please Check**
☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☒ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week
*For TEM Air 3 hr through 6 hr, please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

**PCM - Air** ☐ Check if samples are from NY
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

**PLM - Bulk (reporting limit)**
☒ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☐ NYS 198.1 (friable in NY)
☐ NYS 198.6 NOB (non-friable-NY)
☐ NIOSH 9002 (<1%)

**TEM – Air** ☐ 4-4 6hr TAT (AHERA only)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

**TEM - Bulk**
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis-EPA 600 sec. 2.5

**TEM – Water** EPA 100.2
Fibers >10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

**TEM- Dust**
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

**Soil/Rock/Vermiculite**
☐ PLM CARB 435 - A (0.25% sensitivity)
☐ PLM CARB 435 - B (0.1% sensitivity)
☐ TEM CARB 435 - B (0.1% sensitivity)
☐ TEM CARB 435 - C (0.01% sensitivity)
☐ TEM Qual. via Filtration Technique
☐ TEM Qual. via Drop-Mount Technique

**Other:**
☐

*Per Rich Phone conf. 6-4-15 16:57

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Filter Pore Size (Air Samples):** ☐ 0.8µm ☐ 0.45µm

**Samplers Name.** Richard Zych **Samplers Signature**

| Sample # | Sample Description | Volume/Area (Air) HA # (Bulk) | Date/Time Sampled |
|---|---|---|---|
| 3503-MMA-1 | White Caulk Sealant | MMA | 6/2/15 |
| | | | |
| 3503-SFA-1 | White/Gray Spray Applied Insulation | SFA | ↓ |
| 3503-SFA-2 | ↓ | ↓ | ↓ |
| 3503-SFA-3 | ↓ | ↓ | ↓ |
| | | | |
| | | | |
| | | | |

**Client Sample # (s):** **Total # of Samples.** (4)
**Relinquished (Client):** **Date.** 6/4/15 **Time**
**Received (Lab).** **Date:** 6.4.15. **Time:** 15:56 WI
**Comments/Special Instructions.**
cc. results to - dschafer@hygieneering.com, [illegible]@hygieneering.com lab9800755@hygieneering.com
Bill To: Hygieneering Inc. 7575 Plaza Ct., Willowbrook, IL 60527, United States
Attention: Vicky Igras Phone: 630-654-2550 Email: vigras@hygieneering.com Purchase Order.

Page 1 of 1 pages

**EMSL Analytical, Inc.**
**2225 W. Hubbard Street, Chicago, IL 60612**
Phone/Fax: (773) 313-0099 / (773) 313-0139
http://www.EMSL.com chicagolab@emsl.com

| | |
|---|---|
| EMSL Order: | 261504129 |
| CustomerID: | HYGI55 |
| CustomerPO: | |
| ProjectID: | |

Attn: **Rich Zych**
**Hygieneering, Inc.**
**7575 Plaza Court**

**Willowbrook, IL 60527**

| | |
|---|---|
| Phone: | (630) 654-2550 |
| Fax: | (630) 789-3813 |
| Received: | 06/04/15 3:56 PM |
| Collected: | |

Project: **2015-1738-ENV/BLDG. 3503**

# Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

| *Client Sample Description* | *Lab ID* | *Collected* | *Analyzed* | *Lead Concentration* |
|---|---|---|---|---|
| 3503-S-01 | *261504129-0001* | | 6/5/2015 | 1.1 % wt |
| | Site: GRAY PAINT & RED PRIMER | | | |

Lisa M. Odeshoo

Lisa Odeshoo, Lead Lab Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Analytical, Inc. Chicago, IL AIHA-LAP, LLC--ELLAP Accredited #102992

Initial report from 06/05/2015 14:49:33

# Lead & Metals Chain of Custody

**EMSL Order Number** *(Lab Use Only)*: 261504129

EMSL Analytical, Inc.

Chicago
[illegible]
Chicago, IL [illegible]
PHONE [illegible]
FAX [illegible]

| | |
|---|---|
| **Company:** Hygieneering, Inc. | **EMSL-Bill to:** ☐ Same ☒ Different<br>*If Different, Billing address or billing contact information*<br>*Third Party Billing requires written authorization from third party* |
| **Street:** 7575 Plaza Ct. | |
| **City/State/Zip:** Willowbrook, IL 60527 | |
| **Report To (Name):** Richard Zych | **Fax:** 630-789-3813 |
| **Telephone:** 630-654-2550 | **Email Address:** RZYCH @hygieneering.com |
| **Project Name/Number:** 2015-1738-ENV / Bldg. 3503 | |
| **Please Provide Results:** | **Purchase Order:** / **State Samples Taken:** IL |

**Turnaround Time (TAT) Options* - Please Check**

☐ 3 Hour | ☐ 6 Hour | ☐ 24 Hour | ☒ 48 Hour | ☐ 72 Hour | ☐ 96 Hour | ☐ 1 Week | ☐ 2 Week

**Analysis completed in accordance with EMSL's Terms and Conditions located in the Price Guide*

| Matrix | Method | Instrument | Reporting Limit | Check |
|---|---|---|---|---|
| Chips ☐ mg/cm² ☒ % by wt | SW846 7000B/7420 or AOAC 974.02 | Flame Atomic Absorption | 0.01% | ☒ |
| Air | NIOSH 7082<br>NIOSH 7105<br>NIOSH 7300 modified | Flame Atomic Absorption<br>Graphite Furnace AA<br>ICP AES | 2 µg/filter<br>0.05 µg/filter<br>0.5 µg/filter | ☐<br>☐<br>☐ |
| Wipe ☐ ASTM ☐ non ASTM<br>*If no box is checked, non ASTM Wipe is assumed. | SW846 7000B/7420<br>SW846 6010B or C | Flame Atomic Absorption<br>ICP AES | 10 µg/wipe<br>0.5 µg/wipe | ☐<br>☐ |
| TCLP | SW846 1311/7420/SM 3113B<br>SW846 6010B or C | Flame Atomic Absorption<br>ICP AES | 0.4 mg/L (ppm)<br>0.1 mg/L (ppm) | ☐<br>☐ |
| Soil | SW846 7000B/7420<br>SW846 7421<br>SW846 6010B or C | Flame Atomic Absorption<br>Graphite Furnace AA<br>ICP AES | 40 mg/kg (ppm)<br>0.3 mg/kg (ppm)<br>1 mg/kg (ppm) | ☐<br>☐<br>☐ |
| Wastewater | SM3113B<br>SW846 7000B/7420<br>EPA 239.2<br>SW846 6010B or C | Flame Atomic Absorption<br>Graphite Furnace AA<br>ICP AES | 0.4 mg/L (ppm)<br>0.003 mg/L (ppm)<br>1 mg/kg (ppm) | ☐<br>☐<br>☐ |
| Drinking Water | EPA 200.7 | Graphite Furnace AA | 0.003 mg/L (ppm) | ☐ |

| | |
|---|---|
| **Other:** | **Preservation Method (Water):** |
| **Name of Sampler:** Richard Zych | **Signature of Sampler:** |

| Sample # | Location | Volume/Area | Date/Time Sampled |
|---|---|---|---|
| 3503-S-01 | Grey Paint & Red Primer | N/A | 6/2/15 |

**Client Sample #'s** | **Total # of Samples:** 1

**Relinquished (Client):** Richard Zych | **Date:** 6/4/15 | **Time:**

**Received (Lab):** [illegible] | **Date:** 6/4/15 | **Time:** 3:52pm WS

**Comments/Special Instructions:** cc results to: dschneider@hygieneering.com; ~~rzyches~~ @hygieneering.com
**Bill To.** Hygieneering, Inc. 7575 Plaza Ct., Willowbrook, IL 60527 bkarich
**Attention:** Vicky Igras **Phone:** 630-654-2550

**STAT Analysis Corporation**
*2242 West Harrison St., Suite 200, Chicago, IL 60612-3766*
*Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com*

NVLAP Lab Code 101202-0

# ASBESTOS ANALYSIS BY POLARIZED LIGHT MICROSCOPY

Method: EPA-600/M4-82-020

Hygieneering, Inc.
7575 Plaza Court
Willowbrook, IL 60527
Phone: (630) 654-2550
Fax: (630) 789-3813

| | | | |
|---|---|---|---|
| Reference: | 2015-1735-ENV | Date Received: | 06/05/2015 |
| Location: | Jacobs Engineering Bldg 400 & Bldg 3503 | Date Analyzed: | 06/12/2015 |
| Batch No.: | 319352 | Date Reported: | 06/12/2015 |
| Customer No.: | 206 | Turn Around Time: | 5 Days |

| Laboratory Sample | Customer Sample Number | Asbestos Components (%) | Non-Asbestos Components (%) |
|---|---|---|---|
| 319352001 | 400-MMA-1C | ND | Binder 99-100% |
| 319352002 | 3503-SFA-2C | ND | Glass 99-100% |

ND = Asbestos Not Detected (Not Present) NA = Not Analyzed NS = Not Submitted

Components of inhomogeneous samples are analyzed per our Standard Operating Procedure, or per customer request.

The use of the NVLAP logo does not imply endorsement by NVLAP or any agency of the US Government.

*The information contained in this report and any attachments is confidential information intended only for the use of the individual or entities named above. The results of this report relate only to the samples tested. If you have received this report in error, please notify us immediately by phone.This report shall not be reproduced, except in its entirety, unless written approval has been obtained from the laboratory. This report remains property of STAT Analysis until payment is received in full (see invoice).*

Analyzed by Name : Henry Rebateau / Microscopist



Date: 06/12/2015

**STAT** Analysis Corporation
*2242 W. Harrison, Suite 200, Chicago, Illinois 60612* *Phone: (312) 733-0551* *Fax: (312) 733-2386*
*e-mail address: STATinfo@STATAnalysis.com*

# CHAIN OF CUSTODY RECORD

Page : 1 of 1

Client: Hygieneering, Inc. - Rich Zych
Street Address: 7575 Plaza Ct
City, State, Zip: Willowbrook IL 60527
Phone: 630 654 2550
Fax: 630 789-3313
e-mail/Alt. Fax: RZych@hygieneering.com
Project Number: 2015-1735-ENV
Project Name: Jacobs Engineering
Project Location: Bldg 400 & Bldg 3503
Project Manager: Rich Zych
P.O. Number:

Turn Around: Immediate: ☐ 4 Hrs: ☐ 8 Hrs: ☐ 24 Hrs: ☐ 1 Day: ☐ 2 Days: ☐ 3 Days: ☐ 5 Days: ☒
Date Due: Time Due:
Note: Not all turn around times are available for all analysis.

**OFFICE USE ONLY BELOW:**
Batch No.: 39352
Samples Acceptable: Yes: ☒ No: ☐
Checked by (Initial/Date):
QC by (Initial/Date): 6/12/15
Reported By (Initial/Date/Time/Method):
Comments:

Relinquished by: [signature] Date/Time: 6/5/15 2400
Received by: [signature] Date/Time: 6/8/15 1440
Relinquished by: Date/Time:
Received by: Date/Time:
Relinquished by: Date/Time:
Received by: Date/Time:

| Client Sample Number/Description: | Date Taken | Time On | Time Off | Rate (lpm) | Volume (Liters) | Area Wiped (ft²) | Laboratory Sample No. | PCM Asbestos | PLM Asbestos (Bulk) | PLM Point Count | PLM Gravimetric | TEM Air Asbestos | TEM Bulk Asbestos | TEM Gravimetric Asb. | TEM Microvac Asb. | TEM Water | | Other: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 - MMX-1C (Tan/Gray Sealant) | 6/2/15 | N/A | → | | | | | | X | | | | | | | | | |
| 3503-SFA-2C ~~3503-SFA-2C~~ (White/Gray Fibrous Insulation) | 6/2/15 | N/A | → | | | | | | X | | | | | | | | | |

Comments: cc Results to: bkarich, jdscheidler, rzych@hygieneering.com
cc: Invoice to: LCARTA@hygieneering.com

AIHA Laboratory Accreditation Programs, LLC

*acknowledges that*

# STAT Analysis Corporation

2242 West Harrison St. Suite 200, Chicago, IL 60612-3501

Laboratory ID: 101160

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

## LABORATORY ACCREDITATION PROGRAMS

| | | |
|---|---|---|
| ✓ | **INDUSTRIAL HYGIENE** | Accreditation Expires: 02/01/2016 |
| ✓ | **ENVIRONMENTAL LEAD** | Accreditation Expires: 02/01/2016 |
| ✓ | **ENVIRONMENTAL MICROBIOLOGY** | Accreditation Expires: 02/01/2016 |
| ☐ | **FOOD** | Accreditation Expires: |
| ☐ | **UNIQUE SCOPES** | Accreditation Expires: |

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

*Larry S. Pierce*
*Chairperson, Analytical Accreditation Board*

*Cheryl O. Morton*
*Managing Director, AIHA Laboratory Accreditation Programs, LLC*

Revision 13: 03/12/2013

Date Issued: 02/28/2014

# AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

**STAT Analysis Corporation**
2242 West Harrison St. Suite 200, Chicago, IL 60612-3501

Laboratory ID: **101160**
Issue Date: 02/28/2014

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

**Industrial Hygiene Laboratory Accreditation Program (IHLAP)**

**Initial Accreditation Date: 08/01/1992**

| IHLAP Scope Category | Field of Testing (FoT) | Technology sub-type/ Detector | Published Reference Method/Title of In-house Method | Method Description or Analyte *(for internal methods only)* |
|---|---|---|---|---|
| Chromatography Core | Gas Chromatography | GC/FID | NIOSH 1400 | |
| | | | NIOSH 1500 | |
| | | | NIOSH 1501 | |
| | | | NIOSH 2000 | |
| | | | NIOSH 5503 | |
| | | | OSHA 07 | |
| | | GC/ECD | NIOSH 1400 | |
| | | | NIOSH 1500 | |
| | | | NIOSH 1501 | |
| | | | NIOSH 2000 | |
| | | | NIOSH 5503 | |
| | | | OSHA 07 | |
| | GC/MS | | NIOSH 5515 | |
| Spectrometry Core | Atomic Absorption | CVAA | NIOSH 6009 | |
| | | FAA | NIOSH 7082 | |
| | Inductively-Coupled Plasma | ICP/MS | NIOSH 7300 | |
| Asbestos/Fiber Microscopy Core | Phase Contrast Microscopy (PCM) | | NIOSH 7400 | |

A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

# AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

**STAT Analysis Corporation**
2242 West Harrison St. Suite 200, Chicago, IL 60612-3501

Laboratory ID: **101160**
Issue Date: 02/28/2014

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

The EPA recognizes the AIHA-LAP, LLC ELLAP program as meeting the requirements of the National Lead Laboratory Accreditation Program (NLLAP) established under Title X of the Residential Lead-Based Paint Hazard Reduction Act of 1992 and includes paint, soil and dust wipe analysis. Air analysis is not included as part of the NLLAP.

## Environmental Lead Laboratory Accreditation Program (ELLAP)

## Initial Accreditation Date: 03/09/1998

| Field of Testing (FoT) | Method | Method Description *(for internal methods only)* |
|---|---|---|
| Paint | EPA SW-846 7420 | |
| | NIOSH 7082 | |
| Soil | NIOSH 7082 | |
| Settled Dust by Wipe | NIOSH 7082 | |
| Airborne Dust | NIOSH 7082 | |

A complete listing of currently accredited Environmental Lead laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

# AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

**STAT Analysis Corporation**
2242 West Harrison St. Suite 200, Chicago, IL 60612-3501

Laboratory ID: **101160**
Issue Date: 02/28/2014

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

## Environmental Microbiology Laboratory Accreditation Program (EMLAP)

## Initial Accreditation Date: 04/01/2004

| EMLAP Category | Field of Testing (FoT) | Method | Method Description *(for internal methods only)* |
|---|---|---|---|
| Fungal | Air - Culturable | SOP 6110 | In-house: Analysis of Non-Culturable Air Samples |
| | | SOP 6120 | In-House: Analysis of Culturable Microbiological Air Samples |
| | Bulk - Culturable | SOP 6220 | In-House: Analysis of Culturable Microbiological Swab and Bulk Samples |
| | Surface - Culturable | SOP 6220 | In-House: Analysis of Culturable Microbiological Swab and Bulk Samples |
| | Air - Direct Examination | SOP 6110 | In-house: Analysis of Non-Culturable Air Samples |
| | Bulk - Direct Examination | SOP 6210 | In-House: Analysis of Non-Culturable Microbiological Samples by Direct Examination. |
| | Surface - Direct Examination | SOP 6210 | In House: Analysis of Non-Culturable Microbiological Samples by Direct Examination. |

A complete listing of currently accredited Environmental Microbiology laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899

May 8, 2014

Dr. Lory Littlefield
HI-TEK Environmental, Inc. dba.
STAT Analysis Corporation
2242 W. Harrison
Chicago, IL 60612

NVLAP Lab Code: 101202-0

Dear Dr. Littlefield:

I am pleased to inform you that continuing accreditation for specific test methods in Bulk Asbestos Fiber Analysis (PLM) is granted to your organization under the National Voluntary Laboratory Accreditation Program (NVLAP). This accreditation is effective until June 30, 2015, provided that your organization continues to comply with accreditation requirements contained in the NVLAP Procedures.

Your Certificate of Accreditation is enclosed along with a statement of your Scope of Accreditation. You may reproduce these documents in their entirety and announce your organization's accreditation status using the NVLAP symbol and/or term in business publications, the trade press, and other business-oriented literature. Accreditation does not relieve your organization from observing and complying with any applicable existing laws and/or regulations.

We are pleased to have you participate in NVLAP and look forward to your continued association with this program. If you have any questions concerning your NVLAP accreditation, please direct them to Hazel M. Richmond, Program Manager, Laboratory Accreditation Program, National Institute of Standards and Technology, 100 Bureau Dr. Stop 2140, Gaithersburg, MD 20899-2140; (301) 975-4016.

Sincerely,

Warren R. Merkel, Chief
Laboratory Accreditation Program

Enclosure(s)

National Voluntary Laboratory Accreditation Program

# SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005


**STAT Analysis Corporation**
STAT Analysis Corporation
2242 W. Harrison
Chicago, IL 60612
Dr. Lory Littlefield
Phone: 312-733-0551 Fax: 312-733-2386
E-Mail: LLittlefield@STATAnalysis.com
URL: http://www.STATAnalysis.com


**BULK ASBESTOS FIBER ANALYSIS (PLM)** **NVLAP LAB CODE 101202-0**

| *NVLAP Code* | *Designation / Description* |
|---|---|
| 18/A01 | EPA 600/M4-82-020: Interim Method for 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 |

2014-07-01 through 2015-06-30

*Effective dates*

*For the National Institute of Standards and Technology*

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

# Certificate of Accreditation to ISO/IEC 17025:2005

**NVLAP LAB CODE: 101202-0**

## STAT Analysis Corporation

Chicago, IL

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:*

## BULK 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).*

2014-07-01 through 2015-06-30

*Effective dates*

DEPARTMENT OF COMMERCE ★ UNITED STATES OF AMERICA ★

*For the National Institute of Standards and Technology*

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899

May 8, 2014

Dr. Lory Littlefield
HI-TEK Environmental, Inc. dba.
STAT Analysis Corporation
2242 W. Harrison
Chicago, IL 60612

NVLAP Lab Code: 101202-0

Dear Dr. Littlefield:

I am pleased to inform you that continuing accreditation for specific test methods in Airborne Asbestos Fiber Analysis (TEM) is granted to your organization under the National Voluntary Laboratory Accreditation Program (NVLAP). This accreditation is effective until June 30, 2015, provided that your organization continues to comply with accreditation requirements contained in the NVLAP Procedures.

Your Certificate of Accreditation is enclosed along with a statement of your Scope of Accreditation. You may reproduce these documents in their entirety and announce your organization's accreditation status using the NVLAP symbol and/or term in business publications, the trade press, and other business-oriented literature. Accreditation does not relieve your organization from observing and complying with any applicable existing laws and/or regulations.

We are pleased to have you participate in NVLAP and look forward to your continued association with this program. If you have any questions concerning your NVLAP accreditation, please direct them to Hazel M. Richmond, Program Manager, Laboratory Accreditation Program, National Institute of Standards and Technology, 100 Bureau Dr. Stop 2140, Gaithersburg, MD 20899-2140; (301) 975-4016.

Sincerely,

Warren R. Merkel, Chief
Laboratory Accreditation Program

Enclosure(s)

National Voluntary
Laboratory Accreditation Program

# SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

**STAT Analysis Corporation**
STAT Analysis Corporation
2242 W. Harrison
Chicago, IL 60612
Dr. Lory Littlefield
Phone: 312-733-0551 Fax: 312-733-2386
E-Mail: LLittlefield@STATAnalysis.com
URL: http://www.STATAnalysis.com

**AIRBORNE ASBESTOS FIBER ANALYSIS (TEM)** **NVLAP LAB CODE 101202-0**

| *NVLAP Code* | *Designation / 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. |

2014-07-01 through 2015-06-30

*Effective dates*

*For the National Institute of Standards and Technology*

United States Department of Commerce
National Institute of Standards and Technology

# Certificate of Accreditation to ISO/IEC 17025:2005

**NVLAP LAB CODE: 101202-0**

## STAT Analysis Corporation

Chicago, IL

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:*

## AIRBORNE 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).*

2014-07-01 through 2015-06-30

*Effective dates*

*For the National Institute of Standards and Technology*

AIHA Laboratory Accreditation Programs, LLC

*acknowledges that*

# EMSL Analytical, Inc

2225 West Hubbard Street, Chicago, IL 60612

Laboratory ID: 102992

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

## LABORATORY ACCREDITATION PROGRAMS

| | | |
|---|---|---|
| ☐ | **INDUSTRIAL HYGIENE** | Accreditation Expires: |
| ✓ | **ENVIRONMENTAL LEAD** | Accreditation Expires: 09/01/2016 |
| ✓ | **ENVIRONMENTAL MICROBIOLOGY** | Accreditation Expires: 09/01/2016 |
| ☐ | **FOOD** | Accreditation Expires: |
| ☐ | **UNIQUE SCOPES** | Accreditation Expires: |

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

*Gerald Schultz, CIH*
*Chairperson, Analytical Accreditation Board*

*Cheryl O. Morton*
*Managing Director, AIHA Laboratory Accreditation Programs, LLC*

Revision 14: 03/26/2014

Date Issued: 07/31/2014

# AIHA Laboratory Accreditation Programs, LLC

## SCOPE OF ACCREDITATION

**EMSL Analytical, Inc**
2225 West Hubbard Street, Chicago, IL 60612

Laboratory ID: 102992
Issue Date: 07/31/2014

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

### Environmental Microbiology Laboratory Accreditation Program (EMLAP)

### Initial Accreditation Date: 12/01/2004

| EMLAP Category | Field of Testing (FoT) | Method | Method Description (*for internal methods only*) |
|---|---|---|---|
| **Fungal** | Air - Direct Examination | 05-TP-003.5 | Standard Operating Procedure for the Analysis of Airborne Fungal Spores, Hyphal Fragments, Pollen, Insect Fragments, Skin Fragments and Fibrous Particulate by Optical Microscopy of Spore Trap Samples |
| | Bulk - Direct Examination | M041 | Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Material from Surface Samples |
| | Surface - Direct Examination | M041 | Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Material from Surface Samples |

A complete listing of currently accredited Environmental Microbiology laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

National Voluntary
Laboratory Accreditation Program

# SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

**EMSL Analytical Inc.**
2225 West Hubbard Street
Chicago, IL 60612
Mr. James Hahn
Phone: 773-313-0099 Fax: 773-313-0139
E-Mail: jhahn@emsl.com
URL: http://www.emsl.com

**AIRBORNE ASBESTOS FIBER ANALYSIS (TEM)** **NVLAP LAB CODE 200399-0**

| *NVLAP Code* | *Designation / 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. |

2015-04-01 through 2016-03-31

*Effective dates*

*For the National Institute of Standards and Technology*



NVLAP-01S (REV. 2005-05-19)

United States Department of Commerce
National Institute of Standards and Technology

# Certificate of Accreditation to ISO/IEC 17025:2005

**NVLAP LAB CODE: 200399-0**

## EMSL Analytical Inc.

Chicago, IL

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:*

## AIRBORNE 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).*

2015-04-01 through 2016-03-31

*Effective dates*

*For the National Institute of Standards and Technology*

National Voluntary Laboratory Accreditation Program

# SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

**EMSL Analytical Inc.**
2225 West Hubbard Street
Chicago, IL 60612
Mr. James Hahn
Phone: 773-313-0099 Fax: 773-313-0139
E-Mail: jhahn@emsl.com
URL: http://www.emsl.com

**BULK ASBESTOS FIBER ANALYSIS (PLM)** **NVLAP LAB CODE 200399-0**

| *NVLAP Code* | *Designation / Description* |
|---|---|
| 18/A01 | EPA 600/M4-82-020: Interim Method for 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 |

2015-04-01 through 2016-03-31

*Effective dates*

*For the National Institute of Standards and Technology*



NVLAP-01S (REV. 2005-05-19)

United States Department of Commerce
National Institute of Standards and Technology

# Certificate of Accreditation to ISO/IEC 17025:2005

**NVLAP LAB CODE: 200399-0**

## EMSL Analytical Inc.

Chicago, IL

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:*

## BULK 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).*

2015-04-01 through 2016-03-31

*Effective dates*

*For the National Institute of Standards and Technology*

2015

# OCCUPATIONAL TRAINING & SUPPLY, INC.

7233 S. Adams Street ♦ Willowbrook, IL 60527 ♦ (630) 655-3900

# Asbestos Building Inspector Refresher

Occupational Training & Supply, Inc. certifies that

## Richard Zych

has successfully completed the Asbestos Building Inspector Refresher course and has passed the competency exam with a minimum score of 70%. The course is accredited by the Illinois Department of Public Health and Indiana Department of Environmental Management for purposes of accreditation in accordance with EPA 40 CFR 763, Asbestos Hazard Emergency response Act (AHERA) and TSCA Title II.

Course Date: 1/9/2015

Exam Date: 1/9/2015

Expiration Date: 1/9/2016

Certificate Number: BIR1501090079

Kathy DeSalvo

Kathy DeSalvo, Director

# Occupational Training & Supply, Inc.

7233 Adams Street • Willowbrook, IL 60527 • (630) 655-3900

# Lead Risk Assessor Refresher

Occupational Training and Supply, Inc. certifies that

## Richard J. Zych

**has successfully completed the 8 hour Lead Risk Assessor Refresher course**
and has passed the competency exam with a minimum score of 70%. This course is accredited by the Illinois Department of Public Health in accordance with the Illinois Lead Poisoning Prevention Code.

*Certificate: LRAR1209281664*

*Exam Date: 9/28/2012*

*Course Date: 9/28/2012*

*Expiration Date: 9/28/2015*

Kathy DeSalvo

*Kathy DeSalvo, Director*

2012

ILLINOIS DEPARTMENT OF PUBLIC HEALTH

IDPH

PROTECTING HEALTH. IMPROVING LIVES.

# ASBESTOS PROFESSIONAL LICENSE

| ID NUMBER | ISSUED | EXPIRES |
|---|---|---|
| 100 - 09339 | 3/10/2015 | 05/15/2016 |

RICHARD J ZYCH
3704 SARATOGA DRIVE
JOLIET, IL 60435

Environmental Health

| ENDORSEMENTS | TC EXPIRES |
|---|---|
| INSPECTOR | 1/9/2016 |
| PROJECT MANAGER<br>AIR SAMPLING PROFESSIONAL | 9/6/2015 |

**Alteration of this license shall result in legal action**
This license issued under authority of the State of Illinois Department of Public Health
This license is valid only when accompanied by a valid training course certificate.

# Part 6 Attachments

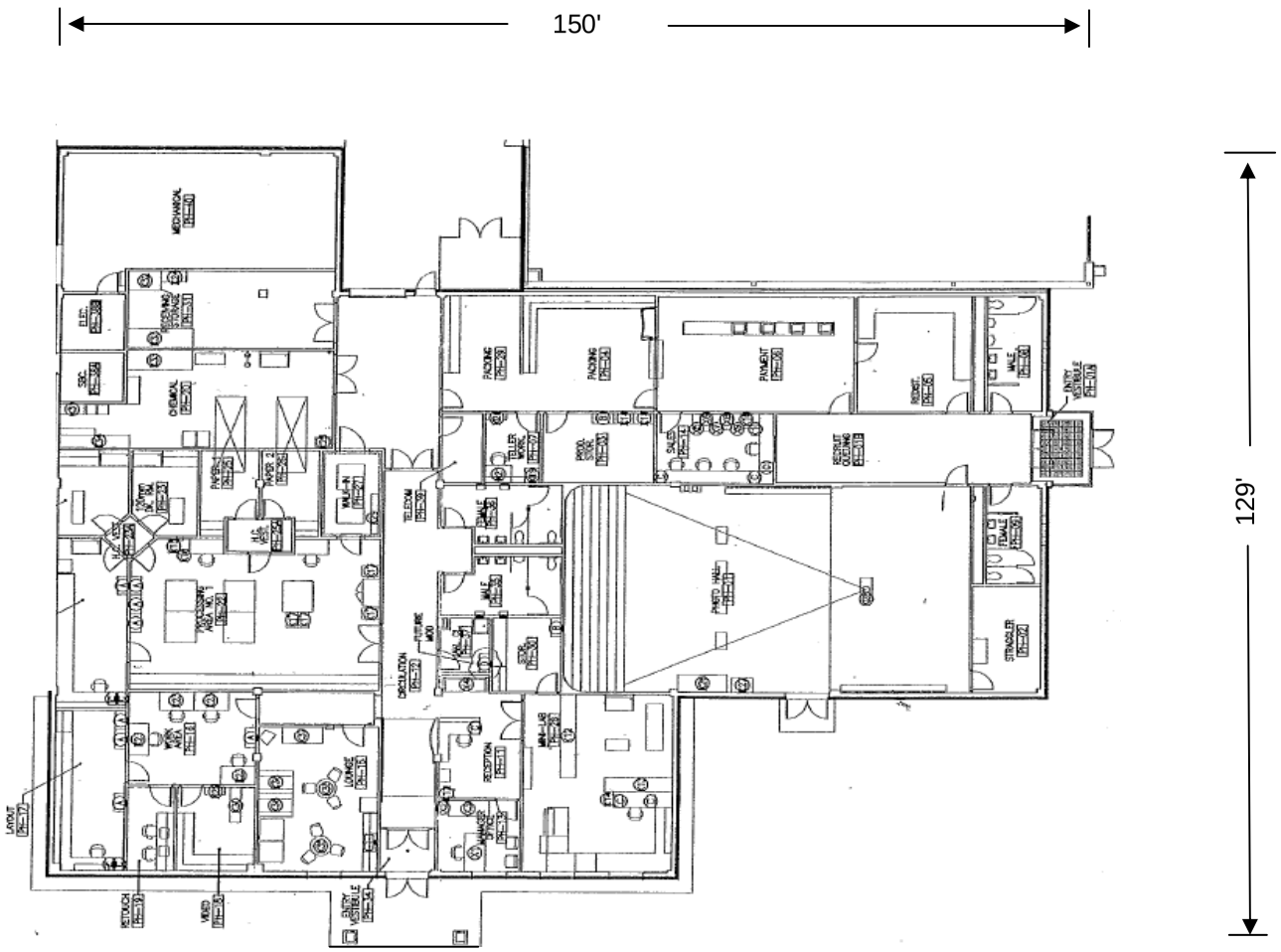
Building 7626 Documents

THIS

PAGE

NOT

USED




UTILIZATION

TOTAL FACILITY: 18,580 SF

N39224 74009 = 18,580 SF

NOT TO SCALE

| Facility Number | | Installation: | UIC: | SITE: |
|---|---|---|---|---|
| 7626 | NAVFAC Naval Facilities Engineering Command | NAVAL STATION GREAT LAKES IL | N00128 | GREAT LAKES MAIN SITE |

# CLASS 2 PROPERTY RECORD

**FACILITY NAME** NEX PHOTO STUDIO / LAB

**FACILITY NUMBER** 7626

**REPORT DATE 22 AUG 2013**

| | | | | | |
|---|---|---|---|---|---|
| **INSTALLATION UIC** | N00128 | GREAT LAKES NAVAL STATION | **REAL PROPERTY UNIQUE ID** | | 91242 |
| **FACILITY ID** | NFA200000453297 | | **LAST UPDATED** | | 22 AUG 2013 |
| **INSTAL MGMT CLMT** | N00052 | CNI | **PROPERTY RECORD NO** | | 230334 |
| **MANPOWER BSO** | | | **FACILITY TYPE** | 2 | BUILDING |
| **OPERATIONAL STATUS** | ACT | Active | **ACTION TYPE** | 1 | ACQUISITION |
| **SPECIAL AREA** | CP | GL CAMP PORTER | **FAMILY HOUSING INDICATOR** | | N |

## LOCATION

| | | |
|---|---|---|
| **REGION** | N61040 | CNR MIDWEST |
| **COUNTRY** | USA | UNITED STATES |
| **STATE** | 17 | ILLINOIS |
| **COUNTY** | 097 | LAKE |
| **CITY** | 3595 | GREAT LAKES |
| **MAP GRID** | R18 | |
| **STREET ADDRESS** | 2601 PAUL JONES ST | |

## DISPOSAL

**CONSOLIDATED PROPERTY NO**

**DISPOSAL METHOD CODE**

**DISPOSAL COMPLETION DATE**

**DISPOSAL CONTRACT NO**

**EXCESS DECLARATION DATE**

**SURPLUS DETERMINATION DATE**

## ACQUISITION

| | | | | |
|---|---|---|---|---|
| **ESTATE CODE** | 11 | MCON | **ACQUISITION DATE** | 22 SEP 2005 |
| **INTEREST TYPE** | FEE | U.S. Government owned property | **GOVERNMENT COST** | $ 4,937,824 |
| **LAND CCN** | 91140 | LAND - CONDEMNATION | | |
| **ACQ CONTRACT NO** | N6895003C0014 | | | |

## MAINTENANCE

| | | |
|---|---|---|
| **PREPONDERANT USER** | N39224 | NEX GREAT LAKES IL |
| **PRIME USE CAT CODE** | 74009 | EXCHANGE SERVICE OUTLETS |
| **PRIME FAC CODE** | 7346 | EXCHANGE SALES FACILITY |
| **MNT FUND SOURCE CODE** | A | O&M, N |
| **MNT RESPONSIBILITY UIC** | N00128 | GREAT LAKES NAVAL STATION |
| **ASSET EVALUATION DATE** | 26 APR 2010 | |
| **CURRENT PRV** | $ 4,460,083 | |
| **PRV AT EOY 12** | $ 4,460,083 | |

| MEASUREMENTS | ENGLISH | METRIC |
|---|---|---|
| **LENGTH** | 150.00 | 45.72 |
| **WIDTH** | 129.00 | 39.32 |
| **HEIGHT** | 20.00 | 6.10 |
| **AREA** | 18,580.00 | 1,726.14 |
| **AREA UM** | SF | M2 |

| | |
|---|---|
| **FLOOR ABOVE GROUND QUANTITY** | 1 |
| **FLOOR BELOW GROUND QUANTITY** | 0 |

## CONSTRUCTION

| | | |
|---|---|---|
| **FACILITY BUILT DATE** | 01 JUL 2005 | |
| **CONSTRUCTION TYPE** | PERM | PERMANENT |
| **HISTORIC STATUS DATE** | | |
| **HISTORIC STATUS CODE** | NEV | Not yet Evaluated |

## READINESS FACTORS

| | | | |
|---|---|---|---|
| **MDI** | 39 | **DATE** | 01 JAN 2007 |
| **CONDITION RATING** | 95 | **DATE** | 07 JUN 2013 |
| **CONFIGURATION RATING** | 100 | **DATE** | 13 JUN 2009 |
| **PHYSICAL QUALITY RATE** | 95 | | |

# CLASS 2 PROPERTY RECORD

**FACILITY NAME** NEX PHOTO STUDIO / LAB

**FACILITY NUMBER** 7626

**REPORT DATE** 22 AUG 2013

## UTILIZATION

| | | | | | |
|---|---|---|---|---|---|
| **UTILIZATION ID** | 1 | | | | |
| **FAC USE CCN** | 74009 EXCHANGE SERVICE OUTLETS | **SET BACK VALUE** | 3,500.00 | **DOD FAC** | 7346 |
| **FACILITY USE** | PHOTO STUDIO | **MAX VALUE** | 200,000.00 | **DOD UM** | SF |
| **USER ACTIVITY** | N39224 NEX GREAT LAKES IL | **OUTGRANT IDENTIFIER** | | **PRIMARY UM** | SF |

**CONFIGURATION**

| | AREA | | OTHER | | ALTERNATE | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **ADEQUATE** | 18,580.00 | 1,726.14 | | | | |
| **SUBSTANDARD** | | | | | | |
| **INADEQUATE** | | | | | | |
| **TOTAL** | 18,580.00 | 1,726.14 | | | | |
| **UNIT OF MEASURE** | SF | M2 | | | | |

| | |
|---|---|
| **SUSTAINMENT FUND SOURCE** | 1804 Operation and Maintenance, Navy |
| **SUSTAINMENT ORGANIZATION** | 06 NAVY ACTIVE |
| **OPERATIONAL FUND SOURCE** | 1804 Operation and Maintenance, Navy |
| **OPERATIONAL FUNDING ORG** | 06 NAVY ACTIVE |

## NOTES

29 SEP 2005 13,630 sf is located within the walls of the photo studio / lab. The covered walkway area is 9,900 sf. For facility area, half of the walkway area (4,950 sf) was added to the studio / lab area. Thus the total facility area of 18,580 sf.

**FACILITY NAME** NEX PHOTO STUDIO / LAB

**FACILITY NUMBER** 7626

**REPORT DATE** 22 AUG 2013

## DOCUMENTS

| FILE NAME | DESCRIPTION | DOCUMENT UPLOAD DATE |
|---|---|---|
| 7626 AE.pdf | AE 19-AUG-2010 | 19-AUG-10 |

## LOCATION DIRECTIONS TEXT

3110 ILLINOIS STREET

NAVAL STATION GREAT LAKES IL

Asset Evaluation Worksheet

| | | | |
|---|---|---|---|
| **Building # (PR#):** | **7626 (230334)** | **Facility POC:** | **Jerold Klinkosh / Bill Dermody** |
| **Building Name:** | **NEX PHOTO STUDIO / LAB** | | |
| **Installation UIC:** | **N00128** | **Site:** | **GLMS** |
| **Street Address** | **3110 ILLINOIS STREET** | **POC Phone Number:** | **847-688-6180** |
| **Occupant:** | **N39224 NEX GREAT LAKES IL** | **POC Email:** | |

| CCN | Unit Title | User Activity | Department | AE Rating | Area / Quantity | U/M | Alternate U/M |
|---|---|---|---|---|---|---|---|
| **74009** | Exchange Service Outlets | **N39224** NEX Great Lakes IL | | Adequate | 18,580 | SF | N/A |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | **18,580** | **SF** | |

| CCN | Def Code | Def Code Description | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | Field Visit: 042610 |

**PHOTOGRAPHS:**

**NOTES:**

AE Evaluator: Reid Planning, Inc. Email: AE@reidplanning.com Telephone: 619-281-8847

# CLASS 2 PROPERTY RECORD

**Report Date** 22 MAR 2010 14:28

| | | | | |
|---|---|---|---|---|
| **Installation** | N00128 | NAVAL STATION GREAT LAKES IL | **Property No** | 230334 |
| **Special Area** | | | **Facility No** | 7626 |
| **Instal Mgmt Clmnt** | N00052 | CNI | **Facility ID** | NFA200000453297 |
| **Claimant Code** | | | **Facility Type** | 2 BUILDING |
| **Operational Claimant** | N69292 | CFFC | **Action Type** | 1 ACQUISITION |
| **Former Installation** | | | **Former PR No** | |
| **Facility Name** | NEX PHOTO STUDIO / LAB | | **Last Updated** | 18 MAR 2010 |
| | | | **Family Housing Indicator** | N |

## Location

| | | |
|---|---|---|
| **Region** | N61040 | CNR MIDWEST |
| **Country** | US | UNITED STATES |
| **State** | 17 | ILLINOIS |
| **County** | 097 | LAKE |
| **City** | 3595 | GREAT LAKES |
| **Map Grid** | R18 | |

## Excess and Disposal

**Excess Action**
**Excess Date**
**Consolidated PR**
**Disposal Method**
**Disposal Date**
**Disp Contract No**

## Acquisition

| | | | |
|---|---|---|---|
| **Estate Code** | 11 MCON | **Acquisition Date** | 22 SEP 2005 |
| **Land CCN** | 91140 LAND - CONDEMNATION | **Government Cost** | $ 4,937,824 |
| **Acq Contract** | N6895003C0014 | | |

## Maintenance

| | | |
|---|---|---|
| **Preponderant User** | N39224 | NEX GREAT LAKES IL |
| **Prime Use CCN** | 74009 | EXCHANGE SERVICE OUTLETS |
| **Prime FAC Code** | 7346 | EXCHANGE SALES FACILITY |
| **Mnt Fund Source** | A | O&M, N |
| **Mnt Responsibility** | N00128 | NAVAL STATION GREAT LAKES IL |
| **Asset Eval Date** | ~~02 FEB 2007~~ 26 APR 2010 | |
| **Current PRV** | $ 4,751,401 | **PRV at EOY 09** $ 4,751,401 |

## Measurements

| | English | | Metric | |
|---|---|---|---|---|
| **Length** | 150.00 | | 45.72 | |
| **Width** | 129.00 | ~~112.00~~ | TBD | ~~34.14~~ |
| **Height** | 20.00 | | 6.10 | |
| **Area** | 18,580.00 | | 1,726.14 | |
| **Area UM** | SF | | M2 | |
| **Number of Stories** | 1 | | | |
| **Irregular Shape Ind** | Y | | | |

## Construction

| | | | |
|---|---|---|---|
| **Facility Built Date** | 01 JUL 2005 | **Original Proj No** | P-745 |
| **Year Improved** | | **Current Proj No** | |
| **Constr Type** | PERM PERMANENT | **ABMP Code** | |

## Utilization

| | | | | | |
|---|---|---|---|---|---|
| **Fac Use CCN** | 74009 EXCHANGE SERVICE OUTLETS | **Set Back** | 3,500.00 | **DoD FAC** | 7346 |
| **Facility Use** | PHOTO STUDIO | **Max Val** | 200,000.00 | **DoD UM** | SF |
| **User Activity** | N39224 NEX GREAT LAKES IL | **Otg Identifier** | | **Primary UM** | SF |

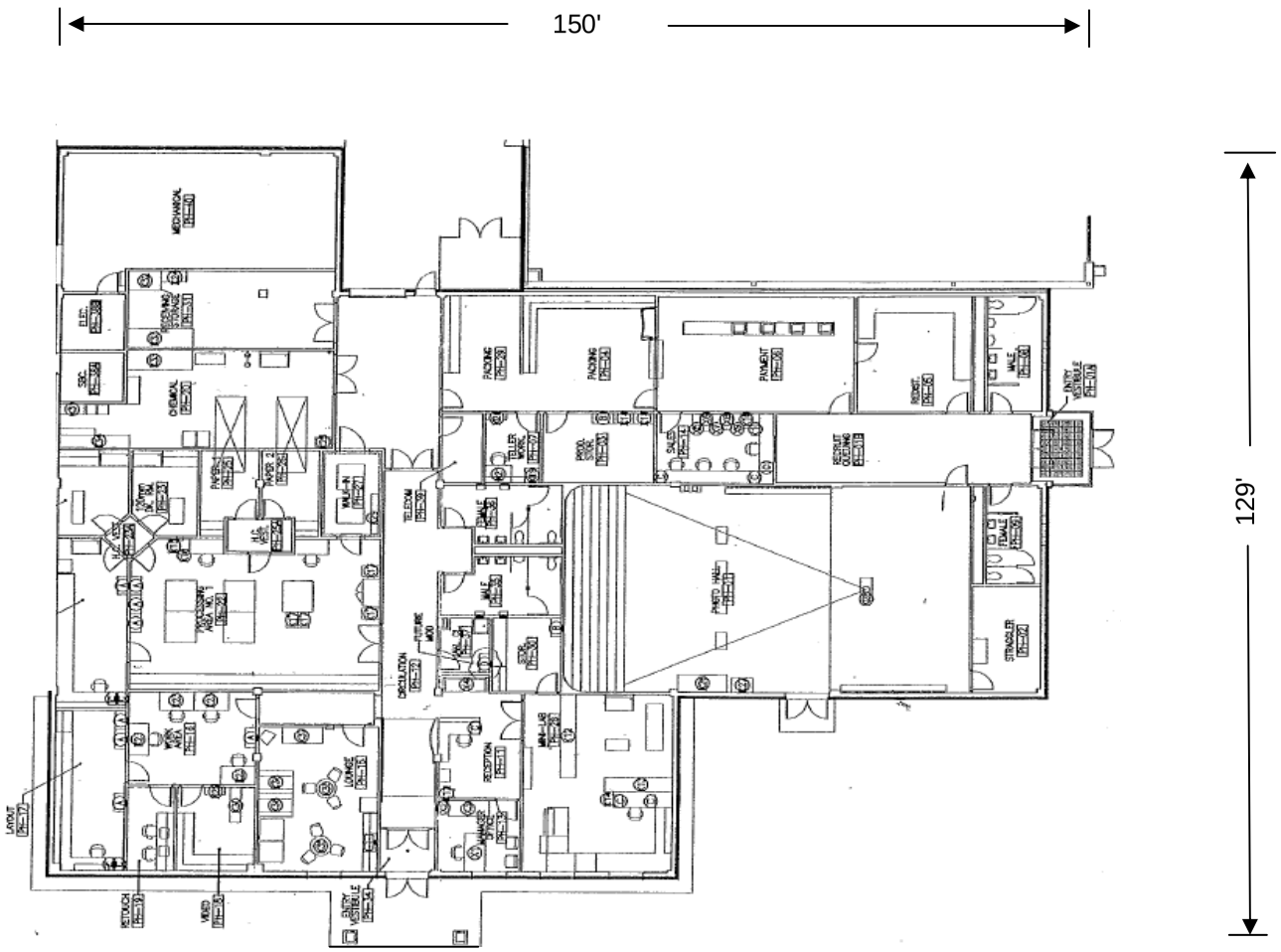
| | Area | | Other | | Alternate | |
|---|---|---|---|---|---|---|
| | English | Metric | English | Metric | English | Metric |
| **Adequate** | 18,580.00 | 1,726.14 | | | | |
| **Substandard** | | | | | | |
| **Inadequate** | | | | | | |
| **Total** | 18,580.00 | 1,726.14 | | | | |
| **Unit of Meas** | SF | M2 | | | | |

**Deficiencies** **Adq** **Sub** **Inad**

## Notes

29 SEP 2005 13,630 sf is located within the walls of the photo studio / lab. The covered walkway area is 9,900 sf. For facility area, half of the walkway area (4,950 sf) was added to the studio / lab area. Thus the total

facility area of 18,580 sf.




UTILIZATION

TOTAL FACILITY: 18,580 SF

N39224 74009 = 18,580 SF

NOT TO SCALE

| Facility Number | | Installation: | UIC: | SITE: |
|---|---|---|---|---|
| 7626 | NAVFAC Naval Facilities Engineering Command | NAVAL STATION GREAT LAKES IL | N00128 | GREAT LAKES MAIN SITE |

Selected Points: B7626*
Selected Panels: *
Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B7626.AH.CDS | -Virtual- | (COLD DECK SETPT ) | 65 | DEG F | -N- | NONE |
| B7626.AH.HDS | -Virtual- | (HOT DECK SETPT ) | 71.4 | DEG F | -N- | NONE |
| B7626.AH.SAS | -Virtual- | (SA SETPT ) | 60.9 | DEG F | -N- | NONE |
| B7626.AH1.OCC:MODE | -Virtual- | (Mode Output ) | OCC1 | | -N- | NONE |
| B7626.AH1.OCC:OA TEMP | -Virtual- | (OA TEMP ) | 0 | deg F | -N- | NONE |
| B7626.AH1.OCC:OA TEMP STOP | -Virtual- | (OA TEMP STOP ) | 32 | deg F | -N- | NONE |
| B7626.AH1.OCC:OCC CLG STPT | -Virtual- | (OCC CLG STPT ) | 78.8 | deg F | -N- | NONE |
| B7626.AH1.OCC:OCC HTG STPT | -Virtual- | (OCC HTG STPT ) | 68 | deg F | -N- | NONE |
| B7626.AH1.OCC:TEMP DV STOP | -Virtual- | (TEMP DV STOP ) | 0 | deg F | -N- | NONE |
| B7626.AH1.OCC:TIME DV STOP | -Virtual- | (Time deviation ) | 0 | min | -N- | NONE |
| B7626.AH1.OCC:VAC CLG STPT | -Virtual- | (VAC CLG STPT ) | 86 | deg F | -N- | NONE |
| B7626.AH1.OCC:VAC HTG STPT | -Virtual- | (VAC HTG STPT ) | 53.6 | deg F | -N- | NONE |
| B7626.AH1.OCC:ZN TEMP | -Virtual- | (Zone Temperature) | 32 | deg F | -N- | NONE |
| B7626.AH1CCV | 021 0 00 11 | (COOL VALVE ) | 0 | PCT | -N- | NONE |
| B7626.AH1CFC | -Virtual- | (CALL FOR COOL ) | ON | | -N- | NONE |
| B7626.AH1COL | -Virtual- | (COOLING REQ ) | ON | | -N- | NONE |
| B7626.AH1DAS | -Virtual- | (DISCHARGE STPT ) | 60.9 | DEG F | -N- | NONE |
| B7626.AH1DAT | 021 0 03 03 | (DISCH AIR TEMP ) | 74.6 | DEG F | -N- | NONE |
| B7626.AH1ECM | -Virtual- | (ECONOMIZER MODE ) | ON | | -N- | NONE |
| B7626.AH1FIL | 021 0 01 06 | (DIRTY FILTER ) | OFF | | -N- | NONE |
| B7626.AH1HCT | 021 0 03 02 | (PREHEAT TEMP ) | 72.2 | DEG F | -N- | NONE |
| B7626.AH1HCV | 021 0 00 10 | (HEAT VALVE ) | 0 | PCT | -N- | NONE |
| B7626.AH1HSP | 021 0 01 04 | (HIGH STATIC ) | OFF | | -N- | NONE |
| B7626.AH1IG1 | -Virtual- | (SUPPLY STATIC ) | 1500 | IGAIN | -N- | NONE |
| B7626.AH1IG2 | -Virtual- | (RETURN STATIC ) | 2000 | IGAIN | -N- | NONE |
| B7626.AH1IG3 | -Virtual- | (UNOCC DAT LOOP ) | 40 | IGAIN | -N- | NONE |
| B7626.AH1IG4 | -Virtual- | (OCC MAT LOOP ) | 300 | IGAIN | -N- | NONE |
| B7626.AH1IG5 | -Virtual- | (VRT ) | 15 | IGAIN | -N- | NONE |
| B7626.AH1LP1 | -Virtual- | (SAF LOOP OUTPUT ) | 70.36 | PCT | -N- | NONE |
| B7626.AH1LP2 | -Virtual- | (RAF LOOP OUTPUT ) | 70.36 | PCT | -N- | NONE |
| B7626.AH1LTD | 021 0 01 05 | (LOW TEMP ) | OFF | | -N- | NONE |
| B7626.AH1MAD | 021 0 00 09 | (MIX AIR DMPR ) | 100 | PCT | -N- | NONE |
| B7626.AH1MAS | -Virtual- | (MIXED AIR LIMIT ) | 44 | DEG F | -N- | NONE |
| B7626.AH1MAT | 021 0 03 01 | (MIXED AIR TEMP ) | 50.9 | DEG F | -N- | NONE |
| B7626.AH1MIN | -Virtual- | (MIN OA SETPOINT ) | 20 | PCTOA | -N- | NONE |
| B7626.AH1OFF | 021 0 02 03 | (AHU-1 KILL SW ) | OFF | | -N- | NONE |
| B7626.AH1OVP | -Virtual- | (OA VEL PRESS ) | 2 | IN WC | -N- | NONE |
| B7626.AH1P2 | -Virtual- | (RETURN PGAIN ) | 750 | PGAIN | -N- | NONE |
| B7626.AH1P3 | -Virtual- | (P-GAIN ) | 840 | PGAIN | -N- | NONE |
| B7626.AH1P4 | -Virtual- | (P-GAIN ) | 800 | PGAIN | -N- | NONE |
| B7626.AH1P5 | -Virtual- | (P-GAIN ) | 800 | PGAIN | -N- | NONE |
| B7626.AH1PG1 | -Virtual- | (SUPPLY STATIC ) | 20000 | PGAIN | -N- | NONE |
| B7626.AH1PG2 | -Virtual- | (RETURN STATIC ) | 20000 | PGAIN | -N- | NONE |
| B7626.AH1PG3 | -Virtual- | (UNOCC DAT LOOP ) | 800 | PGAIN | -N- | NONE |
| B7626.AH1PG4 | -Virtual- | (OCC MAT LOOP ) | 5000 | PGAIN | -N- | NONE |
| B7626.AH1PG5 | -Virtual- | (VRT LOOP ) | 1000 | PGAIN | -N- | NONE |
| B7626.AH1RAF | 021 0 01 10 | (RETURN FAN ) | ON | | -N- | NONE |
| B7626.AH1RAT | 021 0 03 04 | (RETURN AIR TEMP ) | 71.3 | DEG F | -N- | NONE |
| B7626.AH1RCFM | -Virtual- | (RETURN CFM ) | 0 | CFM | -N- | NONE |
| B7626.AH1RCS | -Virtual- | (RET CFM SETPOINT) | 1000 | CFM | -N- | NONE |
| B7626.AH1RP1 | -Virtual- | (SAF RAMP OUTPUT ) | 69.63 | PCT | -N- | NONE |
| B7626.AH1RP2 | -Virtual- | (RAF RAMP OUTPUT ) | 69.63 | PCT | -N- | NONE |

Selected Points: B7626*
Selected Panels: *
Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B7626.AH1RSD | 021 0 01 08 | (RETURN SMOKE ) | OFF | | -N- | NONE |
| B7626.AH1RVA | 021 0 02 02 | (RETURN VFD ALARM) | OFF | | -N- | NONE |
| B7626.AH1RVD | 021 0 00 12 | (RETURN SPEED ) | 70 | PCT | -N- | NONE |
| B7626.AH1RVP | -Virtual- | (RET VEL PRESS ) | 2 | IN WC | -N- | NONE |
| B7626.AH1SAF | 021 0 01 09 | (SUPPLY FAN ) | ON | | -N- | NONE |
| B7626.AH1SCFM | -Virtual- | (SUPPLY CFM ) | 0 | CFM | -N- | NONE |
| B7626.AH1SSD | 021 0 01 07 | (SUPPLY SMOKE ) | OFF | | -N- | NONE |
| B7626.AH1SSP | 021 0 03 08 | (SUPPLY STATIC ) | 1.51 | IN H2O | -N- | NONE |
| B7626.AH1SSS | -Virtual- | (SUP STATIC STPT ) | 1.5 | IN WC | -N- | NONE |
| B7626.AH1SVA | 021 0 02 01 | (SUPPLY VFD ALARM) | OFF | | -N- | NONE |
| B7626.AH1SVD | 021 0 00 13 | (SUPPLY SPEED ) | 70 | PCT | -N- | NONE |
| B7626.AH1SVP | -Virtual- | (SUP VEL PRESS ) | 2 | IN WC | -N- | NONE |
| B7626.AH1T01 | -Virtual- | (TIMER 1 ) | 4388270 | SCNDS | -N- | NONE |
| B7626.AH1T02 | -Virtual- | (TIMER 2 ) | 0 | SCNDS | -N- | NONE |
| B7626.AH1T03 | -Virtual- | (TIMER 3 ) | 4308430 | SCNDS | -N- | NONE |
| B7626.AH1T04 | -Virtual- | (TIMER 4 ) | 4388270 | SCNDS | -N- | NONE |
| B7626.AH1T05 | -Virtual- | (TIMER 5 ) | 4387975 | SCNDS | -N- | NONE |
| B7626.AH1T06 | -Virtual- | (TIMER 6 ) | 0 | SCNDS | -N- | NONE |
| B7626.AH1T07 | -Virtual- | (TIMER 7 ) | 71625 | SCNDS | -N- | NONE |
| B7626.AH1T08 | -Virtual- | (TIMER 8 ) | 0 | SCNDS | -N- | NONE |
| B7626.AH1VRT | -Virtual- | (CONTROL OUTPUT ) | 100 | PCT | -N- | NONE |
| B7626.BLR.LEAD | -Virtual- | (LEAD BOILER ) | 1 | BLR | -N- | NONE |
| B7626.BLR1.RT | -Virtual- | (BLR 1 RUNTIME ) | 2847.52 | HOURS | -N- | NONE |
| B7626.BLR1.SAFETY | 021 0 00 02 | (BLR 1 SFTY ALM ) | OFF | | -N- | NONE |
| B7626.BLR1ALM | -Virtual- | (BLR 1 ALARM ) | ON | | -N- | NONE |
| B7626.BLR1HWS | 021 0 00 17 | (BLR1 HWS TEMP ) | 135 | DEG F | -N- | NONE |
| B7626.BLR1SS | 021 0 00 25 | (BLR1 SS ) | ON | | -N- | NONE |
| B7626.BLR2.RT | -Virtual- | (BLR 2 RUNTIME ) | 3409.53 | HOURS | -N- | NONE |
| B7626.BLR2.SAFETY | 021 0 00 04 | (BLR 2 SFTY ALM ) | ON | | -N- | NONE |
| B7626.BLR2ALM | -Virtual- | (BLR 2 ALARM ) | OFF | | -N- | NONE |
| B7626.BLR2HWS | 021 0 00 18 | (BLR2 HWS TEMP ) | 146.4 | DEG F | -N- | NONE |
| B7626.BLR2SS | 021 0 00 26 | (BLR2 SS ) | ON | | -N- | NONE |
| B7626.BLRCOLD | -Virtual- | (TEMP BELOW 30 ) | OFF | | -N- | NONE |
| B7626.BLRENA | -Virtual- | (BOILER ENABLE ) | ON | | -N- | NONE |
| B7626.BLRREQ | -Virtual- | (BOILERS REQ ) | 2 | BLRS | -N- | NONE |
| B7626.BLRSPD.HGH | 021 0 00 32 | (CMBSTN AIR HGH ) | ON | | -N- | NONE |
| B7626.BLRSPD.LOW | 021 0 01 11 | (CMBSTN AIR LOW ) | OFF | | -N- | NONE |
| B7626.BLRSPD.MED | 021 0 00 31 | (CMBSTN AIR MED ) | OFF | | -N- | NONE |
| B7626.BLRT03 | -Virtual- | (TIMER 1 ) | 0 | SCNDS | -N- | NONE |
| B7626.BLRT04 | -Virtual- | (TIMER 4 ) | 0 | SCNDS | -N- | NONE |
| B7626.BLRT05 | -Virtual- | (TIMER 5 ) | 2488560 | SCNDS | -N- | NONE |
| B7626.BLRT06 | -Virtual- | (TIMER 6 ) | 4.23E+00 | 7SCNDS | -N- | NONE |
| B7626.BLRT07 | -Virtual- | (TIMER 7 ) | 4.23E+00 | 7SCNDS | -N- | NONE |
| B7626.BLRT08 | -Virtual- | (TIMER 8 ) | 67255 | SCNDS | -N- | NONE |
| B7626.BLRTAL | -Virtual- | (BLR TEMP ALARM ) | ON | | -N- | NONE |
| B7626.CH.ENA | -Virtual- | (CHILLER ENABLE ) | OFF | | -N- | NONE |
| B7626.CH1ALM | 021 0 04 04 | (CHILLER ALARM ) | OFF | | -N- | NONE |
| B7626.CH1ENA | -Virtual- | (CHILLER ENABLE ) | OFF | | -N- | NONE |
| B7626.CH1PMP.LEAD | -Virtual- | (CHW PUMP LEAD ) | 1 | | -N- | NONE |
| B7626.CH1PMP1 | 021 0 00 27 | (CHW PUMP 1 ) | OFF | | -N- | NONE |
| B7626.CH1PMP1.RT | -Virtual- | (CH PMP1 RUNTIME ) | 321.39 | HOURS | -N- | NONE |
| B7626.CH1PMP2 | 021 0 00 28 | (CHW PUMP 2 ) | OFF | | -N- | NONE |

Selected Points: B7626*
Selected Panels: *
Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B7626.CH1PMP2.RT | -Virtual- | (CH PMP2 RUNTIME ) | 129.4 | HOURS | -N- | NONE |
| B7626.CH1RWT | 021 0 00 23 | (CHW RET TEMP ) | 82 | DEG F | -N- | NONE |
| B7626.CH1SS | 021 0 04 10 | (CHLR STRT/STOP ) | OFF | | -N- | NONE |
| B7626.CH1SWT | 021 0 00 22 | (CHW SUP TEMP ) | 81.7 | DEG F | -N- | NONE |
| B7626.CH1T01 | -Virtual- | (CHLR TIMER 1 ) | 0 | SECNDS | -N- | NONE |
| B7626.CH1T02 | -Virtual- | (CHLR TIMER 2 ) | 1041855 | SECNDS | -N- | NONE |
| B7626.COLRST | -Virtual- | (COM OUT LEVEL ) | 2 | VALUE | -N- | NONE |
| B7626.ECM | -Virtual- | (ECM ENABLE ) | ON | | -N- | NONE |
| B7626.EF1 | 021 0 02 10 | (EXHAUST FAN EF-1) | ON | | -N- | NONE |
| B7626.EF1CFM | -Virtual- | (EF1 CFM ) | 1200 | CFM | -N- | NONE |
| B7626.EF2 | 021 0 02 11 | (EXHAUST FAN EF-2) | ON | | -N- | NONE |
| B7626.EF2CFM | -Virtual- | (EF2 CFM ) | 675 | CFM | -N- | NONE |
| B7626.EF3 | 021 0 04 09 | (EXHUAST FAN EF-3) | OFF | | -N- | NONE |
| B7626.ELECEXH.ENBL | -Virtual- | (ELEC RM EXH ENBL) | OFF | | -N- | NONE |
| B7626.ELECRMT | 021 0 05 01 | (ELEC ROOM TEMP ) | 78.6 | DEG F | -N- | NONE |
| B7626.ELERM.HEAT | 021 0 04 11 | (ELEC RM HEATER ) | OFF | | -N- | NONE |
| B7626.FPB.PH01:AIR VOLUME | 021 1 01 35 | ( ) | 1040 | CFM | -N- | NONE |
| B7626.FPB.PH01:CTL STPT | 021 1 01 92 | (PHOTO HALL ) | 72 | DEG F | -N- | OVRD |
| B7626.FPB.PH01:CTL TEMP | 021 1 01 78 | ( ) | 72.25 | DEG F | -N- | NONE |
| B7626.FPB.PH01:DAY.NGT | 021 1 01 29 | ( ) | DAY | | -N- | OVRD |
| B7626.FPB.PH01:DMPR POS | 021 1 01 49 | ( ) | 18.8 | PCT | -N- | NONE |
| B7626.FPB.PH01:FAN | 021 1 01 46 | ( ) | ON | | -N- | NONE |
| B7626.FPB.PH01:FLOW | 021 1 01 75 | ( ) | 99.5 | PCT | -N- | NONE |
| B7626.FPB.PH01:FLOW STPT | 021 1 01 93 | ( ) | 100 | PCT | -N- | NONE |
| B7626.FPB.PH01:HEAT.COOL | 021 1 01 05 | ( ) | HEAT | | -N- | NONE |
| B7626.FPB.PH01:ROOM TEMP | 021 1 01 04 | ( ) | 72.25 | DEG F | -N- | NONE |
| B7626.FPB.PH01:VLV POS | 021 1 01 53 | ( ) | 91.2 | PCT | -N- | NONE |
| B7626.FPB.PH01B:AIR VOLUME | 021 1 02 35 | ( ) | 932 | CFM | -N- | NONE |
| B7626.FPB.PH01B:CTL STPT | 021 1 02 92 | (RECRUIT QUEING ) | 72 | DEG F | -N- | OVRD |
| B7626.FPB.PH01B:CTL TEMP | 021 1 02 78 | ( ) | 72.25 | DEG F | -N- | NONE |
| B7626.FPB.PH01B:DAY.NGT | 021 1 02 29 | ( ) | DAY | | -N- | OVRD |
| B7626.FPB.PH01B:DMPR POS | 021 1 02 49 | ( ) | 26.8 | PCT | -N- | NONE |
| B7626.FPB.PH01B:FAN | 021 1 02 46 | ( ) | ON | | -N- | NONE |
| B7626.FPB.PH01B:FLOW | 021 1 02 75 | ( ) | 46.5 | PCT | -N- | NONE |
| B7626.FPB.PH01B:FLOW STPT | 021 1 02 93 | ( ) | 46.5 | PCT | -N- | NONE |
| B7626.FPB.PH01B:HEAT.COOL | 021 1 02 05 | ( ) | COOL | | -N- | NONE |
| B7626.FPB.PH01B:ROOM TEMP | 021 1 02 04 | ( ) | 72.25 | DEG F | -N- | NONE |
| B7626.FPB.PH01B:VLV POS | 021 1 02 53 | ( ) | 0 | PCT | -N- | NONE |
| B7626.GENEXH.ENBL | -Virtual- | (GEN EXH ENBL ) | ON | | -N- | NONE |
| B7626.GLY1HIALM | 021 0 04 06 | (GLYCOL HI ALARM ) | NORMAL | | -N- | NONE |
| B7626.GLY1LOALM | 021 0 04 07 | (GLYCOL LOW ALARM) | ALARM | | *A3* | NONE |
| B7626.GLYCOL.ADD | -Virtual- | (TOT GLYCOL ADD ) | 0.57 | GALLON | -N- | NONE |
| B7626.GLYCOL.LMT | -Virtual- | (MAX GLYCOL ADD ) | 5 | GALLON | -N- | NONE |
| B7626.GLYCOL.PREVDAY | -Virtual- | (PREV DAY AMT ) | 1.82 | GALLON | -N- | NONE |
| B7626.HUM.ENA | -Virtual- | (HUM ENABLE ) | OFF | | -N- | NONE |
| B7626.HWFM | 021 0 00 24 | (GLYCOL FILL FLOW) | 1.32 | GPM | -N- | NONE |
| B7626.HWPMP.LEAD | -Virtual- | (LEAD PUMP ) | 1 | PMP | -N- | NONE |
| B7626.HWPMP1.RT | -Virtual- | (HWPMP 1 RUNTIME ) | 2241.35 | HOURS | -N- | NONE |
| B7626.HWPMP1SS | 021 0 00 29 | (HWPMP 1 S/S ) | ON | | -N- | NONE |
| B7626.HWPMP2.RT | -Virtual- | (HWPMP 2 RUNTIME ) | 2254.12 | HOURS | -N- | NONE |
| B7626.HWPMP2SS | 021 0 00 30 | (HWPMP2 S/S ) | OFF | | -N- | NONE |
| B7626.HWRWT | 021 0 00 20 | (HWR TEMP ) | 133.9 | DEG F | -N- | NONE |

Selected Points: B7626*
Selected Panels: *
Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B7626.HWSWT | 021 0 00 19 | (HWS TEMP ) | 140.7 | DEG F | -N- | NONE |
| B7626.HWSWT.ALM | -Virtual- | (LOW HWSWT ALM ) | ON | | -N- | NONE |
| B7626.HX.ENA | -Virtual- | (HX ENABLE ) | ON | | -N- | NONE |
| B7626.HX.OSWS | -Virtual- | (HX OCC SETPT ) | 131.2 | DEG F | -N- | NONE |
| B7626.HX.USWS | -Virtual- | (HX UNOCC SETPT ) | 121.2 | DEG F | -N- | NONE |
| B7626.MEC21B | -Virtual- | (BATTERY ALARM ) | OFF | | -N- | NONE |
| B7626.MEC21F | -Virtual- | ( ) | 20 | FAILED | -N- | NONE |
| B7626.MKUPAIR | -Virtual- | (MAKE UP AIR ) | HIGH | | -N- | NONE |
| B7626.OAC | -Virtual- | (Virt OA Temp ) | 49.55 | Deg F | -N- | NONE |
| B7626.OAT | 021 0 00 21 | (ECM OAT ) | 50.3 | DEG F | -N- | NONE |
| B7626.OATEMP | 021 0 00 21 | (OA TEMP ) | 50.2 | DEG F | -N- | NONE |
| B7626.OCC.CLG.RMS | -Virtual- | (OCC CLG RM SETPT) | 76 | DEG F | -N- | NONE |
| B7626.OCC.HTG.RMS | -Virtual- | (OCC HTG RM SETPT) | 72 | DEG F | -N- | NONE |
| B7626.OCC.RMS | -Virtual- | (ROOM SETPT ) | 72 | DEG F | -N- | NONE |
| B7626.PAC1ALM | 021 0 02 07 | (PAC-1 STATUS ) | ON | | *A3* | NONE |
| B7626.PRECOOL | -Virtual- | (PRECOOL ENABLE ) | OFF | | -N- | NONE |
| B7626.PRILVL | -Virtual- | (PRIORITY LEVEL ) | 11 | VALUE | -N- | NONE |
| B7626.RLVL | -Virtual- | (RESPONSE LEVEL ) | 0 | VALUE | -N- | NONE |
| B7626.SF2STS | 021 0 01 01 | (SF-2 STATUS ) | OFF | | -N- | NONE |
| B7626.STRMPMP.ALM | 021 0 02 08 | (PAC-1 STATUS ) | OFF | | -N- | NONE |
| B7626.UNOCC.CLG.RMS | -Virtual- | (UNOC CLG RM STPT) | 80 | DEG F | -N- | NONE |
| B7626.UNOCC.HTG.RMS | -Virtual- | (UNOC HTG RM STPT) | 65 | DEG F | -N- | NONE |
| B7626.UNOCC.RH.LIMIT | -Virtual- | (UNOC RH LIMIT ) | 55 | DEG F | -N- | NONE |
| B7626.UNOCC.RMS | -Virtual- | (UNOCC ROOM SETPT) | 65 | DEG F | -N- | NONE |
| B7626.VAV.OCC:MODE | -Virtual- | ( ) | OCC1 | | -N- | NONE |
| B7626.VAV.OCC:OA TEMP | -Virtual- | ( ) | 0 | deg F | -N- | NONE |
| B7626.VAV.OCC:OA TEMP STOP | -Virtual- | ( ) | 32 | deg F | -N- | NONE |
| B7626.VAV.OCC:OCC CLG STPT | -Virtual- | ( ) | 78.8 | deg F | -N- | NONE |
| B7626.VAV.OCC:OCC HTG STPT | -Virtual- | ( ) | 68 | deg F | -N- | NONE |
| B7626.VAV.OCC:TEMP DV STOP | -Virtual- | ( ) | 0 | deg F | -N- | NONE |
| B7626.VAV.OCC:TIME DV STOP | -Virtual- | ( ) | 0 | min | -N- | NONE |
| B7626.VAV.OCC:VAC CLG STPT | -Virtual- | ( ) | 86 | deg F | -N- | NONE |
| B7626.VAV.OCC:VAC HTG STPT | -Virtual- | ( ) | 53.6 | deg F | -N- | NONE |
| B7626.VAV.OCC:ZN TEMP | -Virtual- | ( ) | 32 | deg F | -N- | NONE |
| B7626.VAV.PH05:AIR VOLUME | 021 1 04 35 | ( ) | 164 | CFM | -N- | NONE |
| B7626.VAV.PH05:AUX TEMP | 021 1 04 15 | ( ) | 85 | DEG F | -N- | NONE |
| B7626.VAV.PH05:CAL AIR | 021 1 04 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH05:CLG LOOPOUT | 021 1 04 79 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH05:CTL FLOW MAX | 021 1 04 77 | ( ) | 164 | CFM | -N- | NONE |
| B7626.VAV.PH05:CTL FLOW MIN | 021 1 04 76 | ( ) | 164 | CFM | -N- | NONE |
| B7626.VAV.PH05:CTL STPT | 021 1 04 92 | (REDIST ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH05:CTL TEMP | 021 1 04 78 | (REDIST ) | 73 | DEG F | -N- | NONE |
| B7626.VAV.PH05:DAY CLG STPT | 021 1 04 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH05:DAY HTG STPT | 021 1 04 07 | ( ) | 70 | DEG F | -N- | NONE |
| B7626.VAV.PH05:DAY.NGT | 021 1 04 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH05:DMPR COMD | 021 1 04 48 | ( ) | 44.4 | PCT | -N- | NONE |
| B7626.VAV.PH05:DMPR POS | 021 1 04 49 | ( ) | 44.4 | PCT | -N- | NONE |
| B7626.VAV.PH05:FLOW | 021 1 04 75 | (REDIST ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH05:FLOW STPT | 021 1 04 93 | (REDIST ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH05:HEAT.COOL | 021 1 04 05 | ( ) | HEAT | | -N- | NONE |
| B7626.VAV.PH05:HTG LOOPOUT | 021 1 04 80 | ( ) | 45.6 | PCT | -N- | NONE |
| B7626.VAV.PH05:RM STPT DIAL | 021 1 04 13 | ( ) | 54 | DEG F | -N- | NONE |

Selected Points: B7626*
Selected Panels: *
Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B7626.VAV.PH05:ROOM TEMP | 021 1 04 04 | ( ) | 73.25 | DEG F | -N- | NONE |
| B7626.VAV.PH05:VLV1 COMD | 021 1 04 52 | ( ) | 45.6 | PCT | -N- | NONE |
| B7626.VAV.PH05:VLV1 POS | 021 1 04 53 | ( ) | 45.6 | PCT | -N- | NONE |
| B7626.VAV.PH05:VLV2 COMD | 021 1 04 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH05:VLV2 POS | 021 1 04 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH05:WALL SWITCH | 021 1 04 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH06:AIR VOLUME | 021 1 05 35 | ( ) | 204 | CFM | -N- | NONE |
| B7626.VAV.PH06:AUX TEMP | 021 1 05 15 | ( ) | 85 | DEG F | -N- | NONE |
| B7626.VAV.PH06:CAL AIR | 021 1 05 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH06:CLG LOOPOUT | 021 1 05 79 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH06:CTL FLOW MAX | 021 1 05 77 | ( ) | 200 | CFM | -N- | NONE |
| B7626.VAV.PH06:CTL FLOW MIN | 021 1 05 76 | ( ) | 200 | CFM | -N- | NONE |
| B7626.VAV.PH06:CTL STPT | 021 1 05 92 | (PAYMENT ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH06:CTL TEMP | 021 1 05 78 | (PAYMENT ) | 73 | DEG F | -N- | NONE |
| B7626.VAV.PH06:DAY CLG STPT | 021 1 05 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH06:DAY HTG STPT | 021 1 05 07 | ( ) | 72 | DEG F | -N- | NONE |
| B7626.VAV.PH06:DAY.NGT | 021 1 05 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH06:DMPR COMD | 021 1 05 48 | ( ) | 48 | PCT | -N- | NONE |
| B7626.VAV.PH06:DMPR POS | 021 1 05 49 | ( ) | 48.4 | PCT | -N- | NONE |
| B7626.VAV.PH06:FLOW | 021 1 05 75 | (PAYMENT ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH06:FLOW STPT | 021 1 05 93 | (PAYMENT ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH06:HEAT.COOL | 021 1 05 05 | ( ) | HEAT | | -N- | NONE |
| B7626.VAV.PH06:HTG LOOPOUT | 021 1 05 80 | ( ) | 26 | PCT | -N- | NONE |
| B7626.VAV.PH06:RM STPT DIAL | 021 1 05 13 | ( ) | 54.25 | DEG F | -N- | NONE |
| B7626.VAV.PH06:ROOM TEMP | 021 1 05 04 | ( ) | 73 | DEG F | -N- | NONE |
| B7626.VAV.PH06:VLV1 COMD | 021 1 05 52 | ( ) | 26 | PCT | -N- | NONE |
| B7626.VAV.PH06:VLV1 POS | 021 1 05 53 | ( ) | 26 | PCT | -N- | NONE |
| B7626.VAV.PH06:VLV2 COMD | 021 1 05 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH06:VLV2 POS | 021 1 05 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH06:WALL SWITCH | 021 1 05 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH13:AIR VOLUME | 021 1 06 35 | ( ) | 372 | CFM | -N- | NONE |
| B7626.VAV.PH13:AUX TEMP | 021 1 06 15 | ( ) | 77.5 | DEG F | -N- | NONE |
| B7626.VAV.PH13:CAL AIR | 021 1 06 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH13:CLG LOOPOUT | 021 1 06 79 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH13:CTL FLOW MAX | 021 1 06 77 | ( ) | 376 | CFM | -N- | NONE |
| B7626.VAV.PH13:CTL FLOW MIN | 021 1 06 76 | ( ) | 376 | CFM | -N- | NONE |
| B7626.VAV.PH13:CTL STPT | 021 1 06 92 | (MANAGER OFFICE ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH13:CTL TEMP | 021 1 06 78 | (MANAGER OFFICE ) | 73.75 | DEG F | -N- | NONE |
| B7626.VAV.PH13:DAY CLG STPT | 021 1 06 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH13:DAY HTG STPT | 021 1 06 07 | ( ) | 70 | DEG F | -N- | NONE |
| B7626.VAV.PH13:DAY.NGT | 021 1 06 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH13:DMPR COMD | 021 1 06 48 | ( ) | 35.2 | PCT | -N- | NONE |
| B7626.VAV.PH13:DMPR POS | 021 1 06 49 | ( ) | 35.2 | PCT | -N- | NONE |
| B7626.VAV.PH13:FLOW | 021 1 06 75 | (MANAGER OFFICE ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH13:FLOW STPT | 021 1 06 93 | (MANAGER OFFICE ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH13:HEAT.COOL | 021 1 06 05 | ( ) | HEAT | | -N- | NONE |
| B7626.VAV.PH13:HTG LOOPOUT | 021 1 06 80 | ( ) | 16 | PCT | -N- | NONE |
| B7626.VAV.PH13:RM STPT DIAL | 021 1 06 13 | ( ) | 54.25 | DEG F | -N- | NONE |
| B7626.VAV.PH13:ROOM TEMP | 021 1 06 04 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH13:VLV1 COMD | 021 1 06 52 | ( ) | 16 | PCT | -N- | NONE |
| B7626.VAV.PH13:VLV1 POS | 021 1 06 53 | ( ) | 16.4 | PCT | -N- | NONE |
| B7626.VAV.PH13:VLV2 COMD | 021 1 06 37 | ( ) | 0 | PCT | -N- | NONE |

Selected Points: B7626*
Selected Panels: *
Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B7626.VAV.PH13:VLV2 POS | 021 1 06 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH13:WALL SWITCH | 021 1 06 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH14:AIR VOLUME | 021 1 07 35 | ( ) | 72 | CFM | -N- | NONE |
| B7626.VAV.PH14:AUX TEMP | 021 1 07 15 | ( ) | 74.5 | DEG F | -N- | NONE |
| B7626.VAV.PH14:CAL AIR | 021 1 07 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH14:CLG LOOPOUT | 021 1 07 79 | ( ) | 38 | PCT | -N- | NONE |
| B7626.VAV.PH14:CTL FLOW MAX | 021 1 07 77 | ( ) | 100 | CFM | -N- | NONE |
| B7626.VAV.PH14:CTL FLOW MIN | 021 1 07 76 | ( ) | 52 | CFM | -N- | NONE |
| B7626.VAV.PH14:CTL STPT | 021 1 07 92 | (SALES ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH14:CTL TEMP | 021 1 07 78 | (SALES ) | 72.5 | DEG F | -N- | NONE |
| B7626.VAV.PH14:DAY CLG STPT | 021 1 07 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH14:DAY HTG STPT | 021 1 07 07 | ( ) | 72 | DEG F | -N- | NONE |
| B7626.VAV.PH14:DAY.NGT | 021 1 07 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH14:DMPR COMD | 021 1 07 48 | ( ) | 32.8 | PCT | -N- | NONE |
| B7626.VAV.PH14:DMPR POS | 021 1 07 49 | ( ) | 33.2 | PCT | -N- | NONE |
| B7626.VAV.PH14:FLOW | 021 1 07 75 | (SALES ) | 72 | PCT | -N- | NONE |
| B7626.VAV.PH14:FLOW STPT | 021 1 07 93 | (SALES ) | 72 | PCT | -N- | NONE |
| B7626.VAV.PH14:HEAT.COOL | 021 1 07 05 | ( ) | COOL | | -N- | NONE |
| B7626.VAV.PH14:HTG LOOPOUT | 021 1 07 80 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH14:RM STPT DIAL | 021 1 07 13 | ( ) | 54.25 | DEG F | -N- | NONE |
| B7626.VAV.PH14:ROOM TEMP | 021 1 07 04 | ( ) | 72.75 | DEG F | -N- | NONE |
| B7626.VAV.PH14:VLV1 COMD | 021 1 07 52 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH14:VLV1 POS | 021 1 07 53 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH14:VLV2 COMD | 021 1 07 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH14:VLV2 POS | 021 1 07 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH14:WALL SWITCH | 021 1 07 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH15:AIR VOLUME | 021 1 08 35 | ( ) | 548 | CFM | -N- | NONE |
| B7626.VAV.PH15:AUX TEMP | 021 1 08 15 | ( ) | 75 | DEG F | -N- | NONE |
| B7626.VAV.PH15:CAL AIR | 021 1 08 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH15:CLG LOOPOUT | 021 1 08 79 | ( ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH15:CTL FLOW MAX | 021 1 08 77 | ( ) | 548 | CFM | -N- | NONE |
| B7626.VAV.PH15:CTL FLOW MIN | 021 1 08 76 | ( ) | 172 | CFM | -N- | NONE |
| B7626.VAV.PH15:CTL STPT | 021 1 08 92 | (LOUNGE ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH15:CTL TEMP | 021 1 08 78 | (LOUNGE ) | 74.5 | DEG F | -N- | NONE |
| B7626.VAV.PH15:DAY CLG STPT | 021 1 08 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH15:DAY HTG STPT | 021 1 08 07 | ( ) | 70 | DEG F | -N- | NONE |
| B7626.VAV.PH15:DAY.NGT | 021 1 08 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH15:DMPR COMD | 021 1 08 48 | ( ) | 76.8 | PCT | -N- | NONE |
| B7626.VAV.PH15:DMPR POS | 021 1 08 49 | ( ) | 76.8 | PCT | -N- | NONE |
| B7626.VAV.PH15:FLOW | 021 1 08 75 | (LOUNGE ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH15:FLOW STPT | 021 1 08 93 | (LOUNGE ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH15:HEAT.COOL | 021 1 08 05 | ( ) | COOL | | -N- | NONE |
| B7626.VAV.PH15:HTG LOOPOUT | 021 1 08 80 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH15:RM STPT DIAL | 021 1 08 13 | ( ) | 54.25 | DEG F | -N- | NONE |
| B7626.VAV.PH15:ROOM TEMP | 021 1 08 04 | ( ) | 74.75 | DEG F | -N- | NONE |
| B7626.VAV.PH15:VLV1 COMD | 021 1 08 52 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH15:VLV1 POS | 021 1 08 53 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH15:VLV2 COMD | 021 1 08 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH15:VLV2 POS | 021 1 08 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH15:WALL SWITCH | 021 1 08 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH17:AIR VOLUME | 021 1 09 35 | ( ) | 220 | CFM | -N- | NONE |
| B7626.VAV.PH17:AUX TEMP | 021 1 09 15 | ( ) | 88 | DEG F | -N- | NONE |

Selected Points: B7626*
Selected Panels: *
Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B7626.VAV.PH17:CAL AIR | 021 1 09 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH17:CLG LOOPOUT | 021 1 09 79 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH17:CTL FLOW MAX | 021 1 09 77 | ( ) | 224 | CFM | -N- | NONE |
| B7626.VAV.PH17:CTL FLOW MIN | 021 1 09 76 | ( ) | 224 | CFM | -N- | NONE |
| B7626.VAV.PH17:CTL STPT | 021 1 09 92 | (LAYOUT ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH17:CTL TEMP | 021 1 09 78 | (LAYOUT ) | 73.25 | DEG F | -N- | NONE |
| B7626.VAV.PH17:DAY CLG STPT | 021 1 09 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH17:DAY HTG STPT | 021 1 09 07 | ( ) | 72 | DEG F | -N- | NONE |
| B7626.VAV.PH17:DAY.NGT | 021 1 09 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH17:DMPR COMD | 021 1 09 48 | ( ) | 39.6 | PCT | -N- | NONE |
| B7626.VAV.PH17:DMPR POS | 021 1 09 49 | ( ) | 39.6 | PCT | -N- | NONE |
| B7626.VAV.PH17:FLOW | 021 1 09 75 | (LAYOUT ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH17:FLOW STPT | 021 1 09 93 | (LAYOUT ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH17:HEAT.COOL | 021 1 09 05 | ( ) | HEAT | | -N- | NONE |
| B7626.VAV.PH17:HTG LOOPOUT | 021 1 09 80 | ( ) | 43.6 | PCT | -N- | NONE |
| B7626.VAV.PH17:RM STPT DIAL | 021 1 09 13 | ( ) | 54.25 | DEG F | -N- | NONE |
| B7626.VAV.PH17:ROOM TEMP | 021 1 09 04 | ( ) | 73.25 | DEG F | -N- | NONE |
| B7626.VAV.PH17:VLV1 COMD | 021 1 09 52 | ( ) | 43.6 | PCT | -N- | NONE |
| B7626.VAV.PH17:VLV1 POS | 021 1 09 53 | ( ) | 43.6 | PCT | -N- | NONE |
| B7626.VAV.PH17:VLV2 COMD | 021 1 09 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH17:VLV2 POS | 021 1 09 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH17:WALL SWITCH | 021 1 09 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH18:AIR VOLUME | 021 1 10 35 | ( ) | 420 | CFM | -N- | NONE |
| B7626.VAV.PH18:AUX TEMP | 021 1 10 15 | ( ) | 74.5 | DEG F | -N- | NONE |
| B7626.VAV.PH18:CAL AIR | 021 1 10 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH18:CLG LOOPOUT | 021 1 10 79 | ( ) | 89.2 | PCT | -N- | NONE |
| B7626.VAV.PH18:CTL FLOW MAX | 021 1 10 77 | ( ) | 448 | CFM | -N- | NONE |
| B7626.VAV.PH18:CTL FLOW MIN | 021 1 10 76 | ( ) | 200 | CFM | -N- | NONE |
| B7626.VAV.PH18:CTL STPT | 021 1 10 92 | (VIDEO ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH18:CTL TEMP | 021 1 10 78 | (VIDEO ) | 73.75 | DEG F | -N- | NONE |
| B7626.VAV.PH18:DAY CLG STPT | 021 1 10 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH18:DAY HTG STPT | 021 1 10 07 | ( ) | 70 | DEG F | -N- | NONE |
| B7626.VAV.PH18:DAY.NGT | 021 1 10 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH18:DMPR COMD | 021 1 10 48 | ( ) | 48.4 | PCT | -N- | NONE |
| B7626.VAV.PH18:DMPR POS | 021 1 10 49 | ( ) | 48.4 | PCT | -N- | NONE |
| B7626.VAV.PH18:FLOW | 021 1 10 75 | (VIDEO ) | 93.75 | PCT | -N- | NONE |
| B7626.VAV.PH18:FLOW STPT | 021 1 10 93 | (VIDEO ) | 93.75 | PCT | -N- | NONE |
| B7626.VAV.PH18:HEAT.COOL | 021 1 10 05 | ( ) | COOL | | -N- | NONE |
| B7626.VAV.PH18:HTG LOOPOUT | 021 1 10 80 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH18:RM STPT DIAL | 021 1 10 13 | ( ) | 57.25 | DEG F | -N- | NONE |
| B7626.VAV.PH18:ROOM TEMP | 021 1 10 04 | ( ) | 73.75 | DEG F | -N- | NONE |
| B7626.VAV.PH18:VLV1 COMD | 021 1 10 52 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH18:VLV1 POS | 021 1 10 53 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH18:VLV2 COMD | 021 1 10 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH18:VLV2 POS | 021 1 10 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH18:WALL SWITCH | 021 1 10 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH21:AIR VOLUME | 021 1 11 35 | ( ) | 112 | CFM | -N- | NONE |
| B7626.VAV.PH21:AUX TEMP | 021 1 11 15 | ( ) | 90 | DEG F | -N- | NONE |
| B7626.VAV.PH21:CAL AIR | 021 1 11 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH21:CLG LOOPOUT | 021 1 11 79 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH21:CTL FLOW MAX | 021 1 11 77 | ( ) | 112 | CFM | -N- | NONE |
| B7626.VAV.PH21:CTL FLOW MIN | 021 1 11 76 | ( ) | 112 | CFM | -N- | NONE |

Selected Points: B7626*
Selected Panels: *
Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B7626.VAV.PH21:CTL STPT | 021 1 11 92 | (PROCESSING ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH21:CTL TEMP | 021 1 11 78 | (PROCESSING ) | 74.75 | DEG F | -N- | NONE |
| B7626.VAV.PH21:DAY CLG STPT | 021 1 11 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH21:DAY HTG STPT | 021 1 11 07 | ( ) | 70 | DEG F | -N- | NONE |
| B7626.VAV.PH21:DAY.NGT | 021 1 11 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH21:DMPR COMD | 021 1 11 48 | ( ) | 39.2 | PCT | -N- | NONE |
| B7626.VAV.PH21:DMPR POS | 021 1 11 49 | ( ) | 39.2 | PCT | -N- | NONE |
| B7626.VAV.PH21:FLOW | 021 1 11 75 | (PROCESSING ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH21:FLOW STPT | 021 1 11 93 | (PROCESSING ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH21:HEAT.COOL | 021 1 11 05 | ( ) | HEAT | | -N- | NONE |
| B7626.VAV.PH21:HTG LOOPOUT | 021 1 11 80 | ( ) | 8 | PCT | -N- | NONE |
| B7626.VAV.PH21:RM STPT DIAL | 021 1 11 13 | ( ) | 54.25 | DEG F | -N- | NONE |
| B7626.VAV.PH21:ROOM TEMP | 021 1 11 04 | ( ) | 74.75 | DEG F | -N- | NONE |
| B7626.VAV.PH21:VLV1 COMD | 021 1 11 52 | ( ) | 8 | PCT | -N- | NONE |
| B7626.VAV.PH21:VLV1 POS | 021 1 11 53 | ( ) | 8.4 | PCT | -N- | NONE |
| B7626.VAV.PH21:VLV2 COMD | 021 1 11 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH21:VLV2 POS | 021 1 11 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH21:WALL SWITCH | 021 1 11 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH22:AIR VOLUME | 021 1 12 35 | ( ) | 796 | CFM | -N- | NONE |
| B7626.VAV.PH22:AUX TEMP | 021 1 12 15 | ( ) | 74.5 | DEG F | -N- | NONE |
| B7626.VAV.PH22:CAL AIR | 021 1 12 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH22:CLG LOOPOUT | 021 1 12 79 | ( ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH22:CTL FLOW MAX | 021 1 12 77 | ( ) | 800 | CFM | -N- | NONE |
| B7626.VAV.PH22:CTL FLOW MIN | 021 1 12 76 | ( ) | 800 | CFM | -N- | NONE |
| B7626.VAV.PH22:CTL STPT | 021 1 12 92 | (PROCESSING AREA ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH22:CTL TEMP | 021 1 12 78 | (PROCESSING AREA ) | 76 | DEG F | -N- | NONE |
| B7626.VAV.PH22:DAY CLG STPT | 021 1 12 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH22:DAY HTG STPT | 021 1 12 07 | ( ) | 70 | DEG F | -N- | NONE |
| B7626.VAV.PH22:DAY.NGT | 021 1 12 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH22:DMPR COMD | 021 1 12 48 | ( ) | 66.8 | PCT | -N- | NONE |
| B7626.VAV.PH22:DMPR POS | 021 1 12 49 | ( ) | 66.4 | PCT | -N- | NONE |
| B7626.VAV.PH22:FLOW | 021 1 12 75 | (PROCESSING AREA ) | 99.5 | PCT | -N- | NONE |
| B7626.VAV.PH22:FLOW STPT | 021 1 12 93 | (PROCESSING AREA ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH22:HEAT.COOL | 021 1 12 05 | ( ) | COOL | | -N- | NONE |
| B7626.VAV.PH22:HTG LOOPOUT | 021 1 12 80 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH22:RM STPT DIAL | 021 1 12 13 | ( ) | 54.25 | DEG F | -N- | NONE |
| B7626.VAV.PH22:ROOM TEMP | 021 1 12 04 | ( ) | 76.25 | DEG F | -N- | NONE |
| B7626.VAV.PH22:VLV1 COMD | 021 1 12 52 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH22:VLV1 POS | 021 1 12 53 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH22:VLV2 COMD | 021 1 12 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH22:VLV2 POS | 021 1 12 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH22:WALL SWITCH | 021 1 12 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH23:AIR VOLUME | 021 1 13 35 | ( ) | 124 | CFM | -N- | NONE |
| B7626.VAV.PH23:AUX TEMP | 021 1 13 15 | ( ) | 95 | DEG F | -N- | NONE |
| B7626.VAV.PH23:CAL AIR | 021 1 13 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH23:CLG LOOPOUT | 021 1 13 79 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH23:CTL FLOW MAX | 021 1 13 77 | ( ) | 120 | CFM | -N- | NONE |
| B7626.VAV.PH23:CTL FLOW MIN | 021 1 13 76 | ( ) | 120 | CFM | -N- | NONE |
| B7626.VAV.PH23:CTL STPT | 021 1 13 92 | (DARK ROOM ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH23:CTL TEMP | 021 1 13 78 | (DARK ROOM ) | 69.75 | DEG F | -N- | NONE |
| B7626.VAV.PH23:DAY CLG STPT | 021 1 13 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH23:DAY HTG STPT | 021 1 13 07 | ( ) | 70 | DEG F | -N- | NONE |

Selected Points: B7626*
Selected Panels: *
Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B7626.VAV.PH23:DAY.NGT | 021 1 13 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH23:DMPR COMD | 021 1 13 48 | ( ) | 40.4 | PCT | -N- | NONE |
| B7626.VAV.PH23:DMPR POS | 021 1 13 49 | ( ) | 40.4 | PCT | -N- | NONE |
| B7626.VAV.PH23:FLOW | 021 1 13 75 | (DARK ROOM ) | 103.25 | PCT | -N- | NONE |
| B7626.VAV.PH23:FLOW STPT | 021 1 13 93 | (DARK ROOM ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH23:HEAT.COOL | 021 1 13 05 | ( ) | HEAT | | -N- | NONE |
| B7626.VAV.PH23:HTG LOOPOUT | 021 1 13 80 | ( ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH23:RM STPT DIAL | 021 1 13 13 | ( ) | 55.5 | DEG F | -N- | NONE |
| B7626.VAV.PH23:ROOM TEMP | 021 1 13 04 | ( ) | 69.75 | DEG F | -N- | NONE |
| B7626.VAV.PH23:VLV1 COMD | 021 1 13 52 | ( ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH23:VLV1 POS | 021 1 13 53 | ( ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH23:VLV2 COMD | 021 1 13 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH23:VLV2 POS | 021 1 13 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH23:WALL SWITCH | 021 1 13 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH25:AIR VOLUME | 021 1 14 35 | ( ) | 240 | CFM | -N- | NONE |
| B7626.VAV.PH25:AUX TEMP | 021 1 14 15 | ( ) | 74.5 | DEG F | -N- | NONE |
| B7626.VAV.PH25:CAL AIR | 021 1 14 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH25:CLG LOOPOUT | 021 1 14 79 | ( ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH25:CTL FLOW MAX | 021 1 14 77 | ( ) | 240 | CFM | -N- | NONE |
| B7626.VAV.PH25:CTL FLOW MIN | 021 1 14 76 | ( ) | 240 | CFM | -N- | NONE |
| B7626.VAV.PH25:CTL STPT | 021 1 14 92 | (PAPER 1 ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH25:CTL TEMP | 021 1 14 78 | (PAPER 1 ) | 75.5 | DEG F | -N- | NONE |
| B7626.VAV.PH25:DAY CLG STPT | 021 1 14 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH25:DAY HTG STPT | 021 1 14 07 | ( ) | 70 | DEG F | -N- | NONE |
| B7626.VAV.PH25:DAY.NGT | 021 1 14 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH25:DMPR COMD | 021 1 14 48 | ( ) | 55.6 | PCT | -N- | NONE |
| B7626.VAV.PH25:DMPR POS | 021 1 14 49 | ( ) | 56 | PCT | -N- | NONE |
| B7626.VAV.PH25:FLOW | 021 1 14 75 | (PAPER 1 ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH25:FLOW STPT | 021 1 14 93 | (PAPER 1 ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH25:HEAT.COOL | 021 1 14 05 | ( ) | COOL | | -N- | NONE |
| B7626.VAV.PH25:HTG LOOPOUT | 021 1 14 80 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH25:RM STPT DIAL | 021 1 14 13 | ( ) | 54.5 | DEG F | -N- | NONE |
| B7626.VAV.PH25:ROOM TEMP | 021 1 14 04 | ( ) | 75.5 | DEG F | -N- | NONE |
| B7626.VAV.PH25:VLV1 COMD | 021 1 14 52 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH25:VLV1 POS | 021 1 14 53 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH25:VLV2 COMD | 021 1 14 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH25:VLV2 POS | 021 1 14 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH25:WALL SWITCH | 021 1 14 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH28:AIR VOLUME | 021 1 15 35 | ( ) | 296 | CFM | -N- | NONE |
| B7626.VAV.PH28:AUX TEMP | 021 1 15 15 | ( ) | 84 | DEG F | -N- | NONE |
| B7626.VAV.PH28:CAL AIR | 021 1 15 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH28:CLG LOOPOUT | 021 1 15 79 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH28:CTL FLOW MAX | 021 1 15 77 | ( ) | 300 | CFM | -N- | NONE |
| B7626.VAV.PH28:CTL FLOW MIN | 021 1 15 76 | ( ) | 300 | CFM | -N- | NONE |
| B7626.VAV.PH28:CTL STPT | 021 1 15 92 | (MINI LAB ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH28:CTL TEMP | 021 1 15 78 | (MINI LAB ) | 73.25 | DEG F | -N- | NONE |
| B7626.VAV.PH28:DAY CLG STPT | 021 1 15 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH28:DAY HTG STPT | 021 1 15 07 | ( ) | 70 | DEG F | -N- | NONE |
| B7626.VAV.PH28:DAY.NGT | 021 1 15 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH28:DMPR COMD | 021 1 15 48 | ( ) | 46 | PCT | -N- | NONE |
| B7626.VAV.PH28:DMPR POS | 021 1 15 49 | ( ) | 45.6 | PCT | -N- | NONE |
| B7626.VAV.PH28:FLOW | 021 1 15 75 | (MINI LAB ) | 98.75 | PCT | -N- | NONE |

Selected Points: B7626*
Selected Panels: *
Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B7626.VAV.PH28:FLOW STPT | 021 1 15 93 | (MINI LAB ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH28:HEAT.COOL | 021 1 15 05 | ( ) | HEAT | | -N- | NONE |
| B7626.VAV.PH28:HTG LOOPOUT | 021 1 15 80 | ( ) | 69.6 | PCT | -N- | NONE |
| B7626.VAV.PH28:RM STPT DIAL | 021 1 15 13 | ( ) | 54.25 | DEG F | -N- | NONE |
| B7626.VAV.PH28:ROOM TEMP | 021 1 15 04 | ( ) | 73.25 | DEG F | -N- | NONE |
| B7626.VAV.PH28:VLV1 COMD | 021 1 15 52 | ( ) | 69.6 | PCT | -N- | NONE |
| B7626.VAV.PH28:VLV1 POS | 021 1 15 53 | ( ) | 69.6 | PCT | -N- | NONE |
| B7626.VAV.PH28:VLV2 COMD | 021 1 15 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH28:VLV2 POS | 021 1 15 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH28:WALL SWITCH | 021 1 15 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH29:AIR VOLUME | 021 1 03 35 | ( ) | 304 | CFM | -N- | NONE |
| B7626.VAV.PH29:AUX TEMP | 021 1 03 15 | ( ) | 82 | DEG F | -N- | NONE |
| B7626.VAV.PH29:CAL AIR | 021 1 03 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH29:CLG LOOPOUT | 021 1 03 79 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH29:CTL FLOW MAX | 021 1 03 77 | ( ) | 300 | CFM | -N- | NONE |
| B7626.VAV.PH29:CTL FLOW MIN | 021 1 03 76 | ( ) | 300 | CFM | -N- | NONE |
| B7626.VAV.PH29:CTL STPT | 021 1 03 92 | (PACKING ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH29:CTL TEMP | 021 1 03 78 | (PACKING ) | 72.75 | DEG F | -N- | NONE |
| B7626.VAV.PH29:DAY CLG STPT | 021 1 03 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH29:DAY HTG STPT | 021 1 03 07 | ( ) | 72 | DEG F | -N- | NONE |
| B7626.VAV.PH29:DAY.NGT | 021 1 03 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH29:DMPR COMD | 021 1 03 48 | ( ) | 46.4 | PCT | -N- | NONE |
| B7626.VAV.PH29:DMPR POS | 021 1 03 49 | ( ) | 46.8 | PCT | -N- | NONE |
| B7626.VAV.PH29:FLOW | 021 1 03 75 | (PACKING ) | 101.25 | PCT | -N- | NONE |
| B7626.VAV.PH29:FLOW STPT | 021 1 03 93 | (PACKING ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH29:HEAT.COOL | 021 1 03 05 | ( ) | HEAT | | -N- | NONE |
| B7626.VAV.PH29:HTG LOOPOUT | 021 1 03 80 | ( ) | 62 | PCT | -N- | NONE |
| B7626.VAV.PH29:RM STPT DIAL | 021 1 03 13 | ( ) | 73.5 | DEG F | -N- | NONE |
| B7626.VAV.PH29:ROOM TEMP | 021 1 03 04 | ( ) | 72.75 | DEG F | -N- | NONE |
| B7626.VAV.PH29:VLV1 COMD | 021 1 03 52 | ( ) | 62 | PCT | -N- | NONE |
| B7626.VAV.PH29:VLV1 POS | 021 1 03 53 | ( ) | 62 | PCT | -N- | NONE |
| B7626.VAV.PH29:VLV2 COMD | 021 1 03 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH29:VLV2 POS | 021 1 03 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH29:WALL SWITCH | 021 1 03 18 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH31:AIR VOLUME | 021 1 16 35 | ( ) | 752 | CFM | -N- | NONE |
| B7626.VAV.PH31:AUX TEMP | 021 1 16 15 | ( ) | 75 | DEG F | -N- | NONE |
| B7626.VAV.PH31:CAL AIR | 021 1 16 94 | ( ) | NO | | -N- | NONE |
| B7626.VAV.PH31:CLG LOOPOUT | 021 1 16 79 | ( ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH31:CTL FLOW MAX | 021 1 16 77 | ( ) | 748 | CFM | -N- | NONE |
| B7626.VAV.PH31:CTL FLOW MIN | 021 1 16 76 | ( ) | 748 | CFM | -N- | NONE |
| B7626.VAV.PH31:CTL STPT | 021 1 16 92 | (STORAGE ) | 72 | DEG F | -N- | OVRD |
| B7626.VAV.PH31:CTL TEMP | 021 1 16 78 | (STORAGE ) | 73.25 | DEG F | -N- | NONE |
| B7626.VAV.PH31:DAY CLG STPT | 021 1 16 06 | ( ) | 74 | DEG F | -N- | NONE |
| B7626.VAV.PH31:DAY HTG STPT | 021 1 16 07 | ( ) | 72 | DEG F | -N- | NONE |
| B7626.VAV.PH31:DAY.NGT | 021 1 16 29 | ( ) | DAY | | -N- | OVRD |
| B7626.VAV.PH31:DMPR COMD | 021 1 16 48 | ( ) | 58 | PCT | -N- | NONE |
| B7626.VAV.PH31:DMPR POS | 021 1 16 49 | ( ) | 58 | PCT | -N- | NONE |
| B7626.VAV.PH31:FLOW | 021 1 16 75 | (STORAGE ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH31:FLOW STPT | 021 1 16 93 | (STORAGE ) | 100 | PCT | -N- | NONE |
| B7626.VAV.PH31:HEAT.COOL | 021 1 16 05 | ( ) | COOL | | -N- | NONE |
| B7626.VAV.PH31:HTG LOOPOUT | 021 1 16 80 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH31:RM STPT DIAL | 021 1 16 13 | ( ) | 54.5 | DEG F | -N- | NONE |

Selected Points: B7626*
Selected Panels: *
Filter: All Points

| Name:Suffix | Address | Description | Value/State | | Status | Priority |
|---|---|---|---|---|---|---|
| B7626.VAV.PH31:ROOM TEMP | 021 1 16 04 | ( ) | 73.25 | DEG F | -N- | NONE |
| B7626.VAV.PH31:VLV1 COMD | 021 1 16 52 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH31:VLV1 POS | 021 1 16 53 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH31:VLV2 COMD | 021 1 16 37 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH31:VLV2 POS | 021 1 16 38 | ( ) | 0 | PCT | -N- | NONE |
| B7626.VAV.PH31:WALL SWITCH | 021 1 16 18 | ( ) | NO | | -N- | NONE |
| B7626.VF1 | 021 0 02 09 | (RE-CIRC FAN ) | ON | | *A3* | NONE |
| B7626.VF1.CNT | 021 0 04 08 | (MOTOINS COUNTED ) | 0 | COUNTS | -N- | NONE |
| B7626.VF1.COT | -Virtual- | (CNT MOTION LIMIT) | 2 | MINS | -N- | NONE |
| B7626.VF1.DUR | -Virtual- | (MODE DURATION ) | 60 | MINUTS | -N- | NONE |
| B7626.VF1.LMT | -Virtual- | (COUNT LIMIT ) | 10 | COUNTS | -N- | NONE |
| B7626.VF1.MOT | 021 0 04 05 | (MOTION DETECTED ) | OFF | | -N- | NONE |
| B7626.VF1.OCC | -Virtual- | (MOTION OCCUPANCY) | ON | | -N- | NONE |
| B7626.VF1.PRD | -Virtual- | (PERIOD LENGTH ) | 10 | MINUTS | -N- | NONE |
| B7626.VF1.VACANT | -Virtual- | (VACANT MODE ) | OFF | | -N- | NONE |