



DEPARTMENT OF THE NAVY
UNITED STATES NAVAL ACADEMY
ANNAPOLIS, MARYLAND 21402-1300
NAVAL SUPPORT ACTIVITY ANNAPOLIS
ANNAPOLIS, MARYLAND 21402-1119

USNA/NSAAINST 11000.5
15/PWD
31 MAY 2007

USNA/NSA ANNAPOLIS INSTRUCTION 11000.5

From: Superintendent, U.S. Naval Academy
Commanding Officer, Naval Support Activity, Annapolis

Subj: EXECUTION OF CONSTRUCTION PROJECTS AT THE U.S. NAVAL ACADEMY

Encl: (1) Project Permitting Procedure
(2) Insurance Requirements
(3) Change Order Procedures
(4) Project Closeout Procedures

1. Purpose. The purpose of this instruction is to delineate the roles and responsibilities of the various organizations involved in construction projects on the U.S. Naval Academy (USNA) and to designate the Superintendent's Technical Representative for all projects.

2. Cancellation. USNAINST 11000.3A

3. Background

a. Naval Academy Organization. The mission of the U.S. Naval Academy is to "develop midshipmen morally, mentally, and physically." The Superintendent is the senior officer at USNA and directs the execution of this mission. Naval Support Activity (NSA) Annapolis is an installation within Naval District Washington. Its mission is to provide installation support to the U.S. Naval Academy. NSA Annapolis also serves as the "owner" of the real estate and facilities at USNA, with some exceptions. Public Works Department (PWD) Annapolis is a component of NAVFAC Washington and has the mission to provide facility support services to USNA and NSA Washington. The Executive Director of Academy Projects works directly for the Superintendent and is responsible for the oversight and coordination of all major facilities projects undertaken at the Naval Academy with special emphasis on gift funded projects. The Commanding Officer (CO) of NSA Annapolis, the Public Works Officer (PWO) of PWD Annapolis and the Executive Director of Academy Projects report to and support the Superintendent in the execution of the USNA mission.

b. NAVFAC Washington Public Works Department (PWD) Annapolis. PWD Annapolis executes all construction projects at the Naval Academy built using Navy appropriated funds. These projects include Military Construction (MCON), Navy Special Projects, and those funded by Navy Sustainment (ST) and Restoration and Modernization (RM) accounts. This Instruction does not apply to such projects.

c. Other Organizations that Execute Construction Projects at USNA. In addition to PWD Annapolis, several organizations at the U.S. Naval Academy execute construction projects. These organizations include:

- (1) Naval Academy Athletic Association (NAAA)
- (2) Naval Academy Alumni Association / Foundation
- (3) Navy Morale, Welfare and Recreation Program (MWR)
- (4) Navy Exchange (NEX)

31 MAY 2007

- (5) Defense Commissary Agency (DECA)
- (6) Navy Non-Appropriated Funds Program

These organizations utilize both federal appropriated and non-appropriated funds, as well as private funds, to construct their respective projects. These organizations often act independently in the execution of these projects. On all of these projects, the Superintendent has an overriding requirement to ensure that all projects constructed at the Naval Academy are well coordinated, properly engineered, and constructed in a safe, high quality and environmentally sound manner. This Instruction details how the Navy and the Superintendent's interests will be taken into account on such projects.

4. Definition. For the purposes of this instruction, the term, "U.S. Naval Academy" shall encompass the moral, mental, physical, and professional mission requirements of the Naval Academy and the facilities, grounds, and support operations of NSA Annapolis.

5. Constructing Organization. This Instruction will focus on the process to be used when projects are constructed on USNA property by the organizations listed in paragraph 3c above. For the purposes of this instruction, these organizations will be referred to as the "Constructing Organization."

6. USNA Technical Representative for Construction. The Public Works Officer shall serve as the Superintendent's and CO NSA Annapolis' technical representative on all construction projects executed at the Naval Academy. PWD Annapolis will also serve as the Commanding Officer, NSA Annapolis' technical representative. As such, PWD Annapolis will be included on the respective Constructing Organization's project team for each project. In this role, PWD Annapolis is responsible for ensuring the following:

a. That USNA technical requirements and considerations are incorporated into the planning, engineering, and design of the project. These requirements may include the following aspects of the project:

- (1) Operational
- (2) Mission/Functional
- (3) Anti-terrorism/Force Protection
- (4) Safety standards
- (5) Environmental
- (6) Historic preservation and cultural requirements
- (7) Quality Standards
- (8) Architectural compatibility
- (9) Site and utility infrastructure
- (10) Critical facility systems (structural, roofing, mechanical, electrical, control, doors/keying, weight handling, and elevator systems as well as key interior finishes, information technology, to name a few)
- (11) Energy conservation
- (12) Design review submission requirements (35%, 100%, and final review submissions)
- (13) Life cycle maintenance
- (14) Record drawings or As-builts

PWD Annapolis will provide the specific requirements and criteria in these areas to the Constructing Organization for incorporation into the project design.

b. That the construction is executed safely, in accordance with Navy, OSHA, and industry standards.

c. That the project has been well coordinated with City, State, Federal and Navy organizations and that all required licenses and permits have been received.

31 MAY 2007

- d. That the project is well coordinated with NSA Annapolis Security, the day to day operations of USNA, and other construction projects on the Naval Academy.
- e. That the Constructing Organization and its Architect-Engineer and contractor team act as close partners with Executive Director, Academy Projects and PWD Annapolis in executing the project.
- f. That USNA operational and mission requirements are adhered to during the actual construction of the project.
- g. That the project is constructed in a high quality manner.
- h. That project turnover and all warranty work are successfully completed.

This role will commence from planning through project completion and turnover. Depending on the type of project and how it is funded, these services will be provided by PWD Annapolis on a reimbursable basis to be negotiated on a case by case basis.

7. Executive Director, Academy Projects. The Executive Director of Academy Projects shall serve as the Superintendent's representative and the lead liaison between the Superintendent, the Deputy Superintendent/Chief of Staff, the Deputy for Finance and the Chief Financial Officer, the Naval Academy Alumni Association/Foundation, PWD Annapolis, USNA Faculty & Staff and the Constructing Organizations to ensure that the projects are successfully completed and properly turned over to USNA, if applicable. Executive Director of Academy Projects will advise the Superintendent and the Contracting Organization on all aspects of the project to include USNA requirements, impact of the project on USNA operations and mission, coordination between various USNA departments and cost centers, use of USNA operations and maintenance funding and/or gift funds, client, and other issues of importance to the Superintendent. The Executive Director of Academy Projects serves as the lead point of contact on the Naval Academy staff for such issues. The Public Works Officer and the Executive Director of Academy Projects will execute their respective responsibilities jointly to ensure that all technical and non-technical aspects of a project and the Superintendent's interests are represented.

8. Funding Responsibilities of Constructing Organizations. When the Constructing Organization has been authorized to build a project on USNA using their own contracting capability, they have the responsibility for selecting the Architect/Engineer (the designer) and soliciting, awarding, and administering the construction contract. Alternatively, they may award a Design-Build contract to a firm(s) that will design and construct the project for the purposes of streamlining the design and construction schedules. The Constructing Organization may solicit counsel and recommendations from PWD Annapolis on these selections. Through its own resources, the Constructing Organization shall normally provide all the funds for the project and will not normally seek additional funding from the Government. These funding responsibilities include, but are not limited to, the costs of design, environmental assessments if needed, design management, construction management, construction services, construction and contingency, claims resulting from the project for which it is liable, contract modification when changes are requisite (see Change Order Procedures), legal fees, and PWD construction representative involvement as negotiated. Additionally, the Constructing Organization agrees to have a PWD construction representative attend coordination meetings and in-progress reviews, when applicable.

9. Roles and Responsibilities During the Pre-Construction Phase. The Pre-Construction Phase is defined as that period from development of the initial project concept through design development, finalization of construction documents, and contract award. During this phase of the project, the Superintendent's main goals are to ensure that:

- a. The project supports the mission requirements of USNA.
- b. The project is properly designed and engineered.

31 MAY 2007

c. The project is well coordinated with City, State, Federal entities who have an interest in the project from an environmental, historical, cultural, or security standpoint.

d. The project meets Navy standards from a construction, AT/FP, energy, and environmental standpoint.

e. The project is properly staffed and approved by the Navy chain of command, as required.

(1) Pre-Construction Responsibilities—Executive Director, Academy Projects. On NAAA and Naval Academy Alumni Association/Foundation projects, the Executive Director of Academy Projects works directly for the Superintendent to define the scope and preliminary cost estimate for the project. On Non-Appropriated Fund, Navy Exchange and Defense Commissary projects, the Director will primarily review and coordinate scope issues. The Director will do this with direct input from the Constructing Organization, PWD Annapolis, the Naval Academy Alumni Association/Foundation, and Naval Academy leadership as required. If the project is a gift, the Director will coordinate either acceptance or acknowledgement of the work from the Superintendent or Secretary of the Navy as appropriate. The Director will also coordinate acceptance of the gift from the Naval Academy Alumni Association/Foundation, as applicable. The Director will act as the customer representative during development of the design and construction documents.

(2) Pre-Construction Responsibilities—Constructing Organization. When the Constructing Organization awards a design or construction contract, it acts as the contractual "owner" until such time as the project is successfully completed and turned over to USNA, if applicable. The Constructing Organization will engage a qualified design firm to manage the design and engineering effort of the project. The specific responsibilities of the Constructing Organization are detailed below. While these responsibilities are based on the "Design-Bid-Build" approach, they will be adapted, as required, and applied when a "Design-Build" approach is utilized.

(a) Develop a project team consisting of the Constructing Organization and its design and construction partners, the USNA "mission owner" for the project, USNA Project Officer (as applicable), Executive Director of Academy Projects, and PWD Annapolis. Coordinate the details of the project with this team.

(b) Develop the design of the project, meeting all Navy and industry standards. Ensure that the project design meets Life Safety Code (most current version), Corps of Engineers' Technical Instructions Manual 800-1, Unified Facilities Criteria 3-600-1, fire and force protection requirements, NEPA, all applicable local, state and federal codes.

(c) Provide design submissions to PWD Annapolis and the Executive Director of Academy Projects for their review at the completion milestones agreed to all parties prior to the start of the design effort. Conduct project/design review meetings as necessary to review plans, schedules and construction documents.

(d) Prepare and submit contractor material laydown and traffic management plans for review by PWD Annapolis and final approval by the Deputy Superintendent/Chief of Staff. Ensure that the approved plans have been incorporated in the construction documents.

(e) Prepare all documents and fund the preparation needed to obtain a real estate license to construct the project from NAVFAC Washington, via PWD Annapolis.

(f) Obtain a Construction Permit in accordance with the requirements of enclosure (1) prior to commencing construction.

31 MAY 2007

(g) Ensure the contractor obtains insurance in accordance with enclosure (2).

(3) Pre-Construction Responsibilities— PWD Annapolis/Technical Representative. The PWD shall act as the Superintendent's technical representative for construction as detailed in paragraph 6 above. In this capacity, PWD's main purpose is to ensure the technical interests and requirements of the USNA are satisfied. PWD shall assign a qualified project manager who will act as the PWD single point of contact. PWD shall serve as a member of the Constructing Organization's project team.

10. Roles and Responsibilities During the Construction Phase. The Construction Phase is defined as that period from when the Constructing Organization has been issued a Construction Permit from PWD Annapolis until the project is substantially complete. During this phase of the project, the Superintendent's main goals are to ensure that:

- a. The project is constructed safely and in a high quality manner.
- b. The project is constructed within budget and on schedule.
- c. The project is well coordinated with USNA operations and that impacts to USNA are minimized whenever possible.
- d. The final product will meet USNA's mission requirements.
- e. Changes to the originally approved project are acceptable to USNA.

(1) Construction Responsibilities—Executive Director, Academy Projects. The Director will act as the lead USNA customer representative during construction and is responsible for tracking and coordinating approval of scope changes as previously approved by the Superintendent. If the project is a gift project, the Director will coordinate funding of changes as needed. The Director will also coordinate approval of a Notice to Proceed, signed by the Naval Academy Alumni Association / Foundation, Naval Academy Deputy for Finance and the Chief Financial Officer, to the Constructing Organization upon resolution of the scope and funding requirements. During construction, the Director will assist the contracting organization and PWD in reviewing project construction for safety and quality issues and will assist in the project final inspection and development of the consolidated punch list.

(2) Construction Responsibilities—Constructing Organization. The Constructing Organization will engage the services of a qualified construction contractor to execute the building of the project. The project manager shall be either on-site full time or shall make site visits as necessary, depending on the needs of the project, and shall provide all necessary technical and administrative support to the Constructing Organization. The specific responsibilities of the Constructing Organization are detailed below:

- (a) Manage the construction contract.
- (b) Direct the work of the contractor.
- (c) Utilize the project team to discuss and coordinate issues relating to the construction of the project. Conduct project meetings as necessary and produce and disseminate written records of meetings which will include lists of action items and key issues.
- (d) Ensure that the contractor implements a safety program to ensure that all work on the project is being done in a safe manner in accordance with Navy, OSHA, and Corps of Engineer standards. Support PWD Annapolis' efforts to oversee the safety on the project in their role as Superintendent's technical representative. Allow PWD to review proposed Safety Plans and to provide recommendations on acceptance/rejection. Allow PWD to review daily safety reports and any mishap reports/investigations on the project.

31 MAY 2007

(e) Implement a quality control program, consistent with industry standards and best practices, to ensure the quality of the work being done. Support PWD Annapolis' efforts to oversee the quality of work in their role as Superintendent's technical representative. Allow PWD to review the contractor's proposed Quality Control Plans and to provide recommendations on acceptance/rejection. As necessary, allow PWD to review daily production reports and any quality control test results of critical activities on the project.

(f) Request utility outages and schedule large deliveries that will impact USNA traffic in a timely manner--at least 14 days prior to scheduled activities.

(g) Execute changes to the project in accordance with the Change Order procedure detailed in enclosure (3).

(3) Construction Responsibilities—PWD Annapolis/Technical Representative. The PWD Technical Representative shall act as the lead technical representative for USNA in all matters relating to the actual construction of the project. PWD Annapolis will serve as a member of the project team to represent the Superintendent's and USNA's technical interests on the project throughout the construction phase of the project. The specific responsibilities of the technical representative for construction during the construction phase are detailed below:

(a) Conduct site visits of the construction site as necessary to ensure that the work is being performed in a safe manner in accordance with Navy, OSHA, and Corps of Engineers standards. Review the contractor's safety plan and advise the Constructing Organization on the adequacy of the plan.

(b) Conduct site visits of the construction site as necessary to ensure that the work being performed is in a quality manner in accordance with contract, NAVFAC, and Industry standards. Review the contractor's quality control plan and advise the Constructing Organization on the adequacy of the plan. Review submittals of critical building systems to ensure quality and compatibility with existing USNA systems.

(c) Perform monitoring to validate compliance with all specified historic preservation and environmental mitigations, protective measures, stipulations, conditions, and agreements developed during project design and formulation. Performs all necessary coordination with the general public and state and local and federal agencies as applicable to resolve any environmental or historic preservation concerns or issues that may arise during actual construction or implementation of the project.

(d) Coordinate final keying requirements with PWD locksmith.

11. Roles and Responsibilities During the Post-Construction Phase. The Post-Construction Phase is defined as that period from which the consolidated punch list is developed and completed, and Real Property is transferred to and accepted by USNA, if applicable. During this phase of the project, the Superintendent's main goals are to ensure that:

a. The project is a complete and usable facility that meets the mission requirements and quality standards of USNA.

b. The transfer of the facility to USNA, if applicable, is accomplished in a smooth manner.

c. USNA has all the information required to maintain and operate the facility.

The Executive Director, the Constructing Organization, and PWD Annapolis have the joint responsibility of ensuring that the project meets the agreed upon scope and budget requirements of the Superintendent and Naval Academy leadership.

31 MAY 2007

(1) Post-Construction Responsibilities—Executive Director, Academy Projects. The Director will act as the USNA lead customer representative in project closeout and shall:

(a) Review project to ensure compatibility with approved scope and budget previously approved by Superintendent and Naval Academy leadership. If the project is a gift, coordinate acceptance of the gift at the appropriate level.

(b) Upon acceptance of the gift, the Director will notify the contracting organization and PWD to conduct transfer of real property.

(c) The Director will assist in the resolution of the punch list review.

(2) Post-Construction Responsibilities--Constructing Organizations. The Constructing Organization shall ensure formal project closeout procedures as detailed in Appendix D are followed.

(3) Post-Construction Responsibilities— PWD Annapolis/Technical Representative. PWD shall ensure all USNA parties comply with the project closeout procedures as detailed in enclosure (4).


MICHAEL R. FIERRO
Commanding Officer
Naval Support Activity Annapolis

ISI

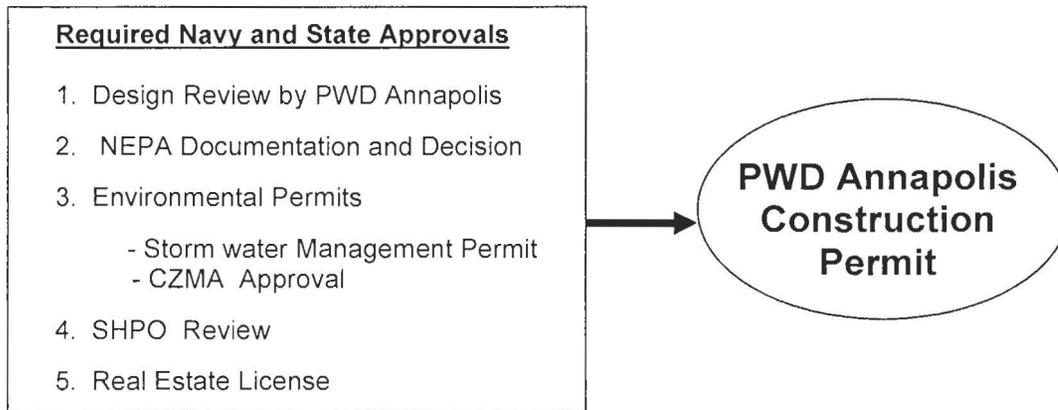
RODNEY P. REMPT
Superintendent
United States Naval Academy

Distribution:
All Non-Mids (electronically)

31 MAY 2007

PROJECT PERMITTING PROCEDURES

1. Procedures. Prior to starting construction, the Constructing Organization must obtain a Construction Permit from PWD Annapolis. This permit authorizes the Constructing Organization to do work on USNA/NSA Annapolis property.
2. Project Permitting Requirements. The Construction Permit will be issued to the Constructing Organization when the Navy and State of Maryland approvals listed below have been completed. As a rule, PWD Annapolis will be the interface between the Constructing Organization and Federal, Navy, or State regulating organizations to ensure that USNA provides a consistent "voice" to these organizations. PWD Annapolis will take the lead in all discussions with these regulators on behalf of the Constructing Organization and USNA.



- a. Public Works Department Annapolis Design Review. The Constructing Organization will allow PWD Annapolis an opportunity to review the design at appropriate times as determined by the project team, based on the Design-Bid-Build or Design-Build approach utilized. PWD Annapolis will provide comments for incorporation into the final design of the project.
- b. National Environmental Protection Act (NEPA) Documentation. A NEPA review is required on all projects. This review may consist of a Categorical Exclusion, an Environmental Assessment, or an Environmental Impact Statement. The NEPA Review must be completed and approved by the Navy prior to issuance of the construction permit.
- c. Maryland State Environmental Permits. The project will require a Storm Water Management permit from the Maryland Department of the Environment (MDE) as well as a Coastal Zone Management Act review by the Maryland Department of Natural Resources. Both of these permits and approvals must be obtained prior to issuance of the construction permit.
- d. State Historical Preservation Office (SHPO) Review. All projects must undergo a review by the SHPO to ensure the project adequately protects the historical and cultural nature of USNA. This review must be obtained prior to issuance of the construction permit.
- e. Real Estate License. For private, non-Navy organizations like NAAA, a Navy Real Estate License must be obtained to prior authorizing the Constructing Organization to build on Navy owned property. This license must be obtained prior to issuance of the construction permit.

31 MAY 2007

INSURANCE REQUIREMENTS

1. Insurance Requirements to Work on a Government Installation. The contractor shall possess the necessary insurance coverage to indemnify the Navy against casualty damages caused by contractor personnel performing on the job site. The contractor shall procure and maintain during the entire period of performance the following minimum insurance coverage:

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

b. Automobile Liability. \$200,000 per person, \$500,000 per occurrence, \$20,000 per occurrence for property.

c. Workmen's Compensation. As required by Federal and State worker's compensation and occupational disease laws.

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

e. Other insurance. As may be required by law.

2. Insurance Required Prior to Construction. Commencement of construction shall be contingent upon proof of insurance. Also, any insurance policy carried shall contain a clause that gives the Navy 30 days notice prior to cancellation.

31 MAY 2007

CHANGE ORDER PROCEDURES

1. Purpose

To formalize the procedures by which all proposed changes to the contractual scope of work are documented and approved. Changes will be classified as either Requisite or Discretionary.

2. Definitions

a. Requisite Changes. Changes that arise due to unforeseen conditions during construction, errors in design or construction documents, changes in code to which the project is beholden, etc. In most cases, Requisite Changes are indispensable to providing a safe, complete and useable facility. These types of changes are the express reason for which contingency is established and maintained by the contracting organization. Accordingly, the contracting organization will always approve and fund through the use of contingency bona fide Requisite Changes. If the project is a gift project, the changes will be coordinated through the Executive Director, Academy Projects.

b. Discretionary Changes. Changes that otherwise enhance the operational efficiency, maintainability, functionality or appearance of the facility but are not indispensable to providing a safe, complete and useable facility. The contractual scope of work is the basic definition for a safe, complete and useable facility. Contingency is not established to fund Discretionary Changes. If the project is a gift project, the changes will be coordinated through the Executive Director, Academy Projects.

3. Procedures

a. Representatives of the following organizations may submit proposed changes for consideration:

- (1) Constructing Organization
- (2) Executive Director, Academy Projects
- (3) USNA End User
- (4) Architect of Record (designer)
- (5) Construction Manager
- (6) Public Works Department
- (7) Prime Contractor

b. The Constructing Organization will coordinate all proposed changes. Upon receiving a change proposal, the Constructing Committee will classify the proposed changes as Requisite or Discretionary. They will also notify the Executive Director, Academy Projects to determine if the scope change needs to be approved by the Superintendent or other Naval Academy leadership.

c. All proposed changes, approved or not, will be documented on a Change Proposal Log maintained by the Constructing Organization.

d. All approved changes will be formally executed by an appropriate amendment to the contract, whether the change involves a change in construction cost, change in scope of work, or both.

31 MAY 2007

PROJECT CLOSEOUT PROCEDURES

1. Purpose

To formalize the procedures and responsibilities for closeout and completion of the construction work so it can be prepared for occupancy and/or use by the end users.

2. Definitions

a. Beneficial Occupancy. When the client or end user accepts a partial completion of the facility, building systems or installed equipment. Beneficial Occupancy will not be issued without mutual concurrence of the Constructing Organization, PWD and the Executive Director for Academy Projects, nor until all security, safety, health and maintenance responsibilities are resolved.

b. Substantial Completion. When the work is sufficiently completed in accordance with the contract documents. Unless otherwise stipulated, Substantial Completion is the date that the contract time ends, insurance responsibilities are transferred from the contractor to the owner and warranties begin. When the contractor is satisfied that the construction work is substantially complete he will prepare a comprehensive list of items to be completed or corrected. This list will be the start of the punch list.

c. Punch List. The consolidated list of construction deficiencies for the project. The list shall include for each item a short description of the deficient item, the room or space where it is located, the date the deficiency was recorded, cost value of the deficiency and final resolution date. The contractor, Constructing Organization, designer, PWD Annapolis will prepare independent deficiency lists. PWD will be responsible for coordinating all NSA Annapolis and end user's comments. The Constructing Organization will then consolidate all the deficiency items and forward to the contractor for final resolution.

d. Final Completion. When all punch list items have been corrected and all other contract requirements have been satisfied. The Constructing Organization shall conduct a final inspection of the work and submit the final application for payment.

e. Certificate of Occupancy. A document issued by PWD to establish the use and occupancy of the project. The Certificate of Occupancy (CO) will be issued by PWD within 14 days after notification by the Constructing Organization that the building, construction or other improvement is completed. The contractor or his subcontractor, prior to issuance of the Certificate of Occupancy, must complete all sign-offs. The Constructing Organization will verify the accuracy of all the sign-offs prepared by the contractor or his subcontractor before submitting to PWD.

3. Closeout Requirements

a. Sign-offs. The Constructing Organization will sign off that the construction work was performed in compliance with the contract documents and the applicable codes. The Constructing Organization will verify the accuracy of all the sign-offs prepared by the contractor or his subcontractor before submitting to PWD. PWD, NSA Annapolis Security, and the Fire Department, must certify that they have participated in the final inspection of the construction work and that they have attended the training sessions or have had the opportunity for training on the building systems. The sign-offs will include at a minimum the following construction work items:

(1) Fire Systems - fire alarm/notification systems, fire suppression systems.

(2) Back Flow Preventer - contractor must complete the requirements of DOH1013 and submit to PWD for coordination and filing with the Department of Health.

(3) Plumbing - interior domestic water systems.

31 MAY 2007

- (4) Electrical - interior and exterior electrical systems.
- (5) Water - exterior water system connections to NSAA systems.
- (6) Telecommunications — voice, data, Audio Video.
- (7) Elevator - QEI inspection.
- (8) Safety - Life Safety / OSHA codes.
- (9) Roofing System.
- (10) Storm and Sanitary Systems.
- (11) Boilers and Hydronic Systems.
- (12) HVAC (including controls).

The PWD technical representative will coordinate all training sessions and sign-offs (for the training sessions) during the closeout process and will maintain attendance records of all sessions.

b. Training. The Constructing Organization and the PWD technical representative will establish and coordinate the required training schedules. The Constructing Organization will be required to conduct the training sessions for the PWD and NSA Annapolis personnel in accordance with the contract requirements. The training will be conducted by qualified mechanics for the specific construction discipline or system(s). A list of required training sessions will be developed per the contract specifications. The training will be a combination of hands-on field sessions and classroom sessions. The contractor will prepare all training correspondence, operations & maintenance manuals and visual aids, and will provide PWD with copies of all materials, including videos of training if used. The suggested training sessions for all newly installed systems shall be as follows:

<u>System</u>	<u>Required minimum hours of training</u>
HVAC	As appropriate
EMCS	As appropriate
Electrical	As appropriate
Fire Alarm	As appropriate
Fire Suppression	As appropriate
Elevators / Lifts	As appropriate
Telecommunications	As appropriate
Plumbing	As appropriate
Boilers / Hydronic System	As appropriate

c. As-Built Drawings. The general contractor shall mark up and maintain a separate set of red-lined prints in the field office during the entire contract duration. The contractor must maintain an accurate record of all construction changes, including building and site modifications, and must review the as-builts with the Constructing Organization at least on a monthly basis. At the completion of the construction work, the contractor will turn over all annotated red-lined drawings and any pertinent supplementary drawings and sketches to the Constructing Organization, including a color copy for PWD. Prior to this turnover, the contractor must arrange a coordination meeting with the Constructing Organization and the PWD to review the red-lined as-built drawings and supplementary drawings and sketches for completeness. The Constructing Organization shall be responsible for the preparation of all final as-built drawings for the project and shall prepare them in the following media / formats:

31 MAY 2007

- (1) One printed set.
- (2) One Mylar reproducible set, and as negotiated.
- (3) One electronic version utilizing AutoCAD 2000 or a later version. (Note: This requirement applies only to projects over \$10 million or as agreed to by the project team.)

Additionally, the contractor's red-line set will be turned over as part of the as-built submission within ninety (90) calendar days.

d. Operations & Maintenance Manuals. The contractor will prepare and submit six (6) copies of the Operations & Maintenance manuals for each piece of operating equipment and building system per the requirements of the contract. Manuals shall be properly indexed and bound in 3-ring plastic binders (8 1/2" x 11"). In addition provide PDF copies of all O&M manuals shall also be provided, if available. The manuals must contain the following basic information:

- (1) Name, address and telephone number of the local manufacturer's representative for each piece of installed equipment.
- (2) Narratives for the following equipment and systems: system intent, start-up procedures, emergency procedures, shutdown procedures, and daily, weekly, monthly and yearly maintenance instructions and procedures.
- (3) Wiring diagrams and trouble-shooting guidelines and procedures.
- (4) System(s) layout and schematics.
- (5) Catalog cuts for plumbing fixtures, valves, water heaters, heating and cooling equipment, temperature control components, fans, electrical panels, breakers, service entrance equipments, cabling, light fixtures, motor starters, and elevator / lift systems.
- (6) Instructions for use in the training, operations, and maintenance of each item of the operating equipment.
- (7) Manufacturer's name, type and color for ceramic tile, ceiling tile panels, resilient flooring, carpeting, doors, frames, hardware, windows, wall coverings, paints, roofing materials, and special finishes.
- (8) Warranty documentation for all materials and installed systems.

The Operations and Maintenance manuals must be compiled and submitted to PWD prior to the scheduling of the field or classroom training sessions for PWD maintenance personnel or end users.

e. Framed Instructions. The contractor will be required to prepare, submit, and mount framed instructions for the mechanical, electrical and telecommunication systems. The instructions shall be suitable for installing in a convenient and appropriate location near the installed equipment or system(s) and shall describe the complete system operation, including a one-line riser diagram with keyed valve, piping and conduit identifications. The instructions shall be laminated for use in wet or moisture-laden conditions.

f. Project Files. The contractor and the Constructing Organization shall be required to maintain accurate contract files for all materials and submittals during the course of the project.

g. Punch List. As the project nears substantial completion, the contractor shall formulate an independent and comprehensive list of construction work deficiencies and incomplete work items. This

31 MAY 2007

list shall be prepared on an Excel spreadsheet format and will include a list of deficient items, the responsible subcontractor for corrective action, anticipated correction date and approximate monetary value of the item. After the list is compiled, the contractor will then offer the construction work for review and inspection by the Constructing Organization, PWD, the Executive Director of Academy Projects, and end user. The Constructing Organization will coordinate a consolidated written list of all deficiencies.

The contractor shall then incorporate all deficiencies in the final consolidated punch list for corrective action and will be required to provide the anticipated completion date for all punch list work items. After all deficiencies are corrected, the Constructing Organization shall coordinate with the PWD technical representative, the Executive Director of Academy Projects, and the end user to collectively sign off on the corrective actions as being acceptable and complete.

h. Maintenance Responsibilities. The construction contractor is responsible for the general daily maintenance of all equipment and systems detailed in the contract documents during the construction and punch list resolution phases of the project. Once the equipment, systems or building is turned over for either beneficial or final completion of the project, NSA Annapolis is responsible for general maintenance. Should a problem arise with the equipment or systems, PWD shall be the first responder to determine the cause of the problem. If the problem can be traced to a minor incident such as breakers being turned-off, blown fuses, broken belts or clogged filters, PWD shall be required to correct the problem. If the problem is determined to be a warranty-related issue, the contractor will be required to contact his subcontractor for resolution of the problem. The NSA Annapolis will be responsible for daily, weekly and monthly maintenance of the equipment and systems after final acceptance of the facility. The construction contractor will be responsible for warranty repairs for the duration of the warranty period. The warranty periods for specific equipment and mechanical systems will be noted on the DD Form 1354 prepared by the contractor and submitted to the NSAA at the final turnover procedures.

i. Extra Materials. The contractor will turn over spare construction materials and supplies to the PWD if required per the contract. The contractor will replace all HVAC and ice machine water filters prior to the final turnover. As agreed to by the project team, the contractor shall provide an additional complete filter replacement for the NSA Annapolis to utilize until replacement filters can be ordered. All extra materials will be turned-over to the PWD technical representative for distribution to the appropriate maintenance work force staff. No extra materials will be stored in mechanical or electrical rooms.

j. Testing Reports. The Constructing Organization will submit a complete list of all building systems that require testing as per contract documents. The contractor shall develop test plans and schedule operational procedures for all items on the approved list. Typical examples of systems requiring testing include: HVAC systems, fire notification/alarm systems, fire suppression systems, lightning protection system, telecommunications systems, security systems, electrical feeders, temperature control systems, air flow balancing, and domestic water sanitation. Testing of the above systems shall include all software and programming as applicable to the system. The Constructing Organization shall schedule the testing only after the entire system to be tested has been completely installed. Operational testing, including performance testing, shall be for the entire system, not just components. For each system to be tested, the Constructing Organization shall obtain the services of an experienced professional who shall certify that the operational test was conducted in accordance with the approved test plan and the results meet or exceed the requirements of the contract documents. The individuals conducting the testing must meet the qualifications established in the technical provisions of the contract documents. PWD shall be invited to witness all testing of installed systems. The Constructing Organization shall be responsible for coordinating PWD's presence.

k. Final Keying. PWD will coordinate final keying with the Constructing Organization, end user and the PWD Annapolis locksmith. Final keying by the PWD locksmith will not commence until the project is substantially complete. If beneficial occupancy is granted, the Constructing Organization will coordinate with all parties to assign responsibility for access, safety and security for work areas and partially-accepted areas. After permanent coring is completed, NSA Annapolis shall provide access to the

31 MAY 2007

Constructing Organization for purposes of maintaining, repairing or servicing the installed equipment or systems.

i. DD Form 1354. The Constructing Organization will prepare and submit the DD Form 1354, Transfer and Acceptance of Military Real Property, to the PWD Real Property Official. The Constructing Organization shall calculate and compile all quantities and associated project costs for the DD Form 1354. The form shall include warranty dates for all covered items. DHPW will review the DD Form 1354 for compliance and, if acceptable, sign the document and forward a copy to the Constructing Organization for record keeping.

m. Certificate of Occupancy Form. PWD will issue the CO to the end user or tenants after all the required steps are approved for occupancy, including but not limited to the completion of testing of systems, approval of fire and life safety measures, completion of sign-offs, and correction of punch list items. A copy of the Certificate of Occupancy will be provided to the Constructing Organization for record keeping.

n. Warranty and Extended Warranties. The Constructing Organization shall schedule a warranty coordination meeting with PWD and Constructing Organization personnel before substantial completion. At least thirty (30) days prior to this meeting, the contractor must prepare and submit a warranty plan that includes all required actions and documents. The plan shall include at a minimum:

- (1) Names and telephone numbers of the contractors and suppliers of warranted equipment
- (2) Listings of warranted equipment, feature of construction and system indicating name, model and serial numbers, location installed, manufacturer's name, address, POC and telephone number, warranties and terms of warranties, effective date and end date of warranty period and summary of maintenance procedures required to continue the warranty in force
- (3) Cross reference to specific sections in the Operations & Maintenance manuals
- (4) Name, telephone number of persons to call for warranty service
- (5) Typical response and repair times expected for the various warranty items

o. Post-Construction Warranty Inspections. The Constructing Organization may choose to attend post construction warranty inspection sessions at both four and nine month intervals after the construction work has been accepted. The PWD technical representative will schedule the post-construction warranty inspections.