

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF	PAGES
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2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. <i>(If applicable)</i>
6. ISSUED BY	CODE	7. ADMINISTERED BY <i>(If other than Item 6)</i>	CODE

8. NAME AND ADDRESS OF CONTRACTOR <i>(No., street, county, State and ZIP Code)</i>	(X)	9A. AMENDMENT OF SOLICIATION NO.
		9B. DATED <i>(SEE ITEM 11)</i>
		10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED <i>(SEE ITEM 11)</i>
CODE		FACILITY CODE

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:
 (a) By completing items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: <i>(Specify authority)</i> THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES <i>(such as changes in paying office, appropriation date, etc.)</i> SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER <i>(Specify type of modification and authority)</i>

E. IMPORTANT: Contractor is not, is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER <i>(Type or print)</i>	16A. NAME AND TITLE OF CONTRACTING OFFICER <i>(Type or print)</i>
15B. CONTRACTOR/OFFEROR	16B. UNITED STATES OF AMERICA
15C. DATE SIGNED	16C. DATE SIGNED
<i>(Signature of person authorized to sign)</i>	<i>(Signature of Contracting Officer)</i>

Item 14. Continued.

CHANGES TO VOLUME I – BIDDING REQUIREMENTS, CONTRACT FORMS, AND CONDITIONS OF THE CONTRACT

1. Replacement Sections - Replace the following sections with the accompanying new sections of the same number and title, each bearing the notation "AMENDMENT #0004:"

00010 PRICE PROPOSAL SCHEDULE
00120 PROPOSAL SUBMISSION REQUIREMENTS

CHANGES TO VOLUME II – DESIGN AND PERFORMANCE REQUIREMENTS

2. Replace the following Chapters with the attached new Chapters of the same number and title, each bearing the notation "AMENDMENT #0004:"

CHAPTER 1 - PROGRAM SUMMARY
CHAPTER 111 - FACILITY PERFORMANCE
CHAPTER D43 - FIRE DETECTION AND ALARM
CHAPTER D52 - SERVICE AND DISTRIBUTION
CHAPTER D7 - TELECOMMUNICATIONS
CHAPTER D71 - VOICE AND DATA
CHAPTER D72 - SOUND REINFORCEMENT
CHAPTER D73 - TELEVISION
CHAPTER D9 - OTHER SERVICES
CHAPTER D92 - SURVEILLANCE AND SECURITY CONTROLS
CHAPTER E - EQUIPMENT AND FURNISHINGS

CHANGES TO VOLUME III – SPECIFICATIONS

3. Replacement Sections - Replace the following section with the accompanying new section of the same number and title, bearing the notation "ACCOMPANYING AMENDMENT NO. 0004 TO SOLICITATION NO. DACA63-02-R-0015:"

SECTION 01000 DESIGN AND CONSTRUCTION SCHEDULE

CHANGES TO VOLUME IV – ATTACHMENTS

4. Delete Attachments A and B and replace with the accompanying new Attachments A and B, each bearing the notation "AMENDMENT #0004:"

ATTACHMENT A – DESIGN CRITERIA AND FUNCTIONAL REQUIREMENTS
ATTACHMENT B – **OPTIONS**

5. Attachment E - Drawings.- Replace the drawings listed below with the attached new drawings of the same number, bearing the notation "AM #0004":

C101.cal C101 Site Plan
A101.cal A101 Floor Plan
E101.cal E101 Data/Communications Plan

END OF AMENDMENT

Design-Build Professional Development Center
 White Sands Missile Range, NM
 Solicitation No. DACA63-02-R-0015

PRICE PROPOSAL SCHEDULE
 (To be attached to SF 1442)

Item No.	Description	Quantity	Unit	Unit Cost	Amount
BASE BID: All work required by the Contract documents for the design and construction of the Professional Development Center <u>excluding</u> Options.					
0001	All work to design the Professional Development Center, complete and construct the building, including utilities to the 5-foot line, exclusive of all work listed separately				
		Job	Sum	***	\$ _____
0002	Construct all Exterior Work outside the building's 5 foot line (Including utilities tie-in, communications ductbank and manholes, earthwork, paving sidewalk, curb and gutter, turfing, landscaping and all other work not listed separately)				
		Job	Sum	***	\$ _____
TOTAL BASE BID \$ _____					

OPTIONS

0003	<u>Option No. 1: Computer Network System: (Including Computer Communications Networking Equipment, Software, Programming, and Warranty Coverage for a Full Functioning Computer Network System).</u>				
		TOTAL OPTION NO. 1 \$ _____			
		TOTAL BASE BID PLUS OPTION 1 \$ _____			
0004	<u>(AM#4) Option No. 2: Professional Development Parking Lot: Construction of parking lot located on the north side of the facility including site construction, paving materials, striping, area lighting, signage, and surrounding landscaping, as shown on drawings.</u>				
		TOTAL OPTION NO. 2 \$ _____			
		TOTAL BASE BID PLUS OPTIONS 1-2 \$ _____			

Solicitation No. DACA63-02-R-0015

PRICE PROPOSAL SCHEDULE (cont)

0005 (AM#4) Option No. 3: "Future" Fiber Installation (to all data port locations not included in building base bid data infrastructure): Additional (2) single-mode and (2) multi-mode fiber connections to remaining data service boxes as shown and labeled "future"; main building trunk and horizontal cabling as required for additional connections; and terminations and testing in accordance with Volume 2.

TOTAL OPTION NO. 3 \$

TOTAL BASE BID PLUS OPTIONS 1-3 \$

0006 (AM#4) Option No. 4: Rear Projection Interactive Whiteboards: Provide in Rooms 125, 130, 131, 132A, 132B, 133A, 133B, 134A, 134B, 120, 118, 104 and 150.

TOTAL OPTION NO. 4 \$

TOTAL BASE BID PLUS OPTIONS 1-4 \$

0007 (AM#4) Option No. 5: Wireless Data Network System: Wireless application hardware and software including PCI cards for addition of wireless network capability into PDC communications data network (Option No.1). System shall have capacity to support minimum of five wireless "zones" within the facility with system capacity installed on day one to include only the Auditorium (Room 120). Furnish 40 wireless transceiver PCI interface cards to user. Include complete training on system and one-year warranty.

TOTAL OPTION NO. 5 \$

TOTAL BASE BID PLUS OPTIONS 1-5 \$

0008 (AM#4) Option No. 6: Surveillance Camera System: Cameras, controllers, and monitors to provide complete, operating system (control wiring and power infrastructure for camera system is part of base bid).

TOTAL OPTION NO. 6 \$

TOTAL BASE BID PLUS OPTIONS 1-6 \$

Solicitation No. DACA63-02-R-0015

PRICE PROPOSAL SCHEDULE (cont)

0009 (AM#4) Option No. 7: Multi-call Network System: Multi-call Unit (MCU) add-on into communications system to serve as gateway (bridge) that will allow up to 50 users/viewers using various video teleconferencing (VTC) equipment at various sites to participate in the VTCs from PDC facility.

TOTAL OPTION NO. 7 \$ _____

TOTAL BASE BID PLUS OPTIONS 1-7 \$ _____

0010 (AM#4) Option No. 8: Voice Recognition Display System: Voice recognition software and display system in Rooms 120, 125, 130, 131, 132A, 132B, 134A, 134B, 133A, 133B, 105, and 118; able to recognize and record spoken speech and display on an in-room monitor; includes hardware and software to make system operational.

TOTAL OPTION NO. 8 \$ _____

TOTAL BASE BID PLUS OPTIONS 1-8 \$ _____

0011 (AM#4) Option No. 9: Backup Electrical and UPS System for Computer Areas: Redundant and UPS electrical power for rooms 119, 120, 125, 126, 127, 128, 129, 130, 131, and 150; design and installation of back-up electrical system including UPS system and facility electrical generator.

TOTAL OPTION NO. 9 \$ _____

TOTAL BASE BID PLUS OPTIONS 1-9 \$ _____

Solicitation No. DACA63-02-R-0015

PRICE PROPOSAL SCHEDULE (cont)

NOTES:

1. ARITHMETIC DISCREPANCIES (EFARS 14.407-2)

(a) For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face of the bidding schedule as submitted by bidders:

(1) Obviously misplaced decimal points will be corrected;

(2) In case of discrepancy between unit price and extended price, the unit price will govern;

(3) Apparent errors in extension of unit prices will be corrected; and

(4) Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purpose of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on the basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.

(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.

2. If a modification to a bid based on unit prices is submitted, which provides for a lump sum adjustment to the total estimated cost, the application of the lump sum adjustment to each unit price in the bid schedule must be stated. If it is not stated, the bidder agrees that the lump sum adjustment shall be applied on a pro rata basis to every unit price in the bid schedule.

3. Bidders must bid on all items.

4. Costs attributable to Division 01 - General Requirements is assumed to be prorated among bid items listed.

5. Responders are advised that this project may be delayed, cancelled or revised at any time during the solicitation, selection, evaluation, negotiation and/or final award process based on decisions related to DOD changes in force structure and disposition of the Armed Forces.

6. EXERCISE OF OPTIONS (SWDR 715-1-1 (16 January 1996))

The Government reserves the right to exercise the option(s) by written notice to the Contractor either singularly or in any combination for up to 90 calendar days after award of the Base Bid without an increase in the Offeror's Bid Price. Completion of added items shall continue at the same schedule as the Base Bid unless otherwise noted in Section 01000 DESIGN AND CONSTRUCTION SCHEDULE, paragraph 1 entitled SCHEDULE.

Solicitation No. DACA63-02-R-0015

PRICE PROPOSAL SCHEDULE (cont)

NOTES: (cont)

7. The Army will procure this facility through a design and cost competition in accordance with the provisions set forth in this Request for Proposals (RFP). When a contract is awarded, it will be a "Firm Fixed Price Contract."

8. The Congress, in authorizing and funding this Contract, has established certain cost limitations for the project. The current authorization for the complete design and construction of this project is **\$6,776,726 (AM#1)**. Proposals that exceed this funding limit after exercising any options may be rejected. Submission of desirable alternative features exceeding minimum requirements may be considered as long as award can be made within the established funds.

9. Any proposal that is materially unbalanced as to prices for the Base Schedule may be rejected. An unbalanced proposal is one that is based on prices significantly less than the cost for some work and prices that are significantly overstated for other work and can also exist where only overpricing or underpricing exists.

10. ABBREVIATIONS

For the purpose of this solicitation, the units of measure are represented as follows:

- a. mm (millimeters)

END OF PRICE PROPOSAL SCHEDULE

SECTION 00120
PROPOSAL SUBMISSION REQUIREMENTS
AM#4

1 GENERAL

1.1 INTRODUCTION

Through the use of a two-phase procurement process, the Department of the Army desires to obtain the design and construction of Professional Development Center, White Sands Missile Range, New Mexico. In this procurement procedure consideration will be given initially to the Project Organization and Personnel; Experience; Past Performance; and Financial Capacity. The offerors that are rated the highest on the Phase I evaluation criteria, minimum of two (2) but no more than five (5), will be selected and given the opportunity to offer their preliminary design and cost proposals in Phase II. Final selection and basis for award of the Design/Build Contract will be on the basis of qualifications, technical quality, price, and other salient factors considered to be in the Government's best interests. If awarded the Contract, the offeror shall complete the design and construction documents and construct the facility in compliance with these completed requirements.

1.2 WHERE AND WHEN TO SUBMIT PROPOSAL

Submit Phase I of the Proposal no later than the date and time indicated in Item 13.A of the Solicitation, Offer and Award form (Standard Form 1442) found in Section 00010, SOLICITATION, OFFER, AND AWARD. Offerors invited to participate in Phase II will be notified of the date and time for submission of their Phase II proposal.

1.3 EXPLANATION TO PROSPECTIVE OFFERORS

Any prospective offeror desiring an explanation or interpretation of the solicitation, drawing, specifications, etc. must request such in writing, and are directed to the individuals listed in Section 00100 INSTRUCTIONS TO OFFERORS, soon enough to allow a reply to reach all prospective offerors before the submission of their proposals. Oral explanation/instructions given before award of a contract will not be binding. Any information given a prospective offeror concerning a solicitation will be furnished promptly to all other prospective offerors as an amendment to the solicitation, if that information is necessary for submitting proposals, or if the lack of it would be prejudicial to other prospective offerors.

1.4 REQUIRED TECHNICAL DATA FOR PROPOSAL SUBMISSION

Offerors are advised that the required data will be utilized for review and evaluation and used for determination of a "Quality Rating" by a Technical Evaluation Board and that all data submitted for consideration under this proposal will be reviewed only for the purposes required for evaluation and award. The Government will not make assumptions concerning the offeror's intent, capabilities, facilities, or experiences. Clear identification is the sole responsibility of the offeror.

1.5 PROPOSAL PREPARATION

Instructions for the preparation and organization of each proposal are included herein. The proposal shall be submitted as summarized below and as required by the specifications.

1.5.1 Phase I - Primary Design Construction Team Management Proposal

- A. Solicitation, Offer, and Award
- B. Project Organization and Personnel
- C. Experience
- D. Past Performance
- E. Financial Capacity

1.5.2 Phase II - Preliminary Design and Pro Forma Requirements (Cost/Price) Proposal

Phase II will be submitted ONLY by those firms that are rated the highest on Phase I evaluation criteria, minimum of two (2) but no more than five (5). It consists of:

- A. Preliminary Design Proposal (Volume I)
 - Design Proposal
 - Preliminary Project Schedule (Volume I)
- B. Pro Forma Requirements (Volume II)

1.5.3 Format

1.5.3.1 Written Material

a. All written material, including catalog cuts, shall be submitted in standard three ring loose-leaf binders. Proposals shall be tabbed and labeled in a manner to afford easy identification from a Table of Contents. Font size shall be not less than 10 point. Each page shall be identified with the appropriate page number centered at the bottom of the page. Sheet size of the proposal contents shall be 8 ½ by 11 inches. 11 by 17 inch sheets will be allowed for charts and tables but will be counted as 2 single-sided or 4 double-sided pages. Legibility, clarity, coherence, and the contents are important. The Phase I (Primary Design Construction Team Management) proposal length shall be limited to 70 single-sided or 35 double-sided pages, exclusive of the cover sheet, Table of Contents, and appendices. The offeror shall not submit verbatim sections or attachments of this solicitation as part of their proposal. Offers that do not meet these requirements may be subject to rejection.

b. A cover sheet identifying the offeror and the project shall be provided. The second sheet shall be a Table of Contents.

c. Table of Contents. The proposal shall contain a detailed Table of Contents. The complete Table of Contents shall be included in each binder used.

d. Materials submitted but not required by this solicitation (such as company brochures and equipment lists) shall be relegated to appendices.

e. Proposal revisions for written portions of the proposal, including catalog cuts and specifications, shall be submitted as page replacements

with revised text readily identifiable, e.g. bold face print or underlined. The source of the revision, e.g. Error, Omission, or Clarification (EOC), amendment or other Contractor-initiated change, shall also be indicated for each revision. Revised pages shall be numbered, dated, submitted in same number of copies as the original proposal submittal, and a different color page than the original.

1.5.3.2 Drawings

a. Full size drawings shall be submitted in accordance with Section 01016, DESIGN DOCUMENT REQUIREMENTS. Each drawing shall be identified with the appropriate Sequence and Sheet Numbers in the lower right hand corner. The original and one copy of all drawings must be full size drawings. The remaining copies may be full size or reduced size, but no smaller than 11 x 17 inches.

b. All alternate designs, which may or may not be priced as additive or deductive items shall be graphically described on separate drawings from the base proposal design. All alternate designs shall meet the minimum requirements of the solicitation.

c. Proposal revisions for drawings shall be submitted as sheet replacements with all changes identified on the drawings with clouds and in the title block, including the source of the revision, e.g. Error, Omission, or Clarification (EOC), amendment, or other Contractor-initiated change. Revised drawings shall be numbered, dated, and submitted in the same number of copies as the original proposal submittal.

1.5.3.3 Electronic Material

The offeror shall submit one copy of the proposal and all revisions, if applicable, on CD-ROM. All textual material, catalog cuts, and other non-drawing material shall be in Adobe Acrobat Portable Document Format (.pdf), arranged in the same order as the hard copy version with each section or part book marked. All drawings shall be formatted in accordance with Section 01016 DESIGN DOCUMENT REQUIREMENTS, Paragraph ".CAL Files." The offeror must ensure that all textual material, if it has been scanned, has been converted to a text searchable document by using the Paper Capture tool in Adobe Acrobat.

1.5.4 Proposal Submission

The proposal submitted shall include an original, copies as indicated below, and one electronic copy on CD-ROM disk (Both Volumes of Phase II may be on the same CD-ROM disk.) Each proposal shall be marked to clearly identify the original and the copies. The copies shall be numbered. Volume II of Phase II shall be sealed in a single package separate from Volume I.

Phase I - Primary Design Construction Team Management Proposal
Original and nine (9) copies

Phase II - Preliminary Design Proposal	
Volume I	Original and nine (9) copies
Volume II	Original and one (1) copy

1.6 REFERENCED PUBLICATIONS

Corps of Engineers' (COE) design criteria and manuals that are referenced in this solicitation, such as Technical Manuals (TM) and Instructions (TI), Military Handbooks, Engineering Regulations (ER), and Engineering Manuals (EM), can be downloaded from the Internet at the following address: <http://www.hnd.usace.army.mil/techinfo> or obtained from the current National Institute of Building Science's (NIB) Construction Criteria Base (CCB) CD-ROM disk. The COE SWD-AEIM, AR 190-51, and EC 1110-1-92 are on the Solicitation CD-ROM Disk. The Installation Information Infrastructure Architecture (I3A) guidelines can be downloaded from the Internet at the following address: <http://arch-odisc4.army.mil/>. Obtaining other referenced publications such as Federal and Military specifications, Military Standards, and industry standards (i.e., ASTM, ANSI, ACI, NFPA, building codes) will be the responsibility of each offeror. See Section 00100, paragraph "52.211-2 AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) AND DESCRIPTIONS LISTED IN THE ACQUISITION MANAGEMENT SYSTEMS AND DATA REQUIREMENTS CONTROL LIST, DOD 5010.12-L (AUG 1998)", for information on obtaining these publications. Offerors are warned that due to the limited time for proposal preparation and submittal, there may not be enough time for ordering and receiving any of the above references. Failure to receive requested references will not be sufficient reason for extension of the proposal submission date.

1.7 UNNECESSARILY ELABORATE PROPOSALS OR QUOTATIONS

Unnecessarily elaborate brochures or other presentations beyond those sufficient to present a complete and effective response to this solicitation are not desired and may be construed as an indication of the offeror's lack of cost consciousness. Elaborate artwork, expensive paper and bindings, and expensive visual and other presentation aids are neither necessary nor wanted.

1.8 REQUIREMENT FOR SPECIAL MARKING OF PROPOSAL DATA

Envelopes or other cover for material submitted in response to this RFP shall be opaque, and must be so presented that they may easily be identified. At a minimum, the outside cover for each phase must show:

- Destination of Proposal
- Name and location of project as described in the RFP documents
- Solicitation number
- Name and address of offeror
- Project phase and volume number

Submit the proposal in the format specified. Oral or telephonic proposals or modifications will not be considered.

Mail or deliver the proposal to the address listed on the Standard Form 1442, "Solicitation, Offer and Award."

1.9 DESCRIPTION OF EVALUATION CRITERIA

1.9.1 Phase I - Primary Design Construction Team Management Proposal Preparation

The Primary Design Construction Team Management proposal shall include information as described below and shall be presented in the sequence listed.

A. Solicitation, Offer, and Award: The Standard Form 1442 shall be completely filled out and signed by a principal of the firm authorized to bind the design;- build team. Signatures(s) must be in long hand.

B. Project Organization and Personnel:

1. Personnel (Primary Design Construction Team):

a. This factor considers the offeror's proposed design, construction, and management team. Provide professional resume data on the individuals who will be key personnel on the Primary Design Construction project team. Key personnel identified in this section should be Primary Contractor's senior working-level people who will be involved in design and construction on a day-to-day basis, as opposed to departmental level supervisors or executives. If reassignment of personnel is considered possible, provide the names and resumes of the alternate professionals in each assignment.

See Sections 01015 DESIGN REQUIREMENTS AFTER AWARD, 01320 PROJECT SCHEDULE, 01430 DESIGN QUALITY CONTROL, and 01451 CONTRACTOR QUALITY CONTROL for minimum personnel qualifications. The following list shall be provided as a minimum:

Project Manager
 Project Architect
 Senior Structural Engineer
 Senior Mechanical Engineer
 Senior Electrical Engineer
 Senior Civil Engineer
 Fire Protection Engineer
 Registered Communication Distribution Designer
 Design Quality Control Manager
 Construction Quality Control Manager
 Project Scheduler
 Interior Designer
 Landscape Architect

Information to be provided includes:

Name
 Project assignment
 Name of firm with which associated
 Years experience: with this firm, with other firms
 Education: degrees(s)/year/specialization
 Active registration: state and year first registered
Experience and qualifications relevant to proposed project:
 for each project listed, provide project description, project dates, the individual's project assignment to include specific roles and responsibilities, and its relevance to this solicitation. Identify the length of time key personnel stayed on their contracts

and how well they managed their portion of the referenced contracts.

b. Identify the Designer(s)-of-Record for each discipline

c. In an appendix, provide letters of commitment for all key personnel on the Primary Design/Construction project team and any proposed alternate personnel. By identifying these personnel, the offeror is making a commitment that, barring unforeseen circumstances, they are the personnel who will be assigned to the project. A letter of commitment from each firm committing specific individuals from the firm may be provided in lieu of separate letters for each individual. After contract award, substitutions for any of the key personnel or alternates shall require the Contracting Officer's approval.

d. Capacity to Perform

(1) Provide a list of key professional job titles. Indicate the total number of personnel in each category of the Primary Design Construction Team, including consultants and subcontractors, and identify all personnel.

(2) Discuss capacity to successfully perform the requirements of this Contract based on current workload and staffing. Discuss strategy to provide supplemental and/or replacement personnel to support this project during design and/or construction, as necessary. In the appendix, provide a list of all current contracts for the Primary Design Construction Team members, including consultants and subcontractors.

2. Team Organization and Management:

a. Provide an organizational chart and supporting narrative describing how the team will be structured. Include all key design and construction personnel and firms on the organizational chart. Discuss the specific roles and responsibilities of each key individual and firm.

b. Describe the proposed management structure for the team. Discuss how the design and construction process will be managed, to include a discussion on delegation of authority within the team.

c. Describe interactions within the team and with the Corps of Engineers during design. Discuss how design changes will be handled and the roles that various team members will play when dealing with design changes. Discuss the role of construction team members during design phase.

d. Describe interactions within the team and with the Corps of Engineers during construction. Discuss how changes will be handled during construction and the roles that various team members will play when dealing with changes during construction. Discuss the role of design team members during construction. Specifically address design team's role in construction Quality Control program; Requests For Information (RFI's); shop

drawing/submittal review and approval; attending progress meetings; site visits; inspections; and contract completion and closeout.

e. Describe the time control systems to be utilized. Discuss the use of the project schedule for managing the design and construction. Describe internal procedures for handling delays to minimize time growth.

f. Identify the items of work to be self-performed by offeror and the percentage of the overall contract value that this work represents.

g. Describe the team's computer-aided drafting and design (CADD) capabilities. Identify the CADD software to be used in the design of this project; if all disciplines are not using the same CADD software, identify the software that each discipline is using. Discuss compatibility with the Government's target CADD and compliance with the Tri-Service A/E/C/ CADD standards. Explain how compatibility will be achieved if the design, or portion of the design, is prepared using a CADD system other than the Government's target CADD system. (Refer to Section 01016 DESIGN DOCUMENT REQUIREMENTS for information on the Government's target CADD system and compatibility requirements.)

C. Experience

1. Provide a list of projects currently underway or completed within the last 5 years that best demonstrates the design and construction experience of the team (firms and/or individual team members) to successfully complete this facility using a design/build process. Experience beyond 5 years ago for construction contractors will not be given consideration unless the key personnel proposed for this project played a significant role in the earlier project and the project can be shown to be similar to this project. An offeror must make clear the extent of involvement in those projects by current key personnel and clearly describe how the older project is similar to this project, considering changes in technology, materials, equipment, codes, etc. Experience beyond 5 years ago for design firms will not be given consideration.

List no more than 10 projects total. The list of projects shall include the following information:

- a. Project name and location
- b. Type of facility
- c. Nature of firm's responsibility (design, construction or both)
- d. Identify type of contract (design, design/build, or construction)
- e. Project owner's name and address and project manager's (point of contact) name, telephone number, fax number, and email address (if known)
- f. If a government contract, include the contracting agency and contracting officer's name, telephone number, fax number, and email address (if known)
- g. Date started
- h. Original scheduled completion date
- i. Actual completion date
- j. Overall size of facility (in square feet or square meters)
- k. Construction cost (excluding design costs)
- l. Duration of construction (excluding design time)
- m. Problems encountered and corrective actions taken
- n. Identify which proposed team members and/or firms were involved in the project; their specific roles and responsibilities on the project; and the extent of time they were involved with the project
- o. Relevance of experience to the solicitation project

2. Joint Ventures: If offeror represents the combining of two or more companies for the purpose of this RFP, the proposal shall indicate whether the firms have experience working together in design/build ventures and for how long and how many projects. In addition, each company of this joint venture shall list their Government contract experiences.

D. Past Performance:

1. For each design and/or construction firm on the project team, provide firm's name, address, and DUNS number.

2. Offerors are encouraged to submit awards, letters, evaluations (ACASS, CCASS, and/or non-Corps evaluations), or other forms of recognition that demonstrates the performance capabilities and customer satisfaction for each firm on the team. If provided, this additional past performance information shall be included in an appendix and will not count towards the aforementioned page limitation.

3. Non-Corps References: For each non-Corps project listed under "Phase I: Experience" factor, offerors should send Client Authorization Letters and Contractor Performance Report (See Section 00500) to each reference listed in the proposal to assist in the timely processing of the past performance evaluation. In an appendix, provide a copy of issued letters with the offeror's proposal.

4. New Companies: For new companies entering the marketplace (without relevant company experience) the quality of the past performance of their key management personnel of the Primary Design Construction Team, consultants, and major subcontractors, will indicate the risk of good performance and become the basis of the past performance evaluation. Identifying how long key personnel

stayed on their contracts and how well they managed their portion of the referenced contracts will be of great importance in the evaluation process.

E. Financial Capacity:

Submit a letter of current bonding capacity from a Bonding Company. This letter will not count towards the aforementioned page limitation.

1.9.2 Phase II - Design and Cost/Price Proposal Preparation

VOLUME I - PRELIMINARY DESIGN PROPOSAL

The purpose of the Preliminary Design Proposal is:

To provide sufficient design information for the Government to determine the acceptability of the proposed design in meeting the functional requirements set forth herein for operational use and economical maintenance during the anticipated life of the facility.

To provide data for a determination of the engineering sufficiency and soundness of the basic approach to the design for each technical discipline. Also, it will serve as a documentary check that the designer has been provided or has developed the essential engineering criteria necessary for all facets of final computations and detailed development of a thoroughly engineered, coordinated, economical, and functional design.

The Preliminary Design Proposal consists of two parts, the Design Proposal and the Preliminary Project Schedule:

A. Design Proposal

1. The design proposal shall include, as a minimum, the following descriptive narratives, manufacturer's catalog data, and graphic information:

a. Narratives

(1) General Description

(a) Provide brief description of the facility addressing the overall design, materials, components, and engineering. DO NOT INCLUDE DESIGN CALCULATIONS. Include the following:

(i) Basic site layout and the rationale behind the site design. Address existing site features, site demolition requirements, new utilities, site improvements, force protection requirements, landscaping, irrigation, and parking.

(ii) Building's architectural configuration and the rationale behind the design. Address relationship of the site and site activities to the building. Address exterior and interior building materials. Discuss the compatibility of the proposed design and materials with the INSTALLATION DESIGN GUIDE.

- (iii) Building(s)' interior configuration, to include general discussion on interior finishes, including those in the classrooms, laboratories, satellite receiving rooms, administrative areas, faculty offices, , and common areas (e.g. library, auditorium/studio, vending area, and restrooms). Discuss use of common areas within the facility. DO NOT PROVIDE COLOR BOARDS.
- (iv) NOT USED
- (v) Structural system and the rationale behind the selection of the proposed system, including identification of major structural materials and systems.
- (vi) Heating, Ventilation and Air Conditioning system and rationale behind the selection of the proposed system.
- (vii) Fire protection system and the rationale behind the selection of the proposed system.
- (viii) Exterior power distribution systems and the rationale behind the selection of the proposed system. Discuss service to the building and location. Identify type of wire. Identify whether aerial or underground.
- (ix) Interior power distribution systems and the rationale behind the selection of the proposed system. Identify electrical characteristics of power supply (phase, voltage, KVA). Provide description of panels, protection devices and typical loading of circuits. Identify type of wire.
- (x) Exterior lighting system and the rationale behind the proposed system. Address exterior lighting locations, illumination levels for each area, and lighting controls.
- (xi) Interior lighting system and the rationale behind the selection of the proposed system. Address illumination levels for each area, emergency lighting, and lighting controls.
- (xii) Exterior communications service to the facility. Discuss the proposed method for relocating existing underground communications line.
- (xiii) Interior communications systems (telephone, data, cable TV, sound transmission) and the rationale behind the selection of each system.
- (b) Describe the energy-efficient and/or energy-saving features proposed for this project.
- (c) Discuss maintenance and accessibility considerations in the selection and layout of the mechanical and electrical systems.
- (d) Identification of proposed methods of meeting security requirements.

(e) **If the design proposal includes any deviations from the RFP requirements, including functional or adjacency requirements, identify the deviation, provide justification for the deviation, and describe the benefit/improvement that the deviation provides to the facility.** (See Section 00150 PROPOSAL EVALUATION AND CONTRACT AWARD, paragraph "DESIGN FREEDOM".)

(f) **Identify all proposed betterments.** (See Section 00800 SPECIAL CONTRACT REQUIREMENTS, clauses entitled "DESIGN-BUILD CONTRACT ORDER OF PRECEDENCE" AND "PROPOSED BETTERMENTS".)

b. Manufacturer Catalog Data

Manufacturer catalog data shall include industry standard quality indicators for the specific material or equipment and that will be used to establish the proposed construction quality during proposal evaluation. Data may be in the form of Construction Specification Institute (CSI) standard product information formats Manu-Spec and Spec-Data, and/or manufacturer's specifications and details. Furnish data, arranged by CSI Divisions, on:

- (1) Windows
- (2) Doors
- (3) Interior finishes, to include floors, base, walls, ceilings, toilet partitions, lavatory tops
- (4) Exterior finishes, to include walls, roof, and soffits
- (5) Interior and exterior light fixtures, including identification of where each proposed fixture type will be used
- (6) Mechanical (HVAC) requirements
- (7) Computer hardware (Option Package 1)
- (8) Any other catalog data deemed pertinent
- (9) **(AM#4) Communication Floor Box**

c. Graphic Information

Furnish preliminary drawings and schematics to illustrate the proposal. If a plan does not fit on one standard size drawing sheet at the scale specified, provide an overall plan to fit on one standard size drawing sheet plus individual sheets at the scale specified.

- (1) Site Layout Plan, minimum scale 1:400 (1" = 30') or 1:500 (1" = 40'), showing:
 - (a) Building location
 - (b) Service drives and parking
 - (c) Location of site features (i.e. landscaping, sidewalks, lighting, mechanical and electrical equipment, dumpsters)
 - (d) Set-backs
- (2) Utility Layout Plan, minimum scale 1:400 (1" = 30') or 1:500 (1" = 40'), showing:
 - (a) Proposed utility locations
 - (b) Electrical equipment

- (3) Grading Plan, minimum scale 1" = 100' (1/8" = 1'), showing:
 - (a) Finished floor elevation
 - (b) Proposed slopes
 - (c) Proposed drainage

- (4) Architectural Floor Plans, minimum scale 1:100 (1/8" = 1'), with all areas identified, showing:
 - (a) Gross area of building; exterior and interior dimensions; size of areas; critical and basic dimensions.
 - (b) Area calculations
 - (c) Door and window openings, including door swings
 - (d) Preliminary finish schedule
 - (e) Plumbing fixture locations, including drinking fountains
 - (f) Furniture layout (Note: Providing furniture is not a part of the Contract)

- (5) Interior Sections/Elevations, minimum scale 1:50 (1/4" = 1'), showing:
 - (a) Front Entrance and Lobby.
 - (b) Classrooms and laboratories, by type and size.
 - (c) Common Areas (e.g. library, auditorium/studio, vending area and restrooms).
 - (d) Critical and basic dimensions.
 - (e) Interior finish materials.

- (6) Exterior Elevations (all views), minimum scale 1:100 (1/8" = 1'), showing:
 - (f) Fenestrations and material indications.
 - (g) Critical and basic dimensions.
 - (h) Exterior finish materials.

- (7) Building Sections (one transverse and one longitudinal), minimum scale 1:100 (1/8" = 1'), showing:
 - (a) Space for structural and HVAC systems.
 - (b) Clearances.
 - (c) Materials.
 - (d) Building and grade to 1524 mm (5 foot) line.
 - (e) Sloped roof and flat roof intersections.
 - (f) Crawl space (if proposed).

- (8) Roof Plan, minimum scale 1:100 (1/8" = 1'), with all areas identified showing:
 - (a) HVAC unit locations.
 - (b) Roof type/slopes
 - (c) Roof drainage system
 - (d) Equipment screens (if applicable)
 - (e) Roof access locations

- (9) Typical Exterior Wall Sections including foundations, minimum scale 1:20 (3/4" = 1'), indicating materials, key vertical dimensions, and clearances.

- (10) (AM#4) Preliminary Communications Plan; minimum scale 1:100 (1/8" = 1'); indicating:
- a. location of data boxes
 - b. location of cable trays
 - c. enlarged communication room layout

d. Sustainable Design. Using the Sustainable Project Rating Tool (SPiRiT), provide a self-assessment of the sustainability features of the facility (see Volume IV ATTACHMENTS for the Sustainable Project Rating Tool manual and rating sheets). For each required element and for each point-scored element where you will meet (or exceed) the requirement, provide justification of how you will meet the stated requirement. Goal is minimum Bronze level certification. If Bronze level certification cannot be attained, discuss the factors that prevent achieving this goal.

B. Preliminary Project Schedule.

A time-scaled logic diagram shall be submitted with the Preliminary Design proposal reflecting the detailed design phase activities and summary level construction activities from Notice to Proceed through final completion, including all option work. Project Schedule shall conform to Section 01320 PROJECT SCHEDULE and may be used for preparation of the Preliminary Schedule required in Section 01320 after award. The following information shall be included as a minimum:

1. Detailed design activities
2. Summary level construction activities
3. Phasing requirements
4. Critical Path
5. Milestones and Constraints
6. Overall Design Duration, in calendar days
7. Overall Construction Duration, in calendar days
8. Overall Proposed Duration, in calendar days

The Contractor shall propose the contract durations for Work Item #1, Design and Construction of the new facility. The proposed duration shall not exceed the duration specified in Section 01000, DESIGN AND CONSTRUCTION SCHEDULE. The proposed schedule shall support the proposed duration. Upon contract award, the successful offeror's proposed duration shall become the contract duration for Work Item #1. It should be noted that the Government will include provisions in the Contract for liquidated damages for each calendar day the Contractor exceeds the contract schedule.

VOLUME II Pro Forma Requirements

C. Pro Forma Documents

1. Solicitations, Offer and Award. The Standard Form 1442 shall be completely filled out and signed by a principal of the firm authorized to bind the design-build team. Signature(s) must be in long hand.

2. Price Proposal Schedule: Prices shall be firm. The offeror's price, to be considered in the competitive negotiation evaluation, shall be the offeror's Total Base Bid, plus all options, as shown on the price proposal schedule. The cost/price proposal will be evaluated separately, after evaluation of design proposal. The cost/price proposal shall consist of the following:
 - a. Offerors shall complete the Price Proposal Schedule by filling out the pricing data blanks.
 - b. Overhead and profit shall be applied proportionally to each category and will not be required to be shown separately.
 - c. Offerors shall include allowance for weather days in the Cost/Price Proposal and shall schedule any contingency for severe weather in accordance with weather requirements included in Section 01000, DESIGN AND CONSTRUCTION SCHEDULE.
3. Bid Guarantee. The bid guarantee shall be submitted in accordance with Section 00700, CONTRACT CLAUSES.
4. Representations and Certifications. Representations are local, state, and federal representative statements and certifications made by the Offeror concerning a variety of issues. Complete each item in Section 00600, REPRESENTATIONS AND CERTIFICATIONS, and submit one original with the Phase II proposal.
5. Subcontracting Plan. (Applies to Large Businesses only.) All large businesses shall submit a subcontracting plan with their technical proposals and Pro Forma documents. The plan shall be prepared in accordance with FAR 52.219-9. Failure to submit an acceptable subcontracting plan may make the offeror ineligible for award of the contract. The submission of the subcontracting plan is in no way advantageous to large businesses over any small business in the evaluation process. A sample subcontracting plan and scoring checklist are included on the Solicitation CD-ROM disk. See Section 00100, paragraph SMALL BUSINESS SUBCONTRACTING PLAN for additional information and Fort Worth District subcontracting floors.

NOTE: All proposed SDB concerns must be certified by the Small Business Administration and listed in the online database PRO-Net. SDB concerns may register in PRO-Net at <http://pronet.sba.gov>.

6. Small Disadvantaged Business (SDB) Utilization Plan. (Applies to all Offerors.) Offerors shall submit a SDB Utilization Plan, to include the following information:
 - a. Identification of each SDB concern proposed and the work each is to perform. (See NOTE below regarding SDB certification.)
 - b. Targets expressed in dollars and percentages representing each SDB concern's participation of the total contract value.
 - c. Total target value of all SDB participation, expressed in dollars and percentages of the total contract value.

The offeror is put on notice that any targets represented in submitted proposal will be incorporated into and become part of any resulting contract.

NOTE: All proposed SDB concerns must be certified by the Small Business Administration and listed in the online database PRO-Net. SDB concerns may register in PRO-Net at <http://pronet.sba.gov>.

1.10 CLARIFICATIONS AND FINAL PROPOSAL REVISION

1.10.1 General

Any conflicting criteria which cannot be resolved by the Order of Precedence specified in Section 00800 SPECIAL CONTRACT REQUIREMENTS shall be brought to the attention of the Government by the Offeror as part of the written clarification requirement of the proposal. In the absence of such request for clarification, the Offeror shall perform to the most beneficial criteria as determined by the Government.

1.10.2 Clarifications Prior to Proposal Due Date

In the event that clarifications are required prior to submitting either the Phase I or II proposal, contact the individuals listed in Section 00100, INSTRUCTIONS TO OFFERORS. All RFP holders will be advised of significant clarifications affecting the scope of the project.

1.10.3 Clarifications Submitted with Proposals

For clarifications remaining at the time and date that proposals are due, written clarifications may be included in the proposal for consideration by the Government. Clarifications submitted with proposals shall clearly identify the understanding of the RFP documents and how this understanding is reflected in the cost proposal. Extensive qualifications, exclusions and exceptions in the form of clarifications may be considered by the Government to be non-responsive and may be grounds for rejection of the proposal.

1.10.4 Final Proposal Revision

If the Contracting Officer determines that discussions are necessary, all offerors in the competitive range will be given an opportunity to submit a final proposal revision. All proposal revisions must be submitted as required in paragraph 1.5.3 Format, subparagraphs 1.5.3.1 Written Material and 1.5.3.2 Drawings.

1.11 PAYMENT FOR PROPOSALS

Offerors will not be reimbursed for the cost of preparing their proposals.

1.12 NOTICE

Failure to submit all the data indicated in this section may be cause for determining a proposal non-responsive and, therefore, not considered for award.

2 PRODUCTS (NOT USED)

3 EXECUTION (NOT USED)

END OF SECTION

CHAPTER 1

PROGRAM SUMMARY

1. BASIC FUNCTION

- 1.1 **(AM#4) Project:** This project is an educational facility consisting of a professional development center. Supporting facilities include utilities, electrical service, fire protection, alarm systems, paving, walks, curbs and gutters, access roads, traffic control barricades, information systems, **infrastructure**, site improvements, utility connections, and incidental related work. See Section 1.0 of the Design Criteria and Functional Requirements for complete program and discipline description of the project.
- 1.1.1 Access for the handicapped will be provided.
- 1.1.2 Location of interior walls, doors, windows, and built in components shall be designed and constructed in conjunction with the user provided floor plan and Design Criteria & Functional Requirements in Volume 3.
- 1.1.3 Work under Option 1 includes the complete turn key completion of the information systems infrastructure (beyond the basic requirements of the base RFP criteria). As described in the included option, this includes the operating equipment and software systems located in the main communications rooms of this proposed facility.
- 1.1.4 A user-provided floor plan and site plan of the proposed project are provided in Volume 3, as an attachment to this RFP.
- 1.1.5 The user-provided floor plan requires the inclusion of an interior courtyard for use by the college astronomy program at night. All supporting utilities and landscaping shall be provided for this area in conjunction with Design Criteria & Functional Requirements in Volume 3.
- 1.1.6 General civil site improvements include provisions and equipment to support the closing of the street west of the proposed project to regular vehicular traffic. In addition, building parking areas shall be located away from the proposed structure in conjunction with COE antiterrorism/force protection guidelines. Refer to user provided site plan in conjunction with the set requirements.
- 1.2 Provision for the Physically Handicapped: The facility shall be accessible to the physically handicapped in accordance with FED-STD 795 (Uniform Federal Accessibility Standards (UFAS) and public law 94-142 (American with Disabilities Act, ADA 1990), whichever is most stringent.

2. SPACES

- 2.1 Interior Spaces: The project includes spaces of the following types:
- 2.1.1 "Customer" Contact (SP1 Spaces): Spaces where the occupants meet the public or their customers, including reception desks.
- 2.1.2 Occupant Work (SP2 Spaces): Spaces intended primarily for one worker, including offices.
- 2.1.3 Equipment Utilization (SP3 Spaces): Spaces where more than one person may use common equipment, including copier rooms, work rooms, and computer rooms.
- 2.1.4 Audience (SP4 Spaces): Spaces with fixed seating and projection rooms.
- 2.1.5 Assembly (SP5 Spaces): Spaces without fixed seating, including library reading rooms and library.
- 2.1.6 Meeting and Instruction (SP6 Spaces): Spaces for meeting rooms, conference rooms, classrooms, and computer laboratories.
- 2.1.7 Occupant Services (SR Spaces): Spaces for toilets and eating.

- 2.1.8 Storage (SS Spaces): Rooms devoted to storage, including storage rooms.
- 2.1.9 Circulation (SC Spaces): Spaces functioning as corridors, lobbies, waiting areas, and vestibules.
- 2.1.10 Utility Equipment (SU2 Spaces): Spaces for mechanical equipment, heating equipment, electrical equipment, and communications equipment.
- 2.2 Exterior Spaces: The project includes spaces of the following types:
 - 2.2.1 Outdoor Assembly (SP5 Spaces): Spaces without fixed seating, including astronomy courtyard.
 - 2.2.2 Outdoor Occupant Services (SR Spaces): Spaces for sitting.
 - 2.2.3 Outdoor Building Services (SU1 Spaces): Spaces for trash collection.
 - 2.2.4 Outdoor Utility Equipment (SU2 Spaces): Dedicated spaces for outdoor elements of fire protection, electrical power, and telecommunications services.

3. PROGRAM

- 3.1 Project Program: There is no written program for this project. The existing user-provided site and floor plan is to be used as the design guide for this project. See the Design Criteria & Functional Requirements in Volume 3 for more information.

4. EXISTING CONDITIONS

- 4.1 The proposed project site is directly across from the existing educational building as shown on the site plan in Volume 3 of this RFP.
- 4.2 The project site is currently vacant with the exception of some existing paved parking areas..

END OF CHAPTER 1

CHAPTER 111

FACILITY PERFORMANCE

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 Provide built elements and site modifications as required to fulfill needs described in the project program.
- 1.1.2 The complete project comprises the following elements:
 - a. Substructure (A): Elements below grade and in contact with the ground.
 - b. Shell (B): The superstructure, exterior enclosure, and the roofing.
 - c. Interiors (C): Interior construction, stairs, finishes, and fixtures, except fixtures associated with services and specialized equipment.
 - d. Services (D): Mechanized, artificial, automatic, and unattended means of supply, distribution, transport, removal, disposal, protection, control, and communication.
 - e. Equipment and Furnishings (E): Fixed and movable elements operated or used by occupants in the functioning of the project.
 - f. Demolition (F): Removal of unneeded and undesirable existing elements.
 - g. Sitework (G): Modifications to the site, site improvements, and utilities.
- 1.1.3 Code: Make all portions of the project comply with the code. The code referred to herein consists of all applicable local, State, and federal regulations, including those listed below:
 - a. Federal Regulatory Requirements:
 - (1) Americans with Disabilities Act of 1990, as a public accommodation, as implemented in:
 - (a) 28 CFR 35, Department of Justice regulations relating to State and local governments, including ADAAG or UFAS (FED-STD-795).
 - (b) 28 CFR 36, Department of Justice regulations, including ADAAG.
 - (c) 49 CFR 27, 37, and 38, Department of Transportation regulations, including ADAAG.
 - (2) 29 CFR 1910, Occupational Safety and Health Standards, as a work place.
 - (3) MIL-HDBK-1008C (10 June 1997) Fire Protection For Facilities Engineering, Design and Construction
 - b. State of New Mexico regulatory requirements, which incorporate and/or amend the following:
 - (1) Erosion and sedimentation control regulations.
 - (2) Drinking water regulations.
 - c. Non-Regulatory Criteria Documents: In addition to specific regulatory requirements, the following documents are also incorporated into the definition of "the code" for the purposes of this project, except for administrative provisions contained therein; where referenced, the role of the code official described in the document will be performed by Government.
 - (1) NFPA 70-2002, National Electrical Code.
 - (2) NFPA 101, Safety to Life From Fire in Buildings and Structures.
 - (3) NSF 61-2001, Drinking Water System Components - Health Effects.
 - (4) ANSI C2-2002, National Electrical Safety Code.
 - (5) ICC International Building Code.
 - (6) ICC International Plumbing Code.
 - (7) ICC International Mechanical Code.
 - (8) ICC International Fuel Gas Code.
 - (9) White Sands Missile Range Installation Design Guide.
 - (10) SWD Architectural and Engineering Instructions Manual (SWD-AEIM), October 2000.
 - (11) TI 809-01, Load Assumptions for Buildings.
 - (12) TI 809-02, Structural Design Criteria for Buildings.
 - (13) TI 809-04, Seismic Design for Buildings.
 - (14) TI 809-29, Structural Considerations for Metal Roofing.
 - (15) TM 5-809-3 (future TI 809-6), Masonry Structural Design for Buildings.

- (16) TM 5-811-1, Electrical Power Supply and Distribution.
 - (17) TM 5-811-2, Electrical Design, Interior Electrical System.
 - (18) TM 5-811-3, Electrical Design: Lightning and Static Electricity Protection.
 - (19) TM 5-818-7, Foundations in Expansive Soils.
 - (20) TM 5-822-5, Pavement Design for Roads, Streets, Walks, and Open Storage Areas.
 - (21) TM 5-853-1, Security Engineering - Project Development.
 - (22) TM 5-853-2, Security Engineering - Concept Design.
 - (23) TM 5-853-3, Security Engineering - Final Design.
 - (24) ASCE 7-98, Minimum Design Loads for Buildings and Other Structures.
 - (25) CoE Moratorium on the Use of Cold Formed, Load Bearing Framing Systems -Policy, 07 March 1997.
 - (26) Department of Defense Antiterrorism/Force Protection Construction Standards (draft dated 30 August 2001).
 - (27) FEMA 302, NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures (1997 Edition).
 - (28) Geotechnical report.
- d. **(AM#4) Occupancy:** The primary occupancy of the project, according to the code, is Type B Education above the twelfth grade.

- 1.1.4 Environmentally Responsible Design: In addition to other requirements, provide design and construction that minimizes adverse effects on the exterior environment, enhances the quality of the indoor environment, and minimizes consumption of energy, water, construction materials, and other resources, and protection of workers. Design shall comply with SWD-AEIM, Chapter X11, Environmental Design. All pre-construction permits, notification, licenses and initial operation permits and related fees is in accordance with applicable Federal, state, and local regulations.
- a. Achieve at least a Bronze rating in accordance with Sustainable Project Rating Tool (SPiRiT) which is derived from The U. S. Green Building Council LEED 2.0 (Leadership in Energy and Environmental Design) Green Building Rating System; selection of specific credits to achieve is the responsibility of Design-Builder unless otherwise indicated; comply with criteria specified in current Sustainable Project Rating Tool (SPiRiT) documentation as well as related criteria specified in other chapters.
 - b. The goals listed below are some of those that are applicable to the project.
 - (1) The goals indicated as "required" must be achieved.
 - (2) The goals indicated "as specified" have different requirements specified in other Chapters.
 - c. Water Conservation:
 - (1) Perimeter project landscaping requiring no potable water for maintenance: Desirable.
 - (2) Reduction of water used by plumbing fixtures, appliances, and equipment, in excess of regulatory requirements: If possible.
 - d. Energy Conservation:
 - (1) Minimum energy efficiency: Required.
 - (2) Energy efficiency exceeding minimum specified: If possible.
 - (3) Improvement of efficiency through comprehensive building commissioning: If possible.
 - (4) Energy and water consumption measurement and verification systems: Desirable.
 - (5) No use of CFC-based refrigerants: Required.
 - (6) No use of HCFC's: Desirable.
 - (7) No use of Halon: Required.
 - e. Conservation of Materials and Resources:
 - (1) Recycling and/or salvaging of construction waste: Required.
 - (2) Use of materials containing recycled content: Desirable.
 - (3) Use of local/regional materials: Desirable.
 - (4) Use of rapidly renewable materials: Desirable.
 - (5) Use of certified wood: Required.
 - f. Indoor Environmental Quality:
 - (1) Minimum ventilation performance: Required.

- (2) Carbon dioxide monitoring and control: Required.
 - (3) Increased ventilation effectiveness: Desirable.
 - (4) Construction procedures that reduce impact on interior air quality during and after construction: Required.
 - (5) Use of materials that are low-emitting, non-toxic, and chemically inert: Desirable.
 - (6) Control of sources of indoor pollutants: Required.
 - (7) Individual occupant control of environmental systems: As specified.
 - (8) Individual occupant control of lighting systems: Required.
 - (9) Thermal comfort conditions: As specified.
 - (10) Provision of daylighting: As specified.
 - (11) Provision of views to outdoors: Desirable.
 - (12) Humidity control and monitoring: As specified.
- g. Substantiation:
- (1) Design Development and Construction Documents Stages: SPiRiT Checklist annotated to show status of design related to specific credits to be achieved and a comprehensive checklist of certification document specified in SPiRiT Reference Guide annotated to show status of preparation of documentation.
 - (2) Design Development and Construction Documents Stages:
 - (a) Checklist annotated to show specific credits status of design related to specific credits to be achieved.
 - (b) Appropriate documentation relevant to the degree of completion of the design; at subsequent design stages it will not be necessary to repeat submissions of the same documentation unless the design has changed.
 - (3) At Completion: Field tests demonstrating compliance with any criteria that is not possible to substantiate until completion. SPiRiT Certification.

1.1.5 In addition to the requirements of this chapter, comply with requirements of Chapter 1 - Program Summary, Chapter 11 - Program, and Chapter 00830 - Design and Construction Procedures.

1.2 Amenity and Comfort:

- 1.2.1 Thermal Performance: Design and construct to provide comfortable interior environment in accordance with the code and the following:
- a. Summer Interior Design Conditions:
 - (1) Daytime Setpoint: 25 deg C (77 deg F), plus or minus 1 deg C (2 deg F).
 - (2) Night Setback: 26.7 deg C (80 deg F).
 - (3) Interior Relative Humidity: 60 percent, maximum.
 - b. Winter Interior Design Conditions:
 - (1) Daytime Setpoint: 21.1 deg C (70 deg F), plus or minus 1 deg C (2 deg F).
 - (2) Night Setback: 19.4 deg C (67 deg F).
 - (3) Interior Relative Humidity: 40 percent, minimum.
 - c. Outside Air Design Conditions:
 - (1) Summer Outside Air Design Temperature: 38.3 deg C (101 deg F) dry-bulb; 17.8 deg C (64 deg F) wet-bulb.
 - (2) Summer Outside Air Design Temperature on the Building Roof: 41.1 deg C (106 deg F) dry-bulb.
 - (3) Winter Outside Air Design Temperature: -6.1 deg C (21 deg F) dry-bulb.
 - d. Energy Design Wind Speed: 40 km/h (25 mph).

1.3 Health and Safety:

- 1.3.1 Fire Resistance: Provide Type I-A construction in accordance with ICC International Code.
- 1.3.2 Prevention of Accidental Injury: As required by code and as follows:
- a. Safety Glazing: As defined by 16 CFR 1201; provide in locations required by code.

- 1.3.3 Lightning Hazard: Design to prevent damage to occupants, structure, services, and contents due to lightning strikes if a lightning protection risk analysis produces a "moderate" or higher risk.
 - a. Provide protection equivalent to that specified in NFPA 780; supplementary strike termination devices, ground conductors, and grounding electrodes are required only where the integral portions of the structure cannot perform those functions.
 - b. Ground Resistance Measurement Methods: As described in IEEE 81.
 - c. Substantiation:
 - (1) Commissioning: Continuity tests for grounding conductors, equipotential bonding of other systems, and ground terminals; ground resistance test for each ground terminal, or equivalent taking into account related grounding systems.
 - (2) Commissioning: Certification of system complying with UL Master Label requirements.
 - (3) Closeout: Project record data; location of ground terminals, ground resistance and soil conditions at time of test.
- 1.3.4 Health Hazards:
 - a. Design to prevent growth of fungus, mold, and bacteria on surfaces and in concealed spaces.
 - b. Hazardous Construction Materials: Design and construct to comply with the requirements of the code and the following:
 - (1) Paint proposed for use containing not more than 0.06 percent lead by weight of the non-volatile.
 - (2) Paint for interior use containing no mercurial mildewcide or insecticide.
 - (3) No asbestos containing material.
 - (4) No Class I or Class II ozone depleting substance use for fire suppressants, refrigerants, and solvents.
 - c. Indoor Air Quality: Design and construct to comply with the following:
 - (1) Acceptable air quality as defined by ANSI/ASHRAE 62.
- 1.3.5 Physical Security: Comply with Department of Defense Anti-terrorism Construction Standards Draft (30 Aug 2001). In addition to any provisions that may be required by law or code, design and construct both exterior and interior spaces to incorporate accepted principles of crime prevention through environmental design (CPTED), using natural (as opposed to technological) methods of providing surveillance, access control, and territorial reinforcement wherever possible.
 - a. Definition of Elements at Ground Level: For purposes of physical security, any element within 6 m (20 feet) of the ground, grade, or adjacent paving.
 - b. Security Zones:
 - (1) Public Access Zone: That area to which the public has free access, including public corridors, grounds, and parking lots.
 - (2) Reception Zone: The area to which the general public has access but beyond which access is restricted at all times.
 - (3) Operations Zone: The area to which only employees, staff, or authorized personnel have access.
- 1.3.6 Electrically-Operated Equipment and Appliances: UL listed for application or purpose to which they are put; suitable for wet locations listing for exterior use.
- 1.4 Structure:
 - 1.4.1 Earthquake Loads: Accommodate loads as prescribed by U.S. Army Corps of Engineers TI 809-04 and FEMA 302 "NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures".
 - 1.4.2 Substantiation:
 - a. Construction Documents: Detailed design analysis by structural engineer licensed in the State of New Mexico.

1.5 Durability:

- 1.5.1 Expected Service Life Span: Expected functional service life of the built portions of this project is 50 years.
 - a. Service life spans of individual elements that differ from the overall project life span are defined in other Chapters.
- 1.5.2 Animals: Do not use materials that are attractive to or edible by animals or birds.
- 1.5.3 Insects: Do not use materials that are edible by insects, unless access by insects is prevented.

1.6 Operation and Maintenance:

- 1.6.1 Energy Efficiency: Minimize energy consumption while providing function, amenity, and comfort specified.
 - a. Provide energy efficient design using procedures and values specified in ASHRAE 90.1.
- 1.6.2 Water Consumption: Minimize water consumption.
- 1.6.3 Ease of Operation: Provide facility, equipment, and systems that are easily operated by personnel with a reasonable level of training for similar activities.
 - a. Minimize the need for specialized training in operation of specific equipment or systems; identify all equipment and systems for which the manufacturer recommends or provides training programs.
 - b. Train Government's personnel in operation of equipment and systems; see Chapter 00830 for additional requirements. See Section 01770 CONTRACT CLOSEOUT for additional requirements.
- 1.6.4 Ease of Maintenance: Minimize the amount of maintenance required.
- 1.6.5 Ease of Repair: Elements that do not meet the specified requirements for ease of repair may be used, provided they meet the specified requirements for ease of replacement of elements not required to have service life span equal to that specified for the project as a whole; the service life expectancy analysis and life cycle cost substantiation specified for service life are provided; and Government's acceptance is granted.
- 1.6.6 Ease of Replacement:
 - a. Elements Not Required to have the Expected Service Life Span Equal to that Specified for the Project as a Whole: Make provisions for replacement without undue disruption of building operation.

2. ELEMENTS AND PRODUCTS

- 2.1 In addition to requirements specified in other chapters, provide products and elements that comply with the following.
- 2.2 Elements Made Up of More Than One Product:
 - 2.2.1 Where an element is specified by performance criteria, use construction either proven-in-use, unless otherwise indicated.
 - a. Proven-In-Use: Proven to comply by having actually been built to the same or very similar design with the same materials as proposed and functioning as specified.
 - b. The Design-Builder may choose whether to use elements proven-in-use, unless either option is indicated as specifically required.
 - c. Exception: Where a design analysis is specified, or allowed by the Government, substantiation of proven-in-use construction is not required.
 - 2.2.2 Where a type of product is specified, without performance criteria specifically applicable to the element, use the type of product specified.
 - 2.2.3 Where more than one type of product is specified, without performance criteria specifically

applicable to the element, use one of the types of products specified.

- 2.2.4 Where a type of product is specified, with applicable performance criteria, use either the type of product specified or another type of product that meets the performance criteria as proven-in-use.
- 2.2.5 Where more than one type of product is specified, with applicable performance criteria, use either one of the types of products specified or another type of product that meets the performance criteria as proven-in-use.
- 2.2.6 Where neither types of products nor performance criteria are specified, use products that will perform well within the specified life span of the building.

2.3 Products:

- 2.3.1 Where a product is specified only by a manufacturer name and model number/brand name, use only that model/brand product.
- 2.3.2 Where the properties of a product are specified by description and/or with performance criteria, use products that comply with the description and/or performance criteria.
- 2.3.3 Where manufacturers are listed for a particular product, use a product made by one of those manufacturers that also complies with other requirements.
- 2.3.4 Builders' Hardware:
 - a. All hardware, including hinges, closers, locksets, exit devices, door hold open devices, and door stops, shall be grade 1 in accordance with the Builders Hardware Manufacturers Association ANSI/BHMA Standards.
 - b. Lock Trim: Lock trim shall be cast, forged, or heavy wrought construction of commercial plain design. In addition to meeting the test requirement of BHMA A156.13, knobs, lever handles, roses, and escutcheons shall be 0.050 inch (1.27mm) thick, if unreinforced. If reinforced, the outer shell shall be 0.035 inch (0.89 mm) thick and the combined thickness shall be 0.070 inch (1.78 mm) except that knob shanks shall be 0.060 inch (1.52 mm) thick. Knob diameter shall be 2-1/8 to 2-1/4 inches (54 to 57 mm). Leverhandles shall be of plain design with ends returned to no more than 1/2 inch (10 mm) from the door face.
 - c. Lock Cylinders and Cores (Mortise, Rim and Bored)
 - (1) Lock cylinders shall comply with BHMA A156.5. Lock cylinder shall have not less than seven pins.
 - (2) Cylinders shall have key removable type cores.
 - (a) Disassembly of knob or lockset shall not be required to remove core from lockset.
 - (b) All locksets, lockable exit devices, and padlocks shall accept the same interchangeable cores.
 - (3) Provide a master keying system.
 - (4) Provide a construction master keying system .
 - (a) Use the manufacturer's standard construction key system.
 - (5) Keying: Locks shall be keyed in sets or subsets as scheduled. Change keys for locks shall be stamped with change number and the inscription "U.S. Property - Do Not Duplicate." The keys shall be furnished to the Contracting Officer arranged in a container in sets or subsets as scheduled.
 - (6) Keys shall be supplied as follows:
 - (a) Locks: 3 change keys each lock.
 - (b) Master keyed sets: 4 keys each set.
 - (c) Construction keys: 4 total.
- 2.3.5 Gypsum Board Products: Gypsum Board Products shall not contain asbestos.

3. SUBSTANTIATION

- 3.1 Definition: Substantiation is any form of evidence that is used to predict whether the design will

comply with the requirements or to verify that the construction based on the design actually does comply. Proposal substantiation requirements are specified in Division 1 Sections 00120 PROPOSAL SUBMISSION REQUIREMENTS and 00150 EVALUATION FACTORS FOR AWARD. During Design Development and Construction Documents phases, requirements to submit substantiation are primarily intended to forestall use of designs or constructions that will not comply. At any time before completion of construction, substantiation is presumed to be only a prediction and may subsequently be invalidated by actual results.

- 3.1.1 Regardless of whether substantiation is specified or not, the actual construction must comply with the specified requirements and may, at the Government's discretion, be examined, inspected, or tested to determine compliance.
- 3.1.2 Substantiation submittals will not be approved or accepted, except to the extent that they are part of documents required to be approved or accepted in order to proceed to the next stage of design or construction. However, approval or acceptance of substantiation will not constitute approval or acceptance of deviations from the specified requirements unless those deviations are specifically identified as such on the submittal. See Division 1 Sections 01015 DESIGN REQUIREMENTS AFTER AWARD and 01330 CONSTRUCTION SUBMITTAL PROCEDURES for definitions of "approved" and "accepted" submittals.
- 3.1.3 The Government accepts the responsibility to review substantiation submittals in a timely manner and to respond if they are unacceptable.
- 3.2 In addition to the requirements stated in other chapters, provide the following substantiation of compliance at each stage of the project:
 - 3.2.1 If a substantiation requirement is specified without an indication of when it is to be submitted, submit or execute it before the end of Construction Documents.
 - 3.2.2 See also Division 1 Sections 01015 DESIGN REQUIREMENTS AFTER AWARD and 01330 CONSTRUCTION SUBMITTAL PROCEDURES for submittal requirements.
- 3.3 Previous Construction: Where elements proven-in-use are used to comply with performance requirements:
 - 3.3.1 During Design Development, identify proven-in-use elements proposed for use, including building name, location, date of construction, owner contact, and description of design and materials in sufficient detail to enable reproduction in this project.
- 3.4 Design Analyses (including Engineering Calculations):
 - 3.4.1 Where a design analysis or calculation is specified without identifying a particular method, perform analysis in accordance with accepted engineering or scientific principles to show compliance with specified requirements, and submit report that includes analysis methods used and the name and qualifications of the designer.
 - 3.4.2 Submit design analyses at the end of Design Development and Construction Document stages as required in Division 1 Section 01016 DESIGN DOCUMENT REQUIREMENTS.
- 3.5 Products:
 - 3.5.1 Where actual brand name products are not identified by either the Government or the Design-Builder, identify the products to be used.
 - 3.5.2 In the Proposal:
 - a. See Section 00120 PROPOSAL SUBMISSION REQUIREMENTS for substantiation requirements.
 - 3.5.3 During Design Development:
 - a. Where more than one product type is identified for a particular system, assembly, or element,

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identify exactly which type will be used.

- b. For each product type, provide descriptive or performance specifications; early submittals may be brief specifications, but complete specifications are required prior to completion of construction documents.
- c. For each product type, identify at least one manufacturer that will be used.
- d. For major manufactured products that are commonly purchased by brand name, and any other products so indicated, provide manufacturer's product literature on at least one actual brand name product that meets the specifications, including performance data and sample warranty.

3.5.4 During Construction:

- a. Identify actual brand name products used for every product, except commodity products specified by performance or description.
- b. Where a product is specified by performance requirements with test methods, and if so specified, provide test reports showing compliance.
- c. Provide manufacturer's product literature for each brand name product.
- d. Provide the manufacturer's certification that the product used on the project complies with the contract documents.
- e. Builders' Hardware:
 - (1) **Hardware and Accessories:** Manufacturer's descriptive data, technical literature, catalog cuts, and installation instructions. Spare parts data for locksets, exit devices, closers, electric locks, electric strikes, electro-magnetic closer holder release devices, and electric exit devices, after approval of the detail drawings, and not later than 3 months prior to the date of beneficial occupancy. The data shall include a complete list of parts and supplies, with current unit prices and source of supply.
 - (2) **Hardware Schedule:** Hardware schedule listing all items to be furnished. The schedule shall include for each item: the quantities; manufacturer's name and catalog numbers; the ANSI number specified, sizes; detail information or catalog cuts; finishes; door and frame size and materials; location and hardware set identification cross-references to drawings; <CHG> lock trim material thicknesses; </CHG> lock trim material evaluation test results; corresponding reference standard type number or function number from manufacturer's catalog if not covered by ANSI or BHMA; and list of abbreviations and template numbers.
 - (3) **Keying:** Keying schedule developed in accordance with DHI Keying Systems, after the keying meeting with the user.
 - (4) **Certificates of Compliance:** The hardware manufacturer's certificates of compliance stating that the supplied material or hardware item meets specified requirements. Each certificate shall be signed by an official authorized to certify in behalf of the product manufacturer and shall identify quantity and date or dates of shipment or delivery to which the certificates apply. A statement that the proposed hardware items appear in BHMA L & R Directory, BHMA Closer Directory and BHMA Exit Devices Directory directories of certified products may be submitted in lieu of certificates.
 - (5) **Buy American Act:** Furnish a separate certificate of compliance attesting that hardware items conform to the Section 00700 Contract clauses pertaining to the Buy American Act.
- f. Gypsum Board Products: Submit certification that gypsum board products, such as gypsum wallboard, gypsum backing board, cementitious backer units, and joint treating materials, do not contain asbestos.

3.5.5 Before End of Closeout:

- a. Provide copies of all manufacturer warranties that extend for more than one year after completion.

END OF CHAPTER 111

CHAPTER D43

FIRE DETECTION AND ALARM

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 **(AM#4)** Provide automatic fire detection and manual alarm systems as required by code and as follows:
- a. Install addressable fire alarm system in accordance with NFPA 70, ADA, and national fire alarm codes in 3/4-inch EMT conduit. Include turn key system with full building combination smoke and heat detector coverage including system wiring, addressable combination smoke/heat detectors, addressable modules, addressable heat detectors, indicating appliances, projected beam detectors, air conditioning shut down/control modules, duct detector remote switches, slave indicating appliance power supply and Notifier AP400 addressable fire alarm control panel. Mark J-box covers F/A. Use raintight EMT compression fittings only. Stub-out conduits minimum of 2 feet above ceiling tile, j-boxes face down and accessible. System j-boxes will be 4-11/16 inches at 100-foot intervals. Run sensor data circuits and indicating appliance circuits in separate 3/4-inch EMT conduits, Class A configuration.
 - (1) Provide addressable heat detectors in Rooms 102/03, 122/3/4, 144, 152/3/5/9, and staff restroom.
 - (2) Provide projected beam smoke detection in Rooms 101, 113, and 120.
 - (3) Provide ADA indicating appliances installed throughout facility based on national fire alarm code spacing to include restrooms and on opposing walls in the courtyard (UL/FM listed with AFP400). Install indicating appliances in separate 3/4-inch EMT conduits, Class A configuration.
 - b. Provide separate fire alarm system conduit, do not integrate into other systems. Alarm conditions will automatically shut down air handlers and release magnetic lock power. Reset condition will automatically restart air handlers and apply magnetic lock power.
 - c. Provide duct smoke detector placement per CFM capacity of each air handler. Place reset switch for each unit in accessible location and mark per the unit it controls.
 - d. Provide individual 20 ampere home run feeder circuits for Notifier AFP 400 fire alarm panel, slave indicating appliance power supply, and Motorola transmitter in 1/2-inch EMT; raintight fittings only, No. 12 THHN solid copper, dedicated hot, neutral, ground.
 - e. Provide pull stations at all exits and in mechanical areas. Mount on deep 4-square, 1-gang plaster ring, flush mount at ADA height, in accordance with 200-foot distance rule. Mount Notifier AFP400, slave indicating appliance power supply, and Motorola transmitter adjacent, 6 feet off fixed floor in main entry on the north exterior wall of Room 147. Combination smoke/heat detector within 3 feet of supply/return air registers or within 18 inches of light fixtures will not be acceptable. Provide raised floor computer areas up to 18-inch with smoke detection; provide suppression in areas over 18 inches. Protect Notifier AFP200 in accordance with national fire codes.
 - f. FDS transmitter will be installed, programmed, and tested by WSMR Electronic Maintenance section.
- 1.1.2 Integrated systems performing all functions are required, subject to requirements of code for separated, independent systems.
- 1.1.3 Where fire detection and alarm elements also must function as elements defined within another element group, meet the requirements of both element groups.
- 1.1.4 In addition to the requirements of this chapter, comply with all applicable requirements of Chapter 111 - Facility Performance, Chapter D - Services, and Chapter D4 - Fire Protection.

1.2 Amenity and Comfort:

- 1.2.1 Accessibility: Comply with requirements of local, State, and federal authorities for facilities for the disabled.

1.3 Health and Safety:

- 1.3.1 Detection, Alarm, Notification Methods: In accordance with NFPA 72 and MIL-HDBK-1008C.

1.3.2 Detection:

- a. Air Handling Units Over 3360 cu m/h (2,000 cfm): Minimum of one detector in both supply and return.
- b. Upon detection of fire, smoke, or waterflow condition, automatic notification of occupants, building operations staff, private monitoring service, and applicable public emergency authorities shall be transmitted by RF reporting system to facility fire alarm panel. Coordinate RF reporting system and equipment with Whitestands Fire Department personnel.
- c. Upon detection of fire or smoke condition in vault, automatic notification throughout facility as described above and release of fire suppression agent.

1.3.3 Alarms:

- a. Means for occupants to communicate same types of alarm as automatic system does.
- b. Manual stations at each egress exit.
- c. Audible Alarms: Minimum of 15 dB over ambient noise, audible throughout common areas and means of egress.
- d. Visual alarms, in locations required by NFPA 72 and MIL-HDBK-1008C including public toilets, corridors, and areas of common use.
- e. Separate audible and visual signals for alarms and trouble notification in corridors.
- f. Monitor sprinkler waterflow alarm and fire suppression system operation for activation of notification appliances.
- g. Visual and audible alarms to notify occupants of a fire or smoke condition prior to discharge of fire suppression agent.

1.3.4 Fire Protection Controls:

- a. Provide connections between alarm and detection system and fire suppression system activation sensors.
- b. Upon Alarm: Shut down or deactivate the following:
 - (1) HVAC air distribution.
 - (2) Fire-rated door hold-opens.
 - (3) Locks restricting exit through doors constituting means of egress.
- c. Connections to RF transmitter to report the following:
 - (1) Alarm
 - (2) Waterflow.
 - (3) Trouble.
 - (4) Supervisory.

- 1.3.5 Audible and visual trouble notification of operations staff, for alarm zone failures, annunciator zone failures, ground faults, backup power failure, water supply equipment failures.

- 1.3.6 Error and Failure Prevention: Addressable system; "tamper" sensors at sensitive points; products of only one manufacturer or certified by manufacturer as compatible.

1.4 Operation and Maintenance:

1.4.1 **(AM#4) Power Supplies:**

- a. Dedicated Battery Backup Power: For:
 - (1) Fire safety systems, 90 minutes.
 - (2) Emergency communications, 90 minutes.
 - (3) Radio frequency reporting system.

- 1.4.2 Ease of Use:
 - a. Minimum of one centralized monitoring display for all systems is required; locate in security office (constantly manned) or lobby.
- 1.4.3 Government Personnel Training: As specified in Chapter 00830.
 - a. Operational: Minimum of 8 hours, for 1 person, for each separate system.
 - b. Maintenance: Minimum of 8 hours, for 1 person, for each separate system.

2. PRODUCTS

2.1 Control Systems for All Applications:

- 2.1.1 Use one of the following:
 - a. Microprocessor-based hardware, UL-listed for suppression release.

2.2 Fire/Smoke Detectors:

- 2.2.1 **(AM#4)** Do not use:
 - a. Thermal detectors.
 - b. Rate compensated detectors.

2.3 Communication Cabling:

- 2.3.1 Use one of the following:
 - a. Copper cable.
 - b. Fiberoptic cable.

END OF CHAPTER D43

CHAPTER D52

SERVICE AND DISTRIBUTION

1. PERFORMANCE

1.1 Basic Function:

1.1.1 Main Electrical Service: Provide the service transformer to convert the utility distribution voltage to the building's utilization voltage. The Owner will maintain the service transformer.

1.1.2 Switchgear Location: Locate the main switchgear in the electrical room.

1.2 Amenity and Comfort:

1.2.1 Sound and Noise:

- a. Do not locate transformers near sound sensitive areas. See Chapter C for interior space sound level requirements.
- b. Provide transformers with noise generation 3 dBA less than the sound levels listed in IEEE Standard 241.

1.3 Operation and Maintenance:

1.3.1 Capacity:

- a. Service Transformers: In accordance with code plus 10 percent spare capacity.
 - (1) Primary Voltage: 12470Y/7200V grounded wye.
 - (2) Secondary Voltage: 480Y/277 V.
- b. Main Switchboards: In accordance with code plus 25 percent spare capacity.
- c. Interior Distribution Transformers: As required to serve building circuits and equipment plus 25 percent spare capacity.
- d. Branch Circuit Panelboards: In accordance with code plus 25 percent spare capacity.

1.3.2 Transformer Applications:

- a. Distribution Transformers For Ordinary Loads: Use general purpose or dry-type transformers. Provide UL K-factor listed transformers for loads with moderate/high harmonic distortion levels.
- b. Distribution Transformers For Loads Sensitive to Harmonics and Increased Neutral Currents: K-factor distribution transformers serving areas of dedicated computer equipment.

2. PRODUCTS

2.1 Transformers:

2.1.1 Use one of the following:

- a. Dry type.
- b. Pad-mounted, copper wound, liquid filled, PCB free, with plus or minus 2 to 2.5 percent taps.

2.2 Secondary Service and Distribution Feeders:

2.2.1 Conduits:

- a. Size neutral conductors to computer loads at 200 percent capacity.
- b. Do not use:
 - (1) Below Grade: EMT.
 - (2) Exterior, Exposed: PVC conduit.

2.2.2 Conductors:

- a. Do not use:
 - (1) Aluminum.

2.3 Main Service Equipment:

2.3.1 Types of Equipment:

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- a. Do not use:
 - (1) Low voltage switchgear.
- 2.3.2 Main Devices:
 - a. Do not use:
 - (1) Power circuit breakers.
- 2.3.3 Branch Devices:
 - a. Do not use:
 - (1) Fused switches.
- 2.3.4 Busbars:
 - a. Do not use:
 - (1) Plated aluminum.
- 2.4 Branch Circuit Panelboards:
 - 2.4.1 Circuit Breakers:
 - a. Do not use:
 - (1) Fused switches.
- 2.5 Motor Control Centers:
 - 2.5.1 Busbars:
 - a. Do not use:
 - (1) Plated aluminum.
 - 2.5.2 Overcurrent Protectors:
 - a. Do not use:
 - (1) Fused switches.

3. (AM#4) METHODS OF CONSTRUCTION

END OF CHAPTER D52

CHAPTER D7

TELECOMMUNICATIONS

1. PERFORMANCE

1.1 Basic Function:

1.1.1 Provide the following telecommunications services:

- a. Voice and Data: Infrastructure for voice and data transmission and telephone equipment.
- b. **(AM#4) Sound Reinforcement: Public address via voice over internet protocol system.**
- c. **(AM#4) Television: Television distribution to future television classroom locations as shown on drawings and reception from roof.**
- d. **(AM#4) Voice Data Horizontal Distribution: Provide required cable tray above main corridors and classrooms to support future connection of four fiber and two unshielded twisted pair lines to data communication box locations shown on drawings.**
- e. **(AM#4) Provide floor and wall data boxes to support connection as shown on drawings.**
- f. **(AM#4) Provide fully operational telephone system including telephones as shown on drawings. System should be similar to "Meridian" business model NTYX4Z.**

2. PRODUCTS

2.1 Use the following:

- 2.1.1 Cable tray wire management system for distribution of voice/data cabling through main corridors of the facility and under the raised floor in the computer education center.

END OF CHAPTER D7

CHAPTER D71

VOICE AND DATA

1. PERFORMANCE

1.1 Basic Function:

1.1.1 Provide means of conveying voice communication between rooms and spaces in the building and between the building and the Government's telephone network provider as specified in the program and as follows.

- a. Point-to-Point Voice Communications For:
 - (1) Private two-way verbal communication.
 - (2) Group conversations among more than 2 stations, at user's option.
 - (3) Both handset and speaker operation, at user's option.
 - (4) Transfer of live call to another station, at user's option.
 - (5) Hands-free paging.
- b. Recording and Management of Voice Messages:
 - (1) At and for each station.
 - (2) Incoming and internal messages.
 - (3) User-recorded reception message for each station.
 - (4) Automated answering of incoming voice telephone.
- c. Point-to-Point Voice Stations: Required in the following spaces:
 - (1) Each interior room, minimum of one.
 - (2) Each entrance, both outside and inside.
- d. **(AM#4)** Furnished by Government: Performance and function of system shall be compatible with White Sands Missile Range existing systems in connected facilities: **Voice over internet protocol.**

1.1.2 Provide means of conveying data between computers within the building and between the data transmission network and the Government's Internet service provider as follows.

- a. Government's operational computer network is PC- based.
- b. Connection between Internet and internal network will be via White Sands Missile Range fiber optic campus connection.
- c. Connection between campus central server and internal network is part of the data network.
- d. **(AM#4)** Operational network outlets are required in the following spaces:
 - (1) Main Communications Equipment Room.
 - (2) Server Room.
 - (3) Each interior room, **as shown on drawings.**
 - (4) Each other location indicated as "data outlet" on included drawings.
 - (5) Locations in center courtyard area as shown on drawings.

1.1.3 Integrated systems performing all functions are preferred, subject to requirements of code for separated, independent systems.

1.2 Operation and Maintenance:

1.2.1 Transmission Capacity:

- a. Sound Communication Cabling: 100 megabits per second; RJ45 connectors.
- b. **(AM#4)** Data Communication Cabling: Minimum 100 megabits per second; RJ45 connectors, Category **5E** in compliance with EIA/TIA data requirements.
- c. Substantiation:
 - (1) Closeout: Continuity and performance testing.
 - (2) Closeout: Printed report of each cable's full functional performance, provided to Government.

- 1.2.2 Ease of Maintenance: Provide communications networks that are logically arranged and well-marked, using terminal panels that provide:
 - a. Connections between each voice station and hub in server room through continuous cabling with no splices, maximum length of run not to exceed 90 meters (295 feet).
 - b. Point-to-point connections between each data input and output point and hub location in server room through continuous cabling with no splices, maximum length of run not to exceed 90 meters (295 feet).
- 1.2.3 Government Personnel Training:
 - a. Operational: Minimum of 8 hours, for 2 persons, for each separate system.
 - b. Maintenance: Minimum of 8 hours, for 2 persons, for each separate system.

2. PRODUCTS

2.1 Control Systems for All Applications:

- 2.1.1 Use one of the following:
 - a. Microprocessor-based hardware.

2.2 Communication Cabling:

- 2.2.1 **(AM#4)** Use the following:
 - a. Copper cable.
 - b. Fiberoptic cable.
 - c. Campus Subsystems: Fiberoptic.
 - d. Backbone Cable: Fiberoptic.
 - e. Distribution Cable: Copper.
 - f. 110 Blocks.
 - g. Wiring troughs.
 - h. Cable tray system.

3. METHODS OF CONSTRUCTION

3.1 Construct using the following methods:

- 3.1.1 All voice and data cabling shall be at least 305 mm (12 inches) from parallel power runs, and 50 mm (2 inches) from diagonal and perpendicular crossing power runs.
 - 3.1.2 Minimum 3/4-inch EMT conduit for single gang outlets. Minimum 1-inch EMT conduit for dual gang outlets.
 - 3.1.3 **(AM#4)** Provide protected wiring enclosure for outlets located outdoors in courtyard area. Provide enclosure that allows for protection of outlets from weather while having user connections attached at outlets as shown on drawings.
 - 3.1.4 Provide modular floor power / data outlets in large computer classrooms without raised access floors. Install in concrete slab with conduits to main trunk cable tray and 50 percent spare capacity of outlets and conduits for future cabling.
 - 3.1.5 **(AM#4)** Provide modular flush power / data outlet box for raised access floor connections as shown on drawings.
 - 3.1.6 **(AM#4)** Provide fiber optic connectivity as shown on drawings.
 - 3.1.7 **(AM#4)** Provide Category **5E** connectivity to a limited number of seating locations in auditorium. Total number of outlets and final locations to be coordinated with Government.
- 3.2 **(AM#4)** Work associated with existing Communications Manhole 309 and new communications ductbank:

- 3.2.1 **(AM#4)** Core drill north side of existing communications manhole 309. **Provide new** six-way 4-inch duct bank **from** existing communications manhole 309 **to the** new learning development center. **Provide one manhole adjacent to the facility, with additional manholes in the ductline for changes in direction of run and at 300-foot maximum intervals.**
- 3.2.2 Install manhole sized according to White Sands Missile Range communications standards.
- 3.2.3 Route six-way 4-inch duct bank from new manhole into main commo room in new learning development center.
- 3.2.4 Utilize long sweep elbows for all turns in duct bank routing.
- 3.2.5 Provide three 1-1/4-inch innerducts in one upper duct bank conduit, consistent from manhole 309 to new building.
- 3.2.6 Provide 1/4-inch nylon pull cord in each innerduct secured at both ends.
- 3.2.7 **(AM#4)** Provide fiber cables **from manhole 309 to the facility** for data connectivity of new learning center to White Sands Missile Range campus LAN system. **Provide 15-inch slack cable at manhole 309.**
- 3.2.8 **(AM#4)** Provide copper voice trunk cables **from manhole 309 to the facility** for connectivity of new learning center to White Sands Missile Range campus telephone system.
- 3.2.9 **(AM#4)** **Follow cable manufacturer's recommended maximum pulling tension and sidewall pressure limits for fiber optic cable installation.**
- 3.2.10 **(AM#4)** **Provide warning tape 24 inches above ductbank.**
- 3.2.11 **(AM#4)** **Communications cable installation and testing will be performed in accordance with White Sands Missile Range requirements.**
- 3.3 Main Communications Equipment Room:
 - 3.3.1 Minimum room size shall be 6 m (20 feet) by 6 m (20 feet).
 - 3.3.2 Provide six 4-inch PVC underground conduits with 90 degree long sweep elbows into the room from the new exterior communications manhole.
 - 3.3.3 Room shall have 3/4-inch flame retardent plywood backboard on all walls beginning at 305 mm (1 foot) up to 2743 mm (9 feet) above finished floor.
 - 3.3.4 **(AM#4)** Provide minimum two **125** volt, 20 ampere dedicated **receptacles** on each wall.
 - 3.3.5 **(AM#4)** Provide copper ground bar wall mounted on insulators and brackets for the single point ground for all communications equipment in the room. Connect ground bar to main grounding system by one No. 1 minimum AWG stranded copper insulated wire in metal conduit. The measured resistance of this wire shall not exceed 5 ohms over its installed length. **Ground metal conduit at each end.**
 - 3.3.6 Provide racks to terminate fiber and copper cables.
 - 3.3.7 Room shall be environmentally controlled.
- 3.4 Do not use:
 - 3.4.1 Back-to-back wiring of outlet boxes with a shared conduit. Each outlet box shall have its own conduit for connection to the backbone data distribution system.

END OF CHAPTER D71

CHAPTER D72

SOUND REINFORCEMENT

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 Provide the following sound reinforcement functions:
 - a. Sound transmission to all locations in the facility.
 - b. Paging, from any telephone station.
 - c. Music generation by compact disc (media furnished by Government).
 - d. Speaker Outlets: Required in the following spaces:
 - (1) Corridors.
 - (2) Break rooms.
 - (3) Classrooms.
 - (4) Library.
- 1.1.2 Integrated systems performing all functions are preferred, subject to requirements of code for separated, independent systems.

1.2 Operation and Maintenance:

- 1.2.1 Transmission Capacity:
 - a. Sound Communication: 100 megabits per second; RJ45 connectors.
- 1.2.2 Government Personnel Training:
 - a. Operational: Minimum of 8 hours, for 2 persons, for each separate system.
 - b. Maintenance: Minimum of 8 hours, for 2 persons, for each separate system.

2. PRODUCTS

2.1 Control Systems for All Applications:

- 2.1.1 Use one of the following:
 - a. **(AM#4) Voice over internet protocol system.**

2.2 Communication Cabling:

- 2.2.1 Do not use:
 - a. Fiberoptic cable.

3. METHODS OF CONSTRUCTION

- 3.1 Provide system compatible with features and function of existing base standard, "Valcom" brand, or Government-approved equal".

END OF CHAPTER D72

CHAPTER D73

TELEVISION

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 Provide the following television reception and distribution functions:
- a. Incoming internal network television; internal distribution over cabling not broadcast.
 - b. Cable television reception, via provider hard connection.
 - c. Video/Audio Outlets: Required in the following spaces:
 - (1) Projection rooms, one each.
 - (2) Video outlet at optimum projection location for each specified projection surface, audio outlet near screen.
 - (3) Classrooms.
 - (4) Break rooms.
 - (5) **(AM#4) Computer laboratories.**
 - (6) **(AM#4) Computer testing area.**
- 1.1.2 Integrated systems performing all functions are preferred, subject to requirements of code for separated, independent systems.

1.2 **(AM#4) Amenity and Comfort:**

1.3 Operation and Maintenance:

- 1.3.1 Transmission Capacity:
- a. Sound Communication Cabling: 100 megabits per second; RJ45 connectors.
 - b. Video/Audio Cabling: Coaxial 75 ohm, plus 2 dB, 100 percent shielded.
- 1.3.2 Government Personnel Training:
- a. Operational: Minimum of 8 hours, for 2 persons, for each separate system.
 - b. Maintenance: Minimum of 8 hours, for 2 persons, for each separate system.

2. **(AM#4) PRODUCTS**

END OF CHAPTER D73

CHAPTER D9

OTHER SERVICES

1. PERFORMANCE

1.1 Basic Function:

1.1.1 Other services include:

- a. **(AM#4) Base Bid** Surveillance and Security Controls: Provide security system and security camera control wiring and power.
- b. Special Grounding Systems: Elements for lightning protection, fence grounding, and raised access floor grounding.
- c. Cathodic Protection: Elements for supplementary corrosion prevention using cathodic protection.

END OF CHAPTER D9

CHAPTER D92

SURVEILLANCE AND SECURITY CONTROLS

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 **(AM#4)** Provide remote surveillance of specified areas, intrusion detection, **power and control wiring for** automatic and remote control of access to building areas, as required by the code and as follows.
- 1.1.2 Integrated systems performing all functions are preferred, subject to requirements of code for separated, independent systems.
- 1.1.3 **(AM#4) Sound Communication Functions:**
- 1.1.4 **(AM#4)** Data Communications Functions: As required to accomplish security functions.
 - a. Connection between campus central system and building system.
 - b. **(AM#4) Monitoring of all cameras from three internal monitoring stations.**
- 1.1.5 Visual Communications Functions:
 - a. Point-to-Point Video Communication:
 - (1) Visual monitoring, for access/entry control.
- 1.1.6 **(AM#4)** Access/Entry Control and Intrusion Detection Functions: See definition of security zones in Chapter 111.
 - a. Public Access Interaction Points: Remote visual monitoring and continuous visual recording, for secured data storage vault.
 - b. Approaches to Reception Zone from Outside: Remote visual monitoring.
 - c. Doors Between Public Access Zone and Reception Zone: remote visual monitoring, door status monitoring, keyless entry for occupants, and remote locking/unlocking.
 - d. See Chapters B23 and C12 for mechanical locking devices required.
 - e. Furnished by Government:
 - (1) Keyless entry devices.
 - (2) Visual recording equipment.
 - (3) **(AM#4) Door notification and automatic locking controls.**
- 1.1.7 **(AM#4) Surveillance and Security Base Bid:**
 - a. **Provide power and control conduit and wire for camera security system as follows:**
 - (1) **Install 24-inch by 24-inch by 6-inch screw cover junction box with screw cover above ceiling, Communications Room 119; preferably above rack location.**
 - (2) **Install separate 3/4-inch EMT conduit run to each interior camera location.**
 - (3) **For 3/4-inch EMT connections, use rain tight compression fittings hardware only. Setscrew fittings will not be acceptable.**
 - (4) **Place 4-11/16-inch deep boxes with cover every 100 feet, if applicable.**
 - (5) **Terminate 4-11/16-inch deep box with cover at camera location 1 foot above finished ceiling or near camera location. Electronic maintenance will flex to the camera.**
 - (6) **Place pull wire in all conduit runs.**
 - (7) **Mark covers with "CAM" for identification.**
 - (8) **Place junction boxes in an accessible location, not obscured by other fixtures or equipment.**
 - (9) **Install 2-inch Schedule 80 PVC from Communications Room 119 to pole outside front entrance area.**
 - (10) **Terminate courtyard camera conduit with 4-11/16-inch deep box with flush mount 1-gang plaster ring, 1/2-inch raise.**

- b. Provide power and computer conduit and wire for intrusion detection system in library vault as follows:
- (1) Install 3/4-inch EMT conduit, junction boxes, covers, and pullstrings as shown on drawings for individual intrusion detection and access control systems in Room 107. Use rain tight EMT compression fittings only. Stub out conduit minimum of 2 feet above ceiling tiles, junction boxes face down and accessible. Intrusion detection system and access control integration junction boxes will be located 12 inches above ceiling tile at each respective inner/outer door to Room 107. System junction boxes will be 4-11/16-inch at 100-foot intervals, as required.
 - (2) Intrusion detection system and access control system will not be integrated into the same conduit runs. Identify and mark the interior of sensor and junction box locations (I-IDS) (A=Access Control).
 - (3) Provide individual 20-ampere home run feeder circuits for Hirsch M8N access panel, Securitron power supply, intrusion detection system alarm control panel, and the Motorola transmitter in 1/2-inch EMT, rain tight EMT fittings only. No. 12 THHN solid copper, dedicated hot, neutral, ground.
 - (4) Provide 3/4-inch EMT with pull string between Hirsch M8N and fire alarm panel for lock release.
 - (5) Provide motion detector and required to exit sensor locations with deep 4-inch square, 1-gang plaster ring, flush mount. Motion detector mounts 7'-6" off fixed floor. Mount request to exit at ADA switch height. Mount access control key pads at ADA switch height on Hirsch UMK flush mounting ring. Hirsch M8N, intrusion detection system transmitter, intrusion detection system control panel, and Securitron power supply, adjacently mounted 6 feet off fixed floor.
- c. Provide power and control conduit to all exterior doors and interior doors associated with offices, classrooms, computer laboratories, library, and auditorium.

1.1.8 **(AM#4) Option No. 6: Provide complete and operational security camera system.**

1.2 Amenity and Comfort:

1.2.1 Visual Image Quality:

- a. Television Monitors: Minimum 430 mm (17 inch) diagonal maximum 480 mm (19 inch) diagonal, color.

1.3 Operation and Maintenance:

1.3.1 Power Supplies:

- a. Dedicated Battery Backup Power For:
 - (1) Access/entry controls; fail-secure, 90 minutes.
 - (2) Intrusion detection, 90 minutes.

1.3.2 Transmission Capacity:

- a. Sound Communication Cabling: 100 megabits per second; RJ45 connectors.
- b. Data Communication Cabling: 100 megabits per second; RJ45 connectors.
- c. Visual Communication Cabling: Coaxial 75 ohm, plus 2 dB, 100 percent shielded.

1.3.3 **(AM#4) Data Storage Capacity:**

1.3.4 **(AM#4) Ease of Operation:**

- a. Time/date displays centrally synchronized and adjustable.
- b. **(AM#4)** Minimum of **three** centralized monitoring display for all systems is **required**.

1.3.5 Government Personnel Training:

- a. Operational: Minimum of 8 hours, for 2 persons, for each separate system.
- b. Maintenance: Minimum of 8 hours, for 2 persons, for each separate system.

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2. (AM#4) PRODUCTS

END OF CHAPTER D92

CHAPTER E

EQUIPMENT AND FURNISHINGS

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 Design the facility to accommodate the equipment and furnishings provided by the Government, which are shown in the user-provided floor plan.
- 1.1.2 All furniture shall be by Government except as follows:
 - a. Provide fixed seating in proposed auditorium as defined within another element group.
 - b. Relocate Government-owned, moveable storage files (library) as required; refer to Volume 3.
 - c. Provide built-in architectural components as defined in another element group.
 - d. **(AM#4) Provide required audio/visual equipment in auditorium, Room 120, as outlined in Volume 3.**
 - e. **(AM#4) Provide television mounts in classrooms, computer laboratories, and conference rooms, as identified in Design Criteria and Functional Requirements, Volume 3. Size mounts to hold television model Hitachi 36CX39B.**
 - f. **(AM#4) Provide manual pull down projection screens in all classrooms, computer laboratories, and conference rooms as identified in Design Criteria and Functional Requirements, Volume 3.**
 - g. **(AM#4) Provide refrigerator with icemaker in break rooms as shown on drawings and as outlined in Volume 3.**
- 1.1.3 Where equipment or furnishings elements also must function as elements defined within another element group, meet requirements of both element groups.
- 1.1.4 In addition to the requirements of this chapter, comply with all applicable requirements of Chapter 111 - Facility Performance.

END OF CHAPTER E

SECTION 01000

DESIGN AND CONSTRUCTION SCHEDULE

AM#0003 AND 0004

PART 1 GENERAL

1.1 SCHEDULE

Commence, prosecute, and complete the work under this contract in accordance with the following schedule and Section 00700 CONTRACT CLAUSES clauses COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK and LIQUIDATED DAMAGES:

Item of Work	Commencement of Work (calendar days)	Completion of Work (calendar days)	Liquidated Damages per calendar day_ _
(1) Completion of all design and construction work except Landscaping	Within 10 calendar days after receipt of Notice of Proceed	600	\$625.00
(2) Landscaping	**	**	---
<u>(3) Option 0001 (AM#4)</u>			
<u>Computer</u>			
<u>Network</u>			
<u>System</u>		**	
<u>(4) Option 0002 (AM#4)</u>			
<u>Parking Lot</u>		**	
<u>(5) Option 0003 (AM#4)</u>			
<u>Future Fiber</u>			
<u>Installation</u>		**	
<u>(6) Option 0004 (AM#4)</u>			
<u>Rear Projection</u>			
<u>Interactive Whiteboards</u>		**	
<u>(7) Option 0005 (AM#4)</u>			
<u>Wireless Data Network</u>			
<u>System</u>		**	
<u>(8) Option 0006 (AM#4)</u>			
<u>Surveillance Camera System</u>		**	

(9) Option 0007 (AM#4)	
Multicell Network System	**
(10) Option 0008 (AM#4)	
Voice Recognition Display System	**
(11) Option 0009 (AM#4)	
Backup Electrical and UPS System for Computer Areas	**

¹NOTES:

- a. The Contract duration stated above for Work Item 1 is the maximum duration. Upon Contract Award, the Contractor's proposed duration as stated on the Price Proposal Schedule shall become the contract duration for this Work Item unless it exceeds the maximum duration stated above. The liquidated damages stated above will be applied for each calendar day the Contractor exceeds the Contract duration schedule.
- b. See Section 01015 DESIGN REQUIREMENTS AFTER AWARD, paragraph "SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS, AND DESIGN ANALYSES," concerning submission of construction documents and Section 01000 paragraph, "SEQUENCE OF DESIGN/CONSTRUCTION," concerning start of construction.
- c. For construction planning purposes Government review time for review submittals (100% site and utility and 60% buildings design, and 100% buildings design) is specified in 01015 DESIGN REQUIREMENTS AFTER AWARD.
- d. Delay in completion of design will not be considered as a valid reason to delay completion of entire work.

****Landscaping**

Planting and maintenance for landscaping shall be in accordance with Contractor's Section for LANDSCAPING. No payment will be made for landscaping until all requirements of the section are adequately performed and accepted, as determined by the Contracting Officer.

1.1.1 Testing of Heating and Air-Conditioning Systems

The times stated for completion of this project includes all required testing specified in appropriate specification sections of heating, air conditioning and ventilation systems including HVAC Commissioning. Exception: boiler combustion efficiency test, boiler full load tests, cooling tower performance tests, and refrigeration equipment full load tests, when specified in the applicable specifications, shall be performed in the appropriate heating/cooling season as determined by the Contracting Officer.

1.2 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (OCT 1989)
(ER 415-1-15)(52.0001-4038 1/96)

- a. This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the contract clause entitled "Default: (Fixed Price Construction)." In order for the

Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

- (1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.
- (2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.

b. Weather Conditions

- (1) Climate is typical of the southwest desert with a wide temperature range between day and night, often as high as 10 degrees C change in 24 hours. The annual range temperature is from a maximum of 42 degrees C in summer to an extreme low of -18 degrees C in winter. The recorded low was -23 degrees C.
- (2) Average annual rainfall varies from about 240 mm in the southern part of the reservation to over 254 mm in the northern part. During most years, about 60 percent precipitation occurs in July, August, and September.
- (3) The prevailing winds are out of the west. A salient feature of these winds is their gusty nature. Wind velocities have reached a maximum of 5.5 meters per second (107 knots). The higher velocities are experienced adjacent to the mountains, and the lower velocities in the valley regions. These winds, chiefly from the west and southwest, vary from small whirlwinds know as "devil-dusters," to high winds of more than 24-hour duration. The devilduster type of whirlwinds throw sand and gravel with sufficient velocity to cause visible pitting of automobile windows and impingement. The high winds with their gusts have removed windows and roofs from houses and buildings in the Post Area. The sand and dust (most prevalent in the spring), cause rapid deterioration of unprotected equipment and instruments. Damaging high winds have also been recorded in November, December, and March.
- (4) The following schedule of monthly anticipated adverse weather delays due to precipitation and temperature is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities. Wind is not considered in the Monthly Anticipated Adverse Weather Calendar Day Schedule.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

WHITE SANDS, NM AREA (WSMR AND RESEREVE CTR AT LAS CRUCES)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1	1	1	2	1	4	4	2	1	1	3

c. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the contractor's scheduled work day.

The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph "b", above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled "Default (Fixed Price Construction)."

1.3 WORK RESTRICTIONS

1.3.1 Working Hours

Normal working hours are Monday through Friday, 0730 to 1700 hours.

1.3.2 Security Requirements

For the duration of this Contract, access to the Installation may be delayed between 30 minutes to an hour or more due to security precautions, including the checking of vehicle occupants' IDs, vehicle manifests, and the searching of all vehicles.

1.4 UTILITIES

1.4.1 Payment for Utility Services (FAR 36.303(C)(6))

(AM#3) Water, gas, and electricity are available from Government-owned and operated systems and will be charged to the Contractor at rates as provided in Contract Clause 52.236.14 AVAILABILITY AND USE OF UTILITY SERVICES. At the Contractor's expense and in a manner satisfactory to the Contracting Officer, the Contractor shall provide and maintain necessary temporary connections, distribution lines, and meters required to measure the amount of each utility used for the purpose of determining charges. Meters shall measure customer consumption, with the registers reading in U.S. gallons (water), cubic feet per hour (gas), and watthours (electricity). The Contractor shall notify the Contracting Officer, in writing, 5 working days before final connections are desired so that a utilities contract can be established. The Contractor shall make the final connections after inspection and approval of the Contractor's temporary installations. The final connection for the electrical utility shall be a hot connection.

(AM#3) Before completion of the work and final acceptance of the work by the Government, the Contractor shall notify the Contracting Officer, in writing, 5 working days before termination is desired. After the Government takes a final meter reading, the Contractor shall disconnect service and remove the meters. The Contractor shall then remove all the temporary distribution lines, meters, and associated paraphernalia. The Contractor shall pay all outstanding utility bills before final acceptance of the work by the Government.

(AM#3) The Contractor shall keep records of the utilities used, including the amounts and payments. Records shall include all sources of water, such as when tanker trucks fill up at the tanker truck fill point on Post for dust control or other purposes.

1.4.2 Outages

The Contractor shall coordinate all requests for utility outages with the Contracting Officer in writing 14 days prior to date of requested outage:

- a. Water, gas, steam, and sewer outages shall be held to a maximum duration of 4 hours unless otherwise approved in writing.
- b. Electrical outages shall have a maximum duration of 4 hours.

1.5 STREET CLOSINGS

The Contractor shall coordinate all requests for street closings with the Contracting Officer in writing 14 days prior to date of requested outage:

- a. One lane traffic shall be maintained at all times (except that a total closing may be allowed for specific 8-hour periods).
- b. The final street repair shall be completed within 14 days after the start of any street crossing. Any part of the street returned to service prior to final repair shall be maintained smooth with hot-mix cold-lay surface course.

1.6 SEQUENCE OF DESIGN/CONSTRUCTION

(a) After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submission requirements as covered under Division 01 General Requirements, and obtain Government review of each submission. No construction may be started, [with the exception of clearing, etc, until the Government reviews the Final Design submission and determines it satisfactory for purposes of beginning construction. The Contracting Officer will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the Contracting Officer, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.

(b) If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.

(c) No payment will be made for any in-place construction until all required submittals have been made, reviewed and are satisfactory to the Government.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

June 27, 2002

Amendment 0004

DESIGN CRITERIA & FUNCTIONAL REQUIREMENTS

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PART I - DESIGN CRITERIA

PROGRAM NARRATIVE

Executive Summary

The goal of the Professional Development Center (PDC) is to support military education, training and development at White Sands Missile Range. The project will include classrooms, computer labs, offices for faculty and staff, a computer education center, a conference room, a library facility (with an incorporated classified documents section) and a 150-seat auditorium. Supporting facilities include extension of all utilities onto site from surrounding infrastructure, proposed adjacent parking area, paving, walks, curbs, and landscaping. Site improvements include an interior building courtyard and surrounding street vehicular controls (barricades/gates/bollards) to enable the conversion of the street west of the facility into a pedestrian only area. Access for the handicapped will be provided. Anti-terrorism/ Force Protection measures include the stand-off of all parking areas at least 80 feet from building as well as the use of laminated glass on all exterior glazing.

PDC Facility - Project Goal

This facility is needed to provide a centralized education and training facility for the Army Continuing Education System (ACES) sponsored programs, personnel (military and civilian) training and support programs, and library (general and technical) support in one location. It will offer resident and non-resident education and training to **(AM#4) 470** military personnel on post, 500 AGR and Army recruiters in New Mexico, 5599 WSMR employees and 1100 family members. This facility is required to have state-of-the-art communications technology including systems to support direct fiber connectivity **(AM#4) throughout the entire facility**. A modern facility for learning is essential to the professional and personal development of military personnel, civilian employees and family members at this remote and isolated post (35+ miles to Las Cruces). A main focus of the facility must be its communications infrastructure. This infrastructure must be installed to support current IT technology, but also be flexible enough to support the evolution of the educational center over the next 20 years.

WSMR Floor Plan

The Users of the proposed PDC have been working towards the completion of this project for several years. They have researched and visited several similar military facilities across the U.S. In an effort to ensure the proper relationships and function of the new facility the RFP team was presented with a completed floor plan from which to generate the RFP. This floor plan was the sole creation of the User group and has not been modified by the RFP team except as required to ensure compatibility with building code and life safety. The Design/Builder shall be directed to use this floor plan (without exception). No exterior architecture has been predetermined except as noted in the location of windows or the request for natural lighting. As a result of the "absence in programming" for this project, this "Design Criteria and Functional Requirements" document has been prepared to document the intent of the spaces shown in the User provided floor plan. This document should be referred to for information on each program space including but not limited to space function, relationship to adjacent areas, architectural considerations including floor, wall and ceiling type, mechanical considerations including temperature, humidity, exhaust, and control criteria, electrical considerations including lighting type, lighting levels, power requirements, and data (commo) requirements, as well as fire protection and fire alarm information.

Building Areas/Functions

Within the Design Criteria and Functional Requirements Guide a space program has been included which lists all of the required spaces in the WSMR User provided plan. In summary, the following major functional areas have been identified by the User as required spaces.

Lobby

This area will serve as the main entrance and common assembly area for guests and visitors. The main entrance has been oriented from the northeast (away from the prevailing west winds). Seating areas and information kiosks should be provided. The area should be inviting and open. User has expressed interest in high ceiling/exposed structure look to this area. The exterior architecture denote this as the main entrance to the facility.

Administration

This area is the office complex for the **(AM#4) Educational Division Chief** and his staff. The area is for general office functions and has been positioned to have a direct view of the interior courtyard from the main staff offices. The remaining counselor offices are positioned around the ADP Computer Testing Lab. The counselor offices should have a direct view of the Lab through one-way glass. The main information or reception desk is part of this area and should have a greeting counter into the Lobby with both a standard height and ADA compliant height transaction counter. This counter and general reception area will be required to be sealed off from the Lobby during non-office hours with an overhead countertop gate or security grill. **(AM#4) The reception area must be directly adjacent to the counselor and education technical areas.**

Registration

This area is for the college registration function. Provide a transaction counter (both typical and ADA compliant height) with an overhead countertop security grill. The offices in this area will require interior windows to ensure continuous visual control of the transaction counter. Area for two separate college registration functions has been provided for.

Testing

This dedicated computer testing room is located adjacent to the counselor area in the Administration area. A reception counter and test administration room is required at the entrance to the Computer lab as well as a place for safes for test material. The testing administration counter should be accessible from a counselor's office in the Administration area. This room should be acoustically isolated from the rest of the facility as much as possible.

Library

The proposed library facility will contain general stack areas as well as a secure vault room for storage of "secret" level material. Other dedicated areas with the space will be a children's section and a MOS room. The staff functions (control desk, librarian office) have been located in close proximity to the Administration area in an effort to facilitate sharing of the break and restroom facilities. A secondary entrance from the courtyard has been created to increase the use of that area and allow a direct path of egress to the classrooms. The intention expressed by the User for the interior architecture of this space is for the ceilings to be high with high north clear story windows. The structural system should be left exposed and painted white with indirect/direct general lighting. The "secret" vault construction is not a-typical to the rest of the library (metal stud with gypsum board) but the room must be environmentally separated from the rest of the facility as a result of the requirement for a gaseous fire suppression system (FM 200). Three existing movable storage shelving units currently in use will be required to be relocated to the new facility by the successful Design/Build contractor.

Classrooms

Several varying sizes of classrooms are proposed for the facility. All should have provisions for full communications (including fiber) connectivity. Some will contain acoustical divider wall systems as well as dedicated storage areas. Some of the storage areas require overhead security gate separators for secure storage of large hands on display presentations. Rooms should be acoustically separated and equipped with full wall dry-erase magnetic boards, manual projector screens, and provisions for future connectivity to ceiling mounted A/V systems. All power/communications will be provided via floor boxes.

Auditorium

This room will provide an on-base lecture/presentation room for groups up to 150 people. The room should be equipped with the latest technology in A/V presentation systems including but not limited to a large rear projection screen at the head of the room. The chairs should be individually fixed with a provision for ADA accommodations at the bottom (ground) level. This area should be mechanically separated and controllable from the remainder of the facility. **(AM#4) Contractor shall be responsible for providing a complete and functional Audio/Visual system (including feature controllable lighting) for presentations in this Area. Contractor will also provide fiber connectivity back to the Communications Room.**

Computer Education Center and Computer Labs

The computer education area will be a resource area for computer software training and computer science courses. The main open educational area should be constructed on 12" raised floor. Several dedicated areas for private study and software storage have been provided. The computer lab rooms should have full IT/Communications capability via floor mounted boxes. **(AM#4) per the Communications Floor Plan Sheet E.101.**

Courtyard

(AM#4) A richly landscaped and irrigated exterior courtyard should be provided in the center of the education facility, is proposed to provide some shelter from the site's west winds and provide the visual relief for the surrounding rooms and corridors. A minimum of two power and communications kiosks should be provided in this area to allow for nighttime connectivity of computers while the area is in use by Astronomy classes.

Exterior Building Architecture

The proposed look of the facility should be in compliance with the White Sands Installation Design guide. As a result of the anti-terrorism/force protection guidelines, exterior perimeter fenestration should be minimized (except at the main entrance). Most project fenestration should be oriented internally on the proposed courtyard area. Minimize all west facing windows and doors. Because of past problems with nesting swallows and bat infestation, do not include building overhangs in the project design.

Site Plan

The site for the proposed facility is located directly across from the existing educational building. Currently the site is half occupied by an existing asphalt parking area. The remainder of the site is vacant. The topography of the site is generally flat with existing drainage via surface runoff to the adjacent streets. The majority of the proposed utilities for the project can be found directly adjacent to the site (see included utility sections in electrical and civil summaries). The WSMR User group has developed the site plan in conjunction with the anti terrorism/force protection issues. A stand-off distance of 80 feet is required between the parking areas and the proposed building. In regard to this requirement, WSMR has proposed the closing of the street to the west of the education facility. **(AM#4) No re-surfacing or replacement work is required to this street (only traffic control devices as described).** Traffic control devices such as bollards and

vehicular gates have been deployed around the facility to facilitate this closing (per the User provided site plan). In response to the site's predominantly west winds, the main entrance to the facility has been oriented to the northeast. In addition to this entrance, other pedestrian approaches to the facility have been located on the north, south and southeast.

Civil

The proposed site is located on Rock Island Avenue. The boundaries of the site are Flagler Avenue on the west, Dyer Street on the East, and Building 426 on the south. Joliet Street cuts across the site in an east/west direction. Majority of the site is vacant at this time. There is an existing parking lot at the northwest corner. This parking lot extends from Rock Island Avenue to Joliet Street. The site slopes from the west to the east. The site is fairly flat.

The new building will be sited on the southern portion of the site adjacent to Building 426. The entrance to the building should face Dyer Street. A new parking lot will be sited north of the new building with entrances off Rock Island Avenue. The Design/Build (D/B) Contractor should develop the site plan based on the conceptual site plan provided by White Sands Missile Range (WSMR).

Demolition

The existing parking lot pavement will need to be demolished. The pavement is in poor condition. The curbs and gutters will also need to be demolished. There are utility poles along Joliet Street that will need to be relocated or removed entirely. The pavement on Joliet Street and Flagler Street will also require removal to accommodate the new construction.

Pavements And Sidewalks

Flexible pavement is recommended for the new parking lot. The geotechnical report for this project should be referred to for pavement design recommendations **(AM#4) See Volume III**. The D/B Contractor should develop the drive and sidewalk layout.

Grading And Storm Drainage

It is recommended that the existing slope direction of the site be maintained. The area at the northeast side of the site is higher in grade than the south side. The site will need to be leveled to provide the required slopes on the pavements and sidewalks. The D/B Contractor will determine the cut and fill requirements and the grading of the site. There is no underground storm drain system around the proposed site. The entire area surface drains to the adjacent streets. The streets convey the storm runoff to the east eventually reaching a drainage ditch. There is no zero-impact requirement for the site. However, the base Hydraulic Engineer would like to see a detention pond constructed on site to control the peak storm runoff from the site. Low flows can go onto the adjacent streets. Surface drainage is acceptable. WSMR is currently constructing underground storm drains east of the proposed site. A detention pond will help control runoff to this new storm drain line. Storm drainage calculations should be based on either a 10-year or 25-year storm. A detention pond can be sized based on a 10-year storm. The Rational Method and Modified Rational Method can be used for the storm drainage calculations. The D/B Contractor will determine if an underground storm sewer system and detention pond are feasible for this site.

Water Distribution System

All existing water lines are owned by WSMR. There is an existing 8" line on Dyer Street, an existing 8" line on Joliet Avenue, an existing 10" or 8" line on Flagler Street, and an existing 12" line on Rock Island Avenue. The D/B Contractor will determine the sizing of all new lines which existing lines will be used to provide water to the new building. WSMR requires that the portion of an existing AC water line being tied to be removed to the nearest coupling on either side of the tie and replaced with C-900 PVC pipe. All new water lines can be PVC lines. The removal of the

existing line will be considered an asbestos abatement project. The new building will require domestic and fire water service. The domestic service will be required to be metered. The D/B Contractor will install the meter and backflow preventor. Domestic water lines must meet the New Mexico Drinking Water Regulations and NSF 61.

There do exist fire hydrants at the intersection of Joliet Street and Flagler Street, on Dyer Street in front of Building 426, on Dyer Street near Joliet Street, and at the intersection of Milan Street and Flagler Street. The D/B Contractor will determine if additional fire hydrants are required. See Volume 3 for water line pressure test results.

Sanitary Sewer System

The existing sanitary sewer lines are owned by WSMR. WSMR has a wastewater treatment plant on the base approximately 1.5 miles from the site. All existing lines are gravity lines. There is an existing 8" line on Rock Island Avenue, an 8" line on Flagler Street, and existing line on Milan Street. There do exist manholes on Rock Island Avenue between Flagler Street and Dyer Street. There is also an existing manhole on Flagler Street at the corner of Joliet Street. The D/B Contractor should determine the sizing of the lines and the point of connection for the new sanitary sewer service.

Natural Gas Service

WSMR owns the existing gas lines. There is an existing 4"/3" gas loop around the site. The gas pressure on the loop is 22.5 psi. The D/B Contractor will determine the sizing of the new line, the point of connection for the gas service, make the tap, and install the meter/regulator.

Hazardous And/Or Toxic Waste

WSMR has an asbestos landfill and a construction/demolition waste landfill. These landfills can be used to dispose of any asbestos waste and construction waste. There is no sanitary landfill on site.

Structural

There are several alternatives for a structural system appropriate for the proposed Professional Development Center. All of these systems employ reinforced masonry or reinforced concrete exterior walls with a braced frame or moment resisting frame for lateral support of the exterior walls and support of the roof. The exterior walls may be reinforced concrete masonry, site cast tilt-up reinforced concrete panels, or plant cast reinforced concrete panels. It is also possible to employ shear walls to stabilize the structural framing. The structural framing may be steel or concrete, or perhaps heavy timber or heavy glu-lam wood framing. An exterior bearing wall system is not deemed to comply with the DoD Force protection/Antiterrorism Construction Standards in lack of ductility and energy dissipation. The exterior walls should span vertically from the foundation to the superstructure framing. Spanning the exterior walls horizontally can lead to localized collapse of the roof if the supporting column is overloaded. There is greater redundancy if the exterior walls span vertically.

It is presumed, but not required, that the roof framing will be steel. The steel roof deck will form a horizontal diaphragm for support of the exterior walls and transfer of lateral loads to the shear walls or to the bracing or moment frames. The roof is a flexible diaphragm distributing forces in proportion to length of shear walls or stiffnesses of moment frames and tributary areas.

The roof may be supported by interior concrete masonry shear walls in combination with steel beams and columns. Columns supporting floor and roof framing consist of steel HSS or wide flange sections. Exterior walls consist of concrete masonry units reinforced and grouted solid for security walls and for seismic loading. Exterior walls are to be design and detailed with special seismic detailing according to FEMA 302, Section 11.11.5. Interior masonry partitions consist of 8-inch and 12-inch concrete masonry units, which are

reinforced and grouted solid for security walls and for seismic loading. Interior walls that also function as shear walls shall be special seismic detailing wall according to FEMA 302, Section 11.11.5. The exterior concrete masonry walls in combination with interior concrete masonry bearing walls form the lateral load resisting system for the facility.

The perimeter walls are concrete masonry with stiffening pilasters. The pilasters are set toward the exterior of the building to allow an uninterrupted surface for displays in the operations areas. At the option of the Contractor's Structural Engineer, the exterior walls may be designed as tilt-up concrete walls if necessary for antiterrorism and force protection requirements. The exterior concrete masonry walls will have all cells filled and reinforced for improved resistance to blast and to toughen the walls for day to night temperature changes.

Provision shall be made in design of exterior walls and columns to prevent progressive collapse. This shall be achieved through an arrangement of the structural elements that provides stability to the entire structural system by transferring loads from any locally damaged region to adjacent regions capable of resisting those loads without collapse. This shall be accomplished by providing sufficient continuity, redundancy, or energy dissipating capacity (ductility) or a combination thereof in the members and connections of the structure. That analysis will include a removal of one primary vertical or one primary lateral load-carrying element framing the perimeter of the structure without progressive collapse. For further guidance, refer to ASCE 7-98.

Roof framing consists of metal deck on steel joists bearing on masonry walls or on steel wide flange beams. Steel beams are supported by masonry walls or bear on steel columns. For redundancy, a perimeter steel beam, supporting the open web joists, will frame between pilasters offering an alternative load path in the event of collapse of a portion of the masonry wall between pilasters or in the event of collapse of a pilaster.

In order to improved diaphragm stiffness, roof and floor decks will be fastened to supporting framing with 5/8" diameter puddle welds, spacing of welds as required for strength, and as recommended by metal deck manufacturer. Self-tapping screws and powder-actuated fasteners are not allowed for fastening roof and floor decks to supporting framing. Side laps for the roof deck should be nested and fastened with self-tapping screws.

As an antiterrorism/force protection measure, bridging shall be provided for the open web joists to stabilize the bottom chord for wind uplift and for load reversal equal to the dead load plus one half the live load.

The site shall be screened for seismic-geologic hazards according to TI-809-4 for surface fault rupture, soil liquefaction, and soil differential compaction. The geotechnical report shall indicate whether that the existing surface soils are suitable for support of the proposed foundations. The potential for expansion of the native soils shall be evaluated and recommendations made for dealing with expansive soils are appropriate. The geotechnical investigation and report shall evaluate the existing soil potential for solubility and make recommendation on treatment if such soils are encountered.

The geotechnical investigation and report shall make recommendations for soil modification as appropriate and for bearing stresses of foundations in soils. The potential for sulfate reaction with the Portland cement concrete shall be evaluated by the geotechnical consultant.

The foundation design and construction should limit maximum settlements and differential settlements according to the sensitivity of the structural systems to movements. Total maximum settlement should not exceed one (1") inch and differential settlements should not exceed one half (0.5") inch.

The slab is type "E" under the ACI 360 classifications, reinforced for temperature and shrinkage with joints spaced at 24 to 36 times the slab thickness. A minimum of 0.18 percent deformed bar reinforcement shall be provided in each direction.

Dowels are provided for load transfer at the joints. The location of vapor barrier above or below the capillary water barrier is to be determined by the construction sequence, floor coverings, and whether humidity is controlled in the facility. The capillary water barrier will be of granular material other than sand, such as “crusher run” that can be compacted to form a stable base, and not be rutted by ready-mix delivery trucks during placement of concrete.

Incorporation of fly ash in the slab on grade concrete mix design is an example of sustainable design by incorporating waste and byproduct into building materials. The ASTM C618 Type F fly ash also has cementitious properties that enhance the performance of the concrete.

The Contractor’s Structural Engineer shall be responsible for the design of the completed structural system for the building. The Contractor’s Structural Engineer shall seal the calculation, drawings and specifications. The Contractor shall submit these to the Contracting Officer for review. Complete structural system for the building shall include foundations, walls, floors, beams, columns, roof framing, roof and floor diaphragms, lateral load stability, framing and connection of any architectural features, and support of mechanical and electrical equipment. Structural design of the building shall be compatible with the architectural design shown on the plans.

Electrical

(AM#4) In general, the electrical system will be typical for a college-type facility. However, because of the special focus of the facility on technical training and connectivity, it is critical that the electrical and communication backbones of the facility be both flexible and expandable. Special features of the needs of the facility include:

- ?? **(AM#4) The network infrastructure is of primary importance to the training and learning functions of this facility. A Complete Data/Networking Horizontal Distribution System will be part of the base bid of work in the facility. The user has requested special expandable data/power connection boxes be installed in the facility at all location where there is proposed to be a computer. See the “Data/Network” portion of this section.**
- ?? **(AM#4) The Data Networking switches, routers, servers, and user computers, etc., to provide a complete full-function data networking system is proposed to be furnished by contractor as described in Option 1.**

Distribution Systems

- ?? Exterior Distribution – Along the perimeter of the existing building site area, there is an overhead primary circuit. The D/B Contractor will extend the existing primary circuit and transition it to an underground primary service feed. A pad-mount transformer will be provided by the contractor for the main service to the new facility. The primary voltage is a 12470/7200V grounded wye system. The secondary service voltage from the transformer will be 480V, 3 phase, 4 wire. Metering of the facility to WSMR Electrical Facility standards will be provided to be accessed from the outside of the facility.
- ?? Interior distribution will be efficiently handled by 480V service switchboards, distribution panel boards, dry-type transformers and 120V branch circuit panel boards. All circuits will consist of copper conductors in conduit with separate equipment grounding conductor. All electricity consuming equipment will be connected to an appropriately sized branch circuit. Convenience receptacles will be located throughout the facility as needed and required. Dedicated receptacles for computer circuits will include an isolated ground from the isolation ground bus of the branch circuit panel board. Dedicated computer circuit panel boards will be served from a ‘K’-factor dry-type transformer, and will utilize an isolated grounding bus as well as a 200% rated neutral bus.

- ?? Due to the sensitivity of the equipment housed in this facility, a Transient Voltage Surge Suppressor will be installed at the main service switchboard.
- ?? **(AM#4) As part of Option 1 a** frame mounted Uninterruptible Power Supply with battery backup will be installed at the Main Distribution Frame in the main telecommunications room. The battery bank will be sized to handle the entire telecommunications server/switch load for 5 minutes.

Lighting

- ?? A mixture of different type fluorescent fixtures will be utilized to provide the necessary illumination within the facility. Illumination levels will be based upon the IES Handbook and other Corps of Engineers or USACE guidelines. For energy conservation and efficiency of spare parts, the primary lamps used will be the T8 and compact fluorescent, 32-watt lamps with electronic ballasts.
- ?? Computer classroom areas requiring low brightness and glare control will utilize direct-indirect, pendant-mounted fixtures. Standard classrooms, offices, and corridors will utilize parabolic fixtures. Storage and non-critical areas will utilize surface mount or industrial strip fixtures. Specialty fixtures will be utilized for areas that have architectural, mounting, functional or environmental requirements.
- ?? Most areas in the facility will be controlled with local wall switches. The Auditorium has requirements for various lighting scenes based on the type of audio/video presentation. A programmable system, with scene presets and manual override options will be utilized, with provisions for ties to the audio/video controls system. To handle this requirement, there will be various types of fixtures on different, separately controlled circuits. Dimmable type down lights will be utilized to provide illumination during the A/V presentations.
- ?? Emergency lighting for general egress will be by standard fluorescent fixtures with an internal battery backup ballast. Emergency exit lights will be located above doors as required.

Public Address System

- ?? A PA system will be installed to make announcements throughout the facility. The system will be zoned to isolate certain areas from announcements if required, but will be capable of 'all call'. There will be a master station at the main reception office, with provisions for other master announce stations at key locations in the future. The system will be accessible from the telephone interconnection. **The (AM#4) preferred system by the User is will be a Voice over IP system. There is no requirement for this system to accept or broadcast transmission to other facilities on base.**

(AM#4) Telephone

- ?? **(AM#4) As part of the base bid the Contractor shall furnish and install a complete and operational phone system for the facility. The interior telephone system will consist of unclassified lines. The facility will be pre-wired with Category 5e cables and outlets. All cross connects and terminations will be made by the D/B contractor. Color coding and**

physical separation of telephone and computer networking cabling will be used to distinguish between the types of lines and outlets.

(AM#4) Outside Plant

?? (AM#4) As part of the base bid a 6-way, 4" Ductbank shall be installed to existing manhole 'MH-309' across Milan Street to the southeast of the facility, with three 1-1/2" fiber optic innerducts in one of the conduits. An intermediate manhole(s) may need to be installed to accommodate field routing and pulling requirements of the cabling installed. WSMR Communications Group will provide connection locations and cable specifications for installation. The Base bid shall include installation, conduit and fiber to the new facility. Nylon pull cords will be installed in all conduits not utilized in the initial cabling installation. WSMR personnel will be responsible for the final manhole tie in of the facility into the WSMR base infrastructure.

(AM#4) Inside Plant

(AM#4) AS part of the base bid The facility will be pre-wired with Category 5e cables and outlets. Fiber will be provided as part of the base bid in the Computer Education Center, Computer Labs, Computer Classroom, Auditorium and Library. Communication termination boxes shall be provided as identified in the Communications Plan Sheet E.101 with boxes of sufficient size to accommodate the following;

- a. 1 - Cat 5e (UTP) cable,
- b. 2 - Single Mode Fibers (future except in rooms 113, 120, 125, 128, 130 and 150)
- c. 2 - Multi Mode Fibers (future except in rooms 113, 120, 125, 128, 130 and 150)
- d. 1 future undetermined
- e. 1 – Dedicated Power Outlet

All cross connects and terminations will be made by the D/B contractor. Contractor shall be responsible for design and installation of cable tray layout. Color coding and physical separation of telephone and computer networking cabling will be used to distinguish between the types of lines and outlets.

As part of OPTION 1, the contractor shall furnish and install all other required plant infrastructure to insure an operable system per the requirements.

Data lines should be provided as directed by the Using Agency with unclassified routing. All terminations will be made by the D/B contractor, and each cable must have complete standard throughput testing performed with an output report on each cable provided to the User by the D/B contractor.

A raised floor was requested in the Computer Education Center to facilitate cable distribution. Cable trays and racks will be installed to handle the main cable routing. Raised floor will be grounded for safety and electrical noise reduction.

(AM#4) Computer Network Infrastructure

(AM#4) As part of the Option 1, Contractor shall furnish and install a complete and operational computer network system including but not limited to servers, routers, racks, computers, software, cards and supporting warranty and service. These requirements are described in Option 1.

(AM#4) Audio/Visual

- ?? **(AM#4) As part of the base bid The Contractor shall furnish and provide a complete and operations Audio/Visual System in the proposed Auditorium (Room 120) per the requirements in this document. TV's and VCR in the associated Classrooms and Conference rooms shall be provided by the user (WSMR). However, Contractor shall be responsible for providing utilities (including power and conduit for future connectivity) to all locations. Contractor shall also furnish and install wall mounts for all of the TV equipment identified on the Architectural Floor Plan A.101. Contractor shall furnish and install Cable TV (conduit and wire) to all TV locations.**
- ?? **Per Option 1, Contractor shall furnish and install any/all additional A/V equipment and supporting infrastructure required to make the described system operational.**

Special Considerations

- ?? Electrical equipment and lighting shall be secured to meet seismic zone requirements.
- ?? The facility shall have a buried counterpoise grounding system to improve the grounding integrity of the building systems.
- ?? The facility shall have a complete lightning protection system for protection of the building structure and contents.
- ?? Underground metallic piping systems shall have cathodic protection.

(AM#4) Intrusion Detection System (IDS)

(AM#4) As part of the base bid, the contractor shall provide the control and power infrastructure only for the Intrusion Detection System (IDS) which will be installed by the user (WSMR). This includes but is not limited to control wiring and power to proposed security camera locations and IDS equipment in the proposed Vault (Library area.) Power and control Infrastructure should also be provided for notification and electronic control devices at exterior, office, classroom, lab, Auditorium, and service area doors.

- ?? The exterior doors which access the corridors of the building will be unlocked for use during normal business and class hours or when the lobby security desk is manned. These doors will be locked from the corridor side at all other times.

Mechanical

General Requirements

The primary purpose of the heating, ventilating, and air conditioning system (HVAC) shall be to support the indoor environment requirements of the instructional, library, assembly, and support areas of the Professional Development Center. All of these areas will have variable occupancy and impose variable requirements on the HVAC system. Therefore, the HVAC system must be capable of providing the required indoor conditions from periods of very light occupancy to those times when the facility is operating at its maximum requirement.

- ?? The proposed facility User has indicated that evaporative cooling shall not be used.
- ?? Should there be any type of HVAC equipment failure, there are no requirements to have any type of redundant equipment capacity in the cooling or heating system.
- ?? The facility should be "zoned": common use, orientation of the building envelope, or adjacency of spaces will be the criteria used to make up a "zone". Each zone should have an individual thermostat for temperature control.
- ?? In order to provide acceptable indoor air quality, pre-treated outside air will be supplied to each space in accordance with code requirements.

The library spaces contain books, microfiche, cassettes, videos, and also classified documents. In order to preserve the integrity of those items, humidity and temperature levels are required to be controlled within acceptable levels.

- ?? In order to maintain the integrity of the indoor environment, pressure levels within the building should be maintained at a slightly positive level with respect to the exterior. Bathroom areas will be maintained at a negative pressure with respect to adjacent areas.
- ?? The HVAC system should be operated by an automatic energy management system. This system monitors and controls various equipment functions and allow for energy conservation while maintaining the required interior environment. There will be a central operator computer terminal from which system temperatures, operating schedules, operating status, and historical parameters can be either viewed or modified.

Plumbing

General Features

- ?? The facility will be supplied from the campus wide distribution system at WSMR.
- ?? In the raised floor areas, floor drains with trap primers should be installed.
- ?? The raised floor area should be equipped with a leak detection system.

Fire Protection

Project Description

- ?? The fire suppression systems and the fire detection and alarm systems for this facility will be designed in accordance with the following codes, standards, and guidelines:
 - Military Handbook 1008C for Fire Protection, 1997.
 - NFPA 10: Standard for Portable Fire Extinguishers, 1998.
 - NFPA 13: Standard for Installation of Sprinkler Systems, 1999.
 - NFPA 72: National Fire Alarm Code, 1999.
 - NFPA 2001: Clean Agent Fire Extinguishing Systems, 2000.
 - Uniform Building Code, 1997.
 - Uniform Fire Code, 1997.
- ?? A single automatic wet pipe fire sprinkler system will be provided throughout the building excluding the Library Vault. The Library Vault will be protected by an FM-200 clean agent gaseous suppression system to protect sensitive documents from potential water damage.

- ?? A single, addressable, UL listed fire alarm panel will control monitoring of the fire sprinkler system and releasing of the FM-200 gaseous suppression agent and associated smoke detection zones.
- ?? The fire sprinkler system will be fully integrated with the fire detection and alarm system for occupant notification.

Fire Suppression Systems

- ?? Sprinkler spacing and density requirements will be provided in accordance with NFPA 13 and MIL-HDBK-1008C based upon the following occupancy classifications:
- ?? Common areas are classified as a Light Hazard Occupancy including all offices, corridors, computer rooms, restrooms, meeting areas, auditorium, and lobby.
- ?? Storage areas, mechanical and electrical rooms, janitor rooms, and the library will be protected as an Ordinary Hazard Group 2 occupancy classification.
- ?? Black steel pipe and fittings will be utilized in both the wet pipe and gaseous suppression systems. White, recessed sprinklers will be installed in areas with suspended ceilings and brass upright sprinklers in areas exposed to structure.
- ?? The library vault will be protected with a total flooding FM-200 gaseous suppression system designed per NFPA 2001 for a minimum concentration of 7.0%. The main and reserve cylinders of FM-200 agent may be floor-mounted in the vault or hung from the structure above.
- ?? An evaluation of the water supply to the building must be conducted to determine if the available pressure and flow are adequate to support the fire sprinkler system demand without a fire pump.

Fire Detection and Alarm Systems

- ?? The FM-200 gaseous suppression agent will release into the library vault upon an alarm signal from two smoke detectors. Photoelectric-type smoke detectors will be located throughout the library vault at the ceiling level. Detector spacing will be based on the total anticipated airflow within the space per NFPA 72 and MIL-HDBK-1008C.
- ?? Alarm notification with horns and strobes will be provided throughout the entire building in accordance with NFPA 72, MIL-HDBK-1008C, and ADA. The fire alarm system will monitor the manual pull stations at each exit, sprinkler tamper and flow switches, and duct-mounted smoke detectors on air handling units.
- ?? The fire alarm control panel should transmit system alarm, trouble, supervisory, and water flow signals to the facility fire alarm panel or approved central monitoring station via RF transmission. **(AM#4) Transmit Panel will be provided by user (WSMR)**
- ?? An LCD or graphic annunciator panel may be remotely located in the building for monitoring of the fire alarm system.

Fire Extinguishers

Wall-mounted semi-recessed fire extinguisher cabinets with multi-purpose ABC-type extinguishers will be provided throughout the facility in accordance with NFPA 10 and MIL-HDBK-1008C. Bracket-mounted Carbon Dioxide extinguishers will be located throughout the electrical rooms and areas with sensitive electronic equipment.

FUNCTIONAL REQUIREMENTS

Amendment 0004

PART II - FUNCTIONAL REQUIREMENTS

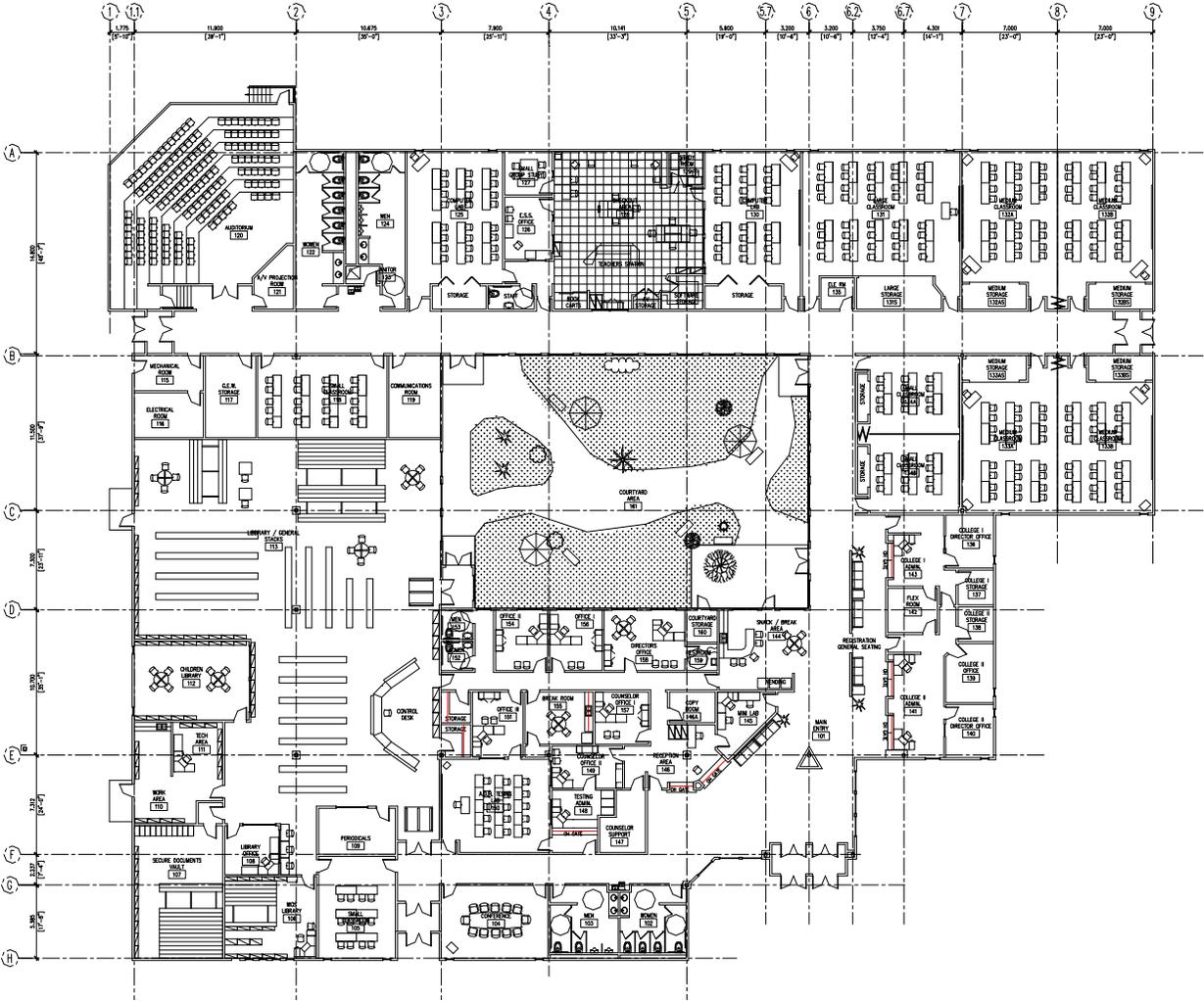
FUNCTIONAL REQUIREMENTS

Amendment 0004

COMMON SPACES

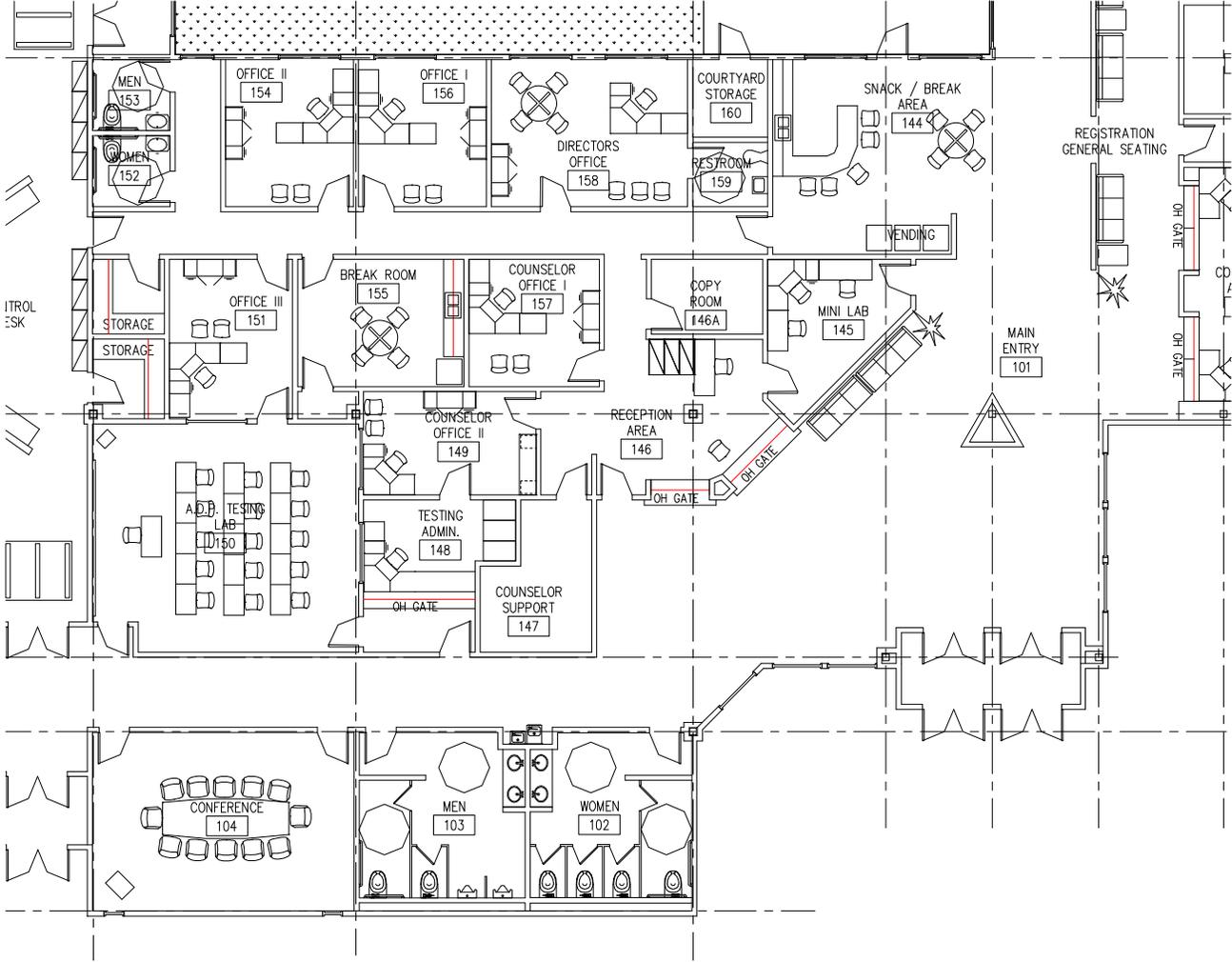
Functional Area Modules

Each functional area within the WSMR Professional Development Center has been individually defined as a module. Each module has information regarding the function of the space, relationships to other areas, critical dimensions (if any), equipment/furnishings, and finishes. Technical considerations for ventilation, mechanical, plumbing, and electrical are also defined.



FUNCTIONAL REQUIREMENTS

Amendment 0004



LOBBY AREA

MAIN ENTRY

(LOBBY)

FUNCTIONAL CHARACTERISTICS

Function

?? Building entry and lobby waiting area to accommodate 16 visitors.

Relationship to Other Areas

?? Adjacent to Administration Reception Area.

?? Near Vending Area, Break Area, and Men's and Women's Restrooms.

?? Convenient access to/from Visitor and Handicapped Parking.

SPECIAL CONSTRUCTION

?? Provide 3 foot by 3 foot by 3 foot triangular information kiosk in center of area for lockable bulletin boards. Provide power and data for future connection and use.

TECHNICAL CONSIDERATIONS

Architectural

User's intent in the Lobby is to have an enhanced design one may find in a high quality and high visibility public building. Extra consideration should be made in the interior design of this area. User has expressed interest in an open higher exposed ceiling with progressive modern low maintenance finishes which can last the life of the building.

?? Floor: Coordinate with interiors scheme, (tile, carpet, stained concrete), walk off mat at entry.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: Ceiling design should provide visual interest. User suggest high ceilings, exposed structure and/or 2 by 2 open architectural grid.

?? Walls: Install with batt insulation to deck for sound control.

?? Wall Finish: Painted dry wall, wall covering, and/or high architectural finish per interior design.

?? Window: Standard storefront glass associated with entry doors. Blast characteristics per COE guidelines (See Volume 2).

?? Doors: Main entry doors, double 3-foot by 9-foot storefront with architectural finish.

?? H/C Hardware: Electronic handicapped operator at vestibule doors.

?? Furniture: Provided by User.

Mechanical

?? Ductwork possibly exposed as provided by architectural design.

?? Temperature Requirements

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: incandescent down lights, highlight with architectural low voltage tracks and pendants. Emergency and exit lights per NEC and NFPA.

?? Special receptacles in kiosk for lighting and future power needs.

FUNCTIONAL REQUIREMENTS

Amendment 0004

Communications

- ?? Rough data connection location to kiosk per “special construction” above. **(AM#4) (Per Communications Plan (Sheet E.101))**
- ?? Telephone outlet for public pay phone.

Fire Protection

- ?? Locate main fire alarm panel in this area.
- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

MENS/WOMENS RESTROOM

(LOBBY)

FUNCTIONAL CHARACTERISTICS

Function

- ?? Restroom facilities to serve visitors and staff.
- ?? Men's: 2 toilets/2 urinals/2 sinks. (Verify with local code).
- ?? Women's: 4 toilets/2 sinks. (Verify with local code).
- ?? ADA compliant.

Relationship to Other Areas

- ?? Adjacent to the Lobby and Library.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Ceramic tile.
- ?? Ceiling: Gypsum board, painted.
- ?? Walls: Ceramic tile to 6 feet above finished floor.
- ?? Countertop and Splash: Plastic laminate.
- ?? Sink Skirt: Plastic laminate.
- ?? Mirrors: Frameless mirrors with beveled edges at perimeter.
- ?? Toilet Partitions: Plastic laminate toilet compartments. Ceiling mounted.
- ?? Access Panel: Stainless steel access panel located at plumbing controls.
- ?? Sinks: Counter mounted sinks with inset soap dispensers.
- ?? Doors: 3 feet by 8 feet, painted hollow metal with welded frames.
- ?? Signage: Per local code, ADA
- ?? Accessories: Grab bar, soap dispenser, paper towel dispenser and waste receptacle, dual roll toilet paper dispensers, diaper changing stations, feminine products dispenser.
- ?? ADA compliant water fountains outside restroom **(AM#4) in adjacent hallway.**

Mechanical

- ?? Temperature Requirements: Controlled from adjacent spaces.
- ?? Humidity Requirements: None.
- ?? Exhaust or Ventilation Requirements:
 - Per ASHRAE 62.
 - Exhaust 2 cubic feet per minute per square foot.
- ?? Zone Thermostat Type: None.
- ?? Plumbing:
 - Floor drain(s).
 - Fixtures per TM 5-810-5 (Ref. Chapter 00840 Volume 2).

Electrical

- ?? Lighting: Recess cove lighting with continuous fluorescent strip above lavatories and above water closets. Emergency and exit lights per NEC and NFPA.
- ?? Provide emergency lighting per NEC.
- ?? Power: Provide GFCI outlet at sink.

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

SNACK/BREAK AREA

(LOBBY)

FUNCTIONAL CHARACTERISTICS

Function

- ?? Amenities area for students, visitors and staff.
- ?? Serving counter for use during special events.
- ?? General seating for 12 at bar and at tables.

Relationship to Other Areas

- ?? Adjacent/access to courtyard.
- ?? Accessible from Lobby.

SPECIAL CONSTRUCTION

- ?? Provide counter "bar" per floor plan for preparation and serving by clubs or WSMR staff during special events. Counter shall have durable surface with lockable cabinets below. Provide sink, garbage disposal, microwave oven, and required utilities and location for full size refrigerator and under counter icemaker.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Coordinate with interiors scheme, (tile, stained concrete). Must be low maintenance surface.
- ?? Countertop: Plastic laminate.
- ?? Cabinetry: Laminate faced inside and out with adjustable shelves and locking hardware.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: Ceiling design should provide visual interest. Suggest high ceilings, exposed structure and/or 2 by 2 open Architectural grid.
- ?? Walls: Install to deck.
- ?? Wall Finish: Painted dry wall, wall covering, and/or architectural finish per interior design.
- ?? Window: Per COE force protection guidelines.
- ?? Doors: Glass storefront to Patio in courtyard.
- ?? Furniture: Provided by User.

Mechanical/Plumbing

- ?? Provide two-compartment sink with disposal.
- ?? Provide water to owner supplied refrigerator location.
- ?? Temperature Requirements: Served from adjacent spaces.
- ?? Humidity Requirements: None.
- ?? Exhaust or Ventilation Requirements:
 - Per ASHRAE 62.
 - Exhaust 2 cubic feet per minute per square foot.
- ?? Zone Thermostat Type: None.
- ?? Plumbing:
 - Floor drain(s).
 - Two compartment sink, ADA, with disposal.
 - Water supply to refrigerator and under counter icemaker.

FUNCTIONAL REQUIREMENTS

Amendment 0004

Electrical

- ?? Lighting: Fluorescent or incandescent down lights, highlight with architectural low voltage tracks and pendants. Emergency and exit lights per NEC and NFPA.
- ?? Service outlets for coffee pot(s), microwave and owner supplied popcorn machine.

Communications

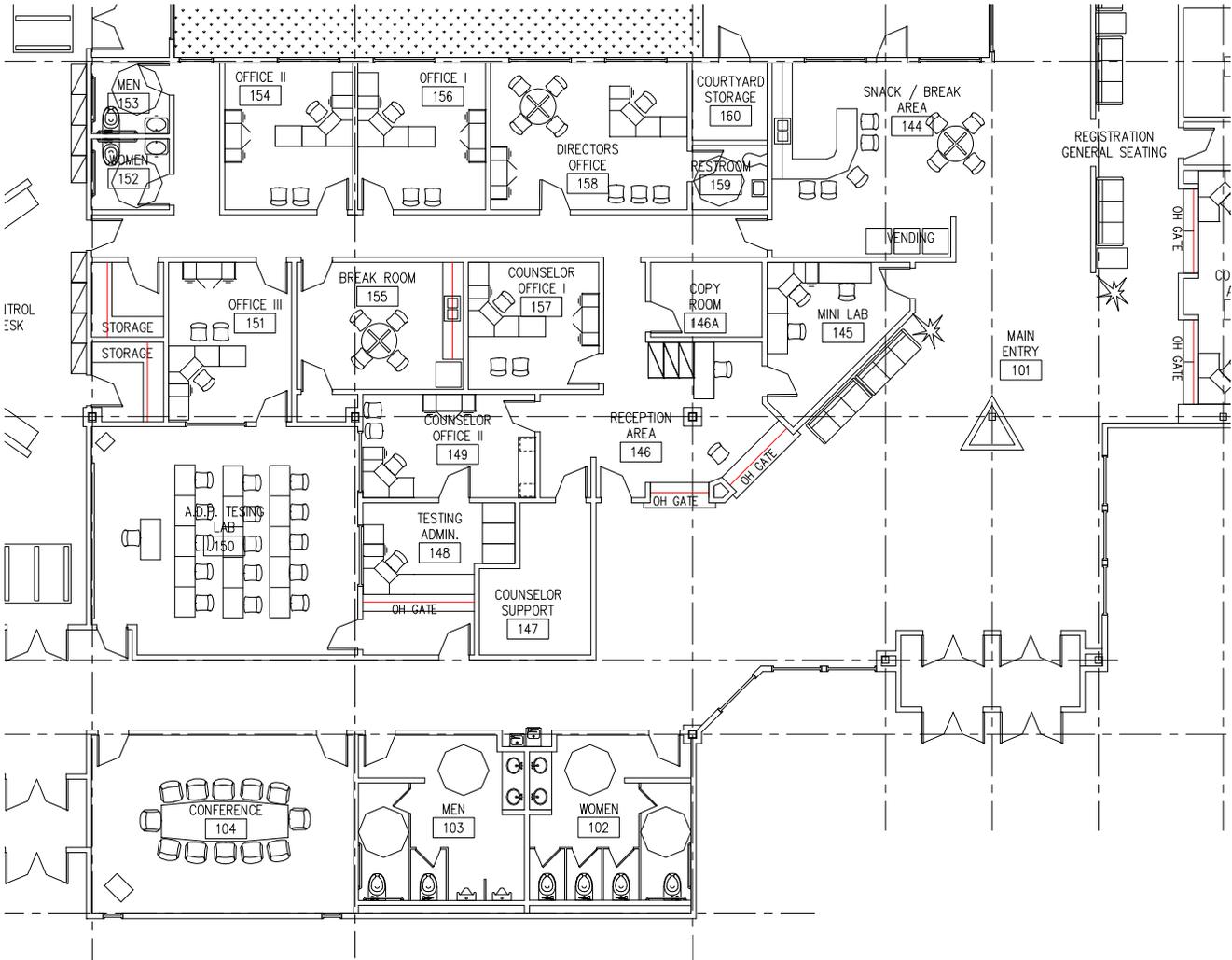
- ?? Data location **(AM#4) per Communications Plan (Sheet E.101).**

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004



ADMINISTRATION

CONFERENCE ROOM

(ADMINISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? Dedicated area for private meetings in large groups (12 to 15 people).

Relationship to Other Areas

- ?? Adjacent/Accessible from Lobby and offices.
- ?? Near Administration Offices.
- ?? View to exterior.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Static dissipating carpet.
- ?? Base: Rubber Base, 4-inch cove.
- ?? Ceiling: 2 by 2 acoustical tile.
- ?? Walls: Painted gypboard, wall covering.
- ?? Windows: Per COE Force Protection Guidelines.
- ?? Furnishing: Conference table and chairs to accommodate 12 to 15 people, by User.
- ?? Equipment/Specialties: Pull down projection screen, 4-foot tall, wall-to-wall marker board with wood frame trim (short ends of room), utilities for TV, ceiling mounted projector (by User), and data transmissions from offsite. **(AM#4) Provide TV mount at location shown on plan for Hitachi (Model No. 36CX39B).**

Mechanical

- ?? Temperature Requirements:
 - Heating: Per Volume II criteria.
 - Cooling: Per Volume II criteria.
- ?? Humidity Requirements: Per TI 810-10 (Ref Chapter 00840 Vol. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- ?? Plumbing: None.

Electrical

- ?? Lighting: Recessed incandescent cans on dimmers, one set controlled above the table, one set controlled along room perimeter.
- ?? Power: Grounded electrical convenience outlets per local code. Minimum of one floor outlet for extension to conference table extension and phone/laptop.
- ?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**
- ?? Speaker with volume control for PA/Intercom System.
- ?? CATV outlet for wall mounted TV.
- ?? Provide additional conduit from ceiling mounted projector location (future) to floor box below conference table.

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

MINI-LAB

(ADMINISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? Dedicated area for computer use during standard work day by students.

Relationship to Other Areas

?? Adjacent/Accessible from lobby and administration reception desk.

?? Near Offices within view of reception area.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Static dissipating carpet.

?? Base: Rubber Base, 4-inch cove.

?? **(AM#4) Door: Glass door between mini-lab and reception counter.**

?? Ceiling: 2 by 2 acoustical tile.

?? Walls: Painted gypboard.

?? Furnishing: Minimum three computer stations (by User) and printer.

?? Equipment/Specialties: 4-foot tall by 8-foot long white magnetic marker board with wood frame (by GC).

Mechanical

?? Temperature Requirements: Served from adjacent spaces.

?? Humidity Requirements: None.

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: None.

?? Plumbing: None.

Electrical

?? Lighting: Provide light with indirect fluorescent fixtures.

?? Power: Grounded electrical convenience outlets per local code in addition too dedicated isolated ground outlets for computer stations (3 minimum). **(AM#4) 1-220V-30A service for user equipment.**

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

DIRECTOR'S OFFICE

(ADMINISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? Dedicated office for Facility Director and small meetings.

Relationship to Other Areas

?? Adjacent to Offices. Adjacent to private restroom.

?? Near Administration reception desk, view of courtyard.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Static dissipating carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Gypsum board with sound batt insulation painted and/or wall covering. Extend walls underside of metal deck acoustical or batt insulation on top of ceiling for sound control.

?? Window: Operable window per COE Force Protection Guidelines.

?? Furnishings: By User.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: 2-foot by 4-foot recessed parabolic fluorescent fixtures.

?? Power: Grounded electrical convenience outlets per local code.

?? Data (AM#4)/Phone: Per Communications Plan (Sheet E.101).

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

PRIVATE RESTROOM

(ADMINISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

- ?? Restroom facility for facility director.
- ?? Unisex: 1 toilet/1 sink. ADA compliant.

Relationship to Other Areas

- ?? Adjacent to director's office.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Ceramic tile.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.
- ?? Walls: Walls with batt sound insulation to deck above.
- ?? Mirrors: Frameless mirrors with beveled edges at perimeter.
- ?? Sinks: Wall mounted sink.
- ?? Door: 3-foot by 8-foot door with privacy lock.
- ?? Signage: Per local code.
- ?? Accessories: Grab bar, paper towel dispenser soap dispenser (wall mounted) and waste receptacle, dual roll toilet paper dispenser.

Mechanical/Plumbing

- ?? Temperature Requirements: Served from adjacent spaces.
- ?? Humidity Requirements: None.
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: None.
- ?? Plumbing.
 - Floor drain(s).
 - Fixture per TM 5-810-5.
 - Exhaust Vent
 - Tank mounted toilet.

Electrical

- ?? Lighting: 2-foot by 4-foot fluorescent recessed fixture.
- ?? Power: Provide GFCI outlet at sink.

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

OFFICE(S)

(ADMINISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? Private offices for general staff.

Relationship to Other Areas

?? Adjacent/Accessible from administration area.

?? Near facility director's office.

?? View of courtyard and/or ADP Testing Lab (One-way reflective glass).

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Static dissipating carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Coordinate with interiors scheme, painted gypboard with batt sound insulation (to underside of structure) and/or wall covering, four-foot wall-to-wall marker board with wood trim (one wall).

?? Windows: Operable window **(AM#4) at office on courtyard** per COE Force Protection Guidelines. **(AM#4) One way glass in office adjacent to testing lab (provide mini-blinds).**

?? Furnishing: By User.

Mechanical

?? Temperature Requirements: Served from adjacent spaces.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: None.

?? Plumbing: None.

Electrical

?? Lighting: 2-foot by 4-foot recessed parabolic fluorescent fixtures.

?? Power: Grounded convenience outlets as required per code. Isolated ground power for dedicated computer outlet.

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

COPY ROOM

(ADMINISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? Designated room for copy machine and related storage.

Relationship to Other Areas

?? Adjacent to reception counter.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Resilient tile.
- ?? Base: 4-inch vinyl, black.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical tile.
- ?? Walls: Painted gypboard.
- ?? Doors/Frame: 3 foot by 8 foot door with lock.

Mechanical

- ?? Temperature Requirements: Served from adjacent spaces.
- ?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: None.
- ?? Plumbing: None.

Electrical

- ?? Lighting: 2-foot by 4-foot recessed parabolic fluorescent fixture.
- ?? Power: Grounded convenience outlets as required per local code **(AM#4) and (2) dedicated outlets for copy machines.**
- ?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

RECEPTION AREA

(ADMINISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? Office administration counter and greeting (help desk) window.

Relationship to Other Areas

?? Accessible from administration area.

?? Adjacent to lobby, counselor's offices, and Educational Technical Director.

?? Clear view of entrance doors and mini-lab.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Static dissipating carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical tile.

?? Walls: Painted gypboard, wall covering.

?? Window Counter: Open counter (ADA compliant) to lobby area with pull down security gate.

?? Furniture: By User.

?? Special Construction: Provide overhead door (security grill) above reception counter to secure reception area during off hours (between receptionist and lobby).

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (Ref Chapter 00840 Vol. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: 2-foot by 4-foot recessed parabolic fluorescent fixture and recessed can fixtures over counter.

?? Dedicated isolated ground outlets for computer station locations. Data outlets on all wall **(AM#4) per Communications Plan (Sheet E.101)**.

?? **(AM#4) As required for** security camera monitoring station.

?? Intercom: Overall intercom **(AM#4) control** system located here. Speaker and handset at reception counter.

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

COUNSELOR STORAGE ROOM

(ADMINISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? Dedicated area for counselor computer and resource library, network printer, fax, and storage.

Relationship to Other Areas

?? Adjacent to reception area.

?? Accessible from counselor offices.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Static dissipating carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted gypboard.

?? Furnishing: By User (two workstations).

Mechanical

?? Temperature Requirements: Served from adjacent spaces.

?? Humidity requirements: None.

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: None.

?? Plumbing: None.

Electrical

?? Lighting: 2-foot by 4-foot recessed parabolic fluorescent troffers.

?? Power: Isolated ground power receptacles for copy **(AM#4) machine** and printer equipment.

?? Grounded electrical convenience outlets per local code.

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101)**.

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

COUNSELOR OFFICE(S)

(Education Technical Officer)

(ADMINISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? Dedicated office for counselor and/or educational technical officer.

Relationship to Other Areas

?? Adjacent to reception area. **(AM#4) (View of Reception)**

?? Direct view of testing laboratory (through one-way reflective glass) **(AM#4) (one office only)**.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Static dissipating carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted gypboard and/or wallpaper with sound batt insulation (full height to underside of structure).

?? Furnishing: By User (one workstation).

?? **(AM#4) Special Construction: Interior window to Testing Lab with 1-way reflective glass and blinds.**

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.
- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: 2-foot by 2-foot recessed parabolic fluorescent troffers.

?? Power: Isolated ground power for dedicated computer outlet. Grounded electrical convenience outlets per local code.

?? Data **(AM#4)/Phone Per Communications Plan (Sheet E.101)**.

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

BREAK ROOM

(ADMINISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? Break/lunch room for Administrative and Library staff.

Relationship to Other Areas

?? Near General administration offices and Library counter.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Resilient tile.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical.
- ?? Walls: To deck above with sound batt insulation. Painted gyp.
- ?? Built-Ins: built-in laminate countertops and cabinets.
- ?? Equipment: **(AM#4) Provide** full refrigerator with icemaker, sink with disposal.

Mechanical/Plumbing

- ?? Temperature Requirements: Served from adjacent spaces.
- ?? Humidity Requirements: None.
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: None.
- ?? Plumbing: Provide plumbing, fixtures and equipment for sink and water to ice maker.

Electrical

- ?? Lighting: Recessed parabolic fluorescent troffers.
- ?? Power: Grounded electrical convenience outlets per code. Dedicated receptacles for refrigerator, coffee maker, and microwave. GFI outlet at wet locations per NEC.
- ?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101)**.

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

MENS/WOMENS RESTROOM

(ADMINISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

- ?? Restroom facility to serve administration area.
- ?? ADA Compliant: 1 toilet/1 sink per facility.

Relationship to Other Areas

- ?? Near break room.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Ceramic tile.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical with sound batt insulation.
- ?? Walls: Gypsum wall board assembly with ceramic tile to 4 feet above finished floor - walls to deck with sound batt insulation.
- ?? Mirrors: frameless mirrors with beveled edges at perimeter.
- ?? Sinks: Wall mounted – ADA compliant.
- ?? Signage: Per local code.
- ?? Accessories: Grab bar, paper towel dispenser wall mounted soap dispenser and waste receptacle, dual roll toilet paper dispenser.

Mechanical/Plumbing

- ?? Temperature Requirements: Served from adjacent spaces.
- ?? Humidity Requirements: None.
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62 -Exhaust 2 cubic feet per minute per square foot.
- ?? Zone Thermostat Type: None.
- ?? Plumbing: Floor drain(s)/Fixtures per TM 5-810-5.

Electrical

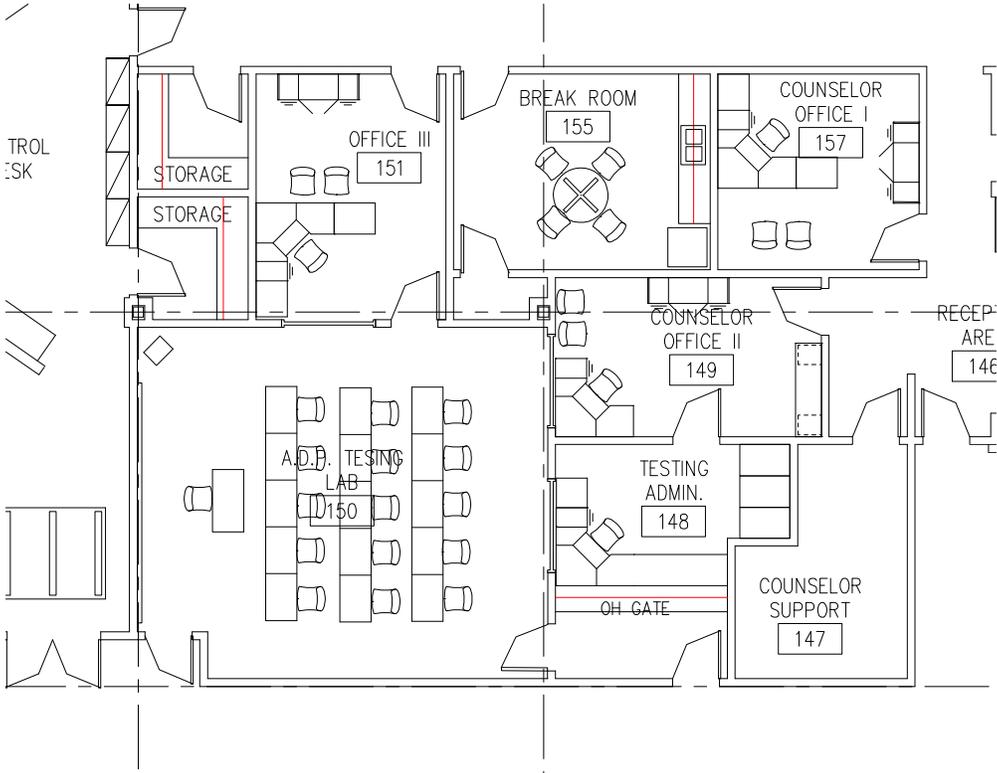
- ?? Lighting: Recessed parabolic fluorescent troffers.
- ?? Power: Provide GFCI outlet at sink. Convenience outlets per local code.

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004



TESTING

TESTING ADMINISTRATION OFFICE

(TESTING)

FUNCTIONAL CHARACTERISTICS

Function

- ?? Dedicated office for testing administration and support.
- ?? Adjacent to with direct view of Testing Lab/Classroom (view through one-way reflective glass).

Relationship to Other Areas

- ?? Adjacent to with direct view of Testing Lab/Classroom.
- ?? Near to general administration areas.
- ?? Direct access from lobby area.
- ?? Dedicated area for three test material storage safes.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Static dissipating carpet.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical with sound batt insulation above.
- ?? Walls: Painted sheetrock. Wall to deck with sound batt insulation.
- ?? Furnishing: Built administration counter with drop down gate. **(AM#4) Three** safes for testing material **(AM#4) by user**.
- ?? Special Construction: Provide lockable overhead door at built-in test administration counter (ADA compliant). **(AM#4) Interior window to testing lab (one-way) glass.**

Mechanical

- ?? Temperature Requirements: Served from adjacent spaces.
- ?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: None.
- ?? Plumbing: None.

Electrical

- ?? Lighting: Recessed parabolic fluorescent troffers.
- ?? Power: Isolated ground power for dedicated computer outlets.
- ?? **Data/Phone:** Data locations for workstations **(AM#4) per Communications Plan (Sheet E.101).**
(AM#4).

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

ADP TESTING LAB

(TESTING)

FUNCTIONAL CHARACTERISTICS

Function

?? Secure computer testing area and general computer classroom.

Relationship to Other Areas

?? Adjacent to testing administration office.

?? Direct access from corridor.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Resilient tile.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling with sound batt insulation.

?? Walls: Painted sheetrock. Walls to deck with sound batt insulation.

?? Furnishing: Computer tables/stations by User.

?? Equipment: Recessed Overhead retractable screen, 4-foot tall wall-to-wall magnetic dry erase boards.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: Provide bi-level lighting with indirect fluorescents.

?? Power: Isolated ground power for dedicated computer outlets.

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

?? Projector: **(AM#4) Provide power and data infrastructure to support projector by Owner.**

?? TV: **(AM#4) Provide mount for TV and install** associated power and CATV outlets adjacent on wall.

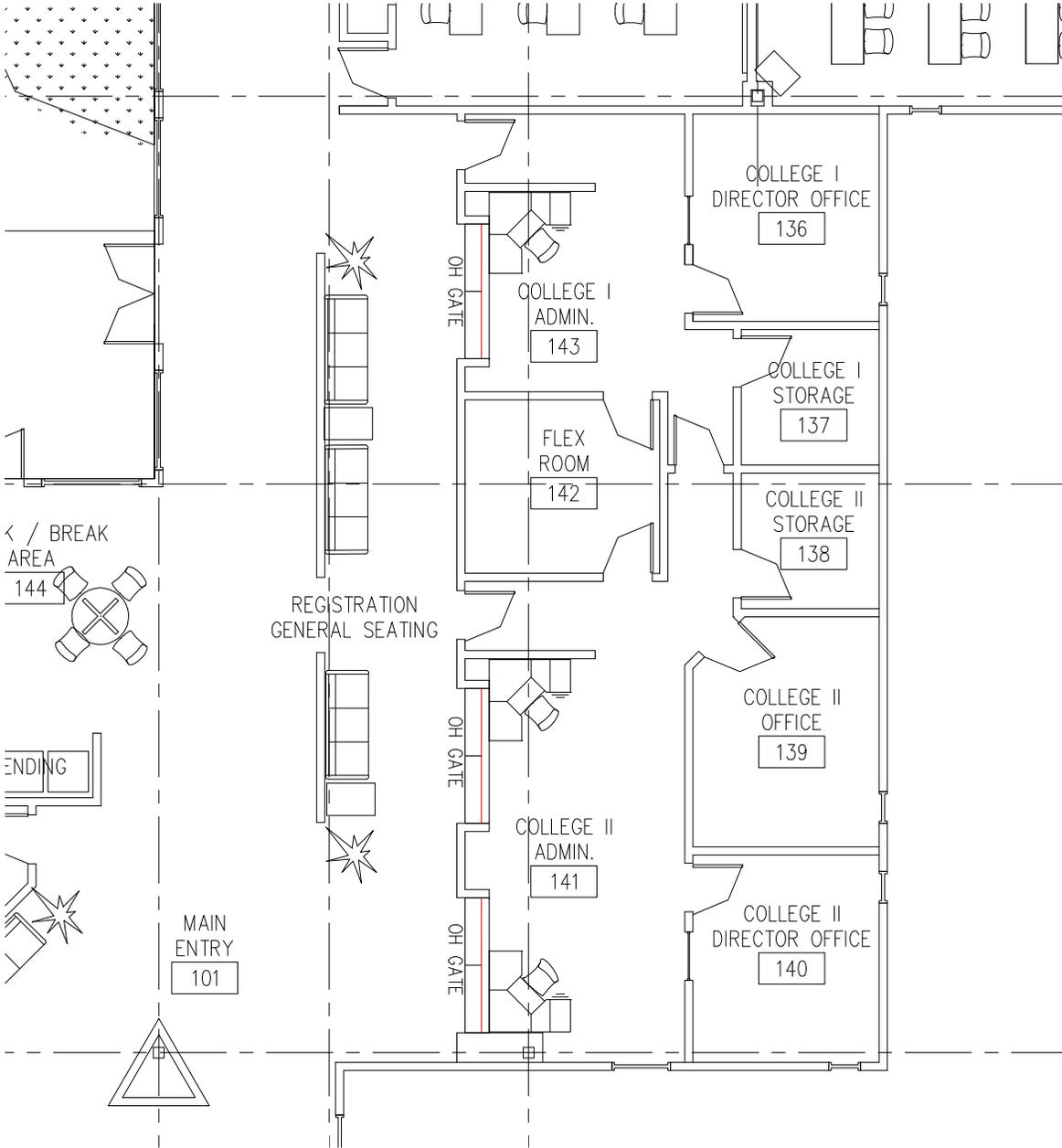
Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004



REGISTRATION AREAS

FUNCTIONAL REQUIREMENTS

Amendment 0004

REGISTRATION GENERAL SEATING

(REGISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? Registration waiting and paperwork completion area with general seating for 16 people.

Relationship to Other Areas

?? Adjacent to Registration windows area.

?? Near main lobby – out of main hall circulation.

SPECIAL CONSTRUCTION

?? Provide 20 linear feet of 42-inch high counter area with laminate top.

?? Provide ADA compliant countertop at all transaction windows.

TECHNICAL CONSIDERATIONS

Architectural

Architecture and finished should be consistent to adjacent Main Lobby area.

?? Floor: Tile and/or carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: Ceiling design should provide visual interest. User suggests high ceilings and exposed structure.

?? Walls: Install to deck.

?? Wall Finish: Painted dry wall and/or wall covering.

?? Furniture: Provided by User (General seating).

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: Fluorescent and/or incandescent down lights, highlight with architectural low voltage tracks and pendants. Emergency and exit lights per NEC and NFPA.

?? Grounded electrical convenience outlets per local code.

Communications (AM#4)/Phone

?? (AM#4) Per Communications Plan (Sheet E.101).

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

COLLEGE I – ADMINISTRATION AREA

(REGISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

- ?? Work/ transaction counter area for College I Registrar.
- ?? Transaction counter for student enrollment.

Relationship to Other Areas

- ?? Adjacent to registration general seating and College I offices.
- ?? Adjacent to College II registration area.
- ?? View from director's office to administration counter.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Static dissipating carpet.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.
- ?? Walls: Painted sheetrock, wallpaper.
- ?? Furnishing: Workstation by User.
- ?? Special Construction: Provide overhead coiling security door at transaction (enrollment) counter.
- ?? ADA height transaction counter.

Mechanical

- ?? Temperature Requirements:
 - Heating: Per Volume II criteria.
 - Cooling: Per Volume II criteria.
- ?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- ?? Plumbing: None.

Electrical

- ?? Lighting: Recessed parabolic fluorescent troffers. Provide can mounted task lighting at counters.
- ?? Power: Isolated ground power for dedicated computer outlets. Grounded electrical convenience outlets per local code.
- ?? Data (AM#4)/Phone: Per Communications Plan (Sheet E.101).

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

COLLEGE I – DIRECTORS OFFICE

(REGISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? General office for College I Director.

Relationship to Other Areas

?? Adjacent to College I registration administration area.

?? View through window to registration counter.

?? Exterior window.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Static dissipating carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical with sound batt.

?? Walls: Gypsum wall board with batt insulation to underside of structure. Paint finish and/or wallpaper.

?? Furnishing: Workstation by User.

?? **(AM#4) Special Construction: Interior window with view of registration counter.**

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: Recessed parabolic fluorescent troffers.

?? Power: Grounded electrical convenience outlets per local code.

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

COLLEGE II – ADMINISTRATION AREA

(REGISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? Work area and enrollment transaction counter for College II registrar.

Relationship to Other Areas

?? Adjacent to registration general seating and College II offices.

?? Near to College I Registration area.

?? Transaction counter in view of director's office.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Gypsum wall board painted and/or wallpaper.

?? Door: 3 feet by 8 feet with card reader.

?? Furnishing: Workstation by User.

?? Special Construction: Provide overhead coiling security door at registration desk.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: Recessed parabolic fluorescent troffers. Provide can mounted task lighting at counter.

?? Power: Isolated ground power for dedicated computer outlets. Grounded electrical convenience outlets per local code.

?? Data (AM#4)/Phone: Per Communications Plan (Sheet E.101).

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

COLLEGE II – DIRECTORS OFFICE

(REGISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? General office for College II Director.

Relationship to Other Areas

?? Adjacent to College II registration administration area.
?? View through window to registration counter.
?? Exterior window.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Static dissipating carpet.
?? Base: Rubber base, 4-inch cove.
?? Ceiling: 2-foot by 2-foot suspended acoustical with sound batt.
?? Walls: Gypsum wall board with insulation to underside of structure. Painted and/or wallpaper.
?? Furnishing: Workstation by User.
?? **(AM#4) Special Construction: Interior Window to Admin. counter.**

Mechanical

?? Temperature Requirements:
- Heating: Per Volume II criteria.
- Cooling: Per Volume II criteria.
?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
?? Plumbing: None.

Electrical

?? Lighting: Recessed parabolic fluorescent troffers.
?? Power: Grounded electrical convenience outlets per local code.
?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

COLLEGE II – GENERAL OFFICE

(REGISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? College I general office area.

Relationship to Other Areas

?? Adjacent/Accessible from College II registration administration area.

?? View of transaction counter.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Static dissipating Carpet.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.
- ?? Walls: Painted sheetrock and/or wallpaper.
- ?? Furnishing: One workstation.

Mechanical

- ?? Temperature Requirements:
 - Heating: Per Volume II criteria.
 - Cooling: Per Volume II criteria.
- ?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- ?? Plumbing: None.

Electrical

- ?? Lighting: Recessed parabolic fluorescent troffers.
- ?? Power: Grounded electrical convenience outlets per local code.
- ?? Data (AM#4)/Phone: Per Communications Plan (Sheet E.101).

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

COLLEGE I & COLLEGE II – STORAGE AREA

(REGISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? General Storage Room.

Relationship to Other Areas

?? Near to College enrollment areas.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Resilient tile.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.
- ?? Walls: Painted sheetrock.
- ?? Furnishing: By User.

Mechanical

- ?? Temperature Requirements:
 - Heating: Per Volume II criteria.
 - Cooling: Per Volume II criteria.
- ?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- ?? Plumbing: None.

Electrical

- ?? Lighting: Recessed parabolic fluorescent troffers.
- ?? Power: Grounded convenience receptacle per local code.
- ?? Data (AM#4)/Phone: Per Communications Plan (Sheet E.101).

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FLEX ROOM

(REGISTRATION)

FUNCTIONAL CHARACTERISTICS

Function

?? Storage/Office room for undetermined use. Flexible to be dedicated to either registration College area.

Relationship to Other Areas

?? Adjacent to College I and College II areas (requires direct access from both).

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Static dissipating carpet.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.
- ?? Walls: Painted sheetrock.

Mechanical

- ?? Temperature Requirements:
 - Heating: Per Volume II criteria.
 - Cooling: Per Volume II criteria.
- ?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- ?? Plumbing: None.

Electrical

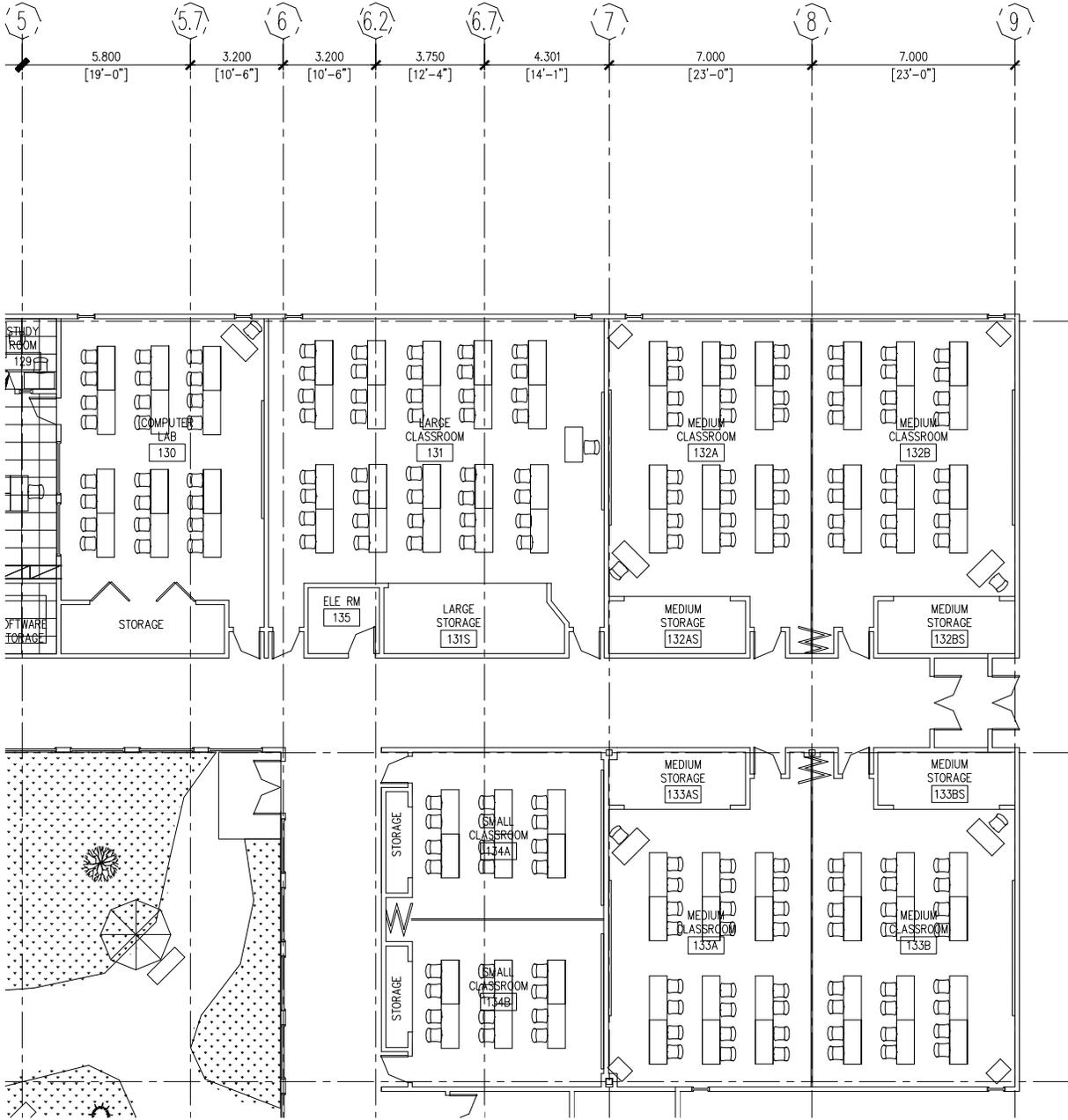
- ?? Lighting: Recessed parabolic fluorescent troffers.
- ?? Power: Isolated ground power for dedicated computer outlet. Grounded electrical convenience outlets for local code.
- ?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004



CLASSROOM AREA

FUNCTIONAL REQUIREMENTS

Amendment 0004

SMALL CLASSROOM

(CLASSROOMS AND LIBRARY)

FUNCTIONAL CHARACTERISTICS

Function

?? Classroom for 15 students.

Relationship to Other Areas

?? Adjacent/Accessible from main corridor.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Resilient flooring.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.
- ?? Walls: Painted sheetrock with sound batt insulation, extend above ceiling and insulate to control acoustics between classrooms.
- ?? Door: Two required – 3 feet by 8 feet with lock.
- ?? Furnishing: By User.
- ?? Provide 6-foot by 8-foot overhead recessed projection screen.
- ?? Special Equipment: Provide 4-foot tall wall-to-wall magnetic dry erase board at front of class, provide acoustical room wall divider (where shown on plan).
- ?? **(AM#4) Provide mount for TV (Hitachi 36CX39B) where indicated on plans.**

Mechanical

- ?? Temperature Requirements:
 - Heating: Per Volume II criteria.
 - Cooling: Per Volume II criteria.
- ?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- ?? Plumbing: None.

Electrical

- ?? Lighting: Indirect fluorescents.
- ?? Power: Provide isolated ground power for dedicated computer outlets. Provide electrical convenience outlets per local code power to future overhead projector. **(AM#4) Power to wall at front of room for future wall clock.**
- ?? Projector: (future) Ceiling mounted with power/data outlets adjacent. Conduit from projector to instructor's station.
- ?? CATV: Outlet with associated power outlet wall mounted near TV **(AM#4) mount.**
- ?? Data/Phone: Conduit system to floor mounted power/data outlets. Locate outlet boxes **(AM#4) per Communications Plan (Sheet E.101) provided.**
- ?? Intercom: Speaker with adjustable volume control.

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C. Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

MEDIUM CLASSROOM

(CLASSROOMS)

FUNCTIONAL CHARACTERISTICS

Function

?? Classroom for 30 students.

Relationship to Other Areas

?? Adjacent/Accessible from main corridor.

?? Adjacent to classroom storage area.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Resilient flooring.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock with sound batt insulation. Extend walls above ceiling and insulate to control acoustics between classrooms.

?? Door: Two required – 3 feet by 8 feet with lock.

?? Furnishing: By User.

?? Provide 6-foot by 8-foot overhead recessed projection screen.

?? Special Equipment: Provide 4-foot tall wall-to-wall magnetic dry erase board at front of class, provide acoustical room wall divider (where shown on plan).

?? **(AM#4) Provide mount for TV (Model No. Hitachi 36CX39B) at location shown on floor plan.**

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.
- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: Indirect fluorescents.

?? Power: Provide power and data to each table shown via floor boxes. Provide isolated ground power for dedicated computer outlets. Provide electrical convenience outlets per local code. **(AM#4) Power for clock at front of room.**

?? Projector: (future) **(AM#4) Equipment by Owner, contractor to install** power/data outlets adjacent. Conduit from projector to instructor's station.

?? CATV: Outlet with associated power outlet wall mounted near **(AM#4) TV mount.**

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

?? Intercom: Speaker with adjustable volume control.

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

LARGE CLASSROOM

(CLASSROOMS)

FUNCTIONAL CHARACTERISTICS

Function

?? Classroom for 50 students at tables.

Relationship to Other Areas

?? Adjacent/Accessible from main corridor.

?? Near large classroom storage.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Resilient flooring.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock with sound batt insulation. Extend above ceiling to underside of structure.

?? Furnishing: By User.

?? Provide 6-foot by 8-foot overhead recessed projection screen.

?? Special Equipment: Provide 4-foot tall wall-to-wall magnetic dry erase board on two walls.

?? **(AM#4) Provide mount for TV (Model No. Hitachi 36CX39B) at location shown on floor plan.**

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.
- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: Provide 30 footcandles with indirect fluorescents.

?? Power: Provide isolated ground power for dedicated computer outlets. Provide electrical convenience outlets per local code. **(AM#4) Power to front wall for wall clock.**

?? Projector: **(AM#4) Provide projector by Owner.** Power/data outlets adjacent. Conduit from projector to instructor's station.

?? CATV: Outlet with associated power outlet wall mounted near TV **(AM#4) mount.**

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

?? Intercom: Speaker with adjustable volume control.

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

SMALL CLASSROOM STORAGE

(CLASSROOMS)

FUNCTIONAL CHARACTERISTICS

Function

?? Secure area for classroom materials.

Relationship to Other Areas

?? Adjacent/Accessible from classroom only.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Resilient flooring.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical.
- ?? Walls: Painted sheetrock/sound batt insulation, extended to underside of structure.
- ?? Door: Bi-fold or sliding doors with secure lock.
- ?? Furnishing: Shelves by User.

Mechanical

- ?? Temperature Requirements:
 - Heating: Per Volume II criteria.
 - Cooling: Per Volume II criteria.
- ?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- ?? Plumbing: None.

Electrical

- ?? Lighting: Recessed parabolic fluorescent troffers.
- ?? Power: Grounded convenience electrical outlets per local code.
- ?? Data/Phone: Provide two data/phone outlets **(AM#4) per Communications Plan (Sheet E.101).**
- ?? Fire Protection
- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

MEDIUM CLASSROOM STORAGE

(CLASSROOMS)

FUNCTIONAL CHARACTERISTICS

Function

?? Secure area for classroom and display materials.

Relationship to Other Areas

?? Adjacent/Accessible from classroom only.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Resilient flooring.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.
- ?? Walls: Painted sheetrock with sound batt insulation, extended to underside of structure.
- ?? Door: Overhead door/gate with lock.
- ?? Furnishing: By User.

Mechanical

- ?? Temperature Requirements:
 - Heating: Per Volume II criteria.
 - Cooling: Per Volume II criteria.
- ?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- ?? Plumbing: None.

Electrical

- ?? Lighting: Recessed parabolic fluorescent troffers.
- ?? Power: Grounded convenience electrical outlets per local code. Power outlet for hearing impaired wireless microphone/earpiece amplifier unit.
- ?? Data/Phone: Provide data **(AM#4) per Communications Plan (Sheet E.101)**.

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

LARGE CLASSROOM STORAGE

(CLASSROOMS)

FUNCTIONAL CHARACTERISTICS

Function

?? Secure area for classroom material and large display materials.

Relationship to Other Areas

?? Adjacent/Accessible from classroom.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Resilient flooring.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.
- ?? Walls: Painted sheetrock with sound batt insulation, extended to underside of structure.
- ?? Door: Overhead door/gate with lock.
- ?? Furnishing: By User.

Mechanical

- ?? Temperature Requirements:
 - Heating: Per Volume II criteria.
 - Cooling: Per Volume II criteria.
- ?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- ?? Plumbing: None.

Electrical

- ?? Lighting: Recessed parabolic fluorescent troffers.
- ?? Power: Grounded convenience electrical outlets per local code. Power outlet for hearing impaired wireless microphone/earpiece amplifier unit.
- ?? Data/Phone: Provide data connections **(AM#4) per Communications Plan (Sheet E.101)**.

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

COMPUTER LABS

(CLASSROOMS)

FUNCTIONAL CHARACTERISTICS

Function

?? Dedicated classroom for computer education.

Relationship to Other Areas

?? Adjacent/Accessible from main corridor.

?? Adjacent to Education Center.

?? Near ADP Lab storage.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Resilient tile.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock with sound batt insulation. 4-foot tall wall-to-wall magnetic dry erase board at front of classroom. Extend walls above ceiling to underside of structure, to ensure acoustical control between classrooms.

?? **(AM#4) Provide 6 foot by 8 foot recessed projection screen.**

?? Furnishing: Computer tables by Owner.

?? **(AM#4) Special Construction: Provide mount for TV (Model No. Hitachi 36CX39B) at location shown on floor plan.**

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: Indirect fluorescents.

?? Power: Grounded electrical convenience outlets per local code. Provide floor power and data boxes per **(AM#4) Communications Plan (Sheet E.101).**

?? CATV: Outlet with associated power outlet TV **(AM#4) mount.**

?? Projector: **(AM#4) Power and data outlets at ceiling location for future projector.** Conduit from projector to instructor's station.

?? Intercom: Speaker with adjustable volume control.

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

COMPUTER LAB STORAGE

(CLASSROOMS)

FUNCTIONAL CHARACTERISTICS

Function

?? Secure storage for computer equipment.

Relationship to Other Areas

?? Adjacent/Accessible from Computer Lab.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Resilient tile.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock, adjustable shelves with sound batt insulation, 4 inches above ceiling.

?? Door: Medium duty bi-fold with lock.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.
- Cooling: Per Volume II criteria.

?? Humidity Requirements: 45 to 55 percent relative humidity.

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Zone Humidistat Type:

- Additional sensors and humidifier array in supply duct at the main air handling unit level.

Electrical

?? Lighting: Provide 20 footcandles with recessed parabolic fluorescents troffers.

?? Power: Grounded electrical convenience outlets per local code.

?? Data (AM#4)/Phone: Outlets per Communications Plan (Sheet E.101).

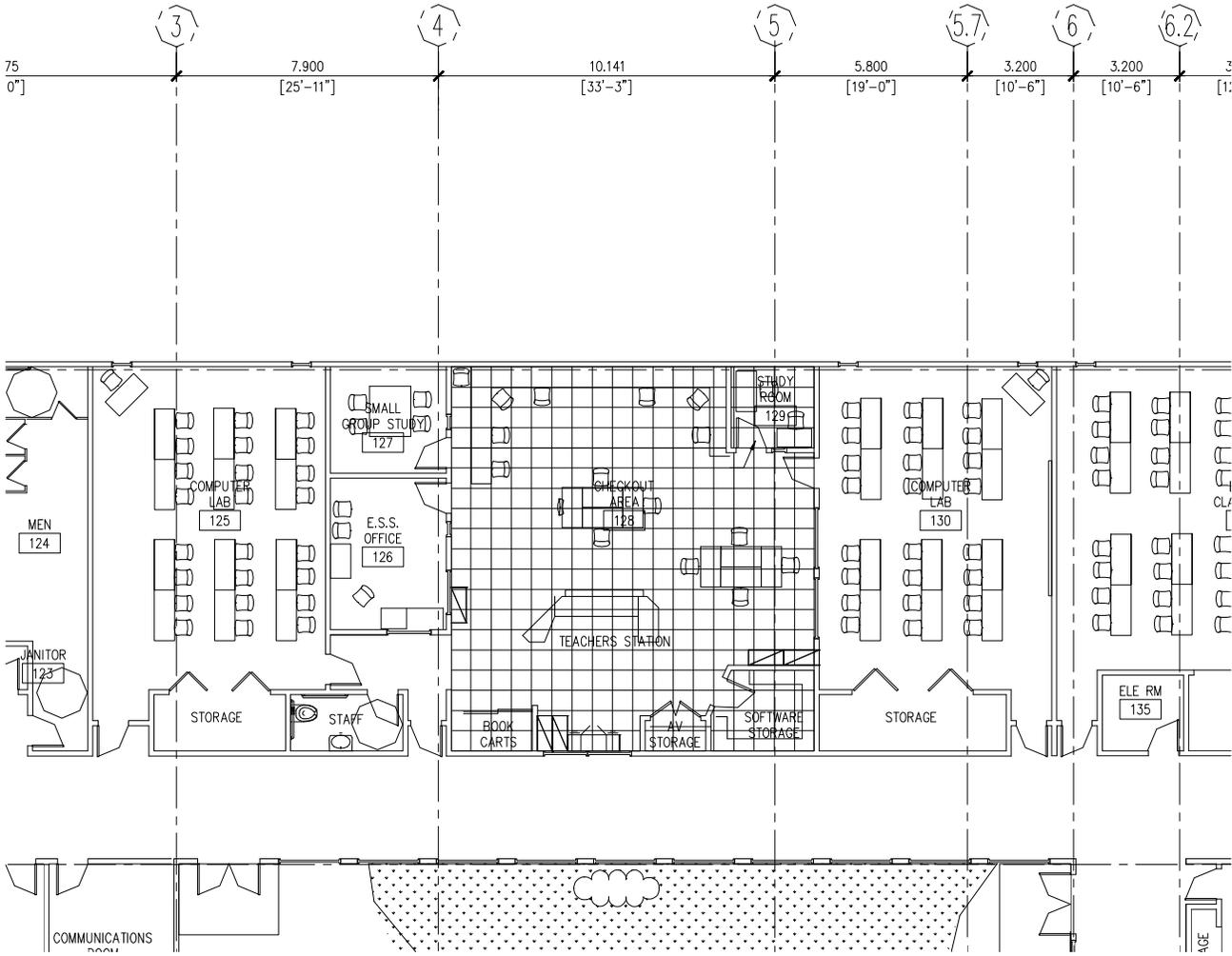
Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004



EDUCATIONAL CENTER

CHECKOUT AREA

(EDUCATIONAL CENTER)

FUNCTIONAL CHARACTERISTICS

Function

?? Teacher's workstation for checkout procedures.

Relationship to Other Areas

?? Central to educational areas.

?? Near all educational center spaces.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: 12-inch raised access floor (depressed slab) with anti-static carpet, finished flooring.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock with ball insulation to underside of structure.

?? Furnishing: Built in Teachers workstation – by GC.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing:

- Floor drain(s) with trap primer(s) under raised flooring.

- Leak detection under raised flooring.

Electrical

?? Lighting: Parabolic fluorescents troffers.

?? Power: Isolated ground power for dedicated computer outlets. Grounded electrical convenience outlets per local code.

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

?? Intercom: Speaker with adjustable volume control.

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

COMPUTER LAB COUNTER

(EDUCATIONAL CENTER)

FUNCTIONAL CHARACTERISTICS

Function

?? Computer teaching area for small groups.

Relationship to Other Areas

?? Adjacent/Accessible from checkout area.

?? Near ESS office.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: 12-inch raised access floor (depressed slab) with anti-static carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock, with batt insulation to underside of structure.

?? Furnishing: Teachers workstation by User.

?? Special Construction: Room partition divider.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.
- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing:

- Floor drain(s) with trap primer(s) under raised flooring.
- Leak detection under raised flooring.

Electrical

?? Lighting: Parabolic fluorescents troffers.

?? Power: Isolated ground power for dedicated computer outlets. Grounded electrical convenience outlets per local code.

?? Data (AM#4)/Phone: Per Communications Plan (Shee E.101).

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

ESS OFFICE

(EDUCATIONAL CENTER)

FUNCTIONAL CHARACTERISTICS

Function

?? Dedicated office for ESS Director.

Relationship to Other Areas

?? Adjacent/Accessible from checkout area.

?? View of main educational center areas.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Static dissipating carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock with sound batt insulation to underside of structure.

?? Furnishing: Teachers workstation – by User.

?? Special Equipment: **(AM#4) Provide homerun conduit, outlets and wire for security camera system monitor station in this room. Coordinate with security camera system requirements.**

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: Recessed parabolic fluorescents troffers.

?? Power: Isolated ground power for dedicated computer outlets. Grounded electrical convenience outlets per local code.

?? Data **(AM#4)/Phone: Data outlets per Communications Plan (Sheet E.101).**

?? Intercom: Speaker with adjustable volume control.

?? **(AM#4) Outlets for security camera monitoring station.**

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

SOFTWARE STORAGE

(EDUCATIONAL CENTER)

FUNCTIONAL CHARACTERISTICS

Function

?? Secure dedicated area for software storage.

Relationship to Other Areas

?? Adjacent/Accessible from main educational area.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: 12-inch raised access floor (depressed slab) with anti-static carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock.

?? Furnishing: By User.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.
- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing:

- Floor drain(s) with trap primer(s) under raised flooring.
- Leak detection under raised flooring.

Electrical

?? Lighting: Recessed parabolic fluorescents troffers.

?? Power: Grounded electrical convenience outlets per local code.

?? Data/Phone: Data/phone outlet **(AM#4) per Communications Plan (Sheet E.101)**.

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

SMALL GROUP STUDY

(EDUCATIONAL CENTER)

FUNCTIONAL CHARACTERISTICS

Function

?? Dedicated study/meeting room for educational center activities.

Relationship to Other Areas

?? Adjacent/Accessible from main educational area.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Static dissipating carpet.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.
- ?? Walls: Painted sheetrock with sound batt insulation, to underside of structure.
- ?? Furnishing: By User.
- ?? **(AM#4) Door – entry door and hall have vision panel.**

Mechanical

- ?? Temperature Requirements:
 - Heating: Per Volume II criteria.
 - Cooling: Per Volume II criteria.
- ?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- ?? Plumbing: None.

Electrical

- ?? Lighting: Recessed parabolic fluorescents troffers.
- ?? Power: Isolated ground power for dedicated computer outlets. Grounded electrical convenience outlets per local code.
- ?? Data/Phone: Data/phone **(AM#4) per Communications Plan (Sheet E.101).**

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

STUDY (LISTENING/LANGUAGE) ROOM

(EDUCATIONAL CENTER)

FUNCTIONAL CHARACTERISTICS

Function

?? Small room for private and language study.

Relationship to Other Areas

?? Adjacent/Accessible from main educational area.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: 12-inch raised access floor (depressed slab) with anti-static carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock **(AM#4) with sound batt insulation.**

?? Furnishing: Workstation by User.

?? **(AM#4) Entry door shall have vision panel.**

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.
- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing:

- Floor drain(s) with trap primer(s) under raised flooring.
- Leak detection under raised flooring.

Electrical

?? Lighting: Recessed parabolic fluorescents troffers.

?? Power: Isolated ground power for dedicated computer outlets. Grounded electrical convenience outlets per local code.

?? Data: **(AM#4) Per Communications Plan.**

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

UNISEX RESTROOM

(EDUCATIONAL CENTER)

FUNCTIONAL CHARACTERISTICS

Function

- ?? Restroom facility to serve.
- ?? Unisex: ADA compliant - one toilet/one sink.

Relationship to Other Areas

- ?? Near ESS office.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Ceramic tile.
- ?? Ceiling: 2 by 2 suspended acoustical with sound batt insulation.
- ?? Walls: Ceramic tile to 4 foot above finished floor – gypsum wall board assembly to deck with sound batt insulation.
- ?? Mirrors: Frameless mirrors with beveled edges at perimeter.
- ?? Sinks: Wall mounted sinks.
- ?? Signage: Per local code.
- ?? Accessories: Grab bar, paper towel dispenser and waste receptacle, dual roll toilet paper dispenser.

Mechanical/Plumbing

- ?? Temperature Requirements: Served from adjacent spaces.
- ?? Humidity Requirements: None.
- ?? Exhaust or Ventilation Requirements:
 - Per ASHRAE 62.
 - Exhaust 2 cubic feet per minute per square foot.
- ?? Zone Thermostat Type: None.
- ?? Plumbing:
 - Floor drain(s).
 - Fixtures per TM 5-810-5.
 - Tank type toilet, floor drain with trap primer.

Electrical

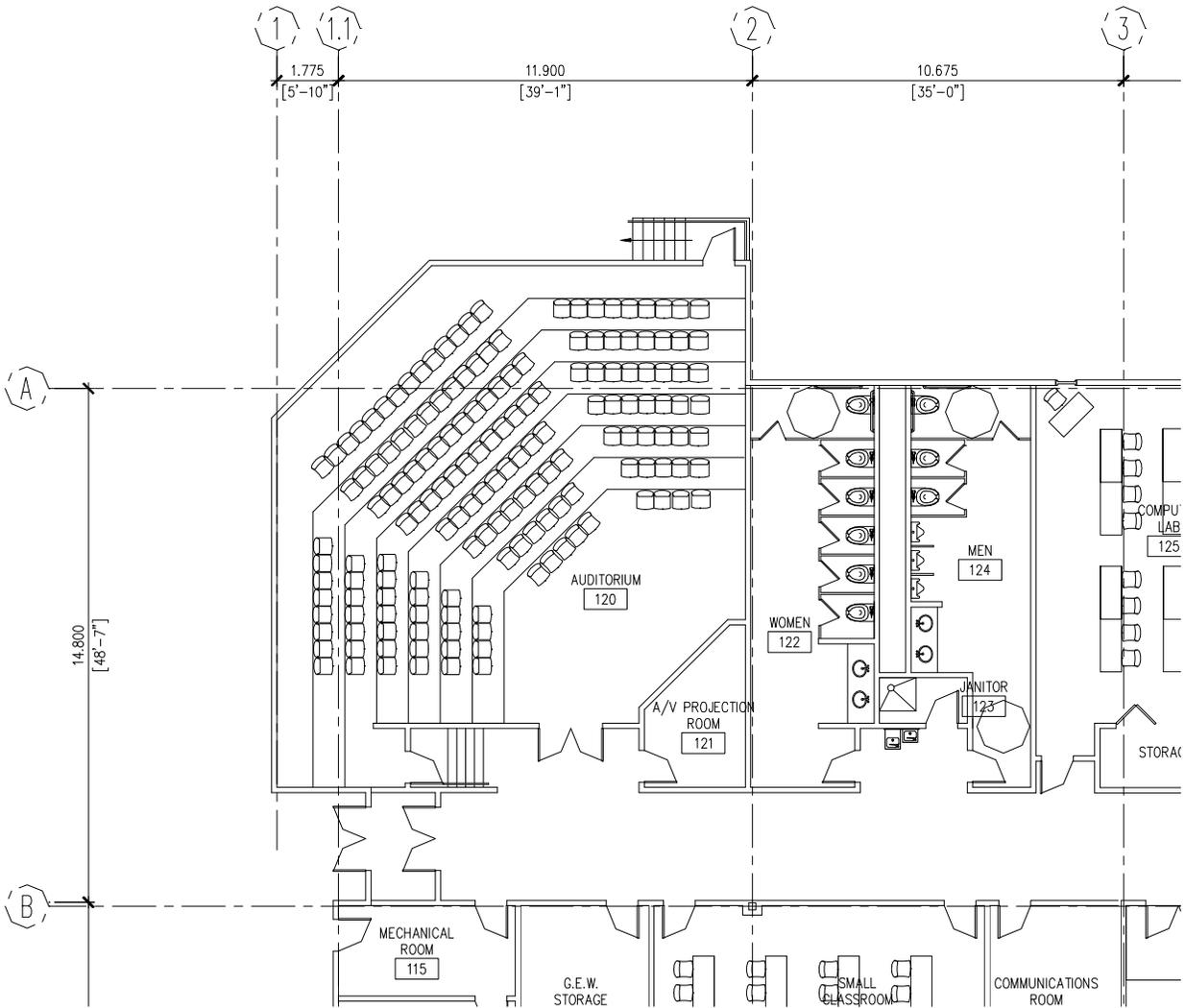
- ?? Lighting: Recessed parabolic fluorescent troffers.
- ?? Power: Provide GFCI outlet at sink. Convenience outlets per local code.

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004



FUNCTIONAL REQUIREMENTS

Amendment 0004

AUDITORIUM

AUDITORIUM

(AUDITORIUM)

FUNCTIONAL CHARACTERISTICS

Function

?? Meeting/Training area for large groups up to 150.

Relationship to Other Areas

?? Adjacent to Main Entrance.

?? Near Men's and Women's Restrooms.

SPECIAL CONSTRUCTION

?? Arrange seating in tiered "stadium" configuration for line of sight visibility.

?? Provide full A/V system **(AM#4) equipment and connectivity.**

?? Provide 8 foot by 8 foot rear projection screen, **(AM#4) hi definition projector, surround sound system speakers, broadcast equipment, and theatrical light system.**

TECHNICAL CONSIDERATIONS

Architectural

User's intent in the Auditorium is to have an enhanced design one may find in a high quality and high visibility public building. Extra consideration should be made in the interior design of this area.

Architecture shall support A/V system.

?? Floor: Carpet.

?? Ceiling: Ceiling design should support acoustic properties.

?? Walls: Install to deck with full batt insulation.

?? Wall Finish: Apply acoustical wall covering (panels).

?? Doors: Main entry doors, double 3-foot by 8-foot.

?? Furniture: 150 auditorium chairs. 10 to 15 percent of seating area ADA accessible.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: General lighting with multi-level dimmable incandescent down lights, highlight with architectural low voltage. Emergency and exit lights per NEC and NFPA. Theater style spot and accent lights controlled from master lighting control system.

?? Grounded electrical convenience outlets per local code.

Communications

?? Data location **(AM#4) per Communications Plan (Sheet E.101).**

?? **(AM#4) Full outlet/conduit construction for support and operation of A/V system and room lighting from front podium location.**

FUNCTIONAL REQUIREMENTS

Amendment 0004

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

A/V SYSTEMS ROOM

(AUDITORIUM)

FUNCTIONAL CHARACTERISTICS

Function

?? A/V equipment room for support of auditorium (rear projection **(AM#4) system**).

Relationship to Other Areas

?? Adjacent/Accessible from auditorium or exterior corridor.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Resilient tile.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: Exposed to structure.
- ?? Walls: Painted sheetrock with sound batt insulation to underside of structure.

Mechanical

- ?? Temperature Requirements (See also Vol. 2):
 - Heating: Per Volume II criteria.
 - Cooling: Per Volume II criteria.
- ?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- ?? Plumbing: None.

Electrical

- ?? Lighting: **(AM#4) Coordinate with A/V system requirements.**
- ?? Power: As required for A/V systems. Grounded electrical convenience outlets per local code.
- ?? Data: As required for A/V system **(AM#4) and communications system. Connection to Commo room and to podium in auditorium.**

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

MENS/WOMENS RESTROOM

(AUDITORIUM)

FUNCTIONAL CHARACTERISTICS

Function

- ?? Restroom facilities to serve visitors and staff.
- ?? Men's: Three toilets, three urinals, two sinks. Verify with local code.
- ?? Women's: Six toilets, two sinks. Verify with local code.
- ?? ADA compliant.

Relationship to Other Areas

- ?? Adjacent to the auditorium.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Ceramic tile.
- ?? Ceiling: Gypsum board, painted.
- ?? Walls: Ceramic tile to 6 feet. Gypsum wall board assembly with ball insulation to underside of structure.
- ?? Countertop and Splash: Plastic laminate.
- ?? Sink Skirt: Plastic laminate.
- ?? Mirrors: Frameless mirrors with beveled edges at perimeter.
- ?? Toilet Partitions: Plastic laminate toilet compartments. Ceiling mounted.
- ?? Access Panel: Stainless steel access panel located at plumbing controls.
- ?? Sinks: Counter mounted sinks.
- ?? Signage: Per local code.
- ?? Accessories: Grab bar, soap dispenser, paper towel dispenser and waste receptacle, dual roll toilet paper dispensers, baby changing station, feminine product dispenser.

Mechanical

- ?? Temperature Requirements (See also Vol. 2): Served from adjacent spaces.
- ?? Humidity Requirements: None.
- ?? Exhaust or Ventilation Requirements:
 - Per ASHRAE 62.
 - Exhaust 2 cubic feet per minute per square foot.
- ?? Zone Thermostat Type: None.
- ?? Plumbing:
 - Floor drain(s).
 - Fixtures per TM 5-810-5 (Ref. Chapter 00840 Volume 2).

Electrical

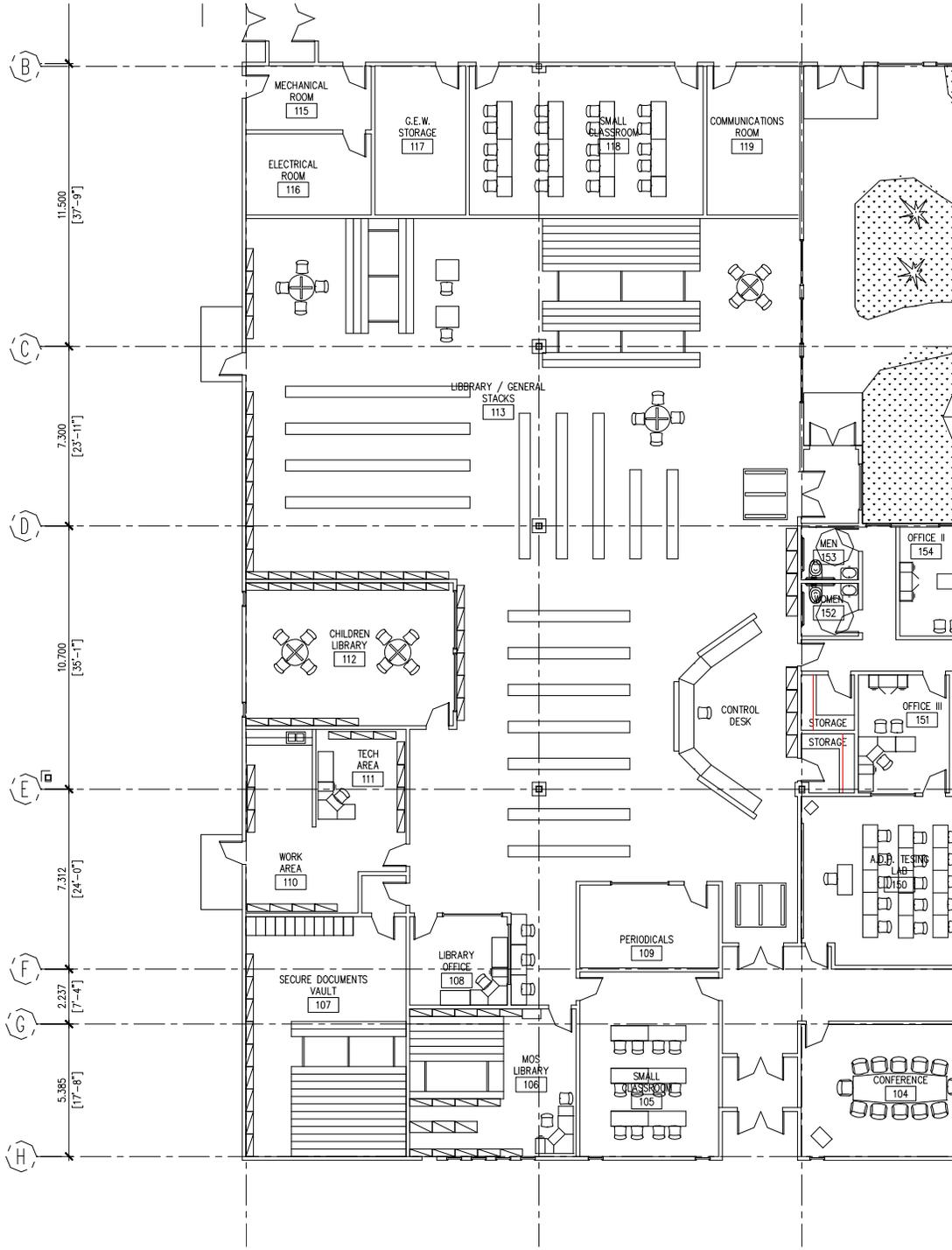
- ?? Lighting: Recess cove lighting with continuous fluorescent strip above lavatories and above water closets. Emergency and exit lights per NEC and NFPA.
- ?? Provide emergency lighting per NEC.
- ?? Power: Provide GFCI outlet at sink.

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004



LIBRARY

CONTROL DESK

(LIBRARY)

FUNCTIONAL CHARACTERISTICS

Function

?? Work and control area for library operations.

Relationship to Other Areas

?? Adjacent/Accessible from general stacks.

?? View of children's library, classified storage, and entrance/exit.

TECHNICAL CONSIDERATIONS

Architectural

User's intent in the Library is to have a modern/open design. Designer should consider exposed structure painted white with 60/40 indirect/direct fluorescent fixtures. Building height of this area should be higher than adjacent office area with clear story windows on north side of space. Extra consideration should be made in the interior design of this area

?? Floor: Static Dissipating Carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling with sound batt insulation.

?? Walls: Painted sheetrock and/or wallpaper.

?? Special Construction: Contractor furnished librarian counter. To support three computers, printers, card checkout machine, scanner, electric card catalogue and book slot drop.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.
- Cooling: Per Volume II criteria.

?? Humidity Requirements: 45 to 55 percent relative humidity.

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Zone Humidistat Type:

- One, wall mounted sensor in general Library area.
- Additional sensors and humidifier array in supply duct at the main air handling unit level.

?? Plumbing: None.

Electrical

?? Lighting: Direct/indirect fluorescents and direct compact fluorescent task lighting.

?? Power: Isolated ground power for dedicated computer outlets. Dedicated outlet for copier.

(AM#4) Power and controls for security camera monitoring station.

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

(AM#4) PERIODICALS

(LIBRARY)

FUNCTIONAL CHARACTERISTICS

Function

?? Room for periodicals and card catalogue.

Relationship to Other Areas

?? Adjacent/Accessible from general library area.

?? In view of control desk

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Static dissipating Carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock and/or wallpaper.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: Recessed parabolic fluorescent troffers.

?? Power: Grounded electrical convenience outlets per local code.

?? Data/Phone: Per Communications Plan (Sheet E.101).

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

LIBRARY/GENERAL STACKS

(LIBRARY)

FUNCTIONAL CHARACTERISTICS

Function

?? Main collection storage and reading areas.

Relationship to Other Areas

?? Adjacent/Accessible from control desk.

?? Near children's library.

TECHNICAL CONSIDERATIONS

Architectural

User's intent in the Library is to have a modern/open design. Designer should consider exposed structure painted white with 60/40 indirect/direct fluorescent fixtures. Building height of this area should be higher than adjacent office area to allow north facing clear story windows along north perimeter of space. Extra consideration should be made in the interior design of this area.

?? Floor: Static dissipating carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: Exposed – painted white.

?? Walls: Painted sheetrock, wall covering or architectural finish.

?? Special Construction: User's existing rolling shelf/stack system to be relocated by GC. Will require foundation modifications.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.
- Cooling: Per Volume II criteria.

?? Humidity Requirements: 45 to 55 percent relative humidity.

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Zone Humidistat Type:

- One, wall mounted sensor in general Library area.
- Additional sensors and humidifier array in supply duct at the main air handling unit level.

?? Plumbing: None.

Electrical

?? Lighting: Indirect/Direct fluorescents and direct compact fluorescent task lighting.

?? Power: Isolated ground power for dedicated computer outlets. Dedicated outlets for Microfiche stations. **(AM#4) Power on walls for centrally mounted wall clocks.** Dedicated circuits as required for motor operated compressed shelving. **(AM#4) Power in floor for security scanners for security at entrances.**

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

?? **(AM#4) Floor outlets every 30-feet on center for vacuum use.**

?? **(AM#4) Install power outlets at 3 locations at 96" A.F.F. for Owner provided wall clocks.**

CHILDRENS LIBRARY

(LIBRARY)

FUNCTIONAL CHARACTERISTICS

Function

?? Secure sound controlled area for children's collection.

Relationship to Other Areas

?? Adjacent/Accessible from general stacks.

?? Entrance visible from control desk.

TECHNICAL CONSIDERATIONS

Architectural

User's intent in the Children's Library is to have a modern/open design. Designer should consider exposed structure painted white with 60/40 indirect/direct fluorescent fixtures.

?? Floor: Carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: Exposed – painted white.

?? Walls: Painted sheetrock, wall covering or architectural finish.

?? Door: 3 feet by 8 feet (50 percent glass) with lock.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.
- Cooling: Per Volume II criteria.

?? Humidity Requirements: 45 to 55 percent relative humidity.

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Zone Humidistat Type:

- One, wall mounted sensor in general Library area.
- Additional sensors and humidifier array in supply duct at the main air handling unit level.

?? Plumbing: None.

Electrical

?? Lighting: Indirect/Direct fluorescents.

?? Power: Isolated ground power for dedicated computer outlets. General use outlets all with childproof spring loaded swing covers.

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101)** with childproof self-closing covers when outlets are not in use.

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

(AM#4) CHILDREN'S RESTROOM

(LIBRARY)

FUNCTIONAL CHARACTERISTICS

Function

- ?? Restroom facility for children.
- ?? Unisex: 1 toilet/1 sink. ADA compliant. (Smaller fixtures for children as possible per code.)

Relationship to Other Areas

- ?? Adjacent to children's library.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Ceramic tile.
- ?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.
- ?? Walls: Walls with batt sound insulation to deck above.
- ?? Mirrors: Frameless mirrors with beveled edges at perimeter.
- ?? Sinks: Wall mounted sink.
- ?? Door: 3-foot by 8-foot door with privacy lock.
- ?? Signage: Per local code.
- ?? Accessories: Grab bar, paper towel dispenser soap dispenser (wall mounted) and waste receptacle, dual roll toilet paper dispenser.

Mechanical/Plumbing

- ?? Temperature Requirements: Served from adjacent spaces.
- ?? Humidity Requirements: None.
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: None.
- ?? Plumbing.
 - Floor drain(s).
 - Fixture per TM 5-810-5.
 - Exhaust Vent
 - Tank mounted toilet.

Electrical

- ?? Lighting: 2-foot by 4-foot fluorescent recessed fixture.
- ?? Power: Provide GFCI outlet at sink.

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

SECURE DOCUMENTS VAULT

(LIBRARY)

FUNCTIONAL CHARACTERISTICS

Function

?? Resource/stacks area for "secret" material.

Relationship to Other Areas

?? Adjacent/Accessible from control desk.

?? Entrance must be controlled from manned station.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: **(AM#4) Vinyl tile.**

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock. Wall perimeter construction per COE "Secret" criteria.

?? Door: 3 feet by 8 feet per COE "Secret" criteria.

?? Furnishing: User's existing rolling shelf/stack system to be relocated by GC. Will require foundation modifications.

?? **(AM#4) Special Construction: Area must be "air tight for FM200 System".**

Mechanical

(Isolated from surrounding areas due to Chemical Fire Suppressant System)

?? Temperature Requirements:

- Heating: Per Volume II criteria.
- Cooling: Per Volume II criteria.

?? Humidity Requirements: 45 to 55 percent relative humidity.

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Zone Humidistat Type:

- One, wall mounted sensor in vault area.
- Additional sensors and humidifier array in supply duct at the main air handling unit level.

?? Plumbing: None.

Electrical

?? Lighting: Recessed parabolic fluorescent troffers and direct compact fluorescent task lighting.

?? Power: Isolated ground power for dedicated computer outlets. Dedicated circuits as required for motor operated compressed shelving. Dedicated outlets for Microfiche stations. **(AM#4) Power and control wiring for user installed IDS System.**

?? Data/Phone: As required for network and workstations **(AM#4) per Communications Plan (Sheet E.101).**

?? **(AM#4) Phone: At entry door location.**

Fire Protection

?? Suppression: Chemical suppression FM200 in accordance with NFPA 2001.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004

MILITARY OCCUPATION SPECIALTIES (MOS LIBRARY)

(LIBRARY)

FUNCTIONAL CHARACTERISTICS

Function

?? Secure and controlled area for MO material.

Relationship to Other Areas

?? Adjacent/Accessible from general stacks.

?? Entrance in view of control desk.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock.

?? Furnishing: User's existing rolling shelf/stack system to be relocated by GC to this location. Will require foundation modifications.

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: 45 to 55 percent relative humidity.

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Zone Humidistat Type:

- One, wall mounted sensor in general Library area.

- Additional sensors and humidifier array in supply duct at the main air handling unit level.

?? Plumbing: None.

Electrical

?? Lighting: Recessed parabolic fluorescent troffers and direct compact fluorescent task lighting.

?? Power: Isolated ground power for dedicated computer outlets. Floor outlets under workstations. Dedicated circuits as required for motor operated compressed shelving.

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

LIBRARY OFFICE

(LIBRARY)

FUNCTIONAL CHARACTERISTICS

Function

?? Work/office area for library director.

Relationship to Other Areas

?? Adjacent/Accessible from general stacks.

?? View of control desk and vault entry.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Carpet.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock and/or wallpaper.

?? Furnishing: One workstation.

?? **(AM#4) Special construction – Interior window with view of control desk (with mini-blinds).**

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: 45 to 55 percent relative humidity.

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: None.

Electrical

?? Lighting: Recessed parabolic fluorescent troffers.

?? Power: Isolated ground power for dedicated computer outlet. Grounded electrical convenience outlets per local code.

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

TECH/WORK AREAS

(LIBRARY)

FUNCTIONAL CHARACTERISTICS

Function

?? Work area for preparation, maintenance and repair of library collection material.

Relationship to Other Areas

?? Near to library office.

?? Direct access to dock.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Resilient tile.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: 2-foot by 2-foot suspended acoustical ceiling.

?? Walls: Painted sheetrock.

?? Furnishing: Work desks by User.

?? Special Equipment: Sink for book repair, printer, copier, 12 feet of built-in cabinets. **(AM#4)**
Provide ramp at service door (if required) for cart access into area from outside.

?? **(AM#4) Window to control desk with mini-blinds.**

Mechanical

?? Temperature Requirements:

- Heating: Per Volume II criteria.

- Cooling: Per Volume II criteria.

?? Humidity Requirements: 45 to 55 percent relative humidity.

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.

?? Plumbing: **(AM#4) Sink with hot and cold water.**

Electrical

?? Lighting: Provide 50 footcandles with parabolic fluorescent troffers. Task lighting 80 footcandles with incandescents. **(AM#4) Exterior light over service door.**

?? Power: Isolated ground power for dedicated computer outlet. Grounded electrical convenience outlets per local code.

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101).**

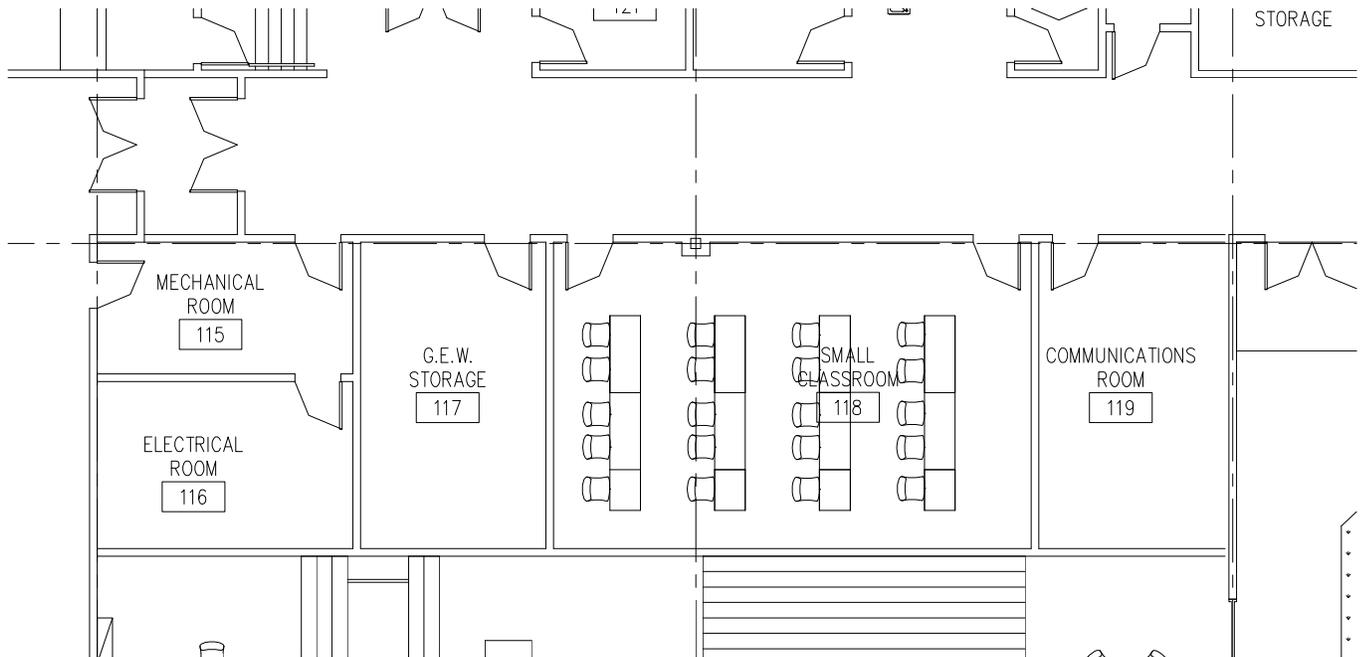
Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

FUNCTIONAL REQUIREMENTS

Amendment 0004



SERVICE

FUNCTIONAL REQUIREMENTS

Amendment 0004

MECHANICAL ROOM (FIRE RISER)

(SERVICE)

FUNCTIONAL CHARACTERISTICS

Function

?? House mechanical equipment and fire risers.

Relationship to Other Areas

?? Adjacent/Accessible from outside.

?? Adjacent to main corridor.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Sealed concrete.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: Exposed.

?? Walls: Painted sheetrock, full height to underside of structure (fire rated).

Mechanical

?? Temperature Requirements: Controlled from adjacent spaces. (Limit temperature to 10 degree rise/prevent from freezing 55 degrees F).

?? Humidity Requirements: None.

?? Exhaust or Ventilation Requirements:

- Per ASHRAE 62.

- Exhaust 2 cubic feet per minute per square foot.

?? Floor drain(s).

Electrical

?? Lighting: Industrial fluorescents.

?? Power: As required per equipment.

?? Data **(AM#4)/Phone: Per Communications Plan (Sheet E.101) and as required for equipment and controls.**

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

ELECTRICAL ROOM

(SERVICE)

FUNCTIONAL CHARACTERISTICS

Function

?? House main electrical distribution panel.

Relationship to Other Areas

?? Adjacent/Accessible from Main corridor.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Resilient tile.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: Exposed structure.

?? Walls: Painted sheetrock, full height to underside of structure (fire rated).

Mechanical

?? Temperature Requirements: Controlled from adjacent spaces.

?? Humidity Requirements: None.

?? Exhaust or Ventilation Requirements:

- Per ASHRAE 62.

- Exhaust 2 cubic feet per minute per square foot.

?? Plumbing: None.

Electrical

?? Lighting: Industrial fluorescents.

?? Power: Electrical convenience outlets per local code.

?? Data: As required per controls system.

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

G.E.W. STORAGE

(SERVICE)

FUNCTIONAL CHARACTERISTICS

Function

?? Secure general storage area.

Relationship to Other Areas

?? Adjacent/Accessible from main corridor.

?? Near auditorium.

TECHNICAL CONSIDERATIONS

Architectural

?? Floor: Resilient tile.

?? Base: Rubber base, 4-inch cove.

?? Ceiling: Exposed structure.

?? Walls: Painted sheetrock, full height to underside of structure.

?? **(AM#4) Special construction: 18" deep built0in shelving on two walls.**

Mechanical

?? Temperature Requirements: Served from adjacent spaces.

?? Humidity Requirements: Per TI 810-10 (REF CHAPTER 00840 VOL. 2).

?? Exhaust or Ventilation Requirements: Per ASHRAE 62.

?? Zone Thermostat Type: None.

?? Plumbing: None.

Electrical

?? Lighting: Industrial fluorescents.

?? Power: Grounded electrical convenience outlets per local code.

?? Data: None.

Fire Protection

?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.

?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

COMMUNICATIONS ROOM

(SERVICE)

FUNCTIONAL CHARACTERISTICS

Function

?? Secure/Accessible location for network communications equipment and main phone board.

Relationship to Other Areas

?? Adjacent/Accessible from main corridor.

TECHNICAL CONSIDERATIONS

Architectural

- ?? Floor: Static Dissipating VTC.
- ?? Base: Rubber base, 4-inch cove.
- ?? Ceiling: Exposed structure painted white. (Leave area clear for data bundle access to frames).
- ?? Walls: 3/4-inch fire treated plywood panelboards (4 foot by 8 foot) panel sizes over painted sheetrock, full height to underside of structure.

Mechanical

- ?? Temperature Requirements: Served from adjacent areas.
- ?? Humidity Requirements: 45 to 55 percent relative humidity.
- ?? Exhaust or Ventilation Requirements: Per ASHRAE 62.
- ?? Zone Thermostat Type: None.
- ?? Plumbing: None.

Electrical

- ?? Lighting: Wall mounted industrial fluorescents.
- ?? Power: Grounded electrical convenience outlets per local code. Dedicated **(AM#4) 200A panel (72 ckts.)** for data equipment. Isolated ground circuits for dedicated communication outlets.

Fire Protection

- ?? Suppression: Wet pipe sprinkler system in all areas per NFPA 13 and MIL-HNBK-1008C.
- ?? Alarm: Visible/audible notification appliances and pull stations in accordance with NFPA 72 and ADA.

Communications

- ?? 8-foot tall plywood primed backboards on two adjacent walls, full length of wall. Fire rated plywood and primer.
- ?? Reference ground bus bar mounted adjacent to main commo. conduit entrance into room. Connected to main service entrance ground.
- ?? 18-inch cable tray mounted around room perimeter, minimum 8 feet above finished floor.

ATTACHMENT B

OPTIONS

(AM#4)

OPTION No. 1 – Provide all electronics and network switching components required to supply a fully functional computer network for the White Sands Missile Range Professional Development Center (WSMR PDC).

I. DESCRIPTION OF OPTION

- A. The contractor is to provide computer networking equipment, software, programming and warranty coverage to provide a full functioning computer network system for the WSMR PDC.
- B. The contractor will provide personal computers for classroom and office connection to the network, including all associated software, networking support cards, and peripheral support components such as monitors, keyboards, mouse controllers, etc.
- C. All main building trunk and horizontal cabling for the network is included in the building base bid.
- D. **(AM#4) Network design to exceed latest edition of the installation information Infrastructure Architecture (I3A) Design Guide.**
Refer to <http://arch-odisc4.army.mil/i3a/i3a.asp> and http://arch-odisc4.army.mil/i3a/General_Docs/20000911_I3A_Design_Guide.pdf.
Client may require formal DoD review of proposed networking design.
- E. Pre-Installation:
 - 1. Components for review by client:
 - a. The contractor will provide Full size drawings for all submissions. Drawings will be provided in both hard and soft copy (AutoCAD 2000.DWG format.)
 - b. The contractor will provide a network schematic including all equipment, cabling (type and length), and all associated connectors (by type). Schematic will also include manufacturer's information and part number for major components along with power requirements.
 - c. Drawings will include an elevation (to scale) of proposed racked equipment in Main Communications room. Drawing will show all major components, associated hardware, cable (bundles), cable termination areas, and power connection locations.
- F. Post-Construction:
 - 1. Components for review and records of client:
 - a. The contractor will provide all owners manuals, operations and maintenance manuals, software

medium, and warranty information for all equipment installed as a part of the complete network installation.

- b. The contractor will provide a complete record of all networking data outlet labels, locations, and associated IP address configurations for workstations assigned to those outlets.

II. BASIC FUNCTION

- A. The contractor will provide equipment, programming, software, and warranty coverage to support installation of a full functioning computer network.
- B. The contractor is to coordinate with White Sands Missile Range (WSMR) Director of Information Management (505.678.2322) for connection requirements to WSMR Wide Area Network (WAN). Cabling infrastructure design is based on use of fiber optic cabling to building.
- C. The contractor will provide network equipment which must support the following tasks:
 1. **(AM#4) Ethernet connections to the following areas, through both copper and fiber optic cabling (Note: cabling infrastructure is based on use of fiber optic cabling support to teaching stations in each of the following areas, while utilizing copper cabling for support of student connectivity within the remaining areas of the building :**
 - a. **ADP Testing Lab (Rm 150).**
 - b. **Computer Labs (Rm 125 & 130).**
 - c. **ESS Learning Center (All areas on raised floor including Rms. 126, 127, 128, 129).**
 - d. **Audio/Visual in Auditorium (Rms. 120 & 121).**
 - e. **Library Computer Stations (Outside of Room 108).**
 2. **(AM#4) Future expansion from copper to all fiber optic for future connectivity requirements in all areas (Per Option 3 of (AM #4)).**
 3. **(AM#4)** Distance learning function, including broadcasting and receiving streaming audio/video throughout key areas within the WSMR, based on Distance Learning (DL) standards H.323 and H.320 (See attachment).
 4. The Network shall support connectivity into the Auditorium for audio/video presentations.

5. The Network shall support the broadcasting of events from either classroom or auditorium locations to both inside and outside the local area network.
6. **(AM#4) Satellite downlink capability from the following sources: (See <http://www.almc.army.mil/> and http://books.usapa.belvoir.army.mil/cgi-bin/bookmgr/BOOKS/P351_4/5.1 for a definition and technical information on ALMC and AMEC networking.**
 - a. **Army Logistics Management College (ALMC) / Army Management Engineering College (AMEC) course reception in the following areas:**
 - (1) **Auditorium (Rm. 120)**
 - (2) **Large Classroom (Rm. 131).**
 - b. **Army Logistics Management College (ALMC) / Army Management Engineering College (AMEC) broadcast capabilities in one large classroom (Rm. 131)**
 - c. **Communications contractor be responsible for relocating uplink/downlink system from existing Education Building to new Professional Development Center.**
- D. **(AM#4) The contractor is to provide full support of Computer Based Training CBT, Computer Enhanced Instruction CEI and Automated Interactive training capabilities in the ADP Testing Lab (Room 150). Refer to http://www.ece.gatech.edu/academic/computer_education/gtf.htm as an example.**
- E. The contractor is to include 100 PCs with monitors configured to work with the installed network, including all required drivers, patch cords, PCI cards, **(AM#4) selected software (Windows 2000 professional)**, and all virus protection per IAW White Sands Security requirements. All Class-B addresses will be supplied by the COR. Minimum requirements for the PC's provided is as follows:
 1. 900MHz Pentium III processor.
 2. 20GB hard drive.
 3. 128MB RAM with expansion to 512MB RAM.
 4. 20X CD-ROM Drive.
 5. 16MB Video RAM.
 6. 17" SVGA Monitor.

- F. The network must comply with DOD standards, and have the capability of supporting 200 each IEEE802.5 connections.
- G. The contractor will provide an additional 50 PCI 1Gig network cards for computers to be relocated to the new building by the government.
- H. The contractor will provide a dual PCI 1Gig card for each server in the network.
- I. The contractor will provide the Main Network Switch with the following:
 - 1. 24 native Asynchronous Transfer Mode (ATM) connections to desktop PCs with an OC3 connection to each of the 24 PCs requiring this connectivity. The contractor will also provide the 24 ATM PCI cards for the designated PCs.
 - 2. Technology which supports OSPF, IGRP, and TCP/IP network language protocol capabilities within the same network switch.
 - 3. Support for 25 IEEE802.3 data networking connections.
 - 4. A switched network, without use of hubs.
 - 5. Dual power inputs to support hot swapping power supply components without loss of power to the switch or loss of function to the network.
 - 6. **(AM#4) – Delete wireless applications support requirement from Option #1.**
 - 7. **(AM#4) – Delete wireless PCI cards from Option #1.**
 - 8. Spare capacity to support 100 percent growth with an open-slot chassis that will enable expansion using cards.
- J. The contractor will provide a minimum of an OC12 (single mode fiber optic) connection from the main switch to the Central Office of the Base in Building 123.
- K. The contractor will provide a security system with the network that complies and is compatible with the Army, ATEC, and WSMR security requirements. Refer to AR380-19 **(AM#4) - (See www.usapa.army.mil)** “Information Systems Security”, AR 380-5 “DOA Information Security Program”, including TECOM and WSMR supplements. The contractor will coordinate with the WSMR DOIM to validate compliance and insure that the network will function within the parameters of the existing WSMR network security system.
- L. The contractor will provide a reporting/management tool using SNMP that includes a PC display capability, including all software and configuration.
- M. The contractor will provide a UPS system sized to provide a minimum of 4 hours of support for the main switch and associated servers with a 70% network load factor, with provisions for both RS-232

and USB connectivity to server from UPS for coordinated shutdown of server at an adjustable setting based on percentage of battery life remaining.

III. PREFERRED COMPONENTS

A. The following are acceptable components for equipment installed for network support of the WSMR PDC.

1. Main Communications Switch:
 - a. Cisco 5500 Family or approved equal.
 - b. 13 slot density.
 - c. Gigabit Ethernet.
 - d. Full system redundancy.
 - e. Multilayer switching.
 - f. Hot-swappable module support.
 - g. Dual redundant switching engines.
 - h. Dual redundant power supplies.
 - i. Passive system backplane.
 - j. 19" Rack mountable hardware.
2. Supervisor Base Module:
 - a. Catalyst 5000 Family, or approved equal.
 - (1) NetFlow Feature Card (NFFC II)
 - (2) User monitoring and profiling
 - (3) Application monitoring
 - (4) Network monitoring
 - (5) Network planning
 - (6) Accounting and Billing
3. Asynchronous Transfer Mode (ATM) OC-12 LANE/MPOA Module:
 - a. Catalyst 5000 Family, or approved equal.
 - (1) Multi-mode Fiber Optic.
 - (2) One direct connection.
 - (3) One standby connection.
 - (4) Support for up to 4096 virtual circuits.
 - (5) ATM LAN Emulation (ATM LANE 1.0).
 - (6) Multiprotocol over ATM (MPOA) Support.
4. Switched 10/100BaseTX Fast Ethernet Interface Cards:
 - a. Catalyst 5500 Family, or approved equal.
 - (1) 24 port interface capacity per slot.
5. OC-3 Multimode Fiber Interface Cards:
 - a. Catalyst 5500 Family, or approved equal.
 - (1) 16 port interface capacity per slot.
6. Site Licensing and Technical Support:

- a. Cisco SmartNet Family, or approved equal.
 - (1) Software updates and upgrades on demand.
 - (2) Online and telephone access.
 - (3) Registered access to resources 24X7.
- 7. Online troubleshooting assistant.

IV. LICENSING, SUPPORT, AND WARRANTY REQUIREMENTS

- A. The contractor will provide equipment, programming, software and warranty with minimum one year coverage to support installation of a full functioning computer network. Service support shall guarantee 24-hour, on-site response assistance.

(AM#4)

Option No. 2 – Professional Development Center Parking Lot Improvements

Description: All materials, labor and infrastructure costs associated with construction of the proposed Professional Development Parking Lot (located on the north side of the facility) including but not limited to the sitework, paving materials, striping, sidewalks, area lighting, signage, and surrounding landscaping. Limits of area have been highlighted on overall RFP Site Plan sheet C-101.

(AM#4)

OPTION No. 3 – Completion of the Fiber Installation

Description: All material and labor associated with the completion of the fiber installation to the data outlet locations labeled “future” on the Communications Floor Plan sheet E.101. This is to include (2) single-mode and (2) multi-mode fiber connections to all of the remaining data service boxes in the facility. Work shall also include all additional facility trunk and horizontal cabling improvements as required for the additional connections. All work, terminations and testing shall be done in accordance with Volume 2 of the RFP.

(AM#4)**Option No.4 – Furnish Interactive White Boards**

Description: Contractor to furnish and install Rear Projection Interactive Whiteboards in Rooms (125, 130, 131, 132A, 132B, 133A, 133B, 134A, 134B, 120, 118, 104 and 150) equal to “SMART Board 3000i” as manufactured by SMART Technologies, Inc. (www.smarttech.com/rearprojection/3000i). Components shall be furnished with lab instruction software equal to “SynchronEyes” by SMART Technologies, Inc.

Features of the hardware system shall include:

- ~~///~~ Touch screen access and control of computer based material.
- ~~///~~ Rear projection configuration with 1024 x 768) resolution and accessible controls on front of cabinet.
- ~~///~~ Full functional infrared remote.
- ~~///~~ Control option from connected laptop.
- ~~///~~ Mobile cabinet with locking casters.
- ~~///~~ Key lockable cabinet.
- ~~///~~ Video cabinet platform.
- ~~///~~ Audio system which supports multi-media and exterior audio inputs such as a VCR.
- ~~///~~ Wireless keyboard with holder on side of cabinet.
- ~~///~~ Glare reduction screen or finish to reduce ambient light and reflections.

(AM#4)**Option No. 5 – Wireless Data Network System.**

Description: Contractor shall furnish and install hardware and software as required for addition of “Wireless Network” into the Professional Development Center’s communications data network (Option No.1). The proposed Multi-zone wireless application shall be able to serve up to 150 stations in accordance with IEEE802.11. System shall have capacity to support a minimum of five wireless “zones” within the facility. The initial infrastructure should include the Auditorium (Room 120). In addition to the operating system, the contractor shall turn over an additional 40 wireless transceiver PCI interface cards to the user. Installation shall include complete training of the system and warranty for one-year.

(AM#4)**Option No. 6 – Surveillance Camera System.**

Description: Contractor shall furnish and install security camera system including, but not limited to, cameras, controllers, and monitors to provide a complete and operating system (control wiring and power infrastructure for camera system is to have already been furnished as part of the base bid). System shall include a multi-plexer to support not less than 8 cameras and 3 monitoring stations. Cameras shall be positioned so as to monitor the main hallways, the Testing Room, the Auditorium, the Children's Section of the Library, each entrance and the main parking lot. Monitoring stations shall be provided in Rooms 146, 126, and 113. Contractor shall use Interior/Exterior Hi-Resolution Color Cameras w/Infrared capability and 1/3" CCDs., 6.0(H) x 4.96(V)mm Image Size, w/(EIA):512(H)x492(V), (CCIR)500(H) Effective Pixels, (EIA):15.750KHz (CCIR):15.625KHz Horizontal Frequency, 50Hz, 60 Hz Vertical Frequency, (EIS):525 lines, 60 fields/sec, (CCIR): 625 lines, 50 fields/sec Scanning System, 6.0mm F2.0 Board lens, 420 TV lines, 0.0 Lux Sensitivity, 2:1 INTERLACE scanning system, 1.0Vp-p composite video at 75 ohm Video Output, 1/60~1/100,000 sec.(linear), 20Unit IR LED, Distance 5-7 meter, IP 57 Water Resistance, Electronic Shutter, better than 46dB S/N Ratio, 16 Camera Multiplexer, camera mounting hardware, power supply and required BNC connectors, a 21" Hi-Resolution Monitor. Because of the reliability factor and the White Sands environment, this system shall be hard wired.

(AM#4)**Option No. 7 – Multi-call Network System**

Description: Contractor shall provide a Multi-call Unit (MCU) add-on into the Communications System: This system is the gateway (bridge) that will allow viewers using various Video Teleconferencing (VTC) equipment at various sites to participate in the VTC's that imamate from the PDC facility. The user size shall for 50 users. System should enable up to 50 users (soldiers out in New Mexico or employees up/down and across the range) to tie into education and training courses that we present from the PDC. System shall be similar or equal to Manufacturer and part number: Accord Networks, MGC-50 (8 Slot Chassis).

(AM#4)**Option No. 8 – Voice Recognition Software.**

Description: Contractor shall furnish and install voice recognition software and display system in rooms 120, 125, 130, 131, 132A, 132B, 134A, 134B, 133A, 133B, 105, and 118. System shall be able to recognize and record spoken speech and display it on an in room monitor. Option shall include all hardware and software required to make system operational. The system shall be equal to product by “Softel”. System should have operating software equal to Softel's AdePT advanced multimedia toolkit to accommodate the non-creative and repetitive tasks - from script alignment to transmission.

(AM#4)**Option No. 9 – Backup Electrical and UPS System for Computer Areas.**

Description: Contractor shall provide redundant and UPS electrical power for rooms 119, 120, 125, 126, 127, 128, 129, 130, 131, and 150. Contractor shall provide design and installation of back-up electrical system including, but not limited to, UPS system and facility electrical generator. This system is to provide uninterrupted power to computer areas of facility. System shall include a central or individualized UPS system to support uninterruptible power to computers in the identified rooms. UPS System(s) shall provide uninterrupted power to all computers until generator power is available. Generator capacity shall support not only computer associated loads, but the operating loads associated with those rooms including general lighting and HVAC. System shall include Automatic Transfer Switch and panel logic to allow system to operate without direct employee intervention. Back-up power generation system shall include fuel storage for at least 8 hours at full load.

Attachment E

DRAWINGS

See the Contract Viewer for Drawings