

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE _____ PAGE _____ OF _____ PAGES

2. AMENDMENT/MODIFICATION NO. _____ 3. EFFECTIVE DATE _____ 4. REQUISITION/PURCHASE REQ. NO. _____ 5. PROJECT NO. (If applicable) _____

6. ISSUED BY _____ CODE _____ 7. ADMINISTERED BY (If other than Item 6) _____ CODE _____

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) _____ (X) 9A. AMENDMENT OF SOLICIATION NO. _____
 9B. DATED (SEE ITEM 11) _____
 10A. MODIFICATION OF CONTRACT/ORDER NO. _____
 10B. DATED (SEE ITEM 11) _____
 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: (Specify authority) 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 (such as changes in paying office, appropriation date, etc.) 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 (Specify type of modification and authority)

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

Item 14. Continued.

CHANGES TO 00710 WAGE DECISIONS

1. 00710 Wage Decisions.- Replace wage decision pages 00710-1 through 00710-45 with the attached pages 00710-1 through 00710-44, each page bearing the notation "ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015."

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 #0005:"

- Chapter 111 Facility Performance - *(Paragraph 1.1.3.c – added information)*
- Chapter A Substructure - *(Paragraph 1.2.4 & 1.3.3 – deleted substantiation requirement)*
- Chapter A1 Foundations - *(Paragraph 1.2.2.c – deleted substantiation requirement)*
- Chapter B Shell - *(Paragraph 1.2.8.e & 1.3.1.b – deleted substantiation requirement)*
- Chapter B1 Superstructure - *(Paragraph 1.4.4.a – clarify wind speed requirement)*
- Chapter B31 Roof Coverings – *(Paragraph 1.6.1.a – delete substantiation requirement)*
- Chapter D22 Plumbing Fixtures – *(Paragraph 1.4.1 & 1.6.3 – text revisions)*
- Chapter D24 Sanitary Waste – *(Paragraph 1.6.1.a – text revision)*
- Chapter D34 Air Distribution – *(Paragraph 1.5.1.c – text revision)*

CHANGES TO VOLUME III – SPECIFICATIONS

3. Replacement Sections - Replace the following sections with the accompanying new sections of the same number and title, bearing the notation "ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015:"

- Section 01015 Design Requirements After Award – *(Paragraph 1.7.4 & 1.7.5 – added text)*
- Section 01451 Contractor Quality Control – *(Paragraph 3.4.3.2 – deleted text)*

CHANGES TO VOLUME IV – ATTACHMENTS

4. Attachment A. - Replace the Attachment A Design Criteria & Functional Requirements with the accompanying new Attachment bearing the notation "Amendment 0005":

The following items are a summary of the information in Attachment A that has been revised in consideration of Amendment #0005.

1. *Structural Clarification: pg. I.6*
2. *General Correction: Spelling pg. II.3*
3. *General Correction: Grammar pg. II.48*
4. *Under Technical Considerations / Humidity Requirements (Entire Document): Deletion of the text "(REF CHAPTER 00840 VOL.2)"*
5. *Addition of "Janitors Room" Criteria – Auditorium Section*

END OF AMENDMENT

APPLICATION OF WAGE DECISIONS

Solicitation No: **DACA63-02-R-0015**

Project: **Professional Development Center**

Location: **White Sands Missile Range, New Mexico**

1. Service Contract Act (SCA) Wage Determination Number 94-2361, Revision 18, will be applicable to those activities performing installation support requirements for certain minor maintenance repairs, clerical support services, custodial services, grounds maintenance, and landscaping or for those services requiring the utilization of professional/service employees, i.e., Biologists, Agronomists, Environmentalists, Environmental Abatement, Computer Specialists, Architects/Engineers, Surveyors, and associated Technicians thereof of the professional/technical trades in **Socorro County, New Mexico**.

2. Service Contract Act (SCA) Wage Determination Number 94-2511, Revision 20, will be applicable to those activities performing installation support requirements for certain minor maintenance repairs, clerical support services, custodial services, grounds maintenance, and landscaping or for those services requiring the utilization of professional/service employees, i.e., Biologists, Agronomists, Environmentalists, Environmental Abatement, Computer Specialists, Architects/Engineers, Surveyors, and associated Technicians thereof of the professional/technical trades in **Dona Ana, Lincoln, Otero and Sierra Counties, New Mexico**

NOTE: Payroll records are not required to be submitted to the U.S. Army Corps of Engineers for work performed under the Service Contract Act (SCA). SCA payroll records are required to be kept by the Prime Contractor, and available for review if requested, for a minimum of three years from the date of contract completion. Labor compliance will be monitored by the U.S. Department of Labor for SCA labor records.

3. Davis-Bacon Act Wage Decision, NM020001, Building and Heavy Construction Projects (Statewide), will be applicable to the construction, alteration, painting or repair of buildings, installation within buildings, appurtenances to buildings, foundations for buildings, excavation and fill for buildings, and utilities within five feet of buildings for those construction activities performed in **Dona Ana, Lincoln, Otero, Sierra and Socorro Counties, New Mexico**.

NOTE: PAYROLL RECORDS ARE REQUIRED, UNDER THE DAVIS-BACON ACT, TO BE SUBMITTED TO THE U.S. ARMY CORPS OF ENGINEERS FOR ALL CONSTRUCTION WORK PERFORMED.

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Stenographer I	10.45
Stenographer II	11.74
Supply Technician	16.85
Survey Worker (Interviewer)	10.04
Switchboard Operator-Receptionist	9.57
Test Examiner	12.83
Test Proctor	12.83
Travel Clerk I	10.38
Travel Clerk II	11.19
Travel Clerk III	11.90
Word Processor I	9.80
Word Processor II	11.02
Word Processor III	12.32
Automatic Data Processing Occupations	
Computer Data Librarian	10.45
Computer Operator I	12.57
Computer Operator II	12.80
Computer Operator III	16.91
Computer Operator IV	18.80
Computer Operator V	21.53
Computer Programmer I (1)	15.21
Computer Programmer II (1)	17.41
Computer Programmer III (1)	21.93
Computer Programmer IV (1)	26.52
Computer Systems Analyst I (1)	17.50
Computer Systems Analyst II (1)	22.59
Computer Systems Analyst III (1)	26.60
Peripheral Equipment Operator	12.67
Automotive Service Occupations	
Automotive Body Repairer, Fiberglass	15.27
Automotive Glass Installer	13.99
Automotive Worker	13.99
Electrician, Automotive	16.03
Mobile Equipment Servicer	11.94
Motor Equipment Metal Mechanic	15.90
Motor Equipment Metal Worker	13.99
Motor Vehicle Mechanic	16.03
Motor Vehicle Mechanic Helper	12.04
Motor Vehicle Upholstery Worker	13.99
Motor Vehicle Wrecker	13.99
Painter, Automotive	15.20
Radiator Repair Specialist	13.99
Tire Repairer	10.94
Transmission Repair Specialist	15.90
Food Preparation and Service Occupations	
Baker	11.12
Cook I	9.75
Cook II	11.12
Dishwasher	6.65
Food Service Worker	6.97
Meat Cutter	13.77
Waiter/Waitress	7.15
Furniture Maintenance and Repair Occupations	
Electrostatic Spray Painter	14.65
Furniture Handler	11.32
Furniture Refinisher	14.49
Furniture Refinisher Helper	11.32

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Furniture Repairer, Minor	13.70
Upholsterer	14.65
General Services and Support Occupations	
Cleaner, Vehicles	7.56
Elevator Operator	7.60
Gardener	11.82
House Keeping Aid I	6.73
House Keeping Aid II	7.76
Janitor	7.60
Laborer, Grounds Maintenance	8.60
Maid or Houseman	6.73
Pest Controller	12.02
Refuse Collector	7.14
Tractor Operator	10.83
Window Cleaner	8.75
Health Occupations	
Dental Assistant	11.27
Emergency Medical Technician (EMT)/Paramedic/Ambulance Driver	12.33
Licensed Practical Nurse I	12.90
Licensed Practical Nurse II	12.90
Licensed Practical Nurse III	14.43
Medical Assistant	10.21
Medical Laboratory Technician	12.93
Medical Record Clerk	11.24
Medical Record Technician	13.54
Nursing Assistant I	8.04
Nursing Assistant II	9.04
Nursing Assistant III	9.87
Nursing Assistant IV	11.07
Pharmacy Technician	12.19
Phlebotomist	10.65
Registered Nurse I	15.04
Registered Nurse II	18.40
Registered Nurse II, Specialist	18.40
Registered Nurse III	22.27
Registered Nurse III, Anesthetist	22.27
Registered Nurse IV	26.68
Information and Arts Occupations	
Audiovisual Librarian	11.94
Exhibits Specialist I	12.68
Exhibits Specialist II	15.48
Exhibits Specialist III	19.37
Illustrator I	14.58
Illustrator II	17.80
Illustrator III	22.28
Librarian	16.53
Library Technician	10.09
Photographer I	12.66
Photographer II	14.06
Photographer III	17.30
Photographer IV	19.37
Photographer V	23.43
Laundry, Dry Cleaning, Pressing and Related Occupations	
Assembler	6.70
Counter Attendant	6.53
Dry Cleaner	7.51
Finisher, Flatwork, Machine	6.70

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Presser, Hand	6.70
Presser, Machine, Drycleaning	6.70
Presser, Machine, Shirts	6.70
Presser, Machine, Wearing Apparel, Laundry	6.70
Sewing Machine Operator	8.49
Tailor	9.79
Washer, Machine	7.00
Machine Tool Operation and Repair Occupations	
Machine-Tool Operator (Toolroom)	16.41
Tool and Die Maker	19.81
Material Handling and Packing Occupations	
Forklift Operator	11.24
Fuel Distribution System Operator	12.80
Material Coordinator	13.46
Material Expediter	13.46
Material Handling Laborer	9.92
Order Filler	9.83
Production Line Worker (Food Processing)	10.49
Shipping Packer	10.67
Shipping/Receiving Clerk	10.67
Stock Clerk (Shelf Stocker; Store Worker II)	10.71
Store Worker I	8.08
Tools and Parts Attendant	10.49
Warehouse Specialist	10.49
Mechanics and Maintenance and Repair Occupations	
Aircraft Mechanic	15.54
Aircraft Mechanic Helper	11.32
Aircraft Quality Control Inspector	16.56
Aircraft Servicer	12.80
Aircraft Worker	13.70
Appliance Mechanic	14.49
Bicycle Repairer	10.94
Cable Splicer	16.69
Carpenter, Maintenance	14.49
Carpet Layer	15.76
Electrician, Maintenance	17.48
Electronics Technician, Maintenance I	14.94
Electronics Technician, Maintenance II	18.44
Electronics Technician, Maintenance III	19.56
Fabric Worker	10.60
Fire Alarm System Mechanic	15.54
Fire Extinguisher Repairer	12.80
Fuel Distribution System Mechanic	15.54
General Maintenance Worker	13.70
Heating, Refrigeration and Air Conditioning Mechanic	15.91
Heavy Equipment Mechanic	15.37
Heavy Equipment Operator	13.88
Instrument Mechanic	15.54
Laborer	8.21
Locksmith	14.65
Machinery Maintenance Mechanic	16.75
Machinist, Maintenance	15.95
Maintenance Trades Helper	12.04
Millwright	17.20
Office Appliance Repairer	14.65
Painter, Aircraft	14.49
Painter, Maintenance	14.49

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Pipefitter, Maintenance	17.61
Plumber, Maintenance	16.47
Pneudraulic Systems Mechanic	15.54
Rigger	15.54
Scale Mechanic	15.20
Sheet-Metal Worker, Maintenance	15.20
Small Engine Mechanic	13.70
Telecommunication Mechanic I	15.20
Telecommunication Mechanic II	16.02
Telephone Lineman	15.54
Welder, Combination, Maintenance	15.20
Well Driller	15.54
Woodcraft Worker	15.54
Woodworker	15.20
Miscellaneous Occupations	
Animal Caretaker	8.85
Carnival Equipment Operator	10.36
Carnival Equipment Repairer	11.29
Carnival Worker	7.14
Cashier	7.69
Desk Clerk	8.52
Embalmer	17.93
Lifeguard	9.42
Mortician	17.93
Park Attendant (Aide)	11.84
Photofinishing Worker (Photo Lab Tech., Darkroom Tech)	10.04
Recreation Specialist	13.57
Recycling Worker	10.36
Sales Clerk	9.34
School Crossing Guard (Crosswalk Attendant)	6.61
Sport Official	8.73
Survey Party Chief (Chief of Party)	13.68
Surveying Aide	12.44
Surveying Technician (Instr. Person/Surveyor Asst./Instr.)	12.55
Swimming Pool Operator	11.46
Vending Machine Attendant	9.21
Vending Machine Repairer	11.46
Vending Machine Repairer Helper	8.25
Personal Needs Occupations	
Child Care Attendant	8.52
Child Care Center Clerk	12.21
Chore Aid	7.05
Homemaker	15.61
Plant and System Operation Occupations	
Boiler Tender	17.48
Sewage Plant Operator	16.66
Stationary Engineer	17.48
Ventilation Equipment Tender	10.60
Water Treatment Plant Operator	14.99
Protective Service Occupations	
Alarm Monitor	7.99
Corrections Officer	12.06
Court Security Officer	12.06
Detention Officer	12.06
Firefighter	11.88
Guard I	7.15
Guard II	8.00

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Police Officer	14.96
Stevedoring/Longshoremen Occupations	
Blocker and Bracer	13.67
Hatch Tender	13.67
Line Handler	13.67
Stevedore I	13.28
Stevedore II	13.86
Technical Occupations	
Air Traffic Control Specialist, Center (2)	28.21
Air Traffic Control Specialist, Station (2)	19.46
Air Traffic Control Specialist, Terminal (2)	21.43
Archeological Technician I	14.26
Archeological Technician II	15.95
Archeological Technician III	19.75
Cartographic Technician	19.85
Civil Engineering Technician	17.42
Computer Based Training (CBT) Specialist/ Instructor	22.03
Drafter I	12.80
Drafter II	14.37
Drafter III	17.24
Drafter IV	19.63
Engineering Technician I	13.47
Engineering Technician II	15.12
Engineering Technician III	16.91
Engineering Technician IV	18.84
Engineering Technician V	22.42
Engineering Technician VI	27.08
Environmental Technician	16.04
Flight Simulator/Instructor (Pilot)	25.50
Graphic Artist	18.52
Instructor	19.15
Laboratory Technician	16.17
Mathematical Technician	17.40
Paralegal/Legal Assistant I	10.91
Paralegal/Legal Assistant II	14.32
Paralegal/Legal Assistant III	17.52
Paralegal/Legal Assistant IV	21.18
Photooptics Technician	15.13
Technical Writer	19.69
Unexploded (UXO) Safety Escort	17.93
Unexploded (UXO) Sweep Personnel	17.93
Unexploded Ordnance (UXO) Technician I	17.93
Unexploded Ordnance (UXO) Technician II	21.70
Unexploded Ordnance (UXO) Technician III	26.01
Weather Observer, Combined Upper Air and Surface Programs (3)	16.17
Weather Observer, Senior (3)	17.97
Weather Observer, Upper Air (3)	16.17
Transportation/ Mobile Equipment Operation Occupations	
Bus Driver	12.55
Parking and Lot Attendant	7.58
Shuttle Bus Driver	10.96
Taxi Driver	9.07
Truckdriver, Heavy Truck	14.84
Truckdriver, Light Truck	10.21
Truckdriver, Medium Truck	12.75
Truckdriver, Tractor-Trailer	14.84

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ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: \$2.02 an hour or \$80.80 a week or \$350.13 a month

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 10 years, and 4 after 15 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year: New Year's Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)

THE OCCUPATIONS WHICH HAVE PARENTHESES AFTER THEM RECEIVE THE FOLLOWING BENEFITS (as numbered):

1) Does not apply to employees employed in a bona fide executive, administrative, or professional capacity as defined and delineated in 29 CFR 541. (See CFR 4.156)

2) APPLICABLE TO AIR TRAFFIC CONTROLLERS ONLY - NIGHT DIFFERENTIAL: An employee is entitled to pay for all work performed between the hours of 6:00 P.M. and 6:00 A.M. at the rate of basic pay plus a night pay differential amounting to 10 percent of the rate of basic pay.

3) WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

HAZARDOUS PAY DIFFERENTIAL:

An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordnance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordnance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving regrading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordnance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordnance, explosive, and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordnance, explosives, and incendiary material differential pay.

** UNIFORM ALLOWANCE **

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$3.35 per week (or \$.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

** NOTES APPLYING TO THIS WAGE DETERMINATION **

Source of Occupational Title and Descriptions:

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations," Fourth Edition, January 1993, as amended by the Third Supplement, dated March 1997, unless otherwise indicated. This publication may be obtained from the Superintendent of Documents, at 202-783-3238, or by writing to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Copies of specific job descriptions may also be obtained from the appropriate contracting officer.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE
{Standard Form 1444 (SF 1444)}

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C)(vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

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1) When preparing the bid, the contractor identifies the need for a conformed occupation) and computes a proposed rate).

2) After contract award, the contractor prepares a written report listing in order proposed classification title), a Federal grade equivalency (FGE) for each proposed classification), job description), and rationale for proposed wage rate), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.

3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).

4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.

5) The contracting officer transmits the Wage and Hour decision to the contractor.

6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

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Stenographer I	10.79
Stenographer II	11.57
Supply Technician	17.06
Survey Worker (Interviewer)	11.62
Switchboard Operator-Receptionist	7.64
Test Examiner	12.88
Test Proctor	12.88
Travel Clerk I	9.02
Travel Clerk II	9.61
Travel Clerk III	10.23
Word Processor I	8.74
Word Processor II	9.80
Word Processor III	12.52
Automatic Data Processing Occupations	
Computer Data Librarian	7.41
Computer Operator I	8.13
Computer Operator II	12.03
Computer Operator III	13.94
Computer Operator IV	15.48
Computer Operator V	17.18
Computer Programmer I (1)	16.45
Computer Programmer II (1)	22.06
Computer Programmer III (1)	25.16
Computer Programmer IV (1)	27.62
Computer Systems Analyst I (1)	20.63
Computer Systems Analyst II (1)	24.75
Computer Systems Analyst III (1)	27.42
Peripheral Equipment Operator	9.04
Automotive Service Occupations	
Automotive Body Repairer, Fiberglass	15.63
Automotive Glass Installer	13.69
Automotive Worker	13.69
Electrician, Automotive	14.67
Mobile Equipment Servicer	11.73
Motor Equipment Metal Mechanic	15.63
Motor Equipment Metal Worker	13.69
Motor Vehicle Mechanic	16.49
Motor Vehicle Mechanic Helper	10.75
Motor Vehicle Upholstery Worker	12.70
Motor Vehicle Wrecker	13.69
Painter, Automotive	14.67
Radiator Repair Specialist	13.69
Tire Repairer	11.33
Transmission Repair Specialist	15.63
Food Preparation and Service Occupations	
Baker	10.41
Cook I	8.92
Cook II	10.41
Dishwasher	6.37
Food Service Worker	6.54
Meat Cutter	10.41
Waiter/Waitress	6.69
Furniture Maintenance and Repair Occupations	
Electrostatic Spray Painter	14.67
Furniture Handler	8.80
Furniture Refinisher	14.67
Furniture Refinisher Helper	10.75

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Furniture Repairer, Minor	11.95
Upholsterer	14.67
General Services and Support Occupations	
Cleaner, Vehicles	6.32
Elevator Operator	7.06
Gardener	10.67
House Keeping Aid I	6.68
House Keeping Aid II	7.25
Janitor	7.06
Laborer, Grounds Maintenance	8.00
Maid or Houseman	6.35
Pest Controller	9.97
Refuse Collector	6.55
Tractor Operator	9.80
Window Cleaner	7.94
Health Occupations	
Dental Assistant	11.10
Emergency Medical Technician (EMT)/Paramedic/Ambulance Driver	12.30
Licensed Practical Nurse I	11.02
Licensed Practical Nurse II	12.36
Licensed Practical Nurse III	13.83
Medical Assistant	10.35
Medical Laboratory Technician	12.29
Medical Record Clerk	9.77
Medical Record Technician	13.54
Nursing Assistant I	7.10
Nursing Assistant II	7.98
Nursing Assistant III	8.71
Nursing Assistant IV	9.77
Pharmacy Technician	12.19
Phlebotomist	12.29
Registered Nurse I	16.62
Registered Nurse II	20.35
Registered Nurse II, Specialist	20.35
Registered Nurse III	24.62
Registered Nurse III, Anesthetist	24.62
Registered Nurse IV	29.49
Information and Arts Occupations	
Audiovisual Librarian	19.00
Exhibits Specialist I	19.15
Exhibits Specialist II	23.08
Exhibits Specialist III	26.14
Illustrator I	19.15
Illustrator II	23.08
Illustrator III	26.14
Librarian	20.23
Library Technician	11.31
Photographer I	11.81
Photographer II	15.14
Photographer III	18.93
Photographer IV	22.50
Photographer V	25.66
Laundry, Dry Cleaning, Pressing and Related Occupations	
Assembler	6.61
Counter Attendant	6.61
Dry Cleaner	7.55
Finisher, Flatwork, Machine	6.61

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

Presser, Hand	6.61
Presser, Machine, Drycleaning	6.61
Presser, Machine, Shirts	6.61
Presser, Machine, Wearing Apparel, Laundry	6.61
Sewing Machine Operator	8.11
Tailor	8.63
Washer, Machine	7.06
Machine Tool Operation and Repair Occupations	
Machine-Tool Operator (Toolroom)	14.67
Tool and Die Maker	18.42
Material Handling and Packing Occupations	
Forklift Operator	10.39
Fuel Distribution System Operator	11.73
Material Coordinator	12.20
Material Expediter	12.20
Material Handling Laborer	7.64
Order Filler	10.19
Production Line Worker (Food Processing)	10.86
Shipping Packer	9.49
Shipping/Receiving Clerk	9.49
Stock Clerk (Shelf Stocker; Store Worker II)	10.04
Store Worker I	8.54
Tools and Parts Attendant	10.86
Warehouse Specialist	10.86
Mechanics and Maintenance and Repair Occupations	
Aircraft Mechanic	16.88
Aircraft Mechanic Helper	11.61
Aircraft Quality Control Inspector	17.95
Aircraft Servicer	13.72
Aircraft Worker	14.79
Appliance Mechanic	14.67
Bicycle Repairer	11.33
Cable Splicer	17.19
Carpenter, Maintenance	14.67
Carpet Layer	13.69
Electrician, Maintenance	15.67
Electronics Technician, Maintenance I	15.24
Electronics Technician, Maintenance II	18.72
Electronics Technician, Maintenance III	19.92
Fabric Worker	12.70
Fire Alarm System Mechanic	15.63
Fire Extinguisher Repairer	11.73
Fuel Distribution System Mechanic	15.63
General Maintenance Worker	13.69
Heating, Refrigeration and Air Conditioning Mechanic	15.63
Heavy Equipment Mechanic	15.63
Heavy Equipment Operator	15.63
Instrument Mechanic	15.63
Laborer	7.64
Locksmith	14.67
Machinery Maintenance Mechanic	15.63
Machinist, Maintenance	15.98
Maintenance Trades Helper	10.75
Millwright	15.63
Office Appliance Repairer	14.67
Painter, Aircraft	14.67
Painter, Maintenance	14.67

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

Pipefitter, Maintenance	15.63
Plumber, Maintenance	14.67
Pneudraulic Systems Mechanic	15.63
Rigger	15.63
Scale Mechanic	13.69
Sheet-Metal Worker, Maintenance	15.63
Small Engine Mechanic	13.76
Telecommunication Mechanic I	17.19
Telecommunication Mechanic II	18.28
Telephone Lineman	15.63
Welder, Combination, Maintenance	15.63
Well Driller	15.63
Woodcraft Worker	15.63
Woodworker	11.73
Miscellaneous Occupations	
Animal Caretaker	8.02
Carnival Equipment Operator	8.45
Carnival Equipment Repairer	9.21
Carnival Worker	6.14
Cashier	6.75
Desk Clerk	9.41
Embalmer	17.93
Lifeguard	9.42
Mortician	17.93
Park Attendant (Aide)	11.84
Photofinishing Worker (Photo Lab Tech., Darkroom Tech)	7.49
Recreation Specialist	11.65
Recycling Worker	9.01
Sales Clerk	8.10
School Crossing Guard (Crosswalk Attendant)	6.37
Sport Official	8.24
Survey Party Chief (Chief of Party)	13.04
Surveying Aide	9.03
Surveying Technician (Instr. Person/Surveyor Asst./Instr.)	10.65
Swimming Pool Operator	10.77
Vending Machine Attendant	8.47
Vending Machine Repairer	10.77
Vending Machine Repairer Helper	8.47
Personal Needs Occupations	
Child Care Attendant	8.41
Child Care Center Clerk	10.49
Chore Aid	5.83
Homemaker	12.70
Plant and System Operation Occupations	
Boiler Tender	15.63
Sewage Plant Operator	14.67
Stationary Engineer	15.63
Ventilation Equipment Tender	10.75
Water Treatment Plant Operator	14.67
Protective Service Occupations	
Alarm Monitor	12.33
Corrections Officer	17.48
Court Security Officer	17.48
Detention Officer	17.48
Firefighter	18.03
Guard I	6.00
Guard II	9.44

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

Police Officer	18.07
Stevedoring/Longshoremen Occupations	
Blocker and Bracer	13.82
Hatch Tender	13.82
Line Handler	13.82
Stevedore I	13.46
Stevedore II	16.46
Technical Occupations	
Air Traffic Control Specialist, Center (2)	28.21
Air Traffic Control Specialist, Station (2)	19.46
Air Traffic Control Specialist, Terminal (2)	21.43
Archeological Technician I	17.29
Archeological Technician II	19.33
Archeological Technician III	23.95
Cartographic Technician	20.76
Civil Engineering Technician	18.93
Computer Based Training (CBT) Specialist/ Instructor	21.41
Drafter I	13.16
Drafter II	15.41
Drafter III	19.99
Drafter IV	26.25
Engineering Technician I	11.06
Engineering Technician II	14.42
Engineering Technician III	18.05
Engineering Technician IV	22.22
Engineering Technician V	26.15
Engineering Technician VI	29.80
Environmental Technician	18.11
Flight Simulator/Instructor (Pilot)	24.75
Graphic Artist	19.52
Instructor	18.85
Laboratory Technician	15.08
Mathematical Technician	22.64
Paralegal/Legal Assistant I	14.31
Paralegal/Legal Assistant II	19.00
Paralegal/Legal Assistant III	20.91
Paralegal/Legal Assistant IV	28.11
Photooptics Technician	18.93
Technical Writer	28.84
Unexploded (UXO) Safety Escort	17.93
Unexploded (UXO) Sweep Personnel	17.93
Unexploded Ordnance (UXO) Technician I	17.93
Unexploded Ordnance (UXO) Technician II	21.70
Unexploded Ordnance (UXO) Technician III	26.01
Weather Observer, Combined Upper Air and Surface Programs (3)	16.08
Weather Observer, Senior (3)	18.15
Weather Observer, Upper Air (3)	16.08
Transportation/ Mobile Equipment Operation Occupations	
Bus Driver	11.90
Parking and Lot Attendant	6.78
Shuttle Bus Driver	10.30
Taxi Driver	9.55
Truckdriver, Heavy Truck	13.90
Truckdriver, Light Truck	10.40
Truckdriver, Medium Truck	11.91
Truckdriver, Tractor-Trailer	13.90

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: \$2.02 an hour or \$80.80 a week or \$350.13 a month

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 5 years, and 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year: New Year's Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)

THE OCCUPATIONS WHICH HAVE PARENTHESES AFTER THEM RECEIVE THE FOLLOWING BENEFITS (as numbered):

1) Does not apply to employees employed in a bona fide executive, administrative, or professional capacity as defined and delineated in 29 CFR 541. (See CFR 4.156)

2) APPLICABLE TO AIR TRAFFIC CONTROLLERS ONLY - NIGHT DIFFERENTIAL: An employee is entitled to pay for all work performed between the hours of 6:00 P.M. and 6:00 A.M. at the rate of basic pay plus a night pay differential amounting to 10 percent of the rate of basic pay.

3) WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

HAZARDOUS PAY DIFFERENTIAL:

An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordnance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordnance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving regrading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordnance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordnance, explosive, and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to

work that has been specifically designated by the agency for ordnance, explosives, and incendiary material differential pay.

**** UNIFORM ALLOWANCE ****

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$3.35 per week (or \$.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

**** NOTES APPLYING TO THIS WAGE DETERMINATION ****

Source of Occupational Title and Descriptions:

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations," Fourth Edition, January 1993, as amended by the Third Supplement, dated March 1997, unless otherwise indicated. This publication may be obtained from the Superintendent of Documents, at 202-783-3238, or by writing to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Copies of specific job descriptions may also be obtained from the appropriate contracting officer.

**REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE
{Standard Form 1444 (SF 1444)}**

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C)(vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

1) When preparing the bid, the contractor identifies the need for a conformed occupation) and computes a proposed rate).

2) After contract award, the contractor prepares a written report listing in order proposed classification title), a Federal grade equivalency (FGE) for each proposed classification), job description), and rationale for proposed wage rate), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.

3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).

4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.

5) The contracting officer transmits the Wage and Hour decision to the contractor.

6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

GENERAL DECISION NM020001 07/05/02 NM1
General Decision Number NM020001

Superseded General Decision No. NM010001

State: **New Mexico**

Construction Type:
BUILDING
HEAVY

County(ies):
STATEWIDE

STATEWIDE - EXCLUDING EDDY AND LEA COUNTIES FOR BUILDING CONSTR

GENERAL BUILDING AND HEAVY ENGINEERING CONSTRUCTION shall include the construction, alteration, repair and demolition of buildings, including office buildings, warehouses, industrial and commercial buildings, institutional and public buildings, and all air conditioning, conduit, heating and other mechanical and electrical works and site preparation for building or heavy engineering projects under this classification, stadia; and shall include electrical, gas, water, sewer lines, and other such utility construction which are part of projects under this classification and include within the property line or less than five (5) feet from the building or heavy engineering structure, whichever is closer, provided, however, regard to electrical utilities such construction shall include construction from the first attachment of incoming power source without regard to the property line or proximity to the building or the heavy engineering structure; and include construction, alteration, repair and demolition of heavy engineering work such as power generating plants, pump stations, natural gas compressing stations; covered reservoirs and covered sewage and water treatment facilities concrete linings for canals, ditches and channels; concrete dams; earth dams of one million (1,000,000) cubic yards or over; radio towers, ovens, furnaces, kilns, silos, shafts and tunnels (other than highway shafts and tunnels), hydro-electric projects; and well drilling, telephone and electrical transmission lines which are part of **GENERAL BUILDING AND HEAVY ENGINEERING PROJECTS**: mining appurtenances such as tripples, washeries and loading and discharging chutes, and specialized structures for testing, launching and recovering space and other rocket-type missiles.

Modification Number	Publication Date
0	03/01/2002
1	04/05/2002
2	06/21/2002
3	07/05/2002

COUNTY(ies):
STATEWIDE

ASBE0066D 03/01/2002

Rates

Fringes

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

CURRY, HARDING, LEA, QUAY, ROOSEVELT, UNION COUNTIES

ASBESTOS WORKERS/INSULATORS
 (Includes application of all
 insulating materials, protective
 coverings, coatings and finishings
 to all types of mechanical
 systems and asbestos removal

	17.05	4.96
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ASBE0076B 01/01/2002

	Rates	Fringes
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STATEWIDE, EXCLUDING CURRY, HARDING, LEA, QUAY, ROOSEVELT &
 UNION COUNTIES

ASBESTOS WORKERS/INSULATORS
 (Includes application of all
 insulating materials, pro-
 tective coverings, coatings
 and finishings to all types
 of mechanical systems and
 asbestos removal)

	21.72	5.67
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LOS ALAMOS COUNTY

	23.44	5.67
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BOIL0627A 01/01/2001

	Rates	Fringes
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STATEWIDE, EXCLUDING BERNALILLO, CIBOLA, MCKINLEY, RIO ARRIBA,
 SANDOVAL AND SOCORRO COUNTIES

BOILERMAKERS	19.28	10.89
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BRNM0001A 04/01/2002

	Rates	Fringes
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BRICKLAYERS; MARBLE MASONS;
 STONEMASONS; TILE LAYERS
 & TERRAZZO WORKERS:

DONA ANA COUNTY	17.20	3.39
GRANT, LUNE, OTERO & SIERRA COS.	19.70	3.39
HIDALGO COUNTY	21.70	3.39

BRNM0001B 04/01/2002

	Rates	Fringes
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BERNALILLO, CATRON, CIBOLA, CHAVES, COLFAX, CURRY, DEBACA,
 GUADALUPE, HARDING, LINCOLN, LOS ALAMOS, MCKINLEY, MORA, RIO
 ARRIBA, ROOSEVELT, QUAY, SANDOVAL, SAN JUAN, SAN MIGUEL, SANTA
 FE, SOCORRO, TAOS, TORRENCE, UNION & VALENCIA COUNTIES

BRICKLAYERS-STONEMASONS	21.53	3.51
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MARBLE MASONS, TILE LAYERS &

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

TERRAZZO WORKERS	18.35	3.51
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CARP0092A 10/01/2001		
	Rates	Fringes
CARPENTERS, LATHERS, & PILEDRIVERMEN	19.32	4.29
LIGHT COMMERCIAL CONSTRUCTION**	16.46	2.20

**SEE DEFINITION AT THE END OF TRUCK DRIVERS

MILLWRIGHTS:		
ZONE I	21.75	4.29
ZONE II	24.00	4.29

BASING POINTS FOR MILLWRIGHTS ONLY FROM ALBUQUERQUE CITY HALL

ZONE I 0 TO 15 ROAD MILES
 ZONE II 15 TO 35 ROAD MILES

ELEC0583B 06/01/2002		
	Rates	Fringes
ELECTRICIANS		
Zone I	17.60	4.25%+4.30
Zone II	19.55	4.25%+4.30

CABLE SPLICERS:		
Zone I	17.85	4.25%+4.30
Zone II	19.80	4.25%+4.30

Zone 1: The area within a 25 mile radius from the downtown Post Office in El Paso, TX. Ft Bliss and Biggs Field proper to be included in this free zone. The area within a 15 mile radius from the Post Office in Las Cruces, NM and within a 5 mile radius from the Post Office in Alamogordo, Deming and Lordsburg. The area 10 miles East and 10 miles West of Interstate 10 between El Paso, Texas and Las Cruces NM.

Zone 2: Dona Ana, Otero, Luna and Hidalgo Counties (except that area in Zone 1.

* ELEC0611B 07/01/2002		
	Rates	Fringes

COMMERCIAL LINE WORK (also applies to switching stations and substations adjacent to power plants):

Bernalillo, Catron, Chaves, Cibola, Colfax, Curry, DeBaca, Grant, Guadalupe, Harding, Lincoln, Los Alamos (USE ZONE 3 RATES), McKinley, Mora, Quay, Rio Arriba, Roosevelt, Sandoval, San Juan, San Miguel, Santa Fe, Sierra, Socorro, Taos, Torrance, Union, Valencia & White Sands Missile Range and that portion of Fort Bliss in New Mexico.

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

Lineman - Technicians:		
Zone I	23.05	3.5%+5.95
Zone II	25.12	3.5%+5.95
Zone III	26.51	3.5%+5.95
Zone IV	29.04	3.5%+5.95
Cable Splicers:		
Zone I	25.36	3.5%+5.95
Zone II	27.43	3.5%+5.95
Zone III	28.82	3.5%+5.95
Zone IV	31.35	3.5%+5.95
Equipment Op. (includes helicopter op.) and Equipment Mechanic (includes helicopter mechanic):		
Zone I	21.88	3.5%+5.95
Zone II	23.95	3.5%+5.95
Zone III	25.34	3.5%+5.95
Zone IV	27.87	3.5%+5.95
Powderman:		
Zone I	20.07	3.5%+5.95
Zone II	22.14	3.5%+5.95
Zone III	23.53	3.5%+5.95
Zone IV	26.06	3.5%+5.95
Groundman - Jackhammer Op.:		
Zone I	16.35	3.5%+5.95
Zone II	18.42	3.5%+5.95
Zone III	19.81	3.5%+5.95
Zone IV	22.34	3.5%+5.95

Zone 1	Basic Wage Rates
City	Miles From Main Post Office
*Albuquerque	25 miles
Santa Fe	10 miles
Las Vegas	8 miles
Farmington	6 miles
Raton	6 miles
Tucumcari	6 miles
Gallup	10 miles
Roswell	12 miles
Ruidoso	12 miles
Portales	12 miles
Carrizozo	12 miles
Clovis	12 miles
Belen	12 miles
Los Lunas	12 miles
Espanola	14 miles

*The eastern edge of the Albuquerque Zone extends no further than the western boundary of the Village of Tjieras.

Zone 2 extending up to twenty (20) miles beyond Zone 1, EXCEPT ALBUQUERQUE.

Zone 3 extending up to thirty (30) miles beyond Zone 1, EXCEPT

ALBUQUERQUE.

Zone 4 anything beyond thirty (30) miles from Zone 1, EXCEPT ALBUQUERQUE.

ELEC0611C 06/02/2002

	Rates	Fringes
ELECTRICIANS:		
Bernalillo, Santa Fe, Torrance, DeBaca, Guadalupe, Quay, San Miguel, Mora, Harding, Union, Colfax, Taos, Rio Arriba, Grant, Sandoval, Valencia, Socorro, Catron, McKinley, Sierra, San Juan, Chaves, Curry, Lincoln, Cibola & Roosevelt Counties		
Zone 1		
Electricians	23.05	7.07
Cable Splicers	25.36	7.07
Zone 2		
Electricians	25.12	7.07
Cable Splicers	27.43	7.07
Zone 3		
Electricians	26.51	7.07
Cable Splicers	28.82	7.07
Zone 4		
Electricians	29.04	7.07
Cable Splicers	31.35	7.07

Basic Wage Rates
City

Miles From
Main Post Office

Albuquerque	40 miles
Belen	12 miles
Carrizozo	12 miles
Clovis	12 miles
Espanola	14 miles
Farmington	6 miles
Gallup	10 miles
Las Vegas	8 miles
Los Lunas	12 miles
Portales	12 miles
Raton	6 miles
Roswell	12 miles
Ruidoso	12 miles
Santa Fe	10 miles
Tucumcari	6 miles

Zone 2 extending up to twenty (20) miles beyond Zone 1, EXCEPT ALBUQUERQUE.

Zone 3 extending up to thirty (30) miles beyond Zone 1, EXCEPT ALBUQUERQUE.

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

Zone 4 anything beyond thirty (30) miles from Zone 1, EXCEPT ALBUQUERQUE.

FOR ESTABLISHING THE OUTLYING ZONES FROM THE ALBUQUERQUE FREE ZONE ONLY, ZONE 2 SHALL EXTEND UP TO TEN (10) MILES BEYOND ZONE 1, ZONE 3 SHALL EXTEND UP TO TWENTY (20) MILES BEYOND ZONE 1, AND ZONE 4 ANYTHING BEYOND TWENTY (20) MILES FROM ZONE 1.

ELEC0611D	06/02/2002		
		Rates	Fringes
LOS ALAMOS CO.			
ELECTRICIANS		26.51	7.07
CABLE SPLICERS		28.82	7.07

ELEC0611E	06/02/2002		
		Rates	Fringes
EDDY AND LEA COUNTIES:			
ZONE A			
ELECTRICIANS		21.50	7.07
CABLE SPLICERS		22.58	7.07
ZONE B			
ELECTRICIANS		21.95	7.07
CABLE SPLICERS		23.03	7.07
ZONE C			
ELECTRICIANS		22.10	7.07
CABLE SPLICERS		23.18	7.07
ZONE D			
ELECTRICIANS		22.35	7.07
CABLE SPLICERS		23.43	7.07

ZONE A DISPATCH POINTS

- Artesia - 12 miles
- Carlsbad - 12 miles
- Hobbs - 12 miles
- Lovington - 12 miles

Zone A shall be designated from the Main Post Office of Artesia, Carlsbad, Hobbs and Lovington, New Mexico.

Zone B extending up to ten (10) miles beyond Zone A.

Zone C extending up to twenty eight (28) miles beyond Zone A.

Zone D anything beyond twenty-eight (28) miles beyond Zone A.

ELEC0611I 01/01/2000

COMMERCIAL LINE WORK (also applies to switching stations adjacent to power plants):

Eddy and Lea Counties:

Lineman - Technicians:

	Rates	Fringes
Zone I	19.00	3.75%+5.15
Zone II	19.45	3.75%+5.15
Zone III	19.60	3.75%+5.15
Zone IV	19.85	3.75%+5.15

Cable Splicers:

Zone I	19.35	3.75%+5.15
Zone II	19.80	3.75%+5.15
Zone III	19.95	3.75%+5.15
Zone IV	20.20	3.75%+5.15

Equipment Op. and Mechanics
(includes Helicopter Op. & Mechanic):

Zone I	18.05	3.75%+5.15
Zone II	18.50	3.75%+5.15
Zone III	18.65	3.75%+5.15
Zone IV	18.90	3.75%+5.15

Powderman

Zone I	16.53	3.75%+5.15
Zone II	16.98	3.75%+5.15
Zone III	17.13	3.75%+5.15
Zone IV	17.38	3.75%+5.15

Groundman - Jackhammer Op.:

Zone I	13.49	3.75%+5.15
Zone II	13.94	3.75%+5.15
Zone III	14.09	3.75%+5.15
Zone IV	14.34	3.75%+5.15

FROM THE MAIN POST OFFICE OF ARTESIA,
CARLSBAD, HOBBS & LOVINGTON, NEW MEXICO

ZONE I - 0 to 12 miles
 ZONE II - 12 miles to 22 miles
 ZONE III - 22 miles to 40 miles
 ZONE IV - 40 miles and beyond

ELEC0611Z 01/01/2000

COMMERCIAL LINE WORK (ALSO APPLIES TO SWITCHING STATIONS AND SUBSTATIONS ADJACENT TO POWER PLANTS):

Dona Ana, Hidalgo, Luna and Otero Cos., exclusive of White Sands Missile Range and that portion of Fort Bliss in New Mexico

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

Linemen - Technicians		
Zone I	16.85	3.75%+3.30
Zone II	18.80	3.75%+3.30
Cable Splicers		
Zone I	17.19	3.75%+3.30
Zone II	19.18	3.75%+3.30
Equipment Op. (includes Helicopter Op.):		
Zone I	14.66	3.75%+3.30
Zone II	16.36	3.75%+3.30
Equipment Mechanic (includes Helicopter Mech.):		
Zone I	14.66	3.75%+3.30
Zone II	16.36	3.75%+3.30
Powderman:		
Zone I	14.15	3.75%+3.30
Zone II	15.79	3.75%+3.30
Groundman - Jackhammer Op.:		
Zone I	11.96	3.75%+3.30
Zone II	13.35	3.75%+3.30

ZONE I:

a. The area within a 25 mile radius from the Downtown Post Office in El Paso, Texas. Fort Bliss and Biggs Field Property to be included in this Free Zone. Fort Bliss and Biggs Field to be defined by official U.S. Government Map

b. The area within a five mile radius of any city, town, or municipality within which an employer establishes or maintains his permanent place of business.

c. The area within a fifteen mile radius from the Post Office in Las Cruces, New Mexico, and within a five mile radius from the Post Office in Alamogordo, Deming, and Lordsburg, New Mexico.

d. The area ten miles East and ten miles West of Interstate 10, between El Paso, Texas and Las Cruces, New Mexico.

ZONE II: All other areas of the jurisdiction except those specified in Zone I.

* ELEV0131A 07/01/2002

	Rates	Fringes
ELEVATOR CONSTRUCTORS:		
MECHANIC	23.775	7.455+a

FOOTNOTE: a. Under 5 years service 6%; over 5 years service 8%.
7-Paid Holidays New Years Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Day.

ENGI0953C 04/01/2002

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

HEAVY CONSTRUCTION:

ZONE 1:

GROUP I	15.57	3.15
GROUP II	16.96	3.15
GROUP III	17.11	3.15
GROUP IV	17.32	3.15
GROUP V	17.38	3.15
GROUP VI	17.52	3.15
GROUP VII	17.64	3.15
GROUP VIII	19.08	3.15

ZONE 2:

GROUP I	18.07	3.15
GROUP II	19.46	3.15
GROUP III	19.61	3.15
GROUP IV	19.82	3.15
GROUP V	19.88	3.15
GROUP VI	20.02	3.15
GROUP VII	20.14	3.15
GROUP VIII	21.58	3.15

ZONE 3:

GROUP I	19.57	3.15
GROUP II	20.96	3.15
GROUP III	21.11	3.15
GROUP IV	21.32	3.15
GROUP V	21.38	3.15
GROUP VI	21.52	3.15
GROUP VII	21.64	3.15
GROUP VIII	22.08	3.15

SHAFT AND TUNNEL WORK - \$.15 per hour above regular rate.

HAZARDOUS PAY - The following pay shall be applicable for every hour an operating engineer is required by governmental regulations and does wear special equipment for hazardous work at the designated levels. This is applicable in all three zones

- LEVEL C - 10% above regular hourly wage
- LEVEL B - 10% above regular hourly wage
- LEVEL A - 15% above regular hourly wage

ZONE PAY

The reference point for determining zone pay shall be from the intersection of Interstate Highway 25 and Interstate Highway 40 (the Big "I") in Albuquerque.

ZONE I - Albuquerque - 0 to 50 mile radius from the Big "I" shall be a Free Zone

- Farmington - 0 to 15 mile radius of Farmington City Hall shall be a Free Zone

Zone II - Shall be \$2.50 per hour above base pay. Will apply outside of above parameters up to 35 miles

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

Zone III - Shall be \$1.50 cents per hour above Zone II for a total of \$4.00 per hour and will apply after 35 miles of Zone I's parameters.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP I

Fireman, Oiler Screedman, Scale Operators, Rubber Tired farm type tractor, tractors under 50 hp w/o attachments, Breakman, Concrete Paving Curbing Machine (Bridge-Type).

GROUP II

Rollers, Sheepsfoot or Pneumatic Self-Propelled w/o Dozer, Concrete Conveyor, Service Truck operator, Air compressor (315 CFM & Over), Pumps (6" & Over), Screening plants, Concrete Mixers (Under 1 CY), Concrete Saw or grinder-span type, 1 Drum Hoist (tugger), Air Tugger, Elevating Belt Type Loaders, Forklift, Lumber Stacker, Tractor Farm Type (under 50 HP w/Attachments), Motorman and Industrial Locomotive op., Winch Truck, Front End Loaders (under 2 CY), Power Plants which Generate Over 15 KW., Welding Machines.

GROUP III

Bituminous Distributors, Boilers, Retort & Hot Oil Heaters Concrete Mixers, (1 CV & Over), Conc. Paver-Single Drum, Drilling Equip., Motor Grader (rough), Shaft and Tunnel Equipment: (Refrigeration, slusher, jumbo forms), Trenching Machines (all types), Pump crete and gunite machines, Slipform Paver, Mechanical Bullfloats, Concrete Slab Spreading Machine, Concrete Slab Finishing Machine, Space Heaters, Bituminous Finishing Machines, Water Carrier (all types), Concrete Cleaning Decontamination Machine Operator, Horizontal Directional Drill Locator.

GROUP IV

Front End Loaders (2 thru 10 CY), Rollers Steel Wheeled-All Types, Bulldozer, Scrapers (Motor or Towed), Elevating Graders Self-Propelled Rollers - Equipped W/Dozer, Twin-Bowl Scrapers and Quad 8 or 9 pushers (35 cents over basic rate), Three bowl scrapers (60 cents over basic rate), Backhoes up to 3/4 yard bucket, Head Oiler (Service Truck Operator).

GROUP V

Hydraulic Cranes-With less than 50 feet of Boom (20 Tons and Under), Concrete Paver-Double Drum, Cat Cranes, Hysters, 2 Drum Hoist, Auto Fine Grade.

GROUP VI

Mucking Machines-All Types

GROUP VII

Steam Engineers, Loader (Front End Over 10 CV) Concrete Pump (Snorkel Type), Concrete batching plants and Asphalt plants, Crushing plants, Hot plants.

GROUP VIII

All Shovel Type Equipment, Cranes, Draglines, Backhoes over a 3/4 yard bucket, Derricks Guy and Stiff Leg, Pipe mobile (No 2 Operator), Piledriver, Hydraulic Cranes (20 Tons & Over), Mine Hoist, Belt Loader ("C.M.I." Type), Boom and Jibs 150 ft. Through 199 ft. -\$.50 per hour above base pay, 200 ft and over-\$1.00 per hour above base pay. Shovel (Wheel Type), Boring Machine (Tunnel or Shaft Mole), Pipe Mobile, Side and swing-boom cats, Motor grader (finish), Mechanic-Welder, Heavy Equipment Robotics Operator/Mechanic, Ultra High Pressure Waterjet Cutting Tool System Operator/Mechanic, Vacuum Blasting Machine Operator/Mechanic, Mater Environmental Maintenance Mechanic, Horizontal Directoral Drill Operator.

ENGI0953E 11/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
BUILDING CONSTRUCTION:		
GROUP I	15.65	3.00
GROUP II	17.16	3.00
GROUP III	17.28	3.00
GROUP IV	17.56	3.00
GROUP V	17.69	3.00
GROUP VI	17.83	3.00
GROUP VII	17.93	3.00
GROUP VIII	19.93	3.00

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP I

Fireman, Oiler, Screedman, Scale op. such as Bin-a-Batch, Rubber Tired Farm Type Tractor, Tractors under 50 hp w/o Attachments, Brakeman, Concrete Curing Machine(Bridge Type).

GROUP II

Rollers, Sheepsfoot or Pneumatic Self-Propelled w/o Dozer, Concrete Conveyor, Service Truck op. (Head Oiler), Air Compressor (600 CFM & Over), Pumps (6" & Over), Screening Plants, Concrete Mixers (Under 1 CY), Concrete Saw or Grinder-Span Type, 1 Drum Hoists, Elevating Belt Type Loaders, Lumber Stacker, Tractor Farm Type (under 50 HP w/Attachments), Winch Trucks, Front End Loader (under 2 CY), Welding Machines, Cat Head Winch, Power Plants which generate over 15 KW, Oiler with CDL, Concrete Curbing Machine.

GROUP III

Bituminous Distributors, Boilers, Retort & Hot Oil Heaters Concrete Mixers, (1 CY & Over), Concrete Paver-Single Drum, Drilling Equip., Shaft and Tunnel Equipment: Refrigeration, Slusher, Jumbo forms, Trenching Machines (all Types), Pump Crete & Guniting Machines, Slipform Paver, Mechanical Bullfloats, Concrete Slab Spreading Machine, Concrete Slab Finishing Machine, Asphalt Plants, Bituminous Finishing Machines, Crushing Plants, Certified Forklift.

GROUP IV

Front End Loaders (2 thru 19 CY), Rollers Steel Wheeled-All

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

Types, Bulldozer, Scrapers (Motor or Towed), Elevating Graders Concrete Batching Plants, Self-Propelled Rollers - Equipped W/Dozer, Twin-Bowl Scrapers and Quad 8 or 9 Pushers (\$.35 Over Basic Rate), Three Bowl Scrapers (\$.60 Over Basic Rate), Bobcat w/Hydraulic Backhoes with buckets up to one and one quarter cubic yards, Motor Grader (Rough), Small Articulating Trucks.

GROUP V

Concrete Paver, Double Drum, Two Drum Hoist, Auto Fine Grader Hysters, Forklift over 2,000 lbs. Lifting Capacity

GROUP VI

Mucking Machines-All Types, Tractor with Hydraulic Backhoe, Backhoes with Buckets up to one and one quarter cubic yards.

GROUP VII

Hydraulic Cranes with less than 50 feet of boom (20 tons and under), Steam Engineers, Loaders (Front end over 10 cubic yards), Concrete Pump (Snorkel Type), Heavy Equipment Low Boy Driver with CDL, Mining Machine, Roof Bolting Machine, Shuttle Car.

GROUP VIII

All Shovel Type Equipment, Side Boom Cats, Cranes, Draglines, Track or Excavator Backhoe, Backhoes with Buckets over one and one quarter cubic yards, Derricks, Guy and Stiff Leg, Pipemobile (No.2 Operator), Pile Driver, Hydraulic Cranes (20 ton and over), Mine Hoists, Belt Loader (C.M.I. type) Cranes and Draglines with Booms over 150 ft. through 199 feet \$.75 above base rate per hour additional; 200 feet and over \$1.00 above base rate per hour additional, Shovel (Wheel type), Boring Machine (Tunnel or Shaft Mode), Pipe Mobile, Motor Grader (Finish), Mechanic, Welder, Mobile Pipeline Inspection Camera, Operator/Rigger, Crane Inspector, Continuous Mining Machine, VAC Jet Rodder, Equipment Instructor.

IRON0263D 06/01/2002

	Rates	Fringes
CHAVES, CURRY, DONA DNA, EDDY, GRANT, HARDING, HIDALGO, LEA, LUNA, OTERO, QUAY, ROOSEVELT, SIERRA AND UNION COUNTIES		

IRONWORKERS:

Ornamental; Structural and reinforcing	18.79	4.35
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IRON0495A 06/01/2002

	Rates	Fringes
BERNALILLO, CATRON, CIBOLA, COLFAX, DeBACA, GUADALUPE, LINCOLN, LOS ALAMOS, TAOS, McKINLEY, MORA, RIO ARRIBA, SAN JUAN, SAN MIGUEL, SANDOVAL, SANTA FE, SOCORRO, TORRANCE, VALENCIA COUNTIES		

IRONWORKERS:

Ornamental; Structural and

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

reinforcing 18.00 7.53

LABO0016A 10/01/2001

	Rates	Fringes
LABORERS:		
BUILDING CONSTRUCTION:		
GROUP I	12.19	2.40
GROUP II	12.78	2.40
GROUP III	13.50	2.40
GROUP IV	14.97	2.40

LABORER CLASSIFICATIONS

GROUP I: Chainmen, Stakedrivers, Stake Hopper, Heater Tenders, Pick and Shovel Work, Window Cleaning and Clean up, Flagman, Landscaping and Planter, Fence Builder, Guardrail Builder, Unloading of Furniture and Fixtures, Shop Helper. (Chainman and Stakedrivers working solely for an engineering firm are not subject to this agreement.)

GROUP II: Carpenter Tenders, Concrete Workers, Concrete Buggy Operators, Industrial and Plant Laborers, Fire Watch, Swinging Scaffolds Tender, Fine Grader, Form Stripper, Gabian Basket Builders, Rip Rap Stoneman, Drywall, Stocking and Handling, Fly Ash Vacuum Operator, Man Hole Builder, Tool Room Person and Checker on Jobsite.

GROUP III: Electric Air and Gas Operated Power Tools, Asphalt Rakers, Chain Saw Operators, Oxy Gasoline Torch Operators, Cutting Torch Operators or Burner Person, Gunite Rebound Men, Fog Machine Operators, Power Buggy Operators, Rodmen, Sandblasters(potmen), Wagon Drill and Diamond Core Driller, Air Track, Drill Operator Hydraulic Core Drill Diamond, Tenders Outside with Pumps under 6", Concrete Burners, Cement Mason Tenders, Plasterers Hodcarriers, Mortar Mixer, Plaster Spreader Operators, Plaster Tenders, Gunite Nozzlemen, Pipelayer, Pumpcrete Nozzlemen, Powdermen Tender Demolition, Grade Checker, Vibrator Operator, Concrete Saw Operators, Stone Mason Tender, Jack Hammer and Chipping Hammer Operator, Green Cutter High Pressure Air and Water on Concrete Blaster, Pipelayer (includes but not limited to water pipe, sewer pipe, drainage pipe, pvc, and all underground tile, pipe), Cast Iron Concrete pipe, unloading, handling, distribution, and installation.

GROUP IV: Asbestos Abatement Laborer, Toxic and Hazardous Waste Removal Laborer, Lead Base Paint Removal Laborer, Laborer/Concrete Specialist, Pest Technician (Licensed by the Bureau of Rodent Management), State Licensed Powder man and, Blaster, Laborers AGC Certified Scaffold Builder Laborer, or Hydromobile Scaffold Builder, Radiation Worker II.

LABO0016C 04/01/2002

	Rates	Fringes
LABORERS:		
HEAVY CONSTRUCTION:		

ZONE 1:		
GROUP I	13.39	2.45
GROUP II	14.14	2.45
ZONE 2:		
GROUP I	15.89	2.45
GROUP II	16.64	2.45
ZONE 3:		
GROUP I	17.39	2.45
GROUP II	18.14	2.45

LABORER CLASSIFICATIONS

GROUP I: Construction and General Laborers, Carpenter Tenders, Concrete Workers, Stakedrivers, Concrete Buggy Operators, Hand Flagman.

GROUP II: Air and Power Tool Operators, Asphalt Rakers, Chain Saw Operators, Cutting Torch Operators, Demolition, Gunite Rebound Men, Rod and Chainmen, Grade Setters, Power Buggy Operators, Sand Blasters (pot men), Nozzleman, Wagon Core and Diamond Drillers Tenders, Outside Scalers, Fog Machine Operators, Air, Gas, Hydraulic Tool and Electrical Tool Operators, Barco Hammers Cutting Torches, Drill, Diamond and Core Drills, Electric Hammers, Jackhammers, Hydraulic Jacks, Tampers, Air Tampers, Concrete Processing Material, Form-Setters, Airport Runways, Operators of Concrete Saws on Pavement (other than gangsaws) Power Operated Concrete Buggies, Hot Asphalt Labor, Paving Breakers, Cofferdams, Buxtenders, Caissons 8' to 12', Jack-Hammer Operators in Caissons over 12', Labor Applicable to Pipe Coating or Wrapping, Pipe Wrappers, Plant and Yard, Relining Pipe, Hydroliner (a plastic may be used to waterproof), Pipelayer on Underground Bores, Sewer, Monitors, Jeep Holiday Detector Men, Pump Operators, Rakers, Vibrators, Hydro-Boom, Mixer Man, Gunnite Nozzlemen, Shortcrete Operator, Timberman, Timber and Chain Saws, Sand Blasters, Licensed Powdermen, Powdermen and Blasters, Siphons, Signalmen, Grade Checker.

ZONE PAY

The reference point for determining zone pay shall be from the intersection of Interstate Highway 25 and Interstate Highway 40 (The Big "I") in Albuquerque.

ZONE 1 - FREE ZONE - 0 to 50 miles

ZONE 2 - 50 to 85 miles from reference points. \$2.50 per hour above base wage.

ZONE 3 - over 85 miles from reference points. \$4.00 per hour above base wage.

Workmen employed on work forty (40) or more feet above the ground or above a solid floor, deck, or flat roof shall receive premium pay as follows:

40 to 80 feet - \$0.25 per hour
 80 to 120 feet - \$0.50 per hour
 120 to 160 feet - \$0.75 per hour
 above 160 feet - \$1.00 per hour

SHAFTS, RAISES, MISSILE SILOS, AND ALL OTHER UNDERGROUND WORK
 (EXCLUDING REPROCESSING PIPE UNDERGROUND):

ZONE 1:		
GROUP I	15.40	2.45
GROUP II	15.67	2.45
GROUP III	15.82	2.45
Shifter	16.05	2.45
ZONE 2:		
GROUP I	17.90	2.45
GROUP II	18.17	2.45
GROUP III	18.32	2.45
Shifter	18.55	2.45
ZONE 3:		
GROUP I	19.40	2.45
GROUP II	19.67	2.45
GROUP III	19.82	2.45
Shifter	20.05	2.45

LABORER CLASSIFICATIONS

GROUP I: Tunnel Workers: Laborers and Hand Muckers Top Landers, Groutmen, Nippers, Trackmen.

GROUP II: Chuck Tenders.

GROUP III: Shaft Workers, Air Tugger Operators, Concrete Workers (including all cement chipping and finishing underground), Drillers, Form Setters and Handlers, Hand Muckers, Miners, Powdermen, Steel Setters, Tunnel Liners, Plate Setters, Reinforcing Steel Setters, all Cutting and Welding incidental to Miners' work, Powdermen and Blasters, Timbermen.

LABO0016D 10/01/2001		
	Rates	Fringes
LABORERS:		
HEAVY CONSTRUCTION:		
ZONE 1:		
GROUP I	13.65	2.45
GROUP II	13.90	2.45
GROUP III	14.05	2.45
GROUP IV	14.97	2.45

ZONE 2:		
GROUP I	16.15	2.45
GROUP II	16.40	2.45
GROUP III	16.55	2.45
GROUP IV	17.47	2.45
ZONE 3:		
GROUP I	17.65	2.45
GROUP II	17.90	2.45
GROUP III	18.05	2.45
GROUP IV	18.97	2.45

ZONE PAY

The reference point for determining zone pay shall be from the intersection of Interstate Highway 25 and Interstate Highway 40 (The Big "I") in Albuquerque.

Free Zone - 0 to 50 miles.

Zone 2 - 50 to 85 miles from above reference points. \$2.50 per hour above base wage.

Zone 3 - over 85 miles from above reference points. \$4.00 per hour above base wage.

Workmen employed on work forty (40) or more feet above the ground or above a solid floor, deck, or flat roof shall receive premium pay as follows:

40 to 80 feet - \$0.25 per hour

80 to 120 feet - \$0.50 per hour

120 to 160 feet - \$0.75 per hour

above 160 feet - \$1.00 per hour

LABORER CLASSIFICATIONS

GROUP I: Wagon Core, Diamond Drillers

GROUP II: Concrete Burner, Hodcarriers, Mortar Mixers, Plaster Spreader Operators, Plaster Tenders, Gunite Nozzlemen, Pipelayers Pumpcrete Nozzlemen.

GROUP III: Powdermen and Blasters.

GROUP IV: Includes but is not limited to the following specialty categories of Construction Specialists: Asbestos Abatement Laborers, Toxic and Hazardous Waste Removal Laborers, Lead Base Paint Removal Laborers, Laborer/Concrete Specialist, Pest Technician (Licensed by the Bureau of Rodent Management), State Licensed Powderman and Blaster, Laborers-AGC Certified Rigger and Signal Man, Laborers-AGC Certified Scaffold Builder Laborer, or Hydromobile Scaffold Builder, Radiation Worker II.

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

PAIN0823A 04/01/2000

	Rates	Fringes
PAINTERS:		
Mines, mills, Power plants, energy plants, refineries, coal gassification plants, nuclear related facilities & all steel work incidental thereto including stacks of all descriptions:		
Brush, roller, pot tender, sandblaster, grinder operator:		
New Work:		
Zone I	16.05	4.08
Zone II	17.05	4.08
Zone III	18.55	4.08
Repaint/remodel:		
Zone I	13.64	4.08
Zone II	14.64	4.08
Zone III	16.14	4.08
Spray; Preparation for and application of epoxy & special coatings; Hand Finisher/Machine Texture:		
New Work:		
Zone I	16.55	4.08
Zone II	17.55	4.08
Zone III	19.05	4.08
Repaint/remodel:		
Zone I	14.57	4.08
Zone II	15.57	4.08
Zone III	17.07	4.08
Hand texture		
New Work:		
Zone I	16.75	4.08
Zone II	17.75	4.08
Zone III	19.25	4.08
Repaint/remodel:		
Zone I	14.24	4.08
Zone II	15.09	4.08
Zone III	16.36	4.08
Paperhangers:		
New Work:		
Zone I	17.05	4.08
Zone II	18.05	4.08
Zone III	19.55	4.08
Repaint/remodel:		
Zone I	14.49	4.08
Zone II	15.49	4.08
Zone III	16.99	4.08
Drywall finisher; Ames Tool operator:		
New Work:		
Zone I	17.25	4.08
Zone II	18.25	4.08
Zone III	19.75	4.08

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

Repaint/remodel:		
Zone I	14.66	4.08
Zone II	15.51	4.08
Zone III	16.79	4.08

HIGH PAY: High pay shall apply to any free fall area exceeding 30 feet from the ground level. The hourly wage rate shall be increased \$.50 per hour from the 30 foot level up. The determining factor in high pay shall be a stationary floor, landing or grate, excluding elevated tank walkways.

PAINTERS ZONE DEFINITIONS

Free Zone: An area within a 30 mile radius of the main post office in the city or town where an employee permanently resides at the time of hire shall be considered Zone 1. All jobs beyond the 30 mile radius shall be covered by the zone schedule below:

- ZONE I - BASE PAY UP TO 30 MILES
- ZONE II - EXTENDING 30 MILES TO 75 MILES BEYOND ZONE I
- ZONE III - EXTENDING 75 MILES AND BEYOND

Albuquerque, Santa Fe and Belen shall be considered in Zone 1.

PAIN0823B 04/01/2002		
	Rates	Fringes
GLAZIERS	19.15	4.11

PAIN0823C 04/01/2002		
	Rates	Fringes
SOFT FLOOR LAYERS:		
ZONE I	16.73	4.58
ZONE II	17.73	4.58
ZONE III	19.23	4.58

SOFT FLOOR LAYERS ZONE DEFINITIONS

Free Zone: An area within a 30 mile radius of the main post office in the city or town where an employee permanently resides at the time of hire shall be considered Zone 1. All jobs beyond the 30 mile radius shall be covered by the zone schedule below:

- ZONE I -- Up to 30 miles
- ZONE II -- 30 to 75 miles
- ZONE III - 75 miles and beyond

Albuquerque, Santa Fe and Belen shall be considered Zone 1.

PAIN0823D 04/01/2000		
	Rates	Fringes
PAINTERS:		
All Other Work: Commercial:		

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

Brush, roller, spray and special coatings:		
Zone I	14.24	3.58
Zone II	15.24	3.58
Zone III	16.74	3.58
Sand blasters; striping machine operators:		
Zone I	15.69	3.58
Zone II	16.69	3.58
Zone III	18.19	3.58
Sign painters:		
Zone I	16.04	3.58
Zone II	17.04	3.58
Zone III	18.54	3.58
Paper hangers:		
Zone I	16.19	3.58
Zone II	17.19	3.58
Zone III	18.69	3.58
Tenant Improvement*:		
Hand texture:		
Zone I	14.14	3.58
Zone II	15.14	3.58
Zone III	16.64	3.58
Paper hangers:		
Zone I	14.44	3.58
Zone II	15.44	3.58
Zone III	16.94	3.58
Drywall finishers:		
Zone I	14.49	3.58
Zone II	15.49	3.58
Zone III	16.99	3.58
Ames Tool operators:		
Zone I	14.74	3.58
Zone II	15.74	3.58
Zone III	17.24	3.58

*Tenant improvement shall be considered the following types of work: repaint, remodel, alterations and additions to an existing building, the painting and repair of hotels, motels and apartment buildings five stories and over, new and repair.

HIGH PAY: High pay shall apply to any free fall area exceeding 30 feet from the ground level. The hourly wage rate shall be increased \$.50 per hour from the 30 foot level up. The determining factor in high pay shall be a stationary floor, landing or grate, excluding elevated tank walkways.

PAINTERS ZONE DEFINITIONS

Free Zone: An area within a 30 mile radius of the main post office of the city or town where an employee permanently resides at the time of hire shall be considered Zone 1. All jobs beyond the 30 mile radius shall be covered by the zone schedule below:

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

ZONE I - BASE PAY UP TO 30 MILES
 ZONE II - EXTENDING 30 MILES TO 75 MILES BEYOND ZONE I
 ZONE III - EXTENDING 75 MILES AND BEYOND

Albuquerque, Santa Fe and Belen shall be considered in Zone 1.

 PLAS0254A 10/01/2001

	Rates	Fringes
CEMENT MASONS	16.95	3.98

* PLAS0254B 07/01/2002

	Rates	Fringes
PLASTERERS	17.50	4.42

PLUM0412A 04/01/2001

	Rates	Fringes
REMAINING COUNTIES		
PLUMBERS & PIPEFITTERS	22.98	5.95

LOS ALAMOS, WHITE ROCK, SOUTH MESA, MCGREGOR, WHITE SANDS MISSILE RANGE AND/OR PROVING GROUNDS

PLUMBERS & PIPEFITTERS	23.78	5.95
LIGHT COMMERCIAL :		
All irrigation & lawn sprinkler	15.96	4.20

ROOF0174A 10/01/1994

	Rates	Fringes
ROOFERS	13.30	1.99

SHEE0049A 04/01/2002

	Rates	Fringes
REMAINING COUNTIES		
SHEET METAL WORKERS	23.30	7.11

SHEE0049B 04/01/2002

	Rates	Fringes
LOS ALAMOS COUNTY		
SHEET METAL WORKERS	25.30	7.17

SUNM1002A 08/11/1993

	Rates	Fringes
SPRINKLER FITTERS:		
Bernalillo, Los Alamos &		

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

Santa Fe, Counties	15.55	
Otero County	17.45	3.75
Remaining Cos. (Except Dona Ana)	16.06	2.95

 TEAM0492A 06/01/1993

	Rates	Fringes
TRUCK DRIVERS:		
BUILDING CONSTRUCTION:		
Zone I:		
GROUP I	9.83	1.89
GROUP II	10.10	1.89
GROUP III	10.18	1.89
GROUP IV	10.30	1.89
GROUP V	10.35	1.89
GROUP VI	10.45	1.89
GROUP VII	10.55	1.89
GROUP VIII	10.69	1.89
GROUP IX	10.84	1.89
Zone II		
GROUP I	11.58	1.89
GROUP II	11.85	1.89
GROUP III	11.93	1.89
GROUP IV	12.05	1.89
GROUP V	12.10	1.89
GROUP VI	12.20	1.89
GROUP VII	12.30	1.89
Group VIII	12.44	1.89
Group IX	12.59	1.89
Zone III:		
GROUP I	12.08	1.89
GROUP II	12.35	1.89
GROUP III	12.43	1.89
GROUP IV	12.55	1.89
GROUP V	12.60	1.89
GROUP VI	12.70	1.89
GROUP VII	12.80	1.89
GROUP VIII	12.94	1.89
GROUP IX	13.09	1.89
BUILDING CONSTRUCTION:		
Light Commercial Construction:		
Zone I:		
GROUP I	7.86	1.89
GROUP II	8.08	1.89
GROUP III	8.14	1.89
GROUP IV	8.24	1.89
GROUP V	8.28	1.89
GROUP VI	8.36	1.89
GROUP VII	8.44	1.89
GROUP VIII	8.55	1.89
GROUP IX	8.67	1.89
Zone II:		
GROUP I	9.26	1.89
GROUP II	9.48	1.89
GROUP III	9.54	1.89
GROUP IV	9.64	1.89

ACCOMPANYING AMENDMENT NO. 0005 TO SOLICITATION NO. DACA63-02-R-0015

GROUP V	9.68	1.89
GROUP VI	9.76	1.89
GROUP VII	9.84	1.89
Group VIII	9.95	1.89
Group IX	10.07	1.89
Zone III:		
GROUP I	9.66	1.89
GROUP II	9.88	1.89
GROUP III	9.94	1.89
GROUP IV	10.04	1.89
GROUP V	10.08	1.89
GROUP VI	10.16	1.89
GROUP VII	10.24	1.89
GROUP VIII	10.35	1.89
GROUP IX	10.47	1.89

HEAVY CONSTRUCTION:

Zone I:		
GROUP I	10.08	1.79
GROUP II	10.35	1.79
GROUP III	10.43	1.79
GROUP IV	10.55	1.79
GROUP V	10.60	1.79
GROUP VI	10.70	1.79
GROUP VII	10.80	1.79
GROUP VIII	10.94	1.79
GROUP IX	11.09	1.79
Zone II:		
GROUP I	11.58	1.79
GROUP II	11.85	1.79
GROUP III	11.93	1.79
GROUP IV	12.05	1.79
GROUP V	12.10	1.79
GROUP VI	12.20	1.79
GROUP VII	12.30	1.79
GROUP VIII	12.44	1.79
GROUP IX	12.59	1.79
Zone III:		
GROUP I	11.83	1.79
GROUP II	12.10	1.79
GROUP III	12.18	1.79
GROUP IV	12.30	1.79
GROUP V	12.35	1.79
GROUP VI	12.45	1.79
GROUP VII	12.55	1.79
GROUP VIII	12.69	1.79
GROUP IX	12.84	1.79

TRUCK DRIVER (BUILDING & HEAVY CONSTRUCTION) CLASSIFICATIONS

GROUP I:

Pickup 3/4 Ton and Under, Lubrication, Light Tire Repair and Washer, Swamper, 2 or 4 and up.

GROUP II:

Dump or Batch Truck Under 8 C.Y.W.L.: Flat Bed (bobtail) 2 Ton and Under, Warehouseman including Material Check, Fork

Lift Under 5 Ton MRC.

GROUP III:

Dump Trucks (Including All Highway and Off Highway) 8 up to 16 C.Y.W.L.C.; Water, Fuel or Oil Trucks Less Than 3,000 gal. Flat Bed (bobtail) Over 2 Tons.

GROUP IV:

Distributor Driver, Heavy Tire Repair, Lumber Carrier Driver, Young Buggy or Similar Equipment, Transit Mix or Agitator 2 or 3 Axle Bobtail Equipment, Scissor Truck, Bulk Cement Bobtail 2 or 3 Axle, Semi-Trailer Flat Bed or Van Single Axle Forklift 5 Ton and over M.R.C.

GROUP V:

Dumpsters and Dumpcrete Driver; Water, Fuel or Oil Trucks 3,000 to 6,000 Gallons; Lowboys and Light Equipment Driver; Euclid Type Tank Wagon Under 6,000 Gallons.

GROUP VI:

Vacuum Truck; Dump Trucks (including all highway and off-highway 16 up to 22 C.Y.W.L.C.

GROUP VII:

Transit Mix or Agitator Semi or 4 Axle Equipment Driver; Flaherty Truck Type Spreader Box Driver; Slurry Truck Driver Bulk Cement Driver; Semi-Doubles; 5 Axle Bobtail; Winch Truck and "A" Frame; Dump Truck (including all Highway and Off-Highway) 22 CY up to 35 C.Y.W.L.C.

GROUP VIII:

Euclid Diesel Power Turnarocker; Terra Coba-DW20-Tourneau Pulls and Similar Diesel Powered Equipment when used to haul Materials and Assigned to a Teamster-Lowboy Heavy Equipment Driver; Water, Fuel and Oil Trucks 6,000 Gallons and Over Including Tank Wagon Drivers, Semi-Trailer Driver (Flat-Bed or Van Tandems); Light Equipment Mechanic; Dump Trucks (Including All Highway and Off-Highway) 35 C.Y.W.L.C. and Over; Truck and Trailer or Semi-Trailer (Flatbed); eject all.

GROUP IX:

Lowboy (Heavy Equipment Double Gooseneck); Heavy Equipment Mechanic; Welder (Body and Fender Men).

TRUCK DRIVERS ZONE PAY BASING POINTS AND DEFINITIONS LISTED BELOW FOR BUILDING AND HEAVY CONSTRUCTION - BASING POINTS ARE AS FOLLOWS:

ALAMOGORDO, ALBUQUERQUE, ARTESIA, BAYARD, BELEN, CARLSBAD, CLOVIS, DEMING, ESPANOLA, EUNICE, FARMINGTON, GALLUP, GRANTS, HOBBS, LAS CRUCES, LAS VEGAS, LORDSBURG, LOVINGTON, PORTALES, RATON, ROSWELL, RUIDOSO, SANTA FE, SANTA ROSE, SILVER CITY, SOCORRO, TAOS, TUCUMCARI

ZONE I

Projects within 15 miles from the starting points above

ZONE II

Projects 15 or more road miles but less than 35 miles from above, includes all of Los Alamos County

ZONE III

Projects more than 35 road miles, or more from above.

FOOTNOTE:

**LIGHT COMMERCIAL DEFINITION

Construction, erection, alteration, repair, modification, addition to or improvement in whole or in part of structures for which the major support system is wood frame construction and will also include all apartments over 4 stories, all convenience stores, fast food restaurants, automobile service stations & motels up to 2 stories high.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch

of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

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) **(AM#5) TI 810-10, Mechanical Design Heating, Ventilating, and Air Conditioning.**

- (16) **(AM#5) TI 810-11, Heating, Ventilating, and Air Conditioning (HVAC) Control Systems.**
 - (17) TM 5-809-3 (future TI 809-6), Masonry Structural Design for Buildings.
 - (18) **(AM#5) TM 5-810-5, Plumbing.**
 - (19) TM 5-811-1, Electrical Power Supply and Distribution.
 - (20) TM 5-811-2, Electrical Design, Interior Electrical System.
 - (21) TM 5-811-3, Electrical Design: Lightning and Static Electricity Protection.
 - (22) TM 5-818-7, Foundations in Expansive Soils.
 - (23) TM 5-822-5, Pavement Design for Roads, Streets, Walks, and Open Storage Areas.
 - (24) TM 5-853-1, Security Engineering - Project Development.
 - (25) TM 5-853-2, Security Engineering - Concept Design.
 - (26) TM 5-853-3, Security Engineering - Final Design.
 - (27) ASCE 7-98, Minimum Design Loads for Buildings and Other Structures.
 - (28) CoE Moratorium on the Use of Cold Formed, Load Bearing Framing Systems -Policy, 07 March 1997.
 - (29) Department of Defense Antiterrorism/Force Protection Construction Standards (draft dated 30 August 2001).
 - (30) FEMA 302, NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures (1997 Edition).
 - (31) 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' 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). Lever handles 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, 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 A
SUBSTRUCTURE

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 Provide substructure as required to support the completed and occupied building safely and without uncontrolled subsidence or other movement.
- 1.1.2 Substructure comprises the following elements:
 - a. Foundations: Structures responsible for transferring dead loads, live loads, and environmental loads of completed building to the earth in such a way that the building is supported evenly and without movement.
- 1.1.3 Where substructure is integral with 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.

1.2 Amenity and Comfort:

- 1.2.1 Thermal Performance: Provide thermal resistance as necessary to maintain interior comfort levels specified and in accordance with code and the following:
 - a. Energy Efficiency: As specified in Chapter 111 - Facility Performance.
 - b. Average Thermal Transmittance: U-value of 0.85 SI (0.15 IP), maximum, for portions of substructure in contact with earth and enclosing conditioned space.
 - c. Condensation: None on interior surfaces under normal interior temperature and relative humidity conditions, during 97-1/2 percent of the days in the coldest 3 months of the year.
 - d. Minimum thermal performance values for individual substructure elements are also specified in other chapters.
- 1.2.2 Water Penetration: Prevent ground water penetration into the interior of the building, under any circumstances.
- 1.2.3 Water Accumulation: Prevent accumulation of water in open areas adjacent to substructure.
- 1.2.4 Acoustical Performance: Limit sound transmission through substructure as follows:
 - a. Ambient Sound Level: Maintain ambient sound levels in enclosed, occupied substructure spaces within noise criteria (NC) ranges specified in Chapter C - Interiors during normal hours of occupancy.
 - b. Vibration Control: Use substructure elements that will not resonate at frequencies that are characteristic of ambient underground sound and vibration sources at the project site.
 - c. Minimum performance values for individual substructure elements are also specified in other chapters.
 - d. **(AM#5)** Substantiation:

1.3 Health and Safety:

- 1.3.1 Fire Resistance: Design and select materials to provide fire resistance in accordance with code.
 - a. For all elements required to have a fire resistive rating and which are not made of materials and systems specified as acceptable by the code, use proven-by-use construction.
 - b. Minimum performance values for individual substructure elements are also specified in other chapters.
 - c. Substantiation:
 - (1) Construction Documents: Identifying numbers on the construction drawings.

- 1.3.2 Substance Exclusion: Prevent accumulation of harmful chemicals and gases such as radon and methane in spaces below substructure and subsequent penetration into occupied spaces.
 - 1.3.3 Vermin Protection: Provide permanent protection against infestation of construction by ground dwelling termites and other vermin.
 - a. **(AM#5)** Substantiation:
 - 1.4 Structure:
 - 1.4.1 Capacity: Provide loadbearing substructure members as required by code and requirements identified in the geotechnical investigation, designed to distribute dead loads, live loads, and environmental loads so that bearing capacity of soil is not exceeded.
 - a. Extend bearing portions of substructure to levels below frostline at project location; not less than 0.6 m (2 ft) below grade.
 - b. Provide spread footings that do not exceed the allowable soil bearing capacity, caissons or drilled piers that bear on rock, piles that provide adequate friction to withstand loading, or other foundation systems acceptable to governing authorities.
 - 1.4.2 Dead Loads: Accommodate loads from weights of building materials, construction itself, and all fixed service equipment.
 - 1.4.3 Live Loads: Accommodate loads from use and occupancy of the building, either uniformly distributed loads or concentrated loads as prescribed by code, TI 809-01, TI 809-02, TI 809-04, ASCE 7-98, FEMA 302, and high density files loading as prescribed by the equipment manufacturer, whichever are more demanding structurally.
 - 1.4.4 Environmental Loads: Accommodate loads from all environmental forces in accordance with TI-809-28, ASCE 7-98, TI 809-04, and code.
 - a. Earthquake: In accordance with requirements of Chapter 111 - Facility Performance.
 - b. Wind: Overturning forces attributable to design wind speed at project location applied to full building height.
 - 1.5 Durability:
 - 1.5.1 Corrosion Prevention: Provide supplementary protection for underground metal elements, sufficient to prevent corrosion completely for the service life of the element without maintenance.
 - a. 150 mm (3 inches) of concrete cover is considered to be permanent protection.
 - b. Provide cathodic protection if any of the following is true; coatings or wrappings will not be considered sufficient protection for elements falling under these criteria:
 - (1) Metal elements are buried in a soil environment known to cause corrosion on similar nearby structures.
 - (2) Metal elements are buried in a soil environment in which stray DC electrical currents are present.
 - c. See Chapter D9 and D94 for requirements for cathodic protection.
 - 1.5.2 Provide concrete mix employing Type V cement for resistance to sulfate in native soils.
 - 1.6 Operation and Maintenance:
 - 1.6.1 Provide substructure elements that will endure for the lifetime of the building with no maintenance.
- 2. PRODUCTS**
- 2.1 Do not use any of the following:
 - 2.1.1 Treated wood.
 - 2.1.2 Foam plastic insulation below grade.

END OF CHAPTER A

CHAPTER A1

FOUNDATIONS

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 Provide foundations as required to support the completed and occupied building safely and without uncontrolled subsidence or other movement.
- 1.1.2 Foundations comprise the following elements:
 - a. Standard Foundations: Includes spread footings below columns, linear spread footings below loadbearing walls, and foundation walls not part of basements.
 - b. Other Foundations: All types of special foundation systems, including permanent shoring and underpinning, raft foundations, piles, and drilled piers (caissons).
 - c. Floors on Grade: All elements necessary for slab foundations, including trenches, pits, and sumps, equipment bases, integral thermal insulation, slab moisture protection, and subdrainage system.
- 1.1.3 Where foundations are integral with 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 and Chapter A - Substructure.

1.2 Amenity and Comfort:

- 1.2.1 Thermal Performance:
 - a. Thermal Resistance: R-value of 1.23 SI (7.0 IP), minimum, for portions of foundation above grade or within 450 mm (18 in) below grade and enclosing conditioned space.
 - b. Minimum thermal performance values for individual foundation elements are also specified in other chapters.
- 1.2.2 Water Protection:
 - a. Waterproofing: Provide permanent waterproofing at portions of foundation that extend below water table and enclose habitable space.
 - b. Drainage: Provide method of collecting and draining water from below portions of foundation that enclose habitable space.
 - c. **(AM#5)** Substantiation:
- 1.2.3 Acoustical Performance:
 - a. Vibration Control: Use foundation elements that are designed to avoid sympathetic vibration at frequencies within the audible range of 500-4000 Hz.
 - (1) Mass: Not less than 1200 kg/cu m (75 lb/cu ft).

1.3 Structure:

- 1.3.1 Capacity: Provide loadbearing foundation members as required by Chapter A - Substructure and as follows:
 - a. Minimum Wall Thickness: Not less than thickness of superstructure walls supported by foundation walls.
 - b. Minimum Wall Thickness: 200 mm (8 in).
 - c. Footings: Minimum compressive strength of 20.7 MPa (3000 psi) and minimum thickness of 300 mm (12 in).

2. PRODUCTS

2.1 Do not use any of the following:

2.1.1 Wood foundation systems.

2.1.2 Masonry footings.

END OF CHAPTER A1

CHAPTER B

SHELL

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 Provide permanently enclosed spaces for all functional areas shown in the project program, unless otherwise indicated. Provide a physical enclosure that keeps out weather, unwelcome people, animals, and insects without requiring specific action by occupants, while providing convenient movement of occupants between inside and outside, desirable natural light, and views from inside to outside. Provide level floor areas, comfortable ceiling heights, and essentially vertical walls.
- 1.1.2 The elements forming usable enclosed space and separating that space from the external environment comprise the shell and consist of:
 - a. Superstructure: All elements forming floors and roofs above grade and within basements, and the elements required for their support, insulation, fireproofing, and firestopping.
 - b. Exterior Enclosure: All essentially vertical elements forming the separation between exterior and interior conditioned space, including exterior skin, components supporting weather barriers, and jointing and interfacing components; not including the interior skin unless an integral part of the enclosure.
 - c. Roofing: All elements forming weather and thermal barriers at horizontal and sloped roofs and decks, and roof fixtures.
- 1.1.3 Exterior Surfaces Exposed to View: Surfaces visible from street or ground level, plus surfaces visible from windows of same building.
- 1.1.4 Where shell elements also function as elements defined within another element group, meet requirements of both groups.
- 1.1.5 In addition to the requirements of this chapter, comply with all applicable requirements of Chapter 111 - Facility Performance as well as the aesthetic requirements of the White Sands Missile Range Installation Design Guide in Volume 3.

1.2 Amenity and Comfort:

- 1.2.1 Thermal Performance: Provide construction that will have thermal resistance as necessary to maintain interior comfort levels specified and in accordance with code and the following:
 - a. Energy Efficiency: As specified in Chapter 111.
 - b. Average Thermal Transmittance: U-value in compliance with energy conservation design standards for new State building, as defined by ASHRAE/IES 90-1P.
 - c. Condensation: None on interior surfaces under normal interior temperature and relative humidity conditions, during 100 percent of the days in the coldest 3 months of the year.
 - d. Components That Have Surfaces Facing Both Interior and Exterior Environment: Condensation Resistance Factor (CRF) as required to meet requirement above, when tested in accordance with AAMA 1503.1.
 - e. Minimum thermal performance values for individual shell elements are also specified in other chapters.
- 1.2.2 Air Infiltration: Maximum of 0.0003 cu m/s (0.06 cfm) per square meter (square foot) of exterior surface area, measured in accordance with ASTM E 283 at differential pressure of 298 Pa (6.24 psf).
 - a. Use supplementary air barrier if necessary to maintain performance over entire shell.
 - b. Use method of sealing joints between elements that will be effective given available construction practices.

- 1.2.3 Water Penetration: Design and select materials to prevent water penetration into the interior of the building, under conditions of rain driven by 161 km/h (100 mph) wind.
- 1.2.4 Natural Light: Provide fenestration in shell as required to meet requirements for natural light as specified in Chapter C and in accordance with code and the following:
 - a. Exterior Glazing: Minimum 10 percent of total floor area for each habitable room; not required for bathrooms, toilet compartments, closets, halls, or storage and utility spaces. Habitable room fenestration may be from interior corridor off courtyard.
- 1.2.5 Natural Ventilation: Design and construct shell to provide natural ventilation in accordance with code and the following:
 - a. Minimum Ventilation Opening Area: 8 percent of total floor area for each habitable room; not required for bathrooms, toilet compartments, closets, halls, or storage and utility spaces.
 - b. Ventilation Area: Minimum 10 percent of wall area for each floor equally distributed on all elevations.
 - c. Design ventilation to provide cross ventilation where possible.
- 1.2.6 Acoustical Performance: Design and construct the shell to limit sound transmission as follows:
 - a. Ambient Sound Level: Maintain ambient sound levels in perimeter spaces within Noise Criteria (NC) ranges specified in Chapter C - Interiors during normal hours of occupancy.
 - b. Exterior Noise Level: Maintain maximum average daytime and nighttime noise level from interior sound sources in accordance with local regulations, measured at the project property line.
 - c. Vibration Control: Use shell elements that will not resonate at frequencies that are characteristic of ambient exterior sound sources at the project site.
 - d. Minimum performance values for individual shell elements are also specified in other chapters.
- 1.2.7 Cleanliness of Exterior Surfaces: Design and select materials to:
 - a. Prevent attraction and adherence of dust and air-borne dirt and soot, and minimize appearance of settled dust and dirt.
 - b. Be washed reasonably clean by normal precipitation.
 - c. Prevent precipitation from washing settled dust and dirt over surfaces exposed to view.
 - d. Prevent attraction of birds and/or bats to habitation on the project.
- 1.2.8 Appearance: Design and select materials to provide exterior appearance with characteristics as follows, in compliance with White Sands Missile Range Installation Design Guide:
 - a. Compatible with adjacent buildings.
 - b. Complying with requirements of White Sands Missile Range architectural commission regulating the area in which the project is located.
 - c. Concealing mechanical equipment, electrical equipment, and piping, conduit, and ducts from view from the street to west and north.
 - d. Concealing rooftop mechanical equipment from view from the street.
 - e. **(AM#5)** Substantiation:
- 1.3 Health and Safety:
 - 1.3.1 Fire Resistance: Design and select materials to provide fire resistance in accordance with code.
 - a. Minimum performance values for individual shell elements are also specified in other chapters.
 - b. **(AM#5)** Substantiation:
 - 1.3.2 Accidental Injury: Design and select materials to protect building occupants in accordance with code and the following:
 - a. Prevent ice and snow from falling off building elements onto pedestrians, building occupants, and vehicles.
 - b. Protect building occupants from objects accidentally dropped from elevated observation decks, balconies, or plazas.

- 1.3.3 Physical Security: Design and construct to provide protection as follows:
 - a. Opaque Elements at Ground Level: Use materials that give the impression of strength, for discouragement of opportunistic attempts at intrusion.
 - b. Glazed Elements at Ground Level: Minimize size and locate where under surveillance by staff at their normal workstations.
 - c. Opaque Elements at Ground Level: Resist penetration by chainsaw or 4.5 kg (10 lb) sledge hammer (10 blows) wielded by one individual.
 - d. Glazing at Ground Level: UL 972 burglary resistant rating with film lamination in compliance with current CoE guidelines.
 - e. Doors: ASTM F 476 or ASTM F 842 as appropriate, different levels of protection for different locations; see Chapter B23.
 - f. Vault: Construct vault in library program in compliance with COE standards for "secret" material. Coordinate hardware and other security features with White Sands Missile Range guidelines.
 - g. Glazing at Ground Level: Ballistic resistance of Level 1 with Supplementary Shotgun resistance, minimum, in accordance with UL 752 and Department of Defense antiterrorism guidelines (laminated).
- 1.3.4 Ventilation of Special Spaces: Design and construct shell to provide outside air movement through enclosed shell volumes in accordance with code and the following:
 - a. Minimum Ventilation Opening Area: Net 1.0 percent of total enclosed area, distributed to encourage uniform outside air movement through enclosed space.
- 1.4 Structure:
 - 1.4.1 Structural Performance: Design and select materials to support all loads without damage due to loads, in accordance with code, U.S. Army Corps of Engineers TI 809-01, TI 809-02, TI 809-04, ASCE 7-98, and FEMA 302..
 - a. Special Components: If design method is not specifically prescribed by code, design in accordance with ASCE 7.
 - b. Design and provide shell elements to resist loosening or detachment in winds equivalent to the design wind speed.
 - c. Shell elements engineered by their manufacturer or fabricator, rather than by the engineer-of-record, shall comply with the following additional requirements:
 - (1) Manufacturer/fabricator employs licensed structural engineer to accomplish design of structural elements.
 - (2) Manufacturer/fabricator has minimum of 5 years experience in the design and manufacture of similar structures.
 - d. Elements engineered by their manufacturer or fabricator, rather than by the engineer-of-record, are not acceptable for superstructure, exterior enclosure, or roofing.
- 1.5 Durability:
 - 1.5.1 Service Life Span: Same as building service life, except as follows:
 - a. Load-Bearing Structural Members: Minimum of 100 years.
 - (1) No anticipated deterioration when protected as specified.
 - (2) Protective Elements: Minimum 50 years.
 - b. Wall Primary Weather-Barrier Elements: Minimum 50 years functional and aesthetic service life, excluding joint sealers.
 - c. Transparent Elements (Glazing): Same as other wall primary weather-barrier elements, except accidental breakage is considered normal wear-and-tear.
 - d. Joint Sealers: Minimum 20 years before replacement.
 - e. Surfaces Exposed to View: Minimum 20 years aesthetic service life; in addition, deterioration includes color fading, crazing, and delamination of applied coatings.
 - f. Roof Covering Weather-Barriers: Minimum 20 years, fully functional.

- 1.5.2 Water Penetration: Design and select materials to prevent water penetration into the interior of shell assemblies, under conditions of rain driven by 86 km/h (50 mph) wind.
 - a. Exception: Controlled water penetration is allowed if materials will not be damaged by presence of water or freezing and thawing, if continuous drainage paths to the exterior are provided, and water passage to the building interior is prevented.
- 1.5.3 Weather Resistance: Design and select materials to minimize deterioration due to precipitation, sunlight, ozone, normal temperature changes, atmospheric pollutants, and wind.
 - a. Deterioration includes corrosion, shrinking, cracking, spalling, delamination, abnormal oxidation, decay and rot.
 - b. Surfaces Exposed to View: Deterioration adversely affecting aesthetic life span includes color fading, crazing, and delamination of applied coatings.
 - (1) Coated Finishes: Minimize use of materials with separate coated finishes.
 - (2) Coating Performance: AAMA 2603, minimum.
 - (3) Coating Salt Spray Resistance: No deterioration when tested in accordance with ASTM B 117 for 1000 hour exposure with 5 percent salt fog at 35 degrees C (95 degrees F).
 - c. Joint Components and Penetration Seals: Capable of resisting expected thermal expansion and contraction; use overlapping joints that shed water wherever possible.
 - d. Service Temperature: Low temperature equal to historically-recorded low; high temperature equal to that expected due to any combination of air temperature and heat gain from solar and other sources.
 - e. Freeze-Thaw Resistance: Adequate for climate of project.
 - f. Corrosion Resistance: In locations exposed to the outdoor air or in potential contact with moisture inside shell assemblies, use only corrosion-resistant metals as defined in this Chapter.
 - g. Ozone Resistance: Do not use materials that are adversely affected by ozone.
- 1.5.4 Impact Resistance: Design and select materials to resist damage due to impact in accordance with code and the following:
 - a. Minimize damage from windborne debris propelled at up to 86 km/h (50 mph).
 - b. Design and select materials to resist damage from hail of size up to 12 mm (1/2 inch).
 - c. Minimize damage due to potential vandalism.
 - d. Natural Hazards: Design to resist damage from perching, nesting, and feeding birds, and bats.
 - e. Minimum performance values for individual shell elements are also specified in other chapters.
- 1.5.5 Moisture Vapor Transmission: Design to prevent deterioration of materials due to condensation of moisture vapor inside assemblies.
 - a. Use supplementary vapor retarder if necessary to meet requirements.
 - b. Use method of sealing joints between elements that will be effective given available construction practices.
- 1.5.6 Wear Resistance: Design and select materials to provide resistance to normal wear-and-tear in accordance with code and the following:
 - a. Elements Within Reach of Pedestrians: Minimize degradation from rubbing and scratching caused by pedestrians.
 - b. Minimize degradation caused by windblown sand.
- 1.6 Operation and Maintenance:
 - 1.6.1 Ease of Maintenance and Alteration:
 - a. Provide 12-inch raised floors elevated for access, with removable panels, at:
 - (1) Educational center area.

2. PRODUCTS

2.1 Corrosion-Resistant Metals:

- 2.1.1 Hot-dipped galvanized steel, with minimum zinc coating of 275 gm/sq m (0.90 oz/sq ft) total both sides.
- 2.1.2 Stainless steel, Type 304 or 316.
- 2.1.3 Cadmium-plated steel, with minimum coating of 12 micrometers.
- 2.1.4 Aluminum.

2.2 Coated Finishes:

- 2.2.1 Do not use:
 - a. Baked enamel.
 - b. Paint.

2.3 Do not use:

- 2.3.1 Pre-engineered metal building.
- 2.3.2 Air-supported structure.
- 2.3.3 Pre-engineered glazed structure.
- 2.3.4 Different metals subject to galvanic action in direct contact with each other.
- 2.3.5 Aluminum in direct contact with concrete or cementitious materials.
- 2.3.6 Materials and products that require field finishing on surfaces exposed to the weather.
- 2.3.7 Metal siding and roofing.
- 2.3.8 Wood trim.

END OF CHAPTER B

CHAPTER B1

SUPERSTRUCTURE

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 Provide structural elements, above grade, capable of supporting all anticipated loads without failure or damage.
- 1.1.2 Do not use any electrically-operated or fuel-powered construction for support of floor or roof members.
- 1.1.3 The superstructure comprises:
 - a. Roofs: Roof construction, including canopies, and elements required for their support, insulation, fireproofing, and firestopping.
- 1.1.4 Where superstructure elements also must function as elements defined within another element group, meet requirements of both element groups.
- 1.1.5 In addition to the requirements of this chapter, comply with all applicable requirements of Chapter 111 - Facility Performance and Chapter B - Shell.

1.2 Amenity and Comfort:

- 1.2.1 Water Penetration: Where roof coverings as specified in Chapter B3 are not used over roofs provide supplementary waterproof construction providing equivalent protection.

1.3 Health and Safety:

- 1.3.1 Fire: Provide members with combustibility, flame spread, and smoke generation characteristics not greater than allowed by code.
- 1.3.2 Fire Resistance: Design and select materials to provide fire resistance in accordance with code and the following:
 - a. Determine fire resistance rating by testing in accordance with ASTM E 119.
 - b. Determine flame spread index by testing in accordance with ASTM E 84.
 - c. Determine smoke developed index by testing in accordance with ASTM E 84.
 - d. Where fire resistance integrity of superstructure assemblies is impaired by subsequent installation of other construction elements, restore fire resistance using identical materials or other materials tested under ASTM E 814.
 - e. Provide firestopping at openings in fire-rated superstructure elements that is rated at not less than the required fire resistance of the penetrated element.
 - f. Minimum performance values for individual superstructure elements are specified in other chapters.
- 1.3.3 Explosion: Design for and provide resistance to forces generated by explosion hazards specified in Chapter 111.
- 1.3.4 Grounding: When grounding of electrical systems is accomplished using structural members, design to prevent shock to occupants.

1.4 Structure:

- 1.4.1 Capacity: Design and provide load-bearing structural members of capacities required by U.S. Army Corps of Engineers TI 809-01, TI 809-02, TI 809-04, ASCE 7-98, FEMA 302, code and as follows:
 - a. Library Compact Shelving Areas: 14.363 kN per square meter (300 psf) uniform live load.
 - b. Removable Access Floor: 11.969 kN per square meter (250 psf) uniform live load and 1334 N (300 pounds) concentrated load at center of each span.

- 1.4.2 Dead Loads: Design to resist loads from weights of materials, construction, and fixed service equipment.
- 1.4.3 Live Loads:
 - a. Floors: Resist uniformly distributed, concentrated, impact, and other loads without code permitted live load reductions.
 - b. Roofs: Resist uniformly distributed, concentrated, impact, and other loads.
- 1.4.4 Environmental Loads:
 - a. **(AM#5)** Wind: Basic wind speed of **161 km/hr (100 mph)**, Importance Factor of 1.00, Exposure C, in accordance with U.S. Army Corps of Engineers TI 809-01, TI 809-02, and ASCE 7-98.
 - b. Snow: Ground snow load of 239 N per square meter (5 psf) and snow exposure factor of 0.7 in accordance with U.S. Army Corps of Engineers TI 809-01.
 - c. Rain: Resist loads from ponding rainwater when the primary and secondary drainage system is blocked.
 - d. Earthquake: In compliance with provisions of U.S. Army Corps of Engineers TI 809-04 and FEMA 302.
- 1.4.5 Structural Design: In addition to the requirements of the code, design to comply with ANSI/ASCE 7-98, U.S. Army Corps of Engineers TI 809-01, TI 809-02, TI 809-04, and FEMA 302..
- 1.4.6 Structural Serviceability: Comply with requirements and recommended design procedures of ANSI/ASCE 7.
- 1.5 Durability:
 - 1.5.1 Moisture Resistance of Load-Bearing Members: Use materials that are not damaged by contact with water or moisture vapor.
 - a. Materials that will corrode in the presence of water may be used if protected from water.
 - b. Materials that will rot or be damaged by fungus may be used if protected from water.
 - 1.5.2 Impact Resistance of Load-Bearing Members: Use materials that are not easily damaged by common hand tools.
 - 1.5.3 Applied Fireproofing Materials:
 - a. In Locations where Concealed by Permanent Construction:
 - (1) Density: 175 kg/cu m (10 lb/cu ft), minimum.
 - (2) Impact Strength: Passing ASTM E 760.
 - b. Interior Locations, Where Exposed to Air but Out of Reach of Occupants (Above 3 m (10 ft) from Floor):
 - (1) Density: 224 kg/cu m (14 lb/cu ft), minimum.
 - (2) Impact Strength: Passing ASTM E 760.
 - (3) Bond Strength: 14.4 kPa (300 psf), minimum, tested in accordance with ASTM E 736.
 - c. Exterior Locations, Where Exposed to Air but Out of Reach of Occupants (Above 3 m (10 ft) from Ground):
 - (1) Density: 340 kg/cu m (21 lb/cu ft), minimum.
 - (2) Impact Strength: Passing ASTM E 760.
 - (3) Moisture Resistance: Not affected by precipitation or freeze-thaw.
 - d. Exposed Locations on Exterior and Interior within Reach of Occupants (Below 3 m (10 ft)):
 - (1) Density: 625 kg/cu m (39 lb/cu ft), minimum.
 - (2) Impact Strength: Passing ASTM E 760.
 - (3) Moisture Resistance: Not affected by precipitation or freeze-thaw.
 - 1.5.4 Portions of Superstructure Exposed on Exterior: Comply with requirements of Chapter B for water penetration, weather resistance, impact resistance, and wear resistance.

2. PRODUCTS

2.1 Superstructure: Use elements specified in Chapters B11 and B12.

2.2 Fireproofing:

2.2.1 If applied fireproofing is required, use one of the following:

- a. Concealed:
 - (1) Sprayed-on cementitious.
 - (2) Sprayed-on mineral fiber.
 - (3) Intumescent.
- b. Interior, Exposed But Out of Reach:
 - (1) Sprayed-on cementitious.
 - (2) Sprayed-on medium-density cementitious.
 - (3) Sprayed-on mineral fiber.
 - (4) Sprayed-on medium-density mineral fiber.
 - (5) Intumescent.
- c. Exterior, Exposed But Out of Reach:
 - (1) Sprayed-on medium- or high-density cementitious.
 - (2) Intumescent.
- d. Exposed within Reach:
 - (1) Sprayed-on high-density cementitious.
 - (2) Intumescent.

END OF CHAPTER B1

CHAPTER B31
ROOF COVERINGS

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 Provide a weather-resistive covering over the top side of the roof superstructure and any exposed floor superstructure.
- 1.1.2 Roof covering comprises all weather-resistive components, including the primary weather barrier, vapor retarders, insulation, water collectors and conductors, wearing surfaces, trim and accessories, but not including roof opening elements or roof fixtures.
- 1.1.3 Where roof covering 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, Chapter B - Shell, and Chapter B3 - Roofing.

1.2 Amenity and Comfort:

- 1.2.1 Air Infiltration: If a jointless or completely sealed-seam or welded-seam membrane-type water barrier is not used, provide auxiliary method of complying with air infiltration requirements of Chapter B.

1.3 Health and Safety:

- 1.3.1 Fire Retardance: ASTM E 108 Class A roof covering, without the use of fire retardant treatment unless treatment is permanent.

1.4 Structure:

- 1.4.1 Roof Covering Substrate: Sufficiently rigid or dense to support water barrier in a manner that prevents puncture due to traffic on roof.
- 1.4.2 Wind Uplift: Where roof covering has a lower air transmission rate than the roof superstructure, provide means of preventing blow-off or ballooning due to low negative pressure over roof.

1.5 Durability:

- 1.5.1 Life Span: As specified in Chapter B, and the following:
 - a. Aesthetic Life Span: Significant degradation of appearance during the functional life span is not acceptable.
 - b. Manufacturer Approval of Design: Where roof covering manufacturer recommends or requires certain design features for satisfactory performance or for warranty, with manufacturer's requirements.
 - c. Manufacturer Warranty:
 - (1) Materials: 20 years, minimum, for full replacement price without exclusions.
 - (2) Installation and Workmanship: 10 years, minimum, without exclusions.
 - (3) Exception: Warranty not required for wood shingles and wood shakes.
 - d. Substantiation:
 - (1) Construction: Actual manufacturer warranty.

1.6 Operation and Maintenance:

- 1.6.1 Water Conductor Capacity: As required by code or SMACNA Architectural Sheet Metal Manual (ASMM), whichever is greater, based on 100 year 1 hour intensity.
 - a. **(AM#5)** Substantiation:

2. PRODUCTS

2.1 Sloped Roofs:

2.1.1 Do not use:

- a. Asphalt shingles.
- b. Wood shingles.
- c. Metal shingles.
- d. Slate shingles.
- e. Concrete tiles.
- f. Clay tiles.
- g. Mineral fiber-cement tiles.

2.2 Insulation Over Roof Superstructure:

2.2.1 Do not use:

- a. Insulation subject to compression damage.

END OF CHAPTER B31

CHAPTER D22

PLUMBING FIXTURES

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 Provide plumbing fixtures necessary for occupancy, use, and sanitation.
- 1.1.2 Fixtures Required: As specified by code and the project program
 - a. Lavatories: At public and private restrooms and bathrooms.
 - b. Utility Sinks: One in each janitor's closet.
 - c. Drinking Fountains: Minimum of one within 3 m (10 feet) of each public restroom.
 - d. Utility Water Supply: One in each building maintenance space and each building equipment space not primarily for electrical equipment.
- 1.1.3 Where plumbing fixture elements must also 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, Chapter D - Services, and Chapter D2 - Water and Drainage.

1.2 Amenity and Comfort:

- 1.2.1 Appearance:
 - a. Smooth, corrosion-resistant, non-absorbent, with no crevices to collect dirt.
 - b. Aesthetically pleasing and easy and comfortable to use.
 - c. Color: White, except where metal fixtures are required.

1.3 Health and Safety:

- 1.3.1 Burning Hazard: Protect wheelchair occupants from hot water pipes and drains.
- 1.3.2 Disease and Infection:
 - a. Overflow outlets in lavatories, sinks, or tubs.
 - b. All openings and edges around the sides and bottom of each fixture permanently sealed with waterproof material.

1.4 Structure:

- 1.4.1 **(AM#5)** Anchor fixtures to support weight **and uplifting** of fixture **to** a minimum of 180 kg (400 pounds) without failure or stress on the connecting pipes.
- 1.4.2 Wall Mounted Fixtures: Carriers concealed inside fixture and in wall or floor.

1.5 Durability:

- 1.5.1 Expected Service Life Span of Faucet Valves: 30 years.
- 1.5.2 Expected Service Life Span of Flushing Mechanisms: 30 years.
- 1.5.3 Wear Resistance: Provide fixtures, trim and accessories that are resistant to corrosion, breakage, scratching, burning, fading and chipping due to continual contact with water, human usage, and cleaning with abrasive materials.

1.6 Operation and Maintenance:

- 1.6.1 Fixture Functions:
 - a. Lavatories: Standard spout, with integral overflow.
 - b. Urinals: Siphon jet flushing action.
 - c. Kitchen Sinks: Gooseneck spout, water spray nozzle.

- d. Drinking Fountains: With hand operation; chilled water service.
 - e. Utility (Mop or Janitor's) Sinks: Filling of standard rolling mop bucket required; spout designed to support full bucket of water.
- 1.6.2 Water Pressure/Flow At Fixtures: 55.2 kPa (8 psi), minimum, except as otherwise required by code.
- a. Blowout Water Closets: 172 kPa (25 psi), minimum.
 - b. Flush Valves at Water Closets and Urinals: 103 kPa (15 psi), minimum.
- 1.6.3 Water Consumption:
- a. Water Closets: 6 liters (1.6 gallons) per flush, maximum, with complete waste removal in one flush.
 - b. Urinals: 3.8 liters (1.0 gallon) per flush, maximum, with complete waste removal in one flush.
 - c. **(AM#5) Lavatory Faucets: 0.16 liter per second (2.5 gallons per minute).**
 - d. **(AM#5) Electric Water Cooler: 30.2 liters per hour (8 gallons per hour).**
- 1.6.4 Ease of Cleaning:
- a. Use wall or counter-mounted fixtures in public restrooms, for ease of cleaning floors.
 - b. Provide adequate access for cleaning each fixture and the areas around it.
- 1.6.5 Ease of Repair:
- a. Faucet valves easily removable and replaceable as a single unit.
 - b. Each pipe connection to each fixture provided with a stop valve, for easy disconnection from water service.
 - c. Provide access to all concealed connections, such as floor and wall cleanouts and slip-joint connections.

END OF CHAPTER D22

CHAPTER D24
SANITARY WASTE

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 Provide drainage for disposal of waste as required by the code and for the following:
 - a. Fixtures and equipment which have a waste connection or a domestic water connection.
 - b. Indirect Drainage: Floor drains to receive piping from:
 - (1) Equipment drain pans.
 - (2) Condensate drains.
 - (3) Other equipment that produces clear wastes.
 - (4) Other equipment specified to have indirect drain.
- 1.1.2 Where sanitary waste and vent elements must also function as elements defined within another element group, meet requirements of both element groups.
- 1.1.3 In addition to the requirements of this chapter, comply with all applicable requirements of Chapter 111 - Facility Performance, Chapter D - Services, and Chapter D2 - Water and Drainage.

1.2 Amenity and Comfort:

- 1.2.1 Convenience:
 - a. Do not locate floor drains and floor cleanouts in doorways or directly in traffic paths.
- 1.2.2 Odors:
 - a. Do not terminate vents within 3 m (10 feet) horizontally of doors, windows, air intake or exhaust openings, or other openings in the exterior enclosure, unless vent termination is at least 1 m (3 feet) above the top of the opening.
 - b. Do not locate vent openings under overhangs.
 - c. Extend vent pipes at least 150 mm (6 inches) above the surface of roofs.
 - (1) Exception: Where roof areas are to be occupied for normal building functions, extend vent pipes at least 2200 mm (7 feet) above the roof surface.
 - d. Provide an automatic means of priming traps which may evaporate enough water to break the trap seal allowing sewer gases to enter the building.

1.3 Health and Safety:

- 1.3.1 Disease and Infection:
 - a. Do not locate indirect drains in toilet rooms, unventilated or inaccessible rooms, or in air distribution or return plenums.

1.4 Structure:

- 1.4.1 Hub-and-Spigot Joint Support: Support joints so they do not separate under weight of pipe or live loads.

1.5 Durability:

- 1.5.1 Corrosion Resistance:
 - a. Where corrosive wastes can be neutralized or diluted below harmful levels, removal is not required; otherwise, provide appropriate interceptors to remove corrosive wastes, including solids.
- 1.5.2 Condensation:
 - a. Prevent condensation from forming on or dripping from sanitary drain piping, floor drain bodies, drinking fountain or water cooler waste piping, condensate piping, and p-traps.

1.6 Operation and Maintenance:

1.6.1 Maintenance of Drainage:

- a. Where sewer discharge is higher than item to be drained, provide a means of lifting the waste for drainage.
 - (1) **(AM#5) Method of Liting Waste: Provide duplex sewage pumps.**
- b. Fittings, Joints, and Offsets: As required to ensure optimal flow through horizontal and vertical piping and at changes of direction.
- c. Transitions Between Horizontal Piping and Vertical Risers:
 - (1) Sanitary Waste: Sanitary tees, wyes, or wyes and eighth bends.
 - (2) Vents: Wyes, wyes and eighth bends, and short radius fittings.

1.6.2 Ease of Cleaning:

- a. Floor Drains: At low points in floor and flush with finish floor surface.
- b. Cleanout Plugs: Flush with floor surface.
- c. Drain equipment which produces or collects clear waste, such as condensation from cooling coils. Provide piping for the clear waste to the nearest floor drain.
- d. Indirect Waste Pipes Over 25 mm (1 inch) Diameter: Provide a means to catch and remove solid materials 12.7 mm (1/2 inch) and larger, such as a strainer.

1.6.3 Minimization of Cleaning:

- a. Grease Interceptors: Located at drains specifically intended for disposal of grease.

1.6.4 Ease of Maintenance:

- a. Interceptors That Must be Manually Cleaned:
 - (1) Designed for minimum of 2 months operation between cleanings.
 - (2) Located close to or in the same area as drains that receive the harmful wastes, for supervision and maintenance by occupants creating the waste.
 - (3) Removable waste container, with spare.

END OF CHAPTER D24

CHAPTER D34

AIR DISTRIBUTION

1. PERFORMANCE

1.1 Basic Function:

- 1.1.1 Distribute air to maintain the required space conditions.
- 1.1.2 Where air distribution elements also must function as elements defined within another element group, meet the requirements of both element groups.
- 1.1.3 In addition to the requirements of this chapter, comply with all applicable requirements of Chapter 111 - Facility Performance, Chapter D - Services, Chapter D3 - HVAC, and Chapter D36 - HVAC Controls.

1.2 Amenity and Comfort:

- 1.2.1 Space Temperature Control: Coordination of air distribution system's design and installation with zoning and space temperature requirements specified in Chapter D36 - HVAC Controls.
 - a. Maintain winter effective temperature as defined by ANSI/ASHRAE Std 55 between 20 degrees C (68 degrees F) and 23.5 degrees C (74 degrees F).
 - b. Maintain summer effective temperature as defined by ANSI/ASHRAE Std 55 between 23.9 degrees C (75 degrees F) and 26 degrees C (79 degrees F).
 - c. Vertical Air Temperature Difference: Comply with requirements of ANSI/ASHRAE Std 55.
- 1.2.2 Humidity Control:
 - a. Provide humidification equipment in computer rooms and library classified storage.
 - b. Maintain relative humidity between 30 and 60 percent in computer rooms and library classified storage.
- 1.2.3 Air Movement:
 - a. Provide an air distribution system that limits the air velocity to 0.25 m/s (50 fpm), maximum.
 - b. Adjustments: Provide an air distribution system which allows relocating supply diffusers, adjusting direction of airflow from supply diffusers, adjusting dampers, and changing the thermostat setpoint.
- 1.2.4 Acoustical Performance:
 - a. Air Distribution Background Noise: Provide systems which comply with the acoustical requirements of Chapter C - Interiors and the following RC Levels as defined in ASHRAE HVAC Applications Handbook. Do not exceed the sound pressure level for any octave band at the specified RC.
 - (1) Meeting and Banquet Rooms: 25-35,
 - (2) Halls, Corridors, and Lobbies: 35-45.
 - (3) Executive and Private Offices: 25-35.
 - (4) Conference Rooms: 25-35.
 - (5) Teleconference Rooms: 25, maximum.
 - (6) Open Plan Offices: 30-40.
 - (7) Classrooms: 40, maximum.
 - (8) Libraries: 30-40.
 - (9) Theater: 35, maximum.
 - b. Provide equipment with sound ratings which comply with testing and rating requirements of ARI 880.
- 1.2.5 Cleanliness: Provide filtration of the air distributed to the occupied spaces.
 - a. Filter Efficiency: 85 percent arrestance per ASHRAE Standard 52.1.
 - b. Filter Efficiency: 30 percent atmospheric dust-spot efficiency per ASHRAE Standard 52.1.

- 1.2.6 Odor: Provide exhaust to remove odors.
 - a. Toilet Room Exhaust: 10 L/s per sq m (2 cfm per sq. ft.).
 - b. Janitors Closet Exhaust: 10 L/s per sq m (2 cfm per sq. ft.).
 - c. Locker Room Exhaust: 10 L/s per sq m (2 cfm per sq. ft.).
- 1.2.7 Appearance:
 - a. Diffuser Shape: Provide square, round, rectangular, or linear diffusers.
 - b. Diffuser Face: Provide perforated, louvered, or dropped face diffusers.
 - c. Linear Diffusers: Provide two slot linear diffusers.
 - d. Diffuser Color: Provide diffusers which are off-white.
- 1.3 Health and Safety:
 - 1.3.1 Bacterial Growth: Provide humidifiers which do not promote the growth of microorganisms.
 - 1.3.2 Electrical Shock Prevention:
 - a. Provide a disconnect switch at each powered induction unit.
 - 1.3.3 Fire Sources: Provide air distribution elements constructed from incombustible materials.
 - 1.3.4 Fire Spread: Provide interlocks to prevent operation or start-up of air distribution elements when fire or smoke detection systems are in alarm condition.
- 1.4 Durability:
 - 1.4.1 Expected Service Life Span: Provide a system which will be viable for the life of building.
 - 1.4.2 Aesthetic Life Span: Provide units exposed within the occupied space which will not fade, chip, or peel for a minimum of 10 years.
 - 1.4.3 Exposed Units within Occupied Spaces: Heavy gage, galvanized sheet steel, painted casing.
 - 1.4.4 Accidental Damage: Protection of ductwork, air handlers, fans, and condensing units from accidental damage.
- 1.5 Operation and Maintenance:
 - 1.5.1 Operating Parameters:
 - a. Duct Construction: In accordance with SMACNA HVAC Duct Construction Standards, based on the following:
 - (1) Supply Duct Pressure Class: 500 Pa (2 inches w.g.).
 - (2) Return Duct Pressure Class: 500 Pa (2 inches w.g.).
 - (3) Outside Air Duct Pressure Class: 500 Pa (2 inches w.g.).
 - (4) Exhaust Duct Pressure Class: 500 Pa (2 inches w.g.).
 - (5) Transfer Duct Pressure Class: 500 Pa (2 inches w.g.).
 - (6) Duct Seal Class C for Duct Pressure Class 500 Pa (2 inches w.g.).
 - b. Air Velocity: 6 m/s (1200 feet per minute), maximum.
 - c. **(AM#5) Fans: Match fan pressure characteristics to the air distribution system pressure characteristics including the system effect factors; pressure characteristics based on ANSI/AMCA Standard 210 fan ratings and system characteristics based on engineering calculations. For fans that are available in belt or direct drive, belt-driven fan will be selected.**
 - 1.5.2 Ease of Use: Provide units with individual controls coordinated with controls specified in Chapter D36.
 - 1.5.3 Ease of Cleaning: Provide units with removable access panels to allow cleaning.
 - 1.5.4 Ease of Maintenance: Provide units which are modular in design and with filter access without removal of the front panel.

- 1.5.5 Peak Electrical Demand: Coordinate control requirements with Chapter D36 - Controls and Instrumentation.

2. PRODUCTS

2.1 Humidifiers:

- 2.1.1 Use one or more of the following:
- a. Gas-fired humidifiers.
 - b. Ultrasonic fog generation humidifiers.
 - c. Electric humidifiers.

2.2 Ductwork:

- 2.2.1 Do not use:
- a. Steel sheet metal duct.
 - b. Aluminum sheet metal duct.
 - c. Fibrous glass duct.

2.3 Diffusers, Registers, and Grilles:

- 2.3.1 Do not use:
- a. Steel diffusers.
 - b. Stainless steel diffusers.

2.4 Fans:

- 2.4.1 Use one or more of the following:
- a. Steel fan housing with an aluminum propeller.
 - b. Steel fan housing with a stamped steel propeller.
 - c. Aluminum fan housing with an aluminum propeller.
 - d. Aluminum fan housing with an aluminum centrifugal wheel.
 - e. Steel fan housing with an aluminum centrifugal wheel.
 - f. Steel fan housing with a steel centrifugal wheel.

2.5 Air Filters:

- 2.5.1 Do not use:
- a. Panel filters.
 - b. Automatic roll filters.
 - c. Cleanable media filters.

3. METHODS OF CONSTRUCTION

3.1 Construct the system using the following methods:

- 3.1.1 Zone air handling equipment such that adjacent spaces with similar functions, environmental requirements, and utilization schedule are served by the same air handling unit..

END OF CHAPTER D34

SECTION 01015

DESIGN REQUIREMENTS AFTER AWARD

12/2000

AMENDMENT NO. 0005

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Section Includes

This section includes requirements for developing and submitting a design including preparation of drawings, specifications and design analyses conforming to the requirements contained in this section.

1.1.2 Section Excludes

This section does not include requirements for construction submittals which are specified in Section 01330 SUBMITTAL PROCEDURES.

1.2 DESIGN COMPLETION SCHEDULE

See paragraph COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK in Section 01000 DESIGN AND CONSTRUCTION SCHEDULE for the Completion Schedule of the entire work.

1.3 REFERENCES

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

CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI)

CSI MasterFormat (1995) MasterFormat

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 763 Asbestos

1.4 METRIC REQUIREMENTS (CONTRACTOR'S OPTION)

The Contractor has the option of providing the design in either English or Metric dimensions. Once the dimensional standard (English or Metric) is selected, the Contractor needs to remain consistent in using the same standard for the entire project. See Section 01016 DESIGN DOCUMENT REQUIREMENTS for additional requirements.

1.4.1 Definitions

Definitions of hard and soft metric are specified in Section 01415 METRIC MEASUREMENTS.

1.4.2 Project Documents

Wherever possible, the project documents shall be accomplished using "hard" metric measurements; drawings, narratives, calculations, dimensions, capacities, and similar expressions of measurement shall be expressed in "hard" metric units.

1.4.3 SI Units of Measure

Products and building components furnished in "hard" metric units are those manufactured using SI units of measure. SI units of measure shall be stated in metric only; do not repeat their English equivalency in parentheses following the metric unit.

1.4.4 Modular Construction Products

Soft metric conversions from their English units are permitted for modular construction products, unless the application of the product requires it to dimensionally coordinate into the 100 millimeter building module. Modular construction products are brick, concrete block, wallboard, plywood, suspended ceiling systems, recessed lighting, raised access flooring and other manufactured components with dimensions based upon a four (4) inch building module. Coordinate finishes available in metric with those available in non-metric.

1.4.5 Metric Design Guide

The designer shall obtain a copy of and follow the requirements in the "Metric Design Guide" (PBS-PQ260), May 1994, U.S. General Services Administration Public Buildings Service. A copy will be furnished after award of the contract.

1.5 DEFINITIONS

1.5.1 Acceptance

This is the Government's review of the design submittals, construction submittals, and record drawings for conformance to the Contract requirements. Acceptance shall not be construed to be an endorsement of the accuracy or completeness of the design. The Contractor is ultimately responsible for the contract design and construction. Design deficiencies or omissions in the accepted design shall be the responsibility of the Contractor and the Designer of Record.

1.5.2 Approve, Approved and Approval

As these words are used throughout the documents, they shall mean "as approved by the Designer of Record unless otherwise expressly stated." See Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES.

1.5.3 Complete Specification Section

A Complete Specification Section is one that follows the Construction Specifications Institute's (CSI) 16-Division, 3-Part Section format, including the required submittal register and testing requirements.

1.5.4 Contractor

Firm or company to whom award is made to design and construct the project.

1.5.5 Contract Documents

Contract Documents, in addition to the signed Contract Form and the Contract Clauses, include the Request for Proposal, all amendments, the Contractor's proposal as accepted at the time of contract award, and the Contractor approved, Government accepted 100% final construction documents.

1.5.6 Construction Documents

Documents provided by the Contractor and accepted by the Government for use in constructing the project, including but not limited to final design drawings and specifications, schedules, submittal registers, and color boards.

1.5.7 Corps of Engineers Unified Facilities Guide Specifications (UFGS)

Includes the Corps of Engineers Unified Facilities Guide Specifications (UFGS) for Military Construction, the narrow-scope sections developed by the Fort Worth District (UFSWF GS), and the Fort Worth District Supplements to the UFGS.

1.5.8 Design Documents

Documents which include design drawings, project specifications, and design analyses (basis of design and calculations) prepared by or under the direct supervision of registered professional architects and engineers and proposed by the Contractor to meet the requirements of this Contract.

1.5.9 Design Drawings

Documentation showing in graphic and quantitative form the extent, design, location, relationships, and dimensions of the construction to be provided by the Contractor. (Note: Shop Drawings, as defined in Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES, are not to be provided until after design drawings are accepted for construction.)

1.5.10 Designer

Architects and Engineers (A/E) associated with the Contractor who are responsible for the design and have the qualifications and experience specified.

1.5.11 Designer of Record

The Contractor's Architect/Engineer (A/E) is the "Designer of Record" and officially approves the design submittals, construction submittals, and record drawings. There shall be a designer of record for each design discipline. The designer of record is solely liable for design errors and/or omissions and shall have professional liability insurance to insure the designer against design errors and omissions. The Contractor's Quality Control Staff will check and certify all submittals. See paragraph DESIGNER(S) OF RECORD for additional requirements.

1.5.12 Mandatory Guides

Mandatory Guides are those guides listed in the Project Table of Contents as Attachments or included in Divisions 2 through 16 of the Contract as unedited or partially edited guides and which shall be included in the

Contractor's construction specifications. Some of the guides may be partially edited while others may not be edited at all. The Contractor shall edit or finish editing these guides.

1.5.13 Mandatory Sections

Mandatory Sections are those sections included in Divisions 2 through 16 of the RFP which have been completely edited and shall be included in the Contractor's construction specifications verbatim.

1.5.14 Solicitation or Request for Proposal (RFP)

Documents furnished to prospective offerors containing proposal information and specifying criteria and project requirements for design and construction of the project. The documents include this specification, attachments, and the information drawings.

1.5.15 Construction Specifications

Construction specifications are the Contractor's developed construction specifications consisting of the Government-furnished Division 1 (General Requirements) sections and the Contractor-written sections in Divisions 2 through 16 which will be used to construct the project. Divisions 2 through 16 shall include any the Contract mandatory specifications, the Contractor-edited Contract mandatory UFGS and UFSWF guide specifications, Contractor-developed UFGS sections for those items of work covered by the UFGS guides, and the Contractor-developed sections for those items of work not covered by the UFGS and UFSWF guides.

1.5.16 Design Development (60 Percent Design) Submittal

Design Development (60 Percent Preliminary Design) Submittal shall mean 60 percent building and 100 percent site work, utilities (including utilities within the 1.5m line of the building), and foundation design submittal. See paragraph DESIGN SUBMITTALS for further clarification.

1.6 SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS, AND DESIGN ANALYSES

1.6.1 Certification

With each submittal the Contractor shall certify that all items submitted in the design documents (after contract award) comply with the Contract requirements. The criteria specified in this Contract are binding contract criteria and in case of any conflict, after award, between the Contract criteria and Contractor's submittals, the criteria stated in the Document Order of Precedence in Section 00800 SPECIAL CONTRACT REQUIREMENTS will govern. The Contractor shall present with the letter of transmittal for each design submittal (including the 100 percent corrected design (compliance check) submittal) a certification that the submittal (drawings, specifications, design analysis, etc.) complies with the requirements stated above. Prepare the design certification and transmittal letter in the format shown on Attachment A attached at the end of this Section.

1.6.1.1 Signatures

The certification shall be signed by an officer of the Contractor's company and the licensed architect/engineer designer of record attesting that the drawings, specifications and design analyses prepared for the construction

of the facility meet the requirements of the Contract.

1.6.2 Deviations

Deviations from the Contract requirements shall be identified in each design submittal's letter of transmittal. Deviations from the Contract requirements will be considered for approval by the Contracting Officer. The Contracting Officer may reject any deviation proposed by the Contractor without explanation.

1.6.3 Field Verification

The Contractor shall verify field conditions which are significant to design by field inspection, researching and reviewing the existing documents pertaining to the site and existing building(s), and evaluating observable existing conditions. The information shall be reflected in the design documents. It is the responsibility of the Contractor to evaluate existing conditions in the immediate proximity of the project to determine if such conditions may affect, or be affected by the proposed construction.

If there are site conditions which appear to affect the proposed construction the Contractor shall inform the Contracting Officer, in writing, before proceeding with the work.

1.6.4 Number of Copies

The number of copies for distribution is specified in paragraph "Review Document Distribution." For each design submittal, submit for review and acceptance the specified number of copies of the construction drawings, specifications, design analyses, equipment schedules, submittal register, and all other submittal data, which shall be in accordance with the requirements of the Contract Documents. Upon final acceptance, make distribution of the accepted design and construction documents within 7 calendar days. With each distribution, provide one CD-ROM disk (or more if required) containing all documents. The CD-ROM disks shall be fixated "Final," which is a recording option that renders the disk totally used so that no other data tracks can be added in a later recording session. Proposed modifications shall be submitted in 8 copies. Final modifications, after negotiations, shall be submitted in 8 copies (including one reproducible).

1.6.5 Final Construction Documents

Each distributed set shall consist of full-size paper drawings, specifications, submittal register, design analysis, and a CD-ROM disk(s) containing all of the final design documents (e.g. drawing, specification, submittal register, and design analysis files). Provide documents complete, accurate, and explicit enough to show compliance with the Contract requirements and to permit construction. Drawings and specifications illustrating systems proposed to meet the requirements of the Contract shall reflect proper detailing for each such system to assure appropriate use, proper fit, compatibility of components and coordination with the specifications and design analysis required by this section. Coordinate drawings to ensure there are no conflicts between design disciplines and between drawings and specifications. See Section 01016 DESIGN DOCUMENTS REQUIREMENTS for additional requirements. During and upon completion of the project, the accepted design documents shall be corrected to reflect as-built conditions in accordance with Section 01770 CONTRACT CLOSEOUT.

1.6.5.1 Final Construction Drawings

In addition to the required number of hard copies of final design documents (e.g. drawings, specifications, submittal register, and design analysis), construction document (100 percent final design) drawings, and record (i.e. as-built) drawings after the completion of the project shall be submitted on CD-ROM disk in the CADD format required by the Contract. Furnish three CD-ROM disks, one each for the Area Office, Corps of Engineers' District Office, and one for the User. On the CD-ROM disk include the electronic .dgn or .dwg CADD drawing files, the CADD drawing files in .CAL format (CADD files converted to .CAL) for viewing on MaxView Reader, and an Excel spreadsheet listing for each drawing the drawing number, sequence number, level/layer assignments, line colors, line weights, and line types. See Section 01016 DESIGN DOCUMENT REQUIREMENTS for additional requirements.

1.6.5.2 Computer Aided Design and Drafting (CADD) Systems

Within 10 days of Contract Notice to Proceed, furnish for approval samples of CADD electronic files created on the equipment and software to be used for this work. CADD work will not proceed until the Contractor's proposed CADD system and resulting CADD files have been acceptably demonstrated to work on the Corps of Engineers' Resident Fort Worth District Office and the User's CADD systems.

1.6.6 Specifications and Design Analysis

Specifications and design analysis shall be provided in hard copy and on the same CD-ROM disk as the drawings, Microsoft Word for Windows format (Version Word 97 minimum, but shall be compatible with the version used at Fort Worth District). The Division 1 sections included in the Contract shall be reprinted in the final 100 percent construction specifications. Hard copies of the specifications and design analyses shall be bound separately in 3-ring binders. Each set of documents shall have its own Table of Contents. See Section 01016 DESIGN DOCUMENTS REQUIREMENTS for editing and format requirements.

1.7 DESIGN DOCUMENTS

Design documents shall include construction drawings, specifications, submittal register, design analysis, and drafts of DD Form 1354. Detailing and installation of all equipment and materials shall comply with the manufacturers' recommendations. Construction drawings and specifications shall not make reference to RFP requirements. The Contractor, including designers, shall visit the site and make other trips as necessary during the design to accomplish the work. See Section 01016 DESIGN DOCUMENT REQUIREMENTS for additional descriptions.

1.7.1 Drawings

See paragraph SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS AND DESIGN ANALYSES, subparagraph "Final Construction Documents."

1.7.2 Specifications

Specifications shall be in sufficient detail to fully describe and demonstrate the quality of materials, the installation and performance of equipment, and the quality of workmanship. Specifications shall conform to the Construction Specifications Institute (CSI) 16-Division 3-Part format and follow the CSI's section numbering system defined in CSI MasterFormat.

No two sections shall have the same section number. Division 1 specifications shall consist of the Division 1 sections included in the Contract. The specifications shall clearly identify the specific products chosen to meet the requirements of the Contract (manufacturers' brand names and model numbers or similar product information). Turfing sections shall indicate planting dates.

1.7.3 Design Analysis

Describe the design of each discipline of work, including all features and the necessary calculations, tables, methods, and sources used in determining equipment and material sizes and capacities. Provide sufficient information to support the design of the various categories such as, but not limited to, architectural, interior design, structural, mechanical, electrical, civil including grading, drainage, paving, environmental, and outside utility services, and Contract included items.

1.7.4 DD Form 1354

The 1354 process consists of a preliminary (draft) DD Form 1354 and a Final DD Form 1354. Prepare a preliminary (draft) of DD Form 1354, TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY, so that White Sands Missile Range can update their real property maintenance records. This draft shall contain as many of the resource code items with cost and quantity data as can be developed from the Contractor's final 100% design documents. Submit it to the Contracting Officer within 30 days of the Government's acceptance of the 100% design documents. The Government will use this Final DD Form 1354 to develop the interim 1354. The form, a sample of a completed form, and a general list of resource codes with cost and quantity data are included in the ATTACHMENTS. An electronic file of the form, DD1354.frl, for use with Delrina Perform Pro Form Filler, version 16 Jul 1992, or its successor software Form Flow Filler, Version 2.22 (March 5, 1999) is located on the Solicitation and Contract CD-ROM disks.

1.8 DESIGN AND CONSTRUCTION PERSONNEL QUALIFICATIONS

1.8.1 Project Manager - Design

The design project manager shall have a recognized four year or higher college degree in architecture or engineering, be professionally licensed, and have at least 3 years experience in managing design projects and have at least 5 years of design experience. The Design Project Manager may be the lead designer, but shall not be the same individual as the Construction Project Manager.

1.8.2 Project Manager - Construction

The project manager shall have a recognized four-year or higher college degree in architecture, engineering (or related technical fields), or construction management and have at least 5 years experience in managing design and construction projects or 10 years experience in managing construction projects only. The Construction Project Manager shall not be the same individual as the Design Project Manager.

1.8.3 Project Architect

The project architect shall have a recognized four-year or higher college degree in architecture, be professionally licensed, 3 years experience as a lead architect, and have at least 5 years design experience.

1.8.4 Designers

In addition to the Project Architect, provide at least one professional licensed architect or engineer for each of the other design disciplines (landscape architectural, interior designer, civil, electrical, mechanical, **(AM#5) lightning protection specialist**, and structural design) with at least 5 years experience in their discipline. Each lead designer shall have a recognized four-year (or higher) college degree in architecture or engineering. The fire protection system shall be designed by a registered engineer with a minimum of five years experience in designing fire protection systems. Analysis, design and installation of the lightning protection system shall be accomplished by a lightning protection specialist, master certified by the lightning protection institute (LPI) in design and installation. This specialist shall have a minimum of five years experience in Design and Installation of lightning protection systems. The field work, analysis, and design of the cathodic protection system shall be accomplished by or under direct supervision of an engineer licensed in corrosion engineering or a corrosion specialist certified by the National Association of Corrosion Engineers (NACE). Corrosion Engineer or Corrosion Specialist shall have a minimum of five years experience in designing and installing cathodic protection systems. professionally licensed.

1.8.5 Interior Designer

Interior Designer shall be National Council For Interior Design Qualification (NCIDQ) certified or professionally licensed.

1.8.6 Design Quality Control Manager

Design quality control manager and the alternate manager qualifications are specified in Section 01430 DESIGN QUALITY CONTROL. Design quality control manager shall not be the same person as the construction quality control manager.

1.8.7 Construction Quality Control Manager

Construction quality control manager and assistants qualifications are specified in Section 01451 CONSTRUCTION QUALITY CONTROL. Construction quality control manager shall not be the same person as the design quality control manager.

1.8.8 Communications Consultant

This project requires the utilization of a Communications Consultant (CC) who is a Registered Communications Distribution Designer (RCDD). This shall include all phases of design and coordination with other disciplines for all systems listed in the Design Criteria References and these Design Instructions. This communication consultant shall have a minimum of five years of Telecommunications Design experience. The use of any on-staff electrical engineers for design of the telecommunication systems and who are not RCDD is not acceptable.

1.8.9 CADD Personnel

CADD personnel shall be proficient in the preparation of architectural and engineering drawings and the CADD equipment that will be used to create the required drawings and record drawings. The lead CADD person shall have at

least 5 years experience on the proposed equipment.

1.8.10 Project Schedule Scheduler

Qualifications for the Scheduler are specified in Section 01320 PROJECT SCHEDULE.

1.9 DESIGNER(S) OF RECORD

The Contractor shall identify, for approval, the Designer of Record for each area of work. One Designer of Record may be responsible for more than one area. All areas of design disciplines shall be accounted for by a listed, registered Designer of Record. The Designer(s) of Record shall stamp, sign, and date all design and construction drawings under their responsible discipline at each design submittal stage, including modification drawings after start of construction (see Section 00800 SPECIAL CONTRACT REQUIREMENTS, clause "Registration of Designers").

1.10 CONSTRUCTION MANAGEMENT KEY PERSONNEL

The Contractor's construction management key personnel shall be actively involved during the design process to effectively integrate the design and construction requirements of this Contract. In addition to the typical required construction activities, the Contractor's involvement shall include, but is not limited to, actions such as integrating the design schedule into the Master Schedule to maximize the effectiveness of fast-tracking design and construction (within the limits allowed in the Contract), ensuring constructability and economy of the design, integrating the material and equipment acquisition programs to meet critical schedules, effectively interfacing the construction QC program with the design QC program, and maintaining and providing the design team with accurate, up-to-date redline and as-built documentation. The Contractor shall require and manage the active involvement of key trade subcontractors in the above activities. The Contractor's Quality Control Staff will check and certify all submittals.

1.11 DESIGN SUBMITTALS

1.11.1 General

The Contractor shall schedule the number and date of the design submittal phases and conferences. Design submittals are required at the design development (preliminary 60 percent), construction drawing (final 100 percent design) stages, and at the corrected construction drawing (final design) stage. The number, date, and contents of the design submittal phases shall be reflected in the project schedules. An authorization letter to start work will be provided separately by the Contracting Officer for each phase of the design. See paragraph "Government Design Review and Acceptance" and Section 01016 DESIGN DOCUMENTS REQUIREMENTS for additional requirements.

1.11.2 Design Development (60 Percent Design) Submittal

The 60 percent design submittal includes the 60 percent in-progress building design and the 100 percent complete site work, exterior utilities, and foundation design. These documents shall be packaged and stamped "For Review Only - Design Development (60% Design)". Each sheet of the drawings shall also be stamped except sitework, exterior utilities, and foundation drawings which will be stamped "Construction Documents (100% design)". See

Section 01016 DESIGN DOCUMENTS REQUIREMENTS for additional requirements.

1.11.3 Construction Drawing (100 Percent Design) Submittal

The 100 percent design submittal includes complete site and utility design and building design and shall be stamped "For Review Only -Construction Documents (100% Design)", and each sheet of the drawings shall also be stamped. Contractor shall make final proposal of all materials and finishes at this stage.

1.11.4 Compliance Check Design Submittal

The compliance check design submittal(s) after the Government review of the 100 percent complete site and building designs shall be stamped "Construction Documents (100% Corrected Design)"; and each sheet of the drawings shall also be stamped and signed by the Designer of Record.

1.11.5 Insufficient Design Submittals and Delays

No additional time for completion of the contract will be granted to the Contractor due to insufficient design submittals. Delays caused by the Contractor in completion of the 60 percent design, 100 percent design, or the 100 percent corrected design will not be considered as valid reason to delay the entire project within the specified project duration.

1.11.6 Deviations or Betterments

The Contractor shall bring to the Government's attention any deviations or betterments made to the RFP and Contractor's proposal documents. These shall be summarized in letter form with reasons and highlighted or clouded details on the applicable drawings and documents submitted. See Section 00800 SPECIAL CONTRACT REQUIREMENTS for additional requirements concerning betterments.

1.11.7 Review Design Documents

The Contractor shall submit all drawing design documents on black-line media with "FOR REVIEW" stamped in 12.5 mm high letters in the lower right corner in red ink. Specifications and Design Analyses shall be hard copy with "FOR REVIEW" stamped in 12.5 mm (1/2-inch) high letters in the lower right corner in red ink. The Contractor shall submit Contractor-approved documents on black-line media with "APPROVED FOR CONSTRUCTION" similarly stamped.

1.12 DESIGN REVIEWS

Design reviews will be held in the offices of the Fort Worth District's White Sands Missile Range Resident Office at the Design Development (preliminary 60 percent), Construction Drawings (final 100 percent), and corrected final stages of the final design in accordance with the Contractor's Project Schedule. The Government shall have thirty (30) calendar days review period for each submittal (60 percent design and 100 percent Design) and fourteen (14) calendar days review period for resubmittal of the 100 percent Design (including the 100% final site work, utilities, and foundation portion of the 60% Submittal and the Compliance Check Design) after incorporation of final review comments. Design review conference(s) between the Contractor and the Government may be held after submittal of the 60 percent and 100 percent design(s) if the Government determines them necessary. The time for Government review will be

calculated from the date of receipt of the design submittals at the Government address to the date annotated conformance review comments are mailed to the Contractor.

1.12.1 Review Intent

Reviews will be for conformance with the technical requirements of the Contract. If the Contractor disagrees technically with any comment and does not intend to comply with the comment, the Contractor shall clearly outline, with ample justification, the reasons for noncompliance within 5 days after receipt of these comments in order that the comment(s) can be resolved. The Contractor shall furnish disposition of all comments, in writing, with the next scheduled submittal. If the Contractor believes the action required by any comment exceeds the requirements of the Contract, the Contractor shall immediately notify the Contracting Officer in writing and take no action regarding this matter until the matter is resolved.

1.12.2 Late Submittals

If a design submittal is over one (1) day late in accordance with the latest design schedule, the Government review period will be extended 7 days. The review conference will be held the week after the review period. Submittal date revisions shall be in writing at least one week prior to the affected submittal.

1.12.3 Review Document Distribution

For each review, review documents shall be sent, in the quantity indicated, to the addresses listed below. The documents will be in their then present "on-board" design status. All documents must contain an index of contents. Work shall, however, continue up to the time of the review conference date(s) when 2 copies of then-current design documents will be brought to the issuing office for the conference review. Originals of transmittal letters shall be sent to the Area Engineer, address as shown below, and copies should accompany each mail package. Transmittal letters shall indicate distribution by use of the "ATTN" code shown in the address.

No. of Copies

(6- Review)	District Engineer
(2- Final)	US Army Engineer District, Fort Worth
	ATTN: CESWF-EC-AM (Beverly Brannan)
	P.O. Box 17300
	Fort Worth, TX 76102-0300

1.12.4 Additional Review Time

If for any reason the Government requires more time than that stated for review, then the Contractor will be granted an extension of time equal to the number of calendar days of delay.

1.12.5 Government Design Review and Acceptance

Government personnel will present review comments for discussion and resolution. Copies of comments, annotated by the Designer of Record with comment action agreed on, will be made available to all parties at least 10 calendar days prior to the conference. Review conferences will be scheduled by the Contractor. Unresolved problems will be resolved by

immediate follow-on action at the end of conferences. Valid comments will be incorporated into the Documents. On receipt of final corrected design documents (with all backcheck comments incorporated) that are acceptable, the Contracting Officer shall notify the Contractor in writing that the documents are accepted and construction may begin. Furnish the final design and construction documents in accordance with paragraph "Number of Copies." The Government, however, reserves the right to not accept design document submittals if outstanding unincorporated comments are of too great a significance. In this case, every effort shall be made during follow-up action between the Contractor and the Fort Worth District to resolve conflicts and problems such that documents can be accepted. However, if final submittal(s) are incomplete or deficient, requiring correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of \$500.00 per submittal.

1.13 Final Construction Documents

Following the last submittal, the Contractor shall forward the completed original set of reproducibles for acceptance. Upon Government acceptance of corrected 100 percent final design documents, the original will be returned to the Contractor for reproduction purposes. The Contractor shall be responsible for reproduction. Within 7 calendar days after acceptance, the Contractor shall mail 1 complete set of the accepted design documents to the Fort Worth District, CESWF-EC-AM Attn: Beverly Brannan, and 5 complete sets to the Corps of Engineers' White Sands Resident Engineer, White Sands Resident Office. Each set shall consist of full size paper drawings, specifications, and design analysis and CD-ROM disk(s) containing all drawing, specifications, submittal register, and design analysis files). During and upon completion of the project, the accepted design documents shall be corrected to reflect as-built conditions in accordance with Section 01770 CONTRACT CLOSEOUT. After acceptance, changes to the final construction documents shall not be made without the Contracting Officer's knowledge and acceptance.

1.14 COORDINATION

1.14.1 Written Records

The Contractor shall prepare a written record of each design site visit, meeting, or conference, either telephonic or personal, and furnish copies to the Contracting Officer and all parties involved within 5 working days. Include subject, names of participants, outline of discussion, and recommendation or conclusions. Number each written record for the particular project under design in consecutive order.

1.14.2 Design Needs List

Throughout the life of the Contract the Contractor shall furnish the Contracting Officer a biweekly "needs" list for design related items. This list shall itemize in an orderly fashion design data required by the Contractor to advance the design in a timely manner. Each list shall include a sequence number, description of action item, and the name of the individual or agency responsible for satisfying the action item and remarks. Maintain the list on a continuous basis with satisfied action items checked off and new action items added as required. Once a request for information is initiated, that item shall remain on the list until the requested information has been furnished or otherwise resolved. Mail copies of the lists\ to both the Contracting Officer and the agencies

tasked with supplying the information.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 ATTACHMENTS

ATTACHMENT A

[Prime Contractor's Letterhead]

Date: _____

Contract No.: _____

[Reviewing Component Address]

Subject: DESIGN CERTIFICATION AND TRANSMITTAL FOR

Project Title: _____

Project Location: _____

Contract No.: _____

Gentlemen,

Enclosed are the following documents which I hereby certify are in compliance with the Contract requirements of the subject construction contract and can be used to commence construction subject to Government acceptance:

1. Project Drawings
2. Project Specifications
3. Design Analysis
 - a. Civil
 - b. Water Supply and Wastewater Collection
 - c. Architectural
 - d. Interior Design
 - e. Structural
 - f. Mechanical
 - g. Fire Protection
 - h. Electrical
 - i. Environmental
 - j. Landscape Architectural
4. Submittal Register

[Typed Name and Signature of the
Officer of the Prime Contractor's company]

5. Deviations

Copy to: [As standard with the Contractor]

[Typed Name and Signature of the
Licensed Architect/Engineer of Record]

-- End of Section --

SECTION 01451

CONTRACTOR QUALITY CONTROL

01/02

AMENDMENT NO. 0005

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740 (2001) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM E 329 (2000b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2 QUALITY CONTROL PLAN

3.2.1 General

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 60 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.2 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified

deficiencies have been corrected.

- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 5 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The

Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, show drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of one years construction experience on construction similar to this contract or a construction person with a minimum of five years in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned no other duties. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

3.4.3.1 CQC Staff

A staff shall be maintained under the direction of the CQC system manager to perform all QC activities. The staff must be of sufficient size to ensure adequate QC coverage of all work phases, work shifts and work crews involved with the construction. Except as required for specialized CQC personnel, these personnel may perform other duties, but must be fully qualified by experience and technical training to perform their assigned QC responsibilities and must be allowed sufficient time to carry out these responsibilities.

3.4.3.2 Specialized CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: electrical, and mechanical. These individuals shall be directly employed by the prime Contractor and may not be employed by a supplier or sub-contractor on this project; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan.

AM#5 (Deleted)

AM#5 (Deleted)

a. Mechanical

Graduate Mechanical Engineer with 2 yrs experience or person with 5 yrs related experience

b. Electrical

Graduate Electrical Engineer with 2 yrs related experience or person with 5 yrs related experience

3.4.4 Additional Requirement

In addition to the above experience and/or education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This class is mandatory for the Contractor's quality control manager. Certificates issued upon successful completion are valid for five years. This course is periodically offered at the Fort Worth District, Corps of Engineers Office, Federal Building, Room 1A03, 819 Taylor Street, Fort Worth, Texas. Attendees must be fluent in the English language (able to read and write) at the high school level.

Registration is required; call 817-886-1828 or 817-886-1841 for times and reservations. There is no charge for the course; however the Contractor will pay for travel and per diem costs.

3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERIES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements. When Section 15950A HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTROL SYSTEMS; 15951A DIRECT DIGITAL CONTROL FOR HVAC; 15990A TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS; or 15995A COMMISSIONING OF HVAC SYSTEMS are included in the Contract, the submittals required by those sections shall be coordinated with Section 01330 SUBMITTAL PROCEDURES to ensure adequate time is allowed for each type of submittal required.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall

include:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved. (Only coded A or B shop drawing submittals will be considered "as approved." Submittals other than those coded A or B required to be resubmitted will delay the preparatory phase meeting until they have been resubmitted and approved.)
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 72 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with

- contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
 - c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
 - d. Resolve all differences.
 - e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
 - f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.
 - g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$2,000 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing of Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Government-contract laboratory designated by the Area Office.

Coordination for each specific test, exact delivery location, and dates will be made through the Area Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Special Contract Requirement Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Off-site surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 12 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

- a. Minimum construction quality control report and the required preparatory and initial inspection documentation.
- b. All tests of piping systems or portions thereof shall be recorded on the "Piping System Test Report".
- c. Built-up, Modified bitumen, and Elastomeric single-ply roofing operations, including materials used, shall be reported on "CONTRACTOR'S INSPECTOR ROOFING CHECK LIST AND TEST REPORT."

d. When operation and maintenance instructions for equipment are furnished to Government representatives by the Contractor, the Contractor's representative shall record on a form similar to that attached hereto the applicable data, including the name, organization, and signature of each person attending the instructions.

Sample forms enclosed at the end of this section.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

SAMPLE FORMS

Sample QC forms follow this page.

(Sample of typical Contractor Quality Control Report)

CONTRACTOR'S NAME
(Address)

DAILY CONSTRUCTION QUALITY CONTROL REPORT

Date: _____ Report No. _____

Contract

No.: _____

Description and Location of work:

WEATHER: (Clear) (P. Cloudy) (Cloudy);
Temperature: _____ Min. _____ Max;
Rainfall _____ inches.

Contractor/Subcontractors and Area of Responsibility with Labor Count for Each

a. _____

b. _____

c. _____

d. _____

Equipment Data: (Indicate items of construction equipment, other than hand tools, at the job site, and whether or not used.)

1. Work Performed Today: (Indicate location and description of work performed. Refer to work performed by prime and/or subcontractors by letter in Table above. If no work is performed, report the reason.)

2. Results of Surveillance: (Include satisfactory work completed, or deficiencies with action to be taken.)

a. Preparatory Inspection:

b. Initial Inspection:

c. Follow-up Inspections:

3. Test Required by Plans and/or Specifications performed and Results of Tests:

4. Verbal Instructions Received: (List any instructions given by Government personnel on construction deficiencies, retesting required, etc., with action to be taken.)

5. Remarks: (Cover any conflicts in plans, specifications, or instructions or any delay to the job.)

6. Results of Safety Inspection: (Include safety violations and corrective actions taken.)

Contractor's Inspector

CONTRACTOR'S VERIFICATION: The above report is complete and correct and all material and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Contractor's Chief of Quality Control

NOTE:

DO NOT LEAVE REPORT ITEMS BLANK

Items 1. through 6. must be reported every day. If there is no other report on an item, enter the work "none" in the reporting space. Reports with items left blank will be returned as incomplete.

Page 2

PREPARATORY PHASE CHECKLIST

Contract No. _____ Date: _____

Definable Feature: _____ Spec Section: _____

Gov't Rep Notified _____ Hours in Advance Yes _____ No _____

I. Personnel Present:

Name	Position	Company/Government
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		
7. _____		
8. _____		
9. _____		
10. _____		

(List additional personnel on reverse side)

II. Submittals

1. Review submittals and/or submittal log 4288.
Have all submittals been approved? Yes _____ No _____

If no, what items have not been submitted?

- a. _____
- b. _____
- c. _____

2. Are all materials on hand? Yes_____ No_____

If no, what items are missing?

a. _____

b. _____

c. _____

3. Check approved submittals against delivered materials. (This should be done as material arrives.)

Comments _____

III. Material storage

Are materials stored properly? Yes_____ No _____

If No, what action is taken? _____

IV. Specifications

1. Review each paragraph of specifications.

2. Discuss procedure for accomplishing the work.

3. Clarify any differences.

V. Preliminary Work and Permits

Ensure preliminary work is correct and permits are on file.

If not, what action is taken? _____

VI. Testing

1. Identify test to be performed, frequency, and by whom.

2. When required?

3. Where required?

4. Reviewing Testing Plan.

5. Have test facilities been approved?

VII. Safety

1. Review applicable portion of EM 385-1-1.

2. Activity Hazard Analysis approved? Yes _____ No _____

VIII. Corps of Engineers comments during meeting.

CQC REP

PPC Page 3

INITIAL PHASE CHECKLIST

Contract No. _____ Date: _____

Definable Feature: _____

Gov't Rep Notified _____ Hours in Advance Yes _____ No _____

I. Personnel Present:

Name	Position	Company/Government
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		
7. _____		
8. _____		
9. _____		
10. _____		

(List additional personnel on reverse side)

II.

Identify full compliance with procedures identified at preparatory. Coordinate plans, specifications, and submittals.

Comments

III. Preliminary Work. Ensure preliminary work is complete and correct. If not, what action is taken?

IV. Establish Level of Workmanship.

1. Where is work located?_____

2. Is a sample panel required? Yes _____ No _____

3. Will the initial work be considered as a sample?

Yes _____ No _____

(If yes, maintain in present condition as long as possible.)

V. Resolve any differences.

Comments

VI. Check Safety

Review job conditions using EM 385-1-1 and job hazard analysis.

Comments _____

CQC REP

IC Page 3

PIPING SYSTEM TEST REPORT

STRUCTURE OR BUILDING _____

CONTRACT NO. _____

DESCRIPTION OF SYSTEM OR PART OF SYSTEM TESTED: _____

DESCRIPTION OF TEST: _____

NAME AND TITLE OF PERSON IN CHARGE OF PERFORMING TESTS FOR CONTRACTOR:

NAME _____

TITLE _____

SIGNATURE _____

I HEREBY CERTIFY THAT THE ABOVE DESCRIBED SYSTEM HAS BEEN TESTED AS INDICATED ABOVE AND FOUND TO BE ENTIRELY SATISFACTORY AS REQUIRED IN THE CONTRACT SPECIFICATIONS.

SIGNATURE OF INSPECTOR _____

DATE _____

REMARKS: _____

CONTRACTOR'S INSPECTOR ROOFING CHECK LIST AND TEST REPORT
(For each day of roofing operations)

Date _____ Weather _____

Contract No. _____

All data required to be taken from labels on container:

1. Type of bitumen used with underlayment or insulation and area covered _____

2. Type of bitumen used with base sheet and area covered _____

3. Type of bitumen used for mopping 4-plyes _____

4. Type of bitumen used for flood coat or surfacing gravel _____

5. Type of thickness of insulation or underlayment used _____

6. Type of base sheet used _____

7. Type of felt used _____

8. Source of surface gravel and condition, wet, dry, clean _____

9. Roofing sample(s), location and weight _____

10. Bitumen sample furnished to the Government, quantity and type _____

11. Bitumen temperature checks, type of asphalt, time taken, maximum
temperature specified _____

12. Are brooms being used? Yes _____ No _____

13. Bituminous cement used, type and usage _____

14. Area covered _____

Contractor's Approved Authorized
Representative

Quality Control Inspector

July 12, 2002 – (Amendment #0005)

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

DESIGN CRITERIA

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 **(AM #5) The slab should be Class 4 per ACI 302.1R-96 and Type B per ACI 360R-92.** 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

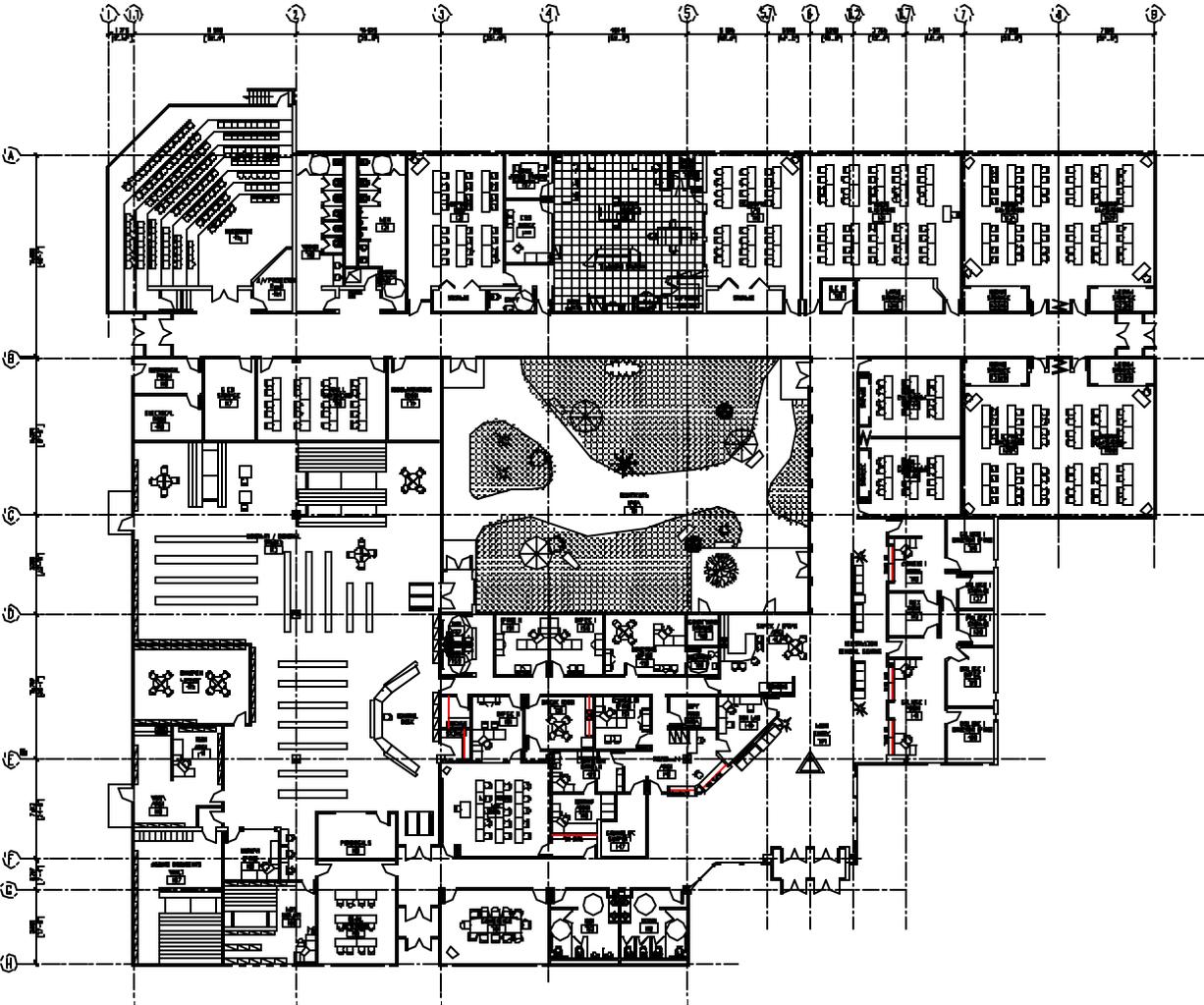
PART II - FUNCTIONAL REQUIREMENTS

FUNCTIONAL REQUIREMENTS

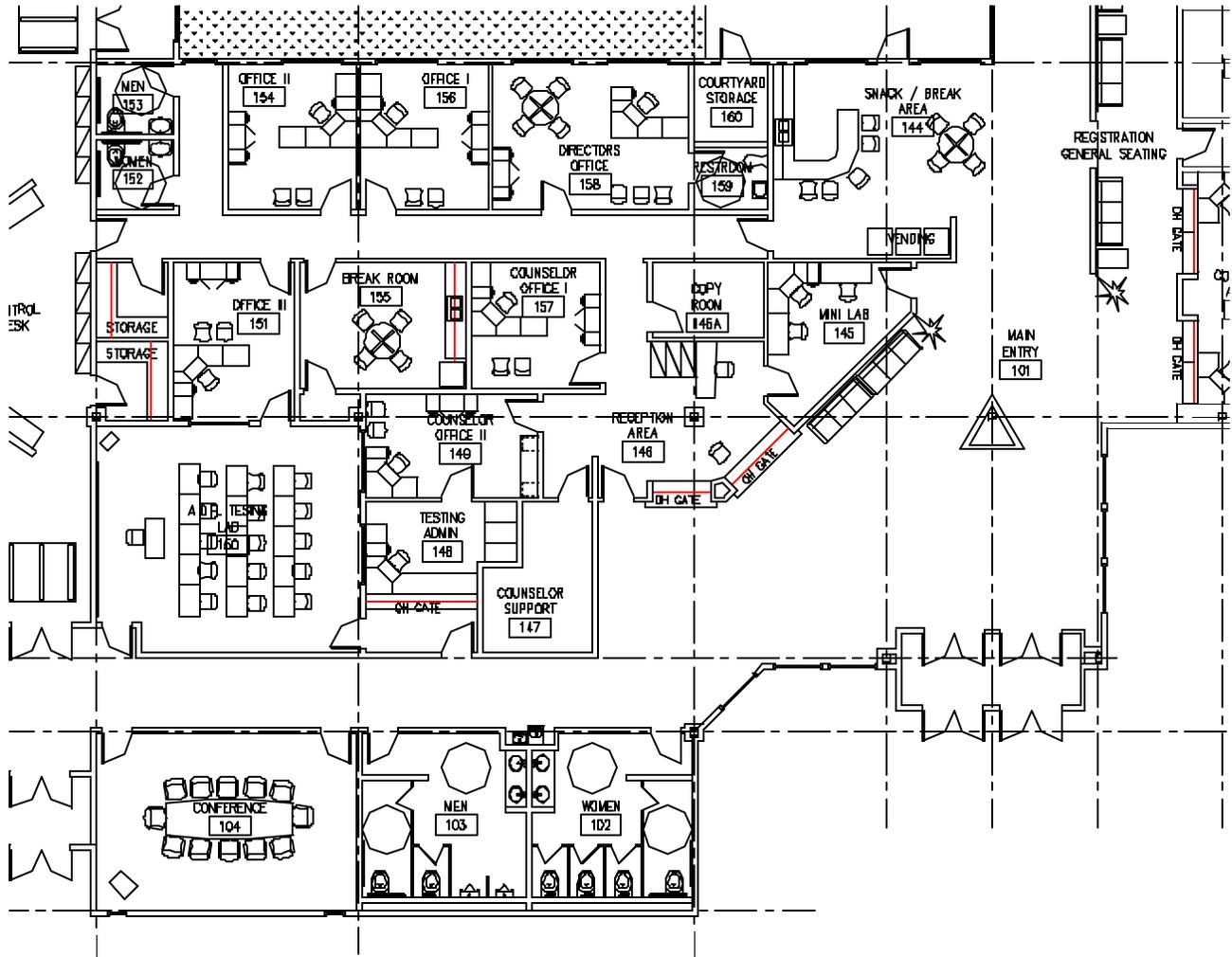
COMMON SPACES

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



LOBBY AREA

FUNCTIONAL REQUIREMENTS

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 **(AM#5)** 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 interested 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. (AM#5) - Delete Ref. to 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

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.

FUNCTIONAL REQUIREMENTS

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.

FUNCTIONAL REQUIREMENTS

SNACK/BREAK AREA

(LOBBY)

FUNCTIONAL CHARACTERISTICS

Function

- **(AM#5) Vending** 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

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.

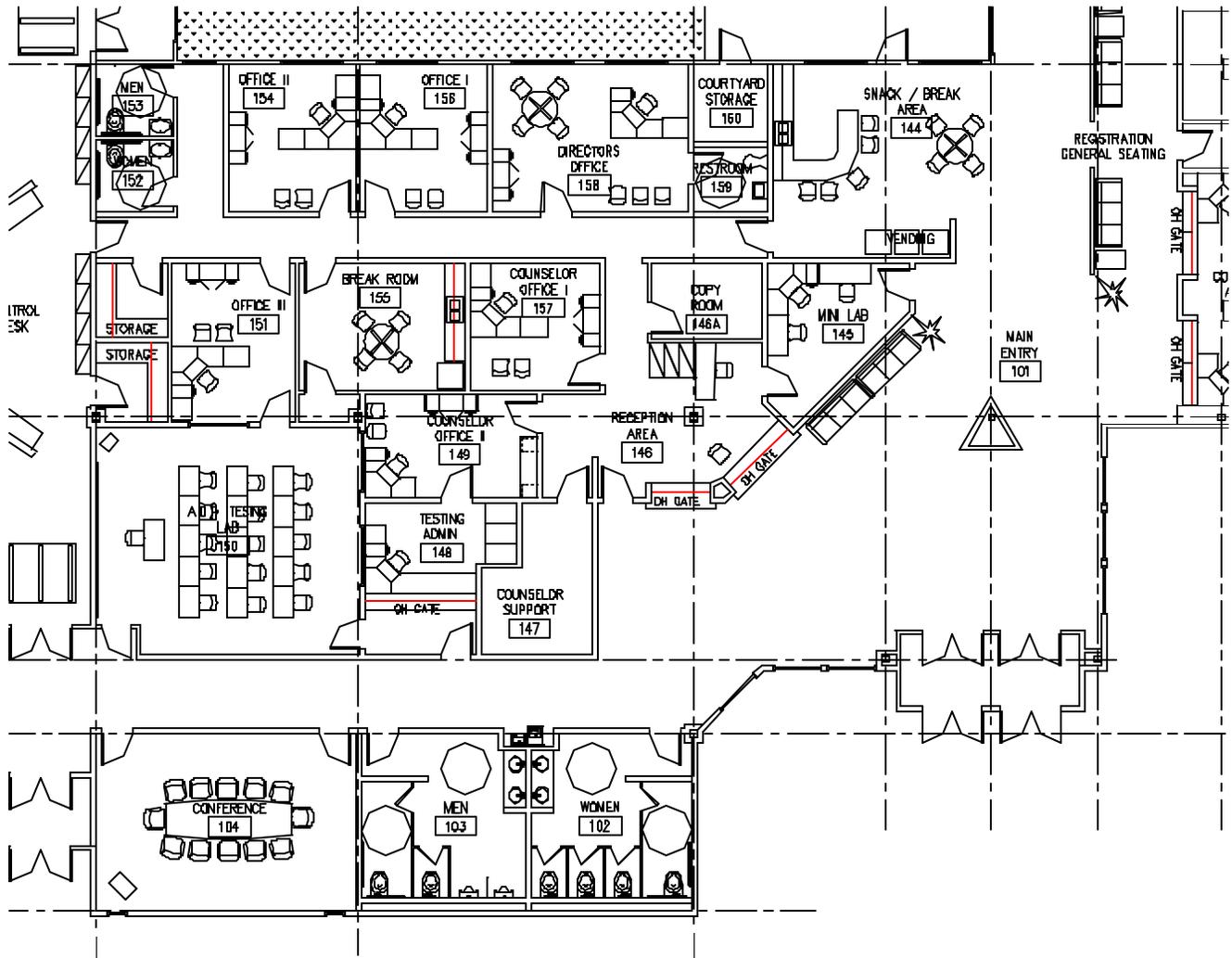
Communications

- 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



ADMINISTRATION

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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

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

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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

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. (AM#5) - Delete Ref. to 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

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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

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. (AM#5) - Delete Ref. to 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

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.

FUNCTIONAL REQUIREMENTS

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.

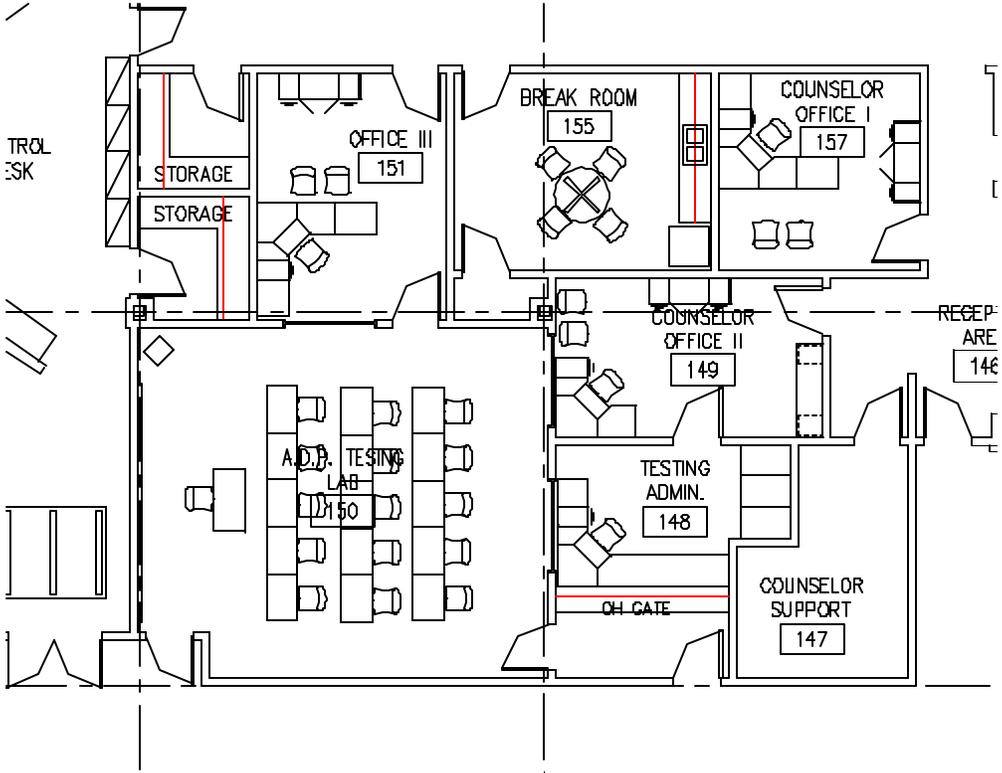
Electrical

- 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



TESTING

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to Chapter 00840 Vol. 2**
- Exhaust or Ventilation Requirements: Per ASHRAE 62.
- Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- Plumbing: None.

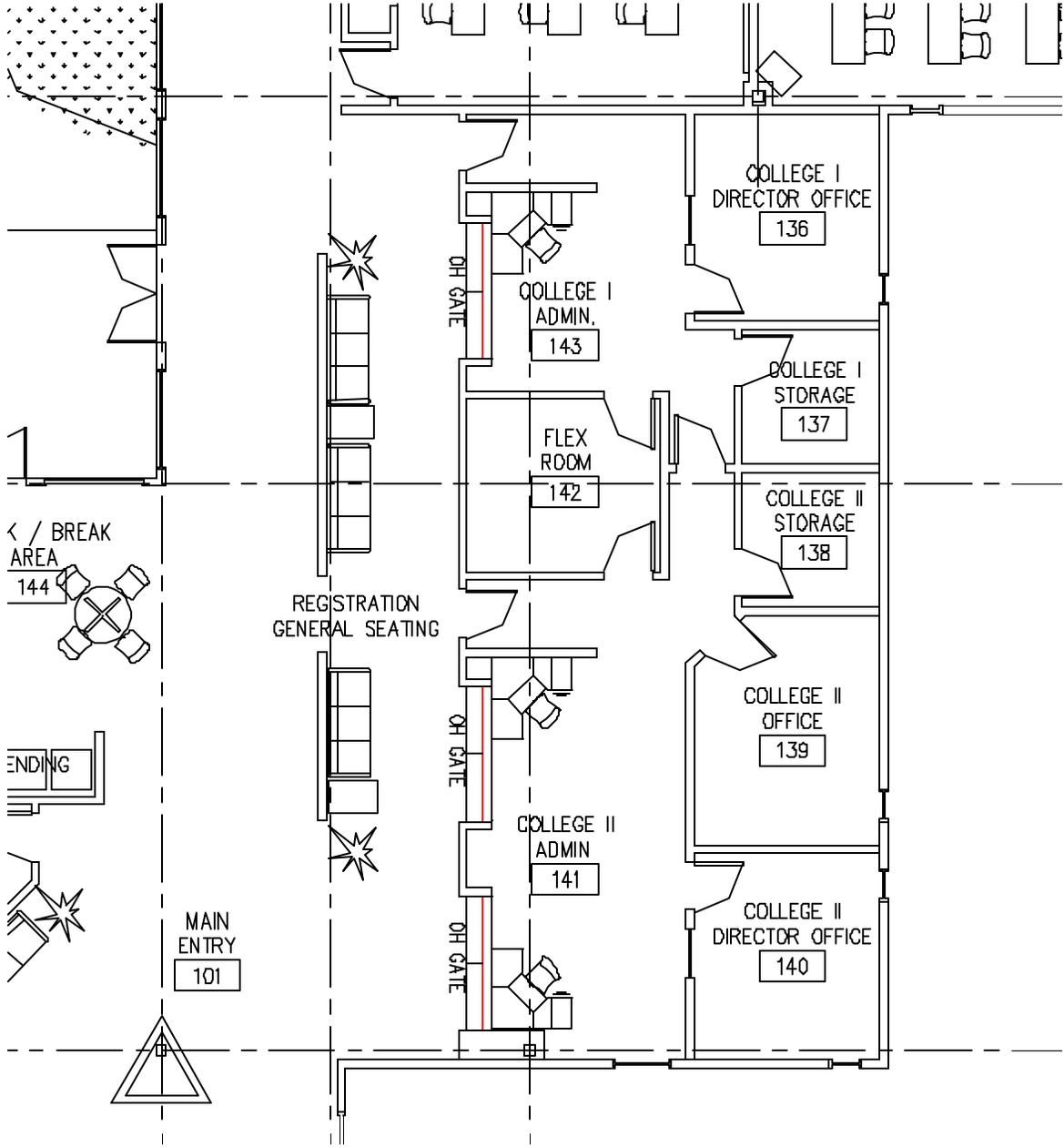
Electrical

- 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



REGISTRATION AREAS

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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

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. (AM#5) - Delete Ref. to 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

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. (AM#5) - Delete Ref. to 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

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. (AM#5) - Delete Ref. to 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

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to Chapter 00840 Vol. 2**
- Exhaust or Ventilation Requirements: Per ASHRAE 62.
- Zone Thermostat Type: Wall mounted sensor, adjustable, heating and cooling.
- Plumbing: None.

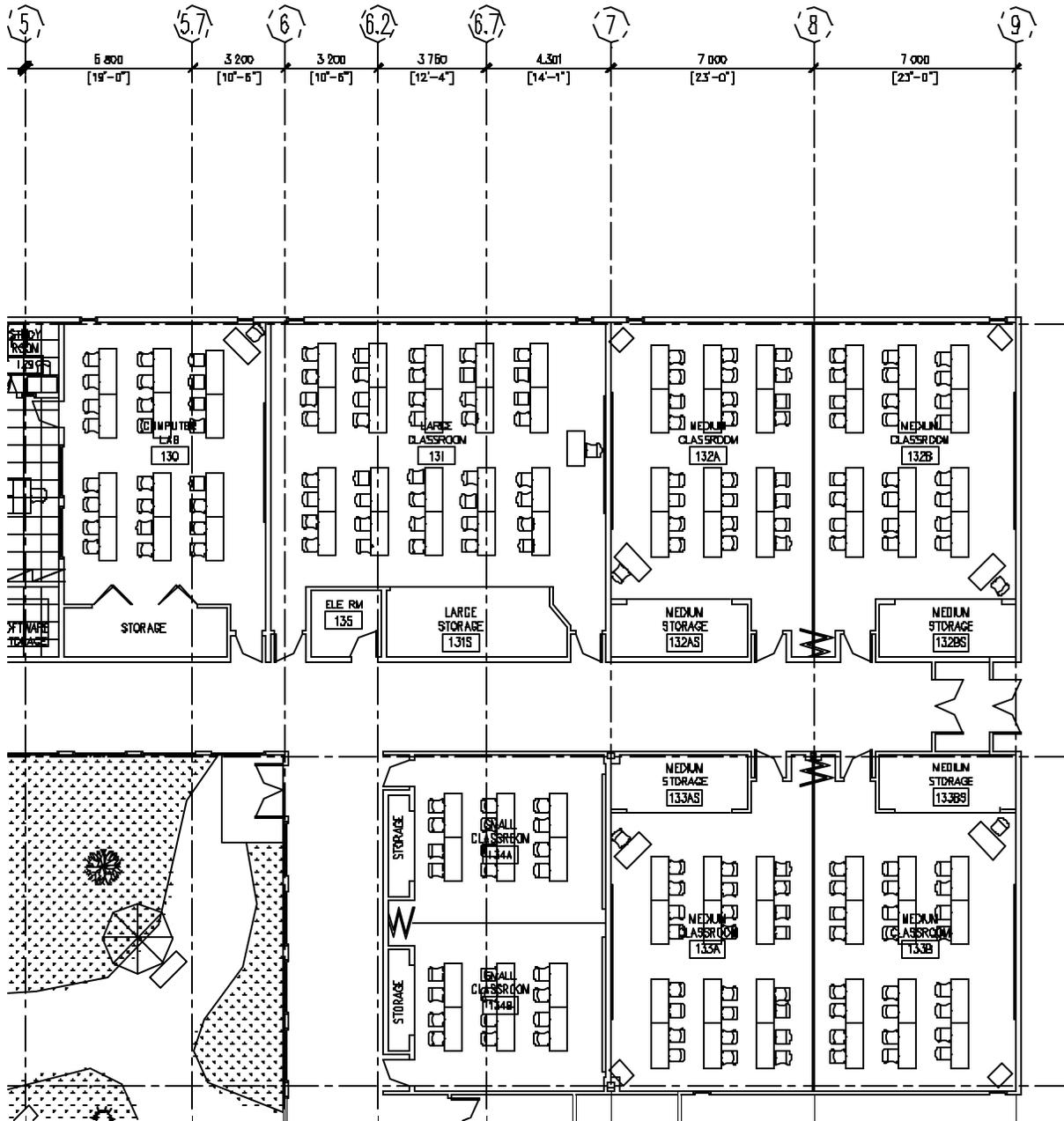
Electrical

- 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



CLASSROOM AREA

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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

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.

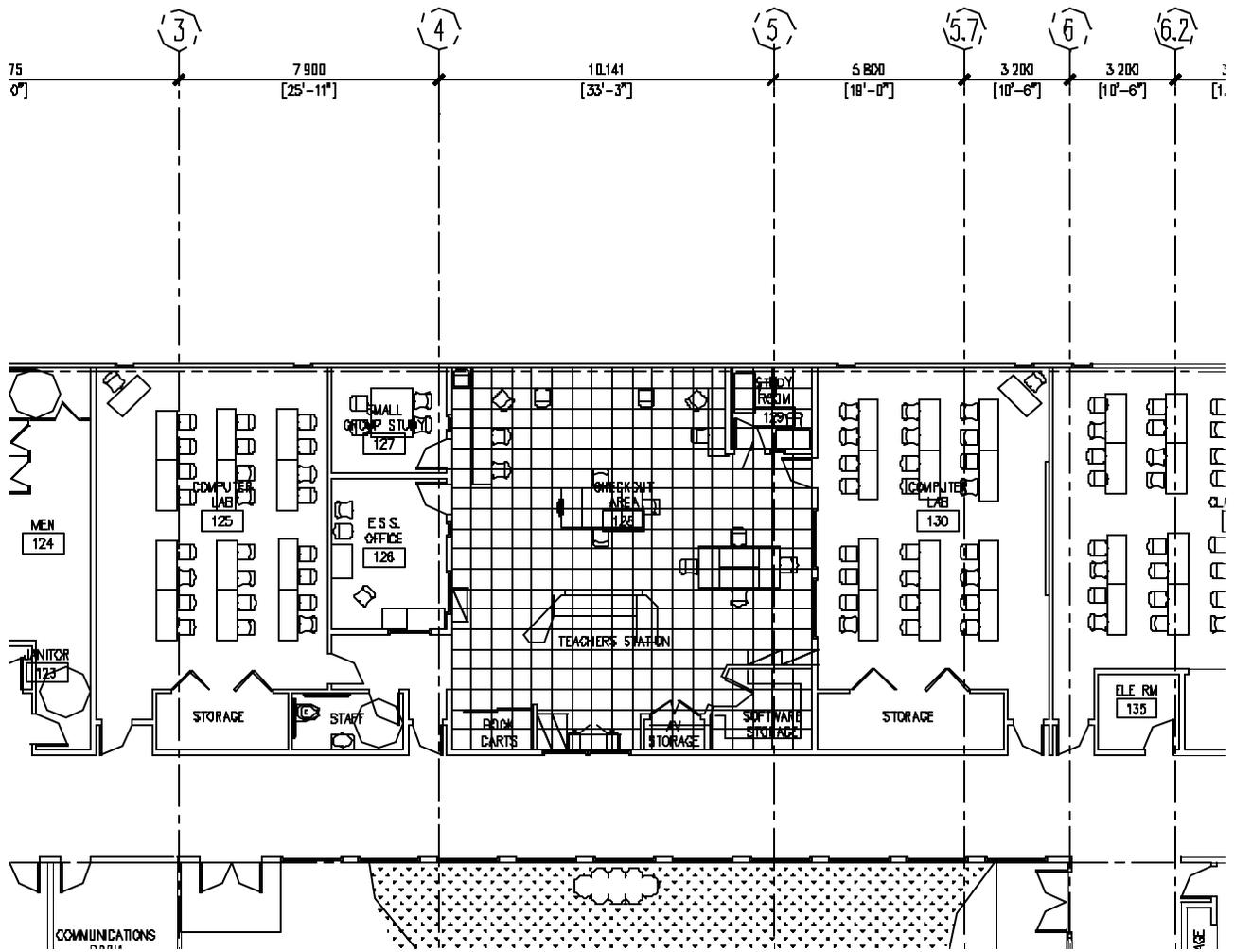
Electrical

- 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



EDUCATIONAL CENTER

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

UNISEX RESTROOM

(EDUCATIONAL CENTER)

FUNCTIONAL CHARACTERISTICS

Function

- Restroom facility.
- 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.

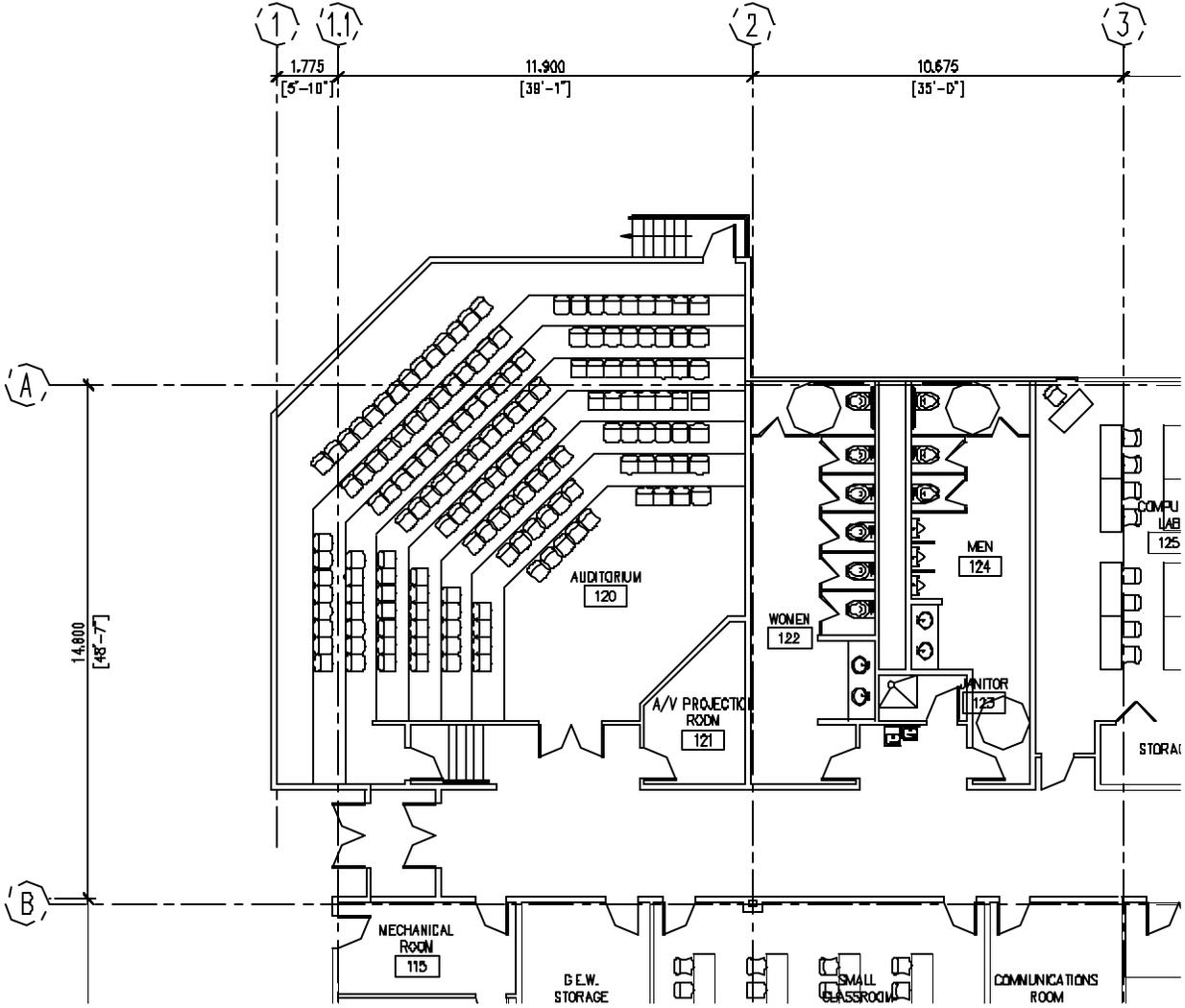
Electrical

- 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



AUDITORIUM

FUNCTIONAL REQUIREMENTS

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. (AM#5) - Delete Ref. to 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

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

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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

(AM#5) JANITOR'S ROOM

(AUDITORIUM)

FUNCTIONAL CHARACTERISTICS

Function

- Dedicated room for facility maintenance and custodial needs.

Relationship to Other Areas

- Near Restroom.
- Unisex.

TECHNICAL CONSIDERATIONS

Architectural

- Floor: Resilient tile.
- Base: Rubber base, 4-inch cove.
- Ceiling: 2-foot by 2-foot suspended acoustical ceiling.
- Walls: Install to deck with sound batt insulation.
- Wall Finish: RFP to 48 inches - remainder paint.
- Doors/Frames: 3-feet by 8-feet wood door.
- Equipment: Mop sink with required fixture, plumbing and floor drain.

Mechanical

- Wall mounted water heater and floor sink.
- 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: Provide 20 footcandles minimum with 2-feet by 4-feet recessed fluorescent fixture, static troffer with steel housing, acrylic prismatic lens.
- Grounded convenience outlets as required per code.

Fire Protection

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

FUNCTIONAL REQUIREMENTS

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).

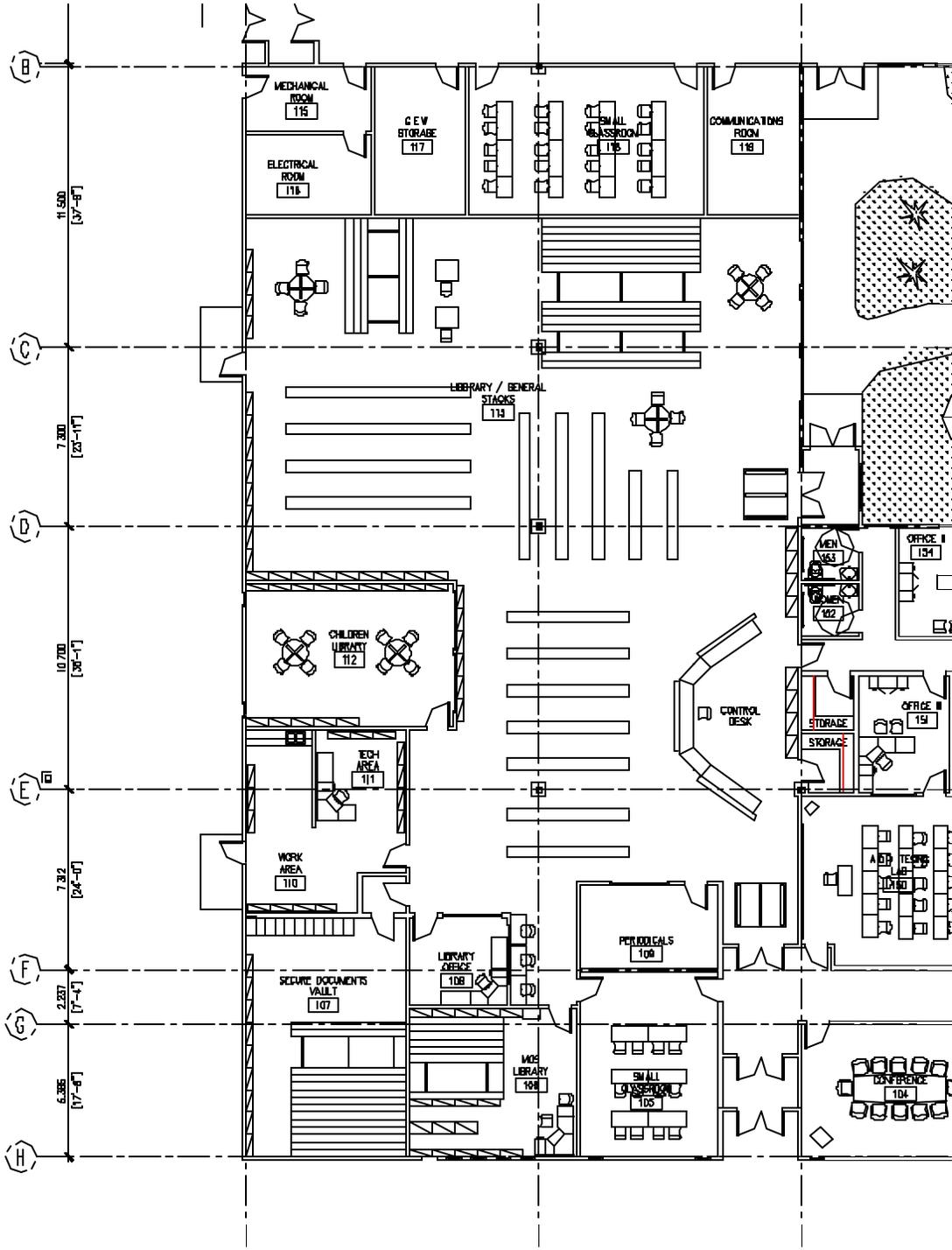
Electrical

- 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



LIBRARY

FUNCTIONAL REQUIREMENTS

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.

FUNCTIONAL REQUIREMENTS

(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. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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.

FUNCTIONAL REQUIREMENTS

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.

FUNCTIONAL REQUIREMENTS

(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.

FUNCTIONAL REQUIREMENTS

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

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.

FUNCTIONAL REQUIREMENTS

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.

FUNCTIONAL REQUIREMENTS

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.

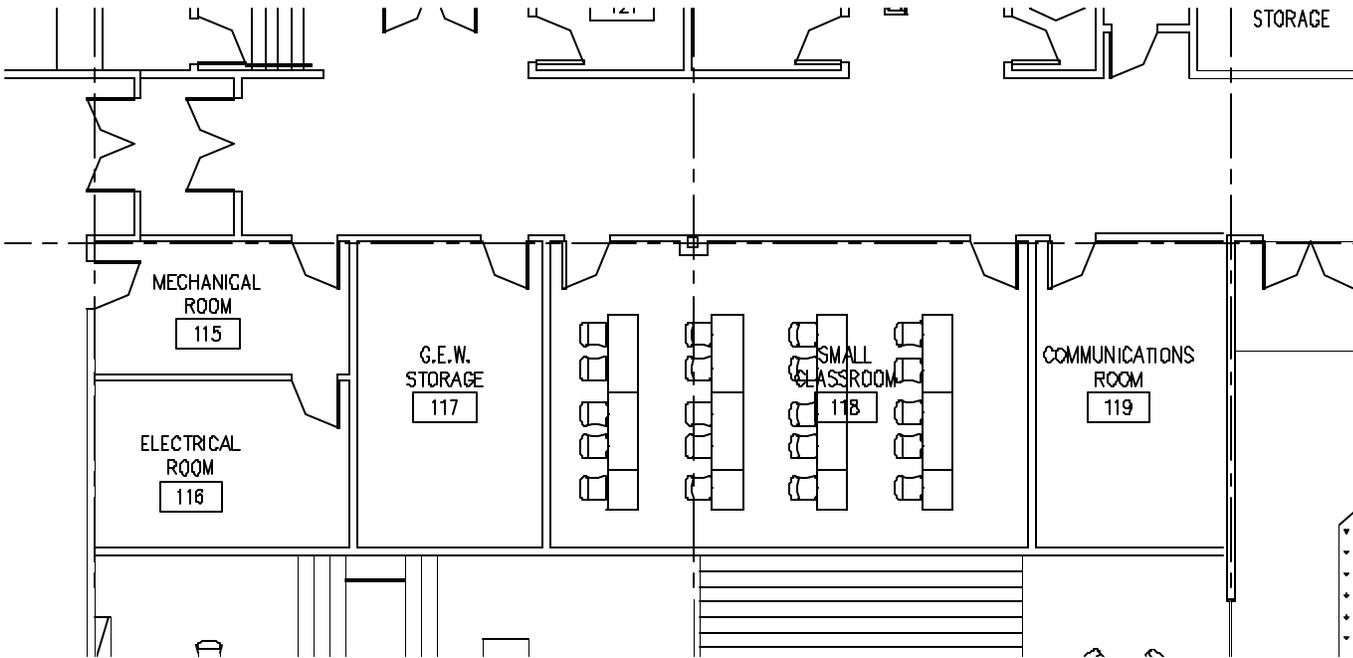
Electrical

- 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



SERVICE

FUNCTIONAL REQUIREMENTS

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.

FUNCTIONAL REQUIREMENTS

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.

FUNCTIONAL REQUIREMENTS

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 built-in shelving on two walls.

Mechanical

- Temperature Requirements: Served from adjacent spaces.
- Humidity Requirements: **Per TI 810-10. (AM#5) - Delete Ref. to 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.

FUNCTIONAL REQUIREMENTS

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 ccts.) 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.