

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE J	PAGE OF PAGES 1 252
2. AMENDMENT/MODIFICATION NO. 00004	3. EFFECTIVE DATE 25-Dec-2009	4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO.(If applicable)
6. ISSUED BY AFGHANISTAN DISTRICT NORTH (AEN) US ARMY CORPS OF ENGINEERS OPERATION ENDURING FREEDOM APO AE 09356	CODE W5J9JE	7. ADMINISTERED BY (If other than item 6) See Item 6		
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		X	9A. AMENDMENT OF SOLICITATION NO. W5J9JE-10-R-0002	
		X	9B. DATED (SEE ITEM 11) 20-Oct-2009	
			10A. MOD. OF CONTRACT/ORDER NO.	
			10B. DATED (SEE ITEM 13)	
CODE	FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS				
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended.				
Offer 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 <u>1</u> 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 you 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 APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.				
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 <input type="checkbox"/> is not, <input type="checkbox"/> 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.) Revise solicitation to align with new seed project and add new seed project sections.				
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)		
		TEL: _____ EMAIL: _____		
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED	
_____ (Signature of person authorized to sign)		BY _____ (Signature of Contracting Officer)		

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION 00010 - SOLICITATION CONTRACT FORM

The following have been modified:

PROPOSAL SCHEDULE

MATOC Afghanistan South

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>
00010	Proposal Schedule
00110	Proposal Preparation
00120	Proposal Evaluation and Contract Award
Attachment 3	SAMPLE TASK ORDER

SEE SECTION 0800 FOR SAMPLE TASK ORDER

MATOC Afghanistan North**SAMPLE TASK ORDER
TABLE OF CONTENTS****DESIGN-BID-BUILD/SITE ADAPT SPECIFICATIONS FOR
1 Story UP District Headquarters, Afghanistan**

<u>Section</u>	<u>Title</u>
00010	Proposal Schedule
00150	The Design/Build Process
00110	Proposal Preparation
00120	Proposal Evaluation and Contract Award
00555	Design Concept Documents
01010	Scope of Work
01015	Technical Requirements
01040	Security
01060	Special Clauses
01312	Quality Control System
01321	Project Schedule
01335	Submittal Procedures for Design-Build Projects
01335a	Attachments AED
01415	Metric Measurements
01451	Contractor Quality Control
01525	Safety and Occupational Health Requirements
01770	Closeout Procedures
01780A	Closeout Submittals
01781	Operation and Maintenance Data
APPENDIX A	1 Story UP District HQs Drawings
APPENDIX B	CJ-ENJ Memorandum – Austere Definition

Section 00010 - Solicitation Contract Form

GENERAL SCOPE OF WORK

Basic Contract Scope of Work: A Multiple Award Task Order Contract (MATOC) for new construction to include incidental demining, Design-Bid-Build/Site Adapt, site assessments, general building renovation, water development work, road and pavement repair, and incidental environmental remedial work or Construction type task orders that may include new construction of buildings, to include but not limited to administrative facilities, recreational facilities, educational facilities, religious facilities, medical facilities, training facilities; repairs, additions, and renovations to buildings, and infrastructure (roads, parking, drainage systems and utility systems) construction tasks as determined by each task order. Generally, however, the task orders under this MATOC contract will be vertical construction projects with associated site work. Task Orders issued under any resultant contract(s) will be Firm-Fixed Price. This solicitation is one of two that will be announced for the Afghanistan Engineer District; this solicitation is for the Afghanistan Engineer District-South. The following Provinces make up the geographic area to be covered by this solicitation: Badghis, Ghor, Herat, Nimroz, Helmand, Kandahar, Zabul, Uruzgan, Daykundi, and Farah.

Projects required under this contract will be provided for facilities throughout Southern Afghanistan. The CLINS on the MATOC will be Design-Bid-Build/Site Adapt, general construction and DBA. The contract shall be for a base period of one year with two one year options, and shall have a capacity of \$240 million over the life of the contract.

A Sample Task Order will be used as part of the MATOC evaluation process. This project is a sample of the typical projects that will be solicited for under this MATOC. This project may or may not be awarded. If it is determined to be in the best interest of the government to award this project then this project will become the initial task order for this MATOC. The Government will evaluate this Sample Task Order by using the Lowest Priced Technically Acceptable source selection process. (FAR Part 15.101-2). During this process the technical capabilities of an Offerors proposal are evaluated for technical acceptability. If a proposal is found to be technically acceptable the sample project price proposal will be used as a factor in the MATOC Best Value Decision.

**SECTION 00010
PROPOSAL SCHEDULE FOR SAMPLE TASK ORDER**

Provide a price for all items, including those labeled, "Optional Items." The Government will evaluate the Contractor's entire proposal to determine which CLINs represent the best value to the Government.

No.	Description	Unit	Unit Price	Total Amount
1. Proposal:				
0001	Site Adapt Construction 1 story UP District Headquarters Kohsan, Herat	LS	xxx	\$ _____
0002	DBA Insurance	LS	xxx	\$ _____
TOTAL PROPOSAL: (Total of all above)				\$ _____

PROPOSAL SCHEDULE NOTES

1. Offeror shall submit prices on all items.
2. Only one contract for the entire schedule will be awarded under this solicitation. This project will be awarded as a lump sum contract. This Proposal Schedule is an accounting tool for allocating funds to applicable budget.
3. Costs associated with this project shall include design and construction costs, site development, and utility installation.
4. The government has the right to reduce the number of units in a bid item or choose to delete a base bit item entirely if necessary after the proposals are received.
5. Period of performance is 353 calendar days from receipt of notice to proceed for the base and 353 calendar days for all optional items; Liquidated damages are assessed at \$628.00 per day for every day of delay past the period of performance of 353 calendar days until contract.

-END OF SECTION-

SECTION 00100 - BIDDING SCHEDULE/INSTRUCTIONS TO BIDDERS

The following have been modified:

MATOC 00110

**SECTION 00110
MATOC- BEST VALUE
PROPOSAL PREPARATION**

1. INQUIRIES

Perspective offerors should submit inquiries related to this solicitation by writing or calling the following (collect calls will not be accepted):

All questions will be submitted in writing by letter or e-mail to:

U.S. Army Corps of Engineers (USACE)
Qalaa House, Attention: Kenneth Carleton, phone number: 079 702 5049
House 1, Street 1
West Wazir Akbar Khan
(behind Amani High School)
Kabul, Afghanistan

E-MAIL ADDRESS: Kenneth.Carleton@usace.army.mil

Please include the solicitation number, and project title with your questions. Written inquiries must be received by this office not later than 4 calendar days prior to the date set for receipt of offers.

Oral explanations or instructions are not binding. Any information given to an offeror which impacts the solicitation and/or offer will be given in the form of a written amendment to the solicitation.

As this is a competitive negotiation acquisition, there is no public bid opening and no information will be given out as to the number of offerors or the results of the competition until all awards are made.

2. DIRECTIONS FOR SUBMITTING PROPOSALS

Offers must be in sealed envelopes/packages, marked and addressed as follows:

MARK PACKAGES:
Solicitation No. W5J9JE-10-R-0002
Offer Closing Date: 27 December, 2009
Offer Closing Time: 4:00 PM
(LOCAL KABUL TIME)

ADDRESS PACKAGES TO:
U.S. Army Corps of Engineers (USACE)
Qalaa House, Attention: Kenneth Carleton
House 1, Street 1
West Wazir Akbar Khan
(behind Amani High School)
Kabul, Afghanistan

Special Instruction Pertaining to Hand Carried Offers: Hand-carried offers must be delivered to the USACE AED offices, Qalaa House, Kabul, Afghanistan. Offerors who desire to hand-deliver their offers notify the Contract Specialist **in advance** in order to be met at the entrance gate to Qalaa House Compound.

3. PREPROPOSAL CONFERENCE / SITE VISIT

The Preproposal Conference shall be held 5 December, 2009 at 10:00 at AM:

U.S. Army Corps of Engineers (USACE)
Qalaa House, Attention: Kenneth Carleton
House 1, Street 1
West Wazir Akbar Khan
(behind Amani High School)
Kabul, Afghanistan

E-mail: Kenneth.Carleton@usace.army.mil
Teresa.F.McCarthy@usace.army.mil

Prospective Offerors may register for the conference at <http://www.aed.usace.army.mil/Conf-registration.asp>. Information for the conference will be located on the AED Home Page <http://www.aed.usace.army.mil>. A Site Visit will not be held.

IMPORTANT NOTES. (1) Remarks and explanations addressed during the conference shall not qualify or alter the terms and conditions of the solicitation. (2) The terms and conditions of the solicitation remain unchanged unless the solicitation is formally amended in writing.

All prospective attendees must register on this website to attend the pre-proposal conference. Because space is limited, only two (2) representatives per company will be admitted. If you are not registered, you will not be admitted onto the Qalaa House compound. You must register before 3 December 2009.

Please plan to arrive early, as it may take time to be processed and screened through the security checkpoint. All attendees must possess a Government issued Identification Document such as National ID Card, CAC Card, Passport, etc. Security will begin screening attendees at 08:30 AM. If you are not registered, security will not admit you.

Your email address will not be shared or used for any purposes other than sending your registration confirmation or communicating important Conference information.

4. TELEGRAPHIC OFFERS - - TELEGRAPHIC OFFERS ARE NOT ACCEPTABLE.

However, offers may be withdrawn by written or telegraphic notice. Any telegram to withdraw an offer sent to this office must be received in the office designated in the Request for Proposal (RFP) for receipt of offers not later than the exact date and time set for receipt of proposals. A telegraphic withdrawal of an offer received in such office by telephone from the receiving telegraph office not later than the exact date and time set for receipt of proposals shall be considered. However, the telephone message shall be confirmed by the telegraph company by sending a copy of the written telegram that formed the basis for the telephone call. The written telegram shall be sealed in an envelope by a proper official and sent to the office designated in the RFP for receipt of offers. The official shall write on the envelope (1) the date and time of receipt and by whom, and (2) the number of the RFP, and shall sign the envelope. The offeror is responsible to inform the telegraph company of these requirements. No one from this office will be dispatched to the local telegraph office to pick up any telegram for any reason.

5. FACSIMILE OFFERS

Facsimile offers, modifications thereto, or cancellations of offers will not be accepted.

6. GENERAL INSTRUCTIONS

Firms formally organized as Design-Build entities, design firms and construction contractors that have associated specifically for this project, consortia of firms, or any other interested parties may submit proposals. A design firm or construction contractor may offer more than one proposal by entering into more than one association. Associations may be joint ventures or include key team subcontractors. Any legally organized Offeror may submit a proposal.

Contractor Team Arrangements; Contractor Team Arrangements are considered an arrangement in which (1) two or more companies form a partnership or joint venture to act as a potential prime contractor; or (2) a potential prime contractor agrees with one or more other companies to have them act as its subcontractors under a specified Government contract or acquisition program. In accordance with FAR 9.6, the Government will recognize the integrity and validity of contractor team arrangements; provided, the arrangements are identified and company relationships are fully disclosed in the offer. The Offeror shall identify the major or critical aspects of the requirement to be performed by those identified in the Contractor Team Arrangement. The submission must contain a narrative that clearly explains the relevance to a particular factor of information concerning a company that is part of a Contractor Team Arrangement. The Government will consider the adequacy of this explanation in deciding the relevance of the information to this procurement.

Information submitted about any company other than the Offeror, whether a predecessor company, affiliated company, subsidiary (including wholly owned subsidiaries), subcontractors that will perform major or critical aspects of this requirement, or other associated business, WILL NOT be evaluated for any factor unless the proposal contains a detailed narrative explaining why this submitted information is relevant to this acquisition. The Government will consider the adequacy of this explanation in deciding the relevance and weight of the information to this procurement. Information about subcontractors may not be given much weight unless the proposal contains some evidence that the subcontractor is committed to perform the work. Where information about a subcontractor is properly submitted and given significant weight during the evaluation, the failure of the Offeror to actually perform with that subcontractor may be grounds for termination for default.

Offerors shall submit their proposal to the address shown in Block 7 of Standard Form 1442.

Proposals are due no later than the time and date specified in Block 13 of Standard Form 1442.

7. GENERAL PROPOSAL FORMAT

Title Page' Include the title of the solicitation, solicitation number, Offeror name, DUNS number and date of the submittal.

Table of Contents. Each volume of the proposal shall contain a detailed table of contents. If more than one binder is used, the complete table of contents shall be included in each. Any materials submitted but not required by this solicitation (such as company brochures) shall be relegated to appendices.

Printed Matter Submissions. Written material shall be on 8 ½ x 11 inch paper printed in no less than a 10 pitch or 10 font. Page limitations, where specified in the RFP, shall be considered a maximum. **Pages in excess of any specified limitation shall not be evaluated.** A single 8 ½ x 11 inch sheet with written material on one side only shall constitute one page. However, if both sides of the sheet bear written material then this single sheet shall be counted as two pages.

Binders. Proposals shall be submitted in tabbed, three ring binders. Volume One should be comprised of Tabs A-E; Volume Two shall be comprised of Tabs F-H and Volume Three shall be comprised of the Sample Task Order.

Number of Copies: Offerors shall submit an original and one hard copy of Volume One and an original and four (4) hard copies of Volume Two and Volume Three.

Electronic Submission. In addition to the hard copies, Offers shall submit proposals on a CD-ROM; this is to include all drawings. Written portions of the proposal should be in MS Word or Adobe Acrobat PDF

format. The electronic version shall be either a single file tabbed in the same order as the hard copy or multiple files hyperlinked to a single table of contents. Drawings should be in one of the following formats: Microstation DGN, Adobe Acrobat PDF, Max View CAL (with Sendable INDEX,SVD), or Auto Cad DWG. Any portion of the proposal not available in electronic format, i.e. cut sheets, should be scanned in Adobe Acrobat PDF format. The CD-ROM must be clearly labeled by solicitation number, project name, installation, and Offeror's name. In the event of any conflict between the electronic submission and the hard copy submission, the hard copy submission will govern and will be the material upon which the Government bases its evaluation and ultimately, its decision.

Tabs The proposal shall be organized and tabbed as follows:

VOLUME I

TAB A – Standard Form 1442, completed and signed by authorized individual(s) of the Offeror. Offers submitted in the name of a Joint Venture must be signed in accordance with the terms and conditions specified in the joint venture agreement as evidenced in the proposal.

TAB B – Proposal Pricing Schedule for the Sample Task Order, Schedule 00010

TAB C – Section 00600 – Representations and Certifications.

TAB D – Proposal Data Sheet

TAB E – Teaming Agreement, if applicable. See paragraph 2.2

VOLUME II

TAB F – FACTOR 1 Relevant Specialized Experience

TAB G – FACTOR 2 Past Performance

TAB H – FACTOR 3 Technical

VOLUME III

SAMPLE TASK ORDER

8. TAB F: FACTOR 1; RELEVANT SPECIALIZED EXPERIENCE

SUBMISSION REQUIREMENTS.

The Government will evaluate the relevant work experience of the offeror and their proposed team, including subcontractors, on projects same/similar to that described in this solicitation. The Offeror shall demonstrate recent, relevant experience on similar projects, using Attachment 1 at the end of this section. The Contractor shall submit a minimum of three (3), but no more than five (5) projects. Of the projects submitted, at least one (1) must be valued at over \$30 Million US and the other projects must be at least \$5 Million within US DOD's CENTCOM or AFRICOM area of authority including: Afghanistan, Tajikistan, Iraq, Pakistan etc. These projects are to be completed or substantially completed in the last five (5) years. Offerors with experience on same/similar relevant projects (type of services, similar dollar value, complexity, USACE design / construction requirements, and applicable quality standards) will receive a higher rating than those with dissimilar or non-relevant projects. If the Offeror is a joint venture, each firm shall provide information, demonstrating experience relevant to their role on this project. If any firm has multiple functions or divisions, limit the project examples to those performed by the division, unit or team member submitting the offer.

Where a project was awarded as a task order or delivery order under an IDIQ type contract, Offerors are cautioned to submit information specific to the instant task or delivery order considered relevant to the requirements of this RFP rather than the umbrella contract. All projects shall be successfully completed, or substantially completed (fully designed and at least 50% construction progress completed) within five (5) years preceding the date of this Solicitation. The experience of individuals will not be credited under this factor.

The Offeror shall provide a supplemental narrative (not additional project lists), not to exceed two (2) pages. The narrative should clearly but concisely describe the extent of recent, related experience of the prime contractor and design firms in design and construction. At a minimum the narrative should address; (1) previous Design-Bid-Build/Site Adapt experience, (2) previous recent teaming experience among the team members, (3) corporate experience that is not directly related to the specific projects above and how the experience is applicable to this project.

9. TAB G: FACTOR 2; PAST PERFORMANCE

SUBMISSION REQUIREMENTS:

Past performance refers to the quality of recent project experience from the owner's perspective. The Offeror shall complete and provide a Past Performance Assessment Sheet on three (3) projects, but no more than five (5) projects. The submission of each Past Performance Assessment Sheet shall not exceed five pages. The Offeror shall provide clear and adequate information in response to the past performance elements identified on Attachment 2. Though not required, ideally project past performance information submitted under this factor would be on the same projects submitted for consideration under Factor 1-1. If any firm has multiple functions or divisions, limit the project examples to those performed by the division, unit or team member submitting the offer. Projects included on the Past Performance Assessment Sheets shall be successfully completed, or substantially completed (fully designed and at least 50% construction progress completed) within five (5) years preceding the date of this solicitation. The Government will call and confirm information provided by the offeror on the Past Performance Assessment Sheet with the points of contact. The Government reserves the right to interview other individuals if the point of contact is not available.

Other Sources. The Government may contact sources other than those provided by the Offeror for information with respect to past performance. These other sources may include but are not limited to: Past Performance Information Retrieval System, other Government sources, and telephone interviews with organizations or individuals familiar with the Offeror's performance.

The past performance of individuals will not be credited under this factor.

10. TAB H: FACTOR 3; TECHNICAL

SUBMISSION REQUIREMENTS: There are two sub factors associated with this evaluation factor. The two sub factors are Technical Approach and Management and Security Plan.

SUBFACTOR A: TECHNICAL APPROACH (a) This information considers the Offeror's intended approach to design and construction of the type of facilities specified in the RFP. Limit the submission to 10 pages or less, clearly but concisely describing the technical approach to execution of any task orders of the type that may be issued under an awarded contract. At a minimum, the narrative should respond to the questions, or address the topics, outlined below:

Identify and explain the roles and responsibilities of team members that will perform major or critical aspects of both the construction and design phases.

How does the Offeror incorporate User comments and reviews into the construction and design process?

Briefly describe the Offeror's Quality Control Program.

How does the Offeror integrate construction subcontractors into the construction process?

What are the Offeror's processes for handling construction and design associated with site adaption problems?

Describe the Offeror's implementation plans to utilize "fast track" procedures on a project whereby preliminary site construction activities can begin prior to 100% completion of the design documents.

SUBFACTOR B: PROJECT MANAGEMENT AND SECURITY PLAN

This information considers the Offeror's project management and security plan for the type of facilities specified in the RFP. Limit the submission to 8 pages or less, clearly but concisely describing the management and security plan used to execute any of the task orders of the type that may be issued under an awarded contract. Resumes and the organizational chart will not count against the 8 page limit. At a minimum, the narrative should respond to the questions, or address the topics, outlined below.

Offerors shall provide, as part of its management plan, its proposed key organizational staff responsible for the management, quality, security and safety of the work to be performed. Information identifying major responsibilities, qualifications, and resumes shall be provided for the key personnel. The offeror must submit resumes for the following key personnel: Project Manager, Security Officer, Quality Control Manager, Senior Civil Engineer, Senior Mechanical Engineer, Senior Electrical and Construction Superintendent.

Offeror's ability/procedures used to manage multiple projects, to include project management, quality control, security and safety.

The offeror shall provide an Afghan Capacity Development Plan. This plan must demonstrate how the contractor will promote the education and skills development of Afghan citizens. Specifically, the plan must address the following elements, as a minimum. The term "contractor" here includes subcontractors, if applicable.

- How the contractor will recruit, hire, train and maintain a staff of skilled Afghan workers for construction trades including, but not limited to: equipment operators, masons, reinforcing steel workers, concrete finishers, laboratory technicians, painters, and carpenters.
- How the contractor will recruit, hire, train and maintain a staff of Afghan journeymen, including but not limited to electricians and plumbers.
- How the contractor will recruit and hire educated Afghans or educate Afghans citizens so that they can assume construction engineering and management positions. These positions will include, but are not limited to safety and health officers, quality control managers, schedulers, cost estimators, construction superintendents, and project managers.
- The name and resume for an Afghan Capacity Development Manager. Whose responsibility it will be to manage the capacity development efforts. The person's position within the company organizational chart must be shown.

How does the offeror plan to meet major design and construction project milestones in the specifications that reflects completion of all work within the period of contract performance.

At the Corporate level, how does the Offeror ensure the success of a site specific project if challenges arise? How does the Offeror infuse technical assets, funds, etc. to make the project successful?

The Offeror must demonstrate how they plan to enforce the prompt payment requirements in accordance with Technical Specification Section 01060 Special Clauses paragraph 2.8 Prompt Payment of Subcontractors.

The offeror must provide a detailed narrative demonstrating how they intend to meet the DBA Insurance requirements in accordance with Technical Specification Section 01060 Special Clauses paragraph 2.10.1.

At the Corporate level, what assets will the Offeror infuse to ensure project success if a long lead item is damaged or destroyed enroute to the project site.

How does the offeror plan to manage concurrent work and provide security on multiple, geographically dispersed job sites?

The Offeror must provide a detailed/comprehensive Security Plan specific to the geographic area of the project location. The plan must demonstrate how the specific requirements documented in Technical Specification Section 01040 Titled: Standard Contract Security will be met.

In addition, the offeror shall include an organizational chart depicting lines of authority and responsibility for all personnel/entities on the project, including subcontractors, from the lowest level to the corporate level. The organizational chart shall clearly indicate which entity has overall authority for the contract and identify by name and title the single Point of Contact to the Government for all project-related matters.

PROPOSAL COVER SHEET**PROPOSAL COVER SHEET**

1. Solicitation Number:
2. The name, address, and telephone and facsimile numbers of the Offeror (and electronic address if available):
3. A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item. Statement to include any exceptions in technical or cost/price proposal or exceptions inherent in Offeror's standard terms and conditions.
4. Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the Offeror's behalf with the Government in connection with this solicitation:
5. Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

11. SOURCE SELECTION

Once the sample task order is evaluated for acceptability all acceptable Offeror's price proposals will be used as a factor in the overall Best Value decision for the MATOC.

The Government will select the offer that represents the best value to the Government by using the trade-off process described in FAR Part 15. This process permits tradeoffs between cost/price and technical ("non-cost") factors and allows the Government to accept other than the lowest priced offer. The award decision will be based on a comparative assessment of proposals against all source selection criteria in the solicitation. See Section 00120.

**TAB D
PROPOSAL DATA SHEET**

**W5J9JE-10-R-0002
MATOC**

1. Name of Firm:

Address:

Phone:

Fax:

E-mail:

DUNS # (used for accessing CCASS)

Tax ID #

If a joint venture or contractor-subcontractor association of firms, list the individual firms and briefly describe the nature of the association. Provide DUNS, if available, for each.

Firm 1:

Firm 2:

Firm 3:

Nature of Association:

2. AUTHORIZED NEGOTIATORS. FAR 52.215-11

The Offeror represents that the following persons are authorized to negotiate on its behalf with the Government in connection with this Request for Proposals (RFP).

[List names, titles, and telephone number of the authorized negotiator.]

Name of Person Authorized to Negotiate:

Negotiator's Address:

Negotiator's Telephone:

Negotiator's E-mail:

ATTACHMENT 1
RELEVANT SPECIALIZED EXPERIENCE
DATA SHEET.

Project Title:

Location:

Address of building(s):

Contract number:

If applicable, Task Order Number:

Nature of involvement in this project, i.e. General Contractor, subcontractor, designer, or other:

Level of involvement in this project in terms of specific work performed:

Procuring activity:

Procurement point of contact and telephone number:

List date of construction completion or percent completion if construction is underway:

Total cost:

Indicate type of project (private sector, Government, planned unit development, etc.):

General description of project:

List the relevant criteria associated with this project:

ATTACHMENT 2
PAST PERFORMANCE ASSESSMENT SHEET

Using the following format, provide information for three to five projects that are successfully completed, or substantially completed (fully designed and at least 50% construction progress completed), preferably of similar design or features to that specified in the RFP, that are being or have been constructed by the Offeror to be used for reference and evaluation purposes. Ideally, these should be the same projects for which have been provided under Factor 1, Relevant Specialized Experience.

For each project provide the following information:

Project Title:

Location:

Address of building(s):

Contract number:

If applicable, Task Order number:

Procuring activity:

Procurement point of contact and telephone number:

Date of Award:

Status: Active _____ (provide percent complete)
Complete _____ (provide completion date)

Total cost:

Total cost of all modifications:

Indicate type of project (private sector, Government, planned unit development, etc.):

Design-Bid-Build or Design-Build

General description of project:

List the relevant criteria associated with this project in accordance with paragraph 4.1.2:

For each project provide the following assessment:

QUALITY OF CONSTRUCTION:

Describe your company's performance in complying with contract requirements, quality achieved and overall technical expertise demonstrated.

TIMELINESS OF PERFORMANCE:

Describe your company's timeliness of performance in the following areas:

Was the contract completed ahead of schedule or on time, if not why?

Were liquidated damages assessed, if so provide an explanation?

Did the award amount or delivery schedule change, if so why?

If any issues were identified, how were they resolved?

If a problem surfaced, what actions were taken to fix it?

CUSTOMER SATISFACTION:

Describe your company's assessment of the customer's satisfaction in relation to Quality, Cost, and Schedule.

SUBCONTRACTOR MANAGEMENT:

Describe your company's assessment of how well subcontractors, suppliers, and the labor force were managed and coordinated?

What was the relationship between your company and subcontractors?

Did the subcontractors perform the bulk of the effort or just add breadth or depth on particular technical areas?

SAFETY:

Describe your company's assessment in complying with safety standards and the effectiveness of your company's safety program.

ADDITIONAL PROJECT INFORMATION:

Describe your company's assessment on any weak/strong points identified throughout the project?

TERMINATED PROJECTS:

Attach a list of any projects within the last three years that have been terminated. Provide an explanation.

Please provide the name, title, Government agency or commercial organization, email address and phone number of three current or previous Points of Contact. Persons identified below should be able to confirm your company's assessment of this project and be able to answer any other questions the Government might have about the performance of this project.

Name: _____

Title: _____

Organization: _____

Email address: _____

Phone: _____

Name: _____

Title: _____

Organization: _____

Email address: _____

Phone: _____

Name: _____

Title: _____

Organization: _____

Email address: _____

Phone: _____

MATOC 00120

**SECTION 00120
MATOC – BEST VALUE**

PROPOSAL EVALUATION AND CONTRACT AWARD

1. ELIGIBILITY FOR CONTRACT AWARD. In accordance with the FAR, no contract shall be entered into unless the contracting officer ensures that all requirements of law, executive orders, regulations, and all other applicable procedures, including clearances and approvals, have been met. This includes the FAR requirement that no award shall be made unless the contracting officer makes an affirmative determination of responsibility. To be determined responsible, a prospective contractor must meet the general standards in FAR Part 9 and any special standards set forth in the solicitation.

2. MATOC SOURCE SELECTION. The Government will select the offer that represents the best value to the Government by using the trade-off process described in FAR Part 15. This process permits tradeoffs between cost/price and technical (“non-cost”) factors and allows the Government to accept other than the lowest priced offer. The award decision will be based on a comparative assessment of proposals against all source selection criteria in the solicitation.

3. RELATIVE IMPORTANCE OF PRICE TO THE TECHNICAL EVALUATION FACTORS

All evaluation factors other than cost or price, when combined, are more important than price. The Government is concerned with striking the most advantageous balance between technical merit (“quality”) and price to the Government (i.e., the price). The degree of importance of price could become greater depending upon the equality of the technical proposals. If competing technical proposals are determined to be essentially equal, price could become the controlling factor.

4. EVALUATION OF THE PRICE PROPOSALS

a. Price will be evaluated and considered but will not be scored or combined with other aspects of the proposal evaluation. The sample task order proposed prices will be analyzed for reasonableness. They may also be analyzed to determine whether they are realistic for the work to be performed; reflect a clear understanding of the requirements; and are consistent with the Offeror's Technical Proposal. Additionally, all offers will be analyzed for unbalanced pricing. The Government will perform a price analysis on all acceptable proposals received as a result of the Sample Task Order evaluation. Price analysis will be performed in accordance with FAR 15.404-1, to determine fairness and reasonableness, as well as, to assure an understanding of the work and ability to execute this task order at a proposed price. Total prices that are either 25% or more below or above the Government estimate, or 25% below or above the average of others received, may be considered to be unrealistically low or high for the work to be performed. Unrealistically low or high prices may also indicate a lack of understanding of the requirement. Proposals with total prices that fail this initial price analysis may not be considered for award under the criteria of this solicitation because those prices may be deemed unrealistic or unreasonable. The evaluation will determine the extent to which the price proposal is consistent with the requirements of the RFP and design solution offered. Historical price information, competitive price information, the Independent Government Estimate (IGE), or any other pricing tool as necessary, will be utilized in making this determination. Offerors are advised that any offer wherein pricing is deemed unrealistic or unreasonable will be rendered ineligible for award.

b. The price will be used along with the technical evaluation to make selection for award. Since evaluation of the price proposal will represent a portion of the total evaluation, it is possible that an offeror might not be selected for award because of unreasonable, unrealistic, or incomplete price proposal information. The Government will evaluate the format and clarity of the price proposal.

c. Other Award Factors: The Contracting Officer shall consider several factors in the selection process which are important, but not quantified, such as:

(1) Agreement by the offeror to all general and special contract provisions and clauses.
 (2) Determination of responsibility of the contractor by the Contracting Officer in accordance with the provisions of the Federal Acquisition Regulation, Part 9.1. In order to be determined responsible, a prospective contractor must:

- (a) Have adequate financial resources to perform the contract or the ability to obtain them.
- (b) Be able to comply with the required or proposed delivery or performance schedule taking into consideration all existing commercial and Governmental business commitments.;
- (c) Have a satisfactory performance record.
- (d) Have a satisfactory record of integrity and business ethics.
- (e) Have the necessary organization, experience, accounting and operational controls, and technical skills, or the ability to obtain them.
- (f) Have the necessary production, construction, and technical equipment and facilities, or the ability to obtain them.
- (g) Be otherwise qualified and eligible to receive an award under applicable laws and regulations.

5. TAB F: FACTOR 1; RELEVANT SPECIALIZED EXPERIENCE

EVALUATION CRITERIA:

The Government will evaluate the extent of recent, related experience of the prime contractor. The Government may place greater importance on projects performed as a prime contractor than as a subcontractor, depending upon overall role and relevancy of the project. Federal Government project experience will not be rated inherently more important than non-Federal Government project experience.

The Government will evaluate the involvement of the contractor's team, to include the sub-contractors, on projects similar to the project of this solicitation. All projects presented will be evaluated for relevancy. Projects that are the same or similar in the following: type of services, dollar value complexity, USACE design/construction requirements and applicable quality standards will receive a higher quality rating than a project that does not have these similarities.

An unsatisfactory rating will be received if an Offeror does not provide projects that meet the following criteria: one project over \$30M; all projects over \$5M; and all projects performed within US DOD's CENTCOM or AFRICOM areas of authority.

Incomplete projects will be reviewed for percent completion. If a project is not fully designed, and a least 50% of the construction completed, the Offeror will receive an unsatisfactory rating.

Joint Ventures will be evaluated on each firms relevant experience to their role on projects submitted.

The Government reserves the right to verify the experience record of cited projects or other recent projects by reviewing the Corps of Engineers Construction Contractor (or Architect-Engineer) Appraisal Support System (CCASS/ACASS), other DOD or Government appraisal systems or by contacting owners or references. The Government may check any or all cited references to verify supplied information.

The relevant experience of key personnel proposed for this project will not be evaluated or considered under this factor.

If the Offeror cannot provide information concerning recent, relevant experience on similar projects or the Offeror has no relevant experience, a determination will be made as to the risk this lack of experience presents to the Government and the Offeror will be given an appropriate rating for this factor.

The past performance of individuals will not be credited under this factor.

6. TAB G: FACTOR 2; PAST PERFORMANCE**EVALUATION CRITERIA:**

The Government will evaluate the Offeror's past performance using the sources available to it including but not limited to: the example projects identified by the Offeror and submitted on the Past Performance Assessment Sheets and any additional information received from references, ACASS, and CCASS. Offerors may be provided an opportunity to address any negative past performance information about which the Offeror has not previously had an opportunity to respond if such information is determined to present an impact on the rating to be assessed.

The Government will consider relevant projects that are successfully completed, or substantially completed (fully designed and at least 50% construction progress completed) within 5 years preceding the date of the solicitation. The Government will consider the currency and relevance of the information, source of the information, context of the data, and general trends in contractor performance. The Government places higher value on projects for which successful performance can be validated by means other than the offeror's self-assessment such as through independent telephone interviews with points of contact identified in the proposal, CCASS/ACASS or other agency performance databases, Offeror furnished references or personal knowledge. The Government places a higher value on projects which provided particularly difficult or unique challenges and the innovative methods the Offeror used to resolve problems successfully.

Offerors are cautioned that the submission of each Past Performance Assessment Sheet shall not exceed five (5) pages and that Government evaluators will review and evaluate only the information contained on the first five pages.

The Government will evaluate past performance based on the elements listed below:

Quality of Construction. The Government will evaluate all information available with respect to the quality of the actual construction undertaken and the standards of workmanship exhibited by the Offeror.

Timeliness of Performance. The Government will evaluate all information available with respect to the completion of projects within the scheduled completion times.

Customer Satisfaction. The Government will evaluate all information available with respect to customer satisfaction, cooperation with customers, and interaction on past projects.

Subcontractor Management. The Government will evaluate all information available with respect to effective management of subcontractors on past projects.

Safety. The Government will evaluate all information available with respect to the contractor's safety program or efforts.

If the Government does not obtain past performance information for the projects identified by the Offeror and cannot establish a past performance record for the Offeror through other sources, past performance will be rated neither favorably nor unfavorably.

7. TAB H: FACTOR 3: TECHNICAL;**SUBFACTOR A-TECHNICAL APPROACH****EVALUATION CRITERIA:**

The Government will evaluate the strengths, weaknesses and any deficiencies in the submission. Based on the submission provided, the Government will evaluate the Offeror's overall understanding of the

design/construction process and its capability to execute any task orders that may be issued under an awarded contract.

Offerors are cautioned that the Technical Approach Narrative shall not exceed ten (10) pages and that Government evaluators will review and evaluate only the information contained on the first ten pages.

TAB H-FACTOR 3:

TECHNICAL; SUBFACTOR B. PROJECT MANAGEMENT AND SECURITY PLAN;

EVALUATION CRITERIA:

The Government will evaluate each offerors planned approach for successfully managing task orders on a simultaneous basis at different locations throughout Afghanistan. Significant participation by subcontractors in the management of the project work should also be fully and completely described.

The required plan must demonstrate how the contractor will promote the education and skills development of Afghan citizens. Specifically, it must demonstrate the following:

- How the contractor will recruit, hire, train and maintain a staff of skilled Afghan workers for construction trades including, but not limited to: equipment operators, masons, reinforcing steel workers, concrete finishers, laboratory technicians, painters, and carpenters.
- How the contractor will recruit, hire, train and maintain a staff of Afghan journeymen, including but not limited to electricians and plumbers.
- How the contractor will recruit and hire educated Afghans or educate Afghans citizens so that they can assume construction engineering and management positions. These positions will include, but are not limited to safety and health officers, quality control managers, schedulers, cost estimators, construction superintendents, and project managers.
- The name and resume for an Afghan Capacity Development Manager. Whose responsibility it will be to manage the capacity development efforts. The person's position within the company organizational chart must be shown.

The Government will evaluate the offeror's plan to mitigate any areas of special concern for its overall effectiveness.

The offeror must demonstrate how they will ensure the prompt payment of all subcontractors, suppliers, and their employees in accordance with local Afghan laws and the requirements specified in Technical Specification Section 01060 Special Clauses paragraph 2.8 Prompt Payment of Subcontractors. Contractors failing demonstrate how they will meet their payment responsibility as a prime contractor and ensure all subcontractors, suppliers, and all employees are promptly paid in a timely manner will receive a "NO GO". For this subfactor.

Defense Base Act (DBA) Insurance: The offeror must demonstrate how they will submit a claim properly, to include necessary actions / preparations to gather contact information for the injured / deceased family, and both the notification and follow up processes facilitate replacing the lost income of the worker. The offeror must also demonstrate how all immediate and required follow-on reports will submitted in a timely manner to the appropriate individuals in accordance with the DBA Insurance requirements specified in Technical Specification Section 01060 Special Clauses paragraph 2.10.1. Contractors failing to demonstrate how the requirements will be met will receive a "NO GO" for this subfactor.

The security plan will be evaluated for reasonableness, risk and logic which illustrates a basic understanding of managing security in Afghanistan.

The Offeror must demonstrate how they will meet the specific requirements found in Technical Specification Section 01040 Standard Contract Security. Contractors failing to demonstrate how they will meet the requirements will receive a "NO GO" for this factor..

Organizational charts will be reviewed for delineated lines of authority, precise and logical organization and relationships between the headquarters, site offices and subcontractors. Clear lines of authority and logical organization will score higher than organizational charts that are not clearly delineated.

Offerors are cautioned that the Management and Security Plan shall not exceed eight (8) pages and that Government evaluators will review and evaluate only the information contained on the first five pages. Resumes and the organizational chart will not count against the eight page limit.

8 RELATIVE WEIGHTING OF THE TECHNICAL EVALUATION FACTORS; All technical factors are equal in weight and importance.

9. GENERAL TECHNICAL CRITERIA

a. Material omission(s) may cause the technical proposal to be rejected as unacceptable.

b. Technical proposals which do not provide the specified information in the specified location in accordance with the submission instructions may be downgraded. The Government is under no obligation to search for information that is not in the specified location.

c. Proposals which are generic, vague, or lacking in detail may be downgraded. The offeror's failure to include information that the Government has indicated should be included may result in the proposal being downgraded and/or being found deficient if inadequate detail is provided.

d. The Government cannot make award based on a deficient offer. Therefore, a rating of "Unsatisfactory" under any subfactor will make the offer ineligible for award, unless the Government elects to enter into discussions with that Offeror and all deficiencies are remedied in a revised proposal.

10 EVALUATION PROCEDURE

SOURCE SELECTION EVALUATION BOARD (SSEB).

The SSEB will be established to conduct the evaluation of proposals received in response to this solicitation. The evaluation will be based on the content of the proposal, proposal corrections and any information obtained from other sources, e.g. past performance information. The SSEB will not consider any documents incorporated by reference, except as expressly allowed by this solicitation.

Each member of the SSEB will independently consider all information provided. Once these individual analyses are completed, the SSEB will assign a consensus rating for each evaluation factor. It is the responsibility of each member of the SSEB to provide and document sufficient strengths, weaknesses, and/or deficiencies to support the assigned rating for each factor as well as the overall. Comments are required for all ratings.

The final overall rating along with ratings on individual factors, to include all support documentation, will be provided to the Source Selection Authority. The Source Selection Authority will determine which Offerors are awarded a contract.

No proposal which receives an overall rating of Unsatisfactory or Marginal in any one factor will be selected for award.

Offerors are cautioned to put forth their best efforts and to furnish all information clearly to allow the Government to determine their performance capability. Offerors should not assume that they will have an opportunity to clarify or correct anything in the proposal after submitting it.

11. BEST VALUE EVALUATION STANDARDS. Evaluation factors will be rated using the following adjectival descriptions. Evaluators will apply the appropriate adjective to each factor rated. The evaluator's narrative explanation must clearly establish that the Offeror's submittal meets the definitions established below. As each factor is evaluated an assessment of Performance Risk will be made. Performance Risk relates to the assessment of an Offeror's present and past work and accomplishments to determine the Offeror's ability to successfully perform as required.

OUTSTANDING - No doubt exists that the Offeror will successfully perform the required effort based on their performance record. The proposal has exceptional merit and reflects an excellent approach which will clearly result in the superior attainment of all requirements and objectives. The proposal contains no significant weaknesses, deficiencies or disadvantages and presents very low risk that it will not be successful. This clearly achievable approach includes numerous advantageous characteristics of substance, and essentially no disadvantages, which can be expected to result in outstanding performance. The risk of unsuccessful performance is very low as the proposal provides solutions which are unquestionably feasible and practical. These solutions are further considered very low risk in that they are exceptionally clear and precise, fully supported, and demonstrate a clear understanding of the requirements.

ABOVE AVERAGE - Little doubt exists that the Offeror will successfully perform the required effort based on their performance record. The proposal demonstrates a sound approach which is expected to meet all requirements and objectives and exceed some. Any weaknesses noted in the proposal are minor and should not seriously affect the Offeror's performance and presents low risk that it will not be successful. This sound approach includes advantageous characteristics of substance, and few relatively minor disadvantages, which collectively can be expected to result in above average performance. The risk of unsuccessful performance is low as the proposal contains solutions which are considered feasible and practical. These solutions are further considered to reflect low risk in that they are clear and precise, reasonably supported, and demonstrate an understanding of the requirements.

SATISFACTORY - Some doubt exists that the Offeror will successfully perform the required effort based on their performance record. The proposal demonstrates an approach which is capable of meeting all requirements and objectives. The Offeror may satisfactorily complete the proposed tasks, but there is at least a moderate risk that it will not be successful. The approach includes both advantageous and disadvantageous characteristics of substance, where the advantages are not outweighed by the disadvantages. Collectively, the advantages and disadvantages are likely to result in acceptable performance. The risk of unsuccessful performance is moderate, as the proposal solutions are generally feasible and practical. These solutions are further considered to reflect moderate risk in that they are somewhat clear and precise, partially supported, and demonstrate a general understanding of the requirements.

MARGINAL - Significant doubt exists that the Offeror will successfully perform the required effort based on their performance record. The proposal demonstrates an approach which may not be capable of meeting all requirements and objectives. The Offeror may satisfactorily complete the proposed tasks, but there is a high risk that it will not be successful. The approach has disadvantages of substance and advantages, which if they exist, are outweighed by the disadvantages. Collectively, the advantages and disadvantages are not likely to result in satisfactory performance. The risk of unsuccessful performance is high as the proposal contains solutions which may not be feasible and practical. These solutions are further considered to reflect high risk in that they lack clarity and precision, are generally unsupported, and do not demonstrate a complete understanding of the requirements.

UNSATISFACTORY - It is extremely doubtful that the Offeror will successfully perform the required effort based on their performance record. The proposal demonstrates an approach which will very likely not be capable of meeting all requirements and objectives. In terms of a specific factor, the Offeror fails to meet

the minimum requirements and there is unacceptably high risk that it will not be successful. This approach has numerous disadvantages of substance, and advantages which, if they exist, are far outweighed by disadvantages. Collectively, the advantages and disadvantages will not result in satisfactory performance. The risk of unsuccessful performance is very high as the proposal contains solutions which are not feasible and practical. The solutions are further considered to reflect very high risk in that they lack any clarity or precision, are unsupported, and do not demonstrate an understanding of the requirement.

12 RELATIVE IMPORTANCE OF FACTORS

TECHNICAL/Non Cost factors are significantly more important than Cost or Price.

NON-COST FACTORS/BEST VALUE

FACTOR 1: RELEVANT SPECIALIZED EXPERIENCE: This factor is approximately equal to Factors 2 and 3.

FACTOR 2: PAST PERFORMANCE: This factor is approximately equal in importance to Factor 1 and 3

FACTOR 3: TECHNICAL: This factor is approximately equal in importance to Factor 1 and 2.

PRICE - A Sample Task Order (See Section 00800) will be utilized to evaluate price.

SECTION 00800 - SPECIAL CONTRACT REQUIREMENTS

The following have been added by full text:

SAMPLE TASK ORDER

SAMPLE TASK ORDER: 00010

**SECTION 00010
PROPOSAL SCHEDULE**

SEE SAMPLE TASK ORDER PROPOSAL SCHEDULE IN SECTION 00100, MATOC 00010.

SAMPLE TASK ORDER: 00110

**SAMPLE TASK ORDER
SECTION 00110
DESIGN-BID-BUILD
PROPOSAL PREPARATION**

1. INQUIRIES

Perspective offerors should submit inquiries related to this solicitation in writing by **21 December 2009**:

All questions will be submitted in writing by letter or e-mail to:

U.S. Army Corps of Engineers (USACE)
Afghanistan Engineer District (AED)
Qalaa House, Attention: Kenneth Carleton or Teresa F McCarthy
Kabul, Afghanistan

E-MAIL ADDRESS: Kenneth.Carleton@usace.army.mil
Teresa.F.McCarthy@usace.army.mil

Please include the solicitation number, and project title with your questions.

Oral explanations or instructions are not binding. Any information given to an offeror which impacts the solicitation and/or offer will be given in the form of a written amendment to the solicitation.

As this is a competitive negotiation acquisition, there is no public bid opening and no information will be given out as to the number of offerors or the results of the competition until all awards are made.

2. DIRECTIONS FOR SUBMITTING PROPOSALS

Offers must be in sealed envelopes/packages, marked and addressed as follows:

MARK PACKAGES:
Solicitation No. W5J9JE-10-R-0002
Offer Closing Date: **27 December, 2009**
Offer Closing Time: **4:00 PM**
(LOCAL KABUL TIME)

ADDRESS PACKAGES TO:
U.S. Army Corps of Engineers (USACE)
Afghanistan Engineer District (AED)
Qalaa House, Attention: Kenneth Carleton/Teresa F McCarthy
Kabul, Afghanistan

Special Instruction Pertaining to Hand Carried Offers: Hand-carried offers must be delivered to the USACE AED offices, Qalaa House, Kabul, Afghanistan. Offerors who desire to hand-deliver their offers shall notify the Contract Specialist **in advance** in order to be met at the entrance gate to Qalaa House Compound.

3. PREPROPOSAL CONFERENCE / SITE VISIT

The Preproposal Conference shall be held at the Corp of Engineers Afghanistan District Headquarter in Kabul at the Qalaa House Compound on **5 December at 1000 hours (10 am)**. There will **NOT** be an official Site Visit scheduled.

IMPORTANT NOTES. (1) Remarks and explanations addressed during the conference shall not qualify or alter the terms and conditions of the solicitation. (2) The terms and conditions of the solicitation remain unchanged unless the solicitation is formally amended in writing.

All prospective attendees must register on this website to attend the pre-proposal conference. Because space is limited, **only two (2) representatives per company** will be admitted. If you are not registered, you will not be admitted onto the Qalaa House compound. You must register before 3 December 2009.

Please plan to arrive early, as it may take time to be processed and screened through the security checkpoint. All attendees must possess a Government issued Identification Document such as National ID Card, CAC Card, Passport, etc. Security will begin screening attendees at 08:30 AM. If you are not registered, security will not admit you.

Your email address will not be shared or used for any purposes other than sending your registration confirmation or communicating important Conference information.

4. TELEGRAPHIC OFFERS - - TELEGRAPHIC OFFERS ARE NOT ACCEPTABLE.

However, offers may be withdrawn by written or telegraphic notice. Any telegram to withdraw an offer sent to this office must be received in the office designated in the Request for Proposal (RFP) for receipt of offers not later than the exact date and time set for receipt of proposals. A telegraphic withdrawal of an offer received in such office by telephone from the receiving telegraph office not later than the exact date and time set for receipt of proposals shall be considered. However, the telephone message shall be confirmed by the telegraph company by sending a copy of the written telegram that formed the basis for the telephone call. The written telegram shall be sealed in an envelope by a proper official and sent to the office designated in the RFP for receipt of offers. The official shall write on the envelope (1) the date and time of receipt and by whom, and (2) the number of the RFP, and shall sign the envelope. The offeror is responsible to inform the telegraph company of these requirements. No one from this office will be dispatched to the local telegraph office to pick up any telegram for any reason.

5. FACSIMILE OFFERS

Facsimile offers, modifications thereto, or cancellations of offers will not be accepted.

6. PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS

a. REQUIREMENT FOR SEPARATE PRICE AND TECHNICAL PROPOSALS.

(1) Each Offeror must submit both a Price Proposal and a Technical Proposal. The Price Proposal and the Technical Proposal must be submitted as separate volumes. The Price Proposal is to be submitted in VOL I (of the overall MATOC proposal) and the Technical Proposal shall be submitted as VOL III. Ensure that the outside of each separate volume is clearly marked to indicate its contents; and the identity of the offeror. Additionally, clearly identify the "Sample Task Order original" cost/price proposal and the "Sample Task Order original" technical proposal on the outside cover.

(2) Both the Price Proposal and the Technical Proposal must be received by the closing date and time set for receipt of proposals.

(3) No dollar amounts from the Price Proposal are to be included in the Technical Proposal.

(4) All information intended to be evaluated as part of the Technical Proposal must be submitted as part of the Technical Proposal. Do not cross-reference similar material in the Price Proposal, or vice versa. Also, do not include links to websites in lieu of incorporating information into your proposal.

(5) Do not include exceptions to the terms and conditions of the solicitation in either the technical or price proposal. Should the offer include any standard company terms and conditions that conflict with the terms and conditions of the solicitation, the offer may be determined "unacceptable" and thus ineligible for award. Should the offeror have any questions related to specific terms and conditions, these should be resolved prior to submission of the offer. The Offeror must clearly describe in the Proposal Cover Sheet submitted with the Price Proposal any exceptions to the contractual and/or technical terms and conditions of the solicitation contained in the Offer.

b. **DISCUSSIONS.** The Government **does not** intend to enter into discussions with offerors prior to determining those contractors within the competitive range, in accordance with FAR 52.215-1, Instructions to Offerors—Competitive Acquisitions, Alternate I.

c. **COST OR PRICING DATA.** Offerors are required to submit Cost or Pricing Data with their offers.

d. **GENERAL INSTRUCTIONS.**

(1) Submit only the hard-copy paper documents and the electronic files specifically authorized and/or required elsewhere in this section. Do not submit excess information, to include audio-visual materials, electronic media, etc.

(2) Use only 8 ½ by 11 inch paper for hard copy submissions, unless another paper size is specifically authorized elsewhere in this section for a particular submission. Do not use fold-outs (e.g., 11" x 14" or 11" x 17" sheets) unless specifically authorized in this section for a particular submission. Do not use a font size smaller than 10, an unusual font style such as script, or condensed print for any submission. All page margins must be at least 1 inch wide, but may include headers and footers.

(3) "Confidential" projects cannot be submitted to demonstrate capability unless all of the information required for evaluation as specified herein can be provided to the Government as part of the Offeror's technical proposal. Offerors that include in their proposals information that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, must be clearly marked in accordance with the instructions at FAR 52.215-1, "Instructions to Offerors— Competitive Acquisition", paragraph (e), "Restriction on disclosure and use of data".

(4) In the case of an Offeror that is part of a large, multi-segmented business concern, provide information directly pertaining to the specific segment of the business concern (i.e., the division, group, unit, etc.) that will perform work under the prospective contract.

(5) For submissions with page limitations, the pages will be counted as follows: One side of the paper is one page; information on both the back and front of one sheet of paper will be counted as two pages. Where authorized, fold-out pages (11" x 14" or 11" x 17") will count as one page. Pages furnished for organizational purposes only, such as a "Table of Contents" or divider tabs, are not included in the page limitation.

e. SPECIFIC INSTRUCTIONS FOR THE TECHNICAL PROPOSAL

(1) Technical Proposals. Submit the (1) ORIGINAL and (4) hard copies of Volume III.

(2) Format and Contents of the Technical Proposal and List of Tabs. The original and all copies of the technical proposal will be appropriately labeled as such. Each set shall be organized using the tabs specified in the following chart. Note: The main tabs directly correlate to the evaluation factors identified in Section 00120.

TAB	CONTENTS OF THE TECHNICAL PROPOSAL
Factor #1	MANAGEMENT AND SECURITY PLAN
Factor #2	PERSONNEL
Factor #3	RESOURCES

7. SAMPLE TASK ORDER EVALUATION PROCEDURES

This sample Task Order will be evaluated using the LPTA methodology per FAR 15.101-2. Proposals, which satisfy the technical requirements of the Sample Task Order RFP will be determined technically acceptable and given a "GO". Proposals that fail to satisfy the evaluation criteria will be given a "NO GO". Proposals that receive a "NO GO" for any factor will not be eligible for a MATOC award.

8. DETAILED SUBMISSION REQUIREMENTS FOR THE TECHNICAL PROPOSAL.

Tables of content, proposal cover letters, and tabs between proposal information do not count toward any page limitations in the proposal. The following is a detailed description of the information to be submitted under each TAB.

9. FACTOR 1 - SAMPLE TASK ORDER – MANAGEMENT AND SECURITY PLAN

SUBMISSION REQUIREMENTS: This information considers the Offeror's **site specific** project management and security plan for the type of facilities specified in the RFP. Limit the submission to 3 pages or less, clearly but concisely describe the management and security plan to execute this task order. At a minimum, the narrative should respond to the questions, or address the topics, outlined below:

How does the offeror plan to meet the construction project milestones in the specifications that reflects completion of all work within the period of contract performance?.

Provide a narrative response that addresses timely delivery and receipt of equipment/ materials at this job site which coincides with the construction project milestones.

How does the offeror plan to provide security for the transferring of construction materials to the site?

How does the offeror plan to provide security at the site?

In addition, the offeror shall include an organizational chart with accompanying clarifying descriptions and explanations that depicts and describes how the various management staff members (to include management staff members employed by subcontractors) assigned for the accomplishment of Task Orders will interact with one another as well as manage and coordinate the activities of the various subcontractors.

10 FACTOR 2 - SAMPLE TASK ORDER - PERSONNEL

SUBMISSION REQUIREMENTS: The Offeror must provide resume data for the following key personnel: Project Manager, Safety Officer, Security Officer, Quality Control Manager, Electrical Engineer, Mechanical Engineer, Civil Engineer, and Construction Superintendent.

Resume information to be provided shall be limited to no more than one page per person and shall include the following information as a minimum:

Name and title

Project assignment

Name of firm with which associated.

Years with this firm or other firm

Education, Type of degree(s), specialization, if applicable

Active professional registration, year first registered, if applicable

Other experience and qualifications relevant to similar work required under this contract

11 FACTOR 3 - SAMPLE TASK ORDER - RESOURCES

SUBMISSION REQUIREMENTS: The Offeror will submit a list of ALL current ongoing contracts or projects. The list shall include the contract number, contract amount, award date, original contract completion date, current official contract completion date, and the current progress.

The Offeror shall identify the key personnel assigned to each of those projects delineated for each of the current contracts or projects. Identify the personnel used on other contracts concurrently and list those projects.

The Offeror shall provide a narrative that satisfactorily explains how they are going to assume the responsibility for this additional contract or project as well as an explanation of the resources they will use on this contract without adversely affecting current contracts or projects. The Offerors narrative shall not exceed 3 pages.

12. PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS

a. REQUIREMENT FOR SEPARATE PRICE AND TECHNICAL PROPOSALS.

(1) Each Offeror must submit both a Price Proposal and a Technical Proposal

(2) No dollar amounts from the Price Proposal are to be included in the Technical Proposal.

(3) All information intended to be evaluated as part of the Technical Proposal must be submitted as part of the Technical Proposal. Do not cross-reference similar material in the Price Proposal, or vice versa. Also, do not include links to websites in lieu of incorporating information into your proposal.

(4) Do not include exceptions to the terms and conditions of the solicitation in either the technical or price proposal. Should the offer include any standard company terms and conditions that conflict with the terms and conditions of the solicitation, the offer may be determined "unacceptable" and thus ineligible for award. Should the offeror have any questions related to specific terms and conditions, these should be resolved prior to submission of the offer. The

Offeror must clearly describe in the Proposal

(5) Cover Sheet submitted with the Price Proposal any exceptions to the contractual and/or technical terms and conditions of the solicitation contained in the Offer.

b. DISCUSSIONS. The Government **does not** intend to enter into discussions with offerors prior to determining those contractors within the competitive range, in accordance with FAR 52.215-1, Instructions to Offerors—Competitive Acquisitions, Alternate I.

c. COST OR PRICING DATA. Offerors are required to submit Cost or Pricing Data with their offers.

(1) For submissions with page limitations, the pages will be counted as follows: One side of the paper is one page; information on both the back and front of one sheet of paper will be counted as two pages. Where authorized, fold-out pages (11" x 14" or 11" x 17") will count as one page. Pages furnished for organizational purposes only, such as a "Table of Contents" or divider tabs, are not included in the page limitation.

d. **SPECIFIC INSTRUCTIONS FOR THE PRICE PROPOSAL**

(1) There are no page limits set for the price proposal. However, limit your response to information required by this solicitation. Excess information will not be considered in the Government's evaluation.

(2) Price Proposal. The Price Proposal shall be appropriately labeled as such and shall be organized using the 00010, Schedule located in VOL I.

(3) Any and all amendments must be acknowledged by all Offerors in accordance with the instructions on the Standard Form 30, Amendment of Solicitation.

13. SOURCE SELECTION USING THE LOWEST PRICE TECHNICALLY ACCEPTABLE . An evaluation will be performed on each proposal in accordance with FAR 15.101-2(b). To be considered technically acceptable, no technical factor in the proposal may be determined to be unacceptable. The failure of the proposal to meet any of the factors will result in a technically unacceptable rating for the Sample Task Order and preclude a MATOC award. See also Section 00120.

SAMPLE TASK ORDER; 00120

**SECTION 00120
SAMPLE TASK ORDER; LOWEST PRICE TECHNICALLY ACCEPTABLE (LPTA)
DESIGN-BID-BUILD**

PROPOSAL EVALUATION

1. ELIGIBILITY FOR CONTRACT AWARD. In accordance with the FAR, no contract shall be entered into unless the contracting officer ensures that all requirements of law, executive orders, regulations, and all other applicable procedures, including clearances and approvals, have been met. This includes the FAR requirement that no award shall be made unless the contracting officer makes an affirmative determination of responsibility. To be determined responsible, a prospective contractor must meet the general standards in FAR Part 9 and any special standards set forth in the solicitation.

2. SOURCE SELECTION USING LPTA. An evaluation of acceptability will be performed on each proposal in accordance with FAR 15-101-2.

The government will evaluate proposals as follows. The technical (non-pricing) volume(s) of each of the proposals will be given to the Technical Evaluators for review, without identification of the prices or rank order of the prices. The Technical Evaluators will review these proposals for Technical acceptability. If Offerors proposals are determined to be technically acceptable, they will receive a "GO" and their pricing proposals will be used as a factor in the MATOC Best Value Decision. If Offerors technical proposal is not acceptable, they will receive a "NO GO" and they will not be eligible for a MATOC award.

3. FACTOR 1 – MANAGEMENT AND SECURITY PLAN

EVALUATION CRITERIA

The Government will evaluate each offeror's planned approach for successfully managing this task order in Afghanistan. Significant participation by subcontractors in the management of the project work should also be fully and completely described.

The Government will evaluate the offeror's plan to mitigate any areas of special concern for its overall effectiveness.

The security plan will be evaluated for reasonableness, risk and logic which illustrate a basic understanding of managing security in Afghanistan.

Failure to meet the standards under this factor may result in a "NO GO" or unacceptable rating and possible elimination from further consideration for contract award.

Offerors are cautioned that the Site Specific Management and Security Plan shall not exceed three (3) pages and that Government evaluators will review and evaluate only the information contained on the first three pages.

4. FACTOR 2 – PERSONNEL

EVALUATION CRITERIA

The Safety Officer, Quality Control Manager, Security Manager, and the Construction Superintendent ,are not required to have degrees, however, they must have a minimum of 5 years experience in their field. The Project Manager, Electrical Engineer, Mechanical Engineer, Civil Engineer shall have a degree in the field of work governed by the position they are assigned to and a minimum of five 5 years of professional experience in that field. For example, a Civil Engineer must have a degree in Civil Engineering and 5 years of professional engineering. The degree requirement must be clearly defined by providing the name of the school and type of degree.

Failure to meet the standards under this factor will result in a "NO GO" or unacceptable rating and possible elimination from further consideration for contract award

5. FACTOR 3 - RESOURCES

EVALUATION CRITERIA

Offerors who demonstrate that they have the reserve resources/capacity for additional contracts or projects without adversely affecting existing projects or contracts will receive a "GO".

Offerors are cautioned that the Resources narrative shall not exceed three (3) pages and that Government evaluators will review and evaluate only the information contained on the first three pages.

6. EXCEPTIONS. Exceptions to the contractual terms and conditions of the solicitation (e.g., standard company terms and conditions) may result in a determination to reject a proposal.

7. RESTRICTIONS. Failure to submit all the data in the format indicated in this section may be cause for determining a proposal incomplete and, therefore, not considered for evaluation, and for subsequent award.

8. PRICE.

For Offerors that proposals receive a "GO" rating, the Sample Task Orders price proposal will be used as a factor in the MATOC Best Value Decision.

9. GENERAL TECHNICAL CRITERIA

a. Material omission(s) may cause the technical proposal to be rejected as unacceptable.

b. Technical proposals which do not provide the specified information in the specified location in accordance with the submission instructions may be downgraded. The Government is under no obligation to search for information that is not in the specified location.

c. Proposals which are generic, vague, or lacking in detail may be downgraded. The offeror's failure to include information that the Government has indicated should be included may result in the proposal being downgraded and/or being found deficient if inadequate detail is provided.

SAMPLE TASK ORDER: 00150

SECTION 00150

THE SITE ADAPT PROCESS

1. GENERAL

1.1 SITE ADAPT PROCESS

The facility shall be site adapt designed and built by a single contractor. Site adapt means the contractor shall construct work in exact conformance to all drawings furnished in the Contract, and perform design analysis and prepare drawings and specifications necessary to complete all other remaining Contract requirements. The design analysis and contractor-developed drawings and specifications shall be submitted for review in accordance with Section 01335. For this site adapt project, specifications shall also be completely developed for work shown in the furnished drawings and provided for AED review per Section 01335.

The contractor may be a single firm or a team of firms that includes registered Architects and Engineers either employed by or subcontracted to the contractor. Licensing jurisdiction of Architects and Engineers of record shall be verifiable. The contractor shall be the Architect/Engineer-of-Record for all work not associated with the furnished drawings, whether the contractor utilizes services of licensed architects and engineers employed by its firm or subcontracts with independent architectural and/or engineering firm(s). The contractor shall be solely liable for design errors and/or omissions and should be insured as the A-E firm against design errors and omissions.

Section 00555, DESIGN CONCEPT DOCUMENTS identifies project documents furnished herewith to be used as the basis for the project design and construction documents. The successful Offeror shall be required to complete the design and construction documentation, and construct the project in compliance with these completed requirements.

2. OUTLINE DESCRIPTION OF THE DESIGN PHASE

No work can begin on any phase of the process until an authorization Clearance For Construction (CFC) for that phase is issued.

2.1 PROPOSAL PHASE

The Proposal Phase includes the period from the time from the issuance of the Request for Proposals (RFP) through the selection process and the final award of the Site Adapt contract.

The proposals to be submitted include a Management/Technical Proposal and a Cost/Price Proposal. The contents and organization of the proposal are described in SECTION 00110 PROPOSAL PREPARATION. The Government will evaluate and award the Site Adapt contract to a single Offeror based upon the criteria which are outlined in SECTION 00120 - PROPOSAL EVALUATION AND CONTRACT AWARD.

2.2 DESIGN PHASE

The successful contractor shall develop and submit for formal review two submittals and the final design. The contractor is encouraged to develop and submit multiple cost saving proposals for innovative design alternatives. The Design Phase will consist of three parts as follows:

- a. A Pre-design meeting will be conducted to distribute drawings to the contractor, finalize and clarify technical information, and clarify other necessary information.

- b. Basic services required to develop the first submittal which represents: 65% complete drawings and specifications for site preparation work, utility construction, paving, foundation, water and wastewater features of all facilities. After approval of the 65% design submittal (drawings and specifications), the Government may issue a CFC letter to commence with the Build Phase for all site and off-site utilities, clearing, grubbing, rough grading the site, demolition work, parking lot base course, foundation, and all building features.
- c. All design services required to complete the 95% design submittal: 100% complete drawings and specifications for site preparation work, utility construction, paving, foundation, and structural diaphragm of all work. 95% design shall not begin until an approval of the 65% design submittal is issued.

3. BUILD PHASE

The Build Phase will be initiated by an authorization letter. The authorization letter will be provided separately by the Contracting Officer for each phase of the work. The Government may give the contractor authorization for the Build Phase for portions of the work following review and approval of the 65% design submittal. Weekly coordination meetings will be held at which, as a minimum, the contractor's Project Manager, a representative of the Designer, the site Superintendent, and the Quality Control Manager shall be present.

4. PROJECT SCHEDULE:

The following is an internal design schedule and is subject to modification by the Offeror to suit their particular method of operation. Overall time constraints are required and cannot be changed except by contract modification. Prospective offerors shall be required to submit a complete schedule for design and construction that meets or exceeds the overall time goals of the Government for this project.

Notice to Proceed	following Award of Contract (upon written notification)
Design Phase – Basic Services Pre-design Meeting	within 7 days from Award of Contract
Design Submittal Due	within 30 days following Award of Contract
Submittal Review Conference (location TBD)	within 7 days following submittal review
Incorporate Changes to Submittal (Re-Submit for Review and Approval 100% design submittal)	within 7 days following review conference
Build Phase Authorization for Remainder of Work	Upon approval of design submittal
Total Design and Construction Period	353 days (performance period includes design and construction phases)

5. LIQUIDATED DAMAGES:

Liquidated damages in the amount of **\$628.00** every calendar day of delay shall be assessed and charged to the Contractor.

All days are in calendar days.

--END OF SECTION--

SAMPLE TASK ORDER: 00555

SECTION 00555

DESIGN CONCEPT DOCUMENTS

1. GENERAL

1.1 GENREAL

This section identifies documents issued with this RFP which establish the concept or basis for the project design. These requirements are minimum standards and may be exceeded by the Offeror. Deviations from these concepts and standards may be approved if considered by the Government to be in its best interests.

The extent of development of these requirements in no way relieves the successful Offeror from the responsibility of completing the design, construction documentation, and construction of the facility in conformance with applicable criteria and codes.

1.2 ENGINEERING AND DESIGN CRITERIA

General design requirements are set forth in this RFP herein. The Specifications Divisions 02 thru 16 is the primary specifications criteria for the design and construction of the project. No design criteria will be furnished by the Afghanistan Engineer District except that which may be required for design and is not available from commercial sources or from the Construction Criteria Base (CCB) or 'Techinfo' website located at <http://www.wbdg.org/ccb/>. The references within CCB must be obtained by the A/E if the criteria are required or desired. All design, unless otherwise specified, shall be based on nationally recognized industry standard, criteria, and practice.

1.3 APPENDIX DOCUMENTS

See Appendices for further technical requirements, criteria, and parameters that are a part of this contract.

1.4 SPECIFICATIONS

Specifications included herein shall be utilized as design criteria and minimum standards for the corresponding construction work. The successful Offeror shall develop complete construction specifications using the criteria included in these specifications.

The Government will provide Division 1 specifications sections as required, to the successful Offeror; and these sections shall be included in the final construction specifications without change. The Design Build Contractor shall furnish these specifications on electronic media for the production of construction specifications when requested. These specifications shall be submitted together with other required contractor prepared project construction documents during the General Design Review (65%) of the Design Phase in accordance with Section 01135 SUBMITTAL REQUIREMENTS.

1.5 ORDER OF PRECEDENCE

In case of conflict, duplication, or overlap of design criteria specified in the documents referenced in this section, the following order of precedence shall be followed:

1. Contract Award Document and referenced publications therein.

2. Written requirements supersede drawings.

1.6 MANDATORY CRITERIA

Portions of the design criteria documents provide mandatory criteria. Mandatory criteria consists of drawings, schematics, specifications, and other requirements which shall not be altered or modified for proposal submittal or subsequent final design except for minor adjustments for coordination or except for cost reduction proposals as specified in Section 00150 - THE DESIGN BUILD PROCESS. Non-mandatory criteria shall be considered minimum requirements and may be enhanced, improved, or substituted to better suit design requirements or to improve evaluation consideration. Mandatory requirements are as listed below. All other design criteria shall be considered non-mandatory.

Work Plan

Boundary survey plan

Topographic survey plan

Any mandatory criteria referenced within Project Program.

Any other criteria listed herein which is listed, shown or implied as mandatory.

1.7 ADDITIONAL DOCUMENTS/CRITERIA FURNISHED BY THE GOVERNMENT

The following documents will be furnished to the Design/Build Contractor when requested by the Offeror or Contractor:

Design Criteria published by the Government such as Technical Manuals (TM), Engineer Manuals (EM), Engineer Technical Letters (ETL) and other documents related to the design referenced herein which are not available on the Internet, including the CCB website.

Commercial design criteria and specifications will not be furnished by the Government.

Conversion of electronic media to other formats shall be the responsibility of the Design Build Contractor.

-- END OF SECTION --

SAMPLE TASK ORDER: 01010

SPECIFICATION SECTION 01010

SCOPE OF WORK

STORY POLICE SECURITY BUILDING)

1.0 GENERAL

This project consists of the design and construction of Afghanistan National Police (ANP) Uniformed Police District Headquarters facilities (approximately 600 SM in size and a population of [60] persons; see drawing A-1 for exact floor plan) to be located at [Kohsan, Herat] Province, Afghanistan. This project is defined as the management, planning, design, material, labor, and equipment, to site adapt and construct all utilities, vehicular access, buildings, force protection measures, site security, de-mining activities, and other features as referenced herein. The work within this contract shall meet and be constructed in accordance with current U.S. design and International Building Codes (IBC), Life Safety Codes (NFPA-101), Force Protection and security standards. A partial listing of references is:

IBC, International Building Codes 2006

NFPA 101, Life Safety Codes

UFC 4-010-01, DoD Minimum Anti-Terrorism Standards for Buildings.

1.1 ENGLISH LANGUAGE REQUIREMENT

All information shall be presented in English. The Contractor shall have a minimum of one English-speaking representative to communicate with the COR at all times when work is in progress.

1.2 PERIOD OF PERFORMANCE

All work under this contract by the contractor shall be completed within 353 calendar days after Notice to Proceed (NTP). Liquidated damages in the amount of \$628.00 dollars shall be assessed for every calendar day beyond the scheduled contract completion date and charged to the Contractor.

This schedule allows for up to 15 days for the Contractor to achieve approval of site specific submittals.

1.3 SUBMITTALS

Submittals and a Submittal Register are required as specified in Section 01335 of the Basic Contract.

1.4 CQM TRAINING REQUIREMENT

Before project design and construction begin, the Contractor's Quality Control Manager is required to have completed the U.S. Army Corps of Engineers (USACE) Construction Quality Management (CQM) course, or equivalent. The CQM course will be offered periodically by the Afghanistan Engineer District (AED), USACE. Additional approved CQM courses include those offered by the Commercial Technical Training Center (in Jalalabad) and the Champion Technical Training Center (in Kabul). The Quality Assurance Branch of the AED can provide information related to AED offerings of the CQM course, as well as contact information for training centers. Alternative CQM courses, other than those mentioned above, must be approved by the Quality Assurance Branch.

The contractor's quality control plan, as defined in USACE Guide Specification 01451 (or 01 45 04.00 10), entitled "Contractor Quality Control", must include "The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function." For the QC Manager, qualifications must include a certificate demonstrating completion of an approved CQM course.

1.5 SECURITY

Security is critical to construction in Afghanistan, especially on roads and remote areas away from Coalition Force bases. The risk/threat level for the area surrounding this project site is (High.), relative to the chance of attack, improvised explosive devices (IEDs), kidnapping, theft, and vandalism. The Contractor must have an appropriate amount of security/protection to match the threat in the project area and along the supply routes. A detailed security plan in accordance with Section 01040 SECURITY shall be in accordance with Section 01335 SUBMITTAL PROCEDURES and approved by the Government before construction notice to proceed.

1.5.1 SITE SECURITY

The Contractor shall provide perimeter force protection security for the developing site. Security may include but is not limited to fence and private security guards. Perimeter security shall prevent unauthorized site access and provide safety protection to the Contractor work force and government personnel for the duration of the project. The contractor is solely responsible for security however local police shall be coordinated with regarding security.

1.6 ELECTRICAL WORKERS QUALIFICATIONS

Electrical work shall be performed by Qualified Personnel with verifiable credentials who are thoroughly knowledgeable with applicable code requirements. Verifiable credentials consist of a certificate of graduations from an approved trade school and required amount of experience, depending on work being performed, and should be identified in the proposal that is submitted. Qualified personnel is one who has received training in and has demonstrated skills and knowledge in the construction and operation of electrical equipment and installations and the hazards involved. This includes the skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment, to determine the nominal voltage of exposed live parts, the clearance distances and corresponding voltages to which the qualified person will be exposed.

1.6.1 SUPERVISORY ELECTRICIAN

Supervisory electricians must be graduates of an approved trade school, and must have two years of relevant electrician experience. Approved programs include but are not limited to the Afghanistan Technical and Vocational Institute (in Kabul), the Kunar Trades Training Center Center, and the Commerical Technical Training Center (in Jalalabad). Work experience resumes and graduation certificates shall be submitted and approved prior to commencement of any design or construction involving electrical work. Approval is granted by the Contracting Officer's Representative with guidance by the Quality Assurance Branch and/or the Safety Office of the Afghanistan Engineer District, US of the Army Corps of Engineers.

1.6.2 ELECTRICIANS

Electricians must be graduates of an approved trade school and must be able to provide upon request a certification of successful course work completion and graduation in addition to a resume of work experience.

2.0 LOCATION

The site is in [Kohsan, Herat] Province, Afghanistan at the location indicated in the attached site assessment.

3.0 UNEXPLODED ORDNANCE (UXO)

3.1 UXO REMOVAL AND CLEARANCE

The contractor shall search for, identify and clear all mines and unexploded ordnance (UXO) from the entire site. The contractor may only provide clearance/removal services via UN Mine Action Center for Afghanistan (UNMACA) accredited entities, and clearance shall be accomplished to the anticipated foundation depth as indicated in the contract. If sub-surface construction activities are to be performed on this site the minimum clearance depth will be 1 meter. Sub-surface clearance for construction activities in excess of 1 meter as defined by the contract parameters will also be the responsibility of the contractor. Clearance by definition is an investigation and clearance of all sub-surface metallic anomalies on the site. Clearance/removal may only be undertaken in accordance with International Mine Action Standards (IMAS), Afghanistan Mine Action Standards (AMAS), and applicable U.S. Army Corps of Engineer (USACE) Ordnance & Explosives (OE) safety standards. When mines and/or UXO's are identified, the Contractor shall place them in a location in accordance with IMAS/AMAS/USACE until destruction of the items can take place. Construction work shall not occur inside the safety exclusion zone based on the most probable munition (MPM) expected on the site. Construction will not commence in any area that has not been cleared to the specified depth. If sub-surface activities

The contractor will provide a standard UXO/Demining safety work plan to the US Army Corps of Engineers UXO / Demining COR for review prior to commencement of all UXO clearance / demining activities on the project sites. Once the UXO/ Demining clearance has concluded, the contractor shall provide the US Army Corps of Engineers UXO / Demining COR a clearance certificate for review and approval before any construction activities are to commence.

NOTE 1: The USACE does not need written clearance certificate approval from the UNMACA to approve the construction start activities. However, the contractor is responsible for providing a copy of the clearance certificate to the UNMACA for entry into their country wide database. A final signed copy of the UNMACE certificate must then be provided to the USACE UXO/Demining COR.

It is the responsibility of the Contractor to be aware of the risk of encountering UXO/mines and to take all actions necessary to assure a safe work area to perform the requirements of this contract. The Contractor assumes the risk of any and all personal injury, property damage or other liability arising out of or resulting from any Contractor action taken hereunder. The Contractor and its subcontractors may not handle, work with, move, transport, render safe, or disarm any UXO/mine, unless they have appropriate accreditations under the IMAS/AMAS from the UNMACA.

If a UXO/mine is encountered after a UNMACA-approved clearance certificate is provided to the Government, UXO/mine disposal shall be handled in accordance with Section 01015, Technical Requirements.

NOTE 2: Point of Contact for UXO/Demining Safety Work Plan review and approval shall be directed to the US Army Corps of Engineers Demining Safety/COR:

UXO Safety/ Demining COR, USACE

tan.uxo.demining.safety@usace.army.mil, Roshan:079-778-6848 Comm:540-667-2127

4.0 SUMMARY OF WORK

4.1 GENERAL REQUIREMENTS FOR FACILITIES

Work shall be executed in accordance with the Technical Requirements in Section 01015 and in the drawings. All requirements set forth in this Section, but not included in the Technical Requirements and/or drawings, shall be considered as set forth in both and vice versa. In case of question or ambiguity, the Contracting Officer (KO) shall make the final decision. The KO shall furnish the decision in writing if requested by the Contractor. Site adaptation of the provided designs shall be approved by the Contracting Officer's Representative (COR) prior to the start of work. The Contractor shall verify all dimensions provided in the scope of work prior to the start of any construction.

The contractor is encouraged to use Afghan labor and subcontractors to the maximum extent possible commensurate with technical, security or other requirements or necessary considerations. The intent of this contract is also to use locally procured materials and labor to the maximum extent possible, but this does not allow the contractor to make changes to the Government-provided drawings, specifications or design analysis.

The Site Adapt work shall include the preparation of design documents and the subsequent construction of the site improvements described within this Section, Section 01015 and the Government-furnished Drawings, with design adaptations to fit the actual site selected. The facilities required for each site shall include structures and all utilities as indicated in the Drawings and/or Specifications as provided. Site work and facilities may require design adaptations to meet site conditions, and these adaptations shall be designed and constructed in accordance with current U.S. and International Building Codes and standards and as described in these documents. The contractor must submit any changes to the Government-provided Drawings, Specifications and Design Analysis in accordance with Contract Section 1335, Paragraph "Variations."

Any standard that can be determined to be substantially equivalent to the standards specified in this document may be used, but it is the Contractor's responsibility to show the equivalency of the alternate standard. Reviewable documentation must be provided to the KO for approval prior to use. Equivalency documentation must be submitted in a timely manner so as not to affect the schedule of the project. No part of the time lost due to such actions shall be made the subject of claim for extension of time, excess costs, or damages by the Contractor. A partial listing of references is included within the Request for Proposal.

Work at individual projects sites consists of the construction of a District Headquarters compound in accordance with the contract documentation. The compound consists of a one-story Multi-Purpose Police Security facility (approx 27 m x 24 m) for sixty (60) police which includes a Dining Facility (DFAC), berthing areas and offices/conference areas, armory and jail cells. It also includes force protection structures, electrical system, plumbing/sewage system, and water delivery system. The contractor will insure that all seismic requirements are met in the construction of the facilities.

Site assessments will be provided for all of the sites, but must be verified by the contractor. The contractor is responsible for surveying, grading and drainage, and de-mining activities for the entire site. The entire site is defined by the limits of the Rights of Entry (ROE) and the site assessment.

Development of the compound contained within the required perimeter wall should utilize the most suitable land for construction based on a maximum 75 meters by 75 meters area. Area developed within the perimeter wall should not exceed 5625 square meters, nor should the length of perimeter wall exceed 300 meters. Site plans should be submitted that conform to this requirement and the requirements of the contract documents.

Leach fields may be installed outside the perimeter wall but must be installed within the limits defined by the ROE.

Manufacturer's standard performance guarantees or warranties that extend beyond a 1 year period shall be provided.

4.2 SEQUENCE OF WORK

After de-mining, but prior to the construction of any structures, the Contractor shall submit a well test plan, drill and test the water well, conduct well design activities, and submit all required information to AED for review and acceptance **prior** to installing any permanent well features (per AED Design Requirements document). Failure to follow this process may, at AED's discretion, result in the contractor having to remove the well casing and screen, re-drill the well and reinstall the proper features per the approved design. It is acknowledged that water may not be available at the site despite Contractor good faith efforts to find it. The Contractor shall drill a minimum of two wells to a minimum depth of 120 meters in an attempt to find water. If water cannot be found the contractor shall immediately notify the Contracting Officer's Representative (COR). The Contractor will be considered to have fulfilled the terms of the contract and will be entitled to the full price of the contract CLIN for well drilling, however, the Contractor must still furnish all other parts of the water distribution system as described in the specifications.

Dry wells must be de-commissioned in accordance with ASTM D 5299. The contractor must submit a written plan for de-commissioning wells.

4.3 PROGRAMATIC DESIGN CHARRETTE

The contractor shall prepare a programmatic Master Site Plan that will be generally applied to all construction locations. The Master Site Plan shall include all locations of construction office/storage containers, lay-down and construction debris removal area. The development of the master plan will include participation in a charrette that will be conducted at the Corps of Engineers Area or Resident Office administering the contract. The charrette shall be scheduled by the Government to occur within ten (10) calendar days of notice to proceed. The programmatic Master Site Plan shall be submitted to the Government no later than twenty (20) days after Notice to Proceed. Site specific adaptations of the programmatic Master Site Plan shall be submitted to the Government according to the schedule provided above.

4.4 SITE SPECIFIC SURVEYS & SUBMITTALS

For each individual construction site, the Contractor shall perform a geotechnical investigation as defined in Section 01015, perform a topographic survey of the site; adapt the programmatic Master Site Plan to the conditions applicable for specific locations; prepare a complete grading and drainage plan with existing grades, proposed grades, and building finished floor elevations based on the technical requirements; prepare a landscaping plan; prepare a water supply, disinfection, and distribution layout plan; and prepare a wastewater collection, septic tank, and leach field layout plan. If there is a requirement for on-site demolition, the Contractor shall prepare and submit a demolition plan for that particular site. The Contractor shall not locate facilities in wadis or dry river beds. The finish floor elevation of all facilities and slabs shall be a minimum of 150 mm above the 10-year flood elevation. The contractor shall provide drawings and details to describe any adaptations to the standard design that will be required for individual project sites as a site specific submittal as necessary. At a minimum, site specific submittals shall include: the geotechnical investigation report; drawings, details and calculations associated with well construction; drawings and details associated with demolition; drawings, and details associated with site grading; drawings, details, and calculations associated with well pump, disinfection system, distribution system construction; and drawings, details and calculations associated with sanitary sewer and leach field construction.

4.5 DEMOLITION AND GRADING

As applicable, the contractor shall demolish all existing structures and buildings at the site prior to commencement of new work. The Contractor shall remove and dispose of all debris, concrete, and foundations. The Contractor shall verify the location of debris disposal with the Contracting Officer's Representative. The Contractor shall perform complete final site grading after installation of all required drainage structures per the Drainage Plan that shall be prepared as part of this project and after installation of any other buried utilities or other project components.

Native crushed stone 100 mm thick shall be placed around all buildings, from the building wall or building landscaping out 2,000 mm and all areas of anticipated foot or vehicle traffic to reduce erosion and to provide dust control. Contractor shall compact underlying subgrade to a minimum 95% of the laboratory maximum dry density as determined by ASTM D 1557, Modified Proctor test.

4.6 WATER SYSTEM

Design and construct a Potable Water System (PWS), to include a well, protected in an enclosed water well house, water well pump(s), elevated water storage tank, and an underground pipe distribution network system. The water system shall be designed and constructed in accordance with the AED Design Requirements, latest version, and UFC 3-230-03A Water Supply which include the use of a capacity factor. Water demand required for fire fighting and for irrigation and landscaping needs shall not be included in design demand calculations.

A manually operated, lever, hand pump shall be installed at the well head. The pump shall be used to supply water when there is no electricity.

4.7 SANITARY SEWER SYSTEM

The sanitary sewer collection and treatment system shall be designed and constructed by the Contractor. The sanitary sewer collection system shall consist of gravity sewer pipe network and accessories such as manholes, cleanouts, and building service connections.

The sanitary sewer system shall be designed to accommodate the total facility compound population as specified in the Scope of Work and verified by the contractor, including use of the required Capacity Factor from UFC 3-240-09FA Domestic Water Treatment, Chapter 4.

System capacity shall be calculated based on a hydraulic waste load equivalent to 80 percent of the water usage rate.

The gravity sewer collection system shall connect to the sewage treatment system which shall be a traditional septic tank absorption field effluent disposal system, facultative pond system or other low maintenance, cost effective system.

Geotechnical investigation of the proposed sewage treatment site is required and the contractor shall design the sewage treatment system to be compatible with site and soil conditions.

At a minimum, design shall include the following:

- (a) Site Survey. The Contractor shall conduct a topographic survey to determine existing site characteristics. The Contractor shall conduct a utility survey to determine the locations of any nearby water lines, wells, sanitary sewers, storm sewers and electrical lines.
- (b) Percolation Testing. At proposed sites for holding ponds and the absorption field, the Contractor shall perform percolation tests in accordance with AED Design Requirements: Sanitary Sewer and Septic Systems. Percolation testing may be carried out with a shovel, posthole digger, solid auger or other appropriate digging instruments. Percolation tests shall be accomplished uniformly throughout the area where the absorption field is to be located. Percolation tests determine the acceptability of the site and serve as the basis of design for the liquid absorption.
- (c) Sanitary system layout. The Contractor shall design a sanitary system layout following requirements of Section 01015 this contract. Pipe, fittings, and connections shall conform to the respective specifications and other requirements as listed in Contract Section 01015 and all of its referenced codes.
- (d) Septic system design. The Contractor shall design a septic tank and absorption field system including all tank geometry, hydraulic loading, and inlet and outlet configurations, number of compartments and related site preparation and earthwork. Design will be per specifications provided in Section 01015.

4.8 SITE POWER, ELECTRICAL, DISTRIBUTION SYSTEM, AND FUEL STORAGE

Contractor shall site adapt the provided electrical design, modifying it where required to meet NEC (NFPA 70) requirements. Contractor shall refer to Section 01015 for detail descriptions and requirements of the Systems. Major Electrical Systems are, but not limited to: (a) On-Site Power Plant, (b) Site Secondary Power Distribution System, and (c) Interior Secondary Power Distribution System. A bulk fuel storage tank is required for a 30 day supply of fuel and shall be filled with fuel upon completion of the contract.

4.8.1 ON-SITE POWER PLANT

Power Plant shall consist of one (1) 80 KW (100 KVA) generator to provide service to the Headquarters Compound. Generator shall be provided inside "weather-proof" (IP54 or better) enclosure. Generator pad shall be constructed with a reinforced concrete floor slab. A covered shelter shall be provided. The shelter shall be pole mounted and shall provide coverage for the generator and switchboard pads.

4.8.2 SITE SECONDARY POWER DISTRIBUTION SYSTEM:

Site Secondary Power Distribution System shall include installation of underground cables in direct buried, thick walled, Schedule 80 PVC conduit from the Power Plant to the individual facilities. Except under traffic areas where the conduit shall be concrete encased.

4.8.3 INTERIOR SECONDARY POWER DISTRIBUTION SYSTEM:

Interior Secondary Power Distribution System, rated at 380/220 volts, 3 phase, 4 wire and 50 Hz. with wiring installed in embedded PVC or corrosion resistant metal conduits or surface mounted metal conduits, shall be provided in all facilities, including guard towers and guard shacks.

4.8.4 GENERATOR FUEL STORAGE:

The work shall include the fabrication and installation of the entire fuel storage and distribution system. Tanks shall be skid mounted and be provided with a concrete dike. The dike shall have enough capacity for the entire contents of the tank, plus 10 percent. Provide a molded neoprene isolation pad to isolate an above-ground tank from the concrete pad underneath. Steel tank supports specifically are prone to encounter premature rusting due to constant exposure to moisture and their incompatibility with concrete. Tank shall be designed and manufactured for horizontal installation. Tank shall be mounted on the tank manufacturer's standard support skid. Skid shall span the entire length of the tank and shall separate the tank from the reinforced concrete slab by a minimum of 200 mm. Indicate on the drawings the number and size of each tank man way required. Tanks of 3,780 to 45,430 L to capacity will be provided with 760 mm diameter man ways. Tanks larger than 45,430 L will be provided with 915 mm diameter man ways. Tanks 3,780 L and larger will be provided with a minimum of 1 tank man way to allow for internal tank access. Piping will not penetrate through access man ways. Tank shall be provided with a combination cleanout and gauge connection. Vent pipe sizing shall be not less than 32 mm nominal inside diameter. Vent shall be the rupture disc type calibrated to burst at 13.8 kPa pressure, and operate at 80 percent of burst setting. Tank shall be provided with an overfill alarm system. Tank shall be provided with 2 stick gauges graduated in m and mm. Stick gauge shall be of wood and treated after graduating to prevent swelling or damage from the fuel being stored. Each storage tank shall be provided with an automatic analog reading gauge which is directly mounted to a tank's man way cover. Provide an in-line centrifugal pump as part of the day tank package for fuel transfer from the bulk storage tanks to the day tank. Day tanks shall provide sufficient fuel for four hours of generator operation without refill. Provide cathode protection for metal components. Storage tanks shall be handled with extreme care to prevent damage during placement and shall be installed in accordance with the manufacturer's installation instructions. Piping shall be inspected, tested, and approved before buying, covering, or concealing. Piping shall be installed straight and true to bear evenly on supports. Piping shall be free of traps, shall not be embedded in concrete pavement, and shall drain toward the corresponding storage tank. Any pipe, fittings, or appurtenances found defective after installation shall be replaced. Below ground nonmetallic

pipe shall be installed in accordance with pipe manufacturer's instructions. Belowground piping shall be laid with a minimum pitch of 25 mm per 6 m.

4.9 FORCE PROTECTION MEASURES

The Contractor shall construct force protection measures as detailed in the drawings which include perimeter walls, gates, vehicle barriers, guard shacks and guard towers. Construct perimeter walls as indicated on the site plan from native stone, as shown on the drawings. Install outriggers and single-strand concertina wire on top of the wall. The walls shall measure at least 2.4 m high from grade inside the compound. Interior grade shall be higher than exterior grade. Wall thickness shall be not less than 600 mm. Guard towers shall be constructed at all four site corners at an offset to allow visual observation along the outside face of the wall. Outrigger supporting arms shall be "Y" shaped with post securely embedded into the top of the wall. Posts shall conform to the IBC standard for Pipe, Steel, Hot Dipped Zinc Coated (Galvanized) Welded.

4.9.1 PERIMETER WALL

Masonry or native stone walls shall be constructed around the perimeter of the site. The height of the walls shall measure at least 2.4 meters from the inside and outside grades. The wall shall be topped with barbed wire outriggers and single-coil concertina style razor wire. The ground grade shall slope away from the wall for at least 5 meters and shall be kept a minimum of 2.4 meters below the top of wall for a minimum distance of 10 meters. The wall shall be designed to keep all pedestrian and truck traffic outside the compound from having a visual line of site into the compound.

4.9.2 ECP

The Entry Control Point (ECP) will include a manually operated swing steel gate for vehicles and a separate steel swing gate for personnel. The ECP will also include two guard shacks. Design vehicle for ECP entrance is a fuel delivery/septic tank truck typical for region of project site.

The Escape Hatch will include a manually operated, steel, swing gate.

4.9.3 GATES

The gates shall be swing type. Hinged gates shall be a pair of 3.65 m wide x 2.4 m high leaves, constructed of steel plates, steel tube frame, and steel tube intermediate posts and rails at the ECP and a single gate, 3.65 m wide x 2.4 m high and similarly constructed at the Escape Hatch. Where site constraints prohibit vehicular sized swing gate at the Escape Hatch provide personnel sized steel swing gate.

The design of the gates shall insure that it is dimensionally stable, square, true and planar. Gate leafs shall not rack or deflect when install on its hinges. Gates shall have a sufficient number of hinges, anchor mounted to the exterior masonry walls, to support each gate leaf. Provide a locking mechanism that holds the gates together when in the closed position as well as a drop bolt that engages a steel sleeve embedded in the pavement.

4.9.4 GUARD SHACKS

Construct one guard shack, located outside the compound at the stand-off ECP location of 3.1 meters. Construct a second guard shack inside the perimeter wall adjacent to the personnel gate. Construction shall be in accordance with the drawings.

4.9.5 GUARD TOWERS

The contractor shall construct four (4) guard towers in accordance with the drawings at the four corners of the compound. Guard towers shall be offset from force protection wall corner to allow sight down the

outside face of the wall. Access ladders shall be constructed per OSHA Standards. Guard towers shall be provided with general lighting and shall be fitted with one 360-degree omni-directional searchlight. Two weather-resistant duplex receptacles shall be provided as required for general use. The area in the immediate exterior vicinity of the guard tower shall be provided with an all-weather non-slip surface and shall be graded to sufficiently drain away from structure.

4.10 FENCING AND BARRICADES

Fencing shall consist of the types shown or described herein. Chain link fences, 2 meters in height, shall be provided around both the water supply and power generation/fuel storage areas. Double swinging gates should be provided in both fences to allow direct vehicular access to the well, and to the generator. Gates should include locking mechanisms that can be secured with a padlock to prevent unauthorized entry. Entire fences, including gates, should be topped with triple strand barb wire.

4.11 PARKING, ROADS, & WALKWAYS

The Contractor shall design and construct the entire road and parking network. The roads shall be designed to carry traffic of a 40 metric-ton five-axle vehicle. A storm drainage system shall also be included. The road layout shall provide access to entry control points, parking lots, vehicle maintenance facilities, fuel points, generator yard, sewage septic tank, and the trash collection point. Provide parking area for a minimum of 4 vehicles inside the compound. Road design shall be designed per Section 01015, Technical Requirements. Roadways and sidewalks are required as shown on attached drawings and shall be designed and constructed based upon recommendations from geotechnical analysis as required herein.

Design and provide a network of sidewalks to connect the buildings.

4.12 VEHICLE RE-FUELING POINT

The Contractor shall design and construct a low profile vehicle re-fueling point, as specified in Section 01015, capable of storing 19,000 liters of diesel. It shall be located as near as practicable to the Generator fuel storage facility. The Contractor shall provide a full supply of fuel to the tanks at the time of turnover to the Government. The Contractor shall provide capability for fuel delivery from two locations – one from outside the wall surrounding the compound and one directly into the fuel tanks. The delivery point outside the compound wall shall be lockable and securable from tampering or sabotage. Provide a fuel dispensing island with one fuel dispenser. Vehicle Re-Fueling Point shall have a metal roof covering.

A typical vehicle refueling point drawing is provided in the Appendix. Contractor shall modify the vehicle refueling point for only diesel fuel and one dispensing pump.

4.13 TRASH POINT

The Contractor shall place, in a location convenient for easy removal, a trash collection point. It shall be located outside the compound walls. The trash point shall be a 1.8 m x 1.8 m concrete pad with 1.8 meter high stucco finished masonry wall about the perimeter. Wall shall be paced on reinforced concrete footings and shall have a concrete coping similar to the force protection wall. One side shall have a 1.2 m wide gate entrance.

4.14 DISTRICT HEADQUARTERS BUILDING

The contractor shall site adapt and construct the Police Security Building in accordance with the scope of work, technical specifications, and drawings. The District Headquarters Building shall consist of a reinforced concrete frame, foundation, floor slab, and roof slab, with masonry infill walls. Truss supported metal roof shall be provided over concrete roof slab.

This facility will contain the following functions: berthing of personnel; kitchen/dining; latrines to include sinks, toilets, showers; security area to include holding cells, latrines, weapons storage, and guard room;

and administrative space (offices). An outside wood stove kitchen shall be provided. Specific requirements are as indicated below:

(a) Foundation Work and Floor - Construct the foundation in accordance with the contract documentation. Foundation excavation shall extend a sufficient distance from walls and footings to allow for placing and removal of forms. The Contractor shall direct surface water away from the excavation to prevent erosion and undermining the foundation by constructing diversion ditches, dikes, or other site grading.

(b) Holding Cells - Construct holding cells in accordance with all contract documents. The holding cells shall not have windows and each holding cell shall have solid reinforced walls as indicated in the drawings. Each holding cell will have a 11-13 gauge steel door with a dead-bolt lock. The door shall have a pass-through slot for passing of food trays with a hinged cover lockable from the outside. Built into the bottom of the door shall be a 300 mm wide by 500 mm tall door for passing a bucket in and out with a hinged cover lockable from the outside. Install a 2400 mm long bench securely bolted to the floor with a wall mounted steel bar. Contractor will construct an Afghan toilet (eastern style) oriented in the correct cultural direction with a screen about 1300 mm high in front of the toilet. Per design, separate gender holding cells will be constructed. An adjacent small mechanical room, as shown on drawing A-1, is required for hot water tank storage and a small air handling unit to provide ventilation and heating to the cells.

(c) Armory (Weapons Storage) - The armory shall have solid reinforced walls, as indicated in the drawings, with a 11-13 gauge steel door with a dead-bolt lock. Roof slab shall be a 200mm reinforced concrete slab.

(d) Dining Area and Kitchen – The Contractor shall design and construct a kitchen and dining area in accordance with the contract documents. The complete and functional dining and kitchen facility shall be capable of feeding up to thirty (30) personnel at one sitting based on the menu and functional requirements of the ANP and the local availability of food service equipment and supplies. Dining area walls and doors shall have no interior glazing. The contractor shall provide 14 gauge, type 304, (18-8) minimum stainless steel work counters, shelving, scullery sink, stoves, electrical capacity, outlets, and space for future refrigerators and freezers (not in contract) within the DFAC. A 1200 x 1800 mm serving opening is required between the dining area and kitchen with the purpose of both serving food and for dish return. Opening shall have fire rated shutter and no glazing allowed. Equipment shall be durable, easy to operate, maintain, clean, and be locally available. All work counters and scullery shall have an 800 mm deep work surface at 900 mm above the floor and supported by pairs of stainless steel legs (front and back of counters) at 1800 mm maximum centers. Provide integral stainless steel backsplashes at each side adjoining a wall (trim as required at the pass-thru opening). Work counters shall be continuous and fixed to the walls or 800 x 1800 minimum units. See floor plan for proposed kitchen layout. Design must be submitted and approved by the contracting officer prior to purchasing or installing any equipment or furnishings.

The stoves in the kitchen shall be propane type. Stoves in exterior kitchen annex shall be wood burning type. Propane shall be provided with standard 100 lb bottles. Trench type floor drains shall be installed in front of the dishwashing area and the propane and cooking stoves. Install a large wash basin with a low rim height designed for washing very large pots. Fire protection is to be provided by portable fire extinguishers at easily accessible locations. Kitchen adjacent pantry room storage is required.

Technical requirements for the propane stoves, kitchen ventilation and wood stoves are provided in Section 01015.

(e) Plumbing – Plumbing fixtures shall be in accordance with section 01015

(f) Clotheslines – Provide clotheslines behind the building, approximately 5 m in length with 4 lines across spaced 410 mm apart and of sufficient strength to prevent sagging when all of the lines are loaded.

4.15 FIRE PROTECTION FEATURES:

No sprinkler system is required, but alarm and smoke detection system is required and detailed in section 01015. All walls, both interior and exterior area 200 mm CMU construction and constitute fire wall protection. All corridor doors shall be 20 minute rated. Both dining room doors shall be 90 minute rated, contain no glazing and have panic hardware. All door glazing must be fire rated and not exceed 0.065 SM in area. Complete fire door requirements are shown on the attached drawings.

-- END OF SECTION --

SAMPLE TASK ORDER: 01015

SECTION 01015

TECHNICAL REQUIREMENTS – DESIGN/BUILD

1.0 GENERAL

1.1 COMPLIANCE

The Contractor's design and construction must comply with technical requirements contained herein. The designer shall have a minimum of 5 years experience with the design and construction of the same magnitude and complexity as required in this project. The Contractor shall provide design and construction using the best blend of cost, construction efficiency, system durability, ease of maintenance and environmental compatibility.

1.2 MINIMUM & ALTERNATE REQUIREMENTS

The design and product requirements stated in these documents are minimum requirements. The technical requirements listed in Codes and Technical Criteria, Section 1.8, apply to this project. Any deviation from the technical requirements shall be approved by the Contracting Officer. Request for deviations shall be submitted for approval. The Contractor is encouraged to propose alternate design or products (equipment and material) that are more commonly used in the region; but these variations shall be equal in performance from a technical standpoint as well as more cost effective or allow for more timely completion. Variations shall furnish the same system safety, durability, ease of maintenance and environmental compatibility. The Contractor will be required to submit information as specified in Section 01335, 3.6.4 Variations, for all proposed variations with which to make a comprehensive comparison of the proposed alternate. All variations of approved designs must be approved by the Contracting Officer.

1.3 ASBESTOS CONTAINING MATERIALS

Asbestos containing material (ACM) shall not be used in the design and construction of this project. If no other material is available which will perform the required function or where the use of other material would be cost prohibitive, a waiver for the use of asbestos containing materials must be obtained from the Contracting Officer.

1.4 SAFETY

1.4.1 Unexploded Ordnance (UXO)

It is the responsibility of the Contractor to be aware of the risk of encountering UXO/mines and to take all actions necessary to assure a safe work area to perform the requirements of this contract. If during construction, the contractor becomes aware of or encounters UXO/mines or potential UXO/mines, the contractor shall immediately notify the COR, mitigate any delays to scheduled or unscheduled contract work, and clear/remove the UXO/mines. The contractor may only provide clearance/removal services via UNMACA accredited entities. Clearance/removal may only be undertaken in accordance with IMAS/AMAS/USACE standards. The Contractor assumes the risk of any and all personal injury, property damage or other liability arising out of or resulting from any Contractor action taken hereunder. Scrap metal shall be the property of the Host Government. The scrap metal on site shall be moved to an area away from the site perimeter as directed by the Contracting Officer's Representative and left for the Host Government to remove and/or salvage.

NOTE: For previous UXO/mine information, and a copy of the clearance certification the following points of contact from the UN Mine Action Center of Afghanistan are provided:

Mohammad Sediq, Chief of Operations,
 Email: sediq@unmaca.org
 Cell: +93 070 295207

Hansie Heymans, Chief Information Officer,
 Email: hansie@unmaca.org
 Cell: +93 070 294286

1.4.2 Unexploded Ordnance (UXO) Safety Support During Construction.

It is the responsibility of the Contractor to be aware of the risk of encountering UXO and to take all actions necessary to assure a safe work area to perform the requirements of this contract. If after the entire site has been cleared of UXO/mines per the International Mine Action Standards (IMAS) and clearance is done to the anticipated foundation depth, the Contractor becomes aware of or encounters UXO or potential UXO during construction, the Contractor shall immediately stop work at the site of the encounter, move to a safe location, notify the COR and Demining Contractor/ Demining Sub-Contractor, and mitigate any delays to scheduled or unscheduled contract work. The Demining Contractor/ Demining Sub-Contractor shall remove and dispose of UXO's per the International Mine Action Standards (IMAS). These standards can be found at <http://www.mineactionstandards.org>. The Contractor assumes the risk of any and all personal injury, property damage or other liability, arising out of and resulting from any Contractor action hereunder. In these cases the contractor shall be required to identify and dispose of the ordnance.

1.5 LIMITATION OF WORKING SPACE

The Contractor shall, except where required for service connections or other special reason(s), confine his operations strictly within the boundaries of the site. Workmen will not be permitted to trespass on adjoining property. Any operations or use of space outside the boundaries of the site shall be by arrangement with all interested parties. It must be emphasized that the Contractor must take all practical steps to prevent his workmen from entering adjoining property and in the event of trespass occurring the Contractor will be held entirely responsible.

Areas located immediately outside the construction area are known to contain mines and unexploded ordnance (UXO). Contractors assume all risks when venturing in or out of the designated work area.

1.6 TEMPORARY STRUCTURES

The Contractor shall erect suitable temporary fences, lighting, and necessary structures to safeguard the site, materials and plant against damage or theft and for the protection of the general public and shall adequately maintain the same throughout the course of the contract.

1.7 SUBCONTRACTORS

Compliance with the provisions of this section by subcontractors will be the responsibility of the contractor.

1.8 LIST OF CODES AND TECHNICAL CRITERIA

The following codes and technical criteria and those referenced therein shall be required for this project. References within each reference below shall be required and adhered to. If there is conflict in the criteria the most stringent requirement shall be applied. This list is not exhaustive and is not necessarily complete.

ACI 318 Building Code Requirements for Structural Concrete (2002), American Concrete Institute
 ACI 530/ASCE 5/TMS 402, Building Code Requirements for Masonry Structures (2002)
 Air Force Manual 32-1071, Security Engineering, volumes 1-4, 1 May 1994

American Institute of Steel Construction (AISC), Specifications for Structural Steel Buildings
 American Water Works Association, ANSI/AWWA C651-99 standard
 ASCE 7, Minimum Design Loads for Buildings and Other Structures (2002)
 ASHRAE - American Society of Heating, Refrigeration and Air-Conditioning
 ASME - American Society for Mechanical Engineering
 ASTM - American Society for Testing and Materials
 ASTM-D-1586 Standard Test Method for Standard Penetration Test
 AWS D1.1, Structural Welding Code – Steel (2000), American Welding Society
 EIA ANSI/TIA/EIA-607: (1994) Commercial Building Grounding/Bonding Requirement Standard
 Factory Mutual (FM) Approval Guide-Fire Protection (2002)
 IBC - International Building Codes, 2006 edition (and its referenced codes including those inset below);
 except structural design.
 IEEE C2, National Electrical Safety Code (NESC), latest edition
 IFGC – International Fuel Gas Code, latest edition
 IMC – International Mechanical Code, latest edition
 IPC – International Plumbing Code, latest edition
 Lighting Handbook, IESNA, latest edition
 NFPA 1, General Fire Protection, latest edition
 NFPA 10, Portable Fire Extinguishers, latest edition
 NFPA 58, Liquefied Petroleum Gas Code, latest edition
 NFPA 70, National Electrical Code, 2005 edition
 NFPA 72, National Fire Alarm Code, 2002 edition
 NFPA 75, Standard for the Protection of Information Technology Equipment
 NFPA 80, Fire Rated Doors and Windows, latest edition
 NFPA 101, Life Safety Code, 2006 edition
 NFPA 110, Standard for Emergency and Standby Power Systems, 2005 edition
 NFPA 221, Standard for
 Chimneys, Fireplaces, Vents, And Solid Fuel–Burning Appliances, latest edition
 NFPA 1141, Site Fire Protection, latest edition
 SMACNA - Sheet Metal and Air Conditioning Contractors' National Association, Standards and Guides,
 latest editions
 International Mine Action Standards, latest edition; (see <http://www.mineactionstandards.org> for copy of
 standards)
 TM 5-811-1 Electrical Power Supply and Distribution
 UFC 1-200-01, Design: General Building Requirements
 UFC 1-300-07A Design Build Technical Requirements
 UFC 3-220-03fa Soils and Geology
 UFC 3-230-03a, Water Supply, 16 Jan 2004
 UFC 3-230-04a, Water Distribution, 16 Jan 2004
 UFC 3-230-06a, Subsurface Drainage, 16 Jan 2004
 UFC 3-230-07a, Water Supply: Sources and General Considerations, 16 Jan 2004
 UFC 3-230-08a, Water Supply: Water Treatment, 16 Jan 2004
 UFC 3-230-09a, Water Supply: Water Storage, 16 Jan 2004
 UFC 3-230-10a, Water Supply: Water Distribution, 16 Jan 2004
 UFC 3-230-13a, Water Supply: Pumping Stations, 16 Jan 2004
 UFC 3-230-17FA, Drainage in Areas Other than Airfields, 16 Jan 2004
 UFC 3-240-03N, Operation and Maintenance: Wastewater Treatment System Augmenting Handbook, 16
 Jan 2004
 UFC 3-240-04a, Wastewater Collection, 16 Jan 2004
 UFC 3-240-09fa Domestic Wastewater Treatment 16 Jan 2004
 UFC 3-240-07fa Gravity Sewers 16 Jan 2004
 UFC 3-240-04A Wastewater Collection 16 Jan 2004
 UFC 3-250-01FA Pavement Design for Roads, Streets, Walks, and Open Storage Areas
 UFC 3-250-18FA General Provisions and Geometric Design for Roads, Streets, Walks, and Open
 Storage Areas
 UFC 1-300-09N, Design Procedures

UFC 3-310-01, Structural Load Data
 UFC 3-310-02A, Structural Design Criteria for Buildings
 UFC 3-501-03N, Electrical Engineering Preliminary Considerations, 16 Jan 2004
 UFC 3-520-01, Interior Electrical Systems, 10 June 2002
 UFC 3-530-01AN, Design: Interior and Exterior Lighting and Controls, 19 Aug 2005
 UFC 3-540-04N Design: Diesel Electric Generating Plants, 16 Jan 2004
 UFC 3-550-03FA Design: Electrical Power Supply and Distribution Systems, 1 Mar 2005
 UFC 4-020-03, Security Engineering: Fences, Gates, and Guard Facilities, 14 June 2007
 UFC 4-022-01, Security Engineering: Entry Control Facilities/Access Control Points, 25 May 2005
 UL 752, Bullet Resisting Equipment, 2000 or later
 USCINCCENT OPORD 97-1
 Overseas Environmental Baseline Guidance Document, Department of Defense, May 2007
 The publications to be taken into consideration shall be those of the most recent editions.

Unified Facility Criteria (UFC) is available online at http://www.wbdg.org/ccb/browse_cat.php?o=29&c=4
 In addition, technical criteria provided in USACE-AED Design Requirements (most recent version) shall be required for use in design and construction specifications as indicated in the following documents.
 The following design criteria shall be used:

AED Design Requirements - Site Layout Guidance, latest version
 AED Design Requirements - Well Pumps & Well Design/Specifications, latest version
 AED Design Requirements – Water Tank and Water Distribution Systems, latest version
 AED Design Requirements – Chlorinators, latest version
 AED Design Requirements - Hydro-Pneumatic Tanks, latest version
 AED Design Requirements – Hydrology, latest version
 AED Design Requirements - Sanitary Sewer and Septic Systems, latest version
 AED Design Requirements - Grease Trap, latest version
 AED Design Requirements - Oil-Water Separator, latest version
 AED Design Requirements - Package Wastewater Treatment Plants and Lagoons, latest version
 AED Design Requirements – Geotechnical Investigations for USACE Projects, latest version
 Standards other than those mentioned above may be accepted if the standards chosen are internationally recognized and meet the minimum requirements of the specified standards. The Contractor shall be prepared to submit proof of this if requested by the Contracting Officer.

1.9 AED Design Requirements documents

AED Design Requirements documents listed above shall be adhered to in this contract. These documents are available from the Contracting Officer and shall be used as the basis for design and construction, and for selecting options within the United Facilities Guide Specifications (UFGS). It is the contractor's option to use specifications contained in the AED Design Requirements Documents, when provided, or to adapt the UFGS specifications to match the requirements provided in the AED Design Documents and specifications. Site or project specific data and requirements in the AED Design Requirements documents shall supersede UFGS language where there are differing criteria which must be evaluated and selected.

2.0 SITE DEVELOPMENT

2.1 GENERAL

The project includes furnishing all materials, equipment and labor for constructing electrical, water, communication, sanitary sewer and storm sewer service lines, as applicable, and connecting to the existing utility networks.

2.2 ENVIRONMENTAL PROTECTION

2.2.1 Applicable regulations

The Contractor shall comply with all Host Nation laws, rules, regulations or standards concerning environmental pollution control and abatement with regard to discharge of liquid waste into natural streams or manmade channels. The contractor shall review host nation and U.S. Government environmental regulations with the contracting officer prior to design and discharge of any liquid wastes into natural streams or manmade channels.

2.2.2 Notification

The Contracting Officer will notify the Contractor in writing of any observed non-compliance with the foregoing provisions. The Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No extension of time or damages will be awarded to the Contractor unless it was later determined that the Contractor was in compliance.

2.2.3 Spillages

Measures shall be taken to prevent chemicals, fuels, oils, greases, bituminous materials, waste washings, herbicides and insecticides, and construction materials from polluting the construction site and surrounding area.

2.2.4 Disposal

Disposal of any materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., shall be taken to a dumpsite off site and subject to the approval of the Contracting Officer. Burning at the project site for the disposal of refuse and debris will not be permitted.

2.3 CIVIL SITE DEVELOPMENT

2.3.1 Site Plan

The contractor shall prepare plat or plan of property as part of the design package consists of a Boundary Survey. The survey shall show the closure of the property boundary consisting of identifying all property corners, establishing horizontal and vertical control listing all bearing and distances of property lines from the centerline of all adjacent roads. The contractor shall place property corner markers and a monument on the property showing site elevations, coordinate grid systems and WGS 84 latitude longitude. This survey shall meet the requirements of World Geodetic System 1984 (WGS 84 UTM Zone 42N in decimal degrees. The survey design shall include topographic map and the locations of all building corners, structures, major trees, road right of ways, names of roads, widths of roads, easements, right of ways, setbacks, parking and paving areas, storage containers, stoops, sidewalks and walkways, above ground utilities, electrical and bunker locations. The contractor shall identify and show perimeter walls, fences, Hesco barriers, guard towers and entry control point structures. The contractor shall locate the facilities in general agreement with the drawings included and any requirements in the Scope of Work 01010. All site features shall be clearly defined and dimensioned on the site plan. Buildings shall be located to provide access for emergency vehicles and fire fighting. Roads and parking areas shall be designed for turning radius of the largest vehicle entering the compound. The site plan shall show geometric design of the site, including applicable dimensions of all exterior facilities, mechanical equipment, pavements, utilities, etc. Required facilities are described in the following sections of this specification. All roads and areas where tractor-trailer vehicles will travel shall be designed for the worst case turning radius. Design and construction of roads and pavements shall be based on recommendations from geotechnical investigation required herein. All site plans and master plans shall be drawn in the following projection and datum for incorporation into the U.S. Army Corps of Engineers GIS system:

WGS 1984 UTM Zone 42 N

2.3.2 Demolition

Demolition shall include removal of all structures, foundations, pavements, and utilities, to include clearing and grubbing. All refuse and debris shall be disposed of off of the site as described in paragraph 2.2.4 DISPOSAL. Holes and depressions shall be backfilled and compacted in lifts not to exceed 300mm in height. Fill materials shall be composed of satisfactory soils or aggregates defined in ASTM D 2487 as GW, GP, GM, SP, SM, and SW. Minimum soil compaction shall be 95 percent of maximum density as defined in ASTM D 1557

Scrap metal shall be the property of the Host Government. The scrap metal on site shall be moved to an area away from the site perimeter as directed by the Contracting Officer's Representative and left for the Host Government to remove and/or salvage. Demolished fencing and concertina wire shall be neatly rolled up for reuse by the host government. Likewise, used fence posts and outriggers shall be neatly stockpiled for reuse by the host government.

2.3.3 Site Grading & Drainage

The contractor will provide all necessary site grading to insure adequate drainage so that no areas will be flooded due to a rainfall of a 10-year frequency. Drainage of the area should be compatible with the existing terrain. Building floor elevation shall be a minimum 150mm above grade and slope away from the building on all sides at a minimum of 5% for 3 meters. Protection of facilities from flood waters originating offsite of an installation is required and shall be based on a rainfall for a 25-year frequency event. This shall include the design or evaluation of bridges, culverts, and causeways.

Rainfall data utilized for hydrology calculations shall be based on data obtained from meteorological records collected in Afghanistan. National agencies may be consulted for data. In the absence of site specific data, intensity-duration-frequency curves contained in the AED Design Requirements – Hydrology July 2009 shall be used by extrapolating the rainfall intensity information from the stations in closest proximity to the project. Under no circumstances will relationships developed by extrapolation from foreign countries be used for hydrologic studies.

2.3.4 Roads

Aggregate roads are required within the compound. All roads shall be a surface 7.3 meters (24 feet) wide, unless otherwise noted, graded for proper drainage, provided with necessary drainage structures and completed with prescribed surfaces in accordance with applicable sections of UFC 3-250-18FA and UFC 3-250-01FA. Aggregate pavement surface should consist of 150mm (6 inches) thick aggregate base course material compacted to 95% maximum proctor density, placed above 150mm of scarified subgrade compacted to 95% maximum density. Provide 1.0 meter wide shoulder on both sides of roadways, consisting of a surface of aggregate base course material and it should be 150mm thick @ 2.0% slope. Contractor shall notify the Contracting Officer immediately if initial site survey determines that the area hydrology requires major drainage structures or bridges.

For Optional Item: Paved roads are required where stated. All roads shall be of wearing surface 7.3 meters (24 feet) wide, unless otherwise noted, graded for proper drainage, provided with necessary drainage structures and completed with prescribed surfaces in accordance with applicable sections of UFC 3-250-18FA and UFC 3-250-01FA. The compound (cantonment area) roads sections shall have 200 mm (8 inch) base course minimum compacted at 98% maximum proctor density and shall be surfaced with minimum 50 mm (2 inch) hot mix asphalt concrete compacted at 100%, unless otherwise noted. Contractor shall notify the Contracting Officer immediately if initial site survey determines that area hydrology requires major drainage structures or bridges. Also, the Contracting Officer shall be immediately notified if the required lengths of road or preexisting conditions are determined to be substantially or materially different than the above-described conditions/estimates

2.3.4.1 Bridges and Site Grading Plan

Preliminary investigation indicates no need for bridges or major drainage structures. The Contractor shall notify the Contracting Officer immediately if initial site survey determines that area hydrology requires major drainage structures or bridges. The contractor shall design a site grading plan that provides positive drainage and minimizes the requirement for major structures in a cost effective manner.

2.3.4.2 Parking Areas and Motor Pools

Contractor shall construct parking and storage areas using aggregate surface (AC pavement is an option item that will be itemized on the 00010 Proposal Schedule). Aggregate surface should consist of 150mm (6 inches) thick Aggregate Base Course (ABC) material compacted to 95% maximum proctor density, placed above 150mm of scarified subgrade compacted to 95% maximum density. Provide 1.0 meter wide shoulder around all parking areas and motor pools, consisting of a surface of ABC material and it should be 150mm thick @ 2.0% minimum slope.

ABC material must be well graded, durable, uniformly moistened, and mechanically stabilized by compaction. Degree of compaction shall be expressed as a percentage of the maximum density obtained by the test procedure in ASTM D 1557.

2.3.5 FORCE PROTECTION DESIGN

The Contractor shall design and construct force protection measures to include a complete perimeter wall, Guard Towers, Compound Illumination System, Security Communication Systems and Entry Control Points (ECP). ECP shall be composed of a Primary ECP, a Stand-Off ECP, and a Secondary ECP. The Force Protection design shall incorporate minimum setbacks for new facilities to maximum extent possible as permitted by size of the site and the requirements of the user. See Appendix A for Guard Shack and Guard Tower building designs with standard details for Perimeter Security wall, and Active and Passive Vehicle Barriers.

2.3.5.1 Perimeter Security Wall

Native stone masonry walls, 600mm thick, shall be constructed around the perimeter of the site. The height of the walls shall measure at least 2.4 meters from the inside grade. Inside grade shall in all cases be higher than outside grade. The foundation width shall be based on USACE standard drawings. The wall shall be capped with a cast-in-place reinforced concrete capping. Outriggers see paragraph 2.3.5.2.3, to support 6 strands of barbed wires and a single-coil concertina style razor wire shall be provided and installed by the contractor. Site grading must slope away from the walls for at least a distance of 5 meters. The wall shall be designed to prevent visual access to the inside of compound by all pedestrian and vehicular traffic outside the compound which may require the wall to be built at a higher level in some locations. Any penetrations through the Perimeter Security Wall shall only be for site drainage purposes and shall have force protection such as a welded bar grill, welded grating, or other pre-engineered barrier.

2.3.5.2 Perimeter Wall Access Gates

2.3.5.2.1 Swinging Gates

Double Swing Gates shall be provided for vehicle access at the Primary Entry Control Point and be constructed of steel and be a pair of 3.65 m wide x 2.4 m high steel leaves, constructed of 6mm steel plate skins, steel tube frame, and steel tube intermediate posts and rails. A Personnel Gate shall be provided for personnel access and be constructed of steel and be 1.5 m wide x 2.4 m high steel leaves, constructed of 6mm steel plate skins, steel tube frame, and steel tube intermediate posts and rails. A single swing gate shall be provided on the opposite side of the compound for an escape hatch and shall be a minimum of 3.65m x 2.4 m. Gate design shall insure it is dimensionally stable, square, true and planar. Gate leaves shall not rack, shake or deflect during operation and the hinges are to be designed

and constructed to support the entire weight of each leaf. Gates shall have a sufficient number of hinges, anchor mounted to the exterior masonry walls, to support each gate leaf. Provide a locking mechanism that holds the gates together when in the closed position as well as a drop bolt that engages a steel sleeve embedded in the pavement. Each gate shall be provided with viewports 200mm x 50mm.

2.3.5.3 Outriggers

Outrigger supporting arms shall be "Y" shaped with middle post, securely embedded 400mm by a 50mm diameter metal tube into the top of the wall. Posts shall conform to ASTM F 1083, Pipe, Steel, Hot Dipped Zinc Coated (Galvanized) Welded. Outriggers shall be spaced a maximum of 3000mm on center.

2.3.5.4 Reinforced Barbed Tape

Reinforced barbed tape shall be 600 mm diameter concertina style coil consisting of 31 loops. Each loop shall consist of 19 barb clusters per loop. Adjacent coils loops shall be alternately clipped together at three points about the circumference to produce the concertina effect upon deployment. Spacing between attachments points when deployed shall be 400 mm. The reinforced barbed tape shall be fabricated from 430 series stainless steel with hardness range of Rockwell (30N) 37-45 conforming to the requirements of ASTM A 176. Each barb shall be a minimum of 30.5 mm (1.2 inch) in length, in groups of 4, spaced on 102 mm (4 inch) centers. The stainless steel core wire shall have a 2.5 mm (0.098 inch) diameter with a minimum tensile strength of 895 MPa. Sixteen gauge stainless steel twistable wire ties shall be used for attaching the barbed tape to the barbed wire. The reinforced barbed tape shall be equivalent to NSN: 5660-01-457-9852.

2.3.5.5 Chain-Link Fence and Gates

Provide chain-link fence and gates around Well House chain link fence and gate fabric shall be No. 9 gage wires woven into a 50 mm diamond mesh. Fabric shall be coated with 366 grams per square meter zinc galvanizing. Posts shall be ASTM F 1083 Pipe, Steel, Hot Dipped Zinc Coated (Galvanized) Welded or equal. Top of fence and gates shall be provided with outriggers and reinforced barbed tape as indicated above. Post sizes shall be as shown on drawings.

The gates shall be swing type. Hinged gates shall be a pair of 3 m wide x 2.4 m high leaves, constructed of a steel tube frame and steel tube intermediate posts and rails. The design of the gates shall insure that it is dimensionally stable, square, true and planar. Gate leaves shall not rack or deflect when install on its hinges. Gates shall have a sufficient number of hinges, anchor mounted to the exterior masonry walls, to support each gate leaf. Provide a locking mechanism that holds the gates together when in the closed position as well as a drop bolt that engages a steel sleeve embedded in the pavement.

2.3.5.6 Primary Entry Control Point (ECP)

Primary ECP shall be laid out and constructed by the Contractor to facilitate secure entrance of authorized vehicles into the compound. A Guard Shack shall be provided both inside and outside the compound as part of the Primary ECP. Entrance to the Primary ECP shall be paved with the same surface as required for the interior roads of the compound, and shall have a two-leaf steel swinging gate. The gate shall be considered the Active Vehicular Barrier (AVB). A drop arm and guard shack shall be provided and located at a distance of one and a half vehicles away from the entrance to serve as a checkpoint. Jersey Barriers or other approved alternatives shall be used to design and construct a Passive Vehicular Barrier (PVB) beyond and away from the checkpoint to significantly slow down approaching vehicles. The PVB shall be laid out to force approaching vehicles into a snake-like manoeuvre while approaching the checkpoint and to significantly slow them down. See Appendix A for Guard Shack drawings.

Provide a rejection lane after vehicle inspection and before entrance to the compound.

2.3.5.6.1 Drop Arm Gates

The height of the beam shall be a minimum of 30 inches above finished grade. The crash beam must be capable of blocking a minimum road width of 7.3 meters. The crash beam shall be manually raised and lowered with less than 30 pounds of force. The end of the crash beam should include a locking pin with padlock acceptance for securing the beam when it is in the down position capable of stopping large (10,000 lb.) trucks, in addition to heavy duty steel gates into the compound.

2.3.5.6.2 Tire Shredder avb

Additional active barriers shall be tire shredder type with manual latch down capability. Shredders shall extend the entire width of the roadway opening where installed. At minimum provide one shredder at rejection lane entrance to prevent unauthorized gate access.

2.3.5.6.3 Concrete pvb

Barriers shall be concrete blocks of one meter by one meter by one meter dimensions. Similar arrangements of large stones (one cubic meter size), jersey barriers or equal sized obstacles may be used.

2.3.5.6.3.1 Hesco pvb

Hesco barriers shall be made of geo-textile fabric shall be 2mm (0.08") non-woven polypropylene and bound with 8 gauge galvanized steel wire mesh size 7.62 cm (3") grid. The coil hinges and joining pins shall be 8 gauge hardened steel. Fill material shall be a mixture of sand and gravel. The gravel shall not be more than 1.8 cm (¾") in size. The materials shall be compacted in lifts no greater than 25 cm (10"). Bastions shall be provided with suitable foundations as recommended by the manufacturer depending on the height, and filled with a sand & gravel mixture. Provide a gravel base at least 50 cm (20") deep, and extending around the bottom edge of the barrier by at least 50 cm (20"), for proper support and drainage. The gravel base material shall have no stones large than 2.5 cm (1"), due to the risk of becoming projectiles in a blast.

Protection from UV light shall be provided with an application of a protective coating such as UV CAM, cement slurry not greater than 0.3 cm (1/8") thick. The cement slurry is a mixture of cement powder and water, mixed to a proportion of 1:1, but this may be adjusted to suit the application method. Sand may also be added as necessary.

Submittal Requirements:

- a. The manufacturer of this product must have been in this business for at least 5 years.
- b. Installers must be certified by the manufacturer.
- c. Welded mesh and wire must be ASTM A641 Class 3
- d. Geo-textile shall be ASTM D4632, D6241, D4355, D4751 & D4491.
- e. Structural calculations must be prepared by a licensed engineer and must be submitted and approved by the Government prior to installation

2.3.6 Loudspeakers and Alarm System

Install Loud Speaker & Alarm System that can alert the entire compound via panic button from any tower or guard post station. Speaker & Alarm System shall be exterior grade components to withstand severe weather conditions of cold, heat, rain, sleet, and dust storms and to be completely understandable during these conditions from any point within the compound. All wires shall be installed in conduits.

2.4 CIVIL UTILITIES

2.4.1 Water

2.4.1.1 General

The Contractor shall provide water distribution mains, branches, service connections to include all pipe, valves, bends, thrust blocking, fittings and appurtenances. Exterior water line construction shall include service to all buildings as described in the Scope of Work Section 01010. The required average daily flow (ADF) shall be the average daily demand (ADD) per person - derived from 190 liters (or 50 gallons) per capita per day (lpcd) – times a capacity factor, times the effective population. A capacity factor of 1.5 shall be used. The capacity factor shall be utilized as described in the following paragraph. In the event potable or non-potable use water is required prior to completion of the water facilities infrastructure the Contractor may be issued a Request for Proposal to provide non-potable (tank truck) and potable (bottled or other reliable source) consumption. Provide a minimum of one (1) outside water hydrant (hose spigot) for all buildings with water service.

Features of the water system shall be sized to provide flow or storage capacity as follows:

- Water Well Pump Capacity - Capacity and total dynamic head (TDH) shall be based on an adjusted ADF (ADD, times the population, times the capacity factor) over a 16 hour period).
- Water Tanks - Capacity shall be based on ADF (ADD x c x CF). (NOTE: If a minimum volume of storage is provided in the contract documents, and it is determined that the value provided does not account for the capacity factor, that value will be multiplied by the capacity factor to determine the actual required storage volume for the facility.)
- Water Mains – Diameter shall be 100mm. A larger diameter may be installed based on maximum velocities determined using the installation fixture unit flow or two times the ADF (ADD x c x CF). The flow through the system shall be distributed on the basis of fixture unit flow in each the buildings serviced or per contract
- Water Service Lines - Diameter based on fixture units of the building serviced or per contract

2.4.1.2 Water wells

The contractor shall construct water well(s) inside the compound, to provide sufficient supply for the facility. The new well capacity shall be based on the allowable safe yield of the new well determined by a well pump test as described in the USACE-AED Water Well Guide Specification. The new well site shall be at a location approved by the Government. The new well site shall be no closer than 60 meters from any existing wells. Well construction shall be in accordance with the USACE-AED Water Well Guide Specification.

After de-mining, but prior to the construction of any structures, the Contractor shall submit a well test plan, drill and test the water well, conduct well design activities, and submit all required information to AED for review prior to installing any permanent well features. Drilling shall not proceed without an AED Engineering approved well drilling plan. A plan for decommissioning dry wells shall be included with the well drilling plan. It is acknowledged that water may not be available at the site despite Contractor good faith efforts to find it. The Contractor shall drill a minimum of two wells to a minimum depth of 120 meters in an attempt to find water. If water cannot be found the contractor shall immediately notify the Contracting Officer's Representative (COR). The Contractor will be considered to have fulfilled the terms of the contract and will be entitled to the full price of the contract CLIN for well drilling. However, the Contractor must still furnish all other parts of the water distribution system as described in the specifications. At this time, off site water wells and other alternatives may be considered upon approval by the COR.

Well Capacity shall be equal to one day's demand delivered over 16 hours of pumping time.

Well construction shall be in accordance with AED Design Requirements - Well Pumps & Well Design/Specifications, latest version - which includes, but is not limited to, requirements for well screen, casing, gravel pack, well pump, disinfection, and testing requirements. All design requirements, material specifications, and testing contained in this document shall be used and submittals shall be made promptly in accordance with Section 01335. Failure to follow the construction and submittal procedures outlined may, at AED's discretion, result in rejection of the well and, the contractor having to remove the well casing and screen, re-drill the well and reinstall the proper features per the approved design.

Well Depth. The well shall be drilled to a minimum depth of 20 m below the existing water table. The depth of the permanent well shall take into consideration the drawdown depth, screen depth and pump submergence as described in the AED Design Requirements document.

Casing - Selection of the casing diameter, material and depth shall be per the AED Design Requirements document. All wells will be cased 610 mm above grade (i.e., base of pit, ground surface, etc.) and be fitted with a lockable cap with air gap (vacuum relief during pumping). Each section of casing will be joined with standard couplings and full-threaded joints, or by proper welding, so that all joints are sound and watertight. Well casing alignment shall not interfere with the proper installation and operation of the pump.

Screen. The casing will be fitted with a well screen that will permit maximum transmission of water without clogging. The material of construction, opening requirements, minimum lengths and placement shall be per the AED Design Requirements document

Sealing - The drilling process will create a hole (borehole) larger than the casing. To protect the well and properly finish construction, the entire space between the casing and the edge of the borehole will be filled with gravel, overburden, or concrete as follows:

- a. The upper 3 m of the well bore will be sealed with cement grout. Grout shall be placed in one continuous mass and be impermeable.
- b. The space around the well screen will be filled with material that will form a filter and not clog the slots in the screen (e.g. washed coarse sand for a fine bore wall material).
- c. The space between the top of the filter pack and the base of the grout seal may be backfilled with overburden or other clean earth material.

Crushed Stone. Per the AED Design Requirements, crushed stone for well sealing shall consist of crushed stone containing angular shapes and surfaces with no rounded surfaces shall be used for sealing the solid wall casing and edge of the borehole area. All aggregate shall contain less than 5% of shale, clay lumps, coal, lignite, soft or unfragmented stone, or other deleterious materials.

Source protection - Surface drainage within 30 m of wellhead shall ensure no ponding, flooding or collection of runoff adjacent to the well. This can be accomplished through surface grading or use of gravel drains to modify site drainage in the vicinity of the well. Contractor shall identify all sources of contamination and ensure the proposed well site meets minimum standoff distances as indicated below:

- Sewage storage areas (outhouses, tanks, individual sewage pits, lagoons, and WWTP) – 30 m
- Septic fields (infiltration galleries) – 30 m
- Fuel storage, engine maintenance/repair – 30 m

Well Pump – A submersible, centrifugal pump shall be installed inside the casing set no more than 1.5 meters from the base of the excavation. Control of the pump shall be by means of a Hand-Off-Auto (HOA) switch. In the "Auto" position, the pump shall be started and stopped automatically by water levels in the water storage tank. Pump shall start at low level and shall stop at high level. Level controls shall be adjustable. Manual start shall be the Hand position.

Expansion Tank – Provide bladder style expansion tank for well pump to minimize pressure surges and water hammer effects

2.4.1.3 Well pump testing

Well pump testing and water clarity testing after well development shall be per the requirements in AED Design Requirements - Well Pumps & Well Design, latest version.

2.4.1.4 Water Quality Sampling and Analysis

The Contractor shall perform water quality sampling and testing at the source. The Contractor shall utilize well-qualified and equipped testing capability in the project site area, if available. If professional testing

services are not available in the area, the Contractor will submit an alternative practical testing source for approval. Raw water quality criteria for Water Quality and Criteria Standards, and shall address the See USACE-AED Well Pumps & Well Design Guide with Attachment A – Guide Specifications for Drinking Water Wells, latest version and Appendix A of TM 5-813-3 (UFC 3 230 08a Water Supply Water Treatment, January 2004) for requirements for laboratory testing.

2.4.1.5 Well House

At new wells or springs, construct a permanent well house with reinforced concrete slab floor. The floor of the well house shall slope away from the casing approximately 3 mm per 300 mm (1/8" per foot) and drain to the outside. Floor of well house shall be minimum 300mm above adjacent grade. The well house design should be such that the well pump, motor, and drop pipe could be removed readily by providing an insulated hatch in the building roof provided with a hasp and lock. The well house shall protect valves and provide physical security and freeze protection for protect piping, valves, hand pump, and chlorination equipment. The well house shall be insulated and have a heating unit provided. The entry door shall be made of heavy duty metal and metal frame with no louvers. The well shall be protected from unauthorized use by a security fence with lockable gate. Provide outriggers, barbed wire and concertina wire on fence and gate.

2.4.1.6 Raw Water Disinfection

Contractor shall perform disinfection of the well water in accordance with AED Design Requirements - Well Pumps & Well Design/Specifications, latest version. Bacteriological samples shall be collected and examined in accordance with Standard Methods for the Examination of Water and Wastewater by a qualified lab as approved by the Contracting Officer.

2.4.1.7 Water Storage Tank

Contractor shall provide a steel, elevated water storage tank. The bottom of the storage tank shall be 20 meters above the finished grade at the base of the tank and shall be at least 20 meters above the finished floor elevation of the headquarters building. Volume of the water storage tank shall be a minimum storage volume of a full days demand. The Contractor shall verify storage volume requirements based on final design population. The storage facility shall be located above drainage areas and locations subject to flooding as approved by the Contracting Officer. Overflow and air vents shall be screened so that birds, rodents and debris cannot enter the reservoir. The tank shall meet all applicable codes for potable water storage. The interior coatings for the tank shall meet NSF/ANSI 61 requirements.

2.4.1.8 Disinfection & Chlorination System

Use hypochlorite compounds for disinfection. A hypo-chlorinator shall be used to feed a sodium hypochlorite solution of 5-15% available chlorine into the system. Hypochlorite compound may be a liquid or solid form. The hypo chlorination system shall consist of a chemical solution tank for hypochlorite, diaphragm-type pump, power supply, water pump, pressure switch and storage tank (optional hydro-pneumatic/storage). The pump shall feed a hypochlorite solution in proportion to the water demand. The hypo-chlorinator shall have a pumping rate, liters per day (lpd) (gallons per day (gpd)) adequate to deliver 5 percent (%) available hypochlorite solution adjustable to the quantity of water being produced from the source. Dosage rate will vary somewhat depending on actual pump production rate and available residual chlorine in the system. Contractor shall determine the required dosage rate milligrams per liter (mg/l) to maintain the required chlorine residual (usually 0.2-0.4mg/l) in the distribution system. Chlorine solution tank shall be large enough to hold a three days' supply of hypochlorite solution. A fresh solution shall be prepared every two or three days because the solution may lose its strength over time and this will affect the actual chlorine feed rate. The hypochlorite shall be stored in a cool dry place. Sodium hypochlorite can lose from two to four percent of its available chlorine content per month at room temperature. Contractor shall verify required minimum residual chlorine in accordance with local requirements verified and approved by the Contracting Officer. The chlorination system shall have the capability for manually adjusting the dosage rate and be installed in such a manner that the system can

be easily disconnected and bypassed in the event of health safety or routine maintenance and repair. Disinfection of water mains shall be in accordance with AWWA standard C651-86 and disinfection of storage facilities in accordance with AWWA standard C652-86. The package disinfection system shall be located in the well pump house.

2.4.1.9 hand pump

The Contractor shall provide a hand pump with separate intake piping in the well casing to allow water supply during periods without electricity. Water drawn from the well by the hand pump shall not flow through the electric well pump. The pump shall be valved so that it can be used to fill the water storage tank or discharge to a spigot outside the well house. The capacity of the pump shall be at least 20 liters per minute (5.3 gpm). The pump shall be lever operated while standing in the well house.

2.4.2 Water Distribution System

2.4.2.1 General

The Contractor shall provide a water distribution system. Distribution lines shall be 100mm (4 inches) in diameter. Water supply distribution shall connect to a building service at a point approximately 1.5m (5 feet) outside the building or structure to which the service is required. All piping and joints shall be capable of at least 1.03 MPa (150 psi) leakage testing and 1.38 MPa (200 psi) hydrostatic test pressure unless otherwise specified. Pipes should be adequate to carry the maximum quantity of water at acceptable velocities not to exceed 1.5m/sec (5 ft/sec) at maximum flows not to exceed 2.8m/sec (9.2ft/sec). Pressure shall not exceed 517kPa (75 psi) at any point of the distribution system. If high pressures greater than 517kPa (75 psi) cannot be avoided, pressure-reducing valves shall be used. Contractor shall not use HDPE pipe and fittings.

Adequate cover must be provided for frost protection. A minimum cover of 800mm (2'-8") is required to protect the water distribution system against freezing. Water lines less than 1.25 meters (4 feet) deep under road crossings shall have a reinforced concrete cover of at least 150 mm (6 inch) thickness around the pipe extending out to 1m from each road edge.

2.4.2.2 Pipe

The Contractor shall provide PVC pipe of adequate strength, durability and be corrosion resistant with no adverse effect on water quality.

2.4.2.2.1 Water Mains and Branches

Water pipe material for water mains and branches shall be PVC. Pipe diameters used in the network shall be a minimum 100mm (4 inch). Building service lines will be sized according to guidance provided below. The exterior surface of the pipe must be corrosion resistant. All pipes and joints shall be capable of at least 1.03 MPa (150 psi) and 1.38 MPa (200psi) hydrostatic test pressure unless otherwise specified herein. Polyvinyl Chloride (PVC) pipe shall conform to ASTM D 1785. Plastic pipe coupling and fittings shall be manufactured of material conforming to ASTM D 1784, Class 12454B. PVC screw joint shall be in accordance with ASTM D 1785, Schedules 40, 80 and 120. PVCu pipe couplings and fittings shall be manufactured of material conforming to ASTM D 1784, Class 12454B. Pipe less than 80mm (3 inch), screw joint, shall conform to dimensional requirements of ASTM D schedule 80. Elastomeric gasket-joint, shall conform to dimensional requirements of ASTM D 1785 Schedule 40, PVCu (or uPVC) pipe and fittings shall have SDR that provide equal or superior strength properties to ASTM 1785 SCH 40 or SCH 80 pipe and fittings.

2.4.2.2.2 Water Service

Water service connections to buildings shall vary from 19mm, 25mm, 38mm, 75mm, to 100mm as calculated, depending on the maximum flow velocity and minimum pressure requirements as determined

by hydraulic analysis. Pipes for service connections may be smaller as required by plumbing code (IPC). Pipe service connections from the distribution main to the building shall be Polyvinyl Chloride (PVC) plastic Schedule 80 ASTM D 1785. PVC pipe couplings and fittings shall be manufactured of material conforming to ASTM D 1784, Class 12454B. Contractor shall not use HDPE for any of the water pipes.

2.4.2.3 Hydrostatic, Leakage and Disinfection tests

The Contracting Officer will be notified not less than 48 hours in advance of any water piping test and will be given full access for monitoring testing procedures and results. Where any section of water line is provided with concrete thrust blocking for fittings or hydrants, tests shall not be made until at least 5 days after installation of concrete thrust blocking, unless otherwise approved. Pressure and leakage testing shall be as specified in AED Design Requirements – Water Tank and Water Distribution Systems, latest version.

2.4.2.4 Pressure Test

After the pipe is laid, the joints completed, and the trench partially backfilled leaving the joints exposed for examination, the newly laid piping or any valved section of piping shall, unless otherwise specified, be subjected for 1 hour to a hydrostatic pressure test of 1.38 MPa (200 psi). Each valve shall be opened and closed several times during the test. Exposed pipe, joints, fittings, hydrants and valves shall be carefully examined during the partially opened trench test. Joints showing visible leakage shall be replaced or remade as necessary. Cracked or defective pipe, joints, fittings, hydrants and valves discovered following this pressure test shall be removed and replaced and retested until the test results are satisfactory.

2.4.2.5 Leakage Test

Leakage tests shall be conducted after all pressure tests have been satisfactorily completed. The duration of each leakage test shall be at least 2 hours, and, during the test, water lines shall be subjected to not less than 1.38 MPa (200 psi). Leakage is defined as the quantity of water to be supplied into the newly laid pipe, or any valved or approved section, necessary to maintain pressure to within 34.5kPa (5 psi) of the specified leakage test pressure after the pipe has been filled with water and all air expelled. Pipe installation will not be accepted if leakage exceeds the allowable leakage, as determined by the following formula:

$L = 0.0001351ND (P \text{ raised to } 0.5 \text{ power}), \text{ where:}$

L = Allowable leakage in gallons per hour

N = Number of joints in the length of pipeline tested

D = Nominal diameter of the pipe in inches

P = Average test pressure during the leakage test, in psi gauge

Should any test of pipe disclose leakage greater than that calculated by the above formula, the defective joints shall be located and repaired until the leakage is within the specified allowance, without additional cost to the government.

2.4.2.6 Bacteriological Disinfection

2.4.2.6.1 Disinfection Procedure

Before acceptance of potable water operation, each unit of completed waterline shall be disinfected as prescribed by AWWA C651. After pressure tests have been completed, the unit to be disinfected shall be thoroughly flushed with water until all entrained dirt and mud have been removed before introducing the chlorinating material. Flushing will be performed in a manner and sequence that will prevent recontamination of pipe that has previously been disinfected. The chlorinating material shall be liquid chlorine, calcium hypochlorite, or sodium hypochlorite. The chlorinating material shall provide a dosage

of not less than 50 ppm and shall be introduced into the water lines in an approved manner. Polyvinyl Chloride (PVC) pipelines shall be chlorinated using only the above-specified chlorinating material in solution. The agent shall not be introduced into the line in a dry solid state. The treated water shall be retained in the pipe long enough to destroy all non-spore forming bacteria. Except where a shorter period is approved, the retention time shall be at least 24 hours and shall produce not less than 25 ppm of free chlorine residual throughout the line at the end of the retention period. Valves on the lines being disinfected shall be opened and closed several times during the contact period. The line shall then be flushed with clean water until the residual chlorine is reduced to less than 1.0 ppm. During the flushing period, each fire hydrant on the line shall be opened and closed several times.

2.4.2.6.2 *Sampling*

For each building connected to the water system, personnel from the Contractor's commercial laboratory shall take at least 3 water samples from different points, approved by the Contracting Officer, in proper sterilized containers and perform a bacterial examination in accordance with approved methods. The commercial laboratory shall be verified to be qualified by the appropriate authority for examination of potable water. Contractor shall submit a water sampling protocol for approval. This shall include at a minimum the name of the laboratory, parameters to be tested, the Company conducting the sampling, and the sample locations.

2.4.2.6.3 *Acceptance Requirements*

The disinfection shall be repeated until tests indicate the absence of bacteria for at least 2 full days. The unit will not be accepted until satisfactory bacteriological results have been obtained. All retests shall be conducted at the Contractor's expense.

2.4.2.6.4 *Time for making Tests*

Except for joint material setting or where concrete thrust blocks necessitate a 5-day delay, pipeline jointed with rubber gaskets, mechanical or push-on joints, or couplings may be subjected to hydrostatic pressure, inspected, and tested for leakage at any time after partial completion of backfill.

2.4.2.6.5 *Concurrent Tests*

The Contractor may elect to conduct the hydrostatic tests using either or both of the following procedures. Regardless of the sequence of tests employed, the results of pressure tests, leakage tests, and disinfection shall be recorded for submission and approval. Replacement, repair or retesting required shall be accomplished by the Contractor at no additional cost to the Government. Pressure and leakage testing may be conducted concurrently. Hydrostatic tests and disinfection may be conducted concurrently using water treated for disinfection to accomplish the hydrostatic tests. If water is lost when treated for disinfection and air is admitted to the unit being tested, or if any repair procedure results in contamination of the unit, disinfection shall be re-accomplished.

2.4.2.7 *Valves*

Valves (Gate valves w/box) shall be placed at all pipe network tees and cross intersections, and the number of valves shall be one less than the number of lines leading into and away from the intersection. For isolation purposes valves shall be spaced not to exceed 3600 mm (12 feet). Gate valves shall be in accordance with AWWA C 500 and/or C509. Butterfly valves (rubber seated) shall be in accordance with C504 et al. The valves and valve boxes shall be constructed to allow a normal valve key to be readily used to open or close the valve. Provide traffic-rated valve boxes. Provide concrete pad, 1 meter (3'-4") square, for all valve boxes. Valves shall be pressure rated to 1.38 MPa (200 psi).

2.4.2.8 Vacuum and Air Release Valves

Air release valves are required to evacuate air from the main high points in the line when it is filled with water, and to allow the discharge of air accumulated under pressure. Vacuum relief valves are needed to permit air to enter a line when it is being emptied of water or subjected to vacuum. Contractor shall submit manufacturer's data for properly sized combination air and vacuum release valves and determine their locations on the distribution system subject to review and approval of the Contracting Officer.

2.4.2.9 Thrust Blocking

Contractor shall provide concrete thrust blocking at any point where the layout of the system changes the direction of the flow, increases the velocity, or decreases or stops the flow. At these points, the pipes and fittings must be anchored and kept from moving or pulling apart by the use of thrust blocks installed against undisturbed earth.

2.4.3 Sanitary Sewer

2.4.3.1 General

There are no functional or salvageable sanitary sewer collection, treatment or disposal facilities at this site. The Contractor shall obtain topographic information or other maps that show vegetation, drainage channels and other land surface features such as underground utilities and related structures that may influence the design and layout of the collection system. If maps are not available, or do not provide satisfactory information or sufficient detail of the site, field surveys shall be performed. Sanitary sewers less than 1.25 meters (4 feet) under road crossings shall have reinforced concrete cover at least 150 mm (6 inch) thick around the pipe. Concrete cover will extend out to at least 1 m from each road edge. Exterior sanitary sewer line construction shall include service to all buildings as described in the Scope of Work Section 01010. Contractor shall design sanitary sewer collection system using approved field survey data and finished floor elevations. Depending upon the topography and building location, the most practical location of sanitary sewer lines is along one side of the street. In other cases they may be located behind buildings midway between streets. Main collection sewers will follow the most feasible route to the point of discharge. The sewer collection system shall be designed to accommodate the initial occupancy and a reasonable expansion capability. Sewer collection capacity shall be based on the two times the average daily wastewater flow unless minimum diameter specified is adequate to provide flow and required maximum velocity; wastewater flow through the system shall be distributed on the basis of fixture unit flow in each the buildings serviced by multiplying the proportion of the total fixture flow from each building or facility times the total wastewater flow for the project or installation as determined above. All sewers shall be located outside of the roadways as much as practical, and minimize the number of roadway crossings. To the extent practical, a sewer from one building shall not be constructed under another building, or remain in service where a building is subsequently constructed over it. The Contractor shall use the following criteria where possible to provide a layout which is practical, economical and meets hydraulic requirements:

- a. Follow slopes of natural topography for gravity sewers.
- b. Check subsurface investigations for groundwater levels and types of subsoil encountered. If possible, avoid areas of high groundwater and the placement of sewers below the groundwater table.
- c. Avoid routing sewers through areas which require extensive restoration or underground demolition
- d. Depending upon the topography and building locates, the most practical location of sanitary sewer lines is along one side of the street. In other cases they may be located behind buildings midway between streets. The intent is to provide future access to the lines for maintenance without impacting vehicular traffic.

- e. Avoid placing manholes in low-lying areas where they could be submerged by surface water or subject to surface water inflow. In addition, all manholes shall be constructed 50 mm higher than the finished grade, with the ground sloped away from each manhole for drainage.
- f. Sewer lines shall have a minimum of 800 mm of cover for frost protection.
- g. Locate manholes at change in direction, pipe size, or slope of gravity sewers.
- h. Sewer sections between manholes shall be straight. The use of a curved alignment shall not be permitted.
- i. If required by the design, locate manholes at intersections of streets where possible. This minimizes vehicular traffic disruptions if maintenance is required.
- j. Sewer lines less than 1.25 meters deep under road crossings shall have a reinforced concrete cover of at least 150mm thickness around the pipe or shall utilize a steel or ductile iron carrier pipe. It is recommended to continue the reinforced concrete cover or carrier pipe a minimum of one (1) meter beyond the designated roadway.
- k. Verify that final routing selected is the most cost effective alternative that meets service requirements.

2.4.3.2 Protection of Water Supplies

The Contractor shall ensure that the sewer design meets the following criteria:

- a. Sanitary sewers shall be located no closer than 30m (100 feet) horizontally to water wells or reservoirs to be used for potable water supply.
- b. Sanitary sewers shall be no closer than 3 m (10 feet) horizontally to potable water lines; where the bottom of the water pipe will be at least 300mm (12 inches) above the top of the sanitary sewer, horizontal spacing shall be a minimum of 1.8m (6 feet).
- c. Sanitary sewers crossing above potable water lines shall be constructed of suitable pressure pipe or fully encased in concrete for a distance of 2.7m (9 feet) on each side of the crossing. Pressure pipe will be as required for force mains in accordance with local standards and shall have no joint closer than 1m (3 ft) horizontally to the crossing, unless the joint is fully encased in concrete.

2.4.3.3 Quantity of Wastewater

The Contractor shall verify the average daily flow considering both resident (full occupancy) and non-resident (8hr per day) population. The average daily flow will represent the total waste volume generated over a 24-hour period, and shall be based on the total population of the facility and water usage rate of 190 liters (50 gallons) per capita per day (water usage). The wastewater flow rate shall be calculated as approximately 80% of water usage rate, or 155 liters (41 gallons) per capita per day times the capacity factor requirements.

2.4.3.4 Gravity Sewer

Sanitary sewers shall be designed to flow at a maximum in the following way: 1) sanitary sewer laterals, mains and trunk lines flow velocities shall be designed to provide a minimum velocity of 0.6 meters per second (mps) or 2.0 feet per second (fps) at the ADD flow rate, 2) a minimum velocity of 0.8 to 1.05 mps (2.5-3.5fps) at the peak diurnal flow rate, 3) flows shall be based on allocating the proportion of the average daily or peak daily flow to each building or facility on the basis of fixture unit flow developed for the plumbing design, and 4) minimum pipe slopes shall be provided regardless of the calculated flow velocities to prevent settlement of solids suspended in the wastewater. The minimum slopes are shown

in the following table from AED Design Requirements for Sanitary Sewer and Septic Systems. This table does not state that slopes are designed at this slope regardless of flow depth and velocity. Other criteria must also be used to determine grade stated above. The word “minimum” is defined as “the least quantity or amount possible, assignable, allowable, or the like”. Greater slopes shall be used as needed to achieve all the design requirements.

Minimum Slopes for Sewers	
Sewer Pipe Size (mm)	Minimum Slope in meters per 100 meters
100	1.00
150	1.0

Unless otherwise indicated (see Building Connections and Service Lines), gravity sewer pipe shall be installed in straight and true runs in between manholes with constant slope and direction. Adequate cover must be provided for frost protection. A minimum cover of 800 mm (2'-8") will be required to protect the sewer against freezing.

2.4.3.4.1 Manholes

The Contractor shall provide standard depth manholes (MH), (depth may vary) an inside dimension of 1.2m (4 ft). Manholes shall be made of cast-in-place reinforced concrete with reinforced concrete cover. Alternate pre-cast manhole option shall taper to a 750 mm (30-inch) cast iron frame that provides a minimum clear opening of 600 mm (24 inches). In every case, the manholes, frames and covers shall be traffic rated, H-20 load rating. All manholes shall be provided with a concrete bench with a flow line trough, smoothly formed to guide waste flow to the outlet pipe from the inlet pipe(s). The top surface of the bench shall be above the crown of all pipes within the manhole. All surfaces of the bench shall be sloped smoothly toward the trough to guide flow, even under peak flow conditions. Sanitary sewer lines shall enter at the manhole flow line. Where the invert of the inlet pipe would be more than 0.5 meter above the manhole floor, a drop inlet shall be provided. No internal drop structures shall be permitted at lift stations. Inlet to lift station wet wells shall enter below the lowest water level of the pump operating range, and if necessary a drop inlet approach pipe external to the lift station may be used to avoid cascading influent flow.

2.4.3.4.2 Manhole Design Requirements

Manholes are required at junctions of gravity sewers and at each change in pipe direction, size or slope, except as noted hereinafter for building connections. Manholes shall be installed at start of all main runs.

2.4.3.4.3 Spacing

The distance between manholes must not exceed 120m (400 ft) in sewers of less than 460mm (18 in) in diameter.

2.4.3.4.4 Pipe Connections

The crown of the outlet pipe from a manhole shall be on line with or below the crown of the inlet pipe.

2.4.3.4.5 Frames and Covers

Frames and covers shall be cast iron, ductile iron or reinforced concrete, traffic rated in any case to an H-20 load rating. Cast iron frames and covers shall be traffic rated, circular with vent holes.

2.4.3.4.6 Steps for Manholes

Steps shall be cast iron, polyethylene coated, at least 15mm (5/8 in) thick, not less than 400mm (16 in) in width, spaced 300mm (12 in) on center.

2.4.3.5 Pipe

Pipe shall conform to the respective specifications and other requirements as follows: Provide Polyvinyl Vinyl Chloride (PVC) conforming to ASTM D 3034, Type PSM with a maximum SDR of 35, size 380 mm (15inch) or less in diameter. PVC shall be certified as meeting the requirements of ASTM D 1784, cell Class 12454 B. Minimum pipe sizes for the main lines shall be 150mm (6 inch) diameter and service lines/laterals shall be a minimum of 100 mm (4 inch) diameter. Contractor may use uPVC pipe provided the SDR and strength properties of the pipe equal or exceed the properties of ASTM D 1784 for PVC. Manufacturer supplied data stating that all aspects of the ASTM are met will be required for approval.

2.4.3.5.1 Fittings

Fittings shall be compatible with pipe supplied and shall have a strength not less than that of the pipe. Fittings shall conform to the respective specifications and requirements as follows: provide PVC fittings conforming to ASTM D 3034 for type PSM pipe.

2.4.3.5.2 Joints

Joints installation requirements shall comply with the manufacturers installation instructions. Flexible plastic pipe (PVC) gasket joints shall conform to ASTM D3212.

2.4.3.5.3 Branch Connections

Branch connections for new piping installations shall be made using regular fittings. Branch connections for upgrades or repairs shall be made by use of regular fittings or solvent-cemented saddles as approved. Saddles for PVC pipe shall conform to Table 4 of ASTM D 3034. The minimum depth of the cover over the pipe crown shall be 0.8m (2 ft 8").

2.4.3.5.4 Building Connections and Service Lines

Building connections and service lines will be planned to eliminate as many bends as practical and provide convenience in rodding. Bends greater than 45 degrees made with one fitting should be avoided; combinations of elbows such as 45-45 or 30-60 degrees should be used with a cleanout provided. Connections to other sewers will be made directly to the pipe with standard fittings rather than through manholes. However, a manhole must be used if the connection is more than 31m from the building cleanout. Service connection lines will be a minimum of 100 mm (4 inch) diameter and laid at a minimum 1% grade. Service laterals shall be 150 mm (6 inch) and sloped to maintain the minimum velocity as described in paragraph "Gravity Sewer."

2.4.3.5.5 Cleanouts

Cleanouts must be installed on all sewer-building connections to provide a means for inserting cleaning rods into the underground pipe. Install manufactured wye fittings. In lieu of a wye fitting, an inspection chamber may be installed. The inspection chamber shall be of the same construction as a manhole. Preferably the cleanout will be of the same diameter as the building sewer, and never be smaller than 150mm (6 in). Cleanouts shall be located within 1m from the building.

2.4.3.6 Grease Interceptors

Grease interceptors are used to remove grease from wastewater to prevent it from entering the sanitary sewer and septic systems. All Dining Facilities (DFACs) shall incorporate preliminary treatment with use of a grease interceptor prior to the sanitary sewer system. The only waste lines upstream of the grease interceptor shall be grease laden waste from the kitchen or other areas. Grease interceptor design shall be based on AED Design Requirements - Grease Trap, latest version. The grease interceptor shall be of reinforced cast-in-place concrete, reinforced precast concrete or equivalent capacity commercially

available steel, with removable three-section, 9.5 mm checker-plate cover, and shall be installed outside the building. Steel grease interceptors shall in be installed in a concrete pit and shall be epoxy-coated to resist corrosion as recommended by the manufacturer. Concrete shall have 21 MPa minimum compressive strength at 28 days. The grease interceptor shall connect to the sanitary sewer system. Contractor shall provide bollards around the tank and construct a minimum 4 m wide access road from the closest roadway to the grease interceptor for a pump truck. The access road shall be of the same material as the main roads in the compound. Under no circumstance shall the grease interceptor be installed inside the building. Provide outside water spigot for cleaning.

2.4.3.7 Field Quality Control

2.4.3.7.1 Field Tests and Inspections

The Contracting Officer will conduct field inspections and witness field tests specified in this section. The Contractor shall perform field tests and provide labor, equipment and incidentals required for testing. Check each straight run of pipeline for gross deficiencies by holding a light in a manhole; it shall show a practically a full circle of light through the pipeline when viewed from the adjoining end of the line. When pressure piping is used in a non-pressure line for non-pressure use, test this piping as specified for non-pressure pipe.

Test lines for leakage by either infiltration tests or exfiltration tests. Prior to testing for leakage, backfill trench up to at least lower half of the pipe. When necessary to prevent pipeline movement during testing, place additional backfill around pipe to prevent movement during testing, but leaving joints uncovered to permit inspection. When leakage or pressure drop exceeds the allowable amount specified, make satisfactory correction and retest pipeline section in the same manner. Correct visible leaks regardless of leakage test results.

Infiltration tests and ex-filtration tests: Perform these tests for sewer lines made of specified material, not only concrete, in accordance with ASTM C 969M, ASTM C 969. Make calculations in accordance with the Appendix to ASTM C 969M and ASTM 969.

Low-pressure air tests: Perform tests as follows:

- d. PVC Plastic pipe: Test in accordance with applicable requirements of UBPPA UNI-B-6. Allowable pressure drop shall be as given in UBPPA UNI-B-6. Make calculations in accordance with the Appendix to UBPPA UNI-B-6.

2.4.3.7.2 Deflection Testing

Deflection testing will not be required however; field quality control shall ensure that all piping is installed in accordance with deflection requirements established by the manufacturer.

2.4.4 Wastewater Treatment Systems

Septic systems shall be designed and installed in accordance with AED Design Requirements - Sanitary Sewer and Septic Systems, latest version. Contractor shall provide a minimum 4 m wide access road to the septic tank. Bollards shall be installed around the absorption field as well as the septic tank. The access road construction shall be of the same thickness and material as the roadway on the compound. The access roadway shall tie to the nearest road network. Septic tank and leach field disposal systems shall be limited to effective design populations under 300 personnel.

Contractor shall not use sewage holding tanks for wastewater disposal system unless specifically required as the only method in the contract section 01010 and 01015. When soil conditions make septic systems with leach fields unfeasible, the contractor may request consideration for sewage holding tanks from the USACE-AED Engineering Branch. This policy applies only for facilities with 60 personnel or less and shall be considered on a case by case basis.

Medical waste water treatment shall be designed in accordance with UFC 4-51-01 Design: Medical Military Facilities. Contractor shall provide a medical waste incinerator for all regulate medical waste (RMW) as defined in the UFC. The facility shall be located on a reinforced concrete pad with minimum 2 m high chain link fence and gate per Section 1015.

2.4.5 Septic System

Generally when determining an appropriate septic tank location, the Contractor shall provide protection for the septic system by ensuring that vehicles, material storage, and future expansion shall be kept away from the area. Signage or other prevention methods (i.e. pipe bollards) shall be used to provide this protection. The finished grade for the site shall ensure that storm water runoff shall drain away from the site to prevent ponding, inflow, and infiltration. Once an appropriate site is located, the Contractor shall conduct soil investigations for the site to determine ground water levels, soil conditions, and the percolation rate. Septic systems shall be designed and installed in accordance with UFC 3-240-09A, Domestic Wastewater Treatment, 16 January 2004 edition, and the following guidance:

2.4.5.1 Site Survey

The Contractor shall conduct a topographic survey to determine existing site characteristics. The Contractor shall conduct a utility survey to determine the locations of any nearby water lines, wells, sanitary sewers, storm sewers and electrical lines.

2.4.5.2 Percolation Testing

At proposed sites for holding ponds and the absorption field, the Contractor shall perform percolation tests. Percolation testing shall be conducted in accordance with AED Design Requirements - Sanitary Sewer and Septic Systems (latest version).

2.4.5.3 Septic Tank

A baffled, multi-compartment or dual chamber design shall be utilized. Refer to AED Design Requirements - Sanitary Sewer and Septic Systems (latest version) for sizing and design details. The septic tank shall be designed with a length-to-width ratio of 2:1 to 3:1 and the liquid depth shall be between 1.2 m and 1.8m. This depth is determined by the outlet pipe invert elevation. If not specified in the contract, the septic tank shall be sized based on the average daily demand of 190 liters/capita/day, plus an additional 100% for sludge storage capacity and peak flows. The tank shall be constructed of reinforced, cast-in-place concrete, with a minimum compressive strength of 21MPa at 28 days. When feasible, wastewater influent and effluent shall enter and exit on the short sides of the tank, in order to allow the wastewater longer detention and settling time. The baffle tank shall have two compartments, with the first compartment (influent entry point) having 2/3 thirds the volume capacity of the tank. The tank shall have a minimum earth backfill cover of 300mm. Access shall be provided at the entry (influent) and exit (effluent) points of the tank by installing reinforced concrete risers, with steel access hatches, that will rise 50mm above the finished grade.

2.4.5.4 Absorption Field

Absorption fields (also termed "leach fields") are used, in conjunction with septic tank treatment, as the final treatment and disposal process for the wastewater treatment system. Absorption fields normally consist of perforated distribution pipe laid in trenches or beds that are filled with rock. Refer to AED Design Requirements - Sanitary Sewer and Septic Systems (latest version) for absorption field sizing and performance requirements. The septic tank effluent shall be distributed by a perforate pipe and allowed to percolate through the ground, where it is filtered and treated by naturally occurring bacteria and oxygen. Once effluent is released from the septic tank, it shall travel by gravity through a solid 100mm diameter PVC pipe, at a minimum 1.0% slope, to a distribution box or dosing tank. The distribution box shall be a reinforced concrete structure that distributes the septic tank effluent evenly throughout the absorption field through several 100mm diameter perforated pipes. The distribution pipe shall be distributed evenly over the absorption trenches or beds; the perforated pipe shall have a maximum slope of 0.5% and shall be capped at the end of each pipe. If percolation testing indicates that soil absorption rates are not between 0.1 min/25cm and 60 min/25cm, the contractor shall notify the COR.

2.4.5.5 As-Builts

Upon completion of installing the sanitary sewer and septic systems, the Contractor shall submit editable CAD format As-Built drawings. The drawings shall show the final product as it was constructed in the field, with the exact dimensions, locations, materials used, and any changes made to the original design.

2.4.6 Storm Sewer Systems

2.4.6.1 Design Storm Return Period (baseline frequency)

Developed portions of the site installation such as administration, industrial and barracks areas, shall be based on a rainfall of 10-year frequency. Basic system design shall be in accordance with UFC 3-230-17A, Chapter 2. Potential damage or operational requirements may warrant a more severe criterion or in certain areas a lesser criterion may be appropriate. The design of roadway culverts and other on-site storm drainage features & structures will normally be based on 10-year rainfall event. Protection of installations against flood flows originating from areas exterior to the base installation shall be based on a 25-year or greater rainfall depending on cost vs. benefit considerations.

2.4.6.2 Storm Drainage System Design

The Contractor shall be responsible for the complete design of the storm drainage system. Drainage of runoff from turf areas onto pavements shall be minimized. If storm drain piping is required it shall comply with the requirements in this section. Where storm drain pipes are of different diameters, the pipe crown elevations should be matched at the drainage structure. Storm drain lines shall be located outside of paved areas to the extent possible. Under no circumstance shall storm drain lines be located beneath buildings. Erosion control shall be provided for all storm drain structures during construction. Water from roof down spouts shall be drained off building site. All storm drain pipe and structures shall comply with the requirements specified in Section 33 40 01 STORM-DRAINAGE.

2.4.6.3 Hydraulic Design

New storm drain pipes shall be designed for gravity flow during the design storm baseline unless otherwise approved by the Government. The hydraulic grade line shall be calculated for the storm drain system and all energy losses accounted for. Design computations shall adhere to procedures contained in UFC 3-230-17A. Storm drain systems shall be designed to provide a minimum flow velocity of .75 meters per second when the drains are one-third or more full. Storm drain pipes shall have a minimum diameter of 300mm. Rectangular culverts passing under roads and through perimeter walls shall have a minimum width of 300mm. Larger sizes shall be provided as required.

2.4.6.4 Area Inlets

Area inlets shall be properly sized and designed to accommodate the design flows. All grates shall be of a "bicycle safe" design.

2.4.6.4.1 Concrete Pipe

Reinforced concrete pipe shall be a minimum Class III. Type I cement may be used only when sulfates in the soil are 0.1 percent or less and dissolved sulfates in the effluent are 150 ppm or less. Type II cement may be used only when sulfates in the soil are 0.2 percent or less and dissolved sulfates in the effluent are 1,500 ppm or less. Only Type V cement may be used if sulfates in the soil exceed 0.2 percent or dissolved sulfates in the effluent exceed 1,500 ppm. Concrete pipe shall be assumed to have a minimum design service life of 50 years unless the Contractor determines that conditions at the site will reduce the service life. Concrete culverts and storm drains shall be protected by a minimum of 1 meter of cover during construction to prevent damage by heavy construction equipment.

2.4.6.4.2 Plastic Pipe

Stiffness of the plastic pipe and soil envelope shall be such that the predicted long-term deflection shall not exceed 7.5 percent. Plastic culverts and storm drains shall be protected by a minimum of 1 meter of cover during construction to prevent damage by heavy construction equipment. Split couplers shall not be allowed for corrugated high-density polyethylene pipe. Plastic pipe shall be assumed to have a minimum design service life of 50 years unless the Contractor determines that conditions at the site will reduce the service life (then plastic pipe shall not be used).

2.4.7 Oil water separators

Oil/water separators shall be utilized for all drains from industrial sites. Separators shall be installed as close as possible from the drain location. Storm sewer system shall not be mixed with sanitary sewer system and shall be in accordance with UFC 3-240-07FA, latest edition.

2.5 GEOTECHNICAL

2.5.1 SOIL INVESTIGATION

Existing geotechnical information is not available at the project site. Any site-specific geotechnical data required to develop foundations, materials, earthwork, and other geotechnical related design and construction activities for this project shall be the Contractor's responsibility. The Contractor shall develop all pertinent geotechnical design and construction parameters by appropriate field and laboratory investigations and analyses. The Contractor shall produce a detailed geotechnical report containing field exploration and testing results, laboratory testing results (particle sizes and distribution, liquid and plastic limit test, and moisture and density test, etc.). Information in the report shall include, but not limited to: existing geotechnical (e.g. surface and subsurface) conditions, location of subsurface exploration logs on site plan, exploration point, allowable soil bearing capacity and foundations recommendations, bearing capacity, pavement design criteria (e.g. CBR values, K values), ground-water levels, and construction materials (e.g. concrete cement, asphalt, and aggregates). For standard penetration test (SPT), the Contractor shall use ASTM D1586. All geotechnical laboratory and field work shall be based on standards set forth in the ASTM. Contractor shall not use any DIN standards for penetration tests in lieu of ASTM D 1586. Soil investigations shall conform with AED Design Requirements: Geotechnical Investigations for USACE Projects, latest version, or most recent version.

For foundation design, allowable soil bearing pressures, shall be based on the International Building Code (IBC) 2006 Table 1804.2. The contractor shall conduct soils classification per ASTM D 2487-06. There shall be no variation from the values listed in the table above, unless the soils investigation indicates lower allowable values should be used.

The contractor shall submit a geotechnical investigation plan prior to commencing any field investigation to the USACE-AED Engineering Branch through the COR for review and approval. Once the plan is reviewed and approved, the Contractor can start the field investigation. The Geotechnical report shall be submitted with all the design review submittals as specified in the 01335. No design review submittal shall be considered complete without an approved geotechnical report. Geotechnical investigation plans and report of investigations shall be submitted promptly in accordance with Section 01335.

2.5.2 GEOTECHNICAL QUALIFICATIONS

A geotechnical engineer or geotechnical firm responsible to the Contractor shall develop all geotechnical engineering design parameters. The geotechnical engineer or geotechnical firm shall be qualified by: education in geotechnical engineering; professional registration; and a minimum of ten (10) years of experience in geotechnical engineering design. The geotechnical firm conducting either the field investigation or laboratory work shall be certified by the Chief, Quality Assurance Branch USACE-AED. Certification document shall be submitted as part of the Geotechnical Report.

3.0 STRUCTURAL

3.1 GENERAL

The project consists of various structures. The ANP 1-Story Headquarters Building, Guard Tower, Guard Shack, and Well House are existing structural designs based upon International Building Code 2003 and as specifically listed herein, paragraph 3.0 Structural.

The new buildings shall be provided with a reinforced concrete foundation that is properly placed on suitable compacted earth and shall be prepared in accordance with the recommendations from the geotechnical investigation. The reinforced concrete foundation shall be designed by the Contractor. Building foundations shall be founded a minimum of 800 mm below grade.

The new building foundations were designed for a soil bearing capacity of 0.75kg/cm^2 . The geotechnical investigation shall confirm bearing capacity to be no less than 0.75kg/cm^2 . If geotechnical investigation shows less than 0.75kg/cm^2 , Contractor shall redesign footings based on the geotechnical investigation. Foundation design shall be corroborated with the geotechnical findings and recommendations.

Brick shall not be used as a construction material for the new buildings.

3.2 DESIGN

Designs for wood stove kitchen enclosure, generator sunshade, and roof trusses shall be performed and design documents signed by a registered professional architect and/or engineer. Design shall be performed and design documents signed by a registered professional architect and/or engineer. Calculations shall be in SI (metric) units of measurements.

All components of the structures shall be designed and constructed to support all loads, including all required factors of safety, without exceeding the allowable stresses for the materials of construction in the structural members and connections. All building exterior walls shall be constructed with reinforced CMU or reinforced concrete.

3.3 STANDARDS

The Contractor should use the following American standards to provide sound structural design if local standards are not available, relevant, or applicable. The Contractor shall follow American Concrete Institute Standards (ACI) for design and installation of all concrete structures. All codes are latest edition.

Concrete	ASTM C 39 and ACI 318; 28 MPa ($f'_c = 4,000\text{psi}$) minimum specified compressive strength @ 28 days, and maximum water-cement ratio of 0.45.
Steel Reinforcement	ASTM A 615; 420 MPa ($F_y = 60\text{ksi}$) yield strength.
Welded Wire Fabric	ASTM A 185.
Anchor Bolts	ASTM A 36.
Bolts and Studs	ASTM A 325.
Plaster	ASTM C 926; 14 MPa ($f'_c = 2,000\text{psi}$).
Concrete Masonry Units	ASTM C 90; Type I (normal weight, moisture control).
Mortar	ASTM C 270; Type S (Ultimate compressive strength of 13 MPa) Proportion: 1 part cement, 0- $\frac{1}{2}$ part lime and 4 $\frac{1}{2}$ parts aggregate.
Grout	ASTM C 476; 14 MPa (2,000psi) minimum compressive strength @ 28 days (Slump between 200 mm to 250mm).
Structural Steel	ASTM A 36; 250 MPa ($F_y = 36,000\text{psi}$).
Shaped Structural Tubing	ASTM A 500, Grade B; 315 MPa ($F_y = 46,000\text{psi}$).
Welding	AWS D1.1 (American Welding Society).

3.4 DEAD AND LIVE LOADS

Dead loads consist of the weight of all materials of construction incorporated in the buildings. Live loads used for design shall be in accordance with ASCE Standards and minimum design loads for buildings and

other structures, ASCE 7-2005. All facilities shall be classified as a minimum of Category II in accordance with Table 1-1.

3.5 WIND LOADS

Wind loads shall be calculated in accordance with ASCE 7-2005 using a "3-second gust" wind speed of 135 km/hr. Exposure = C. Importance Factor = 1.0.

3.6 SEISMIC

The building and all parts thereof shall be designed for the seismic requirements as defined by the International Building Code 2006.

Spectral ordinates shall be $S_s = 1.65g$ and $S_1 = 0.75g$.

3.7 STRUCTURAL CONCRETE

Concrete structural elements shall be designed and constructed in accordance with the provisions of the American Concrete Institute, Building Code Requirements for Structural Concrete, ACI 318. A minimum cylinder 28 day compressive strength of 28 MPa (4,000 psi) shall be used for design and construction of all concrete. Reinforcing steel shall be deformed bars conforming to American Society for Testing and Materials publication ASTM A 615, Deformed and Plain Billet-Steel Bars for Concrete Reinforcement. Concrete shall have maximum water-cement ratio of 0.45. No concrete shall be placed when the ambient air temperature exceeds 32 degrees C (90 degrees F) unless an appropriate chemical retardant is used. In all cases when concrete is placed at 32 degrees C (90 degrees F) or hotter it shall be covered and kept continuously wet for a minimum of 48 hours.

3.8 MASONRY

Masonry shall be designed and constructed in accordance with the provisions of Building Code Requirements for Masonry Structures, ACI 530/ASCE 5/TMS 402. Mortar shall be Type S and conform to ASTM C 270. Masonry shall not be used below grade.

All cells of exterior CMU walls shall be fully grouted. For interior CMU walls, only the reinforced cells need to be grouted. All CMU walls shall have reinforced horizontal bond beams at a maximum spacing of 1,200 mm on center.

Brick shall not be used as a construction material for the new buildings.

3.9 STRUCTURAL STEEL

Structural steel shall be designed and constructed in accordance with the provisions of American Institute of Steel Construction (AISC), Specifications for Structural Steel Buildings. Design of cold-formed steel structural members shall be in accordance with the provisions of American Iron and Steel Institute (AISI), Specifications for Design of Cold-Formed Steel Structural Members.

3.9.1.1 Steel Roof Joists

Steel roof joists shall be placed according to the roof design and roof manufacturer specifications. Steel purlins shall be installed perpendicular to the steel beams. Use continuous metal roof sheets from ridge to eave to avoid constructing roof seams. In lieu of the continuous metal roof sheets, the Contractor can submit a plan for roofing seams; however, the plan must show a detail of how leaks will be avoided, and the Contracting Officer before application must approve the plan. Provide all necessary metal framing for roof fascia and soffits. See structural paragraph for structural characteristics of steel joists.

3.9.1.2 Open Web Steel Joists

Open web steel joists shall conform to SJI Specifications and Tables. Joists shall be designed to support the loads given in the standard load tables of SJI Specifications and Tables.

3.10 METAL DECK

Deck units shall conform to SDI Publication Number 29. Panels of maximum possible lengths shall be used to minimize end laps. Deck units shall be fabricated in lengths to span three or more supports with flush, telescoped or nested 50 mm (2 inch) laps at ends, and interlocking, or nested side laps. Metal deck units shall be fabricated of steel thickness required by the design and shall be galvanized.

3.11 FOUNDATIONS

Foundations shall be in accordance with the Geotechnical requirements of this RFP.

3.12 EARTHWORK AND FOUNDATION PREPARATION

3.12.1 Capillary Water barrier

ASTM C 33 fine aggregate grading with a maximum of 3 percent by weight passing ASTM D 1140, 75 micrometers, No. 200 sieve, or 37.5mm and no more than 2 percent by weight passing the 4.75mm No. 4 size sieve and conforming to the soil quality requirements specified in the paragraph entitled "Satisfactory Materials."

3.12.2 Satisfactory Materials

Any materials classified by ASTM D 2487 as GW, GW-GM, GW-GC, SW, SW-SM, or SW-SC and free of debris, roots, wood, scrap material, vegetation, refuse, soft unsound particles, or objectionable materials. Unless specified otherwise, the maximum particle diameter shall be one-half the lift thickness at the intended location.

3.12.3 Unsatisfactory Materials

Any materials which do not comply with the requirements set forth in the Satisfactory Materials paragraph. Unsatisfactory materials also include man-made fills, trash, refuse, or backfills from previous construction. Unsatisfactory material also includes material classified as satisfactory which contains root and other organic matter, frozen material, and stones larger than 75mm. The Contracting Officer shall be notified of any unsatisfactory materials.

3.12.4 Clearing and Grubbing

Unless indicated otherwise, remove tress, stumps, logs, shrubs, brush and vegetation, and other items that would interfere with construction operations within lines 1.5 meters outside of the building and structure line. Remove stumps entirely. Grub out matted roots and roots over 50mm in diameter to at least 460mm below existing surface.

3.12.5 Stripping

Strip suitable soil from the site where excavation or grading is indicated and stockpile separately from other excavated material. Material unsuitable for use as topsoil shall be stockpiled and used for backfilling. Locate topsoil so that the material can be used readily for the finished grading. Where sufficient existing topsoil conforming to the material requirements is not available on site, provide borrow materials suitable for use as topsoil. Protect topsoil and keep in segregated piles until needed.

3.12.6 Excavation and Compaction of Fill

Excavate to contours, elevation, and dimensions indicated. Reuse excavated materials that meet the specified requirements for the material type required at the intended location. Keep excavations free from water. Excavate soil disturbed or weakened by Contractor's operations, soils softened or made unsuitable for subsequent construction due to exposure to weather. Excavations below indicated depths will not be permitted except to remove unsatisfactory material. Unsatisfactory material encountered below the grades shown shall be removed as directed. Refill with satisfactory material and compact to at least 95 percent of the maximum dry density, as determined by the Modified Proctor laboratory procedure. ASTM D 1557 shall be used for producing the Modified Proctor moisture-density curve, unless the soil to be compacted includes more than 30% retained on the 19 mm (3/4") sieve. In this case, the Contractor must replace the ASTM D 1557 laboratory compaction procedure with AASHTO T 180, Method D, corrected with AASHTO T 224.

During compaction, the moisture content of the soil shall be within 1.5 percent of the optimum moisture content, as determined by the Modified Proctor laboratory procedure. The thickness of compacted lifts shall not exceed 15 cm and the dry density of each compacted lift shall be tested by either sand cone (ASTM D 1556) or nuclear gage (ASTM D 2292). If the nuclear gage is used, it must first be compared to sand cone tests for each soil type to verify the accuracy of the nuclear gage measurements for moisture content, wet density, and dry density. Furthermore, every tenth nuclear gage test must be accompanied by a sand cone test and these verification data must be summarized and submitted to the Contracting Officer. Density tests shall be performed at a frequency of not less than one test for each 200 square meters and not less than two tests per compacted lift.

4.0 ARCHITECTURAL REQUIREMENTS

4.1 GENERAL

All material approved shall become standardized material to be used throughout the facilities under contract. Different sub-contractors shall not use different material or standards under the contract. Intent of the project is to use locally procured materials (unless specified otherwise) and labor to the maximum extent possible while satisfying seismic, international building code, and national fire protection agency life safety code. Conflicts between criteria shall be brought to the attention of the Contracting Officer for resolution. In such instances, the Contractor shall furnish all available information with justification to the Contracting Officer.

4.2 DESIGN CRITERIA

Schematic designs for the facility types requested in this proposal are provided in Appendix A. These designs shall be used to create a complete and usable facility meeting the minimum requirements stated in these documents. The Codes, Standards, and Regulations listed in these documents shall be used in the construction of this project. The publications shall be the most recent editions. Standards other than those mentioned may be accepted provided they meet the minimum requirements and the contractor shall submit proof of equivalency to the Contracting Officer for approval.

IBC - International Building Code, latest edition

NFPA 101 - Life Safety Code, latest edition

4.2.1 LIFE SAFETY/ FIRE PROTECTION/ HANDICAPPED ACCESSIBILITY

A life safety and fire protection analysis shall be completed prior to construction commencement. This analysis shall be documented in plans and in the design analysis. All spaces shall be classified following NFPA 101 or IBC. Whichever code is used shall be stated and referenced in the life safety plan. The facility shall comply with all other safety requirements of the NFPA 101. To the extent possible, all facilities shall be designed in accordance with recognized industry standards for life safety and building

egress. An adequate fire alarm system, fire extinguishers, and smoke alarms shall all be included as required. Due to the lack of adequate water volume and pressure, sprinkler systems are not feasible. In keeping with the intended function of these facilities, handicapped accessibility will not be incorporated in this project. Due to the war contingency requirement, it is assumed that only able-bodied military and civilian personnel will use the facilities listed herein.

4.2.2 ANTITERRORISM / FORCE PROTECTION

Force protection/anti-terrorism measures for this location shall be followed and incorporated into this project as indicated, in accordance with the referenced DoD Regulations. Information regarding force protection may be found herein and at the following link: www.tisp.org. UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings, including change 1, 22 January 2007; is the primary DoD AT/FP regulation for projects.

4.3 CONCRETE

4.3.1 Finish

Horizontal finish shall be troweled or screed. If finish is exposed concrete, then the floor shall be a broom finish for texture and shall not interfere with sloping for drainage of the surface. Vertical work shall have a form finish. Exposed concrete shall be sealed with an approved sealer.

4.3.2 Insulated Concrete Sandwich Wall System (3-D Building System)

As an option to standard masonry construction, the Contractor may construct walls of single story buildings using an insulated concrete sandwich wall system. The insulated concrete sandwich wall system shall be field fabricated and composed of a 76 mm (3 inch) expanded polystyrene core that spans in a single piece from floor elevation to top of wall elevation. The polystyrene core shall have a welded wire fabric, 50 mm x 50 mm (2 inch x 2 inch) mesh, 2.52 mm (12.5 gauge) wire, attached to both faces of the polystyrene core. The welded wire mesh shall be installed at 13 mm from the face of the polystyrene core. The welded wire mesh on each face shall be attached to each other and the polystyrene core with diagonal truss wires. Apply sprayed concrete (shotcrete) to a minimum thickness of 45 mm (1-3/4 inch) or as structural calculations require, whichever is greater. Method of placing the shotcrete shall be in conformance with ACI 506R-85. Concrete finishing shall be done by appropriate hand tools (darby, trowel, etc.) to provide the desired finish effect.

4.3.3 PRECAST

Storage of precast units shall be in a dry place or materials shall be covered with a plastic or protective layer. Units shall be detailed to provide size, shape and location of installation. Precast units shall meet the minimum concrete strength requirements.

4.4 Masonry

Storage of masonry materials shall be in a dry place or materials shall be covered with a plastic protective layer. Cover open walls each day to keep them protected and dry. Masonry construction systems shall be reinforced.

4.4.1 Concrete Masonry units

Concrete masonry units (CMU) for exterior walls shall be either 190 mm or 290 mm wide x 390 mm x 190 mm high as shown on drawings. They shall be installed in running bond level and plumb. Mortar joints shall be 10 mm on all sides between CMU. Joints shall be struck with a concave tool to provide a smooth recessed curved surface. Install only quality units. The surface shall be free of chips, cracks, or other

imperfections that would detract from the overall appearance of the finished wall. Defective CMU or mortar shall be rejected.

4.5 Stone

Stone type shall be identified for approval in design. Mortar shall be of lower strength than stone and weep holes shall be provided in cavity wall systems.

4.6 THERMAL PERFORMANCE OF EXTERNAL BUILDING ASSEMBLIES

External building assemblies shall meet the requirements of TI-800, Design Criteria, UFC 3-400-01 Design: Energy Conservation, and ASHRAE Standard 90.1, latest editions, but shall meet the following minimum requirements:

2. Assembly	3. Minimum Thermal Value
4. Exterior walls (above grade)	5. RSI 2.280 (R 13)
6. Ceilings/roof	7. RSI 5.284 (R 30)
8. Floor (over unheated space)	9. RSI 3.346 (R 19)
10. Exterior doors	11. RSI 0.252 (R 1.43)
12. Exterior windows/(glazing within doors)	13. RSI 0.308(R 1.75)
14. Skylights	15. RSI 0.180 (R 1.02)

This table is a summary of ANSI/ ASHRAE 90.1 Table 5.5-5, Climate Zone 5 (A,B,C) RSI measured in K-m²/W, R measured in SF-F-hr/BTU. 1 K-m²/W = 5.678 SF-F-hr/BTU. The building design shall utilize solar heating by orientating the buildings and wind breaks, insulation and exterior window shading techniques to reduce building heat loss and heat gain. Contractors shall include energy efficient heating and cooling solutions to minimize energy consumption.

4.7 CARPENTRY

The use of wood framing as indicated below is acceptable only where allowed by IBC and NFPA 101.

4.7.1 Wood Purlins

If Contractor chooses to utilize wood purlins, provide and install roof purlins of natural wood, locally available material 1 meter on center securely wedged between steel H structural joists. Tightly fit 25mm or 30 mm boards over roof structure and nail into wood purlins. New roofing shall extend a minimum of 600 mm past the exterior surface of the wall.

4.7.2 Wood Battens

If Contractor chooses to utilize wood ceiling batten strips, wood ceiling batten strips, 20 mm x 60 mm, shall be nailed to the bottom of the wood purlins. Battens shall be spaced at 400 mm on center (or per UBC requirements if sheetrock is substituted for plaster). This is for the support of a plaster ceiling.

4.8 ROOFING AND WEATHERPROOFING

All buildings shall have a sloped metal roof, with metal eaves, and soffits. All exterior entry ways to be covered and protected by rain gutters and diverters as to not have water falling on the entry ways to all buildings.

4.8.1 Sloped Roofs

A sloping roof shall be as defined in the IBC. On sloping roofs provide and install 0.60 mm (24 gauge) galvanized steel in either corrugated or standing seam design. Use 0.75 mm (22 gauge) for pre-denotation roof issues which should be augmented with sand bags in the ceiling below the metal roofing. Metal roofing shall be anchored to the steel "Z" purlins or wood deck sub-surface using exposed fasteners

at 300 mm on center at all seams and at 600 mm on center in the panel field. Wood deck sub-surface shall either be solid wood boards or plywood. Fasteners shall be placed at the top of the corrugation taking care not to dent panel. Roof sealant or adhesive shall be placed over each anchor head. Roofing system shall include all edge, ridge and penetration flashings necessary for a watertight installation and as described in this section. Roofing shall be galvanized mil finish. Panels shall be overlapped two corrugations side to side and be continuous sheets from ridge to eave. Provide continuous ridge vents on all gable roofs.
for layup as indicated.

4.8.1.1 Insulation

Provide a 50 mm (2 inch) thick extruded polystyrene rigid thermal insulation boards, conforming DIN, EN 13164 BS, EN 13164, $k=0.2$ @ 75 degrees F mean temperature, 2.82 kg/sq cm (40 lbs/sq in) compressive strength, hydrophobic, Type VI. Provide thickness by multiple boards to meet the designed R-value.

4.8.1.2 Insulation Installation

Comply with insulation manufacturer's instructions and recommendations for handling, installing, and bonding or anchoring insulation to substrate. Insulation boards shall be installed loose, without glue, in staggered manner. Attention should be paid not to leave separation along edges. Where overall insulation thickness is 50 mm (2 inches) or greater, install required thickness in two layers with joints of second layer offset from joints of first layer a minimum of 300 mm (12 inches) each direction. Trim surface of insulation where necessary at roof drains so completed surface is flush with drain ring. Polyester felt or geotextile shall be installed over insulation layers as a filter layer to prevent the passage of fines in gravel layer to lower strata.

4.8.1.3 Primer

ASTM D 41 primer as recommended by roofing manufacturer.

4.8.1.4 Coal Tar Bitumen

ASTM D 450, Type III, as an option to asphalt.

4.8.1.5 Bitumen Membrane

- e. ASTM D312 or the equivalent EN 1849-1 for thickness and unit weight,
- f. ASTM D312 or the equivalent EN-1426 for penetration,
- g. ASTM D312 or the equivalent EN-1427 for softening point
- h. ASTM D312 or the equivalent TS 11758-1 for flash point or heat stability
- i. ASTM D4601 or the equivalent TS 11758-1 for width and area of roll
- j. ASTM D4601 (moisture percentage) or the equivalent EN 1928 (water tightness)
- k. ASTM D226 (pliability) or the equivalent EN 1109 (cold bending).

4.8.1.6 Glass Roofing Felt

ASTM D 2178, Type IV or VI, except felts for coal tar systems shall be impregnated with a bituminous resin coating which is compatible with coal tar bitumen.

4.8.1.7 Organic Felt Base

- l. ASTM D 2626 for use with asphalt roofing system.
- m. ASTM D 226 for use with asphalt roofing system and ASTM D 227 for use with coal tar roofing system. Organic felts may be used for bitumen stops and edge envelopes.

4.9 Connections and Jointing

4.9.1 Soldering

Soldering shall apply to copper and stainless steel items. Edges of sheet metal shall be pre-tinned before soldering is begun. Soldering shall be done slowly with well heated soldering irons so as to thoroughly heat the seams and completely sweat the solder through the full width of the seam. Edges of stainless steel to be pre-tinned shall be treated with soldering acid flux. Soldering shall follow immediately after application of the flux. Upon completion of soldering, the acid flux residue shall be thoroughly cleaned from the sheet metal with a water solution of washing soda and rinsed with clean water.

4.9.1.1 Seaming

Flat-lock and soldered-lap seams shall finish not less than 25 mm. wide. Unsoldered plain-lap seams shall lap not less than 75 mm. unless otherwise specified. Flat seams shall be made in the direction of the flow.

4.9.1.2 Cleats

A continuous cleat shall be provided where indicated or specified to secure loose edges of the sheet metalwork. Butt joints of cleats shall be spaced approximately 3 mm. apart. The cleat shall be fastened to supporting wood construction with nails evenly spaced not over 300 mm. on centers. Where the fastening is to be made to concrete or masonry, screws shall be used and shall be driven in expansion shields set in concrete or masonry.

4.10 Metal

4.10.1 STEEL HANDRAILS

Steel handrails shall be steel pipe conforming to ASTM A 53/A 53M, and shall have a nominal diameter of 50 mm. Handrails shall be designed to resist a concentrated load of 490 N in any direction at any point on the top of the rail or 290 N applied horizontally to the top of the rail, whichever is more severe. Installation of handrails shall be with expansion shields and bolts into masonry and/or concrete, and full length welds of metal posts to stair stringers. Railings shall be hot dipped galvanized [and shop painted]. Pipe collars of the same material and finish as the handrail shall be provided.

4.10.2 METAL STAIRS

Provide galvanized steel [ship] stair stringers and treads. [Ship stairs are a steeper stair used for utility purposes only.] Treads shall be [concrete pan, checkered plate steel, grated galvanized steel] along with welds or fasteners. Stairs shall be designed and constructed to support live load of not less than 500 kg (100 psf) per square meter and a concentrated load of 1.3 kN (300lbs).

4.10.3 Materials

Any metal listed by ASTM, DIN, BS or EN standards. Manual for a particular item may be used, unless otherwise specified or indicated. Materials shall conform to the requirements specified below and to the thicknesses and configurations established in ASTM, DIN, BS or EN standards. Different items need not

be of the same metal, except that if copper is selected for any exposed item, all exposed items shall be copper.

4.10.3.1 Steel Sheet, Zinc-Coated (Galvanized)

Zinc coated steel conforming to ASTM A 525, DIN BS or EN Standards.

4.10.3.2 Aluminum wall capping

Aluminum wall capping shall conform to ASTM B 209 M, DIN 18339, BS or EN Standards.

4.10.4 Flashing

Flashing shall be installed at locations indicated and as specified below. Sealing shall be according to the flashing manufacturer's recommendations. Flashings shall be installed at intersections of roof with vertical surfaces and at projections through roof, except that flashing for heating and plumbing, including piping, roof and floor drains, and for electrical conduit projections through roof or walls are specified in other sections. Except as otherwise indicated, counter flashings shall be provided over base flashings. Perforations in flashings made by masonry anchors shall be installed on top of joint reinforcement. Lashing shall be formed to direct water to the outside of the system.

4.10.4.1 Through-wall Flashing

Through-wall flashing includes sill, lintel, and spandrel flashing. The flashing shall be laid with a layer of mortar above and below the flashing so that the total thickness of the two layers of the mortar and flashing are the same thickness as the regular mortar joints. Flashing shall not extend further in to the masonry backup wall than the first mortar joint. Joints in flashing shall be lapped and sealed. Flashing shall be one piece for lintels and sills.

4.10.4.2 Lintel Flashing

Lintel flashing shall extend the full length of lintel. Flashing shall extend through the wall one masonry course above the lintels and shall be bent down over the vertical leg of the outer steel lintel angle not less than 50 mm, or shall be applied over top of masonry and pre-cast concrete lintels. Bed joints of lintels at joints shall be under laid with sheet metal bond breaker.

4.10.4.3 Valley flashing

Valley flashing shall be provided at intersections of roofs where a valley is formed. Flashing shall be a minimum of 500 mm centered on the valley (extending each direction a minimum of 250 mm). Valley flashing shall have a small ridge in the center to allow for expansion and contraction. Material shall be stainless steel, galvanized or match finished roofing metal.

4.10.4.4 Sill Flashing

Sill flashing shall extend the full width of the sill and not less than 100 mm beyond ends of sill except at joint where the flashing shall be terminated at the end of the sill.

4.10.5 Metal Fascia & Soffit

No wood fascias and/or soffits are allowed. Use metal fascias and soffits throughout. Extend roof decking out over fascia a minimum of 20 mm. Provide a 40 mm drip flashing over edge of roof decking so that it extends past bottom of decking on all sides of the building. Soffits shall be a minimum width of 600mm extending from the building wall.

4.10.6 Continuous soffit vent

Enclose soffits and return to vertical wall. Provide continuous soffit venting of all overhangs on the underside of the soffit. The opening shall be no larger than 100 mm and set in a minimum of 50 mm from the exterior fascia edge.

4.10.7 Ridge vent

For sloping roofs, provide continuous metal ridge vent at the top of roof along the ridge. Ridge vent shall be sized to provide adequate ventilation of the roofing system.

4.10.8 Screen

Provide insect screen for all soffit, ridge, vents, louvers and all openings except for doors and windows unless otherwise specified.

4.10.9 Expansion joint profiles

Metal expansion joints shall have a profile to allow deflection and expansion in two directions. Metal shall be treated for exterior conditions. Expansion joints shall be water proof.

4.10.10 Roof Gutters

Roof gutters shall be installed as indicated. Roof gutters shall be rigidly attached to the building. Supports for roof gutters shall be spaced according to manufacturer's recommendations. A 600 mm overlap, jointing with approved crimping or welding shall provide a continuous gutter along the building eaves.

4.10.11 Downspouts

Downspouts shall be designed and fabricated for each specific application. Unless otherwise specified or indicated, exposed edges shall be folded back to form a 13 mm (1/2 inch) hem on the concealed side, and bottom edges of exposed vertical surfaces shall be angled to form drips. Bituminous cement shall not be placed in contact with roofing membranes other than built-up roofing and shall not block the flow of water to the downspout for low sloped roofs. Downspouts shall be rigidly attached to the building with supports a minimum of 1.5 M apart. At the base of each downspout, concrete splash block shall be placed to eliminate damage to the building due to rain water runoff toward the building.

4.10.12 Wall Capping

Wall Capping shall be installed according to the manufacturer's recommendations.

4.11 Sealants

Provide a sealant compatible with the material(s) to which it is applied. Do not use a sealant that has exceeded shelf life or has jelled and cannot be discharged in a continuous flow from the gun. Apply the sealant in accordance with the manufacturer's instructions with a gun having a nozzle that fits the joint width. Force sealant into joints to fill the joints solidly without air pockets. Tool smooth fresh sealant after application to ensure adhesion. Sealant shall be uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints; apply sealant, and tool smooth as specified. Sealer shall be applied over the sealant when and as specified by the sealant manufacturer.

4.11.1 Interior Sealant

ASTM C 834 or ASTM C 920, Type S or M, Grade NS, Class 12.5. Use NT, DIN, BS, or EN equal

standards.

4.11.2 Exterior Sealant

For joints in vertical and horizontal surfaces, provide ASTM C 920, Type S or M, Grade NS, DIN, BS, or EN equal standards.

4.11.3 Floor Joint Sealant

(ASTM C 920) Type S or M, Grade P, class 25, use T

4.11.4 Primers

Provide a non-staining, quick-drying type and consistency recommended by the sealant manufacturer for the particular application. Immediately prior to application of the sealant, clean out loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's instructions. Do not apply primer to exposed finish surfaces.

4.11.5 Bond Breakers

Provide the type and consistency recommended by the sealant manufacturer to prevent adhesion of the sealant to backing or to bottom of the joint. Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for each type of joint and sealant used, to prevent sealant from adhering to these surfaces. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.

4.11.6 Backing

Backing shall be 25 to 33 percent oversize for closed cell and 40 to 50 percent oversize for open cell material, unless otherwise indicated.

4.11.7 Surface Preparation

Surfaces shall be clean, dry to the touch, and free from dirt, frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion. Oil and grease shall be removed with solvent and surfaces shall be wiped dry with clean cloths. When resealing an existing joint, remove existing caulk or sealant prior to applying new sealant. For surface types not listed below, the sealant manufacturer shall be contacted for specific recommendations.

4.11.8 Masking Tape

Masking tape shall be placed on the finish surface on one or both sides of a joint cavity to protect adjacent finish surfaces from primer or sealant smears. Masking tape shall be removed within 10 minutes after joint has been filled and tooled.

4.11.9 Backstops

Install backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide a joint of the depth specified.

4.11.10 Protection

Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled.

4.11.10.1 Final Cleaning

Provide cleaning solvent type(s) recommended by the sealant manufacturer except for aluminum and bronze surfaces that will be in contact with sealant. Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

4.11.10.1.1 Masonry and Other Porous Surfaces

- n. Immediately scrape off fresh sealant that has been smeared on masonry and rub clean with a solvent as recommended by the sealant manufacturer. Allow excess sealant to cure for 24 hour then remove by wire brushing or sanding.

4.11.10.1.2 Metal and Other Non-Porous Surfaces

- o. Remove excess sealant with a solvent-moistened cloth.

4.12 Louvers

4.12.1 Interior louvers

SDI 111-C, Louvers shall be stationary sight-proof or lightproof type as required. Louvers for lightproof doors shall not transmit light. Detachable moldings on room or non security side of door; on security side of door, moldings to be integral part of louver. Form louver frames of 0.90 mm thick steel and louver blades of a minimum 0.60 mm. Louvers for lightproof doors shall have minimum of 20 percent net-free opening. Sight-proof louvers shall be inverted "V" blade design with minimum 55 or inverted "Y" blade design with minimum 40 percent net-free opening.

4.12.2 Exterior louvers

Louvers shall be inverted "Y", "V" or "Z" type. Weld or tenon louver blades to continuous channel frame and weld assembly to door to form watertight assembly. Form louvers of hot-dip galvanized steel of same gage as door facings. Louvers shall have steel-framed insect screens secured to room side and readily removable. Provide aluminum wire cloth, 7 by 7 per 10 mm or 7 by 6 per 10 mm mesh, for insect screens.

4.13 Windows, doors & glazing

4.13.1 Windows

Windows shall be operable. Operable windows shall be slider or awning type. High clerestory windows shall be awning type and operable from ground either by cable or other device.

4.13.1.1 Materials

4.13.1.1.1 Aluminum Extrusions

Provide alloy and temper recommended by the window manufacturer for the strength, corrosion resistance, and application of required finish, meeting the DIN 1725 raw material requirements, but not less than 215 N/mm² ultimate tensile strength and not less than 1.5 mm thick at any location for main frame and sash members. Note: At the contractor's option extruded PVC windows may be provided in lieu of aluminum windows.

4.13.1.1.2 Fasteners:

Provide aluminum, nonmagnetic stainless steel, epoxy adhesive, or other materials warranted by the manufacturer to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors, and other components of window units.

4.13.1.1.3 Reinforcement

Where fasteners screw-anchor into aluminum less than 3 mm (0.125 inch) thick, reinforce the interior with aluminum or nonmagnetic stainless steel to receive screw threads or provide standard non-corrosive pressed-in splined grommet nuts.

4.13.1.1.4 Exposed Fasteners

Except where unavoidable for application of hardware, do not use exposed fasteners. For application of hardware, use fasteners that match the finish of the member or hardware being fastened, as appropriate.

4.13.1.1.5 Anchors, Clips, and Window Accessories

Fabricate anchors, clips, and window accessories of aluminum, nonmagnetic stainless steel, or hot-dip zinc-coated steel or iron complying with the requirements of DIN 1748; provide sufficient strength to withstand design pressure indicated. As a minimum provide 3 anchors on each side of the frame.

4.13.1.1.6 Compression-Type Glazing Strips and Weatherstripping

Unless otherwise indicated, and at the manufacturer's option, provide compressible stripping for glazing and weatherstripping such as molded EPDM or neoprene gaskets.

4.13.1.1.7 Sealant

For sealants required within fabricated window units, provide type recommended by the manufacturer for joint size and movement. Sealant shall remain permanently elastic non-shrinking, and non-migrating. Comply with Sealants of these specifications for selection and installation of sealants.

4.13.1.1.8 Wire Fabric Insect Screen

Wire Fabric Insect Screen shall be permanently fixed to the exterior of operable windows.

4.13.1.2 Hardware

Provide the manufacturer's standard hardware fabricated from aluminum, stainless steel, or other corrosion-resistant material compatible with aluminum and of sufficient strength to perform the function for which it is intended. Provide at a minimum one locking device on the interior of each window. Any operable window over 2 square meters shall have two locking devices as a minimum.

4.13.1.3 Fabrication

Provide aluminum windows with factory finish in all buildings as indicated in the design drawings. Window openings shall be provided with insect screening permanently fixed to the exterior. Provide a minimum of 3 anchors on each side of the frame into the adjoining structure. Provide weather stripping system for all exterior windows and doors.

4.13.1.4 Metal Window Sills

Galvanized metal window sills, 0.90 mm (20 gauge), shall be installed on the exterior of all windows. The metal window sills shall have a turn down of 50 mm over the exterior masonry and stucco. Metal sills shall extend from side to side of the masonry opening in a single piece. Extend the metal window sill a minimum of 20 mm under the bottom of the aluminum windows. Install masonry mortar as required for a smooth surface under the window sills. Sills shall slope a minimum of 6 mm to the exterior and not allow water to puddle.

4.13.1.5 Finishes

Apply baked enamel in compliance with paint manufacturer's specifications for cleaning, conversion coating, and painting. Color shall be white meeting the requirements of DIN 50018

4.13.1.6 Inspection

Inspect openings before beginning installation. Verify that rough or masonry opening is correct and the sill plate is level. Masonry surfaces shall be visibly dry and free of excess mortar, sand, and other construction debris.

4.13.1.7 Installation

Comply with manufacturer's specifications and recommendations for installation of window units, hardware, operators, and other components of the work. Set window units plumb, level, and true to line, without warp or rack of frames or sash. Provide proper support and anchor securely in place. Set sill members and other members in a bed of compound or with joint fillers or gaskets, as shown, to provide weather tight construction. Refer to the Sealant sections for compounds, fillers, and gaskets to be installed concurrently with window units. Coordinate installation with wall flashings and other components of the work.

4.13.1.8 Adjusting

Adjust operating sash and hardware to provide a tight fit at contact points and at weather stripping for smooth operation and a weather tight closure.

4.13.1.9 Cleaning

Clean aluminum surfaces promptly after installation of windows. Exercise care to avoid damage to protective coatings and finishes. Remove excess glazing and sealant compounds, dirt, and other substances. Lubricate hardware and other moving parts.

4.13.2 Doors

Fire rated door assemblies including hollow metal frame and hardware shall be provided as indicated in the design drawings. Rated doors and frames shall be tested and approved as an assembly and shall be provided by a single manufacturer/distributor. Hardware for fire rated door assemblies shall be labeled as appropriate for fire rated applications and shall be coordinated with door manufacturer. All exterior doors shall be heavy duty metal doors with metal frames. Interior door shall be wood doors with hollow metal frames. Commercial duty lock sets and hardware shall be used on all doors. Hinges shall be the 5 knuckle type or equivalent. Provide door handles and locksets that can be locked with a key on all doors. All door locks shall have a thumb latch on inside of door such that no key is necessary to exit the room or building. Coordinate the final keying schedule with Contracting Officer prior to ordering lock sets. Generally each building should have 8 master keys fitting all locks, 8 sub-master keys fitting all exterior doors and 3 keys each for each interior door. Include 25% spare key blanks for the amount of keys provided per building. Provide numbering system identifying key to associated room door. Provide

weather stripping system for all exterior doors.

4.13.2.1 OVERHEAD Doors

Overhead doors shall be sized as required. Doors shall be fabricated from interlocking cold-rolled slats, designed to withstand building wind loading and be installed with wind locks. Curtain door slats shall be continuous for the width of the door and steel interlocking flat-profile design. Standard steel slats shall be made of roll-formed steel [22, 18, or 16] gauge steel, either primed & painted galvanized, stainless steel or anodized aluminum as provided by manufacture. Channel or curtain door guides shall be provided on each side of door. Overhead doors shall have a weather stripping bottom bar, head and jambs. Weather stripping and astragals shall be natural rubber or neoprene rubber. A manual pull chain shall be connected to the operation of the rolling door to provide open and close operation. Coiling housing shall be mounted above all opening, on the interior side. For rated openings, a fusible link shall be provided on the most hazardous side (example: kitchen rather than dining area). The coiling shutter shall also be rated and designed accordingly by the manufacture for the required fire rating. Hoods shall be fabricated from steel sheets with minimum yield strength of 227.5 MPa. Doors shall be counterbalanced by an adjustable, steel, helical torsion spring mounted around a steel shaft in a spring barrel and connected to the door curtain with the required barrel rings.

Counterbalance-barrel components shall be as follows:

- a. Spring barrels shall be hot-formed structural-quality carbon steel, welded or seamless pipe. Pipe shall be of sufficient diameter and wall thickness to limit deflection to a maximum of 1/360 of the span.
- b. Counterbalance springs shall be oil-tempered helical steel springs designed with a safety factor of 4. Springs shall be sized to counterbalance the weight of the curtain at any point of its travel, and shall be capable of being adjusted to counterbalance not less than 125% of the normal curtain load. Spring adjustment shall be arranged in such a way that the curtain need not be raised or lowered to secure the adjustment.
- c. Counterbalance shafts shall be case-hardened steel of the proper size to hold the fixed ends of the spring and carry the torsion load of the spring.
- d. Barrel plugs shall be fabricated from cast steel machined to fit the ends of the barrel. Plugs shall secure the ends of the spring to the barrel and the shaft.
- e. Barrel rings shall be fabricated from malleable iron of the proper in-volute shape to coil the curtain in a uniformly increasing diameter.
- f. Shaft bearings shall be factory sealed ball bearings of the proper size for load and shaft diameters.
- g. Door operators shall consist of an endless steel hand chain, chain-pocket wheel and guard, and a geared reduction unit of at least a 3:1 ratio. Required pull for operation shall not exceed 16 kg. Chain hoists shall have a self-locking mechanism allowing the curtain to be stopped at any point in its upward/downward travel and to remain in that position until moved to the fully open or closed position. Hand chains shall be cadmium-plated alloy steel with a yield point of at least three times the required hand-chain pull. Pretreated zinc-coated steel sheets shall be given the manufacturer's standard prime coat and an enamel finish coat applied to the exterior face after forming.
- h. After installation, doors, track, and operating equipment shall be examined and tested for general operation and weather against the specified wind pressure, and weather resistance. Doors that fail the required tests shall be adjusted and retested. Doors that have been adjusted and fail subsequent tests shall be removed and replaced with new doors at no additional cost.

4.13.2.2 Steel doors

SDI A250.8, except as specified otherwise. Prepare doors to receive specified hardware. Undercut where indicated. Exterior doors shall have top edge closed flush and sealed to prevent water intrusion. Doors shall be 44.5 mm thick, unless otherwise indicated. Doors shall be constructed using heavy gauge steel with minimum thickness of 1.2 mm.

4.13.2.3 Wood doors

Provide solid core wood doors. Wood doors shall meet the requirements and standards of the Window and Door Manufacturers Association (WDMA) and the American Architectural Manufacturers Association (AAMA) and ASTM 2074-00 Fire Test for fire rated doors. Doors shall be 44.5 mm thick.

4.13.2.4 Door hardware

Door hardware sets shall be provided as follows:

HW-1
 1-1/2 pr Hinges, A5111
 1 ea Lockset, F04 Entry Lock w/levers, Grade 1, Exit Devices
 1 ea Door Closer, C02061
 1 ea Marble Threshold
 1 ea Door Sweep

HW-2
 3 pr Hinges, A5111
 2 ea Exit Device, Conc Vert Rod, F04 w/Levers, Grade 1
 2 ea Door Closers, C02061
 1 ea Marble Threshold
 1 ea Door Sweep

HW-3
 1-1/2 pr Hinges, A8112
 1 ea Latch Set, F01 w/Levers, Grade 1
 3 ea Silencers

HW-4
 1-1/2 pr Hinges, A8112
 1 ea Lockset, F05
 1 ea Stop, L02101 or L02161
 3 ea Silencers

HW-5
 1-1/2 pr Hinges, A8112
 1 ea Lockset, F04
 1 ea Stop, L02101 or L02161
 3 ea Silencers
 1 ea Kick Plate, J102
 1 ea Mop Plate, J103
 1 ea Marble Threshold

HW-6

1-1/2 pr Hinges, A8112
 1 ea Lockset, F07 Storeroom Lock
 1 ea Stop, L02101 or L02161
 3 ea Silencers

HW-7
 1-1/2 pr Hinges, A5111
 1 ea Passage Lockset
 1 ea Marble Threshold
 1 ea Door Sweep

HW-8
 3 pr Hinges, A8112
 2 ea Door Pull, J405
 2 ea Door Closer, C02051
 2 ea Door Stop, L02101 or L02161
 2 ea Silencers at framehood

HW-9
 1-1/2 pr Hinges, A5111
 1 ea Lockset, F05
 1 ea Stop, L02101 or L02161
 3 ea Silencers
 1 ea Kick Plate, J102
 1 ea Mop Plate, J103
 1 ea Marble Threshold

HW-10
 1-1/2 pr Hinges, A5111
 1 ea Passage Lockset
 1 ea Marble Threshold
 1 ea Door Sweep
 1 ea Door Closer, C02061

HW-11
 2 pr Hinges A8112
 1 ea Heavy Duty Dead Bolt Lock

HW-12
 1-1/2 pr Hinges, A8112
 1 ea Lockset, F04
 1 ea Stop, L02101 or L02161
 3 ea Silencers

General Note: sleeping rooms require BMHA 156.12 type F13 lockset. All corridor doors, including toilet rooms that face corridors, shall be 20 minute fire rated. Doors to kitchen pantry and weapons storage shall be 45 minute rated. Doors to dining area shall be 90 minute rated, panic hardware and no glazing. Door to kitchen shall be 90 minute rated and no glazing.

4.13.2.5 Solid Plastic & phenolic Doors

Not allowed for this project. [Solid Plastic & Phenolic doors and frames are for interior wet room use only. Solid Plastic & Phenolic doors and frames may be used for bath stalls, shower stalls, and toilets stalls.]

4.13.2.6 Fire and Smoke Doors and Frames

The requirements of NFPA 80 and NFPA 105 respectfully shall take precedence over details indicated or specified.

4.13.2.7 THRESHOLDS

All exterior doors (except Mech/Elect rooms) shall be provided with manufactured metal thresholds conforming to ANSI/BHMA A156.21. Doors at all wet areas with ceramic tile or terrazzo tile flooring shall be provided with solid marble thresholds with marble threshold set 13 mm above tile. Thresholds shall span continuously from jamb to jamb.

4.13.2.8 Standard Steel Frames

SDI A250.8, except as otherwise specified. Form frames to sizes and shapes indicated, with welded corners or knock-down field-assembled corners. Provide steel frames for doors, transoms, sidelights, mullions, cased openings, and interior glazed panels, unless otherwise indicated.

4.13.2.9 Welded Frames

Continuously weld frame faces at corner joints. Mechanically interlock or continuously weld stops and rabbets. Grind welds smooth.

4.13.2.10 Stops and Beads

Form stops and beads from 0.9 mm thick steel. Provide for glazed and other openings in standard steel frames. Secure beads to frames with oval-head, countersunk Phillips self-tapping sheet metal screws or concealed clips and fasteners. Space the fasteners approximately 300 to 400 mm on centers. Miter molded shapes at corners. Use butt or miter square or rectangular beads at corners.

4.13.2.11 Weather-stripping, Integral Gasket

Provide weather-stripping that is a standard cataloged product of a manufacturer regularly engaged in the manufacture of this specialized item. Black synthetic rubber gasket with tabs for factory fitting into factory slotted frames, or extruded neoprene foam gasket made to fit into a continuous groove formed in the frame, may be provided in lieu of head and jamb seals. Weather stripping shall be looped neoprene, synthetic rubber gasket, or vinyl held in an extruded non-ferrous metal housing. Air leakage of weather stripped doors shall not exceed 0.003125 cubic meters per second of air per square meter of door area when tested in accordance with ASTM E 283.

4.13.2.12 Anchors

Provide anchors to secure the frame to adjoining construction. Provide steel anchors, zinc-coated or painted with rust-inhibitive paint, anchors not lighter than 1.2 mm thick.

4.13.2.12.1 Wall Anchors

Provide at least three anchors for each jamb. For frames which are more than 2285 mm in height, provide one additional anchor for each jamb for each additional 760 mm or fraction thereof.

4.13.2.12.2 Floor Anchors

Provide floor anchors drilled for 10 mm anchor bolts at bottom of each jamb member. Where floor fill occurs, terminate bottom of frames at the indicated finished floor levels and support by adjustable extension clips resting on and anchored to the structural slabs.

4.13.2.13 Hardware Preparation

Provide minimum hardware reinforcing gages as specified in ANSI A250.6. Drill and tap doors and frames to receive finish hardware. Prepare doors and frames for hardware in accordance with the applicable requirements of SDI A250.8 and ANSI A250.6. For additional requirements refer to BHMA A115. Drill and tap for surface-applied hardware at the project site. Build additional reinforcing for surface-applied hardware into the door at the factory. Locate hardware in accordance with the requirements of SDI A250.8, as applicable. Punch door frames, with the exception of frames that will have weather-stripping or lightproof or soundproof gasketing, to receive a minimum of two rubber or vinyl door silencers on lock side of single doors and one silencer for each leaf at heads of double doors. Set lock strikes out to provide clearance for silencers.

4.13.2.14 Hinges

Exterior hinges shall have non-removable pins and be satin-chrome steel or stainless steel; Grade 1 anti-friction or ball bearing; and 3 each of 115 mm x 115 mm per leaf up to 900 mm wide door 125 mm x 125 mm for doors 900 mm to 1,200 mm wide. Interior hinges shall be Grade 1; anti-friction or ball bearing; and 3 each of 115 mm x 115 mm per leaf up to 900 mm wide door 125 mm x 125 mm for doors 900 mm to 1,200mm wide. Hinges for labeled fire doors must be either steel or stainless steel. Hinges shall conform to ANSI/BHMA A156.1 and A156.7. Locksets, Latchets, Exit Devices, and Push and Pull Plates: Exterior doors shall have mortise locks conforming to ANSI/BHMA A156.13 for metal doors. Emergency exit devices shall be Grade 1, flush mounted type. Interior doors shall have mortise locksets conforming to ANSI/BHMA A156.13, Series1000, Grade 1. All locks and latchsets shall be the product of the same manufacturer. Locksets, padlocks and latchsets shall be provided, as required, with lever handles on each side. Provide heavy duty hasp and locks at all fuel storage tanks.

4.13.2.15 Closers

Closers shall be provided on all exterior doors and fire-rated doors. All exterior doors and interior doors that require security or privacy such as toilet room shall be provided with heavy-duty hydraulic closers. Closers shall conform to ANSI/BHMA A156.4, Grade 1. Closers shall be surface-mounted, modern type, with cover. Closer shall be adjustable type and have slow-down control to prevent door leaf from slamming to frame. Provide door silencers on all door frames provided with closers.

4.13.2.16 DOOR STOPS

Door Stops: Door stops shall be provided on all exterior and interior doors. Door stops shall comply with ANSI/BHMA A156.16 and shall be satin chrome on bronze, Grade 1.

4.13.2.17 Keying SYSTEM & LOCK cylinders

Provide locks for all doors. A [Master] key system shall be provided. [Master key system shall include a separate & different key for each door with a master key provided to open any & all doors.] Cylinders: Lock cylinders shall comply with BHMA A156.5. Lock cylinder shall have six pins. Cylinders shall have key removable type cores. All locksets, exit devices, and padlocks shall accept same interchangeable cores.

4.13.2.18 Finishes

All surfaces of doors and frames shall be thoroughly cleaned, chemically treated and factory primed with a rust inhibiting coating as specified in SDI A250.8, or paintable A25 galv-annealed steel without primer. Where coating is removed by welding, apply touchup of factory primer. Provide door finish colors as selected by the Contracting Officer from the color selection samples.

4.13.2.19 Water-Resistant Sealer

Provide a water-resistant sealer compatible with the specified finish as approved and as recommended by the door manufacturer.

4.13.2.20 Fabrication and Workmanship

Finished doors and frames shall be strong and rigid, neat in appearance, and free from defects, waves, scratches, cuts, dents, ridges, holes, warp, and buckle. Molded members shall be clean cut, straight, and true, with joints coped or mitered, well formed, and in true alignment. Dress exposed welded and soldered joints smooth. Design door frame sections for use with the wall construction indicated. Corner joints shall be well formed and in true alignment. Conceal fastenings where practicable. On wraparound frames for masonry partitions, provide a throat opening 3 mm larger than the actual masonry thickness. Design other frames in exposed masonry walls or partitions to allow sufficient space between the inside back of trim and masonry to receive caulking compound.

4.13.2.21 Installation

Before installation, seal top and bottom edges of doors with the approved water-resistant sealer. Seal cuts made on the job immediately after cutting using approved water-resistant sealer. Fit, trim, and hang doors with a 2 mm minimum, 3 mm maximum clearance at sides and top, and a 5 mm minimum, 6 mm maximum clearance over thresholds. Provide 10 mm minimum, 11 mm maximum clearance at bottom where no threshold occurs. Bevel edges of doors at the rate of 3 mm in 50 mm. Door warp shall not exceed 6 mm when measured in accordance with WDMA I.S. 1-A. Hang doors in accordance with clearances specified in SDI A250.8. After erection and glazing, clean and adjust hardware.

4.13.2.21.1 Frames

Set frames in accordance with SDI 105. Plumb, align, and brace securely until permanent anchors are set. Anchor bottoms of frames with expansion bolts or powder-actuated fasteners. Build in or secure wall anchors to adjoining construction. Backfill frames with mortar. When an additive is provided in the mortar, coat inside of frames with corrosion-inhibiting bituminous material. For frames in exterior walls, ensure that stops are filled with rigid insulation before grout is placed.

4.13.2.21.2 Grouted Frames

For frames to be installed in exterior walls and to be filled with mortar or grout, fill the stops with strips of rigid insulation to keep the grout out of the stops and to facilitate installation of stop-applied head and jamb seals.

4.13.2.22 Protection and Cleaning

Protect doors and frames from damage. Repair damaged doors and frames prior to completion and acceptance of the project or replace with new, as directed. Wire brush rusted frames until rust is completely removed. Clean thoroughly. Apply an all-over coat of rust-inhibitive paint of the same type used for shop coat. Upon completion, clean exposed surfaces of doors and frames thoroughly. Remove mastic smears and other unsightly marks.

4.13.2.23 Weather Stripping

Install doors in strict accordance with the manufacturer's printed instructions and details. Weather strip the exterior swing-type doors at sills, heads and jambs to provide weather tight installation. Apply weather stripping at sills to bottom rails of doors and hold in place with a brass or bronze plate. Apply weather stripping to door frames at jambs and head. Shape weather stripping at sills to suit the threshold. Insert gasket in groove after frame is finish painted.

4.13.2.24 Pre-fitting

At the Contractor's option, doors may be provided factory pre-fit. Doors shall be sized and machined at the factory by the door manufacturer in accordance with the standards under which they are produced. The work shall include sizing, beveled edges, mortising, and drilling for hardware and providing necessary beaded openings for glass and louvers. Provide the door manufacturer with the necessary hardware samples, and frame and hardware schedules as required to coordinate the work.

4.13.3 Glazing

All glazing shall be double laminated and insulating. Laminated glazing shall be constructed of two panes of minimum 3 mm annealed glass laminated to a minimum 0.75 mm polyvinyl-butryal (PVB) interlayer, in accordance with UFC 4-010-01. Two panes of laminated glazing shall be installed in each window with hermetically sealed 13 mm airspace between them. After installation of windows, the contractor shall install a minimum 3 mil tinted film (Scotch Shield Ultra Safety and Security Window Film or approved equal) to the inside face of the glazing in accordance with manufacturer's instructions.

4.13.3.1 Tempered glazing

Tempered glass shall be kind FT fully tempered flat type. Class 1 clear, condition A uncoated surface, Quality q3-glazing select, conforming to ASTM, DIN, BS or EN standards. Color shall be clear.

4.13.3.2 Sealant

Sealant shall be elastomeric conforming to ASTM, DIN, BS, or EN standards. Type S or M, Grade NS, Class 12.5, Use G, of type chemically compatible with setting blocks, preformed sealing tape and sealants used in manufacturing insulation glass. Color of sealant shall be as selected from manufacturer's full range of standard colors by Contracting Officer.

4.13.3.3 Glazing Gaskets

Glazing gaskets shall be extruded with continuous integral locking projection designed to engage into metal glass holding members to provide a watertight seal during dynamic loading, building movements and thermal movements. Glazing gaskets for a single glazed opening shall be continuous one-piece units with factory-fabricated injection-molded corners free of flashing and burrs. Glazing gaskets shall be in lengths or units recommended by manufacturer to ensure against pull-back at corners.

4.13.3.4 Fixed Glazing Gaskets

Fixed glazing gaskets shall be closed-cell (sponge) smooth extruded compression gaskets of cured elastomeric virgin neoprene compounds conforming to ASTM, DIN, BS or EN standards.

4.13.3.5 Wedge Glazing Gaskets

Wedge glazing gaskets shall be high-quality extrusions of cured elastomeric virgin neoprene compounds, ozone resistant, conforming to ASTM, DIN, BS, or EN standards.

4.13.3.6 Putty and glazing Compound

Glazing compound shall conform to ASTM, DIN, BS, or EN standards for face-glazing metal sash. Putty shall be linseed oil type conforming to DIN, BS, or EN standards for face-glazing primed wood sash. Putty and glazing compounds shall not be used with insulating glass or laminated glass.

4.13.3.7 Setting and Edge Blocking

Neoprene setting blocks shall be dense extruded type conforming to ASTM, DIN, BS, or EN standards. Silicone setting blocks shall be required when blocks are in contact with silicone sealant. Profiles, lengths and locations shall be as required and recommended in writing by glass manufacturer.

4.13.3.8 Preparation

Openings and framing systems scheduled to receive glass shall be examined for compliance with glass manufacturer's recommendations including size, squareness, offsets at corners, presence and function of weep system, face and edge clearance requirements and effective sealing between joints of glass-framing members. Detrimental materials shall be removed from glazing rabbet and glass surfaced and wiped dry with solvent. Glazing surfaces shall be dry and free of frost.

4.13.3.9 Installation

Glass and glazing work shall be performed in accordance with, glass manufacturer's instructions and warranty requirements. Glass shall be installed with factory labels intact and removed only when instructed. Edges and corners shall not be ground, nipped or cut after leaving factory. Springing, forcing or twisting of units during installation will not be permitted.

4.13.3.10 Cleaning

Upon completion of project, outside surfaces of glass shall be washed clean and the inside surfaces of glass shall be washed and polished in accordance with glass manufacturer's recommendations.

4.13.3.11 Protection

Glass work shall be protected immediately after installation. Glazed openings shall be identified with suitable warning tapes, cloth, or paper flags, attached with non-staining adhesives. Reflective glass shall be protected with a protective material to eliminate any contamination of the reflective coating. Protective material shall be placed far enough away from the coated glass to allow air to circulate to reduce heat buildup and moisture accumulation on the glass. Glass units which are broken chipped, cracked, abraded, or otherwise damaged during construction activities shall be removed and replaced with new units.

4.14 FINISHES

All exterior metal surfaces, including container exterior shall be painted to match existing adjacent buildings. Interior shall be painted gypsum board or plaster ceilings and walls. Provide color boards with all materials, paints and finishes for COR approval prior to ordering materials. Color boards shall remain on site in view or with the project engineer until completion of the facility.

4.14.1 Renovation work

Disturbed, patched, repaired and renovated areas shall be finished to provide protective coatings. At a minimum, wall and ceiling areas shall be plastered with similar material to match adjacent surfaces. Areas shall be sanded, cleaned and prepared for primer and two coats of paint. Paint shall be feathered out a meter over the existing surfaces to blend in patch work with existing. Areas requiring tiles shall match existing tile areas. All renovated areas shall be returned to a new finished state.

4.14.2 Paints & Coatings

Paints and coatings shall be provided as a specification 09 90 00 Finishes, Paints and Coatings.

4.14.3 Concrete hardener

Concrete sealers shall be a liquid chemical sealer-hardener compound. Apply a minimum of two coats. Sealer shall be compatible with climate temperatures and not reduce the adhesion of resilient flooring, tile, paint, roofing, waterproofing or other materials applied to the concrete.

4.14.4 Paint

Paint shall be oil based or latex. A primer shall be placed prior to any coats of paint. A minimum of two (2) coats of paint shall be used for each surface. Exposed exterior steel
Exposed exterior steel shall include items such as trim, frames, door, pipe rails and other exposed steel surfaces. Paint with one coat oil-based primer, with 2 coats of oil-based alkyd gloss enamel, color to be selected by the Contracting Officer from the color board provided by the Contractor.

4.14.4.1 Exposed Wood

Exposed wood shall include items such as trim, frames, doors and other exposed wood surfaces. Paint with one coat oil-based primer, 2 coats of gloss enamel, color to be selected by the Contracting Officer from the color board provided by the Contractor

4.14.5 Expansion Joints In Plaster & Stucco

Expansion joints shall be provided as specified in ASTM, DIN 18339, BS or EN Standards for all walls, floors and ceilings.

4.14.6 Exterior Walls

The exterior of all buildings shall be stucco and/or plaster conforming to ASTM C926. A temperature of between 4 and 27 degrees C shall exist for a period of not less than 48 hours prior to application of plaster and for a period of at least 48 hours after plaster has set. Control joints shall be designed for expansion and contraction of plaster work due to thermal exposure. Control joints shall comprise of back to back casing beads. Install new stucco in 2 coats. The first coat shall be a scratch coat approximately 10 mm thick. Allow 7 days to cure. The second coat shall be finish stucco, smooth finish, approximately 10 mm thick. Allow 7 days to cure before painting. Stucco showing over sanding, cracks, blisters, pits, checks, discoloration or other defects is not acceptable. Defective plaster work shall be removed and replaced with new plaster at the expense of the Contractor. Patching of defective work will be permitted only when approved by the Contracting Officer. Patching shall match existing adjacent work in texture. No painted stucco shall be permitted due to minimize future maintenance.

4.14.7 Interior walls

4.14.7.1 Plaster Walls

Interior walls shall be plaster applied in a similar manner as exterior stucco. Paint with 2 coats of semi-gloss off-white with less than .06% lead by weight color to be selected by the Contracting Officer from the color board provided by the Contractor.

4.14.7.2 Gypsum board walls

Gypsum wall board shall not be used unless specifically noted in the contract documents or written approval from the Contracting Officer. If GWB is used; contractor must meet fire rating requirements per NFPA 252 standards. For 13 mm (1/2") thick gypsum board structural fastener supports shall be not further apart than 400 mm.

4.14.7.3 Sound Control

Walls between sleeping rooms shall have a Sound Transmission Class (STC) minimum 45-55 or better, An STC value is a single number rating used to characterize the sound insulating value of a partition (wall, floor, or ceiling). All walls shall be caulked at floor and ceiling prior to installing wall base. All openings between rooms shall be caulked or sealed. Doors shall have rubber seal around frames and threshold.

4.14.7.4 Harden interior walls

IMPORTANT: INTERIOR WALL STRUCTURE SHALL BE EITHER CMU (MIN THICKNESS = 100 mm), 3D PANEL OR REINFORCED CONCRETE. Interior walls shall be plaster applied in a similar manner as exterior stucco. Paint with 2 coats of semi-gloss off-white with less than .06% lead by weight color to be selected by the Contracting Officer from the color board provided by the Contractor.

4.14.8 Interior Ceilings

4.14.8.1 Plaster ceilings

Ceilings shall be plaster applied in 2 coats over wire mesh, which is to be stapled or secured by wire to the 20 mm x 60 mm wood battens. Paint ceiling with 2 coats of flat white, with less than .06% lead by weight.

4.14.8.2 Gypsum board ceilings

Gypsum board may be used in lieu of plaster but framing supports for Gypsum board shall be as follows: For 13 mm (½") thick gypsum board structural fastener supports shall be not further apart than 400 mm. If gypsum board is thicker follow guidelines in ASTM C 840 for supports and fastener frequency. Fire rated gypsum board: follow NFPA 252 guidelines. The minimum for one hour fire rating is two layers of 15 mm type X GWB or European EN 520 equivalent.

4.14.8.3 Concrete ceilings

Concrete ceilings shall be exposed concrete painted with 2 coats of flat white, with less than .06% lead by weight.

4.14.9 Tile Work

Tile work shall not be performed unless the substrate and ambient temperature is at least 10 degrees C and rising. Temperature shall be maintained above 10 degrees C while the work is being performed and for at least 7 days after completion of work. Upon completion, tile surfaces shall be thoroughly cleaned in accordance with manufacturer's approved cleaning instructions. Acid shall not be used for cleaning glazed tile. Floor tile with resinous grout or with factory mixed grout shall be cleaned in accordance with instructions of the grout manufacturer. After the grout has set, tile wall surfaces shall be given a protective coat of a non-corrosive soap or other approved method of protection.

4.15 SPECIALTIES

4.15.1 Mirrors

600 mm x 900 mm, 6 mm plate glass shall be mounted above all lavatories. Mount bottom of mirrors 1100 mm above finished floor.

4.15.2 Toilet Paper Holders

Toilet paper holders with removable pin shall be stainless steel, installed approximately 200 mm above floor by eastern toilets.

4.15.3 Shower Curtain Rods & Shower Curtain

Shower curtain rods, stainless steel, heavy duty, 1.20 mm (18 gauge) shall be mounted between the walls of each shower stall. Mount rod 2000 mm above finished floor. Provide a shower curtain with support rings for each shower stall.

4.15.4 Grab-Bars

Stainless steel grab-bars, heavy duty, 1.20 mm (18 gauge), two each 900 mm and 1050 mm long, 40 mm diameter shall be mounted behind and beside all eastern toilets, and bathtubs as they occur. Mount grab-bars between 610mm - 900 mm height on the walls. Each bar shall support no less than 91 Kg (200 lbs) in any direction.

4.15.5 Paper Towel Dispensers

Paper towel dispensers, 0.683 mm Type 304 stainless steel, surface mounted. Furnish tumbler key lock locking mechanism.

4.15.6 Light Duty Metal Shelf

Provide a 600 mm long x 150 mm wide, light duty stainless steel shelf with integral brackets over each lavatory and laundry sink.

4.15.7 Robe Hooks

Provide a minimum of two robe hooks on all toilet and shower stalls.

4.15.8 Dining Facilities**4.15.8.1 Ceiling finish**

Ceilings of Dining Facility shall be exposed concrete painted with 2 coats of flat white, with less than .06% lead by weight.

4.15.8.2 Steel Cook Top

Provide steel cook top in kitchen minimum thickness of 25 mm. Provide circular cut outs. Consult with the Contracting Officer for the diameter of circular cutouts. Provide steel infill plates for all cut out openings. Cook top can be made of several pieces for ease of handling. Adjacent plates shall be tight fitting to each other.

4.15.8.3 Pass-Through Counter Top

Provide 1.6 mm (16 gauge) stainless steel, or 40 mm marble, pass through counter tops at openings between the kitchen and dining area. Edges shall be turned down 30 mm and corners shall be welded and ground smooth. Provide anchor angles welded to the bottom of the counters to anchor tops to masonry walls below. Provide a minimum of six (6) anchors on the Dish Return Counter, three (3) on each side of the wall. Provide a minimum of eight (8) anchors on the Serving Counter, four (4) on each side of the wall. Anchor angles to wall with masonry expansion sleeves and stainless steel screws.

Counter tops are to be 600 mm wide x length of opening shown. Counter height is 1000 mm above floor finish (AFF).

4.15.8.4 Fire Counter Shutter (Dining Facilities)

Fire Counter Shutters shall be installed in conjunction with the Pass-Through Counter Tops described in the paragraph above. Fire counter shutters shall be used to separate the kitchens from the dining areas, and shall be U.L labeled for gypsum board, masonry and steel openings, and rated at 90 minutes in full compliance with NFPA-80 standards. Finish of shutter, guides and hoods shall be stainless steel. System shall be activated by 74° C (1 65° F) fusible links, and by electrical switches located near exit doors. Bottom bar sliding bolt locks shall be provided to secure the shutters in the down position; bolts shall be operated from the kitchen side of the shutter.

4.15.9 Trench Covers and Frames. Trench covers shall be designed to meet the indicated load requirements. Trench frames and anchors shall be all welded steel construction designed to match cover. Covers shall have flush drop handles formed of 6 mm round stock, and shall be steel floor plate. Grating opening widths shall not exceed 25 mm. See drawings for locations.

4.15.10 Mirror Frames. Frames for plate glass mirrors larger than 450 by 750 mm shall be fabricated from extruded aluminum with anodized finish. Frames shall be provided with concealed fittings and tamperproof mountings.

4.15.11 Sunshades (Power Generators). Provide a 3.5 meter by 7.5 meter reinforced concrete pad and metal sunshade for power generator as indicated. See Site Plan for location. Proposed sizes shall be approved by Contracting Officer. Reinforced concrete pads shall have thickened slabs around the perimeters of the slabs Unless Noted Otherwise (UNO). Capillary water barriers shall be provided under the slabs. Sunshade shall have weather tight roofs. Sunshade framing members shall conform to ASTM A 653A/A 653M and ASTM A 36/A 36M. Sheet metal for roofing shall conform to ASTM A 153/A 153M, ASTM A 653A/A 653M and ASTM A 1008/A 1008M. Design calculations for the sunshade structures and fabrication drawings shall be submitted for approval. General sizing, placement, and construction details have been provided for information only. Sunshades shall be designed to meet all snow, wind, wind uplift, seismic, and lateral loads for the site location. Roofing panels and fascia shall not be less than 24 gauge (0.70 mm) before coating. Roof finish shall be two (2) coats of baked enamel coating or silicone polyester coating consisting of an epoxy primer and a finish coat of silicone polyester or approved equal. Coating shall be applied to the outside of the panels. Inside shall be primed. Gutters and downspouts shall be either aluminum (0.81 mm thick minimum) or zinc coated (galvanized). Colors shall be from manufacturer's standard color chart and approved by the Contracting Officer.

4.15.12 Wood Stove Kitchen Enclosure. Provide a steel frame, metal panel enclosure for a wood stove kitchen. Enclosure shall have metal wall panels on three sides and a metal roof, as illustrated in the contract documents, to form a weather tight enclosure on three sides. Foundation shall be 3.6m x 3.6 m reinforced concrete pad with thickened slab around the perimeter. Capillary water barriers shall be provided under the slab. Steel framing members shall conform to ASTM A 653A/A 653M and ASTM A 36/A 36M. Sheet metal for wall panels and roofing shall conform to ASTM A 153/A 153M, ASTM A 653A/A 653M and ASTM A 1008/A 1008M. Design calculations for the enclosure structure and fabrication drawings shall be submitted for approval. General sizing, placement, and construction details have been provided for information only. Enclosure shall be designed to meet all snow, wind, wind uplift, seismic, and lateral loads for the site location. Roofing panels, wall panels, and fascia shall not be less than 24 gauge (0.70 mm) before coating. Exterior panel finish shall be two (2) coats of baked enamel coating or silicone polyester coating consisting of an epoxy primer and a finish coat of silicone polyester or approved equal. Inside shall be primed. Colors shall be from manufacturer's standard color chart and approved by the Contracting Officer. See 1 Story Building drawings for location.

5.0 MECHANICAL

5.1 GENERAL

The work covered by this section consists of design, supply, fabrication, and installation of new building heating, ventilation and air-conditioning (HVAC) systems. It also includes the delivery to site, erection, setting to work, adjusting, testing, balancing and handing over in perfect operating and running condition all of the HVAC equipment including all necessary associated mechanical works.

5.2 SPECIALIST SUB-CONTRACTORS QUALIFICATIONS

The HVAC works shall be executed by an air-conditioning specialist sub-contractor experienced in the design and construction HVAC equipment to include conventional compression systems, heat pump units, space heaters and knowledge in fabricating specialized units consisting of supplemental electric resistance heaters in satisfying the specified indoor design conditions. HVAC equipment will normally consist of split-pack heat pump units with supplemental electric heating elements, ducted packaged heat pump units with supplemental duct mounted electric resistance heaters, industrial quality unit heaters, air ventilation systems and specialized industrial ventilation systems. The HVAC heating and cooling load calculations shall be prepared using recognized HVAC load analysis programs such as Trane "Trace" or Carrier "HAP". The heating and cooling load calculations shall take into account the site elevation and ambient design temperatures when determining required HVAC equipment capacities and airflows. The HVAC specialist shall submit the complete HVAC analysis with equipment layout drawings at the 65% design submittal. The HVAC analysis shall clearly state and the drawings clearly show the type of systems to be used and how the system will satisfy the specified indoor design conditions.

Provide complete, edited specifications using the UFGS specs for selected HVAC system. The edited specifications shall be submitted along with the 65% design submittal. The specifications shall be coordinated with the manufacturer of the equipment.

5.3 CODES, STANDARDS AND REGULATIONS

The equipment, materials and works covered under the heating, ventilation and air-conditioning services shall conform to the referenced standards, codes and regulations where applicable except where otherwise mentioned under each particular clause.

5.4 DESIGN CONDITIONS

Outside Design Conditions (Contractor shall verify the ambient conditions with available and reliable local weather data) [(Contractor shall use the below weather date for equipment compatibility with the site conditions)].

Bagram area :

Latitude – (approx.) 35 deg. North

Longitude – (approx.) 69 deg. East

Elevation – (approx.) 1490 M (4888 ft.)

Summer - 35 deg C (95 deg F) Dry Bulb (DB) [& 18.6 deg C (66 deg F) Wet Bulb (WB)]

Winter – (-12.8 deg C/9 deg F)

Daily Range – 18.3 deg C (33 deg F)

Darualaman area:

Latitude – (approx.) 34.42 deg. North

Longitude – (approx.) 69.11 deg. East

Elevation – (approx.) 1737 M (5700 ft.)

Summer – 34 deg C (93 deg F) Dry Bulb (DB) [& 15.6 deg C (60 deg F) Wet Bulb (WB)]

Winter – (-8 deg C/18 deg F)

Daily Range – 19 F)

Farah area

Latitude – (approx.) 32.22 deg. North

Longitude – (approx.) 62.11 deg. East

Elevation – (approx.) 700 M (2297 ft.)

Summer – 41.1 deg C (106 deg F) Dry Bulb (DB) [& 22.5 deg C (72.5 deg F)] Wet Bulb (WB)]

Winter – (1.6 deg C/35 deg F)

Daily Range – data unknown)

Gardez area:

Latitude – (approx.) 33.60 deg. North

Longitude – (approx.) 69.22 deg. East

Elevation – (approx.) 2350 M (7710 ft.)

Summer – 29 deg C (84 deg F) Dry Bulb (DB) [& 12.2 deg C (54 deg F)] Wet Bulb (WB)]

Winter – (-10deg C/ 14deg F)

Daily Range – data unknown)

Ghazni/ Khair Kot area:

Latitude – (approx.) 33 deg. North

Longitude – (approx.) 68 deg. East

Elevation – (approx.) 2183 M (7162 ft.)

Summer – 30.5 deg C (87 deg F) Dry Bulb (DB) [& 15.6 deg C (60 deg F)] Wet Bulb (WB)]

Winter – (-7.2 deg C/19 deg F)

Daily Range – data unknown)

Herat area:

Latitude – (approx.) 34.22 deg. North

Longitude – (approx.) 62.22 deg. East

Elevation – (approx.) 964 M (3163 ft.)

Summer – 38 deg C (100 deg F) Dry Bulb (DB) [& 20 deg C (68 deg F) Wet Bulb (WB)

Winter – (-6 deg C/21 deg F)

Daily Range – 17 F)

Jalalabad area:

Latitude – (approx.) 34 deg. North

Longitude – (approx.) 70 deg. East

Elevation – (approx.) 580 M (1903 ft.)

Summer – 39.6 deg C (103 deg F) Dry Bulb (DB) [& 25.6 deg C (78 deg F)] Wet Bulb (WB)]

Winter – (4.6 deg C/40 deg F)

Daily Range – data unknown)

Kabul area:

Latitude – (approx.) 34.55 deg. North

Longitude – (approx.) 69.22 deg. East

Elevation – (approx.) 1790 M (5876 ft.)

Summer – 34 deg C (93 deg F) Dry Bulb (DB) [& 15.6 deg C (60 deg F) Wet Bulb (WB)]

Winter – (-8 deg C/18 deg F)

Daily Range – 19 F)

Kandahar area:

Latitude – (approx.) 31.5 deg. North

Longitude – (approx.) 65.85 deg. East

Elevation – (approx.) 1010 M (3314 ft.)

Summer – 41 deg C (106 deg F) Dry Bulb (DB) [& 21.7 deg C (71 deg F)] Wet Bulb (WB)

Winter – (-1.7 deg C/29 deg F)

Daily Range – 21 F)

Khost:

Latitude: 33 22 degrees N
 Longitude: 69 58 degrees E
 Elevation: 1146 meters (3760 ft)
 Summer: 35.5 C (96° F) DB and 25.8° C (78.5° F) WB.
 Winter: 0° C (32° F) db
 Range of DB: Summer 15.5 (28)
 Average Extreme Wind: 40 kph (25 mph)

Kunduz area:

Latitude – (approx.) 36 deg. North
 Longitude – (approx.) 68 deg. East
 Elevation – (approx.) 432 M (1417 ft.)
 Summer – 38.8 deg C (102 deg F) Dry Bulb (DB) [& 22.8 deg C (73 deg F)] Wet Bulb (WB)
 Winter – (0 deg C/32 deg F)
 Daily Range – data unknown)

Lashkar Gah (unconfirmed):

Latitude: 31.58 degrees N
 Longitude: 64.37 degrees E
 Altitude: 773m (2536ft)
 Summer: 44.4 C (112F) db and 24.4° C (76° F) WB.
 Winter: -5.5° C (22° F) db
 Range of DB: Summer 17.8 (32)
 Average Extreme Wind: 40 kph (25 mph)
 Prevailing Wind Direction: Summer SE, Winter ENE

Mazar-e-Sharif area:

Latitude – (approx.) 36 deg. North
 Longitude – (approx.) 67 deg. East
 Elevation – (approx.) 391 M (1284 ft.)
 Summer – 37.8 deg C (100 deg F) Dry Bulb (DB)] [& 20.5 deg C (69 deg F) Wet Bulb (WB)
 Winter – (0 deg C / 32 deg F)
 Daily Range – data unknown)

Pol-e-Charki area:

Latitude – (approx.) 34.56 deg. North
 Longitude – (approx.) 69.37 deg. East
 Elevation – (approx.) 1830 M (6000 ft.)
 Summer – 34 deg C (93 deg F) Dry Bulb (DB) [& 15.6 deg C (60 deg F) Wet Bulb (WB)]
 Winter – (-8 deg C/18 deg F)
 Daily Range – 19 F)

Qalat:

Latitude: 32 degrees N
 Longitude: 66 degrees 54 E
 Altitude: 1565 meters (5135 ft)
 Summer: 37.7 C (100° F) DB and 16.1° C (61° F) WB.
 Winter: -3.9° C (25° F) db
 Range of DB: Summer 18.3 (33)
 Average Extreme Wind: 40 kph (25 mph)
 Prevailing Wind Direction: Summer W, Winter

5.4.1 Indoor Design Condition

Administrative Buildings/Offices	No Cooling	Heating 20 C (68 F)
DFAC (Dining Area)	No Cooling	Heating 20 C (68 F)
Toilet/Shower/Laundry Bldgs	No cooling	Heating 20 C (68 F)
Detention Cell	No Cooling	Heating 20 C (68 F)
Arms Storage	No cooling	No Heating
Well House	No Cooling	Heating 20 C (68 F)
Guard towers/sheds	No Cooling	Heating 20 C (68 F)

5.4.2 Noise Level

Noise levels inside occupied spaces generated by HVAC systems indoors shall not exceed **NC 35**

5.4.3 Internal Loads

- a. Occupancy: Use ASHRAE standards to calculate sensible and latent heat from people. In general, light/moderate office work is 73watts sensible and 45watts latent.
- b. Lighting: 21.5 W/m² (2 W/Ft²) maximum (however lighting levels shall meet minimum requirements and shall be accounted for in the heating and cooling loads based on the actual lighting design).
- c. Outdoor Air: Outdoor air shall be provided per International Building Code. In general this requires 2.5 L/s/Person (5 CFM/Person) and 0.3 L/s per square meter of floor space (0.06 CFM/sqft); outdoor air. Outdoor air shall be introduced by opening doors and windows.
- d. Latrine/Bathroom Exhaust– 85 CMH (50 CFM) per toilet, urinal, and shower head.

5.5 *ventilation & HEATING EQUIPMENT*

Environmental control of the facilities shall be achieved by wall/ceiling fans, electric unit heaters or wood burning heaters. The detention cell shall be heated and ventilated using a small air handling unit. Kitchen shall be provided with mechanical ventilation.

Facility Type	Cooling	Heating	Type of HVAC System	Remarks
Battalion HQs	Provide ceiling fans	20C 68 F	Wood Heaters and Electric Unit Heaters	Wood Heaters Provided by Occupant
Well House	None	20C 68 F	Electric Unit Heater	
Guard Tower/Shed	Provide ceiling fan	20C 68 F	Electric Unit Heater	

5.6 DUCTWORK

Air shall be distributed from central Air Handling Units (AHUs) to achieve proper airflow throughout the facility by means of air distribution ductwork. Air distribution system shall be comprised of supply and return ductwork, fittings, manual volume control dampers, grilles, registers, and/or diffusers. Ductwork shall be constructed of galvanized steel or aluminum sheets and installed as per SMACNA "HVAC Duct Construction Standards (Metal and Flexible)." Flexible non-metallic duct may be used for final unit/diffuser connection in ceiling plenums. These flexible duct run-outs shall be limited to 3 meters in length.

5.6.1 Duct Insulation

Duct insulation shall be provided for all supply ductwork that is not located in the conditioned space and for return ductwork not located within the conditioned space. All ductwork exterior to the building shall be insulated with a minimum RSI=0.88 (R5).

In general interior ducts shall be exposed to the rooms and will not be insulated. The heat lost or gained from the un-insulated ducts shall be considered as part of the heating or cooling of the conditioned space.

5.6.2 Diffusers, Registers & Grilles

Diffusers, registers and grilles shall be factory fabricated of steel or aluminum and distribute the specified air quantity evenly over the space intended. The devices shall be round, half round, square, rectangular, linear, or with perforated face as determined by the design. Units will be mounted in ceilings, high sidewalls, or directly to ductwork and shall be sized for the airflow to be delivered with a maximum NC rating of 35. Pressure loss through the diffuser shall be considered in sizing the duct system and the system static pressure calculations.

5.6.3 Branch Take-offs

Air extractors or 45° entry corners shall be provided at all branch duct take-offs. Manual volume control dampers shall be included at the branch duct take-offs and where required to facilitate air balancing and shall be shown on the design drawings.

5.6.4 Wall Penetrations

Building wall penetrations shall be carefully made so as not to deteriorate the structural integrity of the wall system. The Contractor shall consult with the building manufacturer, if possible, to determine the best way to penetrate the wall. If the building manufacturer is not available, a structural engineer shall be consulted. In either case, the recommendations of the engineer shall be strictly adhered to.

5.6.5 Air Filtration

All supply air shall be filtered using manufacturer's standard washable filters mounted inside the unit. In addition, all outdoor air intakes shall be equipped with 50 mm (2 inch) thick washable filters.

5.7 VENTILATION AND EXHAUST SYSTEMS

All fans used for building ventilation, exhaust, and pressurization shall be selected for minimum noise level generation. All fans used for supply or roof/wall exhaust shall be centrifugal forward curved, backward inclined, or airfoil fans with non-overloading characteristics of high efficiency and quiet running design. The fans shall be of the heavy-duty type with durable construction and proved performance in a desert environment. Each wall exhaust fan shall be provided with gravity dampers which close automatically when the fan is not running. The kitchen makeup air opening shall be provided with an interlocked motorized damper which closes automatically when the exhaust fan is not running. The intake

opening shall be provided with filter and insect screen. Also, each fan shall be complete with vibration isolator, external lubricators, and all accessories and sound attenuators as necessary.

To reduce sand and dirt migration, outside air intakes shall be installed as high as possible within architectural constraints.

Toilet and Wash Area: Minimum exhaust ventilation shall be the largest of 35 m³/h / m² floor or 85 m³/h / toilet (WC).

5.7.1 Kitchen Hood Exhaust and Make-up Air

Kitchen exhaust hood shall be constructed out of 20 gauge stainless steel material. Exhaust flow rate shall be 6,000 CMH. The air velocity in the exhaust duct shall be limited to 1500 feet per minute. The designer shall take special note that multiple large LPG stoves will be installed in the kitchen. The steam generated by the local style of cooking with large pots is immense in comparison to western standards, and the additional need for ventilation must be accounted for in the design. Also, the cooks are accustomed to standing on top of the stoves in order to stir the large cauldrons of food. This common cooking practice should be taken into consideration when designing the exhaust hood. The height of the hood above the stovetop should be such that a man of average stature could stand upright without risk of hitting his head on the hood. Make up air intake shall be provided from the roof air intake and discharge through a linear diffuser directly in front of the hood and running the entire length of the hood. Makeup air capacity shall be 85% of the exhaust capacity. An in-line supply fan shall be installed.

To reduce sand and dirt migration, outside air intakes shall be located as high as possible within architectural constraints. The intakes shall be sized so that free air velocities are below 2.5 m/s (500 fpm). Each air intake shall be provided with a motorized damper which is interlocked with the exhaust fan.

5.7.2 Submittals

The Contractor shall submit the following for the equipment to be provided under this section of the specification: manufacturer's data including performance characteristics at design conditions; catalog cuts showing dimensions, performance data, electrical requirements, compliance with standards as stated in paragraph CODES, STANDARDS AND REGULATIONS; drawings indicating location and installation details.

5.8 ELECTRIC HEATERS

Electric heat trace cable for freeze protection shall not be provided as a substitute for space heating system.

5.8.1 Unit Heater

Electric resistance unit heaters shall be installed in spaces where only heating is required. Generally, unit heaters shall be mounted as high as possible. Unit heaters shall be of the industrial grade, very durable and securely fastened to the ceiling, wall or structure. Provide a self-contained electric heating unit, suspended from ceiling or structure, fan with at least two-speeds and heating elements. Provide control-circuit terminals and single source of power supply with disconnect. Heating wire element shall be nickel chromium. Include limit controls for overheat protection of heaters. Provide hard-wired tamper resistant integral thermostat located as indicated on the drawings.

5.8.2 Submittals

The Contractor shall submit the following for the equipment to be provided under this section of the specification: manufacturer's data including performance characteristics at design conditions; manufacturer's certificate stating that each unit will perform to the conditions stated, catalog cuts showing dimensions, performance data, electrical requirements, compliance with standards as stated in paragraph

CODES, STANDARDS AND REGULATIONS; complete shop drawings indicating location and installation details.

The manufacturer shall also submit a 1 year warranty for each of the units.

5.9 TEST ON COMPLETION

After completion of the work, the Contractor shall demonstrate to the Contracting Officer that the installation is adjusted and regulated correctly to fulfill the function for which it has been designed. The Contractor shall test, adjust, balance and regulate the section or sections of concern as necessary until the required conditions are obtained. Coordinate with the Contracting Officer on when the test shall be scheduled. Include tests for all interlocks, safety cutouts and other protective device to ensure correct functioning. All such tests shall be carried out and full records of the values obtained shall be prepared along with the final settings and submitted to the Contracting Officer in writing.

The following tests and readings shall be made by the Contractor in the presence of the Contracting Officer and all results shall be recorded and submitted in a tabulated form.

- a. Ambient DB and WB temperatures
- b. Room Inside Conditions:
 - i. Inside room DB & WB temperatures
 - ii. Air flow supply, return and/or exhaust
 - c. Air Handling Equipment: Air quantities shall be obtained by anemometer readings and all necessary adjustments shall be made to obtain the specified quantities of air indicated at each inlet and outlet.
 - d. Following readings shall be made:
 - i. Supply, return and outside air CMH (CFM) supplied by each air handling unit.
 - ii. Total CMH (CFM) exhausted by each exhaust fan
 - iii. Motor speed, fan speed and input ampere reading for each fan
 - e. Electric Motors: For each motor:
 - i. (1) Speed in RPM
 - ii. (2) Amperes for each phase
 - iii. (3) Power input in KW

5.10 ELECTRICAL REQUIREMENTS FOR HVAC EQUIPMENT

- a. Note that electrical requirements for all HVAC systems shall be designed and installed to operate on the secondary power standard required herein. The existing power distribution system may require modifications or upgrades to support the additional power required by the HVAC unit. The Contractor is responsible to field verify all the conditions and provide complete shop drawings showing any incidental power upgrades. All electrical work shall comply with the National Electric Code.
- b. All thermostats shall be wall-mounted. In lieu of a thermostat, a temperature sensor may be located in the same location. Wall-mounted thermostats shall be mounted 1.5 meters (5 feet) above the finished floor and be easily accessible. Thermostats for the latrine facilities shall be

mounted 1.5 meters (5 feet) above the finished floor. Operation of the control system shall be at the manufacturer's standard voltage for the unit.

5.11 Wall/CEILING FANS

5.11.1 Wall/Ceiling Fans

Provide wall or ceiling fans at one per 40 square meters of floor space.

Wall fans shall be mounted approximately 2 meters high on the wall and shall be the oscillating type. Wall fans shall be securely mounted on the wall and shall be hard wired. Do not provide plug in type wall fans. Ceiling fans shall have reversible motors. Fans shall be centered or distributed evenly throughout the room. Coordinate placement with the lighting plan to prevent conflict or casting shadows. Fan mount shall be flush, standard, or angle mount depending on ceiling height. Fan shall be mounted such that the fan blade is approximately 2.5 meters (98 inches) above the finished floor. The fan shall be provided without light kit. The finish shall be factory painted white. The controls shall be wall-mounted from either a single pole switch or from two (2) 3-way switches to provide on/off operation. The electrical supply shall be as indicated. Install per manufacturers' instructions.

5.11.2 Submittals

The Contractor shall submit the following for the equipment to be provided under this section of the specification: manufacturer's data including performance characteristics at design conditions; catalog cuts showing dimensions, performance data, electrical requirements, compliance with standards as stated in paragraph CODES, STANDARDS AND REGULATIONS; drawings indicating location and installation details.

5.12 LPG COOKING STOVE

Cooking area shall be provided canopy type exhaust only kitchen hoods and associated exhaust fans. These exhaust hoods shall include baffle type aluminum filters to trap grease/oil. Provide an upblast exhaust fan as shown on the drawings. The placement of the exhaust hood shall allow enough clearance for an average sized male to stand on top of the stove platform unobstructed, for standing on the stove is common local cooking practice. The higher than average placement of the hood will require the extension of the lip of the hood out further than normal, in order to catch the majority of the smoke and adequately vent the area. LPG tank shall be located out the DFAC covered in the fenced storage yard

New LPG stoves shall be installed with consideration to ease of cooking operation and daily cleanup.

The new LPG stoves shall be set into a formed concrete opening such that it can easily be removed for replacement, maintenance and cleaning.

Each LPG stove shall be provided with three burners. The LPG stoves shall be of commercial quality and be capable of producing the highest BTU heat output with all three burners on. The center burner is low heat, center and middle burner is medium heat and all three burners is high heat. A shut off valve for each burner shall be provided at the face of the LPG appliance.

Piping from the LPG tanks to the respective LPG stoves shall be wrought iron, ASTM B36.10M or steel (black or galvanized), ASTM A53. The steel piping shall terminate in front of the LPG stoves with a shut off valve and quick disconnect nipple. A stainless steel flexible hose shall connect from the LPG stove to the steel piping. Each end of the flexible hose shall be provided with quick disconnect fittings.

The LPG piping shall not be embedded in the concrete floor. The propane piping shall be routed from the exterior and to the respective propane stoves by passing the piping through the concrete platform.

Piping passing through the exterior wall and the concrete platform shall be provided with pipe sleeves.

5.12.1 LPG Fuel Storage/Distribution

LPG Storage and Distribution shall be provided to support operation of the LPG stoves for cooking and boiling tea. The storage of fuels shall consist of above-ground steel bottles. The standard bottle size is

100 gallons. LPG tanks shall be secured using chain to prevent the bottles from toppling over. LPG storage tanks shall be provided and installed in accordance with NFPA 58. The LPG storage tanks shall be installed on a concrete pad, and provided within an enclosure to protect the tanks from the elements. The Contractor shall coordinate with the User and the Contracting officer in determining the capacity of LPG fuel required. The LPG fuel capacity shall be based on frequency of cooking, consumption of fuel every cooking cycle, frequency and availability of replacement fuel tanks and spare capacity. This project will require that the Contractor provide the agreed to amount of fuel tanks filled with LPG fuel at time of completion.

Provide chain link fence and gates around entire LPG storage facility. Fence shall match perimeter Force protection fence with lockable gates, and concertina wire etc.

5.13 WOOD COOKING STOVE – For Outside Kitchen Facility Only

Provide a separate wood burning cooking stove kitchen annex building within the DFAC yard with commercial grade wood fired cooking stoves. The floor shall be terrazzo floor tiles and ceramic tile wainscots. Provide a trench drain that extends the length of the cooking line-up for cleaning purposes. The cooking stove tops shall be accessible by stairs for walking on top of the stoves and the stove tops wide enough for a person to walk on. The hood height shall not interfere with a person standing on the stove top. The ceiling of the annex shall not be less than 3 meters high to allow smoke and/or heat to be ventilated outside of the building. This can be accomplished with exhaust fans and clerestory window designs.

This annex shall be separated from the main kitchen by a covered walkway.

Provide a covered wood storage area next to the annex which shall be secured and surrounded with fencing as to prevent pilfering. Gates and locks shall be provided as part of the security.

Water service shall be provided for the cooking annex. Water piping shall be insulated to prevent piping from freezing. Freeze proof wall hydrants shall be considered.

Stove shall be constructed out of fire bricks and topped with 5mm thick cast iron countertop. Route the chimney runs inside the building envelope (inside the heated space) so air and flue gases stay at least as warm as the air in the building until they are expelled outside. The minimum flue thickness shall be no less than 1.5mm black steel. The Contractor shall protect chimney by means of metal rails or masonry wall from damage from large pots during cooking. The chimney shall penetrate the highest part of the building envelope so the chimney functions better. The chimney shall rise at least 60 cm (24 inches) above the roof ridge and its top is clear of obstacles to wind flow so it can produce stable draft and it has a chimney (rain) cap because without one, any chimney is vulnerable to adverse wind pressures. The chimney flue shall be insulated and be the correct size for the appliance so flue gases are kept warm and flow quickly through the system. The flue pipe, if used, shall run straight up from the appliance to the chimney and the chimney has no offsets because each change in direction presents resistance to flow. The appliance and venting system shall be reasonably well-sealed to prevent leaks that introduce cool air and make the system more vulnerable to adverse pressures. The system shall be installed in a building that has a balanced ventilation system. There shall be high exhaust fan in the stove exhaust hood. The Wood stove kitchen shall be well vented with louvers located high at walls on the building ends. The wood feeding doors shall be located on the outside of the building. Contractor must submit shop drawings for approval.

5.14 MECHANICAL REQUIREMENTS FOR GENERATORS

- a. The following shall be provided for the Mechanical design and installation for the stationary generator sets and related mechanical systems with their interface with the facility. This includes, but not limited to, the following: Foundations, mountings, exhaust systems, cooling systems, ventilation, fuel systems, noise reduction, fire protection & safety, and equipment room configuration. See Electrical for power and electrical equipment requirements.
- b. The generator set(s) shall be the manufacturer's design for outdoor weatherproof installation with skid-mounted radiator. Weatherproof generator set(s) shall be protected from the elements with a structural cover which extends over the bulk fuel storage tank(s).

- c. For fuel and day tank requirements, see Plumbing paragraph, "GENERATOR FUEL STORAGE/DISTRIBUTION."
- d. For fire emergencies, see Fire Protection paragraph, "PORTABLE FIRE EXTINGUISHERS."
- e. Generator set facilities shall be oriented with the prevailing winds when possible (with the alternator upwind) to assist ventilation air flow across the alternator and engine and promote heat removal by the fan and radiator. Weather-proof generator sets shall be provided with a covered (roof-only) shelter enclosed with a chain link security fence for both the generator(s) and fuel storage tank(s).]

5.15 OPERATIONS AND MAINTENANCE (O&M) FOR MECHANICAL

- a. The O&M manuals must be provided prior to any training activities. Manuals shall be "tri-lingual" in Dari, Pashto and English.
- b. All control panels shall have tri-lingual name plates in Dari, Pashto and English.
- c. The contractor shall provide an outline of the training lesson plan (to be approved by the Government) prior to conducting training. CD recordings of training on video shall also be provided, after training is conducted.

5.16 PLUMBING

5.16.1 General

The Contractor shall design and build domestic cold and hot water systems, waste, drain and vent systems, waste-oil collection and storage and fuel-oil storage and distribution systems required in the facilities identified in Section 01010 Scope of Work and as described herein. The Contractor shall also be responsible for complete design and construction of all domestic and special plumbing systems required for full and safe operations in the Generator Plant, Water Storage and other facility or structures required in this contract.

The work covered in this scope also includes the delivery to site, erection, setting to work, adjusting, testing and balancing and handing over in full operating condition all of the plumbing equipment and associated plumbing works.

5.16.2 Sub-Contractors Qualifications

The plumbing systems shall be executed by a plumbing specialist subcontractor experienced in the design and construction of these types of systems.

5.16.3 Standard Products

All materials and equipment shall be standard product of a manufacturer regularly engaged in the manufacture of the product and shall duplicate items that have been in satisfactory use for at least two (2) years prior to bid opening.

5.17 CODES, STANDARDS AND REGULATIONS

The design and installation of equipment, materials and work covered under the plumbing services shall conform to the following standards, codes and regulations where applicable except where otherwise indicated under particular clause(s). The publications to be taken into consideration shall be those of the most recent editions. Standards other than those mentioned herein may be accepted provided that the standards chosen are internationally recognized and meet the minimum requirements of the specified standards. The Contractor shall submit proof of equivalency if requested by the Contracting Officer.

IPC – International Plumbing Code
 NFPA - National Fire Protection Association
 ASHRAE – American Society of Heating, Refrigeration and Air-Conditioning Engineers
 ASME – American Society of Mechanical Engineers
 ASTM – American Society for Testing and Materials
 AWS – American Welding Society

5.18 PLUMBING SYSTEMS REQUIREMENTS

5.18.1 Water

Domestic cold and hot water shall be provided in the facilities to serve the water usage and plumbing fixtures provided for the facility. Water service to each facility shall enter the building in a mechanical, toilet, storage, or similar type space. The building service line shall be provided with a shut off valve installed inside the mechanical room or similar spaces. Water piping shall not be installed in or under the concrete foundation except for the service line. All water piping shall be exposed and routed parallel to the building lines and tight to the walls and ceiling. Insulation shall be provided where required to control sweating of pipes or to provide protection from freezing. Electric heat trace cable for freeze protection shall not be provided as a substitute for space heating systems.

5.18.2 Piping Materials

Domestic cold water shall be distributed by means of standard weight (schedule 40) galvanized steel pipe. Domestic hot water shall be distributed by means of standard weight (schedule 40) galvanized steel pipe. Waste and vent piping can be made of either galvanized steel pipe (schedule 40), or Polyvinyl Vinyl Chloride (PVC) conforming to ASTM D 2665. Corrosion protection shall be provided if galvanized piping comes in contact with earth or masonry floors, walls or ceilings.

5.18.3 Plumbing WATER Fixtures

The following typical plumbing fixtures shall be provided:

- a. Eastern Water Closet with flush tank assembly. Provide acid resisting fired porcelain enameled cast iron water closet complete with rotating No-Hub 'P' trap and No-Hub coupling to meet piping requirements. Eastern Style water closet shall be furnished with integral non-skid foot pads and bowl wash down non-splashing flushing rim. The water closet shall be completely self supporting requiring no external mounting hardware and shall be flush with floor. The Eastern Style water closet shall incorporate waterproofing membrane flashing flange. Provide a cold water spigot 300mm above finished floor on the right (from a perspective of standing inside of the cubicle and looking out) sidewall of the cubicle. Spigot shall have a flexible hose and spray nozzle such that the occupant can wash over the water closet. Toilets shall be oriented north and south. Toilets shall not face east or west.
- b. Lavatories. All sinks shall be the trough type constructed of block and concrete with ceramic tile exterior and lining capable of withstanding abuse. Provide maintenance access to waste piping and P-traps from under the sink.
- c. Sink Faucets. Faucets shall be chrome plated brass or bronze alloy with hot and cold water valves for manual mixing. Faucet handles shall be chrome plated brass or bronze alloy and non-lever type. **No goose neck faucet fixtures shall be used.**
- d. Janitor's Sink. Janitor sink shall be floor mounted and constructed out of concrete. Provide hot and cold water valves with manual mixing. Faucet handles shall chrome plated brass or bronze alloy. Include a stainless **steel shelf and three mop holders.**

- e. **Shower.** Showerhead and faucet handles shall be chrome plated brass or bronze alloy. Provide hot and cold water valves for manual mixing. In addition to a shower head, provide each shower stall with a threaded faucet approximately 1.2 m AFF with hot and cold-water controls, mixing valve and a diverter type valve so water can be directed to either the shower or to the lower faucet. Shower shall be provided with low flow shower head. The shower head shall be heavy duty type and securely fastened to the wall.
- f. **Kitchen Sink.** Two (2) compartment sink shall be corrosion resisting formed stainless steel. Faucet bodies and spout shall be chrome plated brass or bronze alloy. Handles, drain assembly, and stopper shall be corrosion resisting steel or brass/bronze alloy.
- g. **Ablution Trench.** See building floor plans for size and construction of trench and number of stations. Provide trench drain with brass grating and strainer. Provide each station with hot and cold water valves with manual mixing. Faucet handles shall be copper alloy.
- h. **Grease Interceptor (Exterior only).** Shall be constructed out of concrete, manual cleaning type with removable checker-plate cover complete with flow control valve. Tested and rated in accordance with PDI G-101. Concrete shall have a minimum compressive strength of 21 MPa (3045 psi) in 28 days (kitchen use only).
- i. **Floor Sink (P-13).** Provide floor sink, circular or square, with 300mm overall width or diameter and 250mm nominal overall depth. They shall have acid resistant enamel interior with cast iron body, aluminum sediment bucket and perforated grate of cast iron. Outlet size as indicated on plans.
- j. **Floor or Shower Drain:** Cast iron construction with galvanized body, integral seepage pan, and adjustable perforated or slotted chromium plated bronze, nickel-bronze, or nickel brass strainer consisting of a grate and threaded collar. Toilet room floor drains are similar except are provided with built-in, solid, hinged grate.
- k. **Trench Drains:** Floor trench shall be concrete construction with a cast iron grate. The cast iron grate shall be sectionalized and hinged so that it can easily be opened to clean out the trench. Iron grates shall be fabricated in sections in length not greater than 1500 mm. The floor trench shall be provided with perforated aluminum pan inserts which can be removed to clean out large food particles. The floor trench drain shall be adjustable perforated or slotted chromium plated bronze, nickel-bronze, or nickel brass strainer consisting of a grate and threaded collar. This style of floor trench shall be installed in the kitchen area of the DFACs in response to kitchen cleaning practices of the local national staff.
- l. **Room hose bibs and floor drains** shall be provided as required. Afghan dining facility kitchen area clean-up hose bib to be supplied with connecting hose on reel including approximately 12 meters of hose. Provide clean-up spray nozzle with hose assembly.
- m. **Provide P-Traps** per International Plumbing Code IPC for all fixture drains, floor and trench drains, and shower drains. P-traps shall have minimum of 50 mm water seal.
- n. **Large Pot sink,** provide clean-up spray nozzle with hose assembly.

5.18.4 Hot Water

Hot water shall be provided for the facility to supply 49°C (120°F) hot water to fixtures and outlets requiring hot water. Hot water of a higher temperature shall be provided only where required for special use or process. Hot water piping shall be routed parallel to the building lines and concealed within finished rooms. All hot water piping shall be insulated. A hot water re-circulating pump shall be provided if hot water piping run exceeds 30m.

5.18.5 Hot Water Heaters

The hot water shall be generated by electric water heaters. The unit(s) shall be typically located inside a mechanical room, storage room, toilet/janitor room or similar type space and be wall-mounted or be floor-mounted on a 100 mm (4 inch) raised concrete pad. The unit(s) shall be of the commercially available tank type having low or medium watt density electric heating elements.

In cases where the pressure of the water coming into the tank will violate manufacturer recommendations, a pressure reducer shall be installed in the line before the water heater. Each water heater shall be equipped with a vacuum relief valve and temperature and pressure (T&P) relief valve that discharge into a nearby floor drain; discharge piping shall terminate 50 mm (2 inches) above the floor drain. The discharge pipe shall not be installed horizontally along the floor to eliminate any tripping hazards. Multiple water heaters shall be connected by common inlet and outlet manifolds to ensure equal flow and drawdown rates.

5.19 WASTE, DRAIN AND VENT SYSTEM

Floor drains shall be provided in each room that contains a water source. Floor drains shall be provided in the mechanical equipment and toilet rooms as required. Floor drains shall be provided next to the electric water heaters. In mechanical rooms, floor drains shall be provided to avoid running drain piping long distances above or over the floor. A trench drain shall be provided for the DFAC Kitchen. All waste and vent piping shall be provided in accordance with the latest edition of IPC. Drain outlet shall use p-trap system to trap sewer gases. P-trap drain should be a one-piece system without removable parts.

Every trap and trapped fixture shall be vented in accordance with the IPC. In order to minimize vent piping, consider incorporating circuit venting or combination drain and vent systems in accordance with Section 911 and 912 of the IPC. IPC Section 708.3 states that cleanouts be provided no more than 100 feet apart measured from the upstream entrance of the cleanout. AED standard is to provide cleanouts at 25 feet intervals due to the nature of Afghans plugging up the drains and the limitation of the cleanout routers available in Afghanistan.

5.19.1 Generator Fuel Storage/Distribution

Fuel Oil Storage and Distribution system shall be provided to support operation of diesel engine generator set(s) and tank(s) shall be protected from the weather by a structural cover.

The containment dike(s) shall be sized to contain 110% of the total fuel in the tank(s), and the dike structure shall be constructed of reinforced concrete. Underground fuel piping shall be provided with either double-wall fiberglass, double-wall steel with cathodic protection, or a concrete secondary containment trench with removal covers and applied POL-resistant coating.

Fuel shall be transferred from the bulk storage tanks by either the generator engine fuel pump(s), bulk tank submersible pump(s), or duplex-fuel pumps as determined by the designer. Day tank(s) shall be provided if so determined by the designer and shall be provided with secondary containment (i.e. Double-wall tank, containment dike, etc.) and store enough fuel to operate each generator set at full load for a 2-hour period.

Bulk storage tanks shall be complete with fill tube and cap, suction tube, tank gauge, vent, and other fittings and appurtenances required for full and safe operation. Tanks shall be provided with support saddles, platform/stair and concrete pad.

Tanks of 3,780 to 45,430 liters (1,000 to 12,000 gallons) capacity shall be provided with 760 mm (30 inch) diameter manways. Tanks larger than 45,430 liters (12,000 gallons) shall be provided with 915 mm (36 inch) diameter manways. Tanks 3,780 liters (1,000 gallons) and larger shall be provided with a minimum of one (1) tank manway to allow for internal tank access. Piping will not penetrate through access manways. Tank shall be provided with a combination cleanout and gauge connection.

Vent pipe sizing shall be not less than **32 mm (1-1/4")** nominal inside diameter Vent shall be the rupture disc type calibrated to burst at **14 kPa (2 psi)** pressure, and operate at 80 percent of burst setting. Tank shall be provided with an overfill alarm system. Tank shall be provided with two (2) stick gauges graduated in **m and mm**. Stick gauge shall be of wood and treated after graduating to prevent swelling or damage from the fuel being stored. Each storage tank shall be provided with an automatic analog reading gauge which is directly mounted to a tank's manway cover. Cathodic protection shall be provide for metal

components in accordance with the manufacturer's recommendations. Storage tanks shall be handled with extreme care to prevent damage during placement and shall be installed in accordance with the manufacturer's installation instructions. [External platform/ladder access to tank top \(i.e. manhole\) shall be installed on a concrete pad.](#)

A tightness test shall be performed on each above ground storage tank. The tests shall be performed prior to making piping connections. Tests shall be capable of detecting a **0.1 mL/s (0.0126 cu.ft/h)** leak rate from any portion of the tank while accounting for effects of thermal expansion or contraction. Each storage tank shall be pressurized with air to **35 kPa (5 psi)** and monitored for a drop in pressure over a 2-hour period during which there shall be no drop in pressure in the tank greater than that allowed for pressure variations due to thermal effects. Following the tank tightness test, each storage tank shall be leak tested in accordance with the manufacturer's written test procedure if the manufacturer's test procedure is different from the tightness tests already performed. [The Contractor shall provide a full supply of fuel to each tank at the time of turnover to the Government.](#)

5.19.1.1 Filling System

A fuel filling system shall be provided for unloading fuel from fuel tanker into individual bulk storage tanks comprising of truck pad(s), duplex fuel transfer pumps, piping manifold and valves. The system shall provide remote fuel level monitoring panels at the pad(s).

5.19.2 Vehicle refueling point

Fuel storage and distribution shall be provided to support the vehicles used at various locations on base. The fuels shall be stored in one 19,000 liter fuel tank within a containment dike. The containment dike shall be sized to contain 110% of the total fuel in the tank, and the dike structure shall be constructed of reinforced concrete. Underground fuel piping shall be provided with either double-wall fiberglass, double-wall steel with cathodic protection, or a concrete secondary containment trench with removal covers and applied POL-resistant coating.

These tanks shall be complete with fill tube and cap, suction tube, tank gauge, vent, and other fittings and appurtenances required for full and safe operation. Tanks shall have overfill protection devices and remote overfill alarm. Tanks shall be provided with support saddles, platform/stair, concrete pad and leak spillage containment provisions. Fuels shall be transferred from the storage tanks by transfer pumps located within the fuel dispensing units. Fuel piping shall be fiberglass for underground and steel for piping located above grade. Dispensing unit shall be equipped with dual nozzles and key control. The fuel dispensing unit shall be installed on an island such that two vehicles can simultaneously fuel on either sides of the dispensing unit. Coordinate site design and route all contaminated drainage water from the fuel dispensing pad through an oil/water separator. Provide containment per applicable criteria.

5.20 TESTING AND COMMISSIONING

The Contractor shall test all piping systems in accordance with IPC International Plumbing Code. The final test shall include a smoke test for drainage and vent system and pressure test for the domestic water piping. After completing the work, the Contractor shall demonstrate that all plumbing systems operate to fully satisfy the function for which these systems have been designed. The Contractor shall test, adjust, balance and regulate the system and its controls as necessary until the required designed conditions are met. The Contractor shall include tests for interlocks, safety cutouts and other protective devices to demonstrate safe operation. All such tests shall be carried out in the presence of the Contracting Officer and full written records of the test data and final settings shall be submitted to the Contracting Officer. After all tests are complete, the entire domestic hot and cold water distribution system shall be disinfected. The system shall not be accepted until satisfactory bacteriological results have been obtained.

6.0 FIRE PROTECTION

6.1 PORTABLE FIRE EXTINGUISHERS

Portable fire extinguishers shall be provided inside all facilities and at exterior locations as required in accordance with NFPA 10. Generally, extinguishers will be of the multi-purpose dry chemical type except for occupancies requiring a special type extinguisher (e.g., carbon dioxide portable fire extinguishers for electrical rooms).

7.0 ELECTRICAL

7.1 GENERAL

Contractor shall design and construct all electrical systems for the facilities to be provided. This includes design, construction, all necessary labor, equipment, and material for a fully functional system.

7.2 DESIGN CRITERIA

7.2.1 Applicable Standards

- a. Design shall be in the required units as stipulated herein.
- b. Conflicts between criteria and/or local standards shall be brought to the attention of the Contracting Officer for resolution. In such instances, all available information shall be furnished to the Contracting Officer for approval.
- c. All electrical systems and equipment shall be installed in accordance with the requirements set forth in the documents referenced herein.
- d. Acceptance Testing: Contractor shall develop and submit for approval complete acceptance test procedures on all systems provided. As a minimum the testing procedures shall comply with the requirements of the National Fire Protection Association (NFPA) and the International Electrical Testing Association Inc. (NETA).

7.3 MATERIAL

7.3.1 General

Unless noted otherwise, all material used shall be in compliance with the requirements of UL standards. In the event that UL compliant materials are not available, Contractor may then select applicable British Standards (BS), IEC, CE, CSA, GS, DIN listed material (or equivalent), but the contractor must prove equivalence and must provide the government with a full copy of the relevant specification(s)/standard(s). Material and equipment installed under this contract shall be for the appropriate application and installed in accordance with manufacturers recommendations.

Equipment enclosure types shall be in compliance with the National Electrical Manufacturer's Association (NEMA) or the International Electro-Technical Committee (IEC) standards.

Major components of equipment shall have the manufacturer's name, address, type or style, voltage and current rating, and catalog number on a non-corrosive and non-heat sensitive plate, securely attached to the equipment. All equipment delivered and placed in storage, prior to installation, shall be protected from the weather, humidity and temperature variation, dirt and dust, and any other contaminants. All equipment shall be in new condition, undamaged and unused.

7.3.2 Standard Product

All material and equipment shall be a standard product of a manufacturer regularly engaged in the manufacture of the product and shall essentially duplicate items that have been in satisfactory use for at least two (2) years prior to bid opening.

7.3.3 Design Conditions

All equipment shall be rated and designed for the maximum ambient temperature and altitude of the construction site. Equipment that is altitude and temperature sensitive, such as generators, shall be derated according to the manufacturer's recommendations. Generic derating criteria for altitude and for ambient temperature may be used to approximate the required size of such equipment during the design phase, but a stipulation shall be placed on the construction plans to adjust the size according to the derating criteria specific to the manufacturer's equipment chosen before the equipment is ordered.

7.3.4 Restrictions

Aluminum conductors shall not be specified or used except as bare steel reinforced (ACSR) overhead conductors in an aerial primary distribution system. Aluminum windings shall not be used in transformers.

7.4 DESIGN REQUIREMENTS

7.4.1 Electrical Distribution System

The contractor shall provide generator power as described in the paragraph **Generator Power System** as a prime source of power for the facilities

The contractor shall provide a prime power distribution system to distribute power to the site's facilities and other loads as required. The distribution system shall be underground

The underground distribution system shall be in direct buried schedule 80 ductbanks, except for under roadways and heavy traffic areas, with the ducts not less than 1220mm below grade. Manholes and handholes shall be provided at changes of direction of more than 40 degrees and elsewhere as required to limit the pulling tension and sidewall pressure on the cables during installation to acceptable levels as defined by the cable manufacturer. Manholes shall be provided for ductbanks with more than 2 ducts. Handholes shall be provided wherever a manhole is not required by quantity of ducts or by cable manufacturer's installation recommendations. Underground ducts shall be not less than 100mm diameter Schedule 80 PVC for non roadway and light traffic areas and concrete encased schedule 40 for roadways and heavy traffic areas.

The contractor shall provide service entrance feeders from the distribution system to the service entrance equipment located inside of each facility and sized to the rating of the service entrance equipment. Service entrance equipment shall include a distribution panelboard sized to supply the total load of each facility. Service entrance feeder lengths shall be kept as short as possible to minimize voltage drop. They shall be underground not less than 1220mm below grade. A spare conduit of equal size shall be provided.

All panelboards shall be circuit breaker 'bolt-on' type panels. Minimum size circuit breaker shall be rated at no less than 20-amperes. Circuit breakers shall be connected to bus bar(s) within the panelboards. Daisy chain (breaker-to-breaker) connection(s) are not acceptable. Indoor distribution panels shall be flush mounted in finished areas and surface mounted in unfinished areas. All circuit breakers shall be labeled with an identification number corresponding to the panel schedule. A 3-pole circuit breaker shall be a single unit and not made up of 3 single pole circuit breakers connected with a wire or bridge to make a 3-pole breaker. All branch circuit wiring shall be copper, minimum #4 mm² (#12 AWG) installed in metal conduit. Wiring shall be concealed in finished areas and surface mounted in unfinished areas. Flush mounted panels shall be provided with spare empty conduits from panel to unfinished area for future use. All panels shall be provided with a minimum of 25% spare capacity for future load growth. Power receptacles (outlets) shall be duplex type 220 V, 50 hertz, type CEE 7/7 with Earth Groundrated for 20A or better and shall be compatible with the required secondary power. All splicing and terminations of wires

shall be performed in junction or device boxes. Proper wire nuts/connectors shall be used for splicing wire. No twist-wire connections with electrical tape wrapped around it shall be acceptable. All electrical installation shall be in accordance with NFPA 70 (National Electric Code). For large panels (225 Ampere and above) provide an ammeter, voltmeter and kilowatt-hour meter to monitor energy usage. Selector switches shall be provided for each meter to read all 3 phases. Receptacle locations shall be coordinated with architectural requirements.

Contractor shall design and provide circuits for all mechanical equipment and any other equipment that requires power and make the final connections.

All loads shall be coordinated to provide balanced loading. Phase imbalance at each panel shall not exceed 5%.

Voltage Drop for branch circuits shall be limited to no more than 3%; voltage drop for branch and feeder circuits combined shall be limited to no more than 5%.

All circuit breakers shall use down-stream coordination to ensure the breaker nearest a fault or overload is the first to trip.

7.4.1.1 Generator Power System

The generator power system shall consist of one 80kW (100kVA) generator. The site's total load is defined as the site's total demand load + 25% spare capacity. The generators may supply power at 380/220 V.

Generators shall be derated as necessary for the ambient temperature and altitude of the site.

Generator fuel storage capacity shall be based on usage at total load for a minimum of 30 days. For fuel storage requirements, see Mechanical paragraph: Generator Fuel Storage/Distribution.

7.4.2 Lighting

Design levels shall be per IES standards as a minimum. For convenience, the following lighting level table is listed. Note: all spaces listed below may not be within the work required within this contract.

Toilets, Showers, Latrines, washrooms	20 FC (200 Lux)
Mechanical/Electrical rooms	30 FC (300 Lux)
Corridors and Stairways	20 FC (200 Lux)
Offices (private)	50 h/5 v FC (500 h/50 v Lux)
Office areas (open)	30 h/5 v FC (300 h/50 v Lux)
Conference	30 h/5 v FC (300 h/50 v Lux)
Video Conference	50 h/30 v FC (500 h/300 v Lux)
Armories	30 h/3 v FC (100 h/30 v Lux)
Reading (in chair-casual)	30 h/5 v FC (300 h/50 v Lux)
Reading (in chair-serious)	50 h/10 v FC (500 h/100 v Lux)
Reading (at desk-casual)	30 h/3 v FC (300 h/30 v Lux)
Reading (at desk-serious)	50 h/10 v FC (500 h/100v Lux)
Egress path (incl. exterior)	10 Lux
Areas adjacent to egress path	0.5 Lux

FC = Foot Candle

h = horizontal component

v = vertical component

Indoor lighting for all areas shall consist of fluorescent surface mounted light fixtures. Exterior lighting shall be HID high pressure sodium as referenced. Moisture resistant/waterproof fluorescent light fixtures shall be provided in high humidity and wet areas such as latrines, showers and outside. Battery powered 'emergency' and 'exit' lights shall be provided within each building, as applicable, for safe egress during a power outage. All light fixtures shall be factory finished, complete and operational, to include but not be limited to, lens, globe, lamp, ballast etc. Industrial type fluorescent light fixtures shall not be used. Every room shall be provided with a minimum of one light switch. Light fixtures shall be mounted approximately

2.5-meters (8 feet) above finished floor (AFF) minimum. Fixtures may be pendant or ceiling mounted, depending on the ceiling type and height.

7.4.3 Light Fixtures

Lighting fixtures shall be a standard manufacturer's product. Fluorescent surface mounted light fixtures shall be power factor corrected and equipped with standard electronic ballast(s), except in medical facilities where magnetic ballast(s) shall be required. All light fixtures shall properly operate using standard lamps available locally. Fixtures shall be fully factory wired and designed for appropriate application i.e. appropriate for that location where installed.

7.4.4 Emergency "EXIT" Light Fixtures

Emergency "EXIT" light fixture shall be provided in accordance with NFPA requirements. Fixtures shall be single or double sided as required by the location and for wall/ceiling mounting. Unit shall illuminate continuously and be provided with self-contained nickel cadmium battery pack, to operate on floated-battery or trickle charge circuit. Fixture shall operate satisfactorily for 90 minutes during a power outage. Unit shall have test/re-set button and failure indication lamp. Primary operating voltage shall be 220 volts. Lettering "EXIT" shall be color red and not less than 6 inches (150 mm) in height and on matte white background. Illuminations shall be with LEDs.

7.4.5 Above Mirror Lights

Above mirror lights shall be provided in toilet rooms.

7.4.6 Emergency Lighting

Battery powered emergency lights shall be provided within each building per NFPA for safe egress during power outage. Fixtures shall be provided with self-contained nickel cadmium battery pack to operate on stand-by circuit for 90-minute minimum. Unit shall have test/re-set button and failure indication lamp. Normal operating voltage shall be 220volts. Emergency lighting fixtures shall be connected to the normal lighting system.

7.4.7 Light Switches

Light switch shall be single pole. Minimum of one light switch shall be provided in every room. Lighting in large rooms/areas may be controlled from multiple switches. Three-way or four-way lighting shall be provided in all rooms / areas with multiple entrances.

7.4.8 Receptacles

General-purpose receptacles shall be as required herein. All receptacles shall be duplex, unless otherwise specified in this section, the NEC, or other referenced standard. Receptacles shall be placed at a maximum of 3-meter (10 feet) intervals. Areas with computer workstations or similar equipment will have additional receptacles. Sinks will have a receptacle above, with one duplex receptacle serving two sinks that are side-by-side. Receptacles in wet/damp areas or within 1 meter (~3 feet) of sinks, lavatories, or wash-down areas shall be ground fault circuit interrupter (GFCI) type or residual current disconnect (RCD) type, with the trip setting of [4 to 6] milliamperes or less. Total number of duplex receptacles shall be limited to six (6) per 20-ampere circuit breaker.

7.4.9 Conductors

All cable and wire conductors shall be copper. Conductor jacket or insulation shall be color coded to satisfy NEC requirements. The use of 75 or 90 degree C (minimum) terminals and insulated conductors is required. Use of higher degree C rated conductors on circuits with protective device terminals rated at

a lower degree C is allowed but must be derated to the rating of the device terminals.

7.4.10 Grounding and Bonding

Grounding and bonding shall comply with the requirements of NFPA 70. Underground connections shall be exothermally welded. All exposed non-current carrying metallic parts of electrical equipment in the electrical system shall be grounded. Insulated grounding conductor (separate from the electrical system neutral conductor) shall be installed in all feeder and branch circuit raceways. Grounding conductor shall be green-colored, unless the local authority requires a different color-coded conductor. Ground rods shall be 20 millimeters (0.75 inches) in diameter and 3 meters (~10 feet) long made of copper-clad steel. Final measurement of the ground resistance shall be in compliance with the requirements of the local authority but shall not exceed 25 ohms when measured more than 48 hours after rainfall.

7.4.11 Enclosures

Enclosures for exterior and interior applications shall be NEMA Type 3S (IEC Classification IP54) and NEMA Type 1 (IEC Classification IP10) respectively.

7.4.12 Fire Detection & Alarm System

Smoke detectors shall be provided in all rooms and hallways. Each detector shall be capable of alarming when activated. Detectors are not shown on the drawings. All detectors shall be battery operated.

7.4.13 Transient Voltage Surge Suppression (TVSS)

Transient Voltage Surge Suppression shall be provided utilizing surge arresters to protect sensitive and critical equipment. As a minimum TVSS protection shall be provided at each panel serving electronic loads and shall be shown on the panel schedule. It is recommended that Metal Oxide Varistors (MOV) technology be used for such applications.

7.4.14 Conduit Raceway System

Metal conduit (EMT) system shall be complete, to include but not limited to, necessary junction and pull boxes for all surface mounted conduit systems. PVC conduit, junction and pull boxes are allowed for raceways located in masonry walls. Smallest conduit size shall be no less than 20mm (0.75 inch) in diameter. All empty conduits shall be furnished with pull wire or cord or rope (depending on the size of conduit and length of run). System design and installation shall be per NFPA 70 requirements. Exterior conductors below grade shall be installed in concrete encased PVC conduit at a depth of 1220 millimeters.

7.4.15 Cable Tray Raceway System

Cable trays shall be ladder type and provided with, but not limited to, splices, end plates, dropouts and miscellaneous hardware. System shall be complete with manufacturer's minimum standard radius and shall be free of burrs and sharp edges. Nominal width of cable tray shall be 300mm (12 inch) and rung spaced at 150mm (6 inch). Nominal depth shall be 100mm (4 inch). System design and installation shall be per NFPA 70 requirements.

7.4.16 Identification Nameplates

Major electrical equipment, such as transformers, panelboards, and load centers, etc. shall be provided with permanently installed engraved identification nameplates.

7.4.17 Schedules

All panel boards and load centers shall be provided with a directory. Directory shall be typed written in English, Dari and Pashto

Single Line Diagram

Complete single line diagrams shall be provided for all systems installed. All major items in each system shall be identified and labeled for respective ratings. Single line diagrams for each system, installed in a clear plastic frame, shall be provided.

7.5 OPERATIONS AND MAINTENANCE (O&M) FOR ELECTRICAL

- a. Contractor is required to provide a 12 month supply of parts for operation and maintenance of equipment according to the manufacturer's recommendations. In addition to this, the contractors shall provide an inventory of all items, location/address stored and secured, and commissioning plans.
- b. The O&M manuals must be provided prior to any training activities. Manuals shall be "tri-lingual" in Dari, Pashto and English.
- c. All control panels shall have tri-lingual name plates in Dari, Pashto and English.
- d. The contractor shall provide an outline of the training lesson plan (to be approved by the Government) prior to conducting training. CD recordings of training on video shall also be provided, after training is conducted.

-END OF SECTION-

SAMPLE TASK ORDER: 01015

SECTION 01040

SECURITY

1.0 SPECIFIC CONTRACT SECURITY ASSESSMENT

The Government has determined that there is a High Risk associated with the security environment in which this work is to be performed. This rating takes into consideration the geographic location of the work, including the Government's institutional knowledge of the recent history of this area as it relates to security, and the nature of the work to be performed under this (contract/task order). The Government is entitled to assume that the contractor possesses the degree of knowledge that is "standard" to experienced contractors in this industry and location, and that the contractor will gain other relevant information that is reasonably available about the (contract/task order) to be performed. The Government is further entitled to assume that the contractor understands its abilities as they relate to the work to be performed under the contract.

2.0 GENERAL BACKGROUND

Operations in Afghanistan require Armed Contractors (ACs) and Private Security Companies (PSCs) to fulfill a variety of important security functions for the Department of Defense (DOD), Department of State (DOS), and other entities operating in the Combined Joint Operations Area – Afghanistan (CJOA-A). Included in these ACs and PSCs are traditional private security companies, the Afghan security guards, and DOD contractors who are armed for personal protection. Traditional PSCs perform convoy escort, static security, and personal security details (PSDs). Afghan security guards (ASGs) provide local static security to Forward Operating Bases (FOBs), Company Operating Bases (COPs), and other infrastructure with local Afghan companies. DOD contractors may be armed either as a function of the service they provide or their operating location. These AC/PSCs are not combatants; they execute services to protect personnel, supplies and equipment, and fixed facilities. Weapons employed by AC/PSCs are for purely defensive purposes only. This section is in accordance with the "USCENTCOM Policy and Delegation of Authority for Personal Protection and Contract Security Service Arming of DOD Civilian Personnel and Contractors for Iraq and Afghanistan", 7 November 2006.

The intent of these contracted services is to "free" joint forces to conduct military operations and other inherently governmental functions. As the CJOA-A experiences both building of combat power as well as the parallel civilian uplift effort, the reliance on contracted services to include AC/PSCs is likely to increase. AC/PSC services are necessary to secure installations and other infrastructure, conduct movement support for sustainment, train Afghan Forces to proficiency, and transport key personnel throughout the CJOA-A. The terms armed contractor, private security company, or contractor personnel, includes all personnel directly employed by the contractor at any tier of contract or subcontract. This section applies to all armed contractors providing service on DOD contracts.

3.0 GOVERNMENT REPRESENTATIVES

USACE will have a hierarchical security organization that disseminates essential security information and provides consistent and comprehensive use of security information. The USACE Area OIC/NCOIC will serve as the Area Office security officer and the Resident OIC/NCOIC will serve as the security officer at each Resident Office. When required the Area Office will request security plan review support from the Anti-Terrorism/Force Protection (AT/FP) expertise in the District Joint Operations Center (JOC). The Contractor may request this support from the Area/Resident Office OIC.

3.1 Security plan

The security officers will review and approve all current and future contractor security plans prior to submittal approval by the authorized representative of the contracting officer. The security officer shall

ensure that all contractor security plans are in accordance with the contract requirements. The security plans shall address movement of contractor labor, material, and equipment including contractor notification requirements to Government security officers who will in-turn inform Task Force Commanders and other Coalition Forces. The security officers will lead the quality assurance program to ensure contractors are executing their approved security plans. The Government will not allow the Contractor to start work without an approved security plan.

3.2 Security Coordination

Contractor will be required to coordinate construction site security with Security Officer who will coordinate with the Task Force or Provincial Reconstruction Team (PRT) Commanders. Afghan or Coalition Forces may be available, under certain circumstances, to assist the contractor on a case by case basis. The Government also expects the Contractor to coordinate with local Afghan Forces to the greatest extent possible. Coordination does NOT include nor imply making payments of any nature whatsoever to the local ANA/ANP or Local/Provincial Government Officials for permission or protection to construct the project. The contractor will immediately inform the Government if asked to make any such payments, and the Government will provide further direction to the contractor. Corruption will not be tolerated at any level, under any circumstances. Conducting business in this manner will be grounds for termination of the contract.

3.3 Claim for Security Delays

Following a threat or an attack on a USACE contractor or a contractor claim for security delays, the security officer will validate the incident and assess the incident's impact to the contract period of performance. Within 30 days of the incident, if the contractor submits a request for an extension of time, the Government ACO will assess the incident's impact to the construction schedule and as necessary issue a contract modification for additional non-compensable time.

3.4 Security Rating

Each contract/task order will be assigned a rating by the Government security officer (see paragraph 1.0). This rating will determine the level of approval for the security plan. Assistance from the District's JOC AT/FP expertise may be required to assess the rating. Ratings and approval levels are below:
Extremely High Risk: District Commander
High Risk: Deputy CDR, Chief of E&C, Area OIC, or J3 OIC
Moderate Risk: Chief of Construction, Area OIC/NCOIC, or Area Engineer
Low Risk: Resident OIC/NCIOC, Resident Engineer

3.5 Government Provided Security

Any U.S. Government provided security/escort services will be in accordance with DFAR 252.225-7040 CONTRACTOR PERSONNEL AUTHORIZED TO ACCOMPANY U.S. ARMED FORCES DEPLOYED OUTSIDE THE UNITED STATES (JUN 2006).

4.0 SITE SECURITY FOR PROJECTS OUTSIDE OF ACTIVE COALITION FORCE BASES

The contractor shall develop a site security plan and program (IAW Security Plan Section) to provide 24 hr/7 days a week security for the project throughout the performance of the Contract. There will be licensed armed guards manning project watch towers, the main entry gate, and roving patrols of the compound, adjacent hills, and observation posts at all times. Tower guards will maintain perimeter security to include thwarting any attempted theft, vandalism, or attacks. Roving guards will patrol vehicle staging areas making sure unauthorized personnel are not present, and prevent damage or sabotage of grounds and/or equipment. Roving patrols will also check nearby hills to prevent snipers or any other terrorist activity that might threaten the site. Facility security shall include access control to limit entry to unauthorized personnel, conduct vehicle and personnel bomb searches, report suspicious persons, question persons as required, and respond to calls for security support and assistance. The Contractor

shall employ culturally appropriate means of searching personnel. Local governments, ANA/ANP units, and Coalition Forces should be coordinated with to support the large scale security of the site to the greatest extent possible; however, the contractor is ultimately responsible for providing security. Coordination does NOT include nor imply making payments of any nature whatsoever to the local ANA/ANP or Local/Provincial Government Officials for permission or protection to construct the project. The contractor will immediately inform the Government if asked to make any such payments, and the Government will provide further direction to the contractor. Corruption will not be tolerated at any level, under any circumstances. Conducting business in this manner will be grounds for termination of the contract. The contractor is expected to perform all required actions to protect the construction site compound from theft and vandalism and personnel from physical harm. These measures are strictly for the protection and defense of the on-site people and property; contractors are not authorized to conduct any type of offensive operations. For security of road construction, transportation of supplies, and equipment convoys, see the appropriate section below.

4.1 SITE SECURITY FOR PROJECTS ON-BASE

The Contractor shall provide general perimeter force protection security for developing the site. Security may include but is not limited to temporary fences and private security guards. Perimeter security shall prevent unauthorized site access and provide site protection to the contractor's work force and the Government personnel for the duration of the project. Many bases in Afghanistan have multiple contractors and local Afghan security forces working on them; it is the responsibility of the Contractor to ensure the 24/7 protection of the construction site from vandalism and theft. If the security situation request measures more than the general provision specified by the Contractor, the contractor shall inform the Government immediately. The Contractor has the ultimate responsibility for all security measures. These measures are strictly for the protection and defense of the on-site people and property; Contractors are not authorized to conduct offensive operations.

4.2 SECURITY FOR ROAD PROJECTS, TRANSPORTATION, & CONVOYS

Road construction projects will maintain at least two armed traffic control points (TCPs) at 300 meters in both directions of the road, or at a distance that terrain dictates. TCP guards will thoroughly inspect vehicles, entering the compound for explosives, contraband, and unauthorized personnel. TCP guards will also check for proper identification and conduct physical searches of personnel entering and leaving the site. They will report suspicious persons, question persons as required, and respond to calls for security support assistance. The TCP must have controlling barricades to slow traffic in both directions, but not to block the road completely. The Contractor shall employ culturally appropriate means of searching personnel. The TCP must have a vehicle ready for immediate evacuation or pursuit of AAF trying to access the construction site.

4.2.1 Movement of Project Equipment and Supplies

The Contractor will inform the Government no later than 72 hours before any movement of project equipment and supplies outside of any Coalition Force bases in the CJOA-A. Both the Government and the Contractor must be aware of information security, using face-to-face meetings, courier mail, or other secure means of communication to discuss movements. All contractor convoys will have a minimum of two armed security details in the front and rear of the convoy. Convoys longer than three vehicles will also have a center armed security detail. The minimum security detail is a vehicle(s) with two armed security personnel, each with AK-47 or equivalent weapons. While the aforementioned is a minimum requirement, the Contractor shall have an armed security detail commiserate with the threat of the route. The threat of attack in Afghanistan is very real, and Contractors must be prepared for violent ambushes from Anti-Afghanistan Forces (AAF). Redundant communication equipment is highly recommended using cell phone, satellite phone, or other Contractor/Government supplied communication/tracking equipment.

4.2.2 Security Detail

The project site will also have a security detail on either side of the on-site construction. These details must be able to protect and defend from nearby buildings, hilltops, and concealed terrain while still providing immediate on-site security to the construction equipment and personnel.

4.2.3 Required Training

The contractor shall employ personnel that are trained in finding mines and improvised explosive devices along the construction route. Contractor personnel are prohibited from getting close, touching, or handling any explosive devices or unexploded ordinance found. The Contractor will report the location of any of these devices to the Government security officer or local Afghan Forces immediately for disposal/removal.

5 SECURITY PLAN

During the Preconstruction Conference, the Contractor will receive the Government's Alignment, Movement, & Security Plan (AMSP). The AMSP will have at a minimum:

- a. An estimated threat assessment of the project area and major supply routes.
- b. The contact information for the USACE security officers, engineering/construction representatives, local Coalition Forces, and local Afghan Forces near the project site.
- c. General emergency procedures and critical information required for Coalition/Afghan Force security assistance.
- d. The estimated number of quality assurance (QA) site visits by the Government on a weekly/monthly basis.
- e. Any special security requirements directed by the Coalition Force Commanders in the area.

5.1 Estimated Threat Assessment

The contractor is expected to develop a site security plan to cover a range of security operations from low to high threat. Included in this plan will be the capability for a surge of manpower and equipment required during high threat conditions. The contractor is expected to notify all on-site personnel of increased threats and protective action to take.

5.2 Security Plan Requirements

The security plan introduction must contain the following information at a minimum: MOI license number, AISA licensed (Yes/No), armed contractor & subcontractor company names, contract number/title, contracting agency (USACE-AED), type of work, number/type of weapons authorized, POC for company with contact details, Government Contracting Officer and COR with contact details, number of security personnel by type (U.S., Afghan, Other), company's country of registration/origin.

5.3 Personnel

The plan shall contain the names, photos, and tazkira numbers of security personnel, those personnel with access to weapons/ammo and those persons who will be handling or transporting explosives. As part of the security plan, the contractor shall continually submit the coordinates of the contractor's base camps, quarries, and current work locations. The Contractor shall submit, prior to the commencement of construction, a plan for security protection, with a list of the chain of command. Perimeter security shall prevent unauthorized site access and provide safety protection to the Contractor work force and government personnel for the duration of the project. The Contractor is solely responsible for security however local police shall be coordinated with regarding security to the greatest extent possible. Coordination does NOT include nor imply making payments of any nature whatsoever to the local ANA/ANP or Local/Provincial Government Officials for permission or protection to construct the project. The contractor will immediately inform the Government if asked to make any such payments, and the

Government will provide further direction to the contractor. Corruption will not be tolerated at any level, under any circumstances. Conducting business in this way will be grounds for termination of the contract. Additionally, our new contracts are going to require that ALL security personnel are to be registered biometrically.

5.4 Force Protection Condition Levels

The contractor will use at least four force protection condition levels (Extremely High, High, Moderate, Low) with corresponding levels and codes for on-site threat postures (uniforms, weapons, and vehicle movements). The contractor will use road movement safety restriction codes (Green, Amber, Red, or Black) for frequently traveled roads in the vicinity of project site. Force protection conditions and vehicle route status will be publicized to the site population. As a guideline, here are the Coalition Force route status codes:

- a. Green – Route Open; no restrictions
- b. Amber – Route Open; only mission essential travel allowed on this route; the Government Security Officer must approve all Contractor movements.
- c. Red – Route Open; requires Commander's approval for travel. Forces are required to use armored vehicles; all non-essential ground site visits suspended.
- d. Black – Route Closed to Coalition Forces except for emergency travel.

5.5 Coordination With Local Police

The contractor will establish a threat assessment group with local police to determine local area threats and adjust force protection conditions as required. The contractor must use language assistants/interpreters if there is a language difference between the armed security personnel, the contractor project manager, and other on-site personnel.

5.6 Security Plan Submittal Requirements

Contractors will submit security plans in accordance with contract Section 01335 – Submittal Procedures for Projects.

6.0 ARMING LICENSE

Contractor personnel who are armed will be properly authorized to carry arms in Afghanistan by registering and obtaining a license to carry arms from the Afghanistan Ministry of the Interior through USFOR-A. Armed contractor personnel must be properly trained and qualified on each weapon they will be authorized to use. Exceptions to proceed without a valid MOI license may be granted in rare cases at the sole discretion of the Government. Failure to obtain this license is grounds for contract termination. All armed contractors must carry a copy of their Letter of Authorization (LOA) and their MOI license at all times. U.S. and Coalition Forces have the right to ask for this documentation at any time.

7.0 LOCAL HIRE VETTING PROGRAM

The Contractor shall maintain a local hire vetting program for all local hires required under performance of this contract, to include background checks. The Contractor will conduct interviews and review employment application information for their candidates, with results of the interview and information reviews provided to the USACE security representative for appropriate action. The Contractor will be available to accept reports of threats and intimidations, and forward these to the appropriate Government agency for resolution. The Contractor will demonstrate an awareness of cultural nuances (i.e. tribal relationships, etc.) and employ culturally sensitive measures when conducting interviews. The U.S. Government will enter all AC/PSC personnel into the nation-wide Biometrics network to verify Contractor vetting.

8.0 COMMUNICATION

The contractor will operate a 24/7 security operations center with communication capability to each guard on duty and the ability to notify all on-site personnel of increased threats and protective actions to take. *The operations center will also have the capability of 24/7 communication with the local Coalition, ANA, or ANP security forces.* The Contractor shall have communication with the District JOC at all times for rapid emergency response; the Government Security Officer will give the Contractor the JOC contact information. Communication can be via cell phone, email, satellite phones, VHF, HF, CODAN, text, or other communication technologies compatible with the Government's capabilities. The Contractor will provide the Government with their contact information (names, numbers, frequencies, email addresses, transponder IDs, etc.) for the site encompassing all available communication means.

9.0 CONTRACTOR PROVIDED EQUIPMENT

The contractor will provide the operational security equipment including but not limited to weapons, radios, uniforms, vehicles, vehicle fuel, phones, and other equipment as proposed by the contractor to provide complete site security.

10.0 TRAINING

The contractor will develop a training plan for each aspect of the security operations to ensure all employees receive initial and quarterly training to maintain certification, proficiency, and safety. Records of the training is an inspectable item for the COR and Security Officer. The Contractor will ensure all security personnel are trained on the required COMISAF/USFOR-A Tactical Directive, ROE/RUF, escalation of force (EOF), withdrawal/clear drills, proportionality, target discrimination, positive ID, Law of War, small unit tactics training, and general convoy drills like vehicle recovery. This training will also include but not limited to weapons qualification, vehicle operations, IED, site security, traffic/entry control points, and safety. The contractor shall provide a sufficient number of trained personnel to meet the required security level for the project beginning on the date of mobilization.

11.0 KEY CONTROL

The contractor shall establish and implement methods in writing to ensure that all keys issued by the Contractor are not lost or misplaced and are not used by unauthorized persons. The contractor shall develop procedures covering key control that will be included in their quality control system (See Section 01451). The project managers will keep a master log of all keys and provide a copy to the contracting officer's representative (COR) for verification. If a key is lost or stolen, the Contractor shall pay to have all impacted locks changed/rekeyed immediately.

12.0 SAFETY BARRICADES

Barricades shall be required whenever safe public access to paved areas such as roads, parking areas, or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night. Travel to and from the project site shall be restricted to a route approved by the Government site supervisor. As the situation dictates, one security guard will be posted at each safety barricade.

13.0 RESPONSIBILITY FOR PHYSICAL SECURITY

Prior to mobilization, the Contractor shall submit his proposed means of providing project physical security to prevent unauthorized access to equipment, facilities, materials and documents, and to safeguard them against sabotage, damage, and theft. The Contractor shall be responsible for physical security of all materials, supplies, and equipment of every description, including property which may be Government-furnished or owned, for all areas occupied jointly by the Contractor and the Government, as

well as for all work performed. Security may include but is not limited to fence and private security guards. The Contractor shall provide perimeter force protection security for the developing site. The plan shall address in detail the contractors proposed procedures, and organization necessary to produce and maintain effective security within the contract limits twenty-four (24) hours a day seven (7) days a week. This document shall be referred to as part of the security plan submittal.

14.0 CRITICAL INFORMATION TO REPORT

The Government is responsible for the management and oversight of DOD Contracted AC/PSCs delivering services throughout the CJOA-A. Given the impact of either contractor misbehavior or catastrophic attacks against contractors, it is critical that information regarding AC/PSC incidents is communicated quickly and accurately to the Government for purposes of management, fact-finding, and mitigation where necessary. The Government must receive the information addressed below. The Contractor will report any of these information requirements immediately to the Government site supervisor:

- a. AC/PSC Escalation of Force to include the use of weapons resulting in the death or injury of an Afghan citizen, coalition, or U.S. service member, other government official, or contractor
- b. AC/PSC accidents, traffic, or otherwise, resulting in the death or injury of an Afghan citizen, coalition, or U.S. service member, governmental official, or contractor.
- c. Attacks against AC/PSC activities by Anti-Afghan Forces resulting in the death or injury of an Afghan citizen, coalition or US service member, governmental official, or contractor.
- d. Reports of "lost convoys." These are AC/PSC escort or independent activities which have lost contact with their companies.
- e. AC/PSC Escalation of Force, accidents, or other activities that result in significant damage to Afghan or USG vehicles, materials or facilities.
- f. Anti-Afghan Force actions including small arms fires (SAF), RPG fire, indirect fire (IDF), improvised explosive devices (IEDs), and/or complex attacks against AC/PSC activities.
- g. Contractor accidental or negligent discharge of a weapon.

15.0 REOCCURRING REPORTS.

Every month the Contractor will report the following to the designated contract security officer:

- a. The number, type, and general description of every weapons discharge by the Contractor or any tier of subcontractor on the project.
- b. The name of the Contractor's security manager and the total number of armed personnel working on the project.
- c. The total number by type/caliber of all weapons employed on the project.
- d. The serial numbers and license plates of all armored vehicles used for the project.
- e. The type of transponder/tracking system used for any moving equipment used for the project.
- f. Any changes made to security personnel (new hires, employees who quit or were let go, transfers, etc.).

Referenced Biometrics Clause:

52.225-4001 SECURITY CONTRACTOR REQUIREMENTS (OCT 2009)

The Contractor shall submit the names of all employees who will be working in security positions prior to their performance of any such work on this contract. All security personnel will be subject to Biometrics (retinal scan) testing by representatives of the Contracting Officer, at any time during performance of work on the contract. The names of security personnel and the Biometrics testing results will be vetted with the Afghanistan government, International Security Assistance Forces (ISAF), or U.S. Forces-Afghanistan to determine if any of the proposed security personnel are on the list of enemy combatants compiled by these sources. If the Contractor is notified by the Contracting Officer that such security personnel are on

any of these lists of enemy combatants, such employees must be immediately removed from work on this contract. Repeated incidents of hiring security personnel on any of the lists of enemy combatants will be grounds for terminating the contract for default.

SAMPLE TASK ORDER:01060

SECTION 01060

SPECIAL CLAUSES

1 GENERAL

1.1 PRECONSTRUCTION CONFERENCE

1.1.1 Schedule of Meeting

At the earliest practicable time, prior to commencement of the work, the Contractor and any Subcontractors whose presence is necessary or requested, shall meet in conference with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to the details of the administration and execution of this contract. This will include but not necessarily be limited to the Contractor's Quality Control (CQC) Program, the Contractors Accident Prevention Program, submittals, correspondence, schedule, access to the work site, security requirements, interface requirements, temporary facilities and services, hazards and risks, working after normal hours or on weekends or holidays, assignment of inspectors, representations, special requirements, phasing, and other aspects of this project that warrant clarification and understanding.

1.1.2 Meeting Minutes

It shall be the responsibility of the Contractors CQC System Manager to prepare detailed minutes of this meeting and submit those minutes to the Contracting Officer for approval within three (3) workdays. Any corrections deemed necessary by the Contracting Officer shall be incorporated and resubmitted within two (2) calendar days after receipt. Upon approval of the minutes by the Contracting Officer, the Contractor shall distribute the minutes to all parties present or concerned.

1.2 AREA USE PLAN

The Contractor shall submit to the Contracting Officer, within ten (10) calendar days after award of this contract, an Area Use Plan designating intended use of all areas within the project boundaries. This plan shall include, but not necessarily be limited to the following: the proposed location and dimensions of any area to be fenced and used by the Contractor; construction plant and building installations/the number of trailers and facilities to be used; avenues of ingress/egress to the fenced areas and details of the fence installation; drawings showing temporary electrical installations; temporary water and sewage disposal installations; material storage areas; hazardous storage areas. Any areas that may have to be graveled shall also be identified. The plan shall also include a narrative description of the building structural system, the site utility system and the office or administration facilities. The Contractor shall also indicate if the use of a supplemental or other staging area is desired. The Contractor shall not begin construction of the mobilization facilities prior to approval by the Contracting Officer of the Area Use Plan described herein.

1.3 CONTRACTOR'S MOBILIZATION AREA

The Contractor will be permitted to use an area approved by the Contracting Officer within the contract limits for operation of his construction equipment and plants, shops, warehouses, and offices. Utilities will be provided for the Contractor as described below. The Contractor is responsible for obtaining any required additional mobilization area above that designated. The construction site shall be cleared of construction debris and other materials and the area restored to its final grade.

1.3.1 Contractor's Temporary Facilities

1.3.1.1 General

All facilities within the Contractor's mobilization area shall be of substantial construction suitable for the local weather conditions. Sanitary facilities shall meet the requirements of Corps of Engineers, Safety and Health Requirements Manual EM 385-1-1. Local nationals will not be granted any privileges under this contract. Government provided services are for American and Foreign national contractors only.

1.3.1.2 Administrative Field Offices

The Contractor may provide and maintain administrative field office facilities within the mobilization area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel.

1.3.1.3 Storage Area

The Contractor shall construct a temporary 1.8 meter (6 foot) high chain link fence around trailers and materials. The fence shall include plastic strip inserts, colored green or brown, so that visibility through the fence is obstructed. Fence posts may be driven, in lieu of concrete bases, where soil conditions permit. Trailers, materials, or equipment shall not be placed or stored outside the fenced area unless approved in writing by the Contracting Officer.

1.3.1.4 Plant Communication

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. If radio communication is approved by Contracting Officer / installation security office, frequency selection shall be approved by Contracting Officer to prevent interference with installation operations. Such devices shall be provided by the Contractor and made available for use by Government personnel as requested.

1.3.1.5 Appearance of Mobilization Site Facilities and/or Trailers

Mobilization Site Facilities and/or Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers or other transportable structures which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the construction site until such work or maintenance has been performed to the satisfaction of the Contracting Officer.

1.3.1.6 Maintenance of Storage Area

Fencing shall be kept in a state of good repair and proper alignment. Should the Contractor elect to traverse unpaved areas which are not established roadways with construction equipment or other vehicles, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of soil onto paved or established roadways; gravel gradation shall be at the Contractor's discretion.

1.3.1.7 Security Provisions

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own facilities and equipment.

1.3.1.8 Sanitation

- a. Sanitary Facilities: The Contractor shall be responsible for maintaining such facilities at no expense to the Government.
- b. Trash Disposal: The Contractor shall be responsible for collection and disposal of trash from the work areas and from the mobilization area. General construction debris and demolition debris shall be collected and transported by the Contractor to a location designated by the Government. Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Loose debris capable of being windblown, shall be immediately placed in sealed or covered containers to prevent it from being blown onto taxiways or runways. Any dirt or soil that is tracked onto paved or surfaced roadways shall be cleaned daily. Materials resulting from demolition activities that are salvageable shall be stored within the fenced area described above. Stored material not indoors, whether new or salvaged, shall be neatly stacked when stored.

1.3.1.9 Telephone

The Contractor shall make arrangements to install and pay all costs for telephone facilities desired.

1.3.1.10 Restoration of Storage Area

Upon completion of the project and after removal of mobilization facilities, trailers, materials, and equipment from within the fenced area, the fence shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse unpaved areas shall be removed and all such areas restored to their original conditions.

1.3.2 Protection and Maintenance of Traffic

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the Host Nation and base authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with base traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

1.3.2.1 Use of Existing Roads as Haul Routes

The Contractor shall be responsible for coordinating with the base authorities for use of any existing roads as haul routes. Construction, and routing of new haul roads, and/or upgrading of existing roads to carry anticipated construction traffic shall be coordinated with the Base authorities and is the sole responsibility of the Contractor.

1.3.2.2 Employee Parking

The Contractor's employees may be allowed parking on the military installation. The Contractor is responsible for transporting workers (local nationals) from off post to the worksite, coordinating security identification screening, and cooperating in gate searches with the base authorities. The government reserves the right to terminate any and all contractor parking at any time.

1.3.3 Temporary Project Safety Fencing and Barricades

The Contractor shall impose all measures necessary to limit public access to hazardous areas and to ensure the restriction of workers to the immediate area of the construction and mobilization site. The Contracting Officer may require in writing that the Contractor remove from the work any employee found to be in violation of this requirement.

1.3.3.1 Barricades

Barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night. Travel to and from the project site shall be restricted to a route approved by the Contracting Officer.

1.3.4 Host Nation Authorizations, Permits and Licenses

It shall be the Contractor's responsibility to obtain such local authorizations, permits and licenses necessary to establish his quarry operations, batching operations and haul routes (See Special Clause entitled: COMPLIANCE WITH HOST COUNTRY RULES AND CUSTOMS).

1.4 RESPONSIBILITY FOR PHYSICAL SECURITY

Prior to mobilization, the Contractor shall submit his proposed means of providing project security to prevent unauthorized access to equipment, facilities, materials and documents, and to safeguard them against sabotage, damage, and theft. The Contractor shall be responsible for physical security of all materials, supplies, and equipment of every description, including property which may be Government-furnished or owned, for all areas occupied jointly by the Contractor and the Government, as well as for all work performed.

1.5 DUST CONTROL

The Contractor shall be required to control objectionable dust in the work areas, access roadways, and haul roads by means of controlled vehicle speeds or dust palliatives. Vehicles transporting sand, cement, gravel or other materials creating a dust problem shall be covered, as directed by the Contracting Officer, or in accordance with local Laws, codes, and regulations.

1.6 DIGGING PERMITS

1.6.1 requirements for Digging Permits

Prior to the start of any work activity that requires excavation within the current base, the Contractor shall obtain a digging permit.

1.6.2 Requests for Digging Permits

Requests for Digging Permits shall be submitted to Contracting Officer a minimum of seven (7) days prior to the start of the work activity covered by the permit. The request for a Digging Permit shall include a narrative description of the work to be performed and a detailed map of the area of the excavation clearly marking the location of all known utilities or other obstructions. If the work activity covered by the Digging Permit request also requires a utility outage, a separate request for the outage shall be submitted in accordance with the paragraph entitled CONNECTIONS TO EXISTING UTILITIES.

1.6.3 Preparation of Requests for Digging Permits

Prior to submitting a request for a Digging Permit, the Contractor shall carefully review the area to be excavated to determine the location of existing utilities and other obstructions. The Contractor will review available drawings and will conduct a visual inspection of the site. The Contractor will utilize underground utility detecting devices such as metal and cable detectors to determine the location of existing utilities. All utility lines found shall be clearly flagged or marked and the location of the utility shall be shown on the drawing to be submitted with the request for Digging Permit.

1.6.4 Existing Underground Utilities

The Contractor shall exercise utmost care in researching locations of existing utilities and reducing damage to existing utilities. Any utilities damaged by the Contractor shall be promptly repaired by the Contractor. The Contracting Officer will review and approve any proposed repairs. Any damage to existing utilities will be immediately reported to the Contracting Officer and the Base Commander.

1.7 CONNECTIONS TO EXISTING UTILITIES

1.7.1 General

Any outage involving disruption of electrical service beyond the site area shall be requested in writing at least ten (10) days in advance of the date requested for the commencement of the outage. The Contractor shall provide a request, detailing the type of outage needed (water, sewer, electrical, steam, etc.), the time needed to perform the work, the reason for the outage, and the known affected facilities. The Contracting Officer shall be contacted prior to the outage to confirm the time and date. If the Contractor fails to initiate work at the approved time, the Contracting Officer may cancel the approved outage and may direct the Contractor to resubmit a new request. No part of the time lost due to the Contractor's failure to properly schedule an outage shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

1.7.1.1 Performance of Work During Non-Standard Hours

To minimize outage impact to the mission of the installation, all outages shall be scheduled on weekends or from 2100 – 0530 hours on duty days and/or as directed by Contracting Officer Representative (COR). The period proposed for performance of the outage shall include sufficient contingencies to preclude impact to the peak working hours 0530 – 1800 hours during the workweek.

1.7.1.2 Exterior Night Lighting

Exterior night lighting shall be provided in conformance with EM-385-1-1 entitled Safety and Health Requirements Manual.

1.7.2 Existing Underground Utilities

The Contractor is provided notice that existing utilities may be present in the construction area. The Contractor shall exercise the utmost care in researching locations of existing utility lines by implementing control measures to eliminate, or reduce to a level acceptable to the Contracting Officer, the chance of damaging or destroying existing utilities.

1.7.2.1 Use of Underground Utility Detecting Device

Prior to any excavation, a metal and/or cable-detecting device shall be used along the route of the excavation. All underground utilities discovered by this method will be flagged a minimum distance of one-half (1/2) meter on each side of the location.

1.7.2.2 Hand Excavation

Hand excavation methods and special supervisory care shall be used between any flagged markers, in areas of known or suspected hazards, and in areas known or suspected to have multiple and/or concentrated utility lines or connections.

1.7.3 Repair of Damaged Utilities

The Contractor shall be responsible to repair any utilities damaged by him. The method of repair and schedule for performance of the repair shall be coordinated with, and subject to the approval of, the Contracting Officer. The repair work and any temporary work required to keep the system operational while repairs are being completed, shall be performed at no cost to the Government.

1.8 *electricity*

Electrical service is not available for use under this contract; therefore all electric current required by the Contractor shall be the responsibility of the Contractor, furnished at his own expense. The Contractor shall provide diesel generators to meet his demand requirements. Electricity required for final testing systems will be furnished by the Government. [The Government will provide permanent high voltage electricity to a point indicated by the Contracting Officer for use by the Contractor in the performance of final testing of systems.] The means of doing so, such as by temporary distribution systems, shall be the responsibility of the Contractor. All temporary connections for electricity shall be subject to the approval of the Contracting Officer and shall comply with Corps of Engineers manual EM 385-1-1 entitled Safety and Health Requirements Manual. All temporary lines shall be furnished, installed, connected and maintained by the Contractor in a workmanlike manner satisfactory to the Contracting Officer. Before final acceptance of systems, or facilities, all temporary connections installed by the Contractor shall be removed at his expense in a manner satisfactory to the Contracting Officer.

1.9 *WORK OUTSIDE REGULAR HOURS*

If the Contractor desires to carry on work outside regular base duty hours, or on holidays, including the following U.S. holidays: New Year's Day, Martin Luther King Jr Birthday, President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving and Christmas. the Contractor shall submit an application to the Contracting Officer. Due to reliance upon local national laborers and time off due to local observances, there may be disruptions. Potentials dates are the following local observances: National Islamic Holiday of Ashura, Ramadan (actual date varies – check with local authorities). The Contractor shall allow ample time to enable satisfactory arrangements to be made by the Government for inspecting the work in progress. At night, exterior lighting shall be provided in conformance with EM-385-1-1 entitled "Safety and Health Requirements Manual".

1.10 *SCHEDULING OF WORK IN EXISTING FACILITIES*

As soon as practicable, but in any event not later than thirty (30) calendar days after award of this contract, the Contractor shall meet in conference with the Contracting Officer, or his duly authorized representatives, to discuss and develop mutual understanding relative to the scheduling of work in and access to the existing facilities where work has to be performed under this contract, so that the Contractor's proposed construction schedule is coordinated with the operating and security requirements of the installation.

1.11 *SPECIAL FACILITIES AND SERVICES TO BE FURNISHED BY THE CONTRACTOR*

The Contractor shall furnish the facilities and services listed in this clause for Corps of Engineers personnel and other persons as designated by the Contracting Officer. All facilities, furnishings, materials, and equipment shall be new when furnished at the site. The Contractor shall fully maintain and repair all

facilities, furnishings and equipment listed below. All facilities, furnishings, materials, and equipment furnished and/or installed by the Contractor under this clause shall remain the property of the Contractor at the completion of the contract. Facility structures shall be modular or containerized, suitable for easy movement at a later date.

1.12 PREPARATION OF AS-BUILT DRAWINGS (CONTRACTOR)

1.12.1 As-Built Drawing Submittals

- a. Government approval is required for As-Built drawings as below in accordance with Section 01335, SUBMITTAL PROCEDURES.
- b. Drawings showing final as-built conditions of the project. The local language of Afghanistan shall be added to project As-Built drawings. The final CADD as-built drawings shall consist of **two sets** of electronic CADD drawing files in the specified format, and **one half-size and two full-size paper copies** of the approved as-built drawings.

1.12.2 As-Built Drawings

This paragraph covers as-built drawings complete, as a requirement of the contract. The terms "drawings," "contract drawings," "drawing files," "working as-built drawings" and "final as-built drawings" refer to contract drawings which are revised to be used for final as-built drawings.

1.12.2.1 Government Furnished Materials

One set of electronic CADD files in the specified software and format revised to reflect all bid amendments will be provided by the Government at the preconstruction conference for projects requiring CADD file as-built drawings.

1.12.2.2 Working As-Built and Final As-Built Drawings

- a. The Contractor shall revise 2 sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. These working as-built marked drawings shall be kept current on a weekly basis and at least one set shall be available on the jobsite at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. Final as-built drawings shall be prepared after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The working as-built marked prints and final as-built drawings will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final as-built drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the as-built drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. The working and final as-built drawings shall show, but shall not be limited to, the following information:
 - b. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Valves, splice boxes and similar appurtenances shall be located by dimensioning along the utility run from a reference point. The average depth below the surface of each run shall also be recorded.
 - c. The location and dimensions of any changes within the building structure.
 - d. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

- e. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.
- f. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.
- g. Changes or modifications which result from the final inspection.
- h. Where contract drawings or specifications present options, only the option selected for construction shall be shown on the final as-built prints.
- i. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, the Contractor shall furnish a contour map of the final borrow pit/spoil area elevations.
- j. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.
- k. Modifications (change order price shall include the Contractor's cost to change working and final as-built drawings to reflect modifications) and compliance with the following procedures.

Directions in the modification for posting descriptive changes shall be followed.

A Modification Circle shall be placed at the location of each deletion.

For new details or sections which are added to a drawing, a Modification Circle shall be placed by the detail or section title.

For minor changes, a Modification Circle shall be placed by the area changed on the drawing (each location).

For major changes to a drawing, a Modification Circle shall be placed by the title of the affected plan, section, or detail at each location.

For changes to schedules or drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.

The Modification Circle size shall be 12.7 mm 1/2 inch diameter unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

1.12.3 Drawing Preparation

The as-built drawings shall be modified as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, and adding such additional drawings as may be necessary. These working as-built marked prints shall be neat, legible and accurate. These drawings are part of the permanent records of this project and shall be returned to the Contracting Officer after approval by the Government. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

1.12.4 Computer Aided Design and Drafting (CADD) Drawings

- a. Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings shall be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols shall be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same graphic standards specified for original drawings. The title block and drawing border to be used for any new final as-built drawings shall be identical to that used on the contract drawings. Additions and corrections to the contract drawings shall be accomplished using CADD files. The Contractor will be furnished "as-designed" drawings in AutoCAD Release 2007 or Microstation V8 format compatible with a Windows XP operating system. The electronic files will be supplied on compact disc, read-only memory (CD-ROM). The Contractor shall be responsible for providing all program files and hardware necessary to prepare final as-built drawings.
- b. Prior to submittal of the first design submittal involving CADD drawings, the Contractor shall prepare one typical CADD drawing for the project and furnish, via ENG Form 4025, the electronic

CADD drawing file for review and approval by the Contracting Officer. All Government comments involving changes to this single drawing shall be accomplished and resubmittal(s) made until the Government is satisfied that all CADD Standards are being followed and all subsequent drawings will also be in compliance with these Standards.

- c. CADD colors shall be the "base" colors of red, green, and blue. Color code for changes shall be as follows:
 - Deletions (red) - Deleted graphic items (lines) shall be colored red with red lettering in notes and leaders.
 - Additions (Green) - Added items shall be drawn in green with green lettering in notes and leaders.
 - Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes shall be in blue.
- d. The Contract Drawing files shall be renamed in a manner related to the contract number (i.e., 98-C-10.DGN) as instructed in the Pre-Construction conference. Marked-up changes shall be made only to those renamed files. All changes shall be made on the layer/level as the original item. There shall be no deletions of existing lines; existing lines shall be over struck in red. Additions shall be in green with line weights the same as the drawing. Special notes shall be in blue on layer#63.
- e. When final revisions have been completed, the cover sheet drawing shall show the wording "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in letters at least 5 mm 3/16 inch high. All other contract drawings shall be marked either "As-Built" drawing denoting no revisions on the sheet or "Revised As-Built" denoting one or more revisions. Original contract drawings shall be dated in the revision block.
- f. After Government approval of all of the working as-built drawings for a phase of work, the Contractor shall prepare the final CADD as-built drawings for that phase of work and submit two sets of full size paper copy prints of these drawings for Government review, comparison with approved red-line marked up drawings, and approval. The Government will promptly return one set of prints annotated with any necessary corrections to the CADD file(s) if corrections are required prior to approval. Within 20 days of substantial completion of all phases of work, the Contractor shall submit the final as-built drawing package for the entire project. The submittal shall consist of one set of electronic files on compact disc, read-only memory (CD-ROM), one set of full size paper prints and one set of the approved working as-built drawings. They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the CADD system. Upon approval by the Government of the final as-built drawing package for the entire project, the Contractor shall provide the number of as-built copies noted in Paragraph 1.1 of this Section.
- g. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final as-built drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

1.12.5 Payment

No separate payment will be made for as-built drawings required under this contract, and all costs accrued in connection with such drawings shall be considered a subsidiary obligation of the Contractor.

1.13 CERTIFICATES OF COMPLIANCE

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in accordance with Section 01335 SUBMITTAL PROCEDURES FOR DESIGN/BUILD. Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company involved and shall contain the name and address of the Contractor, the project name and location, description and the quantity of the items involved, and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall

contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material.

1.14 ACCIDENT PREVENTION

The Contractor shall comply with all applicable Host Country laws and with such additional measures as the Contracting Officer may find necessary in accordance with CONTRACT CLAUSE 52.236-13 entitled ACCIDENT PREVENTION (NOV1991)-ALTERNATE 1 (APR 1984). Applicable provisions of the Corps of Engineers manual entitled Safety and Health Requirements Manual EM 385-1-1 will be applied to all work under this contract. The referenced manual may be obtained from the Contracting Officer at the jobsite or from the Afghanistan Engineer District at Kabul, Afghanistan.

1.14.1 Accident Prevention Program

Within fifteen (15) days after award of this contract, and at least ten (10) days prior to the accident prevention pre-work conference, four (4) copies of the Accident Prevention Plan required by the CONTRACT CLAUSE 52.236-13 entitled ACCIDENT PREVENTION (NOV 1991)- ALTERNATE I shall be submitted for review by the Contracting Officer. The Contractor shall not commence physical work at the site until the Accident Prevention Plan (APP) has been reviewed and accepted by the Contracting Officer. The APP shall meet the requirements listed in Appendix "A" of EM385-1-1. The program shall include the following: TAC Form 61 " Accident Prevention Program Hazard Analysis (Activity Hazard Analysis)" fully completed and signed by an executive officer of the company in block No. 13. The Activity Hazard Analysis is a method in which those hazards likely to cause a serious injury or fatality are analyzed for each phase of operations. Corrective action is planned in advance, which will eliminate the hazards. An analysis is required for each new phase of work. On large or complex jobs the first phase may be presented in detail with the submittal of the Accident Prevention Plan rather than presenting the complete analysis. If the plan is to be presented in phases, a proposed outline for future phases must be submitted as a part of the initial Accident Prevention Plan submittal. Accident Prevention Plans will be reviewed for timeliness and adequacy at least monthly with a signature sheet signed and dated documenting that these reviews took place. Copy of company policy statement of Accident Prevention and any other guidance as required by EM 385-1-1, Appendix A.

1.14.2 Ground Fault Circuit Interrupter (GFCI) Requirement – Overseas Construction

The Corps of Engineers Health and Safety Manual, EM 385-1-1, section 11.C.05.a. states: "The GFCI device shall be calibrated to trip within the threshold values of 5 ma +/- 1 ma as specified in Underwriters Laboratory (UL) Standard 943." A variance from USACE has been granted allowing 10 ma, in lieu of 5 ma, for overseas activities that use 220 Volts (V)/50 hertz (Hz) electrical power.

1.14.3 Temporary Power - Electrical Distribution Boxes

EM 385-1-1 section 11.A.01.a. states, "All electrical wiring and equipment shall be a type listed by a nationally recognized testing laboratory for the specific application for which it is to be used." This includes temporary electrical distribution boxes. Locally manufactured electrical boxes will not be allowed. Only manufactured electrical distribution boxes that meet the European CE requirements, with 10 ma CE type GFCIs installed shall be allowed.

Contractors shall:

- a. Make no modifications that might void any CE or manufacturer certification.
- b. Test the installed systems to demonstrate that they operate properly and provide the 10 ma earth leakage protection.
- c. Ensure GFCIs will have an integral push-to-test function. The testing shall be performed on a regular basis.
- d. Check that proper grounding is checked regularly and flexible cords, connectors, and sockets inspected before each use.

1.15 HAZARDOUS MATERIALS

Should the Contractor encounter asbestos or other hazardous materials, during the construction period of this contract, he shall immediately stop all work activities in the area where the hazardous material is discovered. The Contractor shall then notify the Contracting Officer; identify the area of danger; and not proceed with work in that area until given approval from the Contracting Officer to continue work activities. Hazardous material is considered to be asbestos, explosive devices, toxic waste, or material hazardous to health and safety. The Contractor shall secure the area from daily traffic until it is safe to resume normal activities.

1.16 SPARE PARTS

1.16.1 General

The requirements of this clause are in addition to any requirements for the provision of specific spare parts to be provided by the Contractor included in Technical Provisions. The Contractor shall furnish spare parts as directed by the Contracting Officer under the provisions of this clause for all equipment for which O&M data is to be provided under Clause OPERATION AND MAINTENANCE (O&M) DATA of this contract. The term "spare parts" as used herein shall include spare parts, special tools and test equipment.

1.16.2 Selection of Spare Parts to be Furnished

The Contractor shall provide master parts lists, recommended spare parts lists and lists of special tools and test equipment as a part of the equipment O&M data required by Clause OPERATION AND MAINTENANCE (O&M) DATA. The master parts list shall include the supplier's price for each part. After review of the lists, the Contracting Officer will select spare parts and furnish written direction to the Contractor indicating quantities and types of spare parts to be furnished by the Contractor. Written directions for spare parts orders may be provided on an incremental basis as reviews of O&M data submitted by the Contractor are completed but will not necessarily be issued in the sequence in which the Contractor submitted the equipment O&M data.

1.16.3 Procurement and Delivery of Spare Parts

The Contractor shall procure and be responsible for delivery, receipt, handling, placing in storage, inventory, and turnover to the Contracting Officer all spare parts selected by the Contracting Officer. In addition to the recommended spare parts list required in paragraph SELECTION OF SPARE PARTS TO BE FURNISHED above, the Contractor is responsible to have one (1) year supply of manufacturer's recommended spare parts on site ready to turn over to the Contracting Officer at the time of acceptance of the facility.

1.16.3.1 Shipment and Delivery

The Contractor shall be responsible for the shipment and delivery of spare parts to the location on or near the site in Afghanistan as selected by the Contracting Officer. The Contractor shall provide all manpower and equipment required to receive and place into designated storage areas all spare parts purchased under this clause. The Contractor shall give the Contracting Officer thirty (30) calendar days notice of arrival at the site of the first shipment.

1.16.3.2 Turnover of Spare Parts

The Contractor shall notify the Contracting Officer seventy-two (72) hours prior to delivery of spare parts to the designated storage area. The Contractor and the Contracting Officer will perform a joint inventory of the spare parts and the spare parts will be turned over to the Contracting Officer. Spare parts purchased under this clause shall not be used by the Contractor.

1.16.3.3 Parts and Package Identification

Prior to shipment from point of purchase, each spare part shall be tagged or otherwise marked or labeled. Such labeling may be placed or affixed to the container, box or packaging in which spare parts are located when it is not feasible to place or affix such labeling directly on each spare part. Tags or labels shall include, but not necessarily be limited to; part number, description, parent equipment name and number location, project and/or other data as directed by the Contracting Officer.

1.16.3.4 Preservation and Packaging Instruction

- a. Items ordered under this contract shall be preserved and packed for a minimum of three (3) years shelf life storage. All items shall be individually packaged except when the manufacturer specifies that the items are to be used in sets. Appropriate identification labels must be affixed to the items protective box or package. After the spare parts are packaged, the manufacturer shall weigh the spare parts and packaging and place the weight and size of the packaged container on the label with other information as outlined herein. Each item, not normally identified with manufacturer's name and part number, shall have an appropriate label affixed to it with manufacturer's name and part number.
- b. Machined spare parts shall be lubricated or coated in order to withstand extensive periods of storage in a highly corrosive atmosphere.
- c. Large items (greater than 22.7 kg (50 lbs.), or larger than 0.03 CM (one cubic foot) shall be packaged in waterproof wooden boxes and properly braced. Cushioning shall be used to prevent damage to the item and to the packaging material.
- d. Solid state components, such as diodes, transistors, integrated circuits or equipment consisting of such parts that can be damaged as a result of static electricity and other stray electro-magnetic fields shall be packaged in heat-sealed, aluminum foil, laminated, flexible packages.
- e. All other spare parts shall be packaged in heat sealed plastic bags or wrap. Delicate and more fragile items such as test equipment shall be cushioned or wrapped with transparent bubble wrap material prior to being inserted into the plastic package.

1.16.4 Warranty

All spare parts provided by the Contractor under this clause are subject to the general warranty clauses of this contract.

1.16.5 Payments for Spare Parts

Payments for spare parts ordered under the paragraph entitled "Selection of Spare Parts To Be Furnished" will be made under the work item of the Work Breakdown Sheet entitled "Spare Parts". Payments for spare parts specifically required elsewhere in this contract shall be considered as part of those equipment costs and shall be included in other payment items as appropriate. Payments for spare parts ordered under this clause shall be based on the invoice price (FOB supplier) plus certified invoice price of surface shipment to the site in Afghanistan. The invoice price (FOB supplier) shall include the separately listed cost for preservation and packaging by the manufacturer as specified herein. The Contractor shall provide invoices and any additional backup, which may be required to demonstrate that the invoices presented represent the cost of spare parts, preservation and packaging, and cost of surface shipment to the site. Payment for handling, delivery, inventory, turnover, customs, overhead or profit shall not be paid or allowed under this Contract Provision, and shall be included in the cost for installation of this equipment under the other appropriate payment items of this contract. Price increases over prices furnished under paragraph SELECTION OF SPARE PARTS TO BE FURNISHED shall be fully substantiated. Payment for spare parts will be made after the spare parts have been accepted at the site by the Contracting Officer. If the total payments under the work item entitled "Spare Parts" does not reduce the balance of this work item to zero, the remaining balance will be deducted from the final contract amount. If orders exceed the work item entitled "Spare Parts", a modification for equitable adjustment will be issued in accordance with Contract Clause 52.243-4 entitled CHANGES. Payments for spare parts ordered under this clause shall constitute full payment for all cost of the spare parts and

associated cost of preservation and packaging, and cost of surface shipment to the site. Other ancillary costs shall be included by the Contractor under the other appropriate work items of this contract and no additional cost except as provided herein will be allowed.

1.17 OPERATION AND MAINTENANCE (O&M) DATA

1.17.1 General

The requirements contained herein are in addition to all shop drawings submission requirements stated in other sections of the specifications. The Contractor shall include the provisions for all items required under this clause in all purchase orders and sub-contract agreements. Submittals required hereinafter will not relieve the Contractor of any responsibilities under the Warranty of Construction Provisions of this contract or under the various Guarantee Clauses of the Technical Provisions.

1.17.2 Submittals

The Contractor shall submit all items requiring submission of O&M data under this and other sections of these specifications in accordance with Section 01335 SUBMITTAL PROCEDURES FOR DESIGN/BUILD of the specifications.

1.17.3 Operation and Maintenance (O&M) Data

The Contractor shall furnish operation and maintenance manuals for all facilities constructed under this contract. The manuals shall be loose leaf, indexed and shall consist of manufacturer's brochures, manufacturer's operation and maintenance manuals, service and repair manuals, catalogs, service bulletins, instruction charts, diagrams, other information as necessary to support the operation and maintenance of the end items of equipment, assemblies and systems. Each type of facility (housing, barracks, mosque, etc.) shall be covered by a separate manual (or manuals) consisting of all data pertaining to the equipment and/or systems within that facility. Identical equipment within a single major system shall require only one submittal of data. The Contractor shall furnish all O&M manuals to the Contracting Officer not less than thirty (30) calendar days prior to contract completion. Required number of submittals (number of sets) shall be as specified in Section 01335 SUBMITTAL PROCEDURES FOR DESIGN/BUILD.

1.17.4 Recommended Spare Parts List

The Contractor shall furnish a recommended spare parts list containing equipment manufacturers' recommendations for five (5) years; two (2) years and one (1) year spare parts stock levels in Afghanistan. Current unit price and effective date, lead time, shelf life for each individual part, and total cost of all recommended parts shall be furnished.

1.17.5 Supplemental Submittals of Data

After initial submittal of O&M manuals and until final acceptance of all equipment, the Contractor shall prepare and deliver to the Contracting Officer supplemental technical data as previously described for all changes, modifications, revisions and substitutions to equipment and components. For equipment or systems introduced into the contract under change order, or modified by change order, supplemental data shall be furnished within forty-five (45) calendar days after issuance of the change order. The supplemental data furnished shall be properly prepared and identified for insertion into the O&M manuals.

1.17.6 Framed Instructions for Systems

Approved wiring and control diagrams showing the complete layout of the entire system, including equipment, piping, valves and control sequence, framed under glass or in approved laminated plastic, shall be posted, where applicable, in all mechanical equipment rooms. In addition, detailed operating

instructions explaining safe starting and stopping procedures for all systems shall be prepared in typed form along with the inspections required to insure normal safe operations. The instructions shall be framed as specified above for the wiring and control diagrams and posted beside the diagram. Proposed diagrams, instructions, and other sheets shall be submitted for approval prior to posting. Operating instructions shall be posted before acceptance testing of the systems and verified during acceptance testing.

1.17.7 Additional Submittals/Re-submittals

The Contracting Officer reserves the right to determine whether the above specified information, as furnished by the Contractor, is adequate and complete and to require such additional submittals by the Contractor as necessary to insure that adequate information has been furnished to provide the satisfactory operation and maintenance of the various items of equipment and to fulfill the intent of the specifications. Additional submittals or resubmittals supplementing incorrect or incomplete data shall be made within thirty (30) calendar days after receiving notice by the Contracting Officer. All costs arising from these resubmissions shall be borne by the Contractor.

1.18 INSTRUCTIONS AND TRAINING FOR OPERATION AND MAINTENANCE

1.18.1 General

The Contractor shall be responsible for the instruction and training of operating and maintenance personnel as specified below and in the Technical Provisions of the specifications. Unless otherwise indicated in the Technical Provisions, operating and maintenance instructions shall be given for a minimum period as follows:

Title	Duration of Training
Mechanical Systems	10 Days
Electrical Systems	10 Days

1.18.2 Operation and Maintenance Training

The Contractor shall provide competent instructors for training of personnel designated by the Contracting Officer to operate mechanical and electrical building systems and equipment, perform the required preventive maintenance to minimize breakdown, and to perform necessary repairs when malfunction or breakdown of equipment occurs. Such training shall consist of classroom and on-the-equipment training for the period specified, which shall be completed prior to acceptance of a system or equipment, as applicable. The instructor(s) shall have no other duties during the period of training. Classroom instruction shall not exceed fifty percent (50%) of the total training time, with the balance devoted to on-the-equipment demonstration and familiarization. Emphasis will be given to both electrical and mechanical features, in accordance with approved training plans.

1.18.3 Arrangements

The training shall be for not less than the periods of time specified, five (5) days per week, and eight (8) hours per day, subject to review and approval by the Contracting Officer. Each individual training session shall be presented one time only, shall be video taped in a television system compatible with the local area, and be scheduled in a manner acceptable to the Contracting Officer. At the completion of training, the videotapes shall become the property of the Government. In addition to the Contractor's requirements to video tape each training section, the Government reserves the right to record, in any manner, the subject training material, or training sessions given by the Contractor, without additional cost to the Government.

Recordings obtained will be used in future training by the Government. The operating and maintenance manual data, as specified to be furnished in these Special Clauses, shall be used as the base material for training.

1.18.4 Scheduling

The Contractor shall contact the Contracting Officer for the purpose of preliminary planning, scheduling, and coordination of training, to maximize effectiveness of the training program for available operating and maintenance personnel. The Contractor shall initiate and make arrangements for such contact within thirty (30) calendar days after receipt of notification of award of contract; and shall include all significant times in scheduling and completing training in his PROJECT SCHEDULE. The Contractor shall provide a draft outline of training outline in sufficient detail to provide a broad indication of the type of scope of training to be given. It shall include but not be limited to; (a) a list of subjects to be presented; (b) estimated amounts of classroom and on-the-equipment instruction for each subject; (c) a list of minimum qualifications for instructors; and (d) discussions concerning the types and amounts of visual aids, reference materials, tools and test equipment, mock-up and other training materials that will be employed during training.

1.18.5 Preliminary Plan

The Contractor shall submit seven (7) copies of an outline of his proposed training plan to the Contracting Officer for review and approval not later than 60 calendar days after award of this contract. The plan will be reviewed and coordinated with the content of the O&M manuals.

1.18.6 Plan

The Contractor shall submit seven (7) copies of his proposed training plan to the Contracting Officer for approval not later than ninety (90) calendar days prior to start of any training. The plan shall include the following; (a) a weekly outline showing overall form and design of training presentation; (b) a day-by-day schedule showing time intervals, the major and subordinate subjects to be covered in each, the name of the instructor(s) and qualification summary of each, and identification of related handouts; (c) summary of the number of hours of classroom and on-the-equipment training; (d) a list of reference materials to be provided by the Contractor to the trainees; and (e) a list and description of the training materials to be used, such as text, visual aids, mock-up, tools, etc. The Contractor shall be responsible for furnishing all training materials except the following: The Government will provide space, chairs, and tables for classroom training, and three (3) sets of the five (5) sets of O&M Manuals required by the Contractor per Section 01335 SUBMITTAL PROCEDURES FOR DESIGN/BUILD of the specifications. Provision of these manuals is solely for reference purposes, and in no way relieves the Contractor from providing all instruction and materials necessary for training personnel designated by the Government. All costs for resubmission of training plans, training materials, etc., as requested by the Contracting Officer shall be borne by the Contractor. Resubmittals shall be made within twenty (20) days of notice from the Contracting Officer.

1.18.7 Attendance Roster/TAC Form 356

The Contractor shall develop an attendance roster or a similar document indicating each student's attendance, prior to the start of each class, subject and/or topic. This includes both "Hands-On" and classroom training. It is strongly recommended that each student trained be required to sign this document at the beginning of each class day for each and every class, subject and/or topic taught on that day. The Contractor's failure to have student attendance verified in writing may be cause for the Government to order the Contractor to repeat schooling where evidence of attendance cannot be verified. No part of the time lost due to such repeat instruction shall be made the subject of claim for extension of time or for excess costs or damage by the Contractor. Within ten (10) working days after completion of Operation and Maintenance Training conducted in accordance with this clause and/or applicable Technical Provision section, the Contractor shall complete and submit TAC Form 356 "Operation and Maintenance Training Validation Certificate". The attendance roster shall be included as an attachment to TAC Form 356.

1.19 CONTRACTOR FURNISHED EQUIPMENT LISTS

The Contractor shall furnish a list of all items, other than integral construction type items, furnished under the contract. Items such as furniture, drapes, rugs, vehicles, office machines, appliances, etc., shall fall under this category. The Contractor's list shall describe the item; give the unit price and total quantities of each. Model and serial numbers for equipment shall be provided when applicable. The Contractor shall keep an up-to-date register of all covered items and make this information available to the Contracting Officer at all times. Prior to acceptance, the Contractor shall submit the complete register to the Contracting Officer.

1.20 TIME EXTENSIONS

1.20.1 General

This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the Contract Clause 52.249-10 entitled DEFAULT (FIXED-PRICE CONSTRUCTION) APR 1984. The listing below defines the anticipated monthly unusually severe weather for the contract period and is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the geographic location of the project. The schedule of anticipated unusually severe weather will constitute the baseline for determining monthly weather time evaluations. Upon award of this contract and continuing throughout the contract each month, actual unusually severe weather days will be recorded on a calendar day basis (including weekends and holidays) and compared to the monthly anticipated unusually severe weather in the schedule below. The term "actual unusually severe weather days" shall include days actually impacted by unusually severe weather. The Contractor's schedule must reflect the anticipated unusually severe weather days on all weather dependent activities.

Kabul Province - Kabul

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	
22	18	11	10	7	1	2	1	1	3	16	22	114

Logar Province - Pul-i-Alam

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	
21	19	10	2	1	0	0	0	1	8	16	20	98

Parwan Province - Bagram

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	
19	13	7	4	3	2	0	0	0	2	8	19	77

Kunar Province - Asadabad

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	
7	8	10	8	5	3	4	6	4	2	3	5	65

Laghman Province - Mihterlam

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	
7	4	2	1	1	1	1	1	1	0	1	5	25

Nangahar Province - Jalalabad

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	

	3	1	1	4	0	0	1	2	1	1	1	2	17
Badakhshan Province - Feyzabad													
	Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	TOTA
	n	b	r	r	y	n	l	g	p	t	v	c	L
	16	16	1	1	0	0	0	0	0	0	3	12	49
Baghlan Province - Pol-e-Khumri													
	Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
	n	b	r	r	y	n	l	g	p	t	v	c	
	17	9	2	3	1	0	0	0	0	1	6	14	53
Kunduz Province - Kunduz													
	Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
	n	b	r	r	y	n	l	g	p	t	v	c	
	14	9	8	8	4	1	1	0	0	0	5	12	62
Balkh Province- Mazir-e-Sharif													
	Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
	n	b	r	r	y	n	l	g	p	t	v	c	
	12	8	1	0	0	0	0	0	0	1	3	8	33
Jowzjan Province - Sheberghan													
	Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
	n	b	r	r	y	n	l	g	p	t	v	c	
	13	8	7	5	1	0	0	0	0	1	5	8	48
Ghazni Province - Ghazni													
	Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
	n	b	r	r	y	n	l	g	p	t	v	c	
	22	20	15	8	5	1	3	0	0	6	17	20	117
Khost Province - Khost													
	Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
	n	b	r	r	y	n	l	g	p	t	v	c	
	15	7	2	1	1	1	4	1	2	1	4	13	52
Paktia Province - Gardez													
	Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
	n	b	r	r	y	n	l	g	p	t	v	c	
	22	19	13	2	1	0	0	0	0	5	17	21	100
Paktika Province - Sharana													
	Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
	n	b	r	r	y	n	l	g	p	t	v	c	
	21	16	3	0	0	0	0	0	0	0	6	19	65
Kandahar Province - Kandahar													
	Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
	n	b	r	r	y	n	l	g	p	t	v	c	
	14	7	4	6	1	0	1	1	0	1	6	12	53

Nimroz Province - Zaranj

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	
13	6	1	1	0	0	0	0	0	1	4	9	35

Oruzgan Province - Tarin
Kowt

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	
12	3	0	0	0	0	0	0	0	0	1	6	22

Zabul Province - Qalat

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	
19	11	3	0	0	0	0	0	0	1	5	12	51

Badghis Province - Qal-i-
Naw

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	
18	12	5	3	1	0	0	0	0	4	7	12	62

Bamiyan Province -
Bamiyan

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	
21	19	13	3	1	0	0	0	1	9	19	21	107

Farah Province - Farah

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	
11	5	3	3	1	0	0	0	0	1	4	12	40

Herat Province - Herat

Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De	
n	b	r	r	y	n	l	g	p	t	v	c	
15	11	6	6	1	0	0	0	0	2	9	15	65

1.20.2 Time Extensions

The number of actual unusually severe weather days shall be calculated chronologically from the first to the last day in each month. Unusually severe weather days must prevent work for fifty percent (50%) or more of the Contractor's workday and delay work critical to the timely completion of the project. If the number of actual unusually severe weather days exceeds the number of days anticipated in the paragraph above, the Contracting Officer will determine whether the Contractor is entitled to a time extension. The Contracting Officer will convert any qualifying delays to calendar days and issue a modification in accordance with the Contract Clause 52.249-10 entitled DEFAULT (FIXED-PRICE CONSTRUCTION) APR 1984.

1.20.3 Other Delays

Construction delays due to full or partial base closures due to incidents such as demonstrations, civil unrest and outright attacks will be examined on an individual basis for consideration of time extensions.

1.21 STANDARDIZATION

Where two or more items of the same type or class of product, system or equipment furnished in this project are required, the units shall be products of the same manufacturer and shall be interchangeable when of the same size, capacity, performance characteristics, and rating. The only exception to this requirement is where the items are interchangeable due to conformance with industry standards (valves, fittings, etc.); they need not be by the same manufacturer. This requirement applies to all manufactured items in the project that normally require repair or replacement during the life of the equipment.

1.22 COMPLIANCE WITH HOST COUNTRY RULES AND CUSTOMS

The laws of Host Country may prohibit access to certain areas of the country that are under military control. The Contractor shall furnish the Contracting Officer the names of personnel, type, and amounts of equipment, dates and length of time required at the site, and the purpose of entering the host country. It is understood that areas to which rights of entry are provided by the Host Government are to be used only for work carried out under the contract and no destruction or damages shall be caused, except through normal usage, without concurrence of the Host Government.

1.22.1 Contractor's Responsibilities

The following items are the sole responsibility of the Contractor to investigate, estimate as to cost, and assume the risk, as normally encountered by Contractors. The Contractor shall be responsible for determining the effect of the following on his own cost of performance of the contract and for including sufficient amount in the contract price:

- a. Official language and type of accounts required to satisfy the officials of the Local Government.
- b. Entry and exit visas, residence permits, and residence laws applicable to aliens. This includes any special requirements of the Host Government, including those required by local Labor Offices, which the Contractor may have to fulfill before an application for a regular block of visas will be accepted.
- c. Passports, health and immunization certificates, and quarantine clearance.
- d. Compliance with local labor and insurance laws, including payment of employer's share of contribution, collecting balance from employee and paying into insurance funds.
- e. Strikes, demonstrations and work stoppage.
- f. Collection through withholding and payment to local Government, of any Host Country income tax on employees subject to tax.
- g. Arranging to perform work in the Host Country, to import personnel, to employ non-indigenous labor, to receive payments and to remove such funds from the country.
- h. Operating under local laws, practices, customs and controls, and with local unions, in connection with hiring and firing, mandatory wage scales, vacation pay, severance pay, overtime, holiday pay, 7th day of rest, legal notice or pay in lieu thereof for dismissal of employees, slowdown and curtailed schedules during religious holidays and ratio of local labor employed in comparison to others.
- i. Possibility of claims in local bureaus, litigation in local courts, or attachment of local bank accounts.
- j. Compliance with workmen's compensation laws and contributions into funds. Provisions of necessary medical service for Contractor employees.
- k. Special license required by the local Government for setting up and operating any manufacturing plant in the Host Country, e.g. concrete batching, precast concrete, concrete blocks, etc.
- l. Sales within the host country of Contractor-owned materials, and equipment.
- m. Special licenses for physicians, mechanics, tradesmen, drivers, etc.
- n. Identification and/or registration with local police of imported personnel.
- o. Stamp tax on documents, payments and payrolls.
- p. Base passes for permanent staff, day laborers, motor vehicles, etc.
- q. Compliance with all customs and import rules, regulations and restrictions, including, but not limited to, local purchase requirements.

1.23 EMPLOYEE ACCESS TO PROJECT SITE

1.23.1 Employee Identification

The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work, to display identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.

1.23.1.1 Preparation of Identification Badges

The Contractor shall be required to prepare a written application inclusive color photographs and provide all materials and labor necessary to prepare an identification badge, laminated in plastic, containing the employee's name, badge number, color photo, height and weight, the name of the Contractor's organization and for requiring each employee engaged on the work to display this identification as directed by the Contracting Officer. The Contractor shall submit each application and draft badge through the Contracting Officer to the Base Security Office. A minimum of thirty-five workdays shall be allowed for Government review and certification of badges. The Base Security Office will certify each draft badge by signature, stamp, seal or any combination thereof. Upon certification by the Base Security Office, the badges will be returned to the Contractor for final preparation, lamination, and issuance. Badges shall not be taken out of country during periods of travel or absence. During such periods, the Contractor may be permitted to issue temporary identification badges.

1.23.1.2 Employee Background and Historical Information

The Contractor shall be required to prepare and maintain personal background and historical information forms on each employee. These forms may be reviewed by the Base Security Office. The required information shall include but not necessarily be limited to the following:

- a. Full name.
- b. Place and date of birth.
- c. Three (3) current color photographs.
- d. Copy of Citizenship/Nationality identification.
- e. Copy of Passport.
- f. Copy of driver's license.
- g. Police Background Check.
- h. Work History.
- i. Personal background information.
- j. Copy of Work Permit and/or Visa.
- k. Permanent home of record and in-country address.
- l. Other information mandated by local law, the Base Security Regulations or that may be required to coordinate and process the necessary documentation with the government offices responsible for the approval.
- m. Registration, insurance company, policy number and expiration date for each vehicle.

1.23.2 Identification of Contractor Vehicles

The Contractor shall be responsible for requiring each vehicle engaged in the work to display permanent vehicular identification as approved and directed by the Contracting Officer. If acceptable to the Base Security Office and approved by the Contracting Officer, the Contractor may institute a system of non-permanent temporary identification for one-time delivery and transit vehicles. Each Contractor vehicle, machine, piece of equipment, or towed trailers, shall show the Contractor's name such that it is clearly visible on both front doors of the vehicle and both sides of a towed trailer. A valid license plate shall be displayed at all times. Contractor vehicles operated on Government property shall be maintained in a good state of repair, shall be insured, and shall be registered in accordance with Afghan Law.

1.23.3 Security Plan

The Contractor shall submit to the Contracting Officer, within ten (10) calendar days after award of this contract, his proposed personnel and vehicular access plan. This plan shall cover all elements for issuance of the access passes, safeguarding of passes not issued, construction security operations, lost passes, temporary vehicle passes, and collection of passes for employee's and vehicles on 1)- temporary absence; 2)- termination or release; and 3)- termination or completion of contract. The plan shall address in detail the contractors proposed procedures, and organization necessary to produce and maintain effective security within the contract limits twenty-four (24) hours a day seven (7) days a week.

1.24 RADIO TRANSMITTER RESTRICTIONS

To preclude accidental actuation of sensitive electronic equipment, the Contractor shall not use radio-transmitting equipment without prior approval of the Contracting Officer.

1.25 PUBLIC RELEASE OF INFORMATION

1.25.1 Prohibition

There shall be no public release of information or photographs concerning any aspect of the materials or services relating to this bid, contract, purchase order, or other documents resulting there from without the prior written approval of the Contracting Officer.

1.25.2 Subcontract and Purchase Orders

The Contractor agrees to insert the substance of this clause in all purchase orders and subcontract agreements issued under this contract.

1.26 ATTACHMENTS

TAC FORM 61 - Accident Prevention Program Hazard Analysis
TAC FORM 356 - Operation and Maintenance Training Validation Certificate

2 LOCAL CLAUSES

2.1 APPLICATION OF US CRIMINAL JURISDICTION

Reference DODI 5525.11. The contractor is directed to provide all of its personnel working under this contract, and to require all of its subcontractors to provide their personnel, with written notification that - with the exception of nationals of Afghanistan and those ordinarily resident in Afghanistan - contractor and subcontractor personnel, and the dependents of contractor and subcontractor personnel who are residing with such personnel, may be subject to US criminal jurisdiction as provided for in the Military Extraterritorial Jurisdiction Act, 18 USC 3261-3267; see Section 3267(1)(A)(iii)(I) and (2)(A)(iii). A copy of the notice **shall be furnished to the contracting officer upon award of the contract**, along with a certification by an authorized company representative attesting to the provision of the notification to contractor personnel.

2.2 ATTACKS FROM HOSTILE ENTITIES

This contract is firm fixed-price. Costs incurred in the performance of project execution that arise from the attacks of hostile entities, such as costs arising from damage to or destruction of contractor equipment and facilities, and damage to or destruction of the project prior to Government acceptance, are the sole responsibility of the contractor. The Government makes no guarantee to provide the contractor with

security, and bears no obligation to reimburse the contractor for costs arising from the attacks of hostile entities. When appropriate, the Contracting Officer may provide the contractor with an equitable adjustment with respect to time – but not cost – in accordance with clause 52.249-10; see 52.249-10(b)(1)(i) and (2).

2.3 INSTALLATION ACCESS AND BADGING

This contract is firm fixed-price. It is the responsibility of the contractor to be knowledgeable of and to abide by any and all applicable installation access procedures and requirements, to include any and all badging procedures and requirements, that may be necessary for contractor access to the project site. Such procedures and requirements may change over the course of contract performance; it is the responsibility of the contractor to plan accordingly in order to meet its existing obligations under this contract. The US Army Corps of Engineers, Afghanistan Engineer District, neither controls nor is responsible for any such installation access procedures, requirements or changes thereto.

2.4 CUSTOMS CLEARANCE

Reference clauses 52.229-6 and 52.225-13. This contract is firm fixed-price. It is the responsibility of the contractor to be knowledgeable of and to abide by any and all applicable customs clearance procedures and requirements that may be necessary for the transportation of supplies and equipment into Afghanistan. Such procedures and requirements may change over the course of contract performance; it is the responsibility of the contractor to plan accordingly in order to meet its existing obligations under this contract. The US Army Corps of Engineers, Afghanistan Engineer District, neither controls nor is responsible for any such customs clearance procedures, requirements or changes thereto.

2.5 TRAVEL WARNINGS

The contractor shall provide all personnel working under this contract, and shall require subcontractors to provide their personnel, with a written notification advising such personnel to be aware of US State Department Travel Warnings with respect to Afghanistan, available at <http://travel.state.gov>, in the event they wish to consider bringing their dependants into Afghanistan. A copy of the notice **shall be furnished to the contracting officer upon award of the contract**, along with a certification by an authorized company representative attesting to the provision of the notification to contractor personnel. At no time, subject to the written approval of the contracting officer, may the contractor allow such dependants, or any other unauthorized individuals, to be present on the project site grounds, whether in transit or otherwise.

2.6 DRUG-FREE WORKFORCE

Documentation of the contractor's drug-free workforce program as required by clause 252.223-7004(b) **shall be furnished to the contracting officer upon award of the contract**.

2.7 COMBATING TRAFFICKING IN PERSONS, COMMERCIAL SEX ACTS, FORCED LABOR

A copy of the employee notification statement as required by clause 252.222-7006(d) **shall be furnished to the contracting officer upon award of the contract**, along with a certification by an authorized company representative attesting to the provision of the notification to contractor personnel.

2.8 PROMPT PAYMENT OF SUBCONTRACTORS

In accordance with 52.232.5 (b)(1)(v), the contractor shall furnish documentation with each progress payment which indicates that all sub-contractors and suppliers have been paid with funds from the most recent progress payment. In order for the progress payment request to be considered complete, the

contractor shall:

- submit a listing of all subcontractors, the total amount paid to each subcontractor under the contract and the dates and methods of such payments; and
- provide copies of payrolls for each subcontractor working under this contract.

2.9 subcontractors clause requirement

In accordance with 52.232.27, the contractor shall include in each subcontract, a payment clause that obligates each subcontractor to pay their subcontractors for satisfactory performance of work not later than 7 days from the date they receive payment for work under this contract.

2.10 Defense Base Act

- In accordance with FAR 52.228-3 "Workers Compensation Insurance" (Defense Base Act) the contractor is required to provide, prior to commencing work under this contract, such workers' compensation insurance or security as the Defense Base Act ("DBA") (42 U.S.C.1561 et seq.) requires and to continue to maintain it until performance is complete. The amount listed by the offeror on this Contract Line Item (CLIN) is the estimated DBA insurance premium (estimated payroll of the offeror and its subcontractors times the applicable rate(s)). The DBA insurance premium amount varies with payroll and the nature of services and will, therefore, be taken into account during price evaluation of offers. The actual amount paid by the government under that CLIN will be based on the amount of the Rutherford invoice, stamped "paid" and submitted by the offeror after contract award. In the event of recalculation of the premium by CNA based on actual payroll amounts, the contracting officer will adjust this CLIN by contract modification to reflect the actual premium amounts paid.

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2.10.1 SUBMISSION OF DEFENSE BASE ACT CLAIMS

The Contractor's Safety Officer shall, in addition to any other duties required to be performed under this contract, do the following:

- Make timely Defense Base Act insurance claims on behalf of each employee who is injured or killed in the course of their employment under this contract; and
- Make monthly written reports to the Contracting Officer, Administrative Contracting Officer, and the Agency Safety and / or Occupational Health Manger, providing the name(s) of each such injured or deceased employee, the circumstances surrounding each injury or death, the dates of each injury or death, the date the insurance claim was made on behalf of each employee(s), and the current status of each claim.

The Agency Safety and / or Occupational Health Manger POC is John I. Blandamer, [+93] 079-803-5830, john.i.blandamer@usace.army.mil.

-- End of Section --

SAMPLE TASK ORDER:01312**SECTION 01312****QUALITY CONTROL SYSTEM (QCS)****1. GENERAL****1.1 GENERAL**

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. The Contractor module, user manuals, updates, and training information can be downloaded from the RMS web site: the Contractor can obtain the current address from the Government. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Import/Export of Data

1.1.1 CORRESPONDENCE AND ELECTRONIC COMMUNICATIONS

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.1.2 OTHER FACTORS

Particular attention is directed to specifications "SUBMITTAL PROCEDURES", "CONTRACTOR QUALITY CONTROL", "PROJECT SCHEDULE", and Contract Clause, "Payments", which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

1.2 QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become available. It shall be the responsibility of the contractor to maintain the QCS software and install updates as they become available.

1.3 SYSTEM REQUIREMENTS

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run QCS. No separate payment shall be made for updating or maintaining the necessary hardware configurations necessary to run QCS:

Hardware

IBM-compatible PC with 1000 MHz Pentium or higher processor
256+ MB RAM for workstation / 512+ MB RAM for server
1 GB hard drive disk space for sole use by the QCS system
Digital Video Disk (DVD)-Compact Disk (CD) Reader-Writer (RW/ROM)
Monitor with a resolution of AT LEAST 1024x768, 16bit colors
Mouse or other pointing device
Windows compatible printer. (Laser printer must have 4 MB+ of RAM)
Connection to the Internet, minimum 56k BPS

Software

MS Windows 2000 or higher
QAS-Word Processing software: MS Word 2000 or newer
Internet browser supporting HTML 4.0 or higher
Electronic mail (E-mail) MAPI compatible
Virus protection software regularly upgraded with all issued manufacturer's updates

1.4 RELATED INFORMATION

1.4.1 QCS USER GUIDE

After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website; the Contractor can obtain the current address from the Government. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

1.4.2 CONTRACTOR QUALITY CONTROL (CQC) TRAINING

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class. The government will provide QCS training if requested by the contractor.

1.5 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by files attached to E-mail or via CD-ROM. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.6 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. Data updates to the Government shall be submitted via either E-mail or electronic media with printed/file attachments, e.g., daily reports, schedule updates, payment

requests. If permitted by the Contracting Officer. The QCS database typically shall include current data on the following items:

1.6.1 ADMINISTRATION

1.6.1.1 CONTRACTOR INFORMATION

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver Contractor administrative data in electronic format via E-mail.

1.6.1.2 SUBCONTRACTOR INFORMATION

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format via E-mail.

1.6.1.3 CORRESPONDENCE

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

1.6.1.4 EQUIPMENT

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.6.1.5 MANAGEMENT REPORTING

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

1.6.2 FINANCES

1.6.2.1 PAY ACTIVITY DATA

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

1.6.2.2 PAYMENT REQUESTS

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. A signed paper copy of the approved

payment request is also required, which shall govern in the event of discrepancy with the electronic version.

1.6.3 QUALITY CONTROL (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report.

1.6.3.1 DAILY CONTRACTOR QUALITY CONTROL (CQC) REPORTS.

QCS includes the means to produce the Daily CQC Report. The Daily CQC Report generated by QCS shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the QCS-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by specification 01451 "CONTRACTOR QUALITY CONTROL".

1.6.3.2 DEFICIENCY TRACKING.

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The Contractor shall maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

1.6.3.3 THREE-PHASE CONTROL MEETINGS

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

1.6.3.4 ACCIDENT/SAFETY TRACKING.

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports.

1.6.3.5 FEATURES OF WORK

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.6.3.6 QC REQUIREMENTS

The Contractor shall develop and maintain a complete list of QC testing, transferred and installed property, and user training requirements in QCS. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via QCS.

1.6.4 SUBMITTAL MANAGEMENT

The Contractor shall maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using QCS. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

1.6.5 SCHEDULE

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Specification Section Project Schedule. This schedule shall be input and maintained in the QCS database either manually or by using the Standard Data Exchange Format (SDEF). The updated schedule data shall be included with each pay request submitted by the Contractor.

1.6.6 REQUESTS FOR INFORMATION (RFI)

The Contractor shall use the two-way RFI system contained in QCS for tracking all RFI's generated during the contract. Hard copies of all RFI's shall be provided to the government, and will govern in the event of a discrepancy between electronic and printed mediums.

1.6.7 IMPORT/EXPORT OF DATA

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data, and schedule data using SDEF.

1.7 IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

1.8 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of updates, payment requests, correspondence and other data is by E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of computer diskettes or CD-ROM for data transfer. Data on the disks or CDs shall be exported using the QCS built-in export function.

1.9 MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the Contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

1.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. 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.

-- END OF SECTION --

SAMPLE TASK ORDER: 01321

SECTION 01321

PROJECT SCHEDULE

PART 1 GENERAL

1.1 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE) ER 1-1-11 (1995) Progress, Schedules, and Network Analysis Systems

1.2 QUALIFICATIONS

The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS, a Project Schedule as described below shall be prepared. The scheduling of Construction design and construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Designers, Subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

3.2 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel will result in an inability of the Contracting Officer to evaluate Contractor's progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, the Contracting Officer may hold, retain up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

3.3 PROJECT SCHEDULE

The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification. Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. Manual methods used to produce any required information shall require approval by the Contracting Officer.

3.3.1 Use of the Critical Path Method

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in the Precedence Diagram Method (PDM).

3.3.2 Level of Detail Required

The Project Schedule shall include an appropriate level of detail. Failure to develop or update the Project Schedule or provide data to the Contracting Officer at the appropriate level of detail, as specified by the Contracting Officer, shall result in the disapproval of the schedule. The Contracting Officer will use, but is not limited to, the following conditions to determine the appropriate level of detail to be used in the Project Schedule:

3.3.2.1 Activity Durations

Contractor submissions shall follow the direction of the Contracting Officer regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods (usually less than 2 percent of all non-procurement activities' Original Durations are greater than 20 days).

3.3.2.2 Design and Permit Activities

Design and permitting activities, including necessary conferences and follow up actions and design package submission dates, shall be integrated into the schedule.

3.3.2.3 Procurement Activities

Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. Long lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of procurement process activities include, but are not limited to: submittals, approvals, procurement, fabrication, and delivery.

3.3.2.4 Critical Activities

The following activities, as applicable, shall be listed as separate line activities on the Contractor's project schedule:

- a. Submission and approval of mechanical/electrical layout drawings.
- b. Submission and approval of O & M manuals.
- c. Submission and approval of as-built drawings.
- d. Submission and approval of 1354 data and installed equipment lists.
- e. Submission and approval of testing and air balance (TAB).
- f. Submission of TAB specialist design review report.
- g. Submission and approval of fire protection specialist.
- h. Submission and approval of testing and balancing of HVAC plus commissioning plans and data.
- i. Air and water balance dates.
- j. HVAC commissioning dates.
- k. Controls testing plan.
- l. Controls testing.
- m. Performance Verification testing.
- n. Other systems testing, if required.
- o. Pre-final inspection.
- p. Correction of punch list from pre-final inspection.
- q. Final inspection.

3.3.2.5 Government Activities

Government and other agency activities that could impact progress shall be shown. These activities include, but are not limited to: design reviews, environmental permit approvals by State regulators, inspections, utility tie in, and Government Furnished Equipment (GFE).

3.3.2.6 Responsibility- All activities shall be identified in the project schedule by the party responsible to perform the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

3.3.2.7 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.

3.3.2.8 Modification or Claim Number

Any activity that is added or changed by contract modification or used to justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one modification or claim item. The modification or claim number of each activity shall be identified by the Mod or Claim Number. Whenever possible, changes shall be added to the schedule by adding new activities. Existing activities shall not normally be changed to reflect modifications.

3.3.2.9 Work Item

All activities shall be identified in the project schedule by the Work Item to which the activity belongs. An activity shall not contain work in more than one work item. The work item for each appropriate activity shall be identified by the Work Item Code.

3.3.2.10 Phase of Work

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.

3.3.2.11 Category of Work

All Activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited, to the procurement chain of activities including such items as designs, design package submissions design reviews, review conferences, permits, submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.

3.3.2.12 Feature of Work

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to, a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code.

3.3.3 Scheduled Project Completion

The schedule interval shall extend from award of contract to the contract completion date.

3.3.3.1 Project Start Date

The schedule shall start no earlier than the date on which award of contract was acknowledged. The Contractor shall include as the first activity in the project schedule an activity called "Start Project". The "Start Project" activity shall have an "ES" constraint date equal to the date that the award of task order was acknowledged, and a zero day duration.

3.3.3.2 Constraint of Last Activity

Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity called "End Project". The "End Project" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.3.3 Early Project Completion

In the event the project schedule shows completion of the project prior to the contract completion date, the Contractor shall identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. Contractor shall specifically address each of the activities noted in the narrative report at every project schedule update period to assist the Contracting Officer in evaluating the Contractor's ability to actually complete prior to the contract period.

3.3.4 Interim Completion Dates

Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.

3.3.4.1 Start Phase

The Contractor shall include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The "Start Phase X" activity shall have an "ES" constraint date equal to the date on which the award of task order was acknowledged, and a zero day duration.

3.3.4.2 End Phase

The Contractor shall include as the last activity in a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.4.3 Phase X

The Contractor shall include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" activity shall be logically tied to the earliest and latest activities in the phase.

3.3.5 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the Actual Start and Finish dates on the Daily Quality Control report for every in-progress or completed activity, and failure to ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Program features which calculate one of these parameters from the other shall be disabled.

3.3.6 Out-of-Sequence Progress

Activities that have posted progress without all preceding logic being satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case approval of the Contracting Officer. The Contractor shall

propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule.

3.3.7 Negative Lags

Lag durations contained in the project schedule shall not have a negative value.

3.4 PROJECT SCHEDULE SUBMISSIONS

The Contractor shall provide the submissions as described below. The data disk, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

3.4.1 Initial Project Schedule Submission

The Initial Project Schedule shall be submitted for approval within 30 calendar days after award of contract. The schedule shall provide a reasonable sequence of activities which represent work through the entire project and shall be at a reasonable level of detail. The baseline schedule shall be reviewed and deemed acceptable prior to the contractor entering (manually or electronically via SDEF file) in QCS.

3.4.2 Periodic Schedule Updates

Based on the result of progress meetings, specified in "Periodic Progress Meetings," the Contractor shall submit periodic schedule updates. These submissions shall enable the Contracting Officer to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgment of the Contracting Officer or authorized representative is necessary for verifying the Contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made.

3.4.3 Standard Activity Coding Dictionary

The Contractor shall use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11, Appendix A. This exact structure is mandatory, even if some fields are not used.

3.5 SUBMISSION REQUIREMENTS

The following items shall be submitted by the Contractor for the preliminary submission, initial submission, and every periodic project schedule update throughout the life of the project:

3.5.1 Data Disks

Two (2) Data Compact Disks containing the project schedule shall be provided. Data on the disks shall adhere to the SDEF format specified in ER 1-1-11, Appendix A.

3.5.1.1 File Medium

Required data shall be submitted on Compact Disk, formatted to hold 700 MB of data, under the MS-DOS Version 5. or 6.x, unless otherwise approved by the Contracting Officer.

3.5.1.2 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the type of schedule (Preliminary, Initial, Update, or Change), full contract number, project name, project location, data date, name and telephone number of person responsible for the schedule, and the MSDOS version used to format the disk.

3.5.1.3 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will ensure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer for approval.

3.5.2 Narrative Report

A Narrative Report shall be provided with the preliminary, initial, and each update of the project schedule. This report shall be provided as the basis of the Contractor's progress payment request. The Narrative Report shall include: a description of activities along the 2 most critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to relay to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis.

3.5.3 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the schedule submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

3.5.4 Schedule Reports

The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall be printed for those activities in progress or completed.

3.5.4.1 Activity Report

A list of all activities sorted according to activity number.

3.5.4.2 Logic Report

A list of Preceding and Succeeding activities for every activity in ascending order by activity number. Preceding and succeeding activities shall include all information listed above in paragraph Schedule Reports. A blank line shall be left between each activity grouping.

3.5.4.3 Total Float Report

A list of all incomplete activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates. Completed activities shall not be shown on this report.

3.5.4.4 Earnings Report

A compilation of the Contractor's Total Earnings on the project from award of contract until the most recent Monthly Progress Meeting. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by work item and sorted by activity numbers. This report shall: sum all activities in a work item and provide a work item percent; and complete and sum all work items to

provide a total project percent complete. The printed report shall contain, for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost), and Earnings to Date.

3.5.5 Network Diagram

The network diagram shall be required on the initial schedule submission and on monthly schedule update submissions. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1 Continuous Flow

Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity number, description, duration, and estimated earned value shall be shown on the diagram.

3.5.5.2 Project Milestone Dates

Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.5.3 Critical Path

The critical path shall be clearly shown.

3.5.5.4 Banding

Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

3.5.5.5 S-Curves

Earnings curves showing projected early and late earnings and earnings to date.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly onsite meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor shall describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

3.6.1 Meeting Attendance

The Contractor's Project Manager and Scheduler shall attend the regular progress meeting.

3.6.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 4 working days after the monthly progress meeting.

3.6.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost-to-Date shall be subject to the approval of the Contracting Officer. As a minimum, the Contractor shall address the following items on an activity by activity basis during each progress meeting.

3.6.3.1 Start and Finish Dates

The Actual Start and Actual Finish dates for each activity currently in progress or completed.

3.6.3.2 Time Completion

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations shall be based on Remaining Duration for each activity.

3.6.3.3 Cost Completion

The earnings for each activity started. Payment will be based on earnings for each in-progress or completed activity. Payment for individual activities will not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

3.6.3.4 Logic Changes

All logic changes pertaining to change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, lag durations, and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

3.6.3.5 Other Changes

Other changes required due to delays in completion of any activity or group of activities include: 1) delays beyond the Contractor's control, such as strikes and unusual weather. 2) delays encountered due to submittals, Government Activities, deliveries or work stoppages which make re-planning the work necessary. 3) Changes required to correct a schedule which does not represent the actual or planned prosecution and progress of the work.

3.7 REQUESTS FOR TIME EXTENSIONS

In the event the Contractor requests an extension of the contract completion date, or any interim milestone date, the Contractor shall furnish the following for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract: justification, project schedule data, and supporting evidence as the Contracting Officer may deem necessary. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.

3.7.1 Justification of Delay

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with this request. The Contracting Officer's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, will not be a cause for a time extension to the contract completion date.

3.7.2 Submission Requirements

The Contractor shall submit a justification for each request for a change in the contract completion date of under 2 weeks based upon the most recent schedule update at the time of the constructive direction

issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

- a. A list of affected activities, with their associated project schedule activity number.
- b. A brief explanation of the causes of the change.
- c. An analysis of the overall impact of the changes proposed.
- d. A sub-network of the affected area.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

3.7.3 Additional Submission Requirements

For any requested time extension of over 2 weeks, the Contracting Officer may request an interim update with revised activities for a specific change request. The Contractor shall provide this disk within 4 days of the Contracting Officer's request.

3.8 DIRECTED CHANGES

If changes are issued prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer within 2 weeks of this task order being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until revisions are submitted, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, the Contractor shall advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.9 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

-- End of Section --

SAMPLE TASK ORDER:01335**SECTION 01335****SUBMITTAL PROCEDURES FOR SITE ADAPT PROJECTS****1.0 GENERAL****1.1 REFERENCE**

The publication listed below forms a part of this specification to the extent referenced. The publication is referenced to in the text by basic designation only.

CONSTRUCTION SPECIFICATIONS INSTITUTE

Manual of Practice

Construction Specifications Institute
http://www.csinet.org/s_csi/index.asp
601 Madison Street
Alexandria, Virginia
22314-1791

NATIONAL INSTITUTE OF BUILDING SCIENCES (NIBS)

Unified Master Reference List (UMRL)

National Institute of Building Sciences
1090 Vermont Avenue, NW, Suite 700
Washington, DC 20005-4905
Email: nibs@nibs.org
FAX: (202) 289-1092
Tele: (202) 289-7800

1.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows.

1.2.1 DESIGN SUBMITTALS

Contractor furnished design submittals are the various design documents which primarily consist of field investigations, calculations, design analysis, drawings and specifications.

In addition, for each design submittal, the contractor shall submit all non-administrative modifications issued for the contract as part of the Design Submittal package to enable AED to validate that these modifications have been incorporated into this design submittal.

Design submittals should only address Contract requirements not shown on plans and any specifications already furnished to the Contractor as part of this contract. Plans and specifications furnished to the Contractor shall NOT be included as part of any Design Submittal. The Contractor shall complete all work as shown in these furnished drawings without deviation, unless site conditions mandate changes (larger building foundations per geotechnical investigations, etc.).

The Contractor shall clearly label and date all design submittals to reflect the current design stage and date of submission to the Government to avoid confusion between current and previous submittals. The Contractor shall not begin construction work until the Government has reviewed and approved the work presented in each Design Submittal, including complete resolution of all DrChecks comments, and the Contracting Officer has cleared work for construction. Clearance for construction shall not be construed

as meaning Government approval. Unless otherwise indicated, the risk for the design is the sole responsibility of the Contractor.

As a minimum, design submittals shall be submitted at the following intervals:

- Preliminary design reports – 10%
- Site-Adapt General Design review - 65%
- Final Site-Adapt Design review - 90%
- Cleared For Construction review - 100%

1.2.1.1 PRELIMINARY DESIGN REPORTS – (10%)

- a. The review of this submittal is primarily to ensure that the Contractor has at a minimum developed the test well and completed the sub-surface investigation. **This work shall be completed not less than 60 days from Notice To Proceed (NTP). Failure to do so at the satisfaction of the Government shall constitute grounds for withholding of all progress payments.**
- b. Geotechnical Report, indicating appropriate information for various site characteristics, soil parameters as determined by certified lab tests, allowable soil bearing capacities, correlation with foundation design parameters, and any changes in foundation design of structures furnished in the Contract; estimated settlement for building foundation loads; and all other project feature changes due to the Geotechnical Report conclusions.
- c. Well design at each project site location to include a determination of water demand, water availability evaluation, and water quality analysis produced from a test well. Water demand evaluation shall be determined based on the requirements of the 01010 SOW and 01015 Technical Requirements. Water availability evaluation shall include data concerning study of existing water wells in the vicinity, study of hydrological data, and study of geological data. Well hydraulics data shall also be included from the test well or if available from vicinity wells. Water quality analysis shall include physical, chemical, and bacteriological analyses of water from either a test well or an existing well within the same aquifer of the proposed well.
- d. Drawing for the well design shall include, at a minimum, material and dimensions of well pipe and casing, type and dimensions of screen, type and range of sizes of gravel surrounding screen and at bottom of well shaft, type of grouting for well seal, well pad, location and connection detail for hand pump if required by the 1010. Also required would be a detail of the wellhead with all associated valves, flowmeters, and chlorination system.
- e. Percolation test locations and results, and complete leachfield design (if required by Section 01010 of the SOW), which indicate the site will accommodate such a system for the given project requirements, and alternatives proposed if, and only if, the site characteristics will not support such a system.

1.2.1.2 SITE-ADAPT GENERAL DESIGN (65%)

This Design Submittal presents all information necessary to “Site Adapt” the fully designed and detailed buildings and other project features. It is crucial that the submittal is complete and includes all components noted below and any other pertinent information not listed which the Contractor requires to enable construction to begin as soon as possible. As a minimum, for each Contract project location the submittal shall contain:

- a. Results of the site topographic survey which shall include highlighting of significant features (wadis, adjacent properties and structures, roads, etc.) to provide a detailed, overall understanding of the project site and surrounding area; demolition plan for existing site features; complete grading and drainage plan with existing grades, proposed grades, and building finished floor elevations based on Contract technical requirements;

- b. Any necessary adaptations of the Concept Plan and detailed design drawings furnished with this Contract that might be required due to actual site constraints, to include: water supply/storage location and distribution layout plan; wastewater collection or treatment location and tie-in to all required buildings; electrical generation and distribution plan; connection of existing roads with ECP location(s); and any other changes required due to adjacent property or existing topography. As noted in Paragraph 1.2.1, this would also include proposed changes to the detailed drawings if, and only if, site conditions mandate revisions.
- c. Septic Tank drawings and details (if required by Section 01010 of the SOW or not provided as part of this contract), showing tank depth and sizing based on expected sanitary load, and all connecting piping, with dimensions.
- d. Complete design analysis, plans and specifications for any contract feature(s) not already provided in the Contract that the Contractor would like Partial Clearance for Construction on once the Design Submittal has been approved, including project components with long ordering, fabrication and delivery times.
- e. Outline of Construction Specification Sections to be used for other work yet to be submitted at the 90% Final Site-Adapt Design Review submittal, and those Specification items requiring Government Approval (GA), unless 100% Technical Specifications were provided with the Contract.
- f. Preliminary drawing and details of any grease interceptors and oil-water separators required. Grease interceptors should either be gravity or hydro-mechanical types. Drawings would show sizing, depth, and all connecting piping. Design analysis shall include calculations for sizing both the interceptor/separator and connecting piping.
- g. Preliminary cross sections of roads and sidewalks, showing all essential dimensions, materials, layers, and proposed fore and back slopes of adjacent drainage features.
- h. All preliminary sketches of site storm drainage structures, including calculations in the design analysis for sizing and sloping of pipe runs and ditches. Provide cross sections of drainage structures such as ditches and culverts.

1.2.1.3 FINAL SITE-ADAPT DESIGN REVIEW (90%):

The review of this submittal is primarily to insure that the contract documents and design analysis are proceeding in a timely manner and that the Contract requirements and design criteria are being correctly understood and adhered to. The submittal shall consist of the following:

- a. Design Analysis complete.
- b. Draft Construction Specifications complete - all anticipated sections, edited to include only applicable requirements, if not provided as part of the Contract.
- c. Construction Drawings complete with all 65% comments incorporated. The Contractor is expected to have completed all of his coordination checks and have the drawings in a design complete condition. The drawings shall be finalized at this time including the incorporation of any design review comments generated by all past design reviews. The drawings shall contain all the details necessary to assure a clear understanding of the work throughout construction.

1.2.1.4 "CLEARED FOR CONSTRUCTION" SUBMITTAL (100%):

The review of this submittal is to insure that the design is in accordance with directions provided the Contractor during the design process. The only effort remaining between the Final Site-Adapt Design

Review Submittal and the "Cleared For Construction" Design Review Submittal is the incorporation of all Government review comments. The Contractor shall submit the following documents for this review:

- a. Design Analysis, only if changes have occurred since 90% Design Submittal. The Design Analysis shall contain all explanatory material giving the design rationale for any design decisions which would not be obvious to an engineer reviewing the Final Drawings and Specifications.
- b. Construction Specifications, complete.
- c. Construction Drawings, complete.

Once the design documents have been "Cleared for Construction" by the Contracting Officer, the Contractor shall clearly identify each document by annotating it as "Cleared for Construction."

1.2.2 PARTIAL DESIGN SUBMITTALS

In the interest of expediting construction, the Contracting Officer may approve partial design submittals, procurement of materials and equipment, as well as issue the Notice To Proceed (NTP) for construction of those elements of the design which have been cleared for construction. Such partial notices to proceed shall be solely at the discretion of the Contracting Officer. The Contractor must obtain the approval of the Designer of Record (DOR) and the Government's concurrence for any Contractor proposed revision to the professionally stamped and sealed design reviewed and Cleared for Construction by the Government, before proceeding with the revision. The Government reserves the right to non-concur with any revision to the design, which may impact furniture, furnishings, equipment selections or operations decisions that were made, based on the reviewed and cleared for construction design. Any revision to the design, which deviates from the contract requirements (i.e., the RFP and the accepted proposal), will require a modification, pursuant to the Changes clause, in addition to Government concurrence. The Government reserves the right to disapprove such a revision. Unless the Government initiates a change to the contract requirements, or the Government determines that the Government furnished design criteria are incorrect and must be revised, any Contractor initiated proposed change to the contract requirements, which results in additional cost, shall strictly be at the Contractor's expense. The Contractor shall track all approved revisions to the reviewed and cleared for construction design and shall incorporate them into the As-Built design documentation, in accordance with Section 01780A, CLOSEOUT SUBMITTALS, Paragraphs 1.1 and 1.2, which lists all requirements associated with submission of editable CADD format As-Built required as part of this contract. The Designer of Record shall document its professional concurrence on the As-Built for any revisions by affixing its stamp and seal on the drawings and specifications.

1.2.3 DEVIATIONS AND CHANGES TO THE STANDARD DESIGNS

Contractor shall construct standard building designs as indicated. Any request to deviate or change the standard building designs must be due to changed site conditions ONLY and submitted to the AED Resident Office administering the contract. Contractor shall indicate the changes and provide a narrative justification for the changes proposed.

1.2.4 USE OF DRCHECKS_{SM} FOR DESIGN SUBMITTAL COMMENT AND RESPONSE

1.2.4.1 DRCHECKS_{SM} WEB LINK

All AED Design Submittal review comments will be documented using the standard design review tool for the U.S. Army Corps of Engineers, a web-based application called "DrChecks_{SM}". The web link to DrChecks_{SM} is:

<https://www.projnet.org/projnet/binKornHome/index.cfm>

1.2.4.2 DRCHECKS_{SM} VENDOR IDENTIFICATION AND TUTORIAL

Upon notification of award, the contractor shall immediately coordinate with the Chief, Engineering Branch, AED to acquire a vendor identification and a brief tutorial on the use of DrChecks_{SM}. The contractor is responsible for providing their own DrChecks_{SM} Administrator within their own design staff personnel to access and accomplish actions within DrChecks_{SM}.

1.2.4.3 NOTIFICATION OF DRCHECKS_{SM} FILE ACCESS

The Afghanistan Engineer District will complete a review at every Design Submittal stage for conformance with the technical requirements of the Contract and document all comments in DrChecks_{SM}. At completion of the review, a notification will be issued to the Contractor by the Contracting Officer's representative that the particular DrChecks_{SM} file will be opened to the Contractor. Until this time, the Contractor is not able to view any AED comments for that particular Design Submittal.

1.2.4.4 FURTHER CONTRACTOR INFORMATION AFTER DRCHECKS_{SM} REVIEWS

See Paragraph 3.7.4, Government Review, for further procedures and requirements associated with Design Submittal reviews.

1.2.5 CONSTRUCTION SUBMITTALS

1.2.5.1 CONTRACTOR FURNISHED GOVERNMENT APPROVED CONSTRUCTION SUBMITTALS (GA)

Government approved construction submittals are primarily related to plans (Contractor Quality Control, Accident Prevention, Resident Management System, Area Use, etc.), schedules (Project Schedule/Network Analysis), and certificates of compliance, reports and records/statements. They may also include proposed variations to approved design documents in accordance with the paragraph entitled "VARIATIONS".

In addition, GA construction submittals are required for the following:

a. CIVIL FEATURES

TESTING RESULTS: Data will include information on the locations and depths of all viable water supply sources at the site(s) involved and a water quantity and water quality analysis for each source from the Ministry of Public Health or other certified testing firm.

b. MECHANICAL FEATURES

EQUIPMENT SUBMITTALS: Manufacturer's standard catalog data, installation, Operation and Maintenance (O&M) manuals and construction details for water wells, water tanks, control valves, pipe insulation, water pumps, air handling units, condensers, variable air volume (VAV) boxes.

TESTING RESULTS: For water tanks, water pumps (including instrumentation), water piping, sprinkler systems, and oxygen systems, submit six (6) copies of each test containing the following information in bound letter-size booklets:

- 1) The date the tests were performed.
- 2) A list of equipment used, with calibration certifications.
- 3) A copy of measurements taken.

- 4) The parameters to be verified.
- 5) The condition specified for the parameter.
- 6) The inspection results, signed, dated, and certified by the installer. The certification shall state that required procedures were accomplished, that the procedures were conducted in compliance the plans and specifications.
- 7) A description of adjustments performed.

Individual reports shall be provided for storage tank tests, piping tests, system performance tests, high level alarm test, and the system leak tests. Drawings shall be folded blue lines, with the title block visible.

c. ELECTRICAL FEATURES

PRODUCT DATA and SHOP DRAWINGS: generators (and its auxiliaries), load bank, transformers, substations, panels/switchboards/motor control centers, lightning protection, receptacles, circuit breakers.

DESIGN DATA: lightning protection and grounding.

TEST DATA: Lightning protection and grounding.

d. ARCHITECTURAL FEATURES

PRODUCT DATA/CATALOGUE CUTS/SHOP DRAWINGS/SCHEDULES: Specialty doors and frames (fire rated, sound rated, bullet resistant, security, overhead rolling); door hardware; windows; metal roofing (including fasteners, flashing, and accessories); building insulation; fire-rated and water-resistant gypsum board; and other specialty products (bullet resistant glazing/panels).

COLOR BOARD: Architectural finishes

PRODUCT DATA/CATALOGUE CUTS/INSTALLATION INSTRUCTIONS: Exterior Insulation and Finish System (EIFS)

SHOP DRAWINGS: Casework/Cabinetry

1.2.5.2 FOR INFORMATION ONLY CONSTRUCTION SUBMITTALS (FIO)

All submittals not requiring Designer of Record or Government approval will be for information only. These construction submittals shall be checked, stamped, signed and dated by the Contractor's Quality Control Engineer, certifying that such submittal complies with the contract requirements. All Contractor submittals shall be subject to review by the Government at any time during the course of the contract. Any Contractor submittal found to contain errors or omissions shall be resubmitted as one requiring "approval". No adjustment for time or money will be allowed for corrections required as a result of noncompliance with plans or specifications. Normally submittals For Information Only will not be returned. Approval of the Contracting Officer is not required on FIO submittals. These submittals will be used for information purposes. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to

furnish material conforming to the plans and specifications and will not prevent the Contracting Officer from requiring removal and replacement if nonconforming material is incorporated in the work.

1.2.5.3 VARIATIONS

After design submittals have been reviewed and cleared for construction by the Contracting Officer, no submittal for the purpose of substituting materials, equipment, systems, and patented processes will be considered by the Government unless submitted in accordance with the paragraph entitled VARIATIONS.

1.2.5.4 ADDITIONAL SHOP DRAWINGS AND SUBMITTALS

In accordance with the paragraph entitled DESIGN DISCREPANCIES, the Government may request the Design-Build Contractor to provide additional shop drawing and submittal type data subsequent to completion of the design.

1.2.5.5 INCOMPLETE DESIGN

The Design-Build Contractor shall not use construction submittals as a means to supplant and/or supplement an incomplete design effort.

1.3 SUBMITTAL CERTIFICATION

The CQC organization shall be responsible for certifying that all submittals and deliverables have been reviewed in detail for completeness, are correct, and are in strict conformance with the contract drawings, specifications, and reference documents.

1.3.1 EFFECTIVE QUALITY CONTROL SYSTEM

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with Contract Clause 52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION - ALTERNATE I, and SECTION 01451 CONTRACTOR QUALITY CONTROL.

1.3.1.1 ORGANIZATIONAL RESPONSIBILITY

The quality control system shall cover all design, construction, subcontractor, manufacturer, vendor, and supplier operations at any tier, both onsite and offsite.

1.3.1.2 CQC SYSTEM MANAGER REVIEW AND APPROVAL

Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager. If found to be in strict conformance with the contract requirement, each item shall be stamped, signed, and dated by the CQC System Manager. Copies of the CQC organizations review comments indicating action taken shall be included within each submittal.

1.3.1.3 DETERMINATION OF COMPLIANCE

Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements by the Contracting Officer. The contractor shall submit all required documentation with submittals. The U.S. Army Corps of Engineer (USACE) will not accept partial submittals.

1.3.2 RESPONSIBILITY FOR ERRORS OR OMISSIONS

It is the sole responsibility of the Contractor to ensure that submittals do or do not comply with the contract documents. Government review, clearance for construction, or approval by the Contracting

Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract.

1.3.2.1 GOVERNMENT REVIEW

Government review, clearance for construction, or approval of post design construction submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory.

1.3.3 SUBSTITUTIONS

After design submittals have been reviewed and cleared for construction by the Contracting Officer, no re-submittal for the purpose of substituting materials or equipment will be considered unless justified as indicated in the paragraph entitled, "VARIATIONS."

1.3.4 ADDITIONAL SUBMITTALS

In conjunction with Contract Clause 52.236-5 MATERIAL AND WORKMANSHIP, the Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work.

1.3.5 UNTIMELY AND UNACCEPTABLE SUBMITTALS

If the Contractor fails to submit submittals in a timely fashion, or repetitively submits submittals that are incomplete or not in strict conformance with the contract documents, no part of the time lost due to such actions shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

1.3.6 STAMPS

Stamps shall be used by the Contractor on all design and post design construction submittals to certify that the submittal meets contract requirements and shall be similar to the following:

Contractor (Firm Name)
Contract Number
Contract Name

I certify that this submittal accurate, is in strict conformance with all contract requirements, has been thoroughly coordinated and cross checked against all other applicable disciplines to prevent the omission of vital information, that all conflicts have been resolved, and that repetition has been avoided and, it is complete and in sufficient detail to allow ready determination of compliance with contract requirements by the Contracting Officer.

Name of CQC System Manager: _____
Signature of CQC System Manager: _____
Date: _____

1.4 ENGLISH LANGUAGE

All specifications, drawings, design analysis, design calculations, shop drawings, catalog data, materials lists, and equipment schedules submitted shall be in the English language.

1.5 UNITS OF MEASUREMENT

Design documents shall be prepared in accordance with the guidance offered in SECTION 01415 METRIC MEASUREMENTS.

The metric units used are the International System of Units (SI) developed and maintained by the General Conference on Weights and Measures (CGPM); the name International System of Units and the international abbreviation SI were adopted by the 11th CGPM in 1960.

1.5.1 DRAWINGS

1.5.1.1 SITE LAYOUT

All site layout data shall be dimensioned in meters or coordinates, as appropriate. All details and pipe sizes shall be dimensioned in millimeters.

EXAMPLE: Masonry openings shall be a U.S. module to suit a standard U.S. door. The dimensions of the opening shall be given in SI units. Metric dimensions for site plans shall be in meters and fraction thereof. Dimensions for all other drawings shall be in millimeters using hard metric designations (example: 12 meters = 12 000). Hard metric is defined as utilizing standard metric products and the use of measurements in increments of fifty (50) and one hundred (100) millimeters.

1.5.1.2 GEO-REFERENCE

All site plans shall be geo-referenced using the WGS 1984 coordinate system, specifically the following: WGS 1984 UTM one 42 N. If the designer is not able to use the stated coordinate system the coordinate system used shall be correlated to the stated coordinate system. A table shall be provided within the site drawing set cross referencing the WGS84 system to that utilized. This is required to allow AED to incorporate the plans into GIS for storage, map production, and possible geospatial analysis of the different work sites.

1.5.2 DESIGN CALCULATIONS

Calculations shall be in SI units to meet the requirements of the design. Quantities on the contract drawings stated in SI units shall also be stated in SI units in the design analysis to match the drawings.

1.5.3 SPECIFICATIONS

All equipment and products shall be specified according to U.S. standards and described by appropriate units as required herein.

1.6 WITHHOLDING OF PAYMENT FOR SUBMITTALS

1.6.1 DESIGN SUBMITTALS

Payment for Design work will not be made in whole or in part until the Government has reviewed and cleared the design for construction.

1.6.2 CONSTRUCTION SUBMITTALS

Payment for materials incorporated in the work will not be made if required approvals have not been obtained. In event under separate clause of the contract, the Contractor is allowed partial or total invoice payment for materials shipped from the Continental United States (CONUS), and/or stored at the site, the Contractor shall with his request for such payment, submit copies of approvals (ENG Form 4025) certifying that the materials that are being shipped and/or stored have been approved and are in full compliance with the contract technical specifications.

2 PRODUCTS

2.5 GENERAL

The following are contract deliverables which expound upon and finalize the design parameters/requirements outlined within the contract documents. They shall be prepared in such a fashion that the Prime Contractor is responsible to the Government and not as an internal document between the Prime Contractor and its Subcontractors, Vendors, Suppliers, etc.

2.2 PROJECT NARRATIVE

The Project Narrative shall be a bound set and shall contain the contract Request For Proposal (RFP) Sections 01010 and 01015 (and any additional RFP sections that are appropriate). The RFP Section 01010 and 01015 shall be the latest version. Any subsequent changes to the RFP shall be clearly marked and highlighted with explanation for the changes. The Project Narrative shall also contain the general description of the project and a discussion of the design approach and design features for the project.

2.3 DESIGN ANALYSIS

2.3.1 SUBMITTAL

Only design analyses associated with the “Site Adapt” features of this contract shall be submitted for review. It shall be written in the English language with SI units of measure. The design analysis is a written explanation of the project design which is expanded and revised (updated) as the design progresses. The design analysis shall contain all explanatory material giving the design rationale for any design decisions which would not be obvious to an engineer reviewing the final drawings and specifications. The design analysis contains the criteria for, and the history of, the project design, including criteria furnished by the Government, letters, codes, references, conference minutes, and pertinent research. Design calculations, computerized and manual, are included in the design analysis. Narrative descriptions of design solutions are also included. Written material may be illustrated by diagrams and sketches to convey design concepts. Catalog cuts and manufacturer's data for all equipment items, shall be submitted. Specific requirements for the design analysis, listed by submittal phase, are noted in Paragraph 1.2.1.

2.3.2 FORMAT

Format of design analysis shall closely match the standard format referenced within the RFP.

2.4 DESIGN CALCULATIONS

Only calculations associated with the “Site Adapt” features of this contract shall be submitted for review, unless site conditions mandate changes to drawings and specifications furnished with this Contract. All design calculations shall be presented such that they are easily understood, correlated with RFP requirements (Section 1010 and 1015 criteria; codes; all other applicable or pertinent criteria) and all final conclusions clearly documented and summarized. The Design Submittal must include complete information (Soil Report, percolation test results, concrete design strengths, steel material properties, electrical loads, heat gain/loss assumptions, etc.) necessary to support all design calculations in order to easily and efficiently verify the accuracy of this information and the resulting project components shown in plans and specifications.

2.4.1 SUBMITTAL

When design calculations are voluminous, they shall be bound separately from the narrative part of the design analysis. Design calculations will include a title page, table of contents, and be indexed (tabbed)

to separate distinct parts of the various analysis and design actions being accomplished to support plan drawings submitted. They shall be presented in a clear, consistent and legible format in order to quickly understand the analysis and design accomplished. Presentation shall be such that a person unfamiliar with the project features and associated analysis and design can quickly understand the overall design process and procedures, review the information in conjunction with the given set of plans and specifications, and verify the suitability of all information submitted.

All design calculations shall explain the source of loading conditions with assumptions and conclusions explained. The analysis and design methods shall also be explained, including assumptions, theories and formulae. Include applicable diagrams that are clearly explained and correlated with related computations, whether computer or hand generated. The design calculations shall include a complete and comprehensive list of the criteria (and date or version of the criteria) that the design/analysis will be compared to (codes, Corps of Engineers Engineering Regulations, Engineering Manuals, etc.). Within the separable elements of design calculations, the engineer shall cite the specific code or reference paragraph or section as appropriate to indicate conformance to requirements.

At the beginning of each project component design section, present a summary of all load conditions and combinations required per applicable code or Corps of Engineers manual or regulation. Then clearly identify the particular load case governing the design and clearly show how the particular analysis, construction materials to be used, and the specific design meet the governing load combination.

Calculation sheets shall carry the names or initials of the engineer and the checker and the dates of calculations and checking. No portion of the calculations shall be computed and checked by the same person.

2.4.2 COMPUTER ANALYSIS

Provide a clear summary of all computer outputs and highlight in the outputs information used in the analysis and design accomplished elsewhere in the calculations.

If a computerized analysis or design program is used (either commercial software packages or unique, designer-written computer analysis/design tools), the computations shall provide clear reference to the software program and version being used and an explanation of the validity of the particular program to the given application (where has the program been used before, what input and output does the program provide, is the program a recognized Corps of Engineers or industry standard). If the program is proprietary to the Contractor (not recognized by the Corps of Engineers or industry), the Contractor shall provide a sample hand calculation to verify the results of one set of data generated by the computer program.

State exactly the computation performed by the computer. Include applicable diagrams, adequately identified. Provide all necessary explanations of the computer printout format, symbols, and abbreviations. Use adequate and consistent notation. Provide sufficient information to permit manual checks of the results.

Each set of computer printouts shall be preceded by an index and by a description of the computation performed. If several sets of computations are submitted, they shall be accompanied by a general table of contents in addition to the individual indices.

When the computer output is large, it shall be divided into volumes at logical division points. All final computer results used in design shall be separated from the total pages of computer output that might be included in the design calculations for ease of review.

2.5 SPECIFICATIONS

Specifications for most work associated with this Contract may have been furnished to the Contractor and only portions of them (if provided) should be submitted for review with the “Site Adapt” portion of the work. If the Contractor determines that work associated with the “Site Adapt” features of this contract require additional specifications, they shall be submitted for review and approval. Specifications shall be prepared in accordance with the UFGS (Uniform Facilities Guide Specifications)

format. The Contractor-prepared specifications shall include as a minimum, all applicable specification sections referenced by the UFGS. Where the does not reference a specification section for specific work to be performed by this contract, the Design-Build Contractor shall be responsible for creating the required specification in the UFGS format.

2.5.1 USE OF UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

If additional specifications are deemed necessary by the Contractor, UFGS (Uniform Federal Guide Specifications) are required when U.S. products and systems are required or used. Current UFGS information may be obtained at the following location: http://www.wbdg.org/ccb/browse_org.php?o=70.

Specifications for UFGS are in SpecsIntact format. SpecsIntact is government sponsored software used to edit specifications for government contracts. The software is available at the following link: <http://specsintact.ksc.nasa.gov/index.asp>.

2.5.2 QUALITY CONTROL AND TESTING

Any additional specifications deemed necessary by the Contractor shall include required quality control and further indicate all testing to be conducted by the Contractor, its subcontractors, vendors and/or suppliers.

2.5.3 AMBIGUITIES AND INDEFINITE SPECIFICATIONS

Ambiguities, indefinite specification requirements (e.g., highest quality, workmanlike manner, as necessary, where appropriate, as directed etc) and language open to interpretation is unacceptable.

2.5.4 INDUSTRY STANDARDS

2.5.4.1 U.S. INDUSTRY STANDARDS

The Specifications shall be based on internationally accepted U.S. industry Standards. Customarily accepted publications may be found in the UNIFIED MASTER REFERENCE LIST (UMRL) which may be located at the following URL: <http://www.hnd.usace.army.mil/techinfo/UFGS/UFGSref.htm>.

To access the UMRL select the "Unified Facilities Guide Specifications" tab and scroll down to Unified Master Reference List (UMRL) (PDF version).

Examples of U.S. standards are: National Fire Protection Association (NFPA), International Building Code (IBC), American Concrete Institute (ACI), American Water Works Association (AWWA), ADAAG (ADA Accessibility Guidelines) for Buildings and Facilities, etc. Standards referenced shall be by specific issue; the revision letter, date or other specific identification shall be included.

This document lists publications referenced in the Unified Facilities Guide Specifications (UFGS) of the Corps of Engineers (USACE), the Naval Facilities Engineering Command (NAVFAC), the Air Force Civil Engineer Support Agency (AFCESA), and the guide specifications of the National Aeronautics and Space Administration (NASA). This document is maintained by the National Institute of Building Sciences (NIBS) based on information provided by the agencies involved and the standards producing organizations. The listing is current with information available to NIBS on the date of this publication.

Standards referenced in specifications and drawings prepared by the Contractor shall be by specific issue; the revision letter, date or other specific identification shall be included.

2.5.5 AED DESIGN REQUIREMENTS DOCUMENTS

AED Design Requirements (latest version) documents listed in section 01015, shall be adhered to in this contract. These documents are available from the COR. These documents shall be used as the basis for design and construction, and for selecting options within the United Facilities Guide Specifications (UFGS). It is the contractor's option to use specifications contained in the AED Design Requirements

Documents, when provided, or to adapt the UFGS specifications to match the requirements provided in the AED Design Documents and specifications. Site or project specific data and requirements in the AED Design Requirements documents shall supersede UFGS language where there are perceived conflicts.

2.6 DRAWINGS

2.6.1 COMPUTER ASSISTED DESIGN AND DRAFTING (CADD)

Computer Assisted Design and Drafting (CADD) is required for all work related to this contract. Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare new drawings. The CADD deliverables shall meet the requirements of the A/E/C CADD Standard (Release 3.0). Emphasis is on drawings meeting sheet layout standards, level/layer naming standards and sheet naming conventions. The CADD standards may be downloaded at the CAD/BIM Technology Center at the following link:

<https://caddim.usace.army.mil/default.aspx?p=s&t=13&i=4>.

The Contractor shall furnish all softcopy design submittals (and As-Builts) using software applications in either .dwg (AutoCAD, AutoDesk release 2005 or later) or in .dgn (MicroStation, Bentley Systems version 8.0 or later) format. In addition, the Contractor is required to submit the softcopy design submittals in .pdf (Adobe Acrobat) format. Drawings prepared in any convention other than CADD, must have the written approval of the Contracting Officer.

2.6.2 DRAWINGS

Drawings shall be prepared in the English language with metric (SI) units of measure. All the drawings and details of the working drawings shall be adequately labeled and cross-referenced. Complete, thoroughly checked, and coordination with other engineering disciplines design drawings shall be submitted. At the final design submittal (100%) the Contractor shall have incorporated all design review comments generated by previous design review(s), have completed all of the constructability and coordination comments, and have the drawings in a Ready-to-Build condition. The drawings shall be complete at this time and contain all the details necessary to ensure a clear understanding of the work throughout construction.

2.6.3 DRAWING SIZE BORDER SHEETS

All drawings shall be prepared in size "A1" border sheets (594mm by 841mm). Hardcopy design submissions may be printed on half size drawing sheets ("A3", 279 mm by 420 mm) for purposes of saving paper and for ease of review. If drawings are not readable in the half size reduction, the Contractor shall submit all drawings in A1 border sheets. All final contract drawing sets (As-Builts) shall be submitted on A1 border sheets. Drawing sheets shall be trimmed to specified size if necessary.

2.6.4 SEQUENCE OF DESIGN DRAWINGS

Referencing the A/E/C CADD Standard (pg. 13, Table 2-1 of the A/E/C CADD standards) the sequence of drawings shall follow the sequence as shown below:

Discipline

1. General
2. Hazardous Materials
3. Survey/Mapping
4. Geotechnical
5. Civil

6. Landscape
7. Structural
8. Architectural
9. Interiors
10. Equipment
11. Fire Protection
12. Plumbing
13. Process
14. Mechanical
15. Electrical
16. Telecommunications
17. Resource
18. Other Disciplines
19. Sub-Contractor/Shop Drawings
20. Operations

2.6.5 DRAWING FOLDER STRUCTURE

CADD files shall be organized in a folder structure to what is described in Paragraph 2.6.4. For multi-building projects a folder of each building type shall be created and the applicable folders shown in each building type folder.

2.6.6 DRAWING SHEET ASSEMBLY

CADD files shall be organized to what is described in “Option 2 – Use of Design Model Only” (page 10, Figure 2-3 of the A/E/C CADD Standard). This method will utilize one view and the use of “paper space” is not used. The border sheet shall be X-REF into each model file and scaled up to the applicable scale.

2.6.7 MODEL FILES

Model files represent the building’s physical layout and components such as floor plans and elevations. Model files shall be drawn to full size (1:1) in the default view. Floor Plan Model files represent one floor. Model files shall have coordinates (x,y,z) of 0,0,0 in paper space on layout. The exception for model files with coordinates 0,0,0 shall be the civil site plan (see section 1.5.1.2 Georeferencing).

2.6.8 BORDER SHEET FILES

Border sheet files are used to assemble model files for plotting and viewing purposes. Every border sheet file has a drawing area, title block, border and represents one plotted drawing.

2.6.9 LAYER/LEVEL NAMES

Layer or level files names shall follow the guidelines of appendix A and B of the A/E/C CADD standards. For AutoCAD, .dwt (drawing template files) shall be used to import the proper layers that will be inclusive of the correct line type, color, and line thickness of the respective layer.

2.6.10 DRAWING FILE NAMING CONVENTION

CADD files shall follow the naming convention as described in the A/E/C CADD Standards. For model files reference pg 12 - 16, figure 2-4, tables 2-1 and 2-2. for sheet files reference pg 18 – 22, figure 2-5, table 2-3.

2.6.11 SHEET IDENTIFICATION BLOCK

The sheet identifier will follow the name of the border sheet file. This will consist of the discipline designator, the sheet type designator and the sheet sequence number as referenced in pg 23, figure 2-6 of the A/E/C CADD Standards.

2.6.12 DRAWING SCALES

The scales indicated on the following list shall, in general, be used for all drawings. The Contractor may, at its option, make exceptions to scales indicated, if approved in writing by the Contracting Officer.

TYPICAL DRAWING SCALES	
DRAWING TYPE	METRIC
SITE PLAN	1:200
	1:400
	1:500
	1:600
	1:700
	1:1000
	1:2000
	1:5000
	1:6000
	1:10000
FLOOR PLAN	1:20000
	1:50
	1:100
ROOF PLAN	1:200
	1:200
EXTERIOR ELEVATIONS	1:100
	1:200
INTERIOR ELEVATIONS	1:50
	1:100
CROSS SECTIONS	1:50
	1:100
	1:200
WALL SECTIONS	1:20

STAIR DETAILS	1:10
DETAILS	1:5

2.6.13 SYMBOLS, LINE STYLES, & PATTERNS

Approved symbols, line styles, and patterns shall be in accordance with AEC CAD Standard Release 3.0 or current version (see Appendix D of the A/E/C CADD Standards). The approved symbols, line styles, and patterns associated with AutoCAD software maybe downloaded in the following link:

<https://tsc.wes.army.mil/products/standards/aec/aecstdsym.asp>

2.6.14 PLOTTER PREPARED ORIGINAL DRAWINGS

Plotter prepared original drawings shall be prepared on 20 pound bond paper, unless otherwise approved and shall be plotted on the matte side. Raster plotters must provide a minimum resolution of 400 dpi while vector plotters shall provide a minimum resolution of 0.0010 inch with an accuracy of +0.1% of the move and a repeatability error of not more than 0.005 inch. Drawings produced from dot matrix plotters are not acceptable. Plots accompanied by the digital design file may be prepared on vellum: translucent bond is not acceptable. Line density shall be equivalent to that produced by black India ink: half tone plots are only acceptable where the half-tone color setting of RGB (red, green blue) settings equal a value of 153 (see pg. 27, Table 3-4 of the A/E/C CADD Standards). Drawings plotted in color is not acceptable. Manual changes to plotted originals are not acceptable.

2.6.15 TITLE AND REVISION BLOCK

Title and revision block shall match examples shown in SITE ADAPT 1335a-Attachments-AED.pdf, Figures 1 through 4, furnished as an attachment to this RFP.

2.6.16 LEGENDS

For each submittal, legends of symbols and lists of abbreviations shall be placed on the drawings. They shall include all of the symbols and abbreviations used in the drawing set, but shall exclude any symbols and abbreviations not used. Since many symbols are limited to certain design disciplines, there is a definite advantage to the use of separate legends on the initial sheet of each design discipline or in the Standard Details package for each discipline. If legends have not been shown by discipline, a legend shall be placed on the first drawing.

2.6.17 LOCATION GRID

To facilitate the location of project elements and the coordination of the various disciplines' drawings, all plans shall indicate a column line or planning grid, and all floor plans (except structural plans) shall show room numbers.

2.6.18 COMPOSITE AND KEY PLANS

If the plan of a large building or structure must be placed on two or more sheets in order to maintain proper scale, the total plan shall be placed on one sheet at a smaller scale. Appropriate key plans and match lines shall appear on segmented drawings. Key plans shall be used not only to relate large scale plans to total floor plans but also to relate individual buildings to complexes of buildings. Key plans shall be drawn in a convenient location and shall indicate the relative location of the represented plan area by crosshatching.

2.6.19 SPECIFICATIONS PLACED ON THE DRAWINGS

Details of standard products or items which are adequately covered by specifications shall not be included on the drawings.

2.6.20 REVISIONS

Drawing revisions shall be prepared only on the original CADD files. A revision area is required on all sheets.

2.6.21 BINDING

All volumes of drawing prints shall be firmly bound and shall have covers of heavier bond than the drawing sheets. If posts are used to fasten sheets together, the drilled holes on the bond edges of the sheets shall be on 8-1/2-inch centers.

2.6.22 GOVERNMENT PROVIDED FILES

At the Preconstruction meeting, the Contractor shall be provided a CD that shall contain the AED border sheet, the A/E/C CADD standards, and various other files related to the compliancy of CADD files to the A/E/C CADD standards.

3 EXECUTION

3.1 GENERAL

3.1.1 DESIGN CONCEPT COORDINATION MEETING

Shortly after Notice To Proceed (NTP) the Government or contractor may suggest meeting(s) to review the Design Submittal process or discuss various aspects of the contract to enable prompt and efficient initiation of contract actions. Meeting(s) will be held to assure attention is focused on key project requirements (necessary contractor design and Government review that is required to provide Construction Clearance), to discuss features and items of work that need to be submitted early due to long lead time items, or discuss other concepts/ideas that will help accelerate the contract work. Other Design Coordination meetings may be requested throughout the contract period if Government review of various contractor Design Submittals indicate poor design and plan or specification quality in order to clearly explain the changes and improvements required of the contractor, assure understanding of Government comments, code references and required investigations and calculations, to move forward with acceptable design and satisfactory plans and specifications.

3.1.2 GOVERNMENT DESIGN CHANGES

Government design changes which do not increase construction costs shall be made at no charge to the Government. The Contracting Officer may request design submittals in addition to those listed when deemed necessary to adequately describe the work covered in the contract documents. Submittals shall be made in the respective number of copies and to the respective addresses set forth in the paragraph entitled SUBMITTAL PROCEDURE. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements.

3.2 SUBMITTAL REGISTER

3.2.1 DESIGN SUBMITTALS

The Contractor shall submit as part of his Project Schedule Design Submittal milestone dates. The Contractor shall post all actual dates of submittal actions (including clearance for construction) as they occur.

3.2.2 CONSTRUCTION SUBMITTAL REGISTER (ENG FORM 4288)

Attached to this section is ENG Form 4288 which the Contractor is responsible for developing for this contract. All design and construction submittals shall be shown on this register. The submittal register shall be the controlling document and will be used to control all submittals throughout the life of the contract. The Contractor shall maintain and update the register on a monthly basis for the Contracting Officer's approval.

3.3 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both design and construction submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care will be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

3.4 PROGRESS SCHEDULE

The Contractor shall prepare and submit a design progress schedule to the Contracting Officer. The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The progress schedule shall show, as a percentage of the total design price, the various items included in the contract and the order in which the Contractor proposes to carry on the work, with dates on which he will start the features of the work and the contemplated dates for completing same. Significant milestones such as review submittals shall be annotated. The Contractor shall assign sufficient technical, supervisory and administrative personnel to insure the prosecution of the work in accordance with the progress schedule. The Contractor shall correct the progress schedule at the end of each month and submit as required to the Contracting Officer. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

3.5 SCHEDULING

3.5.1 DESIGN SUBMITTALS

Adequate time (a minimum of fourteen (14) full calendar days exclusive of mailing time) shall be allowed for AED review and comment in DrChecks_{SM}. This time period starts on the next full day after delivery of the Design Submittal to AED. If the Contractor fails to submit design submittals in a timely fashion, or repetitively submits design submittals that are not in strict conformance with the Contract documents, no part of the time lost due to such actions shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

3.5.2 CONSTRUCTION SUBMITTALS

Contractor furnished Government Approved Construction Submittals (GA) for items noted in Paragraph 1.2.5 of this Section, or others as required by the COR, shall be submitted to the Area or Resident Office,

per directions given at the Pre-Construction meeting. Adequate time (a minimum of fourteen (14) full calendar days exclusive of mailing time) shall be allowed for AED review and comment.

3.5.3 POST DESIGN CONSTRUCTION SUBMITTALS

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of fourteen (14) full calendar days exclusive of mailing time) shall be allowed for review and approval. If the Contractor fails to submit post design construction submittals in a timely fashion, or repetitively submits submittals that are not in strict conformance with the Contract documents, no part of the time lost due to actions shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

3.6 SUBMITTAL PROCEDURE

3.6.1 DESIGN SUBMITTALS

3.6.1.1 AFGHANISTAN ENGINEER DISTRICT (AED)

One (1) half-size hard copy and two (2) soft copies (electronic version) of all design submittals (calculations, reports of field tests, design analysis, plans, specifications, etc) shall be transmitted to the Government at the following address, by means of ENG Form 4025:

AFGHANISTAN ENGINEER DISTRICT NORTH (AEN)

(1) DHL, FEDEX, UPS or any other courier service:
 U.S. Army Corps of Engineers
 Afghanistan Engineer District
 House # 1, St. #1 West
 West Wazir Akbar High School
 Behind Amani High School
 Kabul, Afghanistan
 Attention: Chief, Engineering Branch

And

AFGHANISTAN ENGINEER DISTRICT SOUTH (AES)

<http://www.aed.usace.army.mil>
 U.S. Army Corps of Engineers
 Kandahar Air Field, Afghanistan
 APO, AE 09355

The soft copy (electronic version) and CD case shall both be clearly labeled (hand written information is not acceptable – typed labels are required) with contract information (contract #, title, contractor name, specific design submittal stage including if it is a Resubmittal, date of submission, components of the submittal – design analysis, plans, specifications, and if more than one CD then state 1 of “X”, 2 of “X”, etc., anti-virus information below, etc.)

The Contractor shall scan the soft copy (electronic version) of each Design Submittal using most up-to-date version of recognized Industry-standard anti-virus software (Symantec, Norton, etc.) to insure that no viruses are contained in it prior to acceptance by AED. The label shall indicate it has been scanned for viruses and the anti-virus software and version clearly indicated.

3.6.1.2 RESIDENT/AREA ENGINEER OFFICE

Complete design submittals shall be provided to the Area and/or Resident Engineer Office such that these are received **at the same time** as these submittals are delivered to the AED address in Para. 3.6.1.1. At the Pre-Construction meeting, the Contractor will be furnished the Area and/or Resident Office address to which these submittals shall be provided along with the number and size of hard and soft (electronic version) copies required for these offices. As per Paragraph 3.6.1.1, soft copies are to be properly labeled and checked for viruses by the contractor prior to delivery.

3.6.1.3 EDITABLE CADD FORMAT AS-BUILTS

This is a Design-Build project and in accordance with Contract Clause 52.227-7022 GOVERNMENT RIGHTS (UNLIMITED), the Government has non-exclusive rights to use the design on other projects. Therefore, the As-Builts furnished to the Government must be in an editable format. See Section 01780A CLOSEOUT SUBMITTALS, Paragraphs 1.1 and 1.2, for all requirements associated with submission of editable CADD format As-Builts required as part of this contract.

3.6.2 POST DESIGN CONSTRUCTION SUBMITTALS

One (1) copy of all post design construction submittals shall be transmitted to:

AFGHANISTAN ENGINEER DISTRICT NORTH (AEN)

(1) DHL, FEDEX, UPS or any other courier service:
 U.S. Army Corps of Engineers
 Afghanistan Engineer District
 House # 1, St. #1 West
 West Wazir Akbar High School
 Behind Amani High School
 Kabul, Afghanistan
 Attention: Chief, Engineering Branch

And

AFGHANISTAN ENGINEER DISTRICT SOUTH (AES)

<http://www.aed.usace.army.mil>
 U.S. Army Corps of Engineers
 Kandahar Air Field, Afghanistan
 APO, AE 09355

3.6.3 SUBMITTAL NUMBERING SYSTEM

Instructions on the numbering system to be used for construction submittals follows.

3.6.3.1 SUBMITTALS

Shop drawings and materials are listed on the Submittal Register (ENG Form 4288) as follows:

- a. List is prepared according to contract specifications and drawings, picking up all items involved in the project.
- b. This list is divided into sections as indicated in the specifications. For example:
 Section 01015 "Technical Requirements"

Section 01335	"Design Submittals"
Section 02831	"Chain-Link Fence"
Section 02710	"Subdrainage System"
Section 03300	"Concrete For Building Construction"
Section 04200	"Masonry"

3.6.3.2 NUMBERING PROCEDURES FOR TRANSMITTAL ON ENG FORM 4025

Each Specification Section will have various requirements for submittals (design information, product data, test reports, procedures, etc.) to the Government for Approval (GA) or For Information Only (FIO). Items from different Sections cannot be submitted on the same ENG Form 4025. When furnishing one or more items from the same Section at a given time, a single ENG Form 4025 can be used to identify and submit these items. Block 'b' of the 4025 entitled "DESCRIPTION OF ITEM SUBMITTED" should provide an accurate and unique description of each item being proposed by the Contractor. Item numbers (block "a" of the 4025 entitled "ITEM NO.") will be automatically generated in QCS for each ENG Form 4025. QCS will track and automatically generate the "ITEM NO." for all following ENG Form 4025s for the same Section number. To illustrate, a transmittal for the 65% Design Submittal required by Section 01335 might have the following Items:

ITEM NO. 1	Topographic Information
ITEM NO. 2	Geotechnical Report
ITEM NO. 3	Foundation Design
ITEM NO. 4	65% Plans
ITEM NO. 5	Outline of Construction Specifications to be used

If this was the first submittal furnished by the Contractor for Section 01335, then a Transmittal Number of 01335-1 would be generated using QCS. As new transmittals are generated in QCS, the last digit of the transmittal is increased incrementally, as follows:

Transmittal No. 01335-2
Transmittal No. 01335-3
Transmittal No. 01335-4

and so forth. The first transmittal submitted from each Specification Section will be "-1", in other words, there will never be a "Transmittal No. 01335-0".

The above illustration is true for all other Specification Sections included in the Request for Proposal or in the Construction Specifications compiled by the Contractor in the prosecution of work under the RFP.

3.6.3.3 RESUBMITTALS

Should the Contractor be required to resubmit any transmittal due to one or more items on that transmittal being Coded "C" (Cleared for Construction, except as noted in attached comments, Resubmission Required) or "E" (NOT Cleared for Construction, see attached comments, resubmission required) by the Government, QCS will be used to generate the same transmittal number followed by the number "-1" for the first resubmittal, "-2" for the second resubmittal, "-3" for the third resubmittal, etc.

As an example, assume the 65% Design Submittal is provided to the Government as Transmittal 01335-9. Due to omissions or errors in that Submittal which result in a Code "E" being given, then the subsequent 65% Design Resubmittal #1 would be "Transmittal 01335-9.1". Should a resubmittal again be necessary, it would be Design Resubmittal #2 and would be submitted as "Transmittal 01335-9.2".

The purpose of this system is to avoid deviations from the Submittal Register and to track submittals in both RMS and DrChecks_{SM}. It should be noted that a new transmittal number following the above system

CANNOT be generated in QCS unless the prior transmittal has been given a Code. If the Contractor is having difficulty generating the correct transmittal number, contact the COR to resolve the matter.

The Contractor use the above nomenclature and date of submission to the Government for Plan Cover Sheets; title blocks for all drawings; all Specification Cover Sheets; all specification pages; all Design Analysis Cover Sheets and associated pages; and similar labeling for all other documents included in the submittal.

See the attachment titled "SITE ADAPT 1335a-Attachments-AED.pdf" (Figures 1-4) for required Title Block Required Annotations drawing guidance.

3.6.4 VARIATIONS

If design or construction submittals show variations from the contract parameters and/or requirements, the Contractor shall justify such variations in writing, at the time of submission. Additionally, the Contractor shall also annotate block "h" entitled "variation" of ENG FORM 4025. After design submittals have been reviewed and cleared for construction by the Contracting Officer, no resubmittal for the purpose of substituting materials, equipment, systems, and patented processes will be considered unless accompanied by the following:

- a. Reason or purpose for proposed variation, substitution, or revision.
- b. How does quality of variation compare with quality of the specified item? This shall be in the form of a technical evaluation tabulating differences between the item(s) originally specified and what is proposed.
- c. Provide a cost comparison. This shall include an acquisition and life cycle cost comparison.
- d. For proprietary materials, products, systems, and patented processes a certification signed by an official authorized to certify in behalf of the manufacturing company that the proposed substitution meets or exceeds what was originally specified.
- e. For all other actions, a certification signed by a licensed professional engineer or architect certifying that the proposed variation or revision meets or exceeds what was originally specified.
- f. Advantage to the Government, if variation is approved, i.e. Operation and Maintenance considerations, better product, etc.
- g. Ramifications and impact, if not approved.

If the Government review detects any items not in compliance with contract requirements or items requiring further clarification, the Contractor will be so advised. Lack of notification by the Contracting Officer of any non-complying item does not relieve the Contractor of any contractual obligation.

3.6.5 NON-COMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the worksite, 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.

3.7 REVIEW OF CONTRACTOR PREPARED DESIGN DOCUMENTS

3.7.1 GENERAL

The work under contract will be subject to continuous review by representatives of the Contracting Officer. Additionally, joint design review conferences with representation by all organizations having a direct interest in the items under review may be held. The Contractor shall furnish copies of all drawings and related documents to be reviewed at the review conference on or before the date indicated by the Government. Additional conferences pertaining to specific problems may be requested by the Contractor or may be directed by the Contracting Officer as necessary to progress the work. The Contractor shall prepare minutes of all conferences and shall furnish two copies to the Contracting Officer within seven (7) days after the conference.

3.7.2 INDEPENDENT DESIGN REVIEW

The Contractor shall have someone other than the Designer or Design Team perform an independent technical review of all specifications, drawings, design analysis, calculations, and other required data prior to submission to the Government. This review shall insure the professional quality, technical accuracy, and the coordination of all design analysis, drawings and specifications, and other services furnished under this contract have been accomplished. Work must be organized in a manner that will assure thorough coordination between various details on drawings, between the various sections of the specifications, and between the drawings and specifications. The Contractor shall thoroughly cross-check and coordinate all work until he is professionally satisfied that no conflicts exist, vital information has not been omitted, and that indefinite language open to interpretation has been resolved. Upon completion of this review, the Contractor shall certify that each design submittal is complete, accurate, is in strict conformance with all contract requirements, that repetition has been avoided, that all conflicts have been resolved, and that the documents have thoroughly coordinated and cross checked against all the applicable disciplines to prevent the omission of vital information.

3.7.3 CONTRACTOR'S QUALITY CONTROL ORGANIZATION REVIEW

The Contractor shall thoroughly review each submittal prior to submission to the Contracting Officer to assure it is complete, correct and unified. This review shall be for the purposes of eliminating errors, interferences, and inconsistencies, and of incorporating design criteria, review comments, specifications, and any additional information required. The Contractor will give evidence of such review of all items in each submittal ENG Form 4025, by annotating Column "g" (titled "For Contractor Use Code") of this Form with the letter "A," meaning the Contractor has reviewed it and is indicating it is "Approved as Submitted". Design submittals submitted to the Contracting Officer without evidence of the above requirements or the Contractor's certified approval will be returned for resubmission. No part of the time lost due to such resubmissions shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

3.7.4 GOVERNMENT REVIEW

- a. Within 14 days after Notice to Proceed, the Contractor shall submit, for approval, a complete design schedule with all submittals and review times indicated in calendar dates. The Contractor shall update this schedule monthly. After receipt, the Government will be allowed fourteen (14) full days to review and comment on all Design Submittals, except as noted below. This time period starts on the next full day after delivery of the Design Submittal to AED.
- b. If a design submittal is deficient (errors on ENG Form 4025; incorrect drawing title block information; missing or incomplete features required in the submittal; etc.), it will be returned immediately without further review for correction and resubmission. The review time will begin when the corrected submittal is received. The Contractor may be liable for liquidated damages owed to the Government for returned design submittals due to deficiencies.

- c. The contractor shall not begin construction work until the Government has reviewed the Contractor's Design Submittal and cleared it for construction. Clearance for construction does not mean Government approval. Government review shall not be construed as a complete check but will evaluate the general design approach and adherence to contract parameters. The Government Review is often limited in time and scope. Therefore, the Contractor shall not consider any review performed by the Government as an excuse for incomplete work.
- d. Upon completion of the review the Contractor will be notified by the Contracting Officer Representative that the DrChecks_{SM} file is open for viewing and response to AED comments. The Contracting Officer will indicate whether the Design Submittal, or portions thereof, has or has not been cleared for construction using the following action codes:
 - A – Cleared for Construction
 - B – Cleared for Construction, except as noted in attached comments
 - C – Cleared for Construction, except as noted in attached comments, resubmission required
 - E - NOT Cleared for Construction, see attached comments, resubmission required
 - FX – Receipt acknowledged, does not comply as noted with contract requirements.

These codes shall NOT be used by the Contractor.

Design submittals Cleared for Construction by the Contracting Officer shall not relieve the Contractor from responsibility for any design errors or omissions and any liability associated with such errors, nor from responsibility for complying with the requirements of this contract.

3.7.4.1 INCORPORATION OF GOVERNMENT REVIEW COMMENTS

- a. The Contractor shall review each comment, furnish a complete response in DrChecks_{SM} as to how the comment will be addressed in the Design Analysis, Plans and Specifications, or other Design Submittal stipulations required in this Contract. The Contractor will then incorporate each comment into the design submittal along with other work required at the next Design Submittal stage. The Contractor shall furnish disposition of all comments in DrChecks_{SM}, with the next scheduled submittal. The disposition shall identify action taken with citation of location within the relevant design document. Generalized statements of intention such as "will comply" or "will revise the specification" are not acceptable. During the design review process, comments will be made on the design submittals that will change the drawings and specifications. The Government will make no additional payments to the Contractor for the incorporation of comments. Review comments are considered part of the contract administration process.
- e. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he must clearly outline, with ample justification, the reasons for noncompliance within five (5) days after close of review period in order that the comment can be resolved.
- f. The Contractor is cautioned that if he believes the action required by any comment exceeds the requirements of this contract, he should flag the comment in DrChecks_{SM} as a scope change, and notify the COR in writing immediately.
- g. If a design submittal is over one (1) day late in accordance with the latest design schedule, the Government review period may be extended 7 days. Submittal date revisions must be made in writing at least five (5) days prior to the submittal.

3.7.4.2 CONFERENCES

As necessary, conferences will be conducted between the Contractor and the Government to resolve review comments.

A review conference may be held at the completion of AED review and subsequent Contractor response for each design submittal. The review conference will be held at the Corps District Office in Kabul, Afghanistan. The Contractor shall bring the personnel that developed the design submittal to the review conference.

3.7.4.3 DESIGN DEFICIENCIES

Design deficiencies noted by the Government shall be corrected prior to the start of design for subsequent features of work which may be affected by, or need to be built upon, the deficient design work.

3.7.5 DESIGN DISCREPANCIES

The Contractor shall be responsible for the correction of incomplete design data, omissions, and design discrepancies which become apparent during construction. The Contractor shall provide the Contracting Officer with a proposed recommendation for correcting a design error, within three (3) calendar days after notification by the Contracting Officer. 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 worksite, 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. Should extensions of design, fabrication plans and/or specific manufacturer's details be required as a result of a Government issued Change Order, the Government will make an equitable adjustment in accordance with Contract Clause 52.243-4 entitled CHANGES.

3.8 PHASED OR "FAST-TRACK" DESIGN

3.8.1 GENERAL

If approved by the Government, design and construction sequencing may be effected on an incremental basis as each approved phase or portion (e.g., demolition, geotechnical, site work, exterior utilities, foundations, substructure, superstructure, exterior closure, roofing, interior construction, mechanical, electrical, etc.) of the design is completed.

3.8.2 SEQUENCE OF DESIGN-CONSTRUCTION (FAST-TRACK)

After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submission requirements and obtain Government review of each submission. The contractor may begin construction on portions of the work for which the Government has reviewed the final design submission and has determined satisfactory for purposes of beginning construction. The Contracting Officer will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the Government, the initial submission failed to meet the minimum quality requirements as set forth in the contract.

3.8.3 NOTICE-TO-PROCEED FOR LIMITED CONSTRUCTION

If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction

related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.

3.8.4 IN-PLACE CONSTRUCTION PAYMENT

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

3.8.5 COMMENCEMENT OF CONSTRUCTION

Construction of work may begin after receipt of the clearance for construction (Notice to Proceed) for each design phase. Any work performed by the Contractor prior to receipt of the clearance for construction, shall be at the Contractor's own risk and expense. Work cleared for construction that does not conform to the design parameters and/or requirements of this contract shall be corrected by the Contractor at no additional cost or time to the Government.

3.9 CONDUCT OF WORK

3.9.1 PERFORMANCE

Perform the work diligently and aggressively, and promptly advise the Contracting Officer of all significant developments.

3.9.2 TELEPHONE CONVERSATIONS

Prepare a summary, and promptly furnish a copy thereof to the Contracting Officer, of all telephone conversations relating to the design work under this contract.

3.9.3 COOPERATION WITH OTHERS

Cooperate fully with other firms, consultants and contractors performing work under the program to which this contract pertains, upon being advised by the Contracting Officer that such firms or individuals have a legitimate interest in the program, have need-to-know status, and proper security clearance where required.

3.9.4 TECHNICAL CRITERIA

All designs, drawings, and specifications shall be prepared in accordance with the contract documents and with the applicable publications referenced therein. As soon as possible, the Contractor shall obtain copies of all publications applicable to this contract. Availability of publications (where to purchase) is contained in Specification Section 01420 entitled: SOURCES FOR REFERENCE PUBLICATIONS. Any deviations from the technical criteria contained in the contract documents or in the applicable publications, including the use of criteria obtained from the user or other sources, must receive prior approval of the Contracting Officer. Where the technical criteria contained or referred to herein are not met, the Contractor will be required to conform his design to the same at his own time and expense.

3.9.5 CONFLICTS

Any conflicts, ambiguities, questions or problems encountered by the Contractor in following the criteria shall be immediately submitted in writing to the Contracting Officer with the Contractor's recommendations. Prior to submission to the Government the Contractor shall take appropriate measures to obtain clarification of design criteria requirements, to acquire all pertinent design information, and to incorporate such information in the work being performed.

3.9.6 DESIGN PRIORITIES

The design of this project shall consider the remote location and harsh environment of this project and the impact this will have on sources of technical supply, the cost of construction, the low level of maintenance, and the difficulty of obtaining replacement parts. Unless stated otherwise in this contract, the following design priorities shall be followed.

3.9.6.1 CONSTRUCTION LIFE SPAN

Permanent Construction. Buildings and facilities shall be designed and constructed to serve a life expectancy of more than 25 years, to be energy efficient, and to have finishes, materials, and systems that are low maintenance and low life cycle cost.

3.9.6.2 OPERABILITY

Systems including but not necessarily limited to mechanical, electrical, communications, etc., must be simple to operate and easy to maintain.

3.9.6.3 STANDARDIZATION

Use of standardized materials, products, equipment, and systems is necessary to minimize the requirements for replacement parts, storage facilities, and service requirements.

3.9.6.4 TOPOGRAPHIC SURVEYS, EASEMENTS, AND UTILITIES

Unless otherwise stated in the contract, the Contractor will be responsible for detailed topographic mapping, available easements, and utility information for the project.

3.9.6.5 HORIZONTAL AND VERTICAL CONTROL

The mapping shall be based on the base coordinate system. If the base system cannot be found, the surveyor shall use any established monuments. If monuments have been destroyed or do not exist, an assumed horizontal and vertical datum shall be established, using arbitrary coordinates of 10,000n and 10,000e and an elevation of 1,000 meters. The horizontal and vertical control established on site shall be a closed loop with third order accuracy and procedures. Provide three (3) concrete survey monuments at the survey site. All of the control points established at the site shall be plotted at the appropriate coordinate point and shall be identified by name or number, and adjusted elevations. The location of the project site, as determined by the surveyor shall be submitted in writing to the Contracting Officer. The site location shall be identified by temporary markers, approved by the Contracting Officer before proceeding with the surveying work.

3.9.6.6 TOPOGRAPHY REQUIREMENTS

A sufficient quantity of horizontal and vertical control shall be established to provide a detailed topographic survey at 1:500 scale with one quarter meter contour intervals minimum. Intermediate elevations shall be provided as necessary to show breaks in grade and changes in terrain.

The contours shall accurately express the relief detail and topographic shapes. In addition, 90 percent of the elevations or profiles interpolated from the contours shall be correct to within one-half of the contour interval and spot elevations shall be correct within plus or minus 20 millimeters.

Spot elevations affecting design of facilities shall be provided. Specifically, break points or control points in grades of terrain such as tops of hills, bottoms of ditches and gullies, high bank elevations, etc.

All surface and sub-surface structures features within the area to be surveyed shall be shown and identified on the topographic maps. In addition, these features shall be located by sufficient distance ties and labeled on the topographic sheets to permit accurate scaling and identification.

The location and sizes of potable, sanitary, electrical and mechanical utilities within the survey site shall be shown on the survey map. Sanitary manholes and appurtenances shall show top elevations and invert elevations.

3.9.7 OCCUPATIONAL SAFETY AND HEALTH ACT

The facilities, systems, and equipment designed under this contract shall comply with the Occupational Safety and Health Act (OSHA), Code of Federal Regulations, Title 29, Chapter XVII, Parts 1910 and 1926. Any problems in incorporating these standards due to conflicts with other technical criteria shall be submitted to the Contracting Officer for resolution.

3.9.8 ASBESTOS CONTAINING MATERIALS

Asbestos containing material (ACM) will not be used in the design of new structures or systems. In the event no other material is available which will perform the required function or where the use of other material would be cost prohibitive, a waiver for the use of asbestos containing materials must be obtained from AED.

3.9.8.1 EXISTING CONSTRUCTION

Asbestos containing materials (ACM) presently included in existing construction to be rehabilitated or otherwise modified as a result of this project shall be removed and a non-asbestos containing material substituted in lieu thereof.

3.9.8.2 SUSPECTED ASBESTOS CONTAINING MATERIALS

All such structures and systems shall be inspected to determine the presence or probable presence of ACM. When ACM is suspected, a documented survey will be performed. The survey will be developed into an abatement design and will be made a part of the design documents. In the event no other material is available which will perform the required function or the use of a substitute material would be cost prohibitive due to initial cost and tear-out of existing construction, a waiver for the retention of the asbestos containing material must be obtained from the Contracting Officer.

3.10 ATTACHMENTS

The following attachments form an integral part of this specification:

ENG FORM 4025-R, Mar 95 - Transmittal of Shop Drawings, Equipment Data, Material Samples, or Manufacturer's Certificate of Compliance (2 pages)

ENG FORM 4288-R, Mar 95 - Submittal Register

Figure 1 – AED Title Block

Figure 2 – AED Management Block

Figure 3 – AED Issue Block & Required Notations

Figure 4 – Border Sheet Size

-- END OF SECTION --

SAMPLE TASK ORDER; 01415**SECTION 01415****METRIC MEASUREMENTS****2. REFERENCES**

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

ASTM INTERNATIONAL (ASTM)

ASTM E 621	(1994; R 1999e1) Use of Metric (SI) Units in Building Design and Construction (Committee E-6 Supplement to E380)
ASTM SI 10	(2002) American National Standard for Use of the International System of Units (SI): The Modern Metric System

3. GENERAL

This project includes metric units of measurements. The metric units used are the International System of Units (SI) developed and maintained by the General Conference on Weights and Measures (CGPM); the name International System of Units and the international abbreviation SI were adopted by the 11th CGPM in 1960. A number of circumstances require that both metric SI units and English inch-pound (I-P) units be included in a section of the specifications. When both metric and I-P measurements are included, the section may contain measurements for products that are manufactured to I-P dimensions and then expressed in mathematically converted metric value (soft metric) or, it may contain measurements for products that are manufactured to an industry recognized rounded metric (hard metric) dimensions but are allowed to be substituted by I-P products to comply with the law. Dual measurements are also included to indicate industry and/or Government standards, test values or other controlling factors, such as the code requirements where I-P values are needed for clarity or to trace back to the referenced standards, test values or codes.

4. USE OF MEASUREMENTS IN SPECIFICATIONS

Measurements in specifications shall be either in SI or I-P units as indicated, except for soft metric measurements or as otherwise authorized. When only SI or I-P measurements are specified for a product, the product shall be procured in the specified units (SI or I-P) unless otherwise authorized by the Contracting Officer. The Contractor shall be responsible for all associated labor and materials when authorized to substitute one system of units for another and for the final assembly and performance of the specified work and/or products.

3.1 Hard Metric

A hard metric measurement is indicated by an SI value with no expressed correlation to an I-P value. Hard metric measurements are often used for field data such as distance from one point to another or distance above the floor. Products are considered to be hard metric when they are manufactured to metric dimensions or have an industry recognized metric designation.

3.2 Soft Metric

- a. A soft metric measurement is indicated by an SI value which is a mathematical conversion of the I-P value shown in parentheses (e.g. 38.1 mm (1-1/2 inches)). Soft metric measurements are used for measurements pertaining to products, test values, and other situations where the I-P units are the standard for manufacture, verification, or other controlling factor. The I-P value shall govern while the metric measurement is provided for information.
- b. A soft metric measurement is also indicated for products that are manufactured in industry designated metric dimensions but are required by law to allow substitute I-P products. These measurements are indicated by a manufacturing hard metric product dimension followed by the substitute I-P equivalent value in parentheses (e.g., 190 x 190 x 390 mm (7-5/8 x 7-5/8 x 15-5/8 inches)).

3.3. Neutral

A neutral measurement is indicated by an identifier which has no expressed relation to either an SI or an I-P value (e.g., American Wire Gage (AWG) which indicates thickness but in itself is neither SI nor I-P).

3.4. COORDINATION

Discrepancies, such as mismatches or product unavailability, arising from use of both metric and non-metric measurements and discrepancies between the measurements in the specifications and the measurements in the drawings shall be brought to the attention of the Contracting Officer for resolution.

3.5. RELATIONSHIP TO SUBMITTALS

Submittals for Government approval or for information only shall cover the SI or I-P products actually being furnished for the project. The Contractor shall submit the required drawings and calculations in the same units used in the contract documents describing the product or requirement unless otherwise instructed or approved. The Contractor shall use ASTM SI 10 and ASTM E 621 as the basis for establishing metric measurements required to be used in submittals.

-- End of Section --

SAMPLE TASK ORDER; 1451**SPECIFICATION SECTION 01451****CONTRACTOR QUALITY CONTROL****1 GENERAL****1.1 REFERENCES**

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1110-1-12 (1993) Quality Management

EM 385-1-1 Safety and Health Requirements Manual

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.

2. EXECUTION**2.1 GENERAL REQUIREMENTS**

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clauses and this specification section. 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 the 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.

2.2 CQM TRAINING REQUIREMENT

Before project design and construction begin, the Contractor's Quality Control Manager is required to have completed the U.S. Army Corps of Engineers (USACE) Construction Quality Management (CQM) course, or equivalent. The CQM course will be offered periodically by the Afghanistan Engineer District (AED), USACE. Additional approved CQM courses include those offered by the Commercial Technical Training Center (in Jalalabad) and the Champion Technical Training Center (in Kabul). The Quality Assurance Branch of the AED can provide information related to AED offerings of the CQM course, as well as contact information for training centers. Alternative CQM courses, other than those mentioned above, must be approved by the Quality Assurance Branch.

The contractor's quality control plan, as defined in USACE Guide Specification 01451 (or 01 45 04.00 10), entitled "Contractor Quality Control", must include "The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function." For the QC Manager, qualifications must include a certificate demonstrating completion of an approved CQM course.

2.3 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than five (5) days after receipt of Notice-to-Proceed (NTP) the proposed Contractor Quality Control (CQC) Plan. The plan shall identify personnel, procedures, control, instructions, records, and forms to be used.

2.3.1 CONTENT OF THE CQC PLAN

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both on site and off-site, 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, consultants, and purchasing agents. These procedures shall be in accordance with Specification 01335 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.
- 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.

2.3.2 ADDITIONAL REQUIREMENTS FOR DESIGN QUALITY CONTROL (DQC) PLAN

The following additional requirements apply to the Design Quality Control (DQC) plan:

(1) The Contractor shall provide and maintain a Design Quality Control (DQC) Plan as an effective quality control program which will assure that all services required by this design contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, all documents shall be technically reviewed by competent, independent reviewers identified in the DQC Plan. The same element that produced the product shall not perform the independent technical review (ITR). The Contractor shall correct errors and deficiencies in the design documents prior to submitting them to the Government.

(2) The Contractor shall include the design schedule in the master project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific contract period. This should be at a detailed level of scheduling sufficient to identify all major design tasks, including those that control the flow of work. The schedule shall include review and correction periods associated with each item. This should be a forward planning as well as a project monitoring tool. The schedule reflects calendar days and not dates for each activity. If the schedule is changed, the Contractor shall submit a revised schedule reflecting the change within 7 calendar days. The Contractor shall include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. These completed checklists shall be submitted at each design phase as part of the project documentation. Example checklists can be found in ER 1110-1-12.

(3) The DQC Plan shall be implemented by an Design Quality Control Manager who has the responsibility of being cognizant of and assuring that all documents on the project have been coordinated. This individual shall be a person who has verifiable engineering or architectural design experience and is a registered professional engineer or architect. The Contractor shall notify the Contracting Officer, in writing, of the name of the individual, and the name of an alternate person assigned to the position.

The Contracting Officer will notify the Contractor in writing of the acceptance of the DQC Plan. After acceptance, any changes proposed by the Contractor are subject to the acceptance of the Contracting Officer.

2.3.3 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 the CQC plan and operations including removal of personnel, as necessary, to obtain the quality specified.

2.3.4 NOTIFICATION OF CHANGES

Notification of Changes. After acceptance of the QC plan, the Contractor shall notify the Contracting Officer in writing a minimum of seven calendar days prior to any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

2.4 COORDINATION MEETING

After the Pre-construction Conference, before start of construction, and prior to acceptance by the Government of the Quality Control 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 on-site and off-site 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.

2.5 QUALITY CONTROL ORGANIZATION

2.5.1 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. 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, shop 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.

2.5.2 CQC SYSTEM MANAGER

The Contractor shall identify an individual within his organization at the site of the work who shall be responsible for overall management of the 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 construction manager, with experience on construction projects similar in type to this contract OR a construction person with a minimum of ten (10) years in related work. The CQC System Manager shall be on the site at all times during construction and shall be employed by the Contractor. The CQC System Manager shall be assigned no other duties. An alternate for the CQC System Manager will be identified in the plan to serve in the event of the CQC system manager's absence. The requirements for the alternate will be the same as for the designated CQC manager.

2.5.3 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 course is periodically offered by the government, and inquiries as to the next course offering may be directed to the local construction field office.

2.5.4 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.

2.6 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in the STR titled SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

2.7 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 the construction work as follows:

2.7.1 PREPARATORY PHASE.

This phase shall be performed prior to beginning work on each definable feature of work, after all required documents and 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, in the English language unless specifically approved otherwise by the Contracting Officer, 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.
- d. A check to assure that provisions 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 verify that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. Reviews of the appropriate activity hazard analysis to ensure safety requirements are met.
- h. Discussion of procedures for constructing the work including repetitive deficiencies, construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the Contracting Officer has accepted the portion of the plan for the work to be performed.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 24 hours in advance of beginning any of the required action of the preparatory 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 QC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

2.7.2 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 preliminary work to ensure that it is in compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verification of 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 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 QC 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 on-site, or any time acceptable specified quality standards are not being met.

2.7.3 FOLLOW-UP PHASE.

Daily checks shall be performed to assure continuing compliance with contract requirements, including control testing, 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 noted deficiencies corrected, prior to the start of additional features of work that may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

2.7.4 ADDITIONAL PREPARATORY AND INITIAL PHASES

Additional preparatory and initial phases may be required by the Contracting Officer on the same definable features of work if the quality of on-going work is unacceptable; if there are changes in the applicable QC staff or in the on-site production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

2.8 TESTS

2.8.1 TESTING PROCEDURE

The Contractor shall perform tests specified or required to verify that control measures are adequate to provide a product that conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Costs incidental to the transportation of samples or materials shall be borne by the Contractor.

Testing includes operation and/or acceptance tests when specified. A list of tests to be performed shall be furnished as a part of the CQC plan. The list shall give the test name, frequency, specification paragraph containing the test requirements, the personnel and laboratory responsible for each type of test, and an estimate of the number of tests required. 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 Quality Control report for the date taken. Specification paragraph/item reference, location where tests were taken, and the sequential control number identifying the test will be given. Actual test reports may be submitted later, if approved by the Contracting Officer, with a reference to the test number and date taken. An information copy of tests performed by an off-site or commercial test facility will 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.

2.9 COMPLETION INSPECTION

2.9.1 PUNCH-OUT INSPECTION

Near the end of the work, or any increment of the work established by a time stated in the SPECIAL CONTRACT REQUIREMENTS 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.

2.9.2 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.

A. 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. 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. Offsite 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 forty-eight (48) 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.

3.1 SAMPLE FORMS

In accordance with Specification 01312 QUALITY CONTROL SYSTEM, the contractor shall use the forms produced by and printed from QCS. Samples of any forms required to meet the requirements of this section which are not produced by that system shall be included in the contractors Quality Control Plan.

3.2 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.

-- END OF SECTION --

SAMPLE TASK ORDER; 01525**SECTION 01525****SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS****1. GENERAL**

For contractor safety on projects associated with this program, compliance with EM 385-1-1 safety requirements will be the long-term goal reached by growing a safety culture. This compliance will, by necessity, be achieved through a phased-in process. In the Commander's letter at the preface of the EM 385-1-1, he acknowledges that in OCONUS locations, strict compliance with the manual may not be possible – and through the hazard analysis process, safety measures can be developed to attain the same degree of safety.

This specification consists of two parts:

- 1) Sections 1.1 through 3.12.1, which are the standard safety specifications for work in Europe District and;
- 2) Appendix A, Phasing approach for safety in emerging countries where there is little or no national safety standards.

1.1 REFERENCES

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

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.32	Personal Fall Protection - Safety Requirements for Construction and Demolition Operations
ANSI Z359.1(1992; R 1999)	Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components
ASME B30.3(1996)	Construction Tower Cranes

ASME INTERNATIONAL (ASME)

ASME B30.22(2000)	Articulating Boom Cranes
ASME B30.5(2004)	Mobile and Locomotive Cranes

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10(2002)	Portable Fire Extinguishers
NFPA 241(2000)	Safeguarding Construction, Alteration, and Demolition Operations
NFPA 51B(2003)	Fire Prevention During Welding, Cutting, and Other Hot Work

NFPA 70(2005)	National Electrical Code
NFPA 70E(2004)	Electrical Safety in the Workplace

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1(2008) Safety	Safety and Health Requirements
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U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910	Occupational Safety and Health Standards (OSHA)
29 CFR 1910.146	Permit-required Confined Spaces
29 CFR 1915	Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment
29 CFR 1919	Gear Certification
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.500	Fall Protection

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with SR SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

- Accident Prevention Plan (APP); G, ACC
- Activity Hazard Analysis (AHA); G, ACC
- Crane Critical Lift Plan; G, ACC
- Proof of qualification for Crane Operators; G, ACC

SD-06 Test Reports

Reports: Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."

- Accident Reports
- Monthly Exposure Reports
- Crane Reports
- Regulatory Citations and Violations

SD-07 Certificates

Confined Space Entry Permit

Contractor Safety Self-Evaluation Checklist; G, ACC

Submit one copy of each permit/certificate attached to each Daily Quality Control Report.

1.3 DEFINITIONS

- a. **Competent Person for Fall Protection.** A person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as their application and use with related equipment, and has the authority to take prompt corrective measures to eliminate the hazards of falling.
- b. **High Visibility Accident.** Any mishap which may generate publicity and/or high visibility.
- c. **Medical Treatment.** Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.
- d. **Qualified Person for Fall Protection.** A person with a recognized degree or professional certificate, extensive knowledge, training and experience in the field of fall protection who is capable of performing design, analysis, and evaluation of fall protection systems and equipment.
- e. **Recordable Injuries or Illnesses.** Any work-related injury or illness that results in:
 - (1) Death, regardless of the time between the injury and death, or the length of the illness;
 - (2) Days away from work (any time lost after day of injury/illness onset);
 - (3) Restricted work;
 - (4) Transfer to another job;
 - (5) Medical treatment beyond first aid;
 - (6) Loss of consciousness; or
 - (7) A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.
- f. "USACE" property and equipment specified in USACE EM 385-1-1 should be interpreted as Government property and equipment.

1.4 DRUG PREVENTION PROGRAM

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employee uses illegal drugs or consumes alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine, or saliva specimens and test the injured and involved employees for the influence of drugs and alcohol. A copy of the test shall be made available to the Contracting Officer upon request.

1.5 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this contract, work performed shall comply with USACE EM 385-1-1.

1.6 SITE QUALIFICATIONS, DUTIES AND MEETINGS

1.6.1 PERSONNEL QUALIFICATIONS

1.6.1.1 SITE SAFETY AND HEALTH OFFICER (SSHO)

Site Safety and Health Officer (SSHO) shall be provided at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The Contractor Quality Control (QC) person can only be the SSHO on this project if approved by the Contracting Officer. Any project exceeding 1 Million US dollars in value shall have a full time SSHO. The SSHO shall meet the following requirements: A minimum of 1 year safety work on similar projects; 30-hour OSHA construction safety class or equivalent within the last 3 years. Competent person training as needed.

1.6.1.2 COMPETENT PERSON FOR CONFINED SPACE ENTRY

Provide a competent person meeting the requirements of EM 385-1-1 who is assigned in writing by the Government Designated Authority (GDA) to assess confined spaces and who possesses demonstrated knowledge, skill and ability to:

- a. Identify the structure, location, and designation of confined and permit-required confined spaces where work is done;
- b. Calibrate and use testing equipment including but not limited to, oxygen indicators, combustible gas indicators, carbon monoxide indicators, and carbon dioxide indicators, and to interpret accurately the test results of that equipment;
- c. Perform all required tests and inspections specified in Section 06.I of EM 385-1-1;
- d. Assess hazardous conditions including atmospheric hazards in confined space and adjacent spaces and specify the necessary protection and precautions to be taken;
- e. Determine ventilation requirements for confined space entries and operations;
- f. Assess hazards associated with hot work in confined and adjacent space and determine fire watch requirements; and,
- g. Maintain records required.

1.6.1.3 CRANE OPERATORS

Crane operators shall meet the requirements in USACE EM 385-1-1, Section 16 and Appendix G.

1.6.2 PERSONNEL DUTIES

1.6.2.1 SITE SAFETY AND HEALTH OFFICER (SSHO)/SUPERINTENDENT

- a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractors' daily quality control report.
- b. Conduct mishap investigations and complete required reports. Maintain an accident/injury log such as the OSHA Form 300 or host nation equivalent, and Daily Production reports for prime and sub-contractors.

- c. Maintain applicable safety reference material on the job site.
- d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.
- e. Implement and enforce accepted APPS and AHAs.
- f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. A list of unresolved safety and health deficiencies shall be posted on the safety bulletin board.
- g. Ensure sub-contractor compliance with safety and health requirements.

Failure to perform the above duties will result in dismissal of the superintendent and/or SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

1.6.3 MEETINGS

1.6.3.1 PRECONSTRUCTION CONFERENCE

- a. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).
- b. The Contractor shall discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of AHAs shall be established to preclude project delays.
- c. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Work shall not begin until there is an accepted APP.
- d. The functions of a Preconstruction conference may take place at the Post-Award Kickoff meeting for Design Build Contracts.

1.6.3.2 SAFETY MEETINGS

Shall be conducted and documented as required by EM 385-1-1. Minutes showing contract title, signatures of attendees and a list of topics discussed shall be attached to the Contractors' daily quality control report.

1.7 TRAINING

1.7.1 NEW EMPLOYEE INDOCTRINATION

New employees (prime and sub-contractor) will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

1.7.2 PERIODIC TRAINING

Provide Safety and Health Training in accordance with USACE EM 385-1-1 and the accepted APP. Ensure all required training has been accomplished for all onsite employees.

1.7.3 TRAINING ON ACTIVITY HAZARD ANALYSIS (AHA)

Prior to beginning a new phase, training will be provided to all affected

1.8 ACCIDENT PREVENTION PLAN (APP)

The Contractor shall use a qualified person to prepare the written site-specific APP in both English and in the host nation language. Prepare the APP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Accident Prevention Plan". Specific requirements for some of the APP elements are described below. The APP shall be job-specific and shall address any unusual or unique aspects of the project or activity for which it is written. The APP shall interface with the Contractor's overall safety and health program. Any portions of the Contractor's overall safety and health program referenced in the APP shall be included in the applicable APP element and made site-specific. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP shall be signed by the person and firm (senior person) preparing the APP, the Contractor, the on-site superintendent, the designated site safety and health officer.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP.

Once accepted by the Contracting Officer, the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

Once work begins, changes to the accepted APP shall be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and quality control manager. Should any hazard become evident, stop work in the area, secure the area, and develop a plan to remove the hazard. Notify the Contracting Officer within 24 hours of discovery. In the interim, all necessary action shall be taken to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment.

Copies of the accepted plan will be maintained at the Contracting Officer's office and at the job site.

The APP shall be continuously reviewed and amended, as necessary, throughout the life of the contract. Unusual or high-hazard activities not identified in the original APP shall be incorporated in the plan as they are discovered.

1.8.1 EM 385-1-1 CONTENTS

In addition to the requirements outlines in Appendix A of USACE EM 385-1-1, the following is required:

- a. Names and qualifications (resumes including education, training, experience and certifications) of all site safety and health personnel designated to perform work on this project to include the designated site safety and health officer and other competent and qualified personnel to be. The duties of each position shall be specified.
- b. Qualifications of competent and of qualified persons. As a minimum, competent persons shall be designated and qualifications submitted for each of the following major areas:

excavation; scaffolding; fall protection; hazardous energy; confined space; health hazard recognition, evaluation and control of chemical, physical and biological agents; personal protective equipment and clothing to include selection, use and maintenance.

- c. **Confined Space Entry Plan.** Develop a confined space entry plan in accordance with USACE EM 385-1-1, Section 06.I, and any other federal, state and local regulatory requirements identified in this contract. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)
- d. **Crane Critical Lift Plan.** Prepare and sign weight handling critical lift plans for lifts over 75 percent of the capacity of the crane or hoist (or lifts over 50 percent of the capacity of a barge mounted mobile crane's hoists) at any radius of lift; lifts involving more than one crane or hoist; lifts of personnel; and lifts involving non-routine rigging or operation, sensitive equipment, or unusual safety risks. The plan shall be submitted 15 calendar days prior to on-site work and include the requirements of USACE EM 385-1-1, paragraph 16.C.18. and the following:
 - (1) For lifts of personnel, the plan shall demonstrate compliance with the requirements of EM 385-1-1, Section 22.F.
 - (2) For barge mounted mobile cranes, barge stability calculations identifying barge list and trim based on anticipated loading; and load charts based on calculated list and trim. The amount of list and trim shall be within the crane manufacturer's requirements.
- e. **Fall Protection and Prevention (FP&P) Plan.** The plan shall be site specific and address all fall hazards in the work place and during different phases of construction. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 1.8 m (6 feet). A qualified person for fall protection shall prepare and sign the plan. The plan shall include fall protection and prevention systems, equipment and methods employed for every phase of work, responsibilities, assisted rescue, self-rescue and evacuation procedures, training requirements, and monitoring methods. Fall Protection and Prevention Plan shall be revised every six months for lengthy projects, reflecting any changes during the course of construction due to changes in personnel, equipment, systems or work habits. The accepted Fall Protection and Prevention Plan shall be kept and maintained at the job site for the duration of the project. The Fall Protection and Prevention Plan shall be included in the Accident Prevention Plan (APP).

1.9 ACTIVITY HAZARD ANALYSIS (AHA)

The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1, and shall be written in both English and the host nation language. Submit the AHA for review at least 15 calendar days prior to the start of each phase. Format subsequent AHAs as amendments to the APP. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.

The activity hazard analyses shall be developed using the project schedule as the basis for the activities performed. Any activities listed on the project schedule will require an AHA. The AHAs will be developed by the contractor, supplier or subcontractor and provided to the prime contractor for submittal to the Contracting Officer.

1.10 DISPLAY OF SAFETY INFORMATION

Within 1 calendar day after commencement of work, erect a safety bulletin board at the job site. The safety bulletin board shall include information and be maintained as required by EM 385-1-1, section 01.A.06.

1.11 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project. Maintain applicable equipment manufacturer's manuals.

1.12 EMERGENCY MEDICAL TREATMENT

Contractors will arrange for their own emergency medical treatment. The Government has no responsibility to provide emergency medical treatment. Military medical clinics may provide emergency treatment for serious injuries; the contractor is responsible for coordination with the local military medical clinic prior to mobilization.

1.13 REPORTS

1.13.1 ACCIDENT REPORTS

For recordable injuries and illnesses, and property damage accidents resulting in at least \$2,000 in damages, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the USACE Accident Report Form 3394 and provide the report to the Contracting Officer within 5 calendar day(s) of the accident. The Contracting Officer will provide copies of any required or special forms.

1.13.2 ACCIDENT NOTIFICATION

Notify the Contracting Officer as soon as practical, but not later than four hours, after any accident meeting the definition of Recordable Injuries or Illnesses or High Visibility Accidents, property damage equal to or greater than \$2,000. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted.

1.13.3 MONTHLY EXPOSURE REPORTS

Monthly exposure reporting to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The Contracting Officer will provide copies of any special forms.

1.13.4 CRANE REPORTS

Submit crane inspection reports required in accordance with USACE EM 385-1-1, Appendix H and as specified herein with Daily Reports of Inspections.

1.14 HOT WORK

Prior to performing "Hot Work" (welding, cutting, etc.) or operating other flame-producing/spark producing devices, a written permit shall be requested from the Installation. **CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED.** The Contractor will provide at least two (2) six

kilogram ABC rated extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch shall be trained in fire fighting techniques and remain on-site for a minimum of 120 minutes after completion of the task or as specified on the hot work permit.

When starting work in the facility, Contractors shall require their personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency phone numbers. ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE RESPONSIBLE FIRE DIVISION/DEPARTMENT IMMEDIATELY.

2. EXECUTION

2.1 CONSTRUCTION AND/OR OTHER WORK

Before initiation of work at the job site, an accident prevention plan, written by the Contractor for the specific work and hazards of the contract and implementing in detail the pertinent requirements of EM 385-1-1, will be reviewed and found acceptable by designated Government personnel. Specific requirements for development of the accident prevention plan are found in sections 01.A and Appendix A of EM 385-1-1.

Before beginning each activity involving a type of work presenting hazards not experienced in previous project operations or where a new work crew or subcontractor is to perform the work, activity hazard analysis (AHA) shall be prepared by the Contractor performing the work activity. See paragraph 01.A.09 of EM 385-1-1.

The Contractor shall require subcontractors to submit their plan of operations showing methods they propose to use in accomplishing major phases of work.

The Contractor shall be prepared to discuss the plans in conferences convened by the Contracting Officer prior to starting work on each major phase of operation. Plans shall include all pertinent information such as layout of haul roads, access roads, storage areas, electrical distribution lines, methods of providing minimum exposure to overhead loads, and methods of access to work areas. The plan for accomplishing the initial work phase shall be submitted within 15 calendar days after award of the contract. Plans for subsequent major phases of work shall be submitted not later than 15 calendar days prior to initiation of work on each major phase.

All areas where construction, demolition, alteration, building, or similarly related activities take place, all workers shall have the following minimum personal protective clothing and equipment:

1. Short sleeve shirt.
2. Long trousers.
3. Steel-toed safety boots.
4. Hard hat.

2.1.1 FALLING OBJECT PROTECTION

All areas must be barricaded to safeguard employees. When working overhead, barricade the area below to prevent entry by unauthorized employees. Construction warning tape and signs shall be posted so they are clearly visible from all possible access points. When employees are working overhead all tools and equipment shall be secured so that they will not fall. When using guardrail as falling object protection, all openings shall be small enough to prevent passage of potential falling objects.

2.1.2 HAZARDOUS MATERIAL USE

Each hazardous material must receive approval prior to being brought onto the job site or prior to any other use in connection with this contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material. Any work or storage involving hazardous chemicals or materials must be done in a manner that will not expose Government or Contractor employees to any unsafe or unhealthful conditions. Adequate protective measures must be taken to prevent Government or Contractor employees from being exposed to any hazardous condition that could result from the work or storage. The Prime Contractor shall keep a complete inventory of hazardous materials brought onto the work-site. Approval by the Contracting Officer of protective measures and storage area is required prior to the start of the work.

2.1.3 HAZARDOUS MATERIAL EXCLUSIONS

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

2.1.4 UNFORESEEN HAZARDOUS MATERIAL

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

2.2 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

The Contractor shall establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. The program shall include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures.

2.2.1 TRAINING

The Contractor shall institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, the Contractor shall provide training for each employee who might be exposed to fall hazards. A competent person for fall protection shall provide the training. Training requirements shall be in accordance with USACE EM 385-1-1, section 21.A.16.

2.2.2 FALL PROTECTION EQUIPMENT AND SYSTEMS

The Contractor shall enforce use of the fall protection equipment and systems designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is exposed to a fall hazard. Employees shall be protected from fall hazards as specified in EM 385-1-1, section 21. In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with USACE EM 385-1-1, paragraphs 05.H. and 05.I. Personal fall arrest systems are required when working from an

articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems are required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, or travel. Fall protection must comply with USACE EM 385-1-1 and host nation requirements, whichever is more stringent.

2.2.2.1 PERSONAL FALL ARREST EQUIPMENT

Personal fall arrest equipment, systems, subsystems, and components shall meet ANSI Z359.1 or European Union equivalent. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Only locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 1.8 m (6 feet). The total fall distance and any swinging of the worker (pendulum-like motion) that can occur during a fall shall always be taken into consideration when attaching a person to a fall arrest system.

2.2.3 FALL PROTECTION FOR ROOFING WORK

Fall protection controls shall be implemented based on the type of roof being constructed and work being performed. The roof area to be accessed shall be evaluated for its structural integrity including weight-bearing capabilities for the projected loading.

a. Low Sloped Roofs:

- (1) For work within 1.8 m (6 feet) of an edge, on low-slope roofs, personnel shall be protected from falling by use of personal fall arrest systems, guardrails, or safety nets. A safety monitoring system is not adequate fall protection and is not authorized.
- (2) For work greater than 1.8 m (6 feet) from an edge, warning lines shall be erected and installed in accordance with USACE EM 385-1-1.

b. Steep-Sloped Roofs: Work on steep-sloped roofs requires a personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.

2.2.4 EXISTING ANCHORAGE

Existing anchorages, to be used for attachment of personal fall arrest equipment, shall be certified (or re-certified) by a qualified person for fall protection in accordance with ANSI Z359.1 or European Union equivalent. Existing horizontal lifeline anchorages shall be certified (or re-certified) by a registered professional engineer with experience in designing horizontal lifeline systems.

2.2.5 HORIZONTAL LIFELINES

Horizontal lifelines shall be designed, installed, certified and used under the supervision of a qualified person for fall protection as part of a complete fall arrest system which maintains a safety factor of 2.

2.2.6 GUARDRAILS AND SAFETY NETS

Guardrails and safety nets shall be designed, installed and used in accordance with EM 385-1-1 or Host Nation requirements, whichever is more stringent.

2.2.7 RESCUE AND EVACUATION PROCEDURES

When personal fall arrest systems are used, the contractor must ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. A Rescue and Evacuation Plan shall be prepared by the contractor and include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. The Rescue and Evacuation Plan shall be included in the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP).

2.3 SCAFFOLDING

Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Access to scaffold platforms greater than 6 m in height shall be accessed by use of a scaffold stair system. Vertical ladders commonly provided by scaffold system manufacturers shall not be used for accessing scaffold platforms greater than 6 m in height. The use of an adequate gate is required. Contractor shall ensure that employees are qualified to perform scaffold erection and dismantling. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection and prevention plan. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given to ensure scaffold systems are not overloaded. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base. Work platforms shall be placed on mud sills. Scaffold or work platform erectors shall have fall protection during the erection and dismantling of scaffolding or work platforms that are more than six feet. Delineate fall protection requirements when working above six feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

2.4 EQUIPMENT

2.4.1 MATERIAL HANDLING EQUIPMENT

- a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.
- b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.
- c. Operators of forklifts or power industrial trucks shall be trained/licensed in accordance with Host Nation requirements.

2.4.2 WEIGHT HANDLING EQUIPMENT

- a. Cranes and derricks shall be equipped as specified in EM-385-1-1 section 16.
- b. The Contractor shall notify the Contracting Officer 15 days in advance of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated. Contractor's operator shall remain with the crane during the spot check.
- c. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person. All testing shall be performed in accordance with the manufacturer's recommended procedures.

- d. Under no circumstance shall a Contractor make a lift at or above 90% of the cranes rated capacity in any configuration.
- e. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of USACE EM 385-1-1 section 11.
- f. Crane suspended personnel work platforms (baskets) shall not be used unless the Contractor proves to the satisfaction of the Contracting Officer that using any other access to the work location would provide a greater hazard to the workers or is impossible. Personnel shall not be lifted with a line hoist or friction crane.
- g. Portable fire extinguishers shall be inspected, maintained, and recharged.
- h. All employees shall be kept clear of loads about to be lifted and of suspended loads.
- i. The Contractor shall use cribbing when performing lifts on outriggers.
- j. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.
- k. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.
- l. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall always be available for review by Contracting Officer personnel.
- m. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Contracting Officer personnel.
- n. Certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).
- o. Take steps to ensure that wind speed does not contribute to loss of control of the load during lifting operations. Prior to conducting lifting operations the contractor shall set a maximum wind speed at which a crane can be safely operated based on the equipment being used, the load being lifted, experience of operators and riggers, and hazards on the work site. This maximum wind speed determination shall be included as part of the activity hazard analysis plan for that operation.

2.5 EXCAVATIONS

The competent person for excavations performed as a result of contract work shall be on-site when excavation work is being performed, and shall inspect, and document the excavations daily prior to entry by workers. The competent person must evaluate all hazards, including atmospheric, that may be associated with the work, and shall have the resources necessary to correct hazards promptly.

2.5.1 UTILITY LOCATIONS

Prior to any excavation, all underground utilities in the work area must be positively identified by the contractor utilizing a) a private utility locating service in addition to any station locating service, and/or b) a metal and/or cable-detecting device along the route of the excavation. All underground utilities discovered will be flagged a distance of one-half (1/2) meter on each side of the location, and any markings made during the utility investigation must be maintained throughout the contract.

Damage occurring to existing utilities, when the above procedures are not followed, will be repaired at the Contractor's expense.

2.5.2 UTILITY LOCATION VERIFICATION

The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. Digging within 0.61 m (2 feet) of a known utility must not be performed by means of mechanical equipment; hand digging shall be used. If construction is parallel to an existing utility the utility shall be exposed by hand digging every 30.5 m (100 feet) if parallel within 1.5 m (5 feet) of the excavation.

2.5.3 SHORING SYSTEMS

Trench and shoring systems must be identified in the accepted safety plan and AHA. Manufacture tabulated data and specifications or registered engineer tabulated data for shoring or benching systems shall be readily available on-site for review. Job-made shoring or shielding shall have the registered professional engineer stamp, specifications, and tabulated data. Extreme care must be used when excavating near direct burial electric underground cables.

2.5.4 TRENCHING MACHINERY

Trenching machines with digging chain drives shall be operated only when the spotters/laborers are in plain view of the operator. Operator and spotters/laborers shall be provided training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Documentation of the training shall be kept on file at the project site.

2.6 UTILITIES WITHIN CONCRETE SLABS

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

2.7 ELECTRICAL

2.7.1 CONDUCT OF ELECTRICAL WORK

Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Contracting Officer and Station Utilities for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. In addition, provide electrical arc flash protection for personnel as required by NFPA 70E. Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA.

2.7.2 PORTABLE EXTENSION CORDS

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered and protected from damage. All damaged extension cords shall be immediately removed from service. Portable extension cords shall meet the requirements of NFPA 70 or European Union equivalent.

2.8 WORK IN CONFINED SPACES

The Contractor shall comply with the requirements in Section 06.I of USACE EM 385-1-1. Any potential for a hazard in the confined space requires a permit system to be used.

- a. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See Section 06.I.06 of USACE EM 385-1-1 for entry procedures). All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.
- b. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained to ensure exposure to any hazardous atmosphere is kept below its' action level.
- c. Ensure the use of rescue and retrieval devices in confined spaces greater than 1.5 m (5 feet) in depth. Conform to Sections 06.I.08, 06.I.09 and 06.I.10 of USACE EM 385-1-1.
- d. Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.
- e. Include training information for employees who will be involved as entrants and attendants for the work. Conform to Section 06.I.07 of USACE EM 385-1-1.
- f. Daily Entry Permit. Post the permit in a conspicuous place close to the confined space entrance.

2.9 CRYSTALLINE SILICA

Grinding, abrasive blasting, and foundry operations of construction materials containing crystalline silica, shall comply with USACE EM 385-1-1, Appendix C. The Contractor shall develop and implement effective exposure control and elimination procedures to include dust control systems, engineering controls, and establishment of work area boundaries, as well as medical surveillance, training, air monitoring, and personal protective equipment.

2.10 DEMOLITION

2.10.1 DEMOLITION PLAN

The Contractor shall submit a written demolition plan for all demolition work to be carried on the site. In addition, the demolition plan shall be signed by a Professional Registered Engineer and meet the requirements of the Corps of Engineers Safety and Health Manual, EM 385-1-1, section 23. The demolition plan shall be submitted to the COR at least 1 week before the beginning of the work, including structural calculations for the demolition, if necessary. The demolition work shall not begin before the Contractor has received a written approval from the COR.

2.10.2 PROTECTION OF PERSONNEL

During the demolition work the Contractor shall continuously evaluate the condition of the structure being demolished and take immediate action to protect all personnel working in and around the demolition site. No area, section, or component of floors, roofs, walls, columns, pilasters, or other structural element will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workers remove debris or perform other work in the immediate area.

2.10.3 PROTECTION OF STRUCTURES

Floors, roofs, walls, columns, pilasters, and other structural components that are designed and constructed to stand without lateral support or shoring, and are determined to be in stable condition, shall remain standing without additional bracing, shoring, or lateral support until demolished, unless directed otherwise by the COR. The Contractor shall ensure that no elements determined to be unstable are left unsupported and shall be responsible for placing and securing bracing, shoring, or lateral supports as may be required as a result of any cutting, removal, or demolition work performed under this contract.

Interior concrete or masonry walls shall be demolished from the top down unless a Registered Engineer can demonstrate that an alternate method poses no additional safety hazards

2.11 HOUSEKEEPING

2.11.1 CLEAN-UP

The Contractor shall be responsible for cleaning up. The Contractor shall require his personnel to keep the immediate work site clean of all dirt and debris resulting from work under this contract. Accumulated dirt and debris shall be hauled off and disposed of in accordance with local law and at least once a week by the Contractor. Additionally, all debris in work areas shall be cleaned up daily or more frequently if necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

Stairwells used by the Contractor during execution of work shall be cleaned daily. Cloths, mops, and brushes containing combustible materials shall be disposed of or stored outside of the buildings in tight covered metal containers. Paints and thinners shall not be poured into inlets of the interior or exterior sewage system. Paint, stains, and other residues on adjacent surfaces or fixtures caused by the Contractor shall be carefully removed and cleaned to original finish. Upon completion of the work, the Contractor shall remove all construction equipment, materials and debris resulting from the work. The entire work site and the area used by Contractor personnel shall be left clean.

SAMPLE TASK ORDER, 01770

SPECIFICATION SECTION 01770

CLOSEOUT PROCEDURES

1. GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01335 SUBMITTAL PROCEDURES:

SD-10 Operation and Maintenance Data

Equipment/Product Warranty List; G

Submit Data Package 1 in accordance with Section 01781 OPERATION AND MAINTENANCE DATA.

SD-11 Closeout Submittals

As-Built Drawings; G

Record Of Materials; G

Equipment/Product Warranty Tag; G

1.2 PROJECT RECORD DOCUMENTS

1.2.1 AS-BUILT DRAWINGS

As built drawings shall be submitted in accordance with Section 01780A CLOSEOUT SUBMITTALS

1.2.2 AS-BUILT RECORD OF MATERIALS

Furnish a record of materials.

Where several manufacturers' brands, types, or classes of the item listed have been used in the project, designate specific areas where each item was used. Designations shall be keyed to the areas and spaces depicted on the contract drawing. Furnish the record of materials used in the following format:

MATERIALS DESIGNATION	SPECIFICATION	MANUFACTURER	MATERIALS USED (MANUFACTURER'S DESIGNATION)	WHERE USED

1.3 EQUIPMENT/PRODUCT WARRANTIES

1.3.1 EQUIPMENT/PRODUCT WARRANTY LIST

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

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

b. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.

c. A list for each warranted equipment, item, feature of construction or system indicating:

1. Name of item.
2. Model and serial numbers.
3. Location where installed.
4. Name and phone numbers of manufacturers or suppliers.
5. Names, addresses and telephone numbers of sources of spare parts.
6. Warranties and terms of warranty. This shall include one-year overall warranty of construction. Items which have extended warranties shall be indicated with separate warranty expiration dates.
7. Cross-reference to warranty certificates as applicable.
8. Starting point and duration of warranty period.
9. Summary of maintenance procedures required to continue the warranty in force.
10. Cross-reference to specific pertinent Operation and Maintenance manuals.
11. Organization, names and phone numbers of persons to call for warranty service.
12. Typical response time and repair time expected for various warranted equipment.

d. The Contractor's plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.

e. Procedure and status of tagging of all equipment covered by extended warranties.

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

1.3.2 PERFORMANCE OF WARRANTY WORK

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

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

1.3.3 PRE-WARRANTY CONFERENCE

Prior to contract completion, and at a time designated by the Contracting Officer, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty shall be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor shall furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warranted construction, shall be continuously available, and shall be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

1.3.4 WARRANTY TAGS

At the time of installation, each warranted item shall be tagged with a durable, oil and water resistant tag approved by the Contracting Officer. Each tag shall be attached with a copper wire and shall be sprayed with a silicone waterproof coating. The date of acceptance and the QC signature shall remain blank until project is accepted for beneficial occupancy. The tag shall show the following information.

- a. Type of product/material _____
- b. Model number _____
- c. Serial number _____
- d. Contract number _____
- e. Warranty period _____ from _____ to _____
- f. Inspector's signature _____
- g. Construction Contractor _____
Address _____
Telephone number _____
- h. Warranty contact _____
Address _____
Telephone number _____
- i. Warranty response time priority code _____

j. WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.

1.4 MECHANICAL TESTING AND BALANCING

All contract requirements for testing/adjusting/balancing shall be fully completed, including all testing, prior to contract completion date. The time required to complete all testing/adjusting/balancing is included in the allotted calendar days for completion.

1.5 FINAL CLEANING

The premises shall be left broom clean. Stains, foreign substances, and temporary labels shall be removed from surfaces. Carpet and soft surfaces shall be vacuumed. Equipment and fixtures shall be cleaned to a sanitary condition. Filters of operating equipment shall be replaced. Debris shall be removed from roofs, drainage systems, gutters, and downspouts. Paved areas shall be swept and landscaped areas shall be raked clean. The site shall have waste, surplus materials, and rubbish removed. The project area shall have temporary structures, barricades, project signs, and construction facilities removed. A list of completed clean-up items shall be submitted on the day of final inspection.

-- END OF SECTION --

SAMPLE TASK ORDER, 01780A**SECTION 01780A****CLOSEOUT SUBMITTALS****1. GENERAL****1.1 SUBMITTALS**

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01335 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

As-Built Drawings

Drawings showing final as-built conditions of the project. The local language of Afghanistan shall be added to project As-Built drawings. The final CADD as-built drawings shall consist of **[XX – PM TO PROVIDE #] set[s]** of electronic CADD drawing files in the specified format, and **[XX – PM TO PROVIDE #] half-size and [XX – PM TO PROVIDE #] full-size paper copy[ies]** of the approved as-built drawings.

SD-03 Product Data

As-Built Record of Equipment and Materials

Two copies of the record listing the as-built materials and equipment incorporated into the construction of the project.

Warranty Management Plan

One set of the warranty management plan containing information relevant to the warranty of materials and equipment incorporated into the construction project, including the starting date of warranty of construction. The Contractor shall furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.

Warranty Tags

Two record copies of the warranty tags showing the layout and design.

Final Cleaning

Two copies of the listing of completed final clean-up items.

1.2 PROJECT RECORD DOCUMENTS

1.2.1 As-Built Drawings

This paragraph covers as-built drawings complete, as a requirement of the contract. The terms "drawings," "contract drawings," "drawing files," "working as-built drawings" and "final as-built drawings" refer to contract drawings which are revised to be used for final as-built drawings.

1.2.1.1 Government Furnished Materials

One set of electronic CADD files in the specified software and format revised to reflect all bid amendments will be provided by the Government at the preconstruction conference for projects requiring CADD file as-built drawings.

1.2.1.2 Working As-Built and Final As-Built Drawings

The Contractor shall revise 2 sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. These working as-built marked drawings shall be kept current on a weekly basis and at least one set shall be available on the jobsite at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. Final as-built drawings shall be prepared after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The working as-built marked prints and final as-built drawings will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final as-built drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the as-built drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. The working and final as-built drawings shall show, but shall not be limited to, the following information:

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

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

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

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

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

Changes or modifications which result from the final inspection.

Where contract drawings or specifications present options, only the option selected for construction shall be shown on the final as-built prints.

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

Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.

Modifications (change order price shall include the Contractor's cost to change working and final as-built drawings to reflect modifications) and compliance with the following procedures.

1. Directions in the modification for posting descriptive changes shall be followed.
2. A Modification Circle shall be placed at the location of each deletion.
3. For new details or sections which are added to a drawing, a Modification Circle shall be placed by the detail or section title.
4. For minor changes, a Modification Circle shall be placed by the area changed on the drawing (each location).
5. For major changes to a drawing, a Modification Circle shall be placed by the title of the affected plan, section, or detail at each location.
6. For changes to schedules or drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.
7. The Modification Circle size shall be 12.7 mm 1/2 inch diameter unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

1.2.1.3 Drawing Preparation

The as-built drawings shall be modified as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, and adding such additional drawings as may be necessary. These working as-built marked prints shall be neat, legible and accurate. These drawings are part of the permanent records of this project and shall be returned to the Contracting Officer after approval by the Government. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

1.2.1.4 Computer Aided Design and Drafting (CADD) Drawings

Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings shall be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols shall be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same graphic standards specified for original drawings. The title block and drawing border to be used for any new final as-built drawings shall be identical to that used on the contract drawings. Additions and corrections to the contract drawings shall be accomplished using CADD files. The Contractor will be furnished "as-designed" drawings in AutoCAD Release 2007 or Microstation V8 format compatible with a Windows XP operating system. The electronic files will be supplied on compact disc, read-only memory (CD-ROM). The Contractor shall be responsible for providing all program files and hardware necessary to prepare final as-built drawings.

Prior to submittal of the first design submittal involving CADD drawings, the Contractor shall prepare one typical CADD drawing for the project and furnish, via ENG Form 4025, the electronic CADD drawing file for review and approval by the Contracting Officer. All Government comments involving changes to this single drawing shall be accomplished and resubmittal(s) made until the Government is satisfied that all CADD Standards are being followed and all subsequent drawings will also be in compliance with these Standards.

CADD colors shall be the "base" colors of red, green, and blue. Color code for changes shall be as follows:

1. Deletions (red) - Deleted graphic items (lines) shall be colored red with red lettering in notes and leaders.
2. Additions (Green) - Added items shall be drawn in green with green lettering in notes and leaders.
3. Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes shall be in blue.

The Contract Drawing files shall be renamed in a manner related to the contract number (i.e., 98-C-10.DGN) as instructed in the Pre-Construction conference. Marked-up changes shall be made only to those renamed files. All changes shall be made on the layer/level as the original item. There shall be no deletions of existing lines; existing lines shall be over struck in red. Additions shall be in green with line weights the same as the drawing. Special notes shall be in blue on layer#63.

When final revisions have been completed, the cover sheet drawing shall show the wording "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in letters at least 5 mm 3/16 inch high. All other contract drawings shall be marked either "As-Built" drawing denoting no revisions on the sheet or "Revised As-Built" denoting one or more revisions. Original contract drawings shall be dated in the revision block.

After Government approval of all of the working as-built drawings for a phase of work, the Contractor shall prepare the final CADD as-built drawings for that phase of work and submit two sets of full size paper copy prints of these drawings for Government review, comparison with approved red-line marked up drawings, and approval. The Government will promptly return one set of prints annotated with any necessary corrections to the CADD file(s) if corrections are required prior to approval. Within 20 days of substantial completion of all phases of work, the Contractor shall submit the final as-built drawing package for the entire project. The submittal shall consist of one set of electronic files on compact disc, read-only memory (CD-ROM), one set of full size paper prints and one set of the approved working as-built drawings. They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the CADD system. Upon approval by the Government of the final as-built drawing package for the entire project, the Contractor shall provide the number of as-built copies noted in Paragraph 1.1 of this Section.

Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final as-built drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

1.2.1.5 Payment

No separate payment will be made for as-built drawings required under this contract, and all costs accrued in connection with such drawings shall be considered a subsidiary obligation of the Contractor.

1.2.2 As-Built Record of Equipment and Materials

The Contractor shall furnish one copy of preliminary record of equipment and materials used on the project 15 days prior to final inspection. This preliminary submittal will be reviewed and returned 2 days after final inspection with Government comments. Two sets of final record of equipment and materials shall be submitted 10 days after final inspection. The designations shall be keyed to the related area depicted on the contract drawings. The record shall list the following data:

RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA

Description	Specification Section	Manufacturer and Catalog, Model, and Serial Number	Composition and Size	Where Used
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1.2.3 Final Approved Shop Drawings

The Contractor shall furnish final approved project shop drawings 30 days after transfer of the completed facility.

1.2.4 Construction Contract Specifications

The Contractor shall furnish final as-built construction contract specifications, including modifications thereto, 30 days after transfer of the completed facility.

1.2.5 Real Property Equipment

The Contractor shall furnish a list of installed equipment furnished under this contract. The list shall include all information usually listed on manufacturer's name plate. The "EQUIPMENT-IN-PLACE LIST" shall include, as applicable, the following for each piece of equipment installed: description of item, location (by room number), model number, serial number, capacity, name and address of manufacturer, name and address of equipment supplier, condition, spare parts list, manufacturer's catalog, and warranty. A draft list shall be furnished at time of transfer. The final list shall be furnished 30 days after transfer of the completed facility.

1.3 WARRANTY MANAGEMENT

1.3.1 Warranty Management Plan

The Contractor shall develop a warranty management plan which shall contain information relevant to the clause Warranty of Construction. At least 30 days before the planned pre-warranty conference, the Contractor shall submit the warranty management plan for Government approval. The warranty management plan shall include all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan shall be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below shall include due date and whether item has been submitted or was accomplished. Warranty information

made available during the construction phase shall be submitted to the Contracting Officer for approval prior to each monthly pay estimate. Approved information shall be assembled in a binder and shall be turned over to the Government upon acceptance of the work. The construction warranty period shall begin on the date of project acceptance and shall continue for the full product warranty period. A joint 4 month and 9 month warranty inspection shall be conducted, measured from time of acceptance, by the Contractor, Contracting Officer and the Customer Representative. Information contained in the warranty management plan shall include, but shall not be limited to, the following:

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

Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.

A list for each warranted equipment, item, feature of construction or system indicating:

1. Name of item.
2. Model and serial numbers.
3. Location where installed.
4. Name and phone numbers of manufacturers or suppliers.
5. Names, addresses and telephone numbers of sources of spare parts.
6. Warranties and terms of warranty. This shall include one-year overall warranty of construction. Items which have extended warranties shall be indicated with separate warranty expiration dates.
7. Cross-reference to warranty certificates as applicable.
8. Starting point and duration of warranty period.
9. Summary of maintenance procedures required to continue the warranty in force.
10. Cross-reference to specific pertinent Operation and Maintenance manuals.
11. Organization, names and phone numbers of persons to call for warranty service.
12. Typical response time and repair time expected for various warranted equipment.

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

Procedure and status of tagging of all equipment covered by extended warranties.

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

1.3.2 Pre-Warranty Conference

Prior to contract completion, and at a time designated by the Contracting Officer, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty shall be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor shall furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warranted construction, shall be continuously available, and shall be

responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

1.3.3 Contractor's Response to Construction Warranty Service Requirements

Following oral or written notification by the Contracting Officer, the Contractor shall respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. The Contractor shall submit a report on any warranty item that has been repaired during the warranty period. The report shall include the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframes specified, the Government will perform the work and backcharge the construction warranty payment item established.

First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.

Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.

Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.

The "Construction Warranty Service Priority List" is as follows:

Code 1-Air Conditioning Systems

- 1) Recreational support.
- 2) Air conditioning leak in part of building, if causing damage.
- 3) Air conditioning system not cooling properly.

Code 1-Doors

- 1) Overhead doors not operational, causing a security, fire, or safety problem.
- 2) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

Code 3-Doors

- 1) Overhead doors not operational.
- 2) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical

- 1) Power failure (entire area or any building operational after 1600 hours).
- 2) Security lights
- 3) Smoke detectors

Code 2-Electrical

- 1) Power failure (no power to a room or part of building).
- 2) Receptacle and lights (in a room or part of building).

Code 3-
Electrical
Street lights.

Code 1-Gas

- 1) Leaks and breaks.
- 2) No gas to family housing unit or cantonment area.

Code 1-Heat

- 1) Area power failure affecting heat.
- 2) Heater in unit not working.

Code 2-Kitchen Equipment

- 1) Dishwasher not operating properly.
- 2) All other equipment hampering preparation of a meal.

Code 1-Plumbing

- (1) Hot water heater failure.
- (2) Leaking water supply pipes.

Code 2-Plumbing

- 1) Flush valves not operating properly.
- 2) Fixture drain, supply line to commode, or any water pipe leaking.
- 3) Commode leaking at base.

Code 3 –Plumbing

Leaky faucets.

Code 3-Interior

- 1) Floors damaged.
- 2) Paint chipping or peeling.
- 3) Casework.

Code 1-Roof Leaks

Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks

Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 2-Water (Exterior)

No water to facility.

Code 2-Water (Hot)

No hot water in portion of building listed.

Code 3-All other work not listed above.

1.3.4 Warranty Tags

At the time of installation, each warranted item shall be tagged with a durable, oil and water resistant tag approved by the Contracting Officer. Each tag shall be attached with a copper wire and shall be sprayed with a silicone waterproof coating. The date of acceptance and the QC signature shall remain blank until project is accepted for beneficial occupancy. The tag shall show the following information.

Type of product/material_____.

Model number_____.

Serial number_____.

Contract number_____.

Warranty period_____ from_____ to_____.

Inspector's signature_____.

Construction Contractor_____.

Address_____.

Telephone number_____.

Warranty contact_____.

Address_____ Telephone

number_____.

Warranty response time priority code_____.

WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.

1.4 MECHANICAL TESTING, ADJUSTING, BALANCING, AND COMMISSIONING

Prior to final inspection and transfer of the completed facility; all reports, statements, certificates, and completed checklists for testing, adjusting, balancing, and commissioning of mechanical systems shall be submitted to and approved by the Contracting Officer as specified in applicable technical specification sections.

1.5 OPERATION AND MAINTENANCE MANUALS

Three (3) copies of all Operation and Maintenance (O&M) manuals shall be submitted as follows:

AFGHANISTAN ENGINEER DISTRICT

(1) DHL, FEDEX, UPS or any other courier service:

U.S. Army Corps of Engineers

Afghanistan Engineer District

House # 1, St. #1 West

West Wazir Akbar High School

Behind Amani High School

Kabul, Afghanistan

Attn: Chief, Engineering Branch

Operation manuals and maintenance manuals shall be provided in a common volume, complete, clearly differentiated and separately indexed.

1.6 FINAL CLEANING

The premises shall be left broom clean. Stains, foreign substances, and temporary labels shall be removed from surfaces. Carpet and soft surfaces shall be vacuumed. Equipment and fixtures shall be cleaned to a sanitary condition. Filters of operating equipment shall be replaced. Debris shall be removed from roofs, drainage systems, gutters, and downspouts. Paved areas shall be swept and landscaped areas shall be raked clean. The site shall have waste, surplus materials, and rubbish removed. The project area shall have temporary structures, barricades, project signs, and construction facilities removed. A list of completed clean-up items shall be submitted on the day of final inspection.

-- End of Section -

SAMPLE TASK ORDER, 01781**SECTION 01781****OPERATION AND MAINTENANCE DATA****1. GENERAL****1.1 SUBMISSION OF OPERATION AND MAINTENANCE DATA**

Submit Operation and Maintenance (O&M) Data specifically applicable to this contract and a complete and concise depiction of the provided equipment, product, or system. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 01335 SUBMITTAL PROCEDURES. The O&M manuals shall be provided prior to any training activities. Manuals shall be tri-lingual (e.g.) in Dari, Pashto, and English.

1.1.1 PACKAGE QUALITY

Documents must be fully legible. Poor quality copies and material with hole punches obliterating the text or drawings will not be accepted.

1.1.2 PACKAGE CONTENT

Data package content shall be as shown in the paragraph titled "Schedule of Operation and Maintenance Data Packages." Comply with the data package requirements specified in the individual technical sections, including the content of the packages and addressing each product, component, and system designated for data package submission.

1.1.3 CHANGES TO SUBMITTALS

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

1.2 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES**1.2.1 OPERATING INSTRUCTIONS**

Include specific instructions, procedures, and illustrations for the following phases of operation:

2.1.1.1 SAFETY PRECAUTIONS

List personnel hazards and equipment or product safety precautions for all operating conditions.

2.1.1.2 OPERATOR PRESTART

Include procedures required to set up and prepare each system for use.

2.1.1.3 STARTUP, SHUTDOWN, AND POST-SHUTDOWN PROCEDURES

Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

2.1.1.4 NORMAL OPERATIONS

Provide narrative description of Normal Operating Procedures. Include Control Diagrams with data to explain operation and control of systems and specific equipment.

2.1.1.5 EMERGENCY OPERATIONS

Include Emergency Procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Include Emergency Shutdown Instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance and procedures for emergency operation of all utility systems including required valve positions, valve locations and zones or portions of systems controlled.

2.1.1.6 OPERATOR SERVICE REQUIREMENTS

Include instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gage readings.

2.1.1.7 ENVIRONMENTAL CONDITIONS

Include a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item equipment should not be allowed to run.

2.1.2 PREVENTIVE MAINTENANCE

Include the following information for preventive and scheduled maintenance to minimize corrective maintenance and repair.

2.1.2.1 LUBRICATION DATA

Include preventative maintenance lubrication data, in addition to instructions for lubrication provided under paragraph titled "Operator Service Requirements":

- a. A table showing recommended lubricants for specific temperature ranges and applications.
- b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities.
- c. A Lubrication Schedule showing service interval frequency.

1.2.2.2 PREVENTIVE MAINTENANCE PLAN AND SCHEDULE

Include manufacturer's schedule for routine preventive maintenance, inspections, tests and adjustments required to ensure proper and economical operation and to minimize corrective maintenance. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.

1.2.3 CORRECTIVE MAINTENANCE (REPAIR)

Include manufacturer's recommended procedures and instructions for correcting problems and making repairs.

1.2.3.1 TROUBLESHOOTING GUIDES AND DIAGNOSTIC TECHNIQUES

Include step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

1.2.3.2 WIRING DIAGRAMS AND CONTROL DIAGRAMS

Wiring diagrams and control diagrams shall be point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.

1.2.3.2 MAINTENANCE AND REPAIR PROCEDURES

Include instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards.

1.2.3.3 REMOVAL AND REPLACEMENT INSTRUCTIONS

Include step-by-step procedures and a list required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Instructions shall include a combination of text and illustrations.

1.2.3.4 SPARE PARTS AND SUPPLY LISTS

Include lists of spare parts and supplies required for maintenance and repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead-time to obtain.

1.2.4 CORRECTIVE MAINTENANCE WORK-HOURS

Include manufacturer's projection of corrective maintenance work-hours including requirements by type of craft. Corrective maintenance that requires completion or participation of the equipment manufacturer shall be identified and tabulated separately.

1.2.5 APPENDICES

Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

1.2.6 PARTS IDENTIFICATION

Provide identification and coverage for all parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part

numbers and description, both the illustrations and separate listing shall show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Parts shown in the listings shall be grouped by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master parts catalog

1.2.6.1 WARRANTY INFORMATION

List and explain the various warranties and include the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Include warranty information for primary components such as the compressor of air conditioning system.

1.2.6.2 PERSONNEL TRAINING REQUIREMENTS

Provide information available from the manufacturers that is needed for use in training designated personnel to properly operate and maintain the equipment and systems.

1.2.6.3 TESTING EQUIPMENT AND SPECIAL TOOL INFORMATION

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components.

1.2.6.4 CONTRACTOR INFORMATION

Provide a list that includes the name, address, and telephone number of the General Contractor and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization most convenient to the project site. Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

2 EXECUTION

1.1 TRAINING

Unless provided for elsewhere, the Contractor shall provide operational and maintenance training for all systems furnished under this contract in accordance with this section. The training shall not take place until the operation and maintenance manuals are submitted and approved.

Training will be given to personnel responsible for the operation and maintenance of the system at the installation. Orient training to the specific system being installed under this contract. Use operation and maintenance manual as the primary instructional aid in contractor provided activity personnel training. Manuals shall be delivered for each trainee with two additional sets delivered for archiving at the project site. Submit a training course schedule, syllabus, and training materials 14 days prior to the start of training. Obtain approval of the training course before beginning that phase of training. Furnish a qualified instructor approved by the system manufacturer to conduct training for the specific system.

Training manuals shall include an agenda, defined objectives and a detailed description of the subject matter for each lesson. Furnish audio-visual equipment and all other training materials and supplies. A training day is defined as 8 hours of classroom or lab instruction, including two 15 minute breaks and excluding lunch time, Monday through Friday, during the daytime shift in effect at the training facility. For guidance, the Contractor should assume the attendees will have a high school education.

The Contractor shall videotape the training session on VHS tapes and provide the tapes to the Government.

-- END OF SECTION --

The following have been modified:

JCCI CLAUSES

JCC-I/A CLAUSE 952.222-0001

PROHIBITION AGAINST HUMAN TRAFFICKING, INHUMANE LIVING CONDITIONS, AND WITHHOLDING OF EMPLOYEE PASSPORTS (AUG 2009)

(a) All contractors (“contractors” refers to both prime contractors and all subcontractors at all tiers) are reminded of the prohibition contained in Title 18, United States Code, Section 1592, against knowingly destroying, concealing, removing, confiscating, or possessing any actual or purported passport or other immigration document, or any other actual or purported government identification document, of another person, to prevent or restrict or to attempt to prevent or restrict, without lawful authority, the person’s liberty to move or travel, in order to maintain the labor or services of that person.

(b) Contractors are also required to comply with the following provisions:

(1) Contractors shall only hold employee passports and other identification documents discussed above for the shortest period of time reasonable for administrative processing purposes.

(2) Contractors shall provide all employees with a signed copy of their employment contract, in English as well as the employee’s native language that defines the terms of their employment/compensation.

(3) Contractors shall not utilize unlicensed recruiting firms, or firms that charge illegal recruiting fees.

(4) Contractors shall be required to provide adequate living conditions (sanitation, health, safety, living space) for their employees. Fifty square feet is the minimum acceptable square footage of personal living space per employee. Upon contractor’s written request, contracting officers may grant a waiver in writing in cases where the existing square footage is within 20% of the minimum, and the overall conditions are determined by the contracting officer to be acceptable. A copy of the waiver approval shall be maintained at the respective life support area.

(5) Contractors shall incorporate checks of life support areas to ensure compliance with the requirements of this Trafficking in Persons Prohibition into their Quality Control program, which will be reviewed within the Government’s Quality Assurance process.

(6) Contractors shall comply with International and Host nation laws regarding transit/exit/entry procedures, and the requirements for visas and work permits.

(c) Contractors have an affirmative duty to advise the Contracting Officer if they learn of their employees violating the human trafficking and inhumane living conditions provisions contained herein. Contractors are advised that contracting officers and/or their representatives will conduct random checks to ensure contractors and subcontractors at all tiers are adhering to the law on human trafficking, humane living conditions and withholding of passports.

(d) The contractor agrees to incorporate the substance of this clause, including this paragraph, in all subcontracts under his contract.

(End of clause)

JCC-I/A CLAUSE 952.223-0001

REPORTING KIDNAPPINGS, SERIOUS INJURIES AND DEATHS (MAR 2009)

Contractors shall notify the Contracting Officer, as soon as practicable, whenever employee kidnappings, serious injuries or deaths occur.

Report the following information:

Contract Number

Contract Description & Location

Company Name

Reporting party:

Name

Phone number

E-mail address

Victim:

Name

Gender (Male/Female)

Age

Nationality

Country of permanent residence

Incident:

Description

Location

Date and time

Other Pertinent Information

(End of clause)

JCC-I/A CLAUSE 952.225-0001**ARMING REQUIREMENTS AND PROCEDURES FOR PERSONAL SECURITY SERVICES CONTRACTORS AND FOR REQUESTS FOR PERSONAL PROTECTION (MAR 2009)**

General. Contractor and its subcontractors at all tiers that require arming under this contract agree to obey all laws, regulations, orders, and directives applicable to the use of private security personnel in Iraq and Afghanistan, including U.S. CENTCOM, Multi-National Force Commander and Multi-National Corps Commander orders, instructions and directives. Contractors will ensure that all employees, including employees at any tier of subcontracting relationships, armed under the provisions of this contract, comply with the contents of this clause and with the requirements set forth in the following:

DODI 3020.41, *Program Management for Acquisition and Operational Contract Support in Contingency Operations*;

DFARS 252.225-7040, *Contractor Personnel Supporting a Force Deployed Outside the United States*;

Class Deviation 2007-O0010, Contractor Personnel in the United States Central Command Area of Responsibility

CPA Order #17, *Registration Requirements for Private Security Companies*, dated 27 Jun 04;

U.S. CENTCOM Policy Letter, Mod 1, *Personal Protection and Contract Security Service Arming*, dated 7 Nov 2006

Required Government Documentation. The unit requesting the contractor security shall provide a description of the following to the arming approval authority and to the contracting officer:

The specific location where the PSC will operate;

The persons and/or property that require protection;

The anticipated threat;

The required weapon types; and

The reason current security/police forces are inadequate.

Required Contractor Documentation. Contractors and their subcontractors at all tiers that require arming approval shall provide the following to the contracting officer representative (COR):

Documentation that each employee who will be armed under the contract received the following training—

Weapons Qualification/Familiarization. All employees must meet the qualification requirements established by any DoD or other U.S. government agency Law of Armed Conflict (LOAC);

Rules for the Use of Force (RUF), as defined in the U.S. CENTCOM Policy, dated 23 December 2005; and Distinction between the above-prescribed RUF and the Rules of Engagement (ROE), which are applicable only to military forces.

Completed DD Form 2760 (or equivalent documentation) for each armed employee, indicating that the employee is not otherwise prohibited under U.S. law from possessing the required weapon or ammunition.

One (1) copy of a business license from the Iraqi or Afghani Ministry of Trade or Interior;

One (1) copy of an operating license (or a temporary operating license) from the Ministry of Interior;

A communications plan that, at a minimum, sets forth the following:

The contractor's method of notifying military forces and requesting assistance where hostilities arise or combat action is needed;

How relevant threat information will be shared between contractor security personnel and U.S. military forces; and

How the contractor will coordinate transportation with appropriate military authorities.

An acceptable plan for accomplishing background checks on all contractor and subcontractor employees who will be armed under the contract. The contractor shall, at a minimum, perform the following (which will be specifically addressed in its plan and which will be documented and furnished to the COR upon completion):

Use one or more of the following sources when conducting the background checks:

Interpol, FBI, Country of Origin Criminal Records, Country of Origin U.S. Embassy

Information Request, CIA records, and/or any other records available;

Verify with MNC-I or Afghanistan RCE – CG Provost Marshal that no employee has been barred by any commander within Iraq or Afghanistan; and

Certify, after completing all checks, that all persons armed under this contract are not prohibited under U.S. law from possessing a weapon or ammunition.

Required Contractor Acknowledgements. Contractors and their subcontractors at all tiers that require arming approval will provide written acknowledgement of the following to the COR:

Penalties for Non-Compliance. Failure of contractor or subcontractor employee(s) to comply with the laws, regulations, orders, and rules (including those specified herein) governing the use of force may result in the revocation of weapons authorization for such employee(s). Where appropriate, such failure may also result in the total revocation of weapons authorization for the contractor (or subcontractor) and sanctions under the contract, including termination.

Criminal and Civil Liability. Arming of contractor or subcontractor employees under this contract may subject the contractor, its subcontractors, and persons employed by the same, to U.S. and Host Nation prosecution and civil liability. "Host Nation" refers to the nation or nations where services under this contract are performed.

Lapses in Training. Failure to successfully retrain an employee who is armed under this contract within twelve (12) months of the last training date will constitute a lapse in the employee's authorization to

possess and carry the weapon. All unauthorized employees will immediately surrender their weapon to the contractor and will remain unarmed until such time as they are retrained and the COR determines that the retraining is sufficient.

Authorized Weapon & Ammunition Types. Unless DCDRUSCENTCOM (or a designee) provides otherwise, all arming requests and authorizations for contractor or subcontractor employees under this contract shall be limited to U.S. Government approved weapons and ammunition. This restriction applies to all weapons in the possession of contractor employees, even if such weapons are required for personal protection. The following weapons and ammunition are currently authorized by the U.S. Government for use in Iraq and Afghanistan:

The M9, M4, M16, or equivalent (e.g. .45 CAL, AK-47).

The M9 or equivalent sidearm will be the standard personal protection weapon unless other weapons are specifically requested and approved.

U.S. government Ball ammunition is the standard approved ammunition.

Requirements for Individual Weapons Possession. All employees of the contractor and its subcontractors at all tiers who are armed under this contract must:

Possess only those U.S. Government-approved weapons and ammunition for which they are qualified under the training requirements of section (c);

Carry weapons only when on duty or at a specific post;

Not conceal any weapons, unless specifically authorized;

Carry proof of authorization to be armed. Employees not possessing such proof will be deemed unauthorized and must surrender their weapon to their employer; and

IAW USCENCOM G.O. #1, consumption of alcohol in Iraq or Afghanistan is prohibited. In the event of a suspension or an exception to G.O. #1, employees shall not consume any alcoholic beverage while armed or within eight (8) hours of the next work period where they will be armed.

Weapons/Equipment Restrictions and Responsibilities. Unless otherwise provided, the U.S. Government will not provide any weapons or ammunition to contractors, their subcontractors, or any employees of the same. The Contractor will provide all weapons and ammunition to those employees that will be armed under the contract. The contractor and its subcontractors at all tiers will also provide interceptor body armor, ballistic helmets, and the Nuclear, Biological, and Chemical (NBC) protective masks to those employees that require such equipment in the performance of their duties.

Rules for the Use of Force (RUF). In addition to the RUF and ROE training referenced in paragraph (c), the contractor and its subcontractors at all tiers will monitor and report all activities of its armed employees that may violate the RUF. Prompt reporting demonstrates a desire by the contractor and its subcontractors to minimize the impact of any violations and, therefore, will be given favorable consideration. Violations of the RUF include, though are not limited to:

Taking a direct part in hostilities or combat actions, other than to exercise self-defense;

Failing to cooperate with Coalition and Host Nation forces;

Using deadly force, other than in self-defense where there is a reasonable belief of imminent risk of death or serious bodily harm;

Failing to use a graduated force approach;

Failing to treat the local civilians with humanity or respect; and

Detaining local civilians, other than in self-defense or as reflected in the contract terms.

Retention and Review of Records. The Contractor and all subcontractors at all tiers shall maintain records on weapons training, LOAC, RUF and the screening of employees for at least six (6) months following the expiration (or termination) of the contract. The Contractor and its subcontractors at all tiers shall make these records available to the Contracting Officer or designated representative, at no additional cost to the government, within 72 hours of a request.

Contractor Vehicles. Vehicles used by contractor and subcontractor personnel in the course of their security duties shall not be painted or marked to resemble U.S./Coalition or host nation military and police force vehicles.

Quarterly Reporting. The prime contractor will report quarterly (i.e. NLT 1 January, 1 April, 1 July and 1 October for each quarter of the calendar year) to the Contracting Officer responsible for this contract, and any other organization designated by the Contracting Officer, the following information under this contract:

The total number of armed civilians and contractors;

The names and contact information of its subcontractors at all tiers; and

A general assessment of the threat conditions, adequacy of force numbers, and any

problems that might require a change to force levels. Note: this information is in addition to the information the contractor promises to immediately provide under the communications plan referenced at paragraph (c)(5).

(End of clause)

JCC-I/A CLAUSE 952.225-0002**ARMED PERSONNEL INCIDENT REPORTS (MAR 2009)**

(a) All contractors and subcontractors in the Multi-National Forces-Iraq (MNF-I) or Combined Joint Task Force (Afghanistan) theater of operations shall comply with and shall ensure that their personnel supporting MNF-I or CJTF forces are familiar with and comply with all applicable orders, directives, and instructions issued by the respective MNF-I or CJTF Commanders relating to force protection and safety.

(b) **IRAQ:** Contractors shall provide all incidents and use of weapons firing incidents to the MNC-I Contractor Operations Cell (CONOC) as soon as practical, based upon the situation, and submit a written report to CONOC within 4 hours. The initial report shall include the name of the company, location of the incident, time when the incident occurred, a brief description of the events leading up to the incident, and a company point of contact. A follow-up, comprehensive written report shall be provided to the CONOC

within 96 hours of the incident. Reports shall be submitted to CONOC at:

mncic3conoc@iraq.centcom.mil; DSN 318-435-2369; Iraqna 0044 203 286 9851 or 0044 203 239 5894; or Skype: MNCICONOC.

(c) **AFGHANISTAN:** Contractors shall report all incidents and use of weapons through their Contracting Officers who will notify the JOC Watch at Bagram AB. (JOC SHIFT DIRECTOR, DSN: 318-431-4116; SVOIP: 431-7108) Information should include: the name of the company, where the incident occurred, time when the incident occurred, a brief description of the events leading up to the incident, and a point of contact for the company. The JOC Watch duty officer will issue guidance for further reporting

requirements.

(d) Contractors shall provide first aid and request MEDEVAC of injured persons, and remain available for U.S. or Coalition response forces, based upon the situation. In the event contractor personnel are detained by U.S. or Coalition Forces, prolonged detention due to lack of proper identification can be alleviated by contractor personnel possessing on their person information that includes the contractor's name, the contract number, a contractor management POC, and the phone number of the CONOC/JOC Watch.

(End of clause)

JCC-I/A CLAUSE 952.225-0003**FITNESS FOR DUTY AND MEDICAL/DENTAL CARE LIMITATIONS (MAR 2009)**

(1) The contractor shall perform the requirements of this contract notwithstanding the fitness for duty of deployed employees, the provisions for care offered under this section, and redeployment of individuals determined to be unfit. The contractor bears the responsibility for ensuring all employees are aware of the conditions and medical treatment available at the performance. The contractor shall include this information and requirement in all subcontracts with performance in the theater of operations.

(2) The contractor shall not deploy an individual with any of the following conditions unless approved by the appropriate CENTCOM Service Component (i.e. ARCENT, AFCENT, etc.) Surgeon: Conditions which prevent the wear of personal protective equipment, including protective mask, ballistic helmet, body armor, and chemical/biological protective garments; conditions which prohibit required theater

immunizations or medications; conditions or current medical treatment or medications that contraindicate or preclude the use of chemical and biological protectives and antidotes; diabetes mellitus, Type I or II, or pharmacological therapy; symptomatic coronary artery disease, or with myocardial infarction within one year prior to deployment, or within six months of coronary artery bypass graft, coronary artery

angioplasty, or stenting; morbid obesity (BMI \geq 40); dysrhythmias or arrhythmias, either symptomatic or requiring medical or electrophysiologic control; uncontrolled hypertension, current heart failure, or automatic implantable defibrillator; therapeutic anticoagulation; malignancy, newly diagnosed or under current treatment, or recently diagnosed/treated and requiring frequent subspecialist surveillance, examination, and/or laboratory testing; dental or oral conditions requiring or likely to require urgent dental care within six months' time, active orthodontic care, conditions requiring prosthodontic care, conditions with immediate restorative dentistry needs, conditions with a current requirement for oral-maxillofacial surgery; new onset (< 1 year) seizure disorder, or seizure within one year prior to deployment; history of heat stroke; Meniere's Disease or other vertiginous/motion sickness disorder, unless well controlled on medications available in theater; recurrent syncope, ataxias, new diagnosis (< 1 year) of mood disorder, thought disorder, anxiety, somatoform, or dissociative disorder, or personality

disorder with mood or thought manifestations; unrepaired hernia; tracheostomy or aphonia; renalithiasis, current; active tuberculosis; pregnancy; unclosed surgical defect, such as external fixator placement; requirement for medical devices using AC power; HIV antibody positivity; psychotic and bipolar disorders. (Reference: Mod 8 to USCENTCOM Individual Protection and Individual/Unit Deployment Policy, PPG-Tab A: Amplification of the Minimal Standards of Fitness for Deployment to the CENTCOM AOR).

(3) In accordance with military directives (DoDI 3020.41, DoDI 6000.11, CFC FRAGO 09-1038, DoD PGI 225.74), resuscitative care, stabilization, hospitalization at Level III (emergency) military treatment facilities and assistance with patient movement in emergencies where loss of life, limb or eyesight could occur will be provided. Hospitalization will be limited to emergency stabilization and short-term medical

treatment with an emphasis on return to duty or placement in the patient movement system. Subject to availability at the time of need, a medical treatment facility may provide reimbursable treatment for emergency medical or dental care such as broken bones, lacerations, broken teeth or lost fillings.

(4) Routine and primary medical care is not authorized. Pharmaceutical services are not authorized for routine or known, routine prescription drug needs of the individual. Routine dental care, examinations and cleanings are not authorized.

(5) Notwithstanding any other provision of the contract, the contractor shall be liable for any and all medically-related services or transportation rendered. In accordance with OUSD(C) Memorandum dated 4 June 2008, the following reimbursement rates will be charged for services at all DoD deployed medical facilities. These rates are in effect until changed by DoD direction.

(a) Inpatient daily rate: \$2,041.00. Date of discharge is not billed unless the patient is admitted to the hospital and discharged the same day.

(b) Outpatient visit rate: \$195.00. This includes diagnostic imaging, laboratory, pathology, and pharmacy provided at the medical facility.

(End of clause)

JCC-I/A CLAUSE 952.225-0004

COMPLIANCE WITH LAWS AND REGULATIONS (MAR 2009)

(a) The Contractor shall comply with, and shall ensure that its employees and its subcontractors and their employees, at all tiers, are aware of and obey all U.S. and Host Nation laws, Federal or DoD regulations, and Central Command orders and directives applicable to personnel in Iraq and Afghanistan, including but not limited to USCENTCOM, Multi-National Force and Multi-National Corps operations and fragmentary orders, instructions, policies and directives.

(b) Contractor employees shall particularly note all laws, regulations, policies, and orders restricting authority to carry firearms, rules for the use of force, and prohibiting sexual or aggravated assault. Contractor employees are subject to General Orders Number 1, as modified from time to time, including without limitation, their prohibition on privately owned firearms, alcohol, drugs, war souvenirs, pornography and photographing detainees, human casualties or military security measures.

(c) Contractor employees may be ordered removed from secure military installations or the theater of operations by order of the senior military commander of the battle space for acts that disrupt good order and discipline or violate applicable laws, regulations, orders, instructions, policies, or directives. Contractors shall immediately comply with any such order to remove its contractor employee.

(d) Contractor employees performing in the USCENTCOM Area of Operations (AOR) may be subject to the jurisdiction of overlapping criminal codes, including, but not limited to, the Military Extraterritorial Jurisdiction Act (18 U.S.C. Sec. 3261, et al) (MEJA), the Uniform Code of Military Justice (10 U.S.C. Sec. 801, et al)(UCMJ), and the laws of the Host Nation. Non-US citizens may also be subject to the laws of their home country while performing in the USCENTCOM AOR. Contractor employee status in these overlapping criminal jurisdictions may be modified from time to time by the United States, the Host Nation, or by applicable status of forces agreements.

(e) Under MEJA, a person who engages in felony misconduct outside the United States while employed by or accompanying the Armed Forces is subject to arrest, removal and prosecution in United States federal courts. Under the UCMJ, a person serving with or accompanying the Armed Forces in the field during a declared war or contingency operation may be disciplined for a criminal offense, including by referral of charges to a General Court Martial. Contractor employees may be ordered into confinement or placed under conditions that restrict movement within the AOR or administratively attached to a military command pending resolution of a criminal investigation.

(f) Contractors shall immediately notify military law enforcement and the Contracting Officer if they suspect an employee has committed an offense. Contractors shall take any and all reasonable and necessary measures to secure the presence of an employee suspected of a serious felony offense. Contractors shall not knowingly facilitate the departure of an employee suspected of a serious felony offense or violating the Rules for the Use of Force to depart Iraq or Afghanistan without approval from the senior U.S. commander in the country.

(End of clause)

JCC-I/A CLAUSE 952.225-0005

MONTHLY CONTRACTOR CENSUS REPORTING (MAR 2009)

Contractor shall provide monthly employee census information to the Contracting Officer, by province, for this contract. Information shall be submitted either electronically or by hard-copy. Information shall be current as of the 25th day of each month and received by the Contracting Officer no later than the first day of the following month. The following information shall be provided for each province in which work was performed:

- (1) The total number (prime and subcontractors at all tiers) employees.
- (2) The total number (prime and subcontractors at all tiers) of U.S. citizens.
- (3) The total number (prime and subcontractors at all tiers) of local nationals (LN).
- (4) The total number (prime and subcontractors at all tiers) of third-country nationals (TCN).
- (5) Name of province in which the work was performed.
- (6) The names of all company employees who enter and update employee data in the Synchronized Pre-deployment & Operational Tracker (SPOT) IAW DFARS 252.225-7040 or DFARS DOD class deviation 2007-O0010.

(End of clause)

JCC-I/A CLAUSE 952.225-0009

MEDICAL SCREENING AND VACCINATION REQUIREMENTS FOR LOCALLY HIRED EMPLOYEES (MAR 2009)

- (a) Contractors, and subcontractors at any tier shall ensure and provide satisfactory evidence that all locally hired employees, including Local National (LN), Third Country National, and U.S. employees,

working on military have been screened for and do not currently have active tuberculosis (TB).

(1) Contractors may utilize a testing method of either a chest x-ray or TB skin test (TST).

(i) Chest x-rays shall be taken and TBTs administered within 90 days prior to the start of employment.

(ii) Screening may be performed either by a licensed medical provider from the local economy or by contractors' licensed medical staffs. Contractors shall maintain medical screening documentation and make it available to the Contracting Officer upon request.

(2) TB screening documentation will be required by the responsible Base Defense Operations Center (BDOC) prior to issuance of base access badges.

(b) Contractor employees, including subcontractors at any tier, who work in positions where they are working with food or water production and distribution shall have current Typhoid and Hepatitis "A" (full series) vaccinations, in addition to the TB tests required above.

(c) At least the first inoculation in the Hepatitis "A" series must be given prior to the start of employment, with continuation and completion of the inoculation series. The Typhoid inoculation must be completed within two years prior to the date of employment in the food and water service capacity.

(1) Once the complete Hepatitis "A" vaccination series is completed, it does not have to be repeated. The Typhoid vaccination requires a booster immunization every three years.

(2) Proof of individual employee vaccinations shall be provided to the Contracting Officer and maintained by the Contractor for examination by the Contracting Officer.

(End of clause)

JCC-I/A 952.232-0002

PAYMENT IN LOCAL CURRENCY (AFGHANISTAN)

(OCT 2009)

This contract is awarded in U.S. Dollars. The contractor will receive payment in local currency. The currency exchange rate will be determined at the official exchange rate posted by the local DoD Finance office on the date of the payment in accordance with the Department of Defense Financial Management Regulation. Local currency payments are made via Electronic Funds Transfer. Local currency is defined as the currency of the receiving financial institution. Payments in cash are restricted to contracts where the vendor provides proof that an account at a bank accepting local EFT is unavailable.

Alternate I (Oct 2009): As prescribed in 32.1106-200(b), substitute clause language as follows:

This contract is awarded in Afghani (local currency). The contractor will receive payment in local currency. Payment by the U.S. Government may be made in any of the following formats (provided in order of preference):

- (1) Electronic Funds Transfer (EFT)
- (2) Check, drawn on a U.S. Government account in a local nation bank
- (3) Cash (Afghani), by exception and must be approved prior to contract/purchase order award by the PARC.

JCC-I/A CLAUSE 952.236-0001

**ELECTRICAL AND STRUCTURAL BUILDING STANDARDS FOR CONSTRUCTION PROJECTS
(MAR 2009)**

(a) The standards set forth herein are the minimum requirements for the contract. These standards must be followed unless a more stringent standard is specifically included. In such case the most stringent standard shall be required for contract acceptance.

(b) The contractor, in coordination with the Contracting Officer, Base Camp Mayor, Base/Unit Engineers, and requiring activity shall evaluate, upgrade, build, and/or refurbish buildings to a safe and livable condition. This work may include refurbishment, construction, alterations, and upgrades. All work shall be in accordance with accepted standards of quality.

(c) As dictated by the Unified Facilities Criteria (UFC) the contract shall meet:

- (1) "the minimum requirements of United States' National Fire Protection Association (NFPA) 70,
- (2) National Electrical Code (NEC),
- (3) the American National Standards Institute (ANSI) C2, and
- (4) the United States' National Electrical Safety Code (NESC).

(d) These standards must be met when it is reasonable to do so with available materials. When conditions dictate deviation, then provisions within the International Electrical Code (IEC) or British Standard (BS 7671) shall be followed. Any deviations from the above necessary to reflect market conditions, shall receive prior written approval from a qualified engineer and the Contracting Officer.

(e) The following internet links provide access to some of these standards:

UFC: http://65.204.17.188/report/doc_ufc.html

NFPA 70: <http://www.nfpa.org>

NESC: <http://www.standards.ieee.org/nesc>

(End of clause)

32.1106-100 Electronic Funds Transfer (EFT) payment mechanisms.

(a) IRAQ - Contracts and orders awarded by all contracting offices in Iraq shall be paid by Electronic Funds Transfer (EFT) to a bank of the contractor's choosing. Payment by EFT promotes a modern banking sector in Iraq. Contracts and orders shall be awarded in US Dollars and paid in local currency, except for contracts and orders to Iraqi vendors (Host Nation) which shall be awarded and paid in local currency.

(b) Afghanistan - EFT is the preferred method of payment for all Afghan vendors. Currently, the Afghan banking and business infrastructure is not sufficient to support mandated use of EFT for all contract payments. However, EFT remains the preferred method of payment in Afghanistan and its use is steadily increasing among Afghan vendors. Payments in cash must be approved prior to contract/purchase order award by PARC-A, and will be paid in local currency. Contracts and orders to Afghan vendors (Host Nation) shall be awarded and paid in local currency. Contracting Officers should promote the use of EFT at vendor day presentations, site visits, and pre-award meetings. JCC-I/A Contracting Officers and Business Development Consultants will play a key role in implementing contract payment by EFT in Afghanistan.

(c) Contract actions in excess of \$25,000 funded with O&MA appropriation and paid by EFT are being processed by DFAS, Rome, NY. Only the approved DFAS-Rome EFT Payment form will be accepted by DFAS. The EFT Payment form may be used for both DFAS and GRD payments and is provided on the JCCS website.

DEFENSE BASE ACT INSURANCE RATES – LIMITATION – FIXED-PRICE (OCT 2009)

(a) The U.S. Army Corps of Engineers (USACE) has entered into a contract with **CNA Insurance** to provide all Defense Base Act (DBA) insurance to USACE and JCC-I/A contractors and subcontractors at a contracted fixed rate. The fixed rates for this insurance are as follows:

Service	\$4.00	per \$100 of employee remuneration
Construction	\$6.00	per \$100 of employee remuneration
Security	\$10.00	per \$100 of employee remuneration
Aviation	\$17.00	per \$100 of employee remuneration

(b) Bidders/Offerors should **compute the total compensation or total payroll**, (salary, plus overseas recruitment incentive and post differential, but **excludes** per diem, housing allowance, travel expenses, temporary quarters allowance, education allowance and other miscellaneous post allowances to include fee or profit) to be paid to employees who will be covered by DBA insurance. Compute the cost of DBA Insurance by utilizing the spaces provided below for the base period and whatever extension there may be thereafter, if applicable.

(1) Compensation of Covered Employees: _____
(Total Payroll Not Total Contract Value) Ex: If total Payroll is \$100,000.00

(2) Applicable DBA Rate: _____
(Use appropriate Rate) Ex: If a Service, the rate is \$4.00/\$100 or 4%

(3) Total DBA Cost: _____

(Amount of DBA Premium) Ex: \$100 K multiplied by 4% is \$4,000.00

(c) Bidders/Offerors shall include a statement as to whether or not local nationals or third country nationals will be employed on the resultant contract.

(d) CNA Insurance is utilizing Rutherford International as their managing Broker. The primary POC is the USACE DBA Program Administrator is Ramoan Jones, (703) 813-6571 ramoan.jones@rutherford.com. The alternate POC is Sara Payne, Senior Vice President, (703) 813-6503 sara.payne@rutherford.com.

(e) Labor Category/Job Classification Definitions:

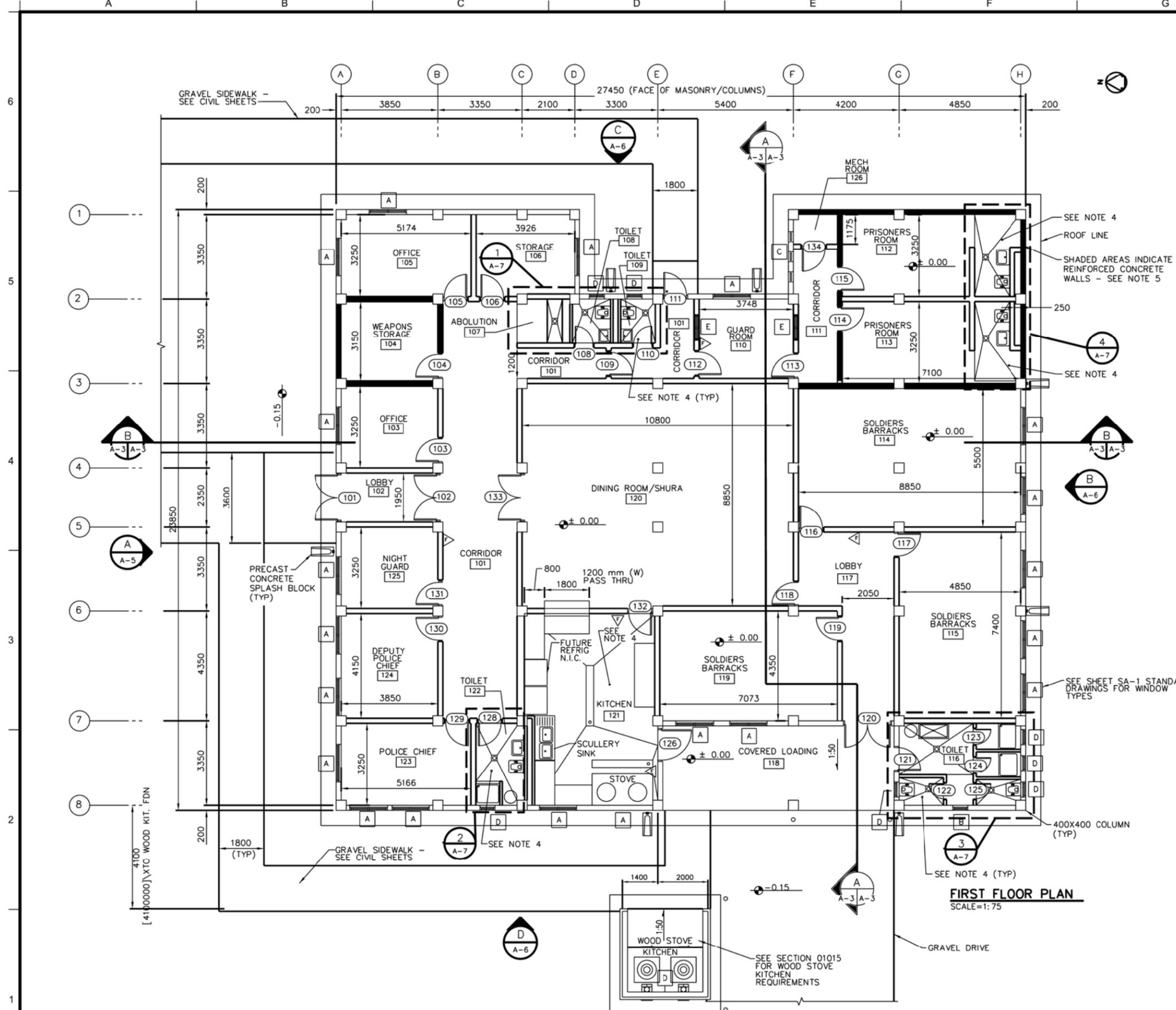
SERVICE: \$4.00/\$100 "White collar" workers such as IT Consultants, Engineers, Administrative type Office workers and light housekeeping. Security Consultants could be included as long as they are just assessing risk and not providing armed protection.

CONSTRUCTION: \$6.00/\$100 "Blue collar" workers providing Construction services such as Carpentry, Electrical, Plumbing, Concrete, Asphalt, Day Laborers, Operation and Maintenance of Heavy Equipment

SECURITY: \$10.00/\$100 Personal Security Detail (PSD) and Static or Convoy Guarding property of Personnel

AVIATION: \$17.00/\$100 Pilot and Crew of any aircraft excluding ground personnel who provide maintenance or services but stay on the ground.

(End of Summary of Changes)



- GENERAL NOTES:**
1. PROVIDE PORTABLE FIRE EXTINGUISHERS, ABC DRY CHEMICAL 4A:60B:C
 2. ALL INTERIOR WALLS SHALL BE 200 mm THICK CMU AND SHALL EXTEND TO THE BOTTOM OF STRUCTURE ABOVE AND CENTER ON COLUMNS UNLESS NOTED OTHERWISE.
 3. TOILET AND SHOWER PARTITIONS SHALL BE 2200mm HIGH.
 4. SLOPE FLOORS IN KITCHENS AND TOILET/SHOWER AREAS 1:50 MINIMUM TO TRENCH DRAINS AND FLOOR DRAINS WHERE INDICATED. SLOPE TRENCH DRAINS 1:50 TO DRAIN AT ONE END. SEE ENLARGED ARCHITECTURAL DRAWINGS, PLUMBING DRAWINGS, AND STRUCTURAL DRAWINGS.
 5. INTERIOR AND EXTERIOR WALLS AROUND PRISONERS ROOMS AND WEAPONS STORAGE, AS INDICATED BY SHADING, SHALL BE 200mm THICK REINFORCED CONCRETE - SEE STRUCTURAL FOR DETAILS.
 6. ALL CORRIDOR DOORS ARE 20 MINUTE FIRE RATED.
 7. PROVIDE PROPANE STORAGE AREA TO INCLUDE CONCRETE SLAB, PROTECTIVE WALL WEATHER SHELTER AND CHAIN LINK FENCING

FIRST FLOOR PLAN
SCALE=1:75





US ARMY CORPS OF ENGINEERS
AFGHANISTAN ENGINEER DISTRICT

REV.	DATE	DESCRIPTION

DESIGNED BY: _____	DATE: _____	REVISED BY: _____	DATE: _____
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CHECKED BY: _____	FILE NAME: _____	PILOT SCALE: _____	
REVIEWED BY: _____			
SUBMITTED BY: _____			

ENGINEERING AND CONSTRUCTION DIVISION

AFGHANISTAN NATIONAL POLICE (ANP) DISTRICT HEADQUARTERS COMPOUNDS - 1 STORY HQ VARIOUS LOCATIONS, AFGHANISTAN 1 STORY BUILDING

FIRST FLOOR PLAN

SHEET REFERENCE NUMBER:
A-1



US ARMY CORPS OF ENGINEERS
AFGHANISTAN ENGINEER DISTRICT

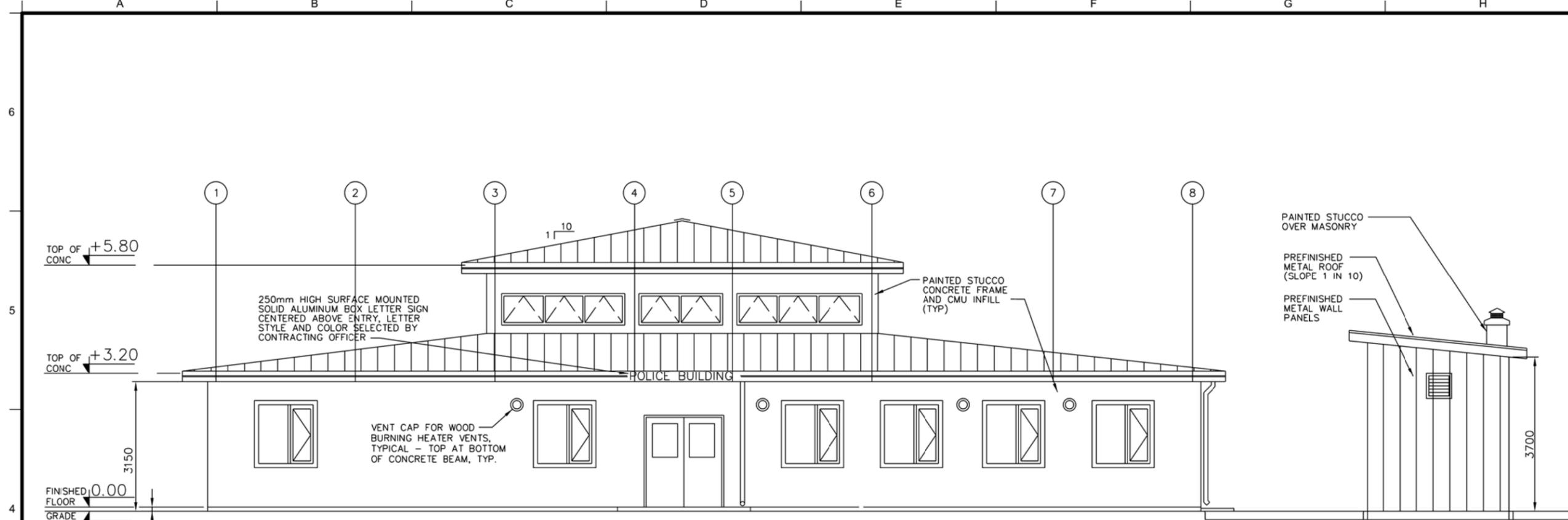
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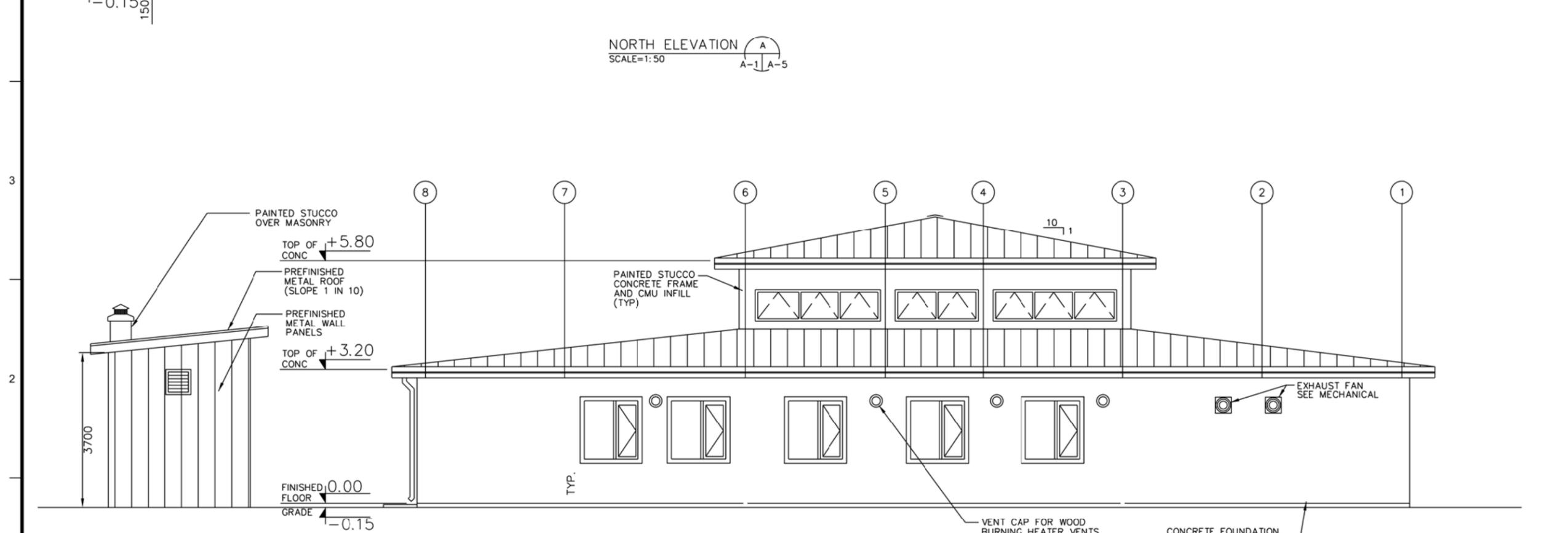
U.S. ARMY ENGINEER DISTRICT AFGHANISTAN
CORPS OF ENGINEERS
APO AE 96338
ENGINEERING AND CONSTRUCTION DIVISION

AFGHANISTAN NATIONAL POLICE (ANP) DISTRICT HEADQUARTERS COMPOUNDS - 1 STORY HQ
VARIOUS LOCATIONS, AFGHANISTAN
1 STORY BUILDING
BUILDING ELEVATIONS

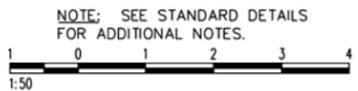
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A
A-5

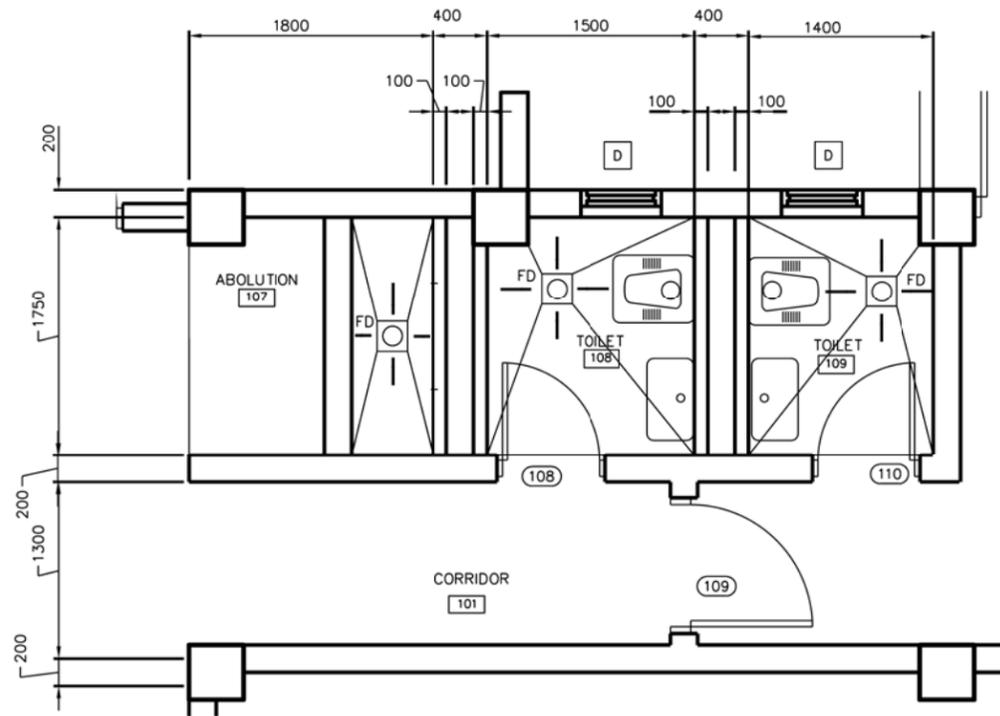


NORTH ELEVATION **A**
SCALE=1:50
A-1 | A-5

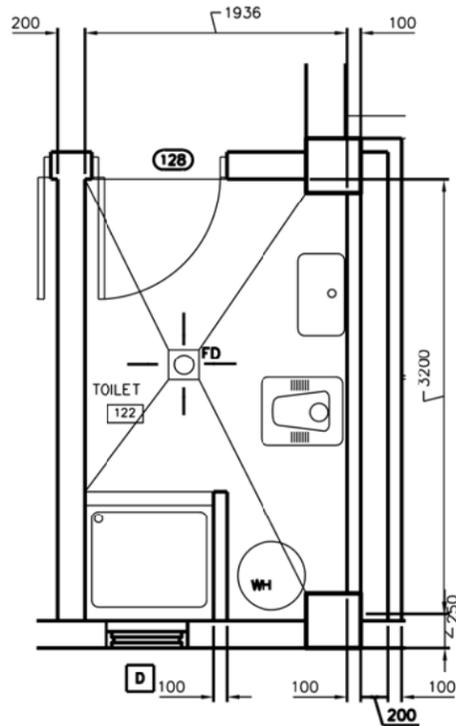


SOUTH ELEVATION **B**
SCALE=1:50
A-1 | A-5

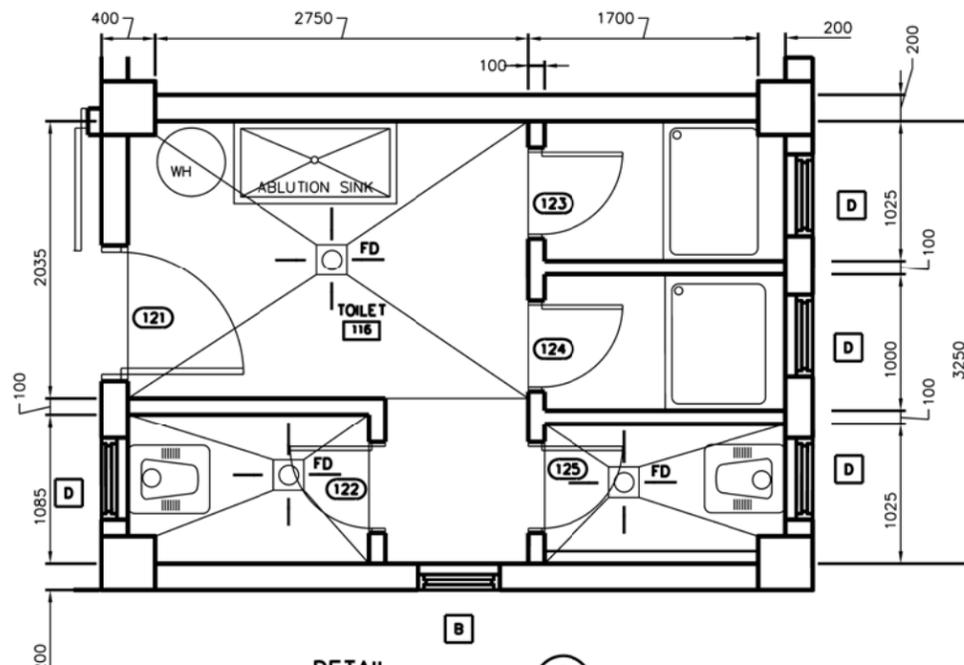




DETAIL
SCALE=1:25
1
A-1 A-7

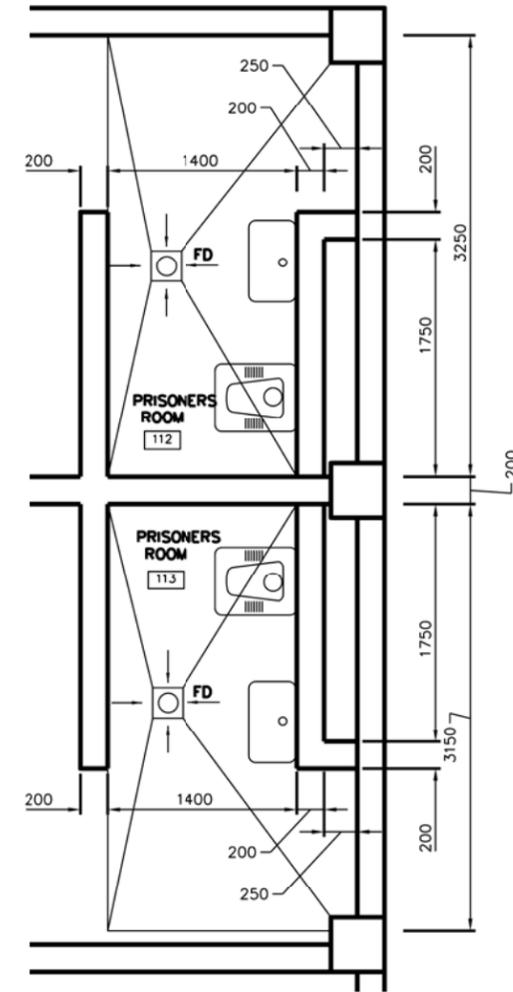


DETAIL
SCALE=1:25
2
A-1 A-7



DETAIL
SCALE=1:25
3
A-1 A-7

NOTE: PARTITION WALLS BETWEEN TOILET STALLS TO BE 2200mm HIGH.



DETAIL
SCALE=1:25
4
A-1 A-7

NOTE:
1. ALL WATER CLOSETS SHALL FACE NORTH OR SOUTH DIRECTION.



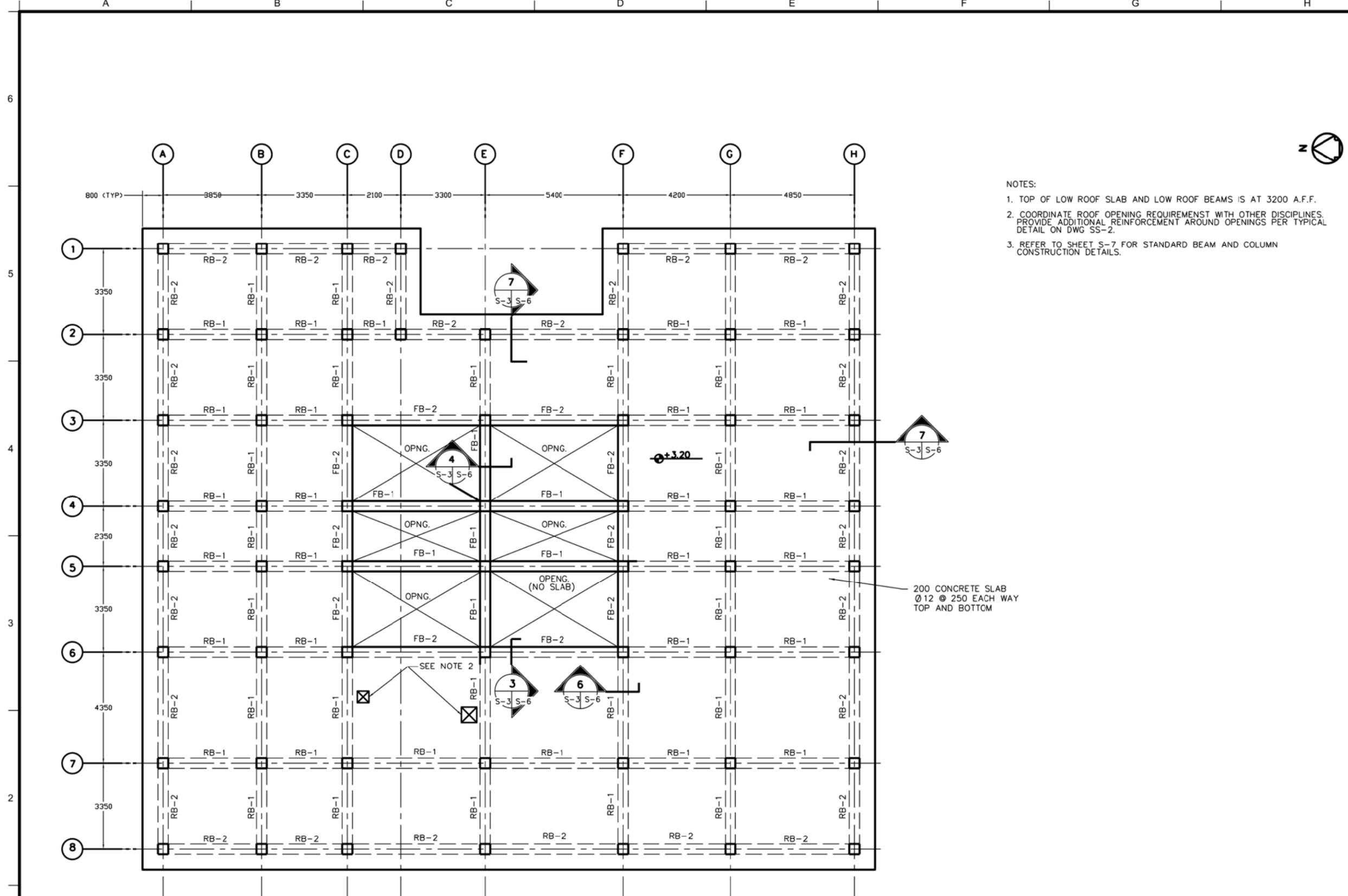
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SUBMITTED BY: _____	PLOT SCALE: _____
	PLOT DATE: _____

U.S. ARMY ENGINEER DISTRICT AFGHANISTAN
CORPS OF ENGINEERS
APO AE 96338
ENGINEERING AND CONSTRUCTION DIVISION

AFGHANISTAN NATIONAL POLICE (ANP) DISTRICT HEADQUARTERS COMPOUNDS - 1 STORY HQ VARIOUS LOCATIONS, AFGHANISTAN
1 STORY BUILDING
ENLARGED TOILET PLANS

SHEET REFERENCE NUMBER:
A
A-7



- NOTES:
1. TOP OF LOW ROOF SLAB AND LOW ROOF BEAMS IS AT 3200 A.F.F.
 2. COORDINATE ROOF OPENING REQUIREMENTS WITH OTHER DISCIPLINES. PROVIDE ADDITIONAL REINFORCEMENT AROUND OPENINGS PER TYPICAL DETAIL ON DWG SS-2.
 3. REFER TO SHEET S-7 FOR STANDARD BEAM AND COLUMN CONSTRUCTION DETAILS.

LOW ROOF BEAM AND SLAB PLAN
SCALE = 1:75



DATE	REVISION	DESCRIPTION

DESIGNED BY: _____	DATE: _____	REV: _____
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REVIEWED BY: _____	DRAWING CODE: _____	
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	PLOT DATE: _____	

U.S. ARMY ENGINEER DISTRICT AFGHANISTAN
CORPS OF ENGINEERS
APO AE 96338
ENGINEERING AND CONSTRUCTION DIVISION

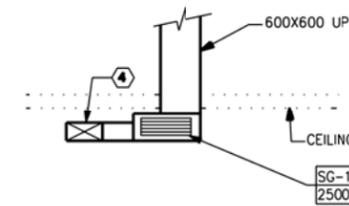
AFGHANISTAN NATIONAL POLICE
(ANP) DISTRICT HEADQUARTERS
COMPOUNDS - 1 STORY HQ
VARIOUS LOCATIONS, AFGHANISTAN
1 STORY BUILDING
LOWER ROOF BEAM PLAN

SHEET REFERENCE NUMBER:
A S-3

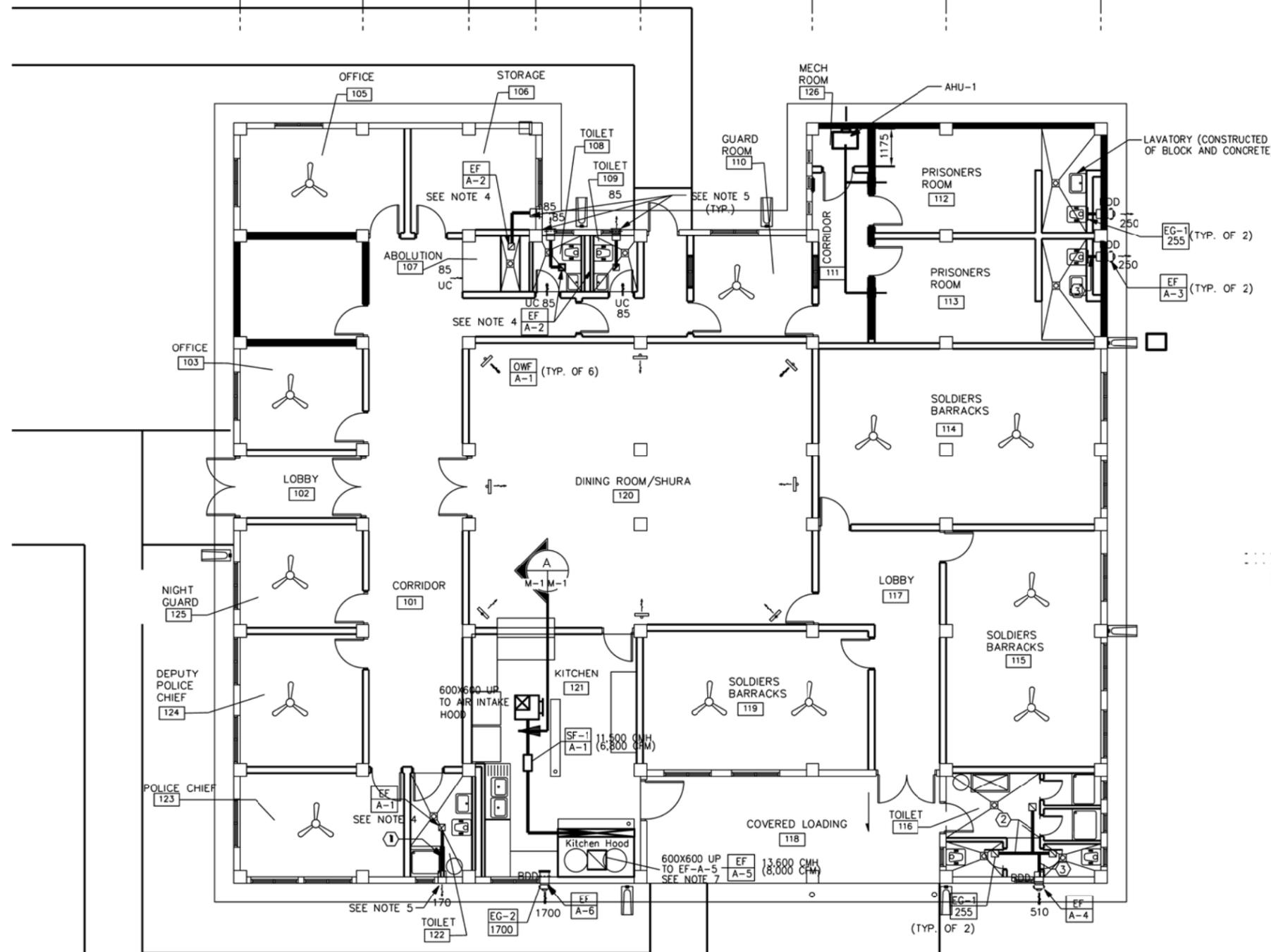
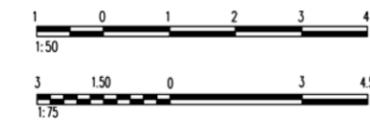
- NOTES:
- FOR LEGENDS, ABBREVIATIONS AND STANDARD MECHANICAL DETAILS SEE SHEETS SM-1 AND SM-3.
 - FOR EQUIPMENT SCHEDULES AND CONTROL DIAGRAMS SEE SHEET SM-2.
 - ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
 - PROVIDE EACH EXHAUST FAN WITH MANUFACTURER'S STANDARD EXHAUST GRILL AND GRAVITY BACKDRAFT DAMPER.
 - PROVIDE 200 x 100 ALL-WEATHER LOUVER WITH BIRDSCREEN.
 - KITCHEN EXHAUST HOOD WITH ALUMINUM FILTERS AND SEALED DUCT CONNECTION TO EXHAUST FAN. SIZE OF HOOD TO MATCH COOKING EQUIPMENT PROVIDED.
 - EXHAUST FAN EF-A-5 CAPACITY INDICATED HERE IS MINIMUM BASED ON 1200W X 2500 L HOOD: ITS CAPACITY SHALL BE REVISED UPWARD TO MATCH AIRFLOW PERFORMANCE REQUIRED BY THE KITCHEN HOOD EQUIPMENT MANUFACTURER. PROPANE STOVE FLUE DUCT SHALL CONNECT TO KITCHEN EXHAUST HOOD.

DUCT SIZING LEGEND

- ① 200 x 100
- ② 200 x 150
- ③ 200 x 200
- ④ 600 x 300



KITCHEN
DETAIL
 SCALE: 1: 50



HVAC PLAN
 SCALE: 1: 75



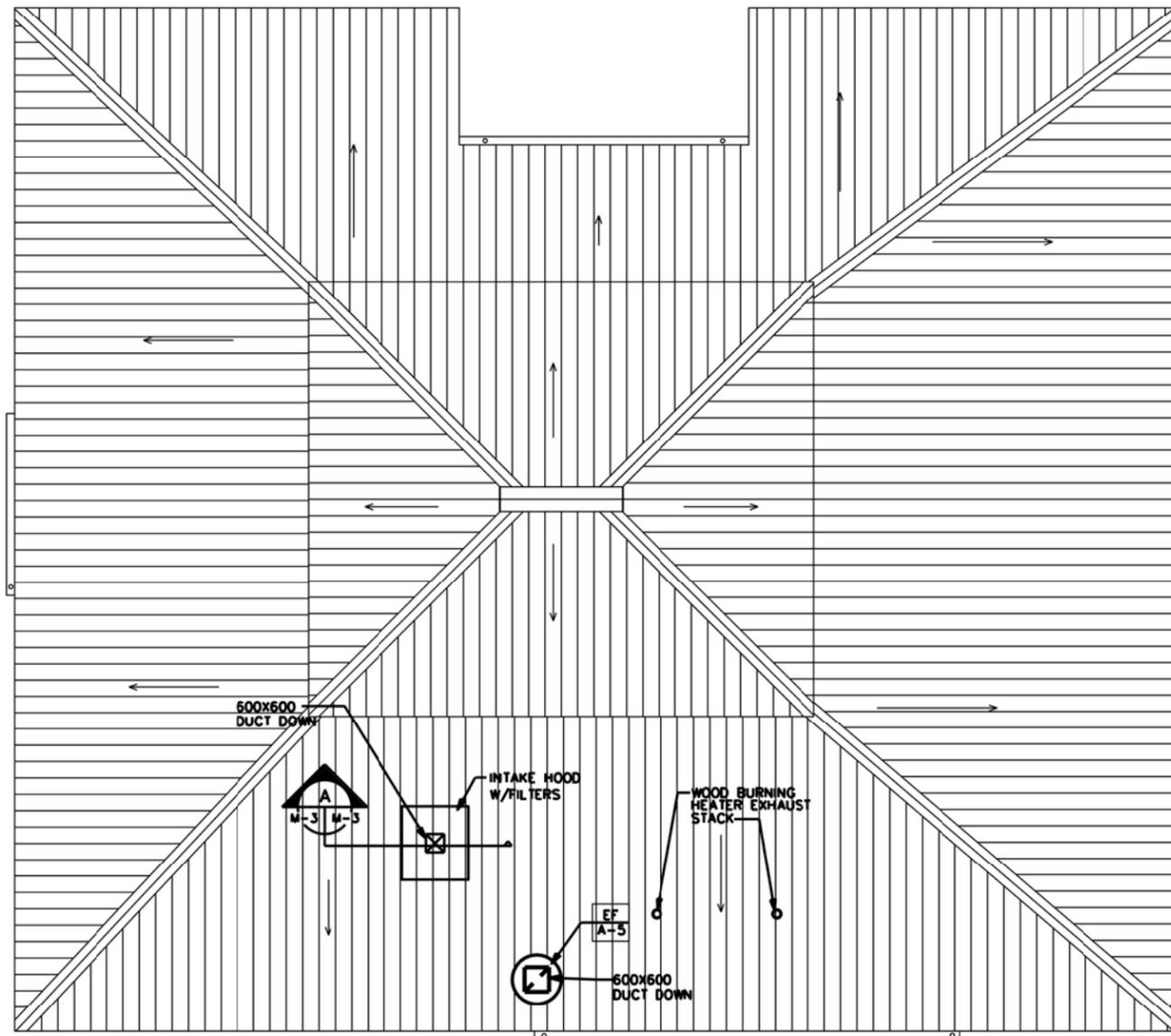
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APO AE 96338	
ENGINEERING AND CONSTRUCTION DIVISION	

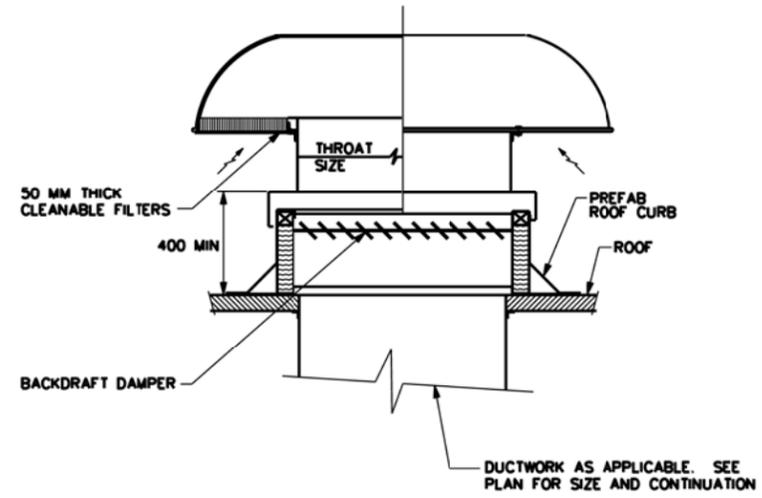
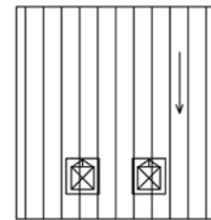
AFGHANISTAN NATIONAL POLICE (ANP) DISTRICT HEADQUARTERS COMPOUNDS - 1 STORY HQ VARIOUS LOCATIONS, AFGHANISTAN 1 STORY BUILDING

HVAC PLAN

SHEET REFERENCE NUMBER:
A M-1

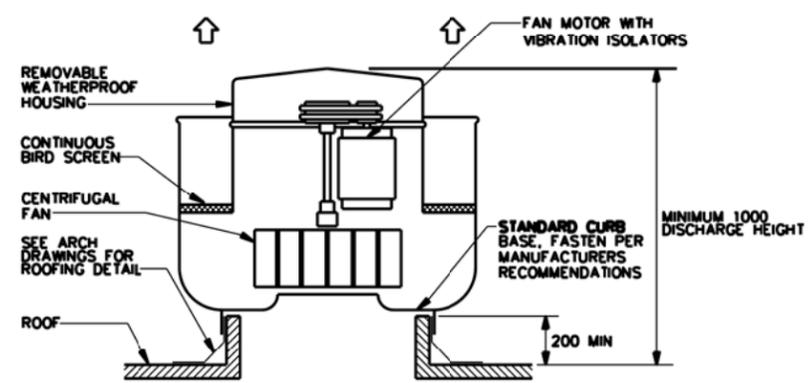


ROOF PLAN
SCALE = 1: 75

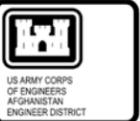


NOTE:
1. FILTER AREA SELECTION AT MAXIMUM FACE VELOCITY OF 300 FPM OR 1.52 MPS.

AIR INTAKE HOOD A
NOT TO SCALE M-3



UPBLAST POWER ROOF VENTILATOR B
NOT TO SCALE M-3



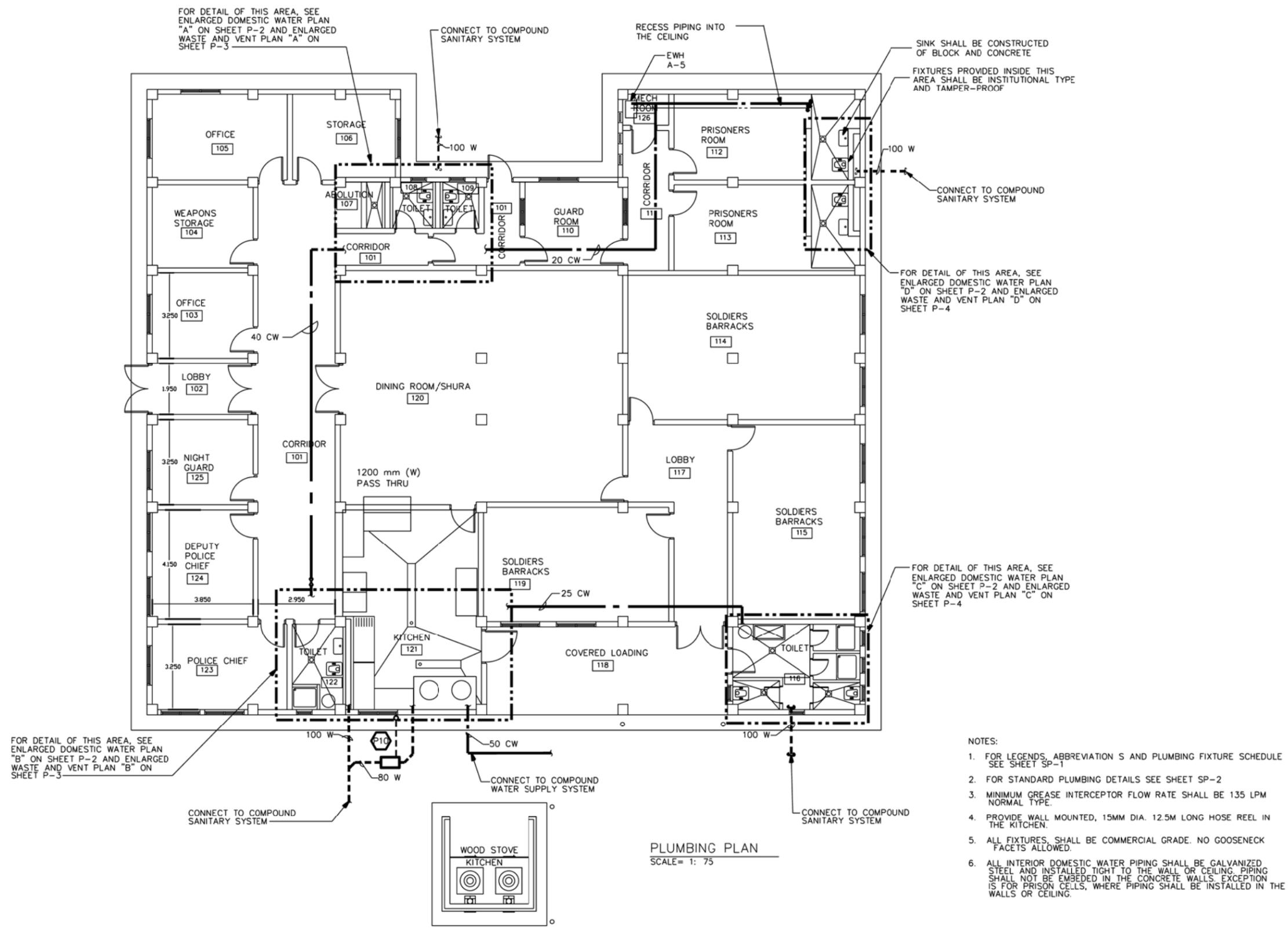
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	PLOT DATE: _____

U.S. ARMY ENGINEER DISTRICT AFGHANISTAN
CORPS OF ENGINEERS
APO AE 96338
ENGINEERING AND CONSTRUCTION DIVISION

AFGHANISTAN NATIONAL POLICE (ANP) DISTRICT HEADQUARTERS COMPOUNDS - 1 STORY HQ VARIOUS LOCATIONS, AFGHANISTAN 1 STORY BUILDING
ROOF PLAN

SHEET REFERENCE NUMBER:
A
M-3



PLUMBING PLAN
SCALE = 1: 75

- NOTES:
1. FOR LEGENDS, ABBREVIATIONS AND PLUMBING FIXTURE SCHEDULE SEE SHEET SP-1
 2. FOR STANDARD PLUMBING DETAILS SEE SHEET SP-2
 3. MINIMUM GREASE INTERCEPTOR FLOW RATE SHALL BE 135 LPM NORMAL TYPE.
 4. PROVIDE WALL MOUNTED, 15MM DIA. 12.5M LONG HOSE REEL IN THE KITCHEN.
 5. ALL FIXTURES, SHALL BE COMMERCIAL GRADE. NO GOOSENECK FACETS ALLOWED.
 6. ALL INTERIOR DOMESTIC WATER PIPING SHALL BE GALVANIZED STEEL AND INSTALLED TIGHT TO THE WALL OR CEILING. PIPING SHALL NOT BE EMBEDDED IN THE CONCRETE WALLS. EXCEPTION IS FOR PRISON CELLS, WHERE PIPING SHALL BE INSTALLED IN THE WALLS OR CEILING.



US ARMY CORPS OF ENGINEERS
AFGHANISTAN ENGINEER DISTRICT

DATE	APPR.	SYMBOL	DESCRIPTION

DESIGNED BY:	DATE:	REV:
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SUBMITTED BY:	PLOT DATE:	
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U.S. ARMY ENGINEER DISTRICT AFGHANISTAN
CORPS OF ENGINEERS
APO AE 98338
ENGINEERING AND CONSTRUCTION DIVISION

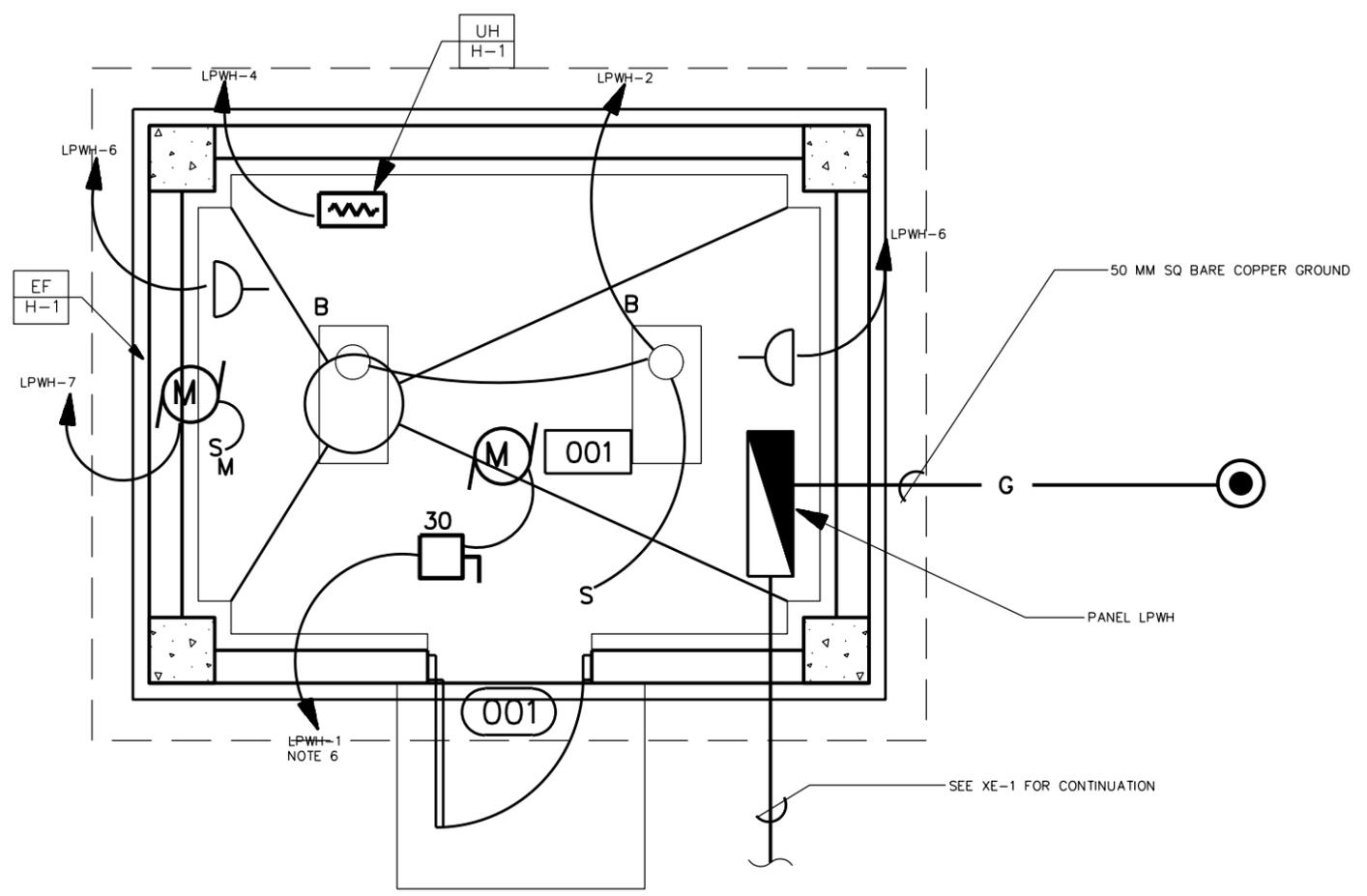
AFGHANISTAN NATIONAL POLICE (ANP) DISTRICT HEADQUARTERS COMPOUNDS - 1 STORY HQ VARIOUS LOCATIONS, AFGHANISTAN 1 STORY BUILDING
PLUMBING PLAN

SHEET REFERENCE NUMBER:
A P-1

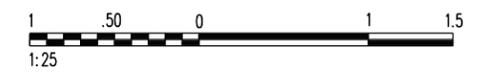
A B C D E F G H

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1

LIGHTING AND POWER PLAN
SCALE= 1:25



- NOTES:**
1. FOR LEGEND AND ABBREVIATIONS SEE DRAWING SE-1.
 2. COORDINATE LOCATION OF ALL ELECTRICAL FIXTURES AND EQUIPMENT WITH ALL OTHER TRADES.
 3. FOR ONE LINE DIAGRAM SEE DRAWING D/E- 1, POWER PLANT.
 4. ALL WIRING SHALL BE SURFACE MOUNTED IN METAL CONDUIT.
 5. FOR EXACT LOCATION OF MECHANICAL EQUIPMENT SEE MECHANICAL DRAWINGS.
 6. DESIGN IS BASED ON A 5 HP PUMP. IT IS CONTRACTOR'S RESPONSIBILITY TO DESIGN AND PROVIDE PROPERLY SIZED PUMP AS REQUIRED BY THE CONTRACT DOCUMENTS.
 7. CONTRACTOR SHALL CONFIRM THAT ALL CIRCUIT RATINGS ARE BASED ON THE ACTUAL NAMEPLATE OF THE SUPPLIED EQUIPMENT.



SYMBOL	DESCRIPTION	DATE	APPR.

DESIGNED BY:	DATE:	REV.
DRAWN BY:	DESIGN FILE NO.	
REVIEWED BY:	DRAWING CODE:	
SUBMITTED BY:	FILE NAME:	
	PLOT SCALE:	
	PLOT DATE:	

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APO AE 96338

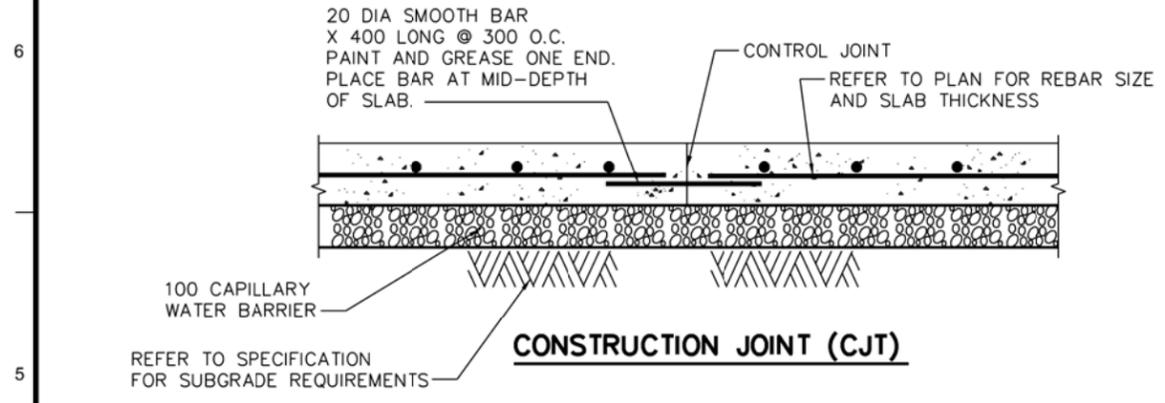
ENGINEERING AND CONSTRUCTION DIVISION

AFGHANISTAN NATIONAL POLICE
(ANP) DISTRICT HEADQUARTERS
COMPOUNDS - 1 STORY HQ
VARIOUS LOCATIONS, AFGHANISTAN
WELL HOUSE

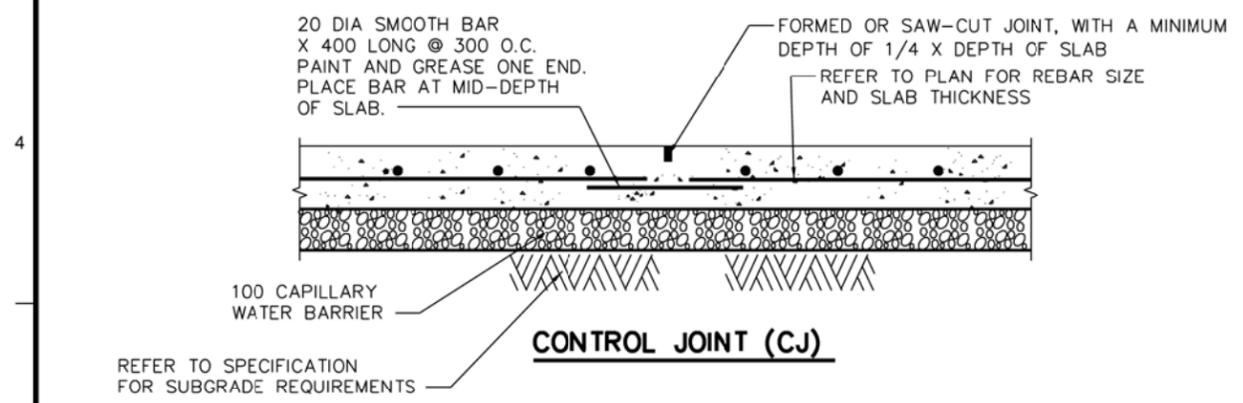
LIGHTING AND POWER PLAN

SHEET REFERENCE NUMBER:
E-1

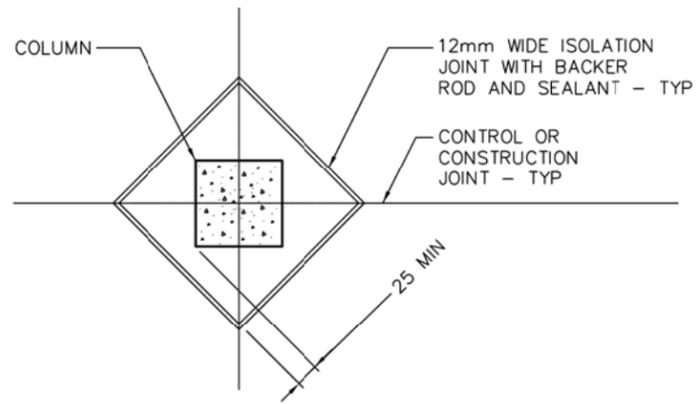
A B C D E F G H



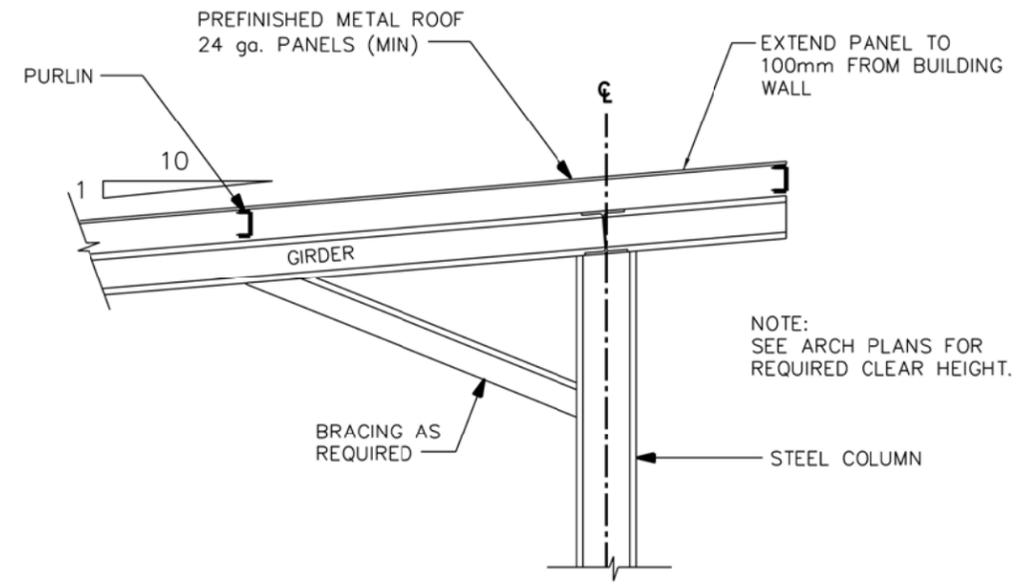
CONSTRUCTION JOINT (CJT)



CONTROL JOINT (CJ)

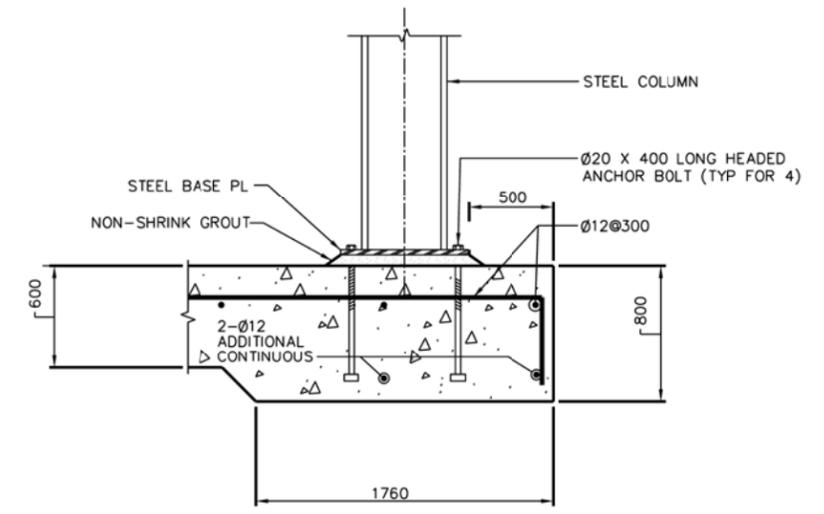


TYPICAL ISOLATION JOINT



TYPICAL SUNSHADE FRAMING

SCALE= NONE



TYPICAL SUNSHADE COLUMN BASE

SCALE= NONE

- TYPICAL SUNSHADE NOTES:**
1. PER SPECIFICATION 01015, PARAGRAPH 3.6.6, DESIGN CALCULATIONS AND FABRICATION DRAWINGS FOR SUNSHADES SHALL BE SUBMITTED FOR APPROVAL.
 2. FRAMING PLAN AND SECTION SHOWN ON THIS DRAWING ARE SCHEMATIC ONLY. ACTUAL MEMBER SIZES AND LAYOUT SHALL BE AS REQUIRED BY DESIGN CALCULATIONS.
 3. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.



DATE	APPR.	STAMP	DESCRIPTION

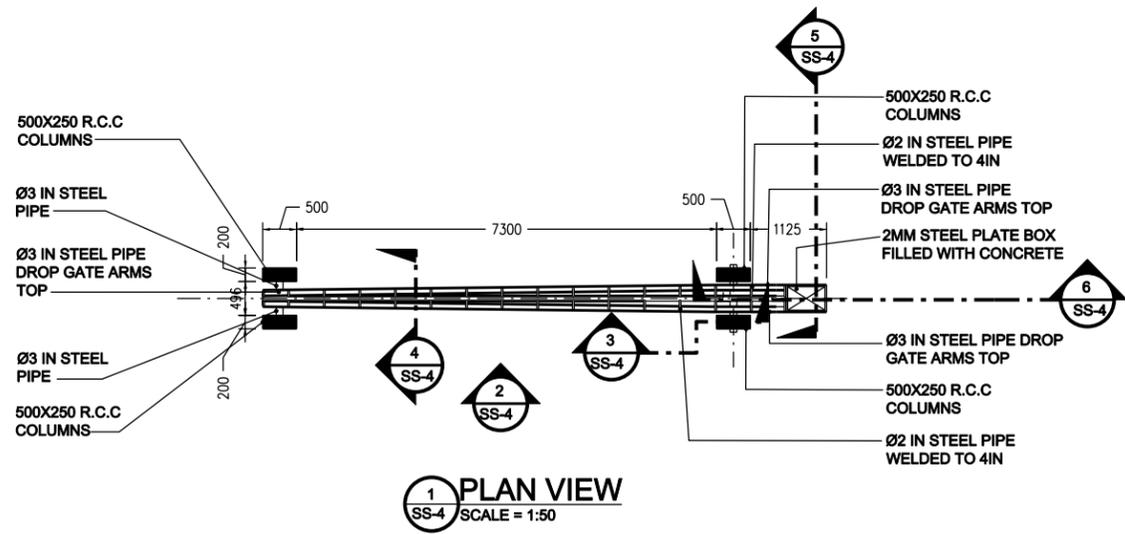
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	PLOT DATE: _____	

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CORPS OF ENGINEERS
APO AE 96338

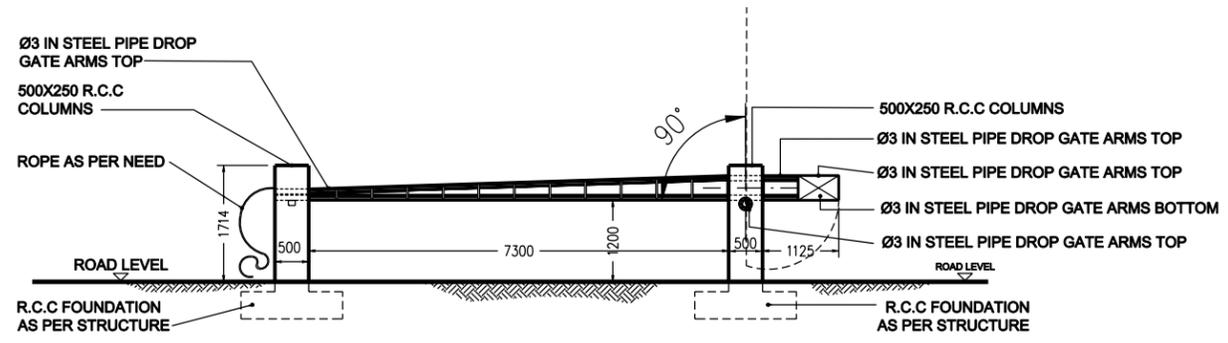
ENGINEERING AND CONSTRUCTION DIVISION

AFGHANISTAN NATIONAL POLICE (ANP) DISTRICT HEADQUARTERS COMPOUNDS - 1 STORY HQ VARIOUS LOCATIONS, AFGHANISTAN	STANDARD DETAILS
DETAILS	

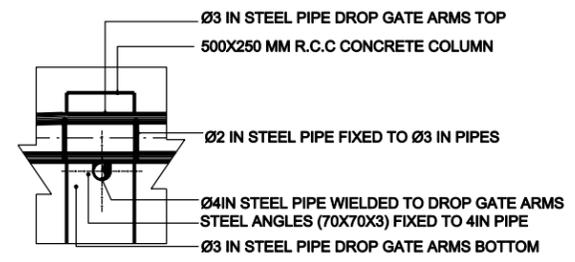
SHEET REFERENCE NUMBER: SS-3 SHEET -- OF --
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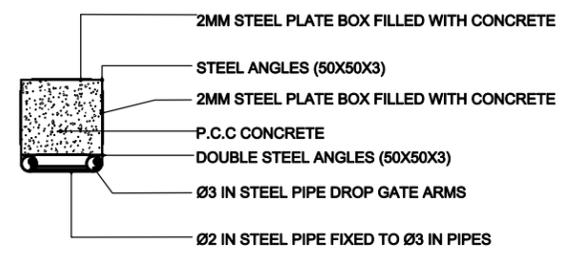
1 PLAN VIEW
SS-4 SCALE = 1:50



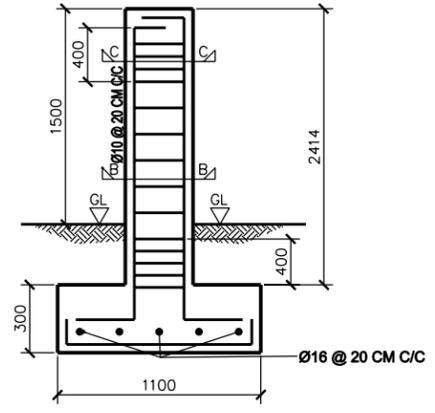
2 ELEVATION VIEW
SS-4 SCALE = 1:50



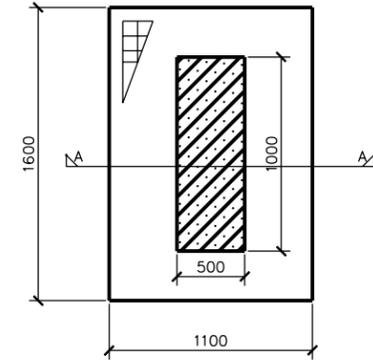
3 SECTION
SS-4 SCALE = 1:50



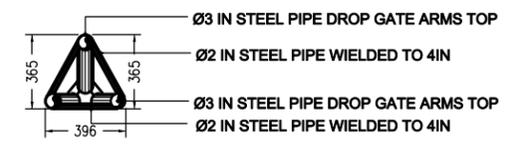
5 SECTION
SS-4 SCALE = 1:50



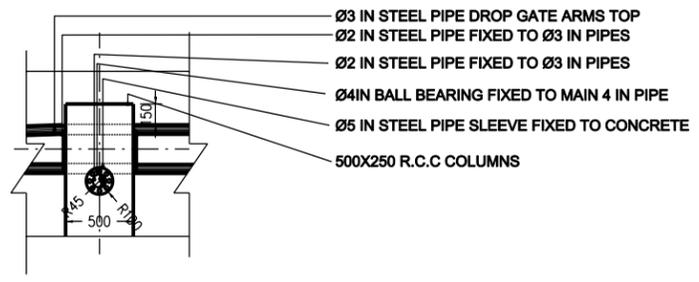
7 SECTION A-A
SS-4 SCALE = NTS



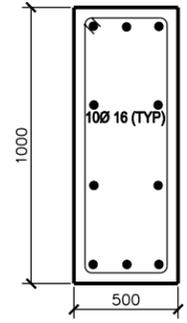
8 TOP VIEW
SS-4 SCALE = NTS



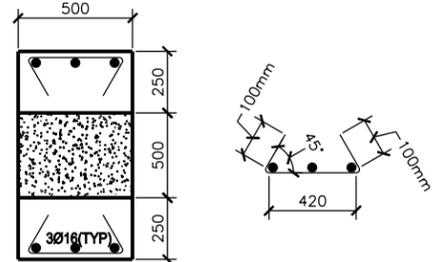
4 SECTION
SS-4 SCALE = 1:50



6 SECTION
SS-4 SCALE = 1:50



9 SECTION B-B
SS-4 SCALE = NTS



9 SECTION C-C
SS-4 SCALE = NTS



GRAPHIC SCALE



REV.	DATE	DESCRIPTION

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DRAWN BY:	DESIGN FILE NO.:	
CHECKED BY:	DRAWING CODE:	
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	PLOT DATE:	

AFGHANISTAN NATIONAL POLICE (ANP) DISTRICT HEADQUARTERS COMPOUNDS - 1 STORY HQ VARIOUS LOCATIONS, AFGHANISTAN

ENGINEERING AND CONSTRUCTION DIVISION

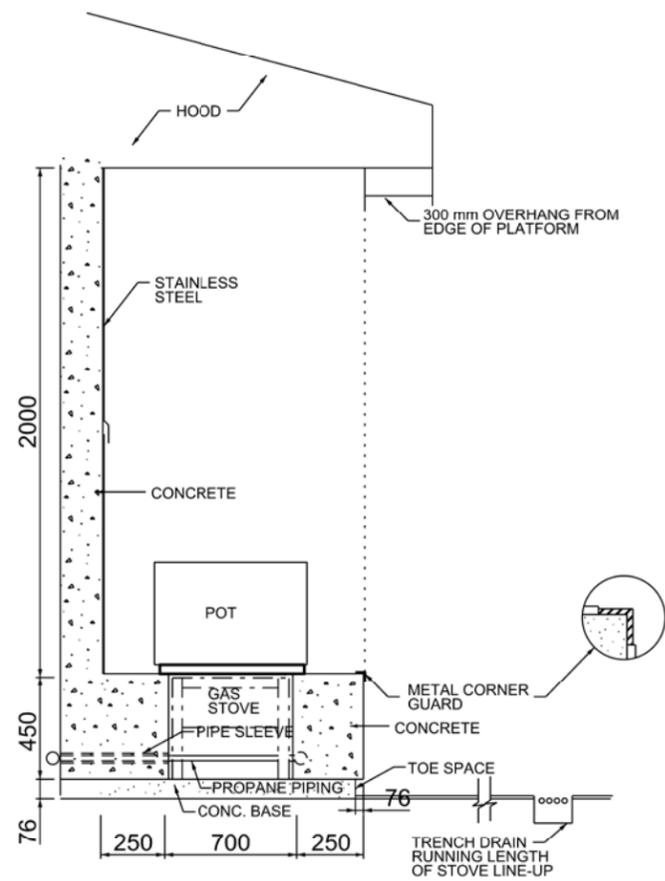
MANUAL DROP ARM GATE PLAN, ELEVATION & SECTIONS

SHEET REFERENCE NUMBER: **SS-4**

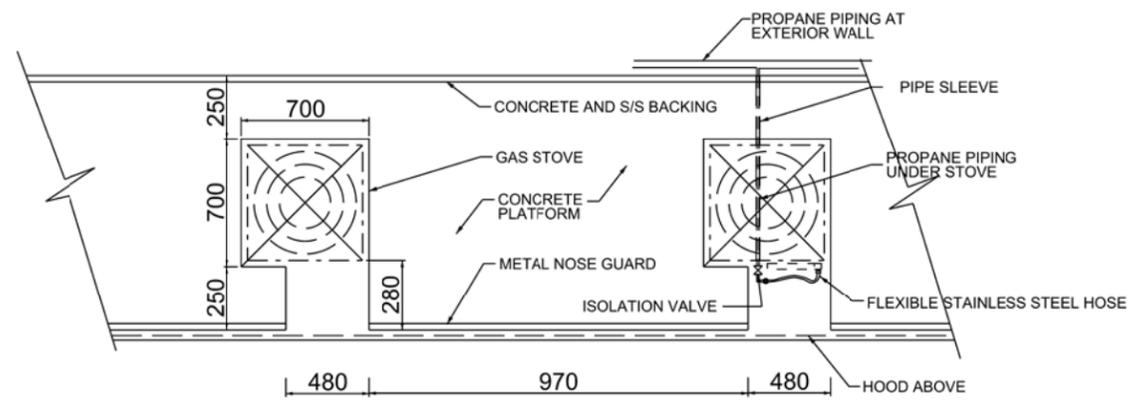
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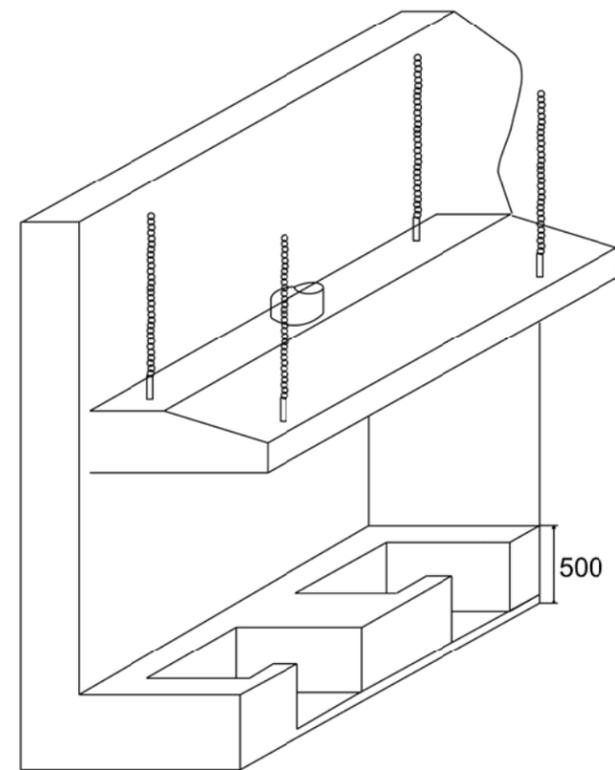


GAS STOVE SECTION
SCALE: NTS

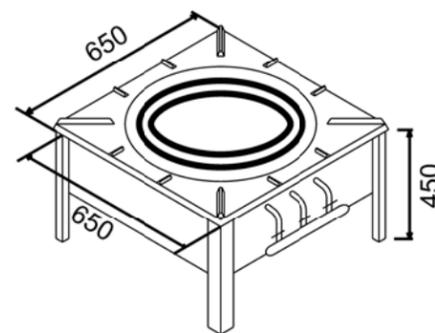


GAS STOVE PLAN
SCALE: NTS

- NOTES:**
- DIMENSIONS SHOWN ARE BASED ON A SPECIFIC STOVE MODEL
 - CONTRACTOR SHALL ADJUST THE DIMENSIONS BASED ON THE ACTUAL STOVE DIMENSIONS
 - THE SURFACE OF THE STOVE SHALL BE FLUSH WITH THE CONCRETE PLATFORM



ISOMETRIC VIEW
SCALE: NTS



GAS STOVE VIEW
SCALE: NTS



US ARMY CORPS OF ENGINEERS
AFGHANISTAN ENGINEER DISTRICT

DATE	APPR.	SYMBOL	DESCRIPTION

DESIGNED BY: _____	DATE: _____	REV: _____
DRAWN BY: _____	DESIGN FILE NO: _____	
REVIEWED BY: _____	DRAWING CODE: _____	
SUBMITTED BY: _____	FILE NAME: _____	
	PLOT SCALE: _____	
	PLOT DATE: _____	

U.S. ARMY ENGINEER DISTRICT AFGHANISTAN
CORPS OF ENGINEERS
APO AE 96338

ENGINEERING AND CONSTRUCTION DIVISION

AFGHANISTAN NATIONAL POLICE (ANP) DISTRICT HEADQUARTERS COMPOUNDS - 1 STORY HQ VARIOUS LOCATIONS, AFGHANISTAN STANDARD DETAILS

PROPANE COOKING STOVE

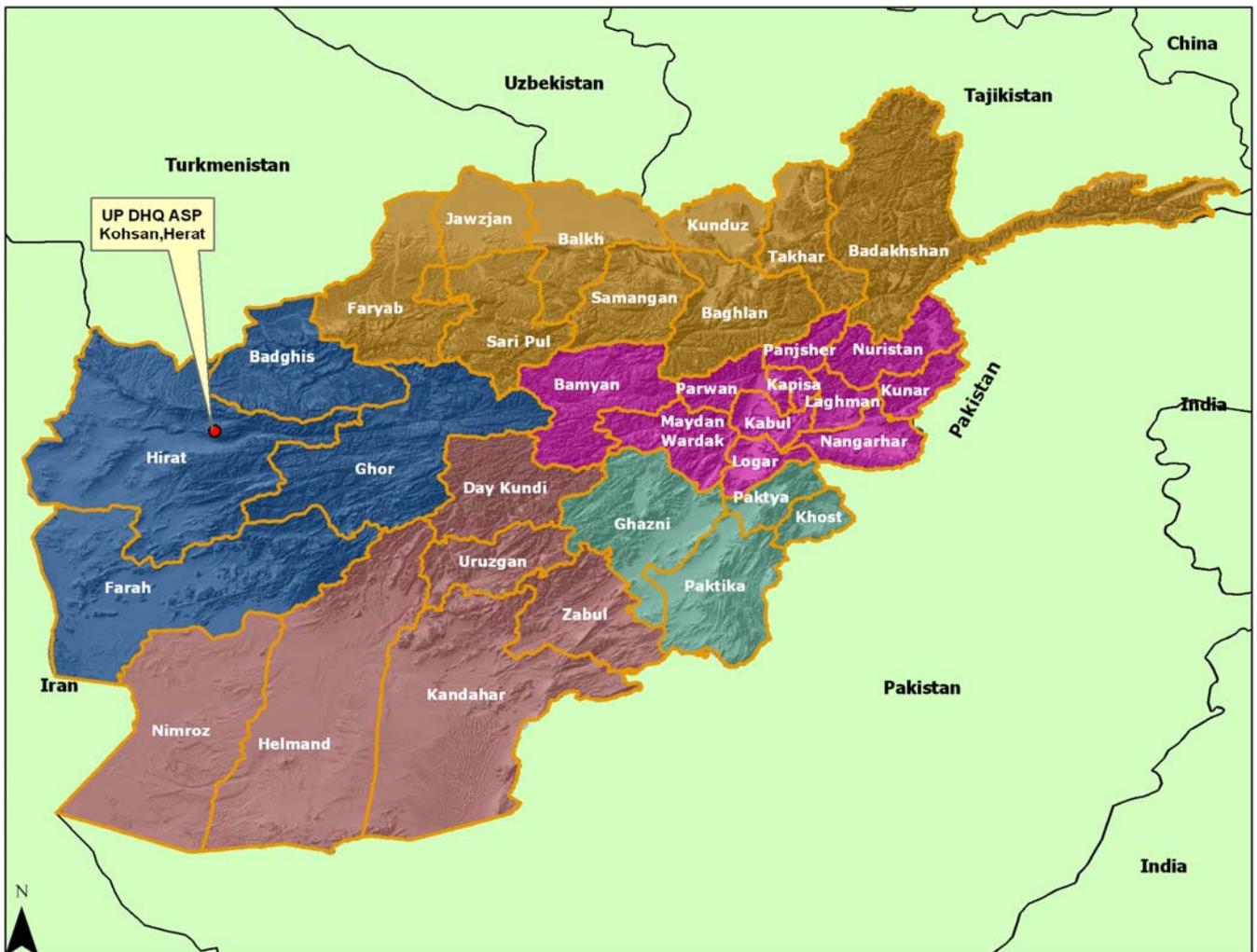
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SM-4
SHEET -- OF --



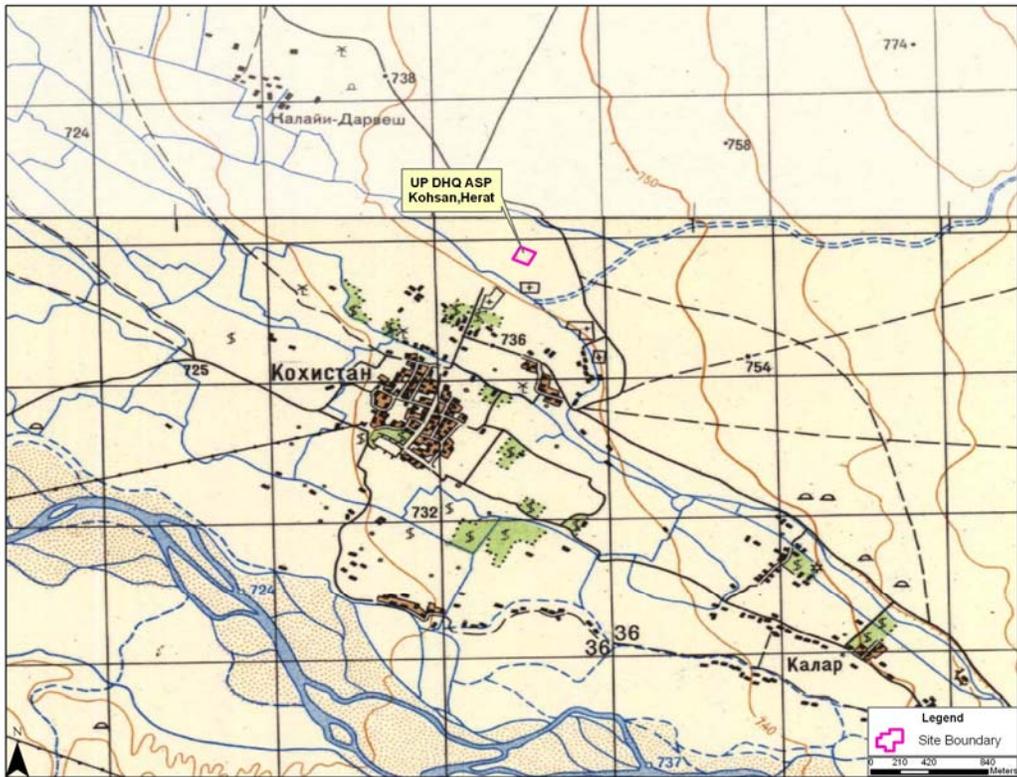
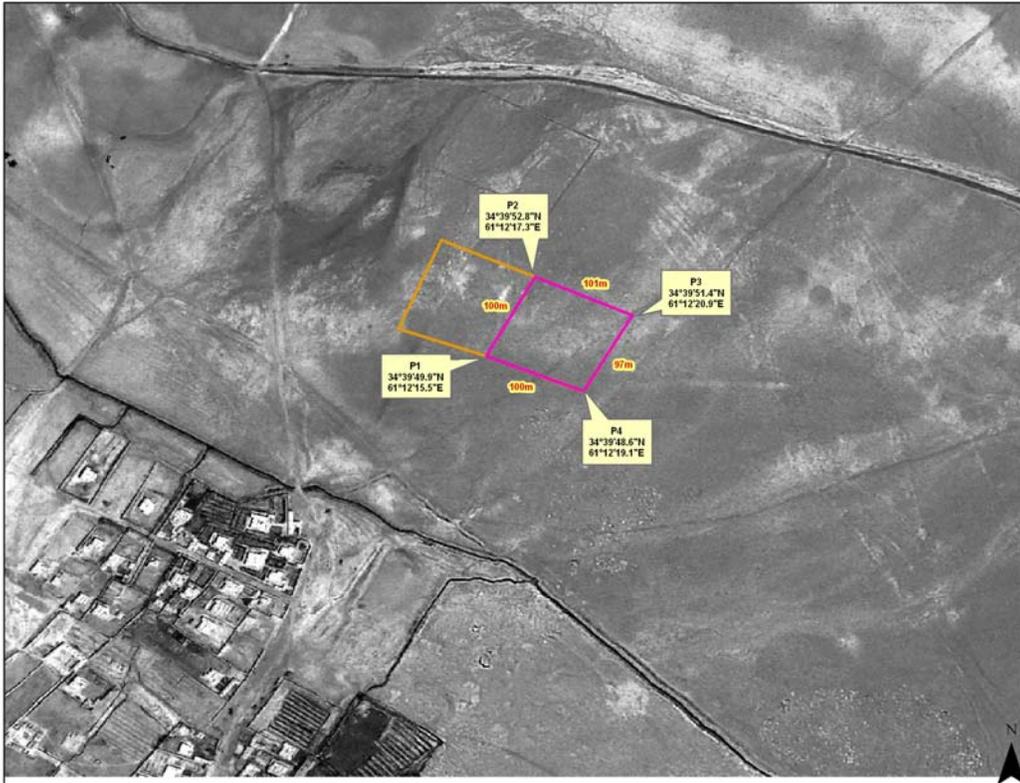
SITE ASSESSMENT SURVEY

September 2009

UNIFORM POLICE, DISTRICT HEADQUARTERS, AFGHANISTAN STABILIZATION PROGRAM (ASP) KOHSAN, HERAT PROVINCE PROJECT # PDHW041001DH



SITE ASSESSMENT



SITE ASSESSMENT

The findings of the site assessment survey indicate the existing Uniform Police District Headquarters **meets** the general requirements of the proposed facility. This site assessment report includes recommendations for improving the existing facilities based upon the current design criteria of the facility and identifying the deficiencies.

- Ownership: Property is owned by the Government of Afghanistan (GoA).
- Surrounding land use: The proposed site is surrounded by;
 - North: Open land owned by the Government
 - South: Open land owned by the Government
 - East: Open land owned by the Government
 - West: Open land owned by the Government, a District Governor's Headquarters and roads.
- Existing structures: There is a one story building that is 70% complete.
- Power: Electricity at the site needs to be connected to the main electric line located 200m from the site. There is no generator unit. The electrical connection inside the building is 30% complete.
- Water: Water table measures approximately 200m deep. There is an existing well located behind the District Governor's Headquarters, West 80 meters from the proposed site. The well is 200m deep and not in use. It does not have water pump and there is no piping system.
- Waste Water: No sewage system at the existing building. The plumbing inside the building is 10% complete.
- Constructability: The land is leveled and sandy.
- Drainage: There is no significant drainage issue.
- Road access: The proposed site is 400m from the District asphalted road and 3Km to Islam Qala- Herat Road.
- Landmines / UXO: No indication of UXO hazards.
- Area resources: Stone can be mobilized from the West 50Km, sand and gravel are available 3-10Km from the site, Steel bar, cement and gypsum can be mobilized from Herat, 120Km East. Skilled and unskilled laborers can be mobilized from the local market. Construction machinery and equipment is available at Herat, 120Km from the site. Fuel is available 8Km South. There is a Clinic located 1,150m South.

SITE ASSESSMENT

This site assessment did not include non scope items such as subsurface investigation and civil surveying.

This Site Assessment Survey Report was produced under the direction of the Senior Principal and reviewed by the Project Principal.

Karon B. Gilmore, PE
MACTEC Senior Principal

Michael W. Midkiff, PE
MACTEC Project Principal

LIMITATIONS

The findings and opinions presented are relative to the dates of our site work and should not be relied on to represent conditions at substantially later dates.

The opinions included herein are based on information obtained during the study and from MACTEC's experience. If additional information becomes available that might impact our conclusions, we request the opportunity to review the information, reassess the potential impacts, and modify the report, if warranted. If this assessment included a review of documents prepared by others, MACTEC has no responsibility for the accuracy of information contained therein.

TABLE OF CONTENTS

1	Site Assessment	1
1.1	Uniform Police District Headquarters, ASP@ Kohsan, Herat Province	1
1.1.1	Introduction.....	1
1.1.2	Existing Conditions.....	1
	Figure 1 - Aerial Site Photo	4
	Figure 2 - Site Delineation Coordinates	5
	Figure 3 - Land Use of Surrounding Area	6
	Figure 4 - Construction Resources.....	7
1.1.3	Site Photograph Direction and Photographs	8
1.1.4	Conceptual Master Plan/Site Plan	15
	Figure 5 – Conceptual Master Plan.....	15
	Figure 6 - Existing Plan	16
	Figure 7 - Barracks Plan.....	17
	Figure 8 - Wood Stove Kitchen Drawings	18
1.1.5	Scope of Requirements	19

LIST OF APPENDICES

<u>APPENDIX A</u>	Site-Specific Official GoA Documents (Pashtu and English)
<u>APPENDIX B</u>	Field Reports (Pashtu and English)
<u>APPENDIX C</u>	Additional Photos

SITE ASSESSMENT

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1 SITE ASSESSMENT

1.1 UNIFORM POLICE DISTRICT HEADQUARTERS, AFGHANISTAN STABILIZATION PROGRAM (ASP), KOHSAN, HERAT PROVINCE

1.1.1 INTRODUCTION

MACTEC Engineering and Consulting, Inc. (MACTEC) conducted a site assessment survey on 02 July 2009 of 1 (one) Hectare (10,000 m²) parcel of master planned land specified for the Ministry of Interior (MoI), Afghan National Police, Uniform Police District Headquarters, Kohsan, Herat Province.

1.1.2 EXISTING CONDITIONS

The proposed site is located 120km West of the Provincial Capital City, Herat and 1,070Km Northwest of Kabul at an average elevation of 745 meters. The proposed site is owned by the Government of Afghanistan (GoA). There are no known claims or dispute about land ownership.

The UP District Headquarters is located in an open desert. The size of the proposed site is 100m x 100m. The construction work is 70% complete. The UP DHQ is a one story building that has no perimeter walls, sewage system, plumbing and water. The electrical wiring is 30% complete. The flooring, ceiling, roofing, plastering of the walls, doors and windows are not complete.

The land at the UP District Headquarters is leveled. The soil is sandy and during summer season, the site is affected by sand storm. There is no other structure at the proposed site.

The surrounding land use is as follows:

North: Open Land (desert) owned by the Government

South: Open Land (desert) owned by the Government

East: Open Land (desert) owned by the Government

West: Open Land (desert) owned by the Government, a District Governor's Headquarters and Roads.

SITE ASSESSMENT

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**FIGURES
UP DISTRICT HEADQUARTERS, ASP @ KOHSAN,
HERAT PROVINCE**

SITE ASSESSMENT

Figure 1 - Aerial Site Photo



SITE ASSESSMENT

Figure 2 - Site Delineation Coordinates

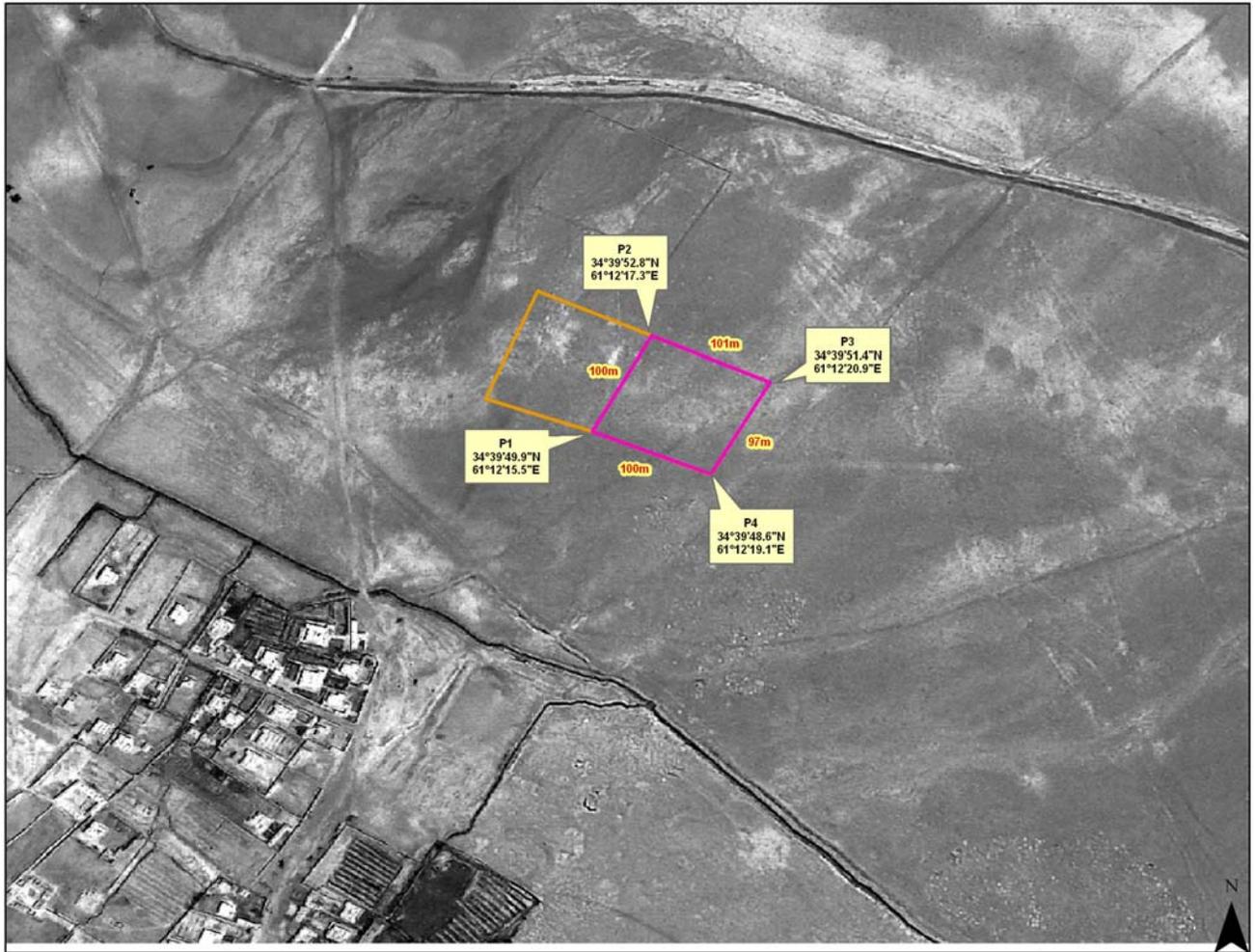


Table 1-1: Site Delineation Coordinates

Site Description	Site Location	Corner Point	Longitude	Latitude	Elevation (m)
UP District Headquarters, ASP @ Kohsan, Herat Province	Kohsan, Herat Province, Afghanistan	1	34° 39' 49.9" N	061° 12' 15.5" E	743
		2	34° 39' 52.8" N	061° 12' 17.3" E	744
		3	34° 39' 51.4" N	061° 12' 20.9" E	744
		4	34° 39' 48.6" N	061° 12' 19.1" E	745

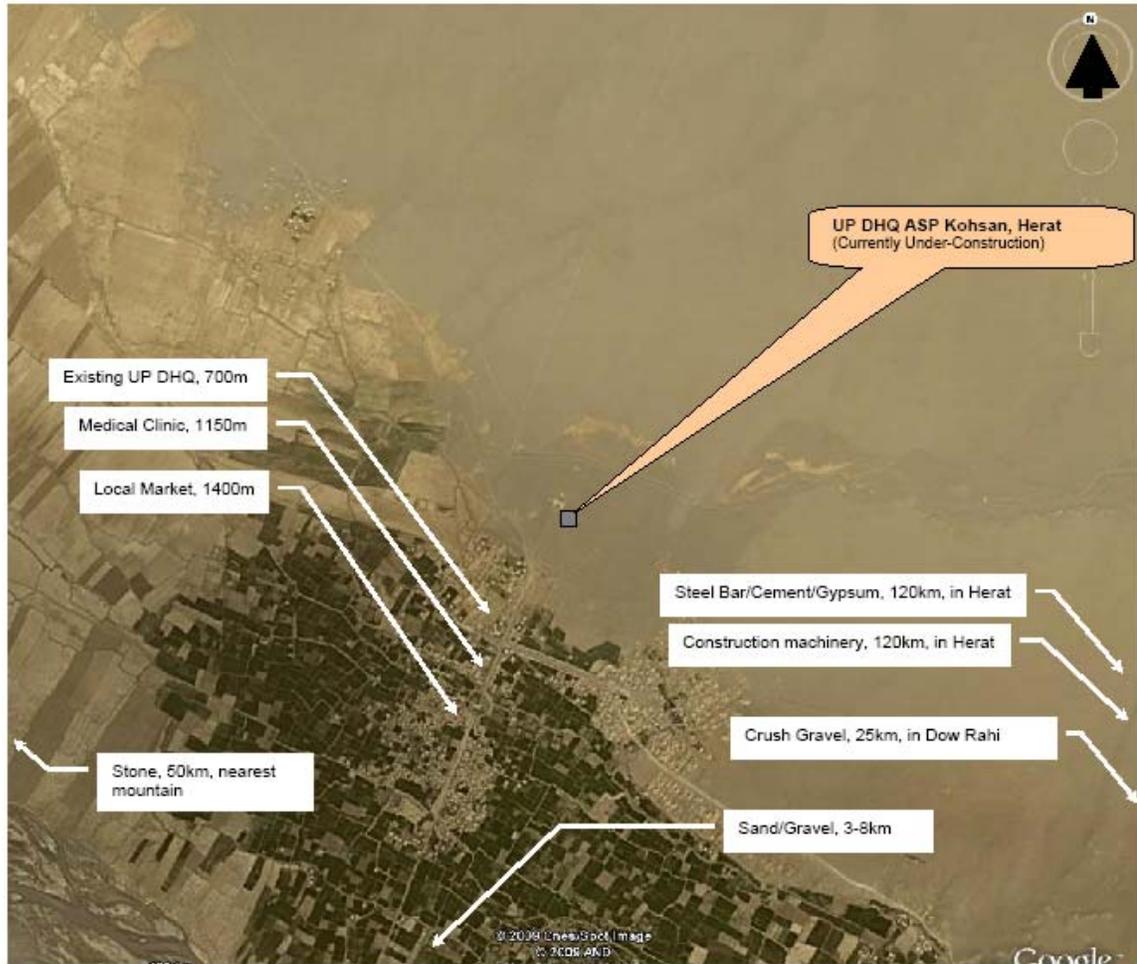
SITE ASSESSMENT

Figure 3 - Land Use of Surrounding Area



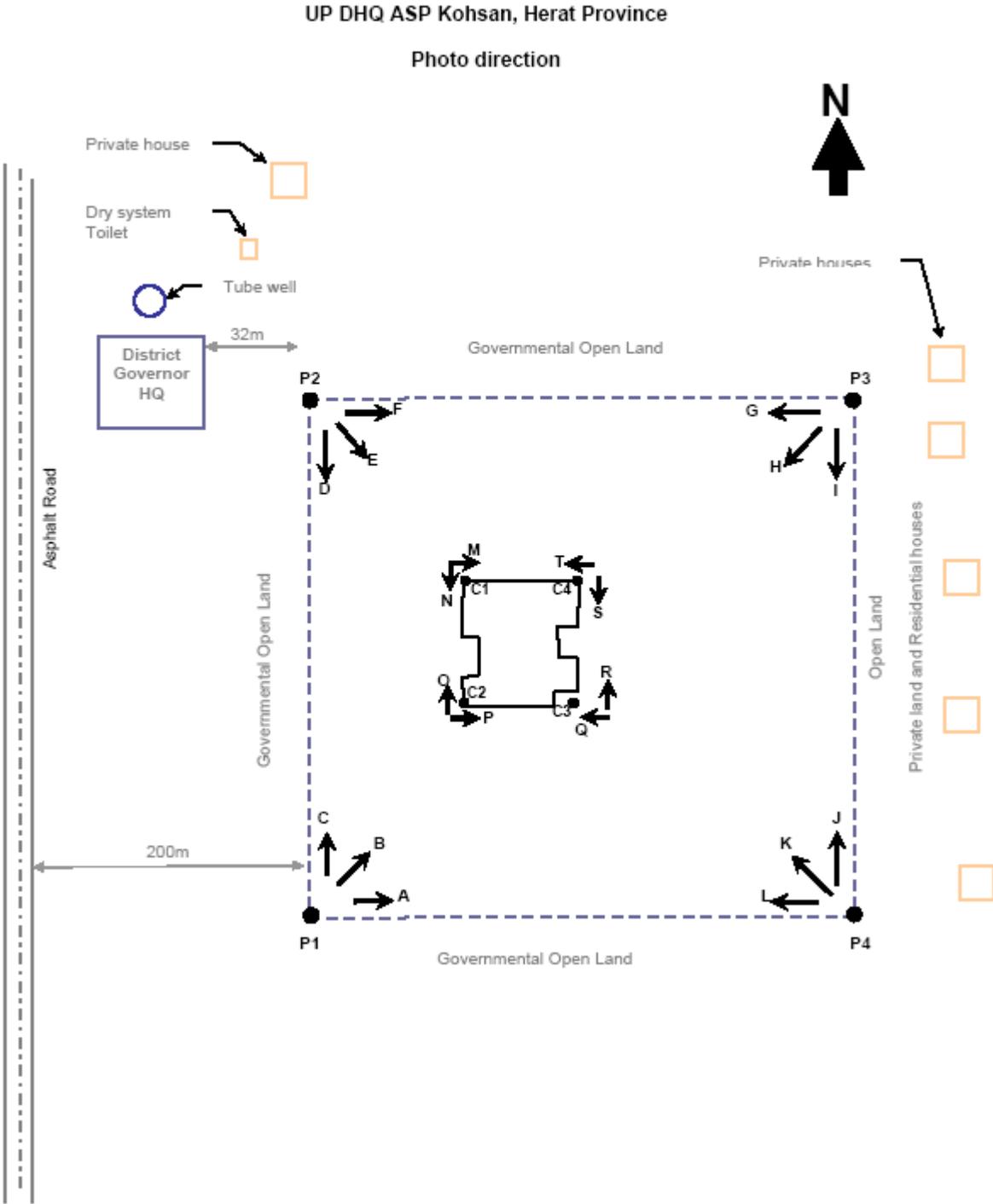
SITE ASSESSMENT

Figure 4 - Construction Resources



SITE ASSESSMENT

1.1.3 SITE PHOTOGRAPH DIRECTION AND PHOTOGRAPHS

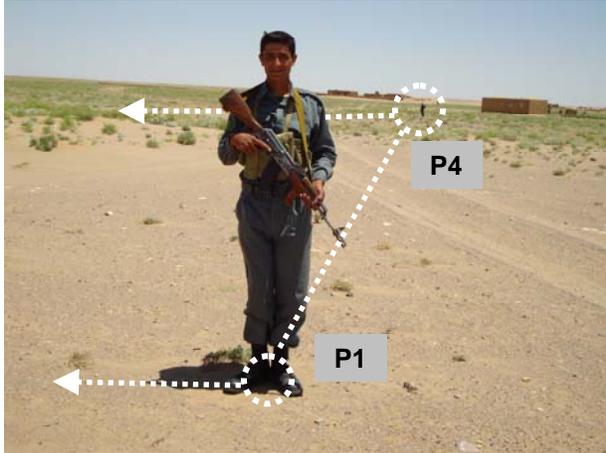


SITE ASSESSMENT

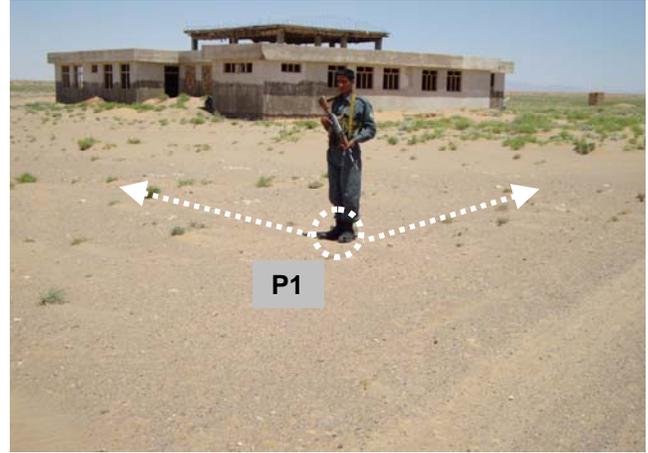
SITE CORNER POINT LOCATIONS (GPS Coordinates)

Site Corner Point #1 [Elev. 743m; 34° 39' 49.9" North, 061° 12' 15.5" East](#)

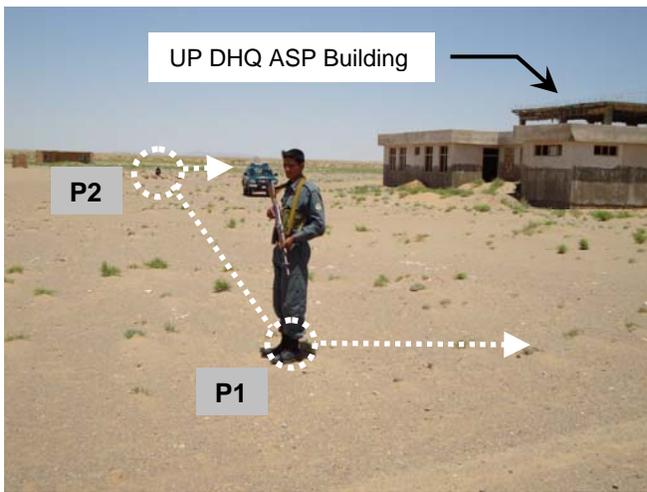
A - to East



B - to Northeast



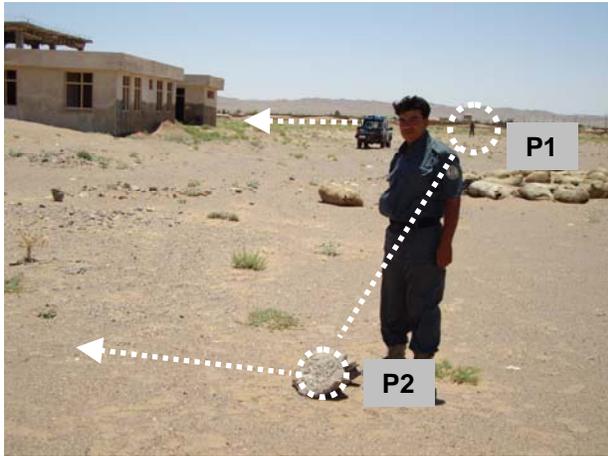
C - to North



SITE ASSESSMENT

Site Corner Point #2- [Elev. 744m; 34° 39' 52.8" North, 061° 12' 17.3" East](#)

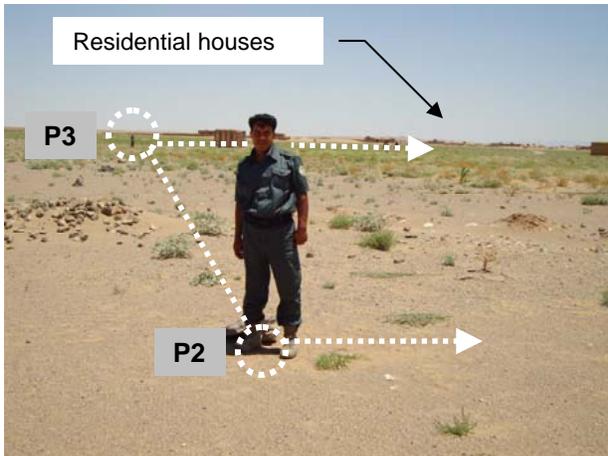
D - to South



E – to Southeast



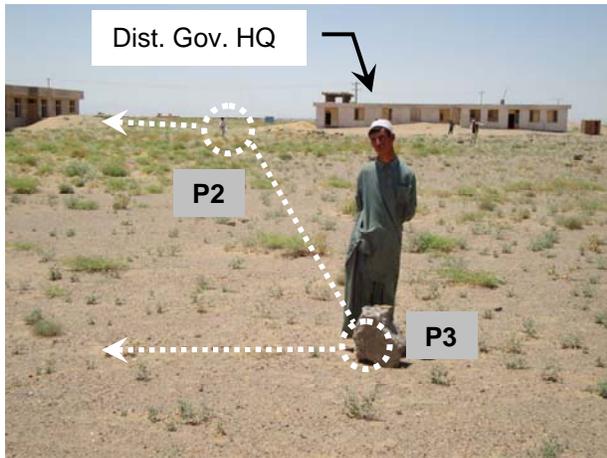
F - to East



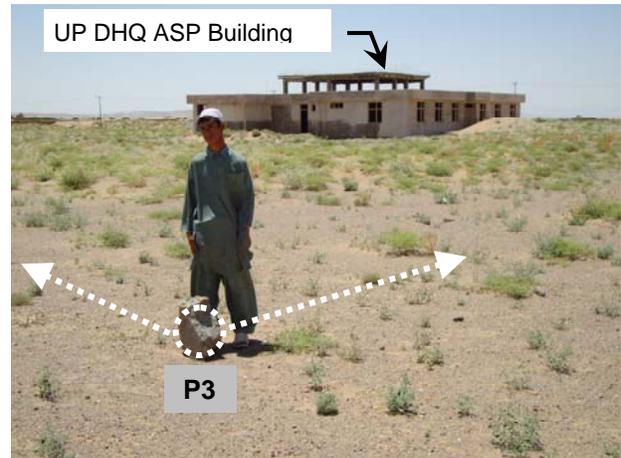
SITE ASSESSMENT

Site Corner Point #3- [Elev.744m; 34° 39' 51.4" North, 061°12'20.9" East](#)

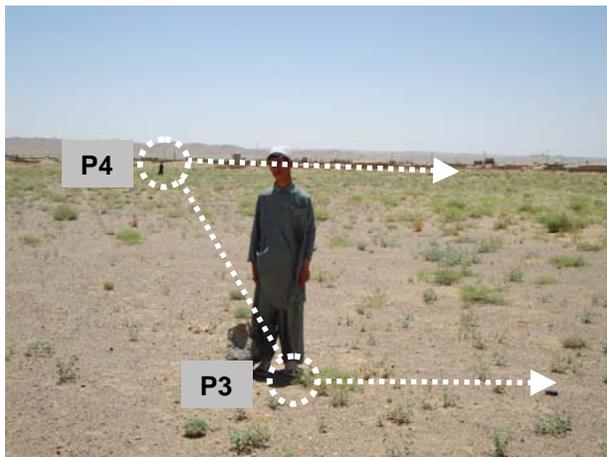
G - to West



H - to Southwest



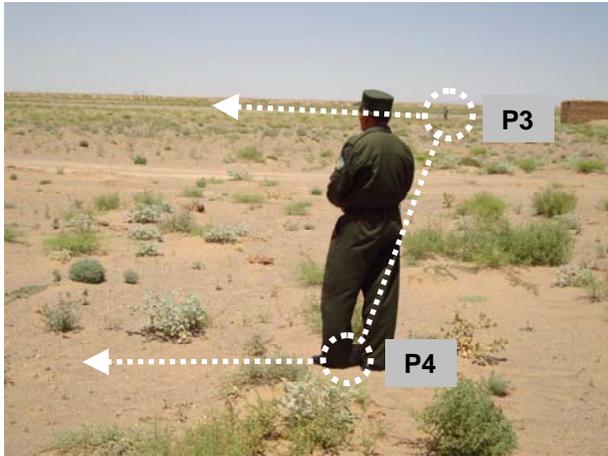
I - to South



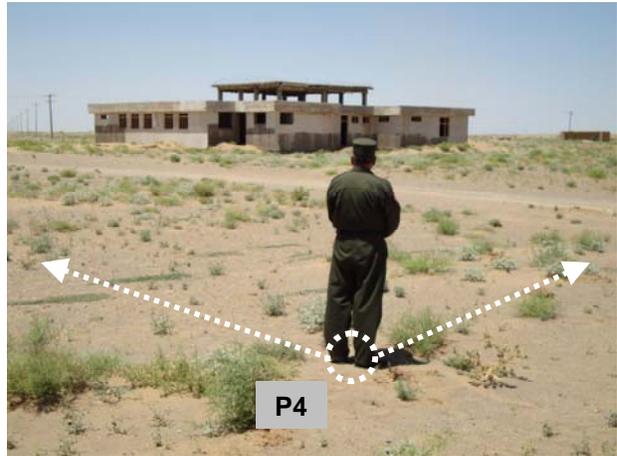
SITE ASSESSMENT

Site Corner Point #4- [Elev. 745m; 34° 39' 48.6" North, 061° 12' 19.1" East](#)

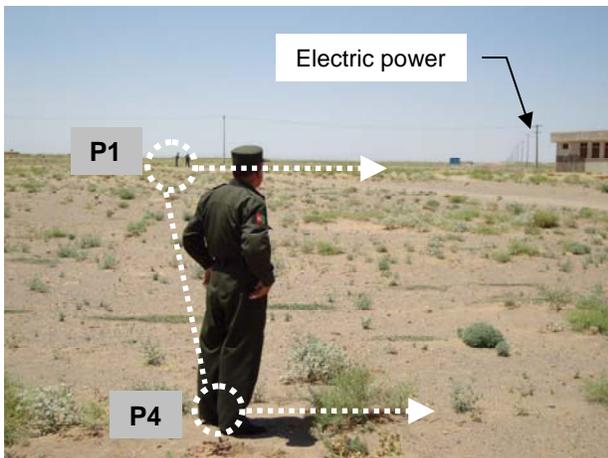
J- to North



K - to Northwest



L - to West



SITE ASSESSMENT

Building location and corner (GPS Coordinates)

Building Corner # 1 - [Elev. 745m; 34° 39' 51.4" North, 061°12'17.1" East](#)

M – to East



N – to South



Building Corner # 2 - [Elev. 745m; 34° 39' 50.6" North, 061° 12'16.8" East](#)

O - to North



P - to East



SITE ASSESSMENT

Building Corner # 3 - [Elev. 7454m; 34° 39' 50.4" North, 061° 12' 17.4" East](#)

Q – to West



R – to North



Building Corner # 4 - [Elev. 7456m; 34° 39' 51.2" North, 061° 12' 18.1" East](#)

S - to South



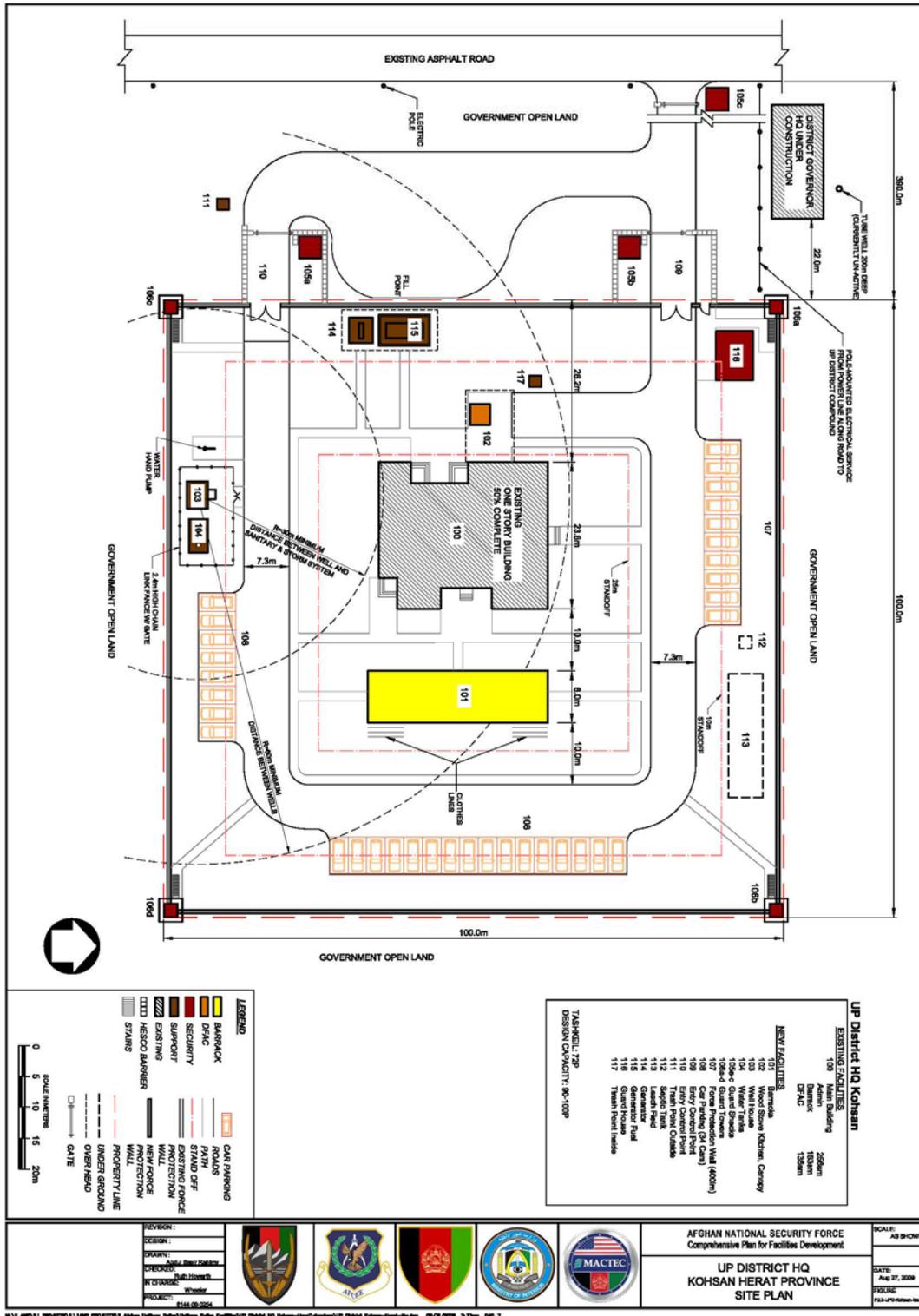
T - to West



SITE ASSESSMENT

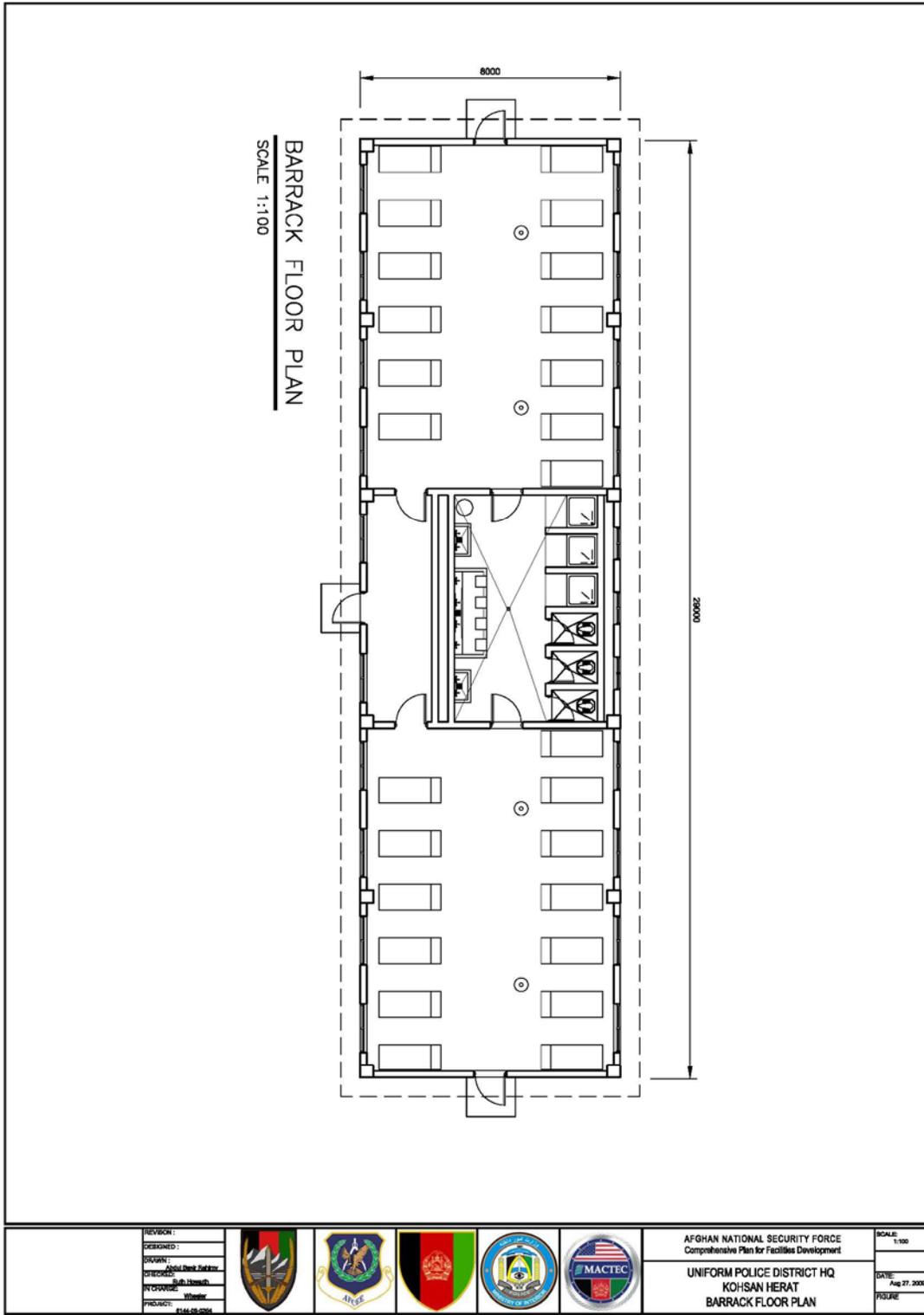
1.1.4 CONCEPTUAL MASTER PLAN/SITE PLAN

Figure 5 – Master Plan Map



SITE ASSESSMENT

Figure 7 – Barracks Plan



SITE ASSESSMENT

1.1.5 SCOPE OF REQUIREMENTS

UNIFORM POLICE DISTRICT HQ - ASP

KOHSAN, HERAT

INTRODUCTION

The Afghan Uniform Police (UP) are those Police assigned to Police District and Provincial and Regional Commands. The Uniform Police District Headquarters are based on a hub-and-spoke model, with Headquarters elements supporting and providing command and control to subordinate units (Police Posts), positioned at key locations throughout local Districts.

The layout and components listed utilize standard design components and are capable of supporting a varying number of personnel, dependent on mixed use of single and double bunks. This project supports:

Tashkiel: 72 as of 11 August 2009
Design Occupancy: 90-100

EXISTING INFRASTRUCTURE AND UTILITIES

GOVERNORS' HQ BUILDING (existing)

There is an existing two-story building currently under construction for the District Governor located adjacent to the UP District HQ site, 22 meters away from the UP District site and closer to the road.

DISTRICT HQ (existing) #100

This building is located approximately 415-meters from the main paved road.

Administration:

This facility accommodates the executive and staff functions of the district police facility. The building was partially constructed as part of the Afghan Stabilization Program based on the standard one-story UP District HQ building currently being contracted by the Corp of Engineers for CSTC-A on behalf of the ANP and MoI. Refer to the site assessment report for detailed conditions of the existing facility and a list of deficiencies and recommendations regarding the building itself.

Typically, the building accommodates five-to-six different functional areas, dependent on local needs and conditions:

- Communication Room
- Uniformed Police Department
- Department of Criminal Investigation
- Department of Central Training
- Department of Central Administration
- Medical Clinic

In addition to Administration (noted above), and Barracks and DFAC (noted below), the building incorporates detainee cells for males and females, weapons storage room, and interior toilet and showers.

SITE ASSESSMENT

Existing Admin Building Area: 256 SM Gross
90p Design: 9 persons +/-
Barracks:

This facility accommodates billeting as such:

Existing Billeting Building Area: 183 SM Gross
Billeting Tashkiel: Single Beds: 6 +/-
Double Bunk Beds: 42 +/- 48 Beds Total

Dining and Kitchen Facilities (DFAC):

This facility was originally design to accommodate a working kitchen with propane cooking, work counters, storage for dry and refrigerated goods, and one dining room as such:

Dining Tashkiel: One room for 46 persons x 2 seatings = 92 persons

However, the kitchen remains unfinished without water, power, stoves and equipment.

WATER SYSTEM

There is an inactive 200-meter deep well adjacent to the District Governor's Building, approximately 80-meters from the existing UP District HQ building.

SANITARY SEWER SYSTEM

There is no sanitary sewer system on-site.

POWER GENERATION and ELECTRICAL DISTRIBUTION

There is a pole-mounted municipal electrical power line along the paved road approximately 390-meters from the site. There is no additional generator capability on-site.

FORCE PROTECTION MEASURES

There are no existing force protection measures.

ROADWAYS, PARKING, and WALKWAYS

There are no existing paved pathways, roads, or parking areas.

TRASH POINT (existing)

There are no dedicated trash collection points.

LIST OF REQUIRED COMPONENTS

Program Space

Administration
Barracks
Dining & Kitchen Facilities (DFAC)
Wood Stove Kitchen
Well House
Water Tank
Septic Tank
Leach Pit

SITE ASSESSMENT

Generator
Fuel Tank (with fill point located outside compound, if possible)
Entry Control Point (ECP)
Secondary ECP (or Escape Hatch)
Guard Shack(s)
Guard Tower(s)
Trash Point(s)

SCOPE OF WORK

DISTRICT HQ #100

If deemed by CSTC-A to be appropriate and necessary for the operation of the police facility, the existing building shall remain and construction shall be completed. Additionally:

- Provide hand wash stations at a ratio of one station per 15 diners
- Provide a custodial room with mop sink
- All sinks shall be trough-type sinks
- Provide propane cooking stoves, hood-type exhaust venting over stoves
- Provide ceramic tile wainscot in the Kitchen and Dining Room – 2m high in Kitchen, 1m high in Dining Room. Provide hose bibbs and trench drains in the Kitchen and Dining Room for cleaning.

WOOD STOVE KITCHEN #102

Provide built-in wood-burning stoves located outdoors separate from the main DFAC and dining area but connected by a roof-covered walkway between the buildings. The stoves shall have doors for adding wood and for removing ash on the outside of the building. The top of the stove shall be a durable metal surface not less than 25mm thick, not ceramic or tile. Each shall have an exhaust stack to remove smoke to the outside environment. The exhaust stack shall extend no less than 60cm (2 feet) above the roof ridge to prevent down draft into the building.

Provide a canopy over the exterior area adjacent to the stoves to provide an area protected from the weather for a storing wood and propane tanks for the stoves.

BARRACKS #101

Provide a one-story 8M x 20M, 160+SM barracks building. Barracks for ordinary personnel shall be open bay and the personnel shall sleep in bunks. Toilets, showers, and lavatory sinks shall be internally located. (See the attached plan).

The barracks shall accommodate 52 double bunk beds, split between two separate open bay style rooms. Total billeting potential is 52, plus 48 in the HQ building = 100.

WATER SYSTEM #103 & 104

Provide a potable water supply system for the compound that includes the development of a groundwater wells; provide water well pump(s), well house, water storage tank, and underground pipe distribution system. The preferably elevated water storage tank capacity shall provide for gravity feed and will be at least 12 cubic meters (3,000 gallons) (2 day at a use of 200 liters per person per day). In addition to the main water supply system, provide a manually operated hand type pump for emergency water supply.

Provide a 2.4m high chain link fence with 4.0m double-gate around the water tank and well house.

SITE ASSESSMENT

Potable water wells shall be located no less than 60 meters from other wells in the area to prevent wells from stealing water from each other. Water wells shall be located no less than 30 meters from septic systems, and up-hill of the septic systems.

Alternatively, the system described above may be provided at the existing well near the Governor's Building with buried piping to a water storage tank within the UP District compound.

SANITARY SEWER SYSTEM #112 & 113

Provide a sanitary sewer collection and treatment system. Sewer collection system shall consist of gravity sewer pipe and appurtenances such as manholes, cleanouts and building service connections. The gravity sewer collection system shall connect to the sewage treatment and effluent disposal system. Construct the systems in accordance with criteria established in UFC 3-240-07FA, Sanitary and Industrial Wastewater Collection-Gravity Sewers and Appurtenances and UFC 3-240-02N Wastewater Treatment Systems Augmenting Handbook. System capacity shall be calculated based on a hydraulic waste load that is equivalent to 80 percent of the Required Daily Demand for the water system as specified in these technical requirements, or as 140 liters/capita, day (33 gallons per capita per day), whichever is greater. Perform a geotechnical investigation of the proposed sewage treatment site (leach field). Design and construct the sewage treatment system that is compatible with site and soil conditions. Sewage treatment system shall be a traditional septic tank and a leach field. Construction requirements and criteria for septic tank & subsurface absorption field and mound systems shall be in accordance with guidelines outlined in TM 5-814-3/AFM 88-11, Volume III Domestic Wastewater Treatment and UFC 3-240-02N Wastewater Treatment Systems Augmenting Handbook. Minimum acceptable percolation rates are categorized as slow permeable 24-48 min/cm (60 to 120 min/in). The sewage treatment system shall be sited the maximum distance possible from the living quarters, working areas, public use areas and proposed facilities. Maintain a 30 meter separation between septic components and potable water wells. The septic tank shall not be located under a building, road, or parking lot. Bollards shall be erected 1.2 meters (4 ft) on center around the treatment system to protect it from vehicle traffic. The sewage treatment system shall be accessible by road for maintenance. Construction of the sewage collection and treatment system must account for all current flows as well as anticipated flow.

POWER GENERATION and ELECTRICAL DISTRIBUTION #114

Connect the UP District compound to the existing municipal electrical supply located along the paved road. Connect shall be strung power lines, pole-mounted alongside the new access road. Provide back-up power via commercial diesel-fired heavy-duty generator(s) with integral day tank fuel storage, weather-tight, sound-insulated enclosures on mounting platforms with roofed canopy. Provide primary electrical distribution panels that are commercial outdoor-rated waterproof, and associated distribution system. The panels must be capable of handling the power load of all components listed or shown, plus six spares.

GENERATOR FUEL TANK(S) #115

Provide generator fuel storage tank(s) with capacity to serve the facility. Provide full-height stone walls to protect tanks against live fire. Provide a spill containment system to not allow a leaking tank to expel its fuel beyond the tank area. Ensure tanks remain fully accessible for maintenance. Provide a metal or concrete roof over the storage tank(s). Provide means of filling tanks from outside the force protection wall.

FORCE PROTECTION MEASURES

Provide force protection measures as detailed in the drawings and herein that include perimeter walls, gates, vehicle barriers, guard shacks and guard towers. Construct perimeter walls as indicated on the site plan from masonry or native stone when available. Install outriggers and single-strand concertina wire on top of the wall. The walls shall measure at least 2.4 m (8 ft) high

SITE ASSESSMENT

with a thickness of the walls not less than 600 mm (24 in). Guard towers shall be constructed at all four site corners at an offset to allow visual observation along the outside face of the wall. Outrigger supporting arms shall be “Y” shaped with post securely embedded into the top of the wall.

Provide a vehicle gate and Guard Shack (#105c) at the end of the new access road where it connects to the existing paved road.

Construct two separate and independent Entry Control Points (ECP - #109, 110) to serve as entry points into the UP District HQ compounds. The ECPs shall include manually operated swing or sliding steel gates for vehicles and a separate steel swing gate for personnel. Provide a drop-arm vehicle gate offset from the main gate and force protection wall to allow a vehicle to be inspected between the drop-arm gate and the main gate. The design vehicle for ECP entrance is a fuel delivery/septic tank truck typical for region of project site and a large fire truck.

The gates shall be swing or slide type. Gates shall be a pair of 3.65 m wide x 2.4 m high (12 ft wide x 8 ft high) leafs, constructed of steel plates, steel tube frame, and steel tube intermediate posts and rails at the ECP and a single gate, 3.65 m wide x 2.4 m high (12 ft wide x 8 ft high).

The design of the gates shall insure that it is dimensionally stable, square, true and planar. Gate leafs shall not rack or deflect when install on its hinges. Gates shall have a sufficient number of hinges anchor mounted to the exterior masonry walls, to support each gate leaf. Provide a locking mechanism that holds the gates together when in the closed position as well as a drop bolt that engages a steel sleeve embedded in the pavement.

Provide a fill point outside the force protection wall to allow filling of generator fuel from outside the compound.

Provide a continuous 1.5m-wide by 1.5m-deep vee-shaped anti-vehicle ditch running along side, parallel, and outside of the perimeter fence, offset from the wall 5.0 meters.

GUARD SHACKS (#105a-b) - Provide two guard shacks, one at each of the two ECPs, outside the compound wall, protected with Hesco barriers as indicated. Guard shack shall be an 11 square meters (118 sf) building consisting of reinforced concrete frames, foundations, floor slabs, and roof slabs (with metal roof over-build), with brick masonry infill walls, 200 mm (8 in) thick. Floor finish shall be sealed concrete. Building shall have three (3) horizontal sliding windows, one (1) exterior door, and a metal sloping roof. Glazing for the windows shall be minimum 8 mm (0.31 in) thick plexiglass.

GUARD TOWERS (#106a-d) – Provide guard towers at each inside corner of the force protection walls or as indicated. Guard tower shall be a minimum of 3 m x 3 m (10 ft x 10 ft) in size. The guard tower shall be constructed of reinforced concrete frame with brick masonry infill walls, a wood floor hatch access door, and awning type windows as indicated. Glazing for the windows shall be minimum 8 mm (0.31 in) thick plexiglass. Windows shall be located on all 4 sides to provide a 360 degree viewing area. The tower shall be supported on reinforced concrete footings located below the frost line or a minimum of 800mm (32 in) below grade, whichever is greater.

- Provide access stairs per OSHA Standards, with entry to the tower through a wooden floor hatch door. Provide pathways to the guard towers.
- Provide general lighting and one 360-degree omni-directional, ballistic resistant searchlight. Do not use white lights inside guard towers. Use red, blue, or black lamps in interior guard tower lighting. Provide two weather-resistant duplex receptacles for general use. The area

SITE ASSESSMENT

in the immediate exterior vicinity of the guard tower shall be provided with an all weather non-slip surface and shall be graded to sufficiently drain away from structure.

- Illuminate the exterior of the compound. Position lights to provide overlapping coverage and to avoid illuminating guard positions.

ROADWAYS, PARKING, and WALKWAYS

Provide a 7.3m wide compacted gravel road from the existing paved road to the compound's ECPs. Provide a compacted gravel road and parking network as indicated. The roads shall be 7.3m wide (two-way traffic) or 3.65m (limited one-way traffic) and designed to carry traffic of a 3 ton two-axle vehicle. The road layout shall provide access to entry control points, parking areas, fuel points (if applicable), generators, sewage septic tanks, and the trash collection point. Provide parking area for vehicles inside the compound. Provide a network of compacted gravel 1.5m wide sidewalks to connect the buildings.

TRASH POINT #117

Provide two collection points - one located outside the compound walls and one located within the compound, near but down-wind of the DFAC. Each collection point shall have a 1.8 m x 1.8 m (6 ft x 6 ft) concrete pad, covered with a concrete or steel canopy structure, and surrounded by chain-link fencing with visual screening material. Provide a double swing gate entry to allow trash containers to be easily wheeled in and out.

SITE LAYOUT and BUILDING DESIGN CRITERIA AND METHODOLOGY

The site layout has been as directed by the customer and according to the scope of work. Setback distances for force protection have been followed where possible; however these requirements were relaxed as a matter of practicality where insufficient area was available. In cases where offsets have been relaxed, occupied buildings have been protected by placement farthest from perimeter walls and unoccupied buildings were placed closer to perimeter walls. The design preference has been to relax the setback requirements before reducing the minimal building separation. In some cases it was deemed necessary to relax both. Following are summaries of design criteria/methodology that were used to prepare each of the site layouts.

Project Footprint Requirements:

Assuming a 25.0 m (82'-0") standoff between Perimeter Wall and District HQ and Barracks buildings.

90p Design District HQ & One Barracks 80.0 meters by 120.0 meters

Standoff Distances and Separation for Structures within a Controlled Perimeter:

From Perimeter Wall:

- >25.0 m (82'-0") – Uninhabited/Unoccupied Structures (storage, etc.)
- >25.0 m (82'-0") – Low-Inhabited/Occupied Structures (latrines, etc.)
- >45.0 m (148'-0") – High-Inhabited/Occupied Structures (barracks, DFAC, and administration)

From Trash Collection, Roadways, and Parking within Controlled Perimeter to:

- <10.0 m (33'-0") – Clear Space/No Buildings
- >10.0 m (46'-0") – Uninhabited/Unoccupied, and Low-Inhabited/Occupied Structures
- >25.0 m (82'-0") – High-Inhabited/Occupied Structures

SITE ASSESSMENT

Between Buildings: 10m (33'-0")

Administration Space Requirement Design Criteria:

Senior (Colonel and above)	private	18.5 - 28.0 NSM
High (LtC)	private	14.0 - 18.6
Middle (Head of sub-directorates)	semi-private (2x)	9.5 - 14.0
Low	open office	7.0 - 9.3
Administration	open office	9.0
Ordinary	none or open	5.0

Barracks Space Requirement Design Criteria:

Space requirement for Ordinary personnel:	6.7 NSM/person
Space requirement for Middle personnel:	8.4 NSM/person
Space requirement for Senior/High personnel:	11.6 NSM/person

Vehicle Parking Requirements:

Privately Owned Vehicle (POV) Parking: 15% x 72 persons = 11 spaces

Visitor Parking: plus: 3 spaces

Vehicle Parking: The total number of vehicles requiring parking is to-be-determined based on available area. The types of vehicles that may be parked consist of LTVs, 5-ton trucks, ATVs, and motorcycles.

Parking Provided: 34 Spaces

SITE ASSESSMENT

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APPENDIX A
Site-Specific Official GoA Documents (Pashtu and English)

SITE ASSESSMENT

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وزارت امور داخله

معینیت تأمیناتی و اداری

ریاست تسهیلات



شماره ۳۴۰
 امریت پیژند ۸ / ۳ / ۱۳۸۸ تاریخ // 1388

به قوماندانی محترم امنیه ولایت هرات!
 بخش انجنیری قواء ایتلاف (مکتیک) ذریعه نامه شماره (6) مورخ
 1388/3/5 و (10) 88/3/5 خویش نگاشته ، میخواهد تعمیرات
 ولسوالی های ادرسکن ، گلران ، کهسان و کشک کهنه ولایت هرات
 و ولسوالی قیسار ولایت فاریاب را به همکاری ریاست تسهیلات
 وزارت امور داخله ^{تعمیرات} توسط نماینده ریاست تسهیلات و تیم تخنیکی
 مکتیک سروی و بررسی نماید.
 بناءً موضوع فوقاً بشما ارقام تا تسهیلات لازم کاری را برای شان
 فراهم نمائید .

وزیر امور داخله

کاپی به قوماندانی امنیه ولایت فاریاب
 کاپی به امریت دفتر
 کاپی به مدیریت انجنیری
 کاپی به مکتیک

SITE ASSESSMENT

**Interior Ministry
Sustaining and Administrative Deputy Ministerial
Facility Department**

Letter No: 345/278

Date: 12/3/1388

**The Uniform Police Commander
UP Provincial Headquarters
Herat, Afghanistan**

LETTER OF INTRODUCTION FOR TECHNICAL TEAM AND MoI REPRESENTATIVE

To The Respected UP Commander:

The Engineering section of the Coalition Forces and MACTEC Engineering and Consulting Inc. will conduct surveys and evaluations of facilities at the different Provinces in Afghanistan for the Afghan National Police (ANP) Project.

A letter dated 5/3/1388, Letter Number 6 and a letter dated 5/3/1388, Letter Number 10 has been sent out to the respective Ministry of Interior Offices about survey and evaluation of various projects at the following provinces listed below:

PROJECT	FACILITY TYPE	PROVINCE/ DISTRICT
Police Project	UP District Headquarters	Adreskan, Herat Province
Police Project	UP District Headquarters	Gulran, Herat Province
Police Project	UP District Headquarters	Kohsan, Herat Province
Police Project	UP District Headquarters	Koshka Kohna, Herat Province
Police Project	UP District Headquarters	Qaysar, Faryab Province

The surveys will be conducted by a Technical Team from MACTEC Engineering and Consulting Inc. in cooperation by the representative of the Ministry of Interior, Facilities Department, Colonel Suhrab. The team will survey UP District Headquarters for land availability, assessment and other related work to support projects in rebuilding Afghanistan.

Your support is highly recommended for the success of this project. We request your support in gathering the information and providing convoys and security if deemed necessary for our team.

Sincerely,

Interior Minister
(Signed)

Cc to Faryab UP Provincial Headquarters
Cc to Section Office
Cc to Engineering Directorate
Cc to MACTEC Inc.

SITE ASSESSMENT

**Herat UP Provincial Headquarters
Administrative and Sustaining Directorate
Logistics Directorate
Construction**

Letter No: 146/142

Date: 14/05/1388

**The Head of the Facility Department
Ministry of Interior
Kabul, Afghanistan**

NOTICE OF COMPLETED SITE SURVEY

The Respected Head of the Facilities Department:

This letter is in response to the Letter Number: 493, dated: 6/04/1388 and Letter Number: 345, dated: 11/03/1388 provided by the Respective Ministry, our notice of survey completion below states that:

The Technical Team of MACTEC Engineering and Consulting Inc. and Colonel Suhrab, representative of the MoI has reported completion of site survey, evaluation of the site of the District Projects and completed site sketches for the Districts listed below:

PROJECT	FACILITY TYPE	PROVINCE/ DISTRICT
Police Project	UP District Headquarters	Gulran, Herat Province
Police Project	UP District Headquarters	Kohsan, Herat Province

The site sketches are attached along with this letter for future reference for the Ministry of Interior through its representative.

The Technical Team and the support group after completion of the survey work, returned to their respective offices and duty stations.

Sincerely,

Lieutenant General Asmatullah Alizai
Herat Province's Chief of Police
(Signed)

Cc to Ansar 606 Zone Headquarter

APPENDIX B
FIELD REPORTS (PASHTU and ENGLISH)

SITE ASSESSMENT

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SITE ASSESSMENT

د ملی پولیس د ساحاتو تشخیصیول
دا فورمه باید مخکی د ساحی له پرېښودو څخه ډکه شی

	شبه	نورمال	خراب
د ساحی نوم:	د برکت ولسوالی د امنیې قوماندانی (امنیتی وضع):		
د سروی نیټه:	11-6-09		
د انجینر نوم:	محمد حارون دوستید محمد		
د ساحی عمومی وضع:	د کابل څخه د مالکیت په اړه: معلومات د مخکی د مالکیت په اړه: د ولسوالی په داخل (احاضه) دولتی ټکله		
د مخکی د اوسنی پیشنهاد حالت:	د کابل څخه (جنوب) لوری، واټن 81m د ولایت څخه د مرکز (جنوب لور) لوری واټن 164m		
<p>د تثبیت شوی خضکی د کنجونو خای د کورډیناټ (جی پی اس) په حساب:</p> <p>اول: ګوټ $N: 33^{\circ} 57' 59.2''$ $E: 68^{\circ} 56' 29.6''$ ELEV: 1955m تصویر <input type="text"/></p> <p>دویم: ګوټ $N: 33^{\circ} 58' 00.8''$ $E: 68^{\circ} 56' 26.9''$ ELEV: 1956m تصویر <input type="text"/></p> <p>پنځم: ګوټ تصویر <input type="text"/></p> <p>آزم: ګوټ تصویر <input type="text"/></p> <p>نهم: ګوټ تصویر <input type="text"/></p>			
<p>د شته تسهیلاتو څرنگوالی! لومړی ساحه در حاجی دیوال لری د ودانی کارنی ناکمیل دی او قرارداد دی نئ تسبیحی دی.</p> <p>د تثبیت شوی ودانیو د کنجونو د کورډیناټ (جی پی اس) په حساب:</p> <p>د (1) ودانی:</p>			

SITE ASSESSMENT

پرمیٹو نوں د پانگولو پہ پارہ کہ معلومات
 لڑو صوبہ سہاوردہ مائینولڈ ٹھہرہ پاکہ دہ

نور معلومات چی پروڈائی منفی اغیزہ لوی؟
 دھو صوبہ سہاوردہ مائینولڈ دھو صوبہ سہاوردہ مائینولڈ
 چتہ نلری اولوچ دی، دروازہ کلکٹین نلری اولوچ دیکھ دیکھ بعض دلو اولو
 پلا شتہ نلری لکھ دی گوی دروازہ نلری
 دسٹیک تھا سطح دودائی دوش د سطح نلری دہ

- مطنی منابع:
- 1) کم تجربہ کارمندان
 500 افغانی
 براخل دوسوال اولو لایت پل علم نلری رانی
 250 افغانی
 16km
 دوشی اجورہ: 250 افغانی
 - 2) با تجربہ کارمندان
 500 افغانی
 براخل دوسوال اولو لایت پل علم نلری رانی
 250 افغانی
 16km
 دوشی اجورہ: 500 افغانی
 - 3) ساختمان مواد لکھ (شگہ، چقل، دیرہ) پہ ساحہ کہ:
 ریش رو صقل درائی 500 AF/m³ کرش 20% حاصلہ 25km توری او بھ
 16km - سروریش 700 AF/m³ حاصلہ 20km
 نور مواد لکھ (سیمنت، گول سیک، خبثہ، گچ، سروریش) کہ کم خای خخہ راورٹی شی.
 سنت و 250 AF/18 حاصلہ 16km، خشت درج سیک: 1000 No/3000 AF
 16km
 تہا براد تیت کابل + کر اس لوتز
 لوری او بھ
 پل علم شمال شرق
 - 4) د مخابراتی سیستم
 16km
 دوشی اجورہ: 16km
 دوشی اجورہ: 16km
 - 5) د سوند نوکی لکھ لرقی، بنزین، فیزل ضرورت لپارہ:
 5-10km
 لوری او بھ
 دوشی اجورہ: 5-10km
 32 AF/Lit. F. Wood 8 AF/kg
 وائٹن:
 - 6) عامہ ترانسپورت لکھ متی بس، ٹکسی، مسافر ورونکی (بس):
 70-80 AF
 کرایہ:
 16km
 لوری او بھ
 پل علم شمال شرق
 - 7) ساختمانی مائتری او وسایل له کم خای خخہ راورٹی شی:
 81km
 حاصلہ
 81km
 وائٹن:
 - 8) د سوند نوکی د مائتری لپارہ:
 5-10
 لوری او بھ
 32 AF/Lit. F. Wood 8 AF/kg
 وائٹن:
 16km
 لوری او بھ
 1km
 داخل دوسوال
 پل علم
 - 9) د سوند نوکی د مائتری لپارہ:
 5-10
 لوری او بھ
 32 AF/Lit. F. Wood 8 AF/kg
 وائٹن:
 16km
 لوری او بھ
 1km
 داخل دوسوال
 پل علم
 - 10) کلنگ پہ ساحہ کہ:
 16km
 لوری او بھ
 1km
 داخل دوسوال
 پل علم

مہربانی وکری د ساحی ترسیم شوی پلان علاوہ کری:

SITE ASSESSMENT

<p>نقطه: $N: 33^{\circ} 58' 00.8''$, $E: 68^{\circ} 56' 29.0''$ تصویر <input type="text"/> Elv. 1957m.</p> <p>خلورم: $N: 33^{\circ} 57' 59.8''$, $E: 68^{\circ} 56' 28.0''$ تصویر <input type="text"/> Elv. 1956m</p>	<p>نقطه: $N: 33^{\circ} 57' 59.9''$, $E: 68^{\circ} 56' 29.1''$ تصویر <input type="text"/> Elv. 1956m</p> <p>نقطه: $N: 33^{\circ} 58' 00.7''$, $E: 68^{\circ} 56' 28.0''$ تصویر <input type="text"/> Elv. 1956m</p>	<p>اول: گوت</p> <p>دویم: گوت</p>
<p>دویم: گوت</p> <p>تصویر <input type="text"/></p> <p>خلورم: گوت</p> <p>تصویر <input type="text"/></p>		<p>د (2) ودائی: اول: گوت</p> <p>دویم: گوت</p>
<p>دویم: گوت</p> <p>تصویر <input type="text"/></p> <p>خلورم: گوت</p> <p>تصویر <input type="text"/></p>		<p>د (3) ودائی: اول: گوت</p> <p>دویم: گوت</p>

د ودائی اندازه او د منزلو تعدادونه:

اوله ودائی: اوله ودائی لوی منزل دوه عرض ئی شمال طرف ته $23.8m$ او طول ئی شرق طرف ته $27.4m$ دی. ($23.8m \times 27.4m$)

دویمه ودائی: -

دویمه ودائی: -

د ودائی ډولونه (مواد ساختمانی شپوه او عمومی اوضاع):

اوله ودائی: دو ودائی درجا ئی دیو الونز له جوړو څخه جوړ شوی دی درخلی ودائی یخه رو چت ئی لښکر دی دو ودائی کار رسا شمالي انکس شوی دی او قرار دادی پوښتلی ئی پوښی دی اوس هم ئی ترنگ شوی ده. د یادولو وړ ده دی پوښورکی ودائی ئی د سپټیک ټانک څانگی ($5.35 \times 3.5 \times 4$) لری دو څخه ودائی نلری -

دویمه ودائی: -

SITE ASSESSMENT

درېمه ودانۍ:

په ساحه کې د کار لویې مواد او کثافتات:

سټورکون خالو مخه ټاکنه ده .

د ساحې په چاپریال کې:

د ساحې چاپریال هم ټاکنه دی .

په کوم لوري؟

ایا ساحه د پراختیا وړتیا لري که نه؟

ساحه د جنوب طرف ته د پراختیا وړه ده چې هلته یو غیر رسمي لویو فعاله
حدارته واقع ده چې اوس یې د پراختیا وړتیا لري چې ټاکنه ده او هلته
کې د دولت لویو وزارت په وزارت کې تعلق لري .

ټولگي شمېرات:
د بریښنا سیستم:

(A) ښاري بریښنا په کومه کچه ظرفیت او فریکونسي شته؟
ښاري بریښنا لري دوه ټاکنه چېرته لویو لوري په ظرفیت کې 44KW
لري او دواړه فعال دي .

(B) اوبه: د اوبو سطح په متر $SWL = 12m$

د اوبو سطح په ساحه کې لږه کچه لري چې د اوبو سطح
په 12m کې لري .

استوګن کسان له څه ډول اوبو څخه استفاده کوي؟
استوګن کسان د ځان خالو لارو لخوا استفاده کوي .

* 4

SITE ASSESSMENT

(C) د فاضله اوبو میټم: د فاضله اوبو میټم پر دوشمې سیمو نږدې، مگر په لاسو کې و د لاسو کې دوه د سټیټیک ټینکونو نښته، خو غږ فعال دی چې اندازه یې پلانې ډول دی
 (5.35m x 3.5m x 4m)

د ساحه ساتلېمان

ډیر شوی	خامه	خراب	کار لاندې
---------	------	------	-----------

د ثقلیه وسایطو لاندې سرک ته

څه ډول سکونزې د ژمی په موسم کې وی
 روښانه دی هم همواره ده د وروڼو نښته سرد سیمه ده په ژمی کې
 واوره کېږي

توپوگرافي

مهرباني وکړی مهم تغیرات په نما کې ونوی

(A) د محلي تپوگرافیات لاسو کې سا همواره ده چې نږدې تپوگرافیک
 زراعتي ټکي دی

(B) د خنډونو کورډینات: خنډونه نږدې

(C) د وادی کورډینات: —

(D) د میناب د کاترول لاره: —

(E) د ساحې ایزولوشن

کومه ساحې میندوونو او غرونو ته نږدې دی؟ ایا دغه ساحې په نوموړو احاطه شويده؟
 لاسو کې ساحې ته نږدې د لاسو غرونه لاسو

(F) د ساحې د پاکولو په اړه معلومات: نوموړې ساحه پاکه ده

15

SITE ASSESSMENT



SITE ASSESSMENT CHECKLIST

To be completed before leaving the site.



Name of Site: UP DHQ ASP @ Kohsan, Herat

Security: GOOD NORMAL BAD

Date of Assessment: 02- July - 2009

Elevation: 745 meter

Names of Engineers: MACTEC rep. Aminullah Azimi & Agha Jan
Mol.rep. Suhrab

Property Ownership questions:

Location: 120Km West of Provincial Capital, Herat Province and 1,070Km Northwest of Kabul.

SITE GENERAL CONDITIONS

A. Current land use of proposed site:

The proposed site is located 120Km West of Provincial Capital Herat and 1,070Km Northwest of Kabul, at an average elevation of 745meters. It is near the District Governor's Headquarters and approximately 700m North of the existing UP District Headquarters.

The size of the land at the proposed site is 100m x100m or 1 Hectare. The land is owned by the GoA and there is no known claim or dispute about land ownership. The land is an open desert and leveled. There is an office of a government authority located at Kohsan's local market/bazaar; an existing UP District Headquarters. The proposed site is approximately 3Km to the Islam Qala – Herat Road. There is an asphalted road 400m from the site.

The land use surrounding the proposed site are: District Governor's Headquarters; Open Desert owned by the Government and Roads.

It is possible to extend to North, South, East and West.

North: Open land owned by the Government

South: Open land owned by the Government

East: Open land owned by the Government

West: Open land owned by the Government, a District Governor's Headquarters and Roads.

SITE ASSESSMENT

B. Site Corner Locations (GPS Coordinates)

Corner 1- Elev. 743m; 34° 39' 49.9" North, 061° 12' 15.5" East

Photo: A, B, C

Corner 2- Elev. 744m; 34° 39' 52.8" North, 061° 12' 17.3" East

Photo: D, E, F

Corner 3- Elev. 744m; 34° 39' 51.4" North, 061° 12' 20.9" East

Photo: G, H, I

Corner 4- Elev. 745m; 34° 39' 48.6" North, 061° 12' 19.1" East

Photo: J, K, L

EXISTING FACILITIES ON SITE

1st Building:

[A UP District Headquarters](#)

This building was constructed by the ASP. There are no perimeter walls but the building is 70% complete.

Listed below are the grid points of the building corners.

Corner 1- Elev. 745m; 34° 39' 51.4" North, 061° 12' 17.1" East

Corner 2- Elev. 745m; 34° 39' 50.6" North, 061° 12' 16.8" East

Corner 3- Elev. 747m; 34° 39' 50.4" North, 061° 12' 17.4" East

Corner 4- Elev. 746m; 34° 39' 51.2" North, 061° 12' 18.1" East

A. Extra material at site:

There is sand inside and surrounding the building which resulted from sand storm that needed to be removed.

UTILITIES

A. Electricity

There is electricity at the proposed site. The electrical wiring inside the UP DHQ is 30% complete. There are electric posts with transformers and electric cables 200 meters from the proposed site.

B. Water

The water table measures approximately 200m deep. There is a well that has not been used located North of the District Governor's Headquarters. The well is 200m deep, no water pump and no piping system.

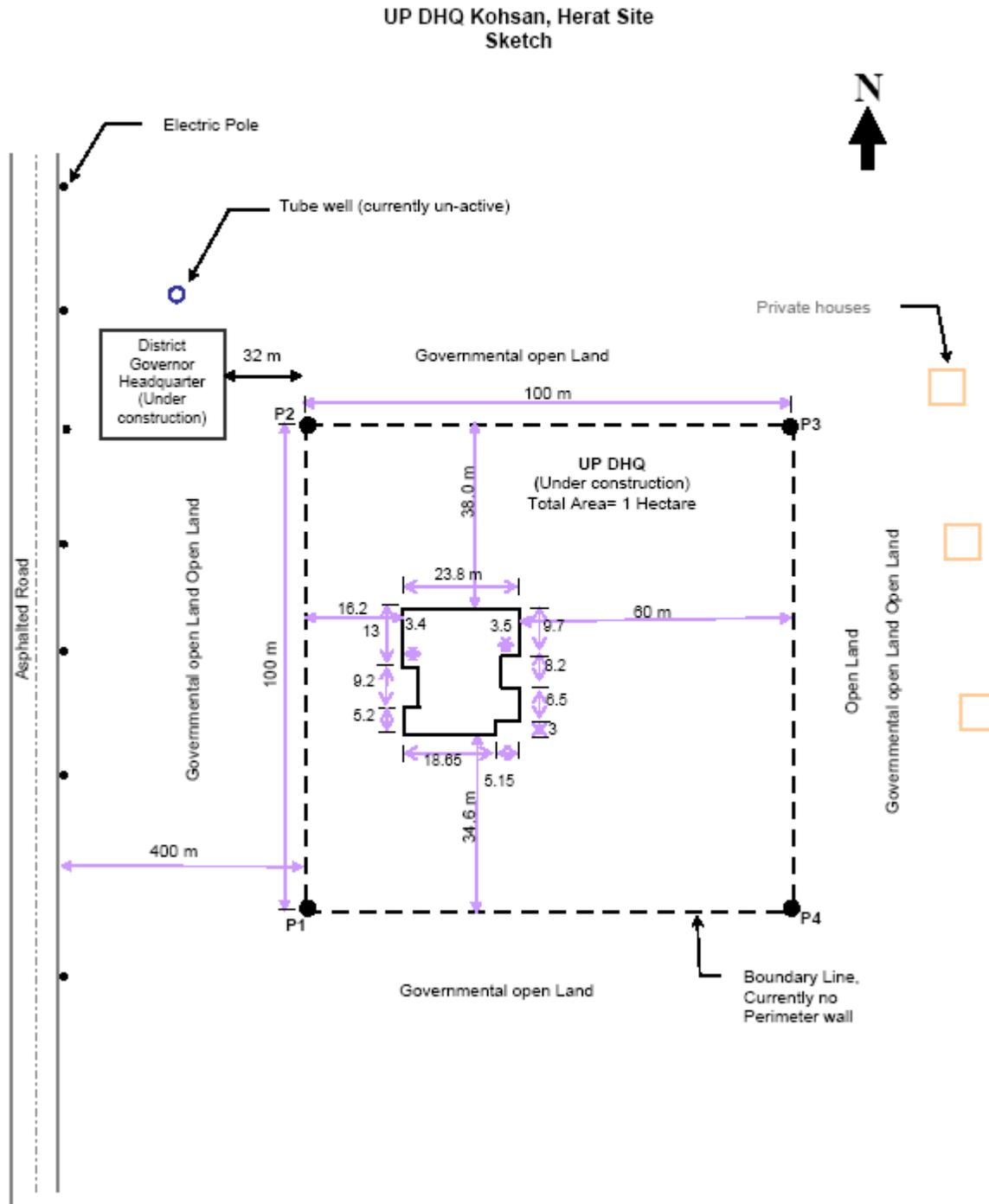
SITE ASSESSMENT

LOCAL or NEARBY RESOURCES:

- Unskilled laborers will be mobilized from [nearby market 250Afs](#)
- Skilled laborers will be mobilized from [nearby market 100Afs](#)
- Material like Sand, Gravel, Stone, crushed, - Not Available ✓ Available
[Sand and Gravel available \(3-10Km\) but stone will be mobilized from West \(50km\)](#)
- Other material like Cement, Steel bar, Brick ,Lime, Gypsum will be mobilized from :
[Herat \(120km to the East\)](#)
- Telephone Communication: [Available](#)
- Fuel For heating and cooking Not Available ✓ Available (wood, diesel)
[8km to the South](#)
- Public Transportation Not Available Scarce ✓ Available (Buses, Taxis,
Coaches)
- Construction Machinery and Equipment will be mobilized from [Herat \(120km\)](#)
- Fuel For machines Not Available ✓ Available [8km to the South](#)
- Clinic Not Available ✓ Available [1150m to the South](#)
- Other:

SITE ASSESSMENT

Attached Site Hand drawn



**APPENDIX C
ADDITIONAL PHOTOS**

SITE ASSESSMENT

SHEET INTENTIONALLY LEFT BLANK

SITE ASSESSMENT

Extra Photos



SITE ASSESSMENT



INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

- | | |
|---|---|
| A -- Approved as submitted. | E -- Disapproved (See attached). |
| B -- Approved, except as noted on drawings. | F -- Receipt acknowledged. |
| C -- Approved, except as noted on drawings.
Refer to attached sheet resubmission required. | FX -- Receipt acknowledged, does not comply
as noted with contract requirements. |
| D -- Will be returned by separate correspondence. | G -- Other (Specify) |
10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

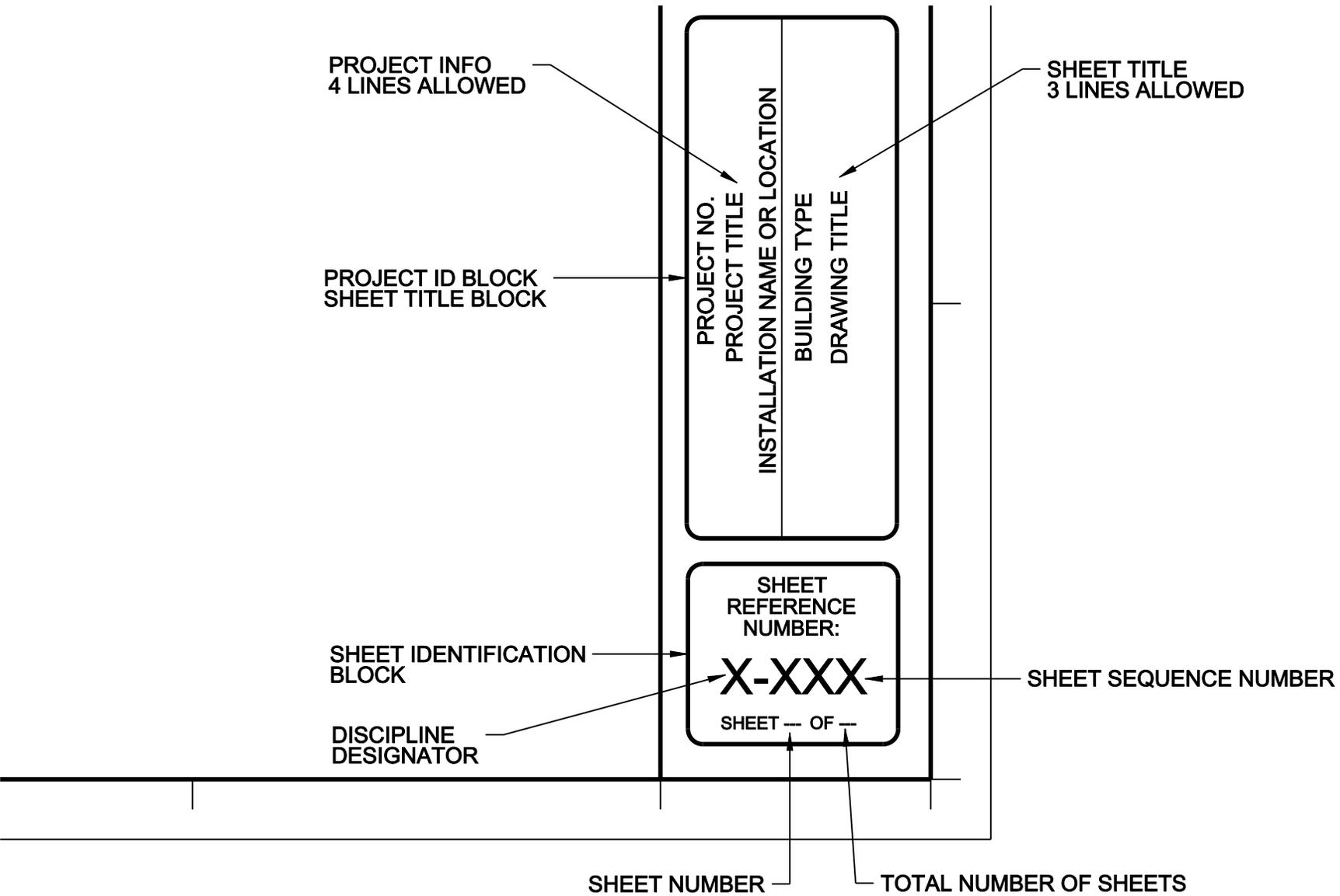


FIGURE 1 - AED TITLE BLOCK

MANAGEMENT BLOCK

U.S. ARMY ENGINEER DISTRICT, AFGHANISTAN CORPS OF ENGINEERS APO AE 96338		DESIGNED BY: _____		DATE: _____	REV. _____
		DWN BY: _____	CKD BY: _____	DESIGN FILE NO. _____	
		REVIEWED BY: _____		DRAWING CODE: _____	
		SUBMITTED BY: _____		FILE NAME: _____	
				PLOT SCALE: _____	PLOT DATE: xx-xx-xx

AE DESIGN FIRM
COMPANY LOGO
COMPANY INFORMATION

FIGURE 2 - AED MANAGEMENT BLOCK

H

DESIGNER IDENTIFICATION
BLOCK (DO NOT ALTER)



ISSUE BLOCK

SYMBOL	DESCRIPTION	DATE	APPR.	SYMBOL	DESCRIPTION	DATE	APPR.
	AS-BUILT SUBMITTAL	DATE					
	100% DESIGN SUBMITTAL	DATE					
	99% DESIGN RESUBMITTAL	DATE					
	99% DESIGN SUBMITTAL	DATE		△	REVISED AS-BUILT		
	65% DESIGN RESUBMITTAL	DATE		△	MOD P0003		
	65% DESIGN SUBMITTAL	DATE		△	MOD P0002		
	35% DESIGN SUBMITTAL	DATE		△	AMENDMENT P0001		
	DESCRIPTION	1 AUG 07					

FIGURE 3 - AED ISSUE BLOCK
& REQUIRED NOTATIONS

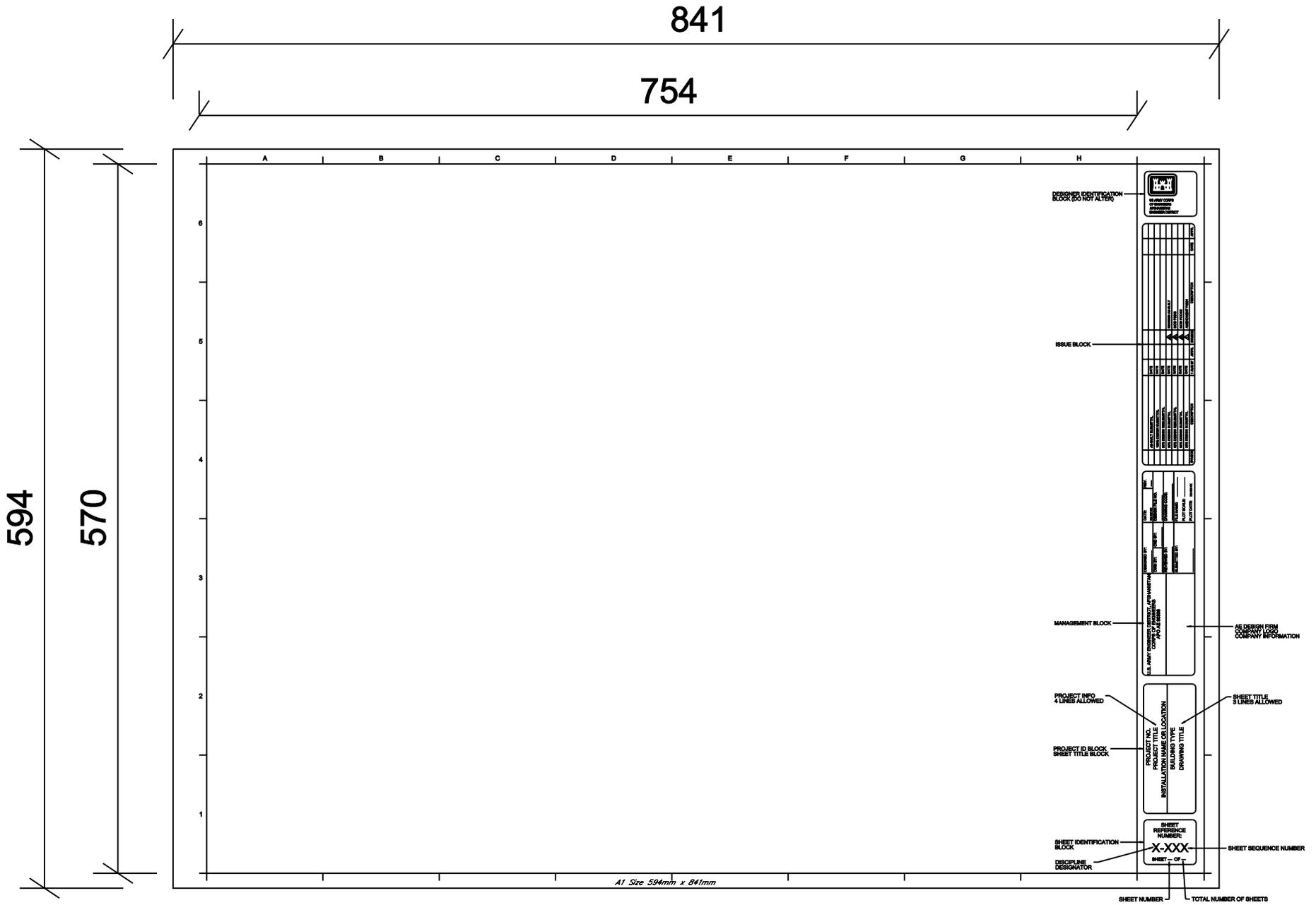


FIGURE 4 - BORDER SHEET SIZE



DEPARTMENT OF DEFENSE
COMBINED SECURITY TRANSITION COMMAND-
AFGHANISTAN
CAMP EGGERS, KABUL, AFGHANISTAN
APO AE 09356

CJ-ENG

MEMORANDUM FOR RECORD

SUBJECT: DESIGN STANDARDS

1. The purpose of this memorandum is to provide a consistent set of standards to be incorporated in all future Title 22 construction projects for the Afghanistan National Security Forces. Standardized designs shall be used to the greatest extent practical.

2. The following construction methods shall be the standard for all future builds: All foundations shall be reinforced concrete. Floors shall be plain concrete with an epoxy sealant applied in eating and living areas. Walls shall be constructed of reinforced CMU block. Roofs shall have metal trusses and metal covering; large spans requiring pre-engineered trusses shall be avoided. Wiring shall be surfaced mounted. Plumbing shall be surface mounted on interior walls only with care taken to prevent plumbing from crossing living spaces. Seismic bracing shall be incorporated as required. Ventilation shall be capable of exchanging the air once per hour. Ceiling fans and electric heaters will be the primary means of heating and cooling.

3. Standard designs shall be used for the following facilities and systems: barracks, latrines, offices, DFACs, maintenance garages, warehouses, force protection standards, heating & cooling systems, and utility systems.

a. Barracks. Enlisted soldiers shall be provided open-bay barracks. Soldiers shall be provided with no less than 3 square meters (SM) and no more than 5 SM. Officers will be housed in a separate building from the enlisted. Enlisted barracks shall be equipped with ceiling fans and electric heaters. Officers shall be provided with double occupancy rooms. Two man rooms will be approximately 14 SM in size. Officer quarters shall be equipped with ceiling fans and electric heaters. Flag officer and visiting officer quarters shall consist of suites with private sleeping quarters and bathrooms. Flag officer and visiting officer quarters shall be equipped with HVAC systems for heating and cooling.

b. Latrines. The following ratios will be used when sizing latrines: Shower 1:20, Toilets 1:20, Ablution 1:20, Sinks 1:20. Latrine facilities shall include a dedicated area for hand washing laundry. Clothes lines shall be provided for drying clothes. All toilets shall be eastern in style and positioned to face North or South. Recommend that no electrical outlets be installed in latrine areas. Sinks shall be trough type with sturdy faucets (no gooseneck style)

c. Offices. Office space shall be co-located to the greatest extent possible. Command leadership (CO, XO, CSM) shall receive individual offices. CO shall have an office approximately 18.5 SM in size. The XO and CSM shall have offices sized approximately 13.9 SM. All other officer offices shall be shared and no larger than 9.3 SM. An open bay floor plan shall incorporate all other administrative and office requirements. At no time shall the size of the office facilities exceed 20 SM per person.

d. DFACs. Dining Facilities (DFAC) shall be designed for three sittings per meal. Kitchens shall have separate food preparation and food cooking areas. Food preparation area shall have a dedicated walk-in freezer, refrigerator, and dry storage unit. The food cooking area shall have wood burning stoves. Sinks for hand washing shall be placed near DFAC entrance. Sinks for hand washing shall be trough type with study faucets. The approximate size for a single kandak DFAC shall be 500 SM and capable of seating 250 personnel at once. All floor drains will be trench drains with an appropriate grill cover. Recommend no electrical outlets in wet areas

e. Maintenance Garages. Maintenance garages shall contain two vehicle bays with one vehicle pit. Basic restroom, storage, and office space shall be incorporated in the design. Overhead cranes will not be installed. Roll up doors will provide vehicle access. Maintenance garage shall not exceed 600 SM per kandak.

f. Warehouses. Warehouses shall utilize an open floor plan and contain a single, small office. Warehouse shall have at least one roll-up door for vehicular access. Approximately size of the warehouse shall be 800 SM per kandak.

g. Force Protection Standards. Garrison shall have a stone perimeter wall 3 meter (M) high topped with concertina wire. Elevated guard towers with manually operated search lights shall be spaced along the wall at an interval not to exceed 250 M. All garrisons shall have a main Entry Control Point (ECP) with inspection and rejection lanes as well as a basic secondary ECP. All billeting and high occupancy facilities shall be constructed with a 40 M stand-off from all perimeter walls.

h. Heating and Cooling Systems. Heating and cooling will be achieved through the use of ceiling fans and electric heaters. This standard applies to all spaces except for the following: Flag officer quarters, Brigade and Corps level offices, and COMM rooms.

i. Utility Systems. Power shall be provide via a consolidated power plant consisting of multiple generators. Generators shall be sized to provide 120% of the expected peak load while maintaining an N+1 configuration. Fuel storage shall be provided to hold a 30 day supply of fuel. Fuel shall be stored in above ground, self-venting tanks. Water will be provided via an onsite well. The well shall produce a flow rate of 7 liters per second. Water storage shall be capable of holding 24 hours worth of water based on a consumption rate of 155 liters per person per day. A pre-packaged waste water treatment unit shall be used for all garrisons supporting less than 1000 soldiers. Waste water treatment plants or lagoon gravity system shall be constructed for garrison supporting over 1000 soldiers.