

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE	PAGE OF PAGES
2. AMENDMENT/MODIFICATION NO. 0004		3. EFFECTIVE DATE 03-Feb-2008	4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO.(If applicable) 1 37
6. ISSUED BY AFGHANISTAN ENGINEER DISTRICT US ARMY CORPS OF ENGINEERS KABUL APO AE 09356		CODE W917PM	7. ADMINISTERED BY (If other than item 6) See Item 6		CODE
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)			X	9A. AMENDMENT OF SOLICITATION NO. W917PM-08-R-0016	
			X	9B. DATED (SEE ITEM 11) 28-Dec-2007	
				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 CONTRACT/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.) The purpose of this amendment for W917PM-08-R-0016 is to incorporate a revised Section 01010 (Changes to paragraphs 4.13 and 5.5) and a revised Appendix R into the solicitation.					
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 _____ (Signature of person authorized to sign)		15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)		16C. DATE SIGNED 03-Feb-2008

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION 00800 - SPECIAL CONTRACT REQUIREMENTS

The following have been added by full text:

SECTION 01010 REVISED AMEND 4**SECTION 01010
SCOPE OF WORK****1. GENERAL**

The project consists of the design, site-adaptation, and construction of a new campus facility for the ANA Infantry Battalion facilities in Kunduz, Afghanistan. Refer to site coordinates for approximate site location. The project is defined as the design, material, labor, and equipment to construct buildings, parking, utilities and other infrastructure features for one new battalion to include: barracks, and storage buildings; Dining Facilities (DFAC), Embedded Training Team Compound (ETTC) and Interpreters' Compound (IC) facilities; prime power plant and electrical distribution system; communication system, communication system, sanitary sewer collection system (no holding tanks allowed); waste water treatment; solid waste collection points; development of a raw water source (i.e. ground source water wells); installation of water well pump(s); potable water booster pumps and associated controls; installation of a water distribution system; construction of ground storage tanks; and design and construct a gravel (with option to pave) road network inside of the compound to include POV and military vehicle parking areas. Reference the table below for a list of base bid and optional bid items.

Note that the one battalion will be sited in an area to be joined later with two more battalions, therefore, the utility infrastructure of electrical power and distribution, water wells and distribution system as required, and communication systems shall be sized to accommodate this future addition to this one project. This shall be addressed in a Master Plan in the design submittal stage of the project to support a total of 1800 personnel. Package waste water treatment system (NO leach fields and/or holding tanks) permitted) shall be addressed for 900 personnel.

Waste water treatment plant and system will be a separate system for each battalion compound.

The contractor shall perform a geotechnical investigation for the building foundations. 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 included herein:

IBC, International Building Codes 2003
 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 SUBMITTALS

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

1.3 CQM TRAINING REQUIREMENT

Before project design and construction can commence, the Contractor's Quality Control Manager is required to have completed the U.S. Army Corps of Engineers CQM course, or equivalent. The Construction Trades Training Center (CTTC) in Jalalabad, Afghanistan provides a course that satisfies the requirement. Courses are offered at regular intervals. For enrollment and course information contact CTTC at the following:

Mhd. Haris
 e-mail: mharis@afghanreconstruction.org
 Telephone: 0700 08 0602

Pervaiz
 e-mail: adpzmuj@yahoo.com
 Telephone: 0700 61 3133

2. LOCATION

2.1 All work under this task order is for the design, site-adaptation, and construction of ANA Infantry Battalion facilities at Kunduz, Afghanistan. Approximate coordinates are:

Longitude	68°55'13.67"E	68°56'05.83"E
Latitude	36°39'05.15"N	36°38'40.50"N
Longitude	68°55'40.70"E	68°54'48.99"E
Latitude	36°38'12.04"N	36°38'37.29"N

Altitude: The Site has rolling hills. The elevation varies from approximately 432 meters. See appendix for topographic map of site.

3. UNEXPLODED ORDNANCE (UXO)

3.1 UXO REMOVAL AND CLEARANCE

Contractor IS NOT responsible for clearance/removal.

The contractor is not responsible for the clearance or removal of mines and unexploded ordnance (UXO) from the site prior to the commencement of construction. The site has been cleared and the certificate of clearance is available for review.

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 from the MAC.

If a UXO/mine is encountered during project construction, the Contractor shall immediately stop work in the affected area and immediately notify the Contracting Officer. UXO/mine disposal will not be the responsibility of the Contractor.

4. SUMMARY OF WORK/CONTRACTOR REQUIREMENTS

4.1 The Contractor shall provide and maintain all Field Office facilities, housing, equipment and servicing as defined in Section 01060, paragraph 1.13 Special Facilities and Services.

4.2 Work shall be executed in accordance with the Technical Requirements in Section 01015, all solicitation requirements, and the attached schematic building layouts.

4.3 The Contractor shall prepare complete designs and specifications for all buildings and systems for review and approval by the Government. All designs and specifications created by the Contractor shall become the property of the Government and may be used in the future by the Government for construction of similar facilities without further compensation to the Contractor.

The Contractor shall provide all design submittals (Design Analyses, Specifications Design Drawings, etc.) for all contract facilities/features at the 35% (includes 99% i.e. foundations, utilities, wall, fence design, etc.), 65% and 100% stage. In addition to printed full-sized copies, the Contractor shall provide electronic versions of all design documentation in AUTOCAD 2006 (version) to the AED in Kabul and the Resident Office. Files shall be arranged on a CD with each facility clearly identified as a separate subdirectory, with all files for that facility contained in that subdirectory. Each disk shall

have an adhered printed label listing contents. **Hand-written labels are unacceptable.**

Drawings and technical references are contained in Appendix and Section 01015. All requirements for building area size are net square meters excluding the exterior walls unless specifically indicated otherwise.

The contractor shall plan and design the entire installation master site and utility plans to include all base and option items. Electric power, water, sewage, and ground drainage systems shall be designed and built to support all base and options items listed in the Section 00010. Design and construction of electric power, water, Waste Water Treatment Plant and distribution system addressed for 900 people, and ground drainage system are included in the base bid item. The cost of connecting utilities of electric power, water, sewage, and ground drainage system to a building/facility shall be included in the total cost of the building/facility, and the connection shall follow the master plan/design of the general site utility systems. Therefore it is highly possible that a utility connection for one building is also sized to support other buildings or option items according to the master design.

The Contractor **shall design, and construct the facilities as a design-construct contract** and shall be in accordance with the requirements stated in Section 01015: TECHNICAL REQUIREMENTS and as contained in this and other task order Sections. Refer to attachment following this section for more specifics for required spaces. The design and construction work shall include but not be limited to that shown within attached table and described herein.

All requirements set forth in the Scope of Work, but not included in the Technical Requirements, shall be considered as set forth in both, and vice versa. Provide heating and cooling for all the facilities unless otherwise stated in Section 01010 or 01015. All toilets shall be eastern; with the exception of the ETTC camp where western style toilets are required. All eastern toilets shall face north or south.

All standard construction amenities and details such as heating, lighting, site drainage, utility connections, etc. shall be implied as a design and construction requirement. Drawings referenced are contained in Section 01015. Concrete walkways are required to connect all buildings, facilities, and features such as parking lots, power plants, etc.

The design and construction work shall include but not be limited to the following subparagraphs.

In general, this project consists of designing, site adaptation, and constructing of the facilities/features listed in the table below.

Work Item	Completion Dates-Days from NTP
4.1 Master Planning/Site Surveys	60 days
4.2 Demolition and Grading	60 days
4.3 Water System	300 days
4.4 Waste Water Treatment Plant/Sanitary Sewer System	300 days

4.5 Prime Power Plant/Distribution System/Fuel System	300 days
4.6 Force Protection Perimeter	150 days
4.7 Road Network	300 days
4.8 Solid Waste Collection Point	300 days
4.10 Infantry Battalion Complex	300 days
•Type A Barracks (4 each)	300 days
•Type B Barracks (5 each)	300 days
•Toilet/Shower/Laundry/Ablution Building (2)	300 days
•Battalion HQ Bldg (OPTION 7)	210 days
•Solid Waste Collection Point (OPTION 1)	210 days
•Battalion Storage (OPTION 2)	210 days
•POL Building (OPTION 3)	210 days
•Motor Pool (OPTION 4)	210 days
4.11 DFAC Number 1	300 days
4.13 Embedded Training Team Facility	300 days
• ETTC Barracks (2)	300 days
• Storage Facility- ETTC	300 days
• DFAC Number 2 (ETTC and Interpreters)	300 days
• Interpreter Barracks (1) with ETTC and Interpreters MWR rooms	300 days
• Interpreter Compound Storage Building	300 days
4.14 OPTION 9 Communications Building	210 days from award of option
4.12 OPTION 5-6 – BOQ Type A and B Facilities (2 total)	210 days from award of option
4.16 OPTION 8 - Brigade HQ Building	210 days from award of option
4.15 OPTION 10 - Vehicle Re-fueling Point	210 days from award of option
4.17 OPTION 11 – Bunkers	210 days from award of option
4.18 OPTION 12 – Anti-vehicle Trench	210 days from award of option
4.19 OPTION 13 - Entrance Road	210 days
4.21 OPTIONS 14-19 – Infantry Type A Barracks	210 days from award of option
• OPTIONS 20-25 – Infantry Type B Barracks	210 days from award of option
• OPTIONS 26-28 Toilet/Shower/Laundry/Ablution Building	210 days from award of option
• Waste Water Treatment Plant/Sanitary Sewer System (OPTION 29)	210 days from award of option
4.20 Brigade and Garrison Facilities:	
• Infantry Type B Barracks (3 each) (OPTION 30)	210 days from award of option
• Toilet/Shower/Laundry/Ablution Building (OPTION 31)	210 days from award of option
• Garrison HQ Building (OPTION 32)	210 days from award of option
• BOQs for Garrison, CS, CSS Battalions 3 BOQs Type B (OPTION 33)	210 days from award of option
• BOQs for Garrison, CS, CSS Battalions 1 BOQ Type A (OPTION 34)	210 days from award of option

The following table lists facilities/features that are to be Master Planned, but not designed or constructed under this contract. However, these facilities/features are to be included in design of all utility systems (including distribution systems) and road networks.

Planned Facilities to be Master Planned and Required to have Utility Connections as Referenced in Paragraph 2.2 of this Section

Helipad	184 SM
Combat Support (CS) Battalion	
Type A Barracks (3 each)	1248 SM
Type B Barracks (5 each)	2080 SM
Toilet/Shower/Laundry/Ablution Building	416 SM
Battalion HQ	
CS Vehicle Maintenance Bldg	800 SM
Battalion Storage	800 SM
POL Building	25 SM
Motor Pool	
Solid Waste Collection Point	
Combat Support Services (CSS) Battalion	
Type A Barracks (2 each)	832 SM
Type B Barracks (3 each)	1248 SM
Toilet/Shower/Laundry/Ablution Building	416 SM
Battalion HQ	
CSS Vehicle Maintenance Bldg	800 SM
Battalion Storage	800 SM
POL Building	25 SM
Motor Pool	
Solid Waste Collection Point	
Arms Storage Building	350 SM
Ammunition Supply Point (including access road)	3900 SM; 1500M from brigade site
Medical Clinic	900 SM
Class VIII Warehouse	800 SM

4.1 MASTER PLANNING, SITE SPECIFIC SURVEYS, & SUBMITTALS

4.1.1 The Kunduz site is approximately 1000 meters X 900 meters see **Appendix A** for grid coordinates of de-mined area, and **Appendix B** site layout concept (only for reference, the contractor will develop the actual layout to be most functional, logical, and engineering sound). The Master Plan shall indicate a site of 1000 meters x 900 meters to be broken into two separate areas; one area to be 1000 X 500 meter site and the other area to be 1000 meters x 400 meters as an expansion space; see paragraph 2 for grid coordinates.

The Master Site Plan shall include all locations of construction, office/storage, containers, lay down and construction debris removal area, and mobilization area. The development of the master plan will include participation in a charrette that will be conducted at the Corps of Engineers Headquarters Office in Kabul.

The master plan shall include but not limited to: General site grading and storm drainage system plan, physical site layout of roads, buildings, facilities, structures; utility plans of electric, water, and sewage systems; and location of construction supporting facilities and other temporary structures, and the siting for the facilities/features in this

contract and those planned facilities/features listed above.

The contractor shall plan the site with good storm drain design, a site perimeter to include water well source, and avoid any existing wadi and flood zone.

The infrastructure (roads, sidewalks, parking, utility systems, etc.) design loads and construction shall be for three battalions, with an estimated population of 1800 personnel. A generic site plan is provided in Section 01015 TECHNICAL REQUIREMENTS.

4.1.2 SITE SPECIFIC SURVEYS & SUBMITTALS

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 distribution layout plan; and prepare a wastewater collection layout plan. If there is a requirement for on-site demolition, the Contractor shall prepare a demolition plan. 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 flood elevations or river banks, whichever is at the highest elevation. The contractor will provide drawings and details to describe any adaptations to the standard designs provided. At a minimum, submittals shall include: the geotechnical investigation report; drawings, details and calculations associated with well construction; and drawings, details and calculations associated with sanitary sewer and leach field construction. The schedule for delivery of site-specific submittals is included above at paragraph 4. Summary of Work/Contractor Requirements.

4.2 DEMOLITION AND GRADING

Minor site demolition is required prior to construction of new work. Grading at the entire site 1000 X 500 meters is required and shall conform to requirements within references herein.

Native crushed stone 100 mm thick shall be placed around all buildings, from the building wall or building landscaping out 2m and all areas of anticipated foot or vehicle traffic to reduce erosion and to provide dust control. Concrete walkways shall be installed between buildings and parking areas.

4.3 WATER SYSTEM AND FACILITIES

4.3.1 Contractor shall design and construct a complete water supply, pumping, storage and distribution system with valves, fittings, bends and related accessories for optimum system performance. Design and construction includes installation of water service

pipng from the supply line with connection to the end user facility. The Contractor will not be responsible for the construction of service lines from Contractor installed distribution lines to future facilities. Refer to Section 01015.

4.3.2 Design a potable water system, to include a groundwater well, drilling of groundwater well and installation of well pump with building. Include installation of hydro-pneumatic water storage tank, service booster pumps with building, ground storage tank(s) (GST), and underground pipe distribution system, sized for the entire base build out Master Plan of 1800 occupants. Ground storage volume shall be a minimum of one day's storage equal to the Average Daily Demand (ADD). Assume that the well shall be constructed to deliver a minimum 345-414 kPa 50-60 pounds per square inch (psi) at a flow rate that is twice the required daily demand. The storage tanks shall provide capacity for a minimum of 100 percent of the required daily demand based on 155 L/capita/day (41gal/capita/day). The distribution system shall be designed to provide a minimum working pressure of 276 kPa (40 psi) at ground level at all points in the systems. Minimum pressures of 207 kPa (30 psi), under peak domestic flow conditions, can be tolerated in small areas as long as all peak flow requirements can be satisfied. Maximum water pressures in distribution mains and service lines shall not exceed 520 kPa (75 psi) at ground elevation. Maximum pressure of 100 psi can be allowed in small, low lying areas not subject to high flow rates and surge pressures. Per customer, fire flow and irrigation systems shall not be included in design calculations. Provide an enclosed water well house.

4.4 SANITARY SEWER SYSTEM AND TREATMENT PLANT

4.4.1 The Contractor shall design and construct a complete sanitary sewer gravity collection system to include a pressure system if necessary. Design and construction includes sanitary sewer service piping from the sanitary sewer collection piping to the user facility. Design and construction shall also include conveyance of raw sewage to a treatment plant for processing of sludge and proper disposal of treated effluent. Underground packaged treatment system is preferred. The contractor is to design the system in the most economic and efficient way in determining the number and location of the treatment plants. Included in the design is the possibility that part of the treated water can be used for irrigation and car wash. The Contractor will not be responsible for the construction of service lines from Contractor installed distribution lines to future facilities. Refer to Section 01015.

4.4.2 The system shall consist of all the necessary ancillary items appurtenances such as manholes, cleanouts and building service connections plus other standard fittings for optimum system performance. The sewerage system may require the use of a sewage lift station & force main to overcome irregular terrain, natural or manmade barriers or other obstructions that cannot be traversed using a gravity system. However, the contractor must maximize the design for optimum efficiency using gravity flow. The sanitary sewer collection system shall connect to the proposed wastewater treatment facility described in Section 01015 of this technical requirement. The sanitary sewer system shall be designed to accommodate future expansion. 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 33 gallons per capita per day (gpcd), whichever is greater. A 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. Wastewater treatment shall be a cost feasible pre-fabricated packaged system conventional activated sludge, (aeration tanks with sedimentation) method. The sewage collection system and wastewater treatment system and effluent disposal shall be designed to accommodate the total infantry battalion and BOQ population of 900 personnel, as specified in the Technical Section *plus 25%* and verified by the contractor.

4.5 SITE ELECTRICAL POWER PLANT, DISTRIBUTION, AND FUEL SYSTEM

4.5.1 Power System: The Contractor shall optimize the power plant design to provide the most economic and efficient solution to the electricity demands and in determining the location of the power plant. The contractor shall provide and complete all required design to construct a fully functional power plant in accordance with the contract technical requirements, to include generators with fuel storage and underground electrical distribution. The contractor shall design a power distribution system to include power distribution to all future Master Planned facilities. The site Primary power distribution shall be 15KV duct bank system. Secondary power distribution shall be pad mounted transformer substations (PTS). Each PTS shall be a standard manufactured substation with a secondary distribution switchboard. Each substation switchboard shall have a secondary distribution circuit breaker for each facility, to include all future Master Planned facilities. The Contractor shall provide secondary distribution manhole, hand hole and duct bank distribution to each facility to be construct from the switchboard. The Contractor shall provide 100mm (4" C) stubbed-out conduits from the closest manhole or hand hole (within the roadway right of way at the limits of the facilities to be constructed) as an allowance for future facilities. The Contractor will not be responsible for the construction of service lines to the future facilities. Each 100mm conduit shall have a pull string, capped off, and have a duct bank marker above the conduit. The Power Plant Building type shall be Pre-Engineered metal buildings on concrete slab with equipment pads with reinforced CMU walls. Reference and site adapt the enclosed design. All electrical design and installation shall meet NEC (NFPA 70) requirements. All wiring shall be running and pulled through conduits. The power plant shall include prime power generators, switchgear, and all appurtenances necessary to meet the electrical demand.

4.5.2 Power Plant: Design a complete Prime Power Plant and power distribution system for the entire Master Plan. Provide and install generators sized to supply power demand to all base bid, optional contract items and future, according to the design and master plan. Generators shall be provided with a synchronizer-switch, so that when total power demanded from one-generator reaches 90% of the generators maximum, an additional generator shall automatically start and supplement the running generator, sharing the load between the generators equally. Provide spaces in the prime power plant for future additional generators to include all necessary equipment pads and

connection conduits. Generator size is not to exceed 1MW (1,000kW).

4.5.3 PERMANENT ELECTRICAL POWER FUEL SUPPLY

- The Contractor shall provide bulk fuel storage capacity based on 30 days full-load operation for current base bid requirements. After testing generators, Contractor shall provide a full supply of fuel to the tanks at the time of turnover to the Government; all fuel tanks shall be turned over to the Government in a full condition. All the fuel tanks will be inside a concrete reinforced containment wall and water tight wall to contain any fuel spillage. The volume of the concrete reinforced wall shall be 110% of the fuel tank capacity and shall be 600 mm above top of fuel tank. Provide a 50 mm diameter drain pipe with a valve thru the wall to drain water that may have accumulated inside after a rain. Provide chain link fence and gates around entire fuel storage facility. Provide chain link fence with gates, C-wire, heavy duty hasp and locks at all fuel storage tanks and openings to prevent theft. A fuel pump and fuel meter shall be provided at the Fuel Storage Tanks with compatible connections to the fuel truck. The pump will be used to transfer fuel to the Fuel Storage Tanks. The piping between the fuel pump and the Fuel Storage Tanks shall be double walled "Durapipe" or equal. Strainers and flexible hoses shall also be provided as required. Tank Level Indicating Systems shall be installed on all Fuel Storage Tanks. Fuel Storage Tank design and installation shall be in complete compliance with NFPA, API and NEC codes.

If the contractor cannot provide permanent power on schedule, temporary power shall be provided to the facilities.

4.6 FORCE PROTECTION MEASURES

The Contractor shall design and construct force protection measures to include stone masonry walls, primary and secondary Entry Control Points (ECPs), guard towers, guard houses, illumination system, and communication systems. The designer shall incorporate force protection setbacks for new facilities to maximum extent possible as permitted by size of the site and the requirements of the user. Force protection design shall be in accordance with Joint Security Directorate Antiterrorism/Force Protection Guide, March 2002; UFC 4-010-01, Minimum DoD Antiterrorism Standards for Buildings; and UFC 4-010-02, DoD Minimum Antiterrorism Standoff Distances for Buildings.

4.6.1 Perimeter Wall

Base size is 1000 meters X 500 meters. Design and construct a Force Protection Perimeter Fence (3000 meters); approximately 1,600 meters of stone masonry wall and approximately 1,400 meters chain link fence. Provide additional two (2) gates minimum into compound other than the ECP; with guard towers at 275 meter maximum intervals. Provide a Guard Tower at each opening in the perimeter (one at the main gate, one

each corner, and one at the alternate gate); and a Reception Building at the main gate. See Section 01015 for additional Force Protection requirements. Note: The perimeter wall/fence does not extend around the expansion area discussed in paragraph 4.1.

Native stone masonry walls shall be constructed around the perimeter of the site. The height of the walls shall measure at least 2.5 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 2.5 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.

4.6.1.1 Gates

The gates shall be swing type gates of 3.65 m wide x 2.4 m high leafs, constructed of steel plates, steel tube frame, and steel tube intermediate posts and rails at the masonry wall and the same type of material when the gate is at the chain-link fence section. 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 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.

4.6.2 Primary Entry Control Point

The Primary ECP shall include a paved entrance, manually operated, sliding steel gate; a guard house; vehicle drop arm barriers; passive anti-ram barriers; and jersey barriers placed in serpentine pattern to prevent high speed vehicle entry into compound. Provide a rejection lane after vehicle inspection and before entering the compound. Also included is a Reception Building.

4.6.3 Secondary Entry Control Point

The Secondary ECP shall include a paved entrance, manually operated, sliding steel gate; a guard house; vehicle drop arm barriers; and passive anti-ram barriers. Provide a rejection lane after vehicle inspection and before entering the compound.

4.6.4 Guard Towers

The Contractor shall design and construct guard towers at each inside corner of the force protection walls, at the main gate, and at the secondary gate. Guard towers shall be a minimum of 3m x 3m in size. The design drawings are provided as **Appendix T**. The guard tower shall be designed and located so that the outside of the perimeter wall can be observed from two sides of the tower windows. The floor height shall be elevated as to allow the window sill to be 0.5m above the top of the wall. The guard tower shall be constructed of CMU walls with a metal door and horizontal sliding

windows with metal window frame, 1400mm high x 1200mm wide. Glazing for the windows shall be a 16mm thick laminated glass. Windows shall be located on all 4 sides to provide a 360 degree viewing area. Windows shall not be screened. The guard tower must meet force protection requirements. The tower shall be supported on reinforced concrete footings. Footings shall be located below the frost line or a minimum of 800 mm, whichever is greater.

The roof shall have a gutter and downspout system to evacuate rain accumulation. The down spout shall run the entire height of the tower and drain at the finished ground level to a splash block. Entry to the tower shall be through a lockable security door. Guard Tower shall have heating-using split pack heat pump units. Guard towers shall be provided with general lighting and shall be fitted with one 360-degree omni-directional searchlight.

One weather-resistant duplex receptacle 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. Provide gutters and downspouts or slope the roof away from the guard house entry way and stairs.

Illuminate the exterior of the compound. Position lights to provide overlapping coverage and to avoid illuminating guard positions. Do not use white lights inside guard towers. Use red, blue, or black lenses in interior guard tower lighting.

For communications, provide rigid metal conduit, two RJ-45 phone jacks with Category 5e, four pair UTP cable back to a protected entrance terminal in the telephone terminal cabinet.

Force Protection measures also include the requirements of UFC 4-010-01, Design: Minimum DoD Antiterrorism Standards for Buildings, 8 Oct 2003 and UFC 4-010-02, DoD Minimum Antiterrorism Standoff Distances for Buildings, 8 Oct 2003 and Joint Security Directorate Antiterrorism/Force Protection Guide, March 2002.

Searchlights shall be provided as indicated and shall be equivalent to the following:

- Prison Grade
- Nickel reflectors (bullet resistant)
- 65 million candlepower (1000 watts)
- Manual operation from below with one hand
- zenon lamp
- weatherproof design

4.6.5 Guard House

Guard House design shall be shall be 200 mm reinforced concrete slab and ceiling. The contractor shall design and construct guard house per floor plan shown in **Appendix U**. Walls shall be reinforced fully grouted CMU. Provide metal roof and eaves to match other building on compound. A general space shall be provided for 2 guards within Guard House. Windows shall be sliding 16 mm laminated glass in steel frames. All other spaces mentioned in standard design shall be provided elsewhere within the site.

Areas in immediate outside vicinity of guard hut shall be provided with an all weather non-slip surface and shall be graded to sufficiently drain away from building and pedestrian areas. Building shall have concrete slab with foundation below frost line. Category 5e dual RJ-45 outlets for voice and data and duplex receptacles shall be provided. Provide built in counter with 2 file drawers and pencil drawers. Provide electric wall mounted split-pack units. Area in immediate outside vicinity of guard house shall be lighted. Provide bullet-proof entry doors.

4.6.6 Reception Building

Reception Building is 88 SM and design shall be 200 mm reinforced concrete slab and ceiling. The contractor shall design and construct reception building per floor plan shown in **Appendix S**. Walls shall be fully grouted CMU. Provide metal roof and eaves to match other building on compound. The functional areas within this facility are a waiting area with toilet and sink, a guard room with shower, toilet and sink and a reception office. Windows shall be sliding 16 mm laminated glass in steel frames. Areas in immediate outside vicinity of guard hut shall be provided with an all weather non-slip surface and shall be graded to sufficiently drain away from building and pedestrian areas. Building shall have concrete slab with foundation below frost line. Communication/Data and duplex receptacles shall be provided. Provide electric wall mounted split-pack heat pump units with ceiling fans. Area in immediate outside vicinity of guard house shall be lighted. Provide bullet-proof entry doors.

4.7 ROAD NETWORK AND SIDEWALKS

The Contractor shall design the entire road and parking network per the Master Plan. The roads shall be designed to carry traffic of a 7 ton three-axle vehicle. An adequate storm drainage system shall also be included. The road layout shall provide access to entry control points, buildings, parking lots, fuel points, generator yard, domestic water and wastewater treatment plant facilities, power generator plant and solid waste collection points. 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. The Contractor shall construct the entire road and parking network **with compacted aggregate gravel** to minimize loss of surface material. The pavement for the road network shall be an optional bid item.

The Contractor shall design and provide landscaping for the compound. Design and provide a network of concrete sidewalks to connect the buildings. Sidewalks shall be wide enough to be used as fire-lane/ service roads. Provide outdoor benches, lighting, and gathering areas.

4.8 SOLID WASTE COLLECTION POINT

The Contractor shall design, in a location convenient for easy removal, a solid waste collection point. It shall be located inside the compound walls. The solid waste

collection point shall be a 1.8 m X 1.8 m concrete pad with a 1.8 meter tall chain link fence around the perimeter. One side shall have a 1.2 m wide gate entrance. The solid waste collection point shall have a metal roof covering.

4.9 BUILDINGS AND FACILITY COMPLEX

The contractor is required to provide **innovative method** to construct the facilities in the most economic and efficient way without compromising the quality and timeliness. The contractor is to propose and decide the structure system and construction methods as long as the basic requirements specified in this RFP are met. For example, pre-engineered building system, site manufactured panel system, 3-D Wall Panel System used in other projects previously, and other creative construction methods fitting for the local situation are encouraged by the government in order to reduce cost and increase efficiency. **The Contractor is required to identify the proposed method of construction on their Technical and Price Proposal.**

The toilet/shower facilities shall be located with toilets facing North/South away from Mecca, for cultural reasons. Do not provide urinals for cultural reasons in ANA Camp. Toilet shall be eastern style for ANA facilities, western style for ETT, and half western half eastern for interpreter Barrack.

4.10 INFANTRY BATTALION COMPLEX

Design and construct an Infantry Battalion capable of supporting 688 personnel (645 enlisted) (43 Officers will be billeted at the BOQ). Complex shall consist of the following buildings: 4- "A" Type Barracks; 5- "B" Type Barracks; 2- Toilet/Shower/Ablution/Laundry Building; 1- **OPTIONAL** Battalion Headquarters Building w/Battalion and Company Command Center; 1- Battalion Storage Building; 1 – Motor Pool; 1- POL Storage Building; 1- Solid Waste Collection Point. The barracks, toilet/shower building, and battalion HQs building shall be provided with evaporative cooling unit with ceiling fans with diesel heat and fuel storage. Command Centers inside Battalion HQ shall be provided with split-pack heat pumps. Additional Barracks, Battalion HQ, Toilet/Shower/Laundry Building, Battalion Storage Building, and Motor Pool criterion is provided in paragraphs 5.1, 5.2, 5.3, 5.4, 5.5, and 5.8 of this section.

4.11 DFAC NUMBER 1, DINING FACILITY AND STORAGE YARD

The contractor shall construct a new Dining Facility (DFAC), design drawing package of this building should be provided for construction to successful Contractor. The contractor shall Supplement existing designs, based on Sections 01010 and 01015 and construct a new Dining Facility (DFAC) 2,088 m² with 1512 m² Dining Room seating for 1000 persons. The floor plan is attached in **Appendix J**. Additional DFAC criteria is provided in paragraph 5.6 of this section.

General requirements as follows:

- 1) The contractor can re-design and select structure and construction method different from what the government provided.
- 2) Design shall be for an open-clear span facility (may have one row of columns in center of room), using insulated modular building construction with CMU walls 3 meters min A.F.F.
- 3) All structural members shall have a fire resistance of at least 1 hour corresponding with construction type 2A as defined in the International Building Code.
- 4) Provide evaporative Cooling unit with ceiling fans with provision for future addition of diesel heat and fuel storage.
- 5) All floors in building shall be terrazzo, except utility type rooms.
- 6) Provide at front entry a concrete sidewalk and covered canopy to match roof construction, length 20 meters.
- 7) Provide and construct a detached Wood Burning Stove Kitchen Annex building, near the entrance to the DFAC kitchen, with wood burning stoves, and covered storage area for the wood. Exact layout will be confirmed at Design Charette.
- 8) Size grates full door width by one (1) meter long.
- 9) Provide 3 flag poles at main entry.
- 10) The Contractor shall design and construct one (1) collection point suitable for solid waste disposal temporary storage area adjacent to the DFAC.
- 11) This building shall be Pre-engineered Metal Building with upper wall and roof constructed of insulated metal panels. The lower walls shall be reinforced insulated CMU.
- 12) Fire protection is to be provided by fire extinguishers throughout the facility at easily accessible locations.
- 13) The Contractor shall design and construct a chain-link fenced storage yard for food and install facilities for the storage of both dry goods and refrigerated items.

The following shall be incorporated into the specific areas of design:

A. Dining Area

- 1) Floor drains shall be incorporated into the dining area with the floor sloped to drain.
- 2) Hand wash stations in the entry vestibule shall be provided. Trough type sinks shall be used.
- 3) 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.

B. Kitchen Area

- 1) Trench type floor drains shall be installed in the kitchen cooking and dishwashing areas.
- 2) Install a large wash basin with a low rim height designed for washing very large

pots.

- 3) The Contractor shall provide space and electrical outlets for future installation of walk-in refrigerators and walk-in freezers.
- 4) Dining Facility Propane Storage- Provide Propane Storage for four (4) weeks operation assuming all stoves are in operation at the highest fuel consumption rate. Provide full tanks when project is turned over to Client.
- 5) Spaces include kitchen facilities outfitted with propane-burning cooking appliances. The stove is a commercial grade propane type appliance.
- 6) Kitchen shall be covered with terrazzo flooring. Walls in kitchen shall be ceramic tile up to the ceiling except where fire brick is called for on the floor plan.
- 7) Provide a ceiling in the propane cooking line-up not less than 5 meters high with clerestory openable windows with screens on all four walls to be able to vent the smoke and heat out of the cooking area.
- 8) Install a large wash basin with a low rim height designed for washing very large pots
- 9) Provide sixteen stainless steel open slotted shelves, 1.9mm (14 gauge). Each set of shelves is 100cm wide x 50cm deep x 1.8m high, 4 tier, with 3cm diameter adjustable stainless steel legs. Shelves are adjustable. Provide 8 of the sets with lockable 12.5cm diameter swivel rolling casters.
- 10) Provide two 14 gauge stainless steel worktables stainless steel worktables in the dining facility. Front and rear to have bull nose edges with square ends. Legs are 3cm diameter, 16-gauge stainless steel with adjustable feet. Provide shelf under table. Tables are 2,000 mm x 90 mm.
- 11) Provide Dish Table with preparation sink. Dish table shall be 1.9mm (14 gauge) stainless steel. Provide 2cm rolled front rim on 3cm high drip guard on front and sides. Provide 25cm high rear splash. Legs shall be 3cm diameter, 1.6mm (16-gauge) stainless steel with adjustable feet. Sinks are integral 50cm x 50cm x 30cm deep, 5 each. Provide spray hose next to each set of sinks.
- 12) Provide a janitor room with a mop sink.
- 13) Provide 1.6mm (16 gauge) stainless steel pass through counter tops at the opening between the kitchen and dining area. Edges shall be turned down 3 cm 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 six (6) anchors, three (3) on each side of the wall. Anchor angles to wall with masonry expansion sleeves and stainless steel screws. Counter tops are to be 60cm wide x length of opening shown.
- 14) The Contractor shall provide walk-in refrigerators and walk-in freezers.
- 15) Trench 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. This style of drain shall be employed in the kitchen area in response to kitchen cleaning practices of the local national staff. Also, access needs to be provided to the solids collector for routine emptying. See Appendix 2, floor trench drain.
- 16) Kitchen Fuel Storage/Distribution. Propane Storage and Distribution shall be provided to support operation of the propane stoves for cooking and boiling tea. The bulk storage of fuels shall consist of above-ground steel tanks sized to store a 28-

day supply of fuel. These tanks shall be complete with fill fittings, 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. Bulk storage capacity shall be based on minimum four-week full load operation of the kitchen. Metal fuel tank saddles should not be placed directly on fuel containment area slabs. They should be elevated on piers to avoid moisture corrosion. Provide chain link fence and gates around entire propane storage facility. Provide fuel filling system for unloading fuel from fuel tanker into individual bulk storage tanks comprising of truck pad(s), duplex fuel transfer pumps, piping manifold and valves as required for a complete system. Provide and fill up 20 large (44KG) type cylinder type gas bottles for ease of handling emergency type conditions and provide fittings to connect to these types of gas tanks.

Kitchen Ventilation

1. Kitchen ventilation design shall be in accordance with NFPA 92A, NFPA 96, NFPA 204, NFPA 211, and other standards listed in this document as appropriate.
2. Kitchen Hood Exhaust and Make-up Air: As required and as per Kitchen design specialist and equipment supplier requirements. The designer shall take special note that multiple large propane 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. Design per NFPA 92A, 96, 204, and 211.
3. Motorized dampers shall be provided to change outdoor/return air mix and to allow summer/winter operation. Exhaust ventilation in the Kitchen area shall be provided with roof or wall mounted centrifugal exhaust fans. 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. The exhaust fan sizing calculations should recognize the use of propane burning stoves in the kitchen, and that there will be excessive steam and moisture loading due to the use of large pots on this type of stove. Sizing should accommodate all propane stoves running simultaneously. Additionally, the placement of the exhaust hood should 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. Provide Propane burners and Afghan type tea boilers. 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 moisture and adequately vent the area. Make-up air for kitchen hood exhaust shall be pulled in from roof mounted louvered penthouse filter air intake and from adjoining Kitchen/Dining areas.

4. Controls Dining Room Heat-Cool Unit shall provide in summer 100 percent outside filtered (evaporative cooled) air for ventilation. , During winter heating, provide a minimum of 20 m³/h / person of outside ventilation air.. Dining exhaust fan(s) shall be provided with Hand-Off-Auto switch. In the Hand setting, these shall operate continuously and in the Auto setting, these shall be interlocked to the air handler unit for operation.
5. The kitchen Heat-Cool Unit shall provide 100 percent filtered outside air for ventilation in the “summer” and heating with minimum outside air in the “winter”. The Kitchen exhaust fan(s) shall be provided with Hand-Off-Auto switch. In the Hand setting, these shall operate continuously and in the Auto setting, these shall be interlocked to the air handler unit for operation. Provide each of the Kitchen Exhaust Hood exhaust fans with a wall mounted ON/OFF switch. In the On setting the fan shall operate continuously.
6. Provide high 4 meter high clerestory ceiling in the kitchen cooking area to allow for

openable windows with screens and an exhaust ventilation fan.

4.12 OFFICERS QUARTERS – BOQ BUILDINGS

BOQ TYPE B

The Contractor shall design and construct Type B BOQs as shown in **Appendix M**.

The Contractor shall incorporate the following features into the BOQ:

- 1) As an alternative all BOQs shall be constructed of reinforced insulated concrete plastered walls, with metal roofs. The Contractor could select the optimal construction method proved to be economic, durable, and fast-erecting.
- 2) Design and construct a Bachelor Officer Quarters complex with double loaded 1500 mm corridors built to the following space requirements.
- 3) Provide housing for the officers with shared toilets, the shared toilets shall be grouped in one area on the corridor shall be constructed with a toilet/shower/sink.
- 4) Provide evaporative cooling unit with ceiling fans with diesel

- heat and fuel storage to maintain comfort in winter and summer.
- 5) Senior officer BOQ shall be provided with split-pack heat pumps for year-round comfort.
 - 6) Provide 4 power outlets in each room.
 - 7) Concrete stoops shall be provided at all exterior doors.
 - 8) Maintain a building envelop of R-13 wall insulation, R-30 roof insulation, double insulated windows, and insulated metal doors.
 - 9) The floor is smooth terrazzo tile. Walls and ceilings flat paint finish.
 - 10) Provide 10% exterior area for window with double insulated glass glazing for light and ventilation.
 - 11) Provide 4 pair of RJ45 outlets (for telephone and data) in the building with wires connected to central location in the building and a connection point to the exterior of the building which will be able to link to the communication system in the garrison.
 - 12) Toilet/shower rooms shall be finished with ceramic tile for floor and wall areas 2 meters above floor, and with paint of gross water-resistant finish for rest walls and ceilings.

	for 1 INF	For 1 INF
	Battalion	Battalion
Rank	O2-O3	O4-O5
No. Personnel	38	4
Room Size	14 SM	14 SM
Occupancy	Double	Single
Toilet/Shower Sink Ratio	7:1	4:1
	For the Base	
Senior Officers	O6-O7	
No, Personnel	1	

Note: O2-O5 officers will be housed in Type B BOQs.

BOQ TYPE A

The Contractor shall design and construct Type A BOQ as shown in **Appendix N**.

The Contractor shall incorporate the following features into the BOQ:

- 1) Provide 4 power outlets in each suite.
- 2) Concrete stoops shall be provided at all exterior doors.
- 3) Maintain a building envelop of R-13 wall insulation, R-30 roof insulation, double insulated windows, and insulated metal doors.
- 4) As an alternative all BOQs shall be constructed of reinforced insulated concrete plastered walls, with metal roofs. The Contractor could select the optimal construction method proved to be economic, durable, and fast-erecting.

- 5) Barracks should be provided with evaporative cooling and ceiling fans with diesel heat and fuel storage to maintain comfort in winter and summer. The floor in living space is smooth terrazzo tile. Walls and ceilings flat paint finish
- 6) Provide 10% exterior area for window with double insulated glass glazing for light and ventilation.
- 7) Provide one pair of RJ45 outlets (for telephone and data) in each suite with wires connected to central location in the building and a connection point to the exterior of the building which will be able to link to the communication system in the garrison.
- 8) Toilet/shower rooms shall be finished with ceramic tile for floor and wall areas 2 meters above floor, and with paint of gross water-resistant finish for rest walls and ceilings.

4.13 EMBEDDED TRAINING TEAM COMPOUND (ETTC) FACILITIES:

Near center of the compound provide ETTC consisting of stone force protection wall with two separate 2400 mm steel gates, parking for 100 vehicles and a guard tower at each corner, all utilities water, sewer, and electricity shall be connected to base utilities. Provide HVAC as specified for each building. Allow space on the master plan for future expansion of the ETTC camp. **One entry control point shall include vehicle drop arm barriers; passive anti-ram barriers; and jersey barriers placed in serpentine pattern to prevent high speed vehicle entry into compound. The Camp shall not be visible from the entry point protected by walls. The perimeter dimension shall be minimum 150mx150m.**

Provide 2 collection points for solid waste storage.

1) ETTC Facilities:

ETTC Barracks

The Contractor shall design and construct 2 barracks with a plan shown in **Appendix C**.

The Contractor shall incorporate the following features into the barracks:

- 1) Design and construct Barracks with double loaded corridors.
- 2) Provide 4 power outlets in each room.
- 3) Select the optimal construction method proved to be economic, durable, and fast-erecting
- 4) Concrete stoops shall be provided at all exterior doors.
- 5) Barracks should be provided with evaporative cooling and ceiling fans with diesel heat and fuel storage.
- 6) Maintain a building envelop of R-13 wall insulation, R-30 roof insulation, double insulated windows, and insulated metal doors.
- 7) The floor in building shall be smooth terrazzo tile, walls and ceilings flat paint finish.

- 8) Provide at least 10% exterior area for window with double insulated glass glazing for natural light and ventilation. Shatter-proof film shall be applied to the windows. Windows shall be set in heavy duty aluminum frames.
- 9) Provide two pair of RJ45 outlets (for telephone and data) in each room with wires connected to central location in the building and a connection point to the exterior of the building which will be able to link to the communication system in the garrison.
- 10) Toilet/shower rooms shall be finished with ceramic tile for floor and wall areas 2 m above floor, and with paint of gross water-resistant finish for rest walls and ceilings. Toilet facilities shall be built separately for men and women (80% Men and 20% Women)
- 11) Each barracks facility shall include a laundry room with utilities to support the installation of ten commercial washers, minimum 30 pounds capacity and ten commercial dryers.
- 12) Sleeping rooms for six (6) Officers @15 m² net per sleeping area and eighty (80) enlisted. Twenty-four (24) KBR personnel @ 7.5 m² net per sleeping area.
- 13) Provide shower, sink and toilet facilities for 110 persons @ 1/10.
- 14) Provide 1 collection point for solid waste temporary solid waste storage.

2) ETTC Storage Building / Interpreter Compound Storage Bldg.

Construct Storage Building (100 m²) with the plan shown in **Appendix U**. Design shall be a pre-engineered building for open bay facilities, anchored to a concrete slab. Provide one roll up insulated metal door and a hollow metal door. Building shall have 5 meter high unobstructed space. Provide bollards at all vehicle doors, two each jamb.

3) ETTC DFAC Number 2:

Facility shall be a western style kitchen for the combined ETTC and Interpreter forces in the compound with commercial grade tables and commercial grade metal stackable chairs for a minimum of **120** occupants, per floor plan provided in **Appendix D**. Stoves and ovens shall be commercial propane. Kitchen shall be sized to prepare food for **250** people. This facility shall provide cafeteria-style feeding and a short order grill next to a heated serving line w/sneeze guard 8 meter length min. Provide toilets, (2 separate) hand wash area with a stainless steel 2 meter pot sink, food service with all stainless fixtures and shelves and prep sinks/tables, dry storage, walk-in freezer, walk-in refrigerator, stainless self-serve counter, beverage counter, self-service cold-drink refrigerator w/sliding doors, and loading dock. Dining facility shall be approximately **550** m² minimum gross areas. Provide an adequate grease trap with clean out to collect discharge from the kitchen area prior to discharging into the sewer system. Provide at front entry a concrete sidewalk and covered canopy to match roof. Provide evaporative Cooling unit with ceiling fans with diesel heat and fuel storage. Referenced the enclosed design and site adapt the design according to the above criteria of DFAC #1.

4) INTERPRETER FACILITIES:

The Contractor shall design and construct barrack building in accordance with **Appendix F**, Section 1010 and 01015 of RFP.

The Contractor shall incorporate the following features into the barracks:

Locate adjacent to the ETTC Facility. All utilities water, sewer, and electricity shall be connected to base utilities. All floors in building shall be terrazzo, except utility type rooms and buildings. The barracks buildings shall be constructed of fully grouted CMU with metal roofs. Provide Barracks with double loaded corridor built to the design of the enclosed Interpreter Facility Barracks. The following space requirements shall be met: sleeping rooms for **20** Translators @ 7.5 m² net per sleeping area @ 6.0 m² minimum. Provide shower, sink and eastern toilet facilities for **20** persons @ 1/10 and a storage room for janitor supplies and mop sink. Overflow personnel from the ETTC Barracks will utilize available barracks space in the Interpreter's barracks. Provide area within the Interpreter Barracks for an Interpreter/ETTC Morale, Welfare and Recreation (MWR) area approximately 100 m² and an office area of 50 m², minimum. The contractor shall construct the laundry facility (room) to include utilities to support the installation of three commercial washers, minimum 30 pounds capacity and ten commercial dryers. The barracks, office, laundry, and MWR areas should be sized to fit the enclosed Interpreter Barracks design footprint. Walk-off grates shall be provided at all exterior doors with removable galvanized steel grates and dirt wells, size full door width by one (1) meter long, See Appendix 4. Barracks shall be provided with evaporative cooling and ceiling fans with diesel heat and fuel storage.

4.14 COMMUNICATIONS BUILDING AND DISTRIBUTION SYSTEM

The Communication Building floor plan is attached as **Appendix Q**.

The facility will serve as the installation's center for telecommunications, switching, and automation networking (including internet service) and shall have year-round climate control in all rooms for the sensitive electronic equipment. A communication building shall have an uninterruptible power supply (UPS) room with ventilation to outdoors. Power to the building shall meet the ultimate demand load plus 20% spare capacity, but shall not be less than a 250 amp service. A grounding grid tested to 5 ohms or less shall be distributed throughout the UPS and equipment rooms.

Provide a communications room having raceways/duct backs going to each facility requiring communications; those to be used in the future will have a pull sting. Manhole/hand hole systems shall have no more than 150 meters between access points. All voice telephone wiring, data and emergency wiring, including any planned or future fiber optical runs, will originate and/or terminate in this communications center.

Provide a 3m x 5m roof covered concrete pad outside the UPS room with a backup generator with an adjacent 2m x 3m concrete pad with a spill dike for a 500 gallon or larger fuel tank. Backup generator shall be sized to meet the ultimate demand load of the communications building, plus 20% spare capacity. A 15cm diameter or larger conduit shall connect the generator pad to the UPS room and shall use long sweep elbows totaling no more than 180 degrees for any bends. Backup generator for Communications building shall be in addition to the generator required in paragraph 4.5

above. When sizing the generator, ensure it is de-rated for altitude and temperature in accordance with manufacturer's recommendations for the site conditions

All buildings (except guard houses and towers) shall have a communication room to house all telephone and computer network equipment. All Barracks shall have cable in accordance with section 1015. Each office will have at least two phone outlets using category 5e, RJ-45 outlets or better and at least two outlets for computer connections, There shall be a 25-pair 24 AWG copper UTP cable ringing the base perimeter to connect all guard towers and houses with redundant paths so that communications are maintained even if a cable is cut. Outside plant building telephone and data cabling shall be RUS PE89 24AWG, Gel filled, and RUS type PE 90, Single mode fiber optic cable. Inside plant cable and termination hardware shall be at minimum category 5e.

In any communication related office or room required raised flooring, IF used, the raised flooring shall be all steel interchangeable square panels 600mm X 600 mm, with 450 mm clear space below finish floor. Assembly shall be designed for the highest earthquake zone. Design shall be bolted stringer capable of withstanding a 12,500 lb. uniform load and a 500 lb. rolling load. Provide Four (4) panel lifting devices. Provide bonded anti-static raised floor assembly and flooring.

Electrical service to the building shall be underground.

Provide voice and NIPR Net LAN drops (category 5e RJ-45 dual voice/data) in each of the living areas for all barracks and all offices in the buildings.

4.15 OPTIONAL VEHICLE REFUELING POINT

The Contractor shall provide for a total capacity of 40,000 liters of diesel storage and 10,000 liters of MOGAS storage; complete with concrete containment floor and walls, power, and dispensing pumps.

The Contractor shall design and construct a low profile vehicle re-fueling point, as specified in Section 01015, capable of storing 40,000 liters of diesel and 10,000 liters of MOGAS. The fuel point shall consist of one 25,000 liters tank of diesel and another dual compartment 25,000 liter tank, of which, 15,000 liter would be used for diesel and 10,000 liters would be used for MOGAS. The tank systems shall be a pre-engineered fully assembled fuel storage package. Provide reinforced concrete pad suite for this application. Additional Vehicle re-fueling criteria is provided in paragraph 5.7 of this section.

4.16 BRIGADE HEADQUARTERS BUILDING

The Brigade HQ building floor plan is attached as **Appendix O**. The Contractor shall incorporate the following features into the design and construction of the building:

- 1) Provide power outlets in walls no more than 3 m apart.
- 2) Concrete stoops shall be provided at all exterior doors.
- 3) Building shall be provided with evaporative cooling and ceiling fans with diesel heat and fuel storage to maintain comfort in winter and summer.
- 4) Maintain a building envelop of R-13 wall insulation, R-30 roof insulation, double insulated windows, and insulated metal doors.
- 5) Select the optimal construction method proved to be economic, durable, and fast-erecting.
- 6) The floor in the building shall be 300mmX300mm terrazzo tile. Walls and ceilings flat paint finish.
- 7) Provide at least 10% exterior area for window with double insulated glass glazing for natural light and ventilation.
- 8) Provide one pair of RJ45 outlets (for telephone and data) near each power outlet with wires connected to central location in the building and a connection point to the exterior of the building which will be able to link to the communication system in the garrison.
- 9) Toilet rooms shall be finished with ceramic tile for floor and wall areas 2 meters above floor, and paint of gross water-resistant finish for rest walls and ceilings.

The following space requirements shall apply to the Brigade Headquarters Building:

Brigade Headquarters Building

Type of Space	Quantity	Area(m²)	Total(m²)
Open Office Spaces	N/A	351	351
Private Office	2	10	20
Private Office	7	14	98
Private Office	1	15	15
Private Office	1	28	28
Conference Room	1	40	40
Total Office Space			552

4.17 BUNKERS

Provide Concrete Personnel Bunkers though out compound; with seating for 900 persons. Site and grade so water cannot stand inside bunkers. Provide 150 mm base course of gravel under sandbags.

4.18 ANTI VEHICLE TRENCH

Provide an anti-vehicle trench (3 meters wide X 2 meters deep) around perimeter fence and walls. Ditch shall be adjacent to all force protection fences and walls. Ditch shall be 5 meters from perimeter fences and walls. Design anti-vehicle trenches to drain and not hold water after rainfall.

4.19 ENTRANCE ROAD

The Contractor shall re-design, construct and widening existing site access road. The final improved entrance road shall be of wearing surface of 7.3 meter wide with 1.0 meters shoulders, graded for proper drainage, provided with necessary drainage structures, drainage ditches and completed with prescribed surfaces in accordance with applicable sections of TM 5-822-2 standards, and Ministry of Public Works and Highway Standards". High erosion areas such as shallow drainage ditches and wadi crossings shall be armored with a hard surfaced crossing such as an at-grade concrete crossing structure. Erosion structures shall be constructed in slide and flood areas to prevent road blockage and wash-out.

Road alignment and profile shall be established by contractor, before construction commences. **The contractor shall eliminate skew angles and kinks from the road alignment, when feasible the contractor shall strive to provide straight road alignment in its entirety.** Drainage ditching is required on both sides of the road and ditches shall terminate in areas where water can drain away from road structure. Hydrology of the region shall be used to determine drainage ditch and structure sizes. All intersecting roads, paths and driveways and culvert crossing are required to end with a smooth transition to the new road alignment.

Pavement surface should consist of 150mm thick compacted aggregate base course material compacted to 100% maximum density placed above 150mm of scarified sub-grade compacted to 95% maximum density with proper drainage. Provide 1.0 meter wide, aggregate base shoulder 150mm thick @ 2.0% slope on both sides of the roadway. This entrance road will be 5 km in length.

The access road is known to cross drainage areas and a Wadi. The road should be constructed at an elevation greater than the anticipated water level. Bridges, culverts,

gabion crossings, concrete wadi crossings or other related structures shall be constructed as required over rivers, creeks and wadis that contain water and deep drainages that fill with water during storm events. Entrance Road shall be provided with necessary drainage structures and ditches.

All culverts shall be constructed of reinforced concrete. The new culverts shall be size to provide sufficient hydraulic capacity, designed to conform to the improved roadway crossing and to carry the maximum flow capacity.

4.20 BRIGADE AND GARRISON FACILITIES

Complex shall consist of the following buildings: 1- **OPTIONAL** Garrison Headquarters Building; 3- **OPTIONAL** Type B Barracks, 1-**OPTIONAL** Toilet-Shower-Laundry-Ablution building; 3-**OPTIONAL** BOQ Type B; 1-**OPTIONAL** BOQ Type A; The barracks, toilet/shower building, and battalion HQs building shall be provided with evaporative cooling unit with ceiling fans with diesel heat and fuel storage. Command Centers inside Garrison HQ shall be provided with split-pack heat pumps.

4.20.1 GARRISON HEADQUARTERS

The Garrison HQ building floor plan is attached as **Appendix P**. The Contractor shall incorporate the following features into the design and construction of the building:

- 1) Provide power outlets in walls no more than 3 m apart.
- 2) Concrete stoops shall be provided at all exterior doors.
- 3) Building shall be provided with evaporative cooling and ceiling fans with diesel heat and fuel storage to maintain comfort in winter and summer.
- 4) Maintain a building envelop of R-13 wall insulation, R-30 roof insulation, double insulated windows, and insulated metal doors.
- 5) Select the optimal construction method proved to be economic, durable, and fast-erecting.
- 6) The floor is smooth terrazzo finished floor, walls and ceilings flat paint finish.
- 7) Provide at least 10% exterior area for window with double insulated glass glazing for natural light and ventilation.
- 8) Provide two pair of RJ45 outlets (for telephone and data) in each room with wires connected to central location in the building and a connection point to the exterior of the building which will be able to link to the communication system in the garrison.

- 9) Toilet rooms shall be finished with ceramic tile for floor and wall areas 2m above floor, and with paint of gross water-resistant finish for rest walls and ceilings.

Construct one Garrison Headquarters in accordance with the enclosed design. Garrison Headquarters to be co-located with optional Brigade Headquarters identified in paragraph 4.16.

4.21 COMBAT SERVICES SUPPORT BATTALION (CSS) & COMBAT SUPPORT BATTALION (CS)

Design and construct a combined CS & CSS Facilities. Complex shall consist of the following facilities: **0 to 6 OPTIONAL** infantry type A barracks; **0 to 6 OPTIONAL** infantry type B barracks; **0 to 3 OPTIONAL** Toilet/Shower/Laundry/Ablution facilities.

5. ADDITIONAL CRITERIA

5.1 INFANTRY BATTALION BARRACKS

The Contractor shall design and construct Type A barracks and Type B barracks per floor plan shown in Appendix G and H

The Contractor shall design and construct barracks facilities based on the total population of one infantry battalion and the areas shown in the following table. Barracks for ordinary personnel shall be open bay. Barracks for middle, high ranking, and senior personnel shall be individual rooms. Enlisted Barracks and Middle, High, and Senior Barracks may be conjoined but shall be segregated by walls and shall have separate entrance/exits. Contractor shall also design and provide electrical room, janitor closet, mechanical room, stairways, toilet rooms, showers, and break room.

Net Sleeping Area per Soldier with Breakdown by Rank (NSM)

Rank		
E1-E6	Open Bay	5SM
E-7	Two to room	14SM
E-8	private room	12SM
E-9	private room	12SM
O2 to O3	Two to room	14SM
O4 & O5	private room	14 SM
O6	Private room	52 SM

Department / Rank	E1-E6	E-7	E-8	E-9	O6	O5	O4	O3	O2	Total E1-E9	Total O2-6
Infantry Battalion	577	23	7	2	1	1	3	14	24	609	43

The Contractor shall incorporate the following special features into the barracks:

- 1) Ceiling fans shall be designed for summer ventilation.
- 2) Provide evaporative Cooling unit with ceiling fans with diesel heat and fuel storage.
- 3) Each barracks shall have a dedicated storage area sized to 0.5 SM per person assigned to the barracks.

5.2 BATTALION HQ BUILDING

The battalion HQ building floor plan is attached as **Appendix K**.

1) **Battalion Command Center:** Construct a 28 SM Battalion Command Center with a high security door. This room shall be located near the Battalion staff offices. The Battalion Commander shall be provided with a bedroom and shower/toilet room next to his office in the Battalion HQ Building. In addition to standard electrical outlets in the room, provide a dedicated electrical circuit with 8 double receptacle electrical outlets in the appropriate locations to support the unit's assigned communications equipment. All inside plant telephone wiring shall originate and/or terminate in this room.

Communications duct banks with cable installed linked to this room shall be designed and constructed to serve each building in the compound, including the Company Command Center and the guard towers. Install a 50mm conduit passing from the Battalion Command Center to the roof of the building. The roof penetration shall have a weatherproof box on top and shall be flashed or patched as necessary to prevent water leakage. Split pack air conditioning heat pumps, in addition to ceiling fans, shall be provided for the Battalion Command Center. The A/C shall be sized to accommodate 4 personnel with 4 computers and 6 radios.

2) **Company Command Center:** Construct a 28 SM Company Command Center with a high security door. This room shall be located near the Company staff offices. In addition to standard electrical outlets in the room, provide a dedicated electrical circuit with 8 two-receptacle electrical outlets to support the unit's assigned communication equipment. Install a 50mm (2") conduit passing from the Company Command Center to the roof. The roof penetration shall have a weatherproof box on top and shall be flashed or patched as necessary to prevent water leakage. The facility in general shall be cooled using an evaporative Cooling unit with ceiling fans. Split Pack heat pump units, in addition to ceiling fans, shall be provided for the Company Command Center. The A/C shall be sized to accommodate 4 personnel with 4 computers and 6 radios.

3) **Arms Storage Area:** Arms Storage Area: Provide a weapons storage area in the rear of Battalion HQ building. The area shall have three equal separate spaces with walls and heavy duty metal doors and framed lockable door to each 8 RPGs, 8 Machine Guns, and all long-arm weapons for each person assigned to both the Battalion and Company. Provide storage within the facility for all Battalion and Company ammunition

and ordinance. Provide wooden racks for storing long-arm weapons vertically. Racks shall not be furnished with locking bars. The Arms Storage Room shall be sized at 320 SM. Provide 18.6 SM (200 sf) room inside the arms room for secure storage of evidence and confiscated money or narcotics. This room shall have its own separate key. The facility shall be of solid reinforced concrete (200 mm thick concrete roof slab and solid CMU wall) with no windows, high security door, and explosion-proof lighting. Note this Arms storage room is not shown on the concept drawings.

5.3 TOILET, SHOWER, ABLUTION, AND LAUNDRY BUILDING

5.3.1

Sink ratio	1:10
Shower Ratio	1:8
Toilet Ratio	1:10
Ablution Area	1:20

The Contractor shall design and construct a toilet, shower, ablution, laundry building. The Contractor shall design and construct a toilet, shower, ablution building and the conceptual floor plan is attached in **Appendix I**. The Contractor shall incorporate the following special features into the building:

- All sinks shall be trough type constructed of block and concrete with ceramic tile exterior and lining capable of withstanding abuse.
- Provide evaporative coolers with supplemental cooling coil to maintain 27.8 C indoor conditions during the summer with provision for future addition of diesel heat and fuel storage.
- Shower stalls shall be large enough to allow room to dress and undress between an outer and inner shower curtain no less than 2m x 1.5m and shall have a solid door on the outside.
- All toilets shall be eastern style with wall-mounted hose bib on the right side of the occupant as he faces the stall door. Urinals are not required. Face all toilets in the North/South axis for cultural reasons. The flush tank shall be provided with heavy duty push type button capable of withstanding abuse.
- Ablution areas shall contain hot and cold water spigots with a flexible 1.5m spray hose mounted below the control valves with a back flow prevented fitting at the hose bib and hanger. Ablution areas shall be provided with low flow water devices.
- Drainage for the entire facility, including showers shall be accomplished using a sloping floor leading to trench drains.
- Showers shall contain a single mixing valve for hot and cold water mixing and a wall mounted shower head.
- Electric hot water heaters shall be installed to provide hot water to the showers and sinks.

- The building shall be constructed with exhaust fans to ventilate steam to the outside environment and, where required, insulated piping to prevent freezing of water pipes in winter.
- All water lines inside of the building shall be galvanized steel and surface mounted... All hot water and cold water piping shall be insulated and provided with stainless steel protective covers.
- Accessories shall include but not limited to; toilet paper holders, soap dishes, curtains and curtain rods, robe hooks, mirrors, paper towel dispenser, metal shelf, and grab bars.
- The laundry function shall have a laundry trough sink, janitor/storage room. The laundry room is not shown on the current plans and shall be added to the facility.
- Provide cloth line for drying outside each barracks building. Fabricate clothes line assembly in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling imitations. Clearly mark units for reassembly and coordinated installation. Wire-rope assemblies (clothes line cable). Minimize amount of turnbuckle take-up used for dimensional adjustment so maximum amount is available for tensioning wire ropes. Wire rope shall be nylon covered. Cut, drill and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approx. 1 mm (1/32 inch), unless otherwise indicated. Remove sharp or rough areas on exposed surfaces. Form work true to line and level with accurate angles and surfaces. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate. Cut, reinforce drill, and tap as indicated to receive finish hardware, screws and similar items.
Welded connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
- Provide evaporative Cooling unit with ceiling fans with provision for future addition of diesel heat and fuel storage.
- Provide a janitor room with a mop sink.
- The Contractor shall design and construct a laundry room at the end of the Toilet/Shower/Ablution/Laundry Building and incorporate the following special features into the toilet/shower building. The room shall have laundry trays to wash clothes. Drying the clothes will be done outside on clothes lines. The building annex for the Laundry room is not shown on the design drawings, and must be designed by the contractor.

5.3.2 Ablution

Ablution areas shall contain hot and cold water spigots with a flexible 1.5m spray hose mounted below the control valves with a back flow prevented fitting at the hose bib and hanger. Ablution areas shall be provided with low flow water devices. Ablutions shall be

provided at a 1:20 ratio and based upon the entire population of men and of women having their own ablution.

5.4 BATTALION STORAGE BUILDING

Construct Storage Building per the plan shown in **Appendix L** (800 m²). Design shall be for open bay facilities, provide 3 meter CMU walls and pre engineered insulated building. Provide office with 52 inch ceiling fan. Provide two 5 meter X 5 meter high roll up doors, or as detailed in the enclosed design drawings. Building shall have 5 meter high unobstructed space. Provide bollards at all vehicle doors, two each jamb.

5.5 MOTOR POOL

The Contractor shall design and construct a motor pool and unit vehicle parking area to accommodate 26 SUV's and eight motorcycles. Provide a yard hydrant, electrical power, lighting, and compressed air service. Provide gravel surfaced parking areas.

The Contractor shall design and construct a motor pool gravel holding area of 150m x 150m.

- a. After leveling, grading, and compacting the holding yard, the contractor shall overlay the entire graded area with 15cm of compacted 25mm gravel/crush stone.
- b. Construct 2.4 meter high chain link fence with barbed wire and vehicle gates surrounding the vehicle holding yard. The contractor shall install barbed wire on supporting arms above the fence posts.
- c. Construct entry control points each consisting of a vehicle gate and a pedestrian gate. Extend each end member of the gate frames sufficiently above the top member to carry three strands of barbed wire in horizontal alignment.
- d. A proper drainage plan shall be incorporated into the [motor pool area](#).
- e. Provide a POL storage building according to Appendix **R**.

5.6 DINING FACILITY No.1

- 1) Floor drains shall be incorporated into the dining area with the floor sloped to drain.
- 2) Trench type floor drains shall be installed in the kitchen cooking and dishwashing areas.

- 3) Hand wash stations in the entry vestibule shall be provided. Trough type sinks shall be used.
- 4) Install a large wash basin with a low rim height designed for washing very large pots.
- 5) The Contractor shall provide walk-in refrigerators and walk-in freezers.
- 6) Fire protection is to be provided by fire extinguishers throughout the facility at easily accessible locations.
- 7) The Contractor shall design and construct a chain-link fenced storage yard for food and install facilities for the storage of both dry goods and refrigerated items.

Dining Facility Propane Storage- Provide Propane Storage for four (4) weeks operation assuming all stoves are in operation at the highest fuel consumption rate. Provide full tanks when project is turned over to Client.

5.7 VEHICLE RE-FUELING

- The fueling area shall have a metal roof awning covering it;
- Fuel point facility shall be enclosed by a chain link fence, with two 7.3m wide lockable vehicle gates (Entry and exit gates for use by large trucks).
- An 8.6 SM building shall be used by the operator and located near the exit gate of the Fuel Point Facility.
- The Fuel Point Facility shall be paved with a compacted crushed aggregate surface sloped for proper drainage;
- Reinforced concrete slab adjacent to the fueling point, where vehicles can park while fueling, with a minimum 1% slope in three directions and 150mm curb along the slab on the sloped side to contain fuel spills;
- Reinforced concrete slab where tanks will be placed to suite this application.
- Bollards to protect the tanks from vehicles;
- Provide electrical service to the tank units as per the manufacturer's recommendations;
- The Fuel Tanks and Fueling Dispensers shall be approved by the Contracting Officer. The tanks shall be equipped with all standard items with the following items:
 - 1) Flameshield (Dual wall fire rated tank) tank option;
 - 2) The system shall include two diesel dispensers with dual hoses and one gasoline dispenser with dual hoses;
 - 3) One of the two tanks shall be a dual compartment tank;
 - 4) All tanks shall be factory pre-wired; meeting UL Standards 142 and 2085, and UFC Appendix **IIIF**, Ballistic Protection; Internal tank lining.

- 5) The pump package shall be submersible pump, grounding, and overflow protection,
- 6) The pump package shall be Model 9853AXTW-1 or equal
- 7) Low mount fill with containment
- 8) Leak monitor
- 9) Overfill prevention valve
- 10) Emergency venting, pressure relieving device and atmospheric venting

The Contractor shall design and construct the 8.6sm fuel point facility building. The building shall consist of reinforced concrete foundation and floor slab; reinforced concrete masonry walls; a steel-framed sloping roof; metal door; and three horizontal sliding windows, with one facing the fueling point and one on each perpendicular wall. The building shall have heating and cooling and lighting with split pack units that shall be able to maintain 21.1 degrees Celsius in the heating season and 23.9 degrees Celsius in the cooling season.

5.8 GENERAL CRITERIA

5.8.1 Heating, Ventilation, and Air conditioning (HVAC)

Environmental control of the facilities shall be achieved by HVAC equipment. As an alternative the contractor could proposed other HVAC systems that will be most cost effective and approved by the U.S. Government. See Section 01015 for scope of work required.

5.8.2 Life Safety

Design and Construct circulation pathways and exit stairs in accordance with building code references herein. Fire sprinkler system is not required. The facility shall comply with all other safety requirements as required within references. Smoke detectors and fire alarm systems shall be installed in accordance with requirements herein. See Appendix 3 Life Safety Analysis

5.8.3 Lighting

General lighting shall be provided as indicated and shall meet recommendations from IESNA for each building type and function within each building. Design and installation shall meet NFPA 70 (NEC) requirements.

Exterior lighting shall be high intensity discharge luminaries on 10 meter high minimum spun aluminum or galvanized steel poles. If to be installed on an existing installation, type of luminaries shall match existing predominant type within installation.

Searchlights shall be provided as indicated and shall be equivalent to the following:

- prison grade
- nickel reflectors (bullet resistant)

- 65 million candlepower (1000 watts)
- manual operation from below with one hand
- zenon lamp
- weatherproof design

5.8.4 Electrical

All electrical design and installation shall meet NEC (NFPA 70) requirements. Electrical receptacles shall be provided as indicated. Conductors and circuits shall be sized for the specific loads. Generated voltage shall be or 220/380v 50Hz. Contractor shall design all interior electrical systems as described in section 01015, Technical Requirements, and shall design and install any required exterior lighting, as described in section 01015.

5.8.5 Fencing and Barricades

Fencing shall consist of the types shown or described herein. Barricades shall consist of either HESCO Bastion Container barriers or concrete type. Barricades shall be as shown. Refer Drawings for required types and locations. Barricades are not intended to resist a certain horizontal load and are not required to be permanently anchored to ground.

5.8.6 Foundation Design

Foundations, including subgrade, shall be designed and constructed based on recommendations from geotechnical investigation required herein.

5.8.7 Special Concerns to be Complied With

- Provide at all exterior doors at all buildings concrete stoops with walk-off grates having removable galvanized steel grates and dirt wells provide boot scraper for boot cleaning, See Appendix 4.
- All building walls will be insulated and rated R-13 and all roofing systems shall be rated R-30.
- Provide a janitor room with a mop sink in all building facilities. The janitor rooms in the BOQs and barracks shall not have mop sinks.
- Provide storage in all BOQs and Barracks at .5 SM per person in each barracks.
- All building 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. See Section 010115 for roof specifications and warranty.
- Barracks shall be spaced far enough apart to minimize noise (minimum 15 meters between barracks).
- Building construction shall maximize the use of local construction material and techniques while meeting all RFP and seismic requirements.
- All Barracks and Admin areas lighting shall be designed and constructed to provide a uniform level of minimum lighting in accordance with Section 01015

throughout the buildings. Fluorescent lighting shall be installed throughout barracks buildings.

- The toilet/shower facilities shall be located with toilets facing North/South away from Mecca, for cultural reasons.
- Do not provide urinals for cultural reasons.
- Showers shall contain a valve for hot and cold water mixing. There shall be a showerhead mounted high on the wall and an additional spigot with a flexible 1.5 m spray hose mounted below the control valves with a hanger. The showerhead and the spigot shall each have a valve so that flow can be diverted to each. Showers shall be provided with low flow water devices.
- All sinks for the buildings and the central toilet/shower facilities shall be 1.8m wide trough type constructed poured in place concrete with ceramic tile exterior and stainless steel lining capable of withstanding abuse. Maximum width is 1.8m. Individual troughs shall serve only three (3) individuals with 3 spigots with hot and cold water and two drains.
- Install carbon monoxide (CO) monitors in large occupancy areas, sleeping areas and enclosed facilities. If all the windows and doors are closed and there is no provision for intake air, there is a possibility of carbon monoxide built up in the rooms. These CO monitors/alarms shall be hard-wired for reliability and to prevent pilferage.
- No connex boxes will be allowed for facilities of any sort.

6. COMPLETION OF WORK

6.1 All work required under this contract shall be completed within 300 calendar days from Notice to Proceed for site work.

Review Section 00150 for Schedule requirements. The Charette shall consist of the Customer, Contractor, Design Team and U.S. Army Corps of Engineers personnel to finalize design Completion of construction documents for 100%, after approval of a preliminary facility layout and landscape plan, the Contractor may commence Site Work. Contractor will prosecute the work diligently, and complete the entire work, ready for use. The time stated for completion shall include final cleanup of the premises. The Contractor shall survey site and verify the existing conditions and report to the Contracting Officer any interface problems that could potentially impact this work. The Contractor shall be responsible for submittals and developing and performing all operational and acceptance testing. Contractor shall construct the facilities as a Design-Build construction contract and shall be in accordance with all codes, regulations, and requirements stated in the task order documents.

6.2 All primary construction facilities, such as, barracks, power plant, all headquarters buildings, and DFAC facilities will display both the flag of the Peoples Islamic Republic of Afghanistan and the United States of America.

EXAMPLE: MARKING (NOT TO SCALE)



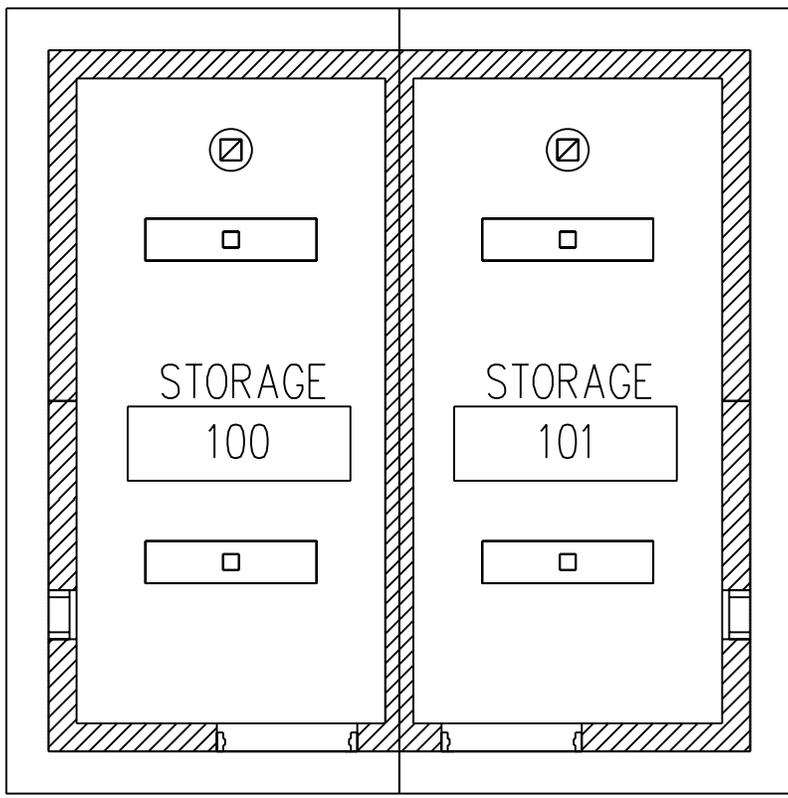
از طرف دولت امریکا
برای مردم افغانستان

From the People of the United States
to the People of Afghanistan

-- End of Section --

(End of Summary of Changes)

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2-209TH HQ FACILITIES, ANA KUNDUZ INSTALLATION

APPENDIX R