

SECTION 01010 SCOPE OF WORK

1.0 GENERAL

The project consists of the design, construction, and erection of Government Furnished Re-Locatable Building (RLB) container modules and related support facilities for 1100 personnel at Forward Operating Base (FOB) Shank located near the village of Pul-E-Alam in Logar Province, Afghanistan. The modules shall be erected in a 2-story building configuration. Coordinate with the Contracting Officer (KO) for the approximate site locations once the contract is awarded. The site will be confirmed by the KO prior to NTP. The project is defined as the material, labor, and equipment to grade the site, construct foundation systems, assemble the RLB modules, move and set RLBs to/on the foundation system, provide sufficient vehicle access roads and parking areas, utilities and any other necessary infrastructure required for the RLB housing project to fully support the design population. This contract provides government furnished RLB units. The work includes site survey; geotechnical investigations; design of concrete foundations; reinforced concrete bunker and blast protection barriers; assembly of RLB container modules; and placing RLB modules (RLB modules shall be secured to foundations and adjacent modules with manufacturer approved/designed connectors, see Appendix D); an above ground water storage tank(s), chlorination system, booster pumps, hydro pneumatic tanks; pump house and buried water distribution system; a buried sanitary sewer collection system and sewage holding tank; an electrical service disconnect, transformers; buried power distribution and communication systems;. A set of conceptual drawings for a project of this type is located in Appendix A. Features shown on the concept drawings are for the contractor's information only. It is the responsibility of the contractor to provide a complete design in accordance with all the requirements set forth herein.

The design and construction 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, 2006
- UFC 4-010-01, DoD Minimum Anti-Terrorism Standards for Buildings
- NFPA 70, National Electric Code, latest edition
- ANSI C2, National Electric Safety Code, latest edition

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 SUBMITTAL PROCEDURES of the Contract.

1.3 SECURITY

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

1.4 CQM TRAINING REQUIREMENT

See Section 01451 paragraph CQM TRAINING REQUIREMENT for Contractor's Quality Manager training requirements.

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

1.5 ELECTRICAL WORKERS QUALIFICATIONS

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

1.5.1 SUPERVISORY ELECTRICIAN

Supervisory electricians must be graduates of an approved trade school and must have two years of relevant electrician experience. Approved programs include but are not limited to the Afghanistan Technical and Vocational Institute (in Kabul), the Kunar Trades Training Center and the Commercial Technical Training Center (in Jalalabad). Work experience resumes and graduation certificates shall be submitted and approved prior to commencement of any design or construction involving electrical work. Approval is granted by the Contracting Officer's

Representative with guidance by the Quality Assurance Branch and/or the Safety Office of the US Army Corps of Engineers. Afghanistan Engineer District,

1.5.2 ELECTRICIANS

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

2.0 LOCATION

The project is located at FOB Shank, Afghanistan. The coordinates for the building site shall be coordinated with the KO; the contractor shall locate the buildings as directed by the KO.

3.0 SUMMARY OF WORK

3.1 CONTRACTOR REQUIREMENTS

The contractor shall design and construct the facilities as a design-build contract which shall be in accordance with the requirements stated in Section 01015: TECHNICAL REQUIREMENTS. Refer to attachment(s) following this section for more specifics for required spaces. The design and construction work shall include but not be limited to that described herein. The design portion shall be in accordance with the requirements of Section 01335 SUBMITTAL REQUIREMENTS.

3.1.1 GENERAL REQUIREMENTS FOR FACILITIES

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 facilities unless otherwise stated in Section 1010 or 1015. All units shall be fabricated in sections and bolted together to provide for easy disassembly.

All standard construction amenities and details such as heating and cooling, lighting, site drainage, grading, utility connections, etc. shall be implied as a design and construction requirement. Conceptual drawings are provided in Appendix A. Concrete walkways are required to connect all buildings, facilities, and features such as sewage holding tank(s), water storage tank(s), trash points, and parking lots.

The design population shall be 1100 personnel.

3.2 WATER SYSTEM

Design a potable water system per Section 01015 TECHNICAL REQUIREMENTS, composed of water storage tank (s), chlorination system, booster pumps, hydro pneumatic tank(s), and underground pipe distribution system. Water distribution system shall be constructed to deliver 345-414 kPa (50-60 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 190 L/capita/day (50 gal/capita/day) multiplied by a capacity factor of 1.5. Per customer, fire flow

and irrigation systems shall not be included in design calculations. The system shall be designed such that the distribution lines can be tied into base water distribution system at a later date

3.3 SANITARY SEWER SYSTEM

Sanitary sewer collection system shall be designed and constructed by contractor in accordance with Section 01015 TECHNICAL REQUIREMENTS. Sanitary Sewer collection system shall consist of gravity sewer pipes and appurtenances such as manholes, cleanouts, building service connections and a sewage holding tank. The gravity sewer collection system shall connect to the sewage holding tank. Sewage holding tank 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 41 gallons per capita per day (gpcd), whichever is greater.

3.3.1 DEMOLITION AND GRADING

Minor site demolition is required prior to construction of new work. Contractor shall grade site to ensure that the finish floor elevation is 150mm above the 10-year storm event. The ground shall slope away at a minimum of 5% from the building finish floor elevation for the first 3 meters. Positive drainage is required for the entire project site.

Native compacted crushed stone 100 mm thick shall be placed around all buildings, from the building footings out 2 meters. Minimum 1.5 meter wide, 100 mm thick concrete walkways shall be installed between buildings, parking areas, trash points, generator pads etc. The sidewalk shall be constructed over compacted soils.

3.4 SITE ELECTRICAL DISTRIBUTION SYSTEM

POWER SYSTEM: The contractor shall design and construct an underground distribution to provide power to all buildings. Main distribution panelboards (MDPs) shall be used to distribute power to the buildings and allow for future or concurrent connection to generated power. All electrical design and installation shall meet the current NEC (NFPA 70) requirements. Electrical design shall be as indicated in Section 01015, TECHNICAL REQUIREMENTS. Conductors and circuits shall be sized for the specific loads. All wiring shall be run and pulled through conduits.

Contractor shall design all interior electrical systems as described in section 01015 TECHNICAL REQUIREMENTS.

3.5 FORCE PROTECTION MEASURES

The Contractor shall design and construct force protection measures to include blast protection barriers, bunkers, 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.

3.5.1 BARRIERS

Provide and place Texas style barriers according to force protection requirements. The barriers shall be designed to meet minimum DOD guidelines. Texas barriers will be provided as a means

of side protection for the RLB Barracks. Contractor is responsible for providing and installing all Texas Barriers.

3.5.2 BUNKERS

Bunkers are required for force protection of occupants in the event of an attack or other emergency. Bunkers shall be constructed per design shown on the conceptual drawings attached in Appendix A. Two layers of sandbags are required on walls and roof of the bunker. Wood benches are required inside the bunker for seating. Texas barriers, the height of the bunkers are required at each end of the bunker. Bunkers shall be located between buildings, of capacity to support 1100 troops. A generic site plan of the buildings and bunker locations are shown on the conceptual drawings attached in Appendix A.

3.6 ROAD NETWORK, SIDEWALK, AND PARKING

The Contractor shall design and construct the entire Aggregate Surface Coarse road and parking network. The road network shall be designed to provide access to all the buildings. The road layout shall provide access to main base road network, parking lots, sewage holding tank(s), water storage tank(s), and trash collection points. Turn around hammer head pattern will be provided at the end of the roadways. Provide parking area for 50 vehicles inside the compound. Road design shall be designed per Section 01015 TECHNICAL REQUIREMENTS. Roadways and sidewalks are required as indicated herein, and shall be designed and constructed based upon recommendations from geotechnical analysis as required herein.

A storm drainage system shall also be included. This shall consist of ditches, culverts, and any erosion control protection at outlets.

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 and gathering areas in between buildings.

All areas left exposed shall be protected against erosion. This can be accomplished by providing vegetation or gravel on all exposed soils.

3.7 TRASH POINT

The Contractor shall design, in a location convenient for easy removal, a minimum of 8 trash collection points. Each shall be located inside the RLB building compound. The trash points shall be 5.0 m X 6.0 m concrete pads with 2.5 meter tall chain link fences around the perimeters. The fences shall be bonded to a buried electrical grounding conductor for lightning protection as described in section 01015, TECHNICAL REQUIREMENTS. One side shall have two 1.5 m wide gates. Trash Points shall have sloped metal roofs.

3.8 BARRACKS - RELOCATABLE BUILDING (RLB) HOUSING

All Re-Locatable Building (RLB) modules to be incorporated into the housing structures will be provided by the US Government (USG) as government furnished equipment (GFE).

The GFE RLB modules, assembled and/or flat-pack (as shipped from the manufacturer), will be available for the Contractor to inspect at a temporary site specified by the COR and relocate to

the building site specified by the COR. The contractor is responsible for moving the modules from the temporary site to the building site; this distance is not more than 1 km and will be within the installation. The Contractor shall be responsible for (1) conducting a joint inspection of the RLB containers with the USG to verify all components are present and have not been damaged prior to assembly; the Contractor is not liable for any damage to the RLB containers which might have occurred prior to their removal; the contractor shall also determine if the RLB containers require electrical upgrades based on the serial numbers and the contents of Appendix B, (2) moving the RLB containers to the building site. (3) Assembling the RLB containers (see Appendix C) and (4) incorporating the RLB containers into the 2-story building structures as per the submitted and approved 100% design.

Specific Design Requirements:

- a. Electric water heaters are provided by the RLB module manufacturer and shall be installed and connected by the Contractor.
- b. Exhaust fans are included with the toilet and shower modules.
- c. RLB module manufacturer connections will be provided as GFE for the contractor to use in installation.
- d. Finishes: all RLB container units come with manufacturer's finishes and toilet/shower room appurtenances.
- e. Doors and Windows: the RLB containers include windows, complete and ready to use. Each module contains a fire-rated (20 minute door).
- f. Electrical power: contractor shall install power from the external power source to each RLB module power connection point. Each RLB building shall be served by a distribution panel located near, but not mounted to, the RLB building. Feeders between the distribution panel and individual RLB's shall be routed in conduit that is supported by structural steel independent of the RLB structure. Feeder taps to feed individual RLB's shall be made in junction boxes mounted to the structural steel support. Taps shall be routed through liquid-tight flexible metal conduit and connected to the module power connection point (see conceptual drawings in Appendix A and manufacturer drawings in Appendix B). Cables reaching through the panel board are positioned indoors on ceiling and come out through the hole placed on roof profiles near the junction box. The panel board contains one point grounding system. Circuit breakers are installed in the panel board that will disconnect all the electrical circuits of each module in case of a ground fault current equal to or greater than 10mA. The metal structure of the module is to be connected to the ground system by means of a connecting bolt placed on the short side of the module. Grounding rods shall be 20 mm diameter copper rod that must extend 3000 mm in depth. The contractor will verify and ensure the interior electrical installation complies with the flow chart in Appendix B. All electrical installations shall comply with NFPA 70, National Electric Code (NEC).
- g. Transport: the RLB containers may be stacked and transported in a stack of 4 flat/pack units, fixed as one package by means of polyester belts (as shown in Appendix C).

Forklift pockets are provided in each module for lifting and movement. The container structure is designed to be moved by cranes, trucks and forklifts, etc to the job site. The contractor is responsible to suitably secure the modules for transport to the job site and for any damage incurred after acceptance of the government furnished equipment (GFE).

- h. Assembly: The RLB container module is constructed of prefabricated elements to facilitate assembly operations at the job site with unskilled labor (as shown in Appendix C). The following work actions, in recommended order of assembly are: (1) Construct RLB container foundations and walkway (2) Assemble RLB containers, lift modules and place on foundations, provide utilities (3) Secure modules via manufacturers connections (See Appendix D) (4) Connect utilities to exterior system; install electrical panels and other appurtenances.

3.9 HVAC, HEATING VENTILATION AIR-CONDITIONING

Government furnished split pack heat pump unit is provided for each of the module unit.

3.10 PLUMBING

Plumbing fixtures are provided with each “wet” module toilet and shower modules. See Section 01015 TECHNICAL REQUIREMENTS for detailed requirements.

Plumbing for toilet and shower modules: the hot-cold water system consists of PVC piping fixed on walls by heavy duty fittings and connectors. Draining and sewage systems shall be polypropylene piping. All plumbing piping and fixtures are provided with each of the wet modules. The Contractor is required to connect the interior piping securely to the exterior piping. Use of approved flexible connectors is allowed. Measures for freeze protection are required as part of this contract. Contractor shall provide additional pipe venting for banks of water fixtures thru exterior walls as necessary. Each shower and toilet module contains a floor drain with P-trap. Sewage lines require interior and exterior clean-outs. Contractor shall provide one (1) exterior freeze proof hose bib with splash block for each building and insure protection from freezing.

3.11 LIFE SAFETY

Design and Construct circulation pathways in accordance with building code references herein. A fire sprinkler system is not required. The facility shall comply with all other safety requirements as required within references. Contractor shall install smoke detectors, and building fire alarm systems shall be installed in accordance with requirements noted in specifications Section 01015 TECHNICAL REQUIREMENTS. Each sleeping room requires a hard wired smoke detector. Toilet and shower rooms do not require smoke detectors. Conventional FACP is required for any corridors. Two horns and two pull stations are required for the end of each floor. Walls between each sleeping unit must be one hour fire rated. Complete life safety and fire protection requirements are detailed in Section 01015 TECHNICAL REQUIREMENTS.

3.12 FOUNDATION DESIGN

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

4.0 COMPLETION OF WORK

All work required under this contract shall be completed within **365** calendar days including government review time from Notice to Proceed (NTP) for site work to the Beneficial Occupancy of the RLB facilities. Any day past the contract period is considered delay with Liquidated Damages assessed to the contractor in the amount of \$850.00 per calendar day.

All work under this contract shall be completed and buildings ready for beneficial occupancy in accordance with the following schedule:

Work Items to be completed no later than **210** calendar days after NTP:

- Site preparation, site utilities (including sewage holding tank), gravel road and sidewalk bases, and half of the RLB building foundations
- Completion of enough RLB buildings to accommodate 576 personnel, complete, including full utility connections

Work Items to be completed no later than **320** calendar days after NTP:

- All remaining RLB building foundations
- Completion of the remaining RLB buildings, complete, includes full utility connections to accommodate the additional 524 personnel (in addition to the initial 576).

Work Items to be completed no later than **365** calendar days after NTP:

- Complete all paving and placement of barriers

OPTION ITEMS:

Work Items to be completed no later than **180** calendar days after exercise/award of OPTION item:

5.0 UNEXPLODED ORDNANCE (UXO)

5.1 UXO REMOVAL AND CLEARANCE

The contractor shall search for, identify and clear all mines and unexploded ordnance (UXO) from the entire site. The contractor may only provide clearance/removal services via UN Mine Action Center for Afghanistan (UNMACA) accredited entities, and clearance shall be accomplished to the anticipated foundation depth as indicated in the contract. If sub-surface construction activities are to be performed on this site the minimum clearance depth will be 1 meter. Sub-surface clearance for construction activities in excess of 1 meter as defined by the contract parameters will also be the responsibility of the contractor. Clearance by definition is an investigation and clearance of all sub-surface metallic anomalies on the site. Clearance/removal may only be undertaken in accordance with International Mine Action Standards (IMAS), Afghanistan Mine Action Standards (AMAS), and applicable U.S. Army Corps of Engineer

(USACE) Ordnance & Explosives (OE) safety standards. When mines and/or UXO's are identified, the Contractor shall place them in a location in accordance with IMAS/AMAS/USACE until destruction of the items can take place. Construction work shall not occur inside the safety exclusion zone based on the most probable munitions (MPM) expected on the site. Construction will not commence in any area that has not been cleared to the specified depth. If sub-surface activities

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

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

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

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

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

UXO Safety/ Demining COR, USACE
tan.uxo.demining.safety@usace.army.mil, Roshan: 079-778-6848 Comm: 540-667-2127

5.2 ALL RLB CONTAINER ELECTRICAL UPGRADES

6.0 REFERENCES

Refer to Section 01015 TECHNICAL REQUIREMENTS for required technical references.

-- END OF SECTION --