



EUCOM Humanitarian Assistance Program

Design and Build New Male Pavilion in Psychiatric Hospital Complex in Demir Hisar - Macedonia

Demir Hisar, Macedonia

OHASIS MK-HA-2014-00024361

June 2015

Version 01

1. TAXATION

This construction contract is exempt from VAT. The contractor is required to coordinate with the US Embassy and with competent Macedonian authorities in order to obtain the VAT TAX EXEMPTION that applies to this contract. Contractor is required to make all necessary coordination and to allow for time for approval of the VAT Tax Exception.

This VAT exemption applies to donations from U.S. Government to Macedonian Governmental entities/facilities. It was established by the Ministry of Finance. The contractor is responsible to coordinate with Macedonian Government the VAT exemption. However, for general information, below is a simplified explanation of the process followed for different Humanitarian Assistance project in Macedonia.

- The US Embassy and the beneficiary need to sign a "Donation Agreement". This document needs to be written in Macedonian, and it needs to be signed and stamped by the Embassy, as donor, and the representative of the beneficiary. The contractor shall coordinate directly with the US Embassy representative for the preparation of this document. However, it is not the contractor's responsibility to prepare such document.
- The US Embassy representative would submit the donation project application to the Government of Macedonia properly signed and stamped by the US Embassy. Afterwards the Project Registration Office would issue a stamped project certificate. As in the previous step, the contractor shall coordinate with the US Embassy representative the submission of this document. However, it is not the contractor's responsibility to prepare such document.
- The contractor shall provide all invoices that are exempt from VAT on the form specified by the Ministry of Finance. Application letter needs to accompany the form. Original invoices must be submitted with the VAT exemption form. Copies of all these documents can be obtained from the Ministry of Finance, from the US Embassy representative or from NAVFAC Project Manager. Each time the contractor submits an invoice for payment, they can submit it to the Ministry of Finance for VAT refund. In order for the contractor to get the VAT money from the Government of Macedonia they need to get paid by the U.S. Government for that invoice.

All prices submitted by the bidders, schedule of prices and invoices provided by the successful contractor shall be provided without VAT.

2. PROJECT DESCRIPTION

THIS PROJECT IS FOR THE DESIGN AND CONSTRUCTION OF A NEW BUILDING. THE CONTRACTOR SHALL PROVIDE A COPY OF CONSTRUCTION PERMITS TO BE PROVIDED BY THE COMPETENT LOCAL AUTHORITIES BEFORE WORK IS AUTHORIZED TO START.

CONTRACTOR WILL COORDINATE WITH LOCAL AUTHORITIES AND WILL PROVIDE ALL REQUIRED DOCUMENTATION IN ORDER TO OBTAIN THE CONSTRUCTION PERMIT THAT MAY BE REQUIRED FOR THE SCOPE OF WORK INCLUDED IN THIS PROJECT. CONTRACTOR SHALL COORDINATE THE PROCEDURES TO SUBMIT THE DOCUMENTATION TO THE MUNICIPALITY WITH COMPETENT LOCAL AUTHORITIES.

THE CONTRACTOR SHALL VERIFY AND FOLLOW THE NECESSARY PROCEDURES TO SUBMIT THE DESIGN PACKAGE IN ORDER TO OBTAIN THE CONSTRUCTION PERMIT FOR A NEW CONSTRUCTION, WITHIN A PUBLIC PLOT OF LAND, FUNDED BY A FOREIGN DONOR, AND TO BECOME PUBLIC BUILDING TO BE USED FOR SPECIFIC MEDICAL USE.

GENERAL SCOPE OF WORK

The Work included under this contract includes the necessary designs, permits, construction and approvals to build of a new fully certified and operational facility to be used as a male pavilion within the plot of land of the Psychiatry Hospital complex located in Demir Hisar. It is absolutely necessary that the bidders visit the construction site before they submit their bids in order to verify existing conditions.

In summary, the contractor's work includes the following items of work:

- Prepare the conceptual design and technical project
- Obtain the Construction Permit from the competent Macedonian Authority
- Demolish any existing facilities interfering with the new construction, and reroute any utilities interfering with the new construction.
- Build a facility to be used as the new Male Pavilion of the Psychiatry Hospital Complex
- Obtain all necessary approvals from competent Macedonian authorities during construction of different phases and at the end of construction (Act of Acceptance)

Note: The contractor is responsible to visit the site in order to verify the existing conditions and utility connection points, prior to the submission of their proposal.

2.1. Legal and Technical Requirements

The project execution is based on the following principles:

- Strict compliance with American Contracting Regulations, including the requirements of the Department of Defense, the US Navy and Naval Facilities Engineering Command (NAVFAC).
- Strict compliance with Macedonian Technical, Legal and Administrative requirements, which are applicable for a renovation project, as described in this PTS.
- Compliance with Macedonian safety regulations, unless the US Safety regulations included in Manual EM385-1-1 are more strict and not in conflict with Macedonian regulations.
- Compliance with technical requirements described in this document

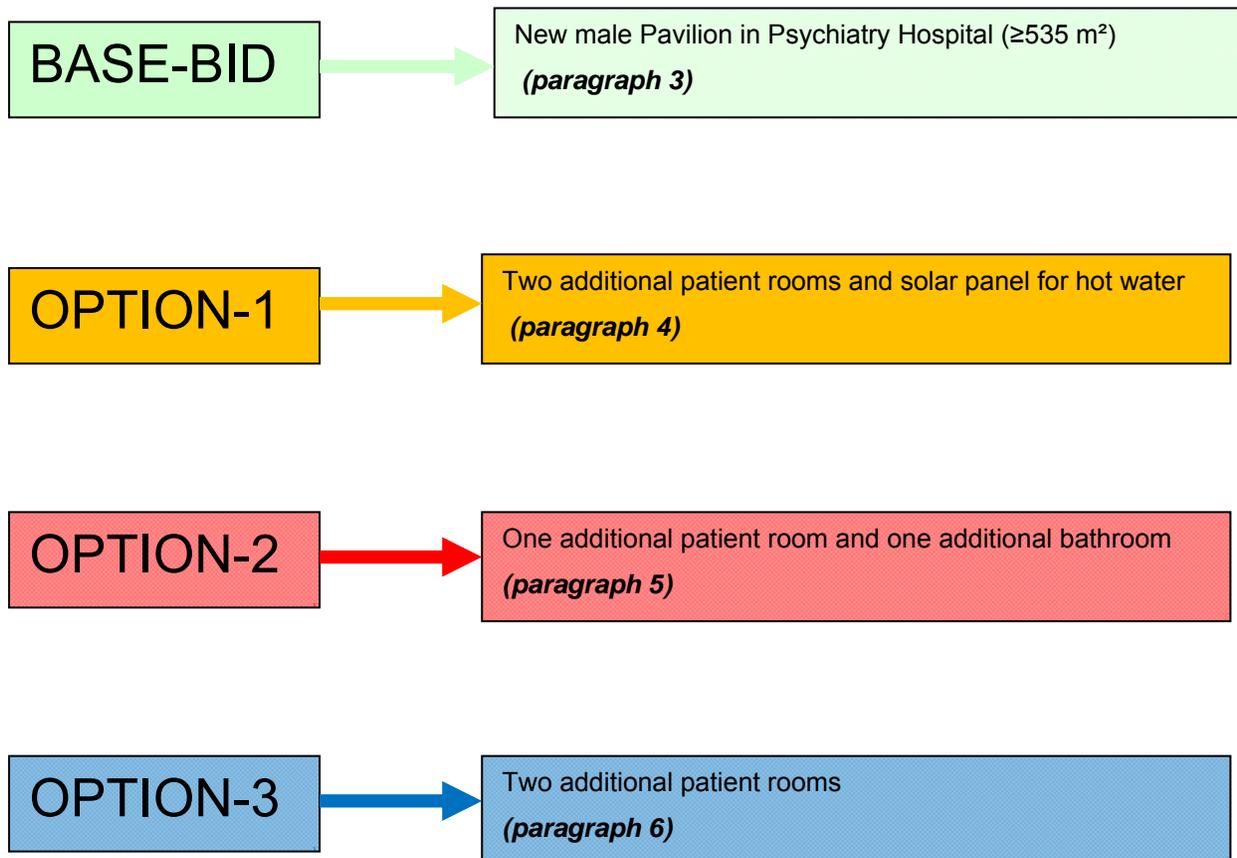
2.2. Construction Permit or Authorization

The construction of a new building to be used as a Male Pavilion in a Psychiatric hospital requires a full technical design/project, as stated by Macedonian regulations. The contractor shall obtain formal Construction Permit to perform the works included in the scope of work of this project from the competent Macedonian authority.

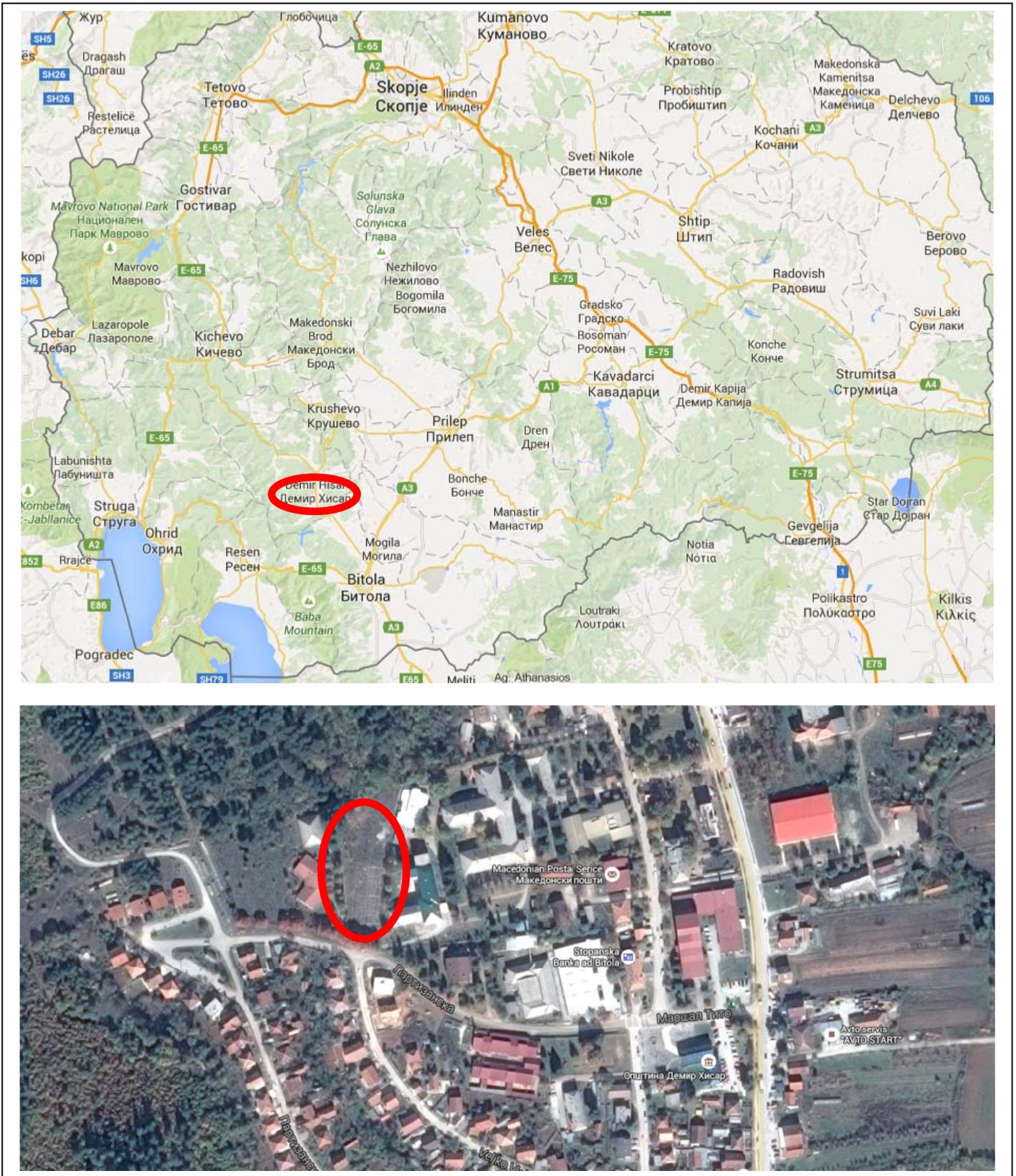
The contractor is required, as part of this contract, to prepare all documentation, designs, projects, reports, geotechnical studies, information, drawings, and everything that may be necessary as required by Macedonian regulations, in order to obtain this Construction Permit.

2.3. Structure of the Contract

The contract includes the design and construction of the new Male Pavilion in the Psychiatry Hospital of Demir Hisar. The work is divided into Base-Bid, Contract Option-1 and Contract Option-2. The Base-Bid is the minimum part of the project that will be awarded to a construction firm. The contract options will be awarded (or not) depending upon availability of funds, as well as other factors. The contractor shall provide a separate price for the Base-Bid and for the contract options, as required by the solicitation documents.



2.4. Location of project: The project is located in the city of Demir Hisar



3. Detailed Description of the Scope of Work (Base-Bid)

THIS IS A DESIGN-BUILD PROJECT

This is a design-build contract. This means that this document describes the scope of work and the requirements for the new facility to be designed and build as part of this contract. The contractor shall prepare all necessary design projects and documents as required per Macedonian regulations and obtain the necessary acceptance by the Contracting Officer and formal approval by the competent Macedonian authorities before they can start work. This includes obtaining the formal Construction Permit by the competent Macedonian authorities.

All work shall be designed and built in accordance with this Request for Proposal (RFP) and in compliance with Macedonian Codes, and it shall include every item of construction necessary to provide a fully usable facility to be used as a male pavilion for a psychiatric hospital, where patients with severe mental disorders will permanently reside. Design and construction shall strictly comply with applicable Macedonian construction codes. All areas of the new building should be accessible by people with limited mobility (wheelchairs) from the front road or paved area. Exterior finishes of the facilities shall be visually similar to residential construction in the vicinity.

THE CONTRACTOR SHALL PROVIDE A COPY OF CONSTRUCTION PERMITS TO BE PROVIDED BY THE CORRESPONDING LOCAL AUTHORITIES BEFORE WORK CAN START. CONTRACTOR WILL COORDINATE WITH LOCAL AUTHORITIES AND WILL PROVIDE AND PROCESS ALL REQUIRED DOCUMENTATION IN ORDER TO OBTAIN THE CONSTRUCTION PERMIT THAT MAY BE REQUIRED FOR THE SCOPE OF WORK INCLUDED IN THIS PROJECT. THE FORMAT IN WHICH TO SUBMIT THE DESIGN PACKAGE, COORDINATION WITH UTILITY COMPANIES, DEFINITION OF THE ASSIGNER OF THE PROJECT, DETAILS OF DRAWINGS, CERTIFICATES FOR THE DESIGNERS, SIGNATURES, AND OTHER BUREAUCRATIC PROCESSES SHALL BE AS REQUIRED BY THE MACEDONIAN AUTHORITIES WITH JURISDICTION OVER CONSTRUCTION OF NEW SANITATION FACILITIES IN MACEDONIA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE PROCEDURES WHICH ARE NECESSARY IN ORDER TO OBTAIN THE CONSTRUCTION PERMIT.

3.1. DESIGN PHASE – GENERAL - LICENSES

Immediately after award, the contractor shall initiate the design phase, as outlined in this document, and as required by Macedonian regulations.

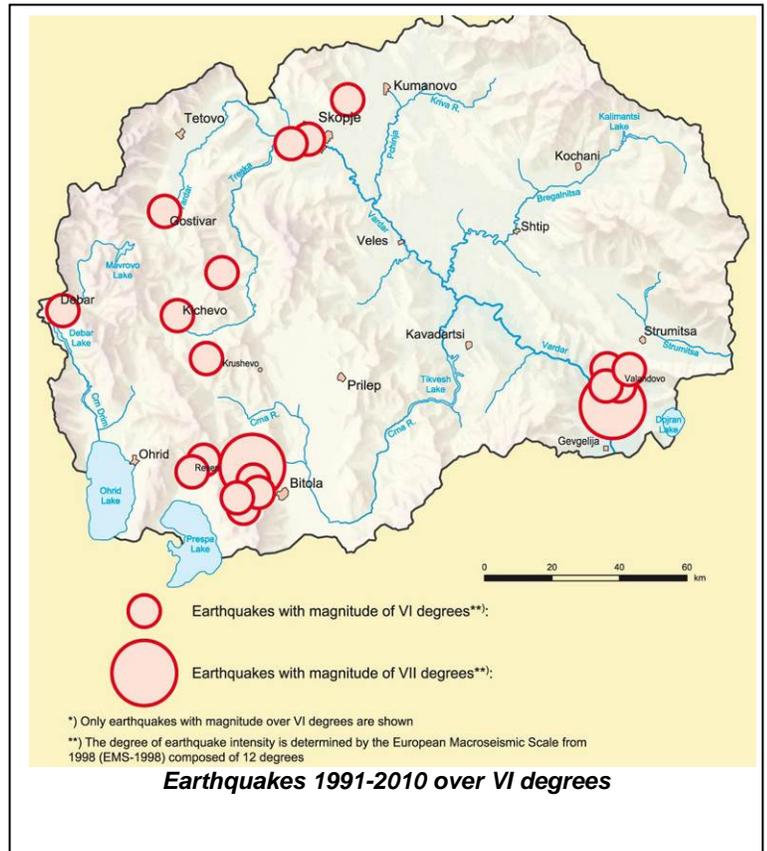
The design shall be prepared in compliance with applicable Macedonian construction codes, with Macedonian Sanitation requirements, with Macedonian Ministry of Health requirements, with applicable Urban Planning in Demir Hisar, with standard construction practices in Macedonia, and with latest European standards for psychiatric institutions. The contractor shall hire the services of an architect licensed in Macedonian to design one facility to be used as the new male pavilion, as detailed in this document. According to Macedonian regulations, several design packages will be necessary. The contractor shall be familiar with the Administrative procedures which are necessary in order for the Municipality and/or Ministry of Health to be able to receive and accept the different documents to obtain the necessary and required Construction Permit. The contractor's final designs shall be signed, stamped and certified by the corresponding licensed architects or engineers in Macedonian, as required by Macedonian regulations. Contractor to show proof that they have all required licenses for design and construction of the new male pavilion. All design documents shall be approved by the competent Municipal Government and by the Ministry of Health before its construction is authorized to start. The level of detail of the design (extent of specifications, number and size of drawings, number of separate designs, calculations, ...) shall be sufficient to verify the compliance with the requirements of this contract and as required by the regulations of Macedonia in general and Demir Hisar in particular.

The contractor shall hire the services of the necessary licensed professionals (architects, engineers) to design one complete and fully operational facility to be used as the new male pavilion for the psychiatric hospital of Demir Hisar. These contract Performance Technical Specifications include the minimum requirements of each element of the facility, but it shall be the licensed professionals to provide the best layout and distribution, meeting these minimum requirements. The design of the facility shall be adequate for persons with limited mobility, specifically for people on wheelchairs. The licensed professional shall design an energy efficient facility, as detailed throughout this document

3.2. GENERAL BASIS OF DESIGN

The licensed professionals hired by the contractor shall prepare the conceptual and the final complete design. It shall be the same professionals the ones preparing the conceptual design and the final design package to be submitted to the competent Macedonian authorities for approval and to provide the necessary Construction Permit. The US Government includes in conceptual designs for the Base-Bid and the Base-Bid with the different contract options. These sketches can be used by the contractor as a general rule to outline the minimum requirements included in this contract. These conceptual designs were approved by the Hospital Administration in Demir Hisar, and therefore it is highly recommended to follow it as a general guideline. The shape of the building is formed in order to use the available space, currently occupied by an abandoned sports field. The building shall be designed with the following general characteristics:

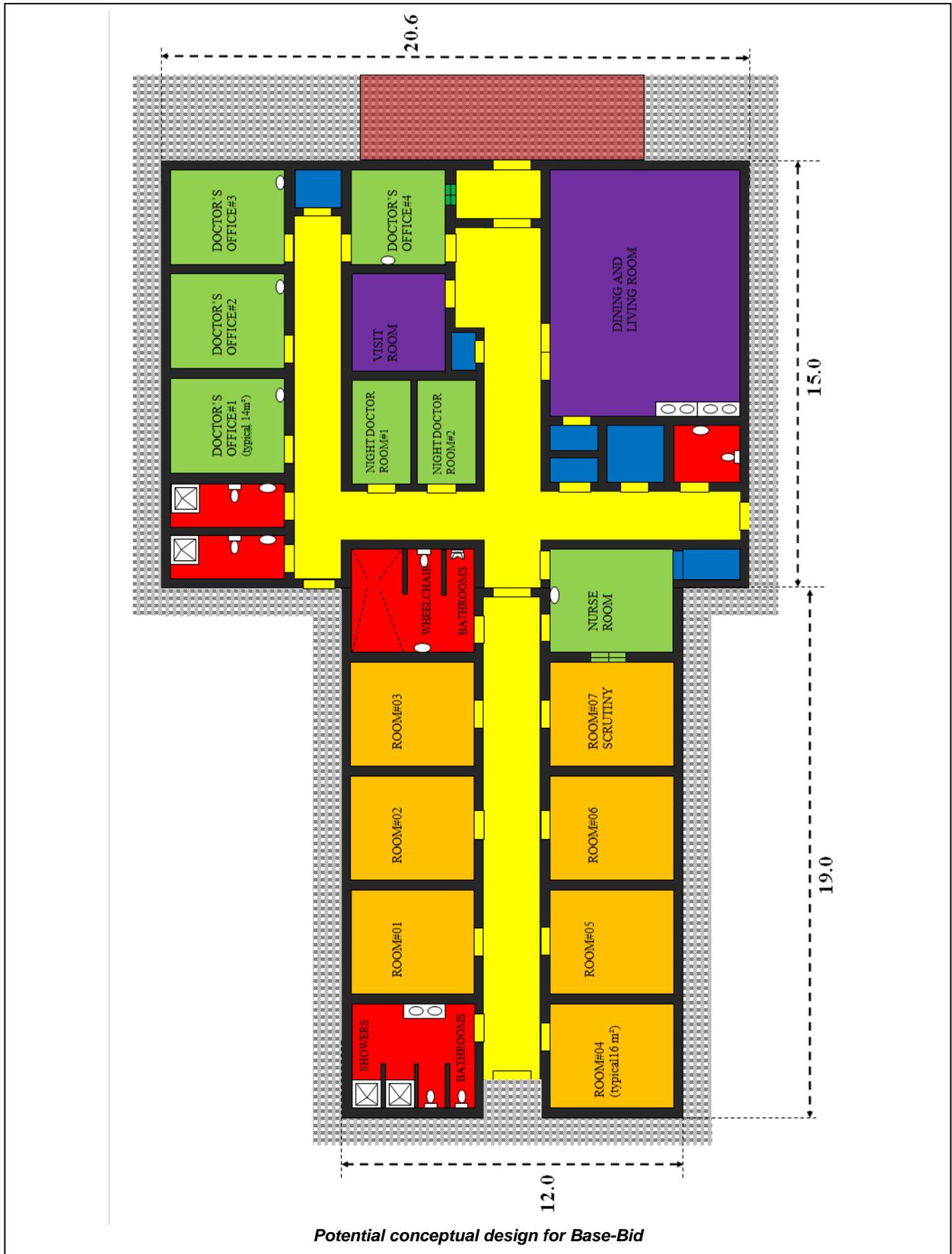
- The building shall be designed with reinforced concrete foundations, reinforced concrete superstructure (columns, beams and ceiling deck), internal masonry walls (gypsum board not authorized), thermally insulated masonry walls as exterior enclosure and thermally insulated roofing with Macedonian traditional ceramic roof tiles.
- Follow the seismic criteria applicable for this region of Macedonia. It must be noted that Demir Hisar is in an area with very high seismic classification and that special seismic criteria shall be applicable for the design of the building. Very strict seismic requirements for new construction projects are applicable in Demir Hisar, which the contractor shall strictly comply with.
- The facility shall have one single floor or level. The floor level shall be minimum 30 cm higher than surrounding grade elevation.
- All areas of the facility shall be accessible for people on wheelchair from the front paved street.
- Urban Planning requirements of the Municipality take precedence over the specific technical requirements of this document.
- Design and energy efficient facility
- Surround the entire facility with one meter wide concrete sidewalk
- Design and built to allow for future expansion of additional patient rooms (designing the heating, electrical and all utilities for a building with 5 additional patient rooms and one additional bathroom)



3.3. GENERAL BASIS OF DESIGN – INTERNAL DISTRIBUTION

The licensed professionals hired by the contractor shall prepare the conceptual design to provide a perfectly functional internal distribution of all areas. The internal distribution shall follow these parameters:

- Divided in 3 main areas, clearly separated in general as detailed below:
 - o Area for residents including bedrooms and bathrooms (bedrooms ≥ 16 m² each)
 - o Common areas (large dining and living room, visit rooms, visitor's toilet and lobby)
 - o Doctors' areas (nurse room, doctor's offices and rooms, and 2 bathrooms for doctors and staff)
- Main entrance as close as possible to adjacent paved road.
- Entrance canopy or porch with minimum 30 m² of covered area
- Minimum 4 doctor's offices (≥ 14 m² each)
- One doctor's office with internal window to main entrance door
- 2 rooms for night doctors (small room with space for bed and desk)
- Nurse Room (≥ 16 m²) with dual access (patient and common areas) and scrutiny room window.
- Visit room near the entrance
- Several storage rooms (5 in the provided sketch). One larger room for lining storage.
- Double door system at the main entrance
- Large dining and living room with wide double entrance door. Room to be diaphanous (without any internal columns)
- One visitor's toilet rated for people on wheelchair (see note below about mechanical room)
- 7 patient rooms (≥ 16 m² each)
- One of patient rooms to have special requirements (Scrutiny Room)
- 2 separate bathroom facilities for patients, one with showers and toilets (minimum 2 each) and one rated for people on wheelchair with shower, toilet and one urinal.
- Mechanical room: The mechanical room is not included in the conceptual design, although the operation of the facility should require such room. In case it is needed, the architect shall design this room with the necessary minimum area required for the intended use, taking the space from dining room or other areas included in the conceptual design, not increasing the total built area. Other possibility is converting one of the doctor's toilets into the bathroom rated for people with disabilities and visitor's toilet. In that case, the area occupied in the sketch for the visitor's toilet could be occupied by the mechanical room.
- Hallways: 2 meter wide in main entrance and patient room areas, and as needed for the doctors' areas and other spaces.



3.4. GENERAL BASIS OF DESIGN – TOTAL BUILT AREA

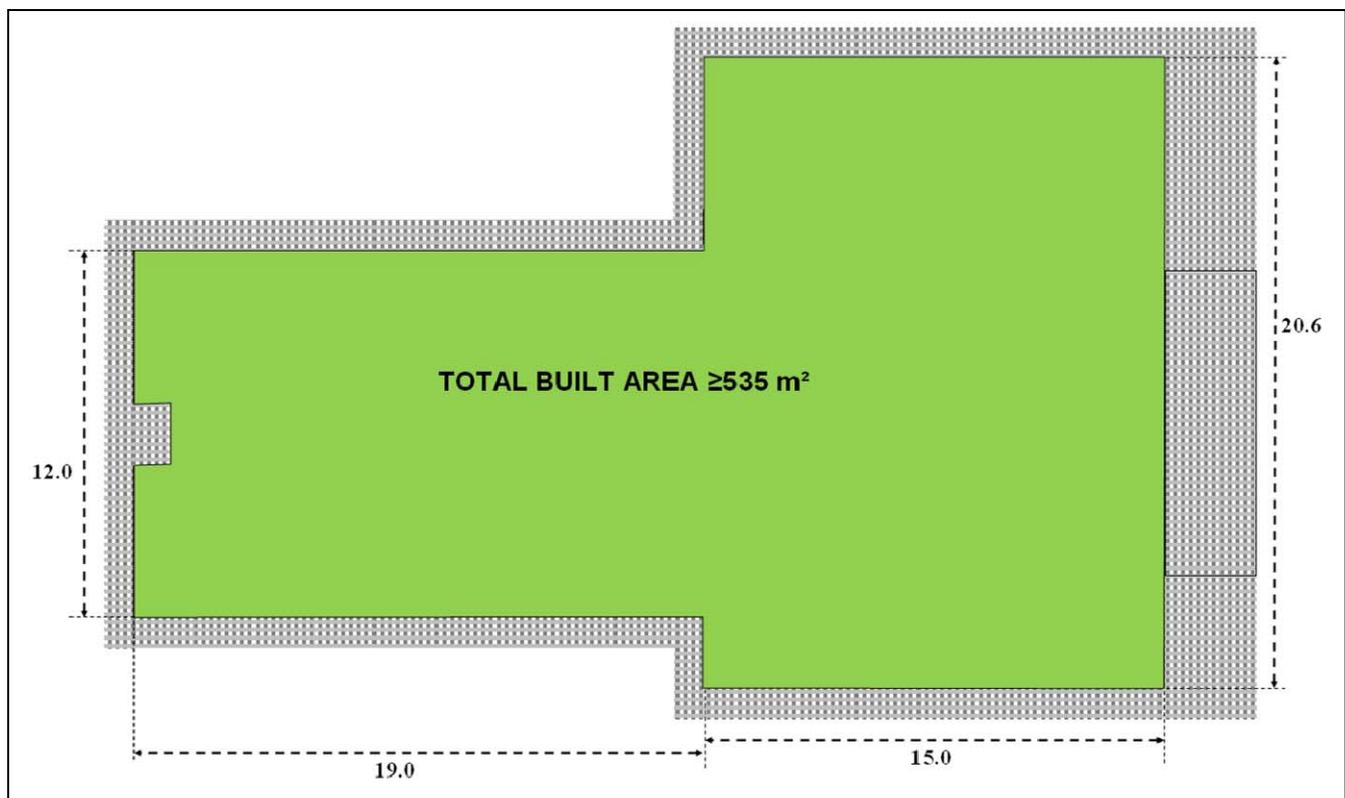
The licensed professionals hired by the contractor shall prepare the conceptual design to provide a perfectly functional internal distribution of all areas. This contract includes designing and building a new male pavilion in the psychiatry institution of Demir Hisar with a total **of 535 m² of built area**.

535 m², plus the entrance porch, is the basis of design and the contract requirement. The contractor shall design the internal layout following the guidelines of this document. They can propose modifications and alterations to the conceptual design included in this document. However, the total built area shall not be less than 535 m².

Built area is defined as the total area occupied by the new facility, including the area occupied by the walls and columns.

Usable area is defined as the sum of all the internal areas of all rooms in the facility.

- Total built area for this contract $\geq 535 \text{ m}^2$
- Total usable area for this contract to be determined by the architect hired by the contractor, but shall be significantly lower than 535 m². Using standard construction practices the total usable area could be from 450 to 460 m². This figure shall be calculated by the architect hired by the contractor.



3.5. GENERAL BASIS OF DESIGN – PSYCHIATRY PAVILION REQUIREMENTS

The facility to be designed and built shall be used as the male pavilion in the psychiatry hospital of Demir Hisar. As such, there are several specific requirements that apply to this contract. The architect hired by the contractor shall apply the applicable European and Macedonian requirements for this type of facility. Find below some of the specific requirements for psychiatry facilities that are applicable and therefore part of this contract:

- General: All construction to be heavy duty or resistant to vandalism by the residents.
- General: All windows to be provided with security bars
- General: Air conditioning needed in dining/living room, nurse room, scrutiny room and 2 other rooms of maximum 20m² each, to be determined by beneficiary.
- General: Lighting in the hallways to be activated manually and by motion detectors
- Patient Rooms (except scrutiny room)
 - o No electrical receptacles
 - o Lighting controlled individually in nurse room and in each room
 - o 2 rooms with floor drains for easy cleaning
 - o Door with security glass of maximum size 20 x 20 cm. Glazing minimum 20 mm thick.
 - o Each door of different color
- Scrutiny room:
 - o Separated by security “interrogation type” window from nurse room
 - o Provided with floor drain
 - o One electric receptacle (lockable)
- Patient area:
 - o Separated by rest of the building by heavy duty doors with card activated lock
 - o Provided with under floor heating to avoid vandalism by residents
- Main entrance door: Security door with card activated lock and also activated from nurse room.
- Nurse Room:
 - o Provided with secure storage for pharmacy
 - o Provided with remote control for main access gate with audio/video communication



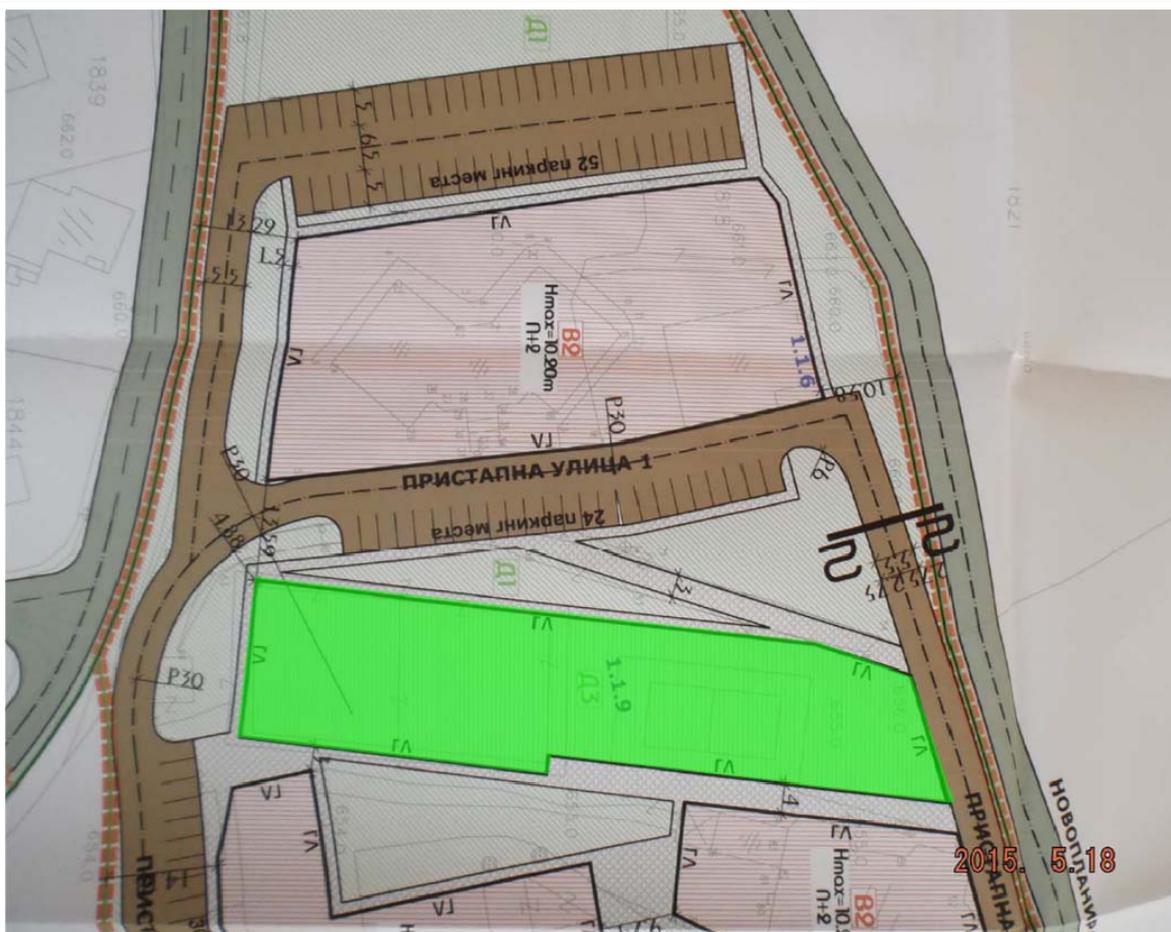
3.6. GENERAL BASIS OF DESIGN – LOCATION OF THE NEW CONSTRUCTION

The facility shall be designed and built in the area currently occupied by an abandoned sports ground. The actual shape of the building shall be designed to match this available and relatively flat area.

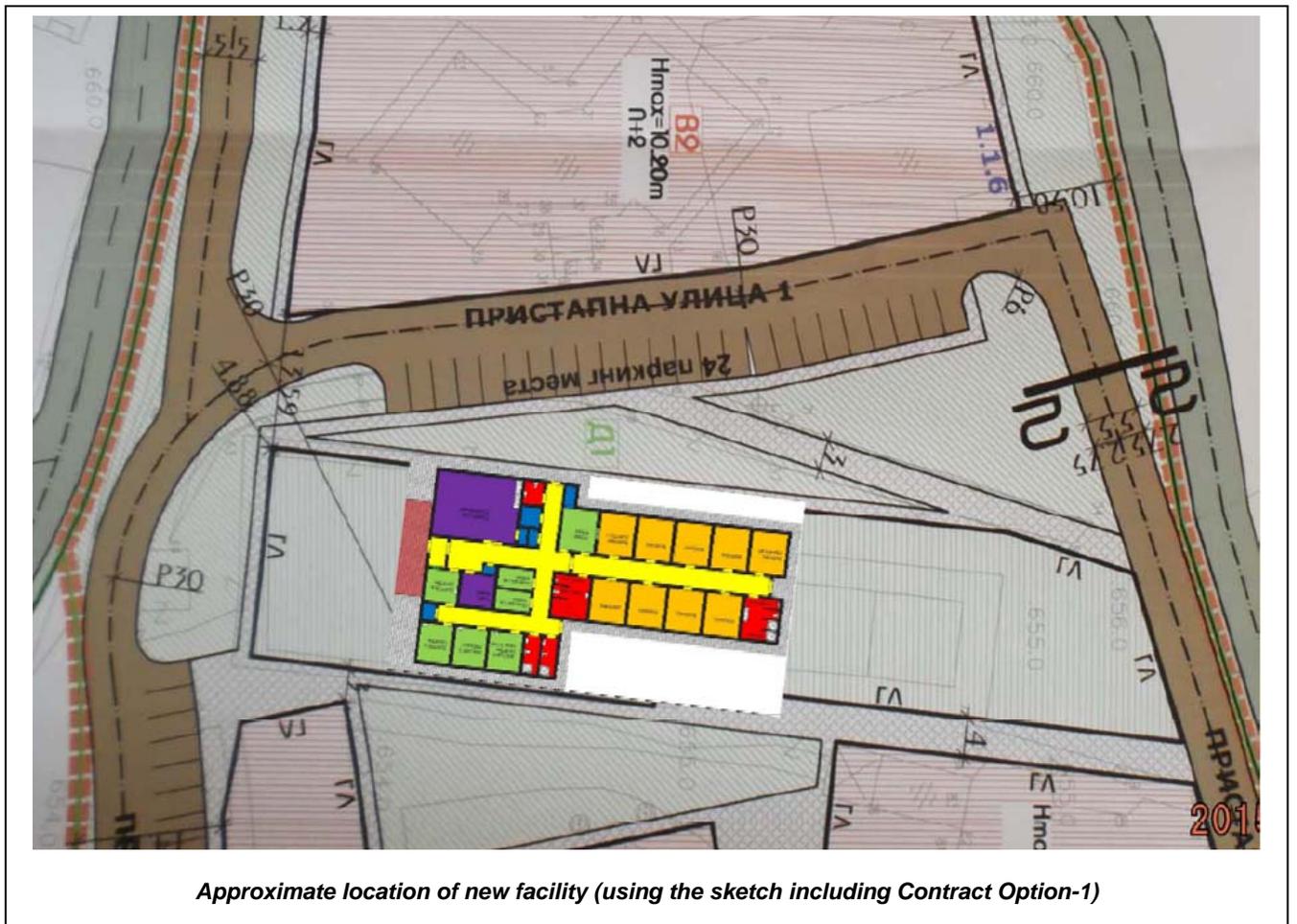
For estimating purposes to design the foundations, the contractor shall estimate that this area was leveled when the plot of land was developed, and therefore it was filled using typical existing soils from the area, and not properly compacted. This together with the seismic criteria shall require deep foundations that the contractor shall properly estimate prior to submission of their offer. The contractor shall also survey the area in detail to account for potential reinforced concrete retaining walls that may be required to fully stabilize the area where the new facility will be built.

The contractor shall use the area highlighted in green in the drawing below. This drawing is from a separate project that the Hospital has to develop their entire plot of land. The location and accesses of the new facility shall be compatible with the existing development project of the hospital. It is recommended to locate the new facility as much to the South as allowed by this development project and by the Urban Planning of the Municipality of Demir Hisar.

Final exact location of the facility shall be proposed by the architect hired by the contractor based on the requirements of this document and the final layout of the building.



Area to design and build new facility (in green) in coordination with planning design of the Hospital





Official document showing available areas for construction in the public plot of land



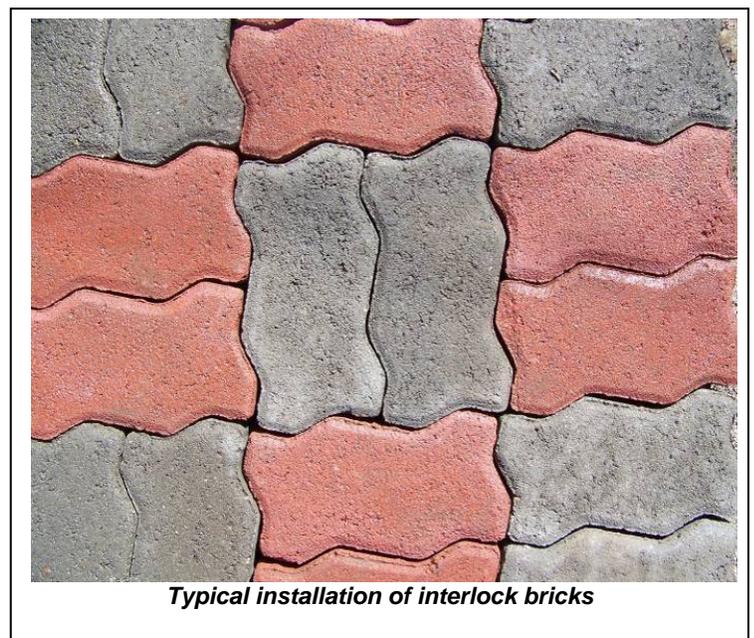
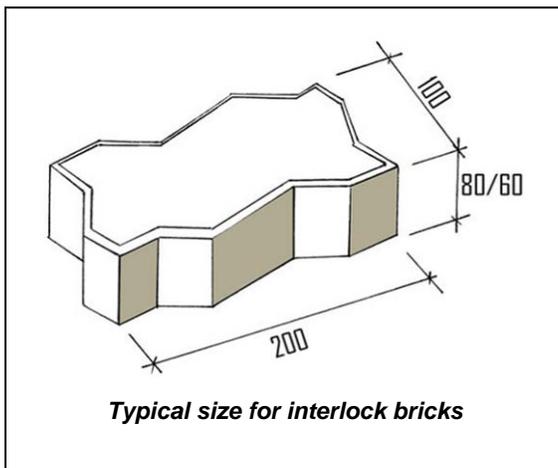
General view of the area for new facility

3.7. GENERAL BASIS OF DESIGN – HORIZONTAL EXTENT OF WORK

The contract includes the design and construction of the new Male Pavilion in the Psychiatry hospital, but it also includes the pavement and horizontal surfaces between the existing paved road and the front of the building as well as the covered porch and an average of 3 meters wide beyond the perimeter of the building. For estimating purposes, this area to be developed outside the footprint of the new building shall have an area of minimum 300 m², including the areas already occupied by the exterior sidewalks surrounding the new facility.

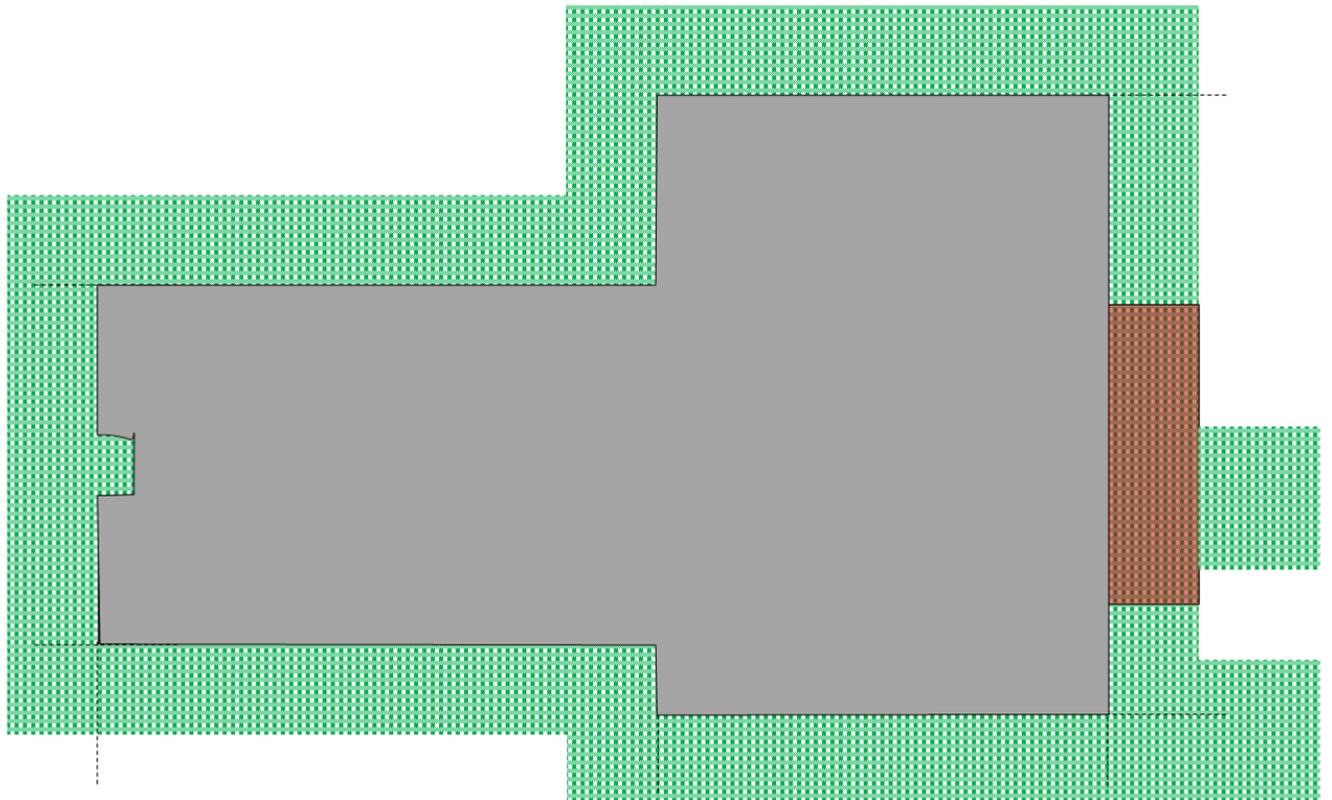
The separation between paved areas, walkways, and green areas shall be designed by the architect hired by the contractor with this general base of design:

- 50% of the area to be paved with solid concrete bricks, surrounded by precast concrete curbs. These shall not be rated or used by cars.
- 50% of the area to be green (gardens)





New precast concrete curbs



In green, approximate extent of the areas to be developed. Brown is the approximate location of the entrance canopy. These areas to be developed shall depend on the final shape of the building and on its exact location. Most of the areas to be developed shall be at the front and the back, as it is estimated that there shall be no available land on the sides due to the shape of the available land.

3.8. GENERAL TECHNICAL REQUIREMENTS

The professionals hired by the contractor and licensed in Macedonia shall design the facility with the requirements outlined in this document:

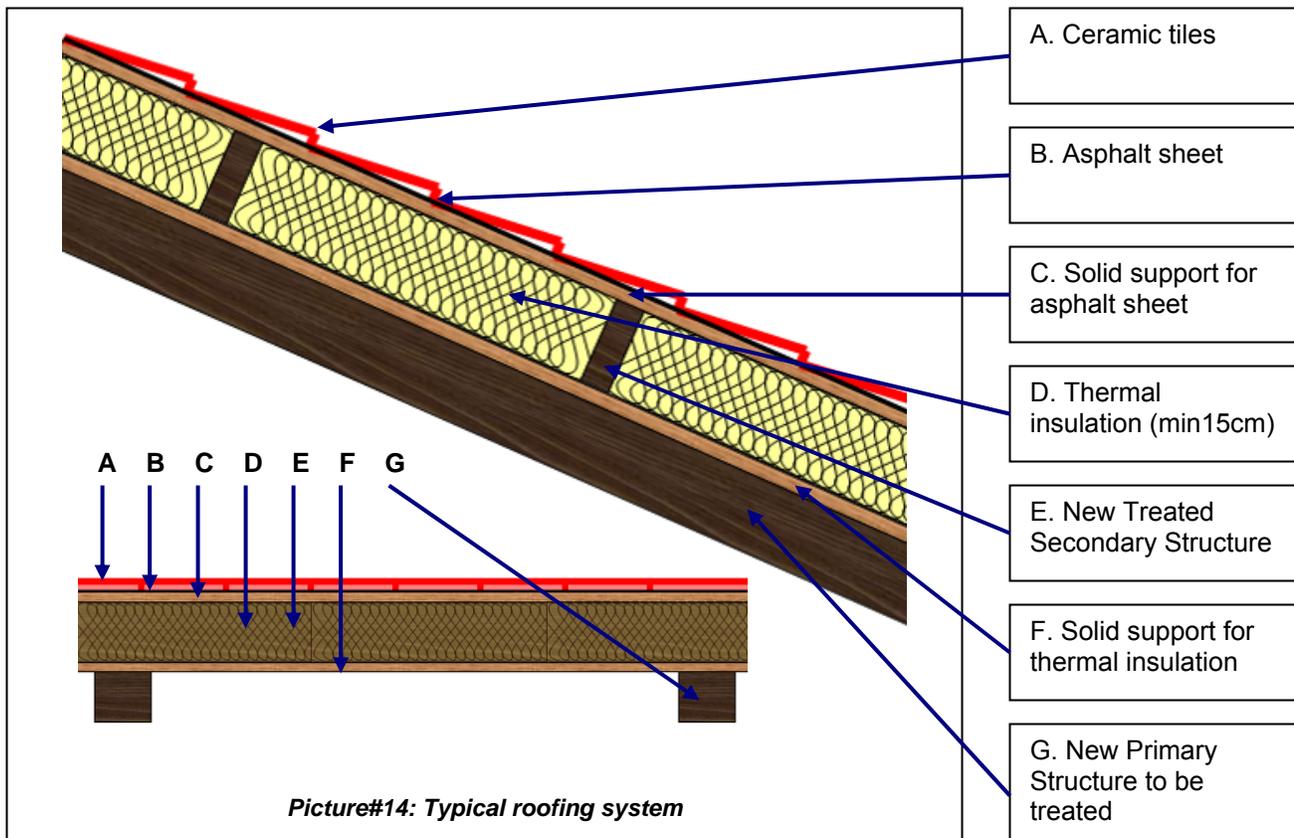
A person or child with disabilities shall be capable of accessing every single space of the facility from the paved road in front of the area where to build the new facility.

The design shall be based upon the minimum required spaces described in this document. Only some specific details and quality of materials are included in this document. This is a design-build contract and therefore the contractor's design team shall select the required materials and equipment based on their professional judgment, the requirements of this technical specification and the requirements of the regulations of Macedonia. If any material or equipment is not specified herein, the contractor shall use commercial grade materials and equipment in compliance with Macedonian Code. Find in the next paragraphs some of the general technical requirements of the new facility:



3.8.1 ROOF

The contract includes the design and construction of a ceramic tiled roof using traditional Macedonian ceramic roof tiles, and including the following elements:

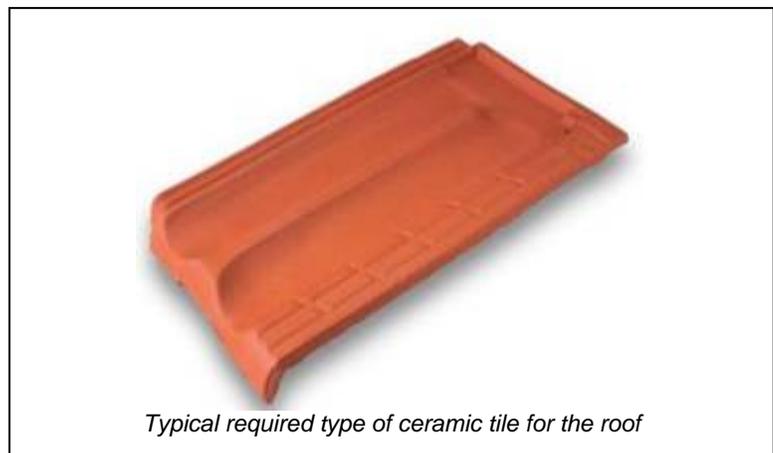


- A. Ceramic tiles. Use traditional Macedonian ceramic roof tiles.
- B. Asphalt sheet, to be used as vapor barrier, and to be installed as recommended by the manufacturer.
- C. Solid support for asphalt sheet. Material, sizes and thickness to be designed by the architect hired by the contractor.
- D. Thermal insulation. Minimum 15 centimeters thickness. Material to be selected by the architect hired by the contractor. Installation of the thermal insulation on the floor is not authorized.
- E. New treated wood secondary structure. Size, location and quantity to be designed by the architect hired by the contractor.
- F. Solid Support for Thermal Insulation. Material and sizes to be designed by the architect hired by the contractor.
- G. New primary Structure.

For this reason, the contractor shall:

- Perform a design for the new roof. This design shall be properly certified as required by Macedonian regulations.
- The slope of the new roof shall be the minimum of 30 degrees (57.73% slope).

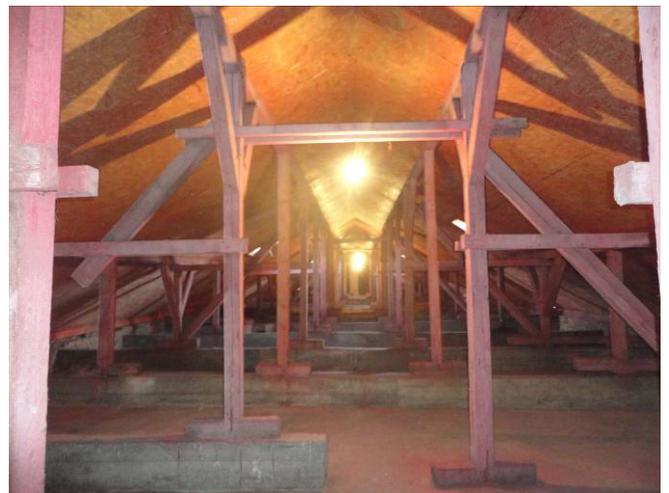
- Design and provide a minimum of 6 windows or dormers on the new roof. Provide for ventilation of the roof and for esthetics of the building, but provide with metal screens to avoid birds from getting inside the roof when windows are opened.
- Provide an eave (or roof overhang) of minimum 0.8 meters wide.
- Provide new roof structure (wood or metal). Any wood to be used shall be treated against fire and termites.
- Provide new traditional flat ceramic roof tiles. Similar to the one shown in pictures below.
- Provide vapor barrier under the new roof system.
- Provide new thermal insulation (minimum R-30) under the roof, properly supported by solid cover, consisting of minimum 15 cm thick thermal insulation. The contractor can install the thermal insulation on the floor, but then it shall be covered by solid surface to allow for use of the area for general storage. The upper part of the building shall be thermally insulated, and the floor of the attic shall be perfectly used and walkable without any disturbance or damage to the thermal insulation.
- Provide snow stops, provided by the manufacturer of the ceramic tiles.
- Install a lightning protection for the roof in strict compliance with applicable Macedonian Electric Code, if required, given the existence of higher buildings in the area. Provide a new grounding system ($<5\Omega$).
- Provide new gutters and downspouts. Use non-ferrous material, of cooper, PVC or PVC coated aluminum. Do not provide around the perimeter of the roof, but only along the building access areas.
- Provide area under the new roof to be used for general storage.
- Provide electrical lighting under the roof. Due to the limited and restricted use of this area, incandescent lighting system is authorized. Switch to be located on the roof, within 20 centimeters of the roof hatch.
- Provide a 10 year written warranty against any water infiltration or evidence of humidity in the ceilings of the building. Warranty letter shall be provided from the contractor to the Municipality with a copy to the Contracting Officer.



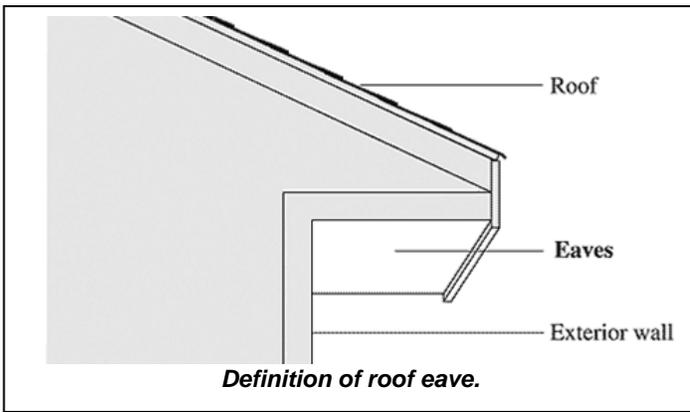
Typical required type of ceramic tile for the roof



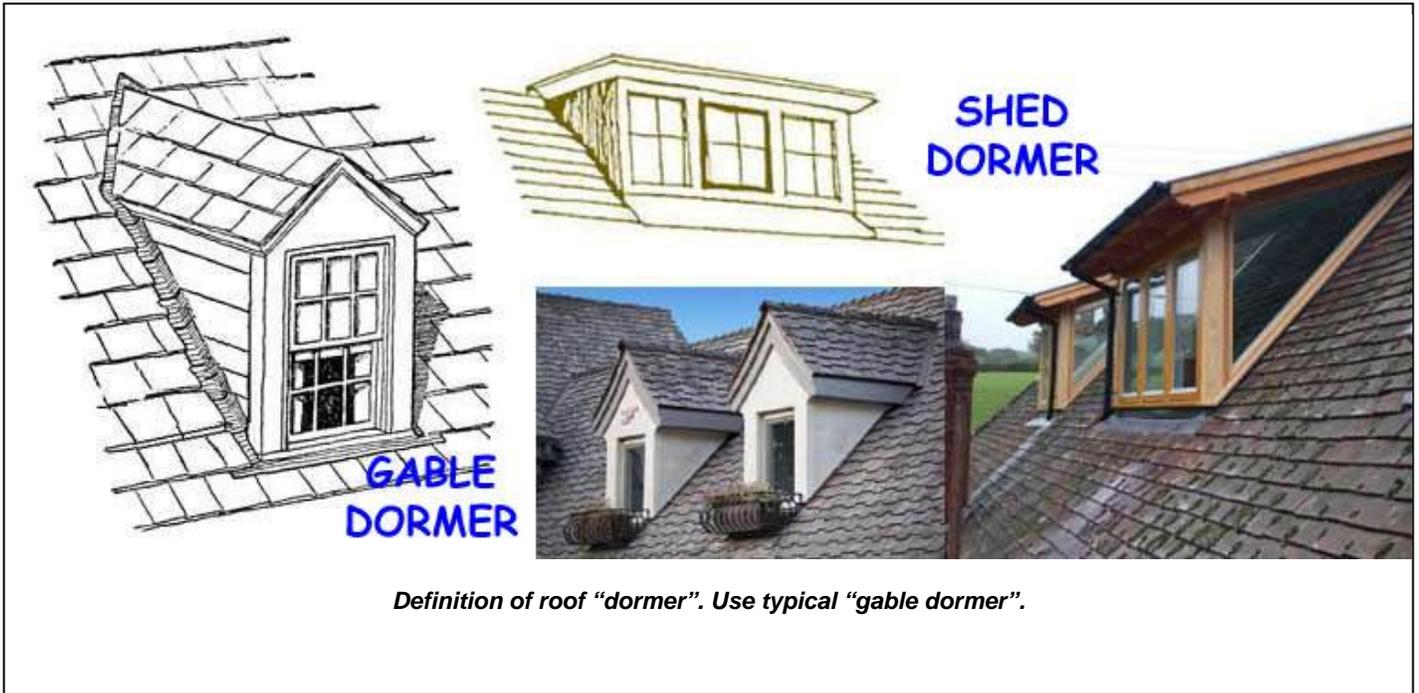
Typical roof thermal insulation support installation



Typical required finish of the inside of the roof (if wood support structure is selected). Thermal insulation supported by solid cover. Area under the roof to be similar to this one, with usable floors.



Definition of roof eave.



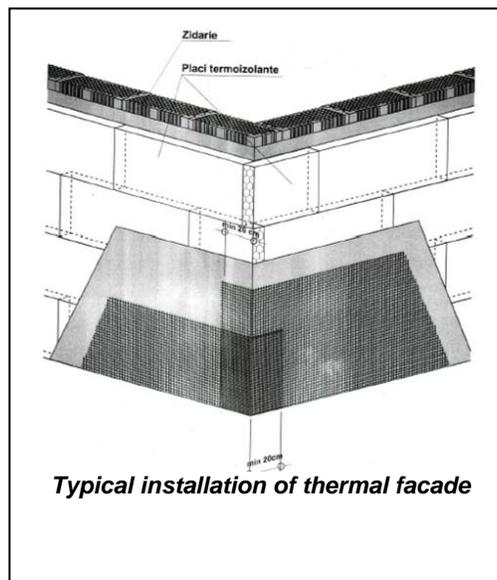
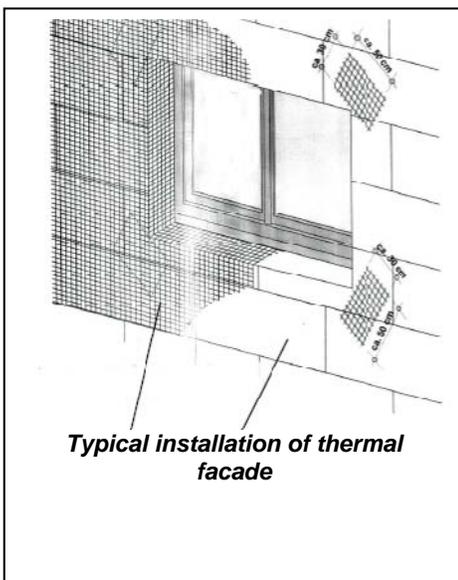
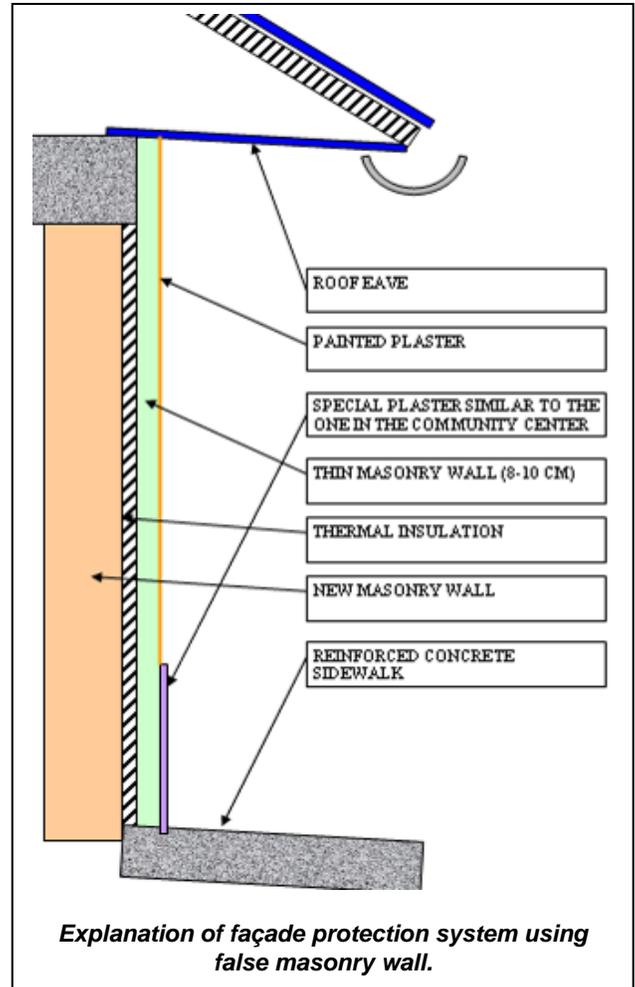
Definition of roof "dormer". Use typical "gable dormer".

3.8.2 THERMAL FACADE

Contractor shall provide a new thermal façade system protected against impacts in all exterior walls of the facility.

The new thermal façade system shall include:

- Rigid thermal insulation panels, minimum of 8 cm thickness, properly attached to the façade, in accordance with manufacturer's recommendations. Follow Macedonian Fire Code. As a minimum insulation around windows and doors shall be fire proof material.
- Cover the thermal insulation with minimum of 1 cm thick plaster. This shall require double synthetic mesh or covering with thick masonry wall as indicated in typical sketch below. Architect to provide vandal resistant thermally insulated building enclosure.
- Thermal façade finishes: The contractor's architect shall provide several designs for the exterior appearance of the façade. The design shall consist of a maximum of combination of 3 colors, including the color of the lowest thicker section of wall.



3.8.3 FLOORS

All floors to be provided at the same height, without any tripping hazard. All floors in the building to be covered with non-slippery grès porcelain tiles of minimum size 40x40 cm. Include matching wall base board from the same model as the tiles. Use large format tiles of minimum size 40x40 cm.

Grès Porcelain stoneware is a ceramic with a compact, hard, colored and non-porous body. The word “grès” means that the ceramic body of the tile is extremely vitrified, that is to say compact, hence the exceptional great resistance. The result is a lean clay body, little refractory, fired in a kiln (at 1200-1400 C°) until it reaches a non-porous vitrification and a complete water-proofing.

Porcelain floor tiles are made by materials featuring the lowest water absorption levels. This feature (that is also one of the two parameters on which the EN ISO standards classification is based) also results in the highest level of bending strength, that is to say, the maximum tension that the material, subject to an increasing bending action, can bear before breaking.

Amongst the most significant features of grès porcelain stoneware there is also the high abrasion resistance, which means the resistance of the surface against the action related to the movement of bodies, surface or materials in contact with it.

- Impact strength and stress resistance
- Wear resistance
- Scratching resistance
- Resistance to frost
- Resistance to chemicals
- Stain resistance

The new porcelain grès tiles shall be high quality, provided with the following technical features:

- Water Absorption: Tested by ISO 10545 - 3 $\leq 0,5\%$
- Deep abrasion resistance: Tested by ISO 10545 – 6: Max 175 mm³
- Frost resistance: Tested by ISO 10545 – 12: Tiles must not produce noticeable alteration to surface
- Chemical resistance: Tested by ISO 10545 – 13: Tiles must not produce noticeable signs of chemical attack
- Friction coefficient (slipperiness): Tested by ASTM C 1028 $\geq 0,60$
- Size: Minimum 40x40 cm

All floors shall be perfectly leveled at the same elevation. In rooms with floor drains, all floors shall be sloped towards the new floor drain to be provided as part of this contract. Tile installation shall be done following manufacturer’s instructions and recommendations.

The new porcelain grès tiles shall be minimum 40x40 centimeters.



Typical large format porcelain grès tiles in large format.



Typical large format porcelain grès tiles in large format.



Typical porcelain grès tiles in combination of two colors



Typical grès base boards. Use same model as for the floor tiles

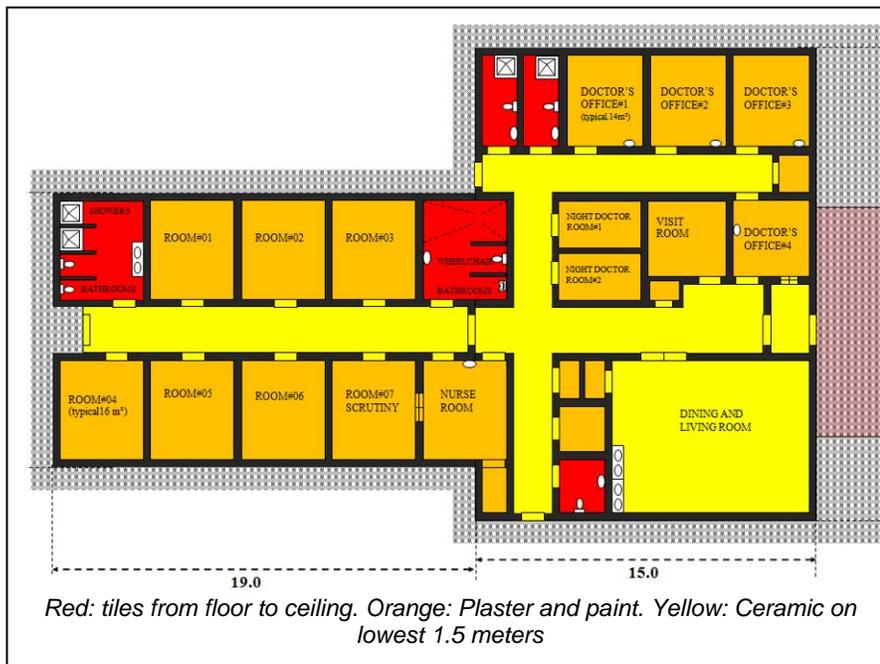
3.8.4 WALLS

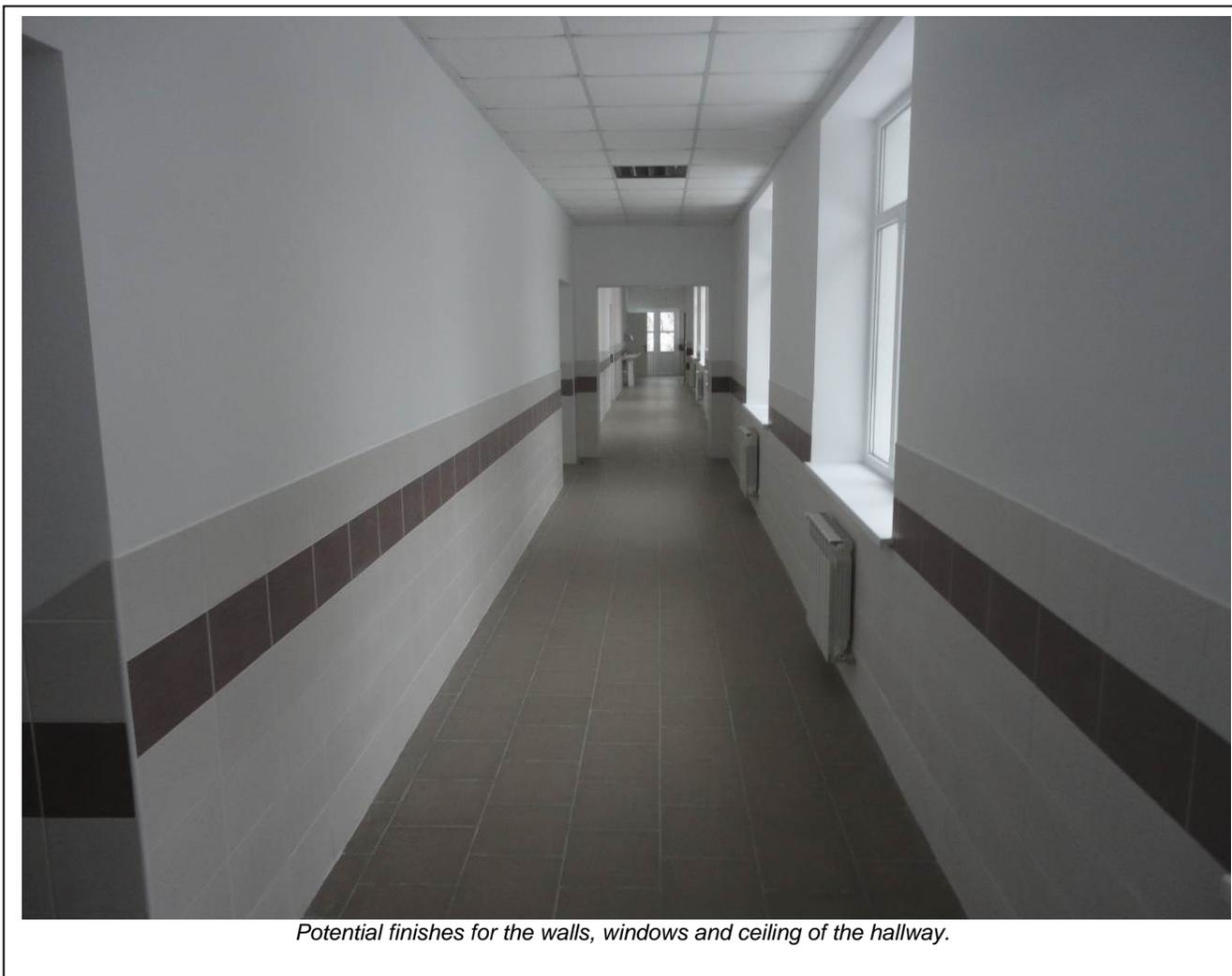
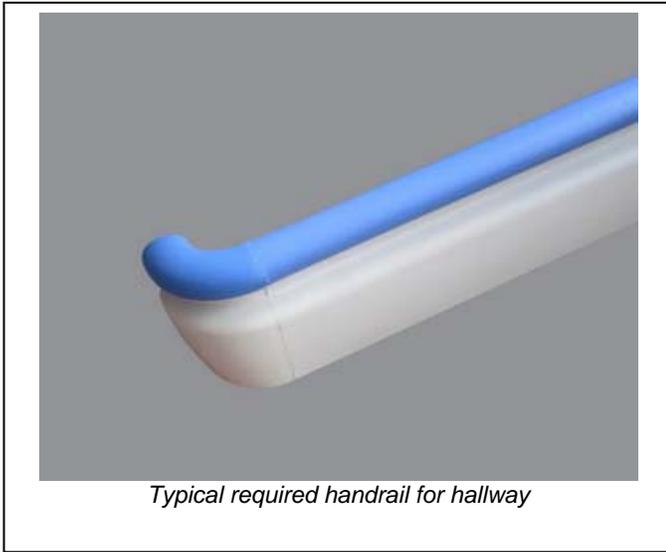
All walls to be perfectly leveled and provided with the finishes required for each room. The colors of the walls shall be coordinated with the Director of the Hospital. There shall be 3 types of wall finishes:

- Plastered and paint: For most areas, the contractor shall provide plaster and paint finishes to the wall, starting from the ceramic wall base to the finished ceiling.
- Hallways and Dining/Living Room: Ceramic on lowest 1.5 meters. Protect all corners/edges of ceramic tiles with metal protection as shown in following pictures. Combination of 2 colors for tiles and different color for plastered and painted section above the ceramic tiles. Provide handrail as shown in pictures below (only on one side of the hallways)
- Bathrooms: Ceramic tiles, minimum size 20x30 cm. Provide combination of different colors with friso in the middle and top. Protect all corners/edges of ceramic tiles with metal protection as shown in pictures below. Provide tiles with different combination of colors for each bathroom.

All paint to be used for the walls shall be certified antibacterial/antifungal product.

In addition to the wall tiles described above, several rooms have wall mounted sinks (nurse or doctors' rooms). Where a wall sink is provided, the contractor shall provide wall covering with ceramic tiles to avoid humidity from damaging the walls. A minimum of 3 m² of wall tiles is required for each wall mounted sink.







Typical required handrail for hallway.



Typical required handrail for hallway.



Typical required handrail. Door frames of different color as the doors, as required in this contract.

3.8.5 CEILINGS

Height of finished ceiling surface shall be maximum 3.0 meters and minimum 2.8 meters from finished floor elevation.

All ceilings to be provided with acoustical suspended ceiling (Armstrong type).

There shall be 3 types of ceiling finishes: suspended ceiling of different types and plastered and painted ceiling.

- **Type 1**: Standard suspended acoustical ceiling in all areas except as indicated below.
- **Type 2**: Humidity rated and certified suspended ceiling for bathrooms.
- **Type 3**: Plaster and paint in the mechanical room

Suspended Acoustical Ceiling

For all areas except bathrooms and mechanical room, use Mineral tiles 600/600/33mm on a metal sub-frame coated with a durable anti-bacterial finish.

Module (mm): 600 x 600 x 19 MMire reaction: EEA - Euroclass A2-s1,d0

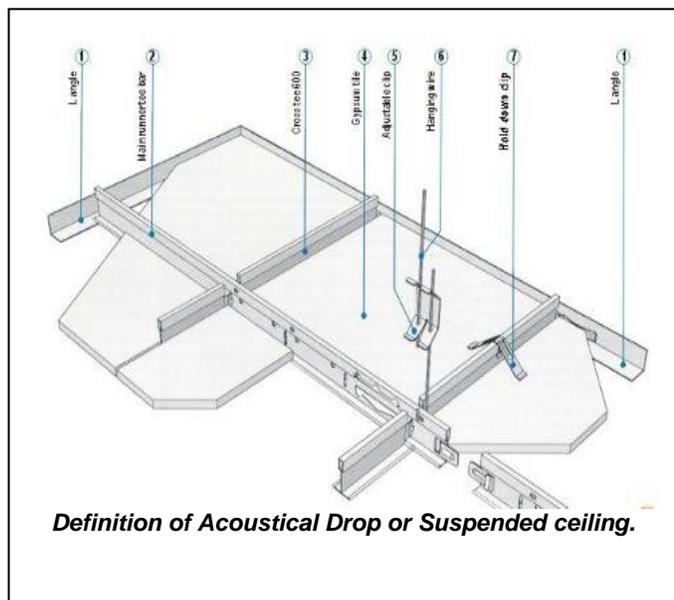
Humidity resistance (%): 95

Material: Mineral

Humidity resistance (RH%) 95

Fire reaction EEA Euroclass A2-s1,d0

Cleanability: With a moist cloth



Humidity Rated Suspended Ceiling

In the bathroom areas, where the accumulation of water vapor could lead to atmosphere with 100% humidity, the contractor shall provide over new metal support humidity rated acoustic tiles. These tiles shall be designed and certified to be in ambient of 100% relative humidity for extended periods of time. The contractor's architect shall select the material to be used, which could be mineral fiber tiles with baseboards, calcium silicate tiles or metal tiles. Use tiles of the same sizes as the other standard acoustical tiles to be provided throughout the building.



Plaster and paint ceilings with certified antibacterial/antifungal paint for product

Only in the mechanical room, the ceiling shall be plastered and coated with special paint, rated and classified as antibacterial and antifungal coating.

3.8.6 EXTERIOR WINDOWS

Contractor shall provide the number of exterior windows required by the contractor's designer, with the following principles:

- Windows in every room, except as noted in the description for each room.
- Designed to maximize the use of natural light
- All windows to be provided with ornamental security bars

The new windows shall have a minimum of 50% of the window surface to be operational vertically and horizontally.

The new thermally insulated windows shall be perfectly finished inside and outside. The joints between the building and the windows shall be perfectly sealed as seen in pictures in this paragraph for a typical installation. Contractor to provide PVC sill inside as seen in the pictures in this paragraph and outside sills made of aluminum or other approved material (i.e. natural marble or exterior rated special ceramic tiles).

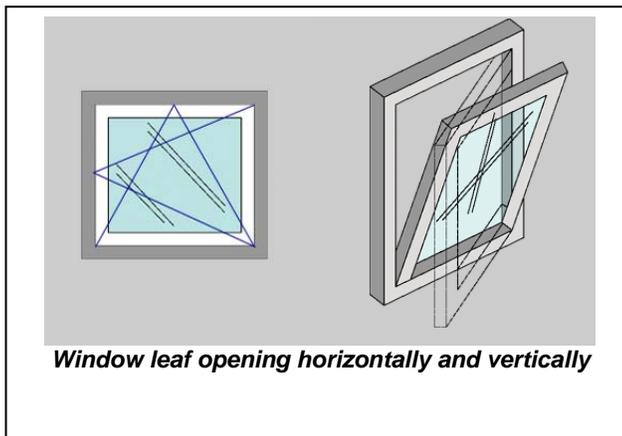
Provide aluminum insect screens in the bathrooms and other 4 rooms to be determined by the beneficiary. The insect screens shall be removable and shall be provided by the manufacturer providing the new windows required by this project.

Exterior Windows – Materials

The new windows shall be aluminum heavy duty framed and thermally insulated with double glazing and thermal bridge in the frames.

Aluminum frames > 4.5 kg/m

In the bathrooms, the contractor shall provide non transparent glazing.



Exterior Windows – Glazing

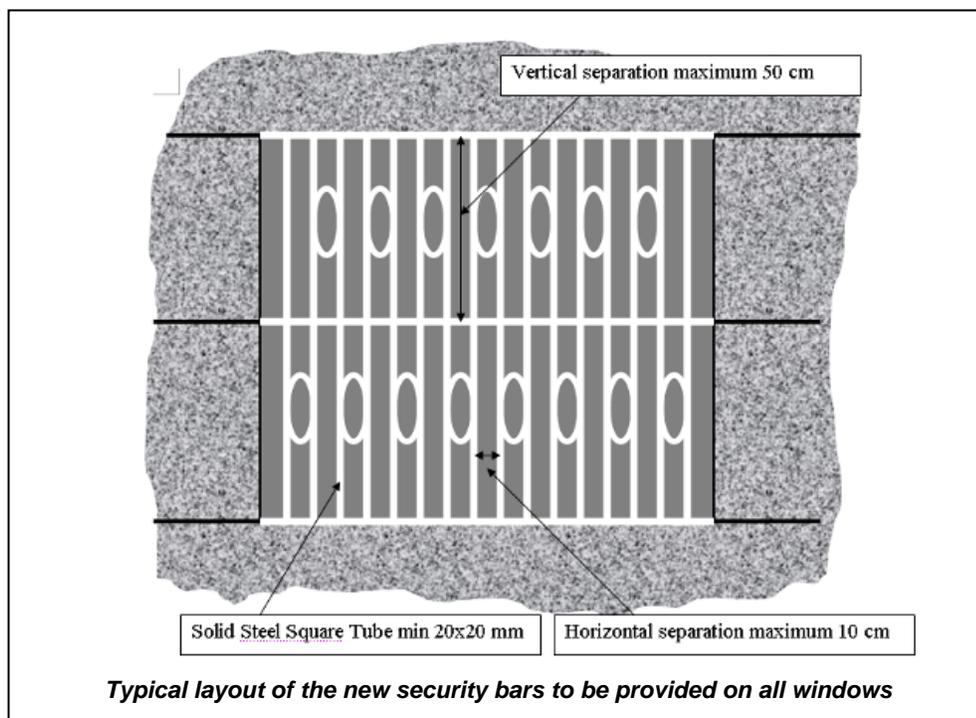
The contractor shall use double thermally insulated glazing for all exterior windows. The thickness of the glazing shall depend on the use of the room where the window will be installed. In general, all windows are impact resistant and with thicker glazing as for general residential windows. The use of some of this glazing may require special aluminum framing in order to fit the new thick double glazing unit.

- For all windows except as indicated below: double pane with 6 mm thick glazing. The distance between each glazing pane will be the maximum technically possible.
- For areas for residents (bathrooms, patient rooms,...) the minimum thickness of each glazing pane shall be 10 mm.
- For scrutiny room: The minimum thickness of each glazing pane shall be 12 mm.

Security Bars for Windows

All windows shall be provided with security bars. This is a requirement for this type of facilities. However, this facility is not a jail and therefore the contractor shall provide security bars in all windows provided with ornamental decoration. The use of only horizontal and vertical bars is not authorized.

Anchoring metal shall be of the same size as the size of the metal in the security bars. Use of bolts or reinforcing steel bars for anchoring the security bars is not authorized. The anchors of the security bars shall be embedded into the building structure, and not attached to the new windows or thermal insulation. Bars shall be primed and painted in white (or other color selected by the beneficiary). Minimum dimensions of security bars shall be solid square steel tube of 20x20mm, and the maximum horizontal separation between vertical bars shall be 10 cm. Maximum separation between horizontal bars shall be 50 cm. The use of hollow metal profiles is not authorized.



Exterior Windows – Installation

The exterior window sills shall be properly sloped away from the building in order to drain the rain water away from the building. The lower window frames shall be properly provided with water drains.



Typical exterior window installation



Typical window installation. Seal all areas around the new windows. Foam not exposed.



Typical window installation with new PVC sill inside and aluminum outside.



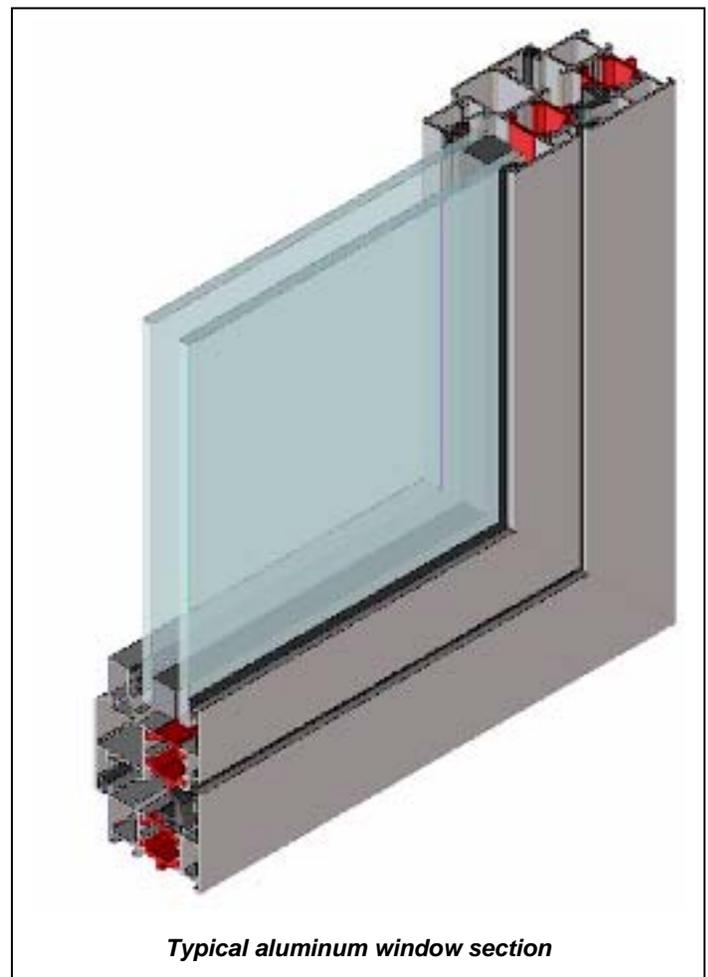
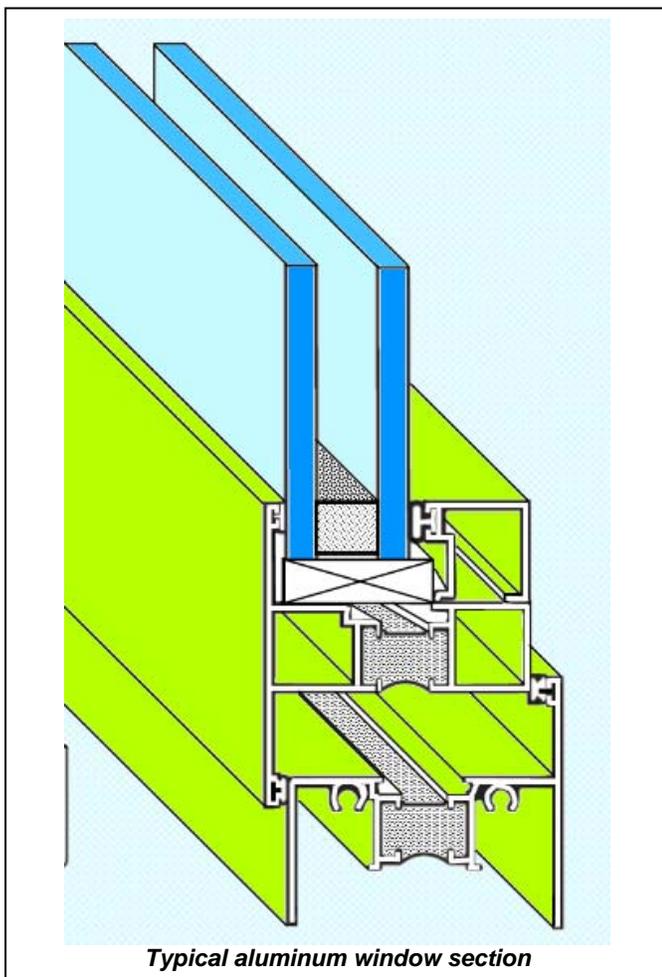
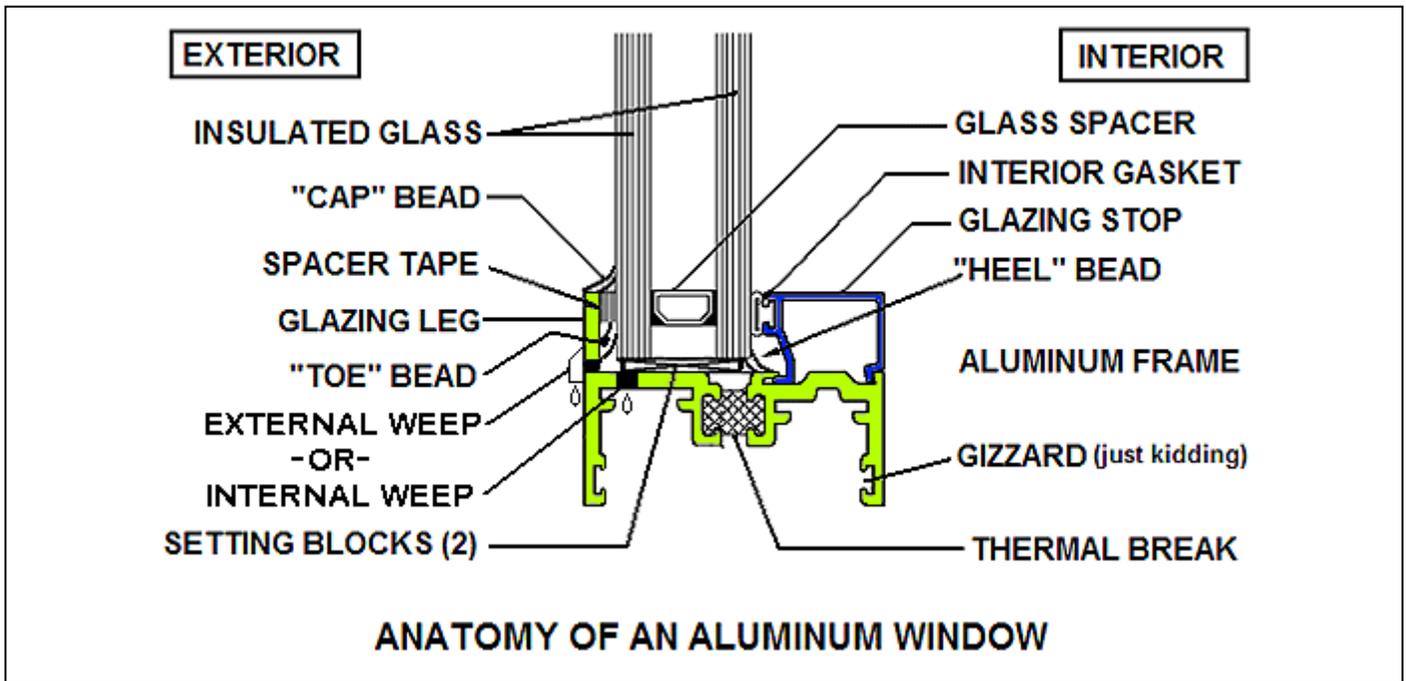
Typical window installation. PVC sill inside and aluminum outside.



Typical acceptable required external sill for all windows



Typical internal sill required for all windows



3.8.7 EXTERIOR DOORS

Contractor shall provide new exterior doors as necessary by the new design and in compliance with Fire regulations in Macedonia.

The exterior doors shall be thermally insulated heavy-duty aluminum doors with glazing in the upper half. The new entrance door for the mechanical room shall be thermally insulated galvanized steel, with louver for ventilation.

These two doors shall be designed and built with the minimum requirements specified herein:

- European standard aluminum profiles with break in the thermal bridge, and must have three rubber dust protection seals.
- With double glazing in the upper half (10-?-10). Glazing in the upper half to be minimum thickness of 10 millimeters thick for safety reasons. This is the thickness of each glazing panel.
- With required locks and anti-panic hardware, all made of stainless steel.
- Provided with door closers and door stops to avoid damages by users.
- Heavy duty construction. Aluminum profiles shall be minimum 8 cm wide and minimum of 1.4 kg/m



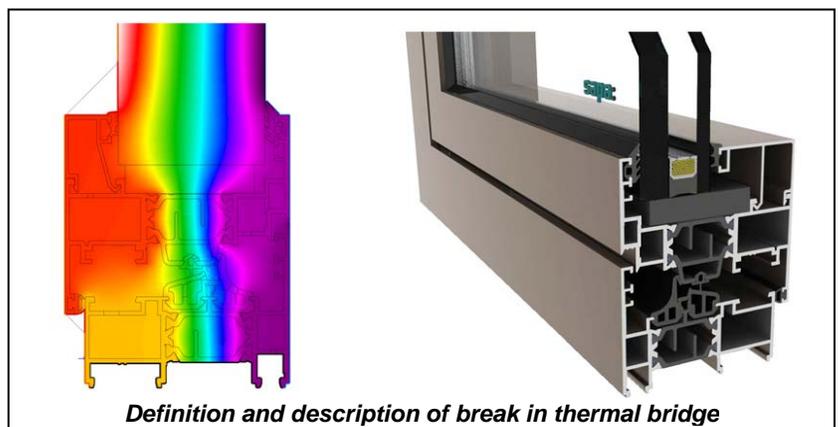
Example of acceptable design for the double required main entrance door



Typical required metal door for the mechanical room.



Typical Anti-panic hardware



Definition and description of break in thermal bridge

3.8.8 INTERIOR DOORS (MEDICAL RATED)

Similarly as for many other elements of the facility, the doors shall be heavy duty, especially those for the patient rooms and to isolate the patient areas (internal hallway door in front of the nurse room).

Use aluminum doors without bottom threshold (only three frames). Use doors rated and certified to be used in medical facilities. Doors shall be rated for heavy traffic use. Width of profiles to be minimum 7 cm.

The use of standard doors without the official certificate for medical facilities is not authorized, even if they are provided with similar finishes.

All hinges, locks, handles and accessories shall be made of stainless steel and installed by the door manufacturer in the assembly plant. Provide also door stops.

The use of solid hardwood doors, certified for medical use are also authorized, given that in addition they shall be provided with stainless steel kick plate.

The double door provided in the main entrance shall be provided with similar finishes as the exterior doors, but without the need to be thermally insulated. (glazing 10 mm thick)

The required double leaf hallway door to isolate the patient areas shall be provided with minimum 20x20 cm window with 20 mm glazing, similar to the windows in the doors of the rest of the patient rooms. However this door shall be double leaf, and provided with card control for the lock.

Coordinate with Hospital Director the need for locks in all the doors. All doors shall be provided without bottom frame or threshold, in order to avoid any tripping hazard and easy movement of wheelchairs and for required ventilation. All doors to be provided with all required accessories, such as door stops, locks or handles.

As previously described, each patient room shall have colored door and frames. Use the same color for the frame and door of each patient room. Each patient room shall have a window of maximum size of 20x20 cm with glazing of 20 mm thickness (security glazing). Similarly as for some of the windows, the installation of this high security glazing will require special panels and heavy duty design for the doors of the patient rooms.

The entrance to the patient areas and to the building from the exterior shall be controlled by card in coordination with the existing card reader system in the rest of the hospital complex. In addition to this, the exterior main entrance door shall be capable of being opened from the nurse room. For that reason, the contractor shall provide a video and audio control system to see who is requesting entrance, to be installed in the nurse room. Provide with color TV monitor. The use of residential type video door control is authorized.



Typical acceptable required internal doors for medical use.



Required tubular stainless steel door handle required for solid hardwood doors



Definition of window for the doors to the patient rooms

3.8.9 INTERIOR WINDOWS

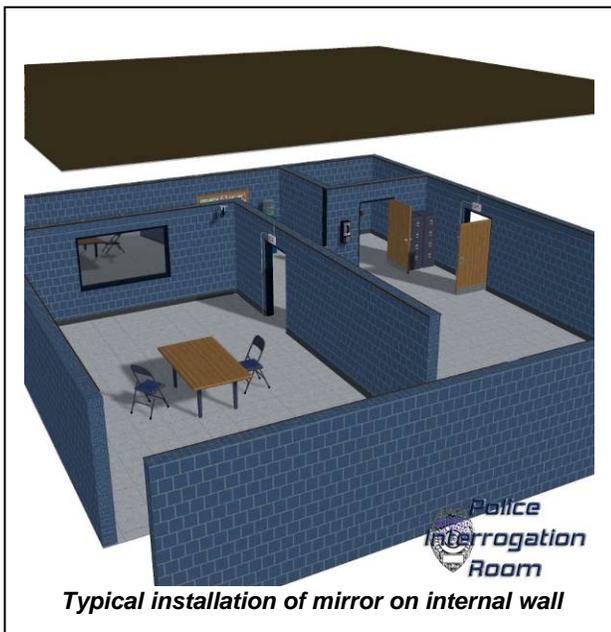
The number, size and location of the interior windows shall be determined by the architect hired by the contractor. As a minimum it is estimated that there shall be 2 internal windows:

- From medical room to the interior lobby or looking towards the main entrance door. Provide with 10 mm thick glazing.
- From nurse room to scrutiny room. Provide typical “interrogation” type one way mirror. Provide 10 mm thickness.

The one-way mirror shall be minimum 0.5 m² and shall be rated by manufacturer for “interrogation” rooms. Use Mirror-grade acrylic coated with a semi-transparent see thru finish. Also known as a two way mirror, one way mirror, see thru mirror, see through mirror, transparent mirror, Mirropane, half-silvered mirror, observation mirror, etc.

Two way mirrors look like a mirror from one side and a window from the other side. These are typically used in post offices, banks, and department stores.

You can only see through the mirror when the area you are looking from is darker then the area you are looking into. Works best when there is no light on the viewing side. When the light is equal on both sides it appears as a mirror but you can also see through to the other side. A two-way mirror, also sometimes referred to as a one-way mirror or one-way glass, reflects some percentage of the light and lets some other percentage pass. It is a sheet of glass coated with a layer of metal only a few dozen atoms thick, allowing some of the light through the surface (from both sides). It is used between a dark room and a brightly lit room. People on the brightly lit side see their own reflection — it looks like a normal mirror. People on the dark side see through it — it looks like a transparent window. It may be used to observe criminal suspects or customers. The same type of mirror, when used in an optical instrument, is called a half-silvered mirror or beam splitter. Its purpose is to split a beam of light so that half passes straight through, while the other half is reflected — this is useful for interferometry. The reality television program Big Brother makes extensive use of two-way mirrors throughout its set to allow cameramen in special black hallways to use movable cameras to videotape contestants without their coming in contact with the workers.



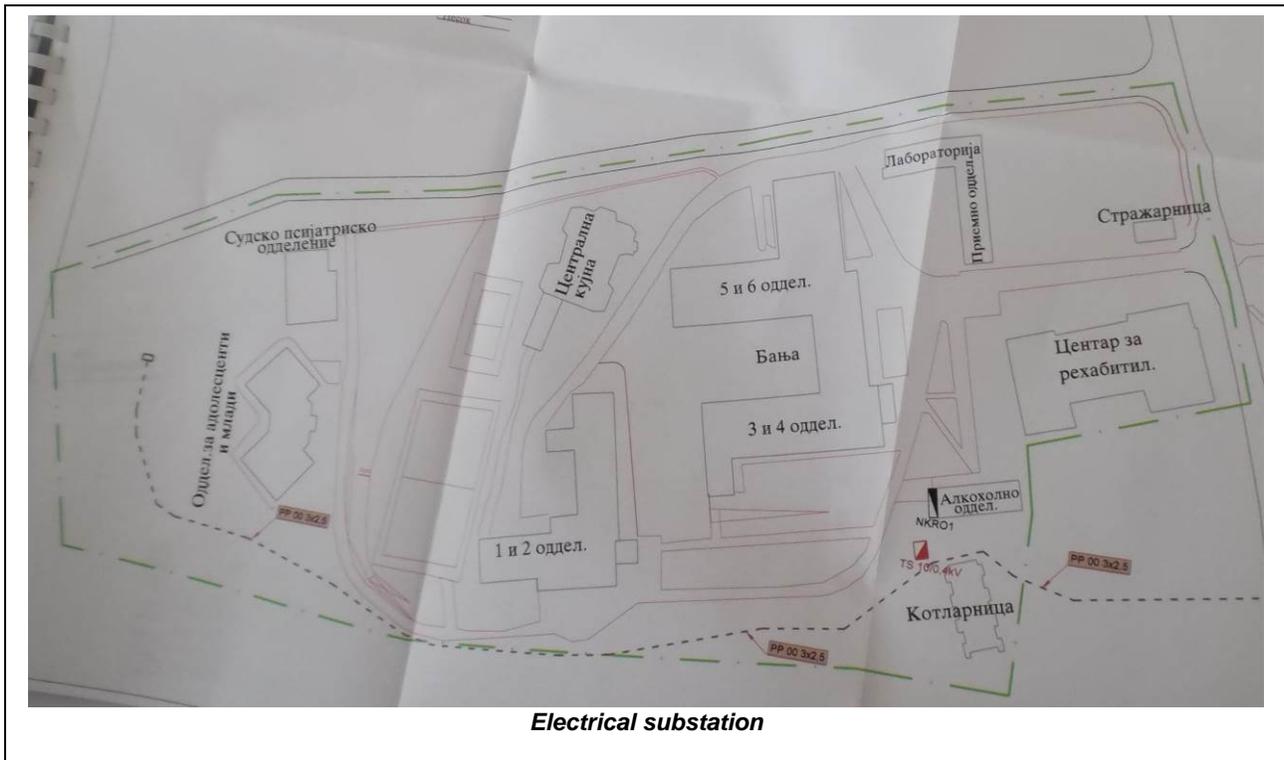
3.8.10 ELECTRICAL

The project includes the design and installation of a new electrical system in strict compliance with Macedonian and European standards.

In addition to all other applicable electrical requirements, all electrical equipment incorporated to the project shall be CE certified (provided with the European Community stamp). The work includes:

3.8.10.1 ELECTRICAL CONNECTION

- Design of the connection with existing electrical substation within the hospital plot of land.
- Provide a new feeder (electrical circuit) from the existing substation. The beneficiary stated that the existing electrical cable to the abandoned Male Pavilion of the hospital complex could be reutilized. However, in order to estimate the cost of the electrical connection of the new building, the contractor shall estimate that they will have to provide a new cable from the existing substation and providing its necessary electrical protection in the substation.
- The contractor can reutilize the existing cables and/or conduits feeding the existing Male Pavilion if they are found to meet the Macedonian and European standards. This includes the cables and the conduits. Contractor responsible to inspect existing conditions and to calculate anticipated new electric load of the building to estimate whether the existing feeder can be reutilized or if it needs to be replaced in its entirety. The new feeder, if needed, shall be installed underground on PVC conduits, with the required manholes for maintenance and pulling the cables.



3.8.10.2 ELECTRICAL INSTALLATION IN THE BUILDING INCLUDING COMMUNICATIONS, EMERGENCY LIGHTS AND MUSIC SYSTEM

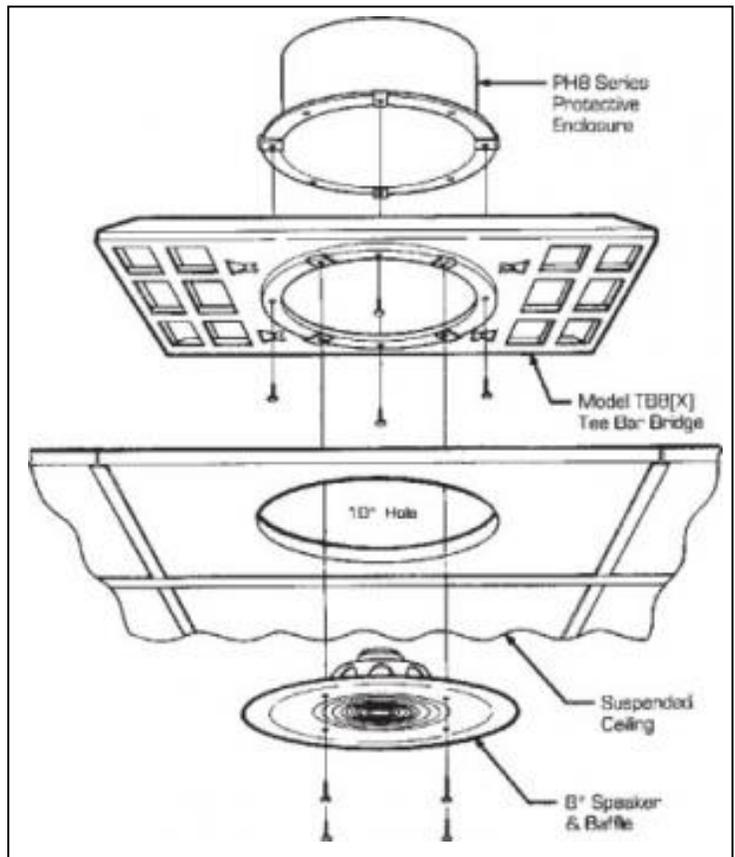
All electrical installations to be recessed on the walls or over the suspended ceiling, so that the electrical installation is not visible.

- Design of a new electrical installation for the building.
- Provide and install new main electric panel to be recessed on the walls in the nurse room. All electrical panels shall be provided with required electrical protection for short circuits and indirect contacts (differential protection).
- Provide grounding system.
- All cables shall be routed through approved electrical conduits to be recessed along the floors, walls and ceilings. No electrical conduits shall be exposed to the view or directly installed under the plaster without its corresponding conduit.
- Provide the required junction boxes for maintenance and pulling the cables recessed on the walls.
- Provide new switches and electrical receptacles as needed and required by this document.
- Interior Lighting: **Provide LED technology lighting.** This system is more expensive than other lighting technologies. The contractor shall include LED lighting in their project. LED lighting is required in all locations except in the storage and the area under the roof. Minimum power for each individual lighting fixture shall be 8 watts. Lighting fixtures shall be recessed within the new false or suspended ceiling. The contractor shall use the services of a manufacturer or authorized supplier of LED lighting fixtures to design the type, quantity and location of the lighting fixtures in order to provide the lighting levels required by the most strict of Macedonian and European regulations.
- Interior light control: The lights in the patient rooms shall be controlled in the room and in the nurse room. There shall be a common switch in the nurse room to light up and shut off all the rooms, and an individual control for each room from the nurse room. The hallways shall be provided with motion detection to control the lights, with another control in the nurse room.
- Interior ambient light: There shall be no possibility of absolute darkness during night. The contractor shall provide ambient light in all patient rooms and in the hallways.
- Exterior lighting: Provide LED technology lighting fixtures in the front covered porch and around the perimeter of the facility. These floodlights shall be controlled by photocell and by individual switch in the nurse room. Provide a total of 6 floodlights of minimum 20 watts (this means that there shall be 6 switches in the nurse room for these floodlights). Lighting fixtures and all electrical installation to be rated for outdoor use.
- Communications: Provide the necessary preinstallation for the installation of telephone and internet cables. This means that once the contractor completes the work, the beneficiary can install telephone and internet services without the need to perform any construction work or to have any cables visible. The contractor shall install all necessary conduits and pull boxes from the nearest telephone and communications manhole within the public plot of land to the receptacles in each room to be determined by the beneficiary. A total of 8 communications plugs are required as part of this contract.

- TV signal: The contractor shall provide a TV antenna, amplifier and cables to be able to connect one TV in the Dining/Living Room and another one in the Nurse Room. The actual TV is not part of this contract.
- Provide the necessary special appliances as required by Macedonian regulations, such as emergency lights, exit signs with batteries, etc.
- Provide the necessary electrical receptacles in each room as needed, and as described in this document. A minimum of 40 electrical receptacles are required.
- Occupant Warning - Intercom System – Ambient Music: Controlled from the Nurse Room, the contractor shall design and provide one central ambient music system with intercom capacity. The general parameters for this system shall be the following:
 - Speakers to be recessed on the false ceiling tiles.
 - Provide ambient music in the patient rooms, in the hallway of the patient area, in the entrance lobby, the remaining hallways and in the Dining/Living Room.
 - Individual volume control for each of the areas of the building
 - Provide spare connections for future expansion of the ambient music system to 8 additional rooms.
 - With microphone to connect with all areas



Typical intercom central panel to be placed in the nurse room



Typical speaker installation on the suspended ceiling



Required LED lighting fixtures for the acoustical ceiling areas.



New electrical panels to be recessed in the walls.



All electrical mechanisms to be recessed in the new walls. Provide wide switches as shown.



Typical required LED flood light for the exterior



Potential LED lighting fixture in the suspended ceiling



Required LED lighting fixtures in the acoustical suspended ceiling.

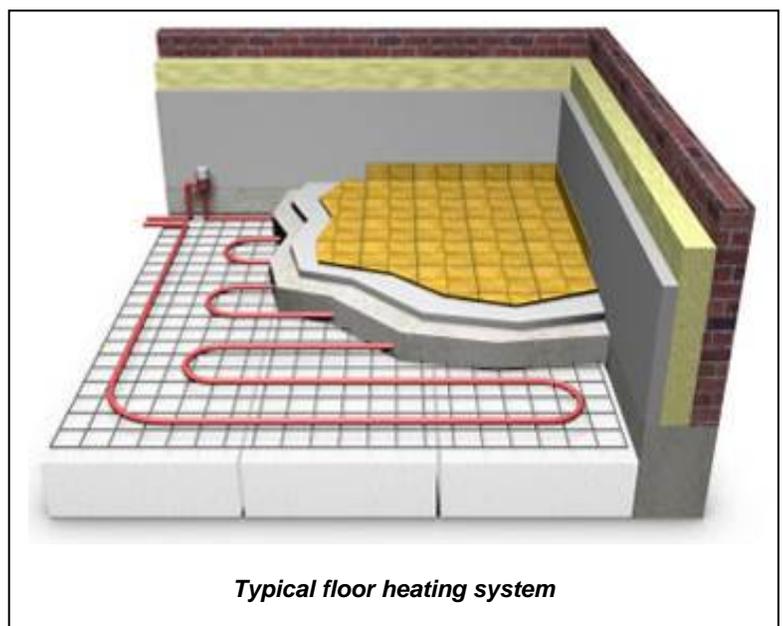
3.8.11.2 Heating System Inside the New Building

The contractor shall provide a fully operational heating system, capable of maintaining an interior temperature of 22°C in all the rooms in worst winter conditions. In the hallways and patient rooms and scrutiny room heating shall be provided by floor radiation system. In the rest of the building, the contractor shall provide bimetal aluminum type heating radiators mounted on the walls (without touching the floor)

The work shall include:

- Full design of the central heating system. The design shall be done by an authorized and licensed engineer authorized to design this type of heating system in accordance with Macedonian Code.
- Provide heat exchangers, expansion tanks, valves, safety relief valves, pumps, and everything else that may be necessary to have a perfectly operational heating system.
- Installation of aluminum bimetal type radiators. See picture#76. Provide with individual regulating valves for each radiator.
- Installation of floor radiation system.
- Heating piping distribution in the facility. All piping to be recessed along the walls or under the floors or above the suspended ceiling. No heating piping shall be exposed to the view in the facility. Piping shall not lie on the floor. Heating piping to be specifically designed and manufactured to be used in heating piping systems.
- Divide the new building in a minimum of 8 heating sectors, so that if there is a malfunction in one sector, this malfunction can be isolated while the remaining 7/8th of the building remains with operational heating system.

Comply with all Fire Protection requirements applicable for this type of heating installation in Macedonia.



3.8.12 WATER AND SEWER

The contract includes the design and construction of a fully operational Male Pavilion for a psychiatry hospital facility. For this reason, it is included the connection with the existing water infrastructure of the hospital complex, all in compliance with the requirements of the Macedonian regulations.

Water lines in the new building: All water lines in the facility shall be HDPE lines with the necessary diameters to allow proper pressure and flow at all connection points. All water lines to be installed under the floors or within the walls or above the suspended ceiling so that no water lines are visible. Provide proper insulation for hot water (and for cold water to avoid potential condensation). Provide isolation valves for all appliances. Provide one hose bib in the patio, at the location to be indicated by the beneficiary.

Hot Water Supply: All sinks and showers shall be provided with hot and cold water. The source of hot water shall be:

- Central Heating for showers and all bathrooms by the installation of a heat exchanger with all required accessories.
- Electric heaters for the doctors' offices and Nurse Room (maximum of 2 water heaters for all rooms)

Sewer/Drainage lines in the building: Provide new sewer and drainage lines in the facility for all connection points (sinks, toilets, floor drains). Provide with the necessary siphons or clean-out for maintenance. Provide vent lines to the exterior of the building through the roof. Route to new concrete manholes outside of the building to be connected with sewer system of the hospital complex.

Water Connection: Connect to nearest potable water lines. Provide the required concrete manhole at the connection point. Provide water meter at point of connection. Provide isolation valves.

Sewer Connection: Provide new sewer gravity lines to the closest sewer manhole. All sewer lines outside the footprint of the new building shall be properly sloped with (minimum 1%) and shall be minimum 200 mm internal diameter dimension.

General: All water, sewer and vent pipes shall be installed under the floors, recessed under the wall surfaces or under the drop ceiling. No water or sewer line shall be exposed to the view, but they shall be provided with the necessary access and hatches to allow for easy maintenance. Provide vent pipes through the roof as required by Macedonian regulations.

3.8.13 MULTI-ZONE INVERTER TECHNOLOGY SPLIT TYPE HEATING AND AIR CONDITIONING

The project includes providing air conditioning to certain rooms, not to the entire facility. Main source of heating shall be provided with the new radiators connected to the central city heating system, nevertheless the air conditioning shall use heat pump technology, to provide heating and cooling. Heating by the use of electric resistance is not authorized.

The contractor shall hire the services of a specialized company or engineer to design the new air conditioning system. For estimating purposes, the contractor can estimate a system with the following technical parameters:

- Heat pump system using inverter technology or variable refrigerant flow. Capable of providing hot and cold air.
- With minimum visual impact to the façade of the building. The project requires maximum of two exterior units for 5 or 6 required interior units.
- Interior units to be ceiling mounted, recessed within the new acoustical suspended ceiling.
- Individual temperature control in each room.
- Drainage from the condensate of each room to be connected with the exterior ground

Provide A/C to the following rooms:

- Nurse Room
- Scrutiny Room
- 2 Doctors' offices
- Dining/living Room



3.8.14 FIRE ALARM

The contractor shall design and install a complete Fire Alarm system for the new building.

Provide Fire Alarm system as required by Macedonian Regulations for this type of public facility. Provide with required smoke detectors, pull stations, horns and strobe lights. Provide automatic telephone communication with fire station only if required by Macedonian regulations for this type of public facility.

All cables shall be installed under conduits recessed on the walls.

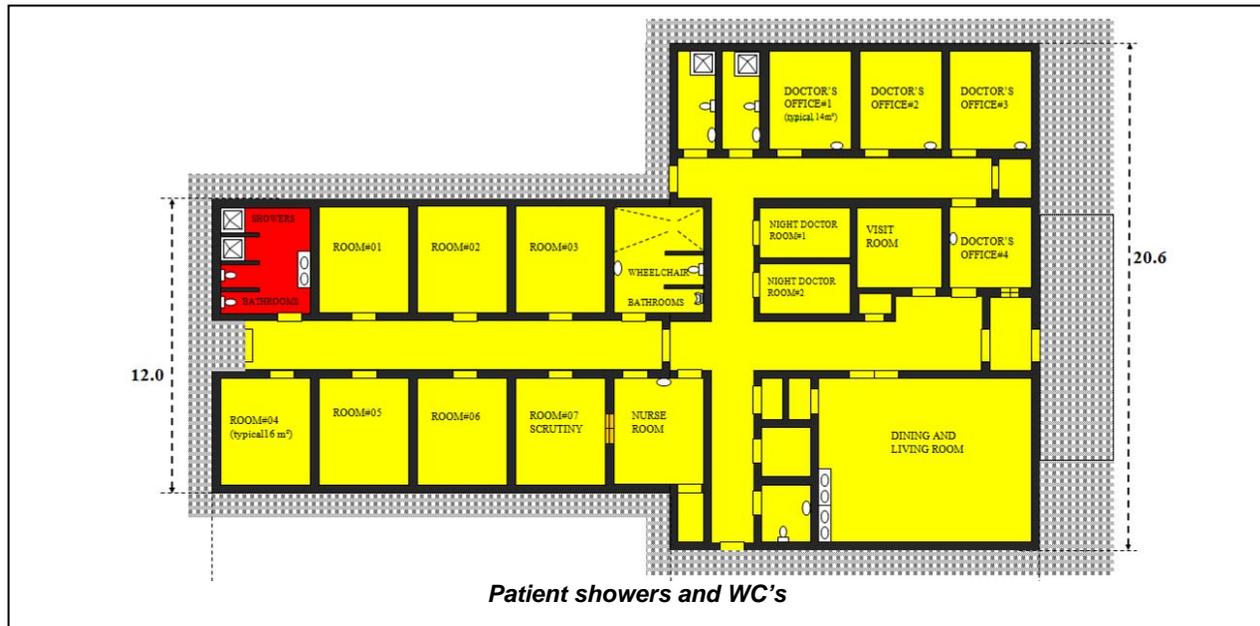
Provide control panel in nurse room.

3.8.15 FIRE HOSE

Provide fire hose as necessary and required by Macedonian regulations for this type of public facility

3.9. SPECIFIC ADDITIONAL REQUIREMENTS FOR PARTICULAR ROOMS

3.9.1 Patient Shower and WC's :

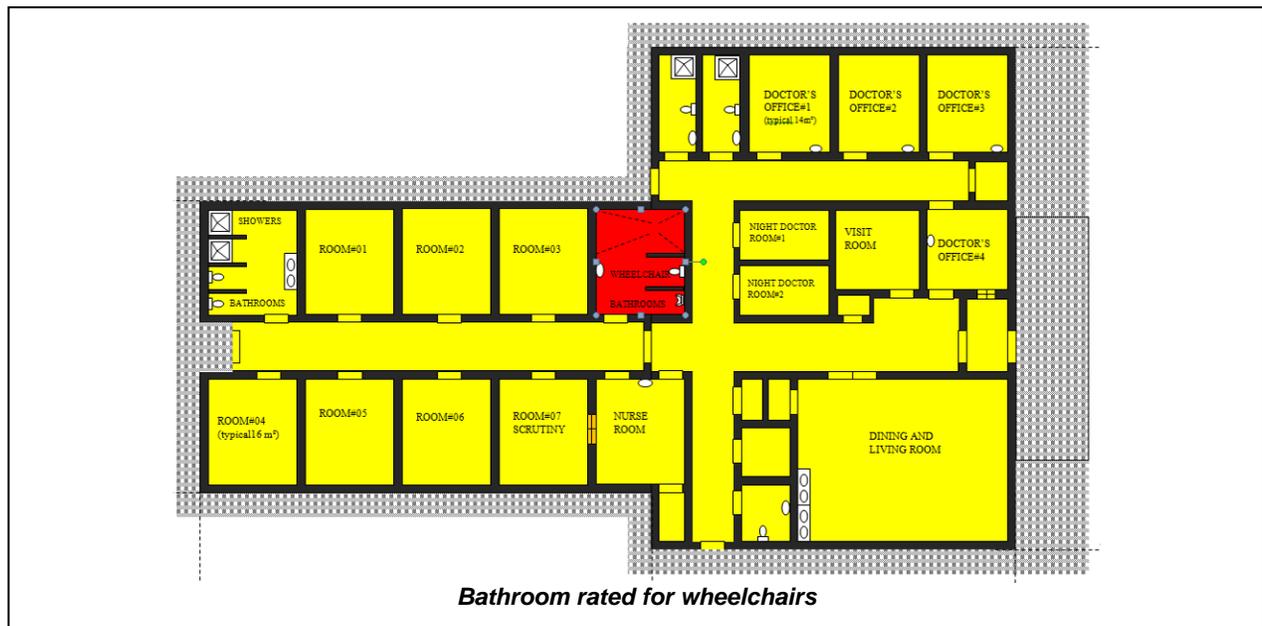


All appliances to be vandal resistant. Some of the specific requirements:

- 2 Toilets. Only ceramic materials are authorized for the seat and water tank. Use of plastic is not authorized. Provide with small door for privacy.
- 2 Showers without doors. Fully equipped with hose and shower head.
- All floors sloped towards the new floor drain
- 3 Sinks over granite countertop with piece over wall. Countertop to be installed over metal structure designed for punctual weight of minimum 200 kg.
- One wall mounted faucet with only cold water for janitorial purposes.
- 10 Wall mounted stainless steel hangers
- Metal mirror over the sinks (typical for penitentiary institutions)
- One lockable heavy duty electric receptacle over the countertop of the sinks
- All necessary additional stainless steel accessories (i.e. toilet paper holder)



3.9.2 Patients' bathroom rated for people with limited mobility:

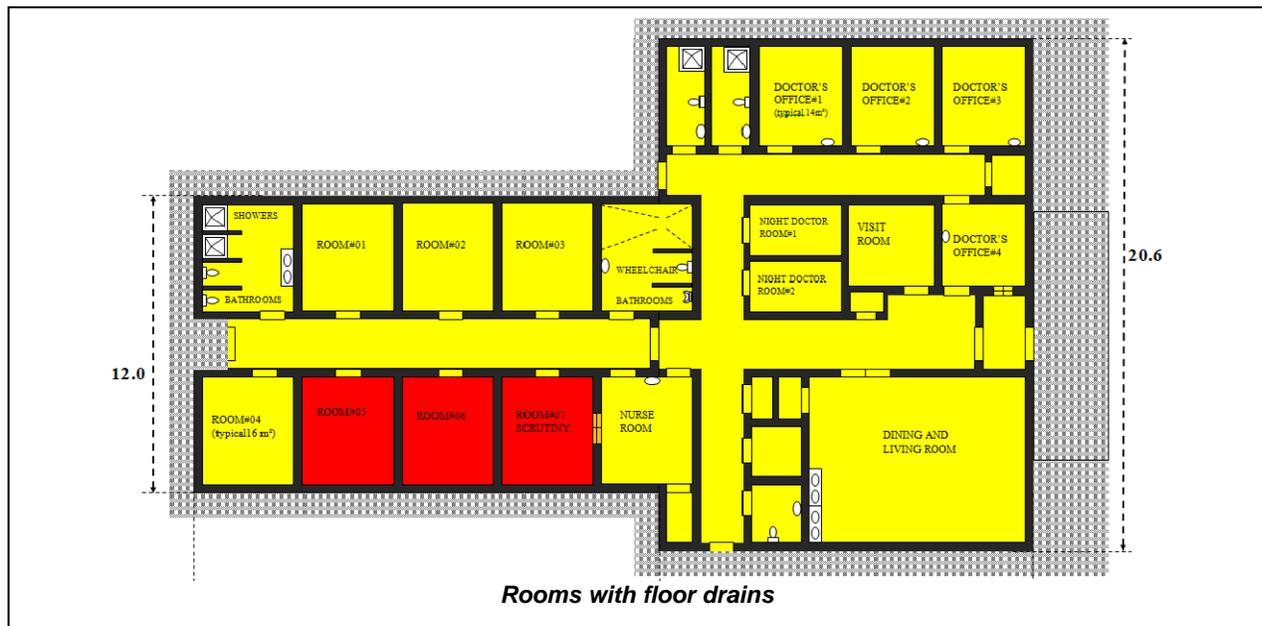


All appliances to be vandal resistant. Some of the specific requirements:

- 1 Toilet. Only ceramic materials are authorized for the seat and water tank. Use of plastic is not authorized. Provide with small door for privacy. Provide with the necessary support stainless steel bars.
- 1 urinal.
- All floors sloped towards the new floor drain
- 1 wall mounted sink designed for people on wheelchairs.
- One wall mounted faucet with only cold water for janitorial purposes.
- 5 Wall mounted stainless steel hangers and all necessary accessories.
- Metal mirror over the sink (typical for penitentiary institutions)
- 1 shower designed for people on wheelchairs
- One lockable heavy duty electric receptacle over the countertop of the sinks

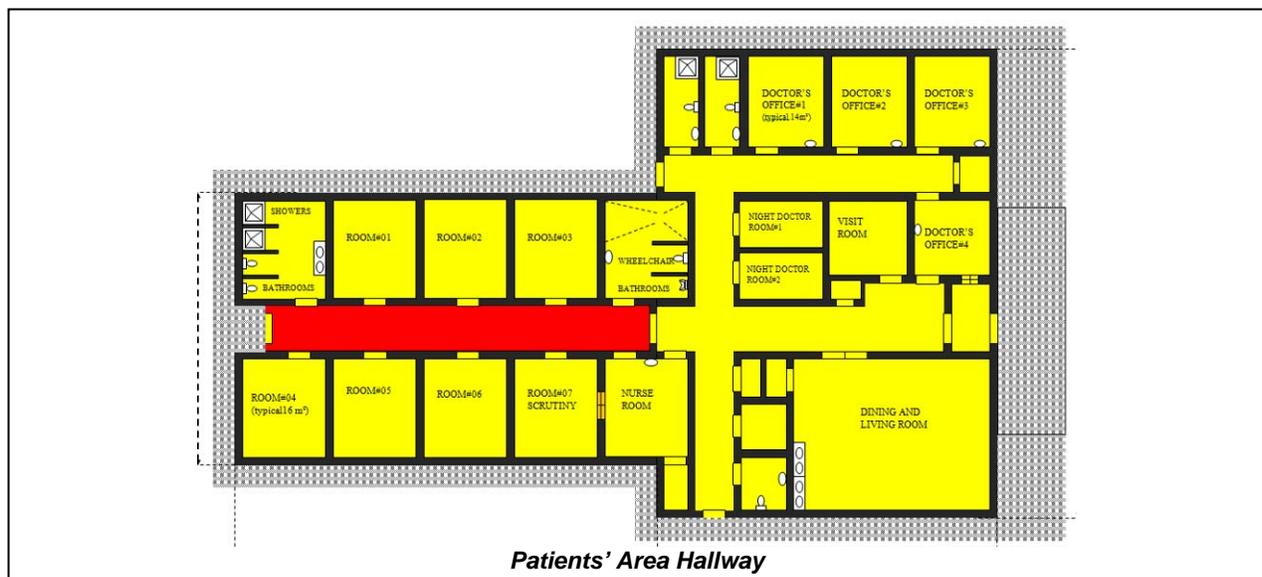


3.9.3 Patients' rooms with floor drains:



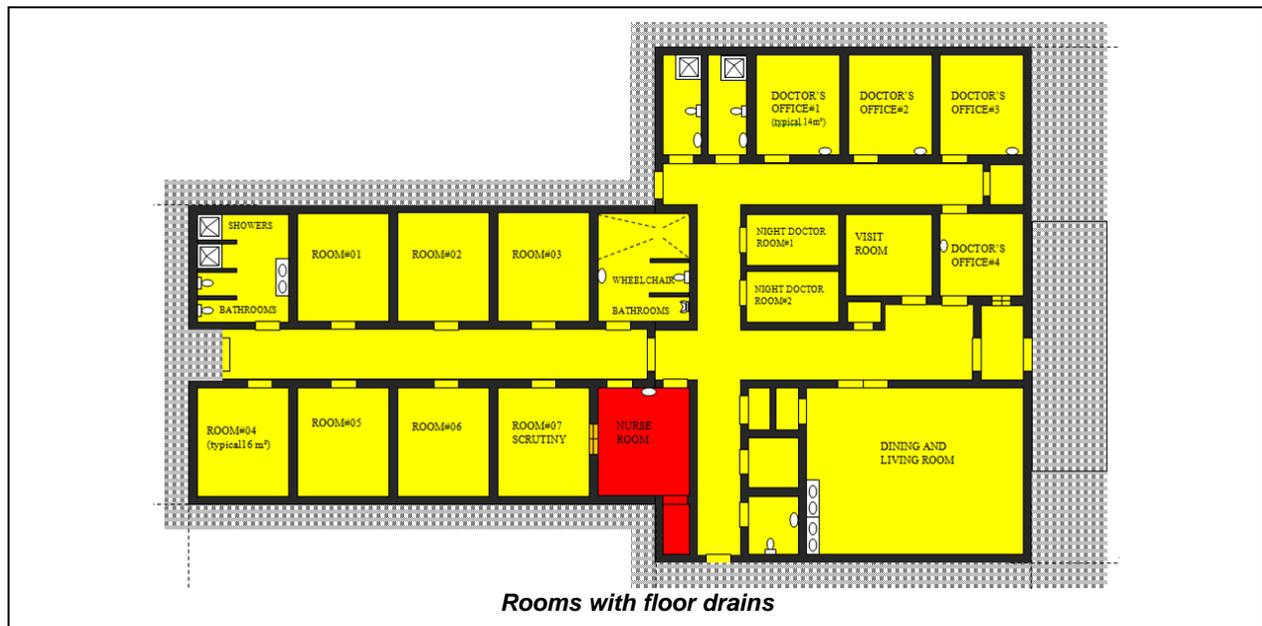
3 rooms, including the scrutiny room shall be provided with all floors sloped towards the floor drain. This is for easy cleaning

3.9.4 Patients' Area Hallway:



In addition to all the requirements previously described, provide a wall mounted faucet, with screwed cap, to connect one hose to clean the rooms with floor drains.

3.9.5 Nurse Room:

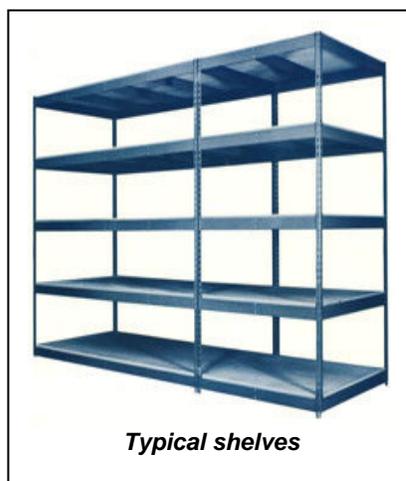


This room shall be provided with all accessories previously listed. It shall be occupied 24/7 and therefore all central panels shall be located in this room. This room shall be provided with 2 doors: for the patient restricted area and for the general public area.

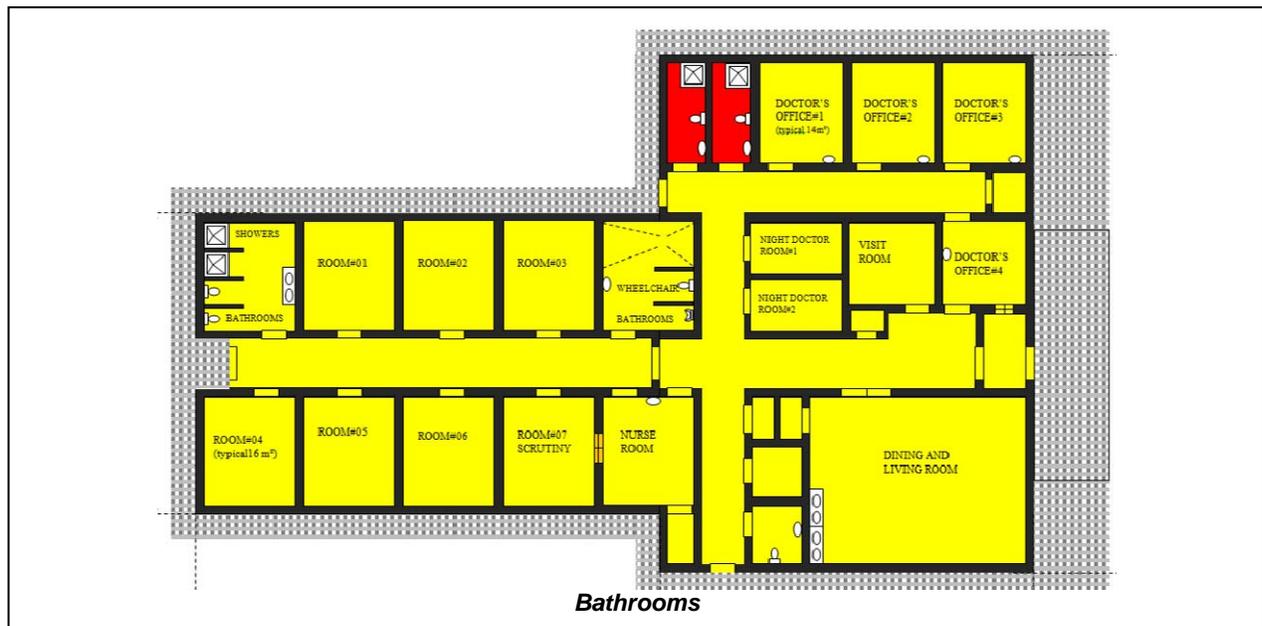
Provide minimum of 10 electrical receptacles in this room

This room shall be provided with a security door to a separate area for storage of medicines.

Storage room of the Nurse Room to be provided with metal shelves. Metal shelves shall be provided along the longest internal wall. Shelves shall be bolted to the walls and floors, to be heavy duty, capable of resisting a load of 100 kg at any location without any visible sign of deflection. Provide 30 cm deep, 2 meter high, with shelves every 40 cm height. (5 horizontal platforms at 0.4, 0.8, 1.2, 1.6 and 2.0 m high)



3.9.6 Visitors' and Doctor/Staff Bathrooms:



Provide 2 separate male and female bathrooms. Each shall be provided with:

- Wall mounted WC.
- Wall mounted stainless steel hand drier.
- One wall mounted sink
- One wall recessed mirror (substituting wall ceramic tiles) surrounded by metal profile.
- One fully equipped and operational shower cabin with ceramic plate
- All floor surfaces sloped towards the new floor drain
- 2 stainless steel wall hangers
- All necessary stainless steel accessories
- Door signs indicating the use of the rooms (male and female bathrooms)

If one of these bathrooms is officially rated for handicapped personnel, it could be possible to remove the visitor's toilet rated for people with disabilities.



Typical shower cabin.



Typical wall mounted toilet, European style.



Typical stainless steel hand drier



Typical required small wall mounted sink

3.9.7 Visitors' Bathroom for People with Disabilities (or mechanical room)

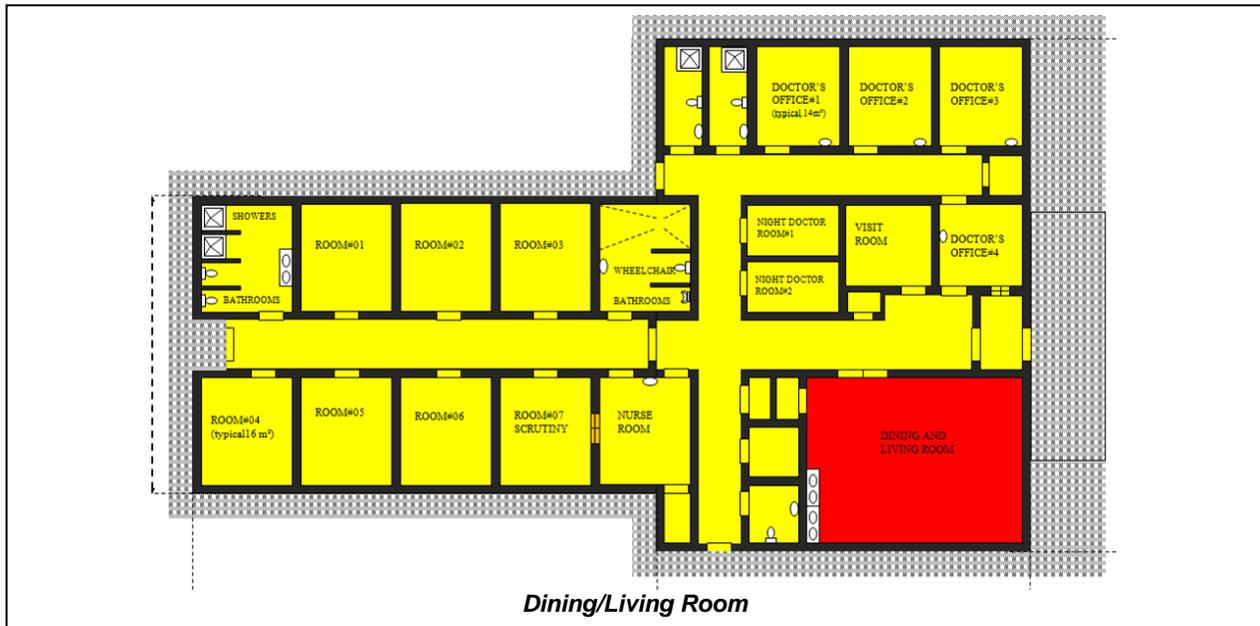


The facility shall be provided with one bathroom facility fated for people with disabilities in the common areas for visitors. As previously described in this document, this toilet could be removed from the scope of work, given that one of the toilets for doctors and staff is officially rated for people with disabilities (wheelchairs). In this case, it would be possible to use this available space for the mechanical room.

The bathroom shall be provided with:

- Wall mounted WC for people on wheelchairs.
- Wall mounted stainless steel hand drier.
- One wall mounted sink for people on wheelchairs.
- One wall recessed mirror (substituting wall ceramic tiles) surrounded by metal profile.
- All floor surfaces sloped towards the new floor drain
- 2 stainless steel wall hangers
- All necessary stainless steel accessories
- Door signs indicating the use of the room
- All necessary stainless steel accessories (i.e. bars) necessary for the bathroom to be officially rated for people with disabilities.

3.9.8 Dining/Living Room:

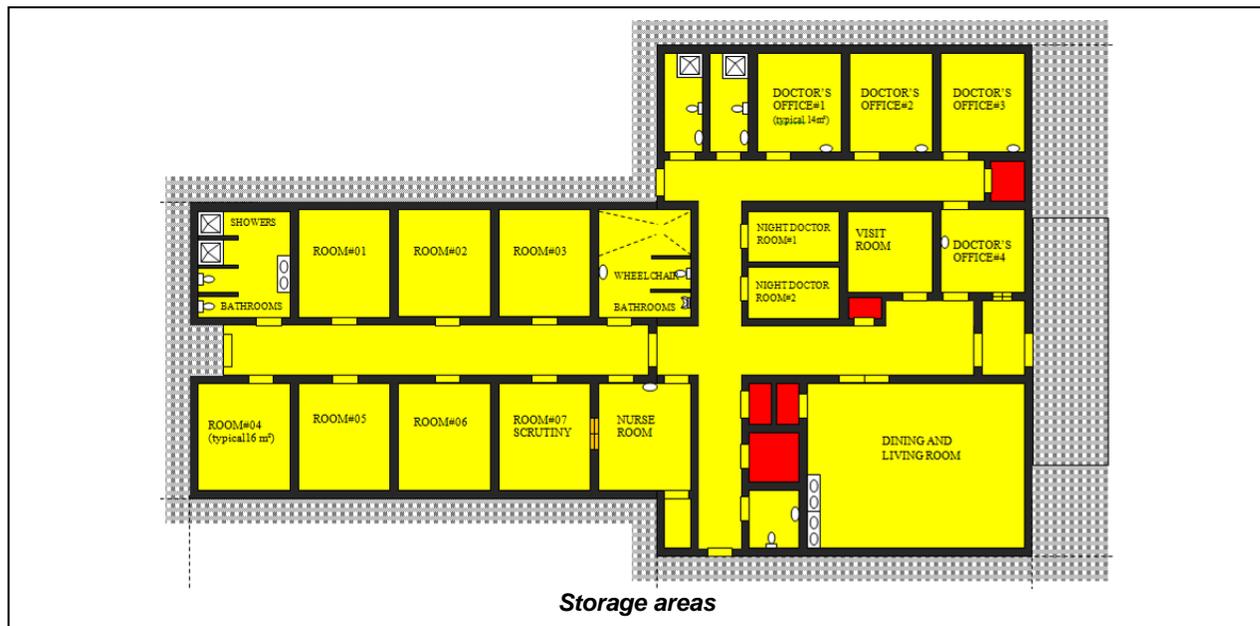


Provide as large as possible without any internal columns.

- Provide with access to one internal storage, similar to the one shown in the sketch
- Preinstallation for stainless steel sink and countertop, and installation of these equipment/material/appliances to be provided by the Hospital Administration. See picture below for type of material to be provided by the Hospital Administration and located in the female pavilion. Purchase of the stainless steel sinks and countertop and tables are not included in the contract, but only their installation.



3.9.9 Storage areas:



The number and location of the storage areas shall be determined and designed by the architect hired by the contractor. As a minimum there shall be the following storage areas:

- One larger room for lining storage. Provided with as many metal shelves as the size and shape of the room would allow. Shelves shall be bolted to the walls and floors, to be heavy duty, capable of resisting a load of 100 kg at any location without any visible sign of deflection. Provide 50 cm deep, 2 meter high, with shelves every 50 cm height. (4 horizontal platforms at 0.5, 1.0, 1.5 and 2.0 m high)
- One storage room accessible from the Dining/Living Room: Provided with as many metal shelves as the size and shape of the room would allow. Shelves similar to the previous room but with 30 cm deep.
- One storage room for Janitor. Provided with similar metal shelves 30 cm deep and with one mop sink as the one in the picture.
- As many additional storage rooms as the design and internal layout of the building would allow. All provided with similar 30 cm deep metal shelves (as many as the size and shape of the room would allow)



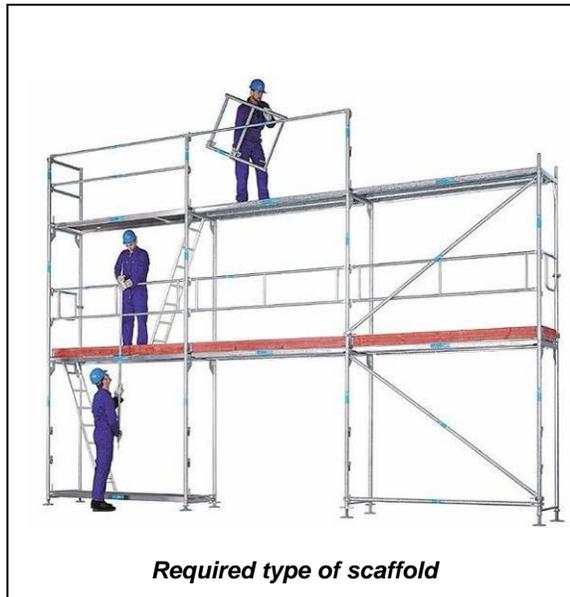
3.10 SCAFFOLDING AND FALL PROTECTION

In order to execute the works included in this project, the contractor shall be required to use scaffolding and/or elevating working platforms.

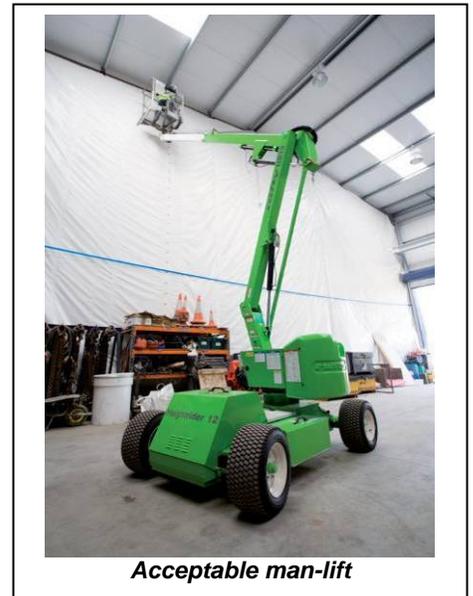
Despite the scaffolds that may be authorized by Macedonian regulations, the contractor is only authorized to utilize European Standard scaffolds similar to the ones shown in pictures below. These scaffolds shall be installed and used in accordance with manufacturer's recommendations. In case the contractor needs to access the façade at any particular point without the need to install scaffolds, the contractor shall use a CE certified self-propelled man-lift, similar to the one shown in picture below. The use of other type of scaffolds, other non CE certified man-lifts, or any type of ladders for façade or roof work, IS NOT AUTHORIZED.



Required type of scaffold



Required type of scaffold



Acceptable man-lift

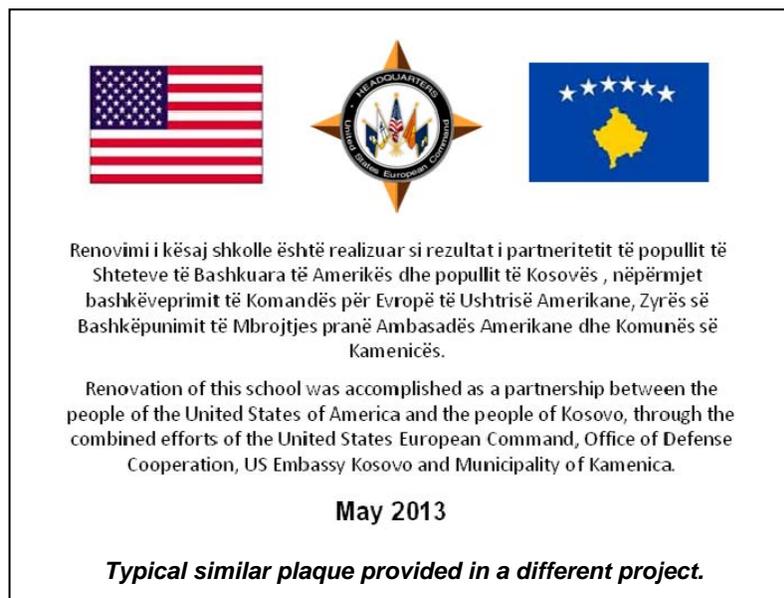
3.11 COMMEMORATIVE PLAQUE

At the end of the construction works, the contractor shall provide and install 1 commemorative plaque near the main entrance, at the location to be indicated by the Contracting Officer. The plaque shall have the following information engraved on it:

- Colored Flag of Macedonia
- Colored Flag of the United States of America
- EUCOM Logo
- This text: "This Male Pavilion was built as a sign of partnership between the people of the United States of America and the people of Macedonia, through the combined efforts of the United States European Command, Office of Defense Cooperation, US Embassy Macedonia and Municipality of Demir Hisar - *Date*"
- Same text as above in Macedonian.

The plaque shall have the following characteristics:

- Fabricated with powder coated aluminum with permanent printed 3.5 cm high, style font "Arial" letters. Adhesive letters will not be accepted.
- Minimum dimensions 75 centimeters wide by 50 centimeters high. Minimum thickness 8 millimeters
- Resistant to outdoor weather and UV radiation.
- Plaque to be manufactured by specialized company.
- Before purchasing the plaques, the contractor shall submit the design to the Contracting Officer for approval.



4. CONTRACT OPTION 1 – TWO ADDITIONAL PATIENT ROOMS AND SOLAR PANEL FOR HOT WATER

The work included in Option-1 will be awarded depending on availability of funds, as well as other factors. Work included in this paragraph will only be executed in Option-1 is awarded.

As previously described in the Base-Bid, the building to be provided in the base-Bid shall be designed for future additions or expansion of additional 5 patient rooms and 1 bathroom.

The work included into the Contract Option-1 includes, but is not limited, to the required design and construction to provide two additional patient rooms and solar panel for domestic hot water heater.

4.1 Sanitary hot water (solar – heat exchanger - electrical)

Provide sanitary hot water system to the showers and to all the sinks. The contractor shall design the system to provide this hot water system in accordance with Macedonian regulations.

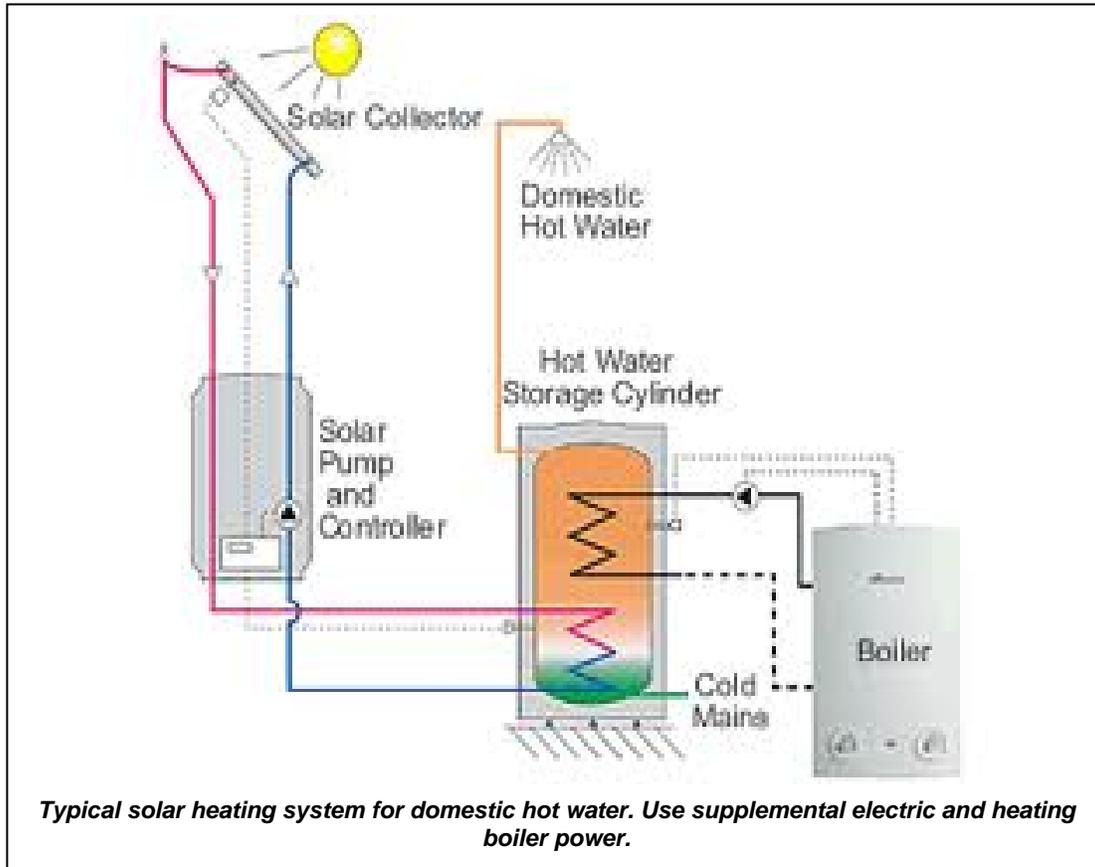
The system shall include a solar hot water system, to be supplemented by an electric resistance and by the central heating system in the Hospital complex during the winter months. All work to be accomplished in accordance with Macedonian Code for solar domestic hot water systems.

Provide non-ferrous water piping, rated for their intended use.

The contractor shall design and install a solar potable hot water system for the showers and the sinks, to be supplemented in the winter with electric and heating system. The system shall be designed to operate in the non-winter months without any supplementary source of energy. Find on next page a typical installation of a solar domestic hot water system.

Basis of design for solar domestic hot water system:

- Minimum surface of solar panels 5 m² facing the South
- Minimum capacity of accumulation tank (hot water storage): 500 liters



4.2 Two Additional Patient Rooms (increase of built area of 50 m² to 585 m²)

The architect hired by the contractor shall design the new Male Pavilion with 9 Patient rooms, compared to the original 7 patient rooms included in the Base-Bid.

For Estimating purposes, this would represent an increase in the total built area of the facility from 535 m² to 585 m².

In case this contract option is awarded, the minimum built area of the new Male Pavilion **shall be 585 m²**.

Find in next page a potential sketch of the final resulting facility with 585 m² of total built area.

All requirements described for the building in the Base-Bid are applicable for these additional areas.



Potential conceptual design for Base-Bid and Contract Option-1

5. CONTRACT OPTION 2 – ONE ADDITIONAL PATIENT ROOM AND ONE ADDITIONAL BATHROOM

The work included in Option-2 will be awarded depending on availability of funds, as well as other factors. Work included in this paragraph will only be executed in Option-2 is awarded.

As previously described in the Base-Bid, the building to be provided in the base-Bid shall be designed for future additions or expansion of additional 5 patient rooms and 1 bathroom.

The work included into the Contract Option-2 includes, but is not limited, to the required design and construction to provide one additional patient room and one additional bathroom facility, providing two separate rooms for showers and toilets.

Additional Rooms (increase of built area of 50 m² to 585 m²)

The architect hired by the contractor shall design the new Male Pavilion with 8 Patient rooms, compared to the original 7 patient rooms included in the Base-Bid and with separate rooms for WC's and showers.

This contract option modifies slightly the requirements of the Base-Bid for the requirements of the Room for Showers and WC's for Patients. Originally this room in the base-Bid included showers and toilets, as described in their corresponding description within paragraph 3. If this Contract Option-2 is awarded there shall be two separate rooms for showers and for WC's.

For Estimating purposes, this would represent an increase in the total built area of the facility of 50 m² from 535 m² to 585 m².

In case this contract option is awarded, the minimum built area of the new Male Pavilion **shall be 585 m².**

In case both contract options are awarded (Contract Option-1 and Contract Option-2), then the total built area for the Male Pavilion shall be as a minimum 630 m².

Find in next page a potential sketch of the final resulting facility with 630 m² of total built area, including contract options 1 and 2.

All requirements described for the building in the Base-Bid are applicable for these additional areas.



Potential conceptual design for Base-Bid, Contract Option-1 and Contract Option-2

6. CONTRACT OPTION 3 – TWO ADDITIONAL PATIENT ROOMS

The work included in Option-3 will be awarded depending on availability of funds, as well as other factors. Work included in this paragraph will only be executed in Option-3 is awarded.

As previously described in the Base-Bid, the building to be provided in the base-Bid shall be designed for future additions or expansion of additional 5 patient rooms and 1 bathroom.

The work included into the Contract Option-3 includes, but is not limited, to the required design and construction to provide two additional patient rooms.

Additional Rooms (increase of built area of 50 m² to 585 m²)

The architect hired by the contractor shall design the new Male Pavilion with 9 Patient rooms, compared to the original 7 patient rooms included in the Base-Bid.

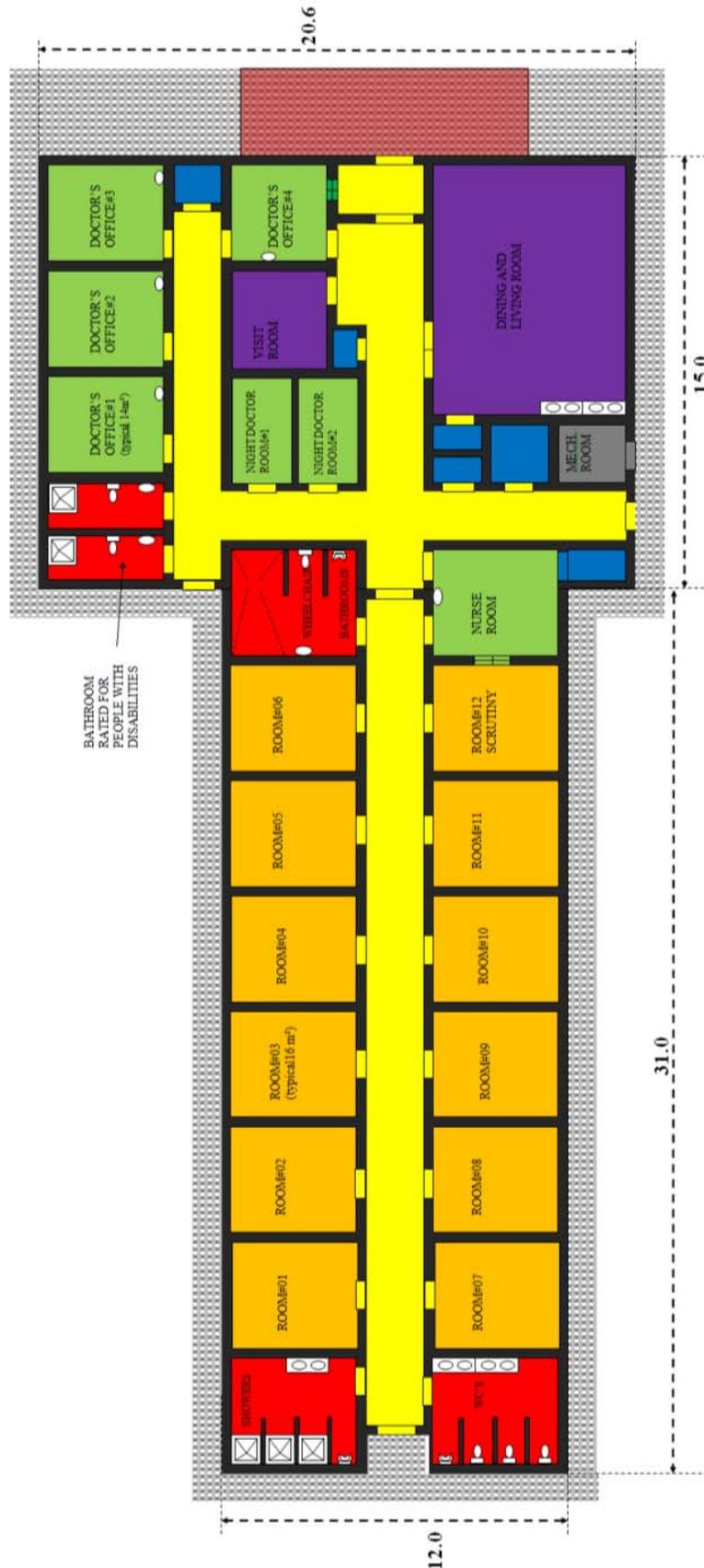
For Estimating purposes, this would represent an increase in the total built area of the facility of 50 m² from 535 m² to 585 m².

In case this contract option is awarded, the minimum built area of the new Male Pavilion **shall be 585 m².**

In case all contract options are awarded (Contract Option-1, Contract Option-2 and Contract Option-3), then the total built area for the Male Pavilion shall be as a minimum 680 m².

Find in next page a potential sketch of the final resulting facility with 680 m² of total built area, including contract options 1, 2 and 3.

All requirements described for the building in the Base-Bid are applicable for these additional areas.



Potential conceptual design for Base-Bid, Contract Option-1, Contract Option-2 and Contract Option-3

7. PROCEDURE:

7.1 Principles

This construction contract is based on 4 principles:

1. Strict compliance with Macedonian technical regulations
2. Strict compliance with United States of America contracting regulations (Federal Acquisition Regulations) as applicable for this contract.
3. Compliance with the most stringent of US and Macedonian Safety regulations
4. Specific technical requirements detailed in this document

7.2 Technical Requirements

The work shall meet all requirements of this Request For Proposal (RFP) package. Drawings to be as required in this RFP and with sufficient detail to communicate the design to the US Government, final users, contractor's staff and sub-contractors. Material selection, specifications and installation to be as described in these Performance Technical Specification (PTS) included in this RFP. The Performance Technical Specification (PTS) are a guideline for the design package.

- If an item in the project design is included in the PTS, the requirements of the PTS and applicable local Macedonian and international codes shall govern.
- If an item in the project design is NOT included in the PTS, the requirements of applicable local Macedonian and international codes shall govern.

Provide the Final work as a complete and usable facility including. Technical details, items of work, permits or fees that are not explicitly described in this RFP, but which are necessary to provide a fully operational and finished facility shall be considered part of this contract. The contractor is responsible to verify all dimensions and existing conditions. The contractor shall hire the necessary architects/engineers to prepare the necessary design documents to design a new Male Pavilion for a Psychiatric Institution in accordance with the scope of work of this contract, and with the technical and quality requirements described in this document.

The contractor shall perform the work in strict compliance with the construction codes and regulations of Macedonia. The contractor is responsible to provide a copy of a Construction Permit issued by the corresponding local authority. The contractor is responsible to prepare any required documentation and/or designs that will be required in order to obtain these permits. No work shall be executed until the corresponding construction permit is issued by the competent Municipal authority, and a copy provided to the Contracting Officer.

For those items required by the Scope of Work, which are not specified herein, the contractor shall follow the applicable Macedonian Codes and Regulations

7.3 Administrative Procedures

The project is based on the principle of strict compliance with Macedonian technical and administrative regulations and US Contracting Regulations.

The contractor shall provide to the Contracting Officer a Construction Permit from the competent local authorities and/or a letter from the local competent authorities authorizing the commencement of the works, and certifying that the contractor meets all the administrative and legal requirements which are necessary to execute the works included in this project, in accordance with Macedonian Law and regulations. No work shall be executed until this certificate is forwarded to the Contracting Officer and the Contracting Officer authorizes the start of work.

The contractor is required to coordinate with local competent municipal authorities and to pay for any construction fee that may be applicable for this new construction project.

7.4 Design-Build Standard Procedure

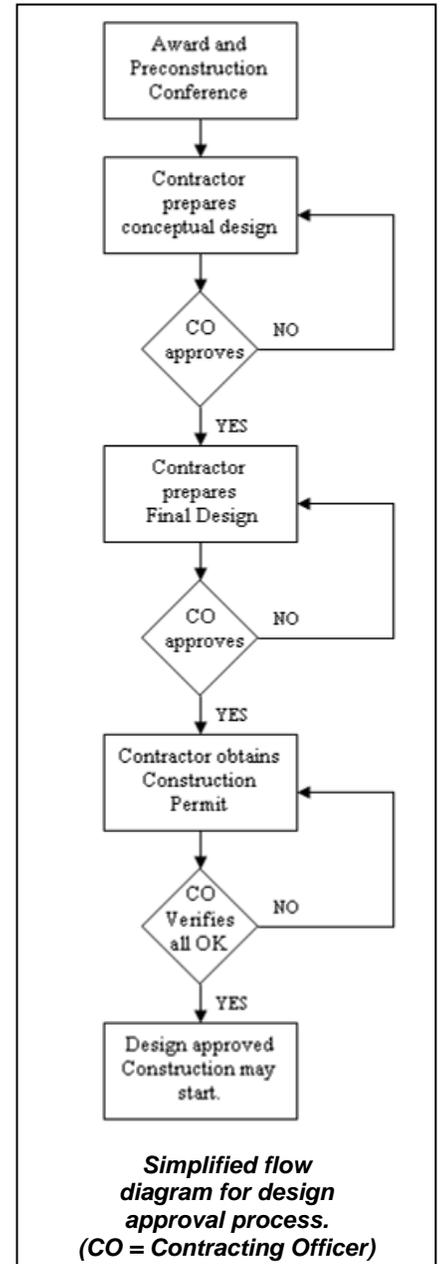
This contract is a design-build contract, and therefore it requires that the contractor prepares the necessary designs. This contract includes the preparation of the required geotechnical report, designs, technical projects, surveys, permits, certifications as well as any required coordination with local authorities. The contract also includes processing and paying for any potential fees that may be required in order to obtain the required Construction Permits.

The contractor is responsible to verify site conditions and preparing a geotechnical report before preparing the design and technical projects. The contractor shall visit the sites and have geotechnical information from the area prior to preparing their offer.

For any required design, the contractor shall start with the preparation of a conceptual design, and only after it is approved by the Contracting Officer, they shall proceed to the final design phase.

The conceptual design shall include sufficient information for the Contracting Officer to understand in detail what the contractor proposes to do, before the contractor moves to the next design stage.

Once the final design is prepared, it shall be approved by the Contracting Officer before the contractor sends it to the local authorities to obtain the corresponding Construction Permit.



7.5 Duration of the contract (400 calendar days)

All work shall be completed within 400 calendar days after contract award. All durations herein refer to calendar days.

7.6 Start of Construction

The Project Manager (PM) appointed by NAVFAC or Authorized Representative of the Contracting Officer shall authorize the start of construction. This authorization to start will not be given until the contractor:

- Provides written evidence that they comply with all legal requirements in Macedonia in order to perform the works described in this document. This includes showing the necessary Macedonian design and construction licenses.
- Provides copy of the required Construction Permit from the competent Macedonian authority authorizing the execution of the works.
- Provides technical information for the proposed materials and equipment to be used for the project. Only materials and equipment previously accepted by the Contracting Officer Representative shall be brought to the job site.
- The Contracting Officer Representative accepts their Accident Prevention Plan. See Annex 1 for the requirements of this Plan
- The Contracting Officer Representative accepts their Quality Control Plan. See Annex 2.
- The Contracting Officer Representative accepts their Construction Schedule
- Construction Sign is placed on site

7.7 Phasing, Scheduling and Coordination Requirements

No special phasing is required for this work.

The hospital complex shall remain operational during the execution of the works.

The contractor shall separate the construction areas from the other common areas of the hospital complex used by the staff and patients and visitors, by the installation of proper fences and barricades. The contractor shall closely coordinate with the Hospital Director the activities that may interfere with their daily work.

7.8 Construction Schedule (bar chart is authorized).

All work shall be completed within 400 calendar days after project award.

Within 15 days after contract award, the contractor shall provide a construction schedule including a minimum of 30 activities.

7.9 Accident Prevention Plan / Safety Plan

SAFETY SHALL BE THE FIRST PRIORITY OF THE CONTRACTOR. SAFETY OF THE WORKERS, STAFF OF THE FACILITIES, PATIENTS AND GENERAL PUBLIC SHALL TAKE PRECEDENCE OVER ANY OTHER FACTOR.

The contractor shall use the format included in Annex 1 to prepare the Safety Plan or Accident Prevention Plan

Within the timeframe allowed for the final design submission, the Contractor will prepare and submit a Safety Plan (Accident Prevention Plan) describing procedures they plan to perform to ensure the safety of the workers, the staff of the facilities, the general public, the children and the equipment on the job site. The Plan shall clearly define the safety personnel assigned to this project and the measurements that the contractor will implement to guarantee that nobody will be exposed to any hazards as a result of this construction contract.

Additionally, the safety plan must address types of personnel protective equipment to be used by personnel, types and frequencies of safety inspections, hazard analysis plan to prevent safety incidents, and training utilized to familiarize employees with safety policies and practices. The contractor shall comply with the US Army Corps of Engineers Safety Manual EM385-1-1 wherever the requirements of this manual are more stringent than the requirements of the Macedonian Safety Law.

No work shall start at the job site until the Safety Plan is received and accepted by the US Government.

Macedonian Safety Code must be strictly followed. The contractor is responsible for the safety of the workers, the safety of the users of the facility and the general public.

Preparation and submission and acceptance of the Accident Prevention Plan does not waive any requirements of the Macedonian safety regulations.

Additional safety requirements for NAVFAC project can be found in Section 01525, which can be found here:

<http://www.aed.usace.army.mil/contracting/0093/01525%20Safety%20and%20Occupational%20Health%20Rqmnts.pdf>

The contractor shall propose a Site Health and Safety Officer (SSHO). This person, must have completed the 30-hour OSHA Construction safety class or as an equivalent, this person must have completed 30 hours of formal construction safety and health training in other accredited institution, covering the subjects of the OSHA 30-hour course (see Appendix A, paragraph 4.b) applicable to the work to be performed and given by qualified instructors. *The SSHO is also required to have five (5) years of construction industry safety experience or three (3) years if he possesses a Certified Safety Professional (CSP) or safety and health degree.* In Appendix 1, it allows equivalent certificate issued and acknowledged by local authorities. This means that the SSHO would meet the requirements is he/she shows evidence of having completed a safety course of at least 30 hours, covering general construction safety; given that the training was conducted by an authorized official institution, such as an University, or European certified safety agency. This is in addition to the required 5 or 3 years of experience in the construction sector.

7.10 Technical Documentation

The contractor shall provide technical information on all equipment to be incorporated to the job site. This information must be sent to and accepted by the NAVFAC Project Manager before they are purchased by the contractor. This includes paint, air conditioning equipment, toilet accessories, LED lighting fixtures, water heater, water faucets, countertops, floor tiles, wall tiles, ceiling systems, roof tiles, etc.

7.11 Language

All communication and correspondence between the contractor and the Government personnel shall be in English. It shall be the responsibility of the Contractor to prepare proposals, invoices, shop drawings and submittals, quality control reports, computations, and all correspondence pertaining to this contract, in the English language; but the Contractor may, for his own record purposes, prepare them in the local language. All correspondence to and from the Contracting Officer shall be in the English language. In case of dispute or claim, the English version will govern.

Immediately after award, the contractor shall appoint an English speaking representative, with cellular phone and e-mail address. The Contracting Officer Representative reserves the unilateral right to disapprove this person if it is found that his/her English language capacity is not sufficient to perform the duties required for such position

For the visits of the Contracting Officer, the PM or their authorized representative to the job site, the contractor shall provide somebody capable of representing the construction company who can communicate in English language or the contractor shall provide a translator to translate from English to Macedonian language.

7.12 Pictures

The contractor shall send weekly and representative digital pictures of their construction by e-mail once construction starts, showing construction progress. These pictures shall be used to monitor the contractor's performance and to validate the invoices.

Failure to provide updated pictures will impact the ability of the Contracting Officer to validate and therefore to pay for the invoices.

7.13 Quality Control Plan

Within the timeframe allowed for the submission of documentation before starting the works, the Contractor will prepare and submit a Quality Control Plan describing personnel, procedures, tests and installation techniques that he plans to perform to ensure the quality required by these Technical Requirements and his design is obtained.

The Quality Control Plan shall include the name and qualifications of the person responsible for the quality of the works

In Annex 2, it is included a guideline to prepare this Plan.

7.14 CONSTRUCTION SIGN

Immediately after award the contractor shall prepare and install on each site, at a very visible location, a construction sign with the following characteristics and information on it:

- Wood sign with minimum dimensions 2 meters wide by 1 meter high
- Letters and logos prepared by an specialized company and designed for outdoor installation
- Flags of Macedonia and the United States of America
- The following text: THE DESIGN AND CONSTRUCTION OF THIS NEW MALE PAVILION IS FUNDED BY THE UNITED STATES EUROPEAN COMMAND AND PROVIDED TO THE PEOPLE OF MACEDONIA IN COOPERATION WITH THE ADMINISTRATION OF DEMIR HISAR. EXECUTIVE AGENT: US EMBASSY IN MACEDONIA. CUSTOMER: US NAVAL FACILITIES ENGINEERING COMMAND. PRIME CONTRACTOR:?
- Logo of NAVFAC EURAFSWA
- Logo of EUCOM
- Start and completion dates.
- Same text in Macedonian



Example of typical construction sign

7.15 PAYMENT

Payment shall be performed as required by US Administrative Requirements. See Contract Clauses pertinent to Payment procedures.

**** NO ADVANCE PAYMENT IS AUTHORIZED ****

Payment shall be performed following the principle of payment for completed work. Payment shall be phased as detailed herein:

- Maximum of 8% for the design, once a copy of the official Construction Permit is provided.
- Partial payments as agreed with the US Representative, as work is being completed and accepted.
- Maximum of 80% (cumulative) is authorized until the final inspection is completed and all potential deficiencies are corrected. No payment over 80% is authorized until all work included in the contract is completed.
- Final invoice (100%) shall be paid once final inspection is completed and all potential defects identified in the final inspection are properly corrected.

Together with each invoice, the contractor shall provide:

- Official invoice
- Cost breakdown justifying the requested amount for payment.
- Filled Contractor's Safety Self Evaluation Form
- Invoice Statement: With the text below signed by a responsible person from the company (ideally the one that signed the contract):

I hereby certify, to the best of my knowledge and belief, that:

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) All payments due to subcontractors and suppliers from previous payments received under the contract have been made, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and legal requirements of Macedonia;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

Progress payment shall only be authorized if NAVFAC representative verifies on site the amount of work performed, or if the contractor proves with sufficient pictures and documentation that the work was actually performed as required by the contract. NAVFAC representative will disallow from the requested amount those portions of the invoice that the contractor does not prove that they were performed as required by the contract.

7.16 Schedule of Prices

In order to process the invoices, the contractor shall send for the acceptance of the Contracting Officer Representative a Schedule of Prices. This document shall include the main elements of the construction contract, and in the invoices the Contracting Officer Representative and PM of the contractor shall agree on the percentages executed for each of the line items.

Only elements that are tangible and incorporated into the job site shall be authorized. Items such as preparation of documents, mobilization, safety, travel costs, overhead and other similar items are not authorized. The value of all items shall be properly distributed. Front-in loading the Schedule of Prices is not authorized.

No invoice shall be processed until the Schedule of Prices is accepted by the Contracting Officer Representative.

Item	Description	Quantity	Units	Unit Price in USD	Value in USD
BASE PROJECT					
1	DESIGN	1	EA	\$12,000.00	\$12,000.00
2	ROOF	1150	m2	\$30.00	\$34,500.00
3	THERMAL FAÇADE	555	m2	\$50.00	\$27,750.00
4	NEW WINDOWS	135	m2	\$150.00	\$20,250.00
5	NEW EXTERIOR DOORS	7	piece	\$500.00	\$3,500.00
6	ENTRANCE CANOPY	1	piece	\$654.00	\$654.00
7	SIDEWALK	180	m	\$10.24	\$1,843.20
8	EXTERIOR GRADING	1	m2	\$10.24	\$10.24
9	ADITIONAL ENTRANCE	4	piece	\$10.24	\$40.96
10	BASEMENT ENTRANCE	1	piece	\$10.24	\$10.24
11	NEW INTERNAL LAYOUT	1	piece	\$10.24	\$10.24
12	INTERNAL FLOORING	560	m2	\$10.24	\$5,734.40
13	INTERNAL WALLS	1,200	m2	\$10.24	\$12,288.00
14	INTERNAL WINDOWS	1	piece	\$10.24	\$10.24
15	INTERNAL DOORS	96	m2	\$10.24	\$983.04
16	CEILINGS	560	m2	\$10.24	\$5,734.40
17	ELECTRICAL	1	piece	\$10.24	\$10.24
18	FIRE ALARM	1	piece	\$5,200.00	\$5,200.00
19	COMMUNICATION	1	piece	\$2,352.00	\$2,352.00
20	WATER DISTRIBUTION	1	piece	\$1,565.00	\$1,565.00
21	SEWAGE	1	piece	\$3,650.00	\$3,650.00
22	PATHOGEN DISCHARGE	1	piece	\$5,568.00	\$5,568.00
23	HEATING	1	piece	\$5,688.00	\$5,688.00
24	VENATILATION FOR LABS.	1	piece	\$455.00	\$455.00
25	COMMEMORATIVE PLAQUE	1	piece	\$500.00	\$500.00
CONTRACT OPTION-1					
26	Exterior Pavement	125	m2	\$56.00	\$7,000.00
27	Generator,Water Tank,Split AC	1	piece	\$6,500.00	\$6,500.00
28	Additional Filters	1	piece	\$1,000.00	\$1,000.00
29	Rooms 28, 30, 32, 34 and HOL	1	m2	\$4,655.00	\$4,655.00
30	Stairway	1	piece	\$8,542.00	\$8,542.00
TOTAL CONTRACT					\$178,004.20

Example of typical Schedule of Prices for a contract with one option

7.17 Paying for Utilities

The contractor is required to pay for the electricity and heating that they may require for the execution of their work. The contractor shall coordinate with the utility company and with the municipality representative the installation of metering devices to quantify the energy consumption.

In case it is not possible to install a separate metering device, the contractor shall provide a report with the theoretical energy consumption for the review and approval of the Contracting Officer Representative.

8 GENERAL WORK REQUIREMENTS

NOTE: This is an American document, and this note is to define the way in which numbers are presented herein:

1,000 = one thousand

3,500 = three-thousand five-hundred

1.08 = one and eight hundredths

0.1 = one-tenth

REFERENCE STANDARD

Construction shall be in accordance with sound construction practices, and shall conform to the latest revision/edition of the codes, criteria, and standards referenced herein; except as otherwise indicated by this Request for Proposal. Construction shall also comply with applicable codes, ordinances and regulations of Macedonia governing seismic criteria, life/safety, fire protection, building construction, conveying, HVAC (heating ventilation and air conditioning) systems, plumbing systems and electrical systems in effect during this contract, except where specifically stated herein. Any material installed that does not meet the requirements of this Technical Specification and/or applicable codes, ordinances and regulations will be removed and a new one reinstalled at Contractor's expense.

In the next paragraphs, we can find the General Work Requirements and Technical Specifications for the work requested and included in this project. For those items required by the Scope of Work, which are not specified herein, the contractor shall follow the applicable Macedonian Code and Regulation.

PAINTING SYSTEMS PER SUBSTRATE

Painting practices shall comply with sound application and handling practices, and shall conform to the latest revision/edition of applicable codes, ordinances and regulations of Macedonia governing life/safety, fire protection and construction, in effect during this contract, except where specifically stated herein. Any material installed that does not meet the requirements of this Performance Technical Specification (PTS) and/or applicable codes, ordinances and regulations will be removed and reinstalled at Contractor's expense.

Remove dirt, splinters, loose particles, grease, oil, and other foreign matter and substances deleterious to coating performance as specified for each substrate before application of paint or surface treatments. Oil and grease shall be removed prior to mechanical cleaning. Cleaning shall be programmed so that dust and other contaminants will not fall on wet, newly painted surfaces. Exposed ferrous metals such as nail heads on or in contact with surfaces to be painted with water-thinned paints, shall be spot-primed with a suitable corrosion-inhibitive primer capable of preventing flash rusting and compatible with the coating specified for the adjacent areas.

All coats on a particular substrate, or a paint system, must be from a single manufacturer.

The surfaces of wood doors, windows, frames and trim shall receive three coats of alkyd enamel paint. Apply one coat to all surfaces of wood prior to installation and two coats to exposed surfaces after installation. Prior to applying second coat spot touch-up first coat where wood is left uncoated due to cutting, drilling or other damage as a result of installation work.

CONCRETE FINISHES

- New and uncoated existing concrete surfaces:

One (1) coat latex filler/primer
Two (2) coats pigmented latex paint

- Existing, previously painted, concrete surfaces:

Two (2) coats pigmented latex paint

- New and uncoated existing concrete surfaces in toilets, food-preparation, food-serving, restrooms, laundry areas, shower areas, areas requiring a high degree of sanitation, and other high humidity areas unless otherwise specified, (Fill all holes in masonry surface):

One (1) coat latex filler/primer
One (1) coat pigmented alkyd paint
One (1) coat pigmented epoxy paint

- New and uncoated existing, existing, previously painted concrete floors:

One (1) coat pigmented latex floor paint

or

One (1) coat pigmented epoxy paint.

CONCRETE MASONRY FINISHES

- New and uncoated existing concrete masonry:

One (1) coat latex filler/primer
Two (2) coats pigmented latex paint

- New and uncoated existing concrete masonry units in toilets, food-preparation, food-serving, restrooms, laundry areas, shower areas, areas requiring a high degree of sanitation, and other high humidity areas unless otherwise specified, (Patch imperfections and fill all masonry surface voids with block filler):

One (1) coat latex filler/primer
One (1) coat pigmented alkyd paint
One (1) coat pigmented epoxy paint

PLASTER FINISHES

- New and uncoated plaster:

- One (1) coat latex filler/primer
 - Two (2) coats pigmented latex paint

- New and uncoated existing plaster in toilets, food-preparation, food-serving, restrooms, laundry areas, shower areas, areas requiring a high degree of sanitation, and other high humidity areas unless otherwise specified, (Patch imperfections and fill all masonry surface voids with block filler):

- One (1) coat latex filler/primer
 - One (1) coat pigmented alkyd paint
 - One (1) coat pigmented epoxy paint

METAL FINISHES

- New steel/ferrous surfaces not otherwise specified:

- Two (2) coats pigmented alkyd paint

- Existing, previously painted steel/ferrous surfaces not otherwise specified:

- One (1) coat pigmented alkyd paint

- New steel/ferrous surfaces in toilet, food preparation, food serving, restrooms, shower areas and areas requiring a high degree of sanitation and other high humidity areas not otherwise specified except floors, hot metal surfaces, and new prefinished equipment:

- One (1) coat pigmented alkyd paint
 - One (1) coat pigmented epoxy paint

- New and Existing, previously painted miscellaneous non-ferrous metal surfaces not otherwise specified:

- Two (2) coats pigmented alkyd paint.

- New and Existing, previously painted miscellaneous galvanized doors not otherwise specified:

- Two (2) coats pigmented alkyd paint.

INTERIOR WOOD FINISHES

- New and existing, uncoated wood and plywood not otherwise specified:
 - One (1) coat latex wood primer
 - Two (2) coats pigmented latex enamel paint

- New and existing, previously finished or stained wood and plywood, except floors; natural finish or stained:
 - Stain uniformly to desired hue
 - One (1) coat clear wood sealer/primer
 - One (1) coat clear, polyurethane finish

- New and existing, uncoated wood timbers:
 - One (1) coat latex wood primer
 - One (1) coat solid body penetrating wood stain
 - One (1) coat solid body penetrating wood stain
(Apply after installation to exposed surfaces. Prior to applying final coat spot touch-up first coat where wood is left uncoated due to cutting, drilling or other damage as a result of installation work.)

- New and Existing, previously finished or stained wood floors; natural finish or stained:
 - Stain uniformly to desired hue
 - One (1) coat clear wood sealer/primer
 - Two (2) coats clear, polyurethane finish

- New and Existing, uncoated wood surfaces in toilets, food-preparation, food-serving, restrooms, laundry areas, shower areas, areas requiring a high degree of sanitation, and other high humidity areas not otherwise specified:
 - One (1) coat latex wood primer
 - Two (2) coats pigmented epoxy paint

- New and existing uncoated wood doors:
 - One (1) coat latex wood primer
 - Two (2) coats pigmented latex enamel paint

9. GENERAL TECHNICAL SPECIFICATION

9.1 NARRATIVE

All Technical Specification (TS) sections must be used in conjunction with all parts of the Request for Proposal (RFP) to determine the full requirements of this solicitation. This TS section provides general requirements for the other TS sections of this RFP and is used in conjunction with the other TS sections.

9.2 PROHIBITED ITEMS

Use of the following items in this construction project is prohibited:

- Use of aluminum for electrical conductors.
- Embedding aluminum conduit in concrete.
- Use of fluorescent light ballasts and other products containing PCB's.
- Use of urea-formaldehyde foam insulation products.
- Use of any paint/coatings having a lead content of over 0.06 percent by weight of non-volatile content. The use of ozone depleting chemicals is prohibited. The use of zinc-chromate is prohibited.
- Empirical Design Of Masonry Shall Be Prohibited.
- The use of materials containing asbestos is prohibited.
- Blasting operations
- Direct burial of electric cables in the plaster without approved conduits

9.3 RESPONSIBILITY OF MATERIALS

All materials delivered to the construction site shall remain in the ownership and responsibility of Contractor. Contractor will be responsible to safeguard the possession and condition of the material until US Government takes possession of the finalized project.

Material that is not intended to become part of the project shall not be delivered, placed, retained nor stored on the project site.

All refuse or salvaged materials shall become the property of the Contractor (except as indicated in this PTS) and shall be disposed of, off-site, in accordance with applicable Macedonian regulations. The Contracting Officer may ask for receipts of proper disposal of debris or excess materials.

9.4 SAFETY AND PROTECTION

- 9.4.1 The contractor is responsible for the safety of the contractors employees, subcontractors, visitors and general public, as they could be affected by this construction project.
- 9.4.2 The contractor shall have new hardhats at the job site for the visitors. Minimum 8 units.
- 9.4.3 The contractor is responsible to comply with Macedonia Safety Code and with the US Army Corps of Engineers Safety Manual for job site safety. A digital copy of this manual can be found here: http://140.194.76.129/publications/eng-manuals/em385-1-1/2008_English/toc.html.
- 9.4.4 Within the context of his responsibilities, the contractor shall take the necessary actions to protect the safety and health of the employees, including the prevention of occupational risks, information and training measures, and measures for the organization of the health and safety at work and its necessary means as required by Macedonian Code. The following general prevention principles shall be taken into account for the adoption and implementation of the measures provided above:
- a) avoiding risks;
 - b) evaluating the risks which cannot be avoided;
 - c) combating the risks at the source;
 - d) adapting the work to the individual, in particular as regards the design of the workplace and the choice of work and production equipment and methods, with a view, in particular, to alleviating monotonous and repetitive work, and its effects on health;
 - e) adapting to technical progress;
 - f) replacing the dangerous by the non-dangerous;
 - g) prevention planning;
 - h) giving collective protective measures priority over individual protective measures;
 - i) giving appropriate instructions to the employees.

An employer shall insure all employees against occupational accident and disease risks, under the terms of Macedonian law. The contractor shall verify that all employees of the prime contractor or any subcontractor employed in this project meet the legal requirements of Macedonian Law.

The contractor shall organize the employee training in the field of health and safety at work. This training must be provided to new employees, those changing the workplace or type of work and those resuming their activity after a break longer than 6 months. In all such cases, the training shall take place before the actual beginning of the activity. The contractor shall be responsible for the facilities related to the provision of first aid in case of occupational accidents, for fire prevention and the evacuation of the employees in special situations and imminent danger.

The contractor shall be responsible for a safe and hygienic work environment both on the project site and at off-site locations where work is done in conjunction with this project.

- 9.4.5 The contractor shall be responsible for the protection of all grounds, vegetation and improvements that exist and are to remain after the project is complete; with-in the project work areas, adjacent to the project work areas and along the common route of access to the site, outside of the work areas. The Contractor shall be responsible to have any damage caused by Contractor's employees, equipment or sub-contractors repaired and restored to pre-damage condition, as approved by the Contracting Officer Representative (COR), at no cost to the Government.
- 9.4.6 The contractor shall be responsible for adequate and safe traffic control in work areas and along the common route of access to the site outside of the work areas. Traffic control shall include; Contractor's workforce traffic, vehicular traffic interfacing with Contractor's traffic and pedestrian traffic interfacing with Contractor's traffic. Traffic controls shall include; signage, barriers, pavement markings and traffic control personnel. Additionally, the contractor shall also be responsible for the safety of the general public.
- 9.4.7 The Contractor shall comply with all applicable safety regulations of Macedonia, including all required record keeping.
- 9.4.8 The Contractor shall provide and maintain in working order during the entire construction period, such fire protective equipment and devices as required by applicable safety standards and as deemed necessary and suitable for any possible class or type of fires. Extinguishers shall be non-freeze type of not less than ten pound (5KG) capacity each.
- 9.4.9 Provide protection against rain, wind, or heat so as to maintain all work, materials, apparatus, and fixtures, incorporated in the work or stored on the site, free from injury or damage. At the end of the day's work, cover all new work likely to be damaged.
- 9.4.10 Contractor shall acquaint themselves with the location of utilities, which may be encountered or be affected by work, and shall be responsible for damage caused by neglect to provide proper precautions or protection. If needed, the contractor shall contact any local authorities or utility companies to locate any utility service, (and pay for their services if needed).
- 9.4.11 Provide, erect and maintain all required barricades, of sufficient size and strength necessary for protection of material storage, as well as to prevent accidents to the public and the workmen at the job site.
- 9.4.12 Watchmen will not be provided by the Government. Contractor will be held responsible for loss or injury to persons or property where work is involved, and shall take such precautionary measures as they may deem necessary to protect their own interest. The contractor shall be responsible for the security of their materials and equipment.
- 9.4.13 Injuries to any person and damage to any property not belonging to the Contractor shall be reported immediately to the COR. Compensation to any third party affected by the construction activities (such as damage to private property) shall be the exclusive responsibility of the contractor.

9.5 CERTIFICATIONS, LICENSES, PERMITS, FEES, ETC.

The Contractor shall be responsible for determining, processing, requesting and paying all fees associated with, and obtaining any required permits for this project including, but not necessarily limited to Macedonian design licenses, Macedonian construction licenses, to permits for on-site and off-site hauling, demolition/disposal, construction activity, utilities, road improvements, communications, etc. The contractor is responsible for acquiring any required certifications (licensing). Coordinate all permit requirements with the Contracting Officer and US Embassy. Submit all completed permit application material, and associated back-up material, required to design and construction, to the Contracting Officer for approval prior to agency submission. Contractor shall be responsible for complying with Macedonian environmental laws, regulations and requirements.

9.6 COORDINATION

All coordination with the local, regional, national authorities shall be the responsibility of the contractor. The Contracting Officer shall be notified of any disputes between agencies or approvals that will affect design approvals, contract execution or contract price.

9.7 SPECIAL SITE CONDITIONS

Confine all operations, equipment, apparatus and storage of materials, to the public property lot. Contractor shall ascertain, observe and comply with all rules and regulations in effect on the project site, including, but not limited to parking and traffic regulations, use of walks, security restrictions, hours of allowable ingress and egress.

9.8 CLEANING

Contractor shall keep premises free of accumulations of surplus materials and rubbish caused by their operations. Combustible rubbish shall be removed from the premises each day. Burning of rubbish on premises is not permitted. In addition, the Contractor shall perform final cleaning to remove all foreign matter, spots, soil and construction dust, so as to put the project in a complete and finished condition ready for acceptance and use intended. Any garbage or debris to stay at the job site for more than one day will be stored in proper approved containers. Stockpiling debris and garbage directly on the ground is not acceptable.

All waste areas and storage areas will be cleaned up to the satisfaction of the NAVFAC Project Manager. All excess materials will be removed from the site and the Contractor will leave the premises free of debris and excess waste materials.

9.9 SPARE PARTS

The contractor will provide spare parts for all new materials to be incorporated to the job site. They shall provide a total of :

- One lighting fixture of each type utilized
- 2 square meters of each floor, wall and ceiling material used
- 2 liters of each type of paint used
- and other typical standard materials that were used in this construction project that may be used for the user of the facility for maintenance purposes.

9.10 WARRANTY AND ACCEPTANCE

The new Male Pavilion shall have the warranty periods required by the Macedonian regulations, which under no circumstance shall be less than one year general warranty and one special 10 year warranty for the roof. The contractor shall provide the warranty letter to the Hospital Director with a copy to the Contracting Officer. The start date for the warranty is the day when all works are accepted by the US Government or when the Municipality starts using the new building, not when the different tasks are completed.

The contractor shall notify the US Government representative at least two months in advance of the proposed final inspection date.

For final acceptance of the facility and in order to authorize Final Payment, the contractor shall provide to the Contracting Officer representative:

- Warranty letter
- 2 books, packages or boxes containing all technical, maintenance and administrative documentation of the contract. One box to remain in the municipality and the other to be sent to the US Embassy in Skopje.
- A list of spare parts provided to the facility signed by the Hospital Director.
- Certificate of occupancy by the Municipality of Demir Hisar or competent Macedonian authority.

<<<END OF PERFORMANCE TECHNICAL SPECIFICATIONS>>>

Annex 1

Annex 1: Guideline to Prepare the Safety Plan / Accident Prevention Plan

Immediately after award, the contractor shall prepare a Safety Plan / Accident Prevention Plan following the guideline and format provided in this Annex. This is in addition to any safety plan of safety documentation that may be required by Macedonian regulations for this type of construction activity. The Plan shall be accepted by the Contracting Officer before works are authorized to start at the job site.

NAVFAC EURAFSWA Contingency Engineering
ACCIDENT PREVENTION PLAN [APP]
Minimum Basic Outline

This first page is NOT to be included in the APP you're going to submit.

This document shall be customized in agreement to the instructions below, pages not applicable shall be removed, and the signed final document shall be submitted in pdf format.

Instructions

A. The contractor is required, at a minimum, to type-in information called for in areas denoted with a **RED arrow** and put a checkmark in the appropriate box or boxes corresponding to that section (*to check a box, double click on it, then select checked in the pop up window*). By signing this plan, the contractor is agreeing to all checked information herein and the checkmark will signify:

- a) Contractor selected one or more items from a list of items
- b) Contractor agrees with the corresponding information,
- c) Contractor agrees to follow the requirement(s) listed herein and those contained in EM 385-1-1 dated 15 September 2008
- d) Contractor agrees to develop written plans based on the requirements listed herein when required by this accident prevention plan.

B. The plan must consist of the following 10 sections:

1. Signature Sheet	6. Training
2. Background Information	7. Safety and Health Inspections
3. Statement of Safety and Health Policy	8. Accident Reporting
4. Responsibilities and Lines of Authority	9. Plans (Programs, Procedures)
5. Subcontractors and Suppliers	10. Risk Management Processes (AHA – Activity Hazard Analysis)

C. In addition to completing each section listed above several sections require certain supporting documents (resumes, certificates of training, organization chart, specific plans (crane lift plan medical support plan, etc.)). The supporting documents and plans must be attached / inserted in the appendices listed below.

Appendix	Title	Required Contents
I	Signature Sheet	As required per Section 1
II	Background Information	Area map
III	Statement of Health Policy.	Copy of signed company Safety Policy if not using generic one
IV	Responsibilities and Lines of Authority	Resume' and NAVFAC online Construction Safety Course certificate for SSHO (http://cst.wbdg.org/start.html); Proof of competency / qualification (Resumes and certificates) for persons listed in Section 4; Organization Chart (with names) for Key Corporate and Project personnel.
V	Subcontractors and Suppliers	As required per Section 5
VI	Training	As required per Section 6
VII	Safety and Health Inspection	As required per Section 7
VIII	Accident Reporting	As required per Section 8
IX	Plans	Area map showing site location; Site layout map; Acknowledgement of applicable plan key elements or NA.
X	Risk Management Processes (AHA – Activity Hazard Analysis)	AHA form for each feature of work

The reviewer of the Accident Prevention Plan shall use this checklist. The preparer of the APP shall use it to verify that all necessary information was included in the APP.

CONTRACTOR:		DATE:		
CONTRACT:		SIGNATURE:		
	A qualified reviewer shall check to assure submitted copies of the following items applicable from EM 385-1-1 Appendix A are included in the APP.	YES	NO	REMARKS
1	SIGNATURE SHEET: Plan Preparer, Approval, Concurrence.			
2	BACKGROUND INFO: Contractor, Contract #, Project Name, Brief Project Description, Contractor Accident Experience (EMR, OSHA) Corp. Trend Analysis, list of activities requiring AHA.			
3	STATEMENT OF SAFETY & HEALTH POLICY.			
4	RESPONSIBILITIES & LINES OF AUTHORITY: Identification of personnel responsible for safety (Corp. & Project Level).			
5	SUBCONTRACTOR & SUPPLIERS: Identification of Subs and Suppliers; means for controlling & coordinating; safety responsibilities.			
6	TRAINING: List subjects in safety indoctrination; mandatory training & certification, emergency response, outline requirements for supv and employee safety meetings.			
7	SAFETY & HEALTH INSPECTIONS: Identify who will conduct inspections, when & how it will be conducted & recorded, deficiency tracking sys and follow-up procedures. Any external inspections/certifications (e.g., Coast Guard etc).			
8	SAFETY & HEALTH EXPECTATIONS, INCENTIVE PROGRAMS AND COMPLIANCE: Company's written safety program goals, objectives, and accident experience goals; description of company's safety incentive program; policy/procedures for non-compliance with safety requirements; written company procedures for holding mgr. /supvs accountable for safety.			
9	ACCIDENT REPORTING: Identify person who completes the following, how, and when; exposure data (m/hrs worked); accident investigations, reports & logs; immediate notification of major accidents.			
10	MEDICAL SUPPORT: Outline on-site medical support and off-site medical arrangements.			
11	PERSONAL PROTECTIVE EQUIPMENT: Outline procedures (who, when, how) for conducting hazard assessments & written certifications for use of personal protective equipment.			
12	PLANS (PROGRAMS, PROCEDURES) REQUIRED BY THE SAFETY MANUAL: a) Hazard Communication; b) emergency response plans; c) layout plans; d) respiratory protection plan; e) health hazard control program; f) lead/asbestos abatement plan; g) abrasive blasting; h) confined space; i.e.) hazardous energy control plan; j) critical lift procedures; k) contingency plan for severe weather; l) access/haul road plan; m) demolition plan (engineering and asbestos surveys); n) compressed air plan; o) formwork and shoring erection and removal plans; p) lift slab plans; q) SHP/SSHP (for HTRW work); r) diving plan; s) alcohol drug abuse prevention plan; t) fall protection plan.			a) k) b) l) c) m) d) n) e) o) f) p) g) q) h) r) i) s) j) t)
13	Information on how the contractor will meet the requirements of the major sections of EM 385-1-1 in the accident prevention plan. Particular attention shall be paid to a) excavations; b) scaffolding; c) medical/first aid requirements; d) sanitation; e) PPE; f) fire prevention; g) machinery and mechanized equipment; h) electrical safety; i) chemical, physical agent, and biological occupational exposure prevention requirements. Detailed site specific hazards and controls shall be provided in the activity hazard analysis for each phase of the operation. A list of anticipated AHAs should be submitted with the APP.			a) b) c) d) e) f) g) h) i.e.)
14	Plans for maintaining job cleanup and safe access			
15	Public safety requirements (e.g., fencing, signs)			

LANT Form 385-APP

ACCIDENT PREVENTION PLAN [APP]

Contract No.:

Project Name:

Location:

1. SIGNATURE SHEET

a. Plan preparer (Safety manager, site safety and health officer (SSHO), or quality control representative will fill this role).

Name:	Title:
Phone no.:	Date:
Signature:	

b. Plan approval (Company owner or Company / corporate officer authorized to obligate the company).

Name:	Title:
Phone no.:	Date:
Signature:	

c. Plan concurrence (e.g., Chief of Operations, Corporate Chief of Safety, Corporate Industrial Hygienist, project manager or superintendent, project safety professional, project QC).

Name:	Title:
Phone no.:	Date:
Signature:	

2. BACKGROUND INFORMATION

Prime Contractor:
Project name:
Contract no.:

a. Project description and location. Prime contractor will provide a brief description of the project to include its location.

b. A map of the project site general location and site plan – Insert in Appendix IX.

c. Prime contractor accident experience. Prime contractor will provide accident experience information, if available, on how many accidents he or she has experienced in the last two years and what type of accidents have occurred.

d. Phases of work / Definable Features of Work. (Examples: Grading, excavation, formwork & shoring, steel erection, etc). NOTE: Section 10 requires an AHA for each of these phases

G1 - Mobilization / General Construction
G2 - Demolition
G3 - Scaffolding / Fall Protection
G4 - Excavation / Trenching
G5 - Electrical
G6 – Cement Work
G7 – Masonry Work
G8 – Confined Spaces & Hazardous Atmosphere
G9 – Plumbing
G10 – Painting
G11 – Steel Structure Erection
G12 – Abrasive Blasting

3. STATEMENT OF SAFETY AND HEALTH POLICY

3. **STATEMENT OF SAFETY AND HEALTH POLICY.** Prime contractor will provide a safe and healthful project site which is free from recognized and anticipated hazards that could cause injury or death. The prime contractor and his subcontractor(s) and supplier(s), and visitor(s), will comply with the policies set forth in EM 385-1-1 'Safety and Health Requirements Manual' dated 15 September 2008. Include a copy of Company's Safety Policy at Appendix III.

4. RESPONSIBILITIES AND LINES OF AUTHORITY

a. **Resumes.** Prime contractor will provide resumes for safety and industrial hygiene personnel if the contract requires these positions. Competent person qualifications for the Site Safety and Health Officer (SSHO) will also be provided. At a minimum, the SSHO will have completed the OSHA 30 hour training and have one year experience. Provide training certificates for all designated competent personnel at Appendix IV.

b. **Accountability for personnel responsible for safety.**

Company owner will:

- Accept responsibility and accountability for the safety program.
- Provide leadership and guidance to supervisory personnel for the acceptance, maintenance, and enforcement of the safety program.
- Provide the necessary resources to maintain a safe and healthful project site.
- Conduct or attend monthly supervisory safety meetings.

Company owner name/phone no.

Project manager (superintendent) will:

- Implement the safety and health program at the project site.
- Conduct periodic project site inspections to verify accident prevention plan (APP) and EM 385-1-1 compliance.
- Review and act upon site safety and health inspection reports.
- Prepare man-hour reports, if applicable.
- Have authority to make spot corrections or stop work for safety purposes.
- Conduct or attend monthly supervisory safety meetings.
- Generate and/or sign ENG Form 3394 when required.

Project manager name/phone no.

Safety manager will:

- Accept administrative and oversight responsibility for the project site safety program.
- Provide technical guidance and support to the project manager, SSHO, supervisors, and foremen on safety and health issues.
- Conduct periodic worksite visits to verify APP and EM 385-1-1 compliance.
- Report observations and findings to the company owner.
- Purchase personal protective equipment (PPE) and safety supplies as necessary.
- Have authority to make spot corrections or stop work for safety purposes.
- Conduct or attend monthly supervisory safety meetings.
- Generate and/or sign ENG Form 3394 when required.

Safety manager name/phone no.

Site safety and health officer will:

- Be on site at all times when work is performed.
- Conduct frequent worksite inspections to verify APP and EM 385-1-1 compliance.
- Conduct or supervise on-site safety training.
- Investigate accidents and incidents as necessary.
- Purchase PPE and safety supplies as necessary.
- Have authority to make spot corrections or stop work for safety purposes.
- Conduct weekly employee safety meetings and attend monthly supervisory safety meetings.
- Generate and/or sign ENG Form 3394 when required.

Site safety and health officer name/phone no.

Supervisors (foremen) will:

- Cover appropriate activity hazard analysis before work begins.
- Conduct periodic project site inspections to verify APP and EM 385-1-1 compliance.
- Assist SSHO with accident and incident investigations.
- Have authority to make spot corrections or stop work for safety purposes.
- Conduct daily safety meetings with specific work crews.
- Conduct weekly employee safety meetings and attend monthly supervisory safety meetings.
- Generate and/or sign ENG Form 3394.

Workers will:

- Wear required PPE for each task.
- Inspect electrical cords daily before use.
- Inspect in-use hand and power tools daily before work begins. Guards will NOT be removed from tools equipped with guards.
- Inspect in-use machinery and mechanized equipment daily before work begins.
- Maintain good housekeeping at the worksite.
- Report accidents and incidents immediately to supervisor.
- Have authority to make spot corrections or stop work for safety purposes.
- Attend employee safety meetings.

c. **Lines of authority.** Prime contractor lines of authority will be as follows: Company owner, project manager, safety manager, SSHO, supervisors, and workers.

i. **Company goal.** Prime contractor will provide a safe and healthful worksite that is free from recognized or anticipated hazards that could cause serious injury or death. We will strive for a zero accident rate and demand zero tolerance for unsafe acts, the workers who perpetrate them, and persons in positions of leadership who condone such actions.

ii. **Incentive program.** Prime contractor will provide their incentive program, if any.

iii. **Check the box if prime contractor will provide his own non-compliance program. If not, prime will put a check mark in paragraph's d and e.**

iv. **Worker non-compliance with safety requirements.** The commission of unsafe acts will not be tolerated at the project site. In the event this type behavior occurs the following disciplinary actions will be taken:

- **First offense.** The offending party will be verbally warned and asked to correct the unsafe act (mentoring will take place if necessary - action will be noted in the daily report).
- **Second offense.** The offending party will be issued a written reprimand (action will be noted in the daily report).
- **Third offense.** The offending party will be removed from the worksite (action will be noted in the daily report).

v. **Supervisor non-compliance with safety requirements.** The condoning of unsafe acts at the worksite will not be tolerated. In the event this type behavior occurs the prime contractor will ensure disciplinary actions commensurate with the violation are taken.

5. SUBCONTRACTORS AND SUPPLIERS

a. Check the box if there aren't any subcontractors or suppliers working the site. If subcontractors will be onsite please identify them below, if not, continue to Section 6.

b. **Identification of subcontractors and suppliers.** Prime contractor will list subcontractors and suppliers, if known, and their phone numbers.

Co:	Ph:

c. **Means for controlling subcontractors and suppliers.** Prime contractor will meet with subcontractors and suppliers before work begins, and periodically thereafter, to coordinate activities and schedules, and to resolve any safety issues that may arise.

d. **Subcontractor and supplier safety responsibilities.** Subcontractors and suppliers will adhere to the requirements of the prime contractor's APP. Prime contractor will have subcontractors and suppliers sign the accident prevention plan signifying their understanding of, and compliance with, its provisions.

SUBCONTRACTOR AND SUPPLIER ACCEPTANCE OF ACCIDENT PREVENTION PLAN

Name:	Date:
Signature:	

Name:	Date:
Signature:	

Name:	Date:
Signature:	

Name:	Date:
Signature:	

Name:	Date:
Signature:	

6. TRAINING

a. **Safety indoctrination subjects.**

- Personal protective equipment requirements for project site.
- Review of accident prevention plan and activity hazard analyses.
- Weekly (employees) and monthly (supervisors) safety meetings.
- Location of portable fire extinguishers.
- Location of first-aid kits.
- Identification of first-aid/CPR qualified personnel (if applicable).
- Location of emergency phone numbers.
- Location of the nearest on-site/off-site medical facility.
- Emergency plans for fires/spills (if applicable).
- Accident notification and reporting procedures.
- Current project site safety issues.

Other safety indoctrination subjects.

b. Training or certifications applicable to the project. (Note: If the activity selected is in **bold** the prime contractor will provide employee names working the job along with their years of 'on-the-job' experience in **Appendix VI**. If workers have attended a specific training class or hold a certification in the job the prime will also annotate this information – See **Appendix VI**.)

- | | |
|---|--|
| <input type="checkbox"/> Abrasive blasting. | <input checked="" type="checkbox"/> Fall protection. |
| <input type="checkbox"/> Blasting. | <input checked="" type="checkbox"/> First-aid/CPR. |
| <input type="checkbox"/> Compressed gas cylinders. | <input checked="" type="checkbox"/> Formwork/shoring. |
| <input checked="" type="checkbox"/> Concrete/masonry. | <input checked="" type="checkbox"/> Hand/power tools. |
| <input type="checkbox"/> Confined space. | <input type="checkbox"/> Hazard communication. |
| <input type="checkbox"/> Cranes/derricks. | <input type="checkbox"/> Hazardous waste. |
| <input type="checkbox"/> Crane hand signals. | <input type="checkbox"/> Lockout/tagout. |
| <input checked="" type="checkbox"/> Electrical. | <input checked="" type="checkbox"/> Machinery/mechanized equipment. |
| <input type="checkbox"/> Elevating work platforms. | <input type="checkbox"/> Motor/all-terrain vehicles. |
| <input type="checkbox"/> Emergency response (fires/spills). | <input type="checkbox"/> Pneumatic tools. |
| <input checked="" type="checkbox"/> Excavation. | <input checked="" type="checkbox"/> Portable fire extinguishers. |
| <input type="checkbox"/> Explosive-actuated tools. | <input type="checkbox"/> Powered industrial trucks. |

- Pressurized equipment/systems.
- Respiratory protection.
- Rigging.
- Rotating work platform.
- Safe lifting techniques.
- Scaffold systems.
- Steel erection.
- Vehicle-mounted elevating platforms.
- Wearing/maintaining PPE.
- Welding/cutting.**

Other training and certifications.

--

c. Weekly employee safety meetings.

- Project manager, safety manager, site safety and health officer, or supervisor will conduct employee safety meetings.
- Prime contractor and subcontractor workers will attend employee safety meetings.

Day and time of employee safety meetings is listed below:

Day:	Time:
Day:	Time:

- Meetings will be documented with facilitator/attendee names, date, and subjects discussed.

d. Monthly supervisory safety meetings.

- Company owner, safety manager; or project manager will conduct supervisory safety meetings.
- Prime contractor and subcontractor supervisors will attend supervisory safety meetings.

Day and time of supervisory safety meeting is listed below:

Day:	Time:
Day:	Time:

- Meetings will be documented with facilitator/attendee names, date, and subjects discussed.

7. SAFETY AND HEALTH INSPECTION

a. Project site safety inspections.

- Company safety manager (periodically).
- Project manager (periodically).
- Supervisors and foremen (periodically).
- Site safety and health officer (SSHO) (frequently).
- Quality control representative (daily).
- Employees will conduct project site inspections of electrical cords, in-use hand and power tools, and in-use machinery/mechanized equipment (daily).

b. Inspector qualifications. Prime contractor will provide inspector qualifications for safety manager, SSHO, and quality control representative.

c. Deficiency log. A deficiency log will be generated after inspections using the criteria listed below. Follow-up inspections will be performed to ensure identified deficiencies have been corrected.

- Date deficiency identified.
- Description of deficiency.
- Name of person responsible for correcting deficiency.
- Projected resolution date.
- Date actually resolved.

d. External inspections. Are external inspections or certifications required? Yes No

If yes please explain.

8. ACCIDENT REPORTING

- a. **Exposure data.** Man-hours worked will be reported to NAVFAC EURAFSWA Project Manager by the 25th of every month using the “Contractor Monthly Safety Self- Evaluation Form”(must insert in **Appendix VIII**).
- b. **Accident notification.** Prime contractor will report accidents and incidents as soon as they happen to the contracting officer’s representative (COR). The COR, in turn, will notify the Safety Office according to the notification information below. For accidents and incidents that require immediate notification, the prime contractor will seal-off the site and wait for the NAVFAC Safety investigation team.

Immediate notification (telephonically):

- Fatality.
- Permanent total disability.
- Permanent partial disability.
- Three or more persons admitted to a hospital.
- Property damage of \$200,000 damage or more.

24-hour notification (telephonically and/or email):

- Lost time (**Note:** Lost time is defined as any loss of time away from work beyond the day or shift on which it occurred).
- Property damage not less than \$2,000 but no greater than \$200,000.
- Treatment of medical injuries not resulting in lost time.

- c. **Accident recording.** Prime contractor will coordinate with the COR on forwarding the appropriate documents to the NAVFAC Safety Office.

Reportable accident and incident requirements: All accidents and incidents to include occupational injuries and illnesses that result in medical treatment with no lost time, and property damage of less than \$2,000, will be documented in an email and sent to the NAVFAC Safety Office within 24 hours.

Recordable accident and incident requirements: All accidents and incidents to include occupational injuries and illnesses that result in lost time (measured in days) or property damage of \$2,000 or more will be documented on ENG Form 3394 ‘U.S. Army Corps of Engineers Accident Investigation Report’ dated March 1999 and submitted to the NAVFAC Safety Office within five (5) days of the occurrence.

9. PLANS (PROGRAMS, PROCEDURES)

A. LAYOUT PLANS – MUST INSERT IN APPENDIX IX.

B. EMERGENCY RESPONSE PLANS – SEE APPENDIX IX.

C. MEDICAL SUPPORT.

a. General requirements.

- An effective means of communication (hard-wired, cellular, or two-way radio and tested in the area of use for functionality) with emergency response source access will be provided along with transportation for injured workers.
- Telephone numbers of medical facilities, physicians, and ambulances will be conspicuously posted (at a minimum these numbers will be posted near project-office telephones).
- A map showing the best route to the nearest medical facility will be conspicuously posted.

Medical Facility Name:

Address:

Phone Number(s):

b. Type of medical support:

- Less than 100 persons employed on any one shift.** On sites with less than 100 workers, and where neither a first-aid station nor infirmary is available, prime contractor will provided a first-aid kit for every 25 persons. These kits will have latex gloves and a CPR shield.

Location of first-aid kits:

--

- Trained first-aid/CPR employees.** Prime contractor will have at least two employees on each shift trained to administer first-aid/CPR when a medical facility or physician is not accessible within five minutes of an injury to a group of two or more employees. Provide training certificates or copy of certification card.

Employee Name:

Certification expiration date:

Employee Name:

Certification expiration date:

- More than 99 but less than 300 persons employed on any one shift.** On sites with more than 99 but less than 300 workers the prime contractor will establish and equip, as directed by a licensed physician, a first-aid station. Identification signs and directional markers will be used to denote the station's location. Emergency lighting will be provided and a first-aid attendant will be on duty at all hours when work is in progress.

300 or more persons employed on any one shift. On sites with 300 or more workers the prime contractor will establish and equip, as directed by a licensed physician, an infirmary. Identification signs and directional markers will be used to denote the infirmary's location and emergency lighting will be provided.

Infirmaries will provide reasonably quiet conditions with some privacy, lighting, climate control, adequate toilet facilities, hot and cold water, drainage, and electrical outlets. Walls and ceilings will be finished with two coats of white paint, windows and doors screened, and the floors made of impervious construction.

A properly-equipped emergency vehicle, helicopter, or mobile first-aid unit will be provided during work hours (the emergency vehicle will not be used for any other purpose). A registered nurse, licensed physician's assistant, certified emergency medical technician, or a licensed practical nurse (approval by a licensed physician) will be assigned on a full-time basis to each work site.

D. PERSONAL PROTECTIVE EQUIPMENT (PPE).

a. General Requirements.

Prime contractor will conduct hazard assessments to find out the type(s) of PPE required.

Prime contractor will ensure workers know how to put on, adjust, wear, remove, and use PPE. PPE will be inspected before each use, maintained in a serviceable and sanitary condition, and stored so the integrity of the equipment is protected. This training will be documented with the name of the facilitator/attendees, date, and subjects taught.

Damaged and defective equipment will not be used but rather marked 'out-of-service' and removed from the project site.

b. PPE used on the project site.

- Minimum required clothing.
- Hard hat.
- Safety glasses/goggles.
- Face shield.
- Ear plugs/muffs.
- Work gloves.
- Welding gloves.
- Steel-toed/hard-soled shoes.
- Welding helmet.

- Welding goggles.
- Welding hand-held shields.
- Full-body harness w/lanyard(s).
- Reflective vest.
- Dust mask.
- Half-face/full-face respirator.
- Personal floatation device.
- Life ring.
-

Other PPE used on the project site.

E. OTHER PLANS: Must check if “YES” or NA (not applicable) for all listed plans. If you check “YES” then you must complete Appendix IX boxes for that plan or insert your company plan. Sections in parenthesis refer to plan coverage in the 2008 EM 385-1-1.

PLAN NAME	YES	NA	PLAN NAME	YES	NA
Plan for prevention of alcohol and drug abuse (01.C.02)	×		Contingency plan for severe weather (19.A.03);	×	
Site sanitation plan (Section 02)	×		Float Plan (19.F.04);		×
Access and haul road plan (4.B)		×	Site-Specific Fall Protection & Prevention Plan (21.C);	×	
Respiratory protection plan (05.G)		×	Demolition plan (to include engineering survey) (23.A.01);	×	
Health hazard control program (06.A)		×	Excavation/trenching plan (25.A.01);	×	
Hazard communication program (06.B.01)		×	Emergency rescue (tunneling) (26.A.);		×
Lead abatement plan (06.B.05 & specifications);		×	Underground construction fire prevention and protection plan (26.D.01);		×
Asbestos abatement plan (06.B.05 & specifications);		×	Compressed air plan (26.I.01);		×
Safety Program (06.E.03.a);	×		Formwork and shoring erection and removal plans (27.C);	×	
Abrasive blasting (06.H.01);		×	Precast Concrete Plan (27.D);		×
Heat/Cold Stress Monitoring Plan (06.I.02)		×	Lift slab plans (27.E);		×
Crystalline Silica Monitoring Plan (Assessment) (06.M) ;		×	Steel erection plan (27.F.01);		×
Night operations lighting plan (07.A.08);		×	Site Safety and Health Plan for HTRW work (28.B);		×
Fire Prevention Plan (09.A);	×		Blasting Safety Plan (29.A.01);		×
Wild Land Fire Management Plan (09.K);		×	Diving plan (30.A.13);		×
Hazardous energy control plan (12.A.01);		×	Confined space Program (34.A).		×
Critical lift Plan (16.H);		×			

Temporary facilities/layout plan (Section 4.A).

NA.

*****Written Company plan required**

- Trailers and other temporary structures used as field offices, personnel housing, or storage areas will be anchored with rods and cables or by steel straps attached to ground anchors.
- Temporary facility spacing requirements will be in accordance with (IAW) paragraph 09.A.19.
- Temporary power distribution requirements will be IAW paragraph 11.D.01.
- Temporary project fencing will be provided on projects located in areas used by the public.
- Signs warning of construction hazards will be posted on fencing every 300'.
- Temporary structures with an electrical capability will be grounded.
- Temporary work camps will be adequately drained (graded and ditched) and rendered free from depressions where water may settle.
- The area surrounding the structures will be free of debris, garbage, and rubbish.
- Temporary sleeping quarters will be heated, ventilated, lighted, and maintained in a clean and safe condition.

Emergency response plans for fires/spills (Section 01.E.01).

NA.

*****Written Company plan required.**

- Discuss escape procedures and routes.
- Designate critical project site operations and discuss how the operations will be protected.
- Discuss employee accountability procedures following an evacuation.
- Discuss employee roles in emergencies to include responsibilities and equipment used.
- Discuss the location of emergency contact information to include reporting procedures.

Hazard communication plan (Section 06.B.01).

NA.

*****Written Company plan required.**

- A current inventory of project site hazardous chemicals will be prepared.
- Material safety data sheets for hazardous substances will be kept at the project site.
- Containers will be labeled with the type of hazardous substance they contain.
- Workers will be notified about new substances that are brought onto the worksite to include the hazards associated with them.

Respiratory protection plan (Section 05.G.03).

NA.

*****Written Company plan required.**

- Discuss the use of dust masks to protect workers from large particulate matter.
- Discuss the use of half-faced respirators to protect workers from small particulate matter to include fumes, mists, and aerosols.
- Discuss sealing a half-face respirator properly.
- Discuss cleaning a half-faced respirator properly
- Discuss inspecting and storing a half-face respirator properly.

Health hazard and control plan (Section 06.A.02(b)). NA.
An activity hazard analysis (AHA) will be completed for each applicable area.

- Discuss hazardous substances.
- Discuss hot substances (heating devices and melting kettles).
- Discuss harmful plants, animals, and insects.
- Discuss ionizing radiation.
- Discuss the use of lasers.
- Discuss ventilation and exhaust systems.

Abrasive blasting plan (Section 06.H.01(b)). NA.
*****Written Company plan required.**

- Use Regulator to control Air supply.
- Change Filters at the advised frequency.
- Monitor the air supply and ensure adequate supply of air.
- Ensure the Dead Man's switch is in good operating condition.
- Make sure blasting is only done by trained personnel with the proper PPE.
- Barricade the area to prevent unauthorized entry.
 - Turn machine 'Off' prior to moving equipment. Follow 'Lock Out / Tag Out' procedures.
 - Ensure the Dead Man's switch is in good operating condition.
 - Maintain and ensure good housekeeping.
- Wear proper Respiratory PPE.
- Wear proper PPE (Gloves and Tyvek suit). Take breaks and hydrate when high temperatures are encountered while wearing PPE.
- Dispose of blasting residue according to all Environmental regulations.

Confined space plan (Section 34.A.06). NA.
*****Written Company plan required.**

- Discuss responsibilities of attendants, entrants, and entry supervisors.
- Train workers how testing and monitoring equipment is used.
- Discuss the type of ventilating equipment needed to obtain acceptable entry conditions.
- Discuss the type of communication equipment to be used.
- Discuss the PPE to be used when engineering and/or administrative controls fail to protect workers adequately.
- Discuss the lighting equipment to be used.
- Discuss the equipment to be used for entrant ingress and egress.
- Discuss rescue procedures to include required equipment and emergency phone numbers.

Hazardous energy control plan (Section 12.A.12). NA.
*****Written Company plan required.**

- Discuss why the lock out/tag out procedure is being used.
- Communicate and coordinate the lockout/tagout procedure with the workers being affected by the procedure and the government's designated authority.
- Discuss the procedural steps in place for shutting down, isolating, blocking, and securing systems to control the release of hazardous energy to include the person(s) responsible for performing this task.

- Discuss the procedural steps in place for placing, removing, and transferring lockout/tagout devices to include the person(s) responsible for performing this task.
- Discuss the procedural steps in place for placing and removing locks and/or tags to include the person(s) responsible for performing this task.
- Discuss the procedures for testing the effectiveness of isolating hazardous energy to include lockout/tagout.
- Discuss emergency scenarios that could arise during the lockout/tagout procedure to include the actions to be taken for safely responding to an emergency.
- Discuss the procedure for transferring removal authority from one person to another.

Critical lift plan (Section 16.H.02).

NA.

*****Written Company plan required.**

- Designate a crane operator, lift supervisor, and rigger (and state their qualifications).
- Describe ground conditions and outrigger and crawler track requirements.
- Discuss crane position, height of the lift, load radius, and boom angle and length for the entire range of the lift.
- Discuss the size and weight of the load to include any crane and rigging components that add to the weight.
- Discuss the rigging plan to include lift points, hardware requirements, and procedures.
- Discuss coordination of the lift and how individual players will communicate with each other.
- Discuss tandem and tailing-crane lift procedures, if applicable.
- Describe environmental conditions which, when in effect, will stop the lift.

Access and haul roads plan (Section 04.B).

NA.

*****Written Company plan required.**

- Discuss equipment to be used on the road, traffic density, and the hours of operation.
- Discuss road layout and widths, horizontal and vertical curve data, and sight distances.
- Discuss sign and signalperson requirements, road markings, and traffic-control devices.
- Discuss how drainage will be controlled.
- Outline contact between vehicles and the public to include implementing safety controls at each one of these places.
- Discuss the maintenance needed to keep the roads hard, smooth, and as dust-free as possible.

Demolition plan (Section 23.A.01).

NA.

*****Written Company plan required.**

- A demolition plan based on engineering, lead, and asbestos surveys will be prepared.
- Utilities and other service lines will be shut-off, capped, or otherwise controlled outside the building line.
- Service lines will be temporarily relocated and protected if utilities are maintained.
- If hazardous building materials and chemicals, flammable materials, explosives, gases, or other dangerous substances have been used in building construction, pipes, tanks, or other equipment on the property they will be controlled or eliminated before demolition begins.
- Glass fragmentation will be controlled.
- Mechanical equipment will not be used on floors or other working surfaces unless the floors and surfaces are of sufficient strength to support the loads.
- Chute openings will be protected by a guardrail 42" in height. When debris is dropped through floor openings without chutes, the openings and the area onto which the material is dropped will be enclosed with barricades not less than 42" in height and not less than 6' back from the protected edge of the opening above. Signs warning of the fall-material hazard will be posted at each side of the debris opening at each floor.

- No wall section more than 6' in height will stand without lateral bracing unless the wall was designed and constructed to stand without this support and its condition is determined safe enough to be self-supporting.
- Workers will not be allowed in the area directly underneath floor arches when they're being removed. The area will be barricaded to prevent access and signed to warn of the hazard.
- Steel construction will be dismantled column-by-column and tier-by-tier (columns may be in two-story lengths).

Compressed air and gas systems plan (Section 20.B).
No written plan required.

NA.

- Compressors and related equipment will be located so safe access is provided to all parts of the equipment for operation, maintenance, and repairs.
- Air hose, pipes, valves, filters, and other fittings will be pressure-rated by the manufacturer and not exceeded. Defective hose will be removed from service.
- Hose will not be laid over walkways, steps, ladders, and scaffolds to create a tripping hazard.
- Compressed air will not be used to blow dirt from the hands, face, or clothing.
- A speed governor independent of the unloaders will be installed on air compressors except those driven electrical induction or electrical synchronized motors.
- Piping will be equipped with traps or other means for removing liquid from the lines.
- Air receivers will be installed so that all drains, hand holes, and manholes are accessible.

Formwork/shoring (Section 27.C).
*****Written Company plan required.**

NA.

- Formwork, shoring, and bracing will be erected and maintained to safety support all vertical and lateral loads that might be applied until such loads can be supported by the structure.
- Sills will be sound, rigid, and capable of carrying the maximum intended load.
- Base plates, shore heads, extension devices, or adjustment screws will be in firm contact with the sill and form material and, as applicable, will be snug against the posts.
- Diagonal bracing will be provided in vertical and horizontal planes to provide stiffness and to prevent buckling of the individual members.
- Forms and shores (except those on slab or grade and slip forms) will not be removed until the concrete has gained sufficient strength to support its weight and all superimposed loads.

Lift-Slab Operations (Jacking plan) (Section 27.E).
*****Written Company plan required.**

NA.

- Manufacturer's rated capacity will be legibly marked on all jacks and not exceeded.
- Jacks will be designed and installed so they won't continue to lift when overloaded.
- Jacks will have a positive stop to prevent over-travel.
- Base of the jack will be blocked or cribbed. If there's a possibility of slippage a wood block will be placed between the jack's metal cap and the load.
- Maximum number of manually-controlled jacks on one slab will be limited to 14.
- During lifting all point of the slab support will be kept within 1/2" of that needed to maintain the slab in a level position.
- No one will be permitted under the slab during jacking operations.

Personal Fall Protection Program (Section 21.C.01).
*****Written plan required.**

NA.

- Workers will be protected by guardrail, personal fall protection, safety nets, catch platforms, or temporary floors in the following situations: Worker can fall 6' or more; on access ways or work platforms over water, machinery, or dangerous operations; on runways where workers can fall 4' or more; and on all exposed sides of stairways and ladder-floor openings.
- Top rails, mid rails, and toe boards will be able to withstand outward and downward forces of 200, 150, and 50 lbs., respectively.
- Wire rope can be used as a top or mid rail under the following conditions: When the posts are spaced no farther than 8"; deflection of the rope under 200 lbs. of force is less than 3"; and the rope is flagged for visibility. Synthetic and natural-fiber rope will not be used.
- Paneling and screening will be in place from the mid rail to the toe board when material is piled higher than the toe board.
- Personal fall protection will consist of a full-body harness (not chest-wait units or body belts), lifeline, and anchorage point.
- Two lanyards will be used when vertical movement is required and when a horizontal lifeline is inappropriate.
- Anchorages capable of supporting 5,000 lbs. per worker will be independent of anchorages used to support or suspend platforms. Lifelines will not be attached to guardrails or hoists but rather to the structure.
- Floor holes will be covered completely and securely. If the cover to an open hole is missing the hole will be barricaded with a guardrail. Workers laboring by wall openings 6' or more above a lower level will be protected by a guardrail or personal fall protection.
- Roofers will be protected by the following forms of fall protection: Guardrails; personal fall protection; a warning line 6' from the roof's edge, or a safety-monitoring system.
- Excavations will be guarded when they are 6' or more in depth and not readily seen because of plant growth or other visual barriers.

Steel Erection Plan (Section 27.F).
*****Written Company plan required.**

NA.

- Verify the Weight of the Objects to be picked.
- Inspect slings before each pick. Remove all cut or frayed slings.
- Check winch lines regularly.
- Make sure workers have proper skills and experience.
- Know hand signals; Use Tag Ropes and Pay Attention.
- Use Spud Wrench & Pull Pins.
- Know where steel is supposed to be landed.
- No lifting near energized wires and maintain proper clearances.
- If welding steel, wear Proper Eye Protection for High Energy Light Source as well as to protect from impact.
- Wear proper PPE (Gloves and Eye Protection). Take breaks and hydrate when high temperatures are encountered while wearing PPE.
- Follow erection plan and drawings. Ensure a sequential erection procedure is prepared, which has been approved by the erection engineer.
- Make provisions for positive connections between members of the structure that have been specified to resist imposed lateral and vertical force.

- Reinforcement required for in-service loads and temporary conditions. Ensure temporary guys or bracing are securely anchored
- Steel Members should be clearly marked and labeled.
- Verify the stability of the structure in accordance with the erection engineer's specifications:
 - at the end of each work day
 - when fastenings may be incomplete
 - during strong winds or when strong winds are forecast.

Night operations lighting plan (Section 7.A.08). **NA.**
*****Written Company plan required.**

Site sanitation plan (Section 02.A). **NA.**
No written plan required.

- An adequate supply of drinking water (cool water during hot weather) will be provided.
- Portable drinking-water dispensers will have a tap – water will not be dipped. Dispensers will be clearly marked as “Drinking Water” and will be capable of being closed. Use of a common cup will be prohibited unless sanitized between uses.
- When sanitary sewers are not available porta-johns will be provided.
- Washing facilities will have running water, soap, and an individual means of drying (hand sanitizer will be used when running water is not practical).
- No food or beverage will be stored or consumed in a toilet room or in any area that is exposed to a toxic material.
- An adequate number of waste receptacles will be provided. Receptacles will have covers that fit tightly, be emptied at least daily, and be maintained in a sanitary condition.

Fire Prevention Plan (Section 09.A). **NA.**
*****Written Company plan required.**

- Discuss the major worksite fire hazards to include potential ignition sources.
- Describe the types of fire-suppression systems to be used (portable fire extinguishers, etc.).
- Discuss employee responsibilities for maintaining the fire-prevention equipment and systems.
- Discuss employee responsibilities for controlling fuel-source hazards.
- Discuss housekeeping procedures to include the removal of waste materials.

Excavations (Section 25.A). **NA.**

*****Written Company plan and AHA required for excavations or trenches greater than 5 ft (1.5 m) in depth. For excavations or trenches less than 5 ft (1.5 m) in depth, An AHA is required but plan is optional.**

- Workers will not labor in excavations in which there is accumulated water or where water is accumulating until the water hazard is controlled.
- Shoring will be used for unstable soil or depths greater than 5' unless benching, lay-back, or another acceptable plan can be implemented.
- In excavations less than 20' in depth the maximum slope will be 34 degrees measured from horizontal (1 1/2' horizontal to 1' vertical).
- Excavations will not go below adjacent structures unless they are underpinned or determined safe by a registered professional engineer.
- Excavated material will be placed a minimum of 2' from the excavation's edge.

- Stairs, ramps, or ladders will be provided to workers who are required to enter excavations greater than 4' in depth. This equipment will be located so no more than 25' of lateral travel is required to escape the excavation.
- Ladders will extend 3' past the excavation's edge.
- Personal access ramps will be 4' wide with guardrails while equipment ramps will be 12' wide with curbs of 8" X 8" timbers or equivalent.
- Protection for excavations exposed to the public will meet guardrail requirements while protection against vehicles will be able to withstand the impact forces with traffic.
- Excavations 6' or more in depth, or where workers are routinely exposed to a hazard (impalement or hazardous material), will have a barricade no closer to the edge than 6' with a warning (tape, flags, act.) located 3-4' above the ground.
- Excavations less than 6' in depth will have a barricade no closer than 6"/no farther than 6'.

Scaffolds (Section 21.J.01, 21.J.02 on page 509 and 22.A and 22.B).
No written plan required (included as part of the Fall Protection Plan).

NA.

- Scaffolds will be level and plumb and erected with base plates upon mudsills or other adequate foundation. Rolling scaffolds will have wheels locked and/or outriggers secured in place.
- Work near overhead power lines will not commence until a survey is made to ascertain a safe clearance distance from the lines. Scaffolds will not be erected or used near power lines until the lines are insulated, de-energized, or rendered safe.
- Scaffolds and their components will be capable of supporting four times the maximum anticipated load. If a scaffold's height is more than four times the minimum base dimension (to include the width added by outriggers) it will be secured to the wall or structure.
- Guardrails will be installed on open sides and ends.
- Platforms will be a minimum of 18" in width and extend over their end supports by at least 6" but no more than 12", unless cleated or restrained by hooks or equivalent means. Platforms will overlap over supports by a minimum of 12" unless nailed together or restrained from movement.
- Platform area will be fully-planked with no greater than 1" gaps between adjacent platforms, and platforms and uprights.
- Scaffold access will be from ladders (bottom rung no greater than 24" in height), stair towers, ramps, and walkways but not from cross-braces.
- If a worker can fall 6' or more to a lower level they will be protected by a guardrail or a full-body harness with lifeline and anchorage point.

Machinery/mechanized equipment (Section 18.G).
No written plan required.

NA.

- Before machinery and mechanized equipment is placed into service it will be inspected and certified as safe by a competent person.
- Front-end loaders, bulldozers, backhoes, cranes, and similar equipment will have at least one dry chemical or CO2 portable fire extinguisher on-board with a minimum rating of 5-B:C.
- Self-propelled construction equipment will have a reverse signal alarm.
- Belts, gears, chains, shafts, pulleys, drums, and other rotating and moving equipment parts will be guarded when exposed to contact by persons or when they otherwise create a hazard.
- Crane will operate at least 10' away from overhead power lines.
- An operating manual, log book, load chart, and document detailing operating limits in windy or cold weather conditions will be in the cab when the crane is operating.

- Crane will be within one degree of level and outriggers fully-extended when in use. Wheels will be off the ground at every setting.
- Crane outrigger floats will be securely attached. Float blocking will be of sufficient size and stability to support the total area. Blocking will not be performed under the outrigger beams.
- Crane's rear swing radius will be barricaded.
- Riding on or standing under loads is prohibited.

Electrical (Section 11).
No written plan required.

NA.

- Electrical work shall be performed by Qualified Personnel with verifiable credentials.
- An AHA and written work procedures must be prepared for unusual or complicated work activities or any activity identified by the Qualified Person.
- Work activity adjacent to energized overhead power lines will not be initiated until a survey has been made to ascertain the safe clearance distance from the lines.
- Whenever possible, all circuits and equipment will be de-energized before work is started and personnel protected by lockout/tagout and clearance procedures, and grounding.
- Live parts of wiring or equipment will be guarded.
- Transformer banks and high-voltage equipment will be protected against unauthorized access and those entrances not under constant observation will be kept locked. Metallic enclosures will be grounded and signs warning of high voltage and prohibiting unauthorized entrance posted.
- Flexible cords will be inspected by the user daily. Cord sets used on construction sites or in damp locations will contain an equipment ground wire and have a plug attached.
- Flexible cords will be protected from damage caused by vehicles, foot traffic, sharp corners, and pinching. Cords passing through holes will be protected by suitable means.
- Flexible cords will only be used in continuous lengths. Cords No. 12 or larger may be used with a splice if the splice is made by a qualified electrician, the insulation is equal to the cord being spliced, and the wire connections are soldered. No wire nuts will be used.
- Flexible cords and cables will not be secured by staples or hung from nails or bare wire.
- Enclosures containing over-current protective devices will be provided with lockable, close-fitting doors. Circuit-breakers, switches, fuse panels, and motor controllers located out-of-doors or in wet locations will be contained in weatherproof enclosures or cabinets. When receptacles are used in wet locations they will be contained in a weatherproof enclosure the integrity of which is not affected when a plug is inserted.
- All electrical circuits will be grounded.
- Portable and semi-portable electrical tools and equipment will be grounded by a multi-conductor cord having a polarized plug with a grounding conductor. Double-insulated tools do not have to be grounded.
- Grounding rods with pipe electrodes will be used in 8' lengths and driven to full depth.
- Temporary lights will not be suspended by their electric wire unless designed for suspension.
- Bulbs attached to temporary lighting strings and extension cords will be protected by guards. Empty light sockets (broken bulbs, etc.) will be immediately filled.
- All receptacle outlets that provide temporary electrical power during construction or demolition shall have GFCI protection.

10. RISK MANAGEMENT PROCESSES (AHA – ACTIVITY HAZARD ANALYSIS)

Instructions

1. List each definable feature of work / phase of work in the table below. NOTE: Definable feature of work / phase of work should be same as listed in Section 2.d. of this APP)
2. For each listed phase/feature complete an Activity Hazard Analysis form (See Figure 1-2 page 10 of EM 385-1-1) and insert into Appendix X.

ID No.	Feature of work / phase of work
1	G1 - Mobilization / General Construction
2	G2 - Demolition
3	G3 - Scaffolding / Fall Protection
4	G4 - Excavation / Trenching
5	G5 - Electrical
6	G6 – Cement Work
7	G7 – Masonry Work
8	G8 – Confined Spaces & Hazardous Atmosphere
9	G9 – Plumbing
10	G10 – Painting
11	G11 – Steel Structure Erection
12	G12 – Abrasive Blasting

APPENDIX I.

SIGNATURE SHEET

**(Reserved if more space is needed other than
Section 1)**

APPENDIX II.

BACKGROUND INFORMATION

Required Enclosures:

Optional:

Copy of project description from SOW, etc.

APPENDIX III.

STATEMENT OF SAFETY AND HEALTH POLICY

Required Enclosures:

- 1. Copy of signed company statement of Safety and Health Policy (if not using generic option in Section 3).**
- 2. The Contractor's written safety program goals, objectives, and accident experience goals for this contract (if not using generic option in Sections 2 and 3).**

Optional:

APPENDIX IV.

RESPONSIBILITIES AND LINES OF AUTHORITY

Required Enclosures:

- 1. Contractor's Resume and "USACE 30 hour Construction Safety Course certificate for SSHO" or equivalent certificate issued and acknowledged by local authorities.**
- 2. Proof of competency / qualification (Resumes and certificates) for the other persons listed in Section 4.**
- 3. Organization Chart (with names) for Key Corporate and Project personnel.**
- 4. Corporate/Company accountability policies and procedures (if not using generic option).**

Optional:

APPENDIX V.

SUBCONTRACTORS AND SUPPLIERS

Required Enclosures:

Optional:

Copies of Subcontractor Safety policies and procedures

APPENDIX VI.

TRAINING

Required Enclosures:

Company Safety and Occupational Health (SOH) Training policies, procedures, and plans (if not using generic option in Section 6).

Optional:

Company SOH training documents – such as training logs, certificates, etc.

SPECIFIC WORKER TRAINING

Abrasive blasting.

Name:	Training:
Name:	Training:
Name:	Training:

Blasting.

Name:	Training:
Name:	Training:
Name:	Training:

Confined space.

Name:	Training:
Name:	Training:
Name:	Training:

Cranes/derricks.

Name:	Training:
Name:	Training:
Name:	Training:

Electrical.

Name:	Training:
Name:	Training:
Name:	Training:

Explosive-actuated tools.

Name:	Training:
Name:	Training:
Name:	Training:

First-aid/CPR.

Name:	Training:
Name:	Training:
Name:	Training:

Lockout/tagout.

Name:	Training:
Name:	Training:
Name:	Training:

Machinery/mechanized equipment.

Name:	Training:
Name:	Training:
Name:	Training:

Scaffolding.

Name:	Training:
Name:	Training:
Name:	Training:

Welding/cutting.

Name:	Training:
Name:	Training:
Name:	Training:

APPENDIX VII.

SAFETY AND HEALTH INSPECTION

Required Enclosures:

- 1. Company safety and health inspection policies, procedures, and forms. (if not using generic option Section 7).**
- 2. Documents supporting Section 7 requirements.**

Optional:

APPENDIX VIII.

ACCIDENT REPORTING

Required Enclosures:

- 1. Company accident reporting policies, procedures, and forms. (if not using generic option in Section 8).**
- 2. Documents supporting Section 8 requirements.**

Optional:

APPENDIX IX.

PLANS

Required Enclosures:

- 1. Area map showing site location.**
- 2. Site layout map also showing site lay down areas, sanitation facilities, on-site medical support location (e.g. 1st Aid Kit), emergency telephone location and numbers.**
- 3. Acknowledgement of key provisions of all required plans – or copies of company SOH policies, procedures, or plans related to requirements.**

Optional:

APPENDIX X.

RISK MANAGEMENT PROCESSES (AHA – ACTIVITY HAZARD ANALYSIS)

Required Enclosures:

- 1. One completed AHA form for each phase of work / feature of work. Refer to AHA template and include the completed forms in Appendix X.**

Optional:

Activity Hazard Analysis Template

How to use this document

**This first page is NOT to be included in the APP you're going to submit.
PLEASE DELETE IT BEFORE PRINTING THE FILLED DOCUMENT**

Directions:

Activity Hazard Analysis [AHA] is required for each definable feature of work (DFOW).

However, many if not all projects involve one or more of the following activities as part of one or more DFOWs.

Work Activities:

- a. Mobilization / General Construction**
- b. Demolition**
- c. Scaffolding / Fall Protection**
- d. Excavation / Trenching**
- e. Electrical**
- f. Cement Work**
- g. Masonry Work**
- h. Confined Spaces**
- i. Plumbing**
- j. Painting**
- k. Steel Structure Erection**
- l. Abrasive Blasting**

*Contractors are authorized to utilize the attached **Generic AHAs** relevant to each of the above said activities in their submittal and then incorporate them into their Accident Prevention Plan (APP). The Contractor is responsible for reviewing this document in its entirety and to make any changes to adapt the document to their construction practices. The Contractor may substitute their own AHAs for submittal review if they have their own APP and AHAs.*

NOTE: *To use the Generic AHA you MUST complete the tables on the following pages (to be part of your submittal) and fill **all** blanks and areas denoted by the **RED** arrows in each generic AHA including checking the "Accepted as part of the APP" box at the bottom of the Generic AHA and completing the APP preparer signature box at the bottom right of each form. If any step or hazard reported in the AHA does not apply to your case it shall be deleted and or modified to meet the needs of the Contractor's operations.*

In addition to the changes mentioned above, update the required information pertaining to Contractor Identity, Contract #, Project Name, Date, ID of Qualified Safety Official, and Signatures.

The AHA shall be submitted in pdf format and incorporated as Appendix X of the ACCIDENT PREVENTION PLAN [APP].

The Generic AHAs are not a substitute for full compliance with EM 385-1-1 requirement but are intended only to highlight selection items.

Activity Hazard Analysis

Contract No.:

Project Name:

Location:

Date:

Contractor's competent / qualified person:

The following Generic AHAs are incorporated into the site specific AHAs.

Generic AHA used in this APP	Yes	No/NA
G1 - Mobilization / General Construction		
G2 - Demolition		
G3 - Scaffolding / Fall Protection		
G4 - Excavation / Trenching		
G5 - Electrical		
G6 - Cement Work		
G7 - Masonry Work		
G8 - Confined Spaces & Hazardous Atmosphere		
G9 - Plumbing		
G10 - Painting		
G11 - Steel Structure Erection		
G12 - Abrasive Blasting		

ACTIVITY HAZARD ANALYSIS		
ID No. G-1	FEATURE OF WORK: GENERIC AHA – Mobilization / General Construction Hazards	
Contract No.	Project:	Location:
Date:	Activity:	Estimated Start Date:
PRINCIPAL STEPS	POTENTIAL SAFETY / HEALTH HAZARDS	RECOMMENDED CONTROLS
General Safety Requirements during mobilization and in general construction projects.	<ol style="list-style-type: none"> 1. Exposure to Cold or Hot Weather 2. Dehydration 3. Illnesses from improper sanitation 4. Injury from use of hand and power tools 5. Slip, Trip, Fall hazards 6. Back, shoulder, and other ergonomic injuries 7. Struck by / Caught between hazards from heavy equipment operations. 8. Injury from mines and unexploded ordnance. 	<ol style="list-style-type: none"> 1a. Minimum Personal Protective Equipment Dress: <ul style="list-style-type: none"> Long Pants Shirts with Sleeves Hardhat Covered Shoes (Steel Toe Preferred) Safety Glasses (Potential Eye Hazard Areas) Reflective Safety Vest if working around heavy equipment or on/near roadways. 1b. Weather: <ul style="list-style-type: none"> Wear appropriate clothing for hot or cold weather. Sun block Lip balm 2. Dehydration: <ul style="list-style-type: none"> Drink at least ½ liter of water an hour. Refer to Company quick sheet, SOPs, plan, etc. for specific details on heat stress signs and symptoms. 3. Provide approved potable water, toilet and hand washing facilities; food service, and waste disposal per EM 385-1-1 Section 2. 4a. Use hand and power tools only if in good working condition and only for intended use. Inspect prior to each use. 4b. Do not use any power tool that does not have the proper electrical grounding plug unless it is double insulated. 4c. Provide proper guarding on all power tools – especially abrasive and grinding wheels. 4d. Do not carry electrical power tools by the cord. 4e. Provide all personal protective equipment necessary to control eye, face, head, body, and foot protection for the task. 4f. Comply with other specific requirements of EM 385-1-1 Section 13. 5a. Maintain housekeeping – maintain the work are free from debris such as board, blocks, rocks, etc. that might create a tripping hazard. (EM 385-1-1 Sec 14.C.) 5b. Store all materials in a neat orderly manner. Do not stack beyond stable levels. (EM 385-1-1 Sec 14) 5b. Provide adequate lighting for the work area – especially at night or during the day in areas without adequate natural light. (EM 385-1-1 Sec 7.A.) 6a. Use proper lifting techniques for manual material handling. 6b. Limit one man lifts to no more than 25 kg. 7a. All vehicles and heavy equipment must be operated by qualified personnel and in accordance with manufacturer's instructions.

		<p>7b. Inspect all heavy equipment prior to use (EM 385-1-1 Sec 18.A.03)</p> <p>7c. Passengers must be seated and wearing seat belts during movement.</p> <p>7d. Backup alarms or ground guides must be used whenever backing where worker are present In the area.</p> <p>7e. Other provisions of EM 385-1-1 Section 18 must be followed.</p> <p>8a. Verify UXO clearance certificate in on file and to anticipated depth of construction for entire site area including lay-down yard.</p> <p>8b. Train all workers on 3Rs – Recognize, Retreat, Report for anticipated UXO. Use the clearance report to anticipate likely items to be found.</p> <p>8c. Train all workers in standard marking color code: White – safe, Blue – unexploded ordnance, Red – mines.</p> <p>All hazards – Post accident prevention signs, tags, labels, and signals at key points around project site in proximity to the hazard and at project entry of general site hazards. Conduct entry brief for all visitors to the site and provide all required PPE for safe entry.</p>
Ladders	<ul style="list-style-type: none"> • Defective ladders • Falling 	<ol style="list-style-type: none"> 1. Only OSHA approved ladders are to be used. 2. Defective and/or damaged ladders shall be removed from jobsite immediately. 3. Standing on top step of ladder is forbidden. Use of metal ladders around exposed energized electrical wiring is forbidden. 4. Always move the ladder to avoid overreaching. 5. Extension ladders are to be properly tied off at the top and rigidly secure at the bottom: The base of the ladder must be set back a safe distance from vertical approximately ¼ of the working length of the ladder. 6. Face the ladder at all times when ascending or descending. 7. Do not carry any material in your hand while using any ladder. Use Hand line.
EQUIPMENT	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Hand and power tools Heavy Equipment	Hand and power tools inspected prior to use and per manufacturer's specifications. Heavy equipment when brought on site and per EM 385-1-1 Sec 18.	Proper use of hand and power tools Heavy equipment operator training for specific type, make, model of equipment. Specialized training for equipment as required by manufacturer. UXO hazard recognition, retreat, and report for probable site munitions.
Prepared by: <i>(Contractor's competent/qualified person signature)</i>		
<input checked="" type="checkbox"/> - AHA Accepted as part of project Accident Prevention Plan		Signature: Date:

ACTIVITY HAZARD ANALYSIS		
ID No. G-2	FEATURE OF WORK: GENERIC AHA – Demolition	
Contract No.	Project:	Location:
Date:	Activity:	Estimated Start Date:
PRINCIPAL STEPS	POTENTIAL SAFETY / HEALTH HAZARDS	RECOMMENDED CONTROLS
1. Planning	1. Lead or asbestos exposure 2. Unplanned structural failure 3. Unplanned hazards from existing utilities	1. Conduct a lead and asbestos survey of the facility to be demolished prior to the start of work. 2. Evaluate the structural integrity of the building and prepare a demolition plan (See EM 385-1-1 Sec 23.A.01). 3. Identify all electric, gas, water, steam, sewer, and other service lines.
2. Demolition	1. General construction hazards. 2. Lead or asbestos exposure . 3. Unplanned structural failure. 4. Hazards from existing utilities. 5. Hazards from debris removal.	1. Follow mobilization and general construction generic AHA requirements. 2. Conduct lead and asbestos abatement per approved plan. 3a. Follow approved demolition plan for sequencing demolition. 3b. Unless specified otherwise in the demolition plan demolition of floors and exterior walls begin at the top of the structure and proceed downward. 3c. Control hazards from fragmentation of glass. 3d. Do not use mechanical equipment on floors that have not been structurally evaluated to support the imposed load. 3e. Competent person will make continuing inspections to detect hazards from weakened or deteriorating floors, wall, or loosened material. If detected do not work in area until hazard abated by shoring, bracing, or other means. 4. Shutoff, cap, or otherwise control outside the building line all utilities identified in Step 1 – planning. 5a. Manage debris removal IAW EM 385-1-1 Sec 23.B with regards to chutes, 5b. Never allow a vertical wall section more than 6 ft in height to stand without lateral bracing. 5c. Control dust exposure by wetting or other means. If this is not practical then provide respiratory protection to workers. 5d. Mark and manage area around demolition site to control falling debris hazard. 5e. Comply with other provisions of EM 385-1-1 Section 23 relevant to site specific demolition hazards.
EQUIPMENT	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Hand and Power tools. Sledge hammers, wrecking bars, and other demolition specific tools. Mechanical demolition equipment.	Inspect hand and power tools daily and per manufacturer's directions. Daily inspection of mechanical equipment per Sec 18 of EM 385-1-1.	Competent person training for demolition. Qualified operator training for all mechanical equipment.
Prepared by: <i>(Contractor's competent/qualified person signature)</i>		
<input checked="" type="checkbox"/> - AHA Accepted as part of project Accident Prevention Plan		Signature: Date:

ACTIVITY HAZARD ANALYSIS		
ID No. G-3	FEATURE OF WORK: GENERIC AHA – Scaffolding / Fall Protection	
Contract No.	Project:	Location:
Date: 9/11/13	Activity:	Estimated Start Date:
PRINCIPAL STEPS	POTENTIAL SAFETY / HEALTH HAZARDS	RECOMMENDED CONTROLS
1. Set-Up	<ol style="list-style-type: none"> 1. Back Strain from uploading or moving scaffold components. 2. Lacerations on hands 3. Scaffold failure due to damaged scaffolding components. 4. Struck by mechanized equipment. 5. Loss of load. 6. Stuck by suspended loads or material. 7. Electrical Shock 8. Scaffold failure due to improper set-up 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety apply to this activity.</p> <ol style="list-style-type: none"> 1a. Utilize proper lifting techniques. 1b. Size up load before lifting. 1c. Ask for help when lifting heavy items more than 50 lbs. <p>2. Wear leather gloves.</p> <p>3a. INSPECT all scaffolding components defects or damage such as cracks, excessive rust, metal fatigue, unauthorized repairs, bent tubing or frame, etc. Frames Tubing Base Plates Locking Pins Access Ladder Planking (Wood or Metal) Cross Braces</p> <p>3b. REMOVE damaged or defective scaffold components immediately.</p> <p>3c. Attach tag or label “DO NOT USE” on scaffold component.</p> <p>4a. ALWAYS maintain eye contact with operator of equipment.</p> <p>4b. NEVER stand behind (Blind Spots) equipment.</p> <p>4c. NEVER stand near unloading or moving of scaffold components.</p> <p>4d. ONLY qualified operators shall operate equipment.</p> <p>5a. Secure loads from displacement with ropes, cables, chains, etc. before movement.</p> <p>5b. Ensure load to be lifted is secured, balanced, etc.</p> <p>5c. Keep hands, fingers, or other body parts away from pinch points.</p> <p>6a. NEVER stand underneath suspended loads.</p> <p>6b. Use taglines to control loads when elevated.</p> <p>7a. Check above for overhead power lines.</p> <p>7b. NEVER erect scaffolding within 10 ft (3 m) of overhead power lines. Refer to EM 385-1-1, Table 11-1 for Minimum Clearance from Energized Overhead Electrical Lines</p> <p>7c. NEVER string or hang temporary power cords, wires, etc. on metal scaffolding. Consult with Safety Officer.</p> <p>8a. Inspect ground conditions (level and firm).</p> <p>8b. Stable base is necessary for proper scaffold assembly.</p> <p>8c. Scaffold shall be tied into structure when the scaffold height exceeds four times the minimum scaffold base dimension per EM 385-1-1, para 22.B.09</p> <p><i>Develop specific controls to eliminate or reduce each hazard to an</i></p>

		<i>acceptable level of risk.</i>
<p>2. Assembly of Scaffolding</p>	<p>1 Fall from Elevated Heights 2. Scaffold Failure 3. Back Strain 4. Lacerations on hands</p>	<p>1a. 100 percent fall protection required during assembly. 1b. Personnel shall not be exposed to unprotected sides or falls greater than 6 ft (1.8 m). 1c. Scaffolding shall not exceed 14 inches (35.5 cm) from the planking to the face of the building or structure. 1d. Scaffolding more than 14 inches (35.5 cm) from the planking to the face of the building or structure shall be guardrails and/or the use of personal fall protection. 1e. Personnel shall be tied off to a vertical lifeline with a rope grab during assembly of scaffolding. 1f. Vertical lifeline shall be secured to an anchor point of at least 5,000 lbs (2,267.9 kg) per individual.</p> <p>1g. Contact Safety Officer for additional guidance on fall protection requirements.</p> <p>2a. See diagram below and refer EM 385-1-1, Section 22 for specific requirements (i.e., toe boards, guard rails, safe access, etc.) 2b. Scaffolding shall be assembled on mud sills and base plates. 2c. Mud sills shall be at least 2 times the size of the base plates to disperse total weight of scaffolding. 2d. Scaffolding shall be plumb and level. 2e. Working levels shall be fully decked and/or planked. 2f. Planking shall extend over the end supports not less than 6 in (30.4 cm), 2g. Planking shall be secured, supported, or braced to prevent excessive spring or deflection and secured to prevent loosening, tipping, or displacement. Use of tie wire, cleats, etc. are options. 2h. Planking shall overlapped at least 12 inches (30.4 cm) or secured from movement. 2i. Scaffold shall be capable of supporting without failure at least 4 times the maximum anticipated loads. 2j. Scaffolding shall be all required cross, horizontal, or diagonal braces to secure vertical members laterally. 2k. Scaffolding shall be rigid.</p> <p>3a. Utilize proper lifting techniques. 3b. Size up load before lifting. 3c. Ask for help when lifting heavy items more than 50 lbs.</p> <p>4. Wear leather gloves.</p>
<p>3. Use of Scaffolding</p>	<p>Scaffold Failure Falls from Heights Slips, Trips, or Fall</p>	<p>1a. DO NOT overload more than 4 times the maximum load rating. 1b. DO NOT attached hoists or other material lifting devices without Safety Officer approval. 1c. Scaffolding shall be tied into building whenever height of the scaffold exceeds 4 times the minimal base. Refer to EM 385-1-1, para 22.B.09 for additional guidance. 1d. Scaffold usage shall cease during high winds or severe inclement weather conditions.</p> <p>2a. Guardrails shall be used as primary fall protection. Guard rails shall installed IAW EM 385-1-1, para 21.B.02. 2b. Securing of personal fall protection devices to scaffolding is prohibited. 2c. Personnel shall have fall protection whenever above 6 ft (1.8 m). 2d. Climbing of braces or cross bracing is prohibited. 2e. Safe access (ladder) shall be provided. 2f. Personnel shall not stand on mid rails. 2g. Ladders shall extend at least 3 ft (0.9 m) past the work area.</p> <p>3. Walking surfaces on and around scaffolding shall be clear of debris.</p>

4. Disassembling of Scaffolding	1 Fall from Elevated Heights 2. Back Strain 3. Lacerations on hands	1a. 100 percent fall protection required during disassembly. 1b. Personnel shall not be exposed to unprotected sides or falls greater than 6 ft (1.8 m). 1c. Personnel shall be tied off to a vertical lifeline with a rope grab during assembly of scaffolding. 1d. Vertical lifeline shall be secured to an anchor point of at least 5,000 lbs (2,267.9 kg) per individual. 1e. Contact Safety Officer for additional guidance on fall protection requirements. 2a. Utilize proper lifting techniques. 2b. Size up load before lifting. 2c. Ask for help when lifting heavy items more than 50 lbs. 3. Wear leather gloves.
EQUIPMENT	INSPECTION	TRAINING REQUIREMENTS
Scaffold components Hammers Mud sills Full body harness Lanyard Lifeline Fall protection anchor points Float	Inspect scaffold components prior to use Inspect scaffold daily (Use Checklist) Inspect level and plumb of scaffoldings during erection and daily when in use. Daily Housekeeping of work areas and scaffolding	Competent Person qualification Scaffold Assembly Fall Protection Inspection of Work Platforms
Prepared by: <i>(Contractor's competent/qualified person signature)</i>		
<input checked="" type="checkbox"/> - AHA Accepted as part of project Accident Prevention Plan		Signature: Date: 9/11/13

ACTIVITY HAZARD ANALYSIS		
ID No. G-4	FEATURE OF WORK: GENERIC AHA – Excavation / Trenching	
Contract No.	Project:	Location:
Date:	Activity:	Estimated Start Date:
PRINCIPAL STEPS	POTENTIAL SAFETY / HEALTH HAZARDS	RECOMMENDED CONTROLS
1. Prepare excavation / trench work area.	<ol style="list-style-type: none"> 1. Struck by traffic in area. 2. Struck by / caught between heavy equipment. 3. UXO hazard. 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety apply to this activity.</p> <ol style="list-style-type: none"> 1a. Develop a traffic control plan for the work areas to keep traffic back from the planned excavation edge and work area. 1b. Wear proper reflective vest type for traffic. 1c. Use proper class perimeter protection (EM 385-1-1 pgs Q55-56 / Sec 25.B.) 2a. Plan for equipment laydown and operating area in traffic control plan. 2b. Perform initial and routine equipment inspections. 2c. Use ground guides in close proximity areas – no exceptions. 3. Verify UXO clearance certificate against work area location.
2. Open excavation / trench.	<ol style="list-style-type: none"> 1. Struck by/ caught between traffic and heavy equipment. 2. UXO hazard. 3. Contact with buried utility lines (electrical, gas, etc.) 4. Cave in / Collapse. 	<ol style="list-style-type: none"> 1. Same as step 1 and 2 above controls. 2. Same as 3 above – plus regularly inspect dig for signs of buried UXO. 3a. Pre-locate all buried utilities. 3b. Observe for marking / signs of buried utilities during dig – barriers, warning tape, etc. 4a. Prepare excavation plan for all excavations over 5 ft (1.5m) in depth. Optional for excavations less than 5 ft – AHA is acceptable. (EM 385-1-1 Sec 25.A.01) 4b. Identify a Competent person for the planning and work. 4c. Evaluate soil type at all planned excavation depths. 4d. Design a protective system (e.g. Bench, slope, or shore) for the excavation per the soil type and other site conditions. 4e. Remove all overburden from edge of trench at least 2 ft. 4f. Protect the stability of adjacent structures including buildings, roadways, etc. 4g. Protect the excavation from water entry 4h. Do not work in excavations where there is standing water. 4i. Provide safe access to and from the excavation – ramps, stairs, ladders. 4j. When persons will be in or around an excavation, a Competent Person shall inspect the excavation, the adjacent areas, and protective systems daily: before each work shift; throughout the work shifts as dictated by the work being done; after every rainstorm; after other events that could increase hazards, e.g., snowstorm, windstorm, thaw, earthquake, etc.; when fissures, tension cracks, sloughing, undercutting, water seepage, bulging at the bottom or other similar conditions occur; when there is a change in size, location or placement of the spoil pile; and where there is any indication or change in adjacent structures. (EM 385-1-1 Sec 25.A.02)
3. Work in/around excavation/ trench.	<ol style="list-style-type: none"> 1. Cave in / Collapse. 2. Fall from excavation / trench edge. 3. Inability to egress especially in an emergency. 4. Changes in soil conditions / 	<ol style="list-style-type: none"> 1, 2, 3, and 4 – same controls as Step 2 above.

	atmospheric conditions in trench (confined space hazards). 5. Traffic hazards.	
4. Close excavation / trench.	1. Struck by/ caught between heavy equipment. 2. Cave in / Collapse. 3. Traffic hazard.	All controls outlined in steps 1, 2, and 3 above. All excavation hazards exist and must be controlled until the excavation is properly closed..
EQUIPMENT	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Hand shovels and tools Excavation equipment	Tool inspections Equipment Inspections Daily plus excavation inspection	Competent person qualification training (EM 385-1-1 Sec 25.A.02.b) Equipment operator training.
Prepared by: <i>(Contractor's competent/qualified person signature)</i>		
<input checked="" type="checkbox"/> - AHA Accepted as part of project Accident Prevention Plan		Signature: Date:

ACTIVITY HAZARD ANALYSIS		
ID No.	G-5	FEATURE OF WORK: GENERIC AHA – Electrical
Contract No.	Project:	Location:
Date:	Activity:	Estimated Start Date:
PRINCIPAL STEPS	POTENTIAL SAFETY / HEALTH HAZARDS	RECOMMENDED CONTROLS
1. Provide temporary power to the construction project and potentially the building occupants.	1. Falls 2. Electrocutation	NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety apply to this activity. 1a. Provide safe work platform and access to all work areas (see generic AHA G3 – scaffolding/fall protection). 1b. Protect all openings in work surfaces from falls. 1c. Do not use drums or other unstable objects as work platforms. 2a. Use only qualified person, electrical (EM 385-1-1, App Q) to perform all electrical work. 2b. Use only CE or UL approved wiring and equipment. 2c. All work must comply with NEC or CE code requirements. 2d. Insure that before work is begun the circuit is de-energized and free from stored energy. Comply with the specific requirements in EM 385-1-1 (e.g. Lockout/Tagout – Control of Hazardous Energy – Sec 12 and 11.A.02 – Isolation) 2e. Provide temporary power from a properly grounded source through a 10mA GFCI protected weatherproof panel. 2f. Protect all circuits from overload by circuit breakers or other approved overload protection methods. 2g. Maintain ground throughout the temporary power circuit to portable hand tools, and other equipment unless the tool is double insulated and marked as such. 2h. Comply with all other provisions of EM 385-1-1 Section 11 (e.g. 11.E temporary wiring and lighting – sketch of plan, testing, clearance, wet locations, etc.)
2. Remove / de-commission existing wiring and electrical equipment.	1. Falls 2. Electrocutation	All controls listed in Step 1 apply to this step also. 1a. Provide safe work platform and access to all work areas (see generic AHA G3 – scaffolding/fall protection). 1b. Protect all openings in work surfaces from falls. 1c. Do not use drums or other unstable objects as work platforms. 2a. All controls identified above – plus: 2b. Control of Hazardous energy – Lock Out / Tag Out. Due to potential for poor understanding of existing wiring service special care must be used to test all circuits prior to removal / de-commissioning. 2c. Warning: stored energy in capacitors and other electrical equipment can present an electrocution hazard even after it is disconnect from a power supply. Stored energy must be dissipated prior to handling.
3. Install new wiring and electrical equipment	1. Falls 2. Electrocutation	All controls listed in Step 1 apply to this step also. 1a. Provide safe work platform and access to all work areas (see generic AHA G3 – scaffolding/fall protection). 1b. Protect all openings in work surfaces from falls. 1c. Do not use drums or other unstable objects as work platforms. 2a. All controls identified above – plus: 2b. Exercise special care to identify energized temporary electrical wiring from

ACTIVITY HAZARD ANALYSIS		
ID No.	G-6	FEATURE OF WORK: GENERIC AHA – Concrete
Contract No.	Project:	Location:
Date:	Activity:	Estimated Start Date:
PRINCIPAL STEPS	POTENTIAL SAFETY / HEALTH HAZARDS	RECOMMENDED CONTROLS
1. Cut Lumber; Set & Secure Lumber; Drive & Secure; Formwork	<ul style="list-style-type: none"> • Excessive Noise • Cuts/Lacerations • Electrical Shock • Flying Debris • Crush Hazard 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety, AHA G3: Scaffolding and Fall Protection, and AGA G4: Excavation and Trenching apply to this activity.</p> <ol style="list-style-type: none"> 1. Hearing and eye protection will be worn while operating saws. 2. Inspect and test equipment and cords prior to use. 3. All guards must in place and operational, prior to use. 4. Ensure that no overhead hazards in the work area. 5. Tools that are not in use will be unplugged from their power source. 6. Worker using sledge hammer will ensure that his work area is clear of other workers prior to swinging the hammer. 7. Steel toed boots will be worn. 8. Visually inspect formwork for defects before use 9. Stage formwork as close to the work area as possible to minimize the material handling exposure. 10. Wear gloves, hardhats and proper PPE. 11. Use proper lifting methods when handling forms. 12. Use team lifting when handling awkward, bulky or heavy loads. 13. Make sure to shore forms properly and they are inspected by qualified individual.
2. Rebar Installation	<ul style="list-style-type: none"> • Struck By (Hot Metal) • Cuts/Lacerations • Mill scale • Sharp/Sheared Tire Wire Ends • Trips/Falls • Impalement Hazard • Overhead Power Lines 	<p>All controls listed in Step 1 apply to this step also.</p> <ol style="list-style-type: none"> 1. Workers cutting rebar will wear face shields, gloves, hearing protection, and hard hats. 2. Grinder guards must be in place and fully operational prior to use. 3. Lathers will wear safety glasses, gloves, and hard hats. 4. Construction debris will be removed on a daily basis. 5. All rebar ends shall be capped to protect workers from impalement/laceration hazards. 6. If possible, stack rebar in a location that is free from overhead power lines. If this is not possible, rebar will be moved forward and away from the power lines before being lifted. 7. No workers will be working under suspended rebar cages at any time.
3. Placing Concrete	<ul style="list-style-type: none"> • Mix Truck Placement • Struck By/Caught Between • Catch in Cement Mixer • Hand Injuries • Eye Injuries • Concrete Burns 	<p>All controls listed in Steps 1 & 2 apply to this step also.</p> <ol style="list-style-type: none"> 1. Use qualified flagmen to ensure a clear path to the work zone. 2. The mix truck will have an operational back-up alarm. 3. Only the truck's operator will place the chute and run the mixer. 4. Train mixer operator; Keep hands and loose clothing away from moving parts; Use of kill-switch on mixer 5. Wear safety glasses when working with wet concrete. 6. Wear impervious gloves, boots and pants when working with wet concrete. 7. Wash off any excess concrete from your skin as soon as

<p>4. Removing concrete forms.</p>	<ul style="list-style-type: none"> • Slips/Trips/Falls same level • Fall from Elevation • Manual Material Handling • Struck by falling/flying materials 	<p style="text-align: right;">possible.</p> <p>All controls listed in Steps 1, 2 & 3 apply to this step also.</p> <ol style="list-style-type: none"> 1. Visually inspect any tools or equipment to be used in the formwork removal operation for defects or damage before each use. 2. Stage formwork transportation cages as close to the work area as possible to minimize the material handling exposure. 3. Be sure the walking/working areas around the forms and the form cages are free from ruts, holes and accumulation of water. 4. Be sure that the formwork is in the firm grasp of the worker(s) before removing any of the form supports. 5. Safety glasses to be worn at all times when removing the forms due to the flying object exposure. 6. Use proper lifting methods when handling forms. 7. Personal fall arrest systems, PFAS, will be utilized to control fall hazards. 8. PFAS will be utilized whenever the workers are exposed to a fall greater than six feet. 9. Gloves will be worn when handling forms to prevent cuts and scrapes 10. Hardhats and safety glasses will be worn at all times to protect the workers from flying/falling objects. 11. All form removal work is to be performed at the direction of the competent person.
EQUIPMENT	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<p>Power and hand tools; Rebar</p>	<p>Tool and equipment inspections Lock-Out / Tag-Out inspections for stored energy; Inspect hand tools for defects; Inspect PPE for wear or defects; Inspect rebar for sharp edges and impale hazards.</p>	<p>Competent person training and qualification</p>
<p>Prepared by: <i>(Contractor's competent/qualified person signature)</i></p>		
<p><input checked="" type="checkbox"/> - AHA Accepted as part of project Accident Prevention Plan</p>		<p>Signature:</p> <p>Date:</p>

ACTIVITY HAZARD ANALYSIS		
ID No.	G-7	FEATURE OF WORK: GENERIC AHA – Masonry
Contract No.	Project:	Location:
Date:	Activity:	Estimated Start Date:
PRINCIPAL STEPS	POTENTIAL SAFETY / HEALTH HAZARDS	RECOMMENDED CONTROLS
1. Material Handling	<ul style="list-style-type: none"> Back Injuries Crush Injuries Cuts, Bruises and Contusions Eye Injuries 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety, AHA G3: Scaffolding and Fall Protection, AGA G4: Excavation and Trenching and AHA G6: Concrete apply to this activity.</p> <ol style="list-style-type: none"> Train employees in proper lifting techniques with bent knees and back erect. Use equipment such as cable or jacks to lift heavy objects. Ask for help from others. Think before lifting. Proper hand protection shall be worn when handling sheet metal raw goods. Hard hats shall be worn at all times. Eye protection shall be worn.
2. Material Installation and Rebar Installation	<ul style="list-style-type: none"> Crush Injuries / Cuts / Lacerations Mill Scale Sharp/Sheared Tire Wire Ends Trips/Falls Impalement Hazard Overhead Power Lines 	<p>All controls listed in previous steps apply to this step also.</p> <ol style="list-style-type: none"> Workers cutting rebar will wear face shields, gloves, hearing protection, and hard hats. Grinder guards must be in place and fully operational prior to use. Lathers will wear safety glasses, gloves, and hard hats. Construction debris will be removed on a daily basis. All rebar ends shall be capped to protect workers from impalement/laceration hazards. If possible, stack rebar in a location that is free from overhead power lines. If this is not possible, rebar will be moved forward and away from the power lines before being lifted. No workers will be working under suspended materials at any time.
3. Placing Mortar	<ul style="list-style-type: none"> Mix Truck Placement Struck By/Caught Between Catch in Mixer Hand Injuries Eye Injuries Skin Irritation 	<p>All controls listed in previous steps apply to this step also.</p> <ol style="list-style-type: none"> Use qualified flagmen to ensure a clear path to the work zone. The mix truck will have an operational back-up alarm. Only the truck's operator will place the chute and run the mixer. Train mixer operator; Keep hands and loose clothing away from moving parts; Use of kill-switch on mixer Wear safety glasses when working with wet concrete. Wear impervious gloves, boots and pants when working with wet concrete. Wash off any excess mortar from your skin as soon as possible.
EQUIPMENT	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Power and hand tools; Rebar;	Tool and equipment inspections Lock-Out / Tag-Out inspections for stored energy; Inspect hand tools for defects; Inspect PPE for wear or defects; Inspect rebar for sharp edges and impale hazards.	Competent person training and qualification
Prepared by: <i>(Contractor's competent/qualified person signature)</i>		
<input checked="" type="checkbox"/> - AHA Accepted as part of project Accident Prevention Plan		Signature: Date:

ACTIVITY HAZARD ANALYSIS		
ID No. G-8	FEATURE OF WORK: GENERIC AHA – Confined Spaces and Hazardous Atmosphere	
Contract No.	Project:	Location:
Date:	Activity:	Estimated Start Date:
PRINCIPAL STEPS	POTENTIAL SAFETY / HEALTH HAZARDS	RECOMMENDED CONTROLS
Confined Spaces (Examples) 1. Intake Structure 2. Outlet Works structures 3. Structural drainage galleries 4. Interior drainage structures 5. Steam Gage house 6. Septic Tanks	<ul style="list-style-type: none"> • Lack of Oxygen • Flammable or toxic atmosphere • Animals • Insects • Heights and Ladders • Slipping and Tripping potential • Temperature extremes 	NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety, AHA G3: Scaffolding and Fall Protection, AGA G4: Excavation and Trenching and AHA G6: Concrete apply to this activity. 1. Personnel entering confined spaces will be required to have the 4 hour confined space training class prior to entry. 2. Contact the appropriate project office to determine structures classified as confined spaces and the appropriate procedures prior to entry. This includes contacting the confined space coordinator and coordinating the confined space entry with him. 3. Where appropriate follow confined space procedures to test the atmosphere for lack of oxygen, flammable or toxic atmosphere. 4. 4. Personnel should be wary of animals and pests lurking in the confined space – particularly outlet works and interior drainage structures. Inspect entrances for signs of animal habitation prior to entry. 5. Personnel should note all areas where the potential for falls may occur and ensure the fall protection appears sound before approaching the area. 6. Personnel should inspect ladders prior to their use and use safety equipment when needed. 7. Personnel should inspect areas where debris or slick surfaces are present to prevent tripping and slipping accidents. Appropriate footwear is needed to provide adequate traction. 8. Safety shoes are required for all personnel entering confined spaces to provide both adequate foot wear with traction and to protect the feet 9. Temperatures in confined spaces may vary dramatically from the outside atmosphere, personnel must dress accordingly for these extremes including both cold. 10. Equipment (combustion engine) shall not be allowed to idle near confined spaces. The contractor shall monitor equipment emissions utilizing appropriate data logging capable instruments. The instrument(s) shall be utilized by a qualified person who has been trained to utilize such instrument(s).
EQUIPMENT	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Power and hand tools; Rebar;	Tool and equipment inspections Lock-Out / Tag-Out inspections for stored energy; Inspect hand tools for defects; Inspect PPE for wear or defects; Inspect rebar for sharp edges and impale hazards.	Competent person training and qualification
Prepared by: <i>(Contractor's competent/qualified person signature)</i>		
<input checked="" type="checkbox"/> - AHA Accepted as part of project Accident Prevention Plan		Signature: Date:

ACTIVITY HAZARD ANALYSIS		
ID No. G-9	FEATURE OF WORK: GENERIC AHA – Plumbing	
Contract No.	Project:	Location:
Date:	Activity:	Estimated Start Date:
PRINCIPAL STEPS	POTENTIAL SAFETY / HEALTH HAZARDS	RECOMMENDED CONTROLS
<p>Preparing area for plumbing pipes and plumbing fixtures.</p> <p>Installation of plumbing pipes and plumbing fixtures.</p>	<ul style="list-style-type: none"> • Injury from use of hand and power tools • Slip, Trip, Fall hazards • Eye Injuries 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety, AHA G3: Scaffolding and Fall Protection, AGA G4: Excavation and Trenching apply to this activity.</p> <ol style="list-style-type: none"> 1. Employees shall be directed to ensure that there is proper lighting in the work area. 2. Housekeeping in the area will need to be kept clean so that there are no tripping hazards created by the debris. 3. All tools and equipment will be inspected for damage and defects before use. 4. Materials to be utilized for this task are to be staged as close as possible to the work area. Carts and other mechanical devices will be used to minimize the manual handling of the materials, tools and equipment 5. Hard hats, safety glasses and hard-soled work boots are required for this and all operations. If power tools are used for the grinding operation, then a face shield will also be provided and it's use will be mandated. 6. Materials will be moved to and from the work area on carts and other mechanical devices to minimize the amount of manual material handling. 7. Workers using ladders, scaffolding or scissor lifts will follow all of the safe use requirements spelled out by the manufacturers and the guidelines from AHA G1: Mobilization and General Construction Safety, AHA G3: Scaffolding and Fall Protection, AGA G4: Excavation and Trenching. 8. Cords and hoses will be moved out of the walking and working areas. When possible, the cords and hoses will be suspended.
Soldering Piping	<ul style="list-style-type: none"> • Burns • Eye Injuries • Fires • Inhalation of Hazardous Vapors 	<ol style="list-style-type: none"> 1. All smelting pots will be set up in well ventilated areas. 2. Respirators will be supplied and used (with training) if required. 3. Contractor will provide a fire extinguisher in the immediate area around the pot. A Fire Watch will be posted. 4. Pots will be located away from water or areas likely to have water present. 5. All tools and equipment use in this operation will be free from water to prevent a boil-over accident. 6. Heavy leather gloves will be required on all workers handling the molten lead. 7. Hard hats, safety glasses and hard-soled work boots are required for this and all operations. If power tools are used for the grinding operation, then a face shield will also be provided and it's use will be mandated 8. Cords and hoses will be moved out of the walking and working areas. When possible, the cords and hoses will be suspended.
EQUIPMENT	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Power and hand tools;	Tool and equipment inspections	Competent person training and qualification

Rebar;	Lock-Out / Tag-Out inspections for stored energy; Inspect hand tools for defects; Inspect PPE for wear or defects; Inspect rebar for sharp edges and impale hazards.	
Prepared by: <i>(Contractor's competent/qualified person signature)</i>		
<input checked="" type="checkbox"/> - AHA Accepted as part of project Accident Prevention Plan		Signature: Date:

ACTIVITY HAZARD ANALYSIS		
ID No.	G-10	FEATURE OF WORK: GENERIC AHA – Painting
Contract No.	Project:	Location:
Date:	Activity:	Estimated Start Date:
PRINCIPAL STEPS	POTENTIAL SAFETY / HEALTH HAZARDS	RECOMMENDED CONTROLS
Compressor and Sprayer Use	<ul style="list-style-type: none"> High Pressure Hazards Inhalation of Fumes and Particles Hazards Eye Injury 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety, AHA G3: Scaffolding and Fall Protection, AGA G4: Excavation and Trenching apply to this activity.</p> <ol style="list-style-type: none"> Lock-Out / Tag-Out Procedures in place prior to using compressor. Proper Spray nozzles used for compressor pressure. Ventilate work area. Inspect compressor lines for any damage. Replace any damaged lines. Wear Respirator with proper filter for paints being used. Wear gloves and Tyvek suit. Take breaks and hydrate when high temperatures are encountered while wearing PPE.
Paint Storage	<ul style="list-style-type: none"> Volatile Organic Fumes Hazard Explosion Hazard 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety, AHA G3: Scaffolding and Fall Protection, AGA G4: Excavation and Trenching apply to this activity.</p> <ol style="list-style-type: none"> Store paints in a properly designed (explosion proof) and well ventilated cabinet. Wear respirator. Wear proper PPE (Gloves and Tyvek suit). Take breaks and hydrate when high temperatures are encountered while wearing PPE. Adequate numbers of the extinguishers must be kept by exits in the storage building and in addition extinguishers kept outside of building. Exits clearly marked and kept free of obstructions. Signs posted to mark 'Flammable Material' and 'No Smoking'.
Paint Mixing and Use	<ul style="list-style-type: none"> Volatile Organic Fumes Hazard Respiratory Hazard Skin Exposure Hazard 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety, AHA G3: Scaffolding and Fall Protection, AGA G4: Excavation and Trenching apply to this activity.</p> <ol style="list-style-type: none"> Wear respirator. Work in well ventilated work area. Wear proper PPE (Gloves and Tyvek suit). Take breaks and hydrate when high temperatures are encountered while wearing PPE. Adequate numbers of the extinguishers must be kept by exits in the storage building and in addition extinguishers kept outside of building. Exits clearly marked and kept free of obstructions. Signs posted to mark 'Flammable Material' and 'No Smoking'.
EQUIPMENT	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Power and hand tools; Rebar;	Tool and equipment inspections Lock-Out / Tag-Out inspections for stored energy; Inspect hand tools for defects; Inspect PPE for wear or defects; Inspect rebar for sharp edges and impale hazards.	Competent person training and qualification
Prepared by: <i>(Contractor's competent/qualified person signature)</i>		Signature:
<input checked="" type="checkbox"/> - AHA Accepted as part of project Accident Prevention Plan		Date:

ACTIVITY HAZARD ANALYSIS		
ID No.	G-11	FEATURE OF WORK: GENERIC AHA – Steel Structure Erection
Contract No.	Project:	Location:
Date:	Activity:	Estimated Start Date:
PRINCIPAL STEPS	POTENTIAL SAFETY / HEALTH HAZARDS	RECOMMENDED CONTROLS
Rigging Steel for Picking	<ul style="list-style-type: none"> Under Rated Slings Cut Slings Damaged Winch Line Unqualified Personnel 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety, AHA G3: Scaffolding and Fall Protection apply to this activity.</p> <ol style="list-style-type: none"> Verify the Weight of the Objects to be picked. Inspect slings before each pick. Remove all cut or frayed slings. Check winch lines regularly. Make sure workers have proper skills and experience.
Picking, Swinging and Guiding Steel Members Drifting and Bolting Steel Members	<ul style="list-style-type: none"> Under sized Crane or Winch Pinch or Crush Injuries Contact with Energized Bus or Wires 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety, AHA G3: Scaffolding and Fall Protection apply to this activity.</p> <ol style="list-style-type: none"> Verify the Weight if the Objects to be lifted. Know hand signals; Use Tag Ropes and Pay Attention. Use Spud Wrench & Pull Pins. Know where steel is supposed to be landed. No lifting near energized wires and maintain proper clearances.
Drilling, Cutting and Welding Galvanized Steel	<ul style="list-style-type: none"> Metal in Eyes or Hand Burns to Eyes 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety, AHA G3: Scaffolding and Fall Protection apply to this activity.</p> <ol style="list-style-type: none"> Wear Proper Eye Protection for High Energy Light Source as well as to protect from impact. Work in well ventilated work area. Wear proper PPE (Gloves and Eye Protection). Take breaks and hydrate when high temperatures are encountered while wearing PPE.
Collapse of Structure due to Member Failure from Temporary Loading during Erection	<ul style="list-style-type: none"> Crush Injuries Impalement Injuries Death 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety, AHA G3: Scaffolding and Fall Protection apply to this activity.</p> <ol style="list-style-type: none"> Follow erection plan and drawings. Ensure a sequential erection procedure is prepared, which has been approved by the erection engineer. Make provisions for positive connections between members of the structure that have been specified to resist imposed lateral and vertical force. Reinforcement required for in-service loads and temporary conditions. Ensure temporary guys or bracing are securely anchored Members should be clearly marked and labeled. Verify the stability of the structure in accordance with the erection engineer's specifications: <ol style="list-style-type: none"> at the end of each work day when fastenings may be incomplete during strong winds or when strong winds are forecast
EQUIPMENT	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS

Power and hand tools; Rebar;	Tool and equipment inspections Lock-Out / Tag-Out inspections for stored energy; Inspect hand tools for defects; Inspect PPE for wear or defects; Inspect rebar for sharp edges and impale hazards.	Competent person training and qualification
Prepared by: <i>(Contractor's competent/qualified person signature)</i>		
<input checked="" type="checkbox"/> - AHA Accepted as part of project Accident Prevention Plan	Signature: Date:	

ACTIVITY HAZARD ANALYSIS		
ID No.	G-12	FEATURE OF WORK: GENERIC AHA – Abrasive Blasting
Contract No.	Project:	Location:
Date:	Activity:	Estimated Start Date:
PRINCIPAL STEPS	POTENTIAL SAFETY / HEALTH HAZARDS	RECOMMENDED CONTROLS
Blasting Operation	<ul style="list-style-type: none"> Insufficient air for breathing Air contaminated. (Breathing problem) Improper supply of air. Ineffective filters Sand blasting on body part / Body injury Locking of dead man's device for intermediate inspection 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety apply to this activity.</p> <ol style="list-style-type: none"> Use Regulator to control supply. Change Filter at the advised frequency. Monitor the air supply and ensure adequate supply of air. Ensure the Dead Man's switch is in good operating condition. Make sure blasting is only done by trained personnel with the proper PPE. Barricade the area to prevent unauthorized entry.
Changing Positions to Blast in New Area	<ul style="list-style-type: none"> Sand blasting on body part (body injury) Trip/fall Machine remain 'ON' Locking of dead man's device. Poor housekeeping 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety apply to this activity.</p> <ol style="list-style-type: none"> Turn machine 'Off' prior to moving equipment. Follow 'Lock Out / Tag Out' procedures. Ensure the Dead Man's switch is in good operating condition. Maintain and ensure good housekeeping.
Hazardous Waste	<ul style="list-style-type: none"> Inhalation of blasted residue Ingestion of blasted residue 	<p>NOTE: All items hazards and controls in generic AHA G1: Mobilization and General Construction Safety apply to this activity.</p> <ol style="list-style-type: none"> Wear proper Respiratory PPE. Wear proper PPE (Gloves and Tyvek suit). Take breaks and hydrate when high temperatures are encountered while wearing PPE. Dispose of blasting residue according to all Environmental regulations.
EQUIPMENT	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Power and hand tools; Rebar;	Tool and equipment inspections Lock-Out / Tag-Out inspections for stored energy; Inspect hand tools for defects; Inspect PPE for wear or defects; Inspect rebar for sharp edges and impale hazards.	Competent training and qualification
Prepared by: <i>(Contractor's competent/qualified person signature)</i>		
<input checked="" type="checkbox"/> - AHA Accepted as part of project Accident Prevention Plan		Signature:
		Date:

ANNEX 2

Annex 2: Guideline to Prepare the Quality Control Plan

Immediately after award, the contractor shall prepare a Quality Control Plan following the guideline and format provided in this Annex 2. This is in addition to any quality control plan or documentation that may be required by Macedonian regulations for this type of construction activity. The Plan shall be accepted by the Contracting Officer before works are authorized to start at the job site.

[Project Title]
[Contract Number]

QUALITY CONTROL PLAN

The purpose of this paper is to illustrate how our site organization, our staff and our procedures will help ensure the quality required by the technical requirements.

SITE ADMINISTRATION

[Describe how to carry out all formalities required by local law to open and run the worksite]

SITE FACILITIES

[Describe how the specific worksite is going to be delimited and organized]

STAFF SITE

[List the roles and relevant names of the staff to be employed on the worksite; provide a short description if necessary]

CONTROL ORGANIZATION

[Detail how it will work; who does what]

TESTING

[Describe how tests of soil and concrete will be conducted]

CHECKING THE QUALITY OF THE WORKS

[Describe]

CONTROL OF MATERIALS

[Describe]

GENERAL CONSTRUCTION CONTROL ACTIVITIES

[Describe]

SAFETY ON SITE

[Describe]

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