

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE S	PAGE OF PAGES 1 14
2. AMENDMENT/MODIFICATION NO. 0001	3. EFFECTIVE DATE 10-Aug-2012	4. REQUISITION/PURCHASE REQ. NO. WF7LKT21140604		5. PROJECT NO.(If applicable)
6. ISSUED BY REGIONAL CONTRACTING OFFICE (RCO) BOGOTA U.S. EMBASSY-BOGOTA USMILGRP UNIT 5130 APO AA 34038-5130	CODE W913FT	7. ADMINISTERED BY (If other than item 6) See Item 6		
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		X	9A. AMENDMENT OF SOLICITATION NO. W913FT-12-R-0036	
		X	9B. DATED (SEE ITEM 11) 03-Aug-2012	
			10A. MOD. OF CONTRACT/ORDER NO.	
			10B. DATED (SEE ITEM 13)	
CODE	FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS				
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.				
12. ACCOUNTING AND APPROPRIATION DATA (If required)				
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.				
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.				
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).				
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:				
D. OTHER (Specify type of modification and authority)				
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.				
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) The purpose of this amendment is to add changes to the SOW and change the terminology from "school" to dormitory. Change the drawings and price list. All other terms and conditions remain unchanged.				
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.				
15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)		
		TEL:	EMAIL:	
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)		16C. DATE SIGNED 10-Aug-2012

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION 00010 - SOLICITATION CONTRACT FORM

CLIN 0001

The CLIN description has changed from Construct School to Construct Dormitory.

The CLIN extended description has changed from THIS CONSISTS OF ALL RESOURCES NECESSARY FOR THE CONTRACTOR TO CONSTRUCT THE 2ND FLOOR OF THE COLOMBIAN ARMY AVIATION BUILDING IN BOGOTA, COLOMBIA IN ACCORDANCE WITH THE STATEMENT OF WORK, DRAWINGS, AND SPECIFICATIONS. to THIS CONSISTS OF ALL RESOURCES NECESSARY FOR THE CONTRACTOR TO CONSTRUCT A DORMITORY IN HACARI, COLOMBIA IN ACCORDANCE WITH THE STATEMENT OF WORK, DRAWINGS, AND SPECIFICATIONS..

SECTION 00100 - BIDDING SCHEDULE/INSTRUCTIONS TO BIDDERS

The following have been modified:

STATEMENT OF WORKSTATEMENT OF WORK (SOW)DORMITORY CONSTRUCTION, HACARÍ, NORTE DE SANTANDER

1.0 SCOPE OF WORK: The Contractor shall build a dormitory area and bathroom facility in the “Hogar Juvenil Campesino” of the “Colegio Integral San Miguel” in the municipality of Hacarí, Norte de Santander, Colombia (8°19'18.00"N, 73° 8'41.11"W). The Contractor shall provide drawings, transport and installation of all materials, labor, and equipment needed to build a dormitory with an area of approximately 190 square meters (m2), and a bathroom facility with an area of approximately 52 square meters (m2) in accordance with (IAW) the Statement of Work (SOW). The scope of work includes:

- Localization and lay out the project at the project site.
- Excavation of footers, compacted filling, proper concrete mix for the footings, footing beams, aerial beams, columns, lintels, slabs and sidewalks.
- Provide and install hydro-sanitary networks, drainage system and waste water treatment system.
- Provide and install electrical system and accessories.
- Provide and install masonry blocks for internal walls.
- Plaster and paint walls, install floor veneer, windows, security bars and doors.
- Provide and install metallic structure and roof materials, commemorative plate
- Provide plaza with three (3) flag poles for U.S., Colombian, and municipal flags

1.1 Required Period of Performance (POP). Performance time to complete the project shall be **150 calendar days or less** from the date the signed award is received by the contractor.

1.2 Recognized Holidays. The Contractor shall not schedule work at any of the worksite locations on Colombian holidays or the designated day of holiday observance. The Contractor shall notify the Project Engineer/Contracting Officer's Representative (PE/COR) and installation point of contact if contractor personnel are planning to work on any holiday at the worksite.

Colombian Holidays

January 12	Feast of the Epiphany
March 19	Saint Joseph's Day
April 5	Holy Thursday
April 6	Holy Friday
May 9	Work Day
May 21	The Ascension Day
June 11	Corpus Christi
June 18	Feast of the Sacred Heart
July 2	Saint Peter and Saint Paul
July 20	Colombia Independence Day
August 7	Boyacá Battle
August 20	Feast of the Assumption
October 15	Race Day
November 5	All Saints Day
December 8	Immaculate Conception Day
December 25	Christmas Day

1.3 Calendar Days. References in the Statement of Work to “days” refer to calendar days, not working days, unless otherwise specified.

1.4 Security Considerations. Contractor and workforce will take appropriate security measures to protect Government critical and sensitive information. Contractor shall not disclose specifics of services to unauthorized personnel. Contractor will provide sub-contractors only required specifics to accomplish services and/or products delivery. All work related paper products and removable storage material that is received, generated, or stored during the contract will be destroyed completely when no longer needed to preclude recognition of information. Installation access badges will not be worn outside Government facility where visible to the general public. The Contractor and workforce personnel shall not sketch or take photos of Government facilities or activities, unless related to service to be provided. The Contractor shall not post or discuss government facility activities on any unauthorized public access media. Contractor will immediately report suspicious activities to security personnel.

1.5 APPLICABLE CODES & STANDARDS. The design and construction shall be in accordance with established construction practices, and the latest revision/edition of the following referenced codes and standards, where applicable. UFC 1-300-09N, Design Procedures, provides design guidance and contains references to other UFC’s and codes that are to be used for this contract. UFC 1-200-1, General Building Requirements, is the building code guide and contains references to other UFC’s and codes that are to be used in this contract.

- American National Standards Institute Standards (ANSI)
- American Society of Testing and Materials (ASTM)
- National Electrical Manufacturers Association (NEMA)
- International Building Code (IBC)
- Electronic Industries Alliance (EIA)
- Federal, State, County, and local environmental regulations.
- National Fire Protection Association (NFPA)
- IEEEEC2, National Electrical Safety Code
- National electrical Code 2011 (NEC)

Where discrepancies in the referenced standards and the contract requirements occur, the more stringent requirements shall govern. The word “should” shall be interpreted as a requirement. If this occurs, the contractor shall immediately notify the PE/COR.

1.6 Project Schedule. Offerors shall save the project schedule utilizing the Critical Path Method (CPM), Program Evaluation & Review Technique (PERT) or Gantt chart. The contractor shall include an Activity Hazard Analysis (applicable to all types of work to be performed) that is to be held in advance of any special features of work such as site preparation. The project schedule shall validate expected completion dates, execution time of each phase, mid-

point completion of project and monetary values for progress invoicing. There shall be periodic worksite inspections by the KO or a representative throughout the project Period of Performance (POP). The POP includes final cleanup. Any changes to the original schedule used for award may result in an equitable adjustment for consideration to the Government for breach of contract.

1.7 Contractor Records/Progress Reports. The Contractor shall certify all completed work on a bi-weekly basis and provide bi-weekly progress report to the KO and PE/COR. The reports are due on Tuesday, before 1300 hrs.

1.8 Project Managers/Superintendents.

1.8.1 The Contractor shall provide a Project Manager (PM) who shall be responsible for the performance of all work. The name of this person and an alternate(s) shall be designated in writing to the KO at least ten (10) days prior to contract performance. The Contractor shall not replace, substitute, or remove key personnel without prior written consent from the KO. Replacement personnel shall be equally or better qualified than the first.

1.8.2 The PM or alternate shall be physically present at the worksite between the work hours stated in section 1.6.3. This excludes U.S. Federal or Colombian holidays. The Contractor shall provide contact information for the PM and alternate(s) for duty and non-duty hours (to include evenings, holidays, and weekends) to the KO and PE/COR.

1.8.3 PMs shall be responsible for overall management and coordination of this contract; directing the onsite work; materials; resolve construction issues; and provide information about work progress to the PE/COR. The PMs shall be highly knowledgeable of the project's progress and be bi-lingual (read/speak English and Spanish fluently). PMs shall be available to meet with U.S. Government personnel, designated by the KO, within 30 minutes unless otherwise coordinated. After duty hours, the PMs or alternates shall be available within two (2) hours.

2.0 PRELIMINARIES: The Contractor shall not initiate work until the following are complete:

- a. Contractor delivers the drawings, tests, material samples, etc. to the PE/COR for approval.
- b. Contractor delivers a list of the complete names of personnel on site, with identification card numbers and place of issue to base security personnel for investigation and entry permits.

2.1 Drawings: All structural, architectural, hydro-sanitary, and electrical drawings shall be provided to the PE/COR for approval within 15 days of award. All drawings shall be developed by an engineer certified in that particular discipline, and comply with appropriate codes.

2.1.1 Structural and Architecture Drawings: Comply with "Norma Sismo Resistente" (NSR) – 2010 code, "Norma Tecnica Colombiana" (NTC) – 4595 (Civil engineering and architectural planning and design of facilities and school areas) and NTC-4596 (Signals for facilities and school areas). ***The contractor shall estimate, design and construct a one story building, but the contractor shall take into account that the building will be expanded, in a future, in a second story, so the contractor shall build a facility with all the structural designs and dimensions for a two story building.***

2.1.2 Hydraulic, Sanitary and Rainwater Drawings: Comply with Colombian codes "Norma Tecnica Colombiana" (NTC) – 1500.

2.1.3 Electrical Drawings: Drawings and specification shall consider electrical consumption of the building plus an additional 30%. The Contractor shall verify that the value of the resistance is the required value of (<5 ohms).

2.2 Soil Study: Contractor shall provide a soil study for PE approval within 15 days of contract award, and before construction may begin.

2.3 Surveying and Layout: A field book shall be kept on the T-shaped rod sighting points and grade (niveletas) levels, while allowing for ground settlement. The contractor is responsible for surveying the terrain levels from the Bench Mark Survey (BMS), base lines, topographical points, perimeter limits, and other control elements necessary to identify the terrain localization and/or elevation.

2.4 Provisional Fencing and Camp: The Contractor shall install provisional fencing and a camp during project development. Upon project completion, debris shall be taken to an area indicated by Hacerf authorities.

2.5 Unforeseen Conditions: The Contractor shall conduct aerial, surface, underground or embedded interference search to avoid damage to pipes, boxes, cables, utility poles, hoses, wells or other elements in the work area. If a potential interference is found, the contractor shall discuss alternatives with the PE/COR.

2.6 Superintendent Engineer/Architect Resume: The Government will consider the extent to which the proposed Superintendent Engineer/Architect has experience on projects equal to or greater than the work required for this project in terms of scope and magnitude. The resume shall be provided to the PE/COR for approval, before work may begin.

3.0 DETAILED ACTIVITIES:

3.1 Excavation: Excavation: All vegetation and top soil shall be removed from site, compacting the exposed surface to at least 95% Proctor Standard (per NSR-2010 code), before beginning backfill. The Contractor shall also provide Proctor Standard results to PE for approval before starting backfill. This includes backfilling and leveling the ground according to the recommendations given in the soil study, and their reasonable proximity to the alignment and gradient shown in the plans or set by the PE/COR. The Contractor shall remove excess materials, and debris to an area authorized by local authorities.

3.2 Concrete Structures: This refers to fabrication, transportation, pouring, and respective reinforcement elements required IAW structural drawings. This item shall be quoted as per detailed chart.

- Concrete footing and foundation beams
- Concrete slabs for the building.
- Concrete columns, aerial beams, roof beams, lintels and confinement structure for walls.
- Concrete slab sub floor and bathrooms roof slab for water tanks support.
- Perimeter channel in concrete for water collecting.
- Sidewalks for the entrance of the buildings shall be constructed and shall be at least 1,5 m wide and 10 cm thick.
- Concrete table for bathroom sinks.
- Concrete mix design shall comply with 3000 psi at 28 days strength -.

3.2.1 Concrete Forms: The PE/COR shall approve the formworks and molds, steel reinforcement, rebar arrangement, overlaps, and all related details, seven (7) days prior to the actual pour date. The forms and supports shall have the necessary resistance and rigidity to support concrete, without localized settling over (0.001) mil of light. The supports shall be arranged to never stress the completed parts of the project at a level higher than one third (1/3) of the design stress. The joints in the forms shall not have slits bigger than 3 millimeters to avoid grout losses, but still have enough room to avoid boards (when using wood) from shrinking and deforming due to inclement weather.

3.2.2 Concrete Pour: All forms and molds shall be cleaned, and dampened with a non petroleum based stripper. Pours shall be in one continuous operation per section. All soft concrete shall be compacted, preferably with a vibrator to ease it around embedded installations. For initial installation of clean concrete, the Contractor shall ensure the poured concrete creates a clean area of thickness = 0.05m. The Contractor shall install the reinforcement for footing and concrete IAW the Contractor's drawings. The pour shall be protected from inclement weather and the exposed concrete surface kept constantly damp for the first seven (7) days.

3.2.3 Repairing Concrete Defects: All defects shall be repaired by cutting out the defective surface, cleaned with compressed air, and filled with epoxy based concrete or mortar, per manufacturer's instructions. Contractor shall submit epoxy specifications for PE approval, before repairs can begin. Repairs shall not be made using common concrete or mortar.

3.2.4 Concrete Testing: The Contractor shall prepare and properly mark six (6) concrete test cylinders per nine (9) cubic yard batches or single mixture in strict accordance with Colombian Law 400 of 1997, and NSR-2010. The Contractor shall conduct the quality tests of concrete used. The contractor shall provide test copies for PE/COR approval before concrete pour. The samples shall be tested in accordance with the C39/C39M-10 Norm of the ASTM (test of cylinders of concrete for compression).

3.2.5 Rebar and Ties: The rebar shall be bent with no variations greater than one centimeter. They shall be tied to the formwork with wire, concrete, or stone plugs; and among themselves with iron annealed No. 16 wire. Separation between parallel rebar shall have a minimum separation equal to the diameter $1 \frac{1}{3}$ of the greater diameters of the coarse aggregate used. Their position shall be adjusted according to the indications in the drawings and instructions approved by PE. The correct arrangement shall be reviewed before the pour, and any modifications noted. No rebar shall be bent on the field. Rebar in a packet shall be tightly tied together forming a single unit. Packets with more than four (4) rebar are not permitted. It may be required that the framework functions below two-thirds ($\frac{2}{3}$) of its admissible tension either by overlap or welding. The overlap of rebar packets shall be based on the packet length required, increased by 20% for three (3) rebar packets and 33% for four (4) rebar packets. The centers of the ties shall be more than 40 diameters (40 D) throughout the length of the piece. When the use of mortise is permitted, the diameter shall not be smaller than the main reinforcement.

3.2.6 Embedding: For elements not exposed to the weather or ground, the minimum embedment shall be: slabs: 2 cm (0,8 in); beams and columns: 3 cm (1,2 in).

3.3 Conventional Masonry: The Contractor shall ensure that all walls be conventional masonry (Prensado Santafe type bricks). Walls shall be plumb, seating brick in mortar at a 1:4 ratio, forming joints not thicker than 1.5 cm. Blocks with strengths and dimensions specified by the Contractor's structural drawings shall comply with quality and standard dimensions.

3.4 Metallic Structure: This work includes all materials, equipment, tools, and labor necessary for the complete installation of the metallic roof structure. It includes supply installation and anchors to support all cover for lodging areas in metallic carpentry, as is shown in the schemes attached. The design of welded connections, electrodes, filler metal, labor, inspections, and tests shall follow standards determined by the latest American Welding Standards (AWS) and American Institute of Steel Construction (AISC) editions. Welding samples, methods, and electrodes shall be approved by the PE, before installation may begin. If doubts arise about a weld sample, the PE shall order trepanation tests at no cost to the government. If deficiencies are found, then all welds shall be checked, and re-welded. The joint plates for columns shall be joined by welding each side of the plate, with a minimum length of $\frac{1}{2}$ the length of the plate. Structural cross-sections shall be bent cold, and parts cut when indicated. Cuts shall be with fine nozzle oxyacetylene, but preferably with a saw for cross-sections.

3.5 Roof: The Contractor shall install a thermo acoustic roof tile tied to the metallic structure. In addition, the Contractor shall install rainwater channel and downspout. The Contractor shall seal roof overhang using fascia or screens. The Contractor shall anchor the new roof frame structure to the bond beam rebar where required IAW the Contractor's drawings.

3.6 Commemorative Plate: The Contractor shall supply and install a plaque in "piedra muñeca" of 0.50 m by 0.40 m with the following text: "ESTA OBRA FUE CONSTRUIDA POR LA COMUNIDAD DE HACARI, GRACIAS A LA GESTIÓN DE SU ALCALDÍA MUNICIPAL Y LA GOBERNACIÓN DE NORTE DE SANTANDER, EN EL MARCO DE LA CONSOLIDACIÓN TERRITORIAL -Fecha-". The text of the commemorative plate shall be submitted to PE for approval, before the plate is produced.

3.7 Flag Area: The Contractor shall construct a flag plaza for three flags. This includes supply and installation of three (3) flagpoles of 2" diameter by 4 m high painted with minimum 3 mils each of anticorrosive and enamel paint.

3.8 Informative Banner: The Contractor shall provide and install an informative banner into the project site. The banner shall be installed 5 work days after the award and retired when the project finished. The banner fabric shall be 13 ounces, printed 4x0 inks, 1.200 DPIS, finished with metallic reinforced eyelets. The banner dimensions are 3.00 meters wide and 2.00 meters length. The banner shall be installed in a metallic support structure of 3.00 meters wide and 5.00 meters length. The banner shall include the shield of Colombia and the logotypes of the "Unidad Administrativa para la Consolidación Territorial" and "Prosperidad para Todos". It shall also include the following text ""Esta obra se construye para el disfrute y beneficio de la comunidad de Hacarí gracias a la gestión de su alcaldía municipal y la gobernación, en el marco de la Consolidación Territorial". The banner shall fulfill the "Manual de Identidad Corporativa" of the "Unidad Administrativa para la Consolidación Territorial". The informative banner design shall be submitted to PE for approval, before it is produced.

3.8 ELECTRICAL NETWORK: This includes the entire electrical wiring and lighting

3.8.1 Electrical System: The internal electrical construction shall be in accordance with the electric regulations in effect in Colombia, National Electric Code (NEC)/American National Standards Institute (ANSI)/Energy Information Administration (EIA)/Telecommunications Industry Association (TIA)/Techniques Electronics Electrical Equipment (TEEE)/National Fire Protection Association (NFPA), and allow for a 30% capacity above the maximum normal usage of all electrical systems simultaneously. All drawings and systems shall conform to International Electrotechnical Commission (IEC) 61024-1-2, NTC 4552, NTC 2050 and "Reglamento Técnico de Instalaciones Eléctricas" (RETIE). The system shall contain grounding systems suitable for the grounding resistance required at the project site. All work shall be performed according to the best trade practices, using specialized personnel.

NOTE: Wiring shall fulfill the following requirements:

All energy cables shall be American Wire Gauge (AWG) and have isolation Thermoplastic Heat and Water Resistant Insulated Wire (TWH) of the caliber specified and calculated IAW the calculated electric bulging loads, subject to the following color code:

- Green: Earth.
- White: Neutral.
- Black: Not regulated.
- Yellow, red, blue: Regulated.
- This code shall flow from the electrical board of distribution to the final point of exit. Joints within the system are not allowed. They shall only be in the boxes.
- Protection elements shall be from a national and recognized manufacturer, all of the same brand preferred.
- All cable ends or joints shall have the appropriate terminals or spring-like connectors for the conductors.

All electric conductors to be installed in the layout conduit shall meet the following material and installation requirements: All metallic conduits installed underground shall be painted with asphalt based paint before being covered with concrete. All exposed conduits shall receive two (2) coats of anticorrosive paint, as well as supports, accessories, and register boxes. All metallic surfaces of electronic equipment with scratches shall be repainted similar to the original.

3.8.2 Electrical Facility Connection: The Contractor shall ensure that underground electrical facility connections are of Polyvinyl Chloride (PVC) pipe and include a distribution switchboard and other elements in approved drawing. The main electrical feed and entire distribution system shall comply with Colombian Electrical Code (NTC-2050). The contractor shall connect the future facilities to the existing electric network, and shall determine if a transformer is needed to accomplish the electricity loads of the future facility.

3.8.3 Internal Electrical Installations: The Contractor shall ensure that all electrical networks are in accordance with NTC-2050. Cable shall be Thermoplastic Heat and Water Resistant Nylon Coated (THWN). The Contractor shall provide calculation records showing actual load and estimated reserve charge with cable caliber for PE approval before contract acceptance. All outlets shall be grounded, and ensure they meet the needs of the project. The installation of all electrical system conduits and cabling system wires shall be of Electrical Metallic Tubing (EMT) ducts or conduits and/or metal cable trays, if they are exposed. If not, PVC conduits shall be used.

3.8.4 Grounded and lightning system: The Contractor shall ensure that grounding is executed in accordance with Colombian Electrical Code (NTC-2050) and approved drawings.

3.8.5 Lighting: The Contractor shall ensure all areas provide a minimum of luxes as required in RETIE and RETILAP. Lighting levels shall be verified at least 1 hour after dark. Switches shall be located at the right hand of each door. Lights and accessories shall be firmly attached to the surfaces of the building with the correct suspension system. Embedded lights shall be flush so that light is not filtered through the slab and the molding. Light switches shall be connected so they never interrupt the neutral conductor, or connected to a hot line. Light switches shall be at a height of 1.20 m above the finished floor.

3.8.6 Electrical Outlets: The Contractor shall deliver and install the electrical outlets to include a minimum of six (6) double GFCI electrical outlets for bathroom and forty (40) double electrical outlets for dormitory area. Non-regulated power circuit shall be installed with ground connection, observing the following conditions:

- Each circuit shall be conformed to support a maximum of five (5) double power outlets
- Each double power outlet shall be fully identified
- The inlet and outlet of circuits shall have on the end pressure connector or non-welded terminal
- In each inlet only one cable shall be installed
- Double power outlets shall be isolated polo hospital type in white color
- Where required by code, the outlets installed shall be ground faulted interrupters (GFI).

3.9 WATER NETWORKS: The Contractor shall ensure that all materials, equipment, and labor necessary for the complete installation of a potable water distribution network, and wastewater drainage systems, according to the National Plumbing Code (NPC), the American Water Works Association (AWWA), and NTC 1500.

3.9.1 Main Water Feed: The Contractor shall construct the main water feed to the existing aqueduct (50 mts aprox). The Contractor shall purchase and locate four (4) 1000 L elevated tanks type “Colempaques” or similar with respective floats, above bath area, and include the elevated reinforced concrete tank base. The Contractor shall construct the house connections in PVC IAW diameters provided in the Contractor’s drawings, and the manufacturer’s instructions. The Contractor shall meet established norms in plumbing code NTC 1500, and be responsible for the inspection of all plumbing materials. The Contractor shall ensure each end of the pipe is secured. The water network shall be subject to three hydraulic tests of constant pressure of 150 psi not less than 12 hours for approval by the PE. The first test shall be accomplished prior to filling trenches or covering pipe, the second test shall be done after filling, and the final shall be executed 15 days before completion of the project. Pipe to be used shall be PVC RDE 21 or better. A register (water valve) shall be installed.

3.9.2 Hydraulic Network: The Contractor shall ensure that all the internal hydraulic networks for the bath areas, according to PE approved drawing provided by the contractor. After approval, they shall become part of the contract specifications. This includes all hydraulic networks (pipes, fittings, valves, outlets, and accessories) needed for the bathroom area.

3.9.3 Drainage Network: The Contractor shall ensure that the network shall be an easy to maintain system. Concrete gutters shall be on the contiguous slope and drain to the site indicated in drawings.

3.9.4 Sanitary/Sewage Network: The contractor shall ensure that all sanitary networks, including sewage collector, internal networks (baths), and ventilation; IAW the Contractor’s drawings. The Contractor shall build a discharge section according to the drawings, constructing boxes for suitable operation and respective discharge points.

3.9.5 Water Treatment System: The contractor shall install a water treatment system that provides capacity for the sanitary and sewer systems. The treatment system shall be a highly resistant, underground horizontal, prefabricated of water treatment system Colempaques type or similar. The Contractor shall guarantee a removal level of 90% to spill waters in the field of infiltration in accordance with contractor's drawings.

4.0 FINISHING:

4.1 Wall Tiles: The Contractor shall install wall tiles in the restrooms showers area and in the concrete table for sinks. Wall tiles shall be in "Ebro 972" type 20 cm x 20 cm or similar up to a height of 2.00 m for the baths. The Contractor shall ensure to provide metallic end caps and install in a professional manner. Colors, styles, types and sizes shall be approved by the PE a minimum of eight (8) working days prior to installation.

4.2 Floor Tiles: The Contractor shall install floor tiles made for high traffic. All the areas shall have broom guard using the same material. Colors, styles, types and sizes must be approved by the PE a minimum of eight (8) working days prior to installation.

4.3 Stucco: Stucco shall have a 1:3 mix ratio and a minimum thickness of 1.5 cm. Within the interior of the facility, the Contractor shall apply waterproofed stucco in all wall areas up to a height of 0.3m and non-waterproof stucco for the rest of the walls. Within bathrooms, water-proofed stucco shall be installed at full wall height. The Contractor shall install non-waterproof stucco on the exterior walls of the facilities throughout.

4.4 Exterior and Interior Painting: The Contractor shall paint all exposed walls, exposed columns, exposed beams and exposed concrete structures with three layers of "Vinilo Eco-paint type" (or similar) paint for interiors and "Koraza" (or similar) for exteriors. This item also includes a general cleaning of all existing masonry in the Facades. Ceilings, eaves, and any other part specified in the plans shall have two (2) coats of acrylic high quality weather resistant paint.

4.5 Windows: The Contractor shall provide and install cold rolled 18 gauge laminate windows, coated with a minimum of 3 mils of anticorrosive paint. This includes installation, finishing, accessories, security bars and lintel (alfajia), as is shown in the schemes attached. All the windows shall include ½ inch thick security bars that shall be square, galvanized, painted with anticorrosive and two coats of enamel paint. Between each coat, the surface shall be lightly sanded with a fine sandpaper No.6/0, 200 or finer.

4.6 Doors: The Contractor shall provide and install doors, doorframes and bath divisions (toilets and showers) to include supply, transport, installation, all finishing accessories (hinges, locks, , and lintel. The Contractor shall install cold rolled laminate caliber 18 doorframes and doors in metallic painted with two coats of anticorrosive and enamel paints at a minimum of 3 mils thick. Between each coat, the surface shall be lightly sanded with a fine sandpaper No.6/0, 200 or finer. The same specifications apply to the toilet area internal doors.

4.7 Bathrooms: The Contractor shall provide restroom facilities with bath apparatuses, all connections and fittings required for sinks, showers and toilets. The restrooms shall also include one (1) paper holder for each toilet, one (1) soap dispenser for each sink and shower, one (1) floor drain for shower module and four (4) floor drain distributed in the bathroom area. The sinks shall be for kids so the hanged height of the baths and the dimensions shall be in accordance with the final drawings approved and IAW the final user specifications. The Contractor shall provide and install metallic protection in all the corners of the bath walls. The Contractor shall also provide and install bevel mirrors located above each respective sink with dimensions of 0.90 m in length and 0.50 m wide.

Each respective restroom facility shall have the following as IAW the schemes provided by the Government:

- Eight (6) toilets and seven (7) sinks, seven (7) bevel mirrors and eight (8) showers.

5.0 MATERIAL SPECIFICATIONS: The Contractor shall be responsible for the development of a material list for PE/COR review. The Contractor shall provide a draft list for review no later than 3 business days after

Government approval of the Contractor's drawings. Upon approval of the material list by Government, the contractor shall provide sample materials as identified in the approved material list.

5.1 Cement: The Contractor shall ensure that the cement used in the cement mixtures shall be Type 1 Portland cement (normal) and meet all American Society for Testing Materials (ASTM) C150/C150M-09. If the project site has high sulfate content, Type V Portland cement shall be used. The Contractor shall provide additive specifications where required.

5.2 Concrete: The Contractor shall ensure that all recommendations of the American Concrete Institute (ACI) Committee Report 301M-99 (Specifications for Structural Concrete for Buildings) or equivalent Colombian specification (NSR-10) shall be followed. All other concrete operations shall follow the Building Code Requirements for Reinforced Concrete ACI 318M-08. All the standards of the ASTM are mandatory. The specified compression resistance shall be measured at the rupture in cylinders measuring 15cm x 30 cm (6 in x 12 in), after 28 days, according to the ASTM C39/C39M-10 standards. All concrete shall have an overlap no greater than three (3) inches. Concrete used for the foundation formworks, columns, retaining walls, joints tied to the foundation, load and tie joints and remaining structural elements, shall have a compression resistance of 210 Kg/centimeter² (3000 lb/square inch). The resistance to fluid concrete for the filling of the reinforced masonry blocks shall guarantee a minimum of 140 Kg/centimeter² (2000 lb/square inch).

5.3 Aggregates: The Contractor shall ensure that aggregates be classified by size, and stored to avoid foreign matter. They shall follow ASTM C33/C33M-11. Sand shall contain deleterious substance in excess of the following percentages: Clay clods - 1%, Pit Coal and Lignite - 1%, Material passing #200 Screen - 3%. The size of the crushed stone shall not be larger than 1/5 of the greatest separation from the sides of the formwork; 1/3 of the slab, or 3/4 of the free space between individual rebar or rebar ties. It shall meet the ASTM C33 standards, with its maximum dimension in accordance with Section 33 of the ACI 318M – 08 Regulation.

5.4 Reinforced Steel: The Contractor shall provide rebar with patterns to assist adhesion. All steel shall be new billet steel conforming to ASTM A615/A615M-09b Grade 60. Rebar grade shall be 60 (420 for metric). Minimum yield strength shall be 420 MPa (60,000 psi). All dirt and non-adhered advanced state oxidation shall be removed. The rebar for the work of setting bolts and tie anchors shall be corrugated and comply with the specifications for steel bars and smooth ingots to reinforce concrete, including complementary requirements ASTM A615/A615M-09b or NSR-2010.

5.5 Metallic Structure Materials: The Contractor shall ensure that the steel meets ASTM A36/A36M – 08, ASTM C500/C500M-10a and ASTM C501-07 specifications for welding structural steel, according to ASTM A755 / A755M - 03(2008). All steel shall be hot galvanized. All metal scratches and welding burrs shall be removed, and surfaces dry before anticorrosive paint is applied. The Contractor shall provide, for PE approval, patterns for placement, anchor and bolt examples, and all steel elements to be embedded in the concrete, 8 days before installation.

5.6 Welding: The Contractor shall ensure that electrodes be class E60 x AWS for structural steel and class E70 x AWS for rebar with a stress flow of 2,800 Kg/square cm (40 ksi). All structural steel elements shall be joined with the electric arc process using E 60 xx electrodes that comply with the ASTM-233 specifications. For rebar welding if required, welded ties shall conform to American Welding Society (AWS) D 1.4/D 1.4M standards, and develop at least 125% of the flow resistance specified.

5.7 Laminated Structural Steel: The Contractor shall ensure that all structural steel, be new and comply with "Design Specifications, Fabrication and Erection for Structural Steel Buildings" of the American Institute of Steel Construction (AISC) or NSR-2010 and shall be type ASTM A36/A36M-08 as certified by a laboratory, with stress in the flow limit of 2,531 Kg/square cm (36,000 lbs/square inches). Structural cross-sections shall be bent cold, and parts cut when indicated. Cuts shall be with fine nozzle oxyacetylene, but preferably with a saw for cross-sections.

5.8 Masonry Unit Blocks: The Contractor shall ensure conventional masonry (Prensado Santafe type bricks with uniform size, color, and texture). All ICONTEC "Instituto Nacional de Normas Tecnicas

Colombianas” norms shall govern. The compression resistance shall be $f_m = 95 \text{ Kg/cm}^2$ (1,350 ksi). The Unit Blocks shall be suitable for load bearing applications, and free of defects. Minor cracks from manufacturer or minor chipping from handling are not grounds for rejection. Five percent with chips less than 25.4 mm (1 in) in any dimension, or cracks not wider than 0.5 mm (0.02 in) but not longer than 25% of the nominal height of the unit are permitted. A sample of the block shall be provided for PE approval a minimum of eight (8) working days prior to installation.

5.9 Bath Apparatus: Bath apparatuses shall be Lavatory Nova Type 07388 /102 or similar, toilets of type “Avanti-Ganamax” or similar (Toilets with Dual Flush: 4.5 lts flush liquids / 6lts flush solids) and Urinals of type “Falcon” (Dry urinals) or similar. Colors, styles, types and sizes must be approved by the PE a minimum of eight (8) working days prior to installation.

5.10 Electrical Materials: The Contractor shall ensure that all materials be new and from accredited companies. All work shall be performed according to the best trade practices, using specialized personnel. All defective or damaged materials and equipment shall be replaced at no cost to the government. The manufacturer data for the panels and sub-panels, conductors, layout conduit and accessories, light switches, wall sockets, controls, inside and outside lights, transformers, and medium frequency structural elements shall be given to the PE for approval, before installation.

5.10.1 Distribution Panel: The Contractor shall ensure that the distribution panel be supplied and installed according to a panel program. The panel shall be rebar and terminal for neutral, and a ground rebar. The circuit breakers shall be connected to the rebar, and the load balanced. The panel shall be embedded correctly and only accessible through the front. The circuit protection devices shall be thermo-magnetic for 60 cycles at capacities indicated in the plans, but never lower than 10,000 amps in a short circuit. All boards shall include signs to identify each circuit or feeder. Outlets for 220 volts shall also include separate identification. The end-user shall be given two (2) sets of instructions.

5.10.2 Bare Continuity Conductor: The Contractor shall ensure that all EMT out ducts, conduits, or metal cable trays have a bare continuity lead (directly connected to the grounding barrage of the power circuit panel) in a gauge that complies with Colombian electrical standards.

5.10.3 Layout Conduit: The Contractor shall ensure that all electric conductors meet the following material and installation requirements: All metallic conduits installed underground shall be painted with asphalt based paint before being covered with concrete. All exposed conduits shall receive two (2) coats of anticorrosive paint, as well as supports, accessories, and register boxes. All metallic surfaces of electronic equipment with scratches shall be repainted similar to the original.

5.9.4 Register Boxes: The Contractor shall ensure that the boxes be the appropriate size and type to hold the amount of conductors in accordance with Colombian regulations. Unnecessary perforations of the boxes and accessories shall be filled. Circular outlet boxes are not allowed. All boxes and accessories shall be galvanized steel, and be octagonal, square, or rectangular. All boxes exposed to the weather, shall be weather resistant. Outlet boxes for lighting units shall be installed on the surface, and be 4' x 4' octagonal or square. Lights embedded in concrete or masonry shall be level, and the unit boxes installed during laying operations. When lights are installed on false ceilings, one register box shall be attached to the conduit, and another to the light unit. When the unit box allows, a metal flexible unit may be installed.

5.9.5 Conductors: The Contractor shall ensure that the conductors be made of copper with thermoplastic insulation, type Thermoplastic, High Heat Nylon (THHN) jacket unless otherwise specified. The insulation shall be for 600 volts service. All wires shall be AWG No. 12 gauge unless specifications indicate otherwise. Gauges lower than No. 12 are only authorized for signals or controls. Conductors of gauges 10 or less shall be flexible. All gauges shall meet the American Wire Gauge system. For identification, the same colors shall be used in the different phases and a uniform color throughout the building, according to the National Electric Code. Conductors in only one color shall be covered with colored tape. No wire joints are authorized. The lines shall be continuous from box to box. In the outlet or register boxes, the connections shall be No. 8 or smaller, and manufactured by a

PE approved company. In all terminals at least 20 cm of the wire shall be left for light connections and other devices.

5.9.6 Light Switches: The Contractor shall provide all light switches for the electrical outlets IAW the electrical drawings approved by PE. All shall be connected with the “on” in the up position. Light switches shall be connected so they never interrupt the neutral conductor, or connected to a hot line. Light switches shall be at a height of 1.20 m above the finished floor. Light switches shall be one (1) pole or two (2) poles and moved two ways, for 15 amps, 120 volts, AC, lever operation, National Electrical Manufacturers Association (NEMA) standard, Specification Grade, silent type.

5.9.7 Lights: The Contractor shall ensure that lights and accessories be firmly attached to the surfaces of the building with the correct suspension system. Embedded lights shall be flush so that light is not filtered through the slab and the molding. Fluorescent lights shall be equipped with a reactor ballast for a high power factor (cos Ø: 0.9) approved for service at the indicated voltage. Cool white lamps shall be used. The lighting shall be wraparound, fluorescent T5 2x32W, and against dust, moisture and humidity. Ballasts with two (2) tubes are preferred whenever expedient and have protection. Energy saver light bulbs shall be approved for 120-volt service and equipped with sockets. The candlelight shall have a nominal voltage of 120 volts, and frosted. All lamps used in construction shall be replaced with new lamps, before final contract acceptance.

5.10 Wastewater and Potable Water Equipment, Pipes, and Accessories: The Contractor shall ensure that the systems be constructed with PVC Schedule 40, specifications ASTM D3034-08, ASTM D2729-11 and ASTM D2241-09. Accessories shall be according to ASTM D2655-10. All valves shall be free of defects and have manufacturer label. The contractor shall include water saver devices or flow control vales or similar devices for all water points.

5.11 Floor Tiles and Wall Tiles: The Contractor shall ensure that ceramic tiles of 0.30m x 0.30m for floors be “A” quality brand, with common shape and dimensions. The tiles shall be uniform with no defects. For bathroom floors, the tiles shall be first class nonskid type. PE approval is required eight (8) labor days previous to installations for tiles, and color selections.

For wall tiles on restroom areas the Contractor shall use 0.20m x 0.20m first class, white tiles or similar. Portland ASTM C150/C150M-09 type II cement shall be used with the tiles to include whitewash with white marble dust.

5.12 Paint: The Contractor shall ensure that the paint manufacturers are national industries of high quality, anticorrosive paint and enamel paint shall be type low VOC (Volatile Organic Compound) or zero VOC, also called environmentally friendly. Materials and paint brands shall be submitted for PE approval, before paint is applied. All paint shall be delivered in its original unopened packaging with labels intact. Paints shall be kept protected against fire, and damage. Ceilings, eaves, and any other part specified in the plans shall have two (2) coats of acrylic high quality weather resistant paint. The Contractor shall provide samples of wall colors, for PE approval, before paint may be applied.

5.13 Varnishes: The Contractor shall ensure that the cabinets, furniture, and any other element specified (for indoor use) shall be given two (2) coats of varnish. Between each coat, the surface shall be lightly sanded with a fine sandpaper No.6/0, 200 or finer.

6.0 Deliverables upon Completion of Project. The Contractor shall deliver the following items:

6.1 A final inspection: A final inspection shall be completed by the KO/PE/COR to ensure all items were completed in accordance with the SOW, and any punch list items were corrected, before final payment approval will be given by the KO.

6.2 Three (3) compact disks containing the electronic project files including solicitation, contract, specifications, project final report, bi-weekly progress reports, topographic survey, as-built drawings, and photos given to the PE/COR and KO.

6.3 One (1) copy of the corresponding equipment/materials manuals to the PE/COR.

6.4 Failure to provide requested deliverables as specified above shall be cause for withholding progress payments and/or final payment until all deliverables have been received by the project engineer.

7.0 Performance Requirements Summary

SOW Reference	Performance Objective	Performance Standard	Acceptable Quality Level (AQL)	Monitoring Method	Remedy
Para 1.5 & 2.7	Compliance with laws, and safety standards	The Contractor shall comply with all current and future applicable labor laws, safety standards, and permit/licensing laws. The Contractor shall be responsible for paying all necessary insurance, and any other entitlements as required by the applicable labor law.	100% compliance required	PE/COR Surveillance; Periodic inspection.	Non-compliance may result in a cure notice and invoices will not be paid until the AQL is met. Continued poor performance may result in contract termination.
Para 1.6	Periodic Progress Inspections	There shall be periodic progress worksite inspections by the KO or a representative throughout the project Period of Performance to determine that the contractor is maintaining the current schedule.	100% compliance required	PE/COR Surveillance; Periodic inspection.	Non-compliance may result in a cure notice and invoices will not be paid until the AQL is met. Continued poor performance may result in contract termination.
Para 1.7	Compliance with required reports	Contractor shall provide bi-weekly, progress reports as required by the Government in the format agreed to between the Contractor and the COR. These reports shall include, but are not limited to the following: Situation reports, progress reports, and meeting minute reports. Other reports may also be required by COLMIL and/or USMILGP-COL Contract section.	100% compliance required	PE/COR Surveillance; Periodic inspection; Customer input	Non-compliance shall be corrected immediately at no additional cost to the Government. Violation may result in a cure notice and invoices will not be paid until the AQL is met. Continued poor performance may result in contract termination.
Para 2.6	Contractor Project Manager experience and qualifications	The contractor's project manager shall be fully qualified personnel and possess the training, skills, and experience to satisfactorily perform the required construction, as indicated in this SOW. The Contractor's proposal shall include resume information on the potential work personnel for COR/PE approval.	100% compliance required.	PE/COR Surveillance	Non-compliant project managers shall be replaced immediately at no additional cost to the Government. Violations may result in a cure notice and invoices will not be paid until the AQL is met. Continued poor performance may result in contract termination.

SOW Reference	Performance Objective	Performance Standard	Acceptable Quality Level (AQL)	Monitoring Method	Remedy
Para 6.1	Final Inspection	A final inspection shall be completed by the KO/PE/COR to ensure all items were completed in accordance with the SOW, and any punch list items were corrected, before final payment approval will be given by the KO.	100% compliance required	PE/COR Surveillance; inspection.	Non-compliance may result in a cure notice and invoices will not be paid until the AQL is met. Continued poor performance may result in contract termination.

(End of Summary of Changes)