

ATTACHMENT # 3-E SPECIFICATIONS

The principal features and characteristics of the work that is to be done are detailed below. The work is to be done at the Counternarcotics Colombian National Police base in Tulua, Valle.

GENERAL DESCRIPTION OF THE PROJECT

The work that is to be done consists of transporting, supply and installation of one (1) 20 feet container, to be used as night vision laboratory and the enhancement of the main power circuit branch, which will connect the existing containers in the areas as well as the new one. The container will be installed at the place indicated by the on-site Embassy representative.

PVC CONTAINER

SUPPLY, TRANSPORTATION AND INSTALLATION

Container Supply

The contractor shall supply one (1) PVC container 2,90m width by 6.0m length.

Characteristics:

- * The containers shall be fabricated in PVC plastic panels and remain fully waterproofed, in order to avoid water leaking through, and flanges should be fitted to windows and doors.
- * The containers should have a system incorporated into their structure which enables them to be lifted by a crane or forklift.

Transportation

- * The containers should be transported from the production site to the base.
- * The cost of this item includes transportation, and insurance cover for the containers and the load or interior fittings. The work includes loading and unloading the containers, renting or otherwise obtaining the crane or forklift, and positioning and leveling the containers on the site indicated by the Embassy representative. If the containers or nearby structures suffer any damage during transportation and/or movement to the site indicated, the contractor will bear all expenses involved in any repairs which might be necessary, at no cost whatsoever to the Embassy.

Installing the Containers

- * **Supports.** The contractor should cast 'darts' on site to support the container; these should be made of 3000 psi concrete and be 40cm. wide, 40cm. long and 60cm. deep, with a Q-2 or M-084 or similar electro-welded mesh. The purpose of the darts is to raise the container above the ground, to a point where its lowest part is at a height of 25cm. Each container should have a minimum of six (6) supports, or more if the contractor feels it necessary in order to guarantee its stability. The supports should be fixed to a firm, compacted base, and they should be leveled in order to ensure that the container itself is perfectly level. The work includes stripping and leveling the work area.
- * **Staircase.** The contractor should supply an extruded-mesh, metal staircase, painted with anti-corrosive paint and topcoat, for each container access. The staircase should be the same width as the doors.

The container shall include a 6" ski structure in double T; in order to be lifted. The skis will be the one to support the container over the concrete supports.

Structure:

The contractor shall supply and install the required structure to support floor, walls and roofing; strong enough not to deteriorate during the transportation. Where exposed, structure shall be protected with special paint for salty environment to avoid corrosion.

Walls and roof

Plastic PVC e=65mm

PVC Panels

Container walls and roof will be made of prefabricated PVC panels, with the edge of each PVC item making up the system having complete polyurethane or 'Frescaza' insulation, in order to guarantee adequate thermal and acoustic insulation. External colors should be the same as or similar to the colors of the existing containers in the area, or as selected by the Embassy representative. Internal colors shall be white in the office and non-glossy black in the dark room. Interior ceiling shall be all white. If black PVC panels are not available, contractor shall include to cover the dark room walls with 4mm superboard and paint them in black.

Dividing Panel Supply and Installation: This item includes supplying and installing a dividing panel or wall 10cm. thick in Superboard.

Internal paint: In the maintenance area (dark room) all walls shall be painted in black color, the roof will be white. Office's walls and roof shall be white.

Finish of container floor: The floor material (wood or metallic) shall remain in perfect conditions. Contractor shall and sealed all perimeter and joints, in order to ensure there are no cracks which might allow leaks to develop. The floor should be perfectly leveled, so that the floor finish can be applied.

The floor finish that is to be fitted will be an 'Emeflex' or 'Konker'-type heavy-duty rubber floor at least 4mm. thick. The contractor should apply an insulating material and/or joint joining element between the floor and the finish, in order to guarantee stability and prevent the floor expanding or lifting due to changes of temperature.

Supply and installation of thermal insulation and interior finish: contractor shall supply and install on the roof and on all the internal walls high density injected (non flammable) polyurethane or the same material in sheets, 5 mm minimum thickness in order to guarantee adequate thermal and acoustic insulation.

Entrance door:

The doors to be supplied and installed shall be 1.0m width by 2.0 m height; in metal sheet of minimum cal. 18 "Entamborado" with metal frames in cold rolled caliber 18 and 4 hinges. The door shall be stable type, divided in the middle for public attention without allowing the access into the laboratory. It includes an abatable shelf of 0.30m x 0.75m. This item includes non corrosive paint; two coats of finish paint.

The upper part shall include hoops and pins to install two padlocks at the interior side, one in the upper part and one lateral. The bottom part of the door shall include a high security lock; against drill; against hook wrench, with three points lock and five codified keys; it also includes interior and exterior handles.

Door in grill:

Additionally a ½” square grill shall be installed in each door; with horizontal spacing of 0.10m and vertical spacing of 0.20m. In the middle of the grill door a space of 0.40m by 0.10m will be left, as it can be seen in the example. This grill shall have lock to the floor and in the upper part to put locks. The door shall be installed at the interior part of the container’s entrance door. This door shall include a superimposed lock, 16 caliber with cylinder.

**Internal door:**

The door to be supplied and installed will be 0.90m y 2.0m metal sheet minimum cal. 20 and frame minimum cal. 18.

This item includes non corrosive paint and two coats of finish paint; a lock of metallic knob, type entrance key, chrome and a simple bolt with exterior key and interior wing nut.

PVC Window Frame: This item includes supplying and installing one (1) sliding window 0.80m. wide and 0.80m. long, made of wide PVC profile and fitted with glass 5mm. thick with a 4 mils. protective film. One section of these windows will be fixed and the other will be sliding, with additional mosquito netting incorporated into it, and there will be a metal, bank-type safety grille on the outside, holes not larger than 0.10m. 0.20m. painted with anti-corrosive paint and topcoat; and a pre ondulated mesh hole ½” in all window. Additionally, contractor shall supply and install preondulated mesh of ½” hole in all window; installed to the grill frame, or with an additional frame.

Overroof: This item refers to the supply and installation of metal structure supported over the container; supply and installation of roofing tiles architectural type, trapezoidal shape, covering all container and wings as shown on the plan. Roof shall be installed according to the manufacturer instruction. The color will be selected by the Embassy.

FURNITURE

This item includes the supply and installation of furniture with high quality and durability standards. The furniture must have a warranty of minimum three (3) years against manufacturing defects.

Workstations and benches:

The system must be made up of freestanding panels or legs without requiring anchors to the walls and floor.

All working surfaces including tables and independent elements shall be and made of white Formica-lined 'Tablex' at least 3 cm. thick (unless otherwise stated on the plans or elsewhere in the description) with flat thermo-fused edges, and will include "balance" and one covered cable run for each surface supplied.

Surface supports will be made of metal coated with electrostatic paint, and levelers will be supplied, the bottoms of which will be of plastic and/or rubber. These supports include bases, anchoring and any other item which might be necessary for joining or fixing them.

L shape workstations

There are workstations in L shape, 1.45m x 1.20m according to the drawing.

0.70m width working bench

This item refers to one (1) working benches 0.70m wide located in the maintenance area; 2,40m length.

Storage items

These should be to standard, top-quality and ergonomic designs, and should be made for heavy duty and long life. The dimensions that are given are the minimum required.

2x1 Filing Cabinets

Filing cabinet consisting of two conventional drawers and a fully opening, legal-sized hanging-folder file with American-type runners. This filing cabinet should be made of metal and, with structure, base, front part and drawers in Caliber 20 minimum sheet and shall be coated with electrostatic paint. It includes a folding key and injection-molded pencil tray, and should be strong and long lasting. Minimum dimensions are 40 cm. wide by 50 cm. deep, extending upwards in height to the surface (variations of +/- 3 cm). Hanging folders letter size shall be able to be filed in the front line and legal size folders in the other direction. In the case of filing cabinets that are not under work surfaces, a top cover should be supplied. The filing cabinets should have enough room to allow folder tabs to pass without problem (at least 2.5 cm. from the edge of the hanging folder).

The base shall be a minimum of 1cm far from the floor, including levelers and plastic or rubber terminals to absorb irregularities of the floor up to 2.5 cm. It shall also include an overturning prevention system. There will be two(2) 2x1 filing cabinets.

Hanging cabinets

These are hanging overhead cabinets that can be easily fixed to paneling or walls. The cabinets should be made of metal, open of 0.30m width, 0.60m high; with electrostatic paint in white color.

There will be two (2) hanging cabinets of 0.60m.

High Filing Cabinet

Filing cabinet consisting of four (4) conventional drawers and a fully opening, legal-sized hanging-folder file with American-type runners. This filing cabinet should be made of metal and, with structure, base, front part and drawers in Caliber 20 minimum sheet and shall be coated with electrostatic paint. It includes lock a key. Minimum dimensions are 0,60m wide by 0, 50 m deep, 1,25m. The filing cabinets should have enough room to allow folder tabs to pass without problem (at least 2.5 cm. from the edge of the hanging folder).

The base shall be a minimum of 1cm far from the floor, including levelers and plastic or rubber terminals. to absorb irregularities of the floor up to 2.5 cm. It shall also include an overturning prevention system. There are two (2) high filing cabinets.

Type A Metallic shelving

Metal item coated with electrostatic paint, **2.0m high, 1.06m front and 0.26/0.32m**. Back. The furniture includes the shelves shown on plans and crotches every 5 cm in vertical direction to have the possibility of

changing the shelves positions. For details see drawings. The furniture include lateral, back upper and bottom covers. The base of the furniture will be considered to be the first variable shelf, and this should be at least 0.05m from the ground and be fitted with rubber and/or plastic packing where it comes into contact with the floor, and allow absorbing floor irregularities up to 2.5 cm.

Freestanding structure which guarantees high stability and high load and impact resistance. It should be possible to anchor it to a wall, or it should be provided with some other mechanism, which ensures greater stability without taking up storage space and without altering its resistance or aesthetic properties. The cold-rolled sheet shelves will be at least caliber 20, while supports will be at least caliber 16. Each shelf and/or level making up the different types of shelving should be designed to withstand weights of **300 kg**.

There will be two (2) type A shelving that will be located in the maintenance area (dark room)

Type B Metallic shelving

Metal item coated with electrostatic paint, **0.49m. high, 1.06m front and 0.26m. Back**, The furniture includes the shelves shown on plans and crotches every 5 cm in vertical direction to have the possibility of changing the shelves positions. For details see drawings. The system includes two metallic sliding doors with lock and key. The furniture include lateral, back upper and bottom covers.

Freestanding structure which guarantees high stability and high load and impact resistance. It should be possible to anchor it to a wall, or it should be provided with some other mechanism, which ensures greater stability without taking up storage space and without altering its resistance or aesthetic properties.

The cold-rolled sheet shelves will be at least caliber 20, while supports will be at least caliber 16. Each shelf and/or level making up the different types of shelving should be designed to withstand weights of **300 kg**.

There will be two (2) type B shelving that will be located in the maintenance area (dark room)

Example of similar furniture:



Chairs

The bidder must send the catalog and description for each one of the chairs offered with technical characteristics. The models will be made available to the Embassy for its considerations before supplying the chairs.

The chairs must be designed and built for heavy duty, be highly durable and must take into account ergonomic factors so as to guarantee the user's comfort. All of the chairs must have a minimum three (3) year warranty.

Professional Type:

Install a permanent contact ergonomic reclining chair with adjustable back piece and blocking device, using high resilience foam, with a minimum density of 40kg/m³ for the sitting part and 30 kg/m³ for the back part, with a lifetime pneumatic mechanism to graduate the height for a range of 10 cm. The back must be minimum **40 cm.** high measured on the plastic structure. This chair must be upholstered in type Hilat fabric with Scotch guard. Chairs shall include, armrests that may be installed and removed must be on self-lubricating rollers coated in nylon. There will be four (4) professional chairs with arms.

Accessories

Office Bin These will be made of metal and round, with minimum dimensions 0.20m. diameter and 0.30m. high, and rubber and/or plastic packing around the bottom. Or the standard shape used by each company, but with the minimum dimensions stated. There shall be four (4) bins.

Blackout: This is a roll-up blackout-type screen for close the fan in the dark room. It shall include a frame to guarantee total darkness in the room.

Erasable Marker Board :Contractor shall supply and install an erasable board made of acrylic or Formica called Pizarron without grid (material that offers more durability and does not stain), white color, for erasable marker pens, Includes a pen holder running the whole length of the board of minimum 8cm, two marker pens, and the board itself. Includes lacquered chipboard frame or metallic frame painted in same color of the furniture profiles 0.06m. Wide in the front part. The board should have a note at the bottom stating that only erasable marker pens should be used. The bottom part shall be at 0.90m height from the finished floor of each space.

There will be two (2) boards 1.0m x0.70m located one at the entrance of the office and the other one at the maintenance area.

Miniblinds

Supply and installation of horizontal miniblinds, white color. Miniblinds shall be aluminum. There will be one located in the office's window.

ELECTRICAL INSTALLATIONS

Electrical standards scope: Any electrical installation which is done by the contractor shall comply with the following electrical standards: NTC 2050 last upgrade and chapters 645, 210,215; NEC 250 last upgrade, NTC 3471/UL 67, EIA/TIA 607, EIA/TIA 568-569 last upgrade, ANSI/IEEE C62.41-C62.45, NEPA 780, NTC 4552, IEEE-80, IEEE-77 and RETIE last upgrade.

Main circuit branch from Power Substation

The bidder shall quote for supply and install a new main circuit branch, running from the Police base's power substation to the new general distribution panel board. The approximated distance between both locations is 150 meters. The bidder shall verify such distance adjusting his proposal if so. The new main circuit branch shall be by a tetra-pole system THHN/THWN AWG 2X(4No2/0+T1/0). .

The bidder shall quote for supply and install a set of industrial three-pole breakers, thermo-magnetic trigger, current protection capacity of 3X150A (each one), which shall be installed as follows: the first one on the police base's power substation main panel board and the second one in the new distribution panel board to be

supplied and installed by the awarded vendor. The new set of breakers shall be new brand such as Merlin Gerin, ABB, Siemens or RETIE certified equivalent

Underground Raceway

The new circuit branch shall be canalized by mean of the existing backup tube which runs from the base's substation until the proposed site for the new electrical panel board to be installed by the awarded contractor.

New electrical distribution panel board

The bidder shall quote for supply and install a new electrical panel board, which allows the electrical distribution for the proposed services on the new container, three existing ones, multipurpose courtyard's illumination and parking lot. The new panel board shall have space for the main breaker (as requested before, 3X150A), barrages for phases, neutral and ground (copper). The phases' barrages shall be protected by an acrylic sheet o any other RETIE certified mechanism, in order to avoid direct manipulation. The new panel board to be supplied and installed shall be in metal and it shall comply with Colombian standard NTC 3475 or US standard UL67. The new panel boar shall have a current capacity up to 400A, voltage isolation rate 600VAC and interruptive current capacity up to 10KA.

The awarded contractor shall re-install the breakers currently placed on the existing panel board (To be removed by the awarded contractor), and installing the new one for the new container to be provided and installed by the awarded vendor. The new breakers shall be new brand and RETIE certified such as ABB, Siemens or Merling Gerin.

The new panel board shall count with a power meter PM820. The new panel board shall also have a TVSS unit class B, which shall comply with US standard ANSI/IEEE C62.41-C62.45. The new panel board shall be placed into a metallic enclosure IP 66, NEMA 2-3R, which shall be supplied and installed by the awarded contractor. The new enclosure shall have frontal door, lock, inspection window and external signaling. This new enclosure shall be fixed in one of the walls of the Infants dormitory, see plan E1.

The new enclosure shall be connected with the new junction box CS 274 by mean of PVC EB tubes and curves (adapter type "elbow"). The base of the enclosure shall have poke-thru to allowing the access of the main circuit branch and the distribution of the secondary circuit branches. The concrete base to be installed shall have six (6) penetrations, two inches gauge each one and they shall finish in PVC terminals (chamber type), four inches each one.

The new enclosure shall be made in CR BWG No 18-20 and it shall be painted with special treatment in order to support the outdoor conditions, oxidation, water and salinity of the current area. The internal spaces shall comply with the US standard IEEE-142. Colombian standard NTC 2050 and RETIE shall be considered during installation. The minimum dimensions for the new metallic enclosure are as follows: 70cm (front), 40cm (depth) and 170cm (height).

Shelter's connection into the new electrical panel board

The bidder shall quote for disconnect the electrical circuits, which are currently connecting the existing shelters and the courtyard and also reconnecting them into the new electrical panel board. The bidder shall include in his proposal the electrical connectors (3M brand is suggested or any other RETIE certified) as well as the necessary cabling portions (same caliber as on site) to connect the circuit branches into the new electrical panel board (Taking into account that the new panel board shall be placed in the same location of the existing panel board). The bidder shall also quote to remove the existing main circuit, which is currently

tied to the existing electrical panel board to be removed. The wiring, electrical panel board and enclosures and breakers to be removed shall be returned to the project's COR.

Adjustment of current protection in Logistics' shelter

The bidder shall quote for supply and install a set of two totalizer 3X30A(three-poles, thermo-magnetic, industrial type and RETIE certified), which shall replace the existing two units of 3X80A, one installed on the general distribution panel board and the second one in the logistics' shelter. The removed units shall be returned to project's COR.

Low voltage works (LV)

The bidder shall quote for supply and install an electrical main circuit, which shall feed the new shelter. This new circuit shall be connected from the power circuit board, which is located in the building next to the assigned area for the new shelter. The new main circuit branch shall have a capacity of 10KVA. The requested circuit branch shall be type dual-phase, three lines and grounding, 2XNo8+1XNo8+1XNo12. The approximately distance between both circuit boards is 20 meters; however the bidder shall verify the distance. The bidder shall quote two (2) main breakers, 2X30A each one, placing one unit in the new circuit board and the other one in the existing circuit board.

Main circuit branch canalization

The bidder shall quote for supply and install a single tube PVC 1 ½", for connecting the new electrical distribution circuit board with the new circuit board (inside the shelter). The pipe shall be undergrounded 60 cm from soil level. An underground warning tape shall be placed 30 cms from soil level. The contractor shall follow the Colombian standard CS 207. The length of the main circuit branch is 20 meters approximately, however the bidder shall review the distance on site.

The pipe shall be extended until a new junction box with dimensions 50cmX50cmX60cm. This box shall also be supplied and installed by the awarded contractor. The piping continues from the new junction box to a new electrical box with a safety industrial receptacle, dual pole, twist lock type, which shall also be supplied and installed by the awarded vendor and which shall be placed 50cm from soil level and canalized by a galvanic tube of one inch gauge. The segment between the new circuit board and the industrial receptacle shall be canalized by an American liquid- tight conduit, one inch gauge, including fixing accessories and coupling, which are suggested by the manufacturer. The same segment shall finish with a safety jack (male), matching with the same type of the industrial receptacle; both shall be supplied and installed by the awarded vendor.

The connection plug to the container should be of the box type, and the connection pin or cord of the pin type, in accordance with Standard NTC 2050, Article 551-46 a)1).

The bidder shall include in his proposal all the civil work required for this item, such as material removal, refilling, channel construction, repainting, junction boxes and any extra-work required for leaving the affected areas as originally. The bidder shall use better qualities and quantities in order to comply with construction codes, even if the existing locations do not comply with.

Electrical circuit board with breakers

The contractor shall supply and install an electrical circuit board, certified under RETIE standards. This panel shall be located inside the container, at a height of at least 1.40m above the level of the container floor (measured to the bottom of the panel). The new panel shall have a main circuit breaker and the regular ones, The board shall have a capacity of 12 circuits.

a. **Illumination**

Single pole Breaker with 15A capacity for 4 lamps - 4X17 W.

Single pole Breaker with 15A capacity for 4 lamps – special lamps

b. Receptacles

Single pole Breaker with 15A capacity to support 5 120V receptacles

Single pole Breaker with 15A capacity to support 5 120V receptacles

Single pole Breaker with 15A capacity to support 1 communication closet 120V

Double pole Breaker with 2X20A capacity to support AC

Double pole Breaker with 2X20A capacity to support AC

The circuit board shall have barrage for phases, neutral and grounding wires. The circuit board shall comply with standards NTC 3475 and UL67. The new panel shall have space for the main breaker. The main breaker shall be thermo-magnetic, industrial type with capacity of 2X35-40A. The new circuit board shall be grounded to a grounding master bus. The new circuit board shall have a door and lock. It shall be labeled and shall have a single diagram and power distribution chart. Each circuit shall be identified by solid labels, fonts in white color and black for background.

120V Electric receptacle Points

The bidder shall quote for supply and install ten (10) receptacles for 15A/120V, double jack, grounding pin, hospital, duly labeled with a non-removable countersunk (low or high relief) plastic or metal label. The sockets should be connected throughout the circuit, and will be uniformly distributed (or as shown on the plan). These sockets will be fitted 0.30m above floor level, unless otherwise stated on the plans

Electrical cabling shall follow the color code for low tension connections (yellow, blue or red for phases, white for neutral and green for grounding). It shall be installed as follows: **phase “S” in yellow, phase “R” in blue, Phase “T” in red, neutral in white or gray and grounding in green.** Every circuit connected to the new circuit board shall preserve the color of each phase, therefore if circuit is connected to the phase “R”, then all the elements that conform that circuit shall be wired in yellow.

220V Double-Phase Electrical receptacles

The bidder shall quote for supply and install two (2) industrial receptacles, double socket, with grounding pin, which shall be used for air conditioning units and distributed as shown on the plan, placing them at a height of 2.00 m above floor level. These receptacles should be duly marked with a non-removable countersunk (low relief) plastic or metal label, indicating the output voltage. The type of NEMA configuration for each receptacle shall depend on the conditions directly required by the manufacturer of the provided units.

Fluorescent Lamps

The bidder shall quote for supply and install four (4) lamps 2 x 32" fluorescent type, including starting condenser, electronic ballast and factory-produced acrylic protector. These lamps shall be fitted inside the container. The item includes the lamps themselves, single receptacles 120V, wiring with jack and rubber conduit for low smoke emission, switches and fluorescent tubes (See plan). The switches shall be placed 120cm above the floor. The bidder shall include in his/her offer the piping system required for the lamps and receptacles wiring, which shall be type PVC ½", embedded in walls. The price shall also include accessories such as unions, connectors, and miscellaneous elements which are required for the canalization work.

Special lamps

The bidder shall quote for supply and install four (4) embedded lamps type 2X11/120V, reference 2X-E27 or equivalent. The light intensity shall be controlled by a dimmer, Luminex brand or equivalent (amber) 120 V

for 300W. (wlx/ax/lx-7). This item includes wiring, embedded piping type PVC ½ and miscellaneous accessories.

Grounding system

The bidder shall quote for supply and install a new grounding system as requested as follows. The new panel board shall count with its own grounding barrage and also with a master grounding barrage. The electrical network shall be grounded into a new grounding system, with impedance lower than to 5 Ohms. The new Master barrage shall connect the grounding line that runs from the power substation, the grounding line from the new distribution panel board and the grounding lines which are running to each of the new buildings.

The new master grounding bar shall be made in copper electro-tinned with 10mm of thickness, 15 cm length and 5 cm width. The grounding lines shall be marked and it shall include the name of the target circuit.

The grounding system shall be composed by four electrodes and forming a square figure. Every electrode shall be separated 3 meters each others. Each electrode shall include its own inspection concrete box and it shall have a concrete cover and a free space between the visible end and the land of at least 30cms.

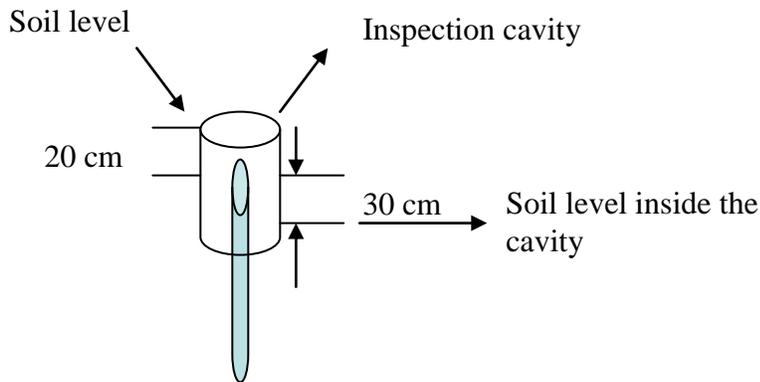
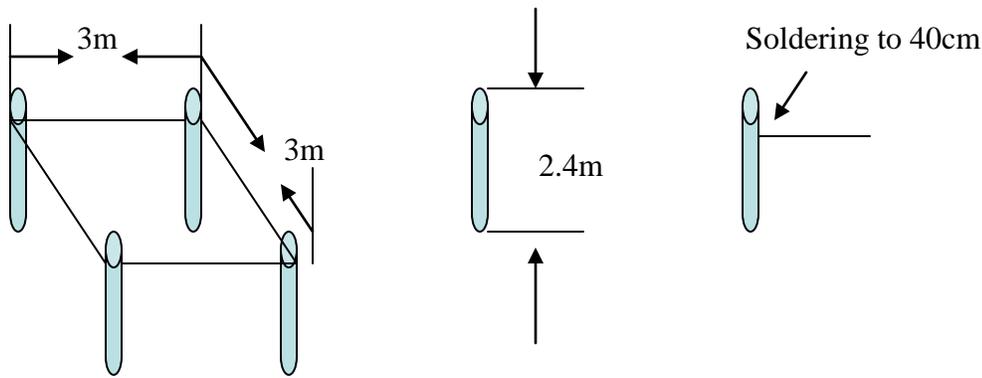
In case that current soil conditions do not allow obtaining the required impedance value as requested in this technical paper, the bidder shall conduct a grounding analysis in order to diagnose the type of soil treatment for being used to improve the expected value of impedance. The awarded contractor shall certify the system by the following sheet:

Impedance value according to IEE 142-4.1.2

- Electrodes material NEC 250-52-c (2)
- Electrodes size and diameter NEC 250-52-c (3)
- Electrodes separation NEC 250-56
- Connection quality NEC 250-70
- Conductor's gauge network NEC 250-50 (d)
- Conductor's gauge for grounding NEC 250-66C
- Conductor qualities NEC 250-50
- Low power interconnection NEC 250-68
- Electrodes accessibility NEC 250-68
- Grounding barrage EI/TIA 607-5.4
- Flowing current IEEE 1100 table 4.3

The electrodes shall be caliber 5/8", 2.44 length, copper 99%. The grounding line shall be made in copper AWG #1/0. The plan E7 depicts grounding installation.

Note: The electrodes' inspection cavities shall contain a soil treatment such as Favigel or Hidrosolta, in order to improve soil conductivity and homogeneity features.



Internal canalization

The contractor shall supply and install perimeter plastic raceway with middle divisor (multichannel); color is defined during project execution. Canalization shall have isolated grounding lines, which shall be directly connected to the grounding master bus, this according to EIA/Tia 607. The grounding lines shall be extended in a radial manner, avoiding loops. Channels shall be minimum 10 cm X 5 cm.

Double Voice / Data points

The contractor shall supply and install ten (10) data/voice access points, ANSI/TIA Category 6. The data/voices points shall be connected to a patch panel 12 ports, which shall be certified for running ANSI/TIA Category 6 applications. The access points shall be certified to be used for ANSI/TIA Category 6 applications, the awarded vendor shall use the channel mode test methodology. The new points shall be placed in the new raceway. The bidder shall include in his/her proposal the accessories, parts and work required to install the data network. The bidder shall quote for supply and install one communication closet (CC) in cold roll caliber 18-16, of 20 inches height, two metallic trays, electrostatic painting, door with glass and lock, one DPS class A multi-receptacle for 5 double outlet. The awarded contractor shall extend three patch-cords from the shelter to the CC which is located in the communication building 30 meters in front of the new shelter. This item includes supply and installs wiring, junction boxes, fixing elements and duct works. The canalization shall be done in EMT ¾ inches gauge. The piping system shall run underground 40 centimeters from soli level and the UTP cable to be used shall be outdoor type. This item includes poke-thru, painting, finishing and holding accessories.

Air Conditioning Units

The bidder shall quote for supply and install two (2) air conditioning (AC) units window type for the container, with cooling capacity of 8000 BTU each one. The units shall contain their respective supports and anchor elements. The air conditioning units will be fitted at a height of 2.00m above floor level (measured to the top edge of the air conditioning unit). This item includes a bank-type security grille around the air conditioning unit supports, holes no bigger than 0.10m, with non corrosive and finish paint. Additionally, in order to prevent for being removed them from outside.

Additionally, contractor shall supply and install pre-ondulated mesh of ½” hole in all windows; installed to the grill frame, or with an additional frame.

The AC shall include the water drain system, piping type PVC. These water drain systems shall be designed in order to evacuate the water which is contained in the trays and prevent water to be blocked by dust and other elements.

Telephone network

This item includes supplying and fitting a telephone strip type S110 with a capacity of ten lines. This telephone strip will be fitted inside of the new CC. The item includes supply and installs a multi-pair cord of 10 pairs and connection from the current PBX system, which is located in the communication building, 30 meters from the new shelter. This item also include piping PVC ¾ inches gauge, underground 40 cm form soil level and multipair cord shall be outdoor type. The junction boxes, civil work and any extra work required for comply this issue shall be included in bid.

Air Extractor

This item includes fitting an electric extractor fan, VENTILATION FAN MOD 676 – 684 for 110 cubic feet with the respective independent switch. This fan shall include a frame with ½’ waved mesh.

Network Switch

The bidder shall quote for supply and install a switch of 12 UTP ports, 2/3 layers, WEB manageable. Operating System configuration shall be done under Colombian National Police direction.

Grounding lines’ labeling

The grounding lines which are running from the main distribution panel board shall be marked. These marks shall be done in solid plastic, 5cmX3cm, fonts colored in red and background colored in yellow.

Panel board labeling

The main distribution panel board, the breaker on the substation’s main panel board, the new distribution panel board for each module (building) and their breakers shall be marked. All marks shall be done in solid plastic, fonts colored in white and background colored in black. The following dimensions are expected:

- 10cmX5cm, for the main distribution panel board
- 5cmX3cm, for each distribution panel board
- 5cmX3cm, breaker on the substation; main panel board

All panel boards shall have their own single diagrams, load diagrams and all circuits shall be labeled.