# ATTACHMENT # 3 SPECIFICATIONS

***A translation to Spanish will be given as a courtesy. If a discrepancy is found between the version in Spanish and the version in English, the version in English will prevail.***

## GENERAL DESCRIPTION OF THE PROJECT

The following are the main characteristics of the works to execute at the Police facilities, located at Pijaos, Tolima.

The works to be done consists in the refurbishing of one (1) 20 feet sea van land container, to be used as night vision laboratory and one (1) 40 feet modular container to be used as a mine detection facility, as well as to provide the main power circuit branch, which will connect both containers to the existing electrical distribution panel. The transportation and placing of the containers at the place shall not be part of this scope, nor shall the concrete supports for the containers.

It is clear that the Contractor shall verify the measures and get familiar with the terrain and the existing conditions before sending his quotation. In this statement of work, guide measures are given for the contractor to check the drawings, the construction quantities chart and to check the physical conditions on site. In no way this figures compromise the Embassy to pay additional quantities if the resulting measures on site vary from the information given by the Embassy.

For the structural, the electrical and communications installations, the Contractor shall supply a maintenance and inspection manual, for routine activities, with recommendations for the inspection and maintenance after storms or severe load conditions.

## DETAILED DESCRIPTION OF THE PROJECT

### PRELIMINAR ACTIVITIES

**Electrical Inspection**
The Contractor shall make an electrical inspection to both containers in order to certify that the existing internal electrical distribution system of the containers is adequate for this installation and shall guarantee the correct execution of the works and fulfilling the standards of the applicable codes before the start of the refurbishing works.

**Temporary Facilities**
If required the Contractor shall submit a drawing with location of the storage facility, fencing of the project site and temporary services (water, energy, telephone, etc.), before starting its installation, for the approval of the COR. All the installations shall be removed by the Contractor with the approval of the COR when the works are finished. The site shall be left as it was found before the start of the project, with grass, sidewalks, etc. This removal, along with the installation shall be quoted at a global price and shall be included in the total cost of the project.
Provisional services: the eventual supply of any service by the final user to the Contractor shall not be a conditioned help and its eventual suspension shall not give place to any claim by the Contractor. The Contractor shall provide alternative services for these situations.

The Contractor shall supply the services of security of the construction site and the camps. The Embassy and the final user will not be responsible for the payment of the security services nor for the elements left at the construction site.

The work site shall be completely isolated from zones or roads surrounding the same. Similarly, if a materials storage area is built, this shall be fenced off in the same manner. A fence will be built for this purpose, consisting of safety tape with wooden posts every two meters. While the works are in progress, the contractor shall ensure that the fence is maintained and repaired, so that it is always in suitable condition.

## 1. 40 FT. CONTAINER FOR MINE DETECTION FACILITY

### 1.1 REFURBISHMENT OF CONTAINER

**Repair and finish of container walls and roof**
Contractor shall check and repair internally and externally the modular container roof and walls, matching the existing materials and conditions of the container in order to guarantee that no water filtrates inside the facility.

**Improve thermal insulation and interior finish**
After the walls and roof part of the container has been repaired, contractor shall supply and install on the roof and on all the internal walls high density injected (non flammable) polyurethane or similar material in sheets, 5 mm minimum thickness in order to guarantee adequate thermal and acoustic insulation.

Then the contractor shall re-install the interior existing finish of the container, anchored to the structure as it was. The area shall cover the roof and all walls.

**Dividing Panel Supply and Installation**
This item includes the supply and installation of a dividing panel or wall 10cm. thick, in Superboard or similar material, with the same characteristics as the outer container panel and with the same type of thermal and acoustic insulation. (See plan)

**Entrance door**
The contractor shall supply and install a new door replacing the existing one. This door shall be 1.0 m width by 2.0 m height in metal sheet of minimum cal. 18 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. 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. (See attached picture)

**Door grill**
Additionally a ½" square grill shall be installed in each door; with horizontal spacing of 0.10 m and vertical spacing of 0.20 m. In the middle of the grill door a space will be left, as it can be seen in the example in order to install an abatable shelf of 0.30 m x 0.75 m. 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. (See attached picture)

**Internal door**
The contractor shall supply and install a sliding door 0.90m x 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.

**Window grill plus pre-ondulated mesh and A/C units supports**
The contractor shall supply and install a metal bank-type safety grille on the outside of the existing windows, holes not larger than 0.10 m. x 0.20m. painted with anti-corrosive paint and topcoat; and a pre-ondulated mesh hole ½" in all windows with an additional frame. Additionally a mosquito net shall be incorporated into the existing windows.
Additionally, contractor shall supply and install a bank-type security grille around the air conditioning unit supports holes no bigger than 0.10m, with non corrosive and finish paint, in order to prevent for being removed them from outside, with a pre-ondulated mesh of ½'' hole installed to the grill frame, with an additional frame. (See attached picture)

**Over roof**
The contractor shall supply and install a metal structure supported over the container; the contractor shall also supply and install the roof 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.

**Staircase**
The contractor shall supply and install an extruded-mesh, metal staircase, painted with anti-corrosive paint and topcoat, for the container access. The staircase should be the same width as the doors and the height shall be measure on site.

**Security cage**
The contractor shall supply and install a security cage in pre-ondulated mesh of ½'' hole with a metallic frame around it, in order secure the storage area. The pre-ondulated mesh shall have metallic studs in between the frame horizontally as well as vertically in order to prevent the bending of the mesh. The height of the mesh shall be to the roof of the container and the length shall be extracted from the attached drawings. The contractor shall supply and install a sliding door 0.90m x 2.0m of the same material and shall include hoops and pins to install two padlocks at the exterior side.

## 1.2 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.

**Low voltage works (LV)**
The contractor shall quote for supply and install an electrical main circuit, which shall feed the container. This new circuit shall be connected from the power circuit board, which is located at 30 m. form the assigned area for the container. The new main circuit branch shall have a capacity of 10 KVA. The requested circuit branch shall be type dual-phase, two lines, neutral and ground, AWG THHN/THNW 2XNo6+1XNo6+1XNo8. The approximately distance between both circuit boards is 30 meters; however the contractor shall verify the distance. The bidder shall quote two (2) main breakers, 2X50A each one, placing one unit in the container circuit board and the other one in the existing circuit board (Tablero de Distribución T2).

**Main circuit branch canalization**
This item include piping, junction boxes and twist-lock weather proof NEMA type connector as described:

The bidder shall quote for supply and install a single tube PVC EB Electric type, gauge 1 ½'', for connecting the existing circuit board with the container circuit board (existing). The pipe shall be undergrounded 60 cm from soil level. An underground warning tape shall be placed 30 cm from soil level.

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 use the two existing electrical circuit board, certified under RETIE standards. These panels are located inside the container, at a height of approx 1.40m above the level of the container floor.

The contractor shall guarantee that the circuit board is grounded to a grounding master bus. 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 six (6) additional receptacles for 15A/120V, double jack, grounding pin, hospital grade, duly labeled with a non-removable countersunk (low or high relief) plastic or metal label. The sockets should be connected throughout the circuit, and shall be uniformly distributed (or as shown on the plan). These sockets shall 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, neutral in white or gray and grounding in green**. Every circuit connected to the new circuit board shall preserve the color of each phase.

**220V Double-Phase Electrical receptacles**
The bidder shall quote for supply and install four (4) 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) additional lamps 2 x 32" fluorescent type (matching the existing ones), 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.

**Grounding system**

The bidder shall quote for supply and install a grounding system, which shall be composed by four electrodes, copper 99%, 5/8'', 240cms each one. These electrodes shall be connected through a bare wire type AWG caliber No.2. The electrodes shall conform and square of 4mX4m. The grounding system shall have inspection cavities with physical dimension: 0.3mX0.3m and depth of 0.5m, covers, which shall be labeled with a "T" letter. The covers shall be built in concrete and metallic frame for heavy traffic. The expected impedance value according to this configuration shall be 2Ω or lower, in case of a bigger value, the bidder shall include in his/her proposal the pricing for achieving a soil analysis, in order to adjust the current conditions for getting the expected impedance value.

The grounding electrodes and the grounding line (AWG No2) shall be exothermic welded. The grounding line shall be connected to a grounding master bus, which shall have the following dimensions: 10 mm thick, 50mm width and 200 mm length. The master bus shall be a copper bar, tin-plated, with a number of holes and separation each other according to NEMA standards. All the grounding lines shall have terminals in order to be screwed in the new master bus. The master bus shall be provided and installed by the awarded vendor; this device shall be placed inside of a crib. The crib shall have door and electrical insulators. The crib shall be fixed in one of the external walls of the shelter. The grounding crib shall be for outdoor application, type NEMA 2-3, special painting with treatment anti-corrosion. The grounding master bus shall receive the grounding line of the new electrical board, the existing electrical board and the shelter. The new grounding system shall be certified by fulfilling the follow standards:

- Official resistance value according to Standard IEEE 142-4.1.2
- Electrode Material according to Standard NEC 250-52-c (2)
- Pipe type Electrode Size according to Standard NEC 250-52-c (3)
- Distance between placed electrodes NEC 250-56

- Connections Quality NEC 250-70
- Grid Conductors Gauge NEC 250-50-(d)
- Ground Connector Gauge NEC 250-66
- Wires Quality NEC 250-50
- PT NEC Interconnection NEC 250-68
- Accessibility to Electrode NEC 250-68
- Main grounding bus bar EIA/ TIA 607-5.4
- Flowing current IEEE 1100 Table 4.3

**Note: The proposed grounding system shall connect both mine detection and NVD lab (Each container shall have a ground master bus, grounding line and piping installation independently)**

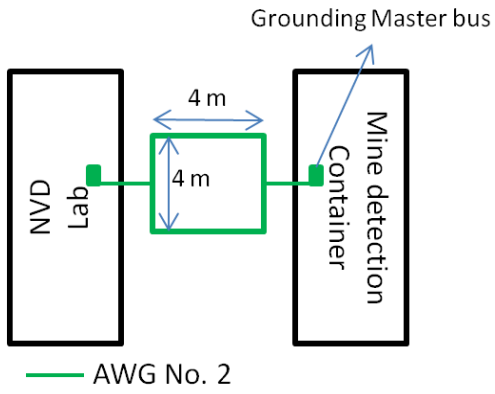


**Exhibit No. 1**

**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.

**Air Conditioning Units**
The bidder shall quote for supply and install four (4) air conditioning (AC) units window type for the container, with cooling capacity of 12000 BTU for the two of the A/C units which shall be the ones installed in the administrative and maintenance areas, and two A/C units of 24000 BTU for the ones at the storage area. 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, in order to prevent for being removed them from outside (as described above), with a pre-ondulated mesh of ½'' hole 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.

**Electric Extractor Fan**

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.

**Wireless router**
The bidder shall quote for supply and install a wireless router, which shall be located on each shelter. The unit to be supplied and install shall have a coverage range of 50 meters, supporting up to 30 clients, dual band operation 2.4GHz and 5GHz, 802.11 a/b/g/n, wireless channel encryption AES 128 or better, four Ethernet ports (10/100/1000 Mbps) and manageable by internet. The unit to be supplied and install shall be Cisco, Linksys, 3COM or equivalent. The bidder shall include in his bid the catalog and technical sheet of the proposed device.

**UTP wiring**
The bidder shall quote for supply and install an UTP cord (Linkage copper line), EIA/TIA CAT 6 certified, for connecting the proposed wireless router and the existing data switch, which is located in the communication container (30 meters from new proposed container's location).

The bidder shall quote AMP, Siemon or Panduit products or RETIE certified. The wiring certification shall be done by using a cabling network analyzer, which shall have a calibration certificate issued with no more than six months.

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.

**UPS 1KVA- Cubicle**
The bidder shall quote for supply and install five (5) UPS 1KVA, true online system, double conversion, single-phase, 10 minutes autonomy and USB port. The proposed UPS shall be located on each cubicle. The unit shall be new brand, APC or Powerware, time of manufactured shall not be over six months (this time includes import process to Colombia). Suggested UPS brand PowerWare (Eaton) or APC.

**1.3 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.**

## NOTE: This chapter only applies to Mine Detection Container

**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 on 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.

**Working bench**
This item refers to two (2) working benches 0.70m wide located in the maintenance area. There will be two (2) of 1.20m. This shall be heavy duty high resistant benches, stable, and shall have hard-wearing materials. The offeror shall include a protective cover for the wood benches made out of rubber reference smooth M-flex with a thickness of 4 mm. or "Negro Consul Proquinal" type or similar with a thickness of 3 mm. The benches shall have the smooth M-flex rubber or "Negro Consul Proquinal" type adhered to its surface.
The benches shall be made out of immunized wood appropriately treated, dry, polished, and lacquered, design to support loads up to 500 kg. The wood surface shall have a minimum thickness of 5 cm. Or two "quintuplex" sheets with wood frame. Each bench shall be 0.90 m. high, 1.20 m. width and 0.70 m. depth, with a pier of minimum 30 mm. at a height of 0.35 m. The system does not have lateral lids so it can be access from any direction. The benches shall have terminals in rubber and/or plastic lids.

**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 seize 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 one (1) hanging cabinet 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. high. 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 is one (1) high filing cabinet.

**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 40 kg/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 three (3) boards 1.0m x0.70m located at the storage, maintenance and administrative areas.

## 2. 20 FT. CONTAINER FOR NIGHT VISION LABORATORY

### 2.1 REFURBISHMENT OF CONTAINER

**Entrance door**
The contractor shall supply and install a new door replacing the existing one. This door shall be 1.0 m width by 2.0 m height in metal sheet of minimum cal. 18 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. 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. (Similar characteristics to the mine detection container description)

**Door grill**
Additionally a ½" square grill shall be installed in each door; with horizontal spacing of 0.10 m and vertical spacing of 0.20 m. In the middle of the grill door a space will be left, as it can be seen in the example in order to install an abatable shelf of 0.30 m x 0.75 m. 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. (Similar characteristics to the mine detection container description)

**External paint**

External paint shall be epoxy. First, a non corrosive coat will be applied, then two coats of epoxy or any other type of paint that is abrasion and weather resistant; minimum thickness of 5mils; same or similar color to the existing containers located at the area or color selected by the Embassy. Area to be painted is roof and all walls and bottom part of the container to avoid corrosion.

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

**Miniblinds**
The contractor shall supply and install horizontal miniblinds, white color. Miniblinds shall be aluminum. There will be one located in the office's window.

**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 at the maintenance and administrative areas.

## 2.2 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.

**Low voltage works (LV)**
The contractor shall quote for supply and install an electrical main circuit, which shall feed the container. This new circuit shall be connected from the power circuit board, which is located at 30 m. form the assigned area for the container. The new main circuit branch shall have a capacity of 10 KVA. The requested circuit branch shall be type dual-phase, two lines, neutral and ground, AWG THHN/THNW 2XNo6+1XNo6+1XNo8. The approximately distance between both circuit boards is 40 meters; however the contractor shall verify the distance. The bidder shall quote two (2) main breakers, 2X50A each one, placing one unit in the container circuit board and the other one in the existing circuit board (Tablero de Distribución T2).

**Main circuit branch canalization**
This item include piping, junction boxes and twist-lock weather proof NEMA type connector as described:

The bidder shall quote for supply and install a single tube PVC 1 ½'', for connecting the existing circuit board with the container circuit board (existing). The pipe shall be undergrounded 60 cm from soil level. An underground warning tape shall be placed 35 cm from soil level.

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.

**Grounding system**
Refer to grounding system on page 7.

**Wireless router**
The bidder shall quote for supply and install a wireless router, which shall be located on each shelter. The unit to be supplied and install shall have a coverage range of 50 meters, supporting up to 30 clients, dual band operation 2.4GHz and 5GHz, 802.11 a/b/g/n, wireless channel encryption AES 128 or better, four Ethernet ports (10/100/1000 Mbps) and manageable by internet. The unit to be supplied and install shall be Cisco, Linksys, 3COM or equivalent. The bidder shall include in his bid the catalog and technical sheet of the proposed device.

**UTP wiring**
The bidder shall quote for supply and install an UTP cord (Linkage copper line), EIA/TIA CAT 6 certified, for connecting the proposed wireless router and the existing data switch, which is located in the communication container (40 meters from new the proposed container's location).

The bidder shall quote AMP, Siemon or Panduit products or RETIE certified. The wiring certification shall be done by using a cabling network analyzer, which shall have a calibration certificate issued with no more than six months.

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.

**UPS 1KVA- Cubicle**
The bidder shall quote for supply and install four (4) UPS 1KVA, true online system, double conversion, single-phase, 10 minutes autonomy and USB port. The proposed UPS shall be located on each cubicle. The unit shall be new brand, APC or Powerware, time of manufactured shall not be over six months (this time includes import process to Colombia). Suggested UPS brand PowerWare (Eaton) or APC.