Renovation of Warehouse at Okhla

SCOPE OF WORK

Brief Description of work: -

Contractor shall do the renovation of ware house as per below sow and specifications:

1. Masonry
2. Carpentry
3. Plumbing
4. Electrical
5. Interior painting
6. Exterior Painting.
7. Cleaning

The contractor shall be given total 50 working days to complete this project after the receipt of letter to proceed.

Note: Contractor should verify availability of all material required as per scope of work and accordingly bid for it. The contractor should use make and brand of material as mentioned in the scope of work or equivalent makes after approval from COR.
The contractor should complete the entire job as mention in the scope of work and then prepare punch list along with supervisor of the job. All the punch list items should be completed before or on completion date.

Masonry

1. Waterproofing of basement walls:

Approximate Area to be treated: 1000 Sq. ft.

Nozzle:

a) Remove plaster around the seepage affected walls in the basement. Install/grout nozzles for injection grouting on brick joints of the wall.

b) Each nozzle shall be 8mm dia. aluminum pipe (approx. 20 gauges thick).

c) Each nozzle shall be minimum of 4" or longer as required to penetrate through casement. The distance between two nozzles shall be 30" center to center.

d) The nozzle shall be permanently grouted in wall, fixed with cement mortar of ratio 1:4.

e) After grouting and injecting waterproofing material in nozzle, each nozzle shall cut off level with top finish of wall and sealed with waterproof grouting material.

f) The Contractor shall re-plaster the seepage affected area with 1:3 cement sand mortar after mixing the water proofing compound as per the manufacturer instructions. Provide a coat of cement primer on the newly plastered walls before painting.

Material

a) PU injection grouting of walls using hydrophobic polyurethane resin (BASF or WEBAC-germany or equivalent makes) by using pressure grouting through 8mm packers fixed using epoxy putty.

b) The material shall be injected with pump pressure through nozzle into wall until the saturation point (until it stops taking more material).

c) The material shall be mixed as per manufacture instructions.

2. Construction of RCC ramp at entrance (5' wide x 25' long) of the ware house as per below specifications:

   - The contractor shall cut the existing KOTA stone (13") from the steps as well as floor where supporting wall to be made for ramp.

   - Construct 13" thick brick supporting wall as per the slop of the ramp. Brickwork should be done with cement: sand mortar of ratio 1: 3.

   - The contractor shall fill the brick bats between supporting walls up to the wall level. The entire brick bats shall be rammed and compacted properly.

   - Provide and lay 3" thick PCC layer over the brick bats and supporting walls in ratio 1: 3: 6 (1 cement: 3 stone dust: 6 stone aggregates) on the entire platform.

   - Pour 8" cement concrete of 1:2:4 ratio with 10mm steel bar at 4"CTC in both directions over the PCC layer.

   - Plaster the supporting wall from outside with 1:3 cement sand mortar. Paint the wall after a coat of cement primer.

   - Provide and install 34" high MS railing for ramp with wooden handrail. The railing shall be made with ½"x ½" MS baluster. The gap between two balusters shall not be more than 4". The MS baluster shall be embedded in ramp with hold fast. The contractor shall provide and install MS flat on top of metal balusters and fix wooden rail. The wooden rail shall be made with 3" x 2" teakwood. The contractor shall paint/polish the metal railing/hand rail. The contractor shall provide all the materials to complete the job.

3. Grind and clean the granite/marble which is installed on walls and flooring of both bathrooms as per masonry specifications.

4. Remove loose plaster from the basement walls, roof floor, boundary walls as well as exterior walls of the building (app. 3250 sq. ft.). Re-do the plaster with 1:3 cement sand mortar after mixing waterproof compound of SIKKA makes or equivalent as per the manufacture instruction. The contractor shall provide a coat of cement primer on newly plastered wall before painting.

5. Clean the overhang of the building and do water proof elastomeric coating (two coats) over the overhang (app. 1600 sq. ft.). The contractor shall use waterproof coating of Rustoleum makes or equivalent as per manufacturer instruction.

6. The contractor shall seal the gap between KOTA stone flooring and skirting in driveway with epoxy cement grout, matching to the color of KOTA stone. (app. 40 running feet)

7. Provide and replace manhole cover complete with frame for tube-well pit. The manhole cover shall be made of ½" thick MS sheet.

8. Provide and raise the balcony railing of mezzanine floor by adding two horizontal MS pipe (1 ½" dia, B-class). MS pipe shall be installed in such a way that pipe can be removed whenever required. The contractor shall repair the side wall after installation of pipe, matching to existing.

9. Repair the rolling shutters at back for smooth opening and closing.

10. Provide and install 24" high MS baluster at 10 locations of the warehouse for protection. The balusters shall be made with 3" MS pipe of B-class and shall have 6" x 6" MS plate at bottom. Balusters shall be installed on the floor with necessary anchors. Paint all balusters with lead free enamel paint of black and yellow color strips after a coat of metal primer.

11. Provide and install proper enclosure for existing pump at roof. Enclosure shall be made with Fiber sheet, welded wire mesh and angle iron frame (1" x 1" x 1/8") to protect pump from the rain water and bad weather. Paint the enclosure with lead free enamel paint after a coat of metal primer. The existing pump are to be properly kept on RCC platform and fixing them with proper nut bolts. . The contractor shall use 8-mm dia. MS steel bar and 1:2:4 cement concrete for R.C.C platform.

12. Provide and install J-hook to secure the existing GI sheet of staircase roof with existing metal frame. Provide and install bituminous washer so that no leakage should be done.

Plumbing

1. Bathroom #1

a) Provide and replace washbasins (two each) complete with waste, new mixing fitting and bottle trap, matching to existing. The wash basins shall be installed on angle iron (1 ½" x1 ½") frame. The angle iron frame shall be grouted properly in the wall to support the washbasin. The washbasin-mixing fitting shall be of **JACQUAR** makes (23167B) or equivalent and bottle trap shall be of C.P 1¼" of **Jacqaur** make (model # 767) or equivalent & connect to nearest floor drain with 1 ½" PVC pipe of Supreme makes or equivalent (6 kg).

b) Provide and replace angle valve for washbasins (for cold as well as hot) with ½" CP pipes for two washbasins. The angle valve (four each) shall be of Jacquar makes, model #053 or equivalent.

c) Provide and install two each ½" GI pipe (B-class) lines in the bathroom. One line shall supply cold water from existing connection of wash basin to water heater with gate valve and second line will supply hot water from water heater to both wash basins. Both lines shall be on surface.

d) Provide and replace all four urinals complete with CP trap, angle valve as well as copper pipe. The Urinals shall be of Hindustan makes or equivalent. The urinal traps shall be connected to nearest floor trap with 1 ½" PVC good quality pipe.

e) Provide and replace drain grating (five each) in bathrooms. The grating shall be of 5" dia (CP) of Chilly makes or equivalent.

f) Provide and replace W/C complete with cistern and seat cover for bathroom with new **Parryware** make **INDUCE** model singles symphonic or equivalent. The contractor shall do necessary modification of floor trap as per location of the fixture.

g) Remove existing Indian type WC complete with cistern from bathroom. Provide and install new Orissa Pan W/C (model # 20004) with flushing pipe and low down cistern (model # 21001) of Hindustan makes or equivalent. Repair the floor, matching to existing after replacement of WC.

h) Provide and replace angle valve for both WC's with ½" CP pipes. The angle valve shall be of Jacquar makes, model #053 or equivalent.

i) Provide and replace both faucets of WC's in bathroom. The faucet shall be of CP, Jacquar makes.

2. <u>Bathroom #2</u>

a) Provide and replace WC cisterns (three each) complete with WC seat covers, inside cistern fitting as well as angle valve, matching to existing.

b) Remove existing faucets (three each) next to WC. Provide and install hand spray for all three WC complete with angle valve of Jacquar makes or equivalent.

c) Provide and replace waste of wash basin (three each), matching to existing.

d) Provide and replace wash basin mixing fitting for three washbasins. The washbasin-mixing fitting shall be of **JACQUAR** makes (23167B) or equivalent.

e) Provide and replace bottle trap of three washbasins. The bottle trap shall be of **Jacqaur** make (model # 767) or equivalent.

f) Provide and replace angle valve for three washbasins (for cold as well as hot) with ½" CP pipes. The angle valve shall be of Jacquar makes, model #053 or equivalent.

g) Provide and install two each ½" GI pipe (B-class) lines in the bathroom. One line shall supply cold water from existing connection of wash basin to water heater with gate valve and second line will supply hot water from water heater to three wash basins. Both plumbing lines shall be on surface.

h) Provide and replace drain grating (four each) in bathrooms. The grating shall be of 5" dia (CP) of Chilly makes or equivalent.

3. <u>Guard Toilet:</u>

a) Remove existing Indian type WC complete with cistern from bathroom. Provide and install new Orissa Pan W/C (model # 20004) with flushing pipe and low down cistern

(model # 21001) of Hindustan makes or equivalent. Repair the floor, matching to existing after replacement of WC.

i) Re-install the existing wash basin with new angle iron frame. Provide and install bottle trap for the washbasin. The bottle trap shall be of **Jacqaur** make (model # 767) or equivalent and connected to the drain. The contractor shall provide all the material to complete the job.

4. Provide and install ¾" GI pipe line of B-class (Jindal makes or equivalent) with gate valve from roof water storage tank to supply water to water cooler in driveway.

5. The contractor shall clean the roof top as well as driveway and overhangs. Also repair the holes in parapet walls which were done for plumbing pipe line with 1:3 cement mortars.

6. Functional Checking:

The contractor shall carry out the following:

- Shall clean thoroughly entire sewer lines, drainpipes and traps of the warehouse.

- Roof and underground water tanks shall be cleaned and super chlorinated up to 15ppm of residual chlorine.

Carpentry

1. The contractor shall seal the gap between window frame and wall with embassy approved silicon of GE makes or equivalent in staircase.

2. Provide and install wooden hand rail with metal supports on the side walls of both steps (at entrance as well as basement) at the height of 34". The metal L-supports shall be embedded in sidewall of steps and repair the wall matching to existing finish. Provide and install MS flat on top of metal support and fix wooden rail. The wooden rail shall be made with 3" x 2" seasoned teakwood. Polish the hand rail, matching to existing. The contractor shall provide all the materials to complete the job.

Interior Painting

- Paint the interior of the complete warehouse including basement and restrooms with two coats of paint as per specifications for interior painting enclosed with the scope of work. All painting material to be arranged by the contractor. Inside of the house should be painted with 'Interior paint – Premium Acrylic Emulsion Paint shall have durable copolymer resin, high opacity micronized pigments, additives to give better properties, Good resistance against fungus growth and mildew. Good wash ability and low VOC (Volatile Organic compounds)

- Plastic acrylic emulsion paint (off-white color as directed by COR) shall be used for all walls of the warehouse. The rest rooms etc. are to be painted with lead free embassy white enamel paint.

- Painting of wood work/metal work (inside and outside) shall be painted as per existing finish (polished or painted).

- **The contractor shall repair all cracks/loose plaster/undulation on interior surface.**

- **Follow standard specifications for interior painting.**

- **The contractor shall make-sure all the doors and window shutters shall be opened and closed smoothly after painting.**

- **Remove hardware and hardware accessories, plates, light fixtures, and items in place that are not to be painted, or provide protection such as taping with 2" thick masking tape prior to surface preparation and painting (taping includes windows, door jams, etc.). Remove temporary protective wrappings after completion of painting operations.**

EXTERIOR REPAIR AND PAINTING

1. The contractor shall repair all cracks/loose plaster on overhangs, building walls, parapet walls, boundary wall and servant quarter.
The contractor removes all loose plaster /concrete and re-do the same with 1:4 cement plaster/ 1:2:4 cement concrete.

- Also the contractor shall repair visible cracks in walls/overhang/boundary wall/parapet walls of complete apartments building. The crack shall be enlarged in V-shape at least 1-1/2" wide and 2" deep to repair. The crack shall than be filled with 1:3 ratio cement mortar in two layer. The contractor shall apply a coat of cement based epoxy modified bonding agent before new plastering/concreting/repairing.
- For structural cracks, new steel bars shall be welded to existing bars for strength. The bars shall be painted with anti-rust coating of good quality. The contractor shall have to use approved quality bonding material make **Sika**, **Beckmen** or **Fosroc or equivalent**, ready-made cement patch repairs per the condition of the cracks. The new repair patch shall be cured at least for three days.
- The contractor shall have to use approved quality bonding material of **sika**, **Beckmen** or **Fosroc or equivalent** for readymade patch repair per the condition of the cracks. It is the contractor responsibility to inspect the cracks and area to be painted at the time of walkthrough. The maintenance representative shall inspect the site to make sure all the loose/dead plaster has been removed before starting the painting. The contractor shall not start any painting unless all repair work shall finish and set properly.

Note: The contractor shall use cement of L &T/Birla/Ambuja of 43-grade make or equivalent.

Exterior Painting

The contractor shall provide and paint the exterior of the complete warehouse with minimum two coats of paint including compound walls, pipes, overhangs, gates, parapet wall and drive-way walls. Contractor should use exterior emulsion water base paint for wall painting and "Lead Free Enamel Paint for all metal work.

- The contractor should wash entire area/surface to be painted prior to start new painting. The woodwork, metal work etc. shall be painted with enamel paint or polished as per existing finish.
- The contractor shall be responsible to paint all exterior woodwork and metal work of warehouse.
- The contractor should remove all loose, peeling, mildew, fungus with wire brush and clean surfaces of dust, dirt, oil, grease etc. before painting.
- The contractor shall remove any tree roots from exterior surfaces and seal the holes with wediseals.

- Any rusted metal surface shall be scrub with sandpaper (no.100) and provide coat of primer on rusted area prior to new painting.
- The contractor shall provide a coat of cement primer on repaired surfaces before painting.

Standard specifications for painting

- Paint used shall be appropriate to the intended purpose. Any material used for purpose for which those materials were not intended shall be repainted by the contractor at their own expense.

- Painting shall not disturb or damage any fixed property (including light fixtures, floors, carpets, or windows). The contractor shall move, protect, and return such property to its original position.

- The contractor shall also protect floors from soiling and paint spills. The contractor shall not wash wooden floors under any circumstances. To protect floors (of all types) from damage, the contractor shall use a suitable protective cover and provide ladders and scaffolding with clean rubber shoes or similar protection devices.

- If the contractor spills any paint, or in any way soils the floors, a specialist floor finishing company at the contractor's expense shall perform the clean up. After completion of the painting work, the contractor shall return all furnishings to their original position, and clean the work area free of litter and debris.

- Paint surfaces as directed by the task order. Match paint to similar adjacent materials or surfaces.

- "Paint" includes coating systems materials, primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

- Product Data: The contractor shall submit manufacturer's technical information, label analysis, and application instructions for each paint material proposed for use to the COR, prior to starting work. As an attachment, list each material and cross-reference specific coating and finish system and application. Identify each material by the manufacturer's catalog number and general classification.

- Single Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats.

- Material Quality: Provide the manufacturer's best quality trade sale type paint material. Paint material containers not displaying manufacturer's product identification will not be acceptable.

- Deliver materials to the job site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label with trade name and manufacturer's instructions.

- Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 degrees F (7 degrees C). Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

- Project Conditions: Do not apply paint when the relative humidity exceeds 85 percent, at temperatures less than 5 degrees F (3 degrees C) above the dew point, or to damp or wet surfaces. Apply paint only in temperatures in accordance with manufacturer's specifications.

- Examine substrates and conditions under which painting will be performed for compliance with requirements. Do not begin application until unsatisfactory conditions have been corrected.

- Preparation: Remove hardware and hardware accessories, plates, light fixtures, and items in place that are not to be painted, or provide protection such as taping prior to surface preparation and painting (taping includes windows, door jams, etc.).

- Clean and prepare surfaces to be painted following manufacturer's instructions before applying paint or surface treatments. Remove oil, dust, dirt, loose rust, mildew, peeling paint or other contamination to ensure good adhesion. In some cases, the contractor may be requested to remove all existing coats of paint and sealers if prior paint application is showing signs of improper adhesion, such as peeling, or chipping. All surfaces must be clean and dry. Schedule cleaning and painting so dust and other contaminants will not fall on wet, newly painted surfaces.

- Notify the Contracting Officer or COR of problems anticipated for any minor preparatory work required, such as but not limited to, filling nail holes, cleaning surfaces to be painted, and priming any requisite areas. Plan preparatory work as most units in residential areas will have nail holes or areas that will need to be primed or sealed.

- Materials Preparation: Mix and prepare paint following manufacturer's directions.

- Application: Apply paint following manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.

- Unless otherwise specified, the contractor is to use a Asian make enamel paint (containing no lead or mercury) for all kitchens, baths, laundry areas, door frames, and window frames, any metal work and all servant quarters. Asian make plastic acrylic emulsion paint (containing no lead or mercury) is to be used in the remainder of the unit. The color to be used must be consistent with the balance of the room, which will normally be off-white. Contractor shall provide samples of the color of the type of material to be painted before actual paint date is scheduled.

- Provide finish coats that are compatible with primers used.

- The number of coats and film thickness required is the same regardless of application method. Do not apply succeeding coats until previous coat has cured. Sand between applications where required to produce a smooth, even surface.

- Apply additional coats when undercoats or other conditions show through final coat, until paint film is of uniform finish, color, and appearance.

- Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable, and before subsequent surface deterioration. Allow sufficient time between successive coats to permit proper drying. Do not re-coat until paint has dried.

- Minimum Coating Thickness: Apply materials at the manufacturer's recommended spreading rate. Provide total dry film thickness of the system as recommended by the manufacturer.

- Prime Coats: Before application of finish coats, apply a prime coat as recommended by the manufacturer to material required to be painted or finished, and has not been prime coated.

- Brush /Roller Application: Brush out and work brush/roller coats into surfaces in an even film. Eliminate cloudiness, spotting, laps, brush marks, runs, sags, ropeness, or other surface imperfections. Draw neat glass lines and color breaks.

- Apply primers by brush unless manufacturer's instructions permit use of mechanical applicators. Other successive coats of paint shall be done with paint roller.

- Mechanical Applications: Use mechanical methods for paint application when permitted by manufacturer's recommendations, governing ordinances, and trade union regulations.

- Wherever spray application is used, apply each coat to provide the equivalent hiding of brush-applied coats. Do not double-back with spray equipment to build up film thickness of two coats in one pass, unless recommended by the manufacturer.

- Upon completion of painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing, scraping or other methods, using care not to scratch or damage adjacent finished surfaces.

- Remove temporary protective wrappings after completion of painting operations.

DRYWALL/PLASTER REPAIR

- Patch defective drywall with a similar thickness and fire rated drywall. Joints must be taped in a manner so they are not readily visible. The patch must be textured with a texture consistent with the rest of the surface being patched. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to paining. Exterior surfaces must be spackled with exterior grade compounds.

PLASTER

- Repair any damaged interior plaster as directed by the Contracting Officer's Representative. The plaster material shall be of a similar material that matches as closely as possible the existing plaster in texture and color.

Electrical

1. Provide and install new tube light fixtures at the locations where presently these are not available and area is dark. Total **17 each** new light fixtures are to be installed. Light fixtures will be of WIPRO make, model WVP-44-236 electronic ballast. New wiring using 16 gauges 1" and ¾" dia GI conduit and 2.5 sq mm PVC insulated copper wire, 1.5 sq mm copper wire for grounding is to be used from distribution board/switch board to the

location of light fixture. Contractor will provide all switches and switch board plates for this work.

2. Provide and install new GI/PVC conduit and PVC batten after removing from the damaged and broken areas. Do all related works including rewiring and installation of saddles and anchors. Sizes of conduit will be same as per existing. Also provide new conduits/batten at all places where temporary and loose wiring is done on the surface for electrical power outlets, telephones and computers. This is to be done in complete warehouse including ceiling and walls. All temporary power outlets lying on the floor.

3. Relocate existing power outlets at new locations as presently these cannot be used due to storage racks in front of them. Total five outlets are to be moved and locations will be shown during the walk through.

4. Relocate the two each switch board plates with switches and wiring to new locations near entrance for easy switching on/off. Presently it is inside the storage area and very difficult to operate. Locations will be shown during walk through.

5. Relocate heavy duty wall fans (6 each) to new locations by extending the existing wiring as per standard electrical specifications. Presently theses fans are not installed at proper height and racks are coming in between them.

6. Get all the existing split AC units (8 each) serviced from the manufacturer or the expert AC technicians. Provide and install new GI flexible conduit ¾" size, heavy gauge for the all AC outdoor units. Provide and install new trays and drain pipe. Trays will be fabricated out of 24 gauge GI sheet and pipe will be SUPREME or equivalent make of ¾" diameter. All material provided by the contractor shall be best quality.

7. Provide and install 4 each 40 watt single tube light fixture make 'Philips' model TCS 19/236 LPF in the stairwell and other rooms which will be shown during the walk through with recessed/surface wiring and connections up to switch board. Follow the detailed specifications as mentioned under the general electrical specifications and at # 1 above.

8. Provide and install 10 each emergency lights with complete wiring as per standard electrical specifications or as per the details mentioned in # 1 above for making 5 amperes power outlets for connection. Emergency lights will be of BPL make model BPL- L-1000 or equivalent.

9. Provide and install three each 16 Amperes, 10ma ELCBS of HAGER make or equivalent for two bathrooms and one water cooler.. Do connections so that electrical outlets are controlled through ELCB.

10. Provide and install 12" size metal blade exhaust fans, 900 rpm, of any branded make at 4 each locations after doing new wiring as mentioned in Para one above and by modifying the existing ventilator in the basement and ground floor level. Switches of fans should be easily approachable. Provide and install screen and louvers for these new fans and also for existing one fan at bathroom.

11. Do dressing of wires and cleaning of all the distribution boards. Do marking of all the breakers for their belongingness.

12. One manually operated pump has been installed to drain pump the water from drive way area which is not effective. Provide and install new pit up single phase 2 H.P., 50 hz complete with automatic control panel with all the piping, wiring and connections.

Return old pump to the embassy. Panel should be protected with rain water overhang of size 3 feet wide and 2 feet deep supported on 1" size, heavy duty (1/8") angle iron frame and 2 mm thick PVC sheet. For wiring specifications please refer to Para one above.

13. Service and repair (existing) all light fixtures, all fans and speed regulators to function normally. Replace all fused lamps, broken/burnt switch/sockets; switch board plates, PL lamps or tube-light, defective ballast and bulb holder, missing and broken shades/ covers of light fixtures in complete warehouse, bathrooms, driveway, terrace and backyard etc. Take special care for ceiling fan blades and their balancing during the make ready.

14. Check and correct the polarity of all the power outlets. The contractor will not use insulation tapes and can use plastic terminal block or copper ferrules for joints

15. Provide and install new brass cup washers and screws where these are rusted.

16. Provide and install ground wire (2.5 sq mm copper) for all light fixtures, fans and power outlets where it is not available or looped with each other.

CLEANING TO BE DONE AS MENTIONED BELOW:

- Cleaning of all electrical sockets, switches, regulators, distribution boards, light fixtures, ceiling fans, exhaust fans, louvers, screens if A/C or split units including their drain lines and trays.

- Cleaning of all plumbing fixtures to remove stains i.e. WC, washbasins, soap dish, tooth brush holder, paper holders, mixtures, deviators and shower.

- Cleaning of floors on all floor, driveway and toilet to remove stains, paint splashes and cement marks. All walls tiles of kitchen and bathrooms shall be cleaned of main house and servant quarter.

- Clean all doors, windows, windows glass, balcony railing and staircase railing.

NOTES:

- Contractor will not connect his own welding machine, floor grinder or heavy equipment directly to meter or meter board, for the purpose makes ready.

- Contractor shall use his equipment power connection only through branch circuit breakers or output of the main circuit breaker. Contractor shall be liable to pay or get it replaced on his own cost if the meter/cable is burnt due to misuse.

- Contractor shall check the energy meter and the incoming BSES/NDMC cable and inform COR, if found faulty before starting or proceeding the make ready work.

- Contractor will provide all material as per above scope of work unless otherwise mentioned. He will arrange all types of tools, painting brushes, rollers including ladders etc. to complete this work.

- Contractor shall use welding machine only for small repair otherwise no fabrication work will be done at site.

- Contractor will follow attached specifications for carpentry, plumbing, electrical, masonry and painting while doing work as per above scope of work.

- All material delivered by the contractor for the plumbing, paintings, carpentry, electrical, air-condition and masonry work etc should be delivered sealed pack at the site and should be strictly approved by COR before any kind of use.

- Contractor shall not proceed with finish work until COR inspects.

- Contractor should verify availability of all material required as per scope of work and accordingly bid of it. The contractor should use make and brand of material as mentioned in the scope of work or equivalent makes after approval from COR.

- Contractor will work with all the safeties and precautions to prevent injury to employees and workers and he will be responsible for any untoward incident on the site.

- Contractor should maintain all safety measures required for accomplishing this kind of job in safe and satisfactory manner.

- The power tools like grinding machines; drill machine etc. shall have insulated three-core wire and power plugs with proper size & required length of wire/cable/extension cord. No bare wires and the switching mechanism shall be operable.

- Contractor shall use aluminum ladders with proper rubber shoes etc. for all jobs within Embassy premises or residence. Ladders shall be maintained in good condition at all times. The ladder shall be so placed as to prevent slipping, or it shall be lashed, or held in position. Where ladders or scaffolding is to be used, they shall be safe and securely fastened. No bamboo ladders will be allowed to use at work sites.

- Contractor is responsible for Personal Protective Equipment (PPE) for employees. Workers shall wear sturdy shoes or boots (flip-flops are not approved). PPE shall include hardhats, hearing, breathing, and eye protection as required.

- All removed items shall be return to embassy unless otherwise specified. Contractor will keep the area clean at all times and shall dispose of all Malba/debris regularly.

- Contractor shall check the fittings/fixtures of the complete warehouse other than mentioned in the SOW, on first day of the renovation work and inform supervisor if any deficiency found. Otherwise contractor will be responsible to give the all fitting/fixtures/lamps in good shape/operational condition at end of the make-ready.

- The contactor shall be held responsible for any damage to the property during the progress of work. He shall repair/replace damaged part matching to existing.

- The contractor is responsible to provide detail about daily progress of project along with no of workers present on site on any particular day.

SUBJECT: **SOW FOR SECURITY UPGRADES GSO - OKHLA Warehouse**

GSO - OKLA Warehouse

Perimeter Wall South: Two trees will need trimming & mesh wire repaired. Tree One:

Tree two:

Mesh wire

Perimeter Wall East: That wall can be easily climbed. Additional concertina wire needed to be installed (about 20 to 25 meters) on top of the wall.

Primary Roll-up Door: That roll up door shall be replaced by a solid folding metal door as per specification provided below:

Remove existing rolling shutter from the entrance of the ware house. Provide and install new folding type doors for the existing opening (13' x 14').

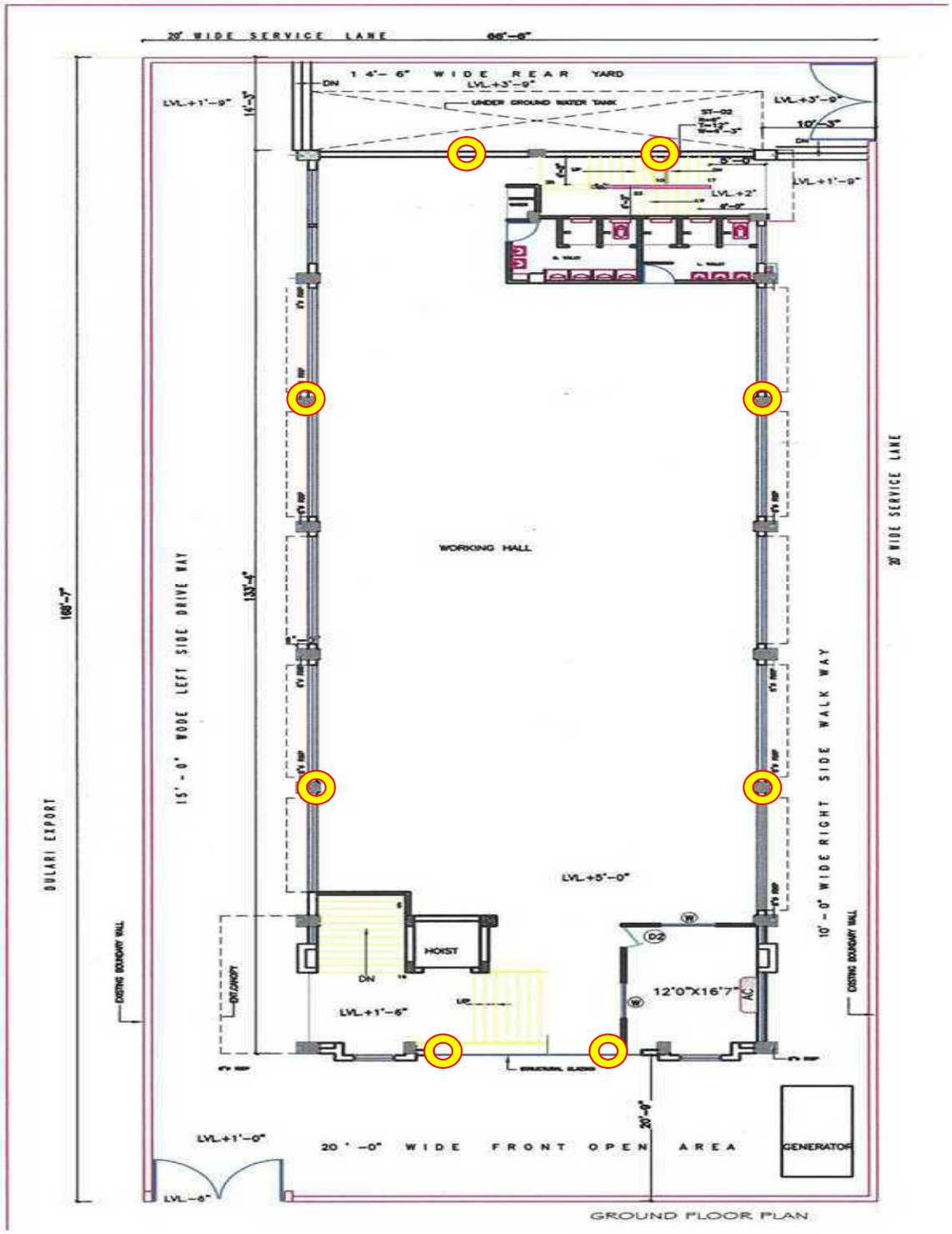
On the front side 2" x 2" x ¼" angle iron frame will be grouted/welded to the existing side columns after chipping the existing plaster layer. Provide and fabricate 3' 3" wide folding door (four each) with 1 ½" x 1 ½" x ¼" angle iron and ¼" thick MS sheet on one side. Use same size of able iron for door braces. The door shall be fixed with the heavy-duty hinges (three each for each door).

Provide & install 12" tower bolts from inside and 15" long sliding bolt from outside for locking arrangement. The each folding door shall have 12" long heavy duty MS handle. The metal door will be painted with 2coats-lead free enamel paint of approve color after providing coat of metal primer. The contractor shall provide all material to complete the work.

Door to rooftop: Will need some reinforcement (hinges) and better cemented into the wall. Sensor is hardwired. Also an eye viewer will be needed.

Perimeter lights: Perimeter lights are not sufficient and eight (8) additional lights will have to be installed. Additional lights have to be installed on the warehouse, on a separate power line (circuit), fuses and on/off switch. New lights will be environmentally friendly LED lights with high output and low electrical energy consumption. Picture of lamp below location map.

Location of new lights



GROUND FLOOR PLAN

Type OLIVE L.E.D. SLOL 40-60

Alarm System: Existing AES alarm system has to be replaced with a Simon 3 System. All sensors have to be replaced and the existing wiring system of the sensors has to be checked and if there is any doubt about functionality, replaced.

Metal Fences: Have to be checked carefully and repaired.

CONTRACT'S REQUIREMENT

Insurance - General Liability (includes premises/operations, collapse hazard, products, completed operations, contractual, independent contractors, broad form property damage, personal injury)

1. Bodily Injury on or off the site stated

   Per Occurrence Rs.100,000
   Cumulative Rs.1,000,000

2. Property Damage on or off the site:
   Per Occurrence Rs.100,000
   Cumulative Rs.1,000,000

Contractor:
Site Address:
Safety Officer Name:
Signature for Acceptance:

SAFETY STANDARDS TO BE FOLLOWED AT CONSTRUCTION AND RENOVATION SITES

General

1. All contractor employees engaged in maintenance/construction activities must wear proper shoes appropriate for their trade. No open toed sandals, flip-flops, or bare feet are permitted at work site.
2. All workers shall be fully clothed. No half pants and other non-appropriate clothing (Dhoti) will be accepted.
3. Malba / trash accumulated on the site shall be removed at a regular intervals (if possible on daily basis) to prevent trip hazards.
4. Employees exposed to occupational hazards shall wear personal protective equipment (hard-hats, eye protection, ear protection, etc.). Appropriate protective equipment for any operation varies with the size, nature and location of work to be performed.
5. Drinking water must be made available to all contractor employees.
6. It is the responsibility of the contractor to provide all personal protective equipment (PPE) per the requirements at the work site and as directed by the COR. Any mishap due to negligence on the part of the contractor shall be entirely the contractor's responsibility.

Hot Work/ Metal Work

1. All contractor's employees who are arc welding at the work site shall use a full face shield with #10 or darker lenses. No contractor employee will be permitted to arc weld with sun glasses, no matter how dark the lenses.
2. All the contractor's employees grinding and sanding shall have approved face masks and goggles for face and eye protection.
3. Contractor's employees handling heavy metallic material shall have appropriate gloves and steel toed safety shoes.
4. Lifting and shifting of the heavy material shall be done with the help of appropriate number of employees or machines.
5. Compressed gas cylinders shall be properly marked and should always be kept in standing positions secured from falling.
6. Hoses connected to the cylinder should be in good condition.
7. The contractor shall provide ventilation during interior arc welding operations.
8. Contractor shall use sight shields during welding to protect against any potential vision hazard.
9. Always keep an approved fire extinguisher near the site of welding.
10. Workers working with metal sheets must wear appropriate gloves to avoid any cuts on the hands.

Ladders Safety

1. Contractor shall use aluminum or fiber glass ladders for most purposes. Wooden or bamboo ladders are not allowed on the site.
2. Proper ladder for the specific job shall be used (for example fiber glass ladders for electrical work etc.).
3. Damaged ladders or ladders with missing supports, shoes, etc. shall not b**e** used at the work site.
4. Height of the ladder shall be at least two feet above the required height for the work.

Electrical

1. All the equipment / machines to be used for the execution of the job shall be properly grounded.
2. All the extension boards to be used at the site shall have proper grounding.
3. All connections to any of the outlets shall be through three pin plugs. Direct connection of wires into receptacles is not permitted.
4. Machines/Tools with damaged wiring/ cabling shall not be used at site. The extension cord or wire with the machines shall be solid core with no breaks.
5. Electricians working on the site shall wear non-conductive shoes with rubber soles and shall use rubber gloves during execution of the work.
6. Any heavy equipment requiring voltage higher that 220VAC shall be connected under supervision of an embassy electrician.
7. No taped joint or undersize wiring is allowed at the site for the work.

Carpentry

1. Carpenters shall have dust masks to protect from the potential hazards from saw dust. Sanding machines used at the site shall have proper guards and operator shall wear suitable PPE, for example safety goggles, safety shoes, gloves etc.
2. All lumber used at the site shall be stored and must not pose a trip hazard.
3. Entire site shall be kept clean from the saw dust at the end of each work day.
4. Carpenter shall use machine guards on all machines used at the site.
5. All power carpentry equipment used at the site shall be properly grounded and wired.
6. Contractor shall use proper tools and tackles for the execution of the work at site.
7. Nails and other sharp material posing a laceration risk shall not be scattered about the site.

Fire

1. Contractor shall provide and place fire extinguishers at the work site.
2. No flammable material shall be stored inside the premises and must be removed at the end of the work day.

Lock Out / Tag Out

1. Lock out/tag out devices should be used during the testing of the electrical points and wiring.

Confined Spaces

1. If contractor's employees must work in a confined space the contractor shall contact the COR before proceeding with the work. Contractor shall arrange all the equipment as instructed by the COR to accomplish the job in a safe manner.

Hearing Protection

1. Contractor's employees working in excessively noisy environments shall wear proper hearing protection.

Height Protection

1. Contractor's employees working at elevations greater that 8 feet for prolonged periods (greater than 1 hour) shall use sturdy metal pipe scaffolding. Alternatives to scaffolding shall require approval of the COR.