

MED/872/01/2011

भारत का प्रधान कौंसलावास /Consulate General of India,
मेदान (इंडोनेशिया)/ Medan Indonesia

NOTICE INVITING BIDS

Subject: Hiring of agency for providing security infrastructure services such as Installation of CCTV cameras, Punched Tape Concertina Coil (PTCC) on the boundary wall , construction of Security Post with all mandatory equipments in the Consulate General of India, Medan.

Consulate General of India proposes to engage a reputed agency for providing security infrastructure services which includes Installation of CCTV cameras, Punched Tape Concertina Coil (PTCC) on the boundary wall, Construction of Security Post with all mandatory equipments in the Consulate General of India at 19 Jalan Uskup Agung A, Sugiopronoto, Medan-20152.

2. In this connection, the firms are requested to submit their bids in two stages- (a) Technical Bid and (b) Financial Bid (Clearly mentioning for each aspect of the security infrastructure). Technical bid and financial bid are to be submitted in two separate doubled sealed envelopes on or before the due date of submission of tenders. It may be noted that the price is not to be quoted either in technical bid. It shall only be quoted in financial bid. Non-adherence to this shall be making tender liable for rejection. The envelopes containing bids shall be superscribed Technical bid and financial bid. The sealed envelopes shall be again put in another sealed cover and should be superscribed with words Technical Bid & Financial Bid against our Tender Document and be addressed to:

Mr. Shubham Singh, Consul General
Consulate General of India in Medan (Indonesia)
19 Jalan Uskup Agung A, Sugiopronoto, Medan-20152

3. It may be noted that the Financial Bids of only those companies will be opened whose technical bids are found qualified. The bids may be delivered on or before 15th June 2023 (15:00 Hrs) in original; signed and sealed by the company/firm representative to this office.

4. The tender document can also be downloaded from the website <http://www.eprocure.gov.in> and also from the website of the Consulate <https://www.cgimedan.gov.in/> from 30th March 2023 onwards. It may also be noted that any corrigendum/addendum in respect of the tender document/job, if required, shall be hosted on both the above mentioned websites.

5. The company/firm applying for the job should also note and provide in the technical bid: (1) Brief profile of their company along with terms and conditions (2) Should have minimum experience of 03 years working in the field, (3) Company/firm has experience of working with

International/Diplomatic/Indonesian Organizations (4) **Annexure A.** The rates quoted by the company once accepted by the Consulate would be valid for the current job only. In the financial bid the Company/firm must quote their unit rates and total cost. The Companies/firms are free to visit the site. Once the bid is submitted no addition to the cost will be entertained on any basis. The bids would be opened 15th June 2023 (1700 Hrs).

Brief Scope of work

The security services and specification each agency describes in the tender document must be able to meet the need of this Office. In this regard, detailed design specifications are mentioned in the attached Annexures for the individual aspect. It is to mention here that the following specifications should be incorporated into your design and the financial bid will be evaluated only in case of those agencies who will meet the technical requirements of this office..

1. Requirement Description of specifications for Punched Tape Concertina Coil (PTCC) on the boundary wall (Design of the wire is attached at Annexure B).

S.N O	Parameter	Specifications
1	Coil Diameter	600 mm
2	Weight	Each Coil with 50 turns/loops should be around 9-10 kgs +/- 5%. If the turns/loops are less, the weight shall be correspondingly less.
3	Steel Strip	Recommended Punched Tape: CR3 grade cold reduced low carbon steel. Estimates may be given for with or without painted with Aluminium Zinc alloy 120.
Spring Core Wire		
4	Material	Should be high carbon steel
5	Diameter	Between 2.6-3 mm .
6	Zinc Coating	The core wire should have thickness of hot dipped galvanized zinc to 240g/m ² (as per specifications BS EN ENO 1461 or Indian equivalent IS 4826)
7	Expandability	About 6 meters
Razor Barb		
8	Length	7-8 mm
9	Spacing	18-20 mm
10	Blade Thickness	0.5 mm (Can go upto 0.7 mm for heavy duty performance)
11	Strip Width	14-15 mm
12	Central Width	22-23 mm

2. Requirement Description of specifications for CCTV cameras covering all the area inside the chancery premises and area around the boundary wall of the chancery premises.

The bidder is required to supply, install and commission the CCTV System at CGI, Medan as per the specifications and conditions specified in the Annexure A1-J1 of Appendix II of this Tender document.

- b) The bidders are advised to visit the above mentioned sites before quoting bid in the tender.
- c) The successful bidder shall give comprehensive hands on Training to the staff of CGI, Medan on operations, preventive maintenance, recording and retrieval of the CCTV recordings etc.
- d) The successful bidder shall carry out the work strictly as per specifications mentioned in various sections of this tender document to the satisfaction of the office.
- e) Workmanship, material and brand of camera used should be as per the tender document.
- f) Bids shall be considered only in those cases where the bidder has quoted for the entire scope of the work.

Evaluation of Bids:

An evaluation committee consisting of officers from CGI, Medan will evaluate the bids of all the bidders, both technically and commercially as per the following schedule/pattern.

Only Technical Bid shall be opened on the day of opening of the bids. The Technical Bid document shall be evaluated as per the following:-

- a) The documentation furnished by the bidder will be examined to see whether the qualifications and specific requirements including technical mentioned in this document are fulfilled.
- b) The bidders if required shall make a presentation/ demonstration of the CCTV system, if required, to the evaluation committee.
- c) CGI, Medan may ask the bidders to arrange visits of evaluation committee to the departments / organizations where the bidder has already executed such orders as claimed in their bid.
- d) The Evaluation committee reserves the right to reject any tender bid without assigning any specific reason to the bidders.

The Commercial Bid of those bidders who satisfy the parameters laid out in the Technical Bid will only be opened. The place, date and time of the opening of the commercial bid has been mentioned in the tender document. The bidder is expected to examine all the instructions, forms, terms & conditions and specifications in the Tender document.

Further to furnish all the information required in the Tender document or submission of a bid in every respect will be at bidders risk and may result in rejection of the bid.

1 Years OEM, onsite comprehensive warranty/ guarantee shall be applicable to the supplied goods and payment shall be made after satisfactory installation of systems and proper functioning. In case of non

performing of Camera, the same will be replaced by the successful bidder at his own cost and subletting will not be permitted.

Bids once submitted cannot be withdrawn/alterd or modified. The bids shall remain valid and open for acceptance for a period of 120 days from the date of opening of the Technical Bids or for a period as mutually agreed upon. The EMD of any bidder, who fails to abide by the above conditions, will be forfeited.

CGI, Medan reserves the rights to demand any supporting documents from the bidder in the interest of the Office after the opening of Technical bid. In case bidder has failed to submit requisite documents, the price bid of those bidder will not be opened & rejected summarily.

3. Requirement description of construction of Security Post with all mandatory equipments in the Consulate General of India.

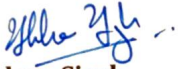
The bidder is required to construct a security Post (as per attached schematic diagram) and installation of Baggage Scanner and Multi-Zone Door frame metal detectors with all the specifications must comply with the technical specification mentioned in the attached annexures and with the power back of minimum 01 hour. Tiled floor and high grade construction materials should be used to ensure durability of the security post.

The work also includes construction of security post, installation of magnetic metallic doors, with all control access, on entry and exit of the Security Post and bidder has to supply Table, Chair, Air conditioner and the room must be with the provision of storage space for the belongings of the Visitors. Space for the guard should be covered with thick strong glass. All local permissions need to be taken by the bidder.

The successful bidder shall give comprehensive hands on Training to the staff of CGI, Medan on operations, preventive maintenance to make familiar with the proposed equipments.

The bidders are advised to visit the above mentioned sites before quoting bid in the tender.

An evaluation committee consisting of officers from CGI, Medan will evaluate the bids of all the bidders, both technically and financialy/commercially as per the following schedule/pattern


Shubham Singh
Consul General

SHUBHAM SINGH
CONSUL GENERAL
Consulate General of India
Medan - Indonesia

Annexure A

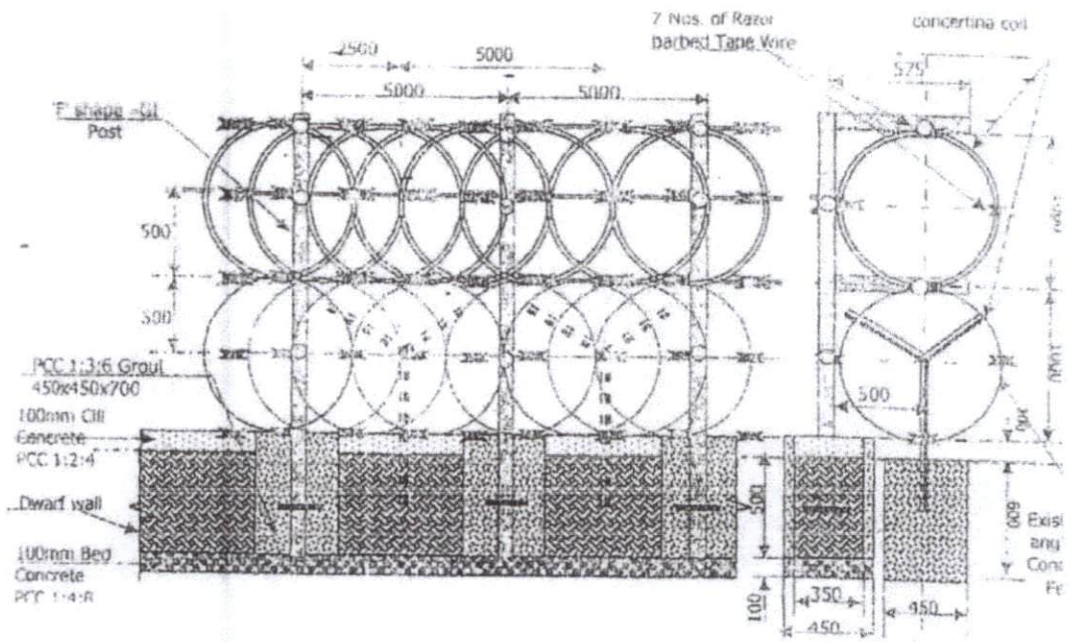
Proforma

Name of the Firm:

Contact Details:

S.No	Particluars	Remarks
.		
1	Years of experience in carrying out such work	
2	Details of the contracts undertaken by the Company/firm	
3	Detailed time frame for completion of work	
4	Work Experience with Diplomatic Mission/Posts	
5	License/Registration details of the Company/firm from the local authorities	

Annexure - 8



Appendix I

List of approved camera brands

S No	Brands
1	Axis Communication
2	Mobotix
3	Arecont Vision
4	Wavesys Global
5	Wiska

Appendix II
Annexure A

4 MP Fixed Bullet Camera for viewing distance upto 40 meters

S No	Parameter	Specification	Compliance and Specification
1	Image Sensor	1/3" Progressive CMOS or better	
2	Day/ Night Operation	Automatic switch	
3	Minimum Illumination	Colour : 0.2lux BW: 0.05lux or better	
4	Image Resolution	4 Mega Pixel or better	
5	Video Compression	H.264 / H.265	
6	Frame Rate	25 fps or better	
7	Stream	Dual or Above	
8	Motion Detection	Built in or IP integrated	
9	Wide Dynamic Range	120 dB or better	
10	IR	20 Mts or better	
11	Interface	RJ45 10BASE-T/100BASE-TX PoE	
12	Protocols	IPv4, IPv6, HTTP, HTTPS, SSL/TLS, DHCPv4/v6 and additional	
13	Security	User Authentication, IP Filtering and user access log	
14	Event Trigger	Motion detection and tamper detection	
15	Operating Temperature	Location specific	
16	Operating Humidity	Location specific	
17	Onvif	Should be compliant	
18	NDAA Complaint	The proposed camera should be NDAA Compliant	
19	Warranty	5 Years OEM warranty or better	

Appendix II
Annexure B

**2 MP Dome Camera for corridors for viewing distance upto 15 meters
and no public access.**

S No	Parameter	Specification	Compliance and Specification
1	Image Sensor	1/3" Progressive CMOS or better	
2	Day/ Night Operation	Automatic switch	
3	Minimum Illumination	Colour:0.2lux B/W: 0.04lux or better	
4	IR Illumination	15meter range or better	
5	Image Resolution	1920X1080 or better	
6	Compression	H.264/H.265	
7	Frame Rate and Bit Rate	30FPS or better.	
8	Stream	Dual or Above	
9	Motion Detection	Built in or IP integrated	
10	Wide Dynamic Range	120 dB or Better	
11	Interface	RJ45 10BASE-T/100BASE-TX PoE	
12	Protocols	IPv4, IPv6, HTTP, HTTPS, SSL/TLS, DHCPv4/v6 and additional	
13	Security	User Authentication, IP Filtering and user access log	
14	Event Triggers	Motion Detection and Tamper Detection	
15	Operating Temperature	Location specific	
16	Operating Humidity	Location specific	
17	NDAA Complaint	The proposed camera should be NDAA Compliant	
18	Onvif	Compliant	
19	Warranty	5Years OEM Warranty	

Appendix II
Annexure C

**4 MP Dome Camera for halls and corridors having public access or
for viewing distance upto 40 meters**

S No	Parameter	Specification	Compliance and Specification
1	Image Sensor	1/3" Progressive CMOS or better	
2	Day/ Night Operation	Automatic switch	
3	Minimum Illumination	Colour:0.2lux B/W: 0.04lux or better	
4	IR Illumination	18 meter range or better	
5	Image Resolution	4 Mega Pixel or better	
6	Compression	H.264/H.265	
7	Frame Rate and Bit Rate	30FPS or better.	
8	Stream	Dual or Above	
9	Motion Detection	Built in or IP integrated	
10	Wide Dynamic Range	120 dB or Better	
11	Interface	RJ45 10BASE-T/100BASE-TX PoE	
12	Protocols	IPv4, IPv6, HTTP, HTTPS, SSL/TLS, DHCPv4/v6 and additional	
13	Security	User Authentication, IP Filtering and user access log	
14	Event Triggers	Motion Detection and Tamper Detection	
15	Operating Temperature	Location specific	
16	Operating Humidity	Location specific	
17	NDAA Complaint	The proposed camera should be NDAA Compliant	
18	Onvif	Compliant	
19	Warranty	5Years OEM Warranty	

**Appendix II
Annexure D**

PTZ Camera

S No	Parameter	Specification	Compliance and Specification
1	Image Sensor	1/2.8" Progressive Scan CMOS or better	
2	Day/ Night Operation	Automatic with IR Cut Filter	
3	Minimum Illumination	Colour: 0.07 Lux B/W": 0.01 or better	
4	Optical Zoom	30Minimum & 12x Digital Zoom, or better	
5	Lens	5-120mm or better	
6	Image Resolution	1920x 1080 or better	
7	Compression	H.265, H.264	
8	Frame Rate and Bit Rate	Full HD 1080p 30 fps or better	
9	Motion Detection	Built in or IP integrated	
10	Electronic Shutter	1/10000 s to 1s or better	
11	Wide Dynamic Range	120 dB or Better	
12	Image Freeze on PTZ	Required	
13	Event Triggers	Motion Detection and Tamper Detection	
14	Preset Positions	100 or better	
15	Protocols	IPv4, IPv6, HTTP, HTTPS, SSL/TLS, DHCPv4/v6 and additional	
16	Security	User Authentication, IP Filtering and user access log	
17	Logs	The camera shall provide logs of latest connections, access attempts, users connected, changes in the cameras etc	
18	Interface	RJ 45, 100 Base TX	
19	Enclosure	IP66- and NEMA 4X-rate	
20	Operating Temperature	Location specific	
21	Operating Humidity	Location specific	
22	NDAA Complaint	The proposed camera should be NDAA Compliant	
24	Onvif	Compliant	
25	Warranty	5 Years OEM warranty	

Appendix II
Annexure E

Omni Directional camera

Sno	Description	Specification	Compliance
1	Cameras	2 or more	
2	Image Sensor	Each camera should have 1/2.8" progressive scan CMOS or better	
3	Day/ Night Operation	Yes with Built in Automatic IR Cut Filter	
4	Minimum Illumination	Colour: 0.2Lux	
5	Lens	3-6 mm,	
6	Field of View	Collectively 360°	
7	Image Resolution	No of cameras x 1920x1080 (1080p)	
8	Compression	H.264 High, Baseline and Main Profiles, MJPEG H.265	
9	Frame Rate and Bit Rate	Up to 25/30 fps	
10	Streams	Dual or above	
11	Motion Detection	Yes built in with multiple configurable areas in the video stream	
12	Event triggers	Motion detection and tamper detection	
13	Protocols	IPv4, IPv6, HTTP, HTTPS, SSL/TLS, DHCPv4/v6 and additional	
14	Security	User Authentication, IP Filtering and user access log	
15	Interface	RJ 45, 100 Base TX	
16	IR illumination	Four individually controllable IR with power-efficient, Range of reach 20m	
17	Enclosure	IP66-, IP67- and NEMA 4X-	
18	Operating Temperature	Location specific	
19	Operating Humidity	Location specific	
20	NDAA Complaint	Should be compliant	
21	Onvif	Compliant	
23	Warranty	5 Years OEM warranty or better	

Appendix II
Annexure F

SFP POE Switch

S No	Description	Specification			Compliance
1	PoE Port	8*10/100/1000 port support IEEE802.3 af/at	16*10/100/1000 port support IEEE802.3 af/at	24*10/100/1000 port support IEEE802.3 af/at	
2	Switch capacity	5 Gbps or better	7 Gbps or better	8 Gbps or better	
3	Transmission Distance	100 - 150m			
4	Protocol standards	IEEE802.3 af/IEEE802.3 at			
5	PoE Type	End-span			
6	Network standard	IEEE 802.3, IEEE 02.3u, 802.3x, 802.3af/at			
7	Network Medium	10/100/1000 mbps 5 class and above non shielded twisted pair			
8	SFP Port	Yes			
9	Forwarding Rate	100 Mbps :14880pps/1000Mbps:1480pps			
10	MAC address	MAC Address table 8K			
11	Port function	Power priority mechanism, fast and forward, MAC IEEE802.3X Full-duplex and mode and backpressure for half -duplex mode.			
12	Indicators	Each port occupied 1 Link/Act 100 Mbps POE status Indicator, Whole power indicator.			
13	Working Temperature	Location specific. Location with sub zero temperature should use Industrial grade switches.			

Note:-The Intellectual Property Rights for the switches should not be with a company from a country which share land border with India. Non compliance would need prior approval.

Appendix II
Annexure G

Server for minimum 45 days back up

S No	Description	Specification				Compliance
		16 Cameras	32 Cameras	64 Cameras	100 Cameras	
1	CPU	64-bit high performance, Minimum one Processor of 8 Core or higher Intel/AMD CPU operating at 2.1 GHz or more with a minimum of 11 MB L3 cache or higher	64-bit high performance, Minimum Two Processor of 8 Core each or higher Intel/AMD CPU operating at 2.1 GHz or more with a minimum of 11 MB L3 cache or higher	64-bit high performance, Minimum Two Processor of 8 Core each or higher Intel/AMD CPU operating at 2.1 GHz or more with a minimum of 11 MB L3 cache or higher	64-bit high performance, Minimum Two Processor of 16Core each or higher Intel/AMD CPU operating at 2.1 GHz or more with a minimum of 11 MB L3 cache or higher	
2	Memory	32GB DDR RAM Upgradable to 512GB	64 GB DDR RAM Upgradable to 1 TB	64 GB DDR RAM Upgradable to 1 TB	256GB DDR RAM Upgradable to 1 TB	
3	Hard Drive	SAS 10k rpm or higher hot swappable Hard disk in raid 5 or 6 configuration having usable space of 45TB or more	SAS 10k rpm or higher hot swappable Hard disk in raid 5 or 6 configuration having usable space of 75 TB or more	SAS 10k rpm or higher hot swappable Hard disk in raid 5 or 6 configuration having usable space of 125 TB or more	SAS 10k rpm or higher hot swappable Hard disk in raid 5 or 6 configuration having usable space of 180 TB or more	
4	Recording Server	Rack Mountable				
5	Fans	Normal with Redundant FANS.				
6	Network Adapter (NIC)	Dual 10/100/1000 Mbps ports.				
7	Keyboard	USB Keyboard				
8	Mouse	Optical Mouse with scroll				
9	Operating System	Licensed MS Windows Server or Linux (Latest version)				
10	Anti-Virus Software	Compatible with Windows/ Linux with offline update provision.				

Note:-The Intellectual Property Rights for the server should not be with a company from a country which share land border with India. Non compliance would need prior approval.

**Appendix II
Annexure H**

VMS

Sno	Specification	Compliance
1	The software should have inbuilt facility to store configuration of cameras.	
2	The software shall Support flexible 1/4/9/16/25 user defined Windows Split screen display mode or scroll mode on the PC/Workstation monitor or on preview monitor as per site requirement.	
3	The software shall be able to control all cameras features such as PTZ control, auto/manual focus, and color balance of camera, Selection of presets, Video tour selection etc.	
4	The software is required to generate reports of stored device configuration. The control software is required to provide alarm and alarm log. The log shall be able to be archived, printed and displayed using a device filter, a device group filter and/or a time window.	
5	The software shall have user access authority configurable on per device or per device group basis. The authorized user shall have the facility to request the access of any camera and can control the camera for a reservation period. Control of camera is released after the reservation period.	
6	The system software shall provide User activity log (audit trail)with user id, time stamp, and action performed, etc.	
7	The administrator shall be able to add, edit & delete users with rights. It shall be possible to view ability/ rights of each user or the cameras which can be viewed &controlled as per the permission assigned by the administrator.	
8	The system software should provide Analytic features such as Intrusion, Motion detection and Security device Alarm etc as per site requirement.	
9	The system software shall have recording modes viz. continuous, manual, or programmed modes on date, time and camera-wise. All modes shall be disabled and enabled using scheduled configuration. It shall also be possible to search and replay the recorded images on date, time	

	and camera wise. It shall provide onscreen controls for remote operation of	
10	PTZ cameras. It shall have the facility for scheduled recording. Different recording speeds (fps) and resolution for each recording mode for each camera shall be possible.	
11	It shall provide programmable motion detection and recording, to be defined, area -wise.	
12	The settings shall be individually configurable for each alarm and each camera, pre -record duration. This shall allow the Camera Server to capture video prior to the alarm/event, as well as after the alarm/ event. Shall be selectable from a list of values ranging between 0 seconds and 5 minutes.	
13	Data storage should be at a secure location, with strictly controlled access. The Capacity of storage should be for the period of continuous 45days or more. For every 30disks one spare disk needs to be configured over and above required capacity. The storage system should follow FIFO on recording.	
14	The software shall support a built -in Hardware or Software Watchdog module. Watchdog shall monitor operation of all services and automatically restart them if they are malfunctioning.	
15	The software should be able to receive alarm signal of the camera and should be able to send relay out signal through the camera.	
16	The software should provide a reporting utility for tracking but not limited to the following options. Video and images shall be stored with reports for documenting events.	
Alarms, Incidents, Operator logs, Service requests		
17	It shall be possible to get reports on past events by querying the audit databases. It shall allow the search by User Logon, Entity Configuration, Incident, Alarm, Application Failure, and Equipment Failure.	
18	It shall allow passage of specific alarms to specified users rather than sending all alarms to every user	
User Facilities Covered In Application Software		
19	The client shall perform the following applications simultaneously without interfering with any of the Archive Server operations (Recording, Alarms, etc.):	

	<ul style="list-style-type: none"> a. Live display of cameras b. Control of PTZ cameras c. Playback of archived video d. Retrieval of archived video e. Instant Replay of live video f. Configuration of system settings 	
20	The user applications shall provide an authentication mechanism, which verifies the validity of the user.	
21	The user shall be able to define bookmarks, the amount of time he wishes to go back from a predefined list or through a custom setup period.	
22	The user shall be allowed to add bookmarks to recorded clips of video.	
23	<p>The user shall be able to choose and trigger an action from a list of available actions included but are not limited to:</p> <ul style="list-style-type: none"> i. View camera in a video tile ii. View Map or procedure in video tile iii. Starting/ stopping PTZ pattern iv. Go to PTZ preset v. Sending alert messages 	
24	The user shall be capable to display all camera sequences created in the system.	
25	The user shall be allowed for unlimited cameras sequences, which can be run independently of each other on either of the monitor tiles.	
26	The user shall be able to drag and drop a camera from a tree of available cameras into any video tile for live viewing.	
27	Support digital zoom on a fixed/ PTZ camera's live and recorded video streams.	
28	The user shall be allowed to access the PTZ configuration with no need of additional hardware.	

Appendix II
Annexure I

Work Station

1	TECHNICAL SPECIFICATIONS:	Compliance
2	Core i9 Processor 3.0GHz or better.	
3	Memory: 32 GB DDR RAM or better.	
4	Form factor : Tower	
5	Hard Drives: 450 GB SSD and 2 TB SATA or better.	
6	Graphic Card : 2 x 4Gb Graphics card with HDMI Port	
7	Network Adapter (NIC): Dual Integrated 10/100/1000 Mbps ports.	
8	Keyboard: USB Keyboard	
9	Mouse: Optical Mouse with scroll	
10	Operating System: Licensed M S windows/ Linux	
11	Anti-Virus Software compatible with Windows/ Linux with offline update provision.	

Appendix II
Annexure J

CCTV Passive items(as per actuals)

S No	NETWORKING, CABLING, ETC.	Compliance
1	CABLES	
a	General Features:	
i	All cables used for the project shall be supplied as under: a) ISO certified reputed cable manufacturer. b) Ensure high bandwidth, low attenuation and low losses in signal quality.	
ii	Backbone Network up to Switches (L3 Switches to L2 Switches): OFC	
iii	From Switches to each node (L2 Switch to Servers, Workstation, Cameras, Displays etc.): UTP Cat 6	
iv	Laying of cable inside the building shall be in conduit and for outdoor a. Through HDPE pipe in sift soil. b. In concrete /read cutting area ,it shall be laid in GI pipe	
v	Cable and spools shall be of flame retardant type.	
vi		
b	Optical Fibre Cable	
i	Optic Fibre 6 core, SMF, 9/125 micron, 1000 Mbps	
ii	Core Diameter @ 1310 nm : 9 ± 0.6 micro meter Cladding Diameter : 125 ± 1.0 micro meter	
iii	Max. Attenuation (Cables with fibres) At 1310 nm : 0.36 dB/km at 1550 nm : 0.25 dB/km	
iv	Secondary Buffer Material : Gel filled Loose Tube	
v	Min. Bend Radius : 20x Outer Diameter	
vi	Fibre Core: Should be Silica Glass or equivalent	
c	CAT6 UTP cable	
i	Suitable for high speed data applications, Gigabit Ethernet.	
ii	4 pairs, easily identifiable colour -striped Outlet.	
iii	Termination of 4 pair balanced twisted pair copper cable.	
iv	Shall be wired straight through.	
v	Rear protective strain relief cap.	
2	PATCH CORDS	
a	Push &pull design with latch.	
b	Shall be wired straight through.	

c	Bend relief compliant boots to ensure proper CAT6 performance.	
3	OFC PATCH CORDS	
	Suitable for single mode SC type fiber cable connectors with plastic moulded plug type connectors. Standard ceramic ferrules.	
4	OFC CONNECTORS	
	Single mode SC/LC type with push-pull mechanism, fully in compliance, with latest industry standards.	
5	OFC ADAPTORS	
	Suitable for single mode SC/LC type fiber cable connectors which shall be fully in compliance with latest industrial standard. It shall be with snap/latch mechanism.	
6	Light Guide Interconnect Unit(LIU)	
	Rack Mount Type LIU fully populated with required modules, connectors, etc. Shall be supplied and installed as required.	
7	9U WALL MOUNT RACK	
a	Portable 9U WALL Mount Rack having front Transparent Toughened glass door. The Rear door material shall be CRCA Steel.	
b	It should consist of secure locks, keyboard tray sliding & rotary, shelf For CRT/TFT Display, Support cable entry from top or bottom, vertical & horizontal managers, fan for heat dissipation, dust or water resistant and PDU power strips.	
c	Minimum 60 Kgs Load Bearing capacity.	
8	OUTDOOR JUNCTION BOX	
a	Protection Class: IP -55	
b	Size: Junction Box must be of appropriate size to house different components as per CCTV system design confirming to tender specifications	
c	Power & Earthing: The junction box shall be provided with external earthing lugs 5 socket Power termination with MCB or More	
9	Poles	
a	GI Poles	
b	Erection: Proper sturdy fixing, including civil/groundwork.	

Appendix III

Bill of Quantity(BoQ)

S No	Equipment	Specification	Number
1	Bullet Cameras	As per Annexure A	
2	2 MP Dome Camera	As per Annexure B	
3	4 MP Dome Camera	As per Annexure C	
4	PTZ Camera	As per Annexure D	
5	Omni-directional Camera	As per Annexure E	
6	Switches- 8 port, 16 port and 24 port	As per Annexure F	As per actuals
7	Server	As per Annexure G	One
8	VMS- for 16 Channel, 32 Channel, 64 Channel and 100 Channel servers.	As per Annexure H	One for <u>16/32/64/100</u> cameras (Strike out ones not required)
9	Work Station	As per Annexure I	
10	Passive Items	As per Annexure J	As per actuals
11	Display	42" LED display caters to 16 camera feeds. May also select Plasma displays for viewing 4K feeds	
12	UPS	As per power requirement.	As per actuals

Specifications of Baggage Scanner

1. Resolution : 42 SWG or better
2. Tunnel Size : Shall be minimum 600mm X 400mm with 10% variation only on higher side.
3. Penetration : $> = 30$ mm Steel.
4. Voltage : 180 – 260 V, 50 Hz single phase.
5. **Conveyer Belt**
- 5.1 Speed should be at least 0.2 meters per second or better.
- 5.2 Maximum load should be 160 Kg.
- 5.3 Conveyor belt height should be at least 750 mm.
- 5.4 Facility of bi-direction scanning be available.
- 5.5 Idle SS rollers to be provided with input/out frames at both ends of the tunnel.
6. **X-Ray Generator**
- 6.1 Cooling – Sealed oil bath.
- 6.2 Anode Voltage $> = 160$ KeV
- 6.3 Tube Current $< = 1$ mA
- 6.4 Beam divergence – 60 degrees. The x-ray beam divergence should be such that the complete image of maximum size of bag is displayed without corner cuts.
7. **Image Processing**
- 7.1 Sensor – Folded array
- 7.2 Grey Levels $> = 4096$
- 7.3 Display – High resolution SVGA, 22" TFT, LED Colour monitors, Flicker-free, minimum 1920 X 1080 pixels full HD display 30 watt and low radiation.
- 7.4 Beam divergence – 60 degrees.
8. **Computer configuration for image Storing and archiving.**
- 8.1 Latest generation compatible with X-Ray machine having the following minimum features or better.
- 8.2 Processor: Core i3 or better available in market.
- 8.3 Hard Disk: 350 GB or better.
- 8.4 CD/DVD Drive R/W
- 8.5 RAM 3 GB or better.
- 8.6 UPS: Reputed make online UPS like Tata libert, APC, Microtek etc. with minimum 30 minutes backup on full load by using SMF batteries.
- 8.6.1 Capacity – Commensurate capacity as per load.
- 8.6.2 Voltage range – 180-260 V, 50 Hz single phase.
- 8.6.3 Output voltage – 230 VAC $\pm 1\%$
- 8.6.4 Transfer Time – 0 ms
9. Zoom facility should be available to magnify the chosen area of an image eight times (X8) or more. Image features shall be key board controller.
10. The machine should be film safe.
11. The machine should have features of multi energy X-ray imaging facility (140 KeV approx.) where materials of different atomic number will be displayed in different colours to distinguish between organic and inorganic materials. With this method should be possible to distinguish high density organic materials including explosives. Machines should have variable colour or material striping to facilitate the operator to monitor images of organic materials for closure scrutiny. All suspicious items (explosives, high density material, narcotics) should be displayed in one mode and that should be online.

12. Facility for variable contrast must be incorporated to allow enhancement of lighter and darker portion of the image.
13. If the machine fails to penetrate an item, then an alarm (visual and audio both) should be generated to notify the operator.
14. The **threat image projection (TIP) system** software to be incorporated as per details given below:
 - 14.1 TIP software facility shall be incorporated in the offered x-ray machines to assist supervisors in testing the operator alertness and training X-ray screeners to improve their ability in identifying specific threat object. The system will create a threat object and the same will be superimposed on monitor screen while a bag is being screened. To acknowledge that the operator has seen the false object, operator must press the control panel key that will cause the computer generated threat object to disappear from X-rayed bag image on the VDU screen. Each operator's action shall be recorded in the hard disc of the computer for the auditing purpose by the supervisor or other authorized person.
 - 14.2 **Design of the System**
 - 14.2.1 TIP software should be compatible with other X-ray technologies such as automatic reject unit, dual x-ray screen technologies, automatic threat recognition system etc. All x-ray image functions must be available at the same time along with the TIP.
 - 14.3 **Image Library**
 - 14.3.1 The TIP facility should have an image library containing at least 100 explosive devices, 100 knives and 100 firearms in various sizes, shapes, locations and orientations. However, the system shall have facility to expand the library to incorporate additional images by user without assistance of the manufacturer.
 - 14.3.2 The image library should contain images of threats at different orientation both plane and end on orientation should be used. Although these will be assigned different file names and reference, it must be possible to cross reference these as the same threat. All threat images protection images must be realistic – representative and non distinguishable from real threat items.
 - 14.4 **Time Interval**
 - 14.4.1 Programming facility shall be available to project threat images in different intervals. The time period for threat image as well as image mix in percentage shall be user programmable e.g. software shall select 40% images of explosive devices, 35% of fire arms & 25% of knives or random items etc.
 - 14.4.2 Once the screener has responded to identify the computer generated threat image, it should remain on the screen for a predefined user programmable time for analysis. The image should be highlighted, upon identification and feedback message shall be visible to the screener.
 - 14.5 **System Administration**
 - 14.5.1 The threat image projection facility shall have details of user data base such as Venue of function, Name of organization, Name of Screener, user ID number, level of access such as screener, Administrator, Maintenance schedule and password etc.
 - 14.5.2 Access to start up menu should be restricted only to the authorized individuals. A log in procedure by means of password or security key could achieve restricted access to each of the comment. The log in procedure should not take longer than 20 second. The system should have facility to bypass the TIP facility, if programmed so by the system administrator. It is to be ensured that the TIP software shall not be hindrance to normal functioning of the x-ray machine.
 - 14.5.3 When the operator logs in or logs out, message should be displayed on the Video Display Unit (VDU) screen to confirm that he/she has been correctly logged in or logged out.

14.6 Feedback Report

- 14.6.1 The threat image projection should be capable of giving feedback HIT MISS or FALSE Alarm message. No message will be presented if a screener correctly passed as clear bag.
- 14.6.2 A HIT message to be presented when a screener has correctly identified a threat image projection image. A MISS message shall be presented when screener fails to identify the TIP image. A False alarm message shall be given when screener incorrectly indicate TIP image when in fact no threat image projection is present. The feedback should clearly indicate in a screen that a TIP object has been correctly identified/TIP object has been missed/no TIP object was present. Information should be recorded in the data base.
- 14.6.3 Different colour coding shall be used for feedback to the screener. It is recommended that colour code RED for MISS, Green for HIT and Yellow to False Alarm or interrupt be used.
- 14.6.4 The system shall automatically prepare the daily log of events for each shift and for each screener performance. TIP log shall include particulars of Venue, XBIS, Name of Screener, Time and date of threat image, whether threat image was successfully identified or missed etc.
- 14.6.5 The report on threat image projection system may have date and time (from – to –) as per requirement, Screener particulars and decision/outcome i.e. MISS, HIT or False Alarm in percentage as well in absolute numbers, number of bags screened, categories such as explosive devices knife or weapon etc.
- 14.6.6 As a standard practice, daily/weekly/monthly report shall be retrieved. Report shall be for any given time and period, as per command.
- 14.6.7 All data should be stored on the system for a minimum of two months after it has been downloaded. No individual regardless of access rights to the threat image projection components would delete or amend any of threat image projection data or time i.e. threat image projection data on the actual X-ray machine will be read only file.
15. Control desk with security housing and locking provision should be available. The entry of operator personal identification number should be possible through keyboard.
16. Maintenance reminder should be available.
17. Display: Date and Time and Operator ID.
18. Baggage counter preferred.
19. Inverse video.
20. Black and white image.
21. Facility of image enhancement should be available.
22. Machine should be capable of recalling 15-20 previous images.
23. It should have the capability of archiving 3000-4000 images.
24. In case of defective diode arrays, scanning should be disabled and error message should be displayed on the screen.
25. Copy of all softwares including x-ray software with recovery CD and passwords should be provided.
26. All software features of machine should be online and password protected.
27. System should work on one software only. All software features should be controlled from key board of machine only. Keyboard function should be user friendly. To enable/disable the software features, system should not be rebooted.
28. All models should have online recording facility and images can be recorded in external media like USB drive.
29. All models should have software controlled diagnosis report facility and system should be able to give printout.

30. The machine should be so designed that software enhancement can be easily implemented to take care of new technique in image processing and pattern recognition.
31. The operating temperature should be 0 degree C to 40 degree and storage temperature-20 degree C and 50 degree Celsius.
32. Anti rodent and dust proof cover must be provided.
33. The company manufacturing the equipment should have ISO certification for manufacturing and servicing of x-ray screening machines.
34. **Safety**
- 34.1 The machine must comply with requirement of health and safety regulations with regard to mechanical, Electrical and radiation hazards. The supplier/manufacturers should furnish Test Certificate from Atomic Energy Regulatory Board of India regarding radiation safety.
- 34.2 The radiation level should not exceed accepted health standard (0.1 mR/Hr) at a distance of 5 cms from external housing.
- 34.3 Lead impregnated safety screens should be available at either ends of the tunnel.
- 34.4 Dosimeter be provided for radiation checking.
35. Combined Test Piece (CTP): The manufacturer shall provide one set of CTP per machine for checking serviceability of the machine by the operator. The details of CTP are given below.
- 35.1 Combined Test Piece Requirements.
- 35.2 **Single wire Resolution (Test No.1):** The requirement is to display 42 SWG wire not covered by step wedge. A tick will indicate the visibility of appropriate wire. A set of un-insulated tinned copper wire of size 26, 30, 35, 38, 40 and 42 SWG should be placed on a Perspex sheet. The wires to be laid out in S Shaped curves. The wires should be placed behind varying thickness of aluminum. Metallic marker should be provided using high density material, so that SWG numbers in the Video Display Unit (VDU) are clearly visible.
- 35.3 **Useful Penetration (Test No.2):** The test defines what level of details can be seen behind a thickness of known material. The CTP should have different gauges of wire behind varying thickness of aluminum. The requirement of this test is that the 26 SWG wire is seen under second step wedge (5/16"). Tick on log sheet will indicate what wires are visible.
- 35.4 **Material discrimination (Test No.3):** The requirement is that different colours be allocated to the sample of organic and inorganic substances. With multi energy X-Ray it should be possible to distinguish between materials of different average atomic number. This means that organic and inorganic substances can be differentiated. The use of sugar and salt samples encapsulated on the test piece and various materials used in the construction of CTP should check the material discrimination facility. A tick should indicate that the sugar/salt samples are shown in different colour.
- 35.5 **Sample Penetration (Test No.4):** The requirement is that the lead be visible beneath 26 mm of steel. This test defines what thickness of steel the machine should be able to penetrate. The steel step wedge on the CTP should have steps of at least 2 mm from 16 mm to 30 mm with a lead strip to check that the machine is above or below the requirement. A tick in log sheet should indicate where a lead strip is visible.
- 35.6 **Spatial Resolution (Test No.5):** The requirement is that vertical and horizontal grating to be seen. This test defines the ability of the system to distinguish and display objects, which are close together. The CTP should have at least 16 copper gratings at right angles to each other. A tick in the log sheet should indicate the gaps in the gratings are visible.

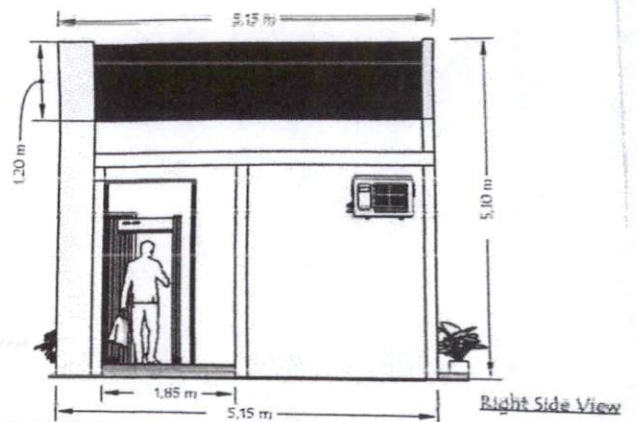
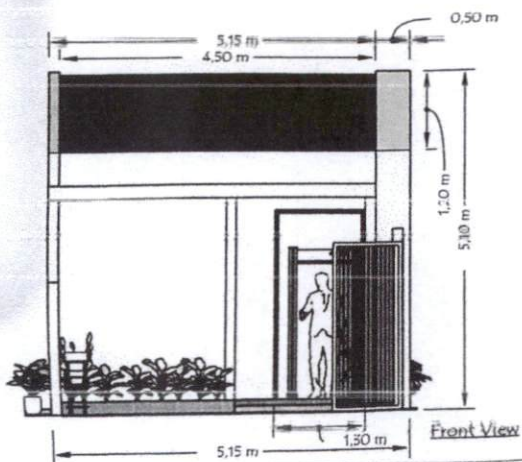
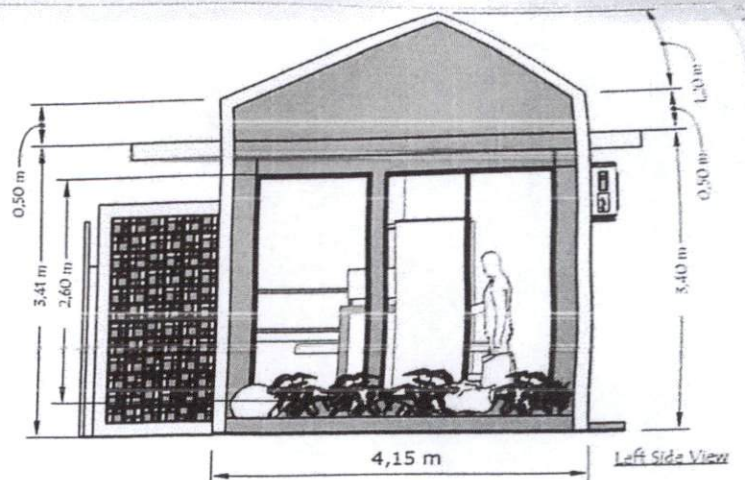
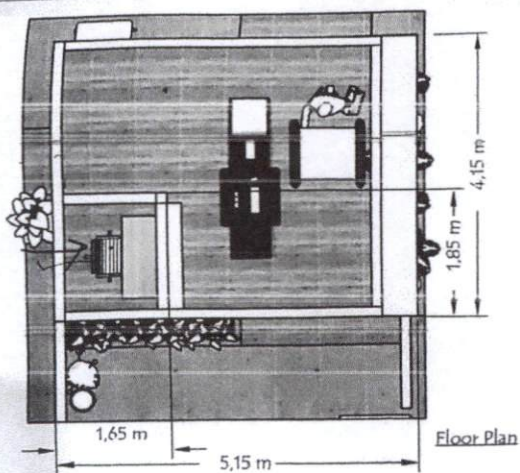
- 35.7 **Thin Metal Imaging (Test No.6):** This tests the machine's ability to image thin metal. A number of thin metal strips of various thicknesses should be placed in row.
- 35.8 **Method**
- 35.8.1 The CTP is to be used as a quick routine test carried out daily to ensure that equipment is working properly and satisfactory image is obtained. The results of the tests should be recorded.
- 35.8.2 The CTP should be placed on the belt and passed through the belt at least once in a day before the baggage is screened or after the x-ray equipment is switched on to ensure that the equipment is working properly. If the image is satisfactory the equipment may be used.
- 35.8.3 The CTP may be viewed by using image enhancing facility till the operator is satisfied that the machine is working properly. The optimum position of CTP on the belt will depend on x-ray source and detector arrangements. This may be ascertained from the service engineer, if need arises.
- 35.9 **Results**
- 35.9.1 The best results taking both colour and black and white images into account should be recorded for a particular machine.
- 35.9.2 The results of test should be recorded giving information like date, time, machine number and type, supervisors name and other remarks.
- 35.9.3 Supervisory officer should carry out the tests once in a week and compare the results with daily test sheets. In case the images are not up to the standard, service engineer must be asked to rectify the fault. The machine may not be used when its performance is in doubt or not satisfactory in the opinion of the supervisor.
- 35.9.4 The record must be kept by the operator for one year. The records may be checked by the inspecting officers during this period.
36. **Warranty & Maintenance** – 3 years Warranty and Annual Maintenance Contract for 07 years. Sufficient spares should be available in stock with the supplier and certificate for availability of spares in *Mech For* at least 7 years after the warranty period.
37. **Miscellaneous:** The firm should be able to provide the following along with the equipment:
- (i) One Test Sample (CTP) for each machine for testing during commissioning and during maintenance.
 - (ii) Suitable voltage stabilizer with isolation transformer.
 - (iii) Training tools – charts, slides, training brochure, training work model, blow up diagram, video films on demonstrations and use etc.
 - (iv) Technical manual giving full description of the item. Practical training for at least 4 times in a year and continuing during the warranty period.
 - (v) User's handbook and literature on preservation/maintenance as applicable.
 - (vi) Procedure for packing, handling, transportation and storage.

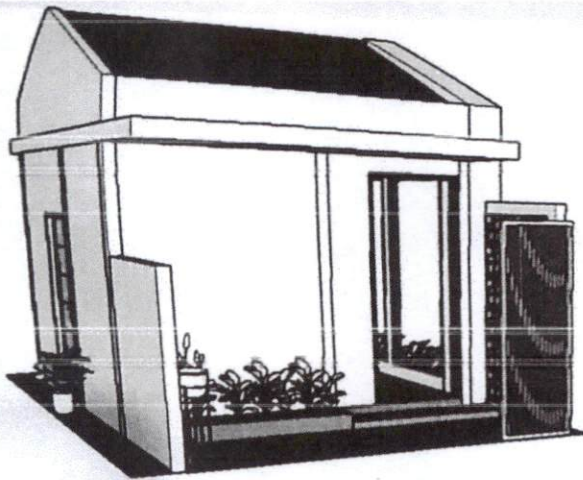
Technical Specification for Multizone Door Frame Metal Detector.

1. Technology : Suitable latest technology.
2. Dimensions :
 - Detection area – Height: not less than 205 cm
 - Width : 72-80 cm
 - Depth : 57-60 cm
3. No. of zones : Minimum 8 Zones
4. Operational : User Selectable
Frequencies
5. Sensitivity : Adjustable
6. Zone sensitivity:
& adjustment : All zones individually adjustable.
7. Metal Detection:
 - (i) Should detect
 - (a) Ferrous, Non-ferrous, Ferrite & Alloys.
 - (b) Uniformly in entire frame area.
 - (c) In all orientation and
 - (d) In walking speed of interception
 - (ii) *Pin point detection with indication at correct zone level without interference/false identification of adjacent zones.*
8. Alarm : i) Audible alarm on detection with adjustable volume.
9. Display : Suitable anti-glare counter and zone display of DFMD – readable to person with normal eye sight in day and night time without any strain on eyes.
10. False Alarm rate: Less than 3%
11. Interference :
Suppression
 - i) Should not interfere with adjacent installed DFMDs within a distance of 1 ft.
 - ii) Should not be affected by opening/closing of a metallic gate in vicinity.
 - iii) Should not be affected by heavily reinforced floors/ roof tops / walls.
 - iv) Should not be affected by external RF transmission and EMI (Electro-Magnetic Interference), (supported by Test certificates from NABL or other accredited labs from the country of origin of the equipment).
12. Capacity/
throughput rate : 20 persons or more per minute Adjustable Traffic count is acceptable
13. Power Supply: (a) 220 VAC 50 Hz Mains $\pm 10\%$

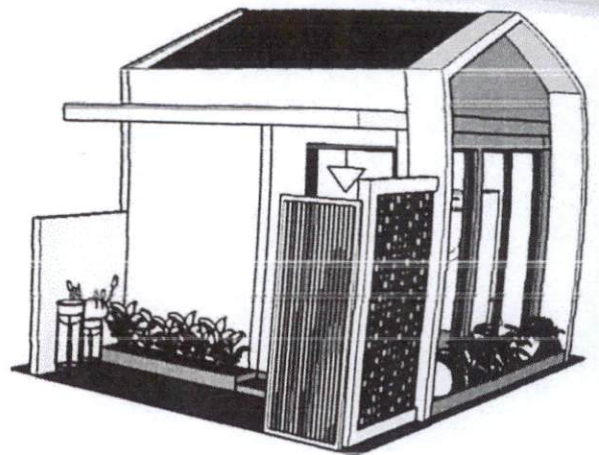
- (b) Rechargeable maintenance free internal battery for minimum 10 hrs operation with inbuilt charger (external batteries will not be accepted)
 - (c) Audio Visual low Battery indicator
- 14. Calibration : Inbuilt auto calibration capability.
- 15. Safety :
 - (a) The bidder shall submit a certificate from any accredited Indian laboratory regarding its adverse effects on human and machines. Harmlessness to magnetic media and heart pacemaker, pregnant women.
 - (b) Should conform to international standards of safety/ radiations.
 - (c) Should be Data safe.
- 16. Self Diagnostics: User-friendly self-testing diagnostics to identify faulty condition.
- 17. Operating :
Ambience : Temperature – From 5 degree C to 55 degree C
Humidity – Upto 95% Non condensation.
- 18. Control Panel: Easily accessible, modular design with standard plugs and connectors. Adjustable control should only be activated on the insertion of a removable key or by password.
- 19. Construction : Construction should be confirming to IP 65 standards. Lightweight, Rigid, laminated side panels and cross piece, ABS plastic boots for panel protection, Base wheels for easy mobility & should be waterproof/ weatherproof and usable at outdoor locations. It should have a floor panel to attach both side panels to give stability & rigidity to the machine.
- 20. Warranty : Warranty for 3 years. Sufficient spares should be available in stock with the supplier from the manufacturer and certificate for availability of spares in Median for at least 7 years after the warranty period.
- 21. Accessories :
 - i) One Test sample for each machine for testing during commissioning and during maintenance.
 - ii) Training tools – charts, slides, training brochure, training work, model blow up diagram, video films on demonstrations and use etc.
 - iii) Technical manual giving full description of the item. Practical training at least 4 times in a year continuing during warranty period.
 - iv) User's handbook and literature on preservation/ maintenance as applicable.
 - v) Procedure for packing, handling, transportation, storage and battery replacement.
- 22. Counters : Counting of number of persons passing the sensing zone-inbound/outbound.

Schematic Diagram for Security Post

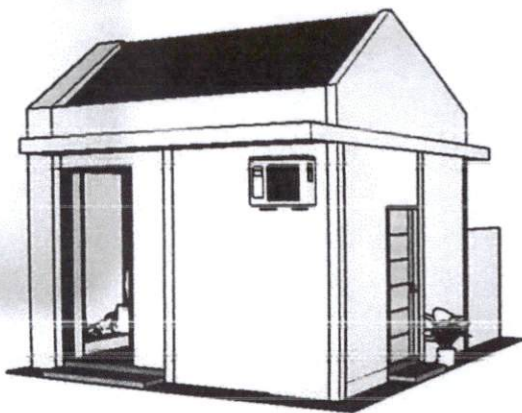




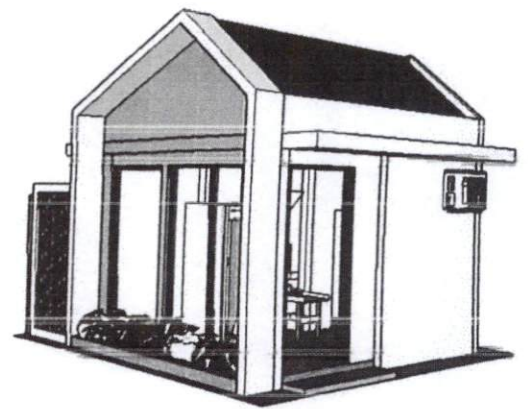
#Isometric Front View



#Isometric Front View



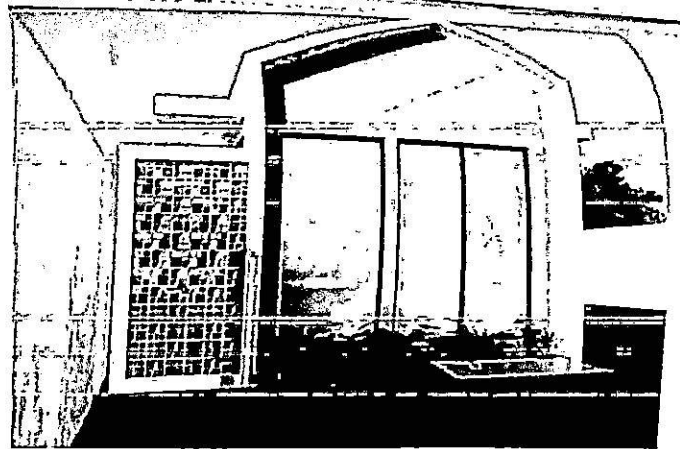
#Isometric Back View



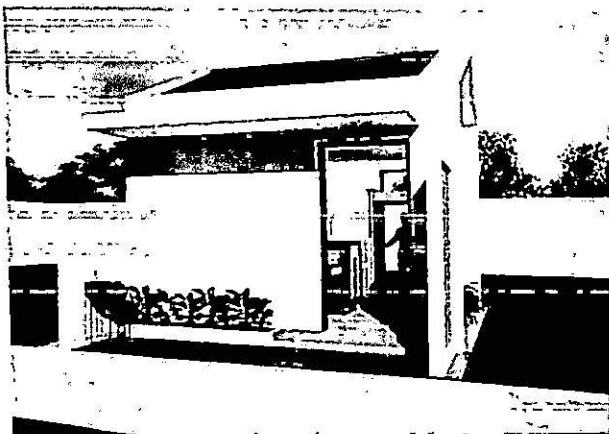
#Isometric Back View



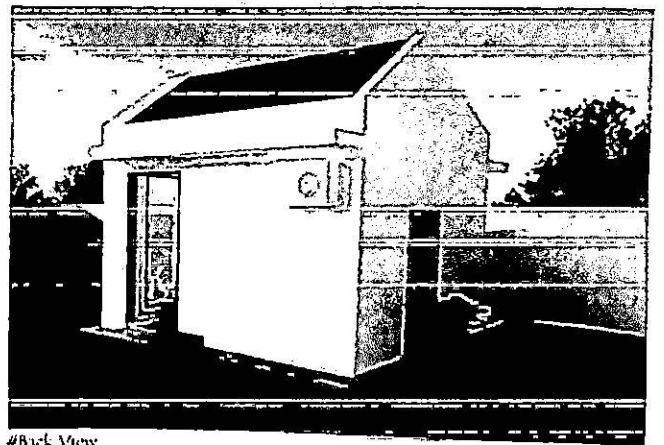
#Side View



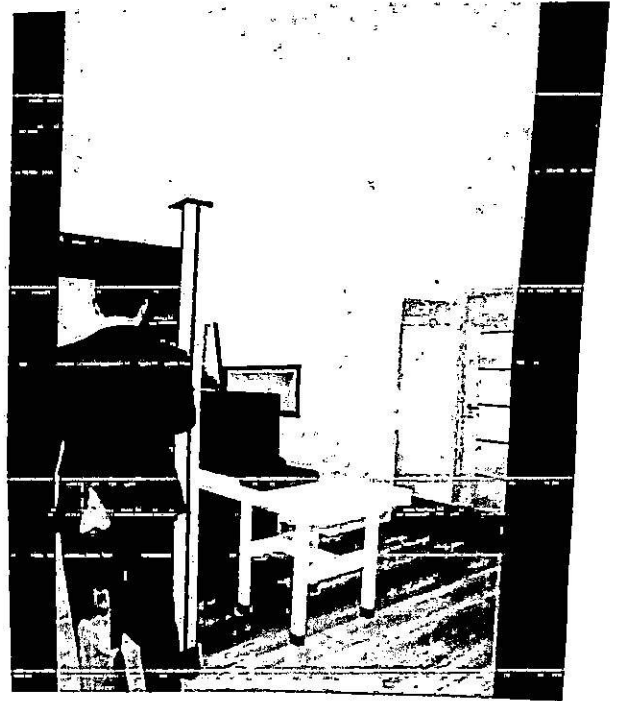
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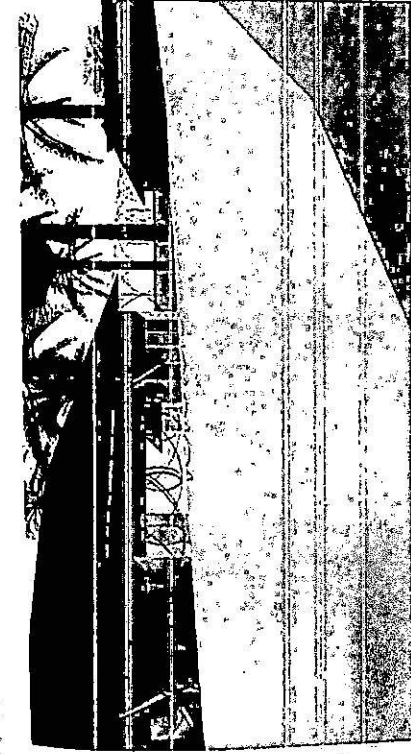


#Front View

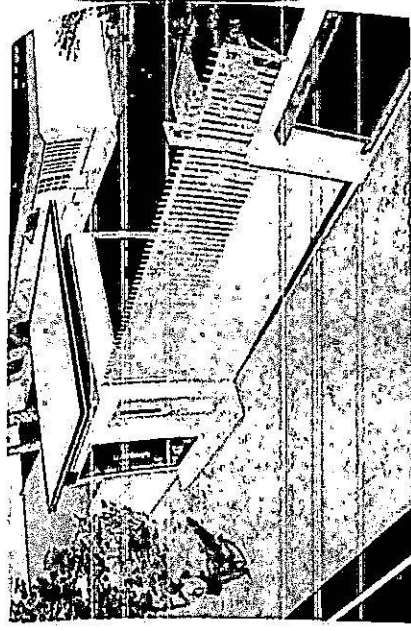


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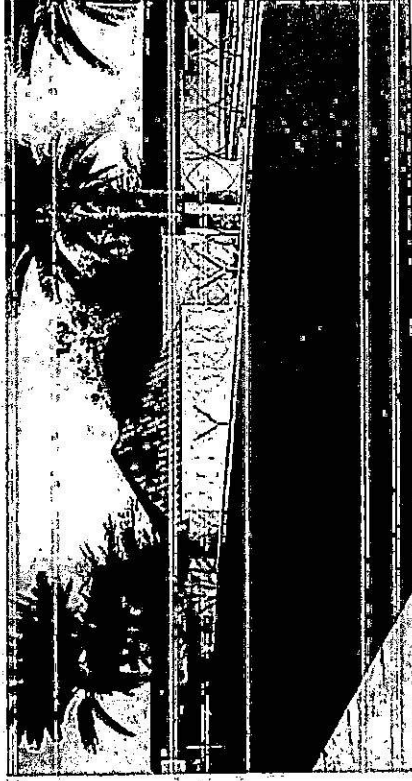




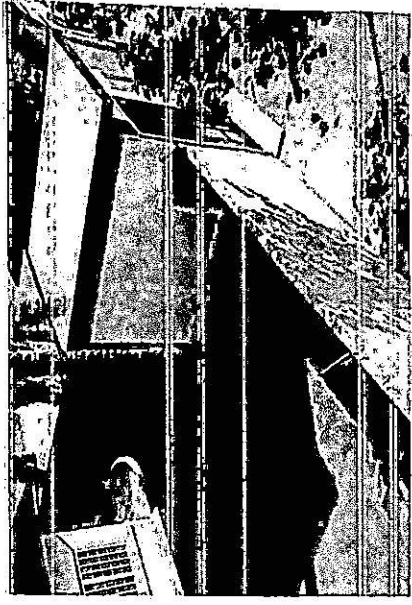
#Barbed Wire View



#Barbed Wire View



#Barbed Wire View



#Barbed Wire View