

## SPECIFICATION : STORES



## MINIMUM BUILDING CONSTRUCTION STANDARDS: SOUTH AFRICAN POLICE SERVICE: STORES

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1. Types of storage accommodation.
- 1.1 Built structures
- 1.1.1 **SAPS 13 large items store (New construction)**  
See Annexure 1

## **GENERAL**

**Room size** as indicated on an approved needs assessment document.

## **CONSTRUCTION**

**Foundations** to be a minimum 600 x 230 mm concrete strip foundations (3:3:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered *structural engineer* must be appointed to design a suitable foundation.

**Plinth walls** to be constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every consecutive brick layer from foundation up to floor screed height.

**Walls** to be constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered *structural engineer*, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable universal primer paint.

Floor to ceiling height to be minimum 2720 mm (32 brick layers) to ensure sufficient space above the large items access door opening for installation of a roller shutter door.

**Roof** construction and covering as per *architect's* specifications.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick *in-situ* casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications.

**Strong room door** to be SABS approved, single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

**A Large items access door** should be installed in the wall opposite the strong room door. Door to be a lockable heavy duty galvanised mild steel roller shutter door,

minimum 1800 mm wide, and installed on the inside of the door opening. (Padlocks with same keys). Padlock latches x 2 are to be provided on the bottom inside on both sides of the roller shutter door. The outside of the door opening must be fitted with a lockable, purpose made mild steel sliding security gate manufactured from 20 x 20 x 2mm mild steel square profile tubing and finished with two coats enamel paint on one coat lead free metal primer paint. The mild steel sliding door to be lockable from the inside only. Provide an in-situ casted concrete ramp on the outside and over the full width of the door opening with the ramp not exceeding 1:10 rise.

The sliding gate must have the following features:

- A full length overhead anti lift rail.
- Lockable from the inside with a padlock (Same size padlock and same key set as padlock used for roller shutter door).
- A 200 x 200 x 2 mm mild steel plate cover integrated into the sliding gate to prevent external access / tampering with padlock.

**Telescopic safe ventilators** are to be installed inside the walls of the large item store in accordance with the manufacturer's specifications. The strong room door manufacturer will normally also supply the telescopic ventilators. No windows in walls.

A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

**Shelving** units to be placed against the long end walls of the room with a middle row in-between allowing for a minimum of 900 mm wide circulation in-between shelving units. Shelving to be a standalone multipurpose, heavy-duty mild steel racking system finished with baked enamel powder coated epoxy and have 38 mm thick Pine shelving slats. The racks must be at least 600 mm deep and have a payload of 2200 kg.

## **ELECTRICAL**

### **Lighting**

A nominal lighting level of 350 lux must be achieved.

Luminaries are of 600 x 600 mm LED format with a cool white colour rendering and must have SABS approval. Luminaries must be of recessed type as used in office areas but be installed with proprietary surface mount steel frame finished in white powder coating. Conduit and draw boxes (63 mm diameter) will be cast into roof slab with luminary draw boxes directly behind the designated positions of luminaries. A centrally located 20 mm conduit entry will be provided for cable access to a surface mounted dual type (Infrared – Ultra Sonic) occupancy sensor. If the lighting design requires a centrally located luminary, the occupancy sensor will be positioned off-centre, in closer proximity to the door. All other conduit for electrical installations will be of 25mm diameter.

An external red/green (default) LED indicator light, mounted directly above the passage door (category-2 door) at a height of 2300 mm above finished floor level (AFFL) and must also be activated by the internal occupancy sensor. No external or internal light switches will be provided.

Bulkhead lighting on exterior of building will be positioned in such manner that an external LED bulkhead with cool white colour rendering at 2300 AFFL will either be directly above the external entrance or centrally located between two adjacent store room entrances, if near. External bulkhead lighting will be controlled by means of photocells.

#### **Switched socket outlets**

A single 100 x 100 mm recessed normal power switched socket outlet with steel face plate at 300 mm AFFL is provided for cleaning and general maintenance purposes.

#### **Electronic fire detection**

A centrally located surface mounted smoke detector will be provided. This smoke detector will be associated with the fire detection control panel located in the behind counter area of the CSC.

#### **CCTV**

The architecture of all CCTV systems must be IP based. Static cameras must be of PoE type.

Two surface mounted static cameras must be provided on the inside of the room at appropriate locations to monitor the respective entrances. Positions must be selected in a manner whereby shelving and storage items do not impede the line of sight to the entrances. A 20 mm diameter conduits will be installed from the designated camera positions to the ceiling void in adjacent proximity of the CCTV, access control, data & telephone welded wire mesh cable tray.

It is recommended that all data CAT-5/CAT-6 be of blue or grey insulation and bundled together on one half of the cable tray and that all CCTV and access control CAT-5/CAT-6 cables be of purple insulation and bundled together on the opposite half of the cable tray.

#### **Electronic access control**

The architecture of all access control systems must be IP based. The door controllers will be installed in the ceiling void above the ceiling slab. A single 100 x 50 mm emergency power single pole isolator with red steel faceplate and appropriately shaved earth will be provided in a weather proof slide lid type synthetic enclosure in the ceiling void in the approximate position of the door controller. It is recommended that the door controllers can also function in an off-line mode.

The category-2 door will be furnished with the following electronic access control devices:

- Magnetic lock with integrated door monitor and associated striker plate.
- Biometric reader.

The magnetic lock will be installed at approximately 2000 mm AFFL on the side wall of the entrance and in a vertical orientation. A 100 x 50 mm recessed draw box with steel faceplate will be installed in a vertical position in the side wall of the entrance and next to the magnetic lock mounting position. A 20 mm diameter conduit will be installed from the draw box to the ceiling void near of the door controller.

A surface mounted biometric reader will be installed at 1200 mm *AFFL* on the opening side of the category-2 door, no closer than 300 mm from the door frame. A recessed 63 mm diameter draw box will be installed in a position directly behind the designated position of the biometric reader. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.

The roller shutter door will not be furnished with electronic access control.

The exterior steel slide gate will be furnished with the following electronic access control devices:

- Magnetic lock with integrated door monitor and associated striker plate.
- Biometric reader.

The magnetic lock will be installed at approximately 2000 mm *AFFL* on the side wall of the entrance and in a vertical orientation and be located on the lockable padlock side of the slide gate. A 100 x 50 mm recessed draw box with steel faceplate will be installed in a vertical position in the side wall of the entrance and next to the magnetic lock mounting position. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.

A surface mounted biometric reader will be installed at 1200 mm *AFFL* on the inside and opening side of the sliding gate, no closer than 300 mm from the door. A recessed 63 mm diameter draw box will be installed in a position directly behind the designated position of the biometric reader. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.



### 1.1.2 SAPS 13 large items store (Existing facilities)

See Annexure 2

#### GENERAL

**Room size** as existing.

#### CONSTRUCTION

**Foundations** as existing.

**Plinth walls** as existing.

**Walls** as existing.

Existing walls to be a minimum of 220 mm thick brick work construction finished with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

Existing **window openings** to be bricked up and finished to match existing walls. In case of a *heritage building*, window openings must be secured on the inside of the room by means of a purpose made expanded mild steel mesh which is welded inside an angle iron frame. The screen and frame must be fixed against the inside of the wall, over the window opening by means of anchor bolts. The screen and frame is to be finished with two coats enamel paint in colour: Grey on one coat lead free metal primer paint, and to be secured over window opening with anchor bolts.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered structural engineer, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable universal primer paint.

Should a concrete ceiling be absent, a purpose made, 2 mm thick mild steel sheet metal ceiling must be installed with proper support, in replacement of the existing ceiling. The structure of the ceiling is to be designed by a registered building professional, either being an *architect* or a *structural engineer*. Mild steel ceiling to be finished with two coats enamel paint in colour: White on one coat lead free metal primer paint.

**Roof** construction and covering as existing.

**Floor** to be 25 mm steel trowel-floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications. Where timber floors are existing, it must be replaced in accordance with the above floor specification.

**Strong room door** to be a SABS approved single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

A **large items access door** should be installed in the wall opposite the strong room door. Door to be a lockable heavy duty galvanised mild steel roller shutter door, minimum 1800 mm wide, and installed on the inside of the door opening. (Padlocks with same keys). Padlock latches x 2 are to be provided on the bottom inside on both sides of the roller shutter door. The outside of the door opening must be fitted with a lockable, purpose made mild steel sliding security gate manufactured from 20 x 20 x 2mm mild steel square profile tubing and finished with two coats enamel paint on one coat lead free metal primer paint. The mild steel sliding door to be lockable from the inside only. Provide an *in-situ* casted concrete ramp on the outside of the door opening with the ramp not exceeding 1:10 rise.

The sliding gate must have the following features:

- A full length overhead anti lift rail.
- Lockable from the inside with a padlock (Same size padlock and same key set as padlock used for roller shutter door).
- A 200 x 200 x 2 mm mild steel plate cover integrated into the sliding gate to prevent external access / tampering with padlock.

**Telescopic safe ventilators** are to be installed inside the walls of the large item store in accordance with the manufacturer's specifications. The strong room door manufacturer will normally also supply the telescopic ventilators. No windows in walls.

A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

**Shelving units** to be placed against the long end walls of the room with a middle row in-between allowing for a minimum of 900 mm wide circulation in-between shelving units. Shelving to be a standalone multipurpose, heavy-duty mild steel racking system finished with baked enamel powder coated epoxy and have 38 mm thick Pine shelving slats. The racks must be at least 600 mm deep and have a payload of 2200 kg.

Sizes of existing stores may influence the type and size shelving to be used. Heavy duty shelving should be preferred considering the larger and heavier evidence pieces to be stored.

## **ELECTRICAL**

Similar to that for new construction. Installations and cabling routes will be recessed into walls and slabs as far as possible. Installations will be surface mounted in areas where the structures do not allow for recessed installations.

### **Electronic fire detection**

Electronic fire detection installations will be extended from existing electronic fire detection infrastructure.

### **CCTV**

CCTV installations will be extended from existing CCTV infrastructure.



**Electronic access control**

Electronic access control will be extended from existing access control infrastructure.

### 1.1.3 SAPS 13 small items store (New construction)

See Annexure 3

#### GENERAL

**Room size** as indicated on an approved needs assessment document.

#### CONSTRUCTION

**Foundations** to be a minimum 600 x 230 mm concrete strip foundations (3:3:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered *structural engineer* must be appointed to design a suitable foundation.

**Plinth walls** to be constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every consecutive brick layer from foundation up to floor screed height.

**Walls** to be constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered *structural engineer*, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable universal primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

**Roof** construction and covering as per *architect's* specifications.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing' on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications.

**Strong room door** to be a SABS approved single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

**Telescopic safe ventilators** are to be installed inside the walls of the small items store in accordance with the manufacturer's specifications. The strong room door manufacturer will normally also supply the telescopic ventilators. No windows in walls.

A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

A **loose standing safe** is to be installed against the inside wall and floor of the store by means of anchor bolts for storage of valuable items such as jewellery and money. Loose standing safe as per separate approved SAPS specifications. Certain police stations might require more than one loose standing safe.

**Shelving units** to be placed against the long end walls of the room with a middle row back to back in-between allowing for a minimum of 900 mm wide circulation in-between shelving units. Shelving to be a standalone multipurpose, durable mild steel racking system finished with baked enamel powder coated epoxy and have pressed mild steel shelves. The racks must be at least 300 mm deep.

## **ELECTRICAL**

### **Lighting**

A nominal lighting level of 350 lux must be achieved.

Luminaries are of 600 x 600 mm LED format with a cool white colour rendering and must have *SABS* approval. Luminaries must be of recessed type as used in office areas but be installed with proprietary surface mount steel frame finished in white powder coating. Conduit and draw boxes (63 mm diameter) will be cast into roof slab with luminary draw boxes directly behind the designated positions of luminaries. A centrally located 20 mm conduit entry will be provided for cable access to a surface mounted dual type (Infrared – Ultra Sonic) occupancy sensor. If the lighting design requires a centrally located luminary, the occupancy sensor will be positioned off-centre, in closer proximity to the door. All other conduit for electrical installations will be of 25 mm diameter.

An external red/green (default) LED indicator light, mounted directly above the passage door (category-2 door) at a height of 2300 mm above finished floor level (*AFFL*) and must also be activated by the internal occupancy sensor. No external or internal light switches will be provided.

### **Switched socket outlets**

A single 100 x 100 mm recessed normal power switched socket outlet with white steel face plate at 300 mm *AFFL* are provided for cleaning and general maintenance purposes.

A single 100 x 100 mm recessed emergency power switched socket outlet with red steel face plate at 300 mm *AFFL* are provided for a biological material evidence refrigerator.

### **Electronic fire detection**

A centrally located surface mounted smoke detector will be provided. This smoke detector will be associated with the fire detection control panel located in the behind counter area of the CSC.

### **CCTV**

The architecture of all *CCTV* systems must be IP based. Static cameras must be of PoE type.

One surface mounted static camera must be provided on the inside of the room at an appropriate location to monitor the entrance. The position must be selected in a manner whereby shelving and storage items do not impede the line of sight to the entrance. A 20 mm diameter conduit will be installed from the designated camera

position to the ceiling void in adjacent proximity of the CCTV, access control, data & telephone welded wire mesh cable tray.

It is recommended that all data CAT-5/CAT-6 be of blue or grey insulation and bundled together on one half of the cable tray and that all CCTV and access control CAT-5/CAT-6 cables be of purple insulation and bundled together on the opposite half of the cable tray.

#### **Electronic access control**

The architecture of all access control systems must be IP based. The door controllers will be installed in the ceiling void above the ceiling slab. A single 100 x 50 mm emergency power single pole isolator with red steel faceplate and appropriately shaved earth will be provided in a weather proof slide lid type synthetic enclosure in the ceiling void in the approximate position of the door controller. It is recommended that the door controllers can also function in an off-line mode.

The category-2 door will be furnished with the following electronic access control devices:

- Magnetic lock with integrated door monitor and associated striker plate.
- Biometric reader.

The magnetic lock will be installed at approximately 2000 mm *AFFL* on the side wall of the entrance and in a vertical orientation. A 100 x 50 mm recessed draw box with steel faceplate will be installed in a vertical position in the side wall of the entrance and next to the magnetic lock mounting position. A 20 mm diameter conduit will be installed from the draw box to the ceiling void near of the door controller.

A surface mounted biometric reader will be installed at 1200 mm *AFFL* on the opening side of the category-2 door, no closer than 300 mm from the door frame. A recessed 63 mm diameter draw box will be installed in a position directly behind the designated position of the biometric reader. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.

#### 1.1.4 SAPS 13 small items store (Existing facilities)

See Annexure 4

##### GENERAL

**Room size** as existing.

##### CONSTRUCTION

**Foundations** as existing.

**Plinth walls** as existing.

**Walls** as existing.

Existing walls to be a minimum of 220 mm thick brick work construction finished with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

Existing **window openings** to be bricked up and finished to match existing walls. In case of a *heritage building*, window openings must be secured on the inside of the room by means of a purpose made expanded mild steel mesh which is welded inside an angle iron frame. The screen and frame must be fixed against the inside of the wall, over the window opening by means of anchor bolts. The screen and frame is to be finished with two coats enamel paint in colour: Grey on one coat lead free metal primer paint, and to be secured over window opening with anchor bolts.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered *structural engineer*, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable concrete primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

Should a concrete ceiling be absent, a purpose made, 2 mm thick mild steel sheet metal ceiling must be installed with proper support, in replacement of the existing ceiling. The structure of the ceiling is to be designed by a registered building professional, either being an *architect* or a *structural engineer*. Mild steel ceiling to be finished with two coats enamel paint in colour: White on one coat lead free metal primer paint.

**Roof** construction and covering as existing.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications. Where timber floors are existing, it must be replaced in accordance with the above floor specification.

**Strong room door** to be a SABS approved single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

**Telescopic safe ventilators** are to be installed inside the walls of the small items store in accordance with the manufacturer's specifications. The strong room door manufacturer will normally also supply the telescopic ventilators. No windows in walls.

A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

A **loose standing safe** is to be installed against the inside wall and floor of the store by means of anchor bolts for storage of valuable items such as jewellery and money. Loose standing safe as per separate approved SAPS specifications. Certain police stations might require more than one loose standing safe.

**Shelving units** to be placed against the long end walls of the room with a middle row back to back in-between allowing for a minimum of 900 mm wide circulation in-between shelving units. Shelving to be a standalone multipurpose, durable mild steel racking system finished with baked enamel powder coated epoxy and have pressed mild steel shelves. The racks must be at least 300 mm deep.

## **ELECTRICAL**

Similar to that for new construction. Installations and cabling routes will be recessed into walls and slabs as far as possible. Installations will be surface mounted in areas where the structures do not allow for recessed installations.

### **Electronic fire detection**

Electronic fire detection installations will be extended from existing electronic fire detection infrastructure.

### **CCTV**

CCTV installations will be extended from existing CCTV infrastructure.

### **Electronic access control**

Electronic access control will be extended from existing access control infrastructure.



#### **1.1.5 SAP 13 small overnight evidence store (Existing facilities)**

See Annexure 4

This evidence store is normally inside or in close proximity of the Community Service Centre (CSC). Pieces of evidence are brought in during night time and are booked into the overnight store for safe keeping until the next morning when the stores clerk are on duty again. The pieces of evidence are then transferred to either the small or large items store the next day.

The overnight store should conform to the same minimum standards as the SAP 13 small items store.

### 1.1.6 SAPS 13 walk-in fire arm safe and station walk-in fire-arm safe (New construction)

See Annexure 5

#### GENERAL

Room size as indicated on an approved needs assessment document.

#### CONSTRUCTION

**Foundations** to be a minimum 600 x 230 mm concrete strip foundations (3:3:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered *structural engineer* must be appointed to design a suitable foundation.

**Walls and plinth walls** to be 200 mm thick reinforced in-situ casted concrete as specified by a professional registered *structural engineer*. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

Alternatively, walls may be constructed as follows:

A 330 mm thick cavity wall constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. The central cavity between brick skins to be in-situ casted concrete (3:3:1 mix ratio @ 30 Mpa) with (Code 888) 200 x 200 x 12 mm diameter mild steel mesh reinforcing vertically installed inside the concrete core. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered *structural engineer*, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable universal primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

**Roof** construction and covering as per *architect's* specifications.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:2:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications.

**Strong room door** to be a SABS approved single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

Telescopic safe ventilators are to be installed inside the walls of the large item store in accordance with the manufacturer's specifications. The strong room door

manufacturer will normally also supply the telescopic ventilators. No windows in walls.

A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

A **service counter** will be provided inside the fire arm safe for dispatch / receive and record keeping purposes. Provide a mild steel security trellis on top of the counter with a 100 mm opening between counter top and the underside of trellis security panel.

**Shelving** for hand guns to be a standalone pigeonhole type, durable mild steel racking system finished with baked enamel powder coated epoxy. The racks must be at least 300 mm deep.

Rifle rack for hand rifles and shot guns as per detail drawings. Annexure 6.

## **MECHANICAL**

A SABS approved **De-humidifier** shall be installed inside the fire arm safe in strict accordance with the manufacturer's specifications. The climatic zone in which the police station is located, must be considered when specifying the unit size. It is preferred that a registered *mechanical engineer* specify the equipment and oversee the installation.

### **Dehumidifiers**

The most common way to dehumidify an environment is to cool the air being treated to a temperature well below the dew point and, thus, remove moisture from the air as water droplets. The treated air is then heated to the required temperature and the resultant relative humidity is a product of the amount of moisture removed by cooling and the final temperature of the air being treated.

This approach though practical, simple and common, has a number of significant problems. Firstly, the energy cost in cooling and then reheating air is quite substantial and should be considered as a factor in the long term running of any environment. Secondly, the amount of moisture removed from the air is proportional to the temperature differential and a system will often have to be oversized in order to be suitable for a wide range of environmental conditions experienced in many places. This is a particular problem in cool environments. And finally, it is very difficult to get accurate control using these sorts of systems, which may lead to cycling such that the system constantly seeks to adjust the conditions and this leads to regular increases and decreases in temperature and humidity, which is in itself detrimental to the storage of collection material.

**Desiccant dehumidification** is the removal of moisture from the air within a storage area by using a substance (desiccant) that is able to absorb moisture. The desiccant is subsequently heated, outside the controlled area to remove the absorbed moisture after which it can be reused. Such systems can achieve the low levels of dehumidification required for archival storage in most environments and are more energy efficient than the common cooling and heating approach described above. It is therefore recommended that the desiccant dehumidifier be considered other than the refrigerant.

## **ELECTRICAL**

### **Lighting**

A nominal lighting level of 350 lux must be achieved.

Luminaries are of 600 x 600 mm LED format with a cool white colour rendering and must have SABS approval. Luminaries must be of recessed type as used in office areas but be installed with proprietary surface mount steel frame finished in white powder coating. Conduit and draw boxes (63 mm diameter) will be cast into roof slab with luminary draw boxes directly behind the designated positions of luminaries. A centrally located 20 mm conduit entry will be provided for cable access to a surface mounted dual type (Infrared – Ultra Sonic) occupancy sensor. If the lighting design requires a centrally located luminary, the occupancy sensor will be positioned off-centre. All other conduit for electrical installations will be of 25 mm diameter.

An external red/green (default) LED indicator light, mounted directly above the passage door (category-2 door) at a height of 2300 mm above finished floor level (AFFL) and must also be activated by the internal occupancy sensor. No external or internal light switches will be provided.

### **Switched socket outlets**

A single 100 x 100 mm recessed normal power switched socket outlet with white steel face plate at 300 mm AFFL are provided for the dehumidifier.

### **Electronic fire detection**

A centrally located surface mounted smoke detector will be provided. This smoke detector will be associated with the fire detection control panel located in the behind counter area of the CSC.

### **CCTV**

The architecture of all CCTV systems must be IP based. Static cameras must be of PoE type.

One surface mounted static camera must be provided on the inside of the room at an appropriate location to monitor the entrance. The position must be selected in a manner whereby shelving and storage items do not impede the line of sight to the entrance. A 20 mm diameter conduit will be installed from the designated camera position to the ceiling void in adjacent proximity of the CCTV, access control, data & telephone welded wire mesh cable tray.

It is recommended that all data CAT-5/CAT-6 be of blue or grey insulation and bundled together on one half of the cable tray and that all CCTV and access control CAT-5/CAT-6 cables be of purple insulation and bundled together on the opposite half of the cable tray.

### **Electronic access control**

The architecture of all access control systems must be IP based. The door controllers will be installed in the ceiling void above the ceiling slab. A single 100 x 50 mm emergency power single pole isolator with red steel faceplate and appropriately shaved earth will be provided in a weather proof slide lid type synthetic enclosure in the ceiling void in the approximate position of the door controller. It is recommended that the door controllers can also function in an off-line mode.

The category-2 door will be furnished with the following electronic access control devices:

- Magnetic lock with integrated door monitor and associated striker plate.
- Biometric reader.

The magnetic lock will be installed at approximately 2000 mm *AFFL* on the side wall of the entrance and in a vertical orientation. A 100 x 50 mm recessed draw box with steel faceplate will be installed in a vertical position in the side wall of the entrance and next to the magnetic lock mounting position. A 20 mm diameter conduit will be installed from the draw box to the ceiling void near of the door controller.

A surface mounted biometric reader will be installed at 1200 mm *AFFL* on the opening side of the category-2 door, no closer than 300 mm from the door frame. A recessed 63 mm diameter draw box will be installed in a position directly behind the designated position of the biometric reader. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.

### 1.1.7 SAPS 13 walk-in fire arm safe and station walk-in fire-arm safe (Existing facilities)

See Annexure 7

#### GENERAL

Room size as existing.

#### CONSTRUCTION

**Foundations** as existing.

**Walls** as existing.

Existing walls to be a minimum of 220 mm thick brick work construction finished with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

Existing **window openings** to be bricked up and finished to match existing walls. In case of a *heritage building*, the required permission must be obtained from the provincial heritage counsel for the required changes.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered structural engineer, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour: White on a suitable concrete primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

Should a concrete ceiling be absent, a purpose made, 2 mm thick mild steel sheet metal ceiling must be installed with proper support, in replacement of the existing ceiling. The structure of the ceiling is to be designed by a registered building professional, either being an *architect* or a *structural engineer*. Mild steel ceiling to be finished with two coats enamel paint in colour: White on one coat lead free metal primer paint.

**Roof** construction and covering as existing.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications.

**Strong room door** to be a SABS approved single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

Telescopic safe ventilators are to be installed inside the walls of the large item store in accordance with the manufacturer's specifications. The strong room door manufacturer will normally also supply the telescopic ventilators. No windows in walls.



A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

A **service counter** will be provided inside the fire arm safe for dispatch / receive and record keeping purposes, should existing space allows. Provide a mild steel security trellis on top of the counter with a 100 mm opening between counter top and the underside of trellis security panel.

**Shelving** for hand guns to be a standalone pigeonhole type, durable mild steel racking system finished with baked enamel powder coated epoxy. The racks must be at least 300 mm deep.

Rifle rack for hand rifles and shot guns as per detail drawings. Annexure 6.

## **MECHANICAL**

A SABS approved **De-humidifier** shall be installed inside the fire arm safe in strict accordance with the manufacturer's specifications. The climatic zone in which the police station is located, must be considered when specifying the unit size. It is preferred that a registered *mechanical engineer* specify the equipment and oversee the installation.

### **Dehumidifiers**

The most common way to dehumidify an environment is to cool the air being treated to a temperature well below the dew point and, thus, remove moisture from the air as water droplets. The treated air is then heated to the required temperature and the resultant relative humidity is a product of the amount of moisture removed by cooling and the final temperature of the air being treated.

This approach though practical, simple and common, has a number of significant problems. Firstly, the energy cost in cooling and then reheating air is quite substantial and should be considered as a factor in the long term running of any environment. Secondly, the amount of moisture removed from the air is proportional to the temperature differential and a system will often have to be oversized in order to be suitable for a wide range of environmental conditions experienced in many places. This is a particular problem in cool environments. And finally, it is very difficult to get accurate control using these sorts of systems, which may lead to cycling such that the system constantly seeks to adjust the conditions and this leads to regular increases and decreases in temperature and humidity, which is in itself detrimental to the storage of collection material.

**Desiccant dehumidification** is the removal of moisture from the air within a storage area by using a substance (desiccant) that is able to absorb moisture. The desiccant is subsequently heated, outside the controlled area to remove the absorbed moisture after which it can be reused. Such systems can achieve the low levels of dehumidification required for archival storage in most environments and are more energy efficient than the common cooling and heating approach described above. It is therefore recommended that the desiccant dehumidifier be considered other than the refrigerant.

## **ELECTRICAL**

Similar to that for new construction. Installations and cabling routes will be recessed into walls and slabs as far as possible. Installations will be surface mounted in areas where the structures do not allow for recessed installations.

### **Electronic fire detection**

Electronic fire detection installations will be extended from existing electronic fire detection infrastructure.

### **CCTV**

CCTV installations will be extended from existing CCTV infrastructure.

### **Electronic access control**

Electronic access control will be extended from existing access control infrastructure.

### 1.1.8 SAPS 13 walk-in ammunition safe and station walk-in ammunition safe (New construction)

See Annexure 8

#### GENERAL

Room size as indicated on an approved needs assessment document.

#### CONSTRUCTION

**Foundations** to be a minimum 600 x 230 mm concrete strip foundations (3:3:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered *structural engineer* must be appointed to design a suitable foundation.

**Walls and plinth walls** to be 200 mm thick reinforced in-situ casted concrete as specified by a professional registered *structural engineer*. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

Alternatively, walls may be constructed as follows:

A 330 mm thick cavity wall constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. The central cavity between brick skins to be in-situ casted concrete (3:3:1 mix ratio @ 30 mPa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing vertically installed inside the concrete core. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered structural engineer, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour: White on a suitable universal primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

**Roof** construction and covering as per *architect's* specifications.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications.

**Strong Room Door** to be a SABS approved single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

Telescopic safe ventilators are to be installed inside the walls of the large item store in accordance with the manufacturer's specifications. The strong room door

manufacturer will normally also supply the telescopic ventilators. No windows in walls.

A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

A **service counter** will be provided inside the fire arm safe for dispatch / receive and record keeping purposes. Provide a mild steel security trellis on top of the counter with a 100 mm opening between counter top and the underside of trellis security panel.

**Shelving** for ammunition to be a standalone multipurpose, heavy-duty mild steel racking system finished with baked enamel powder coated epoxy and have 38 mm thick Pine shelving slats. The racks must be at least 600 mm deep and have a payload of 2200 kg.

A **wall mounted bullet trap** suitable for hand held firearms and rifles with a SABS minimum product quality standard to be mounted against the wall in front of the counter, as indicated on Annexure 5.

## **MECHANICAL**

A SABS approved **De-humidifier** shall be installed inside the fire arm safe in strict accordance with the manufacturer's specifications. The climatic zone in which the police station is located, must be considered when specifying the unit size. It is preferred that a registered *mechanical engineer* specify the equipment and oversee the installation.

### **Dehumidifiers**

The most common way to dehumidify an environment is to cool the air being treated to a temperature well below the dew point and, thus, remove moisture from the air as water droplets. The treated air is then heated to the required temperature and the resultant relative humidity is a product of the amount of moisture removed by cooling and the final temperature of the air being treated.

This approach though practical, simple and common, has a number of significant problems. Firstly, the energy cost in cooling and then reheating air is quite substantial and should be considered as a factor in the long term running of any environment. Secondly, the amount of moisture removed from the air is proportional to the temperature differential and a system will often have to be overdesigned in order to be suitable for a wide range of environmental conditions experienced in many places. This is a particular problem in cool environments. And finally, it is very difficult to get accurate control using these sorts of systems, which may lead to cycling such that the system constantly seeks to adjust the conditions and this leads to regular increases and decreases in temperature and humidity, which is in itself detrimental to the storage of collection material.

**Desiccant dehumidification** is the removal of moisture from the air within a storage area by using a substance (desiccant) that is able to absorb moisture. The desiccant is subsequently heated, outside the controlled area to remove the absorbed moisture after which it can be reused. Such systems can achieve the low levels of dehumidification required for archival storage in most environments and

are more energy efficient than the common cooling and heating approach described above. It is therefore recommended that the desiccant dehumidifier be considered other than the refrigerant.

## **ELECTRICAL**

### **Lighting**

A nominal lighting level of 350 lux must be achieved.

Luminaries are of 600 x 600 mm LED format with a cool white colour rendering and must have SABS approval. Luminaries must be of recessed type as used in office areas but be installed with proprietary surface mount steel frame finished in white powder coating. Conduit and draw boxes (63 mm diameter) will be cast into roof slab with luminary draw boxes directly behind the designated positions of luminaries. A centrally located 20 mm conduit entry will be provided for cable access to a surface mounted dual type (Infrared – Ultra Sonic) occupancy sensor. If the lighting design requires a centrally located luminary, the occupancy sensor will be positioned off-centre. All other conduit for electrical installations will be of 25 mm diameter.

An external red/green (default) LED indicator light, mounted directly above the passage door (category-2 door) at a height of 2300 mm above finished floor level (AFFL) and must also be activated by the internal occupancy sensor. No external or internal light switches will be provided.

### **Switched socket outlets**

A single 100 x 100 mm recessed normal power switched socket outlet with white steel face plate at 300 mm AFFL are provided for the dehumidifier.

### **Electronic fire detection**

A centrally located surface mounted smoke detector will be provided. This smoke detector will be associated with the fire detection control panel located in the behind counter area of the CSC.

### **CCTV**

The architecture of all CCTV systems must be IP based. Static cameras must be of PoE type.

One surface mounted static camera must be provided on the inside of the room at an appropriate location to monitor the entrance. The position must be selected in a manner whereby shelving and storage items do not impede the line of sight to the entrance. A 20 mm diameter conduit will be installed from the designated camera position to the ceiling void in adjacent proximity of the CCTV, access control, data & telephone welded wire mesh cable tray.

It is recommended that all data CAT-5/CAT-6 be of blue or grey insulation and bundled together on one half of the cable tray and that all CCTV and access control CAT-5/CAT-6 cables be of purple insulation and bundled together on the opposite half of the cable tray.

### **Electronic access control**

The architecture of all access control systems must be IP based. The door controllers will be installed in the ceiling void above the ceiling slab. A single 100 x 50 mm emergency power single pole isolator with red steel faceplate and appropriately shaved earth will be provided in a weather proof slide lid type synthetic

enclosure in the ceiling void in the approximate position of the door controller. It is recommended that the door controllers can also function in an off-line mode.

The category-2 door will be furnished with the following electronic access control devices:

- Magnetic lock with integrated door monitor and associated striker plate.
- Biometric reader.

The magnetic lock will be installed at approximately 2000 mm *AFFL* on the side wall of the entrance and in a vertical orientation. A 100 x 50 mm recessed draw box with steel faceplate will be installed in a vertical position in the side wall of the entrance and next to the magnetic lock mounting position. A 20 mm diameter conduit will be installed from the draw box to the ceiling void near of the door controller.

A surface mounted biometric reader will be installed at 1200 mm *AFFL* on the opening side of the category-2 door, no closer than 300 mm from the door frame. A recessed 63 mm diameter draw box will be installed in a position directly behind the designated position of the biometric reader. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.



**1.1.9 SAPS 13 walk-in ammunition safe and station walk-in ammunition safe (Existing facilities)**  
See Annexure 9

**GENERAL**

Room size as existing.

**CONSTRUCTION**

**Foundations** as existing.

**Walls** as existing.

Existing walls to be a minimum of 220 mm thick brick work construction finished with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

Existing **window openings** to be bricked up and finished to match existing walls. In case of a *heritage building*, the required permission must be obtained from the provincial heritage counsel for the required changes.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered *structural engineer*, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour: White on a suitable universal primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

Should a concrete ceiling be absent, a purpose made, 2 mm thick mild steel sheet metal ceiling must be installed with proper support, in replacement of the existing ceiling. The structure of the ceiling is to be designed by a registered building professional, either being an *architect* or a *structural engineer*. Mild steel ceiling to be finished with two coats enamel paint in colour: White on one coat lead free metal primer paint.

**Roof** construction and covering as existing.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications.

**Strong room door** to be a SABS approved single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

Telescopic safe ventilators are to be installed inside the walls of the large item store in accordance with the manufacturer's specifications. The strong room door manufacturer will normally also supply the telescopic ventilators. No windows in walls.

A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

A **service counter** will be provided inside the fire arm safe for dispatch / receive and record keeping purposes. Provide a mild steel security trellis on top of the counter with a 100 mm opening between counter top and the underside of trellis security panel.

**Shelving** for ammunition to be a standalone multipurpose, heavy-duty mild steel racking system finished with baked enamel powder coated epoxy and have 38 mm thick Pine shelving slats. The racks must be at least 600 mm deep and have a payload of 2200 kg.

A **wall mounted bullet trap** suitable for hand held firearms and rifles with a SABS minimum product quality standard to be mounted against the wall in front of the counter, as indicated on Annexure 7.

## **MECHANICAL**

A SABS approved **De-humidifier** shall be installed inside the fire arm safe in strict accordance with the manufacturer's specifications. The climatic zone in which the police station is located, must be considered when specifying the unit size. It is preferred that a registered *mechanical engineer* specify the equipment and oversee the installation.

### **Dehumidifiers**

The most common way to dehumidify an environment is to cool the air being treated to a temperature well below the dew point and, thus, remove moisture from the air as water droplets. The treated air is then heated to the required temperature and the resultant relative humidity is a product of the amount of moisture removed by cooling and the final temperature of the air being treated.

This approach though practical, simple and common, has a number of significant problems. Firstly, the energy cost in cooling and then reheating air is quite substantial and should be considered as a factor in the long term running of any environment. Secondly, the amount of moisture removed from the air is proportional to the temperature differential and a system will often have to be oversized in order to be suitable for a wide range of environmental conditions experienced in many places. This is a particular problem in cool environments. And finally, it is very difficult to get accurate control using these sorts of systems, which may lead to cycling such that the system constantly seeks to adjust the conditions and this leads to regular increases and decreases in temperature and humidity, which is in itself detrimental to the storage of collection material.

**Desiccant dehumidification** is the removal of moisture from the air within a storage area by using a substance (desiccant) that is able to absorb moisture. The desiccant is subsequently heated, outside the controlled area to remove the absorbed moisture after which it can be reused. Such systems can achieve the low levels of dehumidification required for archival storage in most environments and are more energy efficient than the common cooling and heating approach described above. It is therefore recommended that the desiccant dehumidifier be considered other than the refrigerant.

## **ELECTRICAL**

Similar to that for new construction. Installations and cabling routes will be recessed into walls and slabs as far as possible. Installations will be surface mounted in areas where the structures do not allow for recessed installations.

### **Electronic fire detection**

Electronic fire detection installations will be extended from existing electronic fire detection infrastructure.

### **CCTV**

CCTV installations will be extended from existing CCTV infrastructure.

### **Electronic access control**

Electronic access control will be extended from existing access control infrastructure.

#### **1.1.10 SAPS 22 personal property store and blanket store at cell block (New construction)**

See Annexure 10

##### **GENERAL**

Room size as indicated on an approved needs assessment document.

##### **CONSTRUCTION**

**Foundations** to be a minimum 600 x 230 mm concrete strip foundations (3:3:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered *structural engineer* must be appointed to design a suitable foundation.

**Plinth walls** to be constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every consecutive brick layer from foundation up to floor screed height.

**Walls** to be constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered structural engineer, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour: White on a suitable universal primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications.

**Roof** construction and covering as per architect's specifications.

**Door** to be a solid timber door installed inside a standard 813 x 2040 mm single rebate door frame with a 6-lever cylinder door lock with ironmongery as specified by an architect. A 300 x 300 mm Aluminium louver to be installed at the bottom portion of the door.

Standard pre-casted concrete wall ventilation bricks to be built into brick walls (Short ends opposing) at a height 300 mm above finished floor level and 2210 mm above finished floor level, in order provide natural ventilation. No windows in walls.

**Shelving** for detainee's property to be a standalone multipurpose, durable mild steel racking system finished with baked enamel powder coated epoxy and have pressed mild steel shelves. The racks must be at least 300 mm deep.

**Shelving** for the blanket store to be a standalone multipurpose, durable mild steel racking system finished with baked enamel powder coated epoxy and have pressed mild steel shelves. The racks must be at least 600 mm deep.

## **ELECTRICAL**

### **Lighting**

A single vandal proof luminaire equal or similar approved as BEKA Rough Guard LED type (19 Watt) with a cool white colour rendering and with SABS approval. Luminaire will have frosted or opaque diffuser and will be manufactured with no side entries. Luminaire may be manufactured by aluminium die-cast process but base must be powder coated grey. Conduit and draw boxes (63 mm diameter) will be cast into roof slab with luminary draw boxes directly behind the designated positions of luminaries.

### **Switched socket outlets**

None.

### **Electronic fire detection**

A centrally located surface mounted smoke detector will be provided. This smoke detector will be associated with the fire detection control panel located in the behind counter area of cell block admittance.

### **CCTV**

None.

### **Electronic access control**

None.

### **1.1.11 SAPS 22 personal property store and blanket store at cell block (Existing facilities)**

See Annexure 11

#### **GENERAL**

Room size as existing.

#### **CONSTRUCTION**

**Foundations** as existing.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications. Where timber floors are existing, it must be replaced in accordance with the above floor specification.

**Walls** as existing.

Existing walls to be a minimum of 220 mm thick brick work construction finished with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

Existing **window openings** to be bricked up and finished to match existing walls. In case of a *heritage building*, window openings must be secured on the inside of the room by means of a purpose made expanded mild steel mesh which is welded inside an angle iron frame. The screen and frame must be fixed against the inside of the wall, over the window opening by means of anchor bolts. The screen and frame is to be finished with two coats enamel paint in colour: Grey on one coat lead free metal primer paint, and to be secured over window opening with anchor bolts.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered structural engineer, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable universal primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

Should a concrete ceiling be absent, a purpose made, 2 mm thick mild steel sheet metal ceiling must be installed with proper support, in replacement of the existing ceiling. The structure of the ceiling is to be designed by a registered building professional, either being an architect or a structural engineer. Mild steel ceiling to be finished with two coats enamel paint in colour: White on one coat lead free metal primer paint.

**Roof construction and covering** as existing.

**Door** to be a solid timber door installed inside a standard 813 x 2040 mm single rebate door frame with a 6-lever cylinder door lock with ironmongery to match existing. A 300 x 300 mm Aluminium louver to be installed at the bottom portion of the door.



Standard pre-casted concrete wall ventilation bricks to be built into brick walls (Short ends opposing) at a height 300 mm above finished floor level and 2210 mm above finished floor level, in order provide natural ventilation. No windows in walls.

**Shelving** for detainee's property to be a standalone multipurpose, durable mild steel racking system finished with baked enamel powder coated epoxy and have pressed mild steel shelves. The racks must be at least 300 mm deep.

**Shelving** for the blanket store to be a standalone multipurpose, durable mild steel racking system finished with baked enamel powder coated epoxy and have pressed mild steel shelves. The racks must be at least 600 mm deep.

## **ELECTRICAL**

Similar to that for new construction. Installations and cabling routes will be recessed into walls and slabs as far as possible. Installations will be surface mounted in areas where the structures do not allow for recessed installations.

### **Electronic fire detection**

Electronic fire detection installations will be extended from existing electronic fire detection infrastructure.

### **CCTV**

CCTV installations will be extended from existing CCTV infrastructure.

### **Electronic access control**

Electronic access control will be extended from existing access control infrastructure.

### 1.1.12 SAPS 13 vehicles impound yard

See Annexure 12

#### GENERAL

Yard size as indicated on an approved needs assessment document.

The yard should be designed by a registered *architect* considering the number and type of vehicles to be stored, access and circulation, and be so positioned on the premises that a 2 meter patrol area be maintained always where located adjacent to boundary fencing.

#### CONSTRUCTION

**Foundations** for perimeter walls to be a minimum 600 x 230 mm concrete strip foundations (3:2:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered *structural engineer* must be appointed to design a suitable foundation.

**Plinth walls** to be constructed of a satin face brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every consecutive brick layer from foundation up to floor screed height.

**Perimeter walls** to be constructed of a satin face brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. Wall to be 2210 mm above the finished ground level with a roller brick course on top. Provide flat-wrap razor wire on top of the perimeter wall. Vertical expansion joints to be provided in the perimeter wall at distances not exceeding 12 meters. Provide weep holes at the base of the perimeter wall at 900 mm intervals by leaving half a brick opening, for storm water to flow away.

**Perimeter columns** for lateral support to be 440 x 440 mm satin face brick columns spaced at 3 meter centre intervals; laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. Provide pyramid shaped pre-manufactured concrete coping to top of columns.

#### Road surfaces (Paving specification)

The area to be paved will be scarified to a depth of 150 mm where good soil conditions exists. Poor soil conditions to be scarified, backfilled and compacted according to *civil engineer's* specifications. The soil / base will be stabilized to its optimum moisture content and then compacted with a vibrating roller (Bomac), whichever is deemed more appropriate for the paved area. The base course is to be approved by a registered *civil engineer* prior to being treated with a weed killer similar or equal to HYVARX at the rate of 4 g/m<sup>2</sup> spread on a 45 mm thick loose layer of bedding sand (compacted to 30 mm).

The sand shall be sharp and well graded, slit or clay content not exceeding 3% with 85% or more passing a 2.36 mm sieve. The sand must be levelled using a straight edge or other suitable means. The sand surface must not be disturbed or walked upon before placing the paving bricks.

Approved 80 mm thick, interlocking, 30 Mpa road stones with chamfered edges are to be laid in herringbone pattern (or pattern to match existing road surfaces) and compacted with a plate vibrator until the desired line level is achieved, where after the sweeping of sand into joints and additional passes of the plate vibrator is made until the joints are filled. The filling sand shall be finer than those used for bedding and should completely pass a 1.18 mm sieve, 90% or more being retained on a 0.75 mm sieve.

The top of the sub-base shall be so constructed that surface water cannot pond and shall have a longitudinal fall of at least 1% and a transverse fall of at least 2%. The level after compaction shall be the designated level of the top of the sub-base.

Note (A). Deviation of the top of sub-base layer from the designated level: plus minus 10 mm. (c) Thickness from 30 mm compacted sand bedding layer.

An outer **security fence** must be constructed around the impound yard wall maintaining a 2 meter patrol area around the impound yard. See Annexure 13 for the minimum outer security fence specifications.

## **ELECTRICAL**

### **Lighting**

A nominal lighting level of 50 lux must be achieved.

Luminaires are of 320 Watt modular street lighting LED format with a cool white colour rendering and must have SABS approval. The design must be high mast mountable with a provision of mounting up to three luminaires on a single bracket. Luminaires must be available with a variety of directional, symmetrical and a-symmetrical beams to ensure uniform lighting. Luminaires will be constructed from high pressure die-cast aluminium and high impact clear glass. The luminaire body will be finished in grey powder coating.

Luminaires will be mounted at a height of 8m on glass fibre reinforced (GRP) poles. Poles will have the following features:

- Non-conductive
- Low inertia
- High Bending Strength
- Vandal resistant
- SANS 1749 compliant finishing coat
- Mountable to a concrete plinth by means of hot dipped galvanised flange plate
- Will be available with an access opening with a cover manufactured from glass filled nylon impregnated in the same colour as the surface coat.
- Cable entry

Luminaire poles will be located within the patrol perimeter around the yard. Two 32mm PVC sleeves will be cast into each concrete plinth to facilitate electrical cable entry to the light and cable egress to the next mast.

Vehicle impound yard lighting will be controlled by means of photocells.

## **CCTV**

The architecture of all CCTV systems must be IP based. Static cameras must be of PoE type. PTZ cameras must be of PoE+ type. Cameras must be low light capable down to .03 lux.

CCTV cameras can be mounted to GRP poles utilised for illumination of the impound yard. An additional 32mm galvanised conduit will be cast into applicable concrete plinths for entry of power and fibre optic cabling. This route will protrude the top of the plinth and continue to the camera gear cabinet height. The camera gear cabinet will be located directly above the designated camera height. This will allow all sleeve and cable entries to be located at the bottom of the cabinet to enhance ingress protection. The camera gear cabinet will have the following features:

- Size 400mm (height) x 300mm (width) x 200mm (depth)
- Manufactured from 304L stainless steel
- IP rating of 66
- Include chassis plate and pole mount brackets
- Lockable
- Temperature rated -20 deg C to +60 deg C

It is recommended that all CCTV CAT-5/CAT-6 cables be of purple insulation.

Two 110mm nextube sleeves will provide reticulation routes for fibre optic and power cabling from the server room to a manhole located in close vicinity to the vehicle impound yard, specifically for illumination and CCTV coverage of the yard.

## **Electronic access control**

Access to the vehicle yard will be by means of an automated sliding vehicle gate. The gate will be controlled via biometric readers located on the inside and outside of the gate. Biometric readers will be mounted in weatherproof enclosures suitable for the application. The weatherproof enclosures must be mounted on goose necks appropriately positioned to provide unobstructed entrance to vehicles. Goose necks must be cast in plinths with dimensions appropriate to the application. A single 25mm diameter conduit must be cast into the plinth to provide a side entry through the plinth from the manhole used for CCTV and security lighting cabling.

# *Existing vehicle impound yards are required to meet the above minimum construction standards.*

### 1.1.13 Vehicles safeguarding services facilities

See Annexure 14

#### GENERAL

Facilities size as indicated on an approved needs assessment document.  
The facility should be designed by a registered *architect* based on the approved needs assessment.

#### PERIMETER WALL (Refer to Annexure 12)

**Foundations** for perimeter walls to be a minimum 600 x 230 mm concrete strip foundations (3:2:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered *structural engineer* must be appointed to design a suitable foundation.

**Plinth walls** to be constructed of a satin face brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every consecutive brick layer from foundation up to floor screed height.

**Perimeter walls** to be constructed of a satin face brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. Wall to be 2210 mm above the finished ground level with a roller brick course on top. Provide flat-wrap razor wire on top of the perimeter wall. Vertical expansion joints to be provided in the perimeter wall at distances not exceeding 12 meters. Provide weep holes at the base of the perimeter wall at 900 mm intervals by leaving half a brick opening, for storm water to flow away.

**Perimeter columns** for lateral support to be 440 x 440 mm satin face brick columns spaced at 3 meter centre intervals; laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. Provide pyramid shaped pre-manufactured concrete coping to top of columns.

An outer **security fence** must be constructed around the impound yard wall maintaining a 2 meter patrol area around the impound yard. See Annexure 13 for the minimum outer security fence specifications.

**Inner fencing** for division of respective areas to comply with the outer security fence specifications as above. See Annexure 13.

#### ROAD SURFACES AND KERB STONES

##### Road surfaces (Paving specification)

The area to be paved will be scarified to a depth of 150 mm where good soil conditions exist. Poor soil conditions to be scarified, backfilled and compacted according to *civil engineer's* specifications. The soil / base will be stabilized to its optimum moisture content and then compacted with a vibrating roller (Bomac), whichever is deemed more appropriate for the paved area. The base course is to be approved by a registered *civil engineer* prior to being treated with a weed killer

similar or equal to HYVARX at the rate of 4 g/m<sup>2</sup> spread on a 45 mm thick loose layer of bedding sand (compacted to 30 mm).

The sand shall be sharp and well graded, slit or clay content not exceeding 3% with 85% or more passing a 2.36 mm sieve. The sand must be levelled using a straight edge or other suitable means. The sand surface must not be disturbed or walked upon before placing the paving bricks.

Approved 80 mm thick, interlocking, 30 Mpa road stones with chamfered edges are to be laid in herringbone pattern (or pattern to match existing road surfaces) and compacted with a plate vibrator until the desired line level is achieved, where after the sweeping of sand into joints and additional passes of the plate vibrator is made until the joints are filled. The filling sand shall be finer than those used for bedding and should completely pass a 1.18 mm sieve, 90% or more being retained on a 0.75 mm sieve.

The top of the sub-base shall be so constructed that surface water cannot pond and shall have a longitudinal fall of at least 1% and a transverse fall of at least 2%. The level after compaction shall be the designated level of the top of the sub-base.

Note (A). Deviation of the top of sub-base layer from the designated level: plus, minus 10 mm. (c) Thickness from 30 mm compacted sand bedding layer.

**Kerb stones** to be figure 3 pre-casted concrete kerbs stones and installed as follows: The line of installation will be scarified to a depth of 150 mm. The soil / base will be stabilized to its optimum moisture content and then compacted with a vibrating roller (Bomac), whichever is deemed more appropriate for the area. The base course is to be approved by a registered *civil engineer* prior to being treated with a weed killer similar or equal to HYVARX at the rate of 4 g/m<sup>2</sup> spread on a 45 mm thick loose layer of bedding sand (compacted to 30 mm).

The sand must be levelled using a straight edge or other suitable means. The sand surface must not be disturbed or walked upon before placing the kerb stones in line with the approved layout drawings. At the back of every joint where two kerb stones meet, pre-mixed cement needs to be lumped in order to provide lateral support. The back (Straight edge of the kerb must be filled and compacted with soil, level with the top end of the kerb stone. The finished paved surface shall be maximum 20 mm below the chamfer line on the front (paved) side of the kerb stone. Joints where kerb stones meet shall not exceed 20 mm and must be filled with mortar and stroked flush with the edges of the kerb stones. See Annexure 15.

## **ELECTRICAL**

### **Lighting**

A nominal lighting level of 50 lux must be achieved.

Luminaries are of 320 Watt modular street lighting LED format with a cool white colour rendering and must have SABS approval. The design must be high mast mountable with a provision of mounting up to three luminaries on a single bracket. Luminaries must be available with a variety of directional, symmetrical and a-symmetrical beams to ensure uniform lighting. Luminaires will be constructed from high pressure die-cast aluminium and high impact clear glass. The luminaire body will be finished in grey powder coating.



Luminaires will be mounted at a height of 8m on glass fibre reinforced (GRP) poles. Poles will have the following features:

- Non-conductive
- Low inertia
- High Bending Strength
- Vandal resistant
- SANS 1749 compliant finishing coat
- Mountable to a concrete plinth by means of hot dipped galvanised flange plate
- Will be available with an access opening with a cover manufactured from glass filled nylon impregnated in the same colour as the surface coat.
- Cable entry

Luminaire poles will be located within the patrol perimeter around the yard. Two 32mm PVC sleeves will be cast into each concrete plinth to facilitate electrical cable entry to the light and cable egress to the next mast.

Vehicle impound yard lighting will be controlled by means of photocells.

### **CCTV**

The architecture of all CCTV systems must be IP based. Static cameras must be of PoE type. PTZ cameras must be of PoE+ type. Cameras must be low light capable down to .03 lux.

CCTV cameras can be mounted to GRP poles utilised for illumination of the impound yard. An additional 32mm galvanised conduit will be cast into applicable concrete plinths for entry of power and fibre optic cabling. This route will protrude the top of the plinth and continue to the camera gear cabinet height. The camera gear cabinet will be located directly above the designated camera height. This will allow all sleeve and cable entries to be located at the bottom of the cabinet to enhance ingress protection. The camera gear cabinet will have the following features:

- Size 400mm (height) x 300mm (width) x 200mm (depth)
- Manufactured from 304L stainless steel
- IP rating of 66
- Include chassis plate and pole mount brackets
- Lockable
- Temperature rated -20 deg C to +60 deg C

It is recommended that all CCTV CAT-5/CAT-6 cables be of purple insulation.

Two 110mm nextube sleeves will provide reticulation routes for fibre optic and power cabling from the server room to a manhole located in close vicinity to the vehicle impound yard, specifically for illumination and CCTV coverage of the yard.

### **Electronic access control**

Access to the vehicle yard will be by means of an automated sliding vehicle gate. The gate will be controlled via biometric readers located on the inside and outside of the gate. Biometric readers will be mounted in weatherproof enclosures suitable for the application. The weatherproof enclosures must be mounted on goose necks appropriately positioned to provide unobstructed entrance to vehicles. Goose necks must be cast in plinths with dimensions appropriate to the application. A

single 25mm diameter conduit must be cast into the plinth to provide a side entry through the plinth from the manhole used for CCTV and security lighting cabling.

## **BUILT STRUCTURES**

All built structures as designed by registered *architect* with area as per approved needs assessment document and in compliance with SANS 10/400.

**Foundations** for walls to be a minimum 600 x 230 mm concrete strip foundations (3:2:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered *structural engineer* must be appointed to design a suitable foundation.

**Plinth walls** to be constructed of a satin face brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every consecutive brick layer from foundation up to floor screed height.

**External wall finish / construction** to be of a satin face brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work.

**Internal wall finish / construction** to be of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. Internal walls finished with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable universal primer paint.

**External window sills** to be face brick on edge to match external walls.

**Internal window sills** to be 152 x 12 mm fibre cement finished with 2 x coats Acrylic PVA paint on 1 x coat universal primer paint in colour as specified by *architect*.

**Roof** construction and covering as per *architect's* specifications. Roof covering to have low maintenance with proper roof slope to ensure effective rainwater disposal.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed ((3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant (Stores) in accordance with manufacturer's specifications. Floors of offices to be finished non-slip porcelain tiles with a 100 mm high tiled floor skirting to match floor tiles.

**External doors** as per *architect's* specifications

**External door frames** as per *architect's* specifications

**Window frames** as per *architect's* specifications

**Ceiling.**

Provide buildings with a 600 x 600 mm suspended ceiling, installed in accordance with manufacturer's specifications.

Provide 600 mm wide and 75 mm thick in-situ casted **concrete apron** around the building with a 1:100 fall away from the building and 10 mm soft board expansion joints at centres not exceeding 1000 mm. Finish with a wood trowel and rounded stroke tool to front edges.

**Shelving** for engines and parts to be a standalone multipurpose, heavy-duty mild steel racking system finished with baked enamel powder coated epoxy and have 38 mm thick Pine shelving slats. The racks must be at least 600 mm deep and have a payload of 2200 kg.

**ELECTRICAL****Lighting**

A nominal lighting level of 350 lux must be achieved.

Luminaries are of 600 x 600 mm LED format with a cool white colour rendering and must have SABS approval. Luminaries must be of recessed type as used in office areas but be installed with proprietary surface mount steel frame finished in white powder coating. Conduit and draw boxes (63 mm diameter) will be cast into roof slab with luminary draw boxes directly behind the designated positions of luminaries. A centrally located 20 mm conduit entry will be provided for cable access to a surface mounted dual type (Infrared – Ultra Sonic) occupancy sensor. If the lighting design requires a centrally located luminary, the occupancy sensor will be positioned off-centre. All other conduit for electrical installations will be of 25 mm diameter.

An external red/green (default) LED indicator light, mounted directly above the passage door (category-2 door) at a height of 2300 mm above finished floor level (*AFFL*) and must also be activated by the internal occupancy sensor. No external or internal light switches will be provided.

**Switched socket outlets**

One single 100 x 100 mm recessed normal power switched socket outlets with steel face plate at 300 mm *AFFL* are provided for cleaning and general maintenance purposes.

**Electronic fire detection**

A centrally located surface mounted smoke detector will be provided. This smoke detector will be associated with the fire detection control panel located in the behind counter area of the CSC.

**CCTV**

The architecture of all *CCTV* systems must be IP based. Static cameras must be of PoE type.

One surface mounted static camera must be provided on the inside of the room at an appropriate location to monitor the entrance. The position must be selected in a manner whereby shelving and storage items do not impede the line of sight to the entrance. A 20 mm diameter conduit will be installed from the designated camera position to the ceiling void in adjacent proximity of the *CCTV*, access control, data & telephone welded wire mesh cable tray.

It is recommended that all data CAT-5/CAT-6 be of blue or grey insulation and bundled together on one half of the cable tray and that all CCTV and access control CAT-5/CAT-6 cables be of purple insulation and bundled together on the opposite half of the cable tray.

### **Electronic access control**

The architecture of all access control systems must be IP based. The door controllers will be installed in the ceiling void above the ceiling slab. A single 100 x 50 mm emergency power single pole isolator with red steel faceplate and appropriately shaved earth will be provided in a weather proof slide lid type synthetic enclosure in the ceiling void in the approximate position of the door controller. It is recommended that the door controllers can also function in an off-line mode.

The category-2 door will be furnished with the following electronic access control devices:

- Magnetic lock with integrated door monitor and associated striker plate.
- Biometric reader.

The magnetic lock will be installed at approximately 2000 mm *AFFL* on the side wall of the entrance and in a vertical orientation. A 100 x 50 mm recessed draw box with steel faceplate will be installed in a vertical position in the side wall of the entrance and next to the magnetic lock mounting position. A 20 mm diameter conduit will be installed from the draw box to the ceiling void near of the door controller.

A surface mounted biometric reader will be installed at 1200 mm *AFFL* on the opening side of the category-2 door, no closer than 300 mm from the door frame. A recessed 63 mm diameter draw box will be installed in a position directly behind the designated position of the biometric reader. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.

## **ROOM TYPE AIR CONDITIONERS - AIR COOLED**

### **General**

Room type air conditioners shall be completely self-contained units of the direct expansion unitary or split type design, air-cooled.

The air conditioners shall generally be in accordance with SABS 1125-1977 with sound levels not exceeding the values specified in the Supplementary Specification and/or this Standard Specification as applicable.

Room air side shall be equipped with a suitable and easily accessible filter, two speed fan, adjustable directional air discharge grille, adjustable outside air intake damper, control thermostat, electric heating elements (if not specified as reverse cycle heating) (where applicable), drain pan and drain piping, cooling coil, controls and control panel and complete wiring, including interlocking with outdoor unit.

The outdoor unit shall contain the matching compressor unit, air-cooled condenser, condenser fan within a waterproof painted and corrosion protected casing.

The indoor/outdoor units shall be interconnected with refrigerant piping (separately insulated suction and delivery piping for reverse cycle units), electric wiring and interlocking control cabling.

Where visible and/or exposed to the weather or possible mechanical damage refrigerant piping and cabling shall be run inside galvanised sheet steel trunking, neatly erected and painted as specified.

Where applicable provision shall be made in the unit design to re-evaporate condensate from the condenser.

Provision shall however be made in all cases for the drainage of excessive condensate to the nearest building drain by means of copper or uPVC tubing (refer to Supplementary Specification) not less than 18mm diameter.

For reverse cycle heating units, including split type units, a proper drippan with drainage piping as above shall be provided for the outdoor units where dripping can create unacceptable conditions.

Where drainage piping is required to be installed flush mounted, positioning and chasing shall be done in good time to meet construction programmes.

Drainage to points other than a proper building drain shall comply with SABS 0400.

All panels shall be neat fitting with hardwearing exposed surfaces of baked enamel or equal finish of approved colour.

**Electrical interlocking shall be provided to ensure that:**

- Compressor cannot run without both indoor and outdoor fans running,
- No electric heating of areas- use air/con/heat pump units (only standby elements).
- It shall not be possible to switch cooling and heating on simultaneously.

Unless otherwise specified in the Supplementary Specification room type air conditioners in the cooling mode shall be rated at 35°C ambient dry bulb air temperature on to the condenser, 27°C dry bulb and 19°C wet bulb air entering conditions to evaporator, all at sea level with the cooling capacities specified at these conditions. For reverse cycle heating the rating shall be based on 7°C ambient dry bulb and 6°C wet bulb air on to the outdoor coil with 21°C dry bulb air on to the indoor coil.

Unless otherwise detailed on the drawings or in the Supplementary Specification units installed through a wall shall be installed with a sub frame built in to the wall (hardwood or steel) and neat finishing architraves inside and outside. The external architrave shall be of aluminium angle and shall be mitred at corners and shall cover the sub frame and opening completely. The architrave and sub frame surround shall be sealed with clear silicone sealant.

**Console Type Units**

Console units shall be completely self-contained and shall be mounted above skirting height for cleaning purposes.



Units with a two-part construction allowing the cabinet to be built in to the wall with the main body to slide in or out is preferred.

Matching weather tight air intake and exhaust louvered panels of anodised aluminium with horizontal blades shall be provided and installed with each unit.

Depending on size, detail and wall thickness the louver shall form part of the cabinet or shall be fixed to the sub frame.

Units shall be supplied with the manufacturer's standard 2 kW electric heating element thermostatically controlled.

The inverter reverse cycle units shall only be supplied for heating/ fresh air. Condensate handling during heating cycle (heat pump-not electrical) in winter.

### **Split Type Units**

Split type units shall consist of a direct expansion indoor fan coil unit and a separate (remote) externally located air-cooled condensing unit.

The indoor fan coil unit shall be floor-mounted, wall mounted, under-ceiling mounted, and ceiling cassette mounted or above ceiling ducted type as specified. Above ceiling units shall be properly insulated, particularly where exposed to high roof or lighting heat loads.

No remote control units are allowed for air conditioners units. Hard wired fixed control units to be supplied / or remote fixed with cable to holder on wall.

All conduit and draw boxes shall be installed flush in the walls or partitions. Surface mounted wiring in trunking or the like will only be accepted if specified as such.

No joints will be allowed in the control wiring.

Suction lines shall be insulated as specified. Suction and delivering lines may not be insulated grouped together as for a single line. Vapour barrier integrity will be critical to prevent dripping.

Gas piping (insulated as specified) and wiring shall be installed in galvanised steel trunking throughout for protection, painted as specified where exposed or visible.

Outdoor units shall be installed on raised plinths or where wall mounted on unistrut or approved galvanised steel brackets, properly braced and fixed.

Refrigerant piping shall be sized and fitted with the necessary oil traps strictly in accordance with the manufacturer's requirements.

### **RECEIVING AREA**

**Office** as designed by registered *architect* with area as per approved needs assessment document.

**ID team office** as designed by registered *architect* with area as per approved needs assessment document.



## **ADMIN BLOCK**

**Retrieval office and ops room** as designed by registered *architect* with area as per approved needs assessment document.

**Key store and disposal area office** as designed by registered *architect* with area as per approved needs assessment document.

## **HEAVY VEHICLE AND ACCIDENT VEHICLES**

**Vehicles impound area** as designed by registered *architect* with area as per approved needs assessment document. Road surfaces and inner fencing as previously described under ROAD SURFACES AND KERB STONES.

## **COMPACTING AREA**

### **Floor slab**

Provide a 4000 x 18 000 x 300 mm thick *in-situ* casted concrete floor slab (3:3:1 mix ratio @ 40 Mpa) with (Code 888) 200 x 200 x 12 mm diameter mild steel reinforcing mesh to accommodate a compacting heavy vehicle during operation, in accordance with the specifications of a registered *structural engineer*. Floor slab to slope 1:100 minimum towards central positioned sand oil trap. See Annexure 16.

Provide a **sand oil trap** in the centre of the floor slab per detail specifications. See Annexure 16.

Provide adequate vehicle circulation for code 22 heavy vehicles.

## **IDENTIFIED VEHICLES**

**Loose parts store** as designed by registered *architect* with area as per approved needs assessment document.

**Engine store** as designed by registered *architect* with area as per approved needs assessment document.

## **UNIDENTIFIED VEHICLES**

**Vehicles impound area** as designed by registered *architect* with area as per approved needs assessment document. Road surfaces and inner fencing as previously described under ROAD SURFACES AND KERB STONES.

## **SAPS BOARDED VEHICLES**

**Vehicles impound area** as designed by registered *architect* with area as per approved needs assessment document. Road surfaces and inner fencing as previously described under ROAD SURFACES AND KERB STONES.

## **DISPOSAL / VIEWING AREA**

**Vehicles impound area** as designed by registered *architect* with area as per approved needs assessment document. Road surfaces and inner fencing as previously described under ROAD SURFACES AND KERB STONES.

## **INVESTIGATION AREA**

**Vehicles impound area** as designed by registered *architect* with area as per approved needs assessment document. Road surfaces and inner fencing as previously described under ROAD SURFACES AND KERB STONES.

## **CLOSED RESTRICTED AREA**

**Office** as designed by registered *architect* with area as per approved needs assessment document.

**Vehicles circulation area** as designed by registered *architect* with area as per approved needs assessment document. Road surfaces and inner fencing as previously described under ROAD SURFACES AND KERBS. Provide adequate vehicle circulation for code 22 heavy vehicles.

#### 1.1.14 Docket archive (New construction)

See Annexure 17

##### GENERAL

**Room size** as indicated on an approved needs assessment document.

##### CONSTRUCTION

**Foundations** to be a minimum 600 mm x 230 mm concrete strip foundations (3:3:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered structural engineer must be appointed to design a suitable foundation.

**Plinth walls** to be constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every consecutive brick layer from foundation up to floor screed height.

**Walls** to be constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint. No windows in walls.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered *structural engineer*, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable universal primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

**Roof** construction and covering as per *architect's* specifications.

**Floor** to be 25 mm steel trowel floated cement screed on top of an in-situ casted concrete surface bed as specified by a registered *structural engineer* on top of hard core filling material compacted in accordance with structural engineer's specifications. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications.

**Record room door** to be a SABS approved single heavy duty record room door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

**Telescopic safe ventilators** are to be installed inside the walls of the docket archive in accordance with the manufacturer's specifications. The record room door manufacturer will normally also supply the telescopic ventilators. No windows in walls.

A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

A **service counter** will be provided inside the docket archive for dispatch / receive and record keeping purposes. Alternatively, a directly adjacent office will be used with the access door (Record room door) to the archive from this office.

**Shelving units** to be placed as per a designed layout in conjunction with the manufacturer and a registered *architect* with a minimum of 900 mm wide circulation in-between shelving units. Shelving to be a standard mobile shelving system mounted on a roller track base and to be installed by the manufacturer's accredited installer.

## **MECHANICAL**

### **ROOM TYPE AIR CONDITIONERS - AIR COOLED**

#### **General**

Room type air conditioners shall be completely self-contained units of the direct expansion unitary or split type design, air-cooled.

The air conditioners shall generally be in accordance with SABS 1125-1977 with sound levels not exceeding the values specified in the Supplementary Specification and/or this Standard Specification as applicable.

Room air side shall be equipped with a suitable and easily accessible filter, two speed fan, adjustable directional air discharge grille, adjustable outside air intake damper, control thermostat, electric heating elements (if not specified as reverse cycle heating) (where applicable), drain pan and drain piping, cooling coil, controls and control panel and complete wiring, including interlocking with outdoor unit.

The outdoor unit shall contain the matching compressor unit, air-cooled condenser, condenser fan within a waterproof painted and corrosion protected casing.

The indoor/outdoor units shall be interconnected with refrigerant piping (separately insulated suction and delivery piping for reverse cycle units), electric wiring and interlocking control cabling.

Where visible and/or exposed to the weather or possible mechanical damage refrigerant piping and cabling shall be run inside galvanised sheet steel trunking, neatly erected and painted as specified.

Where applicable provision shall be made in the unit design to re-evaporate condensate from the condenser.

Provision shall however be made in all cases for the drainage of excessive condensate to the nearest building drain by means of copper or uPVC tubing (refer to Supplementary Specification) not less than 18mm diameter.

For reverse cycle heating units, including split type units, a proper dripan with drainage piping as above shall be provided for the outdoor units where dripping can create unacceptable conditions.

Where drainage piping is required to be installed flush mounted, positioning and chasing shall be done in good time to meet construction programmes.

Drainage to points other than a proper building drain shall comply with SABS 0400.

All panels shall be neat fitting with hardwearing exposed surfaces of baked enamel or equal finish of approved colour.

**Electrical interlocking shall be provided to ensure that:**

- Compressor cannot run without both indoor and outdoor fans running,
- No electric heating of areas- use air/con/heat pump units (only standby elements).
- It shall not be possible to switch cooling and heating on simultaneously.

Unless otherwise specified in the Supplementary Specification room type air conditioners in the cooling mode shall be rated at 35°C ambient dry bulb air temperature on to the condenser, 27°C dry bulb and 19°C wet bulb air entering conditions to evaporator, all at sea level with the cooling capacities specified at these conditions. For reverse cycle heating the rating shall be based on 7°C ambient dry bulb and 6°C wet bulb air on to the outdoor coil with 21°C dry bulb air on to the indoor coil.

Unless otherwise detailed on the drawings or in the Supplementary Specification units installed through a wall shall be installed with a sub frame built in to the wall (hardwood or steel) and neat finishing architraves inside and outside. The external architrave shall be of aluminium angle and shall be mitred at corners and shall cover the sub frame and opening completely. The architrave and sub frame surround shall be sealed with clear silicone sealant.

**Console Type Units**

Console units shall be completely self-contained and shall be mounted above skirting height for cleaning purposes.

Units with a two-part construction allowing the cabinet to be built in to the wall with the main body to slide in or out is preferred.

Matching weather tight air intake and exhaust louvered panels of anodised aluminium with horizontal blades shall be provided and installed with each unit.

Depending on size, detail and wall thickness the louver shall form part of the cabinet or shall be fixed to the sub frame.

Units shall be supplied with the manufacturer's standard 2 kW electric heating element thermostatically controlled.

The inverter reverse cycle units shall only be supplied for heating/ fresh air. Condensate handling during heating cycle (heat pump-not electrical) in winter.

**Split Type Units**

Split type units shall consist of a direct expansion indoor fan coil unit and a separate (remote) externally located air-cooled condensing unit.

The indoor fan coil unit shall be floor-mounted, wall mounted, under-ceiling mounted, and ceiling cassette mounted or above ceiling ducted type as specified. Above ceiling units shall be properly insulated, particularly where exposed to high roof or lighting heat loads.

No remote control units are allowed for air conditioners units. Hard wired fixed control units to be supplied / or remote fixed with cable to holder on wall.

All conduit and draw boxes shall be installed flush in the walls or partitions. Surface mounted wiring in trunking or the like will only be accepted if specified as such.

No joints will be allowed in the control wiring.

Suction lines shall be insulated as specified. Suction and delivering lines may not be insulated grouped together as for a single line. Vapour barrier integrity will be critical to prevent dripping.

Gas piping (insulated as specified) and wiring shall be installed in galvanised steel trunking throughout for protection, painted as specified where exposed or visible.

Outdoor units shall be installed on raised plinths or where wall mounted on unistrut or approved galvanised steel brackets, properly braced and fixed.

Refrigerant piping shall be sized and fitted with the necessary oil traps strictly in accordance with the manufacturer's requirements.

**Fire suppression system** to be provided as specified by a *mechanical engineer*.

## **ELECTRICAL**

### **Lighting**

A nominal lighting level of 350 lux must be achieved.

Luminaries are of 600 x 600 mm LED format with a cool white colour rendering and must have SABS approval. Luminaries must be of recessed type as used in office areas but be installed with proprietary surface mount steel frame finished in white powder coating. Conduit and draw boxes (63 mm diameter) will be cast into roof slab with luminary draw boxes directly behind the designated positions of luminaries. A centrally located 20 mm conduit entry will be provided for cable access to a surface mounted dual type (Infrared – Ultra Sonic) occupancy sensor. If the lighting design requires a centrally located luminary, the occupancy sensor will be positioned off-centre. All other conduit for electrical installations will be of 25 mm diameter.

An external red/green (default) LED indicator light, mounted directly above the passage door (category-2 door) at a height of 2300 mm above finished floor level (AFFL) and must also be activated by the internal occupancy sensor. No external or internal light switches will be provided.

### **Switched socket outlets**

A single 100 x 100 mm recessed normal power switched socket outlet with steel face plate at 300 mm AFFL are provided for cleaning and general maintenance purposes as well as a refrigerator.



### **Electronic fire detection**

A centrally located surface mounted smoke detector will be provided. This smoke detector will be associated with the fire detection control panel located in the behind counter area of the CSC.

### **CCTV**

The architecture of all CCTV systems must be IP based. Static cameras must be of PoE type.

One surface mounted static camera must be provided on the inside of the room at an appropriate location to monitor the entrance. The position must be selected in a manner whereby shelving and storage items do not impede the line of sight to the entrance. A 20 mm diameter conduit will be installed from the designated camera position to the ceiling void in adjacent proximity of the CCTV, access control, data & telephone welded wire mesh cable tray.

It is recommended that all data CAT-5/CAT-6 be of blue or grey insulation and bundled together on one half of the cable tray and that all CCTV and access control CAT-5/CAT-6 cables be of purple insulation and bundled together on the opposite half of the cable tray.

### **Electronic access control**

The architecture of all access control systems must be IP based. The door controllers will be installed in the ceiling void above the ceiling slab. A single 100 x 50 mm emergency power single pole isolator with red steel faceplate and appropriately shaved earth will be provided in a weather proof slide lid type synthetic enclosure in the ceiling void in the approximate position of the door controller. It is recommended that the door controllers can also function in an off-line mode.

The category-2 door will be furnished with the following electronic access control devices:

- Magnetic lock with integrated door monitor and associated striker plate.
- Biometric reader.

The magnetic lock will be installed at approximately 2000 mm *AFFL* on the side wall of the entrance and in a vertical orientation. A 100 x 50 mm recessed draw box with steel faceplate will be installed in a vertical position in the side wall of the entrance and next to the magnetic lock mounting position. A 20mm diameter conduit will be installed from the draw box to the ceiling void near of the door controller.

A surface mounted biometric reader will be installed at 1200 mm *AFFL* on the opening side of the category-2 door, no closer than 300 mm from the door frame. A recessed 63 mm diameter draw box will be installed in a position directly behind the designated position of the biometric reader. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.

### 1.1.15 Docket archive (Existing facilities)

See Annexure 18

**Room size** as existing.

#### **CONSTRUCTION**

**Foundations** as existing.

**Plinth walls** as exiting.

**Walls** as existing.

Existing walls to be a minimum of 220 mm thick brick work construction finished with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable concrete primer paint.

Existing **window openings** to be bricked up and finished to match existing walls. In case of a *heritage building*, window openings must be secured on the inside of the room by means of a purpose made expanded mild steel mesh which is welded inside an angle iron frame. The screen and frame must be fixed against the inside of the wall, over the window opening by means of anchor bolts. The screen and frame is to be finished with two coats enamel paint in colour: Grey on one coat lead free metal primer paint, and to be secured over window opening with anchor bolts.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered *structural engineer*, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable universal primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

Should a concrete ceiling be absent, a purpose made, 2 mm thick mild steel sheet metal ceiling must be installed with proper support, in replacement of the existing ceiling. The structure of the ceiling is to be designed by a registered building professional, either being an *architect* or a *structural engineer*. Mild steel ceiling to be finished with two coats enamel paint in colour: White on one coat lead free metal primer paint.

**Roof** construction and covering as existing.

**Floor** to be 25 mm steel trowel floated cement screed on top of an in-situ casted concrete surface bed as specified by a registered *structural engineer* on top of hard core filling material compacted in accordance with structural engineer's specifications. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications. Where timber floors are existing, it must be replaced in accordance with the above floor specification.

Existing concrete floors to be certified by a registered structural engineer to ensure it can accommodate the weight associated with the shelving and paper to be stored.

**Record room door** to be a SABS approved single heavy duty record room door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

**Telescopic safe ventilators** are to be installed inside the walls of the docket archive in accordance with the manufacturer's specifications. The record room door manufacturer will normally also supply the telescopic ventilators. No windows in walls.

A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

A **service counter** will be provided inside the docket archive for dispatch / receive and record keeping purposes, should existing space allow. Alternatively, a directly adjacent office will be used with the access door (Record room door) to the archive from this office.

**Shelving units** to be placed as per a designed layout in conjunction with the manufacturer and a registered *architect* with a minimum of 900 mm wide circulation in-between shelving units. Shelving to be a standard mobile shelving system mounted on a roller track base and to be installed by the manufacturer's accredited installer.

## **MECHANICAL**

### **ROOM TYPE AIR CONDITIONERS - AIR COOLED**

#### **General**

Room type air conditioners shall be completely self-contained units of the direct expansion unitary or split type design, air-cooled.

The air conditioners shall generally be in accordance with SABS 1125-1977 with sound levels not exceeding the values specified in the Supplementary Specification and/or this Standard Specification as applicable.

Room air side shall be equipped with a suitable and easily accessible filter, two speed fan, adjustable directional air discharge grille, adjustable outside air intake damper, control thermostat, electric heating elements (if not specified as reverse cycle heating) (where applicable), drain pan and drain piping, cooling coil, controls and control panel and complete wiring, including interlocking with outdoor unit.

The outdoor unit shall contain the matching compressor unit, air-cooled condenser, condenser fan within a waterproof painted and corrosion protected casing.

The indoor/outdoor units shall be interconnected with refrigerant piping (separately insulated suction and delivery piping for reverse cycle units), electric wiring and interlocking control cabling.

Where visible and/or exposed to the weather or possible mechanical damage refrigerant piping and cabling shall be run inside galvanised sheet steel trunking, neatly erected and painted as specified.

Where applicable provision shall be made in the unit design to re-evaporate condensate from the condenser.

Provision shall however be made in all cases for the drainage of excessive condensate to the nearest building drain by means of copper or uPVC tubing (refer to Supplementary Specification) not less than 18mm diameter.

For reverse cycle heating units, including split type units, a proper drippan with drainage piping as above shall be provided for the outdoor units where dripping can create unacceptable conditions.

Where drainage piping is required to be installed flush mounted, positioning and chasing shall be done in good time to meet construction programmes.

Drainage to points other than a proper building drain shall comply with SABS 0400.

All panels shall be neat fitting with hardwearing exposed surfaces of baked enamel or equal finish of approved colour.

**Electrical interlocking shall be provided to ensure that:**

- Compressor cannot run without both indoor and outdoor fans running,
- No electric heating of areas- use air/con/heat pump units (only standby elements).
- It shall not be possible to switch cooling and heating on simultaneously.

Unless otherwise specified in the Supplementary Specification room type air conditioners in the cooling mode shall be rated at 35°C ambient dry bulb air temperature on to the condenser, 27°C dry bulb and 19°C wet bulb air entering conditions to evaporator, all at sea level with the cooling capacities specified at these conditions. For reverse cycle heating the rating shall be based on 7°C ambient dry bulb and 6°C wet bulb air on to the outdoor coil with 21°C dry bulb air on to the indoor coil.

Unless otherwise detailed on the drawings or in the Supplementary Specification units installed through a wall shall be installed with a sub frame built in to the wall (hardwood or steel) and neat finishing architraves inside and outside. The external architrave shall be of aluminium angle and shall be mitred at corners and shall cover the sub frame and opening completely. The architrave and sub frame surround shall be sealed with clear silicone sealant.

**Console Type Units**

Console units shall be completely self-contained and shall be mounted above skirting height for cleaning purposes.

Units with a two-part construction allowing the cabinet to be built in to the wall with the main body to slide in or out is preferred.

Matching weather tight air intake and exhaust louvered panels of anodised aluminium with horizontal blades shall be provided and installed with each unit.

Depending on size, detail and wall thickness the louver shall form part of the cabinet or shall be fixed to the sub frame.

Units shall be supplied with the manufacturer's standard 2 kW electric heating element thermostatically controlled.

The inverter reverse cycle units shall only be supplied for heating/ fresh air. Condensate handling during heating cycle (heat pump-not electrical) in winter.

### **Split Type Units**

Split type units shall consist of a direct expansion indoor fan coil unit and a separate (remote) externally located air-cooled condensing unit.

The indoor fan coil unit shall be floor-mounted, wall mounted, under-ceiling mounted, and ceiling cassette mounted or above ceiling ducted type as specified. Above ceiling units shall be properly insulated, particularly where exposed to high roof or lighting heat loads.

No remote control units are allowed for air conditioners units. Hard wired fixed control units to be supplied / or remote fixed with cable to holder on wall.

All conduit and draw boxes shall be installed flush in the walls or partitions. Surface mounted wiring in trunking or the like will only be accepted if specified as such.

No joints will be allowed in the control wiring.

Suction lines shall be insulated as specified. Suction and delivering lines may not be insulated grouped together as for a single line. Vapour barrier integrity will be critical to prevent dripping.

Gas piping (insulated as specified) and wiring shall be installed in galvanised steel trunking throughout for protection, painted as specified where exposed or visible.

Outdoor units shall be installed on raised plinths or where wall mounted on unistrut or approved galvanised steel brackets, properly braced and fixed.

Refrigerant piping shall be sized and fitted with the necessary oil traps strictly in accordance with the manufacturer's requirements.

**Fire suppression system** to be provided as specified by a *mechanical engineer*.

### **ELECTRICAL**

Similar to that for new construction. Installations and cabling routes will be recessed into walls and slabs as far as possible. Installations will be surface mounted in areas where the structures do not allow for recessed installations.

#### **Electronic fire detection**

Electronic fire detection installations will be extended from existing electronic fire detection infrastructure.

**CCTV** installations will be extended from existing CCTV infrastructure.

**Electronic access control** will be extended from existing access control infrastructure.



### 1.1.16 SAPS alcohol store (New construction)

See Annexure 19

#### GENERAL

**Room size** as indicated on an approved needs assessment document.

#### CONSTRUCTION

**Foundations** to be a minimum 600 x 230 mm concrete strip foundations (3:3:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered *structural engineer* must be appointed to design a suitable foundation.

**Plinth walls** to be constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every consecutive brick layer from foundation up to floor screed height.

**Walls** to be constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered *structural engineer*, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable universal primer paint.

Floor to ceiling height to be minimum 2720 mm (32 brick layers) to ensure sufficient space above the large items access door opening for installation of a roller shutter door.

**Roof** construction and covering as per *architect's* specifications.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick *in-situ* casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications.

**Strong room door** to be a SABS approved single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

**A Large items access door** should be installed in the wall opposite the strong room door. Door to be a lockable heavy duty galvanised mild steel roller shutter door, minimum 1800 mm wide, and installed on the inside of the door opening. (Padlocks with same keys). Padlock latches x 2 are to be provided on the bottom inside on both sides of the roller shutter door. The outside of the door opening must be fitted with a lockable, purpose made mild steel sliding security gate manufactured from 20 x 20 x 2mm mild steel square profile tubing and finished with two coats enamel



paint on one coat lead free metal primer paint. The mild steel sliding door to be lockable from the inside only. Provide an in-situ casted concrete ramp on the outside of the door opening with the ramp not exceeding 1:10 rise.

The sliding gate must have the following features:

- A full length overhead anti lift rail.
- Lockable from the inside with a padlock (Same size padlock and same key set as padlock used for roller shutter door).
- A 200 x 200 x 2 mm mild steel plate cover integrated into the sliding gate to prevent external access / tampering with padlock.

**Telescopic safe ventilators** are to be installed inside the walls of the large item store in accordance with the manufacturer's specifications. The strong room door manufacturer will normally also supply the telescopic ventilators. No windows in walls.

A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

**Shelving** units to be placed against the long end walls of the room with a middle row in-between allowing for a minimum of 900 mm wide circulation in-between shelving units. Shelving to be a standalone multipurpose, heavy-duty mild steel racking system finished with baked enamel powder coated epoxy and have 38 mm thick Pine shelving slats. The racks must be at least 600 mm deep and have a payload of 2200 kg.

## **ELECTRICAL**

### **Lighting**

A nominal lighting level of 350 lux must be achieved.

Luminaries are of 600 x 600 mm LED format with a cool white colour rendering and must have **SABS** approval. Luminaries must be of recessed type as used in office areas but be installed with proprietary surface mount steel frame finished in white powder coating. Conduit and draw boxes (63 mm diameter) will be cast into roof slab with luminary draw boxes directly behind the designated positions of luminaries. A centrally located 20 mm conduit entry will be provided for cable access to a surface mounted dual type (Infrared – Ultra Sonic) occupancy sensor. If the lighting design requires a centrally located luminary, the occupancy sensor will be positioned off-centre. All other conduit for electrical installations will be of 25 mm diameter.

An external red/green (default) LED indicator light, mounted directly above the passage door (category-2 door) at a height of 2300 mm above finished floor level (**AFFL**) and must also be activated by the internal occupancy sensor. No external or internal light switches will be provided.

Bulkhead lighting on exterior of building will be positioned in such manner that an external LED bulkhead with cool white colour rendering at 2300 mm **AFFL** will either be directly above the external entrance or centrally located between two adjacent store room entrances, if near. External bulkhead lighting will be controlled by means of photocells.

**Switched socket outlets**

A single 100 x 100 mm recessed normal power switched socket outlet with steel face plate at 300 mm *AFFL* is provided for cleaning and general maintenance purposes.

**Electronic fire detection**

A centrally located surface mounted smoke detector will be provided. This smoke detector will be associated with the fire detection control panel located in the behind counter area of the CSC.

**CCTV**

The architecture of all *CCTV* systems must be IP based. Static cameras must be of PoE type.

Two surface mounted static cameras must be provided on the inside of the room at appropriate locations to monitor the respective entrances. Positions must be selected in a manner whereby shelving and storage items do not impede the line of sight to the entrances. A 20 mm diameter conduits will be installed from the designated camera positions to the ceiling void in adjacent proximity of the *CCTV*, access control, data & telephone welded wire mesh cable tray.

It is recommended that all data CAT-5/CAT-6 be of blue or grey insulation and bundled together on one half of the cable tray and that all *CCTV* and access control CAT-5/CAT-6 cables be of purple insulation and bundled together on the opposite half of the cable tray.

**Electronic access control**

The architecture of all access control systems must be IP based. The door controllers will be installed in the ceiling void above the ceiling slab. A single 100 x 50 mm emergency power single pole isolator with red steel faceplate and appropriately shaved earth will be provided in a weather proof slide lid type synthetic enclosure in the ceiling void in the approximate position of the door controller. It is recommended that the door controllers can also function in an off-line mode.

The category-2 door will be furnished with the following electronic access control devices:

- Magnetic lock with integrated door monitor and associated striker plate.
- Biometric reader.

The magnetic lock will be installed at approximately 2000 mm *AFFL* on the side wall of the entrance and in a vertical orientation. A 100 x 50 mm recessed draw box with steel faceplate will be installed in a vertical position in the side wall of the entrance and next to the magnetic lock mounting position. A 20 mm diameter conduit will be installed from the draw box to the ceiling void near of the door controller.

A surface mounted biometric reader will be installed at 1200 mm *AFFL* on the opening side of the category-2 door, no closer than 300 mm from the door frame. A recessed 63 mm diameter draw box will be installed in a position directly behind the designated position of the biometric reader. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.

The roller shutter door will not be furnished with electronic access control.

The exterior steel slide gate will be furnished with the following electronic access control devices:

- Magnetic lock with integrated door monitor and associated striker plate.
- Biometric reader.

The magnetic lock will be installed at approximately 2000 mm *AFFL* on the side wall of the entrance and in a vertical orientation and be located on the lockable padlock side of the slide gate. A 100 x 50 mm recessed draw box with steel faceplate will be installed in a vertical position in the side wall of the entrance and next to the magnetic lock mounting position. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.

A surface mounted biometric reader will be installed at 1200 mm *AFFL* on the inside and opening side of the sliding gate, no closer than 300 mm from the door. A recessed 63 mm diameter draw box will be installed in a position directly behind the designated position of the biometric reader. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.

### 1.1.17 SAPS 13 alcohol store (Existing facilities)

See Annexure 20

#### GENERAL

**Room size** as existing.

#### CONSTRUCTION

**Foundations** as existing.

**Plinth walls** as existing.

**Walls** as existing.

Existing walls to be a minimum of 220 mm thick brick work construction finished with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

Existing **window openings** to be bricked up and finished to match existing walls. In case of a *heritage building*, window openings must be secured on the inside of the room by means of a purpose made expanded mild steel mesh which is welded inside an angle iron frame. The screen and frame must be fixed against the inside of the wall, over the window opening by means of anchor bolts. The screen and frame is to be finished with two coats enamel paint in colour: Grey on one coat lead free metal primer paint, and to be secured over window opening with anchor bolts.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered structural engineer, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable universal primer paint.

Should a concrete ceiling be absent, a purpose made, 2 mm thick mild steel sheet metal ceiling must be installed with proper support, in replacement of the existing ceiling. The structure of the ceiling is to be designed by a registered building professional, either being an *architect* or a *structural engineer*. Mild steel ceiling to be finished with two coats enamel paint in colour: White on one coat lead free metal primer paint.

**Roof** construction and covering as existing.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications. Where timber floors are existing, it must be replaced in accordance with the above floor specification.

**Strong room door** to be a SABS approved single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

A **large items access door** should be installed in the wall opposite the strong room door. Door to be a lockable heavy duty galvanised mild steel roller shutter door, minimum 1800 mm wide, and installed on the inside of the door opening. (Padlocks with same keys). Padlock latches x 2 are to be provided on the bottom inside on both sides of the roller shutter door. The outside of the door opening must be fitted with a lockable, purpose made mild steel sliding security gate manufactured from 20 x 20 x 2 mm mild steel square profile tubing and finished with two coats enamel paint on one coat lead free metal primer paint. The mild steel sliding door to be lockable from the inside only. Provide an in-situ casted concrete ramp on the outside of the door opening with the ramp not exceeding 1:10 rise.

The sliding gate must have the following features:

- A full length overhead anti lift rail.
- Lockable from the inside with a padlock (Same size padlock and same key set as padlock used for roller shutter door).
- A 200 x 200 x 2 mm mild steel plate cover integrated into the sliding gate to prevent external access / tampering with padlock.

**Telescopic safe ventilators** are to be installed inside the walls of the large item store in accordance with the manufacturer's specifications. The strong room door manufacturer will normally also supply the telescopic ventilators. No windows in walls.

A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

**Shelving units** to be placed against the long end walls of the room with a middle row in-between allowing for a minimum of 900 mm wide circulation in-between shelving units. Shelving to be a standalone multipurpose, heavy-duty mild steel racking system finished with baked enamel powder coated epoxy and have 38 mm thick Pine shelving slats. The racks must be at least 600 mm deep and have a payload of 2200 kg.

Sizes of existing stores may influence the type and size shelving to be used. Heavy duty shelving should be preferred considering the larger and heavier evidence pieces to be stored.

## **ELECTRICAL**

Similar to that for new construction. Installations and cabling routes will be recessed into walls and slabs as far as possible. Installations will be surface mounted in areas where the structures do not allow for recessed installations.

### **Electronic fire detection**

Electronic fire detection installations will be extended from existing electronic fire detection infrastructure.

### **CCTV**

CCTV installations will be extended from existing CCTV infrastructure.

**Electronic access control**

Electronic access control will be extended from existing access control infrastructure.



### 1.1.18 Flammable liquid store

See Annexure 21

#### GENERAL

**Room size** as indicated on an approved needs assessment document.

A flammable liquid store is to be a loose standing building as specified by a registered *architect* in conjunction with a registered *fire engineer* in order to perform a rational fire design for the structure if required.

#### CONSTRUCTION

**Foundations** to be a minimum 600 x 230 mm concrete strip foundations (3:3:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered *structural engineer* must be appointed to design a suitable foundation.

**Plinth walls** to be constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every consecutive brick layer from foundation up to floor screed height.

**Walls** to be constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered *structural engineer*, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable universal primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

**Roof** construction and covering as per *architect's* specifications.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications. Finished floor slab to be 170 mm below the entrance door threshold in order to provide a liquid catchment area. Finished floor screed to be finished with suitable chemical resistant and liquid proofing sealant.

**Strong room door** to be a SABS approved single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer. The bottom of the door to be 345 mm minimum above the finished floor level to provide a catchment area should flammable liquids leak out of containers.

Provide an in-situ casted concrete ramp to the outer front of the access door finished with a wood trowel and with a slope not exceeding 1:10.

**Telescopic safe ventilators** are to be installed inside the walls of the flammable liquid store in accordance with the manufacturer's specifications. The strong room door manufacturer will normally also supply the telescopic ventilators. No windows in walls.

Provide 600 mm wide in-situ casted **concrete apron** around the building with a 1:100 fall away from the building and 10 mm soft board expansion joints at centres not exceeding 1000 mm. Finish with a wood trowel and rounded stroke tool to front edges.

**Fire safety** to conform to (SANS 10400 Part T).

Supply 9 Kg DCP fire extinguisher on the outside next to the entrance door inside a lockable cabinet with break glass access key as well as required signage.

**Shelving units** to be placed against the long end walls of the room with a middle row in-between allowing for a minimum of 900 mm wide circulation in-between shelving units. Shelving to be a standalone multipurpose, heavy-duty mild steel racking system finished with baked enamel powder coated epoxy and have 38 mm thick Pine shelving slats. The racks must be at least 600 mm deep and have a payload of 2200 kg.

## **ELECTRICAL**

### **Lighting**

A nominal lighting level of 350 lux must be achieved.

Luminaries are of 600 x 600 mm LED format with a cool white colour rendering and must have SABS approval. Luminaries must be of recessed type as used in office areas but be installed with proprietary surface mount steel frame finished in white powder coating. Conduit and draw boxes (63 mm diameter) will be cast into roof slab with luminary draw boxes directly behind the designated positions of luminaries. A centrally located 20 mm conduit entry will be provided for cable access to a surface mounted dual type (Infrared – Ultra Sonic) occupancy sensor. If the lighting design requires a centrally located luminary, the occupancy sensor will be positioned off-centre. All other conduit for electrical installations will be of 25 mm diameter.

An external red/green (default) LED indicator light, mounted directly above the passage door (category-2 door) at a height of 2300 mm above finished floor level (AFFL) and must also be activated by the internal occupancy sensor. No external or internal light switches will be provided.

### **Switched socket outlets**

One single 100 x 100 mm recessed normal power switched socket outlets with steel face plate at 300 mm AFFL are provided for cleaning and general maintenance purposes as well as a refrigerator.

### **Electronic fire detection**

A centrally located surface mounted smoke detector will be provided. This smoke detector will be associated with the fire detection control panel located in the behind counter area of the CSC.

## **CCTV**

The architecture of all CCTV systems must be IP based. Static cameras must be of PoE type.

One surface mounted static camera must be provided on the inside of the room at an appropriate location to monitor the entrance. The position must be selected in a manner whereby shelving and storage items do not impede the line of sight to the entrance. A 20 mm diameter conduit will be installed from the designated camera position to the ceiling void in adjacent proximity of the CCTV, access control, data & telephone welded wire mesh cable tray.

It is recommended that all data CAT-5/CAT-6 be of blue or grey insulation and bundled together on one half of the cable tray and that all CCTV and access control CAT-5/CAT-6 cables be of purple insulation and bundled together on the opposite half of the cable tray.

## **Electronic access control**

The architecture of all access control systems must be IP based. The door controllers will be installed in the ceiling void above the ceiling slab. A single 100 x 50 mm emergency power single pole isolator with red steel faceplate and appropriately shaved earth will be provided in a weather proof slide lid type synthetic enclosure in the ceiling void in the approximate position of the door controller. It is recommended that the door controllers can also function in an off-line mode.

The category-2 door will be furnished with the following electronic access control devices:

- Magnetic lock with integrated door monitor and associated striker plate.
- Biometric reader.

The magnetic lock will be installed at approximately 2000 mm *AFFL* on the side wall of the entrance and in a vertical orientation. A 100 x 50 mm recessed draw box with steel faceplate will be installed in a vertical position in the side wall of the entrance and next to the magnetic lock mounting position. A 20 mm diameter conduit will be installed from the draw box to the ceiling void near of the door controller.

A surface mounted biometric reader will be installed at 1200 mm *AFFL* on the opening side of the category-2 door, no closer than 300 mm from the door frame. A recessed 63 mm diameter draw box will be installed in a position directly behind the designated position of the biometric reader. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.

### 1.1.19 Pyrotechnic safe

See Annexure 22

#### GENERAL

Room size as indicated on an approved needs assessment document.

A Pyrotechnic safe will be used for the storage of explosives as used by specialised high risk units of the South African Police Service. The structure should ideally be positioned 50 meters away from any adjacent built structure and be designed by a registered *architect* with the assistance of a registered *fire engineer* -and *structural engineer*.

#### CONSTRUCTION

**Foundations** to be a minimum 700 x 300 mm concrete strip foundations (3:3:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered *structural engineer* must be appointed to design a suitable foundation.

**Walls and plinth walls** to be 300 mm thick reinforced in-situ casted concrete as specified by a professional registered *structural engineer*. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

Alternatively, walls may be constructed as follows:

A 440 mm thick cavity wall constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. 110 mm outer brick skins with the central cavity between brick skins to be in-situ casted concrete (3:3:1 mix ratio @ 30 Mpa) with (Code 888) 200 x 200 x 12 mm diameter mild steel mesh reinforcing vertically installed inside the concrete core. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable concrete primer paint.

**Ceiling** to be 344 mm minimum thick reinforced concrete slab as specified by registered *structural engineer*, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour: White on a suitable universal primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

**Roof** construction and covering as per *architect's* specifications.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications.



**Strong Room Door** to be a *SABS* approved single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

Telescopic safe ventilators are to be installed inside the walls of the large item store in accordance with the manufacturer's specifications. The strong room door manufacturer will normally also supply the telescopic ventilators. No windows in walls.

**Fire safety** to conform to (SANS 10400 Part T).

Supply 9 Kg DCP fire extinguisher on the outside next to the entrance door inside a lockable cabinet with break glass access key as well as required signage.

**Perimeter markings:**

On the floor to be a red painted line 100 mm thick, parallel to walls at 900 mm distance away from wall. Area between wall and red line to be kept clear at all times for human circulation.

Against all walls to be a yellow line 100 mm thick, and 1500 mm above the finished floor level indicating the maximum height for crates to be stacked and ensuring visual view over the storage area.

A **soil berm** must be placed against the outside of the walls at 45 degree slope covering least 75% of the outer wall height and to be surfaced with concrete paving blocks 40 mm minimum thick with suitable weed and insect killer applied prior to block laying.

Storm water to be directed away from built structures.

## **MECHANICAL**

A *SABS* approved **De-humidifier** shall be installed inside the pyrotechnic safe in strict accordance with the manufacturer's specifications. The climatic zone in which the police station is located, must be considered when specifying the unit size. It is preferred that a registered *mechanical engineer* specify the equipment and oversee the installation.

### **Dehumidifiers**

The most common way to dehumidify an environment is to cool the air being treated to a temperature well below the dew point and, thus, remove moisture from the air as water droplets. The treated air is then heated to the required temperature and the resultant relative humidity is a product of the amount of moisture removed by cooling and the final temperature of the air being treated.

This approach though practical, simple and common, has a number of significant problems. Firstly, the energy cost in cooling and then reheating air is quite substantial and should be considered as a factor in the long term running of any environment. Secondly, the amount of moisture removed from the air is proportional to the temperature differential and a system will often have to be oversized in order to be suitable for a wide range of environmental conditions experienced in many places. This is a particular problem in cool environments. And finally, it is very difficult to get accurate control using these sorts of systems, which may lead to cycling such that the system constantly seeks to adjust the conditions and this leads

to regular increases and decreases in temperature and humidity, which is in itself detrimental to the storage of collection material.

**Desiccant dehumidification** is the removal of moisture from the air within a storage area by using a substance (desiccant) that is able to absorb moisture. The desiccant is subsequently heated, outside the controlled area to remove the absorbed moisture after which it can be reused. Such systems can achieve the low levels of dehumidification required for archival storage in most environments and are more energy efficient than the common cooling and heating approach described above. It is therefore recommended that the desiccant dehumidifier be considered other than the refrigerant.

**Mechanical ventilation** to be provided as specified by a *mechanical engineer*.

## **ELECTRICAL**

### **Lighting**

A nominal lighting level of 350 lux must be achieved.

Luminaries are of 600 x 600 mm LED format with a cool white colour rendering and must have SABS approval. Luminaries must be of recessed type as used in office areas but be installed with proprietary surface mount steel frame finished in white powder coating. Conduit and draw boxes (63 mm diameter) will be cast into roof slab with luminary draw boxes directly behind the designated positions of luminaries. A centrally located 20 mm conduit entry will be provided for cable access to a surface mounted dual type (Infrared – Ultra Sonic) occupancy sensor. If the lighting design requires a centrally located luminary, the occupancy sensor will be positioned off-centre. All other conduit for electrical installations will be of 25 mm diameter.

An external red/green (default) LED indicator light, mounted directly above the passage door (category-2 door) at a height of 2300 mm above finished floor level (AFFL) and must also be activated by the internal occupancy sensor. No external or internal light switches will be provided.

### **Switched socket outlets**

Two single 100 x 100mm recessed normal power switched socket outlets with steel face plate at 300 mm AFFL are provided for cleaning and general maintenance purposes as well as a refrigerator.

### **Electronic fire detection**

A centrally located surface mounted smoke detector will be provided. This smoke detector will be associated with the fire detection control panel located in the behind counter area of the CSC.

### **CCTV**

The architecture of all CCTV systems must be IP based. Static cameras must be of PoE type.

One surface mounted static camera must be provided on the inside of the room at an appropriate location to monitor the entrance. The position must be selected in a manner whereby shelving and storage items do not impede the line of sight to the entrance. A 20 mm diameter conduit will be installed from the designated camera position to the ceiling void in adjacent proximity of the CCTV, access control, data & telephone welded wire mesh cable tray.



It is recommended that all data CAT-5/CAT-6 be of blue or grey insulation and bundled together on one half of the cable tray and that all CCTV and access control CAT-5/CAT-6 cables be of purple insulation and bundled together on the opposite half of the cable tray.

#### **Electronic access control**

The architecture of all access control systems must be IP based. The door controllers will be installed in the ceiling void above the ceiling slab. A single 100 x 50 mm emergency power single pole isolator with red steel faceplate and appropriately shaved earth will be provided in a weather proof slide lid type synthetic enclosure in the ceiling void in the approximate position of the door controller. It is recommended that the door controllers can also function in an off-line mode.

The category-2 door will be furnished with the following electronic access control devices:

- Magnetic lock with integrated door monitor and associated striker plate.
- Biometric reader.

The magnetic lock will be installed at approximately 2000 mm *AFFL* on the side wall of the entrance and in a vertical orientation. A 100 x 50 mm recessed draw box with steel faceplate will be installed in a vertical position in the side wall of the entrance and next to the magnetic lock mounting position. A 20 mm diameter conduit will be installed from the draw box to the ceiling void near of the door controller.

A surface mounted biometric reader will be installed at 1200 mm *AFFL* on the opening side of the category-2 door, no closer than 300 mm from the door frame. A recessed 63 mm diameter draw box will be installed in a position directly behind the designated position of the biometric reader. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.

### 1.1.20 SAPS 13 illegal substance store

See Annexure 23

#### GENERAL

Room size as indicated on an approved needs assessment document.

#### CONSTRUCTION

**Foundations** to be a minimum 600 x 230 mm concrete strip foundations (3:3:1 mix ratio @ 30 Mpa) with the top surface of the foundation 340 mm minimum below the natural ground level, for stable soil conditions. Where suspect soil conditions exist, a qualified and registered *structural engineer* must be appointed to design a suitable foundation.

**Walls and plinth walls** to be 200 mm thick reinforced in-situ casted concrete as specified by a professional registered *structural engineer*. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

Alternatively, walls may be constructed as follows:

A 330 mm thick cavity wall constructed of a burnt clay brick, laid in stretcher bond brick laying pattern, with wire mesh brick reinforcing in every fifth consecutive brick layer. All joints between bricks to be properly filled with mortar. All corners to be properly tied-in with overlapping brick work. The central cavity between brick skins to be in-situ casted concrete (3:3:1 mix ratio @ 30 Mpa) with (Code 888) 200 x 200 x 12 mm diameter mild steel mesh reinforcing vertically installed inside the concrete core. Walls to be finished on both sides with a 20 mm thick cement plaster finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in light colour (Beige etc.) on a suitable universal primer paint.

**Ceiling** to be 170 mm minimum thick reinforced concrete slab as specified by registered structural engineer, finished on the underside with 20 mm thick cement plaster, finished with a steel trowel and covered with 2 x coats Acrylic base PVA paint in colour: White on a suitable universal primer paint. Floor to ceiling height to be minimum 2550 mm (30 brick layers).

**Roof** construction and covering as per *architect's* specifications.

**Floor** to be 25 mm steel trowel floated cement screed on top of 75 mm thick in-situ casted concrete surface bed (3:3:1 mix ratio @ 30 Mpa) with (Code 193) 200 x 200 x 5.6 mm diameter mild steel mesh reinforcing, on top of hard core filling material compacted in layers not exceeding 150 mm. Cement screed to be finished with clear penetrating concrete sealant in accordance with manufacturer's specifications.

**Strong Room Door** to be a SABS approved single heavy duty category 2 safe door, installed in accordance with the manufacturer's specifications and preferably by an accredited installer recommended by the manufacturer.

Telescopic safe ventilators are to be installed inside the walls of the large item store in accordance with the manufacturer's specifications. The strong room door

manufacturer will normally also supply the telescopic ventilators. No windows in walls.

A retractable **security gate** manufactured from mild steel is to be installed on the inside of the strong room door opening. The security gate must have a properly fitted floor slider guide as well as side and top frame – top frame to have top slider guide. Security gate to be finished with baked enamel paint in colour: Grey.

A **service counter** will be provided inside the fire arm safe for dispatch / receive and record keeping purposes.

**Shelving units** to be placed against the long end walls of the room with a middle row in-between allowing for a minimum of 900 mm wide circulation in-between shelving units. Shelving to be a standalone multipurpose, heavy-duty mild steel racking system finished with baked enamel powder coated epoxy and have 38 mm thick Pine shelving slats. The racks must be at least 600 mm deep and have a payload of 2200 kg.

## **MECHANICAL**

**Mechanical ventilation** to be provided as specified by a *mechanical engineer*.

To prevent the dangerous concentration of fumes and toxins building up in the illegal substance store, the storage space needs to be adequately ventilated. Good ventilation is essential to ensure that any fumes or toxins given off will be rapidly dispersed.

**Mechanical ventilation** provided to comply with SANS 10400 requirements. The ventilation arrangements should take into account the heavy nature of the fumes and toxins to ensure adequate air movement and extraction at both high and low levels.

Ventilation openings to be secured on the inside walls of the storage facility to prevent theft of the stored items. No windows due to security requirements.

## **ELECTRICAL**

### **Lighting**

A nominal lighting level of 350 lux must be achieved.

Luminaries are of 600 x 600 mm LED format with a cool white colour rendering and must have SABS approval. Luminaries must be of recessed type as used in office areas but be installed with proprietary surface mount steel frame finished in white powder coating. Conduit and draw boxes (63 mm diameter) will be cast into roof slab with luminary draw boxes directly behind the designated positions of luminaries. A centrally located 20 mm conduit entry will be provided for cable access to a surface mounted dual type (Infrared – Ultra Sonic) occupancy sensor. If the lighting design requires a centrally located luminary, the occupancy sensor will be positioned off-centre. All other conduit for electrical installations will be of 25 mm diameter.

An external red/green (default) LED indicator light, mounted directly above the passage door (category-2 door) at a height of 2300 mm above finished floor level (AFFL) and must also be activated by the internal occupancy sensor. No external or internal light switches will be provided.

**Switched socket outlets**

Two single 100 x 100 mm recessed normal power switched socket outlets with steel face plate at 300 mm *AFFL* are provided for cleaning and general maintenance purposes as well as a refrigerator.

**Electronic fire detection**

A centrally located surface mounted smoke detector will be provided. This smoke detector will be associated with the fire detection control panel located in the behind counter area of the CSC.

**CCTV**

The architecture of all CCTV systems must be IP based. Static cameras must be of PoE type.

One surface mounted static camera must be provided on the inside of the room at an appropriate location to monitor the entrance. The position must be selected in a manner whereby shelving and storage items do not impede the line of sight to the entrance. A 20 mm diameter conduit will be installed from the designated camera position to the ceiling void in adjacent proximity of the CCTV, access control, data & telephone welded wire mesh cable tray.

It is recommended that all data CAT-5/CAT-6 be of blue or grey insulation and bundled together on one half of the cable tray and that all CCTV and access control CAT-5/CAT-6 cables be of purple insulation and bundled together on the opposite half of the cable tray.

**Electronic access control**

The architecture of all access control systems must be IP based. The door controllers will be installed in the ceiling void above the ceiling slab. A single 100 x 50 mm emergency power single pole isolator with red steel faceplate and appropriately shaved earth will be provided in a weather proof slide lid type synthetic enclosure in the ceiling void in the approximate position of the door controller. It is recommended that the door controllers can also function in an off-line mode.

The category-2 door will be furnished with the following electronic access control devices:

- Magnetic lock with integrated door monitor and associated striker plate.
- Biometric reader.

The magnetic lock will be installed at approximately 2000 mm *AFFL* on the side wall of the entrance and in a vertical orientation. A 100 x 50 mm recessed draw box with steel faceplate will be installed in a vertical position in the side wall of the entrance and next to the magnetic lock mounting position. A 20 mm diameter conduit will be installed from the draw box to the ceiling void near of the door controller.

A surface mounted biometric reader will be installed at 1200 mm *AFFL* on the opening side of the category-2 door, no closer than 300 mm from the door frame. A recessed 63 mm diameter draw box will be installed in a position directly behind the designated position of the biometric reader. A 20 mm diameter conduit will be installed from the draw box, internal to the wall and ceiling slab and will enter the ceiling void in a symmetrically clustered formation with the other access control conduit routes associated with the same room.



## 1.2 Movable structures.

### 1.2.1 Shipping containers

#### GENERAL

Standard sizes as follows:

2.22 x 2.44 x 2.59 m high. (Weight = 4 000 kg – Steel container)

6.11 x 2.44 x 2.59 m high. (Weight = 2 300 kg – Steel container)

*# Above container dimensions are approximate as original specifications vary as per the manufacturer.*

The size of the container to be used will be determined by the availability of space on the intended premises. In addition, the space required to provide access for the delivery must also be considered. Sufficient space must be provided on one short end to accommodate the door swing, when accessing the container. The availability of electricity supply and sufficient electric capacity should be confirmed prior to placing containers.

Shipping containers are not intended to be occupied by humans and should be used as storage facilities only.

#### **Surfaces preparation (Paving specification)**

The area under the shipping container will be paved. The area to be paved will be scarified to a depth of 450 mm. The soil / base will be stabilized to its optimum moisture content and then compacted with a vibrating roller (Bomac), whichever is deemed more appropriate for the paved area. The base course is to be approved by a registered *structural engineer or civil engineer* prior to being treated with a weed killer similar or equal to HYVARX at the rate of 4 g/m<sup>2</sup> spread on a 45 mm thick loose layer of bedding sand (compacted to 30 mm).

The sand shall be sharp and well graded, slit or clay content not exceeding 3% with 85% or more passing a 2.36 mm sieve. The sand must be levelled using a straight edge or other suitable means. The sand surface must not be disturbed or walked upon before placing the paving bricks.

Approved 80 mm thick, interlocking, 30 Mpa road stones with chamfered edges are to be laid in herringbone pattern (or pattern to match existing road surfaces) and compacted with a plate vibrator until the desired line level is achieved, where after the sweeping of sand into joints and additional passes of the plate vibrator is made until the joints are filled. The filling sand shall be finer than those used for bedding and should completely pass a 1.18 mm sieve, 90% or more being retained on a 0.75 mm sieve.

The top of the sub-base shall be so constructed that surface water cannot pond and shall have a longitudinal fall of at least 1% and a transverse fall of at least 2%. The level after compaction shall be the designated level of the top of the sub-base.

Note (A). Deviation of the top of sub-base layer from the designated level: plus minus 10 mm. (c) Thickness from 30 mm compacted sand bedding layer.

The paved surface shall be at least 900 mm wider than the foot print of the container/s to be placed. The outer edges will be finished with a cement edge of minimum 150 mm wide to prevent paving blocks from coming loose.

Storm water reticulation should be taken into account when designing the paved surfaces.

To level the container, an in-situ casted concrete footing will be placed under each corner of the container with paving around the footing. See Annexure A.

### **Container specification**

The supplier must provide, convert, transport and place the container/s as per an approved site plan. The supplier must visit the site where the unit(s) will be placed to confirm availability of access and suitable surface preparation. The supplier must perform earthworks, place paving and storm water reticulation etc. prior to placement of containers as per the site plan.

The containers must be water and dust proof, if not, all seals must be replaced. The doors must function properly and be lockable. A 2.5 kilogram DCP fire extinguisher must be provided and mounted at the door of each container on the inside.

Standard 6 (Six) or 12 (twelve) meter steel containers must be used. The roof must be water and dust proof. The roof must not be damaged. Damaged sections must be replaced in a proper manner. The floor must not be damaged. Damaged sections must be replaced in a proper manner. Provide a 2,5mm light industrial rubberised, non-slip floor covering.

### **Electrical**

A proper DB board with circuit breaker switches must be provided for the lights and one 50/60 Hz, 15A plug, inside the container. Proper lighting must be provided inside and along the length of the containers as follows:

6 meter units: 2 x 1200 mm single fluorescent tubes evenly spaced along the length in the centre of the ceiling.

12 meter units: 4 x 1200 mm single fluorescent tubes evenly spaced along the length in the centre of the ceiling. All lights to be fluorescent lights.

An electrical connection must be provided to connect with an external power supply. All wiring must comply with all relevant legislation. Certificates of compliance to be issued upon completion of the electrical installation. Proper conduit must be provided and fixed. The internal DB must be placed as close as possible to the doors for easy access.

### **Finishes**

All rust on the container must be removed; holes must be cut out and replaced properly and neatly. A primer must be applied inside and outside and then be painted with a durable white paint. All outside surfaces of the container must be treated with a spray-on heat reflective paint coating in colour: White.

### **Natural ventilation**

Self-rotating ventilators must be provided on the roof of the shipping container (1 per 6-meter container and 2 per 12-meter container) with installation in accordance with the manufacturer's specifications. The underside of the opening must be secured on the inside of the room by means of a purpose made expanded mild steel mesh which is welded inside an angle iron frame. The screen and frame must be fixed against underside of the ceiling, over the extractor opening by means of stitch-



welding. The screen and frame is to be finished with two coats enamel paint in colour: White on one coat lead free metal primer paint.

## **1.2.2 Pre-manufactured mobile units**

### **GENERAL**

Pre-manufactured mobile units as supplied and installed by an approved SAPS Service Provider in accordance with the client / supplier conditions of contract.

Enquiries to be referred to:

The Divisional Commissioner  
Supply Chain Management  
Private Bag X 254  
Pretoria  
0001  
SOUTH AFRUCAN POLICE SERVICE

The Section Head: Infrastructure Planning  
Tamboti Building  
Persequor Techno Office Park  
18 De Havilland Crescent  
Lynnwood Manor  
Pretoria

## **2. Annexures – Drawings**

- Annexure 1 - SAPS 13 large item store (New construction)
- Annexure 2 - SAPS 13 large items store (Existing facilities)
- Annexure 3 - SAPS 13 small items store (New construction)
- Annexure 4 - SAPS 13 small items store (Existing facilities)
- Annexure 4 - SAPS 13 overnight store
- Annexure 5 - SAPS 13 walk-in fire arm safe and  
Station walk-in fire arm safe (New construction)
- Annexure 6 - Rifle rack for hand rifles and shot guns
- Annexure 7 - SAPS 13 walk-in fire arm safe and  
Station walk-in fire arm safe (Existing facilities)
- Annexure 8 - SAPS 13 walk-in ammunition safe and  
Station walk-in ammunition safe (New construction)
- Annexure 9 - SAPS 13 walk-in ammunition safe and  
Station walk-in ammunition safe (Existing facilities)
- Annexure 10 - SAPS 22 personal property store and  
Blanket store at cell block (New construction)
- Annexure 11 - SAPS 22 personal property store and  
Blanket store at cell block (Existing facilities)
- Annexure 12 - SAPS 13 vehicles impound yard
- Annexure 13 - Minimum outer security fence specifications
- Annexure 14 - Generic layout for vehicle safeguarding services
- Annexure 15 - Concrete road kerb figure 3
- Annexure 16 - Oil and grease trap for vehicle wash bay
- Annexure 17 - Docket archive (New construction)
- Annexure 18 - Docket archive (Existing facilities)
- Annexure 19 - SAPS 13 Alcohol store (New construction)
- Annexure 20 - SAPS 13 Alcohol store (Existing facilities)
- Annexure 21 - Flammable liquid store
- Annexure 22 - Pyrotechnic safe
- Annexure 23 - SAPS 13 illegal substance store

### 3. Definitions

*AFFL*

Above finished floor level

*Architect*

A professional architect registered in terms of the Architectural Profession Act 2000 (Act No. 44 of 2000)

*Building professional*

A qualified Architect, Electrical Engineer, Mechanical Engineer, Civil/Structural Engineer or Quantity Surveyor who is registered in terms of the relevant professions act.

*CCTV*

Closed circuit television

*CSC*

Community service centre

*Fire engineer*

A professional fire engineer registered with the *Fire Engineer Association of South Africa* (FEASA) as well as the *Engineering Council of South Africa* (ECSA), capable of performing rational fire safety design within the built environment.

*Heritage building*

A building older than 60 years with significant historical value, protected under the National Heritage Resources Act (No. 25 of 1999).

*SAHRA*

The *South African Heritage Resources Agency* is a statutory organization established in terms of the National Heritage Resources Act (No. 25 of 1999) as the national body responsible for the protection of South Africa's cultural heritage resources, represented through provincial offices.

*'In-situ'*

On site

*Soil berm.*

A soil embankment designed and installed for a specific purpose such as blast reduction or noise deflection or as a back stop for shooting ranges.

*SABS*

South African Bureau of Standards

*Structural engineer*

A professional Structural engineer registered in terms of the Engineering Profession Act 2000 (Act No. 46 of 2000)

*Mechanical engineer*

A professional Mechanical engineer registered in terms of the Engineering Profession Act 2000 (Act No. 46 of 2000)

#### 4. Legislation

- SANS 10400  
Compliance with the requirements of the SANS 10400 document will be deemed to be compliance with the requirements of part A of the National Building Regulations, issued in terms of the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977).
- Occupational Health and Safety Act, 1993, (Act No. 85 of 1993)
- National Heritage Resources Act, 1999 (Act No. 25 of 1999)
- National Heritage Council Act, 1999 (Act No.11 of 1999)
- Public Finance Management Act, 1999 (Act No 1 of 1999) and updated April 2010.
- Local municipal bye-laws.
- Firearms Control Act, 2000 & Firearms Control Regulations, 2004.

#### 5. Pest control

Proper measures should be taken at all storage facilities to effectively control pests such as pigeons, rodents and insects, all in accordance with the Occupational Health and Safety Act, 1993, (Act No. 85 of 1993).

#### 6. General

***The written and drawn specifications captured inside this document shall under no circumstances be used for construction purposes, but only serves as a minimum standards specification guideline.***

The designs for alterations to existing structures and construction of new accommodation and the preparation of municipal drawings, construction drawings and specification documents, shall be executed by a registered *building professional* in compliance with the above mentioned legislative requirements and minimum standards guidelines.

Building plans shall be submitted to the local municipality for approval, prior to commencing with construction.

Construction to be overseen by the relevant appointed *building professionals*.

Alterations and additions to buildings older than 60 years (Heritage buildings), should be referred to the *South African Heritage Resources Agency (SAHRA)* in order to determine if additional regulations are applicable for the intended development.

## **7. Enquiries**

Enquiries related to the content of this document may be forwarded to:

The Divisional Commissioner  
Supply Chain Management  
Private Bag X 254  
Pretoria 0001  
SOUTH AFRICAN POLICE SERVICE

The Section Head: Programme and Project Management  
Acacia Building  
Perseus Techno Office Park  
18 De Havilland Crescent  
Lynnwood Manor Pretoria

### **MINIMUM BUILDING CONSTRUCTION STANDARDS: SOUTH AFRICAN POLICE SERVICE: STORES: APPROVAL AND ACCEPTANCE**

\_\_\_\_\_  
**BRIGADIER**  
**SECTION HEAD: PROGRAMME AND PROJECT MANAGEMENT**  
**C JUGGADESAN**

**Date:**

\_\_\_\_\_  
**MAJOR GENERAL**  
**COMPONENT HEAD: FACILITY MANAGEMENT**  
**TA MATHIDZA**

**Date:**

\_\_\_\_\_  
**LIEUTENANT GENERAL**  
**DIVISIONAL COMMISSIONER: SUPPLY CHAIN MANAGEMENT**  
**RJ MOKWENA**

**Date:**



**MINIMUM BUILDING CONSTRUCTION STANDARDS: SOUTH AFRICAN POLICE SERVICE:  
STORES: APPROVAL AND ACCEPTANCE**

**GENERAL**  
**NATIONAL COMMISSIONER: SOUTH AFRICAN POLICE SERVICE**  
**KJ SITHOLE**

**Date:**