

**PRASA Design Blue Print
Standards and Guidelines Index**



2023/04/30

PRASA Station Modernisation

GENERAL NOTES:

- This document is part of set of documents which form the internal high-level specification and guidelines document to assist with the design of PRASA Railway Stations for both new and existing stations.
- Information, specifications and guidelines in it are subject to change and variation
- All details are generic and indicative of Prasa Standards & Guidelines. Details to be applied to stations and any variations are subject to approval by Prasa

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PRASA Design Blue
Print Standards and Guidelines Index



prasa

PASSENGER RAIL AGENCY
OF SOUTH AFRICA

PRASA Station Modernisation

Part A

Space Utilisation

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Spatial Parameters Document

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PRASA Station Modernisation

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1. DESIGN PARAMETERS BASED ON PASSENGER VOLUMES

- 1.1 Station Capacity
- 1.2 Walkway & Waiting Areas
- 1.3 Ramps
- 1.4 Stairs
- 1.5 Lifts
- 1.6 Street to street crossings
- 1.7 Platform Design Parameters & Accommodation

1.1 STATION CAPACITY

General Notes:

- i. This document has been compiled to assist with the design of **PRASA** Passenger Railway Stations for the Station Modernisation Development Projects, for both new and existing stations. Refer to Parts A – D for cross references on relevant information
- ii. The purpose of the document is to establish a practical & user-friendly guideline for architectural design on newly constructed & / or upgraded **PRASA** commuter stations and to form part of the new **PRASA** standard for implementation in commuter stations in general.
- iii. **Please note that this document is an architectural design guideline only and is not meant to replace the PRASA NGS or any other regulatory documentation issued by PRASA. This document does not absolve the professional from adhering to any SANS regulations or to circumvent any of their professional responsibilities in upholding national building regulations. If any discrepancies are encountered between this and any other documentation and any violation of the SANS codes, it is to be brought under the attention of their PRASA representative immediately.**
- iv. Please note: All notes and design parameters are for ideal circumstances and not necessarily the rule. Where any of the below guides cannot be adhered to, all changes will be subject to approval by **PRASA**.
- v. All station designs to comply with SANS 10400-XA & SANS 204 Regulations on Energy Efficiency and be provided with solar shading where required.
- vi. All exposed services, cables and sewer lines to be concealed in trunking or cable trays, ducts etc.

- vii. Minimizing of Vandalism to be all round high priority, including light fitting protection, sewer sanitary fittings, etc.
- viii. Walk-off mats to be provided at all entrances. Min 4m deep at street access & 3m deep at platform access points.
- ix. Mechanically operated Roller shutters to be provided at street entrances, to be closed in emergency situations only. Street-to-street Bridge to be accessible for 24hours.
- x. All sizes of the below are to be calculated based on the daily peak commuter volumes, refer to Part A: doc. No. 1.2 Capacity Calculations.
- xi. Step free access to Stations to be prioritized

| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCES | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
|----------|---|--|--|---|--|
| 1.1.1 | Station type and categories | Station Elements to be designed according to station type & category. Station type & categories to be supplied by PRASA. NGS 2020 p. 16 & 17, 2.3.3 Station types and categories | Station Categories based on daily commuter volumes & generated revenue: <ul style="list-style-type: none"> ▪ Super-Core: More than 40 000 ▪ Core: 25 000 - 40 000 ▪ Intermediate: 10 000 - 25 000 ▪ Small: 2 000 - 10 000 ▪ Halt: Less than 2 000 | Station Types: <ul style="list-style-type: none"> ▪ Home / Trip generator Stations - mainly in suburbs where commuters live. ▪ City / Industry Stations - mainly in industrial area or in the city with commuter workplace nearby ▪ Transfer / Intermodal Stations - stations at which commuters need to transfer from one train to another or from one transport mode to another. | <i>Part A: doc no: 1,3 Room Requirements</i> |
| 1.1.2 | Capacity Calculations based on Commuter Volumes (15 min peak) | 2007 rail census Historical Ticket Sales information Pedestrian direction of approach surveys SANS 10400 -S | Sizes to be calculated based on commuter volumes, <i>Doc No 1.2:</i> <ul style="list-style-type: none"> ▪ 3.1.1 - Walkway width (street-to-street access) ▪ 3.1.2 - Bridges & Subways ▪ 3.1.3 - Station Entrance width ▪ 3.1.4 - Staircase width (street to concourse) ▪ 3.1.5 - Stairs to platforms ▪ 3.1.6 - Disabled ramp width | <ul style="list-style-type: none"> a) <i>Passenger volumes to be used in conjunction with Station Capacity Calculations document to determine the sizes of all operational areas.</i> b) <i>15 33 min peak volumes required for all calculations.</i> c) <i>Width required to be calculated based on commuter volumes.</i> d) <i>Provide a clear width from any external walkway into the concourse of the width given.</i> e) <i>Determination of the width of the clear opening from the overhead walkway to the concourse</i> f) <i>No street-to-street bridge to be provided)</i> | <i>Part A: doc no: 1,2 Station Capacity Calculations</i> |
| 1.1.3 | Number of ticket sales points (TSP). | SPDAG 2007, p. 98-99 | Quantities to be calculated based on commuter volumes, <i>Doc No. 1.2 'Capacity Calculations':</i> | <ul style="list-style-type: none"> a. <i>Determine the number of TSP's based on capacity calculations.</i> b. <i>Steel motorised roller shutters to be provided to secure customer services (street-to-street side), to</i> | <i>Part A: doc no: 1,2 Station Capacity Calculations</i> |

| | | | <ul style="list-style-type: none"> ▪ 2.2.1 - No of ticket selling points (TSP) ▪ 2.2.2 - Ticket sales queuing area | <p><i>be operated from within station control room, to be closed during non-operational hours.</i></p> <p><i>g) Provide min. of 11,16m² queuing area per ticket sales window.</i></p> <p><i>h) Provide min clearance in front of ticket sales windows of 1,22m for single ticket sales window & 1,83m for multiple ticket sales windows.</i></p> <p><i>i) Provide handrails to establish boundaries between queuing area & walkways, to support the elderly & positioned not to obstruct passing pedestrian traffic</i></p> <p><i>j) Rail paths to be 900mm wide in between</i></p> | |
|---|---|--|---|---|--|
| 1.1.4 | Number of ticket verification points (TVP / speed gates) & bypass gates. | SPDAG 2007, p. 68, 95 & 100 NGS 2020, p. 99, 6.4.3 & 6.4.4 Access Control | <p>Quantities to be calculated based on commuter volumes, <i>Doc No. 1.2 'Capacity Calculations'</i>:</p> <ul style="list-style-type: none"> ▪ 2.1.1 - No of Ticket Verification points (TVP / speed gates) ▪ 2.2.1 - TVP width ▪ 2.2.2 - No of bypass gates ▪ 2.2.3 - No of escape gates | <p><i>k) Determine the number of TVP's for access control based on capacity calculations</i></p> <p><i>l) Provide bypass gates</i></p> <p><i>m) Steel motorised roller shutters to be provided to secure access control & station operations (at speed gates / top of platform stairs), to be operated from within station control room. To be closed during non-operational hours.</i></p> <p><i>n) Provide min 1 TVP for disabled persons, (900mm clearance)</i></p> <p><i>o) Provide clear area extending 6m from both approach sides of ticket verification points.</i></p> <p><i>p) Provide handrails to force single file queuing to guide commuters, to extend max 1,5m from gate.</i></p> | <p>Part A: doc no: 1,2 Station Capacity Calculations</p> <p>Part B: doc no: 2.2 F - Doors, turnstiles, and speed gates, F15 – F20</p> <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 651-F & G</p> |
| 1.2 WALKWAYS & WAITING AREAS | | | | | |
| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
| 1.2.1 | Overhead Walkway street-to-street over rail line | Foot bridge SPDAG 2007, p. 80 NGS 2020, p 56 – 60, | | <p><i>a) Consideration's matrix</i></p> <p><i>b) commuter spatial parameters based on</i></p> <p><i>c) Clear / protected pedestrian zone along the access route to be provided.</i></p> | Part A: doc no: 1,2 Station Capacity Calculations |

| | | 5.2 Circular Paths - Walkways SANS 10400 - S | | d) <i>Lighting Levels in Lux</i> | <i>Part B: doc no: 2,3a LUX Levels</i> |
|---|--|--|---|--|---|
| 1.2.2 | Bridges & Subways | NGS 2020, p 24, Table 2-3, p34, 3.1.3 Impact area, p48, 4.6 Interface requirements, p80 & p81, 5.9.5 Lighting SANS 10400 - S | | a) <i>Widths to be calculated based on peak flow volume for daily commuter volumes.</i> b) <i>Bridges & Subways to have min. width of 2,6m.</i> c) <i>Min Vertical Clearance of 2130mm.</i> d) <i>To be level within 3%</i> | <i>Part A: doc no: 1,2 Station Capacity Calculations</i> <i>Part C: Generic detail doc 3.1 Series 600, Dwg No. 603 - B</i> |
| 1.2.3 | Corridors / Passageways | SPDAG 2007, p.88 NGS 2020, p 58 & 59, 5.2.4 – 5.2.7 Circular Paths – Walkways - Corridors SANS 10400 – S SANS 784:2008 | | a) <i>Corridors to have min. width of 2,2m.</i> | |
| 1.3 RAMPS | | | | | |
| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCES | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
| <i>General Notes:</i> | | | | | |
| <ul style="list-style-type: none"> i. <i>Ramps are to be provided for access where there is no other alternative to stairs, such as lifts, SPDAG 2007, p. 92.</i> ii. <i>Ramps are required for the transportation of goods weighing in excess of 13kg, SPDAG 2007, p. 92.</i> iii. <i>Where a ramp is used by ambulant disabled people and the gradient exceeds 3°, a handrail is to be provided on at least one side, excluding curb cut-outs, SPDAG 2007, p. 92.</i> iv. <i>Where there is a drop on the side of a ramp exceeding 170mm a balustrade is to be used together with a curb of min. 75mm high, SPDAG 2007, p. 92.</i> v. <i>Where protrusions are between 6,5mm & 13mm the transition step shall be graded at 50%, SPDAG 2007, p. 94.</i> | | | | | |
| 1.1.5 | Ramps - for persons with disabilities | NGS 2020, p54 & p55, 5.1.4 / 5.1.5 Parking | | a. <i>All stations to be universally accessible.</i> b. <i>For vertical rises exceeding 2m, lifts to be installed instead of ramp.</i> | <i>Part A: doc no: 1,2 Station Capacity</i> |

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| | (Platform-to-platform and street-to-street access) | Facilities – Accessible Bays p57, 5.2.3 Circular Paths p 66 – 67, 5.5.1 / 5.5.2 Ramps p68, 5.6.1 Handrails – General p98, 6.4.1 Access Control - General SANS 10400 Part S BS 8300 SPDAG 2007, p. 92-93 | c. Ramp minimum width to be 1,8m – preferably 2m & 1,2m where there will be no passing traffic. d. To comply with SANS 10400, S item 4.8.2(e) and Table 2 e. Ramp landing to be a minimum of 1,2m long with top or foot landings to be min 1,8m long. f. Ramp to be staggered at every vertical rise 600mm according to SANS 10400 | Calculations |
|--|--|---|---|---------------------|

1.4 STAIRS

General Notes:

- i. Recommend no single steps / avoid single steps
- ii. The edge of a single step should be painted yellow or white, provided that the background colour is not yellow or white, in a contrasting, non-slip tone, SPDAG 2007, p. 90.
- iii. A ramp is preferred over steps to accommodate crutch & wheelchair users, SPDAG 2007, p. 90.
- iv. Treads & risers should be of a consistent dimension on the same flight of stairs, SPDAG 2007, p. 90.
- v. The colour & tone of treads should contrast from the colour & tone of risers for those of impaired vision, SPDAG 2007, p. 90.
- vi. Open risers should be avoided where possible, SPDAG 2007, p. 90.
- vii. A splayed nosing is preferred to a square nosing as per diagram in the SPDAG 2007, p. 90.
- viii. The following general dimensions apply, SPDAG 2007, p. 90:
 - a. Treads: 250mm min. – 300mm max.
 - b. Risers: Internal: 127mm min. – 190mm max. External: 150mm min. – 190mm max.
 - c. Stair Gradient: Internal: 30° min. – 40° max. External: 30° min. – 35° max.
 - d. Nosing: 13mm min. – 15mm max.
- ix. Landings to be used for changing direction of stairs, SPDAG 2007, p. 90.
- x. Tactile warnings are to be provided at the top & bottom of each flight of stairs, SPDAG 2007, p. 90.
- xi. A contrast colour to be applied behind hand rails to assist visually impaired
- xii. All hand rails to have a diameter of 50mm
- xiii. Handrails to maximum 2400mm apart
- xiv. Handrail required for rises greater than 600mm as per SANS Part S

xv. Handrails to extend 300mm horizontally beyond first and last step

| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCES | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
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| 1.1.6 | Stairs to overhead walkway | NGS 2020, p 9, UA p45, Table 4-1 p66, 5.5.1 Ramps and gradients p 68, 5.6.1 Hand rails p 72, 5.7.6 Escalators p80, 5.9.5 Lighting – Types of Luminaires p93, 6.1 Specifications Elements SANS 10400 - M SANS 10400 - S | | a) Internal stairs to receive landings every 12 steps or 1,2m vertical rise. b) External stairs to receive landings every 12 steps or 1,8m vertical rise. c) Lighting Levels (Lux) d) Min Vertical Clearance of 2130mm. e) Spiral stairs are not acceptable. Winding stair cases to have min inside radius of 760mm. | Part A: doc no: 1,2 Station Capacity Calculations Part B: doc no: 2,3a LUX Levels Part C: Generic detail doc 3.1 Series 600, Dwg No. 601– A to 601- G |
| 1.1.7 | Stairs from concourse to platform | NGS 2020, p 9, UA p45, Table 4-1 p66, 5.5.1 Ramps and gradients p 68, 5.6.1 Hand rails p 72, 5.7.6 Escalators p80, 5.9.5 Lighting – Types of Luminaires p93, 6.1 Specifications Elements SANS 10400 - M SANS 10400 - S | | a) Staircase to platforms to be min 2,2m wide. b) Lighting Levels (Lux) c) Min width to be 2,2m for bi-directional traffic | Part A: doc no: 1,2 Station Capacity Calculations Part B: doc no: 2,3a LUX Levels Part C: Generic detail doc 3.1 Series 600, Dwg No. 601 – A to 601 - G |

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|-------|-------------------|---|--|--|--|
| 1.1.8 | Escalators | NGS 2020, p45, Table 4-1 p 72 & 73, 5.7.6 Escalators SPDAG 2007, p. 110-113 & 138 SANS 10400 – S SANS 21 SANS 1543 SANS 1545 SANS 14798 SANS 50081 | | a) <i>Size, capacity & design to be according to SPDAG 2007, p. 110-113</i> b) <i>Lighting Levels (Lux)</i> | Part A: doc no: 1,2 Station Capacity Calculations Part B: doc no: 2,3a LUX Levels |
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1.5 LIFTS

General Notes:

- i. *Universal accessibility to all staff & public areas to be priority on all stations and be in compliance with **PRASA** Universal Accessibility Policy.*
- ii. *All lifts to have min. internal dimensions of 2000mm x 1500mm deep, to accommodate emergency stretchers*
- iii. *All lifts to receive CCTV surveillance cameras, inside & at entrances, to be coordinated with ISAMS (Integrated Station Access Management Solutions) specialists & RSR (Rail Safety Regulators). Include emergency buttons & contact info.*
- iv. *All lifts to bear min weight of 1000kgs.*
- v. *Lift internal finishes to be robust, stainless steel cladding.*
- vi. *All buttons to be UA friendly, regarding height for paraplegics, audio & visually impaired persons, etc.*

| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
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| 1.1.9 | Lifts – street to concourse | NGS 2020, p9, UA P45, Table 4-1 | | a) <i>For vertical rises exceeding 2m, lifts to be installed instead of ramp.</i> b) <i>Lifts to be provided to allow street-to-street access</i> | |

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| | | <p>p46, 4.3 Station layout p69 – 72, 5.7.1 – 5.7.5 Lifts SANS 10400 – S SANS 10400 – T SANS 1543 SANS 1545 SANS 50081</p> | | <p>c) Ramps to be provided instead of lifts where possible to avoid future maintenance & operational issues.</p> | |
| 1.1.10 | Lifts – concourse to platforms | <p>NGS 2020, p9, UA P45, Table 4-1 p46, 4.3 Station layout p69 – 72, 5.7.1 – 5.7.5 Lifts SANS 10400 – S SANS 10400 – T SANS 1543 SANS 1545 SANS 50081</p> | | <p>a) Lifts to be provided to allow universal platform-to-platform access b) Min. through lift size 1100mm wide x 1400mm deep (if sufficient stretcher lifts are provided for) c) Min. useable door width 915mm. d) Gap & vertical clearance between lift floor & adjoining level to be max. 5mm. e) International standard for Braille, Button height etc to be used</p> | |

1.6 STREET – TO – STREET CROSSINGS

General Notes:

- i. Universal accessibility for all street-to-street crossings to be priority on all stations and be in compliance with **PRASA** Universal Accessibility Policy.
- ii. Ramps preferable to lifts for maintenance viability. Lifts to be installed where height difference is such that ramps become cumbersome and not economically viable.
- iii. Communities surrounding station precincts to be considered / involved during planning phase for most convenient placement of new pedestrian street-to-street crossings.

| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCES | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
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| 1.1.11 | Bridges | NGS 2020, p 24, Table 2-3, p34, 3.1.3 Impact area, p48, 4.6 Interface requirements, p80 & p81, 5.9.5 Lighting SANS 10400 - S SPDAG 2007, p. 94 | | a) <i>Min. usable width for pedestrian bridge to be 2,6m.</i> b) <i>Stairs & ramps to be used for bridge access</i> c) <i>Bridges to be level within 3%.</i> | |
| 1.1.12 | Lifts – concourse to platforms | | | a) <i>Lifts to be provided to allow platform-to-platform access</i> | |
| 1.7 PLATFORM DESIGN PARAMETERS AND ACCOMODATION | | | | | |
| <p><i>General Notes:</i></p> <ul style="list-style-type: none"> i. <i>Existing platforms & platform surfaces to be retained; repaired and patched where possible.</i> ii. <i>SARCC regulations require that no permanent structure is established on a rail platform within 3m of the edge of the platform, SPDAG 2007, p. 89 & 105</i> iii. <i>Platforms to be accessible to emergency & service vehicles where possible.</i> iv. <i>Platform lengths have been standardized to suit the length of a train set, 300m long. SPDAG 2007, p. 105</i> v. <i>All existing structures on platforms to be demolished to clear space on platforms.</i> | | | | | |
| 1.1.13 | Platform Shelters | NGS 2020, p 46, Station layout p83 – 85, 5.10 Platforms p94, 6.2.1 CCTV – General SANS 10400 - S SPDAG 2007, p. 105 & p. 106 | | a) <i>Existing platform shelters to be assessed & retained if in good condition.</i> b) <i>New platform shelters to be according to details.</i> c) <i>Super-Core & Core Stations to receive continuous platform covering for passengers over length of platform, positioned from middle of platforms.</i> <i>Shelter sizes (Note: overhead concourses may form part of the below shelter sizes):</i> <ul style="list-style-type: none"> i. <i>Super-Core & Core – 200m total</i> ii. <i>Intermediate, Small & Halt – 100m total</i> <i>Shelters to connect with Platform Stair canopies to create continuous roof cover from station to platforms.</i> d) <i>Shelter widths may vary depending on platform widths – shelter ends to align with platform edges</i> | Part C: Generic detail doc 3.1 Series 600, Dwg No. 600 – A to 600 - P |
| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document |

| | | | | <i>reference</i> |
|--------|---|--|--|--|
| 1.1.14 | Platform Seating | NGS 2020, p83 – 85, 5.10 Platforms SANS 10400 - S | a) <i>Provide vandal-proof seating under shelters according to list of finishes & as per detail</i> | Part B: doc no: 2,2 Finishes & Specifications, M04 & M05 Part C: Generic detail doc 3.1 Series 600, Dwg No. 600 – A to 600 -P |
| 1.1.15 | Platform lighting | NGS 2020, p80, 5.9.5 Lighting SANS 10400 - S SPDAG 2007, p. 138 | a) <i>All platforms should be well lit.</i> b) <i>Public safety to be key consideration.</i> c) <i>All lighting to be in accordance with SABS standards</i> d) <i>Min Lux levels on platforms</i> | Part B: doc no: 2,3 Lighting Specifications, Part B: doc no: 2,3a LUX levels |
| 1.1.16 | Platform Universal Accessibility | NGS 2020, p9 UA SANS 10400 - S | a) <i>All platforms to be universally accessible with min. 1 lift per platform.</i> b) <i>Should be monitored by CCTV and have an emergency alarm button to the Security offices.</i> c) <i>Interactive emergency and help points to be defined, at which CCTV emergency / communications equipment to be provided. Linked to universally accessible assisted boarding location.</i> | |
| 1.1.17 | Platform Surface Finishes | NGS 2020, p60 5.3.1 Surface general hard flooring p61, 5.3.3 Surfaces – Manhole covers and gratings p83, 5.10.1 Platforms - General SANS 10400 - S SPDAG 2007, p. 83-84 | a) <i>Colour changes & tactile clues should be provided to assist the visually impaired and the blind to establish the boundaries of the sidewalk and the presence of obstructions.</i> | Part C: Generic detail doc 3.1 Series 600, Dwg No. 600 – A to 600 - P |

2. STATION MANAGEMENT OFFICES & ACCOMMODATION

- 2.1 Customer Services Centre
- 2.2 Station Control & Information Centre
- 2.3 Administrative Offices & Staff Accommodation
- 2.4 Cleaning Staff Accommodation
- 2.5 Security Accommodation & Systems
- 2.6 Public Ablutions

2.1 CUSTOMER SERVICES CENTRE (CSC)

General Notes:

- vi. Only one Customer Services Centre per station, doubling of services (ticket sales points on both sides of rails) to be avoided if possible.
- vii. Customer Services area to have restricted access and be secured with 230mm masonry walls & concrete slab overhead in new stations & in existing stations where possible. Where customer services centre is enclosed with drywall, provide 3mm galvanised M/S sheet metal placed loose (free / unattached) within drywall.
- viii. Not to be accessible from any other portion of the station except through the secure-lock anteroom with anti-bandit access control doors.
- ix. Entire Customer Services Centre to receive CCTV surveillance.
- x. Entire Customer Services Centre to be air-conditioned, except strong rooms & ablutions with individual AC controllers in separate cubicles and offices.
- xi. Inclusive design principles to be applied for both employee and passenger accessibility requirements, i.e., both sides of the ticket window to be universally accessible.
- xii. Ticket sales cubicles to be positioned in close proximity to speed gates, preferably at 90degree angle. Commuter movement from ticket sales to speed gates not to be impeded by street-to-street pedestrian flow.
- xiii. Commuter movement not to be impeded by queues.
- xiv. Provide Alarm system, comprising motion detection, door monitoring, safe monitoring, panic buttons & listing device; connected to siren. NGS 1997, p. 103
- xv. Minimum internal passage width of 1200mm throughout.
- xvi. All room sizes to be in accordance with the **Blue Print Room Requirements Schedule**, Doc. no 1.3. All sizes are to be used as guidelines based on station capacity & commuter volumes.
- xvii. All offices to be equipped with motion sensors for energy efficiency.
- xviii. Metrorail Corporate Branding to be incorporated above ticket sales windows only, all other corporate branding throughout station to be PRASA only.

| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
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| 2.1.1 | Ticket Sales Cubicle | NGS 2020, p8, UA p9, UA p46, 4.3 Station Layout | <ul style="list-style-type: none"> a) Ticket Sales Cubicles to be secure, lockable rooms with glass partitioning between cubicles for maximum surveillance. b) Ticket office windows should have clear visibility over concourse and operational area. c) Existing stations – existing small sales windows to be retained, timber counters to be sanded down & varnished, existing steel burglar proofing to be painted & new PRASA | | Part A: doc no: 1,2 Station Capacity Calculations |

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| | | <p>p81, 5.9.5 Lighting – Types of luminaires</p> <p>p94, 6.2.1 CCTV - General</p> <p>p95, 6.2.2 CCTV – Piping and trenching</p> <p>p96, 6.3.1 Audible Communication - Announcements</p> <p>p97, 6.3.4 Audible Communication- Induction loops</p> <p>SANS 10400 - S BPAA, p. 79-100</p> <p>SPDAG 2007, p. 138</p> | <p><i>chromadek dividers to be installed to detail.</i></p> <p>d) <i>New stations - Ticket sales windows to be full width of cubicles and have 52mm, grade 3 bullet resistant glass to spec. & detail.</i></p> <p>e) <i>Min. cubicle size of 1900mm x1900mm.</i></p> <p>f) <i>L-shaped counter of min. 1900mm x 600mm x 400mm, to detail.</i></p> <p>g) <i>All counters to be 860mm high with complete clearance below.</i></p> <p>h) <i>Counter money slot under safety glass to transfer change and tickets required – to detail.</i></p> <p>i) <i>Power skirting with 3 separate channels (min. 90 x 50mm each) to all walls above counter on walls between cubicles & below counter at ticket window.</i></p> <p>j) <i>Minimum passage width of 1,2m, to be allowed behind ticket sales cubicles.</i></p> <p>k) <i>2 x CCTV cameras installed per cubicle.</i></p> <p>l) <i>All sales cubicles to be lockable, with ISAMS access control system by specialists.</i></p> <p>m) <i>Lighting Levels (Lux):</i></p> <p style="padding-left: 20px;">i. <i>Large, Small & Medium: Average 320</i></p> <p>n) <i>Sales cubicles to receive queue management call system if more than 4 cubicles are installed</i></p> <p>o) <i>Make provision for the conversion of Sales Cubicles space to accommodate Ticket vending machines if so required at new and existing stations</i></p> <p>p) <i>Minimum of 1200mm of manoeuvring clearance space in front of counters</i></p> | <p>Part A: doc no: 1,3</p> <p>Room Requirements p.1</p> <p>Part B: doc no: 2,3a</p> <p>LUX levels</p> <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 651 – A to 651 –G</p> |
| 2.1.2 | <p>Paraplegic Commuter Ticket Sales Point</p> | <p>NGS 2020, p8, UA</p> <p>p9, UA</p> <p>p46, 4.3 Station Layout</p> <p>p81, 5.9.5 Lighting – Types of luminaires</p> <p>p94, 6.2.1 CCTV - General</p> <p>p95, 6.2.2 CCTV – Piping and trenching</p> <p>p96, 6.3.1 Audible Communication - Announcements</p> | <p>a) Existing stations - where counters are to be retained, at least one counter to be made accessible to disabled commuters & employees.</p> <p>b) Existing stations – where counters are to be replaced, as per item (c).</p> <p>c) New stations - all counters to be at universally accessible height of 860mm.</p> <p>d) A min of 800mm, preferably 900mm of manoeuvring clearance in front of counter.</p> | <p>Part A: doc no: 1,3</p> <p>Room Requirements p.1</p> <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 651 – A to 651 – D</p> |

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| | | <p>p97, 6.3.4 Audible Communication- Induction loops SANS 10400 – S PRASA UAP 2011 DGIA 2008, p. 32-33 IBPAPT 2010, p. 51</p> | | | |
| 2.1.3 | <p>Audio or Visually impaired Commuter Ticket Sales Point</p> | <p>NGS 2020, p8, UA p9, UA p46, 4.3 Station Layout p81, 5.9.5 Lighting – Types of luminaires p94, 6.2.1 CCTV - General p95, 6.2.2 CCTV – Piping and trenching p96, 6.3.1 Audible Communication - Announcements p97, 6.3.4 Audible Communication- Induction loops P80, 5.9.5 Lighting P96, 6.3.1 Audible communication P97, 6.3.4 Audible communication SANS 10400 – S PRASA UAP 2011 DGIA 2008, p. 23 &</p> | | <p>a) <i>All ticket sales points to accommodate induction loop for commuters with audio impairment.</i></p> <p>b) <i>Counters should be clearly marked with signage & international symbols for hearing & visual impairment.</i></p> | |

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| | | 112 SNP Design Guidelines 2008, p.28 | | |
| 2.1.4 | Disabled Staff Ticket Sales Point | <p>NGS 2020, p8, UA p9, UA p46, 4.3 Station Layout p81, 5.9.5 Lighting – Types of luminaires p94, 6.2.1 CCTV - General p95, 6.2.2 CCTV – Piping and trenching p96, 6.3.1 Audible Communication - Announcements p97, 6.3.4 Audible Communication- Induction loops P80, 5.9.5 Lighting P96, 6.3.1 Audible communication P97, 6.3.4 Audible communication SANS 10400 – S PRASA UAP 2011 SANS 10400 – S PRASA UAP 2011 IBPAPT 2010, p. 51</p> | <p><i>a) Min. one ticket sales cubicle accessible to employee with physical disability to be provided</i></p> <p><i>b) Ticket sales cubicle to have internal clearance of 1,5m x 1,5m.</i></p> <p><i>c) Counter to be according to generic details.</i></p> <p><i>d) Counters to be 860mm high with complete clearance below.</i></p> <p><i>e) Doors to cubicles to be sliding door or open outward & not obstruct passages. Allow for widening of passage to permit movement around door when open.</i></p> | <p>Part A: doc no: 1,3 Room Requirements p.1</p> <p>Part C: Generic detail doc 3.1, Series 650, Dwg No. 651 – A to 651 – D</p> |

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| 2.1.5 | Default Ticket Sales Point | <p>NGS 2020, p8, UA p9, UA p46, 4.3 Station Layout p81, 5.9.5 Lighting – Types of luminaires p94, 6.2.1 CCTV - General p95, 6.2.2 CCTV – Piping and trenching p96, 6.3.1 Audible Communication - Announcements p97, 6.3.4 Audible Communication- Induction loops P80, 5.9.5 Lighting P96, 6.3.1 Audible communication P97, 6.3.4 Audible communication SANS 10400 – S PRASA UAP 2011 SANS 10400 – S SPDAG 2007, p. 102</p> | <p>a) <i>A minimum of 1 default ticket sales window to be provided per station.</i> b) <i>The default window to be located as part of the restricted ticket office area with sales window access on the operational (controlled) side of access gates.</i> c) <i>To be near Admin area and by-pass gate.</i> d) <i>Should have clear visibility over concourse and operational area.</i> e) <i>Passengers should have easy, unobstructed access to sales point on operational side, queues not to obstruct commuter flows.</i> f) <i>Provide min. 10,75m² queuing area per default ticket sales window.</i> g) <i>Potential to serve as information point.</i> h) <i>Counter to accommodate induction loop for commuters with audio & visual impairment</i></p> | Part A: doc no: 1,3 Room Requirements p.1 |
| 2.1.6 | Secure-lock Ante-Room Entrance to Customer Services Area | <p>DGIA 2008, p. 97-100 SANS 10400-S, 4.4.2.4</p> | <p>a) <i>Secure anteroom with electronically operated gates to be provided for access to customer services.</i> b) <i>Double interlocking electronic door-system opening arrangement similar to those used at banks.</i> c) <i>Min width clearance to be 1250mm for disabled person access, with door clearance at</i></p> | Par A: doc no: 1,3 Room Requirements p.1 |

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| | | | <p>handle side to be min. 450mm.</p> <p>d) Min length to be 2000mm.</p> <p>e) Both doors to open toward exit for emergency escape purposes.</p> <p>f) Emergency escape overrides system to comply with PRASA security standards.</p> | | |
| 2.1.7 | Supervisor / Cashing Up Office | | | <p>a) Cash-up Office to be located adjacent to secure-lock anteroom for CIT access.</p> <p>b) Hatch to be installed between office & CIT passage for cash pick-up.</p> | Part A: doc no: 1,3 Room Requirements p.1 |
| 2.1.8 | Strong Room | | | <p>a) Ticket office safe or strong room to be located within the restricted ticket office space.</p> <p>b) Strong room to have concrete slab over.</p> <p>c) Strong Room to receive class 2 Security door.</p> <p>d) Cash drop-safe minimum size: 1,3m x 0,7m</p> | Part A: doc no: 1,3 Room Requirements p.1 |
| 2.1.9 | Kitchenette / Break Room | | <ul style="list-style-type: none"> ▪ s/s double bowl sink with tap ▪ Space & power for std fridge ▪ Plug for microwave oven ▪ Plug for kettle & other appliances ▪ Min 1 x set of kitchen drawers ▪ 1 x "Point-of-use" water heater ▪ 1 x Water boiler | <p>a) Break Room & kitchenette allocated within the restricted ticket office space.</p> <p>b) All plugs to be double plugs to be installed at 1150mm height.</p> <p>c) Cupboards, counters & splashbacks to generic details.</p> | <p>Part A: doc no: 1,3 Room Requirements p.1</p> <p>Part B: doc no: 2,4 General list of Sanitary fittings, S01 to S09, V26 to V29, Y01 & Y02Part</p> <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 654 – A to 654 – F</p> |
| 2.1.10 | Ablutions | <p>NGS 2020, p46 4.3 Station Layout</p> <p>p74 – 76, 5.8 Ablutions</p> <p>SANS 10400-S</p> | <ul style="list-style-type: none"> ▪ WC ▪ whb & tap ▪ urinal (where possible) ▪ mirror ▪ soap dispenser | <p>a) Where feasible, provide 1 x male, 1 x female & 1 x unisex Paraplegic toilet within the restricted area.</p> <p>b) Provide urinal in male toilets where possible.</p> <p>c) Paraplegic toilet to have min finished wall-to-wall dimensions of 1,8m x 1,8m & to comply with SANS part S, complete with s/s grab rails.</p> | Part A: doc no: 1,3 Room Requirements p.1 to p.3 |

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| | | | <ul style="list-style-type: none"> ▪ bin | <p>a) Doors to Paraplegic toilet to be sliding door or open outward & not obstruct passages. Allow for widening of passage to permit movement around door when open.</p> | <p>Part B: doc no: 2,2 Finishes & Specifications A02, B05, C02, C03, H04, M01, M07</p> <p>Part B: Doc no: 2,3 and 2,3a Lux Levels L06, L07, L09, L11, Lu24</p> <p>Part B: doc no: 2,4 General list of Sanitary fittings, T10 to T13, U01, U02, V01 to V7, V14 to V25, W01 to W07, X01 to X12, Y01 & Y02, Z01 to Z03</p> <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 650 – A to 650 – F & 650 – H</p> |
| 2.1.11 | Secure-Lock Cash-In-Transit Anteroom | | | <p>a) CIT to use passage for cash pick-ups</p> <p>b) Passage & doors/gates to have CCTV surveillance and access control from Control Room</p> <p>c) Passage to function as emergency exit for CSC.</p> <p>d) Emergency escape system to comply with PRASA security standards.</p> | <p>Part A: doc no: 1,3 Room Requirements p.1</p> |

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| 2.1.12 | CIT access yard | | <p>a) CIT yard to have min internal clearance size of 4,5m x 8,5m long, with 3,4m high 220mm face brick fence wall & automated steel-plated sliding speed gate operated from Control Room.</p> <p>b) CIT truck dimensions: 6,67m x 2,5m x 2,4m high.</p> <p>c) Access roads to allow CIT truck min turning circle of 8m, preferably 10m.</p> <p>d) Enclose turning space within yard where possible (approx. 10 x 12m) or Include hammerhead turning space enabling truck to reverse into yard.</p> <p>e) Yard can be open but enclose with roof where possible.</p> <p>f) Accessibility to anteroom preferably ramp, but stairs acceptable.</p> | <p>Part C: Generic detail doc 3.1 Series 600, Dwg No. 603 – G & 603 – H</p> |
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2.2 STATION CONTROL & INFORMATION CENTRE

| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
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| 2.2.1 | <p>Station Control Room (PA, ICS, CCTV, Alarms, AFCC)</p> | <p>NGS 2020, p82, 5.9.6 Lighting p94 & 95, 6.2.2 CCTV – Piping and trenching p95, 6.2.3 CCTV – 6.3.1 Audible Communication - Announcements</p> | <ul style="list-style-type: none"> ▪ Power skirting with 3 separate channels (min. 90 x 50mm each) to all walls above counter on walls between cubicles & below counter at window. ▪ Power distribution board with circuit breakers for speed gates & controls ▪ External telephone lines with sockets in power skirting ▪ A/C ▪ Min. 6 x 220V plug points (2 for UPS & labelled as such) ▪ CCTV interface ▪ Allow 2 x ducts for DBs & equipment boards, min 1200mm x 800mm deep ea. | <p>a) <i>Functions:</i></p> <ul style="list-style-type: none"> ▪ Control of speed- and by-pass gates ▪ CCTV surveillance ▪ Manage all security systems & control of CIT access gates ▪ PA announcements ▪ Telephone systems <p>b) <i>To have unobstructed view / supervision over speed gates, bypass gate & defaulters queuing area.</i></p> <p>c) <i>With 52mm, grade 3 bullet resistant glass.</i></p> <p>d) <i>Min. floor area 3200x1900=6.08m²</i></p> <p>e) <i>1.5m x 1.5m for wheelchair turning circle + 600 deep counter makes space 2.125m deep</i></p> <p>f) <i>Ensure all vertical & horizontal CCTV sightlines are clear / unobstructed.</i></p> <p>g) <i>Provide duct min. 900mm (w) x 600mm (d) for all services, Telkom control box, internal network server & modems, etc.</i></p> | <p>CCTV placement:</p> <p>Provide 2 x cameras above ticket sales cubicles</p> <p>Concourse</p> <p>Platforms</p> <p>CIT access yard & pick-up door</p> <p>Part A: doc no: 1,3 Room Requirements p.2</p> <p>Requirements to be checked with Telecoms</p> |

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| 2.2.2 | Information Desk | NGS 2020, p46, 4.3 Station layout p96, 6.3.1 Audible communication – Announcements P97, 6.3.3 Audible communication – Loud speakers SPDAG 2007, p. 103 | | <ul style="list-style-type: none"> a) Information Point to be accessible from both sides of access control. b) To be enclosed with aluminium windows, to detail. c) Could be a notice board with timetables, trip cost structures, maps, etc. with min 1,5m wide x 1m deep area clear of obstructions. d) Allow 1m clearance around free standing board. | <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 652 – A to 652 – C</p> <p>Part B: doc no: 2,2 General Finishes & Specifications G05</p> |
| 2.2.3 | Back-up Power / Generator Rooms | NGS 2020, p78, 5.9.3 Lighting - emergency | | <ul style="list-style-type: none"> a) Back-up power supply provision to be confirmed, for Super-Core stations only or as required. b) Generator rooms to be properly ventilated & be accessible to service vehicles for re-fuelling. | |

2.3 ADMINISTRATIVE OFFICES & STAFF ACCOMODATION

General Notes:

- i. Min internal passage width of 1200mm throughout
- ii. All room sizes to be in accordance with **Room Requirements Schedule, Doc. no 1.3**. All sizes are to be used as guidelines based on station capacity & commuter volumes.
- iii. All offices to receive a min. of 1 x 16 Amp red plug, 1 x 16 Amp std. plug, 1 x Telephone point & 1 x Network Data point.

| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
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| 2.3.1 | Reception & Lobby | | | <ul style="list-style-type: none"> a) Reception to control all access into administrative area, including equipment & control rooms. b) All Office Lighting Levels (Lux): <ul style="list-style-type: none"> i. Large, Small & Medium: Average 500 | <p>Part B: Doc no: 2,3a Lux Levels</p> <p>Part A: doc no: 1,3 Room Requirements p.2</p> |

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| 2.3.2 | First Aid Room / Infirmary | | <ul style="list-style-type: none"> ▪ Medical whb & taps ▪ Std. hospital bed ▪ First aid kit, including special needs equipment ▪ 2 x Dbl plugs for appliances | <p>a) <i>Min. length to fit std. hospital / Infirmary bed.</i></p> <p>b) <i>First aid room to be easily accessible from or in close proximity to public areas.</i></p> <p>c) <i>Include cupboard for storage.</i></p> | <p>Part A: doc no: 1,3 Room Requirements p.2</p> |
| 2.3.3 | Station Manager's Office | | | <p>a) <i>To be easily accessible from or in close proximity to public & reception areas.</i></p> <p>b) <i>To have clear view of customer service area where possible.</i></p> <p>c) <i>Provide Audio Communications Facilities for Public Announcements</i></p> | <p>Part A: doc no: 1,3 Room Requirements p.2</p> <p>Part B: doc no 2,7: Furniture Standards O05</p> |
| 2.3.4 | Senior Clerk's Office | | <ul style="list-style-type: none"> ▪ To have access to CCTV surveillance systems | <p>a) <i>May be open plan with built-in desk.</i></p> <p>b) <i>Can be combined with station manager's office in smaller stations.</i></p> | <p>Part A: doc no: 1,3 Room Requirements p.2</p> <p>Part B: doc no 2,7: Furniture Standards O03</p> |
| 2.3.5 | Meeting / Briefing Room | | <ul style="list-style-type: none"> ▪ Provision for audio-visual equipment on larger stations | <p>a) <i>Provide pre-assembly space where possible to prevent bottleneck.</i></p> <p>b) <i>Size according to Room Requirements Schedule.</i></p> | <p>Part A: doc no: 1,3 Room Requirements p.2</p> <p>Part B: doc no 2,7: Furniture Standards O10 to O15, O17</p> |
| 2.3.6 | Admin Store | | | <p>a) <i>To accommodate 500mm wide shelves, to detail.</i></p> <p>b) <i>Admin Store to be fire protected room to preserve documents in case of fire.</i></p> | <p>Part A: doc no: 1,3 Room Requirements p.2</p> <p>Part B: doc no 2,7:</p> |

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| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
| 2.3.7 | Equipment Room | NGS 2020, p94 & p95, 6.2.2 CCTV Piping and trenching requirements | <ul style="list-style-type: none"> ▪ Duct min. 300mm (w) x 75mm (h) between equipment & battery rooms. | <p>a) Provide 1 x equipment room, preferably within access controlled administrative area. Can be separate building within secure yard.</p> <p>b) Min area – 20m² (3,6m x 5,2m).</p> | Part A: doc no: 1,3 Room Requirements p.2 Part C: Generic detail doc 3.1 Series 600, Dwg No. 603 – E & 603 - F |
| | | | <ul style="list-style-type: none"> ▪ Ducting to CCTV system equipment & control room. ▪ Ducting to Trans-Tel transmission equipment. ▪ Ducting to speed gates. (Size to be verified by manufacturer) | <p>c) All maintenance & outsourced staff to pass by reception point before being allowed access.</p> <p>d) Provide 300mm raised floor to detail.</p> <p>e) Door min clearance 1500mm (w) x 2100mm (h).</p> <p>f) Room to be ventilated.</p> <p>g) Battery storage area to be ventilated separately to prevent hydrogen build-up.</p> <p>h) Ventilation, lighting & power requirements to equipment installed manufacturers.</p> <p>i) Provide fire detection & alarm.</p> | |
| 2.3.8 | Kitchenette & Break Room | | <ul style="list-style-type: none"> ▪ s/s double bowl sink with tap ▪ Space & power for std fridge ▪ Plug for microwave oven ▪ Plug for kettle & other appliances | <p>a) Break Room & kitchenette for admin staff.</p> <p>b) All plugs to be double plugs to be installed at 1150mm height.</p> <p>c) Cupboards, counters & splashbacks to generic details.</p> <p>d) Min. counter top size 600 x 1000mm, 900mm (h)</p> | Part A: doc no: 1,3 Room Requirements p.1 Part B: doc no: 2,4 |

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| | | | <ul style="list-style-type: none"> ▪ Min 1 x set of kitchen drawers ▪ 1 x "Point-of-use" water heater ▪ 1 x Water boiler | e) Sufficient space, table & chairs for staff to eat lunch or have tea break. | <p>General list of Sanitary fittings, S01 to S09, V26 to V29, Y01 & Y02</p> <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 654 – A to 654 – F</p> <p>Part B: doc no: 2,5 Ironmongery, R05</p> |
| 2.3.9 | Locker Rooms: Male & Female | | <ul style="list-style-type: none"> ▪ 1 x dbl plug ▪ Locker Quantities: <ul style="list-style-type: none"> - Super-Core: 18 - Core: 15 - Intermediate: 12 - Small: 8 - Halt: 4 | <p>a) Provide locker room for male & female admin, ticket verification & customer services staff.</p> <p>b) Provide lockable & stackable lockers fixed to walls. Locker size 300mm (w) x 450mm (d) x 900mm (h), see PRASA Std. Furniture Doc.</p> <p>c) Fixed bench 400mm (d), to detail.</p> | <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 654-G & 654 – H</p> <p>Part A: doc no: 1,3 Room Requirements p.2 & P.3</p> |

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| 2.3.10 | Ablutions | NGS 2020, p46 4.3 Station Layout p74 – 76, 5.8 Ablutions SANS 10400-S | <ul style="list-style-type: none"> ▪ wc ▪ whb & tap ▪ ur (where possible) ▪ mirror ▪ soap dispenser ▪ bin | <p>a) <i>Where feasible, provide min 1 x male, 1 x female & 1 x unisex Paraplegic toilet.</i></p> <p>b) <i>Toilets can be accommodated in locker rooms.</i></p> <p>c) <i>Provide urinal in male toilets where possible.</i></p> <p>d) <i>Paraplegic toilet to have min finished wall-to-wall dimensions of 1,8m x 1,8m & to comply with SANS part S, complete with s/s grab rails.</i></p> <p>e) <i>Door to Paraplegic toilet to be sliding door or open outward & not obstruct passages.</i></p> | <p>Part A: doc no: 1,3 Room Requirements p.1 to p.3</p> <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 650 – A to 650 – F & 650 – H</p> <p>Part B: doc no: 2,2 Finishes & Specifications A02, B05, C02, C03, H04, M01, M07</p> <p>Part B: Doc no: 2,3 and 2,3a Lux Levels L06, L07, L09, L11, Lu24</p> <p>Part B: doc no: 2,4 General list of Sanitary fittings, T10 to T13, U01, U02, V01 to V7, V14 to V25, W01 to W07, X01 to X12, Y01 & Y02, Z01 to Z03</p> |
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| 2.4 CLEANING STAFF ACCOMODATION | | | | | |
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| ITEM No. | USER REQUIREMENT | SOURCE (see 5.1 References) | PRASA DETAILS & OTHER REFERENCES | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
| 2.4.1 | Cleaning Store | | <ul style="list-style-type: none"> ▪ Wash trough with tap ▪ Slop hopper ▪ Floor drain | <p>a) Provide room for storage of cleaning equipment & materials within operational area.</p> <p>b) Ensure chemical ventilation as per regulations with masonry walls & aluminium louvers in door.</p> <p>c) 500mm wide shelving on all walls to detail</p> <p>d) Door to have a minimum clearance of 1500mm (w) x 2100mm (h).</p> | <p>Part A: doc no: 1,3 Room Requirements p.2</p> |
| 2.4.2 | Locker Rooms: Male & Female | | <ul style="list-style-type: none"> ▪ 1 x double plug ▪ Locker Quantities: <ul style="list-style-type: none"> - Super-Core: 12 - Core: 10 - Intermediate: 6 - Small: 4 | <p>a) Provide locker room for male & female cleaning staff</p> <p>b) Allow for shower in each locker room.</p> <p>c) Provide lockable & stackable lockers fixed to walls. Locker size 300mm (w) x 450mm (d) x 900mm (h), see PRASA Std. Furniture Doc.</p> <p>d) Fixed bench 400mm (d), to detail.</p> | <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 654- G & 654 – H</p> <p>Part A: doc no: 1,3 Room Requirements p.2 & P.3</p> |
| 2.4.3 | Ablutions | NGS 2020, p46 4.3 Station Layout p74 – 76, 5.8 Ablutions SANS 10400-S | | <p>a) Provide min 1 x male & 1 x female toilet.</p> <p>b) Provide urinal in male toilets where possible.</p> <p>c) Toilets can be accommodated in locker rooms.</p> | <p>Part A: doc no: 1,3 Room Requirements p.1 to p.3</p> <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 650 – A to 650 – F & 650 – H</p> <p>Part B: doc no: 2,2</p> |

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| | | | | | Finishes & Specifications A02, B05, C02, C03, H04, M01, M14 Part B: Doc no: 2,3 and 2,3a Lux Levels L06, L07, L09, L11, Lu24 Part B: doc no: 2,4 General list of Sanitary fittings, T10 to T13, U01, U02, V01 to V7, V14 to V25, W01 to W07, X01 to X12, Y01 & Y02, Z01 to Z03 |
| 2.4.4 | Kitchenette & Break Room | | <ul style="list-style-type: none"> ▪ s/s double bowl sink with tap ▪ Space & power for std fridge ▪ Plug for microwave oven ▪ Plug for kettle & other appliances ▪ Min 1 x set of kitchen drawers ▪ 1 x "Point-of-use" water heater (if no other geysers available) ▪ 1 x Water boiler | <p>a) <i>Break Room & kitchenette for cleaning staff.</i></p> <p>b) <i>All plugs to be double plugs to be installed at 1150mm height.</i></p> <p>c) <i>Cupboards, counters & splashbacks to generic details.</i></p> <p>d) <i>Min. counter top size 600 x 1000mm, 900mm (h)</i></p> <p>e) <i>Sufficient space, table & chairs for staff to eat lunch or have tea break.</i></p> | Part A: doc no: 1,3 Room Requirements p.1 Part B: doc no: 2,4 General list of Sanitary fittings, S01 to S09, V26 to V29, Y01 & Y02 Part C: Generic detail doc 3.1 Series 650, Dwg No. 654 – A to 654 – F Part B: doc no: 2,5 Ironmongery, R05 |

2.5 SECURITY ACCOMODATION AND SYSTEMS

General Notes:

- i. Security Section to be completely isolated from other office areas, with full height 220mm fire wall.

| ITEM No. | USER REQUIREMENT | SOURCE (see 5.1 References) | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
|----------|-------------------------------------|--------------------------------|---|---|--|
| 2.5.1 | Charge office | | <ul style="list-style-type: none"> ▪ Power skirting to min. 2 walls at floor level with <ul style="list-style-type: none"> - 220V plugs - telephone sockets ▪ A/C | <ul style="list-style-type: none"> a) Direct access from operational area b) Size 2,5m x 4m - min 2,2m (w) c) Provide counter across width to detail. d) Fare-evasion provision | <p><i>Part C: Generic detail doc 3.1 Series 650, Dwg No. 652 – D & 654 – E</i></p> <p><i>Part A: doc no: 1,3 Room Requirements p.3</i></p> |
| 2.5.2 | Security Supervisor's office | | <ul style="list-style-type: none"> ▪ Power skirting to min. 2 walls at floor level with <ul style="list-style-type: none"> - 220V plugs - telephone sockets ▪ A/C ▪ CCTV interface / surveillance | <ul style="list-style-type: none"> a) Security-related offices to be located on operational side of station b) Min size 2,5m x 3m c) To have clear view of charge office | <p><i>Part A: doc no: 1,3 Room Requirements p.3</i></p> |
| 2.5.3 | Security Office / Cell Surveillance | | <ul style="list-style-type: none"> ▪ Power skirting to min. 2 walls at floor level with <ul style="list-style-type: none"> - 220V plugs - telephone sockets ▪ A/C | <ul style="list-style-type: none"> a) Security-related offices to be located on operational side of station b) Min size 2,5m x 3m | <p><i>Part A: doc no: 1,3 Room Requirements p.3</i></p> |
| 2.5.4 | No Holding cells | | NO HOLDING CELLS ALLOWED IN ANY STATION | | |
| 2.5.5 | Strong Room | | <ul style="list-style-type: none"> a) Class 2 Safe / Strong room for storing and locking up firearms & ammunition, accessible from supervisor- or charge office, Min size 2m x 1m. b) Provide concrete slab over. | | <p><i>Part A: doc no: 1,3 Room Requirements p.1</i></p> |

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|-------|--|--|---|---|---|
| 2.5.6 | Kitchenette & Break Room | | <ul style="list-style-type: none"> ▪ s/s double bowl sink with tap ▪ Space & power for std fridge ▪ Plug for microwave oven ▪ Plug for kettle & other appliances ▪ Min 1 x set of kitchen drawers ▪ 1 x “Point-of-use” water heater (if no other geysers available) ▪ 1 x Water boiler | <p>a) Break Room & kitchenette for security staff.</p> <p>b) Can be shared with cleaning staff on small stations.</p> <p>c) All plugs to be double plugs to be installed at 1150mm height.</p> <p>d) Cupboards, counters & splashbacks to generic details.</p> <p>e) Min. counter top size 600 x 1000mm, 900mm (h)</p> <p>f) Sufficient space, table & chairs for staff to eat lunch or have tea break.</p> | <p>Part A: doc no: 1,3 Room Requirements p.1</p> <p>Part B: doc no: 2,4 General list of Sanitary fittings, S01 to S09, V26 to V29, Y01 & Y02</p> <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 654 – A to 654 – F</p> <p>Part B: doc no: 2,5 Ironmongery, R05</p> |
| 2.5.7 | Locker Rooms: Male & Female | | <ul style="list-style-type: none"> ▪ 1 x double plug ▪ Locker Quantities: <ul style="list-style-type: none"> - Super-Core: 18 - Core: 12 - Intermediate: 8 - Small: 4 | <p>a) Provide locker room for male & female security staff.</p> <p>b) Provide lockable & stackable lockers fixed to walls. Locker size 300mm (w) x 450mm (d) x 900mm (h), see PRASA Std. Furniture Doc.</p> <p>c) Fixed bench 400mm (d), to detail.</p> | <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 654-G & 654 – H</p> <p>Part A: doc no: 1,3 Room Requirements p.2 & P.3</p> |

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|-------|---------------------------------------|--|--|---|--|
| 2.5.8 | Ablutions | NGS 2020, p46 4.3 Station Layout p74 – 76, 5.8 Ablutions SANS 10400-S | <ul style="list-style-type: none"> ▪ WC ▪ whb & tap ▪ urinal (where possible) ▪ mirror ▪ soap dispenser & bin | <p>a) <i>Where feasible, provide min 1 x male & 1 x female.</i></p> <p>b) <i>Toilets can be accommodated in locker rooms.</i></p> <p>c) <i>Provide urinal in male toilets where possible.</i></p> | <p>Part A: doc no: 1,3 Room Requirements p.1 to p.3</p> <p>Part C: Generic detail doc 3.1 Series Part C: 650 – A to 650 – F & 650 – H</p> <p>Part B: doc no: 2,2 Finishes & Specifications A02, B05, C02, C03, H04, M01, M07</p> <p>Part B: Doc no: 2,3 and 2,3a Lux Levels L06, L07, L09, L11, Lu24</p> <p>Part B: doc no: 2,4 General list of Sanitary fittings, T10 to T13, U01, U02, V01 to V7, V14 to V25, W01 to W07, X01 to X12, Y01 & Y02, Z01 to Z03</p> |
| 2.5.9 | Detainee transfer requirements | | <p>a) <i>Located on ground floor for easy access by detainee transfer vehicle. (can be combined with CIT yard, but preferably separate)</i></p> <p>b) <i>Access should not be via public area.</i></p> <p>c) <i>Yard to be secure and sized to allow for parking vehicle. Provision for turning vehicle to be made outside the yard.</i></p> | | |

2.6 PUBLIC ABLUTIONS

General Notes:

i. The below table is a guideline only and quantities need to be verified with a traffic impact study for each station's unique circumstances.

| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCES | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
|----------|---------------------------------------|---|---|--|---|
| 2.6.1 | Toilets in concourse operational area | <p>NGS 2020, p46 4.3 Station Layout p74 – 76, 5.8 Ablutions SANS 10400-S</p> <p>Table below derived from SANS 10400 regulations for peak time entertainment facilities.</p> | <ul style="list-style-type: none"> ▪ Whb to be sloping granite slab to detail ▪ Push-on-demand tap, cold water only ▪ Provide electric hand drying units ▪ Mirrors (tile-in) ▪ Soap dispensers ▪ Floor drain ▪ Bins ▪ Sanitary bins (females only) ▪ Natural ventilation / Mechanical extraction | <p>a) Quantity of facilities to be calculated using 5min commuter peak volumes, see table below.</p> <p>b) Commuter 5min peak to be divided 50% male, & 50% female unless specified otherwise</p> <p>c) Located in operational area (behind access control)</p> <p>d) All sanitary fixtures & fittings to be vandal resistant to sanitary specification.</p> <p>e) Toilet cubicle doors to be semi-solid, min. 800mm (w), with 300mm undercut, indicator bolt & robust hinges.</p> <p>f) Min toilet cubicle size to be 800mm x 1600mm, preferably 900mm x 1700mm.</p> <p>g) All fittings to be stainless steel (rust resistant).</p> <p>h) Include min. 1 x hose, tap & floor drain for cleaning</p> | <p>Part A: doc no: 1,3 Room Requirements p.1 to p.3</p> <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 650 – A to 650 – F & 650 – H</p> <p>Part B: doc no: 2,2 Finishes & Specifications A02, B05, C02, C03, H04, M01, M14</p> <p>Part B: Doc no: 2,3 and 2,3a Lux Levels L06, L07, L09, L10, L11, Lu24</p> <p>Part B: doc no: 2,4 General list of Sanitary fittings, T01 to T03, T07 to T09, U03 to U05, V01 to V11, V16 to</p> |

| | | | | | |
|-------|---------------------------|---|--|--|---|
| | | | | | V19, W01 to W07, X01 to X12, Y03 & Y04 |
| 2.6.2 | Paraplegic Toilets | NGS 2020, p46 4.3 Station Layout p74 – 76, 5.8 Ablutions | <ul style="list-style-type: none"> ▪ Lever tap, cold water only ▪ Provide electric hand drying unit ▪ Mirrors (tile-in) ▪ Soap dispenser & Bin ▪ Floor drain ▪ Natural ventilation / Mechanical extraction | <p>i) Provide min 1 unisex par. toilet in operational area.</p> <p>j) Where unisex toilet not possible, male / female Paraplegic may be acceptable.</p> <p>k) Paraplegic toilet to have min finished wall-to-wall dimensions of 1,8m x 1,8m & to comply with SANS part S, complete with s/s grab rails.</p> <p>l) Doors to Paraplegic toilet to be sliding door or open outward & not obstruct passages.</p> | <p>Part C: Generic detail doc 3.1 Series 650, Dwg No. 650 – F</p> <p>Part B: doc no: 2,4</p> <p>General list of Sanitary fittings, T04 & T06, V12 & V13, W04 to W06, W09, W11, X01 to X12, Z01 to Z04,</p> |

| ITEM No. | USER REQUIREMENT | SOURCE (see 5.1 References) | PRASA DETAILS & OTHER REFERENCES | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
|-----------------|---------------------------|--|---|--|--|
| 2.6.3 | Baby Changing Room | | <ul style="list-style-type: none"> ▪ Whb with push-on-demand tap, cold water only ▪ Soap dispenser & Bin ▪ Natural ventilation / Mechanical extraction | <p>a) Provide min 1 unisex baby changing room in operational area.</p> <p>b) 700mm granite counters with whb, to detail.</p> | Part C: Generic detail doc 3.1 Series 650, Dwg No. 650 - A, 650 - B & 650 – G |
| 2.6.4 | Lighting Levels | | | <p>a) Lighting Levels (Lux):</p> <p>i. Average 200</p> | Part B: Doc no: 2,3a LUX Levels |

| Commuter 5 min peak volumes: | Number of sanitary fixtures to be installed relative to the 5 min commuter peak volumes in column 1. | | | | |
|------------------------------|--|---|--|---|---|
| | Males | | | Females | |
| | WC pans | Urinals | WHB | WC pans | WHB |
| < 50 | 1 | 1 | 1 | 1 | 1 |
| 50 | 1 | 1 | 1 | 2 | 1 |
| 100 | 1 | 2 | 1 | 3 | 2 |
| 250 | 2 | 4 | 2 | 5 | 3 |
| 500 | 3 | 7 | 3 | 10 | 6 |
| 1000 | 3 | 10 | 4 | 14 | 7 |
| 1500 | 4 | 15 | 5 | 18 | 8 |
| 1500 < | For population exceeding 1500, add 1 WC for every 500 persons | For population exceeding 1500, add 1 urinal for every 300 persons | For population exceeding 1500, add 1 WHB for every 500 persons | For population exceeding 1500, add 1 WC for every 300 persons | For population exceeding 1500, add 1 WC for every 500 persons |

3. SITE DESIGN & INTERMODAL FACILITIES

3.1 Station Site & Intermodal Requirements

| 3.1 STATION SITE & INTERMODAL REQUIREMENTS |
|---|
| <p><i>General Notes:</i></p> <ul style="list-style-type: none"> i. Provision of all site related facilities are strictly specific to individual stations. Station Managers & PRASA Regional Offices should be consulted when determining quantities. ii. Rail upgrades / planned future service upgrades to be kept in mind when providing facilities, especially Park & Ride needs. iii. Parking quantities, including staff & public parking, to be station specific, depending on staff ratios, commuter profile & station types. iv. CPTED (Crime Prevention through Environmental Design) principles on public safety & awareness to be applied during design process. v. Traffic calming measures to be applied in direct vicinity of station & main pedestrian access, to be coordinated with local authority roads department. vi. When positioning new stations, surrounding vehicular / traffic systems, pedestrian movement & street-to-street crossings should be taken into consideration. Stairs to |

- platforms to be placed as close to centre of platforms as possible.
- vii. Evacuation Plan for each station required, to be led by PRASA RSR (Rail Safety Regulators).
 - viii. Intermodal facilities to be designed in coordination with the relevant local authorities.
 - ix. Requirements for individual stations to be determined by PRASA & local authority.
 - x. CPTED (Crime Prevention through Environmental Design) principles on public safety & awareness to be applied during design process.

| ITEM No. | USER REQUIREMENT | SOURCE (see 5.1 References) | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
|----------|----------------------|---|--------------------------------------|--|--|
| 3.1.1 | Perimeter Protection | NGS 2020, p84 – 87 5.11 Perimeter Protection SANS 10400-S SANS 10400-K | | <ul style="list-style-type: none"> a) Perimeter protection on station perimeter boundary extending 300m beyond both platform ends and in between. b) 3,0m high 220mm face brick perimeter wall required, to detail and or concrete walling c) All penetrations, access gates, etc. in perimeter wall to be secured to prevent fare evasion. | <p>Part C: Generic detail doc 3.1 Series 600, Dwg No. 603 – A</p> <p>Part B: doc no: 2,2 Finishes & Specification N01 to N05</p> |
| 3.1.2 | Staff Parking | NGS 2020, p84 – 87 5.11 Perimeter Protection SANS 10400-S | | <ul style="list-style-type: none"> a) Provide secure parking area with access control, min 3,0 high double face brick wall or “Mesh screening” fencing to be used. b) Not required to be placed within perimeter fence wall. c) Area to be easily & safely accessible to staff. d) Include 1 bay for physically challenged persons within secure area. e) Parking to be covered with Chromadek roof sheeting cantilever type carports to detail. f) Access from external road system to be provided with approval from local authorities’ roads departments. g) Provide min. 1 parking area on one side of rails, can include second parking area on both sides of rails on Super-Core stations, or as required. h) All Parking Areas Lighting Levels (Lux): <ul style="list-style-type: none"> i. Large: Average 50 ii. Small & Medium: Average 10 | <p>Part B: doc no: 2,2 Finishes & Specification N01 to N05</p> |
| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document |

| | | | | | reference |
|-------|---|--|--|---|---|
| 3.1.3 | Park & Ride Facilities | | | <ul style="list-style-type: none"> a) Provide secure parking area with access control, min 3,0m high double face brick wall or “Mesh fencing” to be used. b) Include 1 bay for physically challenged persons within secure area. c) Parking to be covered with Chromadek roof sheeting cantilever type carports to detail. d) Can be combined with staff parking facilities. e) All Parking Areas Lighting Levels (Lux): <ul style="list-style-type: none"> iii. Large: Average 50 iv. Small & Medium: Average 10 | Part B: doc no: 2,2 Finishes & Specification N01 to N05 |
| 3.1.4 | Drop & Go Facilities | | | <ul style="list-style-type: none"> a) Provide drop-&-go temporary parking facilities in close proximity to station entrances. b) To have easy access from external road system with approval from local authorities’ roads departments. c) Vehicular flow not to obstruct traffic. d) Allow parking / drop-off space, preferably parallel parking with one-way traffic flow & pedestrian kerb / island min 1,5m wide, preferably 3m on boarding (left) side of vehicle. e) Provide pedestrian shelters as per detail | Part C: Generic detail doc 3.1 Series 600, Dwg No. 605 – C & 605 - D |
| 3.1.5 | Autopax / Long Distance Bus Facilities | | | <ul style="list-style-type: none"> a) Provide parking, loading & holding facilities for PRASA Corporate Affiliated & Long-Distance Busses in close proximity to station entrances or where feasible at specific / identified stations. b) To have waiting area, ticket sales facilities for different bus companies, public ablutions & retail shops, and administrative offices. | Part C: Generic detail doc 3.1 Series 600, Dwg No. 605 – A & 605 - B |
| 3.1.6 | Landscaping | | | <ul style="list-style-type: none"> a) The open Landscape surrounding the stations should be designed to be user friendly, promote social interaction & safe integration. b) Landscape design should be sensitive to & respond fittingly to station architecture. c) Provide public seating & bins, preferably naturally shaded with tree cover, etc. d) Use low maintenance materials, such as concrete, face brick & s/s where possible. e) Paving to be relatively simple with simplistic patterning & edging where possible. f) Use only indigenous, hardy, low maintenance planting. Keep local hazards in mind, such as livestock damaging landscaping. g) Water features are to be avoided. h) Landscaping to assist in guiding public away from perimeter walls, such as placing | Part C: Generic detail doc 3.1 Series 600, Dwg No. 608 – A & 608 - B |

| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
|----------|---|---|--|--|--|
| | | | rocky outcrops adjacent to wall, etc. to minimize vandalism & maintenance. i) Include manual or automatic irrigation system and / or garden taps. j) Provide pedestrian crossing over all vehicular roads in main pedestrian routes. | | |
| 3.1.7 | Service, CIT Vehicle & Detainee Transfer Access | | a) Provision to be made for Cash-in-Transit, maintenance, and detainee removal vehicles. b) Cash in transit & detainee transfer vehicles to have unobstructed access to secure yard, with speed gates to detail, preferably separate but can be combined. To be kept separate from public areas & routes where possible. c) Provide access for service vehicles & re-fuelling of generators if applicable. | | Part C: Generic detail doc 3.1 Series 600, Dwg No. 603 – G & 603 - H |
| 3.1.8 | Refuse removal | SANS 10400 -U Derived from Pickitup Waste Management Guidelines | a) Provision to be made for, Maintenance, and Waste removal vehicles. b) Provide refuse room / yard on ground level. Provision for turning vehicle to be made outside the yard. c) Min door / opening size: 1,2m & refuse should not be visible (door/no direct sightline) d) Provide tap & floor level gulley connected to sewer not storm water. e) Size to be calculated based on area, the following formula can be used as guideline: <ul style="list-style-type: none"> i. Offices: $0,226 \times GLA / 100 = (m^3) \text{ per week}$ $(m^3) \text{ per week} \times 4 \text{ bins (requiring } 1m^2 \text{ each)} = \text{refuse area required (m}^2\text{)}$ ii. Concourse: (use only internal area) $0,122 \times GLA / 100 = (m^3) \text{ per week}$ $(m^3) \text{ per week} \times 4 \text{ bins (requiring } 1m^2 \text{ each)} = \text{refuse area required (m}^2\text{)}$ iii. Retail: $0,924 \times GLA / 100 = (m^3) \text{ per week}$ $(m^3) \text{ per week} \times 4 \text{ bins (requiring } 1m^2 \text{ each)} = \text{refuse area required (m}^2\text{)}$ f) Refuse areas can be combined or separate. | | |
| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |

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| 3.1.9 | Access for emergency vehicles and evacuation | NGS 2020, p39, 3.5 p45, Table 4-1 p69, 5.7.1 Lifts p85, 5.11.1 Perimeter Protection | | <ul style="list-style-type: none"> a) Emergency vehicles to have access to platform, including fire trucks, where possible. b) Access gates to be solid & motorised, controlled from Control Room. c) To be placed as close to platform ends as possible. | |
| 3.1.10 | Bicycle parking / sheds. | | | <ul style="list-style-type: none"> a) Provide public bicycle sheds / stands to detail. | Part C: Generic detail doc 3.1 Series 600, Dwg No. 606 – A, 606 - B & 606 - C |
| 3.1.11 | Clocks | ELEMENTS | | <ul style="list-style-type: none"> a) Provide clocks at both entrances, to be clearly visible to approaching commuters, to be placed on lift shafts at entrances where possible. b) Digital clocks to be provided on platforms, can be combined with electronic information boards. | |
| 3.1.12 | Taxi Ranking, Drop-off & Loading Facilities | NGS 2020, p52, 5.1 Parking SANS 10400 - S | | <ul style="list-style-type: none"> a) Taxi ranks & loading facilities to be provided in close proximity to station entrances. b) Provision to be made to control taxi movements, by allocating bollards & boom gates to deter unwanted access to restricted areas & pavements. c) Shelters & seating to be provided as per details doc. | |
| 3.1.13 | Bus Drop-off & Loading Facilities | NGS 2020, p52, 5.1 Parking SANS 10400 - S | | <ul style="list-style-type: none"> a) Bus drop-off & loading facilities to be provided in close proximity to station entrances. b) Shelters & seating to be provided as per details doc. | |
| 3.1.14 | Public Parking | NGS 2020, p52, 5.1 Parking SANS 10400 - S | <ul style="list-style-type: none"> a) Allow for open parking bays, including bay for physically challenged persons within station property, quantity requirements to be determined for individual station in conjunction with PRASA. b) Access from external road system to be provided with approval from local authorities' roads departments. | | |

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| 3.1.15 | BRT Boarding Stations | | | c) Investigate possible BRT boarding stations placement in vicinity of station & coordinate with council where required. | |
| 3.1.16 | Intermodal Admin Facilities | | | a) Provide administration office / space on the premises for management of intermodal facilities by third parties. b) Preferably placed to have direct surveillance of all facilities. | |
| 3.1.17 | Public Ablutions | NGS 2020, p46 4.3 Station Layout p74 – 76, 5.8 Ablutions SANS 10400-S | <ul style="list-style-type: none"> ▪ Push-on-demand tap, cold water only ▪ Provide electric hand drying units ▪ Mirrors (tile-in) ▪ Soap dispensers ▪ Floor drain ▪ Bins ▪ Sanitary bins (females only) ▪ Natural ventilation / Mechanical extraction | a) Provide public ablutions building, including Male, Female & Paraplegic Facilities. b) Quantity of facilities to be determined by station requirements. c) Paraplegic toilet to have min finished wall-to-wall dimensions of 1,8m x 1,8m & to comply with SANS part S, complete with s/s grab rails. d) All sanitary fixtures & fittings to be vandal resistant to sanitary specification. e) Whb's to be sloping granite slabs to PRASA general details. f) Toilet cubicle doors min. 800mm (w), lockable with 300mm undercut. g) All fittings to be stainless steel (rust resistant). h) Provide tap & hose in lockable cupboard / duct for maintenance & floor drain. | Part C: Generic detail doc 3.1 Series 600, Dwg no. 607- A to 607 - E |
| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
| 3.1.18 | Lighting & Security | NGS 2020, p76 - 82 5.9 Lighting SANS 10400 - O SANS 10400 – S SANS 10400 - X SANS 10389 – | a) Sufficient lighting to be provided to promote public safety & awareness, including for night time use. b) Pedestrian walkways to be lit so that a person with normal vision can identify a face from approximately 10m. c) Lighting to be uniformly spread to reduce contrast between shadows & illuminated areas. More fixtures with lower wattage is preferable to fewer fixtures with higher wattage. | | Part B: Doc no: 2,3a LUX Levels |

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| | | 1:2008 SANS 10114 SANS 10098 | | |
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4. OTHER EQUIPMENT & SYSTEMS

- 4.1 Information Systems
- 4.2 Lighting
- 4.3 Firefighting Requirements
- 4.4 Logistics & Provision for On-going Operations
- 4.5 Commercial & Retail Facilities

| 4.1 INFORMATION SYSTEMS | | | | | |
|---|---|--------|-------------------------------------|---|---|
| <p><i>General Notes:</i></p> <ul style="list-style-type: none"> i. To form part of ISAMS (Integrated Station Access Management Solutions) specialist contract. ii. ISAMS disciplines include: 1) Speed gates, 2) CCTV Surveillance Systems, 3) General Access Control, 4) Intrusion Detection, 5) Fire & Smoke Detection, 6) Public Address Systems & 7) EDB, including Induction Loops, Help Points, Electronic Kiosks, Fiber Reticulations and Electronic Information Boards. iii. Architects to coordinate duct & services requirements with ISAMS contractor. iv. Provide min. 1 x 800mm x 800mm duct to each platform. v. Provide 3 x 1000mm x 1000mm plinths on each platform for ISAMS distribution boxes: 1 at each platform end & 1 in centre of platform, close to above mentioned duct. | | | | | |
| ITEM No. | USER REQUIREMENT | SOURCE | PRASA DETAILS & OTHER REFERENCES | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
| 4.1.1 | Static Brand / Corporate Identity Signage | | PRASA Signage Application Version 9 | a) Passenger information and corporate information to be addressed: <ul style="list-style-type: none"> vi. Statutory signage vii. Information signage | Part C: doc no: 3.0 – 3.0b Signage Specifications |

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|-----------------|---|--|---|---|--|
| | | | | <ul style="list-style-type: none"> viii. Way-finding signage ix. Corporate information <ul style="list-style-type: none"> b) Provision to be made for advertising space. c) Provide visual indicators for people with hearing impairments | |
| 4.1.2 | Regulatory Signage | | | <ul style="list-style-type: none"> a) Provision to be made for statutory regulatory signage, to be informed by RSR. | |
| 4.1.3 | Advertising Space | | | <ul style="list-style-type: none"> b) Provision to be made for advertising space. c) Conformity for spaces – light boxes / posters etc. | |
| ITEM No. | USER REQUIREMENT | SOURCE (see 5.1 References) | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
| 4.1.4 | Fixed message passenger information / display boards | | To comply with any universally accessible requirements | <ul style="list-style-type: none"> a) To be clearly visible from concourse and operational area and should be easily understood. b) Space for timetables, fares, delays & customer services information to be in lockable glass case in close proximity to ticket sales. c) Min. 1 rail diagram board, positioned in concourse entry foyer at access control point & 1 on each platform. | |
| 4.1.5 | Variable / Electronic Passenger information / display boards | | To be in accordance with the requirements of the Integrated Communications System. To comply with any universally accessible requirements | <ul style="list-style-type: none"> a) To be clearly visible from concourse and operational area and should be easily understood b) To accommodate min. 6 lines of information. c) Power & data connection points to be provided. | |
| 4.1.6 | Interactive Help / Emergency Point | | | <ul style="list-style-type: none"> a) For reporting incidents that have already been committed. Readable from both sides b) Provide emergency information points (min. 2) spread out evenly over platform (one of which to be in the operational area). c) Information desk | |

| 4.1.7 | Communication & Public Address Systems | NGS 2020, p96 & 97, 6.3.1 – 6.3.3 Audible communication | To comply with any universally accessible requirements | <p>a) <i>Install communication systems that are fit for purpose with high reliability, availability, maintainability for TCO-to-train driver communication.</i></p> <p>b) <i>To include trunk radios in all trains, voice logging systems in signal cabins and CTC offices & the necessary procedures and resources to maintain equipment.</i></p> <p>c) <i>Stations to be provided with fit for purpose active (inclusive of public address systems) and static information and safety signage to assist commuters</i></p> | |
|---------------------|---|--|--|---|--|
| 4.1.8 | Internal Clock | | | <p>a) <i>Internal clock to be provided visible from concourse & operational areas, possibly above access control point (speed gates).</i></p> <p>b) <i>Power & data connection points to be provided.</i></p> | |
| 4.2 LIGHTING | | | | | |
| ITEM No. | USER REQUIREMENT | SOURCE (see 5.1 References) | PRASA DETAILS & OTHER REFERENCES | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document reference |
| 4.2.1 | Provision of lighting systems | NGS 2020, p46, 4.3 Station Layout P58, 5.2.4 Circular Paths – Walkways – Corridors p76 - 82 5.9 Lighting SANS 10400 - O SANS 10400 – S SANS 10400 - X SANS 10389 – 1:2008 | | <p>a) <i>Lighting to entire station precinct to ensure adequate light levels for commuter safety. Specific areas include: Walkways, Platforms, Concourse public area, Operational area, Entrance and links to Public Interchange, Information boards and signs.</i></p> <p>b) <i>Special consideration to be made for energy efficient lighting.</i></p> <p>c) <i>All lighting to be in accordance with the SARCC Station Partial Designs & Assessment Guideline, pg. 21-48 & lighting levels in lux according to Appendix 8.</i></p> | Part B: Doc no: 2,3a LUX Levels |

| | | SANS 10114 SANS 10098 | | | |
|--|---|--|--|---|--------------------------------|
| 4.3 FIRE FIGHTING REQUIREMENTS | | | | | |
| 4.3.1 | Firefighting equipment within the building | SANS 10400 - T | | <ul style="list-style-type: none"> a) <i>A Rational Fire Design to be done by qualified specialist for each station, including escape routes, equipment & signage requirements.</i> b) <i>Provide fire hoses, reels and extinguishes in accordance with SANS regulations.</i> c) <i>Provide adequate fire equipment & escape signage in accordance with SANS regulations.</i> d) <i>Emergency escape doors from secured access areas in station to be on electronic control system, forming part of ISAMS contract.</i> | |
| 4.4 LOGISTICS AND PROVISION FOR ONGOING OPERATIONS | | | | | |
| <p><i>General Notes:</i></p> <ul style="list-style-type: none"> i. <i>Determination of procedures & deployment plan to ensure on-going operations and maintenance during construction period.</i> ii. <i>To be coordinated with Facilities Management, access permits etc.</i> iii. <i>Security Strategy to be provided for construction period.</i> | | | | | |
| 4.5 COMMERCIAL & RETAIL FACILITIES | | | | | |
| <p><i>General Notes:</i></p> <ul style="list-style-type: none"> i. <i>Maximum commercial opportunities to be investigated, in cooperation with PRASA Ream</i> ii. <i>Commercial & Retail facilities to be provided, quantity & sizes according to site specific user requirements stipulated by PRASA Ream.</i> iii. <i>Each retail shop to be provided with toilet & sink for exclusive use.</i> iv. <i>Lighting Levels (Lux):</i> <i>Large: Average 200+</i> <i>Small & Medium: Average 160+</i> | | | | | |
| ITEM No. | USER REQUIREMENT | SOURCE (see 5.1 References) | PRASA DETAILS & OTHER REFERENCESS | NOTES ON USER REQUIREMENTS & DESCRIPTION | BLUE PRINT document |

| | | | | | <i>reference</i> |
|-------|---|---|--|---|---|
| 4.5.1 | Informal Trade / Small Business Enterprises (SBE) Facilities | NGS 2020, p62, 5.4.1 Entrances – Station - General | | <p>a) <i>Informal trader shelters to be placed at logical positions, preferably adjacent to main pedestrian & high traffic areas.</i></p> <p>b) <i>No SBE facilities to be provided in Operational Areas</i></p> <p>c) <i>Different trader kiosk types to be found in details doc., to be installed as per station requirements</i></p> <p>d) <i>Lighting Levels (Lux):</i></p> <ul style="list-style-type: none"> <i>i. Large: Average 100</i> <i>ii. Small & Medium: Average 50</i> <p>e) <i>Each enclosed stall to receive a prepaid electricity metre. All metres to be installed in a centrally controlled manager’s office.</i></p> | Part C: Generic detail doc 3.1 Series 600, Dwg no. 604 A – 604 P |

5. REFERENCES & FINAL NOTES

5.1 References

5.1 REFERENCES

- i. **NGS 2021** – SARCC Metro Station Acquisition: *NORMS, GUIDELINES & STANDARDS*, Oct 1997.
- ii. **SPDAG 2007** – SARCC Station Partial Design & Assessment Guideline, Draft March 2007.
- iii. **DGIA 2008** – SARCC Design Guidelines to Improve Accessibility of Commuter Rail in South Africa, Draft March 2008.
- iv. **PRASA UAP 2011** – PRASA Universal Accessibility Policy, June 2011.
- v. **IBAPTD 2010** – International Best Practice in Accessible Public Transportation for Persons with Disabilities, June 2010.
- vi. **CPTED 2003** – Crime Prevention through Environmental Design Guidebook, Oct 2003.
- vii. **SANS 10400- S** – South African National Standard, Part S: Facilities for Disabled Persons, 3rd Edition 2003.
- viii. **SANS 10400 204:2011** – South African National Standard on Energy Efficiency in Buildings, Edition 1, 2011.
- ix. **DBM 2011** – Green Building Principles for Sustainable Architecture, 2011.
- x. **GBG 2008** – City of Cape Town Green Building Guidelines, Draft 2008.
- xi. **NHRA 1999** – National Heritage Resources Act, April 1999.

| | | | | | | |
|---------|--|---------------|-------------|--------------|-------------|-----------------------------|
| doc no: | document name: | station name: | rev no: | date issued: | date drawn: | project name: |
| 1,2 | Station Capacity Calculations - Commuter Volumes | | Revision 06 | 2018/09/21 | 2012/11/30 | PRASA Station Modernisation |

GENERAL NOTES:

- The calculations below are a design guideline for initial design purposes only and has to be verified with a traffic impact study



| ITEM | INPUT FLOW PARAMETERS | TIMEFRAME | SOURCE | CALCULATION | DESIGN VALUE | COMMENTS |
|-------|--|---|---|---|--|--|
| 1.1.1 | Peak AM Period (Morning) | 06:00 - 08:30 | Census 2007 | 10568 x 2 = 8945 x 2 = 1623 x 2 = | 21136 Passengers both directions 17890 Passengers one direction - Boarding 3246 Passengers one direction - Alighting | 1. Data from 2007 Census used as baseline data. 2. Figures from 2007 increased by 100% for projected figures for the year 2025. 3. Census 2007 figures used to calculate directional boarding and alighting. 4. Design width values exclude street to street pedestrian volumes. 5. All Calculations based on the definitions and formulas contained in NGS 1997, p. 50-51, Table 5.1 6. Please note that this is a live document (excel sheet) |
| 1.1.2 | Peak PM Hour | 16:00 - 18:30 | Census 2007 | 10728 x 2 = 1364 x 2 = 9364 x 2 = | 21456 Passengers both directions 2728 Passengers one direction - Boarding 18728 Passengers one direction - Alighting | |
| 1.1.3 | Whole Day Ratio | 06:00 - 18:30 | Census 2007 | 38097 x 2 = 18138 x 2 = 19959 x 2 = | 76194 Passengers both directions 36276 Passengers one direction - Boarding 39918 Passengers one direction - Alighting | |
| | Peak Percentage - Boarding (Peak AM Period ÷ Whole Day Ratio) | | Census 2007 | 17890 ÷ 21136 = 3246 ÷ 21136 = | 85% Passengers one direction - Boarding 15% Passengers one direction - Alighting | |
| 1.2.1 | Peak 15 Minute Flow | 06:45 - 07:00 | Derived from census graph stats *** get these figures from the census graphs spread sheet*** | 1562 x 2 = 1397 x 2 = 165 x 2 = | 3124 Passengers both directions 2794 Passengers one direction - Boarding 330 Passengers one direction - Alighting | |
| 1.2.1 | Peak 1 Minute Flow in both Directions Peak 1 Minute Flow - Boarding Peak 1 Minute Flow - Alighting | 17:30 - 17:45 17:30 - 17:45 17:30 - 17:45 | | 3124 ÷ 15 = 208 p/min 2794 ÷ 15 = 186 p/min 330 ÷ 15 = 22 p/min | 208 Passengers/minute (p/min) - both directions 186 Passengers/minute (p/min) - boarding 22 Passengers/minute (p/min) - alighting | |

| ITEM | QUANTATIVE PARAMETERS | SOURCE | ANALYSIS | CALCULATION | DESIGN VALUE TO BE USED | COMMENTS |
|-------|---|-----------------------------------|---|---|--|--|
| 2.1.1 | Number of Ticket Sales Points (NTSP) | NGS item 5.2.1.1.1a page 53 | No. NTSP's = 15min peak x 0.0225 | 186 x 0.0225* = 4,2 = + 1 default = | 4 TSP 5 TSP | *No source provided in NGS Document |
| 2.2.1 | Ticket Verification Points (TVP) - Current Ticket Verification Points (TVP) - Future | I. Scott (02/10/07) | 30 p/min 70 p/min 40 p/min free flow (escape mode) | 208 ÷ 30 p/min = 6,9 no. 208 ÷ 70 p/min = 3,0 no. | 7 single speed gates gates (current verification method) 3 speed gates gates (future smart card swipe verification) | |
| 2.2.2 | No. of Bypass Gates Total width of Bypass Gates | NGS Document NGS Document | 1 bypass gate per 4 TVP modules* Width of bypass gate 1.05 m | 7 ÷ 4 = 2 no. 1.05m x 2 = 2,1 m | 2 * bypass gate(s) 2,1 m | *NGS Document assumption |
| 2.2.3 | No. of Escape Gates | SABS 0400 - 1990 page 185 Table 9 | speed gate escape capacity Escape gate capacity Total escape capacity | 7 speed gates x 40 p/min = 278 p/min 0 escape gates x 160 p/min = 0 p/min 278 p/min | 1 x 1.5m escape route(s) required | Allow at least 1 x 1.5m escape gate as building standard |

| ITEM | SPATIAL PARAMETERS | SOURCE | ANALYSIS | CALCULATION | DESIGN VALUE TO BE USED | COMMENTS |
|-------|---|---------------------------|--|---|---|---|
| 3.1.1 | Walkway Width (Overhead Walkway to Concourse) Walkway Width (Concourse level) | NGS Table 5.1 [1] page 51 | AFV = 23 p/m/min LOS C _{max} AFV = 33 p/m/min LOS C _{min} | 208 ÷ 23 = 9,1 m 208 ÷ 33 = 6,3 m 9,1 + 0.9m side friction = 10,0 m 6,3 + 0.9m side friction = 7,2 m | 9,1 m max 6,3 m min 10,0 m max walkway width 7,2 m min walkway width | AFV = Average Flow Volume measured in persons per meter per minute or quantity of persons that can walk through a 1m gap within 1 min Level of Service C _{max} (Side friction = 0.45m both sides) Level of Service C _{min} (Side friction = 0.45m both sides) |
| 3.1.2 | Bridges & Subway Widths | NGS Table 5.1 [1] page 51 | AFV = 33 p/m/min LOS C _{max} AFV = 50 p/m/min LOS C _{min} | 208 ÷ 33 = 6,3 m 208 ÷ 50 = 4,2 m 6,3 + 0.9m side friction = 7,2 m 4,2 + 0.9m side friction = 5,1 m | 6,3 m max 4,2 m min 7,2 m max walkway width 5,1 m min walkway width | AFV = Average Flow Volume measured in persons per meter per minute or quantity of persons that can walk through a 1m gap within 1 min Level of Service C _{max} (Side friction = 0.45m both sides) Level of Service C _{min} (Side friction = 0.45m both sides) |
| 3.1.3 | Entrance / Exit Width (Overhead Walkway to Concourse) | NGS Table 5.1 [E] page 51 | AFV = 40 p/m/min LOS C _{max} AFV = 55 p/m/min LOS C _{min} | 208 ÷ 40 = 5,2 m 208 ÷ 55 = 3,8 m | 5,2 m max 3,8 m min | |
| 3.1.4 | Staircase width (Street to Concourse) | HCM 2000 page 18.4 | AFV = 26 p/m/min AFV = 36 p/m/min | 208 ÷ 26 = 8,0 m ² 208 ÷ 36 = 5,8 m ² | 8,9 m max 6,7 m min | Including Side friction = 0.45m (both sides) Including Side friction = 0.45m (both sides) |

| 3.1.5 | Stairs to Platform Width | NGS Table 5.1 [STP] page 51 | AFV = 32 p/m/min LOS C _{max} AFV = 43 p/m/min LOS C _{min} | 208 + 32 = 6,5 m 208 + 43 = 4,8 m | 4,2 m x 2 staircases 2,5 m x 4 staircases | Including Side friction = 0.45m (both sides) Including Side friction = 0.45m (both sides) |
|-------|--|---|--|--|--|---|
| 3.1.6 | Disabled Ramp width (Street to Concourse) | SABS 0400 - 1990 page 152 Item SS2 | SABS SS2 pg. 152 | 1,1 x 2 = 2,2 m | 2,2 m ramp width | Allows 2 x wheelchairs to pass each other (provide landing every 1,5m vertical rise x 1,2m long) |
| ITEM | AREA PARAMETERS | SOURCE | ANALYSIS | CALCULATION | DESIGN VALUE TO BE USED | COMMENTS |
| 4.1.1 | Ticket Selling Point (TSP) Queuing Area (Standing Space) TSP Queuing Area (B) | NGS Table 5.1 [Q2] page 51 | APAO = 0.93 m ² /p APAO = 0.65 m ² /p APAO = 0.93 m ² /p LOS C _{max} APAO = 0.65 m ² /p LOS C _{min} | 67 x 0,93 = 62,4 m ² 67 x 0,65 = 43,6 m ² 16 p/queue* x 4 = 67 persons 67 x 0.93 m ² = 62,4 m ² 67 x 0.65 m ² = 43,6 m ² | 62 m ² max 44 m ² min 62 m ² (Allow extra 1.22m clearance in front of window) 44 m ² (Allow extra 1.22m clearance in front of window) | Level of Service C _{max} Level of Service C _{min} *16p / queue assumption |
| 4.1.2 | Ticket Verification Points (TVP) Width | NGS Document | Length of TVP module = 1.1 m 1 (0.9m) verification pod / 2 gates = | 1,1 x 8 = 8,4 m 0,9 x 4 = 3,4 m | 8,4 m 11,8 m total width required for gates | |
| 4.1.3 | Access Control Queuing Area (Standing Space) Access Control Queuing in Concourse (C) | NGS Table 5.1 [Q1] page 51 NGS Table 5.1 page 51 | APAO = 0.93 m ² /p APAO = 0.65 m ² /p APAO = 0.93 m ² /p LOS C _{max} APAO = 0.65 m ² /p LOS C _{min} | 208 x 0,93 = 193,7 m ² 208 x 0,65 = 135,4 m ² 25 x √0.93 x alight vol/30ppm x 1.5m = 26,5 m ² 25 x √0.93 x alight vol/30ppm x 1.5m = 22,2 m ² | 194 m ² max 135 m ² min 26,5 m ² (1.5m per speed gate used) 22,2 m ² (1.5m per speed gate used) | APAO = Average Pedestrian Area Occupancy measured in square meter per person Level of Service C _{max} Level of Service C _{min} |

| | | | | | |
|---------|----------------------------|-------------|--------------|-------------|-----------------------------|
| doc no: | document name: | rev no: | date issued: | date drawn: | project name: |
| 1,3 | Room Requirements Schedule | Revision 08 | 2020/01/31 | 2012/12/12 | PRASA Station Modernisation |

GENERAL NOTES:

- This document reflects the minimum room requirements for stations in each category.
- This document may be adjusted or added to for unique station specific requirements, PRASA will advise.



| | |
|--|-----------------------------|
| | 1. CUSTOMER SERVICES |
|--|-----------------------------|

| | Ref Key | Halt | | Small | | Intermediate | | Core | | Supercore | |
|--|---------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|
| | | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. |
| Ticket Sales Cubicle <i>Note: quantity required to be based on capacity calculations document</i> | 2.1.1 | 3,9 m ² | ✓ | 3,9 m ² | ✓ | 3,9 m ² | ✓ | 3,9 m ² | ✓ | 3,9 m ² | ✓ |
| Disabled Access Sales Cubicle (Min. 1) | 2.1.2 | | ✗ | 3,9 m ² | ✓ | 3,9 m ² | ✓ | 3,9 m ² | ✓ | 3,9 m ² | ✓ |
| Disabled Staff Sales Cubicle (Min. 1) | 2.1.4 | | ✗ | 4,5 m ² | ✓ | 4,5 m ² | ✓ | 4,5 m ² | ✓ | 4,5 m ² | ✓ |
| Default Ticket Sales Cubicle (Min. 1) | 2.1.5 | | ✗ | 4,9 m ² | ✓ | 4,9 m ² | ✓ | 4,9 m ² | ✓ | 4,9 m ² | ✓ |
| Secure-lock Ante-Room | 2.1.6 | | ✗ | 3,0 m ² | ✓ | 3,0 m ² | ✓ | 3,0 m ² | ✓ | 3,0 m ² | ✓ |
| Supervisor Office | 2.1.7 | | ✗ | 7,4 m ² | ✓ | 7,4 m ² | ✓ | 7,4 m ² | ✓ | 7,4 m ² | ✓ |
| Cash-up Office | 2.1.7 | | ✗ | 7,4 m ² | ✗ | 7,4 m ² | ✗ | 7,4 m ² | ✓ | 7,4 m ² | ✓ |
| Strong Room | 2.1.8 | | ✗ | 2,0 m ² | ✓ | 3,0 m ² | ✓ | 4,0 m ² | ✓ | 4,5 m ² | ✓ |
| Kitchennette | 2.1.9 | | ✗ | 6,0 m ² | ✗ | 6,0 m ² | ✓ | 8,0 m ² | ✓ | 10,0 m ² | ✓ |
| Break Room | 2.1.9 | | ✗ | 12,0 m ² | ✗ | 12,0 m ² | ✗ | 16,0 m ² | ✓ | 20,0 m ² | ✓ |
| Male Toilet | 2.1.10 | | ✗ | 2,4 m ² | ✗ | 2,4 m ² | ✗ | 2,4 m ² | ✓ | 2,4 m ² | ✓ |
| Female Toilet | 2.1.10 | | ✗ | 2,4 m ² | ✗ | 2,4 m ² | ✗ | 2,4 m ² | ✓ | 2,4 m ² | ✓ |
| Disabled Toilet (Unisex) | 2.1.10 | | ✗ | 4,2 m ² | ✗ | 4,2 m ² | ✓ | 4,2 m ² | ✓ | 4,2 m ² | ✓ |
| Secure-lock CIT Ante-Room | 2.1.11 | | ✗ | 3,0 m ² | ✗ | 3,0 m ² | ✓ | 3,0 m ² | ✓ | 2,3 m ² | ✓ |

| | |
|--|---|
| | 2. STATION CONTROL & INFORMATION |
|--|---|

| | Ref Key | Halt | | Small | | Intermediate | | Core | | Supercore | |
|--|---------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|
| | | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. |
| | | | | | | | | | | | |

| | | | | | | | | | | | |
|----------------------|-------|--------------------|---|--------------------|---|---------------------|---|---------------------|---|---------------------|---|
| Station Control Room | 2.2.1 | 4,0 m ² | × | 9,0 m ² | × | 18,0 m ² | ✓ | 25,0 m ² | ✓ | 33,5 m ² | ✓ |
| Information Point | 2.2.2 | 3,9 m ² | × | 3,9 m ² | × | 3,9 m ² | ✓ | 5,5 m ² | ✓ | 8,8 m ² | ✓ |

3. ADMINISTRATIVE OFFICES & STAFF ACCOMMODATION

| | Ref Key | Halt | | Small | | Intermediate | | Core | | Supercore | |
|---------------------------------------|---------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|
| | | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. |
| Reception & Lobby | 2.3.1 | | × | 9,0 m ² | × | 9,0 m ² | ✓ | 11,0 m ² | ✓ | 14,5 m ² | ✓ |
| First Aid / Infirmary | 2.3.2 | | × | 7,4 m ² | × | 5,0 m ² | ✓ | 6,5 m ² | ✓ | 7,4 m ² | ✓ |
| Area Manager (Station Specific) | 2.3.3 | | × | 9,0 m ² | × | 9,0 m ² | × | 12,5 m ² | ✓ | 12,5 m ² | ✓ |
| Station Manager | 2.3.3 | | × | 9,0 m ² | × | 9,0 m ² | ✓ | 11,9 m ² | ✓ | 11,9 m ² | ✓ |
| Senior Clerk / Supervisor | 2.3.4 | | × | 8,0 m ² | ✓ | 8,0 m ² | ✓ | 9,9 m ² | ✓ | 9,9 m ² | ✓ |
| Meeting / Briefing Room | 2.3.5 | | × | 12,0 m ² | × | 12,0 m ² | ✓ | 18,0 m ² | ✓ | 23,2 m ² | ✓ |
| Admin Store | 2.3.6 | | × | 8,0 m ² | × | 12,0 m ² | ✓ | 16,0 m ² | ✓ | 20,2 m ² | ✓ |
| Equipment Room | 2.3.7 | | × | 21,6 m ² | ✓ | 21,6 m ² | ✓ | 21,6 m ² | ✓ | 21,6 m ² | ✓ |
| Kitchennette | 2.3.8 | | × | 6,0 m ² | ✓ | 3,0 m ² | ✓ | 4,0 m ² | ✓ | 5,0 m ² | ✓ |
| Break Room | 2.3.8 | | × | 2,0 m ² | × | 5,0 m ² | ✓ | 6,0 m ² | ✓ | 8,0 m ² | ✓ |
| Male Locker Room (For C.S. & Admin) | 2.3.9 | | × | 3,0 m ² | × | 6,0 m ² | ✓ | 8,0 m ² | ✓ | 10,6 m ² | ✓ |
| Female Locker Room (For C.S. & Admin) | 2.3.9 | | × | 3,0 m ² | × | 6,0 m ² | ✓ | 8,0 m ² | ✓ | 10,6 m ² | ✓ |
| Male Toilet | 2.3.10 | | × | 1,9 m ² | × | 1,9 m ² | ✓ | 1,9 m ² | ✓ | 1,9 m ² | ✓ |
| Female Toilet | 2.3.10 | | × | 2,2 m ² | × | 2,2 m ² | ✓ | 2,2 m ² | ✓ | 2,2 m ² | ✓ |
| Disabled Toilet (Unisex) | 2.3.10 | | × | 3,7 m ² | ✓ | 3,7 m ² | ✓ | 3,7 m ² | ✓ | 3,7 m ² | ✓ |

4. CLEANERS & ACCESS CONTROL STAFF ACCOMMODATION

| | Ref Key | Halt | | Small | | Intermediate | | Core | | Supercore | |
|--------------------|---------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|
| | | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. |
| Cleaners Store | 2.4.1 | | × | 3,0 m ² | ✓ | 6,5 m ² | ✓ | 9,0 m ² | ✓ | 11,5 m ² | ✓ |
| Male Locker Room | 2.4.2 | | × | 6,0 m ² | ✓ | 6,0 m ² | ✓ | 6,0 m ² | ✓ | 10,3 m ² | ✓ |
| Female Locker Room | 2.4.2 | | × | 6,0 m ² | ✓ | 6,0 m ² | ✓ | 6,0 m ² | ✓ | 8,3 m ² | ✓ |
| Male Toilet | 2.4.3 | | × | 2,3 m ² | ✓ | 2,3 m ² | ✓ | 2,3 m ² | ✓ | 2,3 m ² | ✓ |

| | | | | | | | | | | | |
|---------------|-------|--|---|--------------------|---|--------------------|---|--------------------|---|--------------------|---|
| Female Toilet | 2.4.3 | | × | 1,8 m ² | ✓ | 1,8 m ² | ✓ | 1,8 m ² | ✓ | 1,8 m ² | ✓ |
| Kitchennette | 2.4.4 | | × | 4,0 m ² | ✓ | 2,0 m ² | ✓ | 3,0 m ² | ✓ | 4,0 m ² | ✓ |
| Break Room | 2.4.4 | | × | 2,0 m ² | × | 4,0 m ² | ✓ | 6,0 m ² | ✓ | 8,0 m ² | ✓ |

| | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|
| | 5. SECURITY ACCOMMODATION & SYSTEMS | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|

| | Ref Key | Halt | | Small | | Intermediate | | Core | | Supercore | |
|-------------------------------------|---------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|
| | | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. |
| Charge Office | 2.5.1 | | × | 9,8 m ² | × | 6,0 m ² | ✓ | 8,0 m ² | ✓ | 9,8 m ² | ✓ |
| Security Supervisor | 2.5.2 | | × | 8,0 m ² | × | 8,0 m ² | ✓ | 8,0 m ² | ✓ | 8,6 m ² | ✓ |
| Security Office / Cell Surveillance | 2.5.3 | | × | 5,0 m ² | × | 5,0 m ² | × | 8,0 m ² | ✓ | 10,0 m ² | ✓ |
| No Holding Cells | 2.5.4 | | × | 5,0 m ² | ⊙ | 6,0 m ² | ⊙ | 5,0 m ² | ⊙ | 6,5 m ² | ⊙ |
| Strong Room | 2.5.5 | | × | 2,0 m ² | × | 2,0 m ² | ✓ | 2,5 m ² | ✓ | 3,2 m ² | ✓ |
| Kitchennette | 2.5.6 | | × | 4,0 m ² | × | 2,0 m ² | ✓ | 3,0 m ² | ✓ | 3,5 m ² | ✓ |
| Break Room | 2.5.6 | | × | 2,0 m ² | × | 4,0 m ² | ✓ | 6,0 m ² | ✓ | 8,0 m ² | ✓ |
| Male Locker Room | 2.5.7 | | × | 5,0 m ² | × | 5,0 m ² | ✓ | 5,0 m ² | ✓ | 6,5 m ² | ✓ |
| Female Locker Room | 2.5.7 | | × | 5,0 m ² | × | 5,0 m ² | ✓ | 5,0 m ² | ✓ | 6,3 m ² | ✓ |
| Male Toilet | 2.5.8 | | × | 2,3 m ² | × | 2,3 m ² | ✓ | 2,3 m ² | ✓ | 2,3 m ² | ✓ |
| Female Toilet | 2.5.8 | | × | 2,2 m ² | × | 2,2 m ² | ✓ | 2,2 m ² | ✓ | 2,2 m ² | ✓ |

| | | | | | | | | | | | |
|--|--------------------------------------|--|--|--|--|--|--|--|--|--|--|
| | 6. PUBLIC ABLUTION FACILITIES | | | | | | | | | | |
|--|--------------------------------------|--|--|--|--|--|--|--|--|--|--|

| ** Note: Quantities to be calculated based on commuter volumes, see Spatial Parameters Doc, item 2.6 | Ref Key | Halt | | Small | | Intermediate | | Core | | Supercore | |
|--|---------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|
| | | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. | area (m ²) | req. |
| Male Ablutions | 2.6.1 | | × | ** | ✓ | ** | ✓ | ** | ✓ | ** | ✓ |
| Female Ablutions | 2.6.1 | | × | ** | ✓ | ** | ✓ | ** | ✓ | ** | ✓ |
| Unisex Disabled Toilet | 2.6.2 | | × | 2,4 m ² | ✓ | 2,4 m ² | ✓ | 2,4 m ² | ✓ | 4,4 m ² | ✓ |
| Unisex Baby Changing Station | 2.6.3 | | × | 2,4 m ² | × | 2,4 m ² | × | 2,4 m ² | ✓ | 2,3 m ² | ✓ |