

APPENDIX Q COMPASS CARD AND FAREGATES DESIGN INPUTS

- SkyTrain Design Manual, Upgrades Volume 1: Architectural, Design Principles and Standards: 7.0 Compass (14 pages)
- Cubic Hardware Specifications and Drawings
 - *Compass Vending Machine and Exit Ticket Machine Hardware Specification (43 pages)*
 - *Compass Vending Machine and Exit Ticket Machine Installation Drawings (6 pages)*
 - *Faregate Hardware Specification (38 pages)*
 - *Faregate Installation Drawings (10 pages)*
 - *Remote Standalone Validator Hardware Specification (22 pages)*
 - *Remote Standalone Validator Installation Drawings (2 pages)*
- RFID Record Drawings
 - *Proximity Enabled Access Entrances - Burrard Station (12 pages)*
 - *Proximity Enabled Access Entrances - Inlet Centre Station (17 pages)*
 - *Proximity Enabled Access Entrances – Mount Pleasant Street Station (24 pages)*
 - *Proximity Enabled Access Entrances - Sapperton Station (14 pages)*
 - *Proximity Enabled Access Entrances - Waterfront Station (Expo) (13 pages)*



7.0 COMPASS

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7.0 COMPASS

7.1 GENERAL

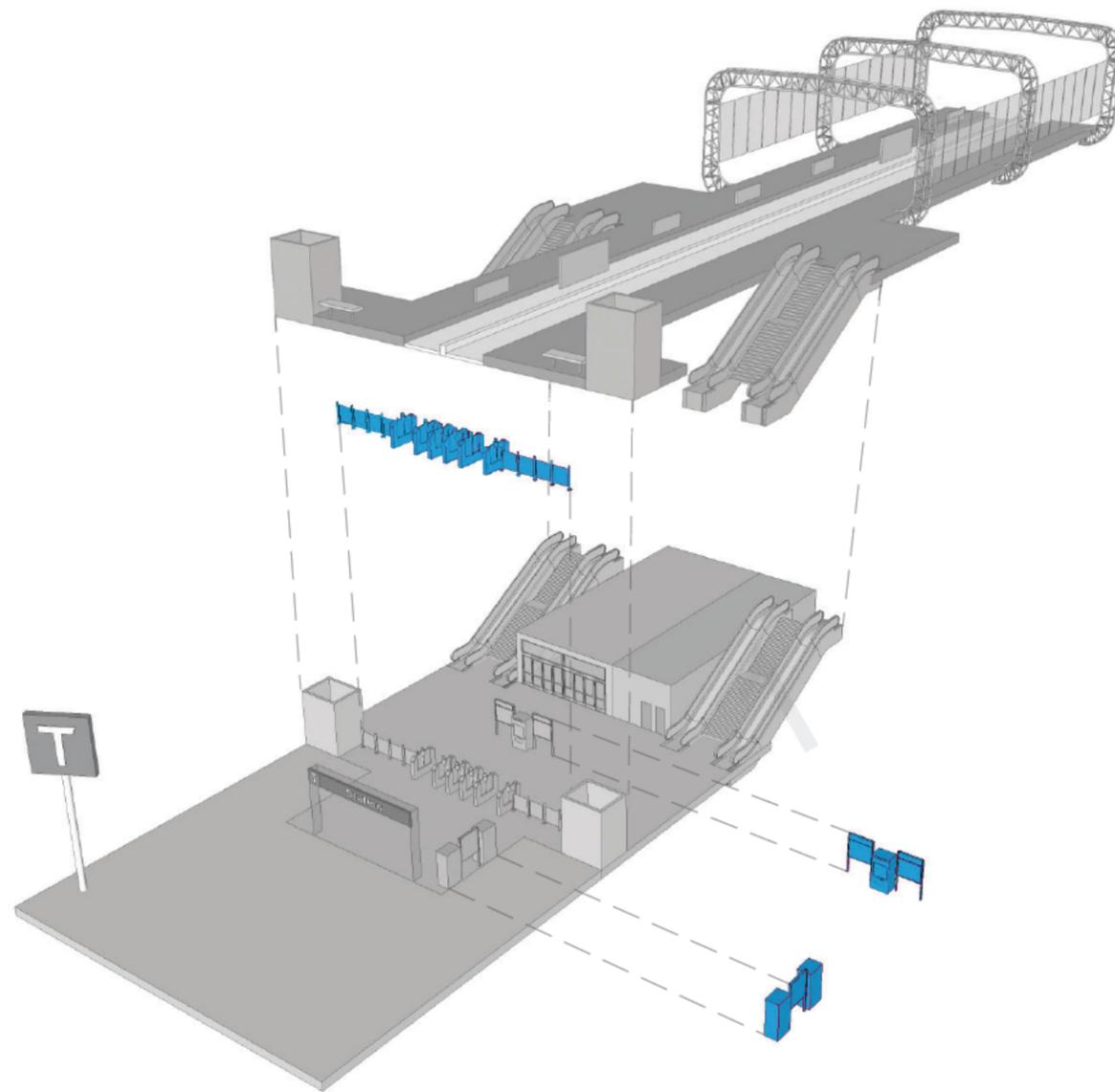
This section of the SkyTrain Design Manual (SDM U) describes the *Compass* program implemented throughout the *SkyTrain* system. This section is meant to assist station designers in incorporating the *Compass* program by describing its components and their location at stations.

As part of the Millennium Line Evergreen Extension, stations were specifically designed to accommodate the established *Compass* program, and are largely reflective of design guidelines noted in this section. Provisions for faregates were also incorporated into the designs of the original Millennium Line and Canada Line stations.

However, original Expo Line **EXPO** stations were constructed before the faregates were contemplated. Therefore, these stations are not designed to accommodate faregates with the exception of the Dunsmuir Street entrance at Granville Station. As a result, station constraints dictated sub-optimal faregate and *Compass* equipment configurations. Most stations had to be upgraded to accommodate *Compass* equipment.

To ensure universal accessibility, the *Compass* program uses Radio Frequency Identification (RFID) equipment that allows customers not able to tap (CNAT) their *Compass* cards to access *SkyTrain* independently.

Customers registered with the Universal Faregate Access Program are provided with cards that can automatically activate the RFID enabled accessible faregates once the customer is within a certain proximity to the equipment. When adding new accessible *Entrances*, or changing a previously unaccessible *Entrance* into an accessible one through the installation of new elevators, station designers shall incorporate RFID enabled accessible faregates as part of the project.



REFERENCES

External References

- » *Building Code*
- » TransLink Building Code Criteria (TLBCC)
- » TransLink Station Signage Design and Implementation Manual (SSDIM)

References in This Manual

- » Section 2.0 Station Design Principles
- » Section 3.0 Station Design Standards
- » Section 8.0 Signage
- » Section 11.0 Safety and Security
- » Appendix A5 - Definitive and Descriptive Drawings

7.2 COMPASS EQUIPMENT COMPONENTS

7.2.1 FAREGATES

Faregates are used for fare validation, controlled access, and formal delineation of the *Fare Paid Zone* of the station (see Section 7.3.1 for placement criteria related to faregates).

There are two faregate types:

1. Standard Faregate - general customer (see Figure 7.1)
2. Accessible Faregate - customers using mobility aids, or customers with strollers, bicycles, or luggage (see Figure 7.2).

Faregate installations shall meet the following requirements:

- » RFID enabled faregates shall be provided at every accessible station *Entrance*; and
- » Modification of existing station envelopes and existing equipment locations shall be minimized.



Fig 7.1 Example of a Standard Faregate



Fig 7.2 Example of an Accessible Faregate

7.2.1.1 Standard Faregate

Dimensions for a Standard Faregate (see Figure 7.3):

- » Cabinet width: 155mm
- » Cabinet length: 1300.5mm
- » Standard aisle Width: 622mm
- » *Surge Area*: 3000mm x Full Width (see Figure 7.21)

7.2.1.2 Accessible Faregate

Dimensions for an Accessible Faregate (see Figure 7.4):

- » Cabinet Width: 155mm
- » Cabinet Length: 1300.5mm
- » Accessible Aisle Width: 1079mm
- » *Surge Area*: 3000mm x Full width (see Figure 7.21)

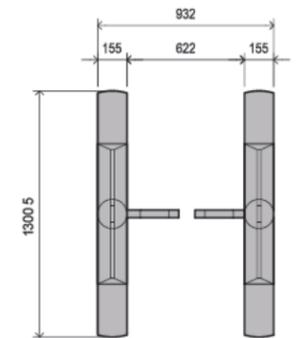


Fig 7.3 Typical Standard Faregate Detail Plan

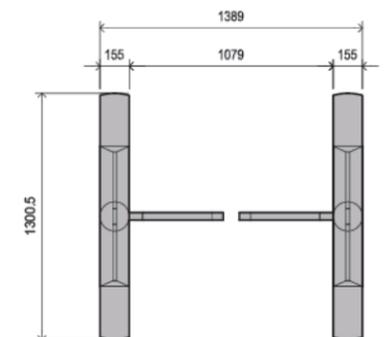


Fig 7.4 Typical Accessible Faregate Detail Plan

7.2 COMPASS EQUIPMENT COMPONENTS

7.2.1.3 Radio Frequency Identification (RFID) equipment

Accessible faregates leading to *platform* access via elevator (and vice versa), are equipped with Radio Frequency Identification (RFID) equipment that allows customers not able to tap (CNAT) their *Compass* cards to use *SkyTrain* independently. RFID related equipment includes the following:

- » Antenna(s), ceiling mounted above the accessible gate (see Figures 7.5-7.8);
- » Ethernet Cable (providing both power and data for the RFID equipment);
- » RFID Reader; and
- » Switch ((1 u rack of space) within the EER room).

There are two RFID equipment assembly types:

1. Bi-Directional RFID Equipment Assembly (see Figures 7.6, 7.8)
 - » Allows an accessible faregate to open in either direction; an
2. Uni-Directional RFID Equipment Assembly (see Figures 7.6, 7.8)
 - » Allows an accessible faregate to open in one direction;

RFID related equipment shall meet the following requirements (see section 7.3.1 for placement criteria, and see Appendix A5 Definitive and Descriptive Drawings A-107:

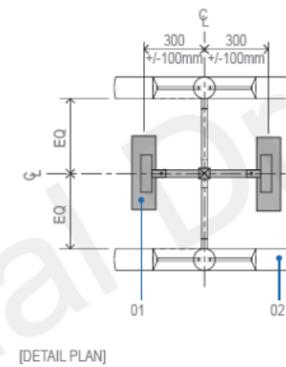
- » RFID antenna shall be mounted 300mm (+/- 100mm) offset from centreline of faregate (see Figures 7.7 and 7.8);
- » RFID antenna shall be mounted 100mm above adjacent *wayfinding* signage (see Figures 7.7 and 7.8);
- » RFID reader shall be located <10.0m from RFID antenna, and installed near, but not inside, the Electrical Equipment Room (EER); and
- » RFID antenna shall be angled 10°-45° in the direction of customer travel



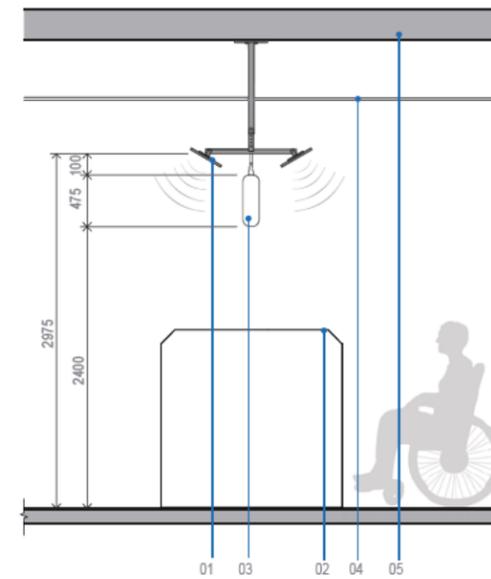
Fig 7.5 Example of Bi-Directional RFID Assemblies - RFID antennas are seen installed above the nearest and farthest faregate (outlined in red).



Fig 7.6 Example of Uni-Directional RFID Assemblies - RFID antennas can be seen installed and offset from each faregate (outlined in red).



[DETAIL PLAN]

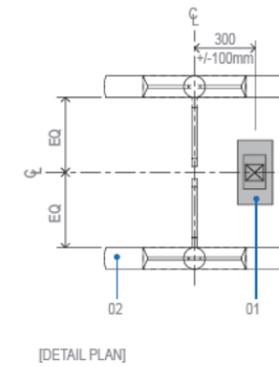


[DETAIL SECTION]

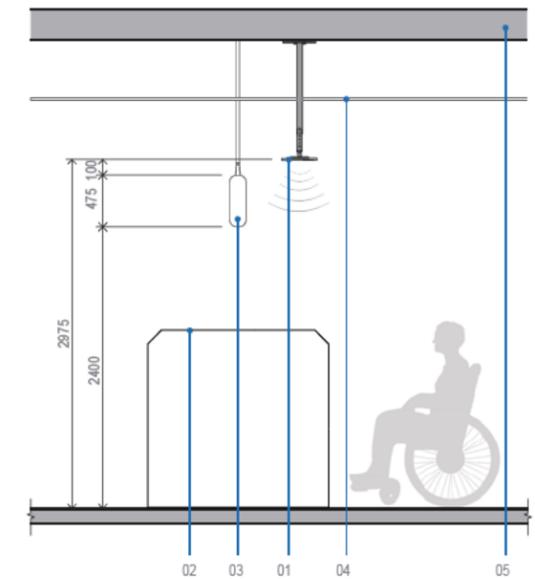
LEGEND

- | | |
|----------------------------------|------------------------------|
| 01 BI-DIRECTIONAL RFID ANTENNA | 04 FINISHED CEILING |
| 02 ACCESSIBLE FAREGATE | 05 PRIMARY STATION STRUCTURE |
| 03 REQUIRED SIGNAGE (WAYFINDING) | |

Fig 7.7 Typical Bi-Directional RFID Equipment Assembly Detail Plan and Section



[DETAIL PLAN]



[DETAIL SECTION]

LEGEND

- | | |
|----------------------------------|------------------------------|
| 01 UNI-DIRECTIONAL RFID ANTENNA | 04 FINISHED CEILING |
| 02 ACCESSIBLE FAREGATE | 05 PRIMARY STATION STRUCTURE |
| 03 REQUIRED SIGNAGE (WAYFINDING) | |

Fig 7.8 Typical Uni-Directional RFID Equipment Assembly Detail Plan and Section

7.2 COMPASS EQUIPMENT COMPONENTS

7.2.2 FARE PAID ZONE BARRIERS AND EQUIPMENT GATES

Fare Paid Zone Barriers and Equipment Gates serve as a barrier to secure off any portion of the *Fare Paid Zone* not already secured by faregates.

Fare Paid Zone Barriers and Equipment Gates shall meet the following requirements (see Figures 7.9 and 7.10, and see Section 7.3.2 for placement criteria):

- » One equipment gate shall be provided at every faregate array/to allow for maintenance and safety equipment access;
- » Where there is insufficient width at an existing station to accommodate both the faregate array and equipment gate, the after-hours door may serve as both the equipment gate and after-hours door, subject to such door meeting the minimum 1.10m equipment gate width requirement (see Figure 7.11);
- » Design and placement of barriers and equipment gates shall follow the *1.25m station module*, and have a clear dimension of 1.10m between stanchion supports (see Figure 7.11);
- » Stainless steel mounting assemblies shall be designed to attach to the concrete floor, and hold structural glass panels (see Figures 7.9 and 7.10);
- » Structural glass panels and equipment gate shall withstand the effects of gravity loads and the wind, seismic and guard loads on glass and guard rail in accordance with the *Building Code*;
- » Glass panels shall be non-laminated clear tempered with anti-graffiti film on both sides;
- » Equipment gates shall have TransLink branded wrap and yellow alert strip added to make the glass partitions visible and prevent customers from running into them accidentally; and
- » Stainless steel hardware shall be used for the equipment gate and include an in-ground and surface mounted bearing device and handrail furnished with a gate open/close sensing device and lock (to be opened by special tools only), complete with conduit and cabling connections backed to the Electronic Equipment Room (EER) within the station ancillary area (see Section 5.0 of this Manual for criteria related to the EER);



Fig 7.9 Example of a Fare Paid Zone Barrier

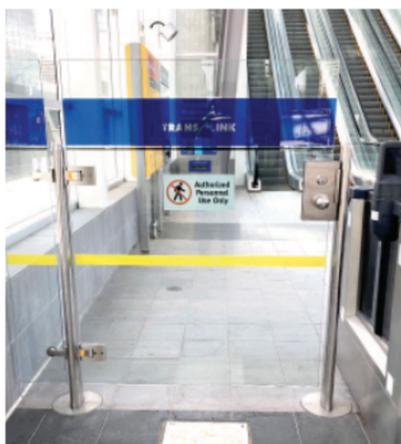


Fig 7.10 Example of an Equipment Gate

7.2 COMPASS EQUIPMENT COMPONENTS

7.2.2.1 Fare Paid Zone Barriers

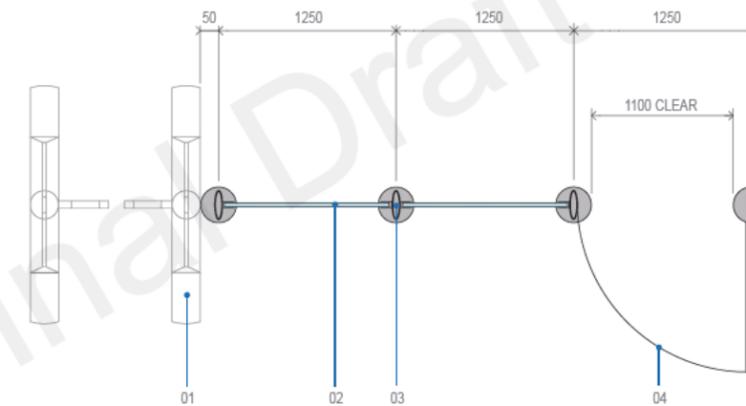
Dimensions for *Fare Paid Zone* Barriers (see Figure 7.11):

Typical Width (centre-to-centre):	1250mm
Glass guard height:	1800mm
Gap between floor and bottom of glass:	50mm-150mm
Gap between panels:	40mm-50mm
Gap barrier terminates perpendicular to faregate:	50mm
Gap where barrier runs parallel to faregate:	100mm

7.2.2.2 Equipment Gates

Dimensions for Equipment Gates (see Figure 7.11):

Width (typical):	1250mm
Clear width in open position:	1100mm
Height (same as <i>Fare Paid Zone</i> Barriers)	1800mm



[PLAN VIEW]

LEGEND

01 FAREGATE	03 STAINLESS STEEL STANCHION
02 STRUCTURAL GLAZING PANEL	04 GLAZED EQUIPMENT GATE

Fig 7.11 Typical Fare Paid Zone Barrier and Equipment Gate Detail Plan

7.2 COMPASS EQUIPMENT COMPONENTS

7.2.3 COMPASS VENDING MACHINES (CVMS) AND EXIT TICKET MACHINES (ETMS)

There are two ticketing machine types:

1. Compass Vending Machine (CVM) - *Non Fare Paid Zone* (see Figure 7.12)
2. Exit Ticketing Machine (ETM) - *Fare Paid Zone* (see Figure 7.13)

CVMS and ETMs shall meet the following requirements (see Section 7.3.3 for placement criteria related to CVMS, and Section 7.3.4 for placement criteria related to ETMs):

- » Information displayed on CAP and ETMI panels shall be confirmed by TransLink and shall provide up to date *Compass* program information;
- » CVM and ETM cabinets shall be oriented to minimize glare from direct sunlight, whenever possible;
- » CVM and ETM cabinets shall be securely bolted to the floor;
- » CVM and ETM cabinets shall have access for maintenance; and



Fig 7.12 Example of a Compass Vending Machine (CVM)



Fig 7.13 Example of an Exit Ticket Machine (ETM)

7.2.3.1 Compass Vending Machine (CVM)

Dimensions for a Compass Vending Machine (CVM) (see Figure 7.14):

- » Cabinet height: 880mm
- » Cabinet width: 914mm
- » Cabinet base depth: 673mm
- » *Surge area*: 1800mm x Full Width (see Figure 7.28)

7.2.4.2 Exit Ticketing Machine (ETM)

Dimensions for an Exit Ticketing Machine (ETM) (see Figure 7.15):

- » Cabinet height: 1880mm
- » Cabinet width: 914mm
- » Cabinet base depth: 673mm
- » *Surge area*: 1800mm x Full Width (see Figure 7.30)

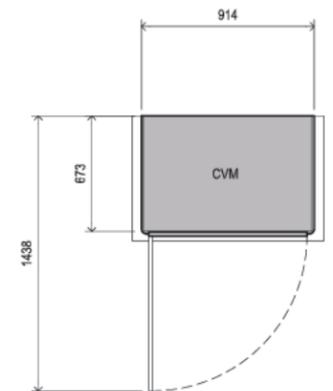


Fig 7.14 Typical Compass Vending Machine (CVM) Detail Plan

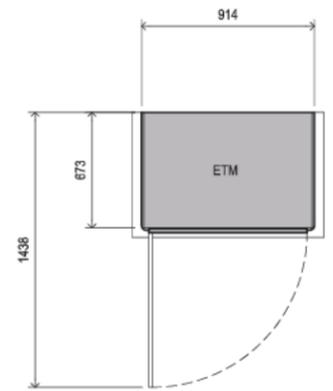


Fig 7.15 Typical Exit Ticket Machine (ETM) Detail Plan

7.2 COMPASS EQUIPMENT COMPONENTS

7.2.4 CUSTOMER ASSISTANCE PANELS (CAPS) AND EXIT TICKET MACHINE INFORMATION PANELS (ETMIS)

There are two panel types:

1. Customer Assistance Panel (CAP) - *Non Fare Paid Zone* (see Figure 7.16)
2. Exit Ticket Machine Information Panel (ETMI) - *Fare Paid Zone* (see Figure 7.17)

CAPs and ETMIs shall meet the following requirements (see Section 7.3.3 for placement criteria related to CAPs, and Section 7.3.4 for placement criteria related to ETMIs):

- » Information displayed on CAP and ETMI panels shall be confirmed by TransLink and shall provide up to date *Compass* program information; and
- » Design Specifications of the CAPs and ETMI panels are available in the TransLink Station Signage Design and Implementation Manual (SSDIM).



Fig 7.16 Example of a Customer Assistance Panel (CAP)



Fig 7.17 Example of a Exit Ticket Machine Information Panel (ETMI)

7.2.4.1 Customer Assistance Panel (CAP)

Dimensions for an CAP Panel (see Figure 7.18):

- » Cabinet height: 880mm
- » Cabinet width: 1100mm
- » Cabinet base depth: 235mm
- » Surge area: 1200mm x Full Width (see Figure 7.28)

7.2.4.2 Exit Ticket Machine Information Panel (ETMI)

Dimensions for an ETMI Panel (see Figure 7.19):

- » Cabinet height: 1880mm
- » Cabinet width: 1100mm
- » Cabinet base depth: 235mm
- » Surge area: 1200mm x Full Width (see Figure 7.30)

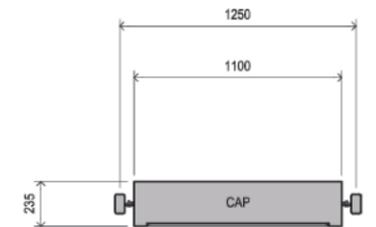


Fig 7.18 Typical Customer Assistance Panel (CAP) Detail Plan

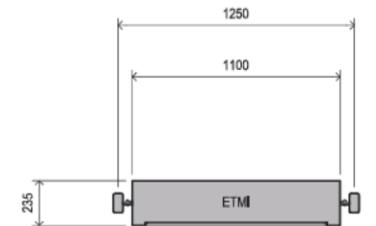


Fig 7.19 Typical Exit Ticket Machine Information Panel (ETMI) Detail Plan

7.3 COMPASS EQUIPMENT PLACEMENT

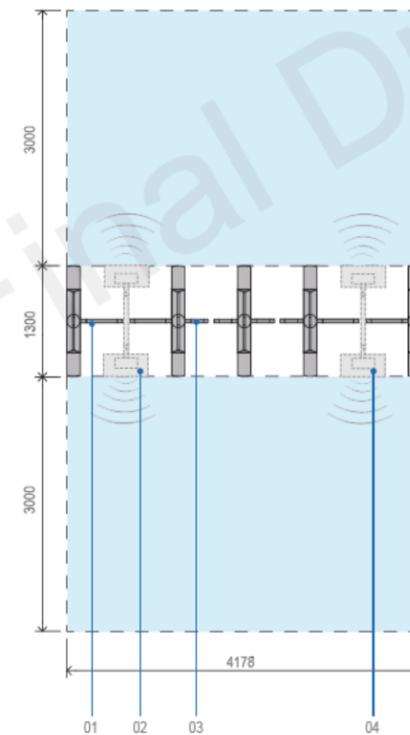
7.3.1 FAREGATE ARRAYS

There are three typical faregate array types:

1. Faregate Array Type 1 - Standard Bi-Directional (see Figure 7.21)
 - » Minimum two standard faregates/ two accessible faregates; and
 - » Accessible faregate(s) are equipped with bi-directional RFID antennas.
2. Faregate Array Type 2 - Standard Uni-Directional (see Figure 7.22)
 - » One standard faregate/ two accessible faregates; and
 - » Both accessible faregates are equipped with uni-directional RFID antennas.
3. Faregate Array Type 3 - Auxillary Entrance Uni-Directional (see Figure 7.23)
 - » Two accessible faregates; and
 - » Both accessible faregates are equipped with uni-directional RFID antennas.

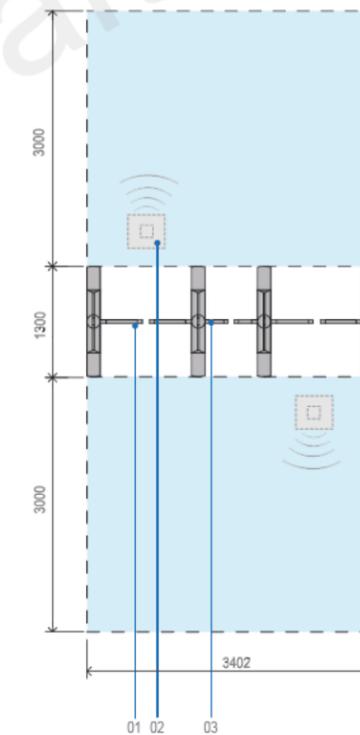


Fig 7.20 Example of Faregate Array Type 1 - Standard Bi-Directional
Metrotown Station, Expo Line



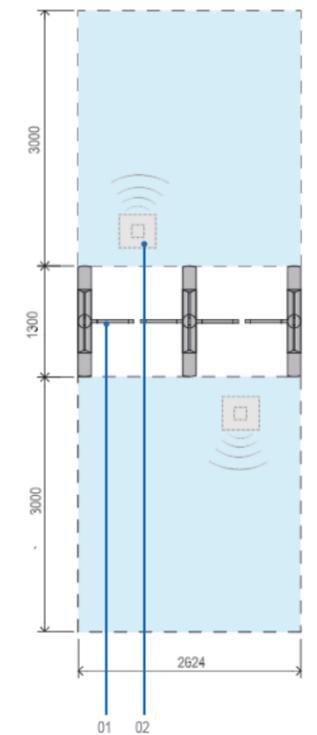
- LEGEND**
- 01 ACCESSIBLE FAREGATE
 - 02 BI-DIRECTIONAL RFID ANTENNA
 - 03 STANDARD FAREGATE
 - 04 ADDITIONAL BI-DIRECTIONAL RFID ANTENNA (SEE SECTION 7.3.1 FOR REQUIREMENT CRITERIA)

Fig 7.21 Typical Faregate Array Type 1 - Standard Bi-Directional Plan



- LEGEND**
- 01 ACCESSIBLE FAREGATE
 - 02 UNI-DIRECTIONAL RFID ANTENNA
 - 03 STANDARD FAREGATE

Fig 7.22 Typical Faregate Array Type 2 - Standard Uni-Directional Plan



- LEGEND**
- 01 ACCESSIBLE FAREGATE
 - 02 UNI-DIRECTIONAL RFID ANTENNA

Fig 7.23 Typical Faregate Array Type 3 - Auxillary/ Elevator Only Entrance Plan

7.3 COMPASS EQUIPMENT PLACEMENT

7.3.1.1 General

Faregate arrays shall meet the following requirements:

- » A minimum faregate array of one standard faregate and two accessible faregates shall be provided for each station entry portal (see Figure 7.22);
- » Faregate arrays shall be located in close proximity to the station entry portal(s), in order to minimize the area of the *Ticket Concourse* not within the *Fare Paid Zone* (see Figures 7.31-7.32);
- » A single faregate array serving both *platforms* shall be located at each station *Entrance*, whenever possible. However, separate faregate arrays for each station *platform* is acceptable;
- » All faregate arrays shall provide two accessible faregates to ensure universal access to and from the station is always available (see Figures 7.21-7.23);
- » At station auxiliary entrances, (i.e. station elevator access remote from the primary access point to the station (Burrard Station, Scott Road Station)), two accessible faregates shall be provided, and the faregate array shall be located to ensure no overlap of the faregate array *surge area* and the elevator *surge area* (see Figure 7.23);
- » A minimum *surge area* of 3.0m, running the full width of the faregate array shall be provided on both the *Fare Paid Zone* and *Non Fare Paid Zone* of the faregates (see Figures 7.21-7.23, and 7.31-7.32);
- » *Surge areas* for faregates shall not overlap the *surge areas* of other *Compass* equipment, that of the station entry portal, other *vertical circulation* components, station furniture or equipment;
- » Given that faregates are typically associated with a station's emergency *egress* route, all faregate arrays shall conform to the code criteria set out in Section 2.4.5.5 of the *TLBCC*;
- » Location of faregate arrays shall not compromise *CPTED* principles such as maintaining clear sight lines and avoiding the creation of hidden spaces (see Section 11.0 of this manual for *CPTED* principles); and
- » Faregates shall be located within the station envelope and fully weather protected.

7.3.1.2 Capacity / Customer Flow

- » Faregate array capacity calculations are to be based on pedestrian modelling of the 2045 peak period volumes based on normal (bi-directional) operating scenarios;
- » Placement of faregates shall reinforce the direct flow of customers to/from *platforms* and shall reinforce the logical sequence of station zones;
- » Placement of faregates shall reinforce *right-hand rule* circulation of customers; and
- » Provision of faregates shall not result in 180° turning movements of customers.

7.3.1.3 RFID Assembly Placement

- » The minimum faregate array size for implementing bi-directional RFID equipment is two accessible faregates separated by two standard faregate (see Figure 7.21);
- » The maximum faregate array size for implementing uni-directional RFID equipment is two accessible faregates separated by one standard faregate (see Figure 7.22);
- » Where two accessible gates are in a side by side condition, both accessible faregates shall be uni-directional RFID enabled (see Figure 7.23);
- » RFID enabled accessible faregates are not required at *Entrances* not leading to elevator access (i.e. Stadium Chinatown Station South East entrance); and
- » RFID enabled accessible faregates are required under the following conditions:
 - » At a *Ticket Concourse* accessed by only one faregate array, both accessible gates shall have bi-directional RFID equipment installed to ensure access if one set of RFID equipment is out of service;
 - » At a *Ticket Concourse* accessed by more than one faregate array, each gate array shall have one accessible gate enabled with bi-directional RFID equipment (see Figure 7.21); and
 - » Where two accessible gates are located directly beside each other (i.e. at auxiliary *Entrances*), both accessible gates shall have uni-directional RFID equipment installed, following the right-hand-rule (see Figure 7.23).

7.3 COMPASS EQUIPMENT PLACEMENT

7.3.2 FARE PAID ZONE BARRIERS AND EQUIPMENT GATES

- » *Fare Paid Zone* barriers shall be adjacent to the faregate array to cut off any open access space that remains between the *Fare Paid Zone* and *Non Fare Paid Zone*;
- » The placement of faregate array and zone barriers shall consider future expansion of faregates. Initial faregate placement shall be calibrated to allow for maximum future expansion within the allotted space by considering faregate cabinet widths; and
- » Equipment gate shall be installed in *Fare Paid Zone* barrier module furthest from faregate array to allow for future expansion of faregates (see Figure 7.25).



Fig 7.24 Example of Future Faregate Expansion Planning 1

Fare Paid Zone Barriers and Equipment Gate are calibrated for future expansion of faregates.

Joyce-Collingwood Station, Expo Line

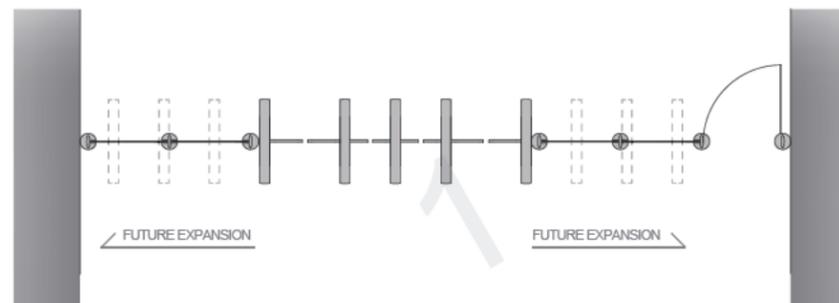


Fig 7.25 Example of Future Faregate Expansion Planning 2

Fare Paid Zone Barriers and Equipment Gate are calibrated for future expansion of faregates.

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7.3 COMPASS EQUIPMENT PLACEMENT



Fig 7.26 Example of a Compass Vending Machine (CVM) and Customer Assistance Panel (CAP) Array



Fig 7.27 Example of a Customer Assistance Panel (CAP) with Customer Information Panel (CIP) Array

7.3.3 COMPASS VENDING MACHINE AND CUSTOMER ASSISTANCE PANEL ARRAYS (NON FARE PAID ZONE)

The placement of CVM and CAP arrays shall meet the following requirements:

- » The minimum CVM and CAP array shall contain two Compass Vending Machines and one Customer Assistance Panel (CAP) (see Figures 7.26 and 7.28);
- » CVMs and CAPs shall be located within the entrance vestibule and close to the station entry portal, outside the *Fare Paid Zone* (see Figures 7.31-7.32);
- » CAPs with information telephone shall be installed outside the *Fare Paid Zone* next to the CVMs, provided that:
 - » Where space permits, a CAP shall be grouped with the *Customer Information Panel* array (CIPs), next to CVMs (see Figure 7.27); and
 - » Where *Entrance* layout requires separate banks of CVMs, a CAP shall be located next to each bank of CVMs.
- » CVM and CAP arrays shall be located on the *right hand* side of the Entrance vestibule, following *right hand rule* placement, and relative to direction of customer flow moving in the direction of station *platforms* (see Figures 7.31-7.32);
- » CVM and CAP arrays shall be located within the station envelope and fully weather protected;
- » If CVMs and CAP arrays must be located outside of the station envelope, they shall be secured by a separate enclosure that allow lock down of equipment after station operating hours;
- » CVM and CAP arrays shall be located away from station glazing whenever possible, in order to follow *CPTED* principles (see Section 11.0 of this manual for *CPTED* principles); and
- » A waste receptacle shall be placed adjacent to each CVM and CAP array (see Section 6.0 of this manual for waste receptacle design criteria).

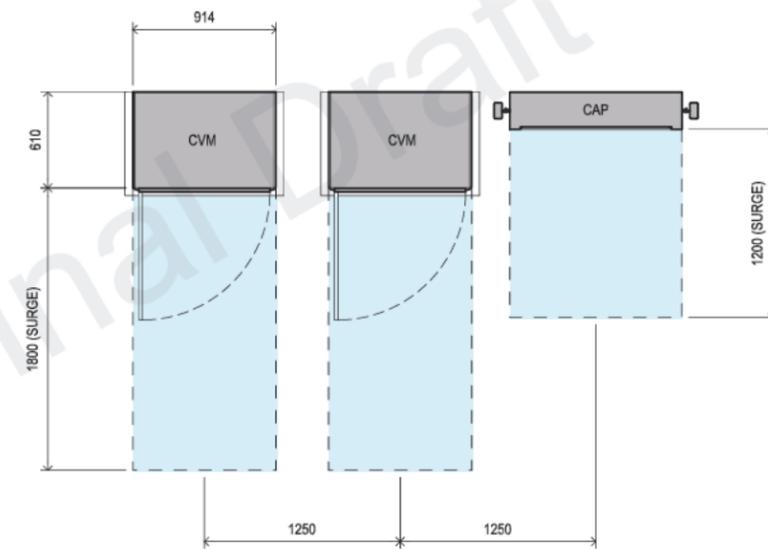


Fig 7.28 Typical Compass Vending Machine (CVM) and Customer Assistance Panel (CAP) Array Detail Plan

7.3 COMPASS EQUIPMENT PLACEMENT



Fig 7.29 Example of an Exit Ticket Machine (ETM) and Exit Ticket Machine Information Panel (ETMI) Array

7.3.4 EXIT TICKET MACHINE (ETM) AND EXIT TICKET MACHINE INFORMATION PANEL ARRAYS (FARE PAID ZONE)

The placement of ETM and ETMI arrays shall meet the following requirements:

- » The minimum Exit Ticket Machine (ETM) array shall contain one Exit Ticket Machine (ETM) and one Exit Ticket Machine Information panel (ETMI) (see Figures 7.29 and 7.30).
- » ETM and ETMI arrays shall be located within the *Ticket Concourse*, inside the *Fare Paid Zone*, and preferably near the faregate array (see Figures 7.31-7.32);
- » ETM and ETMI array placement shall be located on the right hand side of the Ticket Concourse, following *right hand rule* placement, and relative to direction of customer flow moving in the direction of station exit(s);
- » ETM and ETMI arrays shall be located away from station glazing whenever possible, in order to follow *CPTED* principles (see Section 11.0 of this manual for *CPTED* principles); and
- » A waste receptacle shall be placed adjacent to each ETM and ETMI array (see Section 6.0 of this manual for waste receptacle criteria).

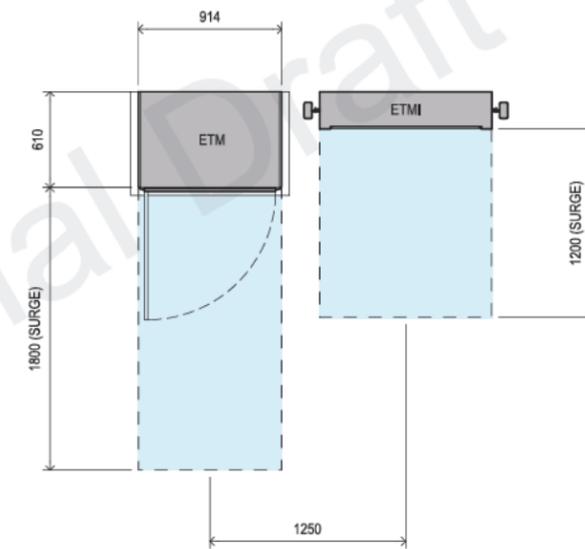
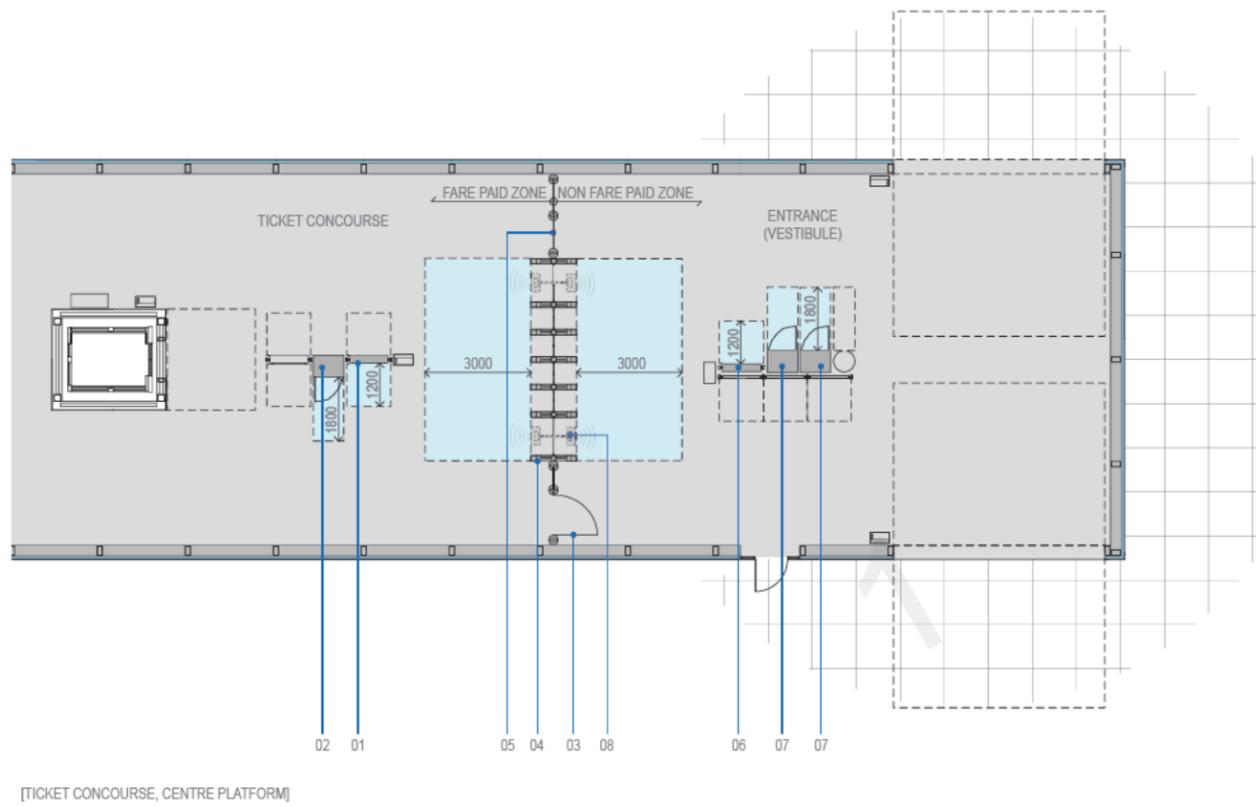


Fig 7.30 Typical Exit Ticketing Machine (ETM) and Exit Ticket Machine Information (ETMI) Array Detail Plan

7.3 COMPASS EQUIPMENT PLACEMENT

7.3.5 COMPASS EQUIPMENT PLACEMENT PLANS

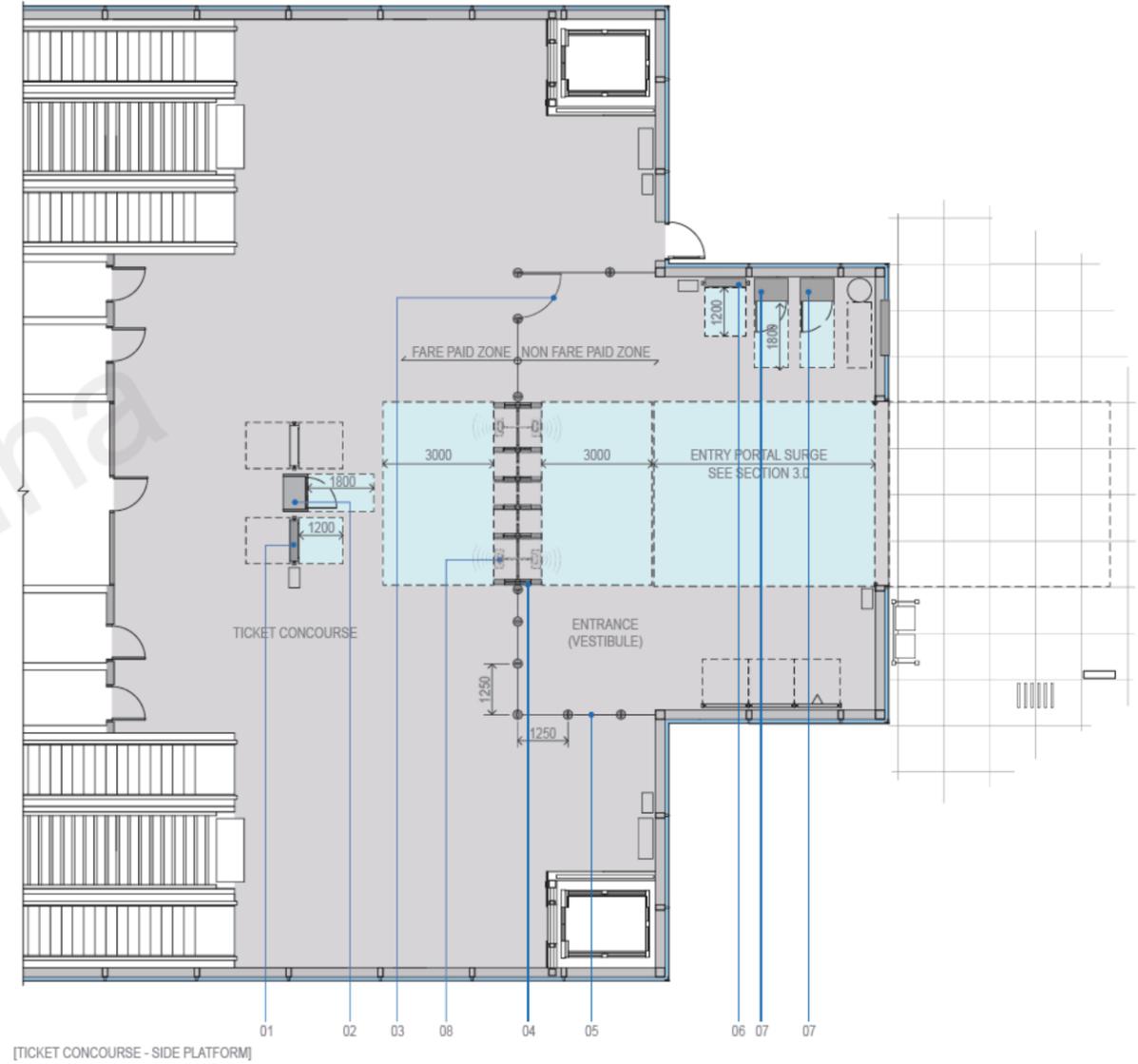


[TICKET CONCOURSE, CENTRE PLATFORM]

LEGEND

- | | | |
|---|------------------------------------|---|
| 01 EXIT TICKET MACHINE INFORMATION PANEL (ETMI) | 04 FAREGATE ARRAY | 07 COMPASS VENDING MACHINE (CVM) |
| 02 EXIT TICKET MACHINE (ETM) | 05 FARE PAID ZONE BARRIER | 08 BI-DIRECTIONAL RFID ANTENNA ASSEMBLY (ABOVE) |
| 03 EQUIPMENT GATE | 06 CUSTOMER ASSISTANCE PANEL (CAP) | SURGE AREA |

Fig 7.31 Typical Compass Equipment Location Plan - Ticket Concourse (Centre Platform)



[TICKET CONCOURSE - SIDE PLATFORM]

LEGEND

- | | | |
|---|------------------------------------|---|
| 01 EXIT TICKET MACHINE INFORMATION PANEL (ETMI) | 04 FAREGATE ARRAY | 07 COMPASS VENDING MACHINE (CVM) |
| 02 EXIT TICKET MACHINE (ETM) | 05 FARE PAID ZONE BARRIER | 08 BI-DIRECTIONAL RFID ANTENNA ASSEMBLY (ABOVE) |
| 03 EQUIPMENT GATE | 06 CUSTOMER ASSISTANCE PANEL (CAP) | SURGE AREA |

Fig 7.32 Typical Compass Equipment Location Plan - Ticket Concourse (Side Platform)

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