Greater Toronto Airports Authority

Working near the Automated People Mover

Safety Protocol

Document No: G02 - FM-APM-0002
Version 6.7 May 20, 2015

Toronto Pearson International Airport

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Version Control

Version	Date	Changes	Prepared by	Approved by
1.0	June 14, 2006	First publication	Jana Schmidt	Iouri Moutine
5.6	November 13, 2013	Updated for organizational changes within the GTAA and interfaces with Union-Pearson Express train service. Complete revision record moved to separate document.	Jill Smith	Iouri Moutine
5.7	November 3, 2014	Updated job titles: ▪ Manager, People Moving Devices ▪ Specialist, People Moving Devices In 2.3.4.1, removed photo taken during construction. Updated Chapter 3 per new Toronto Pearson Construction Activity form. This form replaces Shutdown Request Form FM-MDC-0009. Revised danger zone illustrations for DZ-UP-9.1, 9.2, 9.3, 18 and 19 per completed guideway of Union-Pearson Express train.	Jill Smith, Manufact Technical Writing Inc.	Iouri Moutine
5.8	January 15, 2015	Revised per *RC-20141118-Working Near the APM_2013-11-21 UP comments.pdf* and review meeting on January 12, 2015. Changes listed below to save space.	Jill Smith, Manufact Technical Writing Inc.	Iouri Moutine

- Global change: Changed UPE to UP or UP Express.
- Section 1.3, bullet on Page 2: maintenance worker “on the APM”
- Section 1.5: Added bullet for “Transport Canada - Regulator, Code Compliance (UP Express).” In Union-Pearson Express bullet, added “(i.e., major activities that extend, project or encroach on the APM dynamic envelope)”.
- Section 2.2.1: Changed 4.9% reference to “sloped walkway”.

Version	Date	Changes	Prepared by	Approved by
5.8 (cont'd)	January 15, 2015	Revised per *RC-20141118-Working Near the APM_2013-11-21 UP comments.pdf* and review meeting on January 12, 2015. Changes listed below to save space.	Jill Smith, Manufact Technical Writing Inc.	Iouri Moutine

- Section 3.2: Added UP work categories CAT I, II, III, IV.
- Section 3.10: Added note re safety orientation for UP in sign-off sheet.
- Appendix A: Changed UPE to UP in danger zone illustrations.
- In section A.3 Guideway/Train Danger Zone Illustrations):
  - 1. Aerial Overview: DZ-9 is now green.
  - APM and UP Guideways from APM Pier P24 to UP Pier P370: DZ-9 is now green.
- In section A.7 (Pearson Station Danger Zone illustrations):
  - 2. Pearson Station, Platform Level View: DZ-9, DZ-9.3, T1-UP-18 and T1-UP-19 (including blue light stations) are now green.
  - 5. Pearson Station, North Cross Section and 6. South Cross Section: T1-UP-17.1, T1-UP-18, T1-UP-19 are now green. T1-UP-18, T1-UP-19 are now below canopy (was limited to below parapet).
  - 7. Pearson Station, Longitudinal West View: T1-UP-19 and 21 green. T1-UP-19 below canopy.
  - 8. Pearson Station, Longitudinal East View: T1-UP-18 and 20 green. T1-UP-18 below canopy.

5.9	January 19, 2015	Minor revisions per review meeting with Iouri Moutine and Pawel Trzeciecki.	Jill Smith, Manufact Technical Writing Inc.	Iouri Moutine
6.0	January 28, 2015	On pages 11 and 12, changed "UPE" to "UP" in illustrations (barrier between APM and UP and train dynamic envelope. On page 13, updated two photos of warning sign locations. In Appendix A, revised description of danger zones DZ-8, DZ-9, DZ-UP-9.1, DZ-UP-9.2, UP-9.3, DZ-UP-13, and DZ-UP-17.1. Updated danger zone illustrations on pages 38, 39, and 61-67. Revisions per Iouri Moutine and Pawel Trzeciecki.	Jill Smith, Manufact Technical Writing Inc.	Iouri Moutine

Version	Date	Changes	Prepared by	Approved by
6.1	February 1, 2015	Changes listed below to save space.	Jill Smith, Manufact Technical Writing Inc.	Iouri Moutine

Revised the following sections per Iouri Moutine.

- 1.1: Removed sentence “This document also identifies danger zones between APM….”
- 1.5 bullet: “Metrolinx, an agency of the Government of Ontario under the Metrolinx Act, 2006, was created to improve the coordination and integration of all modes of transportation in the Greater Toronto and Hamilton Area.”
- 1.6: Corrected “Supervisory” in SCADA description.
- 2.3.6.1(comment only): Need updated pictures from Pawel Trzeciecki and DCC.
- 3.3: Corrected “instruction activities” to “construction activities”.

  3.3: Clarification for on-line form: “The on-line GTAA form has a workflow built into it. The form is routed to the appropriate parties, according to the information provided by the requestor.

3.10: Removed note regarding helmet stickers for UP. Protocol for UP to be discussed further with Matt Metcalfe.

6.2	February 19, 2015	In section 2.1.3, updated UP pier numbers per e-mail from Grant McGrath, GO Transit. P370 = P369 and so on.	Jill Smith, Manufact Technical Writing Inc.	Iouri Moutine
6.3	February 20, 2015	Changes per group review with UP and GTAA representatives. In section 2.1.2.1, removed “(some…not on airport)”. Changed number of trains from 2 to “2 to 3”. Changed operational train speed. In Appendix A, changed text “P370” to “P369”.	Jill Smith, Manufact Technical Writing Inc.	To be completed and issued for review.

Version	Date	Changes	Prepared by	Approved by
6.4	February 25-27, 2015	Changes listed below to save space.	Jill Smith, Manufact Technical Writing Inc.	Issued for review.

- Moved Contact List after 1.5 Roles and Responsibilities to improve flow. Acronyms now fit on one page. In contact table, removed email for maintenance planning per Nicole Marjerrison.
- In acronyms table, removed Toronto Pearson Construction Activity Request Form. Added FOD, TWP, and MO CTS.
- In section 3.3, removed images of Toronto Pearson Construction Activity Request form per Iouri Moutine. Per Maxx Kochar, this form is subject to change and a new GTAA workflow is being developed to coordinate operational approvals.
- In section 3.4 Emergency Work, edited steps and removed phone numbers per Nicole Marjerrison. Per comment from Nicole Marjerrison, changed “significant amount of time” to “11 minutes”, per section 1.6 flow chart in APM Bussing Contingency Plan Version 14 Updated November 5, 2013.
- In section 3.5, removed step 3 “Call AOC to advise that work has been completed” and deleted “and/or GTAA” from warning per Nicole Marjerrison.
- **Recommendation: Remove specific procedures and processes related to work requests from Working near the APM - they are documented elsewhere, subject to continuing development, change without notice, and are owned by others within the GTAA.**
- In Appendix A illustrations:
  - changed instances of text “P370” to “P369”.
  - changed UP notation in legends to “Coordination required with UP Express and GTAA”.
  - changed orange to light orange colour to make it stand out.
  - removed colours in legend not shown in illustrations.
- In A1.7, listed orange as a legend colour.
- In A3. Guideway/Train Danger Zone Drawings:
  - 1. Aerial overview of the APM system: Changed DZ-9 area and outline of Pearson Station to orange. Updated legend.
  - 2. APM and UP Guideways from APM Pier P24 to UP Pier P369: Changed DZ-9 area and outline of Pearson Station to orange. Changed DZ-12 to red to match DZ-12 photo/illustration. Updated legend.
  - 3. Danger Zones DZ-9, DZ-UP-9.1, DZ-UP-9.2, DZ-UP-9.3, and DZ-UP-12: Added legend.
  - 7. DZ-13: Updated legend.

Version	Date	Changes	Prepared by	Approved by
▪ In A7. Pearson Station Danger Zone Drawings: ▪ 1. Aerial View – Detail T1-UP-17.1 (Roof): Changed colour of DZ-9 area and outline of Pearson Station to orange. Updated legend. ▪ 2. Platform Level: Changed colour of DZ-9, DZ-UP-18 and DZ-UP-19 areas to orange. Updated legend. ▪ 3. Mid Level: Corrected title block label. Updated legend. ▪ 4. Concourse Level: Updated legend. ▪ 5. North Cross Section and 6. South Cross Section: Made DZ-9.1 and 9.2 sliver of red. Made area above UP canopy orange. Updated legend. ▪ 7. Longitudinal West and 8. Longitudinal East: Changed colour of areas DZ-UP-19, 21, 18 and 20 to orange. Updated legend. Changed “P370” to “P369”. End of list of changes for v6.4.				
6.5	April 20, 2015	Updated pier graphics on page 2.1.3 and A.3 (page 38) per Pawel Trzeciecki.	Jill Smith, Manufact Technical Writing Inc.	Issued for review.
6.6	May 4, 2015	In section 2.3.6 Danger Zone Warning Signs, updated signage photos per Iouri Moutine.	Jill Smith, Manufact Technical Writing Inc.	Issued for review.
6.7	May 20, 2015	In section 2.3.6 Danger Zone Warning Signs, added more signage photos and removed the following listings per Iouri Moutine: ▪ T1 arrivals ramp (from 409) below APM guideway on both sides of the ramp (3 on each side) ▪ UP overpass; inside the UP guideway on concrete parapet on both sides (4 signs on each side) ▪ T1 arrivals ramp from T3 below APM guideway on both sides of the ramp (2 signs on each side)	Jill Smith, Manufact Technical Writing Inc.	Issued for review.

Conventions

This document uses the following conventions.

In an Emergency: Emergency instructions appear in these tables to detail what needs to be done or what needs to be avoided while an emergency situation is in progress.

An emergency is an event that poses an immediate threat to life safety.

Warning: Warning instructions appear in these tables to detail what needs to be done or what needs to be avoided when there is a risk of personal injury or damage to equipment or facilities.

Note: Notes appear in these tables to convey important information, which does not involve the potential for personal injury or damage to equipment or facilities.

CONTENTS

CHAPTER

1

Introduction

1.1 About this Document

This document contains critical information about the inter-terminal train service (Automated People Mover or APM) currently in operation at Toronto Pearson International Airport.

The following chapters identify critical safety procedure, hazardous zones surrounding the APM system, and dangers associated with working near the APM.

1.2 Objective of this Document

This document establishes a mandatory safety protocol for all individuals who require access to areas near the APM and UP trains, stations, and guideways.

Warning: Working near the APM system without adhering to this safety protocol and specific safety precautions may be harmful or fatal, given its automatic operation, elevated design, 600-volt live rail, speed, quiet operation, and close proximity to the Union-Pearson Express (UP) train.

1.3 Who Should Use this Document

This document is intended for anyone who may have a need and right to perform work in the vicinity of the APM. The procedures outlined herein are mandatory for all individuals working near the APM system, without exception.

Examples include, but are not limited to, the following:

- construction contractors and sub-contractors
- GTAA employees: AOC, Maintenance Planning, maintenance staff, APTS Engineering, APTS Maintenance
- all businesses in close proximity to the APM
- Sheraton Gateway Hotel
- maintenance workers
- municipal workers (such as Region of Peel, City of Mississauga etc.)
- Union-Pearson Express and its contractors

Examples of work that may require access to APM danger zones include the following:

- exterior washing of stations and adjacent buildings
- relamping activities near the APM guideways
- maintenance work on or near APM equipment, including maintenance bays, equipment rooms, fire alarm systems, sprinkler systems, electrical equipment, lighting, and bird netting
- snow removal processes around, near, or directly beneath the APM guideways
- pavement and grounds work involving overheight vehicles or equipment that may come in contact with the APM vehicles or guideways
- maintenance or installation of signs located around the APM vehicles and guideways
- testing, commissioning, trials, inspections and audits
- installation of signs and advertising
- coordination between work and operation
- tours

1.4 How to Use this Document

This document is designed to be read sequentially, meaning that chapters should be read thoroughly in the order that they are presented. It is important that all chapters are reviewed before attempting procedures so that the terminology and references used are fully understood.

The document describes the APM system, danger zones, and procedures for accessing any area near the APM system.

1.5 Roles and Responsibilities

- GTAA Airport Planning and Technical Services (APTS) - Owner of Contract
  - Director, Terminal Infrastructure - GTAA Oversight
  - Manager, People Moving Devices - GTAA Oversight
  - Specialist, People Moving Devices - Day-to-Day Operation Liaison with Doppelmayr and Union-Pearson Express, Update APM Protocols and documentation set/internal GTAA Mechanical Systems web portal.
- APM Operator - Operation and Maintenance of the APM
- TSSA – Regulator, Code Compliance.
- Union-Pearson Express and sub-contractors - Operate and maintain UP train service, train, train station (Pearson Station) and guideway. Coordinate major activities that extend, project or encroach on the APM dynamic envelope with the GTAA.
- Metrolinx, an agency of the Government of Ontario under the Metrolinx Act, 2006, was created to improve the coordination and integration of all modes of transportation in the Greater Toronto and Hamilton Area.
- Transport Canada - Regulator, Code Compliance (UP Express).

1.6 Contact List

This section summarizes contact information in this document.

Name	Contact	Regarding
Specialist, People Moving Devices	ShutdownsAPM@gtaa.com	▪ requests for more information ▪ critical work notices ▪ shutdown requests
Airport Operations Control (AOC)	416-776-3055 (Operations)	▪ critical work notices ▪ shutdown requests ▪ Immediate unscheduled maintenance requests
Airport Operations Control (AOC)	416-776-3033 (Emergency)	▪ emergency response (fire, police, medical)

1.7 Acronyms

The following acronyms and initialisms are used in this document.

Acronym	Meaning
AOC	Airport Operations Control
APM	Automated People Mover. Inter-terminal train service owned by the Greater Toronto Airports Authority and operated by APM Operator.
APTS	Airport Planning and Technical Services Department, Greater Toronto Airports Authority
DCC	Doppelmayr Ltd. (APM Operator)
DZ-#	Danger zone around Automated People Mover (APM) guideway and train
DZ-UP-#	Danger zone around Union-Pearson Express (UP) guideway and train
UP Express	Union-Pearson Express
FAP	Facility Alteration Permit (issued by Construction Control Office)
FOD	Foreign Object Debris
GTAA	Greater Toronto Airports Authority
HVAC	Heating, Ventilation, and Air Conditioning
LINK	Inter-terminal train and bus service operated by the GTAA
MO	Manager, Operations, GTAA
MO AVS	Manager, Operations, Aviation Services, GTAA
MO CTS	Manager, Operations, Customer and Terminal Services, GTAA
P#	Pier number for guideway support structures
R#	Request number for shutdown request
SCADA	Supervisory Control and Data Acquisition
T1	Terminal 1, Toronto Pearson International Airport
T1-#	Danger zone around Terminal 1 Station (Automated People Mover)
T1-UP-#	Danger zone around Pearson Station (Union-Pearson Express)
T3	Terminal 3, Toronto Pearson International Airport
T3-#	Danger zone around Terminal 3 Station (Automated People Mover)
TSSA	Technical Standards and Safety Authority
TWP	Terminal Work Permit
UP	Union-Pearson Express. Train service between Union Station (Toronto) and Pearson Station (Toronto Pearson International Airport, Terminal 1).

Acronym	Meaning
VS-#	Danger zone around Viscount Station (Automated People Mover)

CHAPTER

2

APM System Overview and Danger Zones

2.1 APM System Overview

The APM system is a cable liner shuttle that includes two fully automatic train systems with two distinct guideways and drive systems. The trains are propelled by a haul rope (cable) with all required drive and return machinery units.

Warning: Working near the APM system without adhering to specific safety precautions may be harmful or fatal, given its automatic operation, elevated design, 600-volt live rail, speed, quiet operation, and close proximity to the Union-Pearson Express (UP) train.

2.1.1 APM Stations

The APM system links the following three stations at Toronto Pearson:

- Viscount Station, located at the north end of the GTAA Value Park Lot, and connected to the Value Park Garage by the pedestrian bridge. The ALT Hotel is located near the southeast corner of Viscount Station.
- Terminal 3 Station, located between Terminal 3 and the Sheraton Gateway Hotel
- Terminal 1 Station, located between Terminal 1 and the Terminal 1 parking garage. Terminal 1 Station also provides access to Pearson Station and the Union-Pearson Express train service.

2.1.1.1 APM Technical Specifications

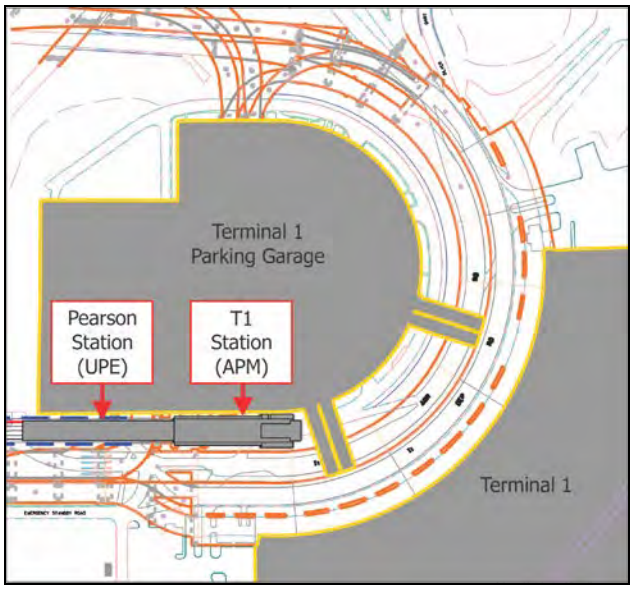
Component	Description
APM Guideway Length (from stopping point at Viscount Station to stopping point at T1 Station)	System 1: 1422 m (Terminal 1 side) System 2: 1411 m (Terminal 1 Parking Garage side)
Number of stations	3 (Viscount, Terminal 3, Terminal 1)
Configuration	dual-track system
Trains	2 trains (7 vehicles per train)
Operating Time	24 hours per day, 7 days per week
Capacity of single train shuttle with 25 passengers/vehicle (0.33m^2/passenger)	Approx. 1272 pphpd* *passengers per hour, per day
Maximum Operating Speed	43.2 km/h (12 m/s; 26.84 mph)*
Acceleration/Deceleration Speed	1.8 km/h (0.49 m/s; 1.09 mph)
Guideway	elevated steel tube truss

2.1.2 Pearson Station

For more information, visit UPExpress.com.

The diesel-powered Union-Pearson Express (UP) train service from Union Station terminates at Pearson Station. The Union-Pearson Express train service is operated by Union-Pearson Express, a division of Metrolinx.

Pearson Station is located at Terminal 1. Guests walk through the Terminal 1 APM Station on a sloped walkway to Pearson Station.



Pearson Station

2.1.2.1 UP Technical Specifications

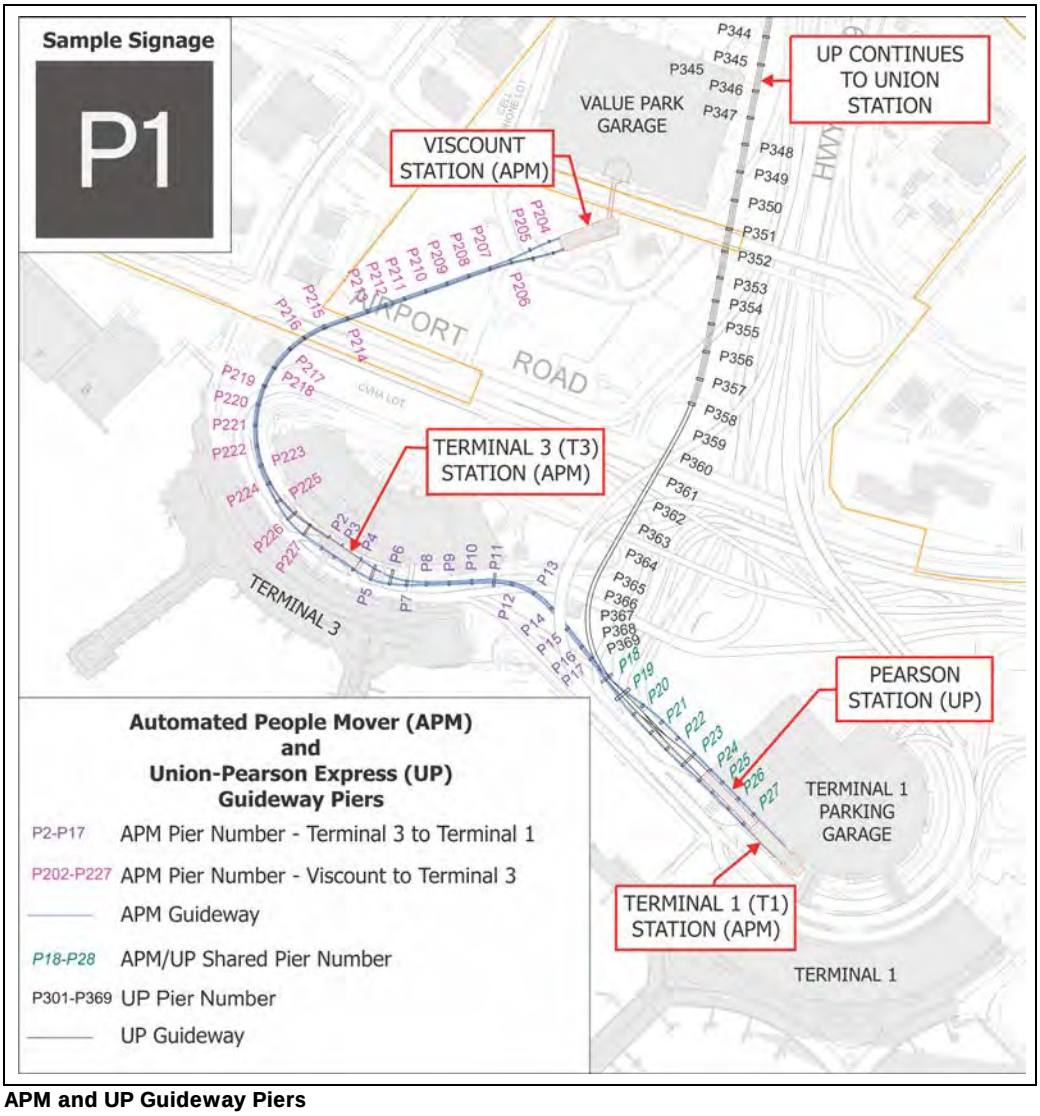
Component	Description
UP Guideway Length	Distance from Pier 1 to emergency stair tower at Northwest Drive: 913 m Distance from emergency stair tower to Pearson Station: 1.709 m
Configuration	dual-track system with cross-over track immediately north-west of the station
Trains	2 at station at any one time 2 to 3 vehicles per train with capacity for approximately 180 passengers
Maximum Operating Speed	40 mph on Pearson Subdivision (name of track)
Acceleration/Deceleration Speed	Acceleration limit – 1.00 mphps to 30mph Deceleration Speed – no less than 1.0mphps
Guideway	Primarily concrete deck on precast concrete girders. Some portions approaching the station are concrete deck on structural steel girders.

2.1.3 Guideway Piers

Piers are support structures for the elevated guideways. Piers have the following numbering convention:

- APM piers between Viscount Station and T3 Station are numbered in a "200" series (P202 - P227).
- APM piers between T3 Station and T1 Station are numbered in a "10" series (P2 - P32).
- UP piers are numbered in the "300" series (P300 - P369).
- The APM and UP share piers P18 through P28.

All piers will be physically labelled with signs. See the illustration below.



APM and UP Guideway Piers

2.2 Preferred Hours of Shutdown

The APM hours of operation schedule is posted on TorontoPearson.com under Parking. Shutdowns to complete maintenance and construction work must be planned in advance and scheduled during non-peak hours (single train service), and when there is the least disruption to GTAA airport operations.

LINK Train Schedule

TIME	DAY OF WEEK	TRAIN MODE	MAX. WAITING TIME
0300 - 0745	Monday through Sunday	Dual Train Shuttle	4 min
0745 - 1130	Monday through Sunday	Single Train Shuttle	8 min
1130 - 0000	Monday through Friday	Dual Train Shuttle	4 min
0000 - 0300	Monday through Friday	Single Train Shuttle	8 min
1130 - 2300	Saturday and Sunday	Dual Train Shuttle	4 min
2300 - 0300	Saturday and Sunday	Single Train Shuttle	8 min

Sample Operating Schedule from TorontoPearson.com. This schedule is subject to change.

2.3 Danger Zones

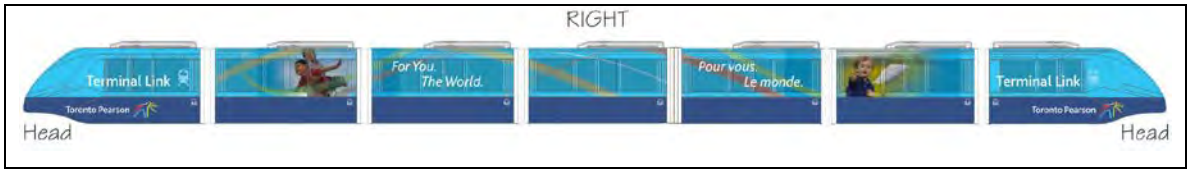
2.3.1 Definition of Danger Zone

APM danger zones are any areas surrounding the APM system (guideways and stations) that may be hazardous to individuals working in the vicinity, including access to trains, guideways, APM equipment, and adjacent structures.

2.3.2 Hazards in Danger Zones

Danger zones are detailed with specific access restrictions in Appendix A.

The APM consists of two trains with distinct guideways (no switches) and distinct drive systems. Each train is propelled by a cable, which is connected to bogies on each of the seven train vehicles with special cable grips integrated to the bogies. The trains, therefore, have no self-propelling drive systems of their own, and no driver.



Seven-vehicle APM train with Toronto Pearson corporate branding

The combination of the system's quiet automatic operation, high speeds, elevated guideways, live rail (energized at 600 volts), proximity to the Union-Pearson Express train, and proximity to exterior buildings creates a potentially hazardous envelope surrounding the APM system.

APM Train in Operation

2.3.3 Types of Danger Zones

APM Danger Zone Type	Description
Train/Guideway	▪ incorporates all areas spanning four metres laterally from the guideway structure, ground to sky (including areas between guideways, and near buildings, bridges, underpasses, and light posts) ▪ designated by numbered zones: DZ-1, DZ-2, etc.
Station	▪ incorporates all danger areas at APM stations, including access to guideways and equipment rooms ▪ designated by numbering that reflects the associated APM station: Terminal 1 (T1-1), Terminal 3 (T3-1), or Viscount Station (VS-1)

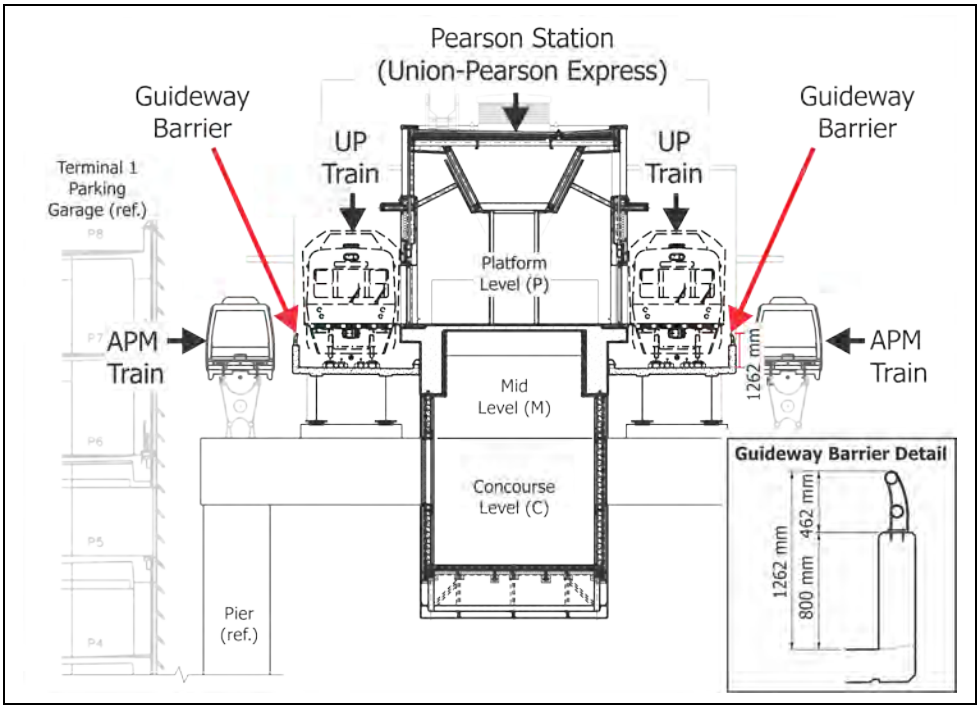
2.3.4 Train/Guideway Danger Zones

The danger zones surrounding each guideway and train incorporate all areas that may be hazardous to individuals working nearby. The guideway danger zone spans four metres laterally from the outside edges of the dynamic envelope, for the entire length of the guideway, and stretches from ground to sky. Any work required within this space requires the shutdown of one or both APM systems.

Note: In some areas, permanent barriers have been installed and approved to separate workers from the APM system. Examples include platform edge doors; fencing in the maintenance bays and at blue light stations; and the barrier between the UP guideway and the APM guideway. Workers are still required to complete and submit the Toronto Pearson Construction Activity Request Form and follow specific procedures. Any opening of doors leading to the APM guideway will result in automatic system shutdown.

2.3.4.1 Barrier between Train Guideways

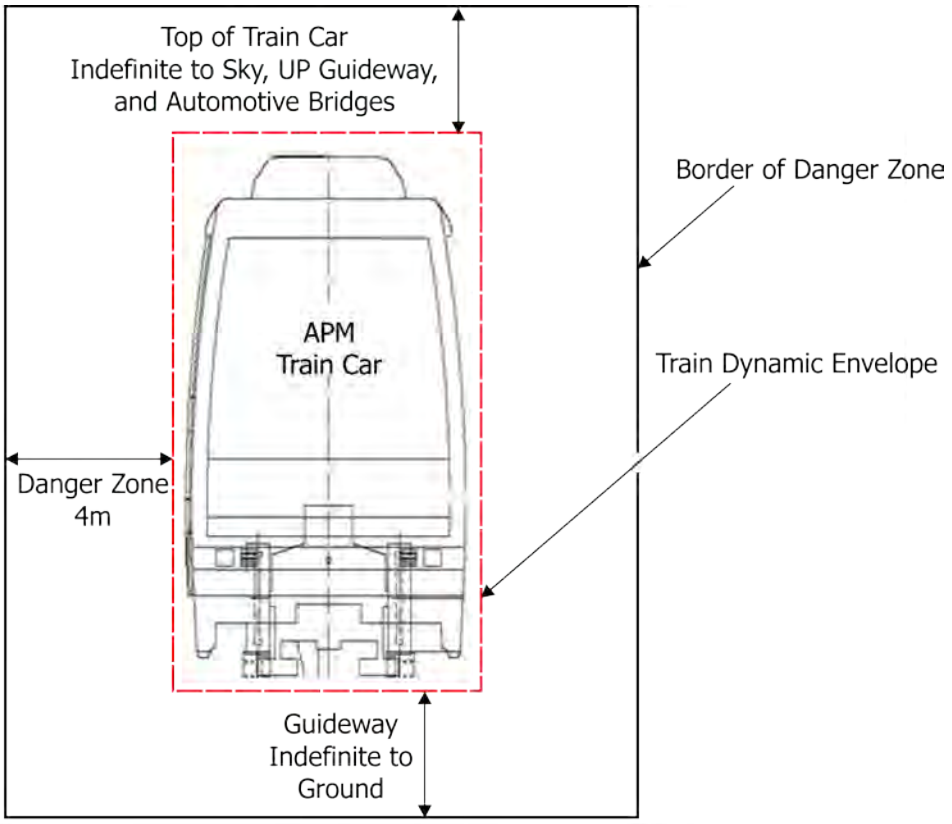
A barrier on the outside of the Union-Pearson Express (UP) guideway separates the train guideways. The barrier is mounted on the UP guideway deck. The barrier consists of a concrete parapet and galvanized railings.



Separation between APM and UP

2.3.4.2 APM Train Dynamic Envelope

The diagram below illustrates the train dynamic envelope and danger zone surrounding the APM guideway and train.



Train dynamic envelope and danger zone boundaries surrounding the APM train car/guideway

The ***train dynamic envelope*** is the total physical space required for the train to operate. It has been designed to avoid any infringement with the adjacent fixed structures or equipment along the APM guideway. Since the trains are continuously in motion, the envelope surrounding the train is dynamic, depending on the position and operation of the train. The dynamic envelope is based on the physical dimensions of the train, with the expanded space resulting from a combination of wheel wear, lateral motion, suspension movement, and track irregularities (top and line).

Four-metre danger zones around the guideway structures, ground to sky (DZ-1 for APM Train 1, and DZ-2 for APM Train 2), and areas around the guideway are particularly hazardous.

Danger zones:

For more information, see Appendix A.

- areas between guideways: DZ-3, DZ-5, DZ-7, DZ-9
- areas near adjacent buildings: DZ-6, DZ-10

- areas near adjacent structures: DZ-4 (Airport Road underpass), DZ-8 (Terminal 1 Departures ramp overpass), DZ-11 (Terminal 3/ Sheraton Hotel pedestrian bridge)
- APM/UP/guideway
- areas around APM stations and Pearson Station.

Warning: In order to verify that cranes and other machines with extended booms cannot inadvertently extend into the 4-metre danger zone, adhere to the following regulations.

If the machine plus the length of the maximum extended boom is outside of the 4-metre danger zone surrounding the guideway, the train(s) may continue regular operations. However, if the machine could potentially enter one or more danger zones when extended to full length, one or both trains must be shut down for the duration of the work.

Operation of machines with extended boom capability is not permitted in the vicinity of the APM train unless pre-approved, as specified in Chapter 3.

No cranes are allowed to maneuver above APM operational guideways when trains are in public service.

2.3.5 APM Station Danger Zones

Each APM station has a list of controlled access areas within and immediately adjacent to the public areas.

Controlled areas are areas controlled by APM Operator. APM Operator controls the trains, the associated maintenance areas at Viscount, Terminal 1, and Terminal 3 stations, and any access to these areas. Access to these controlled areas shall be approved by both the GTAA and APM Operator through a GTAA *Shutdown Request Form (SOP FM-MDC-0009 and form)*.

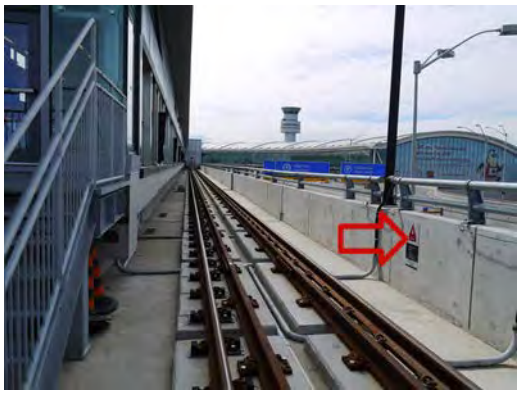
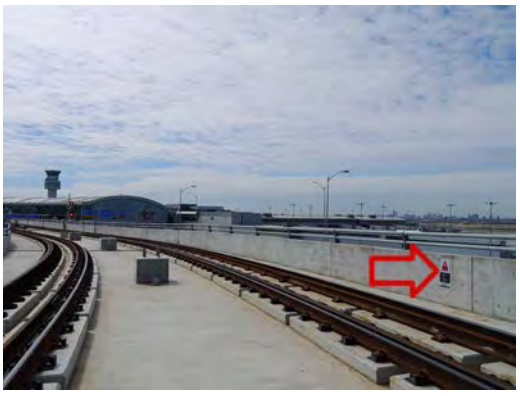
2.3.6 Danger Zone Warning Signs

Danger zone warning signs have been installed at strategic locations (including critical light posts and piers along the guideway) to ensure that GTAA maintenance and construction contractors/subcontractors are aware of safety requirements within the APM area. The signs clearly indicate that no work is permitted in the APM area without prior approval by AOC.

Warning: An approved Facility Alteration Permit (FAP) or Terminal Work Permit (TWP) does not automatically provide approval for work near the APM. An approved shutdown request form is required to proceed with the work.

Danger Zone Warning Signs (Typical)

2.3.6.1 Locations of Danger Warning Signs

Location	Warning Sign
UP guideway within UP station on guideway parapet on both sides of the station (4 signs on each side)	Danger! Moving train below. Work approval required.
	
	

Location	Warning Sign
APM pier caps	Danger! Moving train above. Work approval required.
	
	

2.3.1 Entry into a Danger Zone

For more information, see Ch. 3, "Procedure for Working near the APM System."

Entry into a danger zone may require shutdown of one or both APM trains, APM Operator escort, and/or other measures and precautions. In all cases, entry into a danger zone, by any party and for any duration, requires the submission of a Shutdown Request Form.

Warning: Failure to follow the appropriate procedures identified in this document may result in severe injury or death.

Warning: Failure to follow the appropriate procedures identified in this document shall result in a monetary penalty and suspension of the contractor until the investigation is completed.

CHAPTER

3

Procedure for Working near the APM System

3.1 Overview

The on-line *Toronto Pearson Construction Activity Request Form* and related procedure ensure that any work, including any maintenance and construction activities in the vicinity of the APM system, occurs in a safe and controlled environment.

The request procedure is a mandatory GTAA policy to be followed by all individuals and companies working near the APM. Permission to complete planned work near the APM must be requested in advance, coordinated with all affected parties, and executed safely and correctly with the least possible operational impact.

If scheduled work within one of the danger zones identified in this protocol results in a shutdown of both APM trains, the *APM Contingency Bussing Plan* should be implemented.

Warning: Any person found in non-compliance with these procedures shall immediately cease and desist work. Failure to follow the appropriate procedures identified in this document shall result in a monetary penalty and suspension of the contractor until the investigation is completed.

3.2 Toronto Pearson Construction Activity Request Form

Notify the GTAA per the form and instructions on torontopearson.com>business partners>construction **about all maintenance or construction activities near the APM, with the following exceptions.**

Note: Activities include the following UP Express categories of work:

- CAT I: Routine Maintenance*
- CAT II: Emergency Maintenance Affecting Rail Service*
- CAT III: Planned Maintenance Work with Major Rehabilitation**
- CAT IV: Winter Maintenance.*

* Telephone notice to the GTAA required. Work shall not extend, project or encroach on APM dynamic envelope.

** *Toronto Pearson Construction Activity Request Form* required in advance. Engineering drawings / sketches are not required. A description of work is required.

To notify the GTAA, complete the on-line *Toronto Pearson Construction Activity Request Form,* and then click on the *Submit Form* button.

Note: Contact AOC or Specialist, People Moving Devices to discuss particular requirements.

Warning: Any temporary and permanent modifications, alterations or additions of fixed structures (e.g., modifications of walls, barriers, parapets, etc.) potentially affecting the safe normal operation of the APM train must be approved in writing by the GTAA and APM Operator.

As part of the request, a requestor must submit engineering drawings and/or sketches with detailed descriptions of how proposed changes impact the train dynamic envelope and safe operation of APM trains.

Note: The only individuals who may work within danger zones T1-7, T1-8, T3-7, T3-8, VS-9, and VS-10 without submitting a *Toronto Pearson Construction Activity Request Form* are cleaners working on APM station platforms and inside APM trains to perform scheduled interior cleaning. These cleaners must coordinate with the GTAA and APM Operator to pre-schedule their cleaning, and must communicate with APM Operator and the AOC before beginning work on the APM platform.

Warning: Unscheduled cleaning may require the lockdown of APM train doors or APM train systems as required.

3.3 Initiating Planned Work

To request permission from the GTAA to complete planned maintenance and construction activities, follow the steps below. If the APM must be shut down during operating hours, the APM Bussing Contingency Plan must be implemented.

Warning: Any person found in non-compliance with these procedures shall immediately cease and desist work. Failure to follow the appropriate procedures identified in this document shall result in a monetary penalty and suspension of the contractor until the investigation is completed.

	Requirement	Details
1	Approval to do work	1. In advance of the planned work, Contractor completes the on-line GTAA form, which has a workflow built into it. The form is routed to the appropriate parties, according to the information provided by the requestor. Requests for shutdowns during normal APM operating hours must be submitted as early as possible to allow the GTAA to notify airlines and coordinate bus service. 2. GTAA Maintenance Planning contacts APM shutdown group, including but not limited to: ▪ Manager, People Moving Devices ▪ Specialist, People Moving Devices ▪ APM Operator ▪ GTAA Customer and Terminal Services (CTS). 3. Specialist, People Moving Devices asks contractor to sign off Working near APM Safety Protocol. 4. Specialist, People Moving Devices contacts Maintenance Planning to approve or reject the work.
2	A copy of a Signed Sign-Off Sheet	Report to the APM Control Room at Viscount Station to initiate the approved shutdown for the requested APM train system. Ensure that you have signed and attached a copy of the Working near the APM sign-off sheet. This sheet advises the GTAA that you have read this protocol and accepted all GTAA site rules and regulations including the penalties associated with a failure to follow the protocol.

	Requirement	Details
3	Approved request number	Individuals who have received approval to enter an APM danger zone shall be provided with an approved request number (R#") from GTAA Maintenance Planning. The number will identify a specific task and date/time for the scheduled work. Workers will be required to show the request number to APM Operator staff upon system lockout. Workers shall keep the request number on their person throughout the entire course of the work. Anyone found working within a danger zone without a request number shall be required to cease work and leave the area immediately.
4	Equipment ready to initiate work	No equipment or workers should be placed within the danger zone prior to lockout of the train system. Workers shall have all supplies, equipment, and personnel on site in a safe area and ready to start work prior to initiating system lockout or getting an escort.
5	Lock-Out/Tag-Out Procedure	The purpose of this procedure is to eliminate the source of potential energy or motion from an object that is to be worked on. Each group accessing an APM danger zone that requires system lockout shall use their own lock to shut down the system. Several parties may lock out the system at the same time; the system will be physically unable to return to service until all locks are removed. In addition, APM Operator staff shall attach their own lock to ensure safety for workers in the area. APM Operator staff shall advise AOC upon system shutdown. Parties requiring access to a danger zone shall provide tags for their locks, clearly identifying the company, name, and phone number of the holder of the approved request number. APM Operator staff will request and validate the approved shutdown GTAA R# from the party requesting the train shutdown to proceed. When attaching the locks and tags, the requestor party must sign in with APM Operator staff providing his/her name, company, RAIC #, contact phone on site during the shutdown.
6	Call to the GTAA	Workers shall notify AOC directly upon lockout of the APM system or entering into any danger zone. These are standard GTAA procedures for any shutdown request. When the system is ready to be shut down, APM Operator shall advise AOC.

Note: The approved shutdown can be cancelled at any time by the GTAA, based on operational or maintenance requirements. The GTAA will offer alternative dates.

3.4 Initiating Emergency Work

Warning: Emergency work is unscheduled work that requires immediate response from GTAA airport personnel or its contractors. If this work is not expedited, the safety or operation of the airport/system may be affected.

In cases where immediate unscheduled shutdown of the APM system is required, requestor or APM Operator shall notify AOC regarding the situation and anticipated downtime. If AOC receives notification first, they shall contact APM Operator immediately to determine if safe train operations can continue.

To shut down the APM system for immediate unscheduled work, follow the procedures below:

1. APM Operator contacts the AOC and advises the nature of the emergency work required. AOC follows standard callout procedure.
2. If work is deemed to be critical (i.e., cannot be delayed until the request may be properly scheduled), the MO Customer and Terminal Services (MO CTS) in consultation with APM Operator shall decide upon the most appropriate course of action.

Warning: In cases where work has already been initiated and has not been properly coordinated, AOC shall direct workers to cease work immediately. Workers shall make the work area safe, and AOC will initiate appropriate callouts.

3. APM Operator will ensure that workers follow appropriate lockout procedures.

If there is a requirement to take both trains out of service for more than 11 minutes, the MO T1 shall coordinate an appropriate time frame for work and initiate the *APM Bussing Contingency Plan.*

3.5 Concluding Work

When all work has been completed, workers shall do the following:

1. Ensure that all personnel have left the area and that no equipment or supplies have been left behind in the danger zone.
2. Remove your lock(s) at the APM Control Room.
3. When all locks have been removed, APM Operator shall contact AOC to identify that the system will resume operation.

Warning: APM Operator will check and verify work done by third-party contractors. Before resuming public service, APM Operator must visually ensure the shutdown work area is cleared by contractors, free of hazardous materials, FOD, and obstructions.

3.6 Using the APM Maintenance Vehicle

The APM maintenance vehicle is a diesel-powered, self-propelled vehicle used to maintain guideway equipment. The maintenance vehicle is located at Viscount Station in space controlled by APM Operator. The use of the vehicle is interlocked with operation of the trains.

A request for use of the APM maintenance vehicle shall be identified on the shutdown form. The APM maintenance vehicle is operated by APM Operator personnel only.

GTAA reserves the right to charge the maintenance contractor for use of the APM maintenance vehicle for the escort time, depending on work activity.

Any contractor requesting use of the APM maintenance vehicle as part of the shutdown request must attach photocopies of the valid fall arrest training for workers using the APM maintenance vehicle. Proof of fall arrest training will also be validated by the train operator when the requestors come to the APM Control Room for the APM system lock out.

Note: GTAA reserves the right to charge contractors for the usage of the APM maintenance vehicle. The charge backs will be calculated based on the usage of the maintenance vehicle and impact to the APM operations and maintenance.

3.7 Cordoning Off Areas below the APM

Any contractor performing work on the APM guideway or piers shall be responsible for cordoning off the affected areas below to ensure the safety of the public and airport workers, and to prevent property damage.

For any partial or full closure of active roads on GTAA property, all contractors shall comply with Ontario Ministry of Transportation Traffic Manual Book 7 for traffic control.

3.8 Using the Trapped Key

Trapped keys are keys that restrict maintenance access until the APM is in a safe or off state.

Trapped keys are required for use of all davit arms on the APM station roofs and canopy doors on the platform levels of Terminal 1 and Terminal 3 stations. Accessing trapped keys requires strict procedures to ensure safety.

The same shutdown/lockout procedure is applied when it is requested to use a trapped key.

There are only two trapped keys for the entire APM system: one for Train 1, and one for Train 2. No spares exist. Therefore, individuals should use extreme care when using the key.

If the contractor or the contractor's agent loses the key, the GTAA retains the right to charge back for recoring the locks and other applicable costs of system downtime. APM Operator will enforce a sign-out procedure for the keys.

To access and use the trapped key, follow the procedures below immediately prior to entering the controlled area:

1. Ensure that all supplies and personnel are on site and prepared to initiate work.
2. Proceed with general lockout procedures.
3. Sign out the trapped key(s) for Train 1 and/or Train 2 from APM Operator staff in the APM Control Room, Viscount Station. The key is only removable when the APM system is in a safe or off state.
4. Proceed to the location where you are starting work.

   Note: When you unlock a canopy door or davit arms, you will not be able to remove the key until the door is closed and locked again, and the davit arms are in home state.

5. When work has been completed, return the key immediately to the APM Control Room.

3.9 Accessing Platform in Terminal 3 APM Station

The door lock cores for P01D and P01E platform doors at Terminal 3 APM station have been modified.

“Slave” keys have been created and issued to the HVAC O&M contractor for service access to HVAC units.

The “slave” keys will work only on T3 doors P01D and P01E and will not work on any other platform doors at other APM stations.

3.10 Working near the APM Safety Protocol Sign-Off Sheet

The Working near the Automated People Mover (APM) Safety Protocol Sign-Off Sheet shall be signed by all individuals who will be working in the vicinity of the APM before they initiate work. Each worker is required to sign the form every time the work around the APM is requested.

Complete the form below and email it to GTAA Specialist, People Moving Devices. GTAA Specialist, People Moving Devices will remain custodian of the official sign-off sheet. The form must be submitted to proceed with any APM shutdown request.

Note: By signing this sheet, I, the undersigned, acknowledge that I have read and understood the procedures and requirements in the GTAA *Working near the APM Safety Protocol*.

Please print clearly. Providing incomplete or incorrect information may delay approval. Make extra copies of this form as required.

GTAA R#	Name	Company	Date (dd/mm/yyyy)	Contact phone during work on APM site	Signature

GTAA R#	Name	Company	Date (dd/mm/yyyy)	Contact phone during work on APM site	Signature

APPENDIX

A

Danger Zones Access Matrix and Drawings

The Danger Zone Access Matrix defines all hazardous areas surrounding the APM trains, guideways, equipment rooms, and adjacent spaces. The matrix uses specific terminology to identify system shutdown requirements and access control owners.

A.1 Using the Matrix

The following sections describe columns in the matrix, and clarify terminology that appears throughout the spreadsheet.

A.1.1 Zone

Danger zones are identified by one of four zone types, with consecutive numbering:

Danger Zone Numbering	Description
DZ-#	Hazardous areas above, below, and adjacent to the trains and guideways
T1-#	Hazardous areas in and immediately adjacent to the Terminal 1 Station
T3-#	Hazardous areas in and immediately adjacent to the Terminal 3 Station
VS-#	Hazardous areas in and immediately adjacent to the Viscount Station
DZ-UP-# T1-UP-#	Hazardous areas in and immediately adjacent to the Union-Pearson Express guideway and Pearson Station.

These zones will help requestors to identify specifically where they will be working, as well as aid the GTAA and APM Operator in scheduling system shutdown, escorts, and other controlled access requirements.

A.1.2 Area/Location

The Area/Location column defines the location and boundaries of each danger zone.

A.1.3 Access Point

Different ways of accessing danger zones require different safety procedures, which may affect shutdown, key, and escort requirements. This section identifies access for each area, including specific doors, the maintenance vehicle, roof access with fall arrest devices and davit arms, and man lift equipment. The APM Operator and GTAA shall determine which access points are used, as required.

A.1.4 Security Contact to APM Operator

This section identifies whether a door, when opened, triggers a notification to APM Operator. The following terms are used:

- ***Remote SCADA Alarm:*** These doors trigger an alarm within the Supervisory Control and Data Acquisition (SCADA) software, also viewable by AOC.
- ***Trapped Key:*** Trapped keys are required for access to canopy doors in the Terminal 1 and Terminal 3 stations, and at fall arrest systems on the roofs at each station. Workers may sign out a trapped key from APM Operator only after they have received an approved request number from AOC and have gone through the APM lockout procedures identified by APM Operator.

For more information, see “Using the APM Maintenance Vehicle”.

- ***Interlocked:*** Opening these doors immediately shuts down the system, if still operable, and sends notification to APM Operator.

A.1.5 Access Requirements

Each danger zone has specific access requirements to ensure the safety of individuals working in that area.

- ***System Lockout (red):*** Access to many danger zones requires a shutdown of one or both train systems. Workers are required to physically lock out the system(s) according to APM Operator lockout procedures. APM Operator shall not return the system(s) to operation until all locks have been removed by the parties working near APM systems and AOC has been notified.

- ***APM Operator Escort (yellow):*** APM Operator personnel shall accompany and remain with the individual accessing the danger zone for the full duration required to complete the work.
- ***Coordination with APM Operator/GTAA (green):*** In some cases, the type and location of work requires only coordination with the GTAA and/or APM Operator to ensure there is no operational impact. These spaces may require keys or access from the GTAA or APM Operator, but workers are able to work without an escort or system shutdown.

A.1.6 Required Activity by Contractors

This column lists anticipated work that requires access to the danger zones. These are only examples; all work in the area must follow the same procedures and safety requirements.

A.1.7 Drawing Colour Codes

Illustrations identify specific danger zones throughout the APM system. Colours identify specific access controls, as follows:

- Red: mandatory or potential lockout of one or both systems required
- Yellow: APM Operator escort required
- Green: GTAA and APM Operator coordination required; no escort or shutdown
- Orange: UP Express and GTAA coordination required.

Note: These drawings may not be redistributed or reproduced, in part or in full, outside of direct operational requirements for individuals working within the APM danger zones, without written approval from the GTAA.

The following illustrations are included to display the APM danger zones:

- Guideway/Train: Aerial view of APM-UP system
- Terminal 1 Station (APM): Concourse Level, Platform Level (including return bull wheel rooms), and Penthouse Level floor plans; elevations
- Pearson Station (UP): Platform Level, Mid Level, and Concourse Level floor plans; elevations
- Terminal 3 (APM): Concourse Level, Platform Level, and Penthouse Level floor plans; elevations
- Viscount Station (APM): Concourse Level, Mezzanine Level, Platform Level, and Penthouse Level floor plans; elevations.

A.2 Guideway/Train Danger Zones Matrix

Descriptions of Guideway/Train Danger Zones

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
DZ-1	APM Train 1 - Four metres in all directions from the edge of the dynamic envelope, and ground to sky (includes piers and lamp posts in this area) (See page 14 for more details.)	Man lift equipment External buildings Other	n/a	Lockout of APM Train 1; potential lockout of APM Train 2	▪ cleaning ▪ other
DZ-2	APM Train 2 - Four metres in all directions from the edge of the dynamic envelope, and ground to sky (includes piers and lamp posts in this area) (See page 14 for more details.)	Man lift equipment External buildings Other	n/a	Lockout of APM Train 2; potential lockout of APM Train 1	▪ cleaning ▪ other
DZ-3	Between guideways at Viscount Station, from the west side of the station to Pier 206	Man lift equipment	n/a	Lockout of both trains (APM Trains 1 & 2)	▪ cleaning ▪ other
DZ-4	Airport Road underpass, including any equipment within four metres of the guideways, or anywhere above/below the guideways (Pier 214–216)	Man lift equipment	n/a	Coordinate working areas with APM Operator & GTAA; potential shutdown of one or both systems	▪ landscaping ▪ signage ▪ road work ▪ snow removal ▪ relamping ▪ other

Descriptions of Guideway/Train Danger Zones

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
DZ-5	Between guideways at Terminal 3 Station, from the north side of the station to Pier 223	Man lift equipment	n/a	Lockout of both trains (APM Trains 1 & 2)	▪ cleaning ▪ other
DZ-6A	Sheraton Gateway Hotel south façade (which faces the guideway) from Pier P227–P5 [excluding DZ-6B area below Sheraton Hotel Level 1 window overhang for cleaning purposes]	Sheraton Gateway Hotel	n/a	Lockout of train (APM Train 2)	▪ cleaning ▪ other
DZ-6B	Below the Sheraton Hotel Level 1 window overhang [excluding any portion of the pedestrian bridge] between Piers P226–P5 AND Sheraton Gateway Hotel south façade (top to bottom) between Piers P5–P7 and P226–P227	Man lift equipment Note: No other equipment (such as equipment with extended boom capability) is permitted in this area while System 2 is operational.	n/a	APM Operator coordination	▪ cleaning ▪ other
DZ-7	Between guideways at Terminal 3 Station, from the south side of the station to Pier 8	Man lift equipment	n/a	Lockout of both trains (APM Trains 1 & 2)	▪ cleaning ▪ other

Descriptions of Guideway/Train Danger Zones

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
DZ-8	T1 departure ramp overpass, including any equipment within four metres of the guideways, or anywhere above/below the guideways (Pier 13–15) *Note: Includes East Communication Hub.*	Man lift equipment	n/a	Lockout of one or both trains (as determined by the Specialist, People Moving Devices and APM Operator)	▪ snow removal ▪ drains ▪ other
DZ-9	Space between UP guideways at Pearson Station, from Pier P22 to Pier P24.	▪ Man lift equipment ▪ UP guideway	n/a	Potential lockout of APM Train 1; potential lockout of APM Train 2; coordination with GTAA Groundside.	▪ hoisting ▪ pier inspections ▪ pier repairs ▪ UP ▪ maintenance ▪ other
DZ-UP-9.1	Between APM system 1 and UP guideway parapet wall from Pier 370 to Pier 28 (corner of APM station)	▪ Man lift equipment ▪ UP guideway	n/a	Potential lockout of System 1 (APM Train 1)	▪ cleaning ▪ pier inspections ▪ pier repairs ▪ UP maintenance
DZ-UP-9.2	Between APM system 2 and UP guideway parapet wall from Pier 370 to Pier 28 (corner of APM station).	▪ Man lift equipment ▪ UP guideway	n/a	Potential lockout of System 2 (APM Train 2)	▪ cleaning ▪ pier inspections ▪ pier repairs ▪ UP maintenance

Descriptions of Guideway/Train Danger Zones

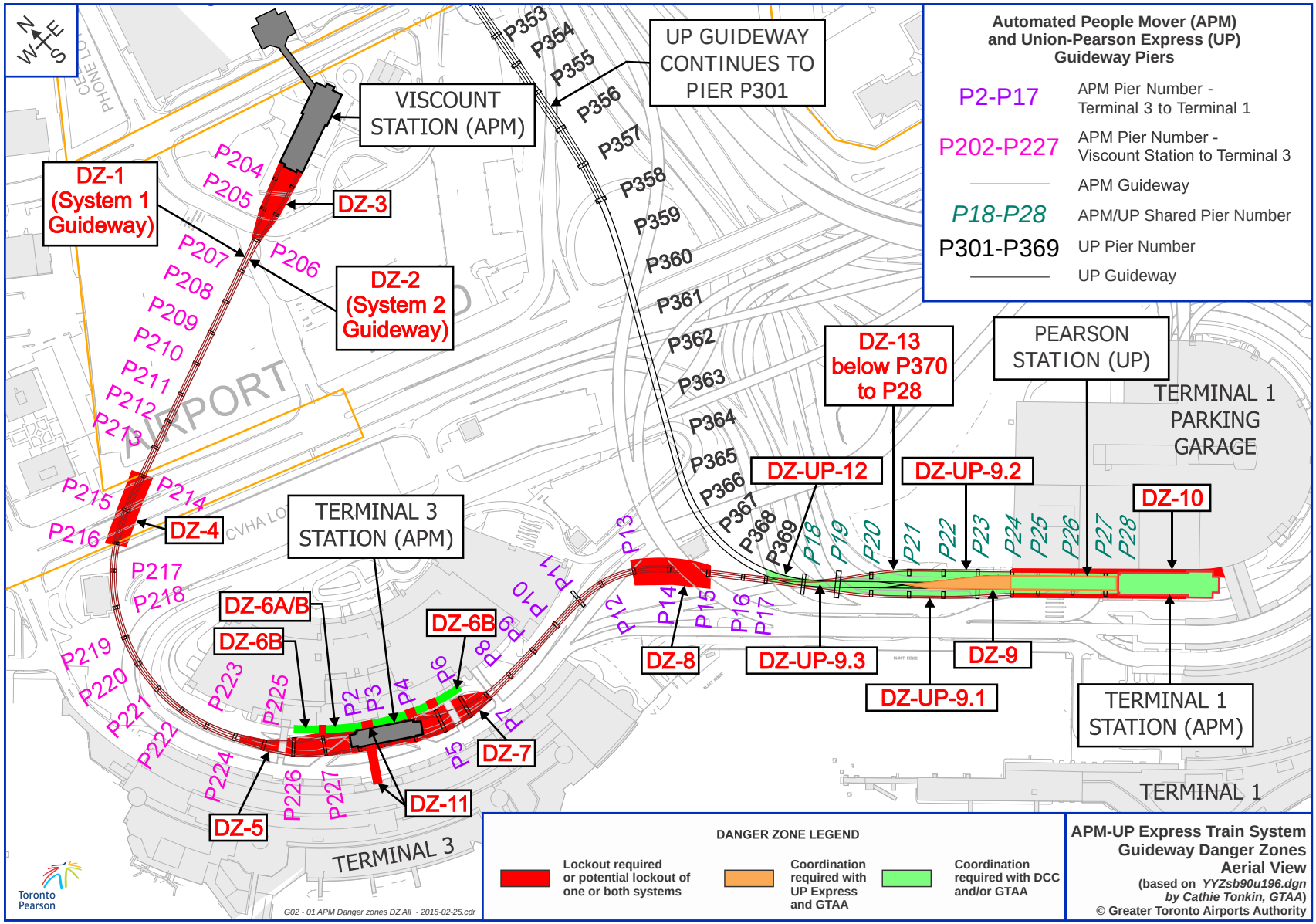
Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
DZ-UP-9.3	Inside UP guideway between parapet walls from pier P369 to Pier 24 between barriers.	▪ Doors at UP station; blue light station doors (#P01C and #P01D) ▪ UP guideway emergency access points ▪ Entrance to UP spur from GO corridor	n/a	Potential lock out and/or coordination with one or both APM systems (green). Lockout for major works that have the potential to extend, project, encroach on APM dynamic envelope.	▪ UP construction / maintenance ▪ other
DZ-10	Terminal 1 Parking Garage – along the south façade (Pier 24–32), and along the north façade (4 m from the guideway)	Terminal 1 Parking Garage, Level 8 (no controlled access)	n/a	Lockout of train (APM Train 2)	▪ cleaning ▪ other
DZ-11	Sheraton Gateway Hotel/Terminal 3 pedestrian bridge (exterior), including space within four metres of the guideway above, below, and adjacent to the bridge	▪ Doors #CO3a, CO3b, CO5a, CO5b (GTAA) ▪ Man lift equipment	n/a	Lockout of both trains (APM Trains 1 & 2) (red)	▪ cleaning ▪ other
DZ-UP-12	UP guideway overpass, including any equipment within four (4) meters of the guideways, or anywhere below the UP overpass (P369 - P19).	▪ Man lift equipment ▪ UP guideway	CAT III, IV activities	Potential lock out and/or coordination with one or both systems (red)	UP maintenance; pier maintenance, relamping; other

Descriptions of Guideway/Train Danger Zones

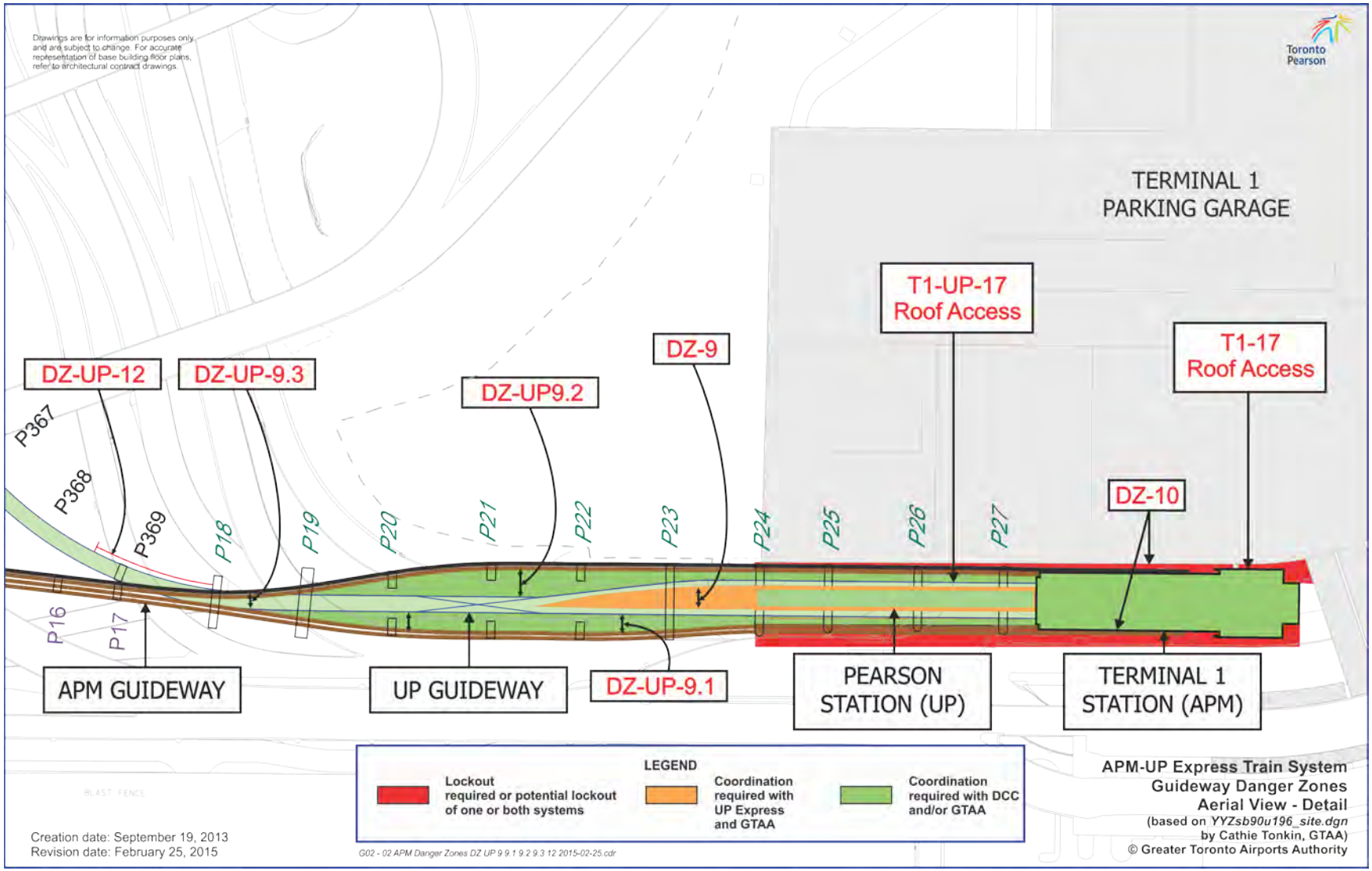
Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
DZ-UP-13	Under the UP guideway and under Pearson Station from piers P369 to P28 (overlaps with Zone DZ-9).	▪ Man lift equipment, bucket truck, crane, lifting equipment.	CAT III, IV activities	Possible coordination and shutdown of one or both APM trains (depending of the type of the work) required	UP construction, pier work/repair, other

A.3 Guideway / Train Danger Zone Drawings

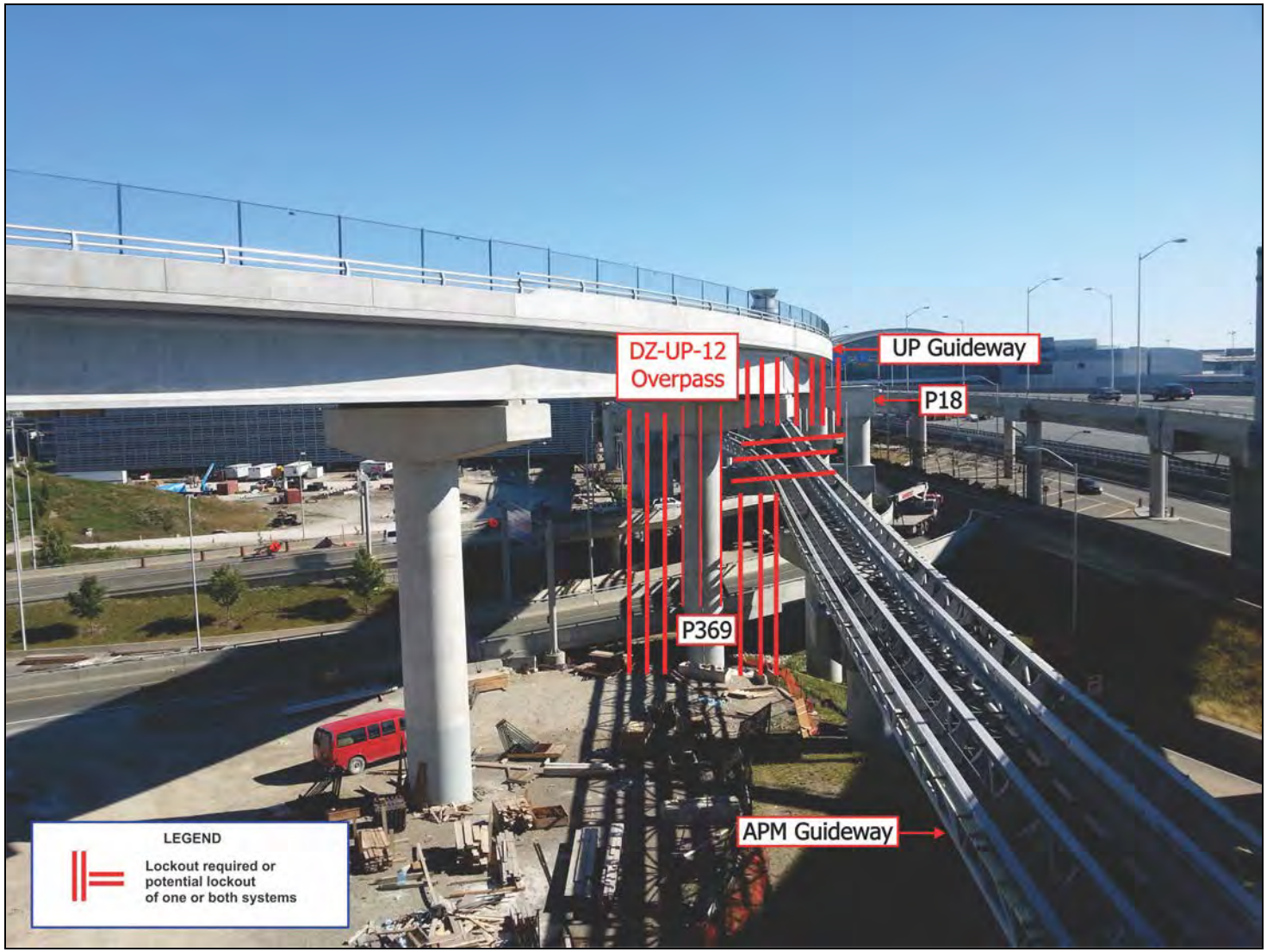
		Guideway / Train Danger Zones Shown on Each Drawing															
#	**Guideway / Train Drawing**	**DZ-1**	**DZ-2**	**DZ-3**	**DZ-4**	**DZ-5**	**DZ-6A**	**DZ-6B**	**DZ-7**	**DZ-8**	**DZ-9**	**DZ-UP-9.1**	**DZ-UP-9.2**	**DZ-UP-9.3**	**DZ-10**	**DZ-11**	**DZ-UP-12**	**DZ-13**
1	APM and Guideway Piers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	APM and UP Guideways: Danger Zones DZ-9, DZ-UP-9.1, 9.2, 9.3, and 12	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	✓	
3	APM and UP Guideways: Danger Zone DZ-UP-12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	
4	Sheraton Hotel window ledge above pedestrian bridge	-	-	-	-	-	✓	✓	-	-		-	-	-	-	-	-	
5 & 6	Sheraton Hotel overhang windows on Level 1	-	-	-	-	-	✓	✓	-	-		-	-	-	-	-	-	
7	DZ-13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓



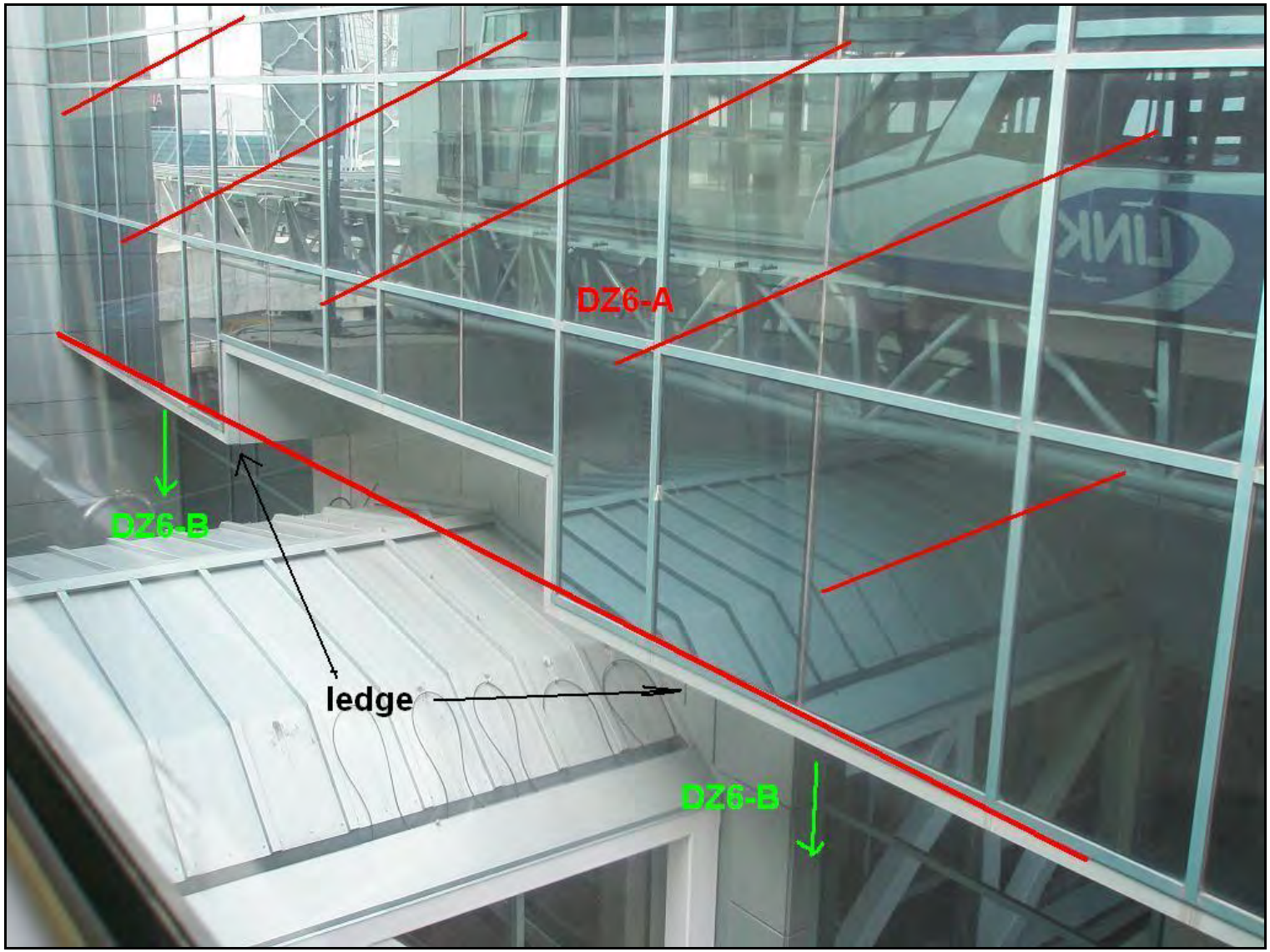
1. Aerial overview of the APM system



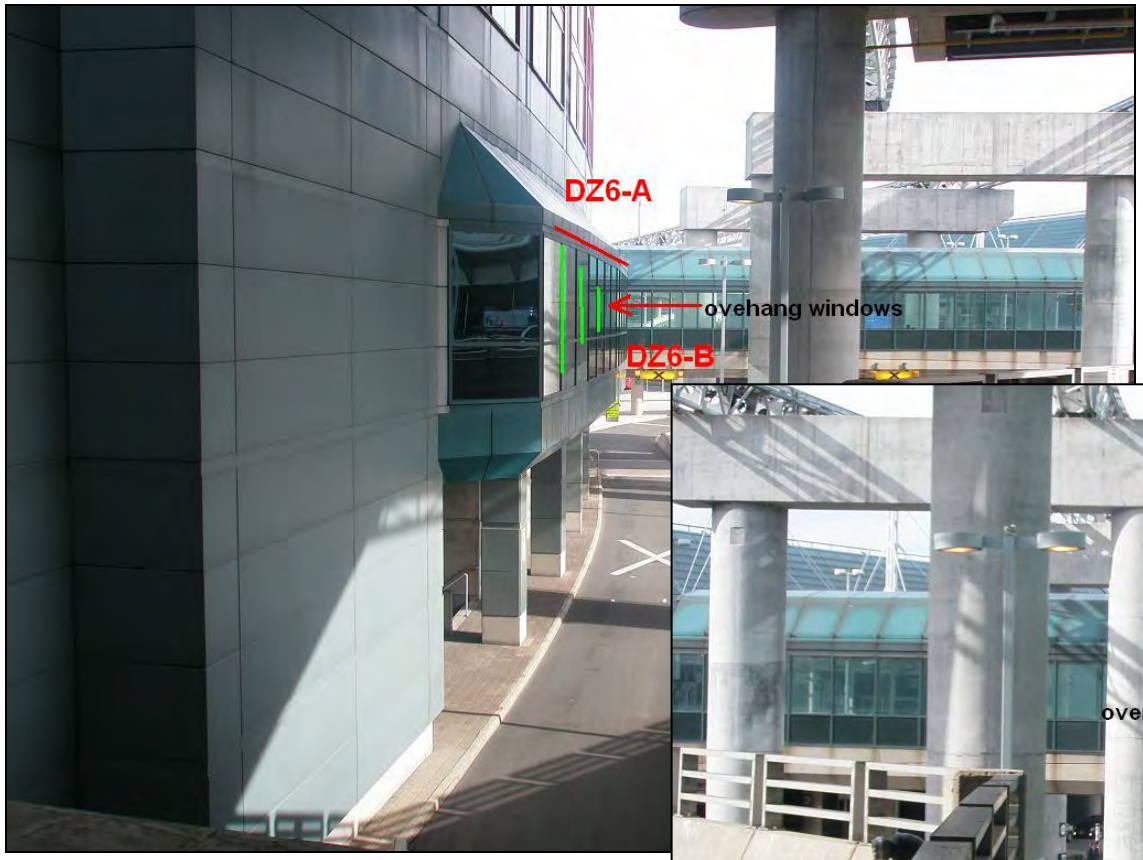
2. APM and UP Guideways from APM Pier P24 to UP Pier P369: Danger Zones DZ-9, DZ-UP-9.1, DZ-UP-9.2, DZ-UP-9.3, and DZ-UP-12



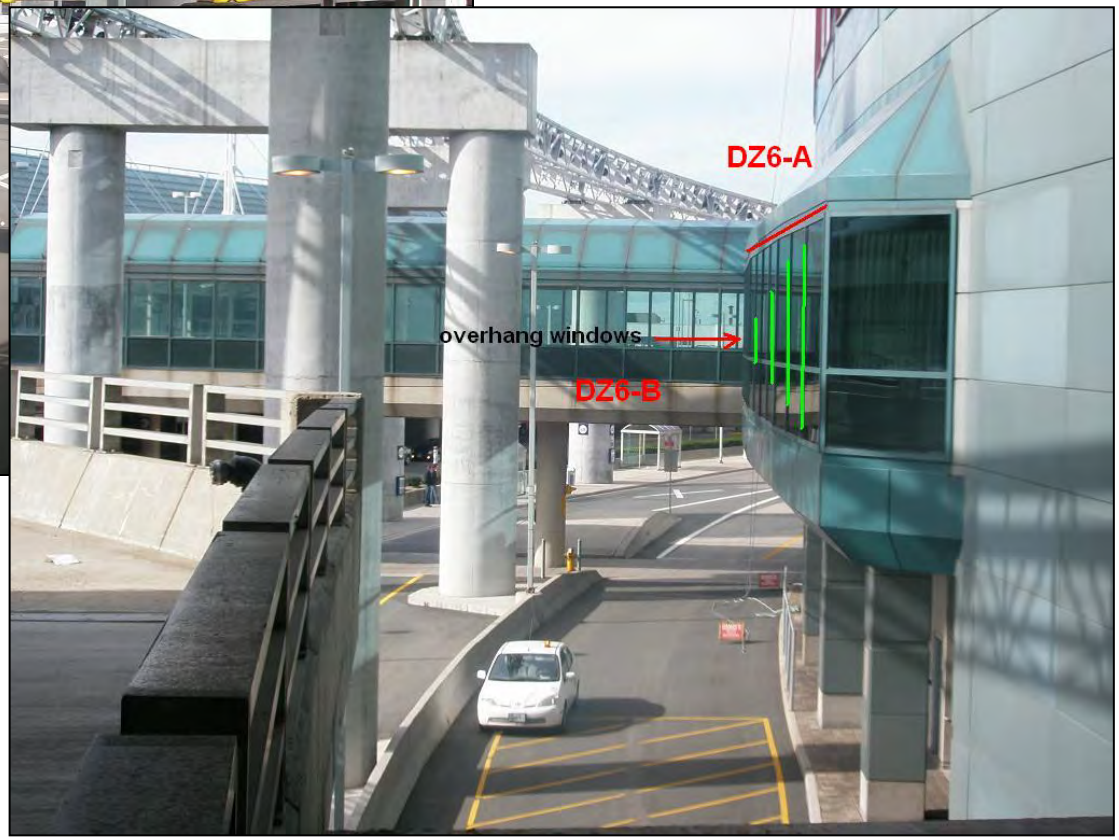
3. APM and UP Guideways from APM Pier P28 to UP Pier P369: Danger Zone DZ-UP-12



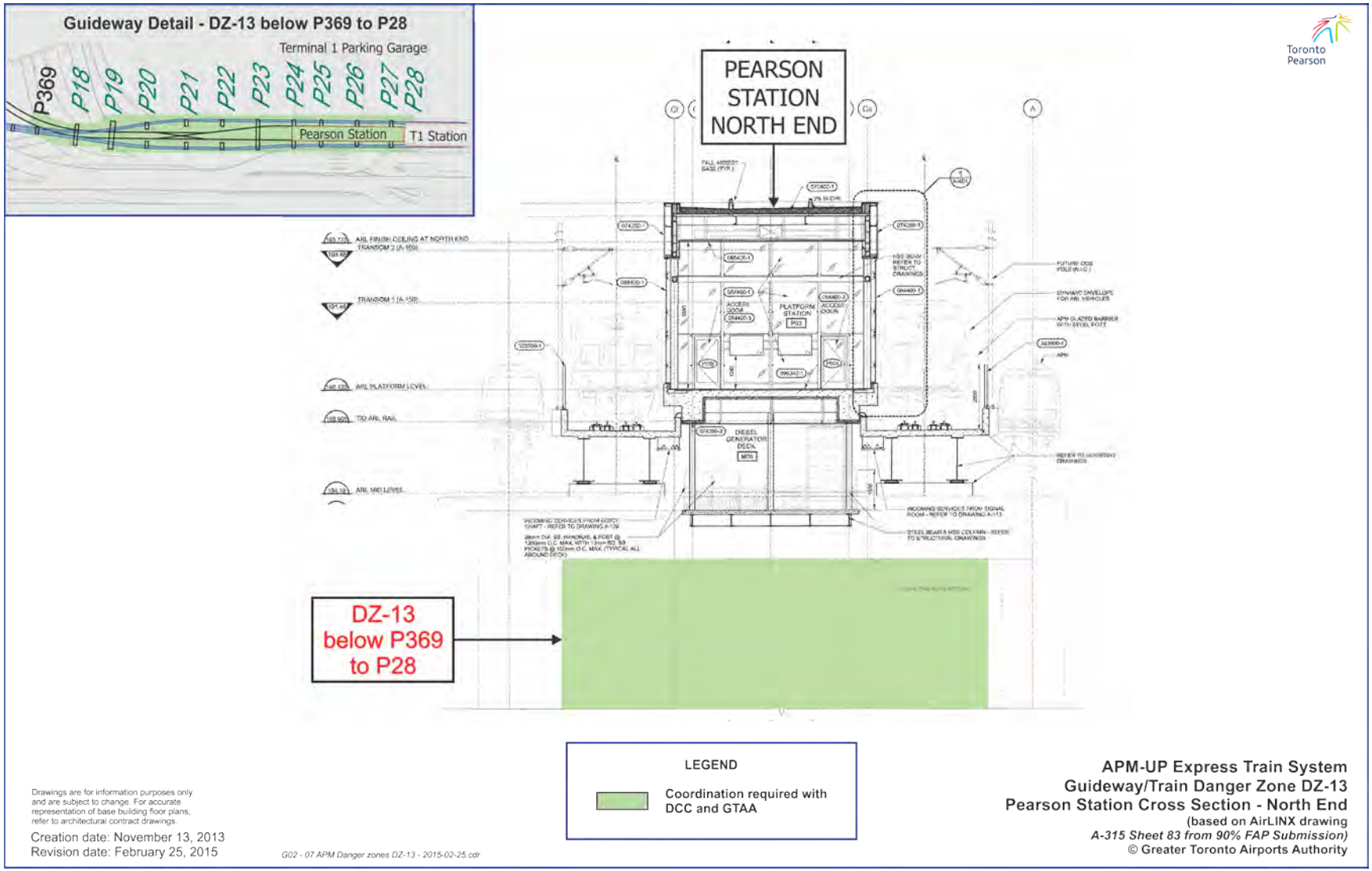
4. Sheraton Hotel window ledge above pedestrian bridge



5. Sheraton Hotel overhang windows on Level 1 (east view)



6. Sheraton Hotel overhang windows on Level 1 (west view)



7. Below Piers P369 to P28 and Below Pearson Station: Danger Zone DZ-13

A.4 Terminal 1 APM Station Danger Zones Matrix

Descriptions of Terminal 1 APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **T1-7** and **T1-8** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
T1-1	APM Equipment Room (Room CO9)	Door #CO8A (APM Operator) - Concourse Level, at emergency staircase Door #CO8B (APM Operator) - from Room CO8 to System Equipment Room (CO9)	Remote SCADA alarm n/a	APM Operator escort	▪ electrical ▪ sprinklers ▪ other
T1-2	Exterior façade (north side of station, between the blue light stations)	Door #PH05 (GTAA) Fall arrest device (PO1F - APM Train 1, PO1E - APM Train 2) and davit arms (APM Operator) Note: Rotation of arms is limited to ensure there is no access to guideway.	n/a Trapped key and travel restraint	APM Operator coordination	▪ cleaning ▪ other
T1-3	Blue light platform (northeast side)	Door #P01C (APM Operator)	Remote SCADA alarm	Lockout of train (APM Train 2)	▪ cleaning ▪ other
T1-4	Blue light platform (northwest side)	Door #P01D (APM Operator)	Remote SCADA alarm	Lockout of train (APM Train 1)	▪ cleaning ▪ other

Descriptions of Terminal 1 APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **T1-7** and **T1-8** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
T1-5	Platform Level – above guideway, below canopy (east side); includes roof section of Return Bull Wheel Room that is not protected by the guardrail, as well as windows above	APM maintenance vehicle (APM Operator)	n/a	Lockout of train (APM Train 2) and APM Operator escort to operate the vehicle	▪ cleaning ▪ other
T1-6	Platform Level – above guideway, below canopy (west side); includes roof section of Return Bull Wheel Room that is not protected by the guardrail, as well as windows above	APM maintenance vehicle (APM Operator)	n/a	Lockout of train (APM Train 1) and APM Operator escort to operate the vehicle	▪ cleaning ▪ other
T1-7*	Interior platform area at platform edge doors (east side)	Terminal 1 Station (public space, no controlled access)	n/a	APM Operator /GTAA coordination, potential shutdown of APM Train 2 (work to generally occur during scheduled system downtime)	▪ cleaning* ▪ electrical ▪ HVAC ▪ Other
T1-8*	Interior platform area at platform edge doors (west side)	Terminal 1 Station (public space, no controlled access)	n/a	APM Operator /GTAA coordination, potential shutdown of APM Train 1 (work to generally occur during scheduled system downtime)	▪ cleaning* ▪ electrical ▪ HVAC ▪ other

Descriptions of Terminal 1 APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **T1-7** and **T1-8** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
T1-9	Guardrail-protected roof section of the Return Bull Wheel Room, APM Train 2 (east side) – above bull wheel room; includes windows above	Door #P01A (APM Operator) - from Platform Level to Return Bull Wheel Platform	Remote SCADA alarm	Coordination with APM Operator (no system shutdown required due to fencing before guideway)	▪ cleaning ▪ other
T1-10	Return Bull Wheel Room A, APM Train 2 (east side) - lobby area	Door #PO1A (APM Operator) - from Platform Level to Return Bull Wheel Platform Door #BW1A (APM Operator) - hatch from platform to Return Bull Wheel Room stairs (no lock on hatch)	Remote SCADA alarm n/a	Coordination with APM Operator	▪ electrical ▪ sprinklers ▪ other

Descriptions of Terminal 1 APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **T1-7** and **T1-8** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
T1-11	Return Bull Wheel Room B, APM Train 2 (east side) - return bull wheel area (fenced)	Door #PO1A (APM Operator) - from Platform Level to Return Bull Wheel Platform Door #BW1A (APM Operator) - hatch from platform to Return Bull Wheel Room stairs (no lock on hatch) Door #BW1B (APM Operator) - access to bull wheels within the Return Bull Wheel Room	Remote SCADA alarm n/a n/a	APM Operator escort, with lockout of train (APM Train 2) if within the guarding around the return bull wheels	▪ electrical ▪ sprinklers ▪ other
T1-12	Guardrail-protected roof section of the Return Bull Wheel Room, APM Train 1 (west side) – above bull wheel room; includes windows above	Door #P01B (APM Operator) - from Platform Level to Return Bull Wheel Platform	Remote SCADA alarm	Coordination with APM Operator (no system shutdown required due to fencing before guideway)	▪ cleaning ▪ other

Descriptions of Terminal 1 APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **T1-7** and **T1-8** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
T1-13	Return Bull Wheel Room A, APM Train 1 (west side) - lobby area	Door #P01B (APM Operator) - from Platform Level to Return Bull Wheel Platform Door #BW2A (APM Operator) - hatch from platform to Return Bull Wheel Room stairs (no lock on hatch)	Remote SCADA alarm n/a	Coordination with APM Operator	▪ electrical ▪ sprinklers ▪ other ▪
T1-14	Return Bull Wheel Room B, APM Train 1 (west side) - return bull wheel area (fenced)	Door #PO1B (APM Operator) - from Platform Level to Return Bull Wheel Platform Door #BW2A (APM Operator) - hatch from platform to Return Bull Wheel Room stairs (no lock on hatch) Door #BW2B (APM Operator) - access to bull wheels within the Return Bull Wheel Room	Remote SCADA alarm n/a n/a	APM Operator escort, with lockout of train (APM Train 1) if within the guarding around the return bull wheels	▪ electrical ▪ sprinklers ▪ other

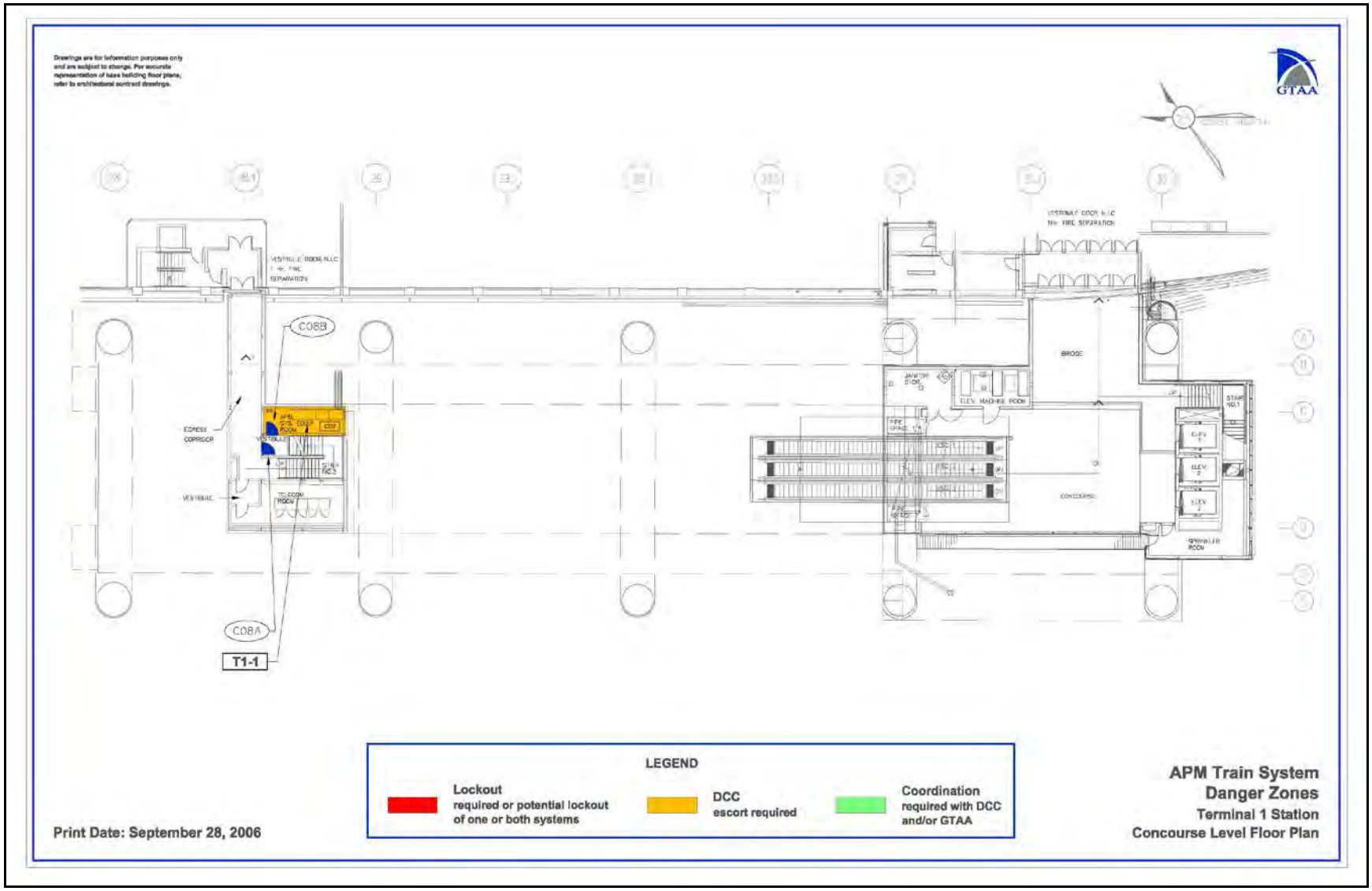
Descriptions of Terminal 1 APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **T1-7** and **T1-8** may require the lockdown of train doors or train systems as required.

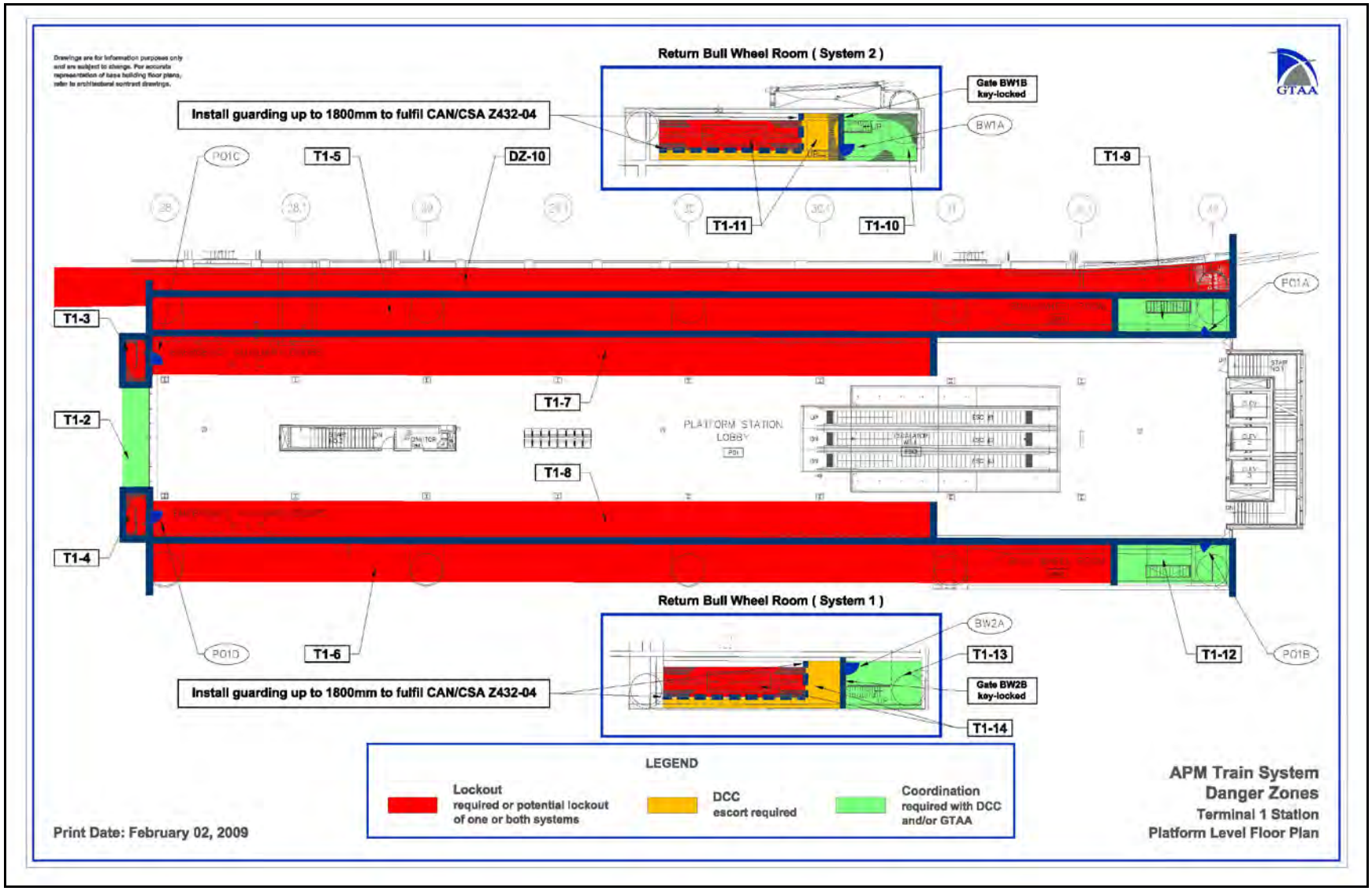
Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
T1-15	Penthouse Level - above canopy (east side)	Door #P01E (APM Operator) - canopy door Fall arrest device (PO1E) and davit arms, APM Train 2 (APM Operator)	n/a Trapped key	Lockout of train (APM Train 2)	▪ cleaning ▪ other
T1-16	Penthouse Level - above canopy (west side)	Door #P01F (APM Operator) - canopy door Fall arrest system (PO1F) and davit arms, APM Train 1 (APM Operator)	n/a Trapped key	Lockout of train (APM Train 1)	▪ cleaning ▪ other
T1-17	Roof access (e.g., security cameras, lightning rods/grounding)	Door #PH05 (GTAA) Travel restraints	n/a	Coordinate working areas with GTAA	▪ electrical (security cameras, lightning rods, grounding) ▪ cleaning ▪ other

A.5 Terminal 1 APM Station Danger Zone Drawings

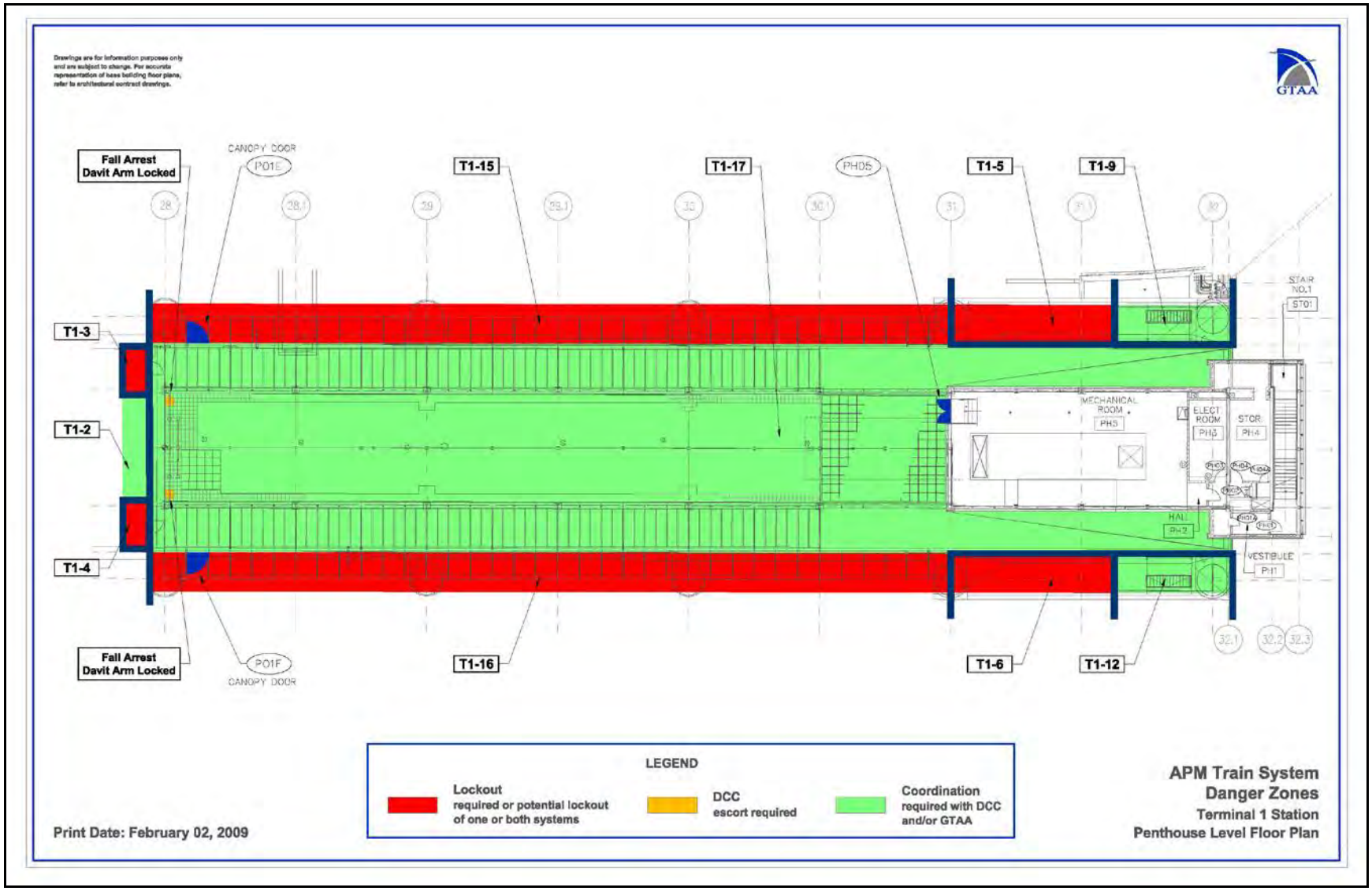
No.	T1 APM Station Drawing	Danger Zones Shown on Each Drawing																	
		T1-1	T1-2	T1-3	T1-4	T1-5	T1-6	T1-7	T1-8	T1-9	T1-10	T1-11	T1-12	T1-13	T1-14	T1-15	T1-16	T1-17	DZ-#
1	Concourse Level	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Platform Level	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	10
3	Penthouse Level	-	✓	✓	✓	✓	✓	-	-	✓	-	-	✓	-	-	✓	✓	✓	-
4	North Elevation	-	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	✓	✓	✓	10
5	South Elevation	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	✓	✓	✓	-
6	West Elevation	-	✓	-	✓	-	✓	-	-	-	-	-	✓	-	-	-	-	✓	-
7	East Elevation	-	✓	✓	-	✓	-	-	-	✓	-	-	-	-	-	✓	-	-	-
Note: *See following pages for drawings.*																			



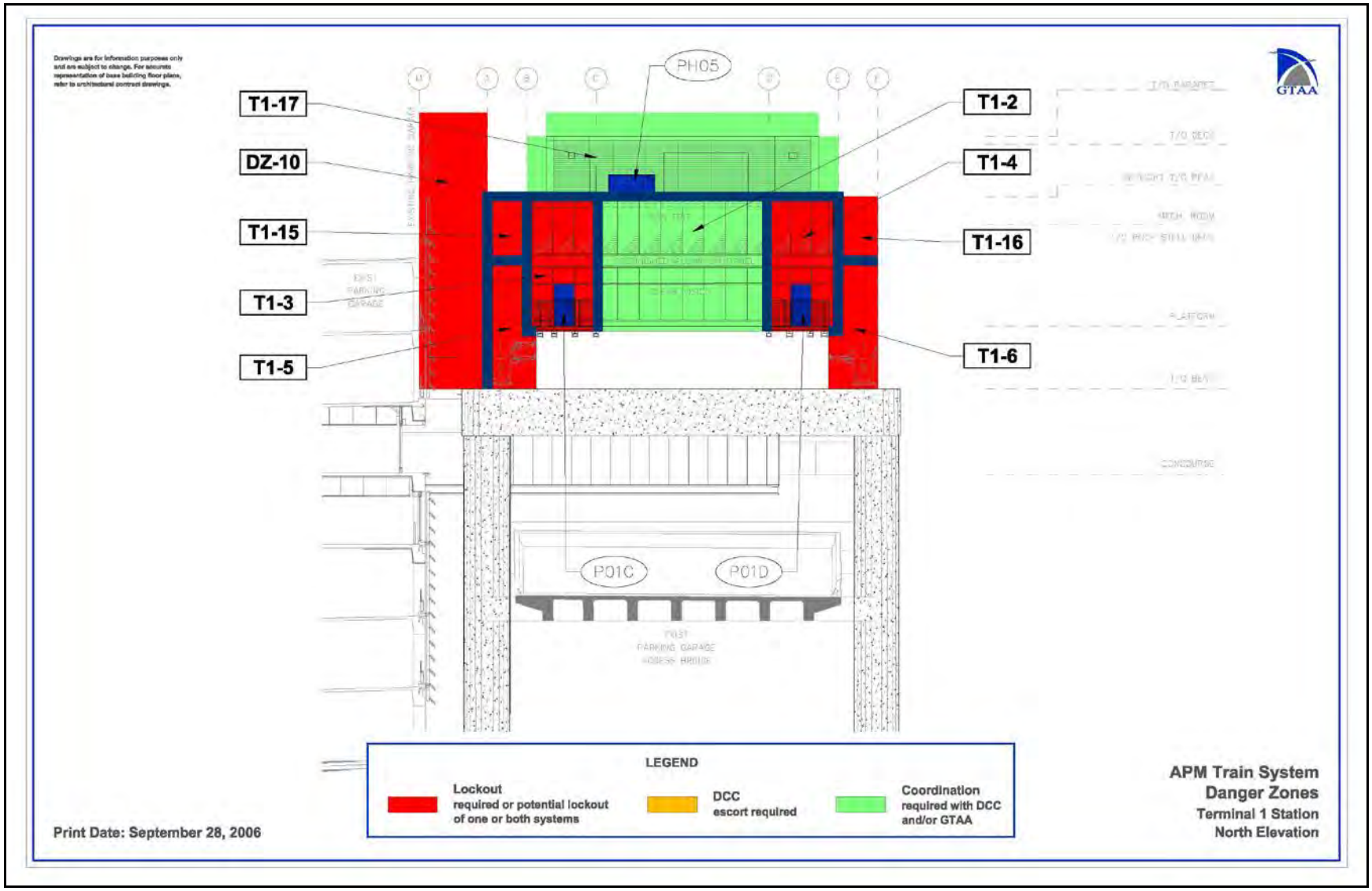
1. Terminal 1 Station, Concourse Level floor plan



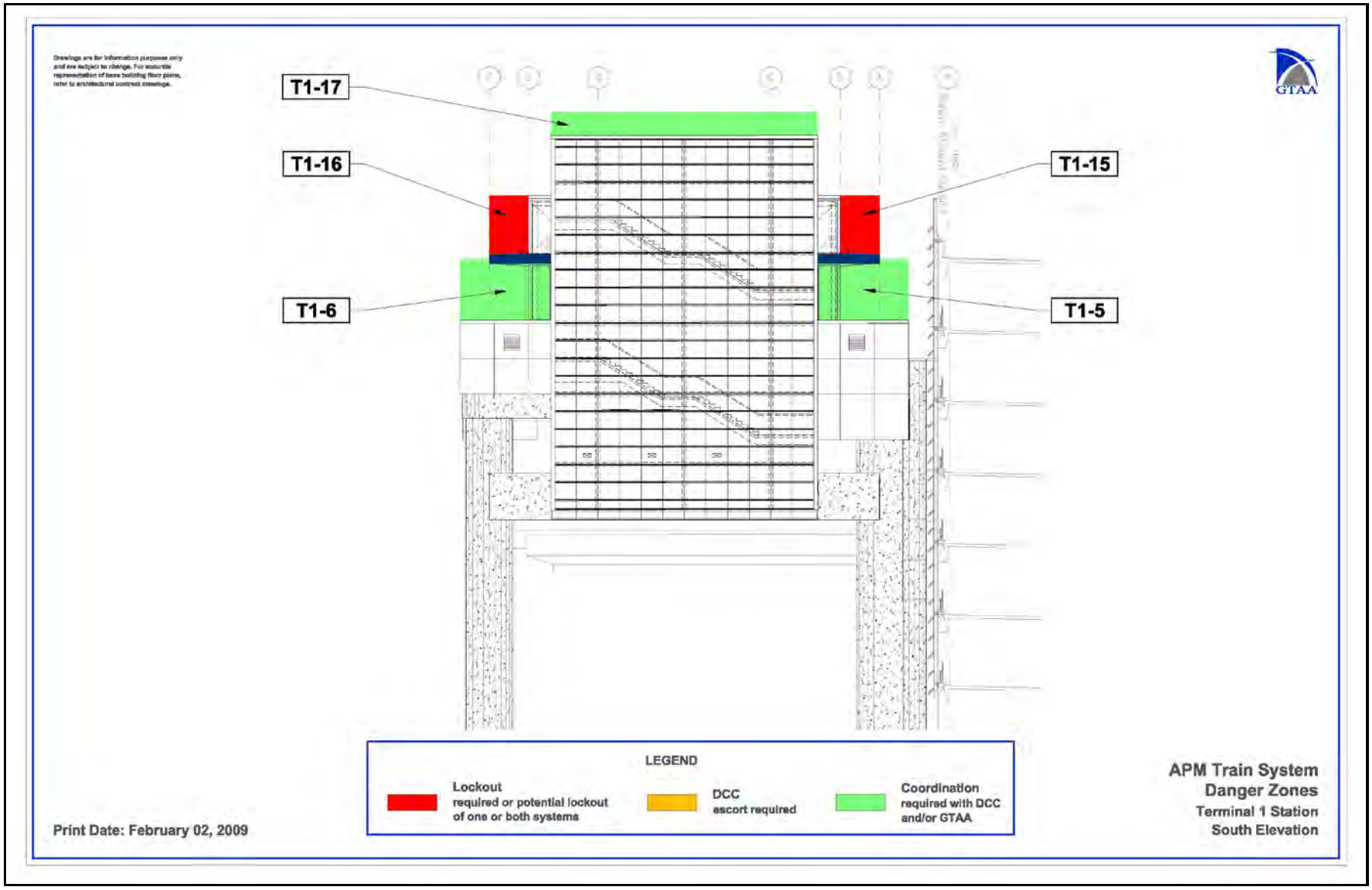
2. Terminal 1 Station, Platform Level floor plan



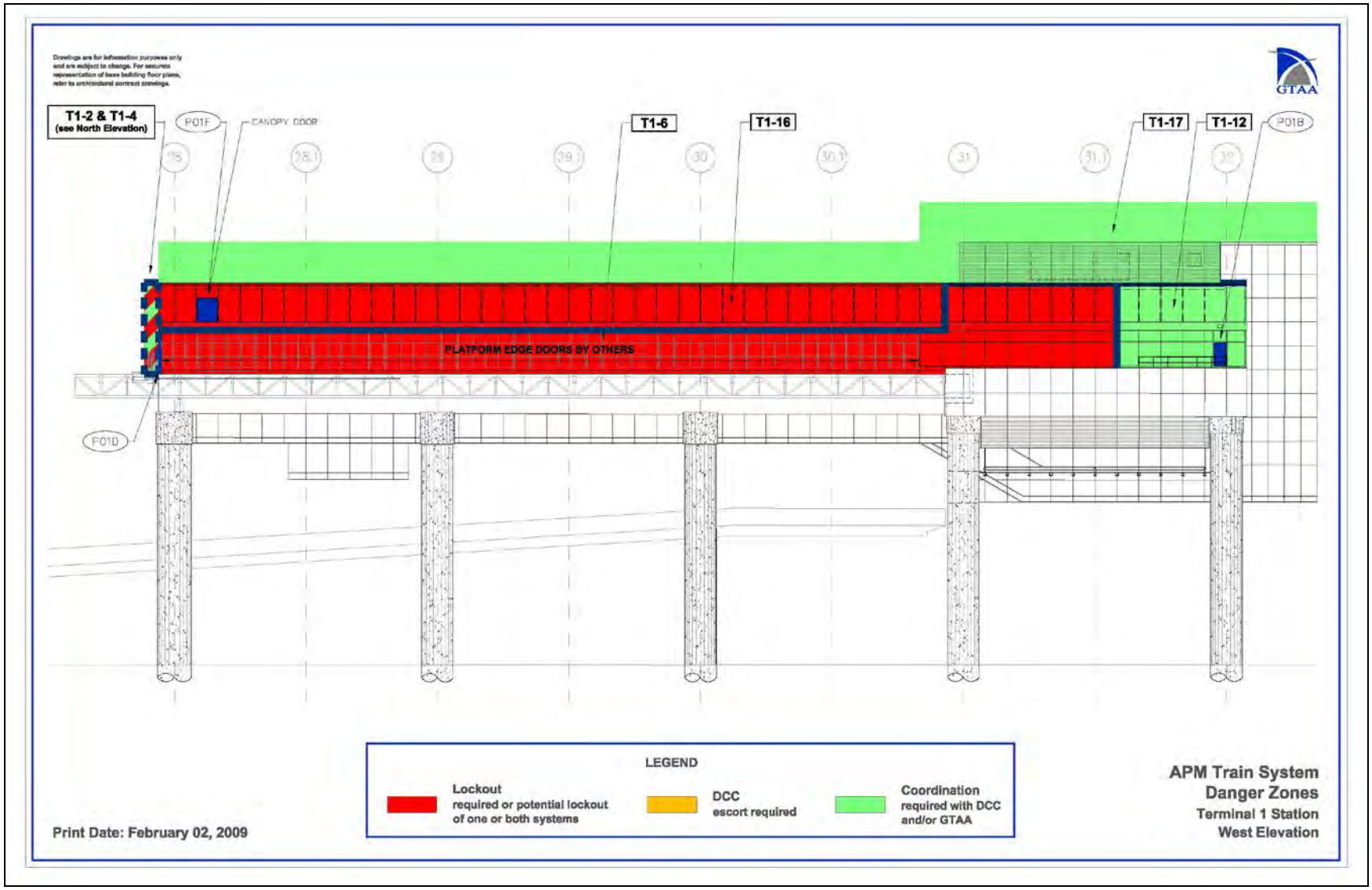
3. Terminal 1 Station, Penthouse Level floor plan



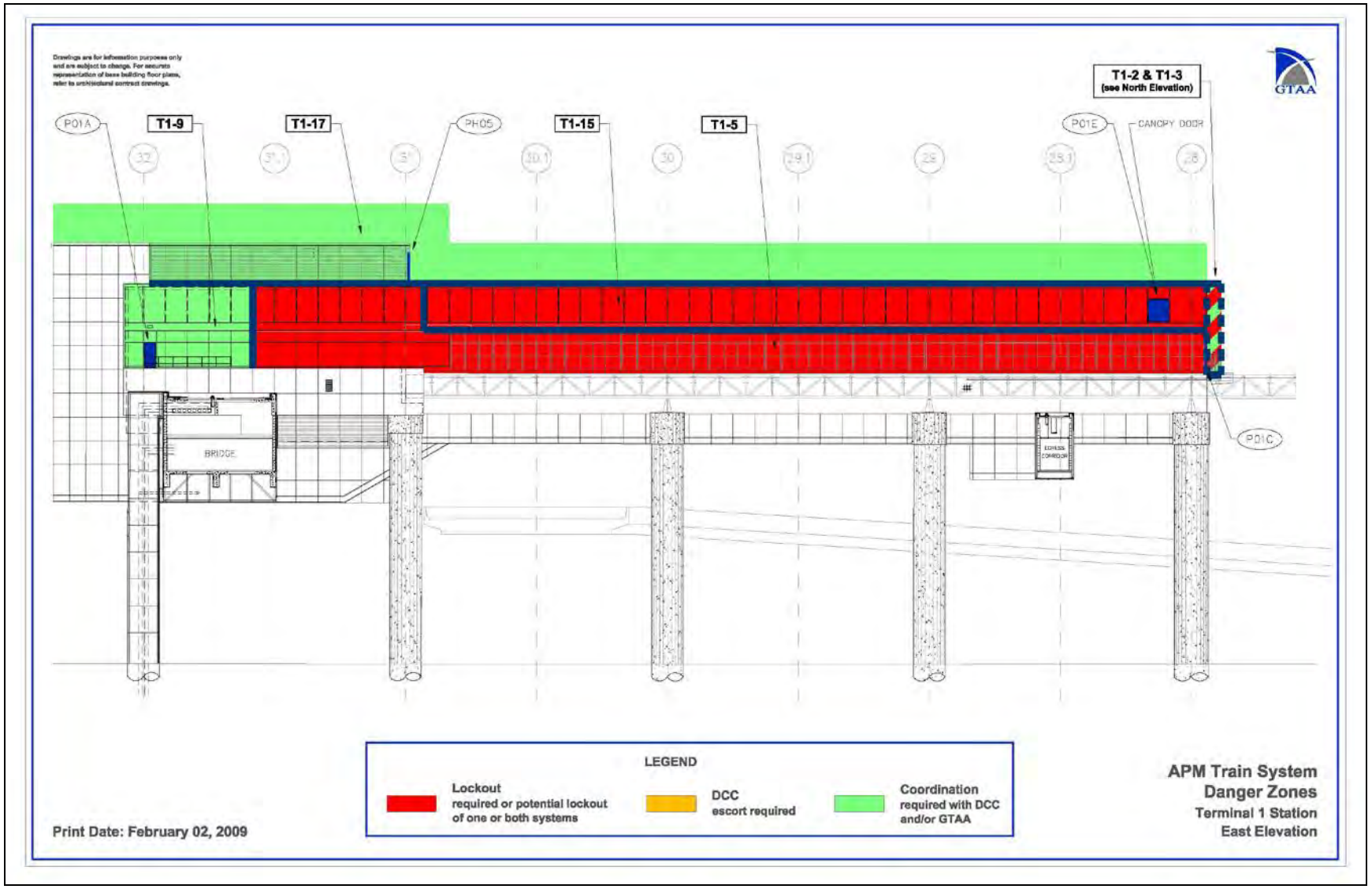
4. Terminal 1 Station, north elevation



5. Terminal 1 Station, south elevation



6. Terminal 1 Station, west elevation



7. Terminal 1 Station, east elevation

A.6 Pearson Station Danger Zone Matrix

Descriptions of Pearson Station Danger Zones

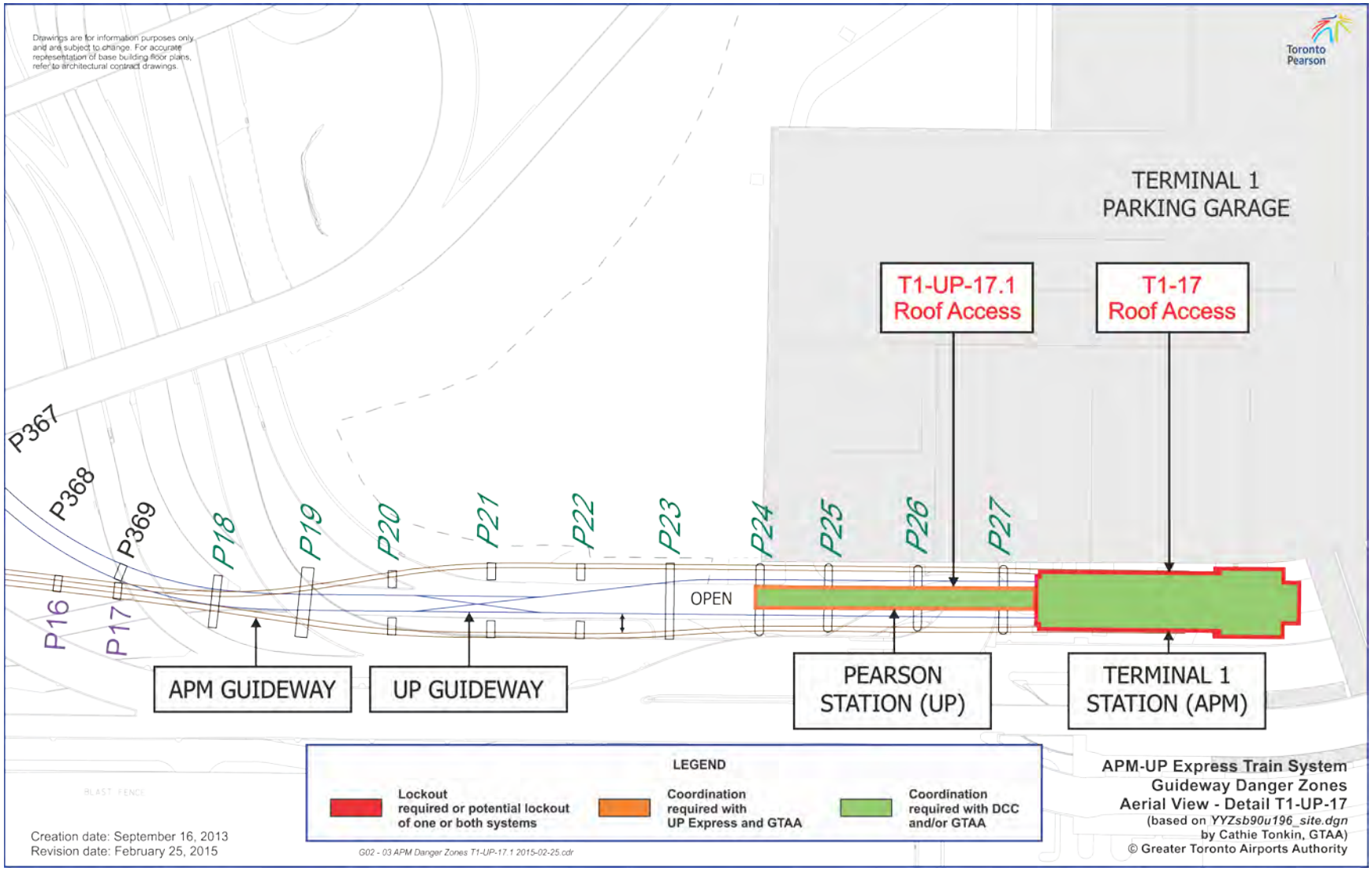
Zone	Area / Location	Access Point (Access control owner of doors / trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
T1-UP-17.1	UP station roof access	Door #PH05 (APM station)	n/a	Potential coordination with APM and UP Potential lock out and/or coordination with APM system near edges of roof, due to risk of falling objects.	▪ signage ▪ electrical ▪ security ▪ lightning rods ▪ cleaning ▪ other
T1-UP-18	Platform level- above parapet, below canopy (east side) P24 to P28	Blue light platform (northeast) #P01C	SCADA alarm	Potential lock out and/or coordination with APM system 2 (red)	▪ UP construction / maintenance ▪ other
T1-UP-19	Platform level- above parapet, below canopy (west side) P24 to P28	Blue light platform (northwest) #P01D	SCADA alarm	Potential lock out and/or coordination with APM system 1 (red)	▪ UP construction / maintenance ▪ other
T1-UP-20	Penthouse level above UP canopy (east)	Canopy door	May require trapped APM key	Lockout of train (APM Train 2) (red)	▪ cleaning ▪ other
T1-UP-21	Penthouse level above UP canopy (west)	Canopy door	May require trapped APM key	Lockout of train (APM Train 1) (red)	▪ cleaning ▪ other

A.7 Pearson Station Danger Zone Drawings

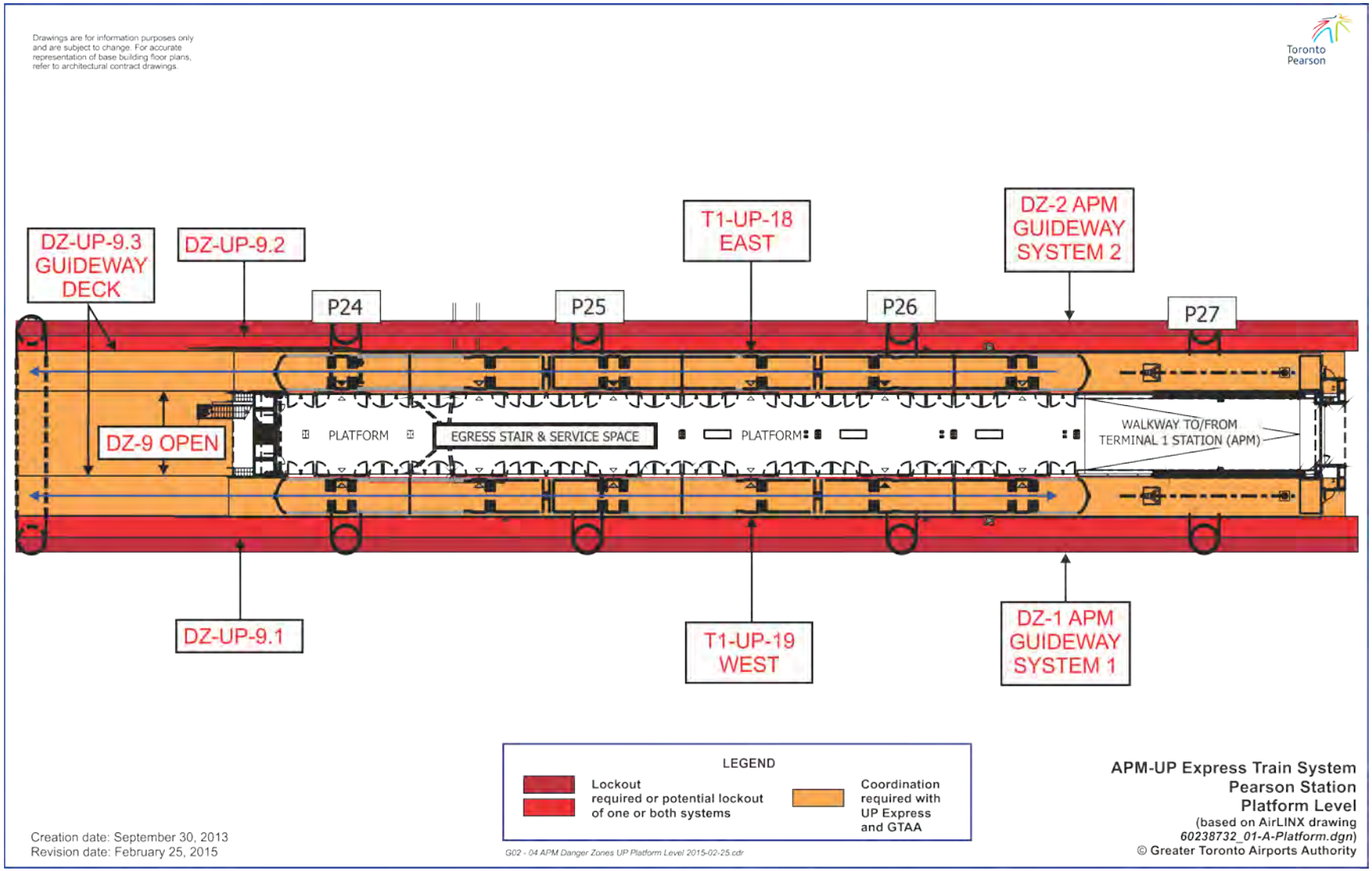
No.	Pearson Station Drawing*	Danger Zones Shown on Each Drawing								
		DZ-UP--9.1	DZ-UP--9.2	DZ-UP--9.3	T1-UP--17.1	T1-UP--18	T1-UP-19	T1-UP-20	T1-UP-21	Other
1	Aerial View – Detail T1-UP-17.1 (Roof)	-	-	-	✓	-	-	-	-	-
2	Platform Level	✓	✓	✓	-	✓	✓	-	-	DZ-9, DZ-1,DZ-2
3	Mid Level	-	-	-	-	-	-	-	-	DZ-1, DZ-2
4	Concourse Level	✓	✓	-	-	-	-	-	-	DZ-1, DZ-2
5	North Cross Section	✓	✓	✓	✓	✓	✓	-	✓	DZ-1, DZ-2
6	South Cross Section	✓	✓	✓	✓	✓	✓	-	✓	DZ-1, DZ-2
7	Longitudinal West	-	-	-	-	-	✓	-	✓	-
8	Longitudinal East	-	-	-	-	✓	-	✓	-	-

Note: *See following pages for drawings.*

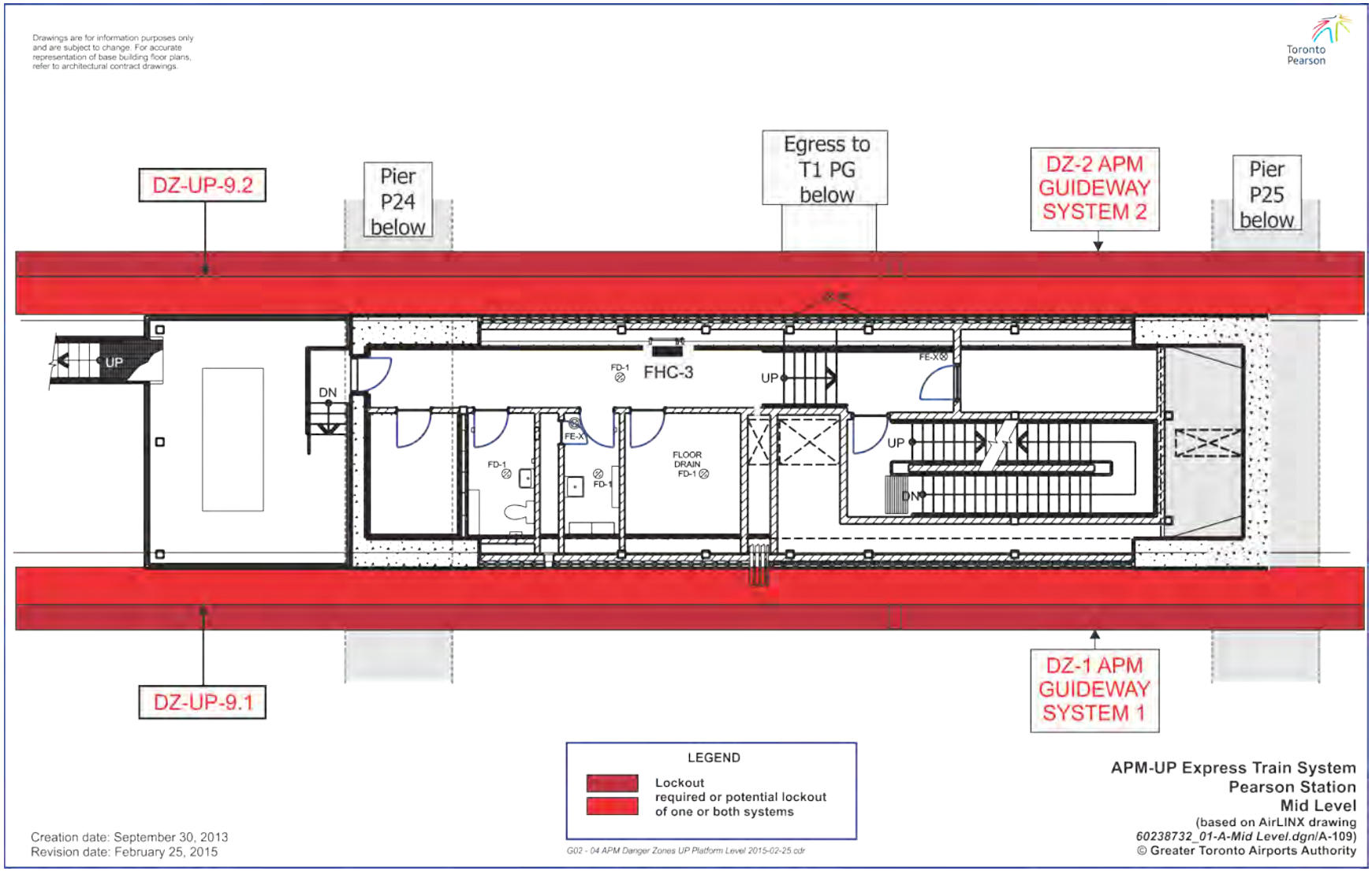
**For the area below the Union-Pearson Express guideway and below Pearson Station from piers P369 to P28, see DZ-13 in Guideway/Train Danger Zones sections A.2 and A.3.*



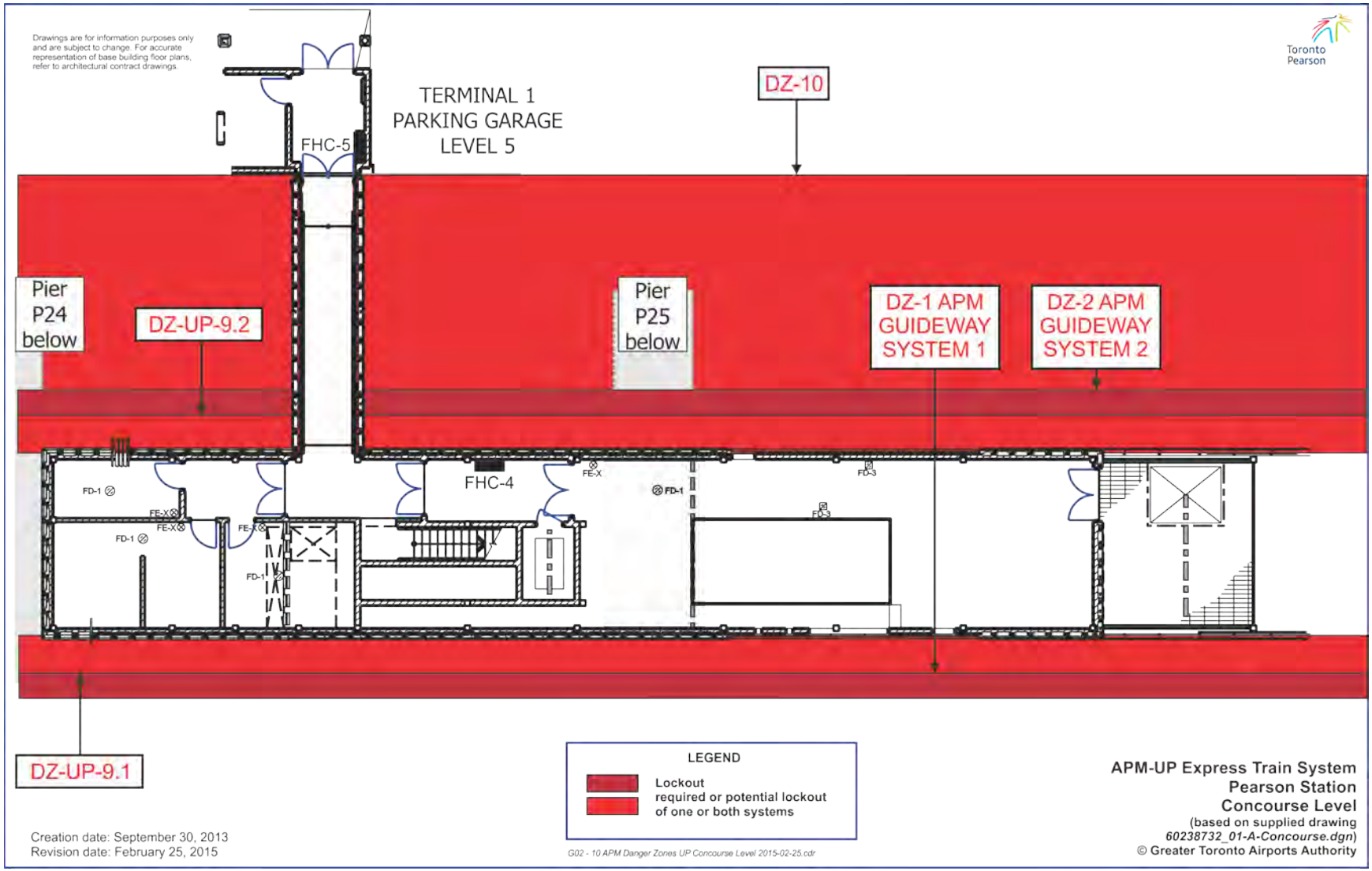
1. Aerial View: Danger Zone T1-UP-17.1



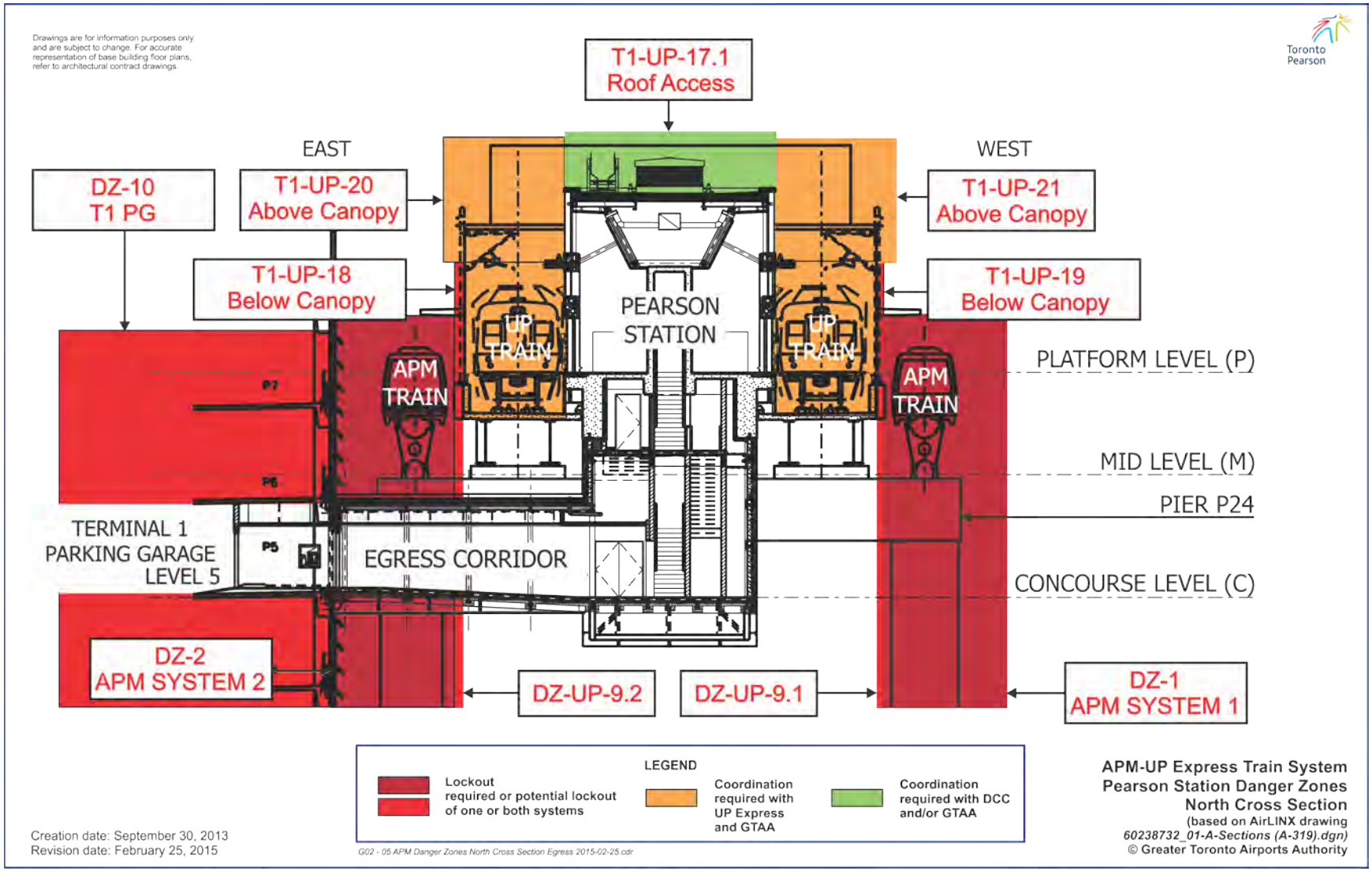
2. Pearson Station, Platform Level Plan View



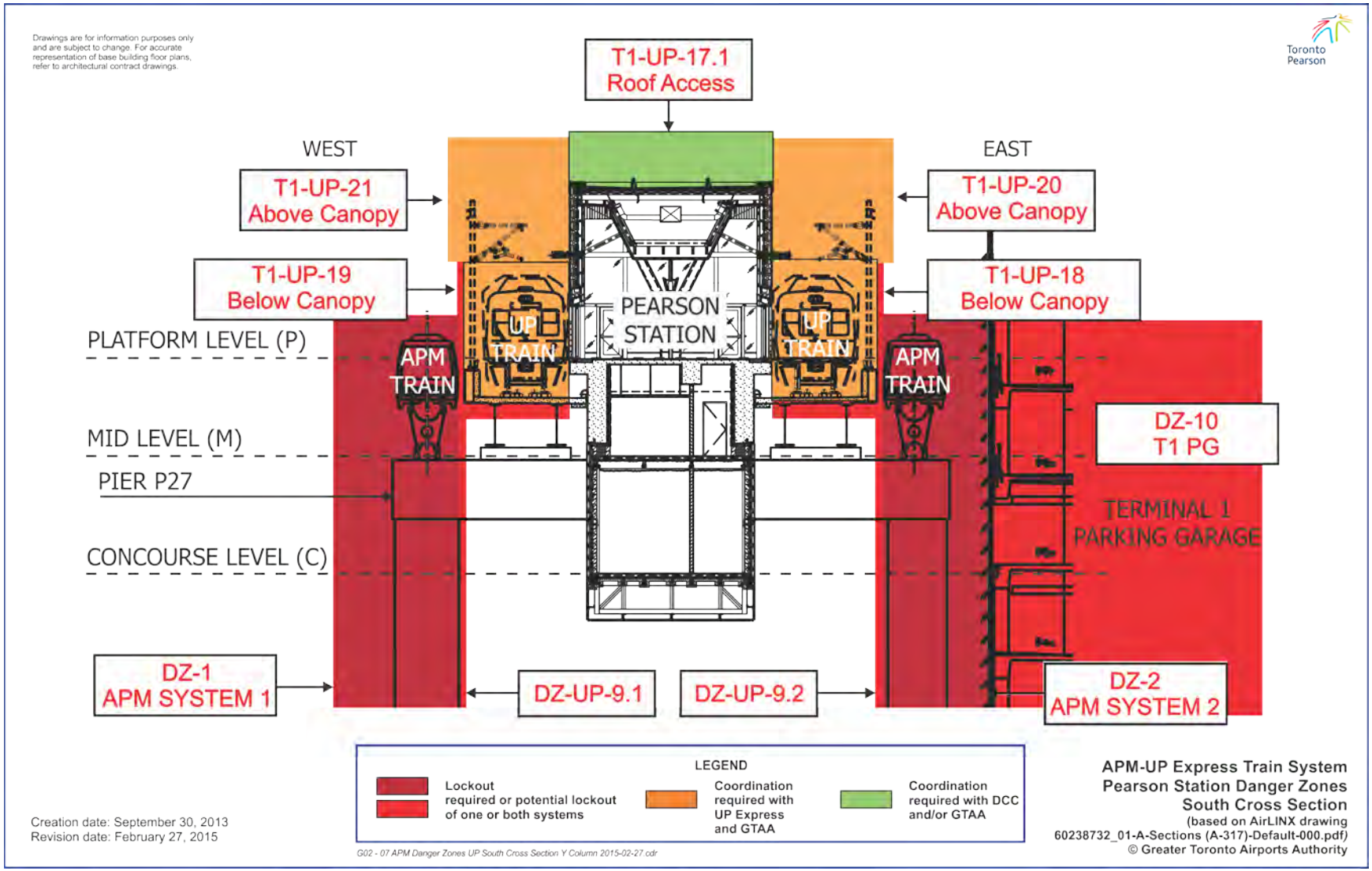
3. Pearson Station, Mid Level Plan View



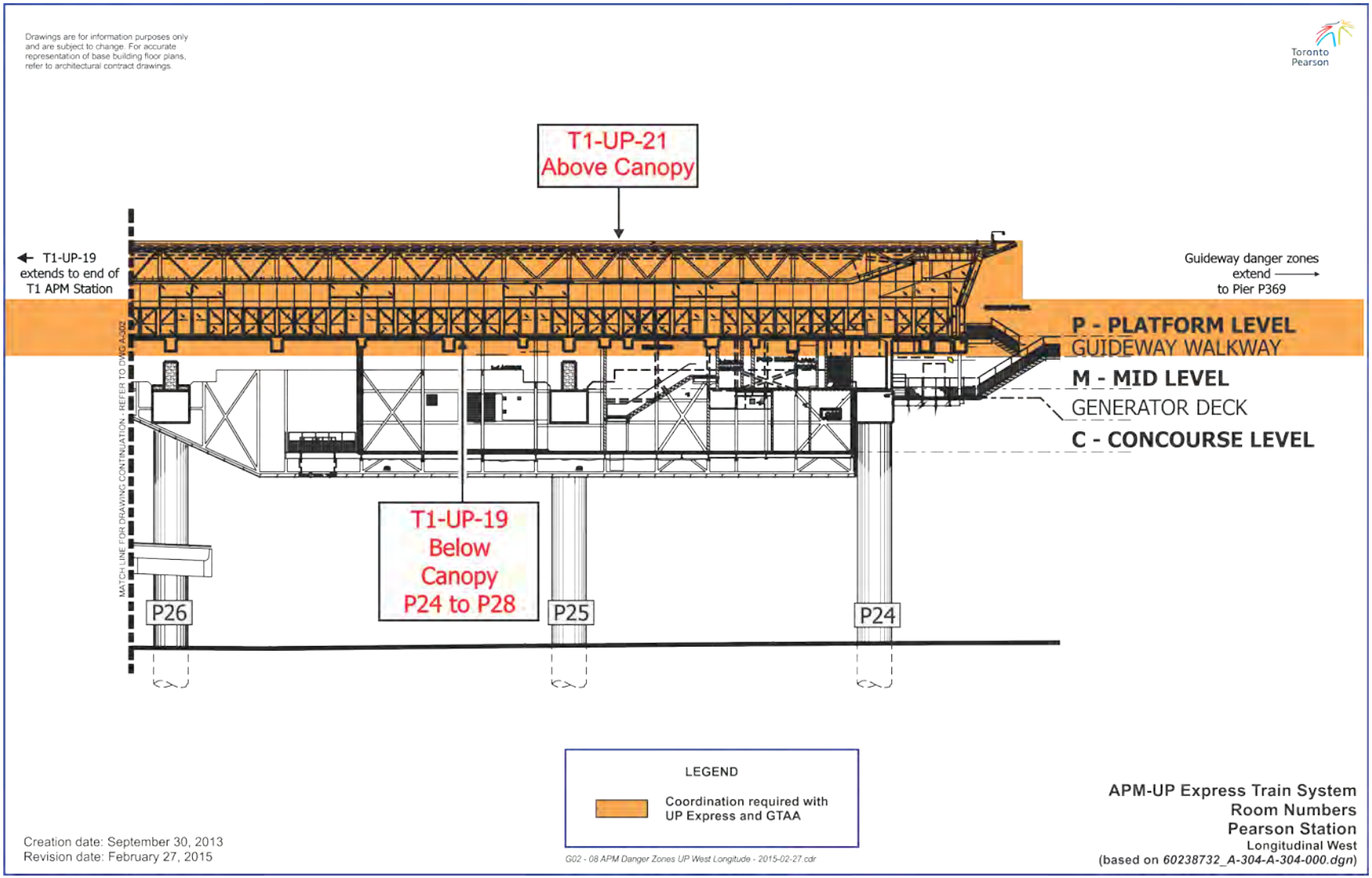
4. Pearson Station, Concourse Level Plan View



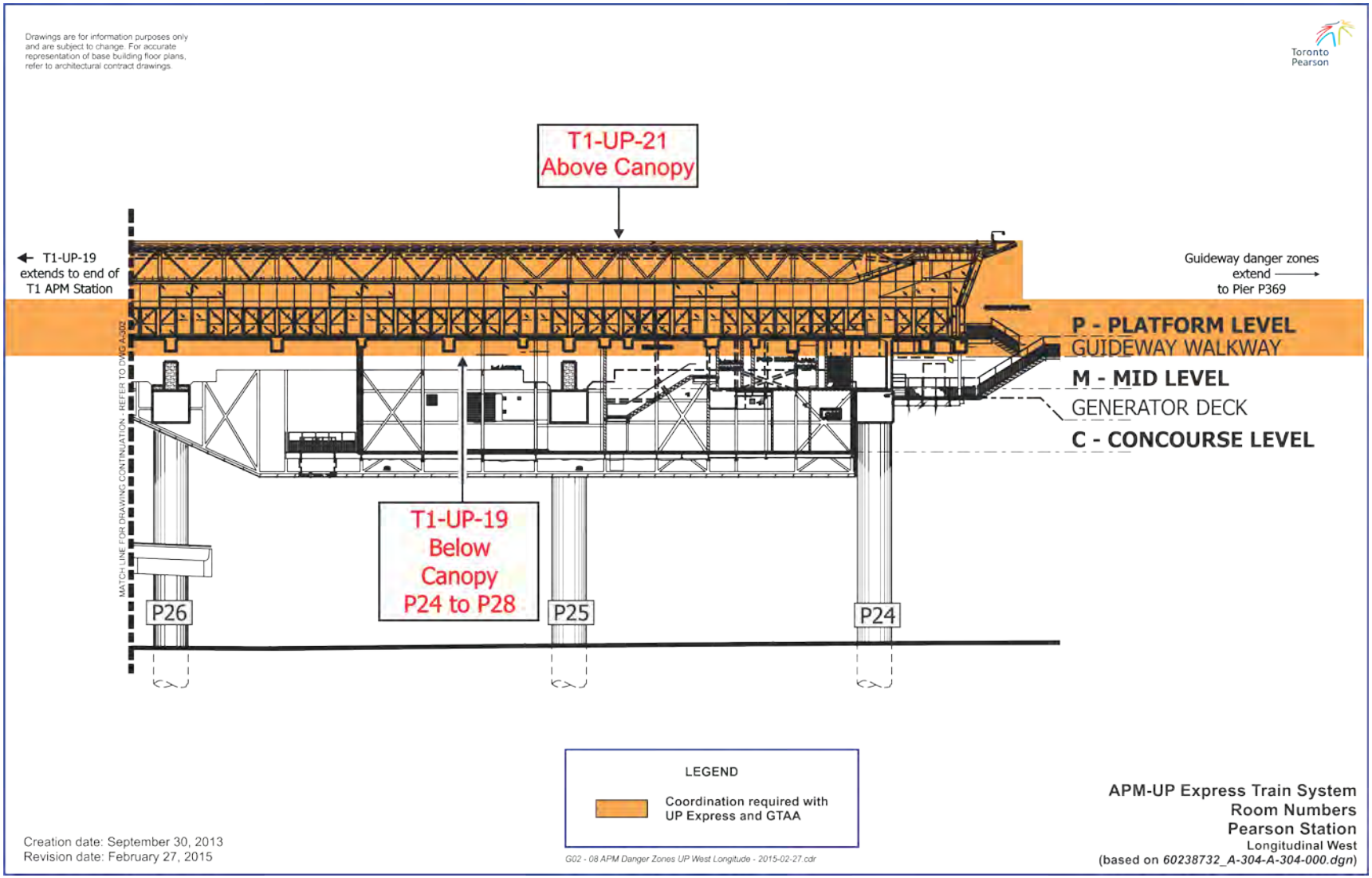
5. Pearson Station, North Cross Section



6. Pearson Station, South Cross Section



7. Pearson Station, Longitudinal West View



8. Pearson Station, Longitudinal East View

A.8 Terminal 3 APM Danger Zones Matrix

Descriptions of Terminal 3 APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **T3-7** and **T3-8** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
T3-1	Concourse Level, exterior access (four exterior catwalk areas)	Doors #CO3A, CO3B, CO5A, CO5B	n/a	APM Operator /GTAA coordination, potential shutdown of one or both systems	▪ cleaning ▪ other
T3-2	Exterior façade on the west side of the station, around the main stairs (excluding the blue light stations)	Door #PH05 (access from roof) (GTAA) Fall arrest device (PO1G - APM Train 1, PO1G - APM Train 2) and davit arms (APM Operator)	n/a Trapped key	Lockout of both trains (APM Trains 1 & 2)	▪ cleaning ▪ other
T3-3	Blue light platform (northwest side) - incorporates space above and below the blue light station (Concourse, Platform, and Penthouse levels)	Door #P01B (APM Operator) - northwest side of Platform Level	Remote SCADA alarm	Lockout of train (APM Train 2)	▪ cleaning ▪ other
T3-4	Blue light platform (southwest side) - incorporates space above and below the blue light station (Concourse, Platform, and Penthouse levels)	Door #P01C (APM Operator) - southwest side of Platform Level	Remote SCADA alarm	Lockout of train (APM Train 1)	▪ cleaning ▪ other

Descriptions of Terminal 3 APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **T3-7** and **T3-8** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
T3-5	Platform Level - above guideway, below canopy (north side)	APM maintenance vehicle (APM Operator)	n/a	Lockout of train (APM Train 2) and APM Operator escort to operate vehicle	▪ cleaning ▪ other
T3-6	Platform Level - above guideway, below canopy (south side)	APM maintenance vehicle (APM Operator)	n/a	Lockout of train (APM Train 1) and APM Operator escort to operate vehicle	▪ cleaning ▪ other
T3-7*	Interior platform area at platform edge doors (north side)	Terminal 3 Station (public space)	n/a	APM Operator /GTAA coordination, potential shutdown of APM Train 2 (work to occur during scheduled downtime)	▪ cleaning* ▪ electrical ▪ HVAC ▪ other
T3-8*	Interior platform area at platform edge doors (south side)	Terminal 3 Station (public space)	n/a	v/GTAA coordination, potential shutdown of APM Train 1 (work to occur during scheduled downtime)	▪ cleaning* ▪ electrical ▪ HVAC ▪ other

Descriptions of Terminal 3 APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **T3-7** and **T3-8** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
T3-9	Epsilon unit platform, including three stories (access to the southeast and southwest blue light stations and the catwalk (Platform Level), stairs, and pipes below (Concourse Level))	Door #P01D (APM Operator) - northeast side of Platform Level Door #PO1E (APM Operator) - southeast side of Platform Level	Remote SCADA alarm Remote SCADA alarm	APM Operator coordination	▪ HVAC ▪ plumbing ▪ fire suppression ▪ cleaning ▪ other
T3-10	Penthouse Level - above canopy (north side)	Door #P01F (APM Operator) - canopy door Fall arrest device (PO1F) and davit arms, APM Train 2 (APM Operator)	n/a Trapped key	Lockout of train (APM Train 2)	▪ cleaning ▪ other
T3-11	Penthouse Level - above canopy (south side)	Door #P01G (APM Operator) - canopy door Fall arrest device (PO1G) and davit arms, APM Train 1 (APM Operator)	n/a Trapped key	Lockout of train (APM Train 1)	▪ cleaning ▪ other

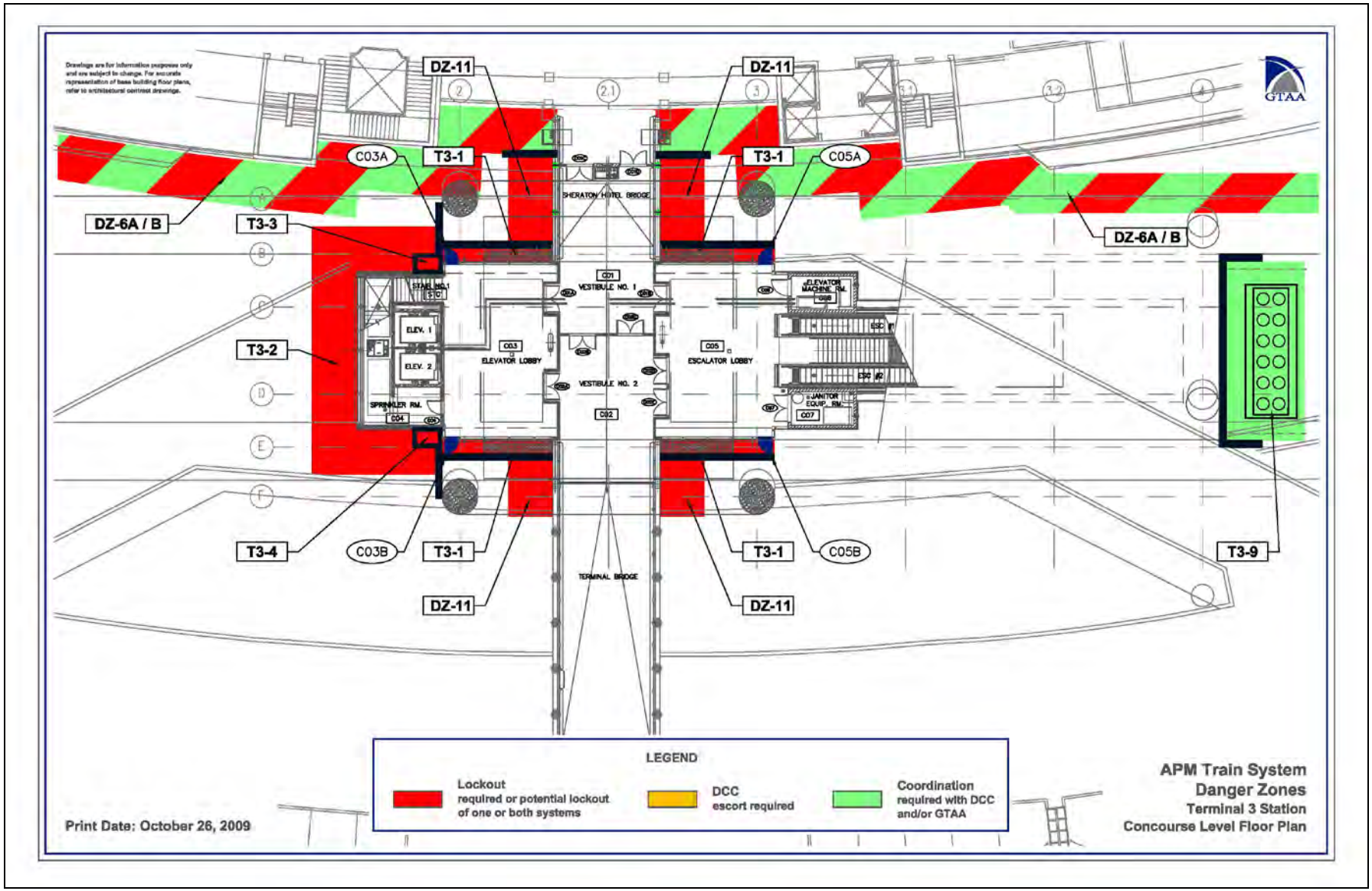
Descriptions of Terminal 3 APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **T3-7** and **T3-8** may require the lockdown of train doors or train systems as required.

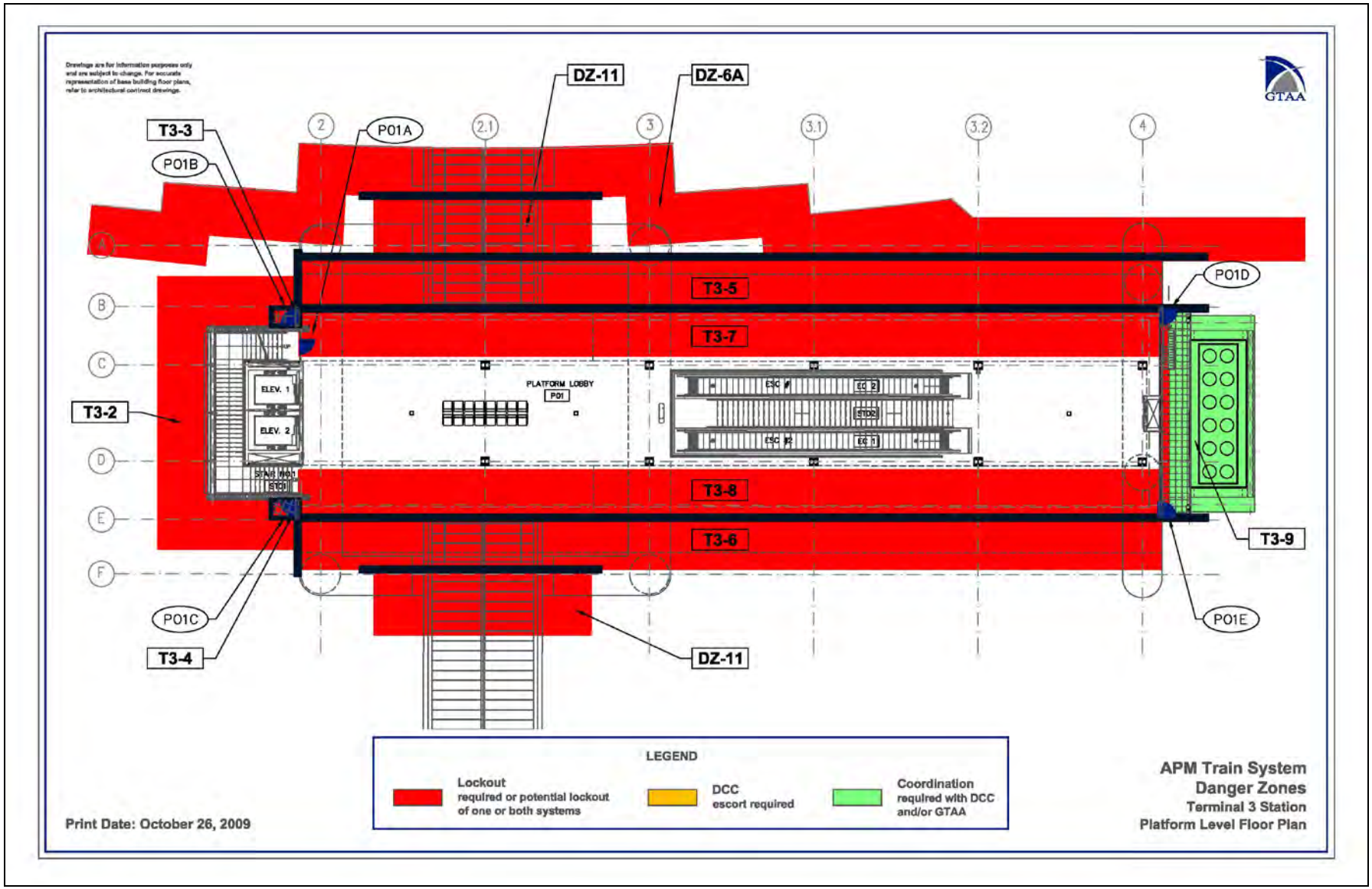
Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
T3-12	Roof access (e.g., security cameras, lightning rods/grounding) - Penthouse Level and Roof Level (above elevator)	Door #PH05 (GTAA)	n/a	Coordinate working areas with GTAA	▪ electrical (cameras, lightning rods, grounding) ▪ cleaning ▪ other

A.9 Terminal 3 APM Station Danger Zone Drawings

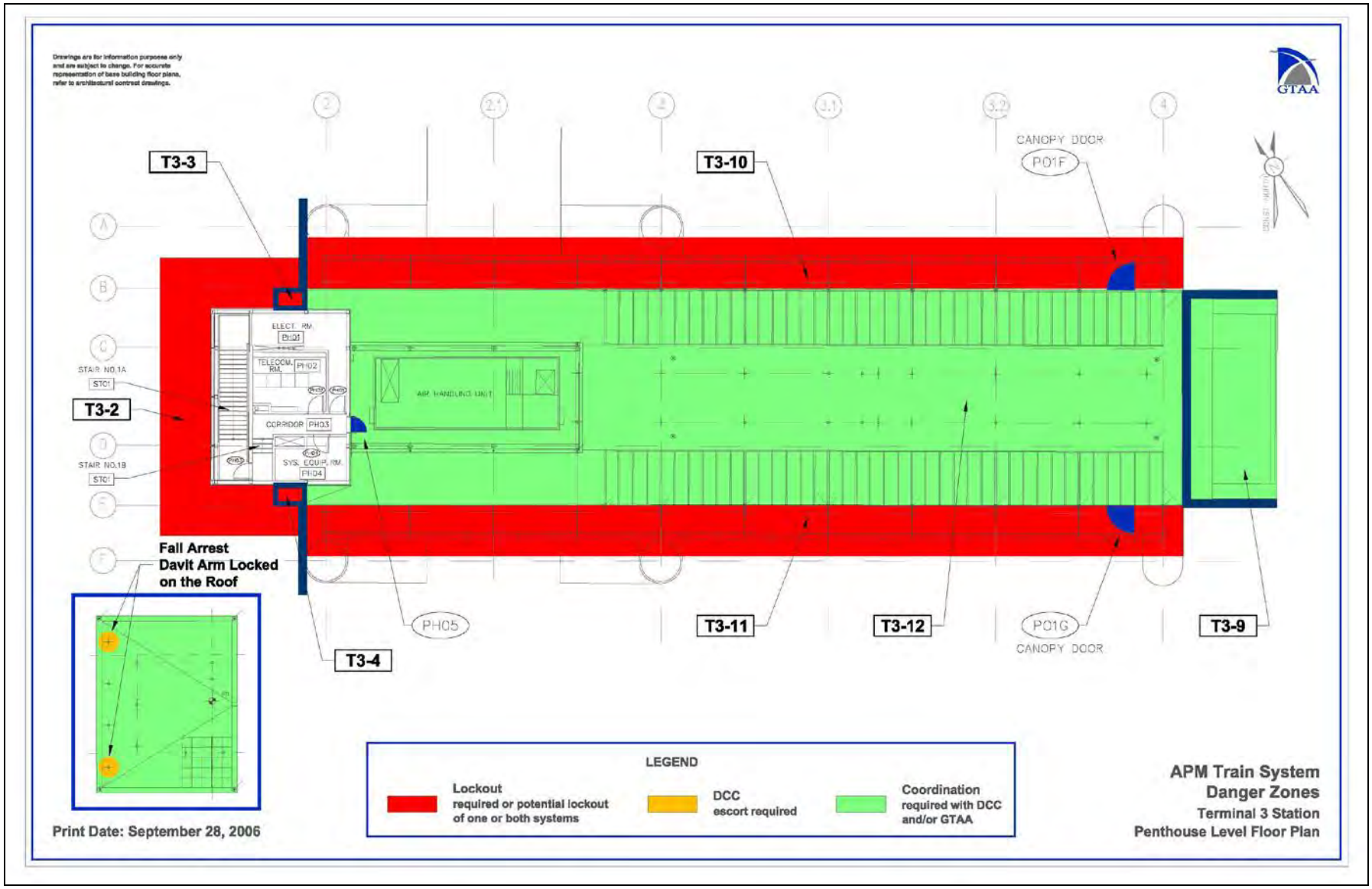
No.	T3 APM Station Drawing	Danger Zones Shown on Each Drawing												
		T3-1	T3-2	T3-3	T3-4	T3-5	T3-6	T3-7	T3-8	T3-9	T3-10	T3-11	T3-12	DZ-#
1	Concourse Level	✓	✓	✓	✓	-	-		-	✓	-	-	-	6A, 6B, 11
2	Platform Level	-	✓	✓	✓	-	-	✓	✓	✓	-	-	-	6A, 11
3	Penthouse Level	-	✓	✓	✓	-	-	-	-	✓	✓	✓	✓	-
4	North Elevation	✓	✓	✓	-	✓	-	-	-	✓	✓	-	✓	-
5	South Elevation	✓	✓	-	✓	-	✓	-	-	-	-	✓	✓	-
6	West Elevation	✓	✓	✓	✓	✓	✓	-	-	-	✓	✓	✓	1, 2, 6A, 6B, 11
7	East Elevation	✓	-	-	-	✓	✓	-	-	✓	✓	✓	✓	1, 2, 6A, 6B, 11
Note: *See following pages for drawings.*														



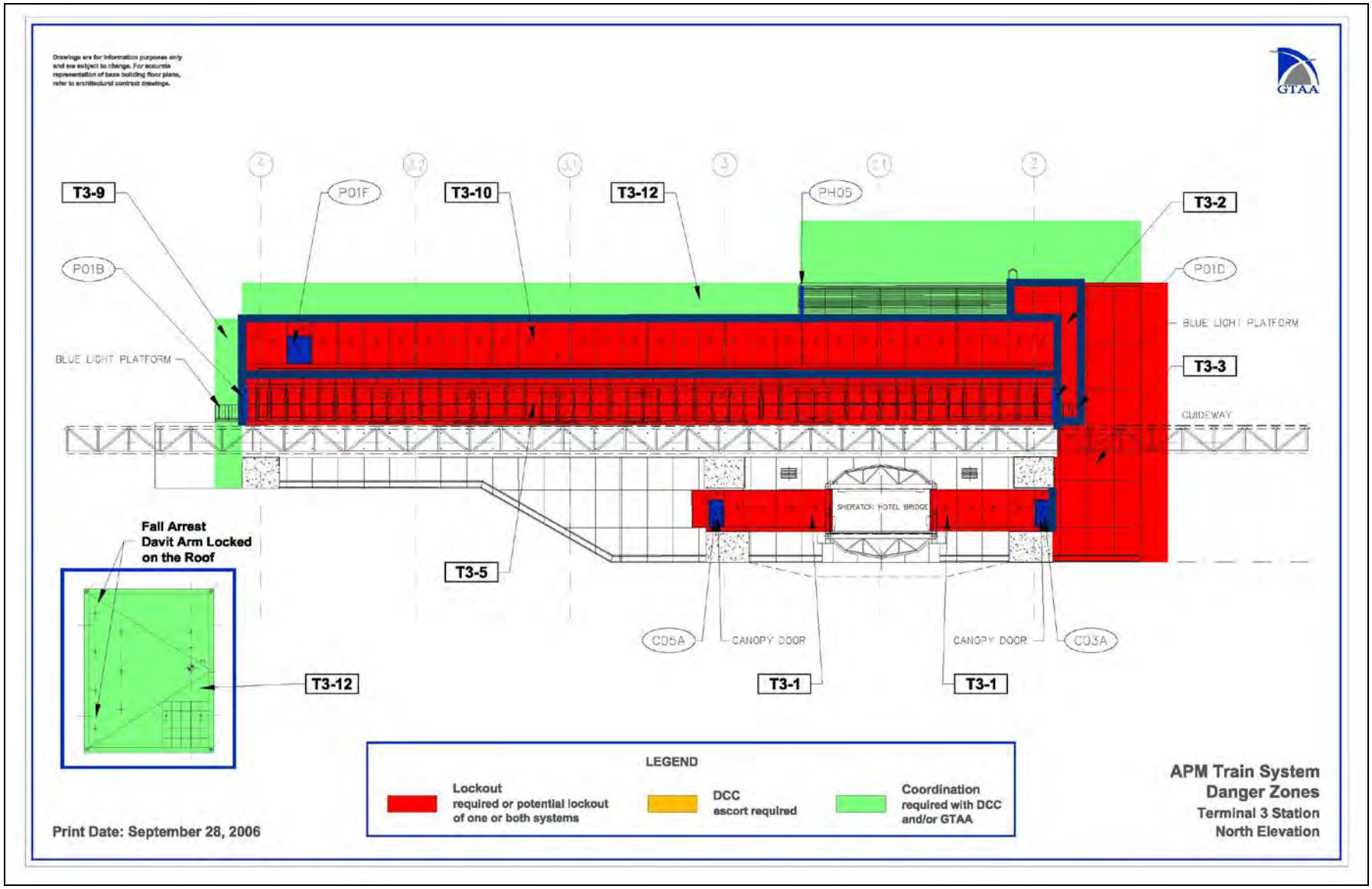
1. Terminal 3 Station, Concourse Level floor plan



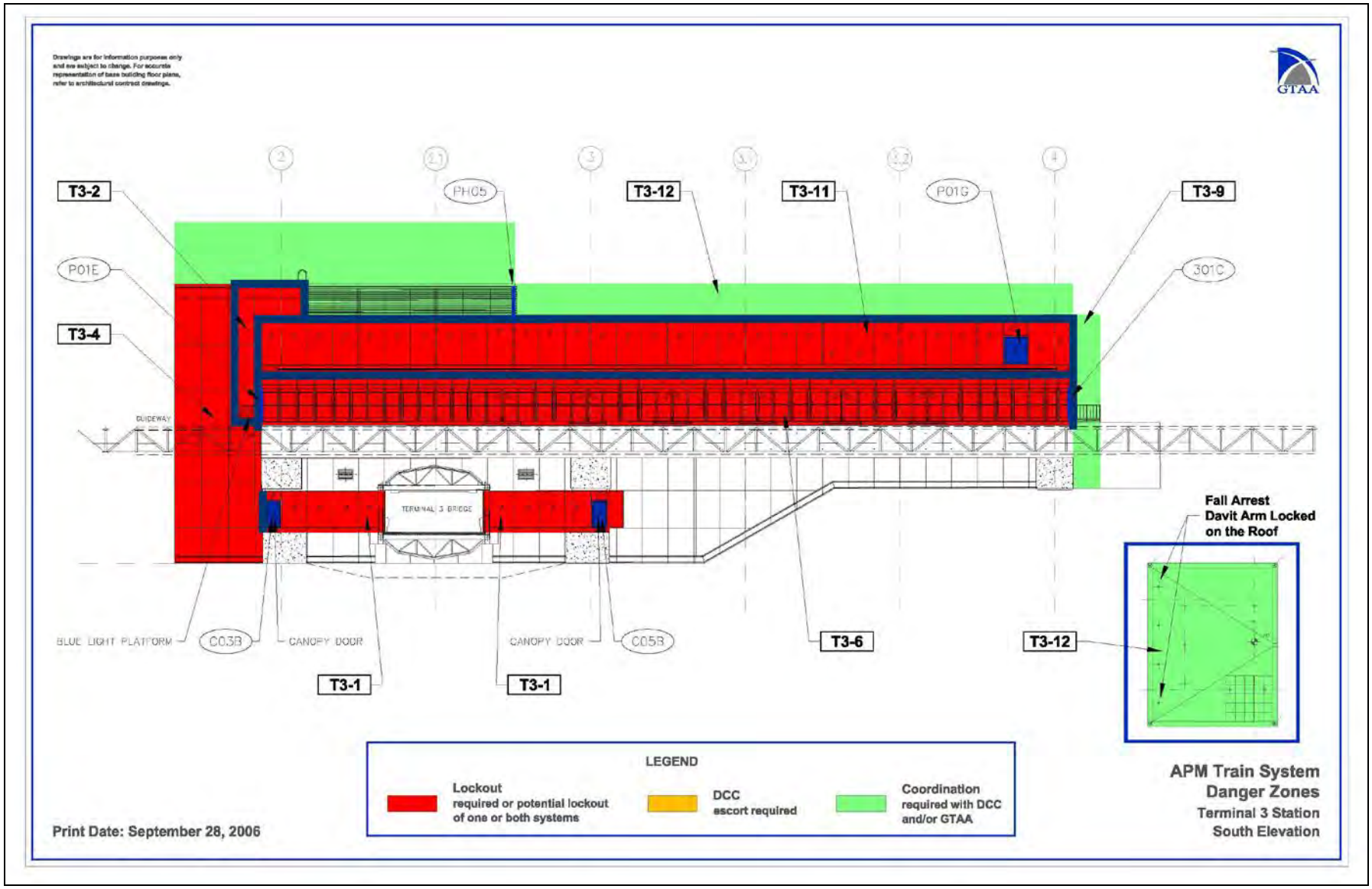
2. Terminal 3 Station, Platform Level floor plan



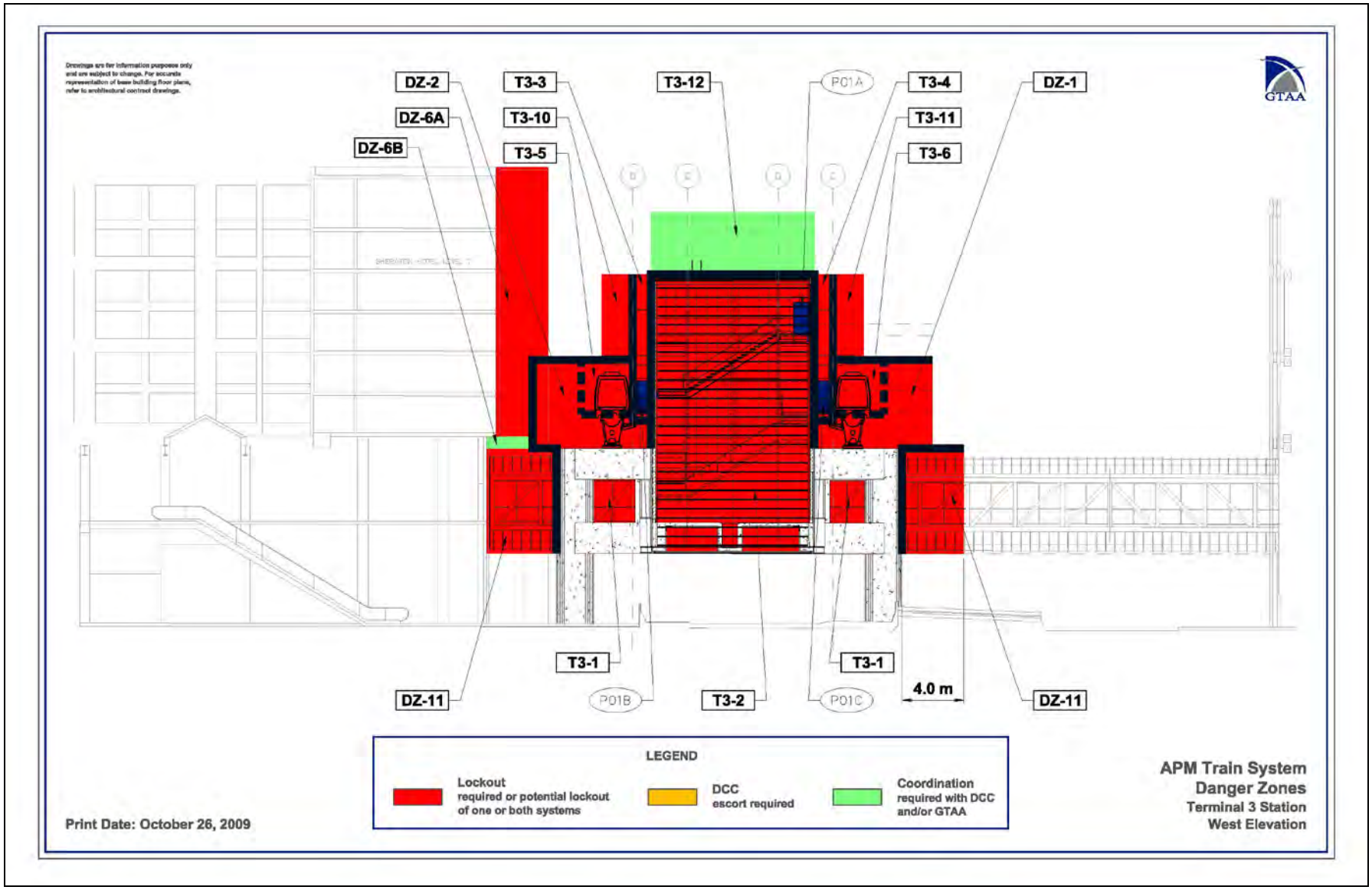
3. Terminal 3 Station, Penthouse Level floor plan



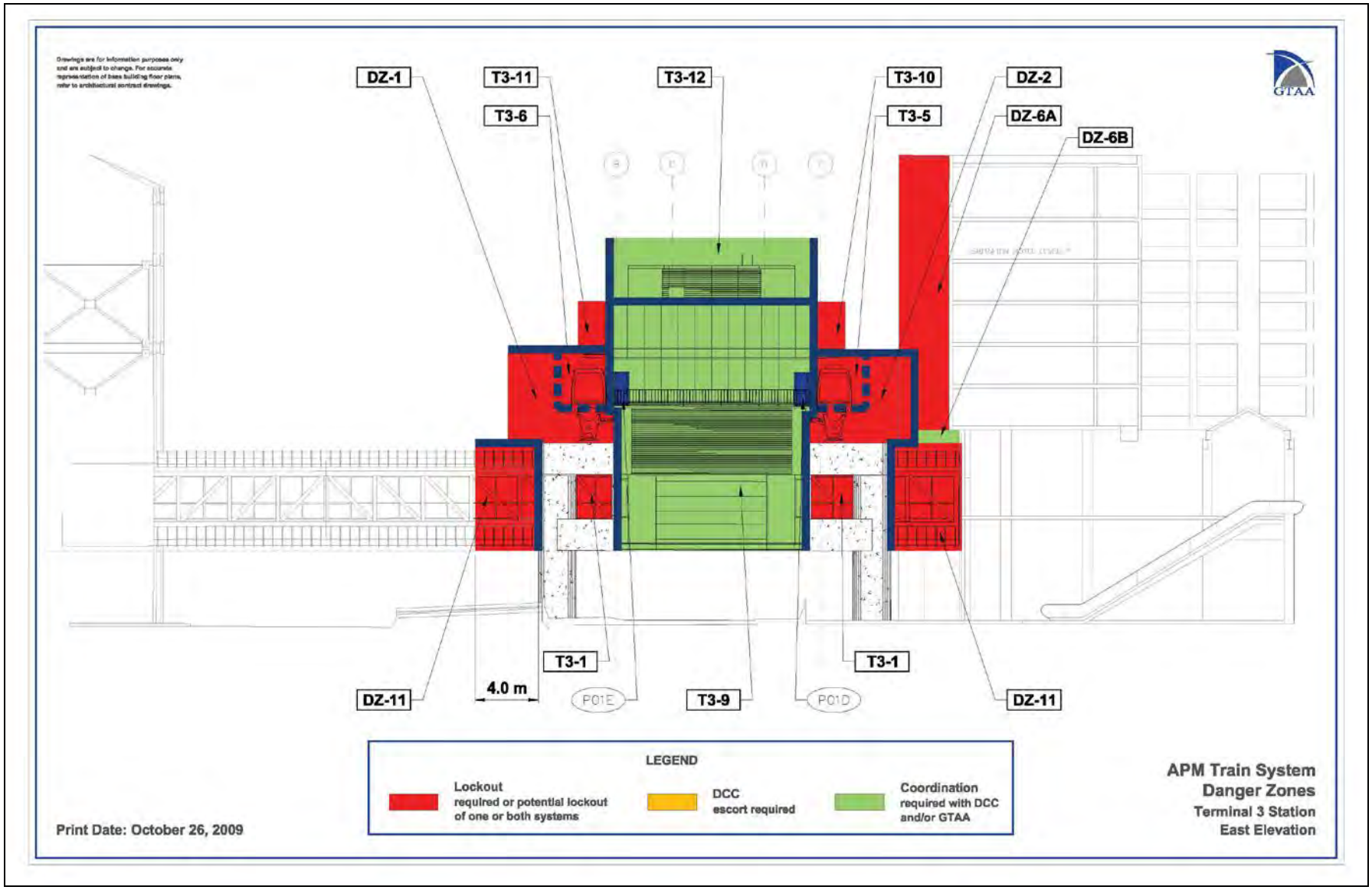
4. Terminal 3 Station, north elevation



5. Terminal 3 Station, south elevation



6. Terminal 3 Station, west elevation



7. Terminal 3 Station, east elevation

A.10 Viscount APM Station Danger Zones Matrix

Descriptions of Viscount APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **VS-9** and **VS-10** may require the lockdown of train doors or train systems as required.

Zone	Area / Location	Access Point (Access control owner of doors / trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
VS-1	West side exterior of Viscount Station (below guideway entrance to station and between guideways) - access from ground	n/a	n/a	Lockout of both trains (APM Trains 1 & 2)	▪ cleaning ▪ other
VS-2	North exterior curtain wall by train entrance (first five metres from west side of building) Note: No access from ground level permitted.	Door #434 (GTAA) Fall arrest device and davit arms, APM train 1 (APM Operator)	n/a Trapped key	Lockout of train (APM Train 1)	▪ cleaning ▪ other
VS-3	South exterior curtain wall by train entrance (first five metres from west side of building) Note: No access from ground level permitted.	Door #434 (GTAA) Fall arrest device and davit arms, APM Train 1 (APM Operator)	n/a Trapped key	Lockout of train (APM Train 2)	▪ cleaning ▪ other

Descriptions of Viscount APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **VS-9** and **VS-10** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
VS-4	APM Operator-controlled spaces on the Platform Level, including: washrooms, locker rooms, lunchroom, stairwell, janitorial room	Doors #111, 116a	n/a	APM Operator coordination	▪ cleaning ▪ electrical ▪ Fire Alarm System (FAS) ▪ lighting ▪ sprinkler system ▪ other

Descriptions of Viscount APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **VS-9** and **VS-10** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
VS-5	APM Operator controlled spaces, including: ▪ North and South Drive Bull Wheel Rooms (Rooms 126-127, Mezzanine and Concourse Level) ▪ Storage Room (Room 124) ▪ Workshop (Room 131) ▪ North Deflector Wheel (Room 213) ▪ South Deflector Wheel (Room 241) Note: doors on the perimeter of this zone are not mentioned if they provide entrance from another area requiring escort or system lockout.	Enter APM Operator space through one of the following doors, per APM Operator decision: ▪ Door 113B - from North Corridor to Loading Room ▪ Door #124B - from North Corridor to Storage Room ▪ Door #126B (APM Operator) - exterior entrance to North Drive Room, Concourse Level ▪ Door #114A (APM Operator) - exterior rollup door into Loading Room ▪ Door #114B (APM Operator) - exterior door into Loading Room ▪ Door #234 (APM Operator) - from emergency stairs, Mezzanine Level	n/a n/a Remote SCADA alarm Remote SCADA alarm Remote SCADA alarm Remote SCADA alarm	APM Operator escort	▪ bird netting ▪ cabling ▪ electrical ▪ fire alarm ▪ heat tracing ▪ HVAC ▪ lighting ▪ sprinkler system ▪ other

Descriptions of Viscount APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **VS-9** and **VS-10** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
VS-6	Power Room (Room 128)	Door #128 (APM Operator - code access)	Remote SCADA alarm	APM Operator escort, potential lockout of one or both trains (as determined by Specialist, People Moving Devices and APM Operator.	▪ HVAC ▪ lighting ▪ building electrical breakers ▪ drains ▪ other
VS-7	Maintenance bay areas, including areas on the Platform and Mezzanine levels: ▪ North Maintenance Bay (Room 210) ▪ South Maintenance Bay (Room 209) ▪ North Washbay (Room 230) ▪ South Washbay (Room 231) ▪ Maintenance Vehicle Deck (Room 302)	Door #217A (APM Operator) - fence at North Washbay	Interlocked with train moving and System Stop	APM Operator escort and lockout of one or both systems, as determined b by Specialist, People Moving Devices and APM Operator.	▪ bird netting ▪ cleaning ▪ electrical (lighting, heat tracking) ▪ Fire Alarm System (FAS) ▪ lighting ▪ sprinkler system ▪ other
		Door #217B (APM Operator) - fence from North Washbay to North Maintenance Bay	Interlocked with train moving and System Stop		
		Door #217C (APM Operator) - fence from North Washbay to North Maintenance Bay	Interlocked while in Public Service and System Stop		
		Door #219 (APM Operator) - from North Drive Bull Wheel Room to North Maintenance Bay	Interlocked while in Public Service and System Stop		

Descriptions of Viscount APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **VS-9** and **VS-10** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
		Door #221B (APM Operator) - from Upper Loading Area to North Maintenance Bay	n/a		
		Door #222B (APM Operator) - from Upper Loading Area to South Maintenance Bay	n/a		
		Door #224 (APM Operator) - from South Drive Bull Wheel Room to South Maintenance Bay	Interlocked while in Public Service and System Stop		
		Door #225A (APM Operator) - fence at South Washbay	Interlocked with train moving and System Stop		
		Door #225B (APM Operator) - fence from South Washbay to South Maintenance Bay	Interlocked with train moving and System Stop		
		Door #225C (APM Operator) - fence from South Washbay to South Maintenance Bay	Interlocked while in Public Service and System Stop		

Descriptions of Viscount APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **VS-9** and **VS-10** may require the lockdown of train doors or train systems as required.

Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
		Door #301A (APM Operator) - Platform Level, by elevator (south side)	Remote SCADA alarm		
		Door #301B (APM Operator) - Platform Level, by elevator (north side)	Remote SCADA alarm		
VS-8	APM Control Room (Room 205)	Door #205 (APM Operator) - Provides access to APM Control Room and offices	Remote SCADA alarm	APM Operator escort, potential lockout of one or both trains (as determined by Specialist, People Moving Devices & APM Operator)	▪ cabling ▪ electrical ▪ fire alarm ▪ HVAC ▪ sprinklers ▪ other
VS-9*	Interior platform area at platform edge doors (north side)	Viscount Station (public space, no controlled access)	n/a	APM Operator /GTAA coordination, potential shutdown of APM Train 1 (work to generally occur during scheduled system downtime)	▪ cleaning* ▪ electrical ▪ HVAC ▪ other

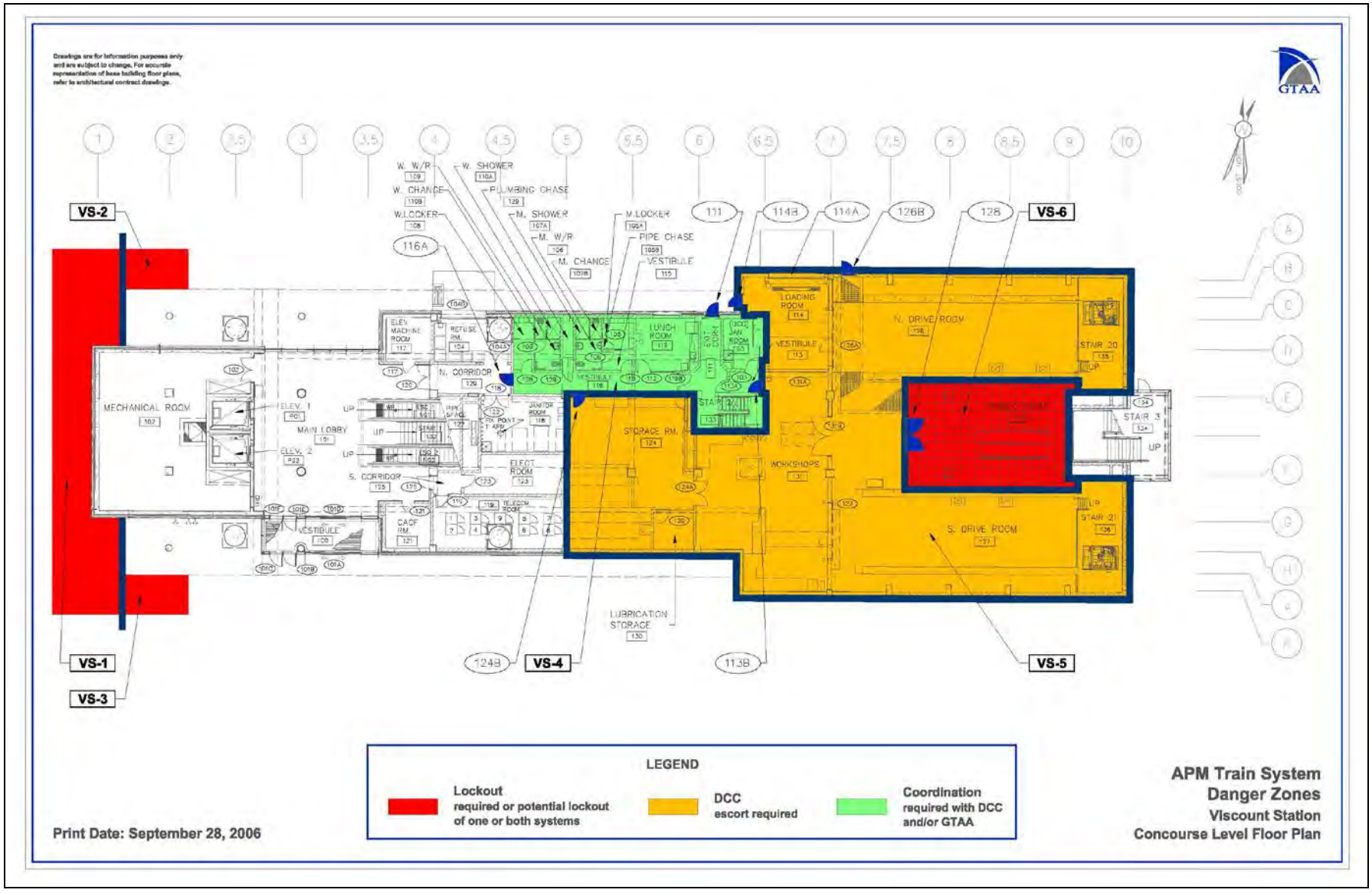
Descriptions of Viscount APM Station Danger Zones

Warning: Unscheduled cleaning in danger zones **VS-9** and **VS-10** may require the lockdown of train doors or train systems as required.

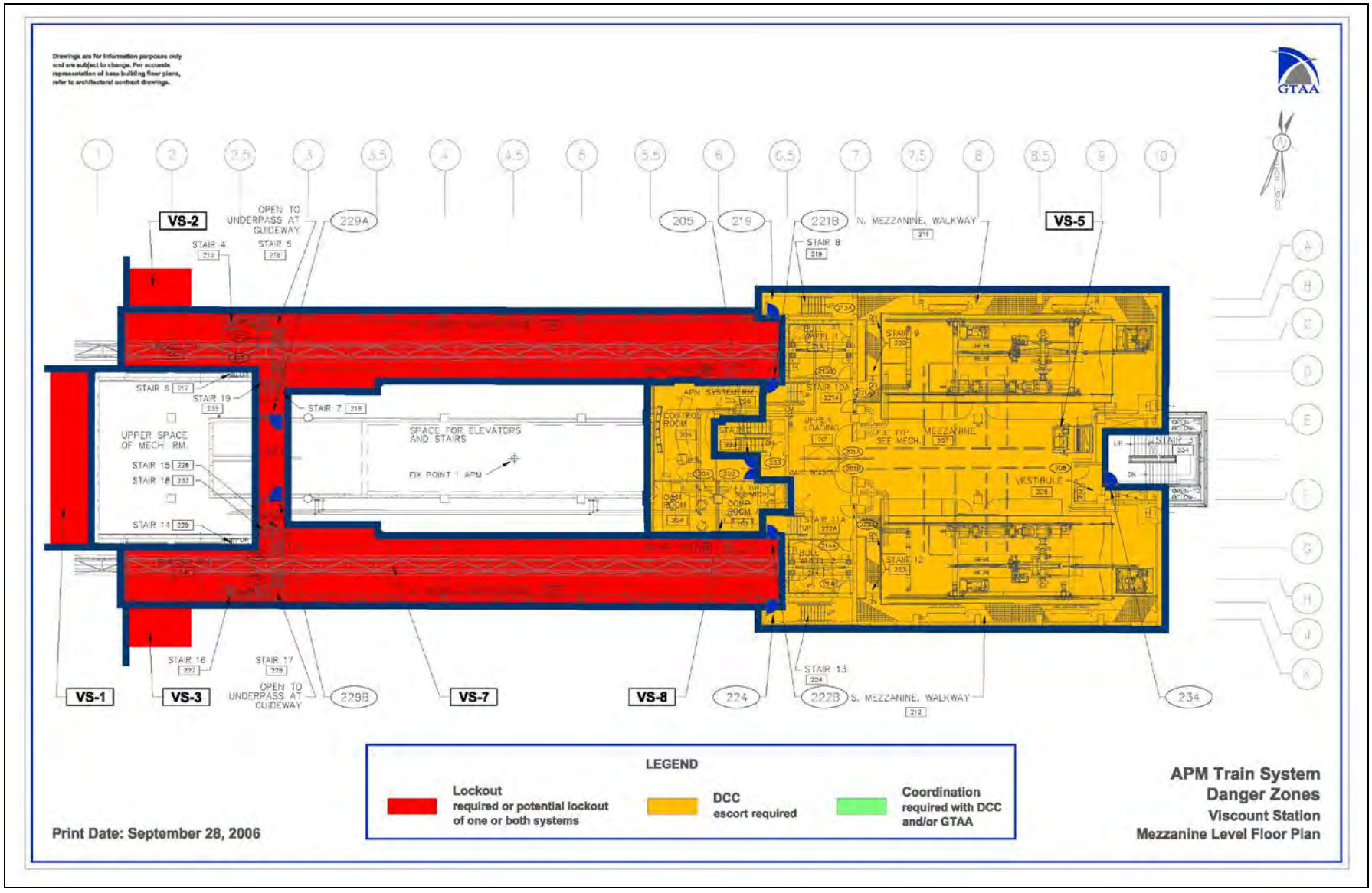
Zone	Area/Location	Access Point (Access control owner of doors/trapped keys are identified in parentheses.)	Security Contact to APM Operator	Access Requirements	Required Activity by Contractors
VS-10*	Interior platform area at platform edge doors (south side)	Viscount Station (public space, no controlled access)	n/a	APM Operator /GTAA coordination, potential shutdown of APM Train 2 (work to generally occur during scheduled system downtime)	▪ cleaning* ▪ electrical ▪ HVAC ▪ other
VS-11	Roof access (e.g., security cameras, lightning rods/grounding, meteorological station, fall arrest devices, and davit arms)	Door #434 (GTAA)	n/a	Coordinate working areas with GTAA	▪ electrical (cameras, lightning rods, grounding) ▪ cleaning ▪ other

A.11 Viscount APM Station Danger Zone Drawings

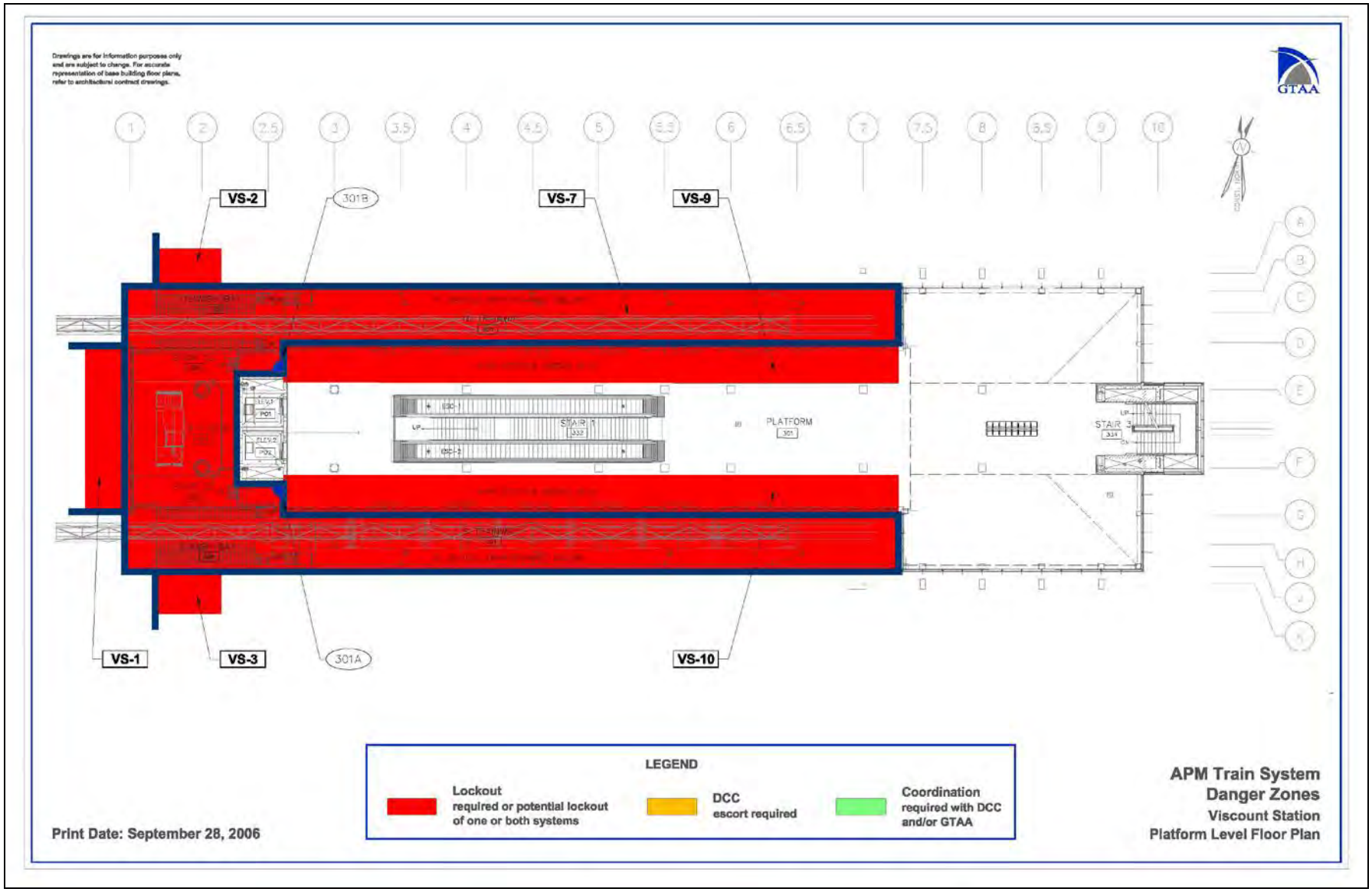
No.	Viscount APM Station Drawing	Danger Zones Shown on Each Drawing											
		VS-1	VS-2	VS-3	VS-4	VS-5	VS-6	VS-7	VS-8	VS-9	VS-10	VS-11	DZ-#
1	Concourse Level	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-
2	Mezzanine Level	✓	✓	✓	-	✓	-	✓	✓	-	-	-	-
3	Platform Level	✓	✓	✓	-	-	-	✓	-	✓	✓	-	-
4	Penthouse Level	-	✓	✓	-	-	-	-	-	-	-	✓	-
5	North Elevation	✓	✓	-	-	-	-	-	-	-	-	✓	-
6	South Elevation	✓	-	✓	-	-	-	-	-	-	-	✓	-
7	West Elevation	✓	✓	✓	-	-	-	✓	-	-	-	-	-
8	East Elevation	-	-	-	-	-	-	-	-	-	-	✓	-
Note: *See following pages for drawings.*													



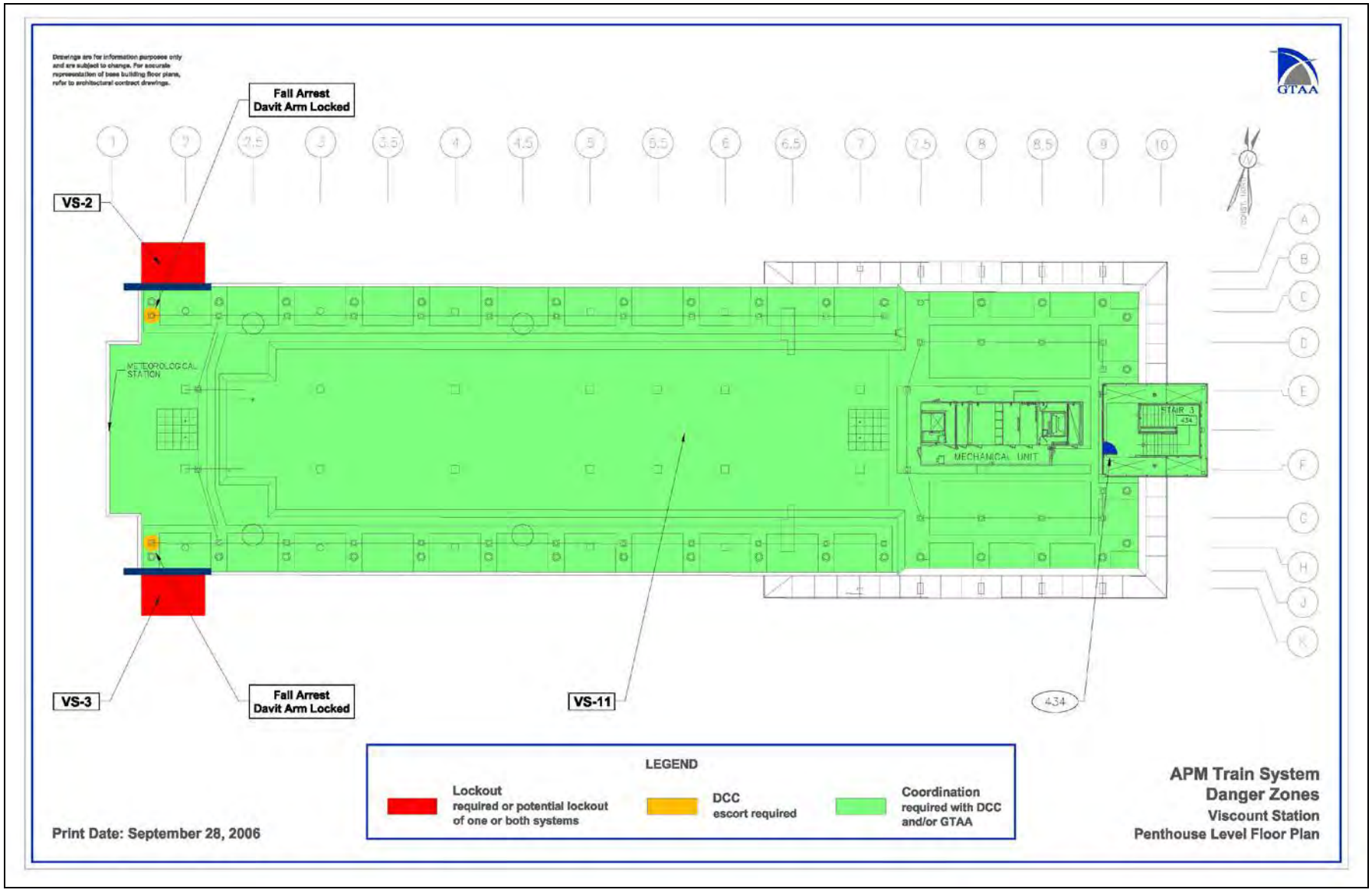
1. Viscount Station, Concourse Level floor plan



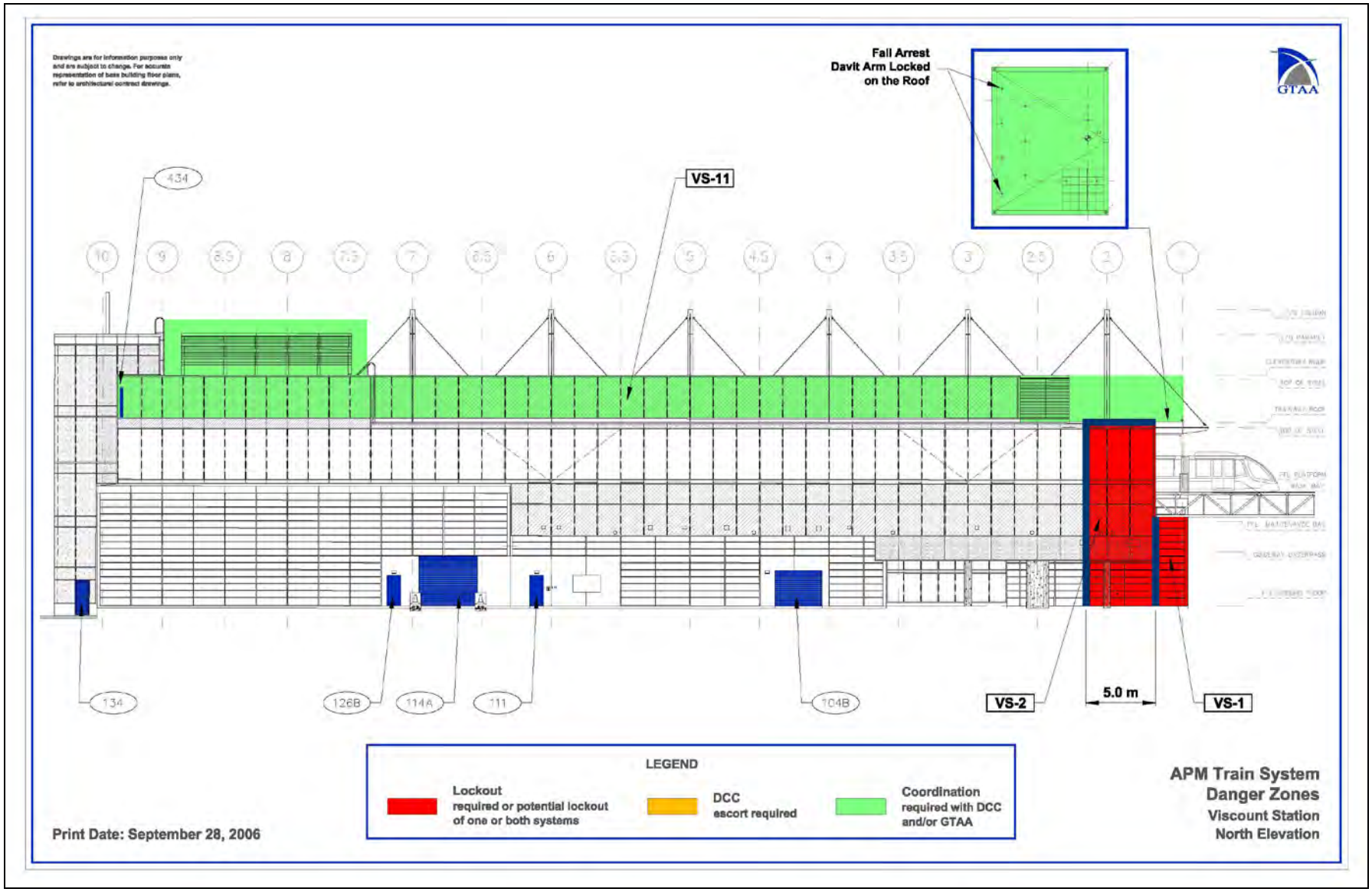
2. Viscount Station, Mezzanine Level floor plan



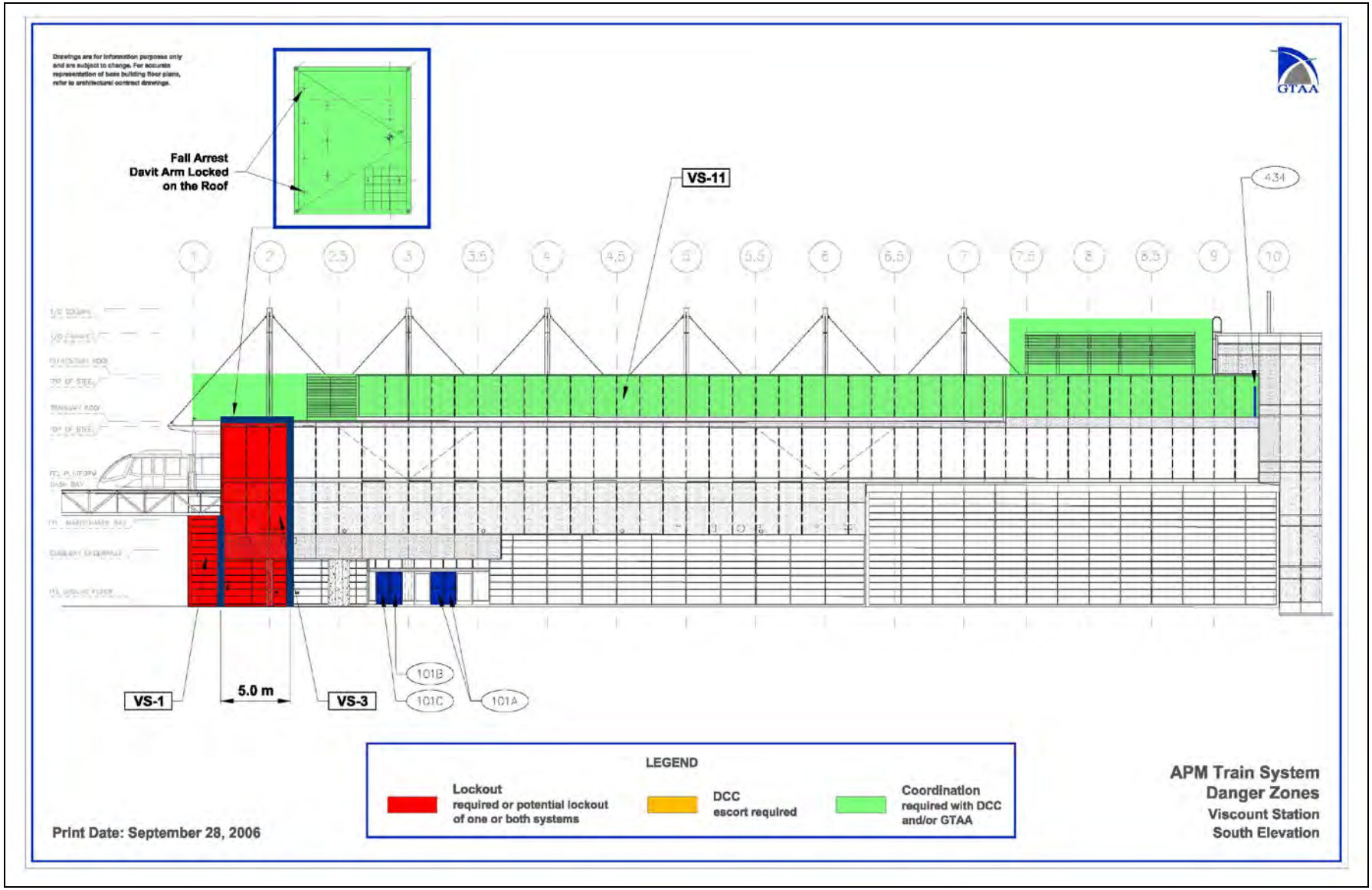
3. Viscount Station, Platform Level floor plan



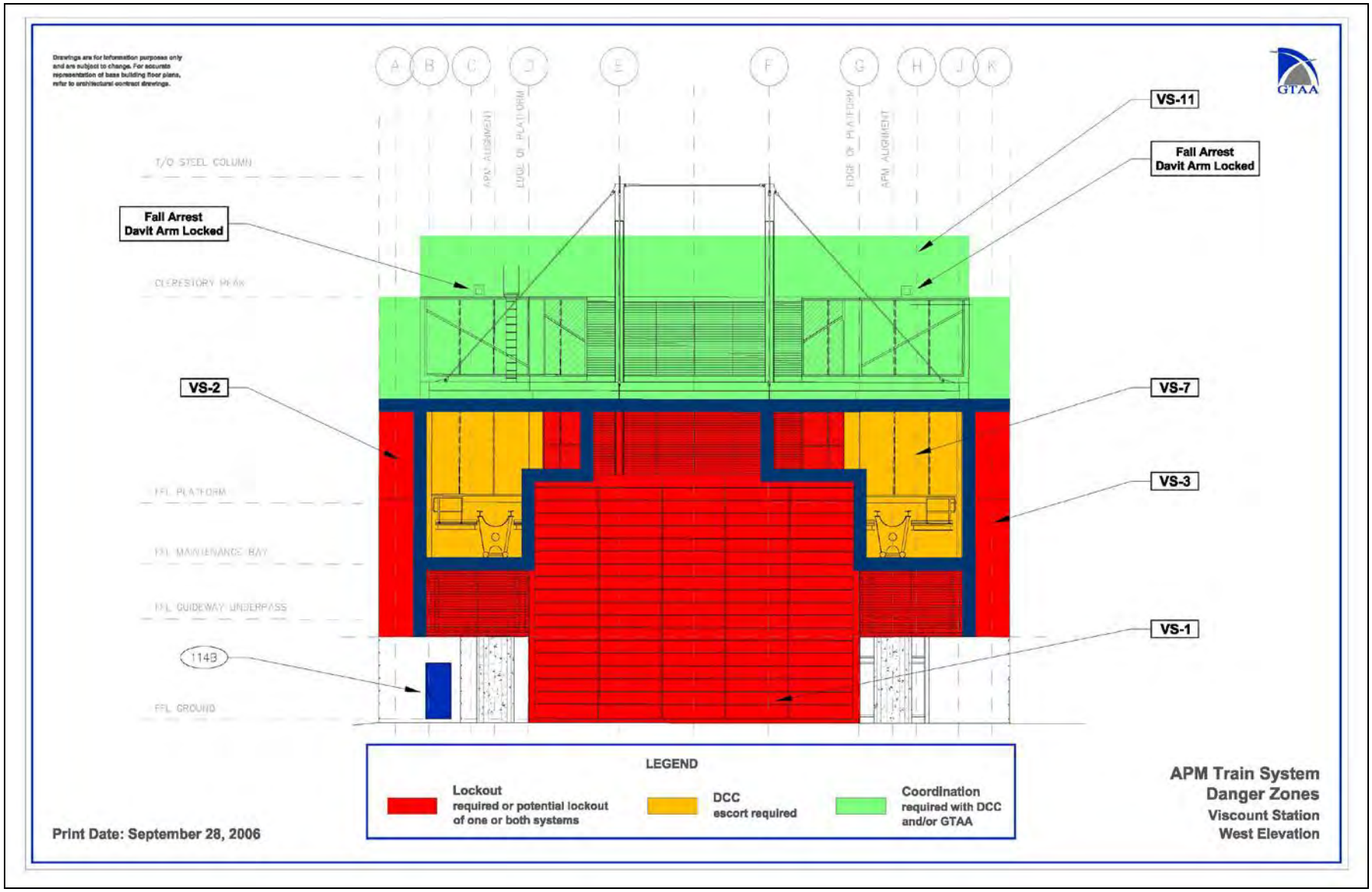
4. Viscount Station, Penthouse Level floor plan



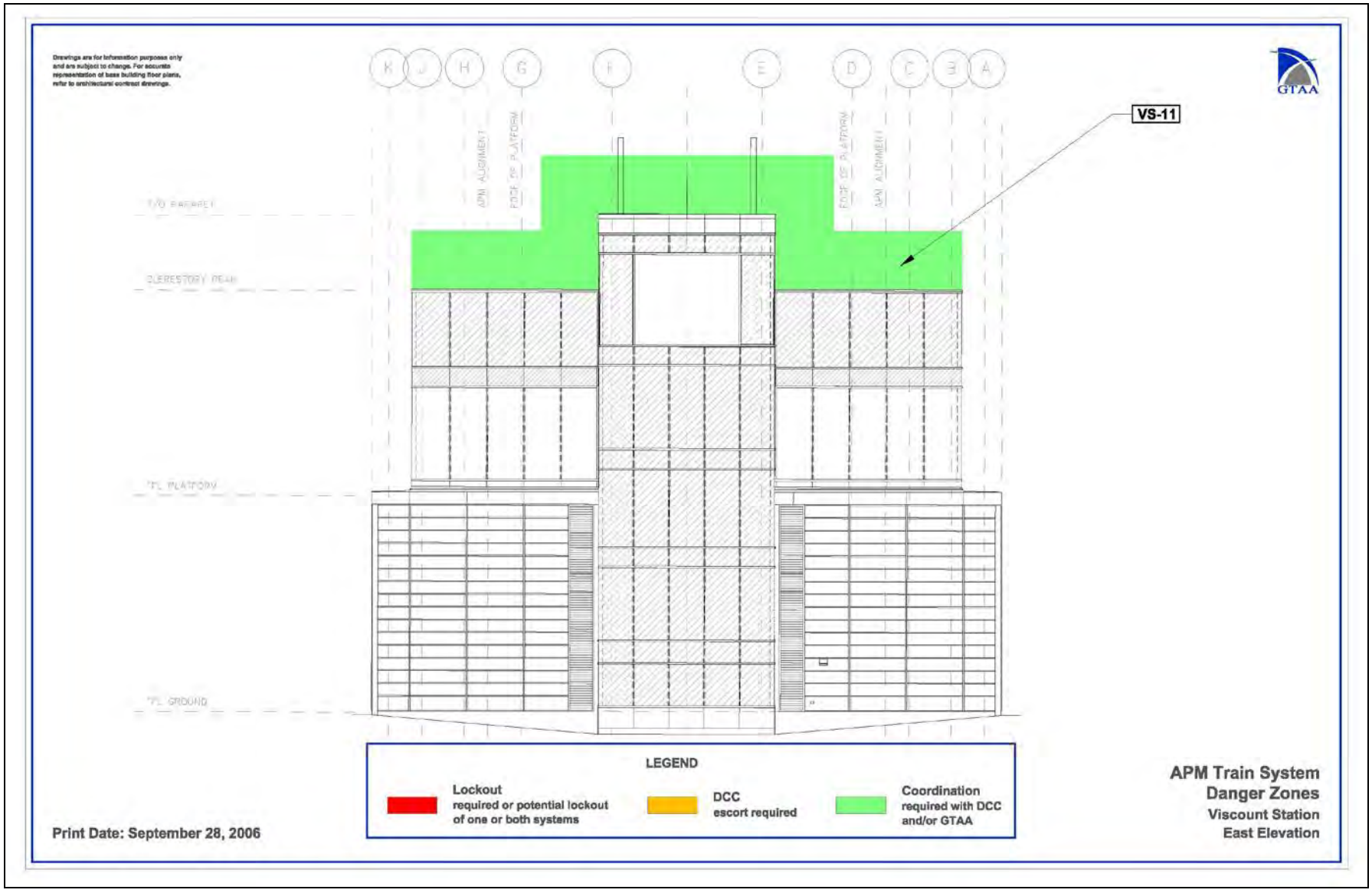
5. Viscount Station, north elevation



6. Viscount Station, south elevation



7. Viscount Station, west elevation



8. Viscount Station, east elevation