

LOS ANGELES INTERNATIONAL AIRPORT
LANDSIDE ACCESS MODERNIZATION PROGRAM

PROGRAM BRIEF

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CONTEXT OF THIS PROGRAM BRIEF

The purpose of this Program Brief is to provide an overview regarding the Landside Access Modernization Program (LAMP) to interested parties as part of an industry outreach effort that includes a Request for Industry Feedback (RFIF) that has been issued by the Los Angeles World Airports (LAWA), a department of the City of Los Angeles. The RFIF is regarding LAWA's prospective procurements for separate Design-Build-Finance-Operate-Maintain (DBFOM) contracts for its Automated People Mover (APM) and Consolidated Rental Car Facility (CONRAC) projects. Both projects are part of LAWA's Landside Access Modernization Program (LAMP).

This Program Brief reflects preliminary conceptual planning and design work to convey the landside development needs of Los Angeles International Airport (LAX) as envisioned by LAWA. Much of the program description in this brief is conveyed in a prescriptive manner for simplicity only. LAWA expects that future potential procurements for the APM and CONRAC projects will include performance-based specifications. The procurement for any LAMP-related project will reflect actual requirements.

Issuing this Program Brief does not constitute LAWA's initiation of a procurement for any LAMP-related project, including the APM or CONRAC projects; nor does it represent a commitment by LAWA to procure any LAMP-related project in the future.

The APM, CONRAC and other components of LAMP are only potential projects at this time and remain in the environmental process. LAWA's issuing this Program Brief is not intended to modify, limit or otherwise constrain the ongoing environmental process.

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PROGRAM OVERVIEW

Los Angeles World Airports (LAWA) is currently undertaking a multi-billion dollar modernization program at Los Angeles International Airport (LAX or the Airport) to improve access to and egress from the Airport. LAX is the world's busiest origin and destination airport; more passengers begin and end their trip at LAX, rather than connecting with another flight, than at any other airport. In 2014, LAX handled 636,706 aircraft landings and takeoffs and 70.7 million passengers (the second busiest airport in the United States, and the fifth busiest in the world);¹ it is anticipated that by 2030, LAX will see over 96 million passengers annually.²

Today, whether by taxi, shuttle, bus or car, passengers and visitors must fight congestion and overcrowding on their trip to the airport. Approximately 50 percent of departing air passengers

¹ U.S. Department of Transportation, Federal Aviation Administration, *The Operations Network (OPSNET)*, available: aspm.faa.gov, accessed November 17, 2015; Los Angeles World Airports, *Los Angeles World Airports (LAWA) Traffic Comparison (TCOM)*, Los Angeles International Airport, Calendar YTD January to December 2014, January 2015.

² U.S. Department of Transportation, Federal Aviation Administration, *Terminal Area Forecast: National Forecast 2014*.

drive to LAX. During peak periods, over 6,000 vehicles enter the airport in one hour. Some of the challenges LAX is experiencing today include:

- Heavy traffic congestion during peak hours;
- Buses, shuttles and cars competing for limited curb and roadway space; and
- Passengers stuck in crowded and uncomfortable conditions along the curb.

Passengers and visitors at LAX must currently drive through a roadway loop in the Central Terminal Area (CTA) to reach the terminals. Each terminal has an arrival and departure curb where people can be picked-up or dropped-off, along with parking structures located within the interior of the roadway loop. Some passengers who choose to rent a car, park remotely or stay in local hotels, or take public transit to LAX, must take a shuttle or a taxi into the CTA to the appropriate terminal.

The Landside Access Modernization Program (referred to throughout this document as LAMP or the Program) includes several individual components that will work collectively to alleviate current and future problems by providing an alternative to the existing CTA curb and roadway. These components include, but are not limited to, an Automated People Mover (APM) system, two Intermodal Transportation Facilities (ITFs), a Consolidated Rent-a-Car Facility (CONRAC), improvements within the CTA, and a connection to the Metro rail system.

Program Objectives

LAWA's focus on addressing aging infrastructure, new technologies, and improving passenger levels of service has shaped the development plans for the LAX LAMP. Specific objectives of the Program include:

- Transform LAX into a world-class destination airport and enhance the passenger experience;
- Relieve traffic congestion in the CTA and on area surface streets and roads;
- Connect to transit, reducing private vehicles trips to LAX;
- Create new options for passenger pick-up and drop-off;
- Give passengers a fast and reliable new way to get to their flights; and
- Reduce vehicle emissions and improve air quality.

Program Components

The Program includes, but is not limited to, the following key components reflected in Figure 2:

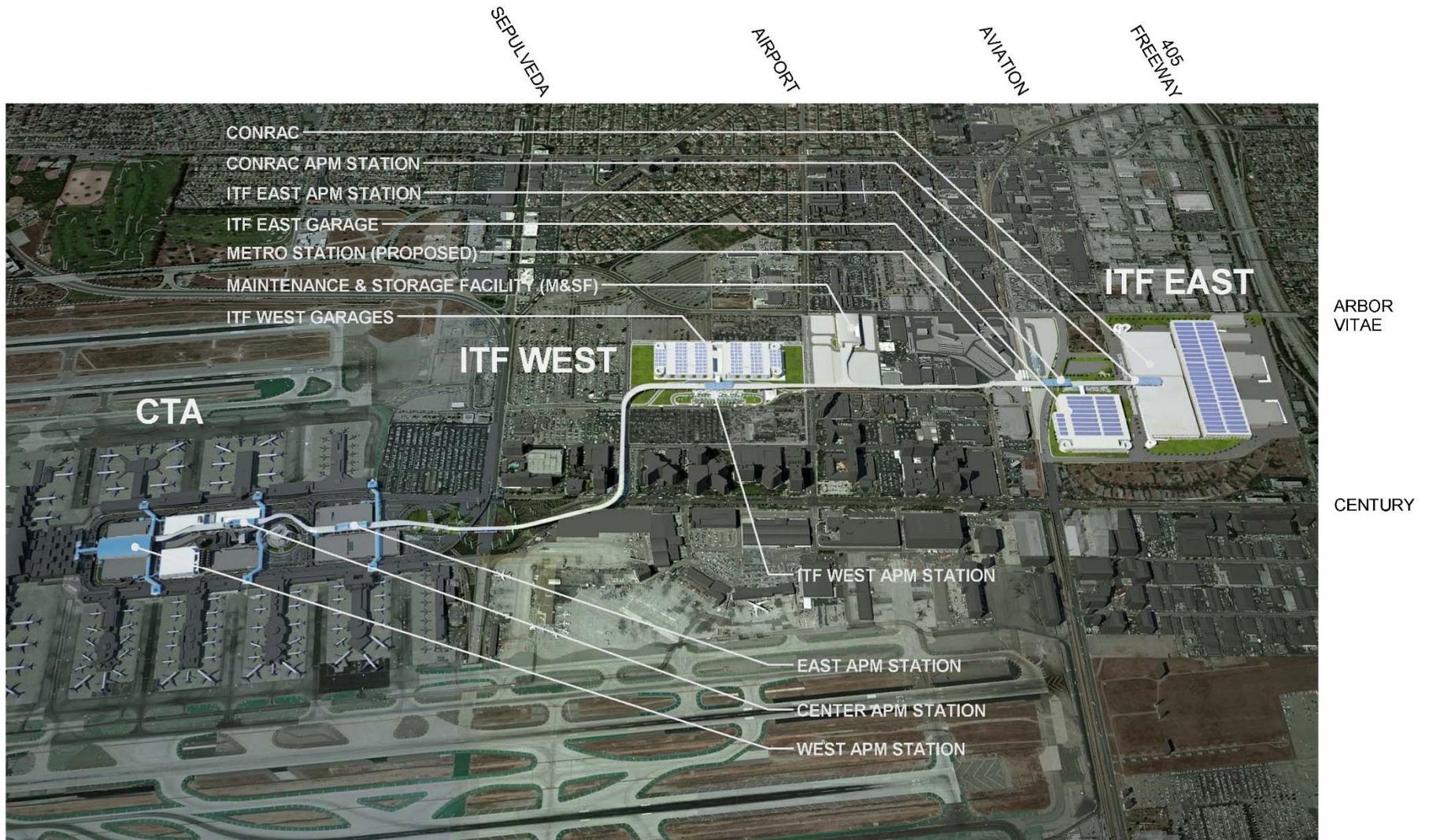
- An APM system with six APM stations connecting the CTA to new ground transportation facilities, including passenger walkways connecting the APM stations to passenger terminals, parking and ground transportation facilities;
- Two Intermodal Transportation Facilities (ITFs) providing parking and pick-up and drop-off areas outside the CTA for private vehicles and commercial shuttles; and
- A CONRAC designed to meet the needs of car rental agencies serving LAX with access to the CTA via the APM.

In addition, the Program includes:

- Roadway improvements designed to improve access to the proposed facilities and the CTA;
- Modifications to existing passenger terminals and parking garages to support the APM walkway system connections, including vertical circulation cores to the arrival, departure and concourse levels; and
- Utilities infrastructure, both new and modified, as needed.

Certain enabling projects (see *Section 5*), including the relocation of existing facilities and the demolition / replacement of existing buildings, necessary to implement the LAMP, are also included.

Figure 2: Program Overview



I. APM SYSTEMS

The Automated People Mover (APM) is the primary component of the Program, designed to provide reliable, time-certain access to the CTA for passengers, employees, and other users. The APM will be a fully automated, grade-separated system, consisting of an elevated dual-lane guideway with six stations. Construction of the APM completely above grade minimizes any effect on the existing street system. The system includes six stations.

The APM consist of two primary components:

- APM Operating System
- APM Fixed Facilities

The following two sections describe these components in detail.

I.1. APM Operating System

The APM Operating System consists of an integration of various subsystems (vehicles, automated train control, power distribution, guidance, propulsion, etc.) to create a fully functional, automated and driverless system. The APM Operating System is proprietary technology that will be adapted to meet the line capacity [peak hour per direction (pphpd)] demand, and performance requirements within the project specific constraints. The maximum train length required to accommodate the projected peak demand (of approximately 5,600 people per hour per direction at an average passenger space allocation of six square feet per passenger) is estimated to be 175 feet long and is expected to vary between different technologies suppliers.

The APM system will operate in a “pinched loop” mode in which multiple trains would follow each other (at specified headways); trains would turn back through switches in front of each of the two end of line stations. APM Operating System technology characteristics are expected to include:

- Electrically propelled with power supplied to the trains through power rails running along the guideway.
- Minimum operating headways of approximately two (2) minutes.
- Total travel time from one end of the APM system to the other (e.g., the CONRAC to the CTA West Station) of approximately nine (9) minutes.

I.2. APM Fixed Facilities

APM Fixed Facilities consist of buildings, structures, or infrastructure that support the APM operating system, including the guideway, passenger stations, pedestrian walkways, vertical cores, the APM Maintenance and Storage Facility (M&SF), and Traction Power Substations (TPSS). These components are described in more detail, below.

Guideway

- Approximately 2.25 miles in length
- Dedicated, grade-separated guideway with an elevation that varies from approximately 70 feet above grade within the CTA to approximately 50 above grade near the ITF East and CONRAC (as measured from ground level to the guideway deck elevation)
- Dual-lane Guideway with switching locations to support normal and failure management operations
- Walkways to support emergency evacuation of passengers and maintenance personnel access
- The Structural System includes superstructure and substructure elements

Stations

The APM System will be comprised of six stations. Three stations are located in the CTA as listed below:

- West Station located between Terminals 3 and 4, east of the Tom Bradley International Terminal (TBIT)
- Center Station located south of Terminal 2 and north of the existing Airport Traffic Control Tower (ATCT) and Center Way
- East Station located between Terminals 1 and 7

Three stations outside the CTA include:

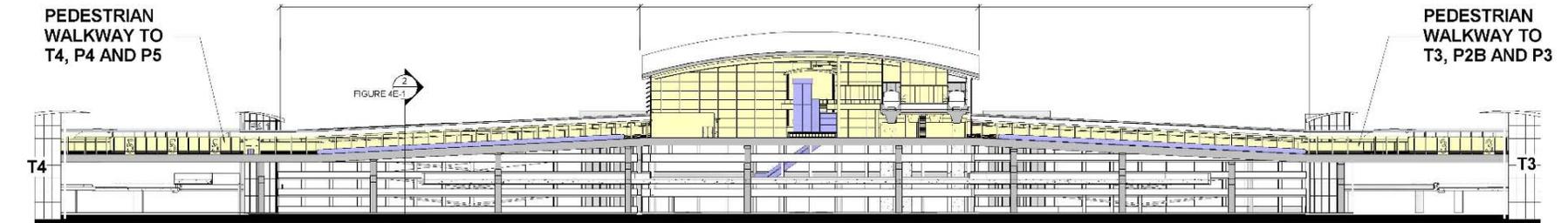
- ITF West Station
- ITF East Station
- CONRAC

The station at ITF East will provide a connection to the Metro rail and bus transit systems at the adjacent transit facility Metro has planned at W. 96th Street/Aviation Boulevard, a separate and independent project Metro would design, approve, construct, and operate.

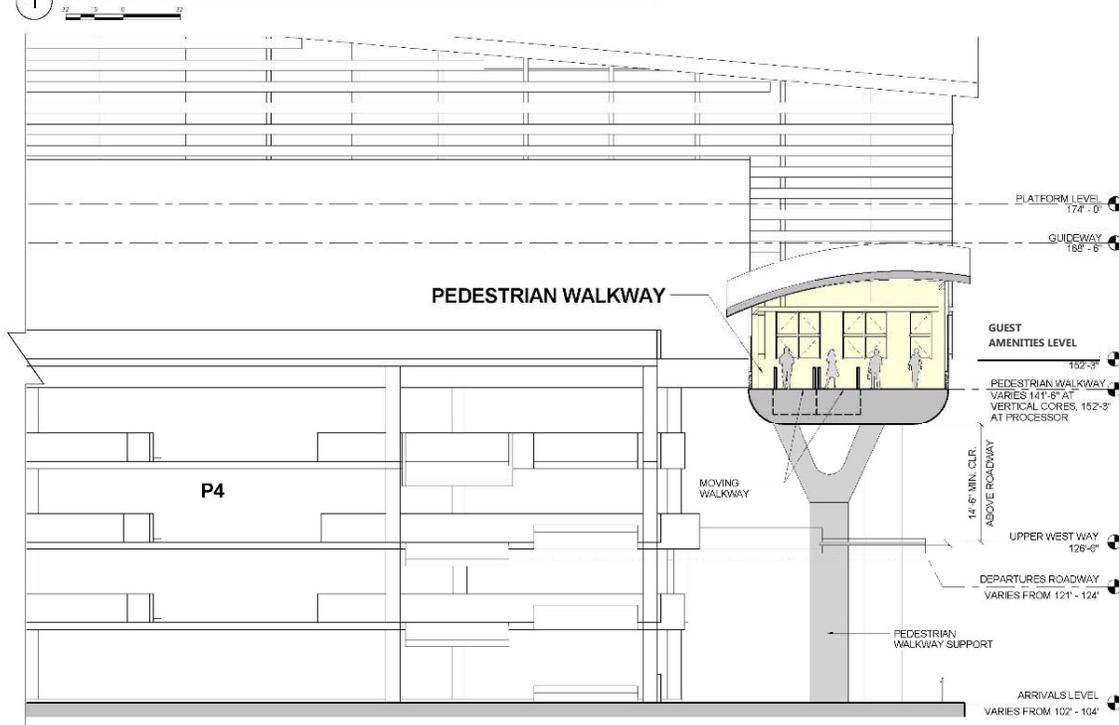
Walkways

Passenger walkways will provide a convenient connection between the APM stations, passenger terminals, CTA parking garages, and to the other facilities (the ITFs and the CONRAC) located east of the CTA. Walkways will be elevated structures incorporating moving walkways for convenience and for reduced travel times. (See *Figures 3 through 8*)

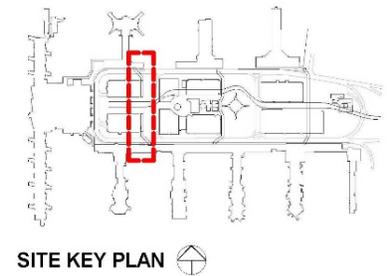
Figure 3: CTA West Pedestrian Walkway - Sections



1 CTA WEST PEDESTRIAN WALKWAY - NORTH / SOUTH SECTION

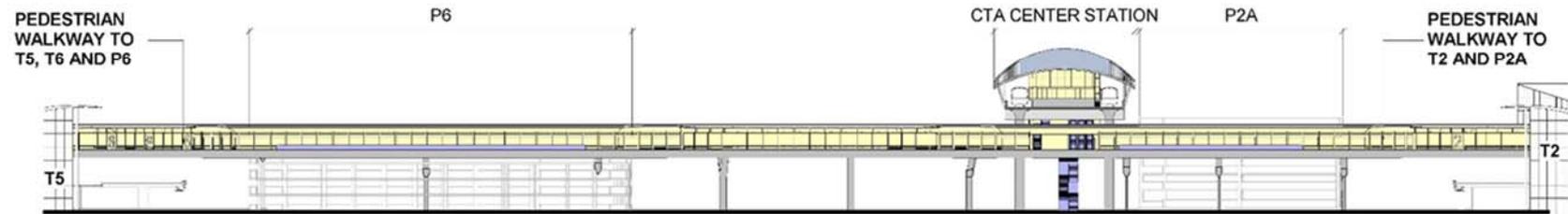


2 CTA WEST PEDESTRIAN WALKWAY - EAST / WEST SECTION

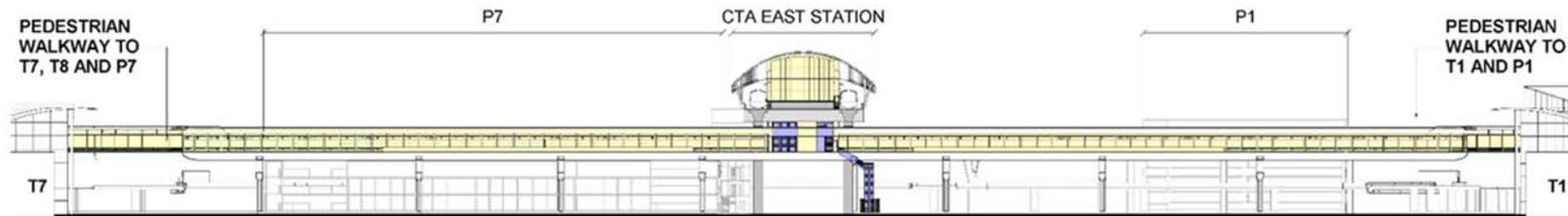


Elevations referenced are "Above Mean Sea Level (AMSL)"

Figure 4: CTA Center and East Pedestrian Walkway - Sections



1 CTA CENTER PEDESTRIAN WALKWAY - NORTH / SOUTH SECTION



2 CTA EAST PEDESTRIAN WALKWAY - NORTH / SOUTH SECTION

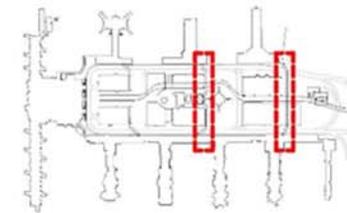


Figure 5: CTA West Pedestrian Walkway

Elevations referenced are "Above Mean Sea Level (AMSL)"

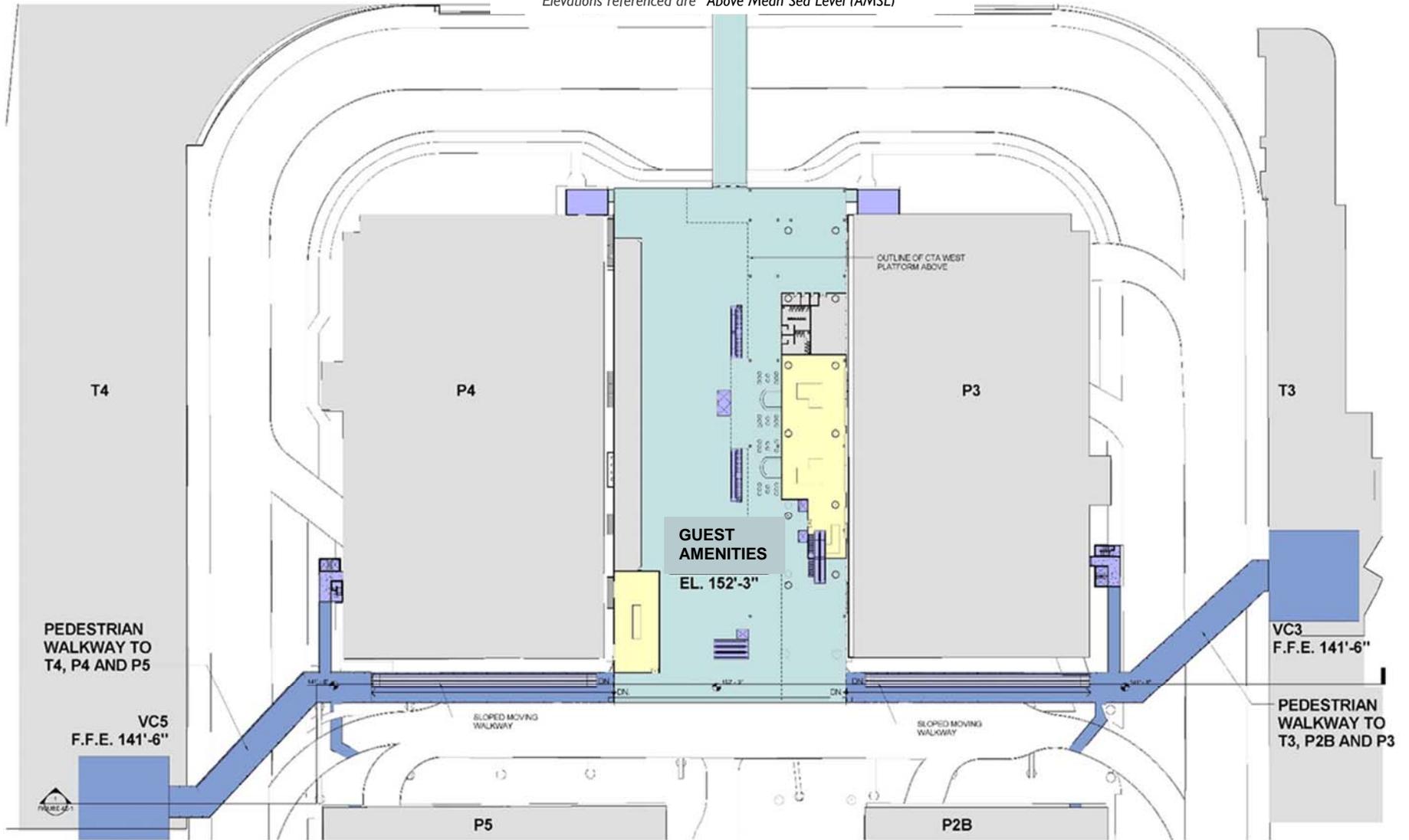


Figure 6: CTA Center Pedestrian Walkway

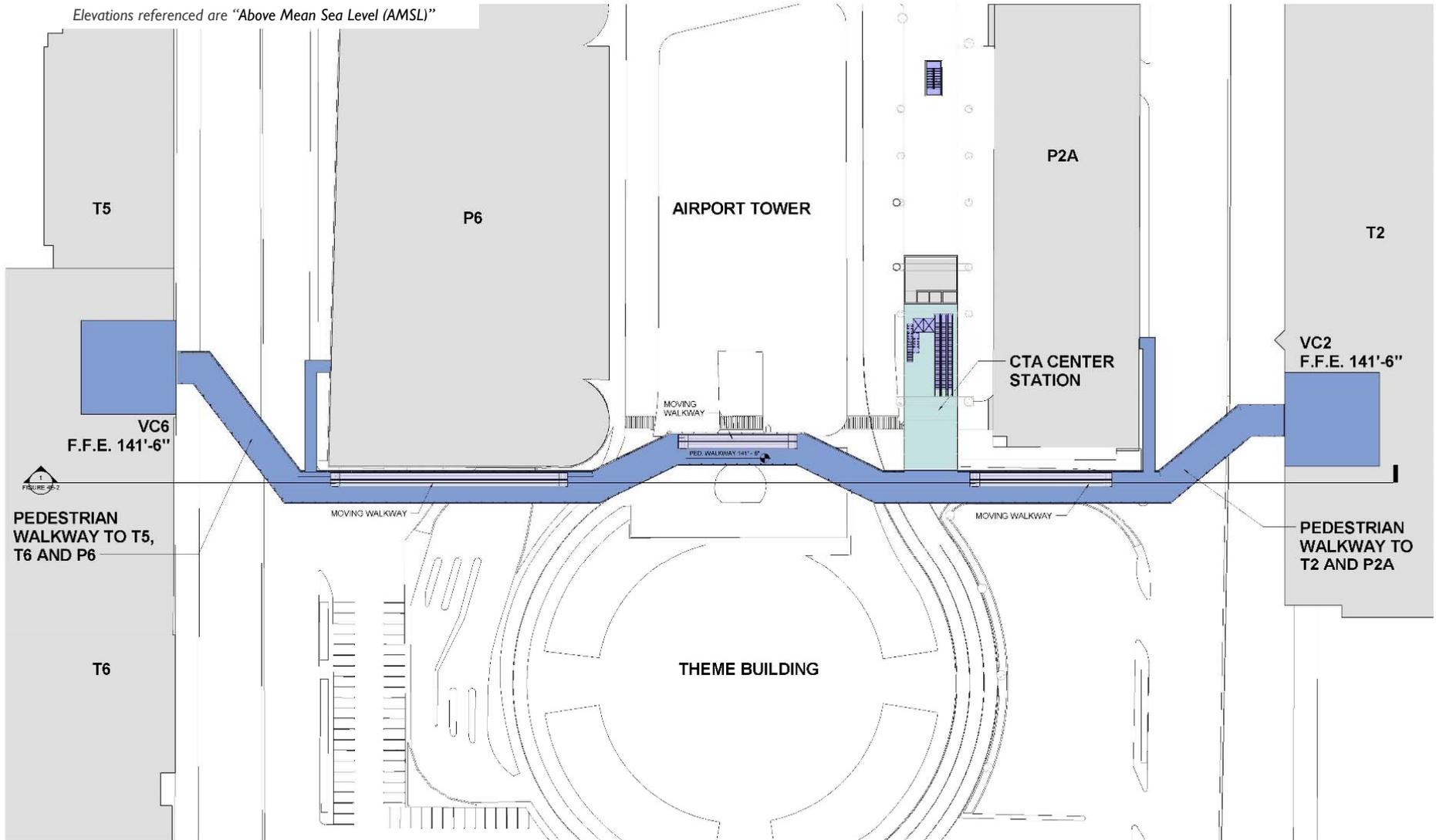


Figure 7: CTA East Pedestrian Walkway Plan

Elevations referenced are "Above Mean Sea Level (AMSL)"

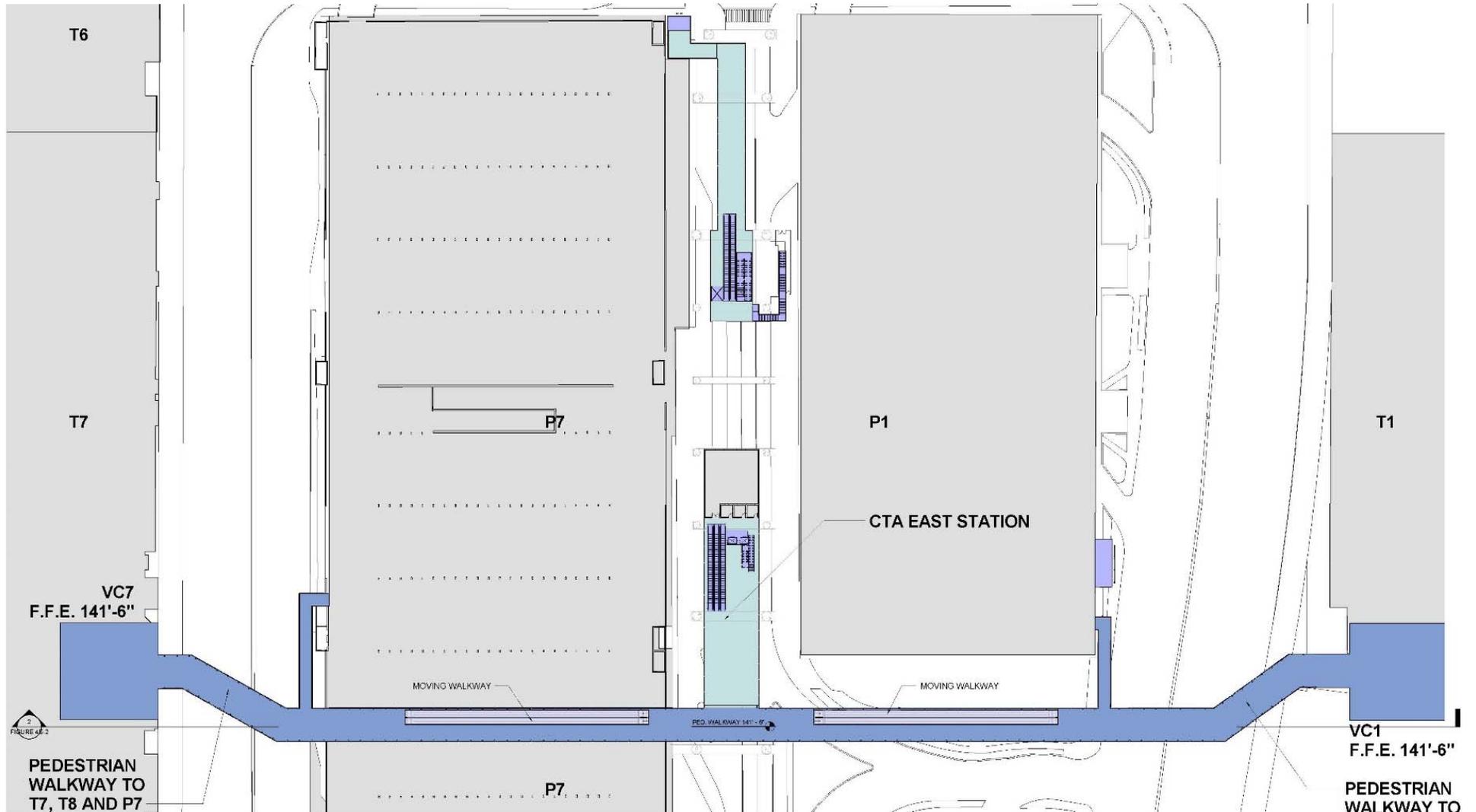


Figure 8: CTA Pedestrian Walkway – Interior Perspective



Parking Structure Vertical Cores

Vertical Circulation cores, located at the ends and along the pedestrian walkways, provide passenger connectivity between the walkways and various levels of parking structures. The number of passengers an elevator can carry will vary according to the height of the facility, the amount of luggage carried by passengers, the dimensions of the elevator cab and the speed of the elevator. The elevators will need to accommodate baggage carts and up to eight passengers per trip, and will need to meet accessibility requirements per the Americans with Disabilities Act (ADA).

CTA APM Stations

The following paragraphs provide a more detailed description of the three stations in the CTA based on the conceptual design.

West Station

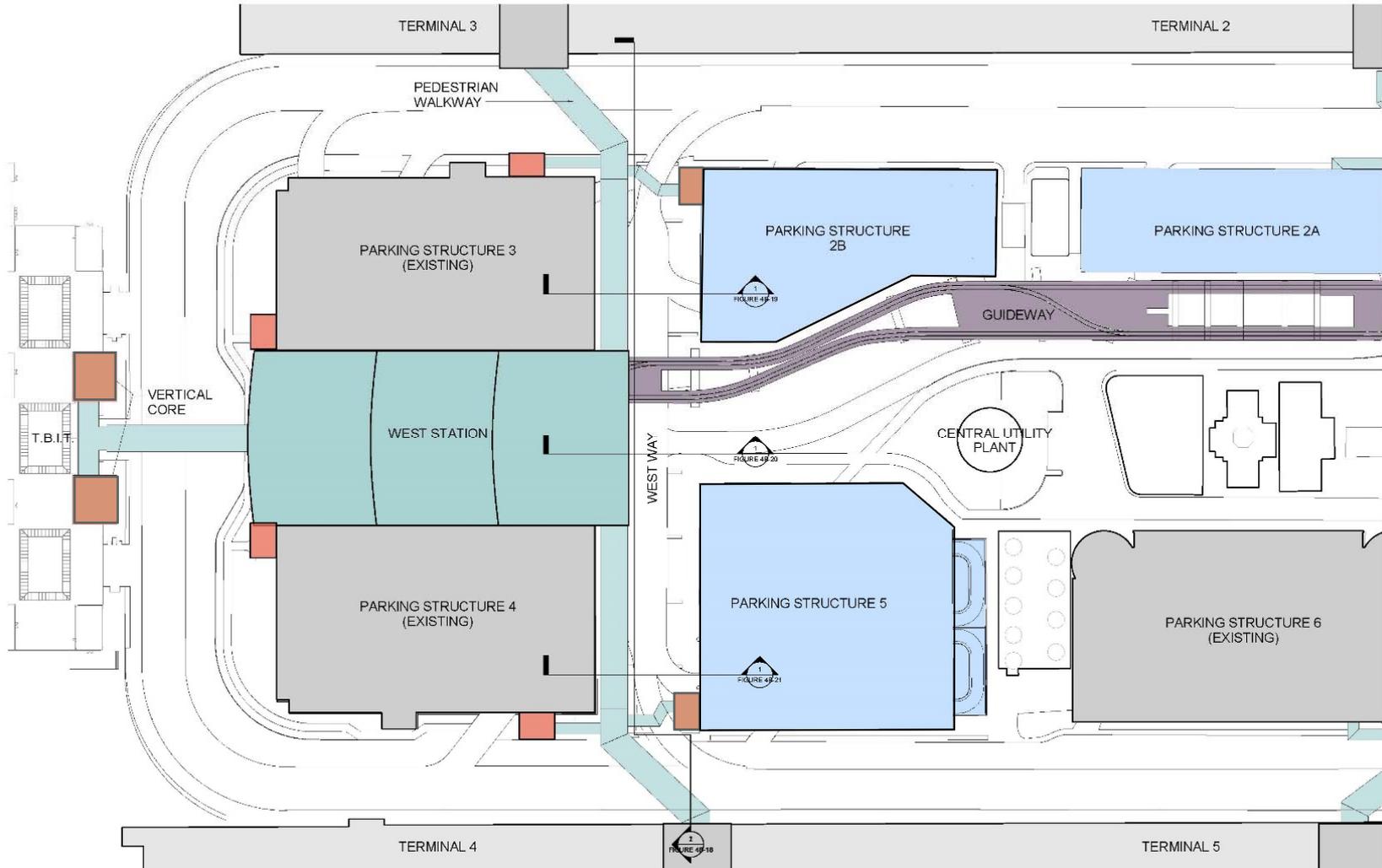
Located between existing parking garages P3 and P4, the West CTA Station (see Figures 9 through 22) will serve TBIT, existing parking structures P3 and P4, new parking structures P2B and P5, and Terminals 3 and 4. The West CTA Station also includes space for future guest amenities to support adjacent terminal operations (currently assumed to be outside the scope of the APM Fixed Facilities contract). Three levels of parking below the APM station along with a new entrance/exit plaza at grade provide interconnectivity to Garages P3 and P4.

The West APM Station has a separate platform for arriving and departing passengers, each measuring 30'-0" wide and 175'-0" in length at approximately 75 feet above grade. On the west end of the platform level, a 30'-0" wide pedestrian walkway connects directly to the APM station and branches off to the north to connect with P3, to the south to connect with P4 and to the west to connect with TBIT. On the east end of station, 25'-0" wide pedestrian walkways at approximately 52 feet above grade branch north and south to provide access to Terminal 3, P3, P2B, P4, P5 and to Terminal 4. All pedestrian walkways will have moving walkways and vertical cores (see *Vertical Core description above*) connecting levels within the parking structures and terminals.

The passenger walkway to TBIT is dual level. Arriving passengers will be directed to vertical cores within TBIT and then to the platform level of the West Station. Departing passengers (arriving on the APM train) will be directed from the platform level to the Guest Amenities level via elevators and escalators within the West Station where the passenger walkway provides access to the vertical cores within TBIT.

To accommodate construction of the dual level passenger walkway from the West Station to TBIT, existing garage access driveways and bridges to Garages P3 and P4 will be demolished. The Program includes construction of replacement access from World Way to the P3 garage from the north and to the P4 garage from the south as well as access along relocated West Way at a "smart curb" located at level 3 between Garages P3 and P4.

Figure 9: CTA West Site Plan



 Vertical Core - Typical

Figure 10: Arrivals Level / Parking Level / Aerial Perspective



Figure 11: Parking Level 2 Aerial Perspective



Figure 12: Departures Curb / Parking Level 3 Aerial Perspective



Figure 13: Parking Level 4 Aerial Perspective



Figure 14: Guest Amenities Level Aerial Perspective



Figure 15: Platform Aerial Perspective



Figure 16: Roof Level Aerial Perspective

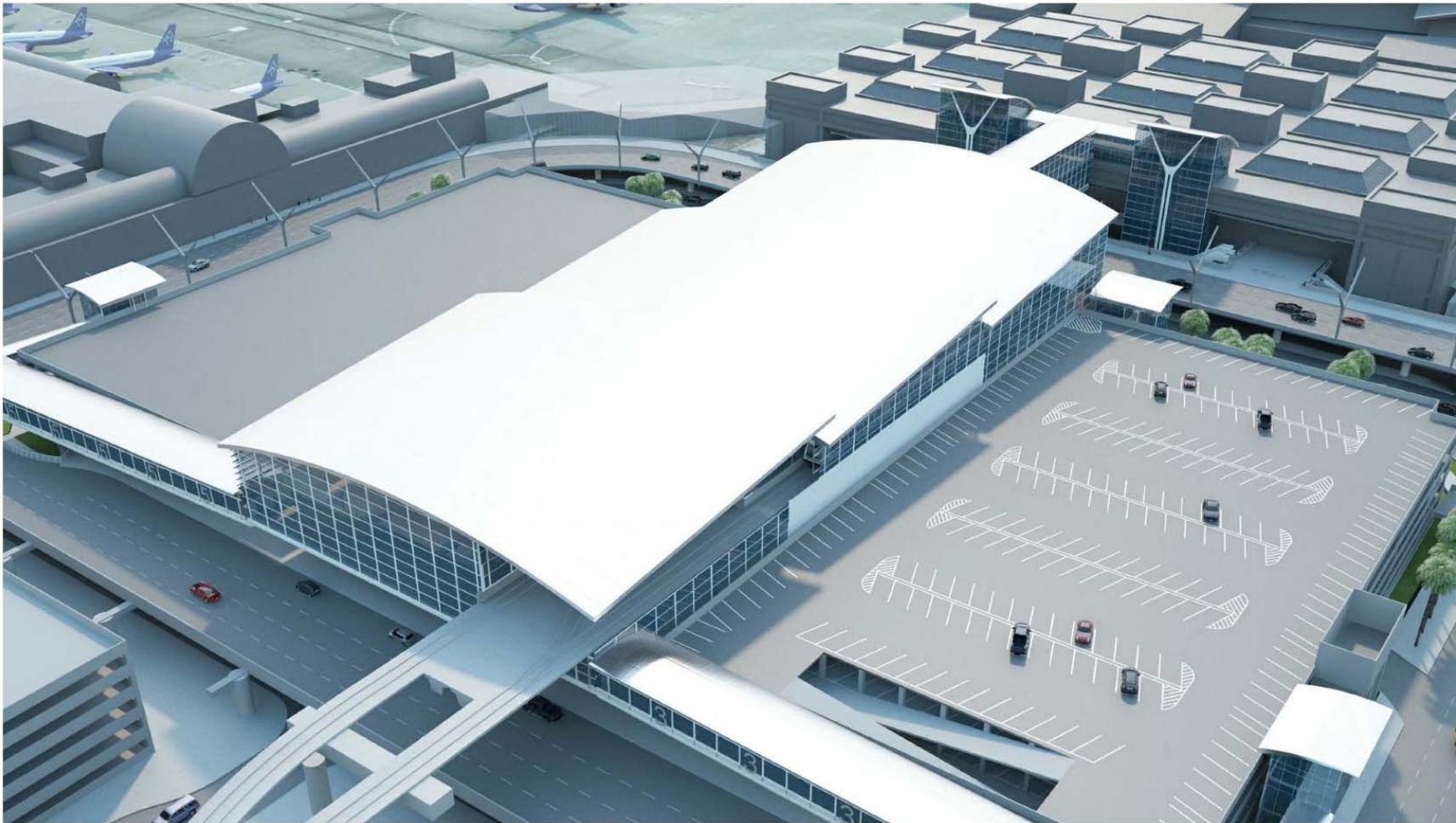
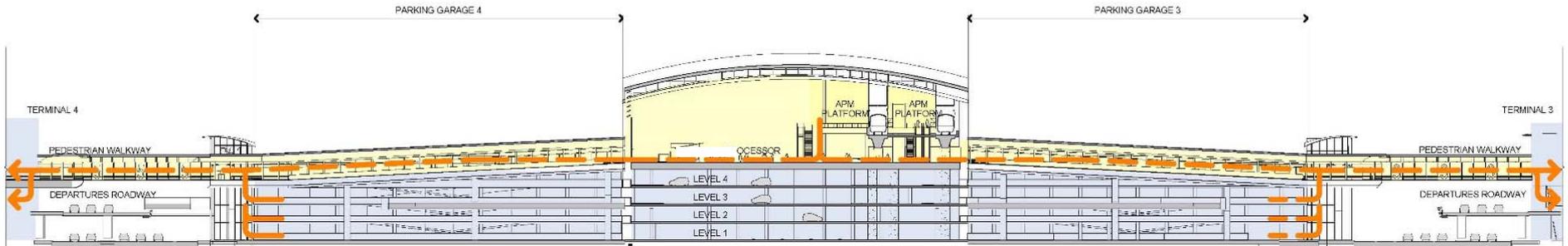
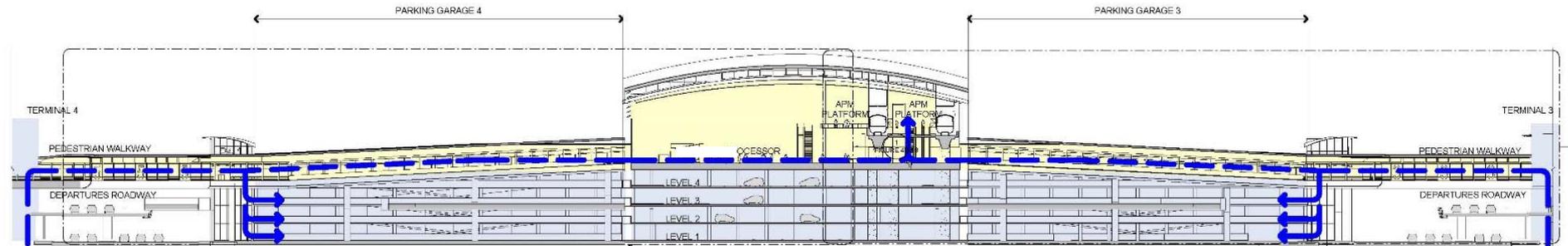


Figure 17: CTA West - North South Sections (Looking West)



DEBOARDING NORTH TO SOUTH SECTION

1/32" = 1'-0"

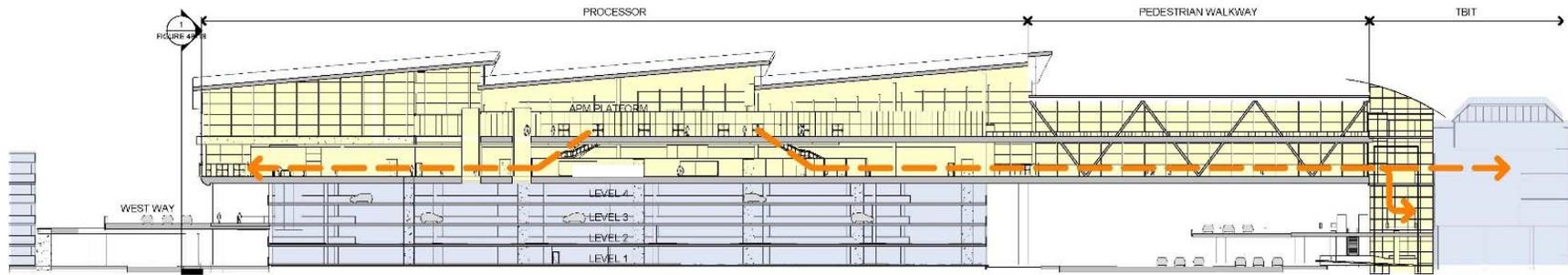


BOARDING NORTH TO SOUTH SECTION

1/32" = 1'-0"

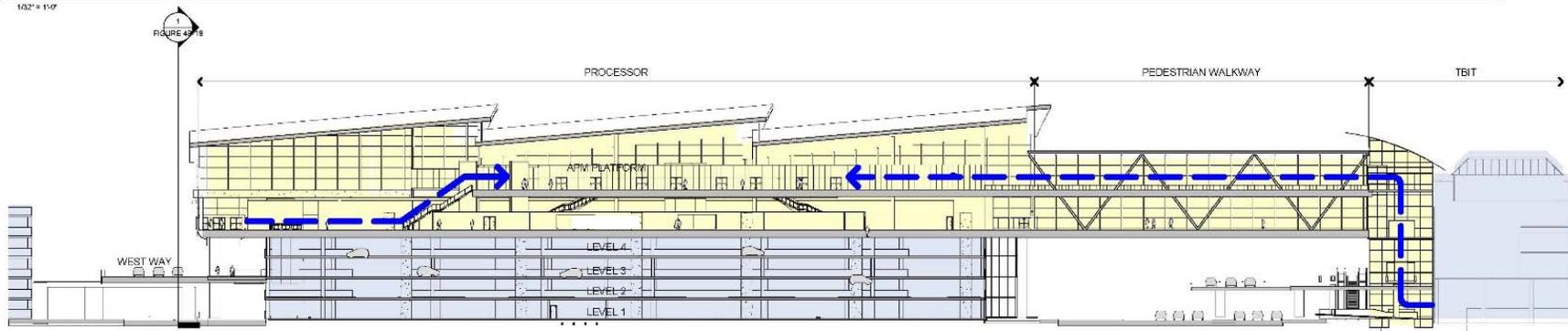
2
FIGURE 49-18

Figure 18: CTA West - East West Sections (Looking South)



DEBOARDING EAST TO WEST SECTION

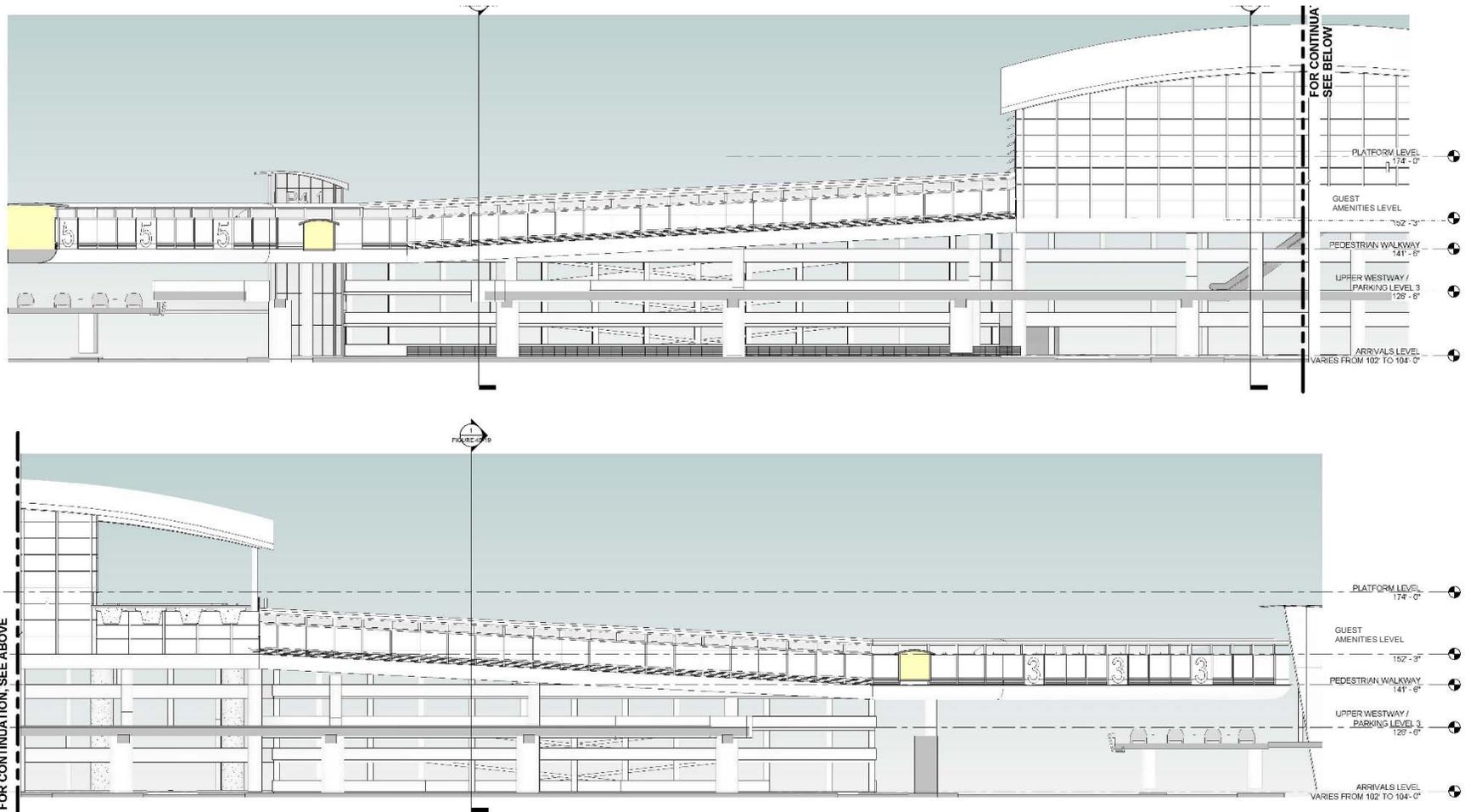
1/82" = 1'-0"



BOARDING EAST TO WEST SECTION

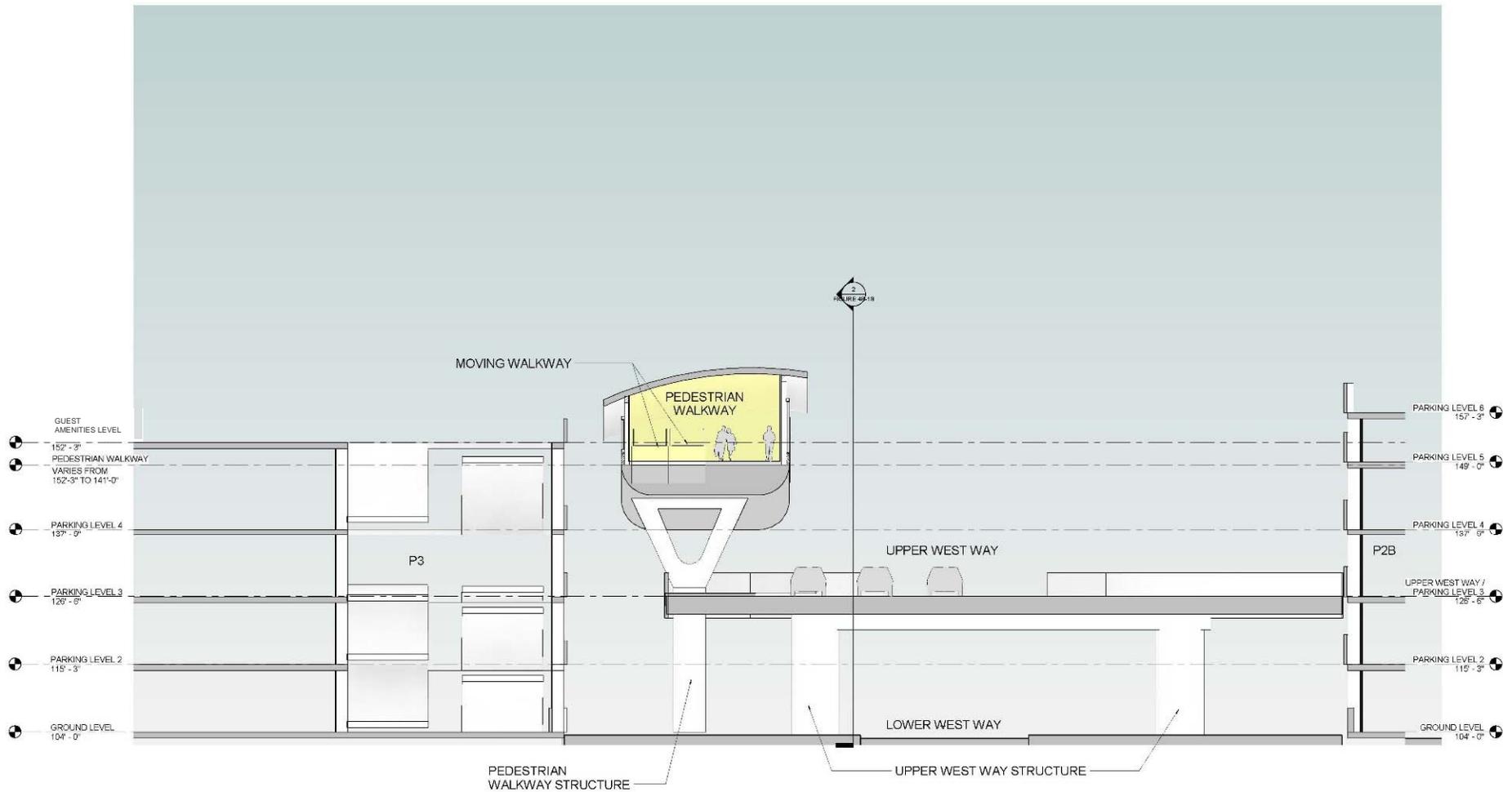
1/82" = 1'-0"

Figure 19: West Station Overall Section (Looking West)



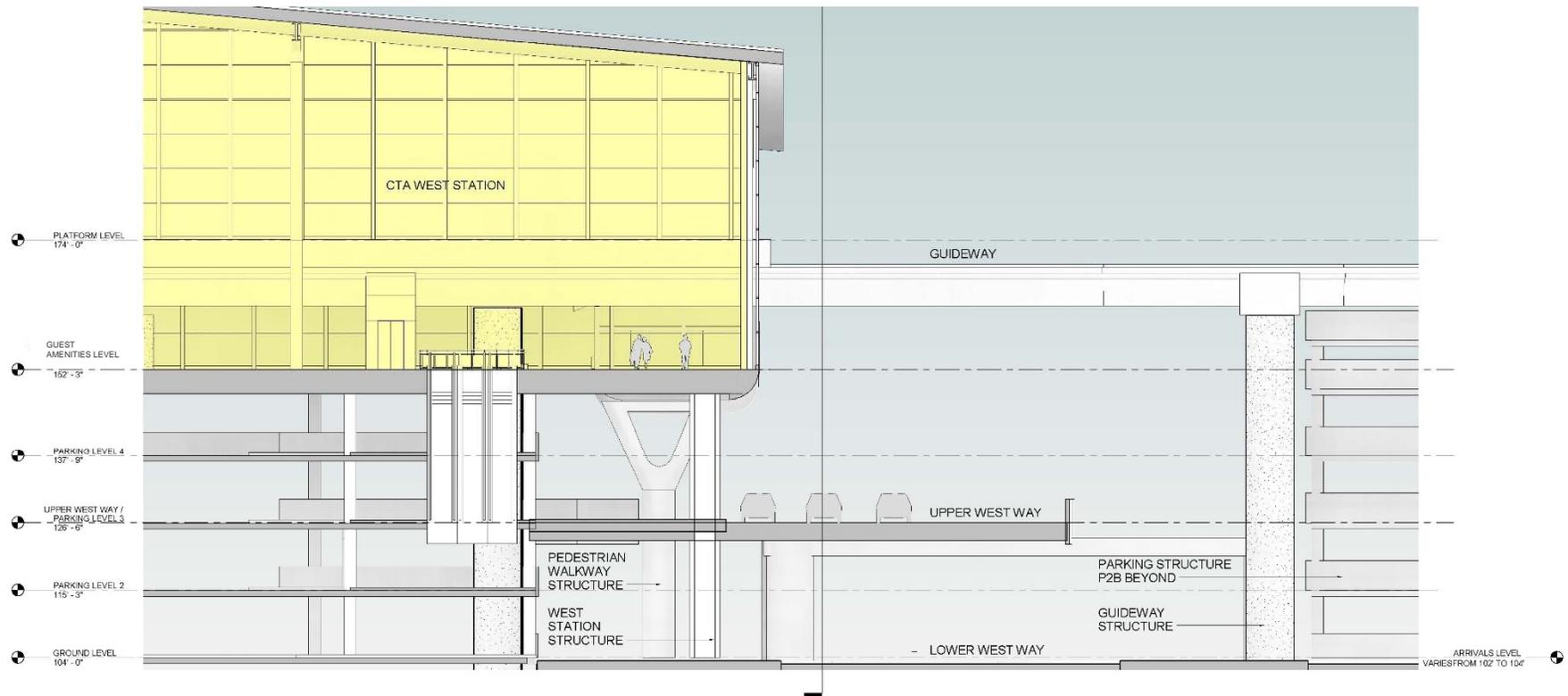
Elevations shown are "Above Mean Sea Level (AMSL)"

Figure 20: Enlarged West Way Interface Section (Looking North Adjacent to P3)



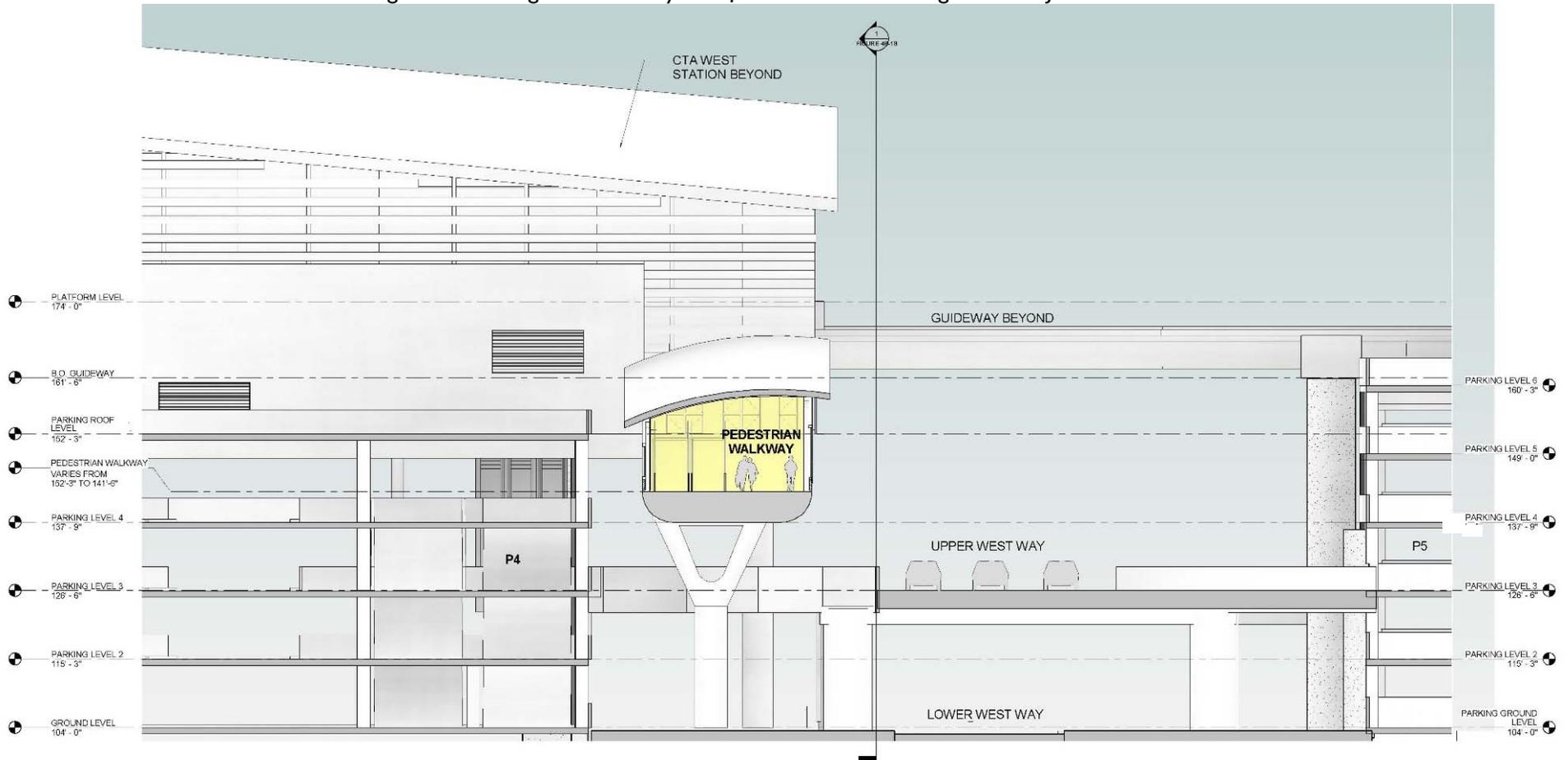
Elevations referenced are "Above Mean Sea Level (AMSL)"

Figure 21: Enlarged West Way Interface Section (Looking North Adjacent to the Station)



Elevations referenced are "Above Mean Sea Level (AMSL)"

Figure 22: Enlarged West Way Interface Section – Looking North Adjacent to P4



Elevations referenced are "Above Mean Sea Level (AMSL)"

Center Station

The Center CTA Station (see Figures 23 and 24) will be located north of the existing Air Traffic Control Tower, directly south of the reconstructed parking garage P2A. The two-story facility will have a footprint of approximately 10,000 sq. ft., with general dimensions of 45 feet in width (north-south) and approximately 185 feet in length (east-west). The single platform will be located between the APM tracks, allowing for boarding and de-boarding in both directions. The APM platform will be approximately 75 feet above ground level with the pedestrian walkway level located below the platform, at an elevation of approximately 40 feet above ground level.

Twenty-five foot wide single-level pedestrian walkways will connect the Center CTA Station to Terminals 2, 5, and 6 and parking garages P2A and P6. The pedestrian walkways will span over World Way and connect to Terminals 2, 5, and 6 via vertical cores with elevator and escalator access to the arrival and departure levels.

East Station

The East CTA Station (see Figures 23 and 24) will be located between existing parking garages P1 and P7. The platform will be located between the APM tracks, allowing for boarding and de-boarding in both directions. The two-story facility will have a footprint of approximately 10,000 sq. ft., with general dimensions of 45 feet in width (north-south) and approximately 185 feet in length (east-west). The APM platform will be approximately 75 feet above ground level with the pedestrian walkway level located below the platform, at an elevation of approximately 40 feet above ground level.

Twenty-five foot wide single-level pedestrian walkways will connect the East CTA Station to Terminals 1, 7, and 8 and parking garages P1 and P7. The pedestrian walkways will span over World Way and connect to Terminals 1, 7, and 8 via vertical cores with elevator and escalator access to the arrival and departure levels.

Passenger Conveyance

A combination of elevators and escalators will convey passengers from the platform level of the stations to the pedestrian walkway level. Based on conceptual design and the anticipated volume of passengers, all stations (with the exception of the CONRAC and ITF East stations) will be served from the pedestrian walkway level by three, 48" wide, transit-type escalators, and two 5,000 lb. elevators. Each station, except the CTA West station, will also have exterior emergency egress stairs, sized per NFPA 130 requirements, connecting the platform level to grade.

Figure 23: CTA Station - Expanded Axonometric

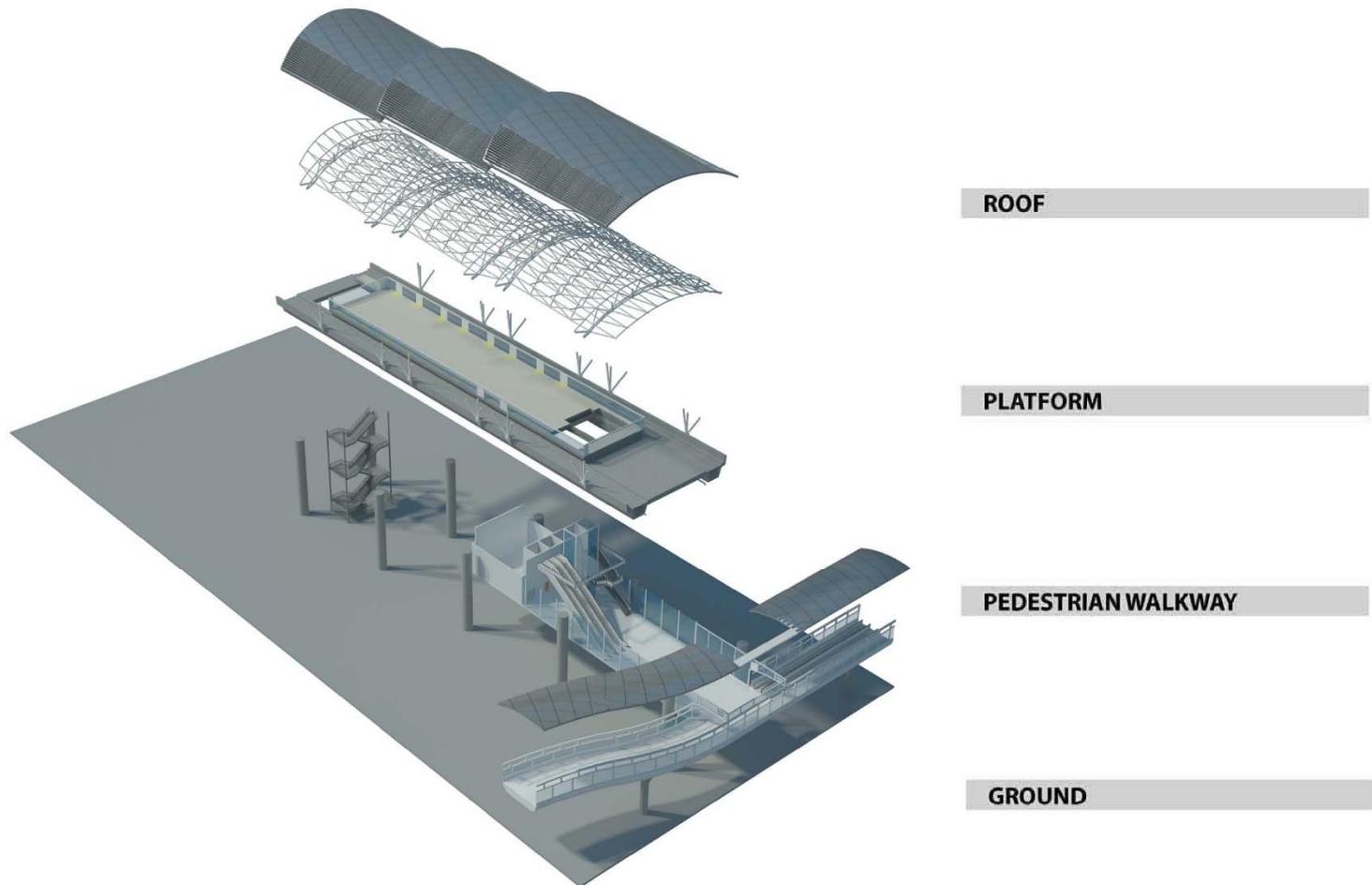


Figure 24: APM Station - Interior Perspective



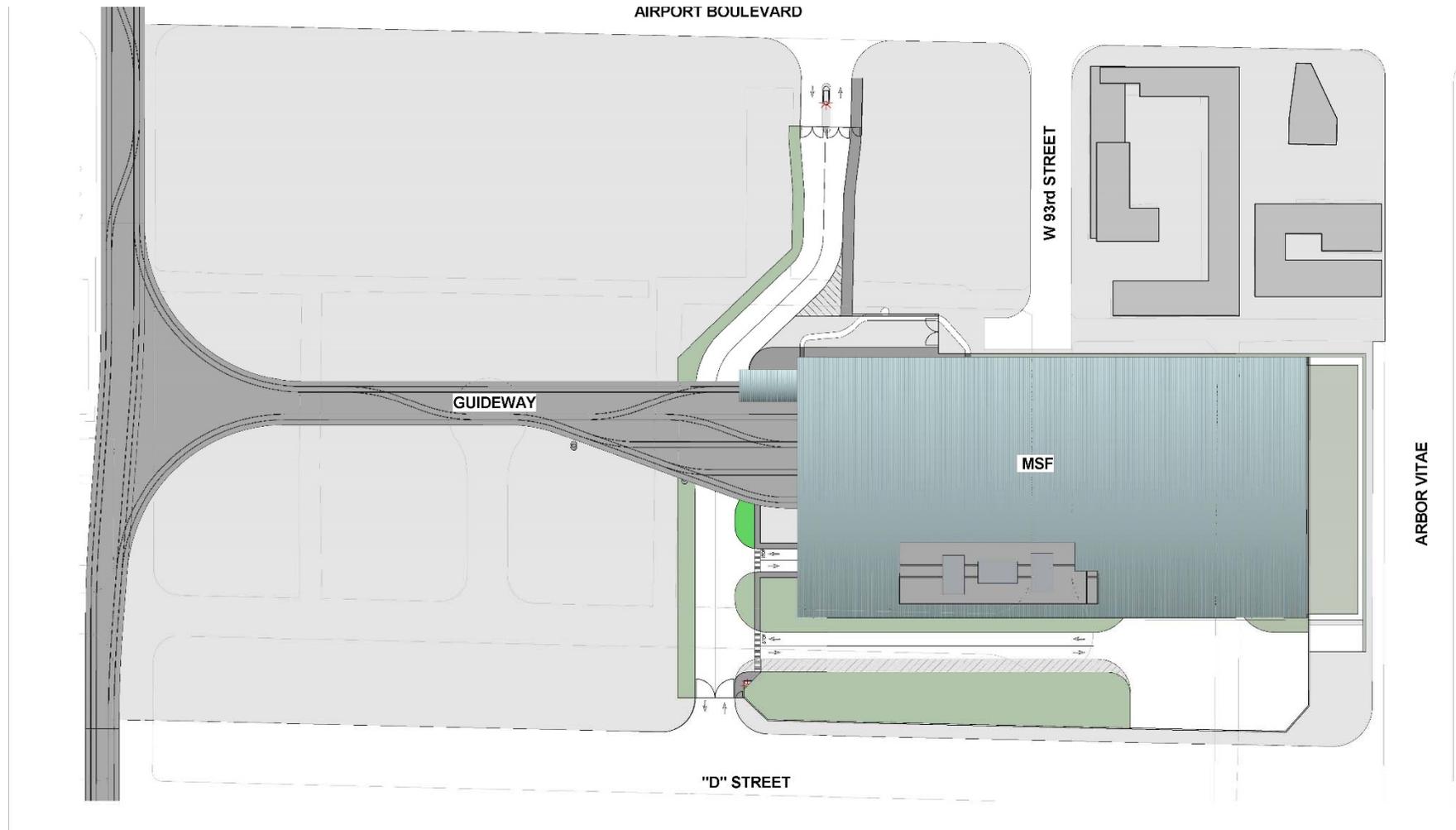
APM Maintenance & Storage Facility

To support the operations and maintenance of the APM Operating System, an elevated APM Maintenance and Storage Facility (MSF) (see Figure 25) will be constructed east of the ITF West. The M&SF will be located northeast of the intersection of Airport Boulevard and W. 96th Street (the Belford property).

Generally assumed to have three levels, the M&SF will have the following attributes:

- **Ground Level:** Employee parking and building access;
- **Maintenance Level:** APM tracks for vehicle maintenance, vehicle storage, and a vehicle washing; maintenance and repair shop areas, parts and supply storage; and
- **Mezzanine:** Office space, conference rooms, employee locker and break rooms, additional equipment and storage rooms, and a central control room.

Figure 25: APM Maintenance & Storage Facility - General Site Layout Concept



Traction Power Substations

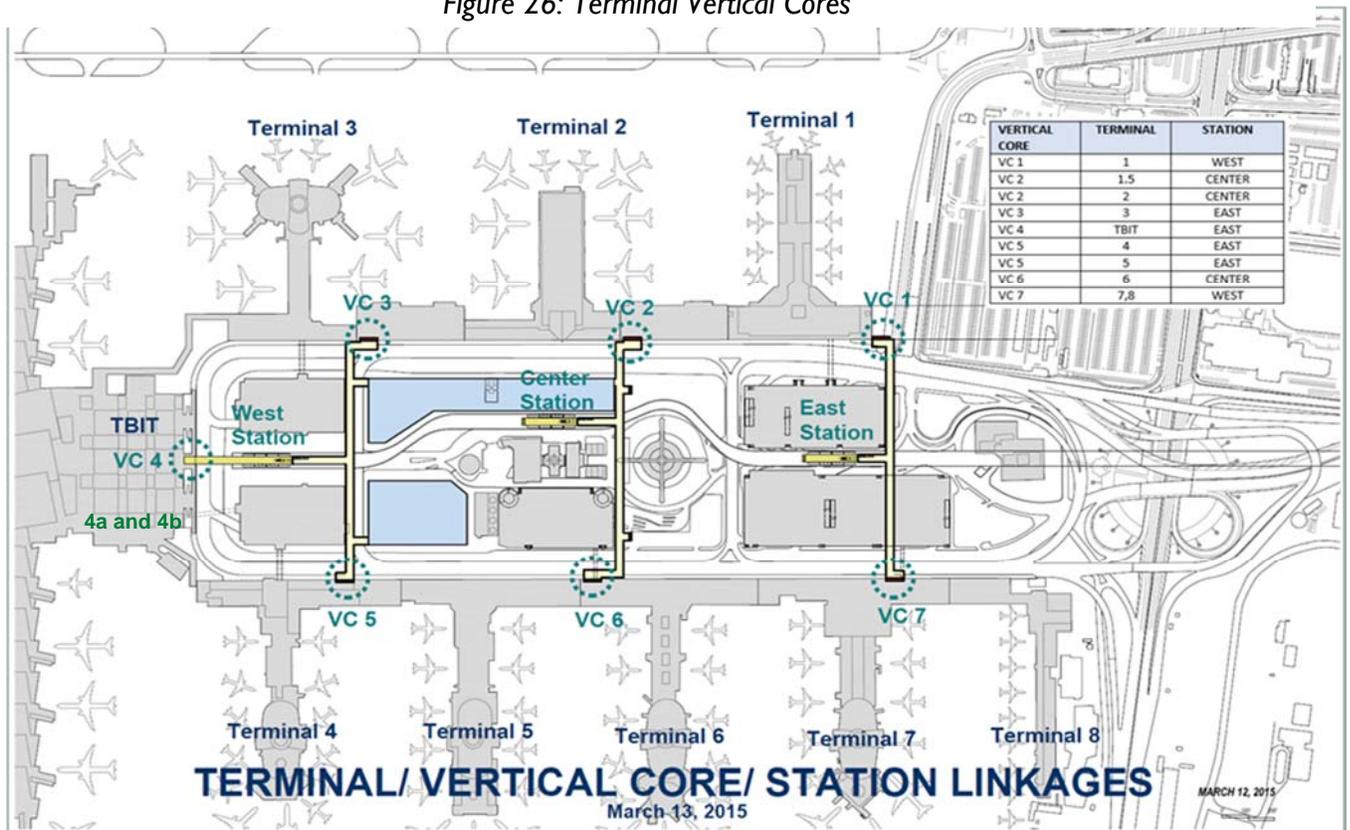
Based on the conceptual design of the system, three APM power substations will be needed to provide power to the APM Operating System with access around the building to support maintenance of the equipment. Transformers, rectifiers and switchgear are representative of equipment typically housed in and around these substations.

Located in the general vicinity of the East CTA station, the ITF West and the ITF East/CONRAC stations, the sites will provide paved parking for maintenance vehicles and an access road leading to each TPSS site from the nearest roadway. Landscaping and screening shall follow design standards established by LAWA.

1.3. Terminal Interface Vertical Cores

The conceptual program requirements for sizing the vertical cores at the terminals, as illustrated in Figure 26, were based upon the projected activity volumes at the 95 MAP level.

Figure 26: Terminal Vertical Cores



Assumptions for distribution of passengers included the flow of passengers from the APM as well as certain assumptions regarding the volume of passengers parking in the garages, meeter/greeters, employees and other pedestrians. As illustrated in Figure 26, passenger distributions at the vertical cores are, as follows:

- VC1 – T1 passengers
- VC2 – T2 passengers
- VC3 – T3 passengers
- VC4a & VC4b – TBIT passengers
- VC5 – T4 passengers
- VC6 – T5 passengers
- VC7 – T6/T7 passengers

APM pedestrians were allocated to the vertical core (VC) serving each Terminal.

Vertical Transportation Baseline Assumptions

The number of passengers an elevator can carry will vary according to the height of the facility, the amount of luggage carried by passengers, the dimensions of the elevator cab and the speed of the elevator.

Elevators

Elevator capacity for the Terminal Interface Vertical Cores is based upon the following criteria:

- 4.8 pax/min. in each direction (9.6 pax/min total and 576 pax/hour)
- 100 second trip interval
- Minimum 5,000 lb. elevator with 60 sf cab
- 8 passengers per trip @ 7.5 sf/pax
- 16 passengers per interval (8 pax up/8 pax down)
- Anticipated elevator usage is 35%
- “Must ride” elevator usage is 20%

As arriving passenger flow is higher than departing passengers, the arriving peak was analyzed to determine the number of elevators required to meet the anticipated demand. A sensitivity analysis was also performed to determine the range of elevator requirements based on 20, 30, and 40 percent of the passengers utilizing the Terminal Interface Vertical Cores. Table I reflects the minimum elevator requirements for each core based on the 30% utilization factor; however, for design consistency between terminals, four elevators will be provided at each core.

Table 1: Elevator Requirements for Terminal Interface Vertical Cores

Vertical Core	No. of Elevators (30% Utilization)
VC1 (T1)	3
VC2 (T2)	3
VC3 (T3)	3
VC4a (TBIT)	4
VC4b (TBIT)	4
VC5 (T4)	3
VC6 (T5)	4
VC7 (T6-T7)	4

Note: based upon meeting demand 100% of the day (includes N+1 redundancy).

Escalators

Escalator capacity was calculated based on escalator clear width and nominal speed, along with the assumption that passengers will utilize every other tread (Table 2).

The following criteria established the Escalator capacity for the Terminal Interface Vertical Cores:

- 30 pax/min. (1,800 pax/hour)
- 100 feet/min.
- 40 in. min tread width
- 15 in. min. tread depth
- 30 pax/min. or approximately one pax per 2 treads

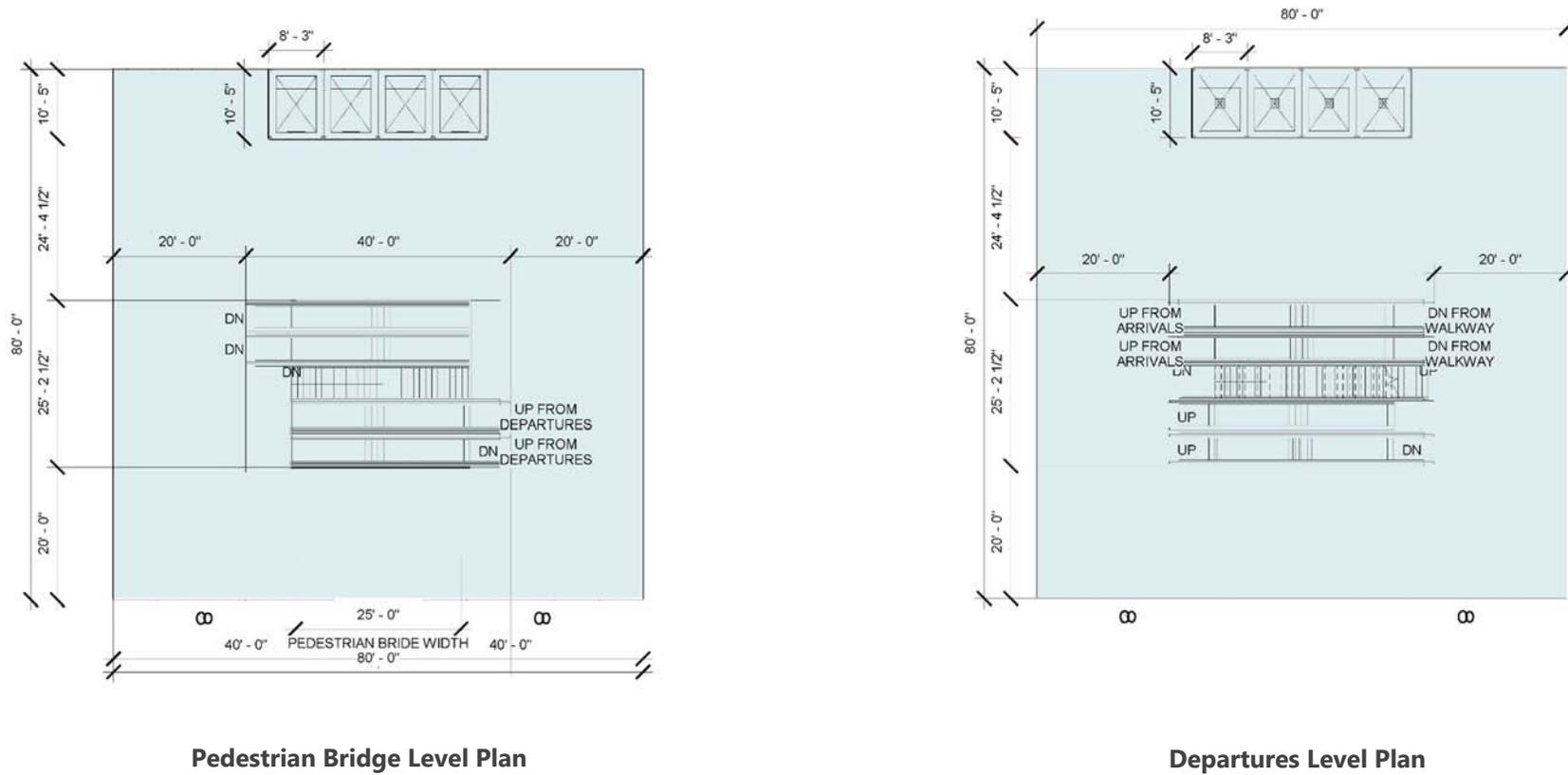
Table 2: Escalator Requirements for Terminal Interface Vertical Cores

Vertical Core	No. of Escalators (80% Utilization)
VC1 (T1)	3
VC2 (T2)	3
VC3 (T3)	3
VC4a (TBIT)	N/A
VC4b (TBIT)	N/A
VC5 (T4)	3
VC6 (T5)	3
VC7 (T6-T7)	3

Note: Based upon meeting demand 100% of the day (One way up from arrivals to the pedestrian bridge. One way down from pedestrian bridge to ticketing and one way down from ticketing to arrivals. Does not include N+1 redundancy).

Figure 27 shows the conceptual plans for the typical Terminal Vertical Core.

Figure 27: Typical Terminal Vertical Core



2. INTERMODAL TRANSPORTATION FACILITIES

The Program includes two Intermodal Transportation Facilities (ITFs): an ITF West and an ITF East. These facilities provide alternative access to the terminals via the APM system. By transferring passengers from vehicles to the APM system, these intermodal facilities will reduce congestion on the internal airport roadway network, improve traffic around the airport, and enhance the arrival and departure experience for passengers. The ITFs provide convenient locations outside of the CTA for passenger pick-up and drop-off by private vehicles and commercial shuttles or for passengers and employees to park and take the APM to the CTA.

2.1. ITF West

ITF West is the area generally bounded by Westchester Parkway/Arbor Vitae Street on the north, New 'A' Street on the west, West 98th Street to the south and Airport Boulevard to the east. The main components of the ITF West include an APM station, two new adjacent and interconnected public parking garages (one structure with four elevated parking decks, the other with five elevated parking decks), a commercial vehicle curb, and internal circulation roads.

The ITF West is located near existing hotels and businesses located along W. Century Boulevard. Therefore, the ITF West facility accommodates pedestrian access and movement within the overall flow of the site. Grade differences, paving materials and/or landscaping provide separation of sidewalks, vehicle parking and vehicle maneuvering areas.

APM Station

A multi-level facility with a footprint of approximately 11,000 sq. ft., and general dimensions of 45 feet in width (north-south) and approximately 211 feet in length (east-west), the APM Station (see *Figures 28 through 34*) has a center platform, allowing for boarding and de-boarding on the same platform. The platform will be elevated approximately 46 feet above ground level. Two vertical circulation cores (one on the west end and one on the east end of the platform) consisting of elevators, escalators, and stairs, provide passengers access to the ground level and to two pedestrian walkways connecting the station to level two of the public parking garages.

Figure 28: ITF West Station – Site Plan

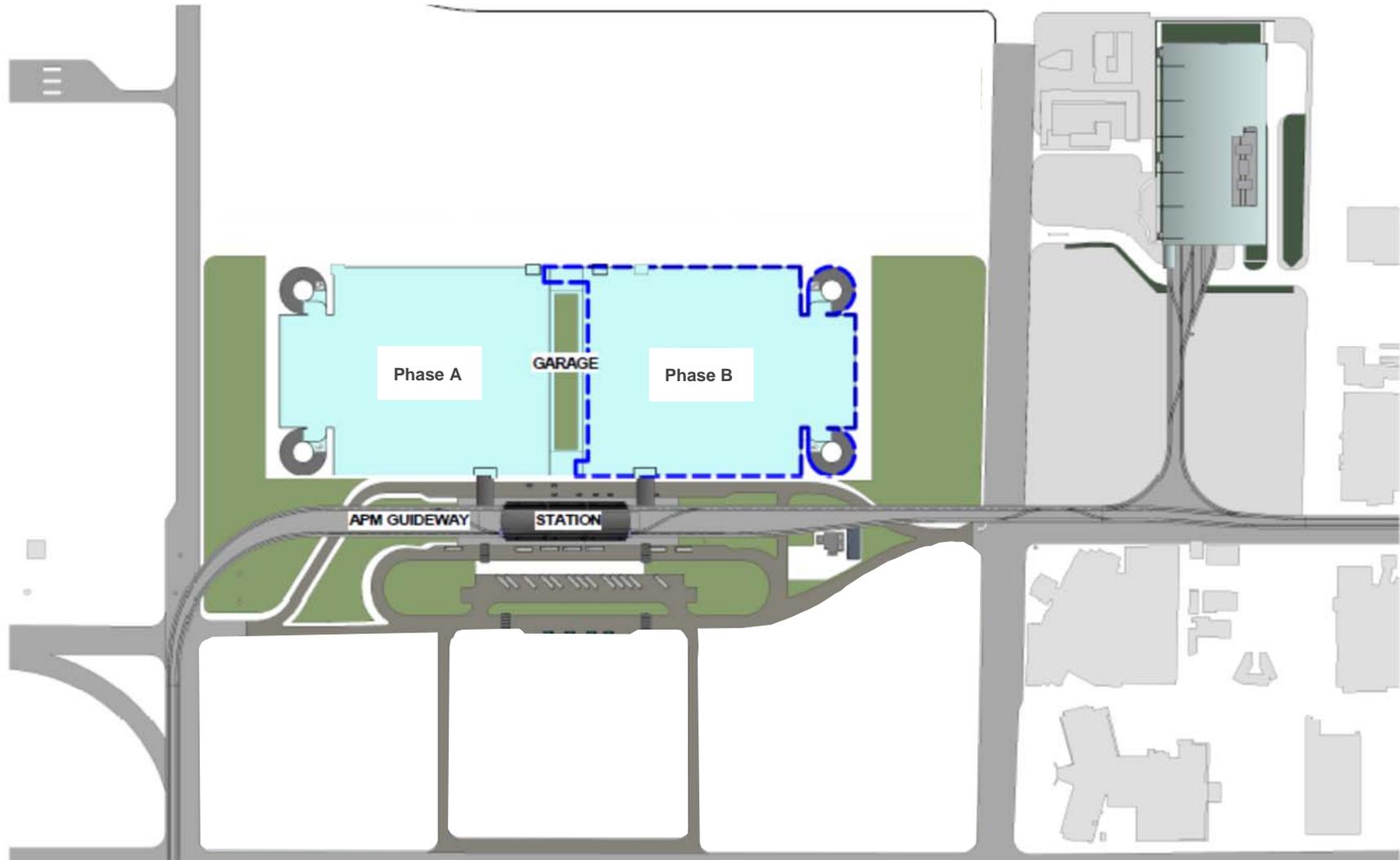
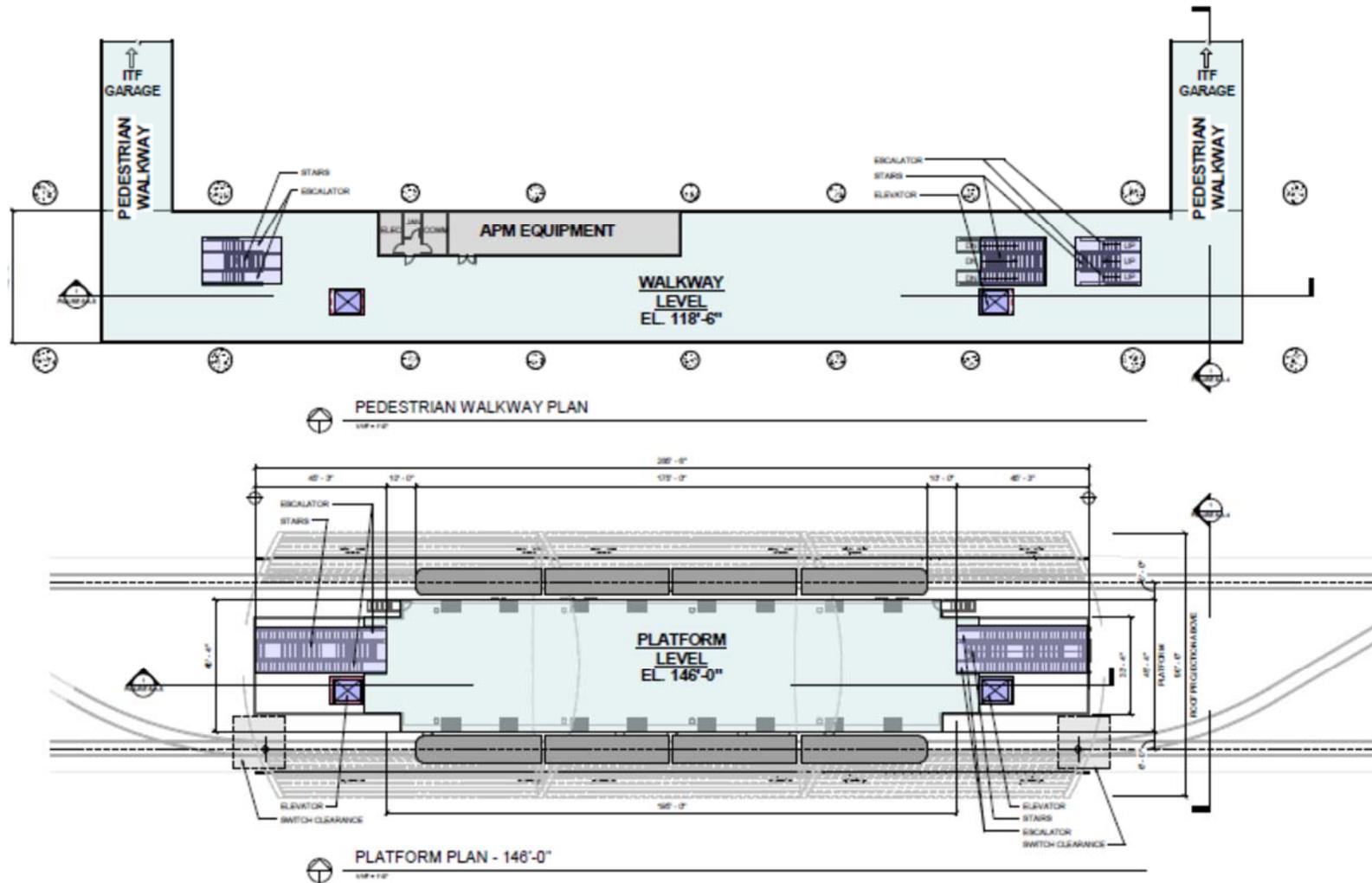
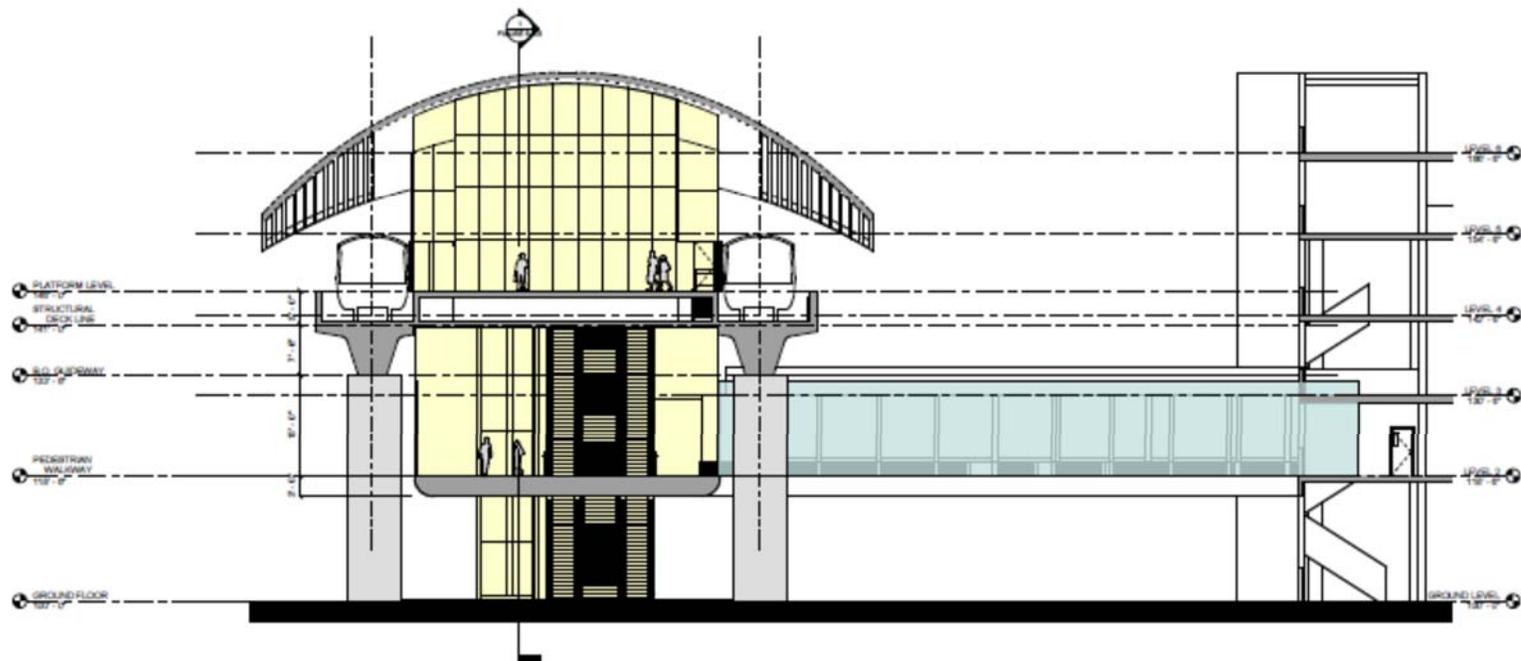


Figure 29: ITF West Station – Floor Plans



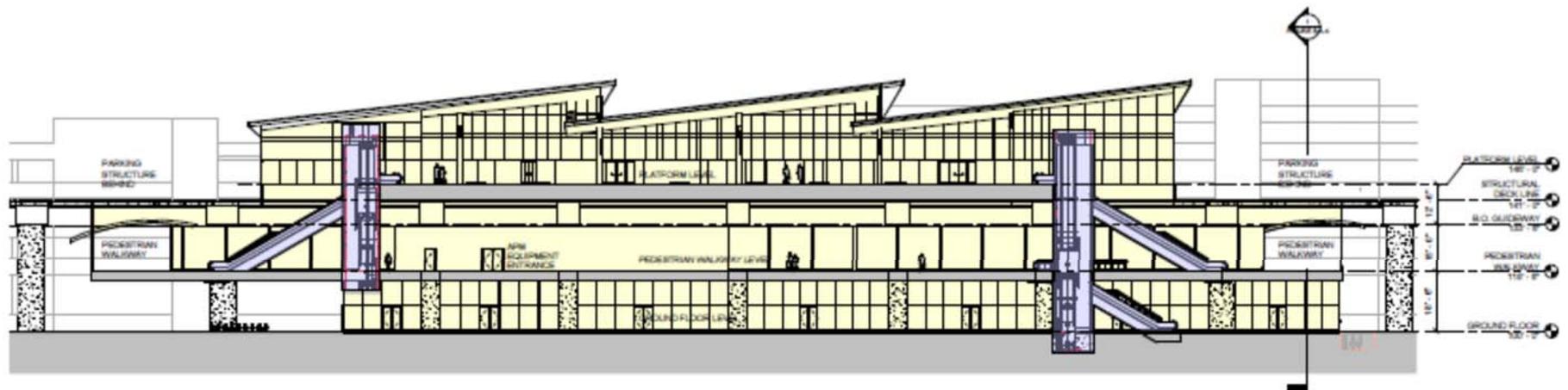
Elevations referenced are "Above Mean Sea Level (AMSL)"

Figure 30: ITF West Station – Pedestrian Walkway Section



Elevations referenced are "Above Mean Sea Level (AMSL)"

Figure 3 I: ITF West Station - Section



Elevations referenced are "Above Mean Sea Level (AMSL)"

Figure 32: ITF West Aerial Perspective



Figure 33: ITF West Garage - Ground Floor Plan

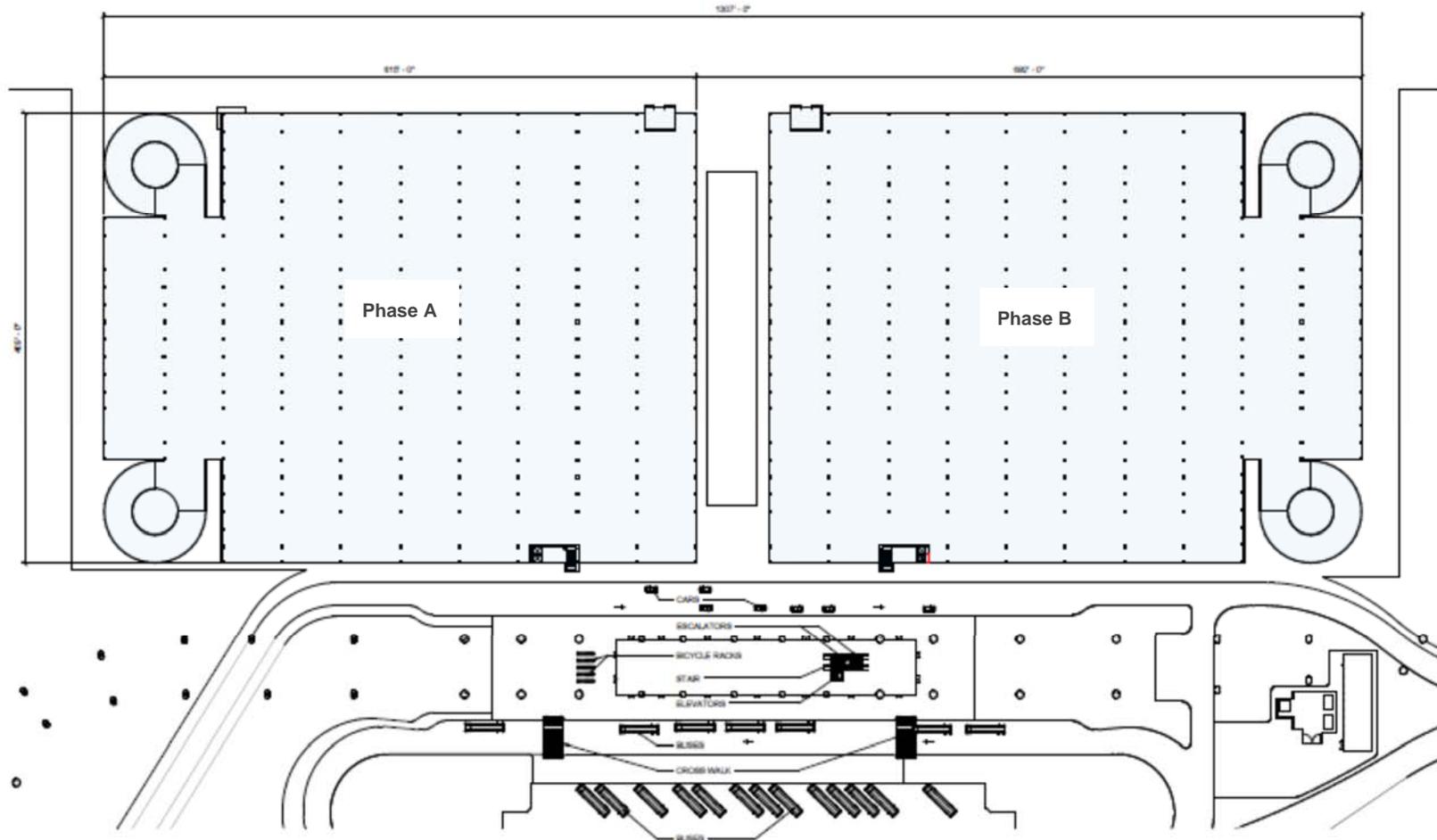
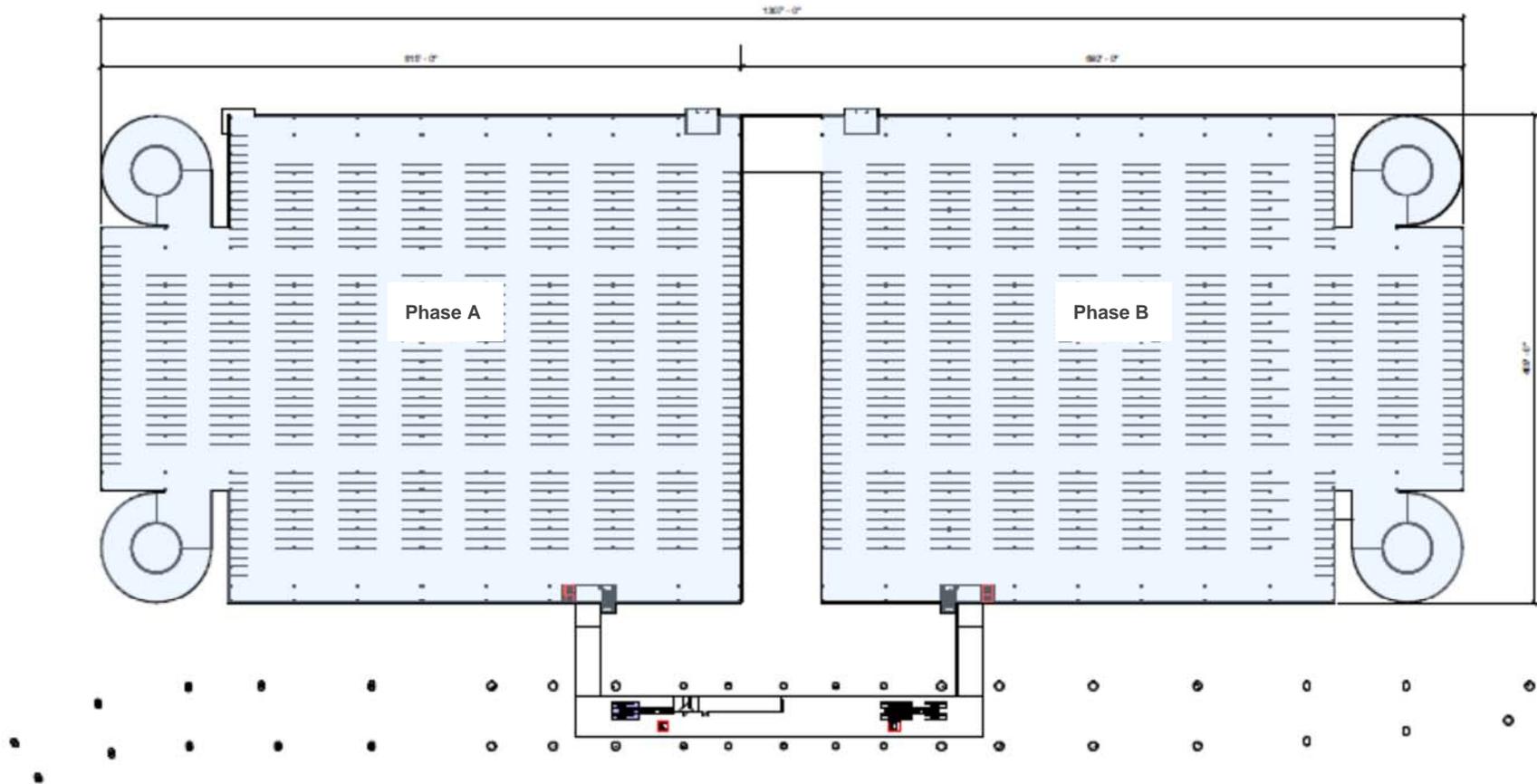


Figure 34: ITF West Garage - Typical Floor Plan



Parking

Based on the timing required to relocate existing land uses, the ITF West Garage will be implemented in two phases. (See Figures 33 and 34)

Phase A – West Section

Phase A of the Garage will have a footprint of approximately 280,000 SF with four levels of elevated parking deck above grade – each with a capacity of approximately 725 standard parking spaces for a total capacity of 3,600 stalls. Entrance/Exit plazas connect to the new “B” Street to the north at grade level. Accessible parking will be at grade level. The garage utilizes a pair of one-way helices for vertical circulation, one upward-bound and one downward-bound, allowing elevated parking decks to be flat.

Parking patrons will enter through two entry lanes directly from new “B” Street. The exit plaza, also with two exit lanes will discharge exiting traffic to “B” Street.

Phase B – East Section

Phase B of the Garage will have a footprint of approximately 280,000 SF, as well; however, with five levels of elevated parking deck above grade – each with a capacity of approximately 725 standard parking spaces - the East Section of the garage will have a total capacity of 4,300 stalls. Entrance/Exit plazas constructed with the Phase A – West Section will be reconfigured to accommodate two each additional entry and exit lanes. As with the Phase A garage, a pair of one-way helices will accommodate vertical circulation allowing the elevated parking decks to be flat.

Roadways and Circulation

ITF West roadway within the alignment of the APM guideway will be constructed as a part of the APM, and will consist of a new one-way, one to two-lane eastbound roadway trunk with limits on the west side at the New “A” Street and W. 96th Street intersection, and on the east at the intersection of W. 96th Street and Airport Boulevard. Also included is a roadway branch that peels away to the north and runs eastbound for private automobile pickups/drop offs along a curbside with a length of approximately 650 feet.

A branch commercial rotary (moving in a counterclockwise direction) will be located north of the trunk roadway to serve commercial vehicles such as charter vans, taxis, paid rides, Limo/Town Car, and hotel shuttles for pickups/drop offs along curbside in WB direction for a length of 650 feet. The total length of rotary (inside dimension) is anticipated to be approximately 890 feet.

Also proposed are transit bus stops along 230 feet of curbside on the trunk roadway about halfway into the segment on the south side of the ITF.

West 98th Street to the south accommodates other access to the trunk and rotaries via a pair of one-way north-south streets with the westerly street aligned with existing Avion Drive. The easterly street will be for southbound moves.

Parking is provided off the trunk roadway about halfway into the segment with two entrance/exit points. The parking is located inside the commercial rotary and is approximately 400 feet long. Operation and Maintenance parking is provided at the east end of the auto-passenger branch roadway with access to both the auto-passengers branch and the commercial rotary branch roadways.

2.2. ITF East

The ITF East would be located on a 21-acre site at the northeast corner of Aviation Boulevard and 98th Street, on a portion of the 135-acre site known as Manchester Square.³ The ITF East will be used primarily by private and commercial vehicles traveling to and from the airport from the freeway system, or via W. Century Boulevard, Aviation Boulevard, and W. Arbor Vitae Street. The ITF East provides a connection to transfer passengers from personal, commercial, and transit vehicles to and from the APM station for access to the CTA and airport passenger terminals. In addition to providing access to the CTA via the APM, this facility also provides access to the Metro Crenshaw/LAX Light Rail line at a future station planned on Aviation Boulevard. As with the ITF West, the ITF East would be located near existing hotels and businesses located along W. Century Boulevard. Therefore, development of the ITF East facility incorporates pedestrian access and movement to the overall flow of the site. Grade differences, paving materials and/or landscaping provide separation of sidewalks, vehicle parking and vehicle maneuvering areas.

APM Station

An APM Station located at the ITF East (see *Figures 35 through 39*) provides access to the CTA. The multi-level facility will have a footprint of approximately 11,500 sq. ft., with general dimensions of 45 feet in width (north-south) and approximately 260 feet in length (east-west). The center platform allows for boarding and de-boarding on the same platform. The APM platform is approximately 50 feet above ground level. A vertical circulation core on the east end of the platform, consisting of elevators, escalators, and stairs, provides passenger access to the ground level and vehicle curbs.

Access to the proposed Metro Station will be accommodated through vertical circulation - including escalators, elevators, and stairways - at the west end of the APM platform. The Metro Station is outside of the scope of the LAMP.

Parking

A new parking garage with a surface level and five elevated decks will provide parking for passengers at the ITF East (see *Figures 40 and 41*). The facility has a footprint of up to approximately 510,000 sq. ft. with approximately 7,900 parking spaces. Primary access to the parking garage is along the south side of the facility from W. 98th Street at grade level. Egress from the ITF East onto northbound Aviation Boulevard is located on the west side of the facility at grade level. A set of one-way helixes provide circulation within the structure, one ascending and one descending, allowing the elevated parking decks to be flat. The ITF-East includes a short-term parking lot north of the ITF East APM Station. Either commercial vehicles or “Kiss and Ride” will utilize this approximately 100,000 sq. ft. lot.

³ The proposed CONRAC facility would occupy the majority of the remainder of the Manchester Square site.

Figure 35: ITF East Station - Site Plan

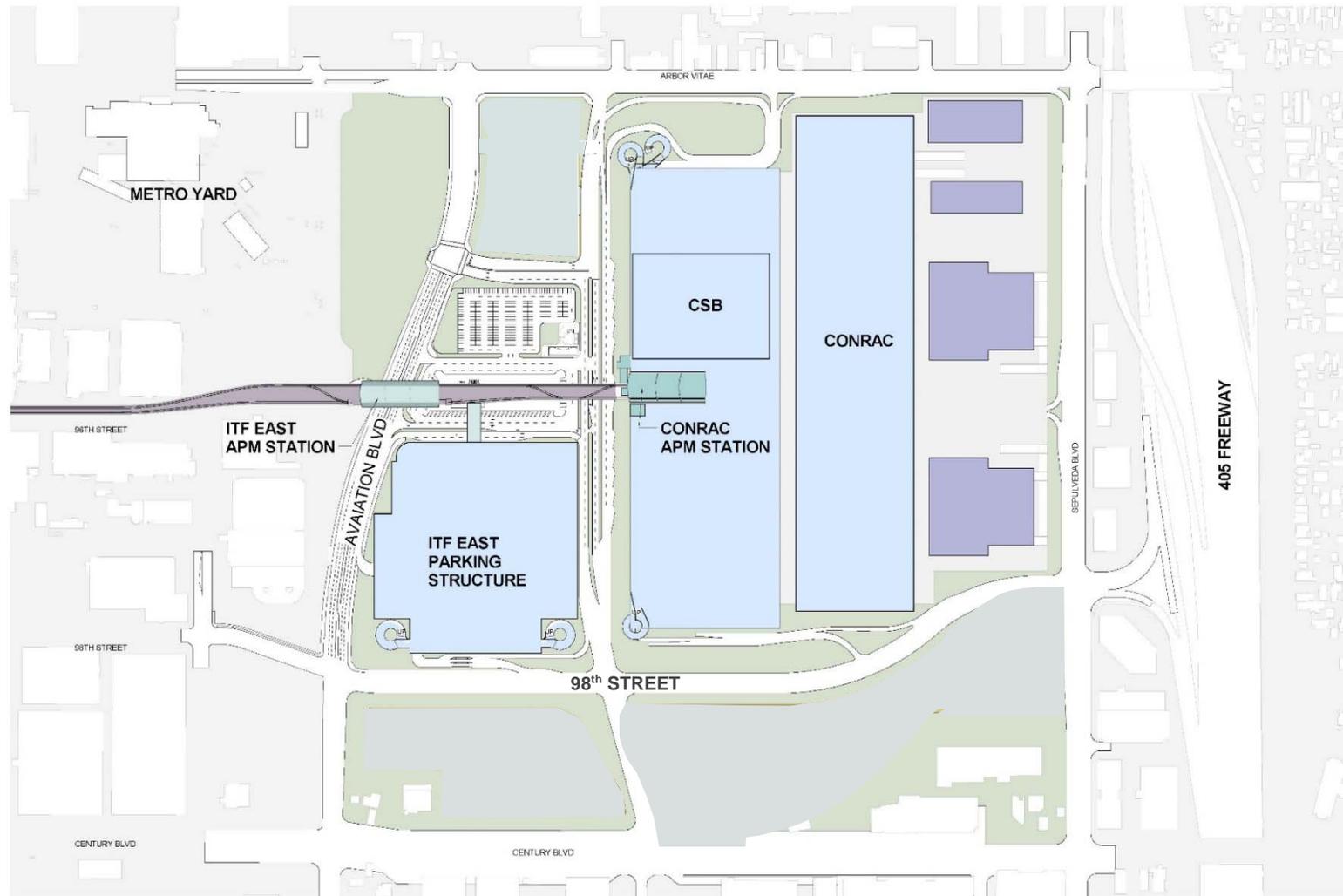


Figure 36: ITF East Station - Ground Floor Plan

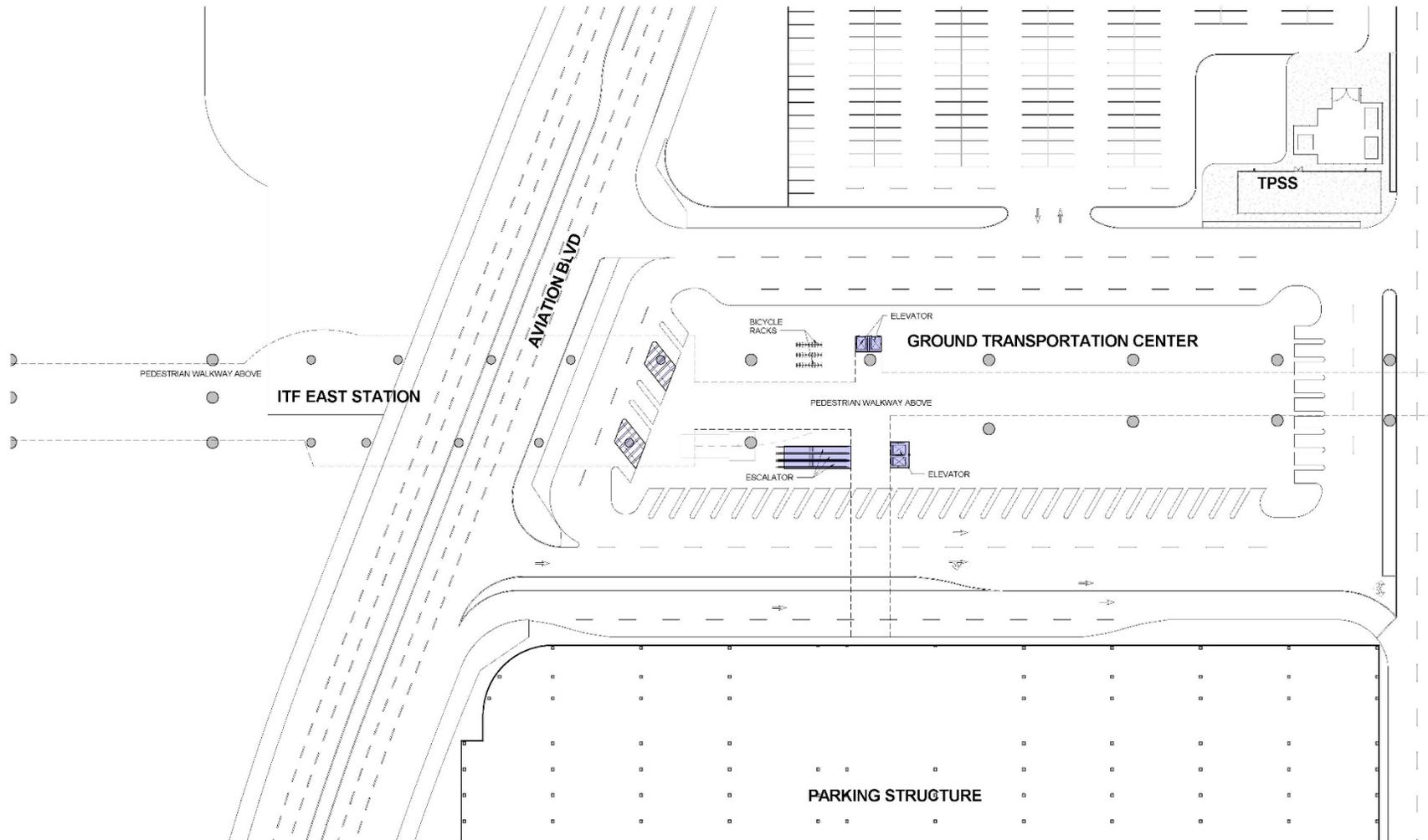


Figure 37: ITF East Station - Pedestrian Walkway Plan

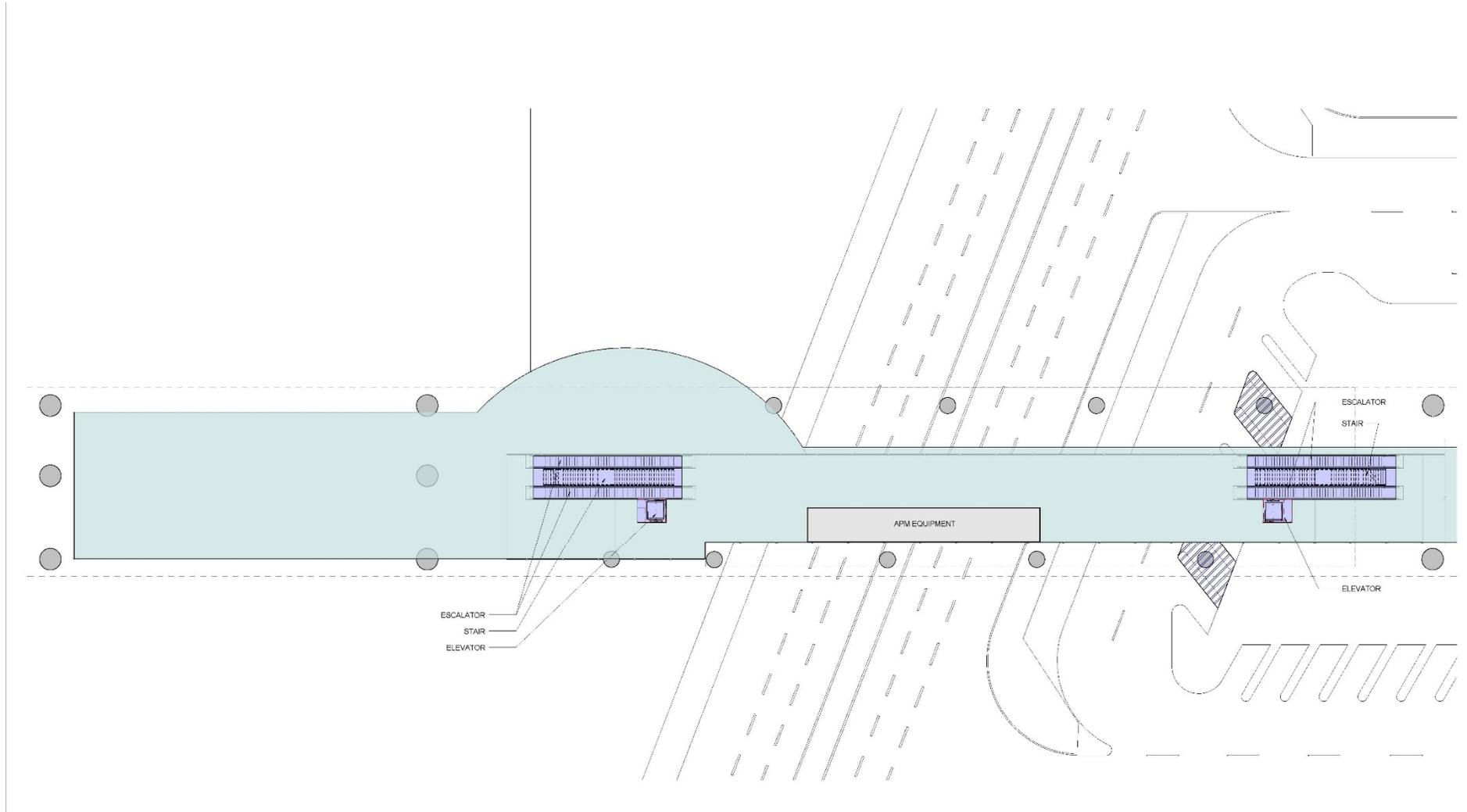


Figure 38: ITF East Station - Platform Plan

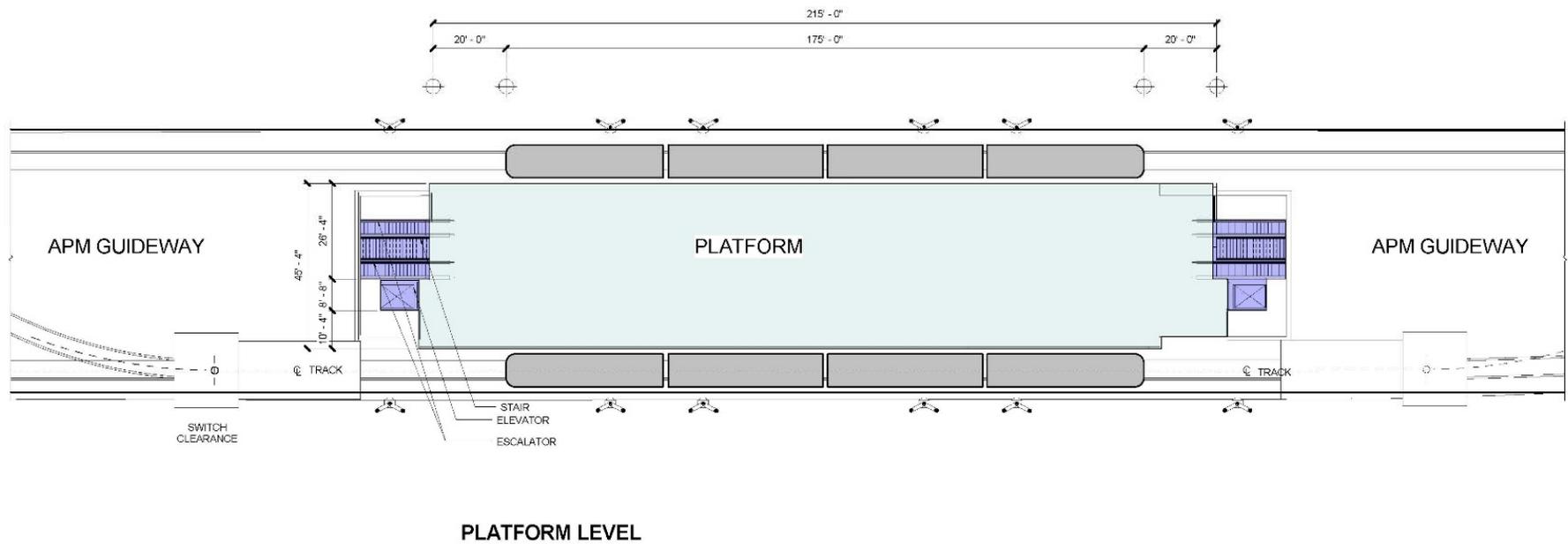


Figure 39: ITF East to CONRAC Station - Pedestrian Walkway Plan

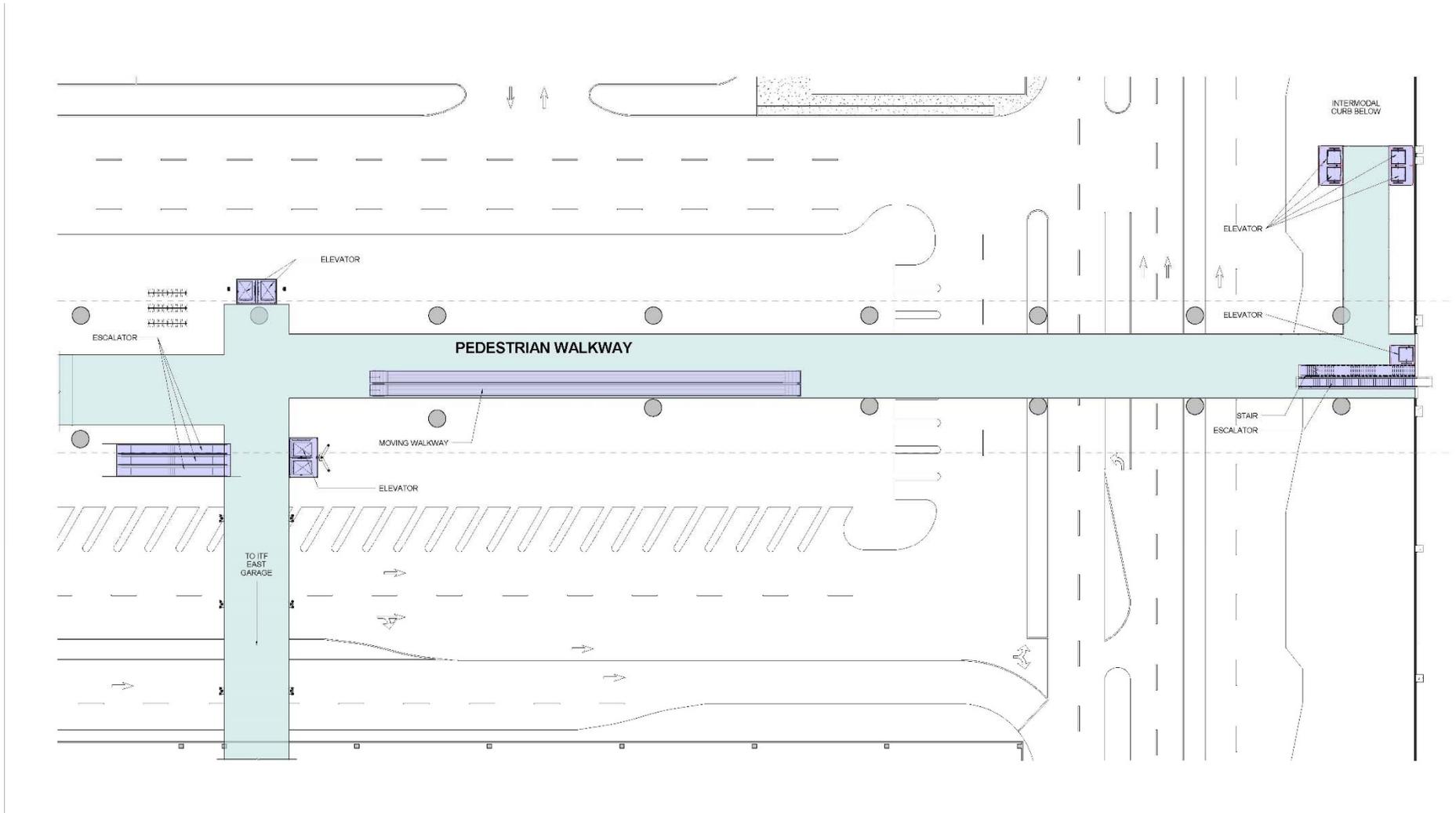


Figure 40: ITF East Garage - Site Plan

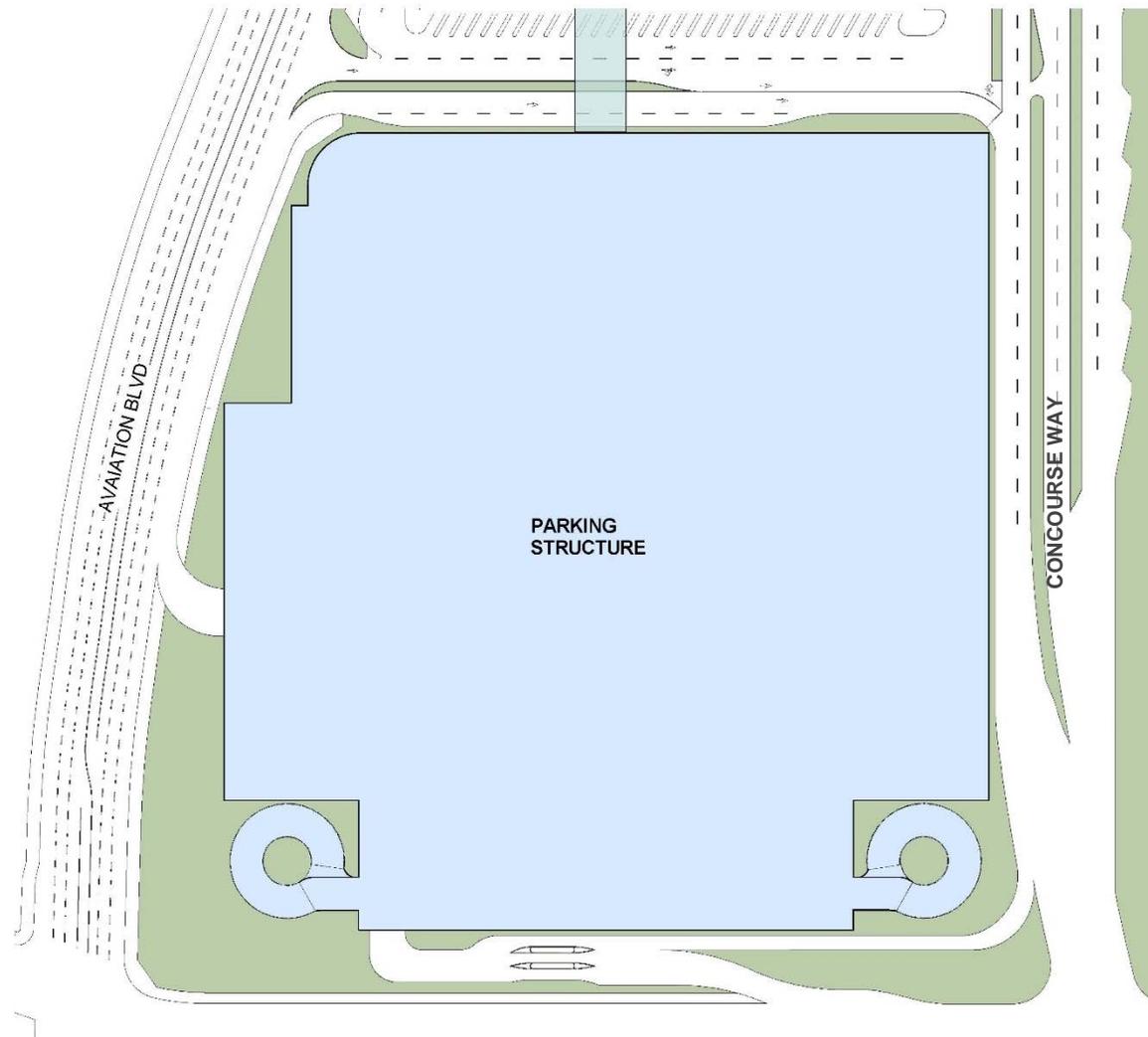
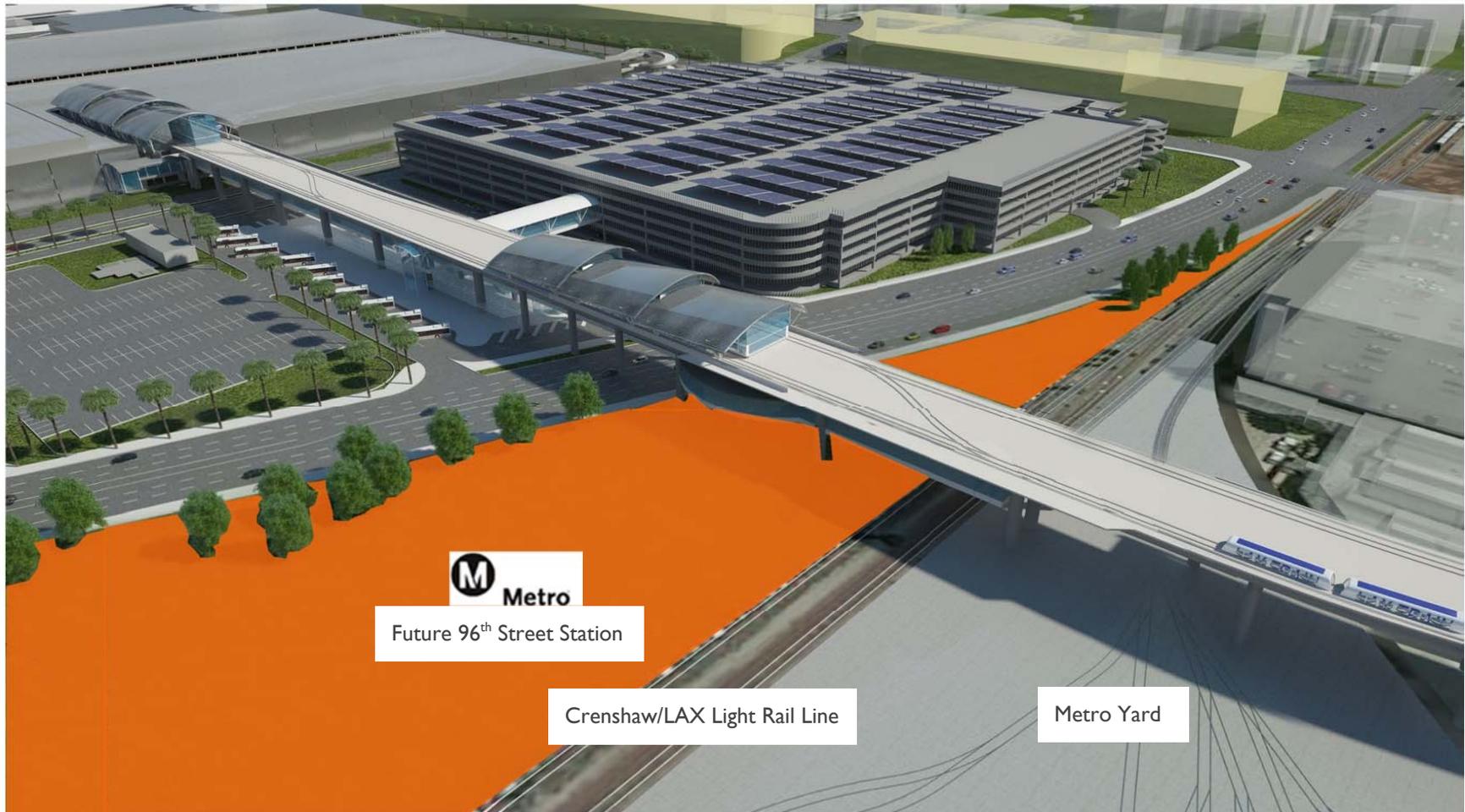


Figure 41: Aerial Perspective



3. CONSOLIDATED RENTAL CAR FACILITY

Currently, there are over 20 properties located north and east of the airport used by the various rental car companies (RACs) for their individual operational needs. LAWA seeks to improve traffic congestion in the surrounding area of LAX by relocating the majority of rental car operations into a centralized location, with a direct and efficient connection to the APM system, and improved connectivity to the I-105 and I-405 freeways.

The Consolidated Rental Car Facility (CONRAC) project site is located within a 68 acre area within Manchester Square. The CONRAC site is bounded by the extension of 98th St. between Aviation Boulevard and S. La Cienega Boulevard on the south; the extension of Concourse Way, between W. Century Boulevard and W. Arbor Vitae Street, on the west, W. Arbor Vitae Street on the north, and S. La Cienega Boulevard on the east. The existing site consists of a range of residential buildings, in the process of being acquired and removed, as well as a Secondary Charter School on property owned by the Los Angeles Unified School District. Figure 42 depicts the Overall View of the Manchester Square Development Area.

In collaboration with the rental car industry, LAWA has identified the following benefits of the CONRAC for LAX:

- **Improved Passenger Experience** – The CONRAC will provide enhanced customer experience and safety with an easy-to-find consolidated location conveniently linked to the CTA by an APM. Average travel time between the terminal curb and the rental car facility will be reduced to 14 minutes or less depending on the customer’s arrival or departure terminal. All rental car customer service areas will be under cover;
- **Improved Traffic Flow** – The facility is projected to eliminate more than 3,200 daily rental car shuttle trips on city streets and CTA roadways. In addition, because the new facility will consolidate the main operations of each company - including idle storage - onto one site, the number of vehicle miles required to process return vehicles to be fueled and washed or sent to storage will be greatly reduced;
- **Free-up CTA Curb Space** – The CONRAC will open up 945 feet (20% of total) of the commercial curb zone on the lower level;
- **Operational Efficiencies** – There will be a reduction in operating costs due to the ability for companies to share space, resources and transportation and have the ability to accommodate entire brand family operations and projected growth within the same secure area. Operational efficiency will improve as all areas will now be under cover; and
- **Better Land Use** – The 68 acres required for ultimate development is at least 46 percent less land compared to the estimated site inventory of 145 acres currently utilized by the rental car companies.

Figure 42: Overall View of Manchester Square Development Area



3.1. CONRAC Components

The program for the new CONRAC is based on accommodating a 42 percent projected growth, from the demands of 67 million annual passengers in 2013 to 95 million annual passengers, to meet the long-term requirements of the current on-airport operators, plus accommodation for growth of and entry into the LAX market by independent operators. The four major components of the CONRAC consist of the Customer Service Building; the Rental Car Ready/Return Garage; the Quick Turn-Around (QTA) Building and the Idle Storage Building. Figures 43 and 44 reflect these main CONRAC facility components with projected gross area allocations for each. Figure 45 shows a view, from the southwest of these components. The functional description of the various components is included in the subsequent pages.

Figure 43: CONRAC Conceptual Site Plan / Overall Levels 1-3 Plan

Site Area	68 ACRES
Ready/Return Garage (RAC)	
• Three-story - 7,600 stalls rental stalls	2,448,800 SF
• 4 Vertical Cores	
• 1,200 Employee & Visitor Parking Spaces and Potential Parking on Level 4	498,000 SF
Idle Storage	
• 10,000 dedicated stalls on Levels 1 to 3	1,867,900 SF
• Airport Employee or Public Parking on Level 4	622,630 SF
QTA	
• 2 buildings - three-levels each	
• 186 fuel nozzles	
• 37 wash bays	824,300 SF
• 64 maintenance bays	
• 17 foot floor to floor heights	

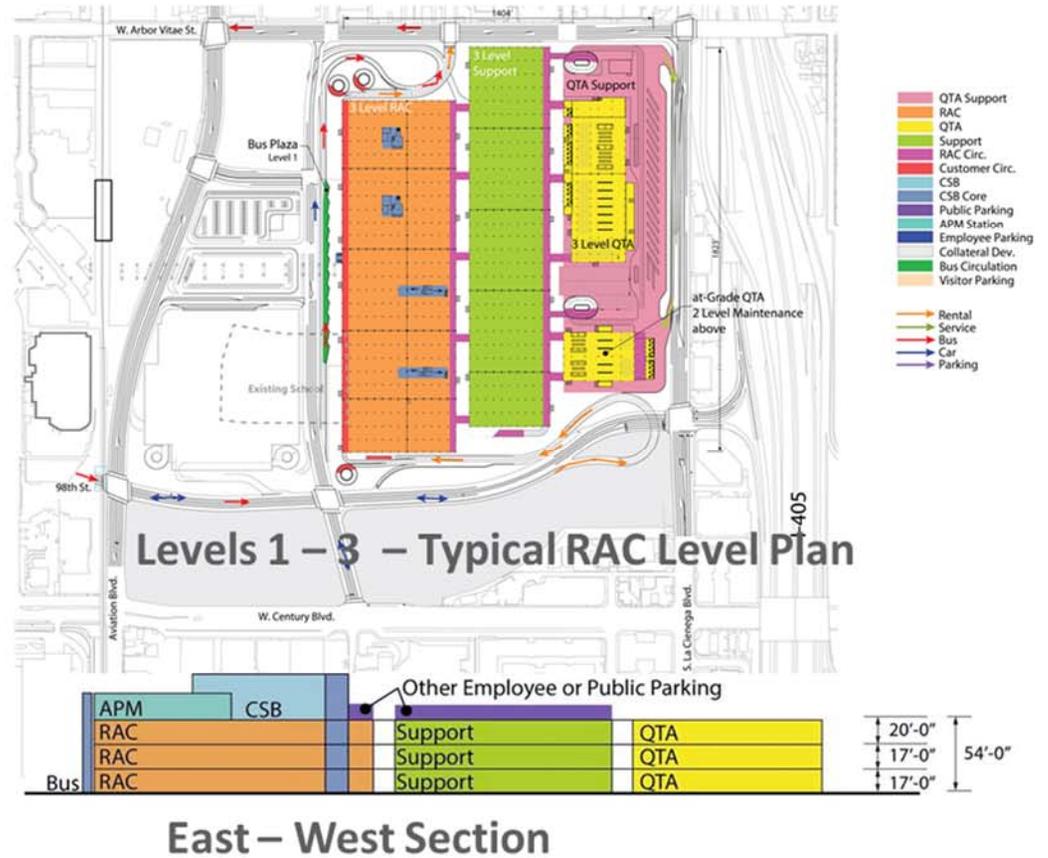


Figure 44: CONRAC Overall Level 4 Plan

Customer Service Building (CSB)	
• Located at Level 4	139,700 SF
• 4 Vertical Cores	
• Elevation at 54 feet above grade	
APM Station	
Courtyard with Canopies & Covered Walkways	177,100 SF
Other Components	
• Interim common use bus operation	
• QTA Support area with 19 car carrier positions and 348 staging corrals	

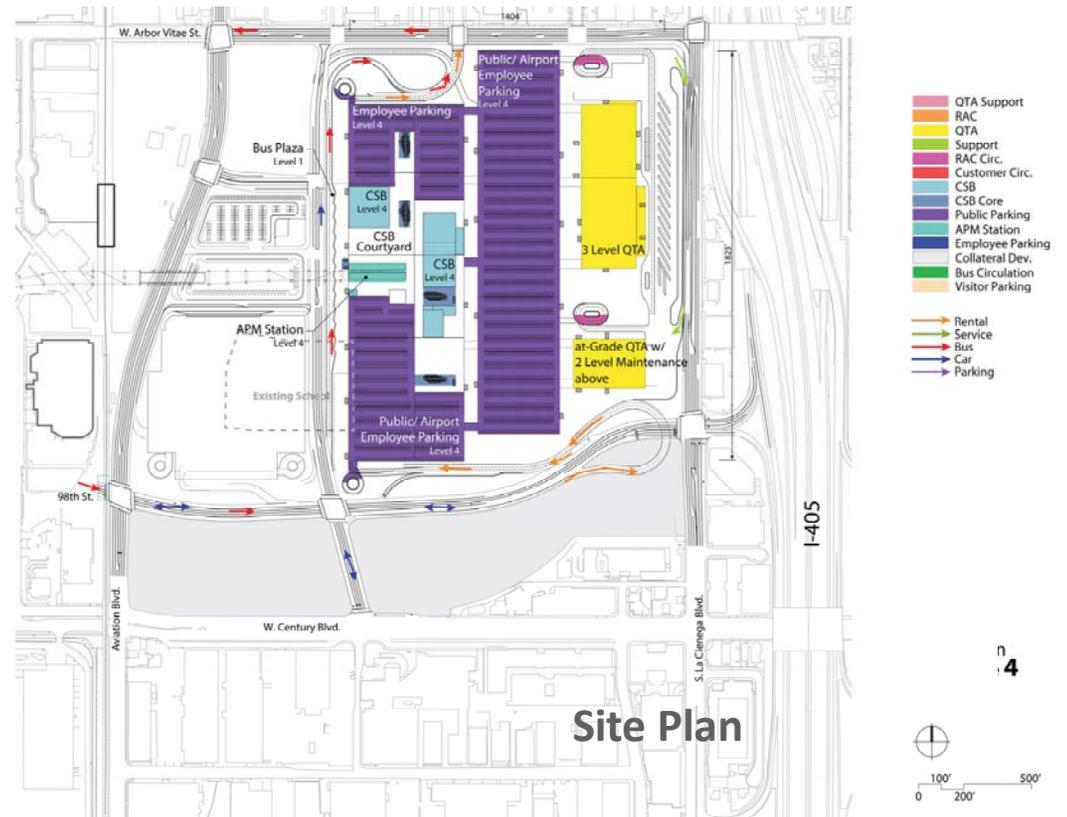
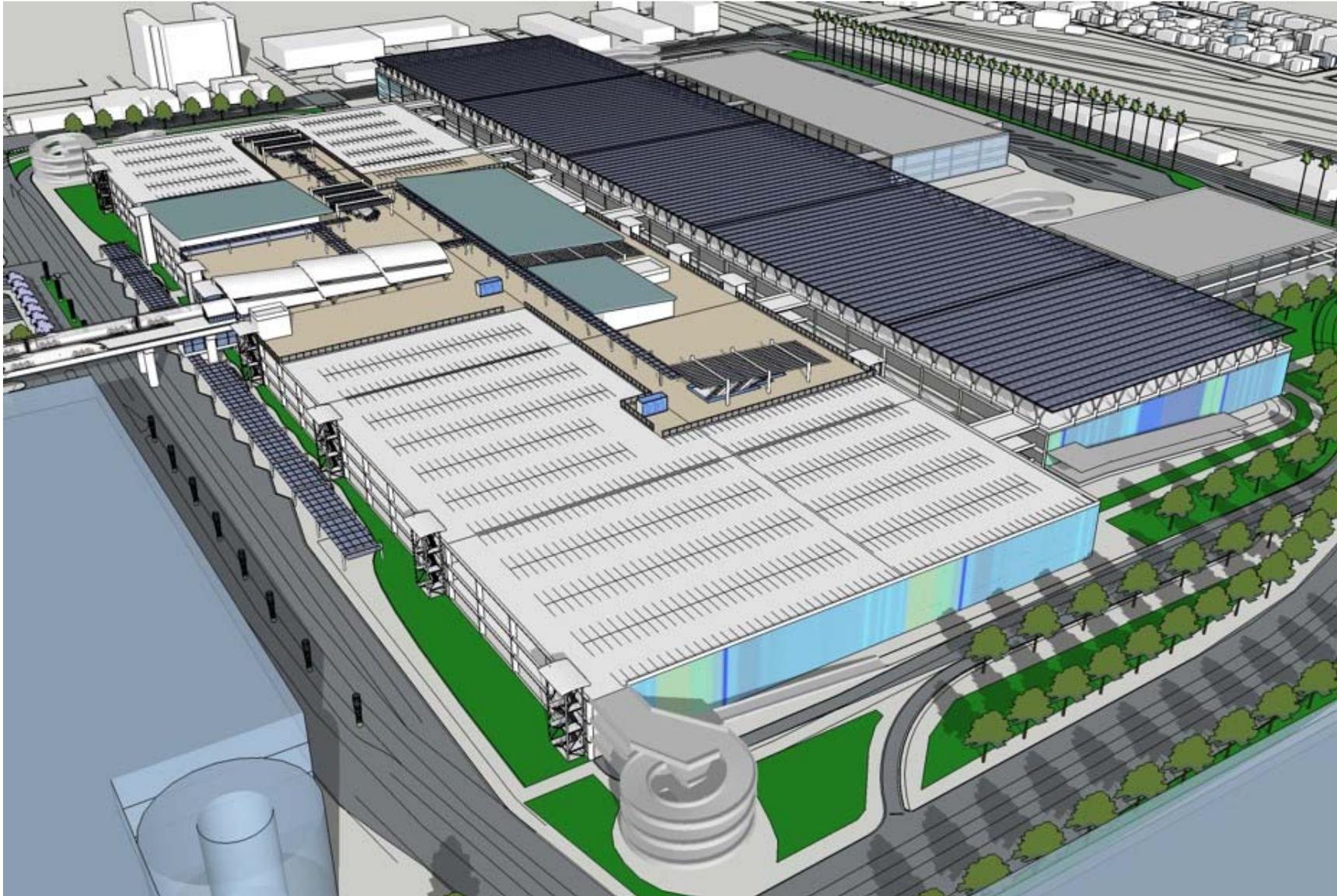


Figure 45: View from Southwest – RAC Garage, Idle Storage Building & QTA



Customer Service Building (CSB)

Figure 46 shows the CSB Level Plan. The CSB is the public hub of the CONRAC. Similar to an airport passenger terminal, the CSB is the area in which arriving passengers pick-up their rental contracts from the various companies, and are provided a range of amenities such as restrooms, concession services, and seating areas with Wi-Fi. The CSB will be located on Level 4 (roof level) of the ready/return garage, with a direct connection, via an open courtyard with canopies and perimeter screen walls, to the APM Station on that same level. Wayfinding signage will help customers easily locate individual companies within the CSB, as well as directing them to their rented vehicle on the three levels of the ready/return garage below the CSB. Four main vertical cores, with escalators and elevators, provide transport of customers between the CSB and each level of the ready/return area. Figure 47 shows a view of the CSB, APM Station and Courtyard from the northwest.

Rental Car Ready/Return Garage (RAC)

Pick-up and return of rental vehicles is the primary function of the Ready/Return Garage. With a total area of approximately 2,400,000 sq. ft. this building provides space for approximately 7,600 ready vehicles. Only the CSB and the ready/return areas of the CONRAC are accessible to the public. Figure 48 shows the Typical Traffic Circulation planned for each level of the RAC. The Customer Route along the perimeter of the west side provides the dedicate route for rental car customers entering and exiting the RAC. A maintenance expressway is provided along the perimeter of the east side of the RAC to provide a dedicated route for transferring return vehicles to the QTA and ready vehicles (which have been cleaned, fueled and washed) to the ready stalls. Each level of the ready/return facility accommodates a rental car brand-family operator combined with existing and future independent operators. As shown in the Typical Traffic Circulation diagram (Figure 48), the northern two-thirds of the deck has been allocated for use by a brand-family operator. All companies in the brand family would have access to the vertical cores connecting the CSB to the ready/return deck. The brand-family operator will have the flexibility to organize its area of the deck to accommodate ready or return vehicles depending on the peak-day and peak-period customer demand requirements. The independent operators assigned to the ground floor will be located at the south third of the deck. This will allow their customers to use the south core for transferring from the CSB to the ready/return floor. The independent operator's vehicles will be able to move safely from the ready/return area, through the idle storage facility and into the QTA and back without encroaching on the exclusive use facilities of the brand family operator. For Levels 2 and 3, the Typical Traffic Circulation diagram shows the brand family operators will operate on the majority of the deck with connectivity to all four vertical cores. At Level 2, a small area will be available to accommodate the independent operators. Access to the South QTA Building will be provided for The Level 2 independent operators via a ramp to ground level.

Quick Turn-Around (QTA)

The QTA portion of the CONRAC is a custom designed building consisting of three major service components: fueling, car wash and maintenance bays for repairs such as oil and other fluid changes,

tire rotations, parts changes, lubrication, and brake repairs. Administration offices for the supervision of these maintenance activities will also be located in the QTA. For the LAX CONRAC, there are two QTA Buildings. Figures 49 and 50 show the Level 1 and Site Circulation and Typical level 2 and 3 Plans, respectively. The north QTA Building provides fueling and wash facilities at all three levels for the major brand families. Maintenance bays occur only at ground level in this building. The south QTA Building will accommodate fueling, wash and light maintenance for the independent operators at the ground floor. In addition, this structure will provide maintenance facilities at levels 2 and 3 so that the major brand families operating on those floors will not have to make any level change to transport vehicles from the fueling and wash areas to maintenance or from maintenance back to the Idle storage or RAC buildings. Vehicular bridges at levels 2 and 3 connect the QTAs to the Idle Storage building of the CONRAC.

Idle Storage

The Idle Storage area has a footprint of approximately 623,000 sq. ft. The RACs will utilize the Idle Storage area for staging of vehicles in their fleets that are on standby for transfer into ready vehicles as dictated by customer demand. Similarly, the Idle Storage area will accommodate overflow staging / queuing for the QTA during peak return periods. The roof of the Idle Storage is designed to accommodate either airport employee or public parking.

Site Access

Access to the CONRAC for customers returning rental vehicles, employees, and visitors will be at the southwest corner of the ready/return garage and reached via eastbound and westbound W. 98th Street between Concourse Way and S. La Cienega Boulevard. Wayfinding signs will direct customers returning rental vehicles to the level on which their particular rental company is located. Customers will use a ramp to Level 2 of the ready/return garage; a helix ramp will provide access to Level 3. Employees and visitors will also use this helix to reach their parking on Level 4. All car rental customers will exit the facility at the northwest corner of the ready/return garage, onto an internal circulation road. A signalized intersection at W. Arbor Vitae Street will allow car rental customers to make right or left turns onto W. Arbor Vitae Street. No northbound or through movements from this street to north of W. Arbor Vitae Street will be allowed. Southbound S. La Cienega Boulevard south of W. Arbor Vitae Street provides access for maintenance vehicles, fueling and delivery trucks, and semi-truck car carriers to the QTA Support area of the CONRAC.

QTA Support and Additional Site Functions

The QTA Support Facility contains equipment and systems to support the operation of the various components of the QTA. The QTA Support Facility is a common use area located on the east side of the site in close proximity to the other QTA buildings. Equipment and distribution systems for the three major operations of the QTA (car wash systems, fueling systems, and light maintenance systems) are contained in the QTA Support Facility. Space to accommodate car carriers to offload

new cars into the rental car fleet (and remove older vehicles from the fleet) will be located east of the QTA along with approximately 350 secured, at-grade parking spaces to store vehicles.

Secured helical ramps provide access from grade to levels 2 and 3 of the Idle Storage Building. Fuel truck access to the QTA is also located east of the QTA support facility.

Employee and Visitor Parking

Level 4 provides 1,110 employee parking spaces of the RAC Garage for all RAC operators and management staff and will be accessible from the Ready/Return area, the CSB, and the QTA. In addition, this level will accommodate 100 Visitor Parking spaces.

3.2. APM Station

The CONRAC APM Station will be located on the fourth level of the CONRAC, adjacent to the CSB. The APM platform level will have separate boarding and de-boarding platforms. Arriving customers on their way to pick-up a vehicle will use the north platform. Departing passengers will use the center platform on their way to their terminal or the 96th Street Metro station.

3.3. Bus Plaza

In the event the CONRAC were to open prior to the APM, planned facilities allow transport of passengers to and from the CTA via a dedicated shuttle bus system. To accommodate the shuttle bus operation, a ground-level Bus Plaza with a centralized vertical circulation core (with elevators) provides express connection to the CSB at Level 4.

3.4. Operations

The CONRAC facility will operate 24 hours per day, seven days a week. Arriving airport passengers will access the CONRAC via the APM. The proposed CONRAC facility also includes a commercial bus curb along the west side of the Ready/Return garage to support a consolidated busing operation to transport CONRAC customers to and from the CTA if the CONRAC opens prior to the opening of the APM. Customers will be dropped off and picked up at the bus curb and would access the CSB area, located on the fourth floor, via four direct elevators. Once the APM is operational, this curb would be available for other commercial buses to utilize.

Figure 46 CSB Level 4 Plan

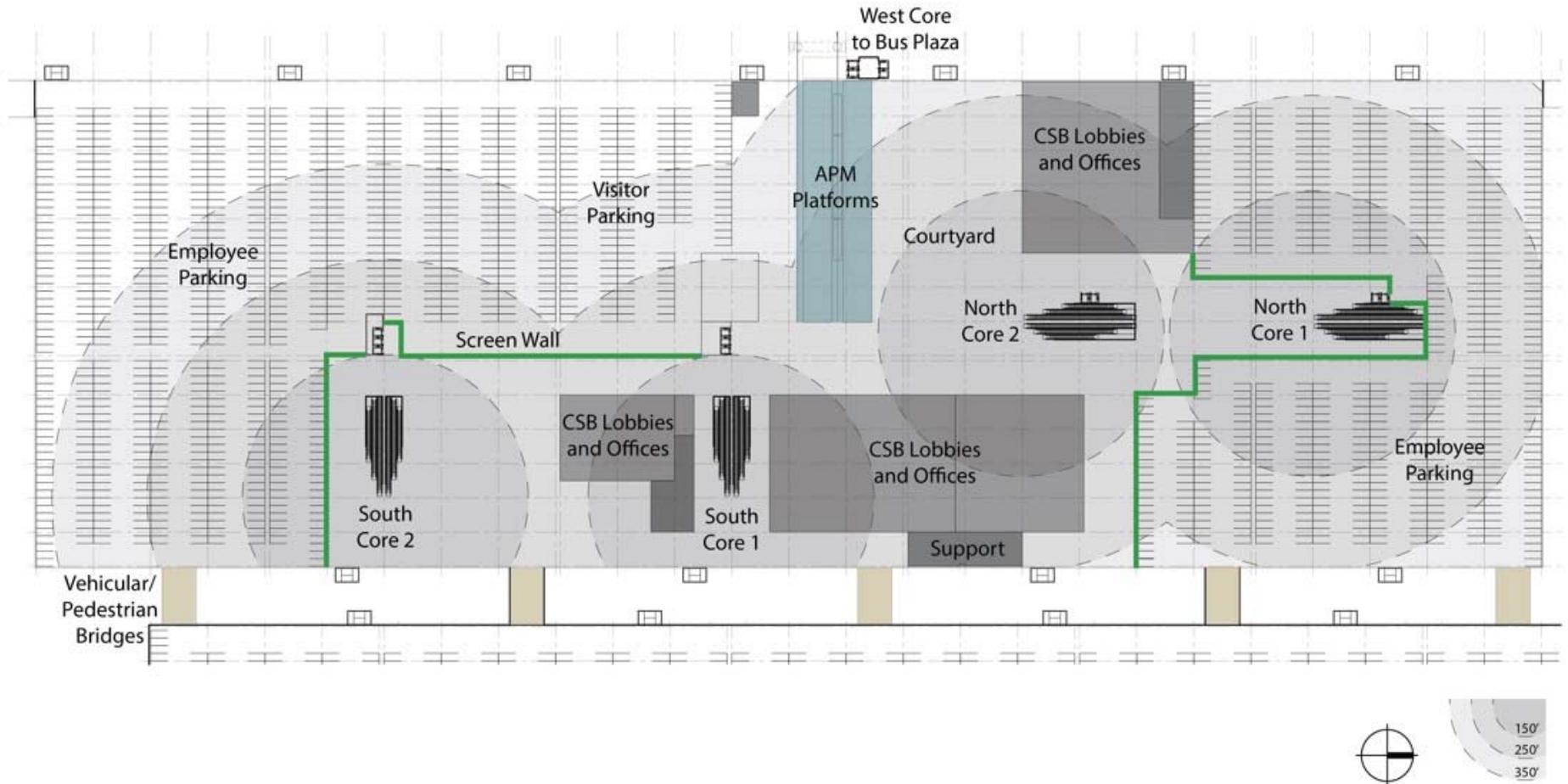


Figure 47: View of CSB, APM Station and Courtyard from the Northwest

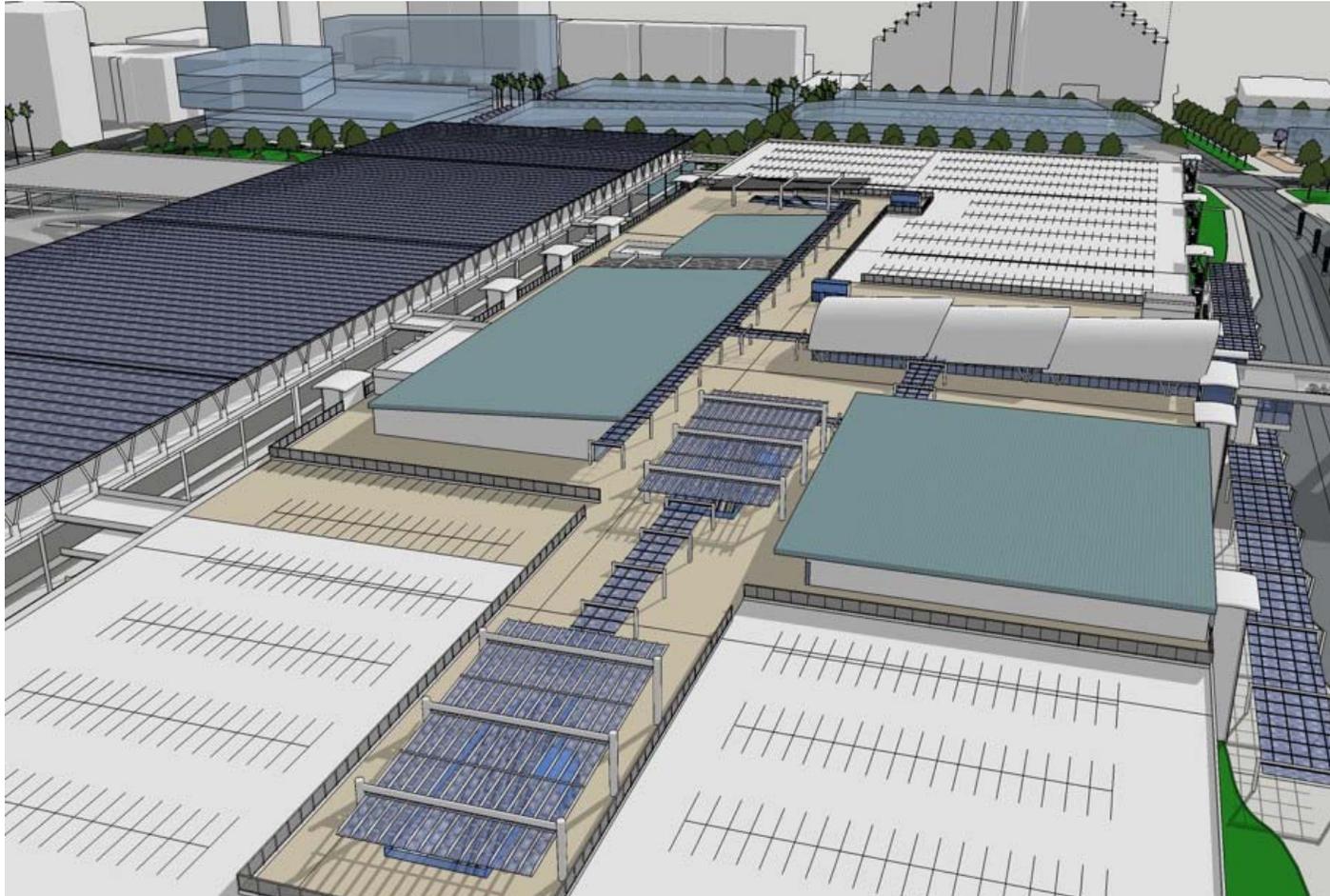


Figure 48: Ready/Return Typical Traffic Circulation

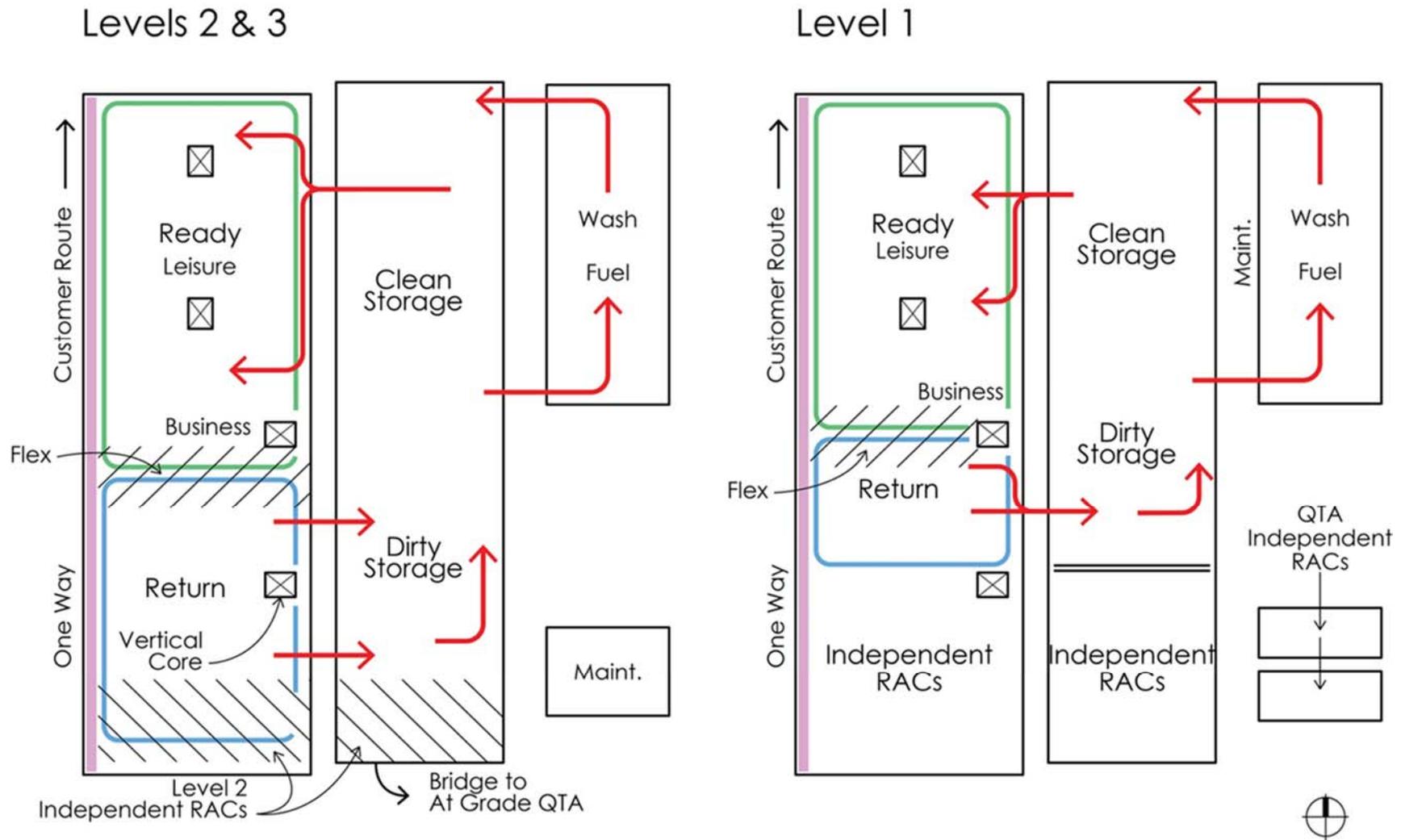
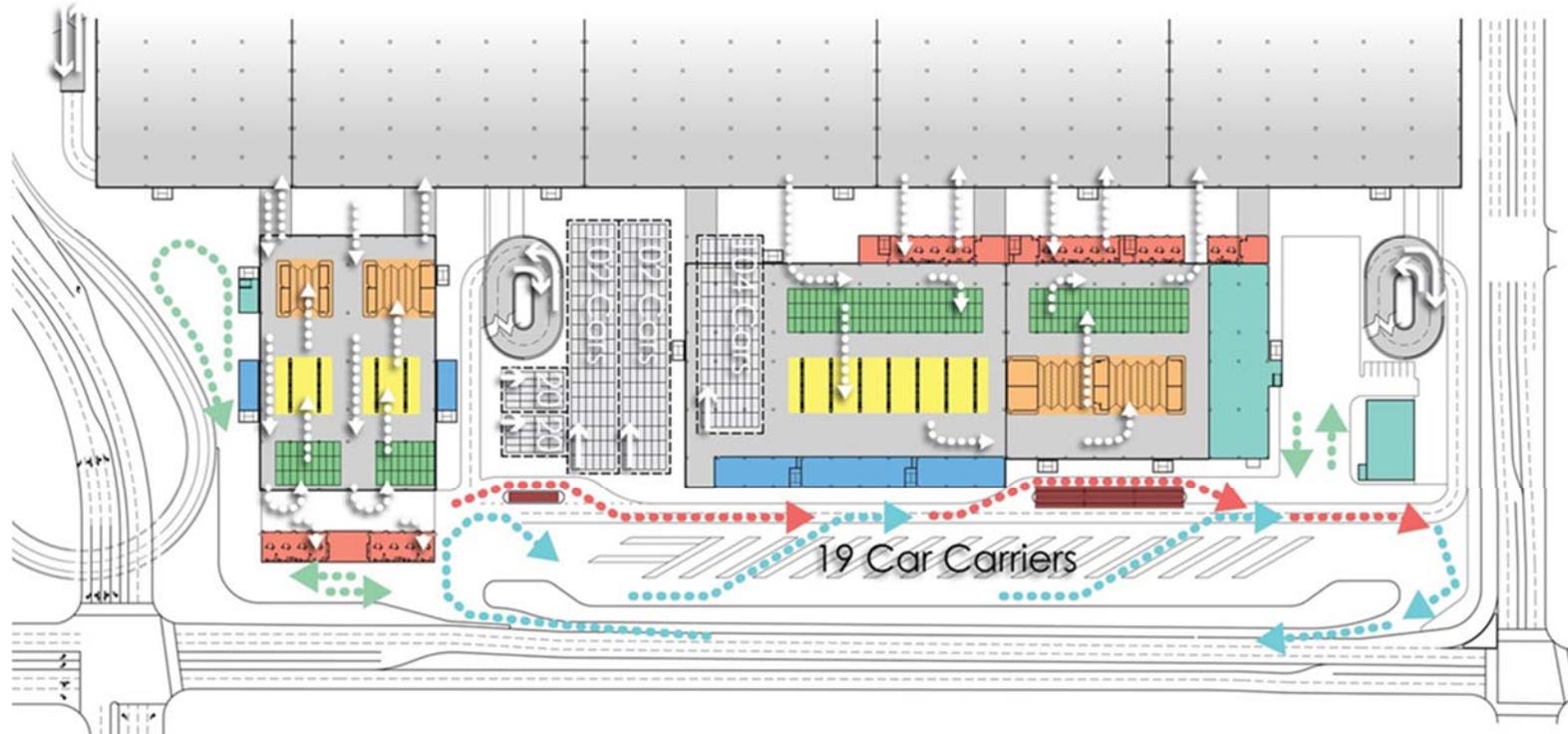


Figure 49: QTA Level I and Site Circulation Plan

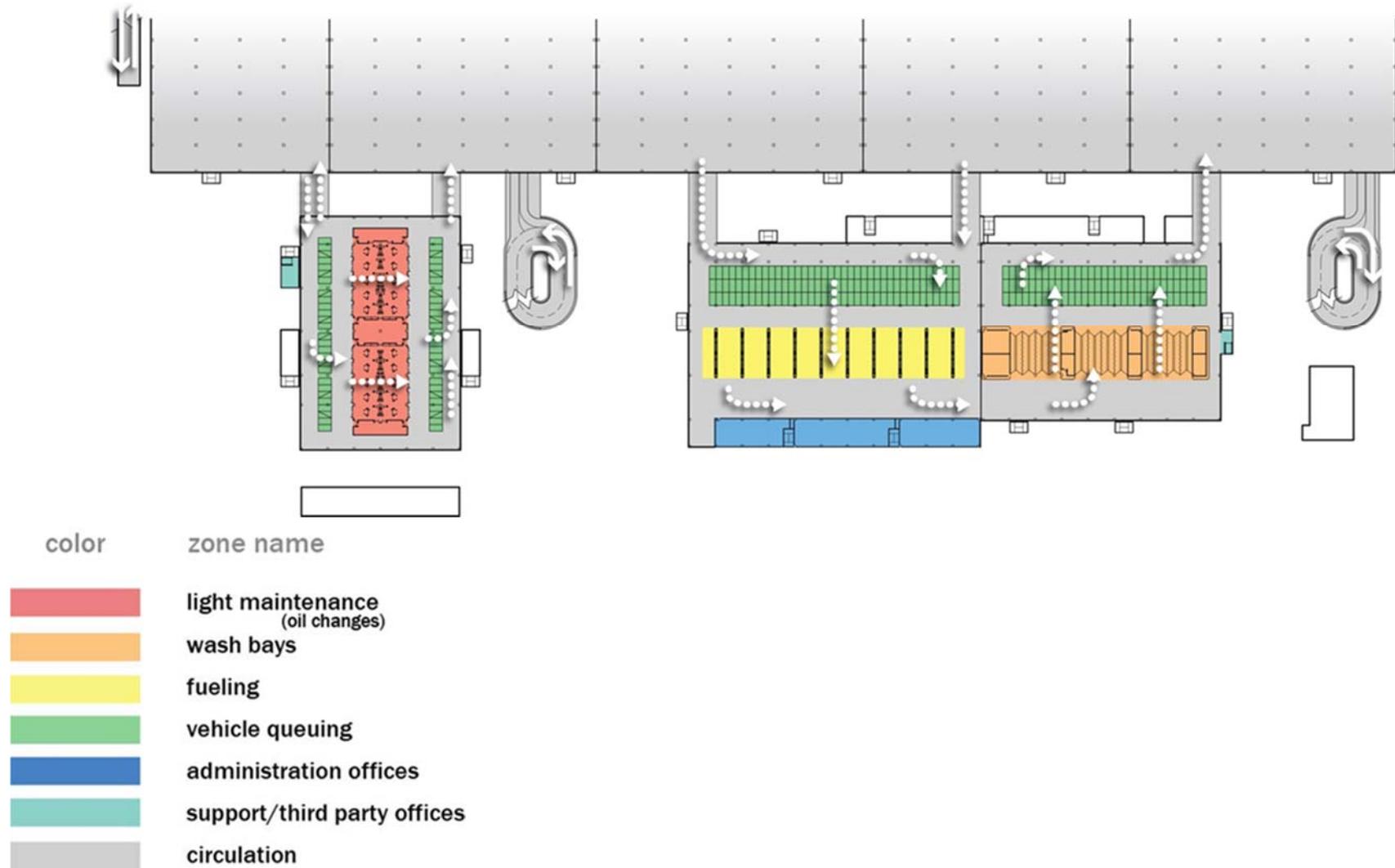


color zone name

	light maintenance (oil changes)
	wash bays
	fueling
	vehicle queuing
	administration offices
	support/third party offices
	circulation

- Yard Entrance from South End of Site off of La Cienega
- 15-Ft Wide Angled Car Carrier Stalls with Adjacent 8-Ft Wide Staging Lanes
- Yard Exit at North End onto La Cienega
- Auxiliary Lane to Allow for Deceleration/Acceleration

Figure 50: QTA Level 2 and 3 Typical Circulation Plan



4. ROADWAYS

Outside of the CTA, improvements to the existing roadway network, as well as construction of new roadway segments will ensure that the APM, the ITFs, and the CONRAC work seamlessly toward the goal of improving overall access to LAX.

The following roadway segments (both new and improved) are included as part of the Program:

- New 'A' Street (W. 96th St to Westchester Pkwy)
- New 'B' Street (New 'A' Street to Airport Blvd)
- New 'D' Street (W. 96th St to W. Arbor Vitae Street)
- New 98th Street (Bellanca Ave to Aviation Blvd)
- New 98th Street (Aviation Blvd to La Cienega Blvd)
- New Concourse Way (Century Blvd to New 98th St)
- Airport Blvd (W. 98th St to West Arbor Vitae St)
- West Arbor Vitae St (Airport Blvd to Aviation Blvd)
- W. 96th St (Airport Blvd to Bellanca Ave) and New 'D' Street (W. 96th St to West Arbor Vitae St)
- W. 98th St (New 'A' Street to Airport Blvd)
- W. 98th St (Airport Blvd to Bellanca Ave)
- West Century Blvd (New 'A' St. to Aviation Blvd) West Arbor Vitae Street (Aviation Blvd to La Cienega Blvd)
- Aviation Boulevard (98th St to West Arbor Vitae St)
- La Cienega Blvd (New 98th St to West Arbor Vitae St)
- La Cienega Blvd (Century Blvd to New 98th St)
- La Cienega Blvd (99th St to New 98th St)

Table 3 describes these roadway segments.

Table 3: New Roadways and Existing Roadway Improvements

Roadway Segment	Limits	Condition	Length Of Segment (Ft)	No. of Lanes in Each Direction	Median Width (Ft)	Curb to Curb Width (Ft)	Sidewalk/Parkway Width (Ft)	Right-of-Way Width (Ft)
New Roadways								
New 'A' St	Westchester Pkwy/W. Arbor Vitae Street to W 96 th St	Proposed	1,600	2	10	70	15	100
New 'B' St	New 'A' St to Airport Blvd	Proposed	1,700	2	10	70	15	100
New 'D' St	W. 96 th St to W. Arbor Vitae St	Proposed	1,100	1	12	48	8	64
New 98 th St	Bellanca Ave to Aviation Blvd	Proposed	400	2	0 to 10	60	12	84
New 98 th St	Aviation Blvd to La Cienega Blvd	Proposed	3,000	2	10	70	10	90
New Concourse Way	Century Blvd to New 98 th St	Proposed	500	2	10	70	10	90
Existing Roadway Improvements								
Airport Blvd	W. 98 th St to West Arbor Vitae St	Existing	1,810	2 to 3	10	76 to 86 & 73 to 82	8 to 22	97 to 107 100, 94, & 165
		Proposed	1,490 & 320	3	12	92 to 102	12	116 to 126
West Arbor Vitae St	Airport Blvd to Aviation Blvd	Existing	2,090	2	10 to 8	64, 60, & 57	8 to 10, 21 to 34, & 10 to 18	76 & 94
		Proposed	2,090	2 to 3	10	Var. 69 to 93	10 to 12	92 to 115
West 96 th St	Airport Blvd to Bellanca Ave	Existing	1,800	1	0	36 to 55	0 to 17	75, 60, & 72
		Proposed	1,800	1	10	44 to 55	10 & 20	Same: 74
West 98 th St	New 'A' St to Airport Blvd	Existing	1,800	1	10	57 & 56	5 to 15	64 to 70
		Proposed	1,800	2	10	70	15	100
West 98 th St	Airport Blvd to Bellanca Ave	Existing	1,720	1	10	44, 48 and 50	5 to 10	65 to 60

Roadway Segment	Limits	Condition	Length Of Segment (Ft)	No. of Lanes in Each Direction	Median Width (Ft)	Curb to Curb Width (Ft)	Sidewalk/ Parkway Width (Ft)	Right-of-Way Width (Ft)
		Proposed	1,720	2	0	44 to 46	5 to 10	65 to 60
Century Blvd	New 'A' St. to Aviation Blvd	Existing	4,050	3 to 4	Var. 5 to 21	Var. 113 to 130	Var. 5 to 30	133 & 158
		Proposed	4,050	4 to 5	No change: Var. 5 to 21	Var. 117 to 130	17	133 & 158
West Arbor Vitae St	Aviation Blvd to La Cienega Blvd	Existing	2,000	2	10	56	5 to 10	76
		Proposed	2,000	3	10	80	10 & 12	102
Aviation Blvd	New 98 th St to West Arbor Vitae St	Existing	2,200	2	12	70, 60, and 67	5 to 19	88, 126, 101, and 78
		Proposed	2,200	3	10	80	12	104
Aviation Blvd	Century Blvd to New 98 th St	Existing	630	2	12 to 20	62 to 73	5 to 12	78 to 86
		Proposed	630	3	10	80	12	104
La Cienega Blvd	New 98 th St to W. Arbor Vitae St	Existing	1,800	2	11	55 to 68	2 to 14/ 0 to 7	63 to 122
		Proposed	1,800	2 to 3	10 to 21	80	12 & 0 to 8	122
La Cienega Blvd	99 th St to New 98 th St	Existing	470	3	13	84	4 to 10	142 & 100
		Proposed	470	3	10 to 20	84 to 98	10 to 9	103to 117

5. ENABLING PROJECTS

Construction of the Program requires the demolition of several existing facilities, reconstruction of certain facilities, and relocation of services to other locations on the Airport. Property acquisitions, including any associated demolition to enable construction of the various components of the LAMP, is ongoing. Table 4 provides an overview of some facilities affected by the Program, including the name, size, and disposition; Figure 44 delineates the existing location of these facilities.

Table 4: Summary of Enabling Projects

MAP ID #	FACILITY	APPROXIMATE FOOTPRINT AREA	CURRENT USE	DISPOSITION OF FACILITY/USE
1 / 8	Parking Garage P2A	77,600 sq. ft.	Parking Structure	Existing parking garage to be demolished and replaced
1 / 8	Parking Garage P2B	64,500 sq. ft.	Parking Structure	Existing parking garage to be demolished and replaced
1 / 8	Parking Garage P5	69,200 sq. ft.	Parking Structure	Existing parking garage to be demolished and replaced
2	Clifton Moore Administration Building (1 World Way)	34,200 sq. ft.	LAWA Administrative Offices	Above-grade structure to be demolished; LAWA administrative offices to relocate to the existing LAWA-owned Skyview Center located at 6033 and 6053 W. Century Boulevard. Below-grade IT facility to remain operational throughout the Program.
3	Bob Hope Hollywood USO	4,000 sq. ft.	Provides services to military personnel	Facility will be accommodated elsewhere on-Airport.
4	Restaurant Building	5,100 sq. ft.	Fast food facility	Existing structure to be demolished.
5	Metro Bus Terminal	84,300 sq. ft.	Regional bus transportation center	Transportation center to be demolished; functionality relocated to the Metro station constructed adjacent to the ITF East (Metro project).
6	Delta Hangar Complex	182,500 sq. ft.	Light maintenance of aircraft	Existing structures to be demolished; existing needs will accommodated elsewhere on the Airport.
7	Reliant Medical Center	30,600 sq. ft.	Provides urgent medical care to the public	Existing structure to be demolished; existing uses accommodated elsewhere.
	Rental Car Facilities on LAWA property		Operations of rental car facilities including light maintenance	Existing structures to be demolished. Tenant to relocate to CONRAC.

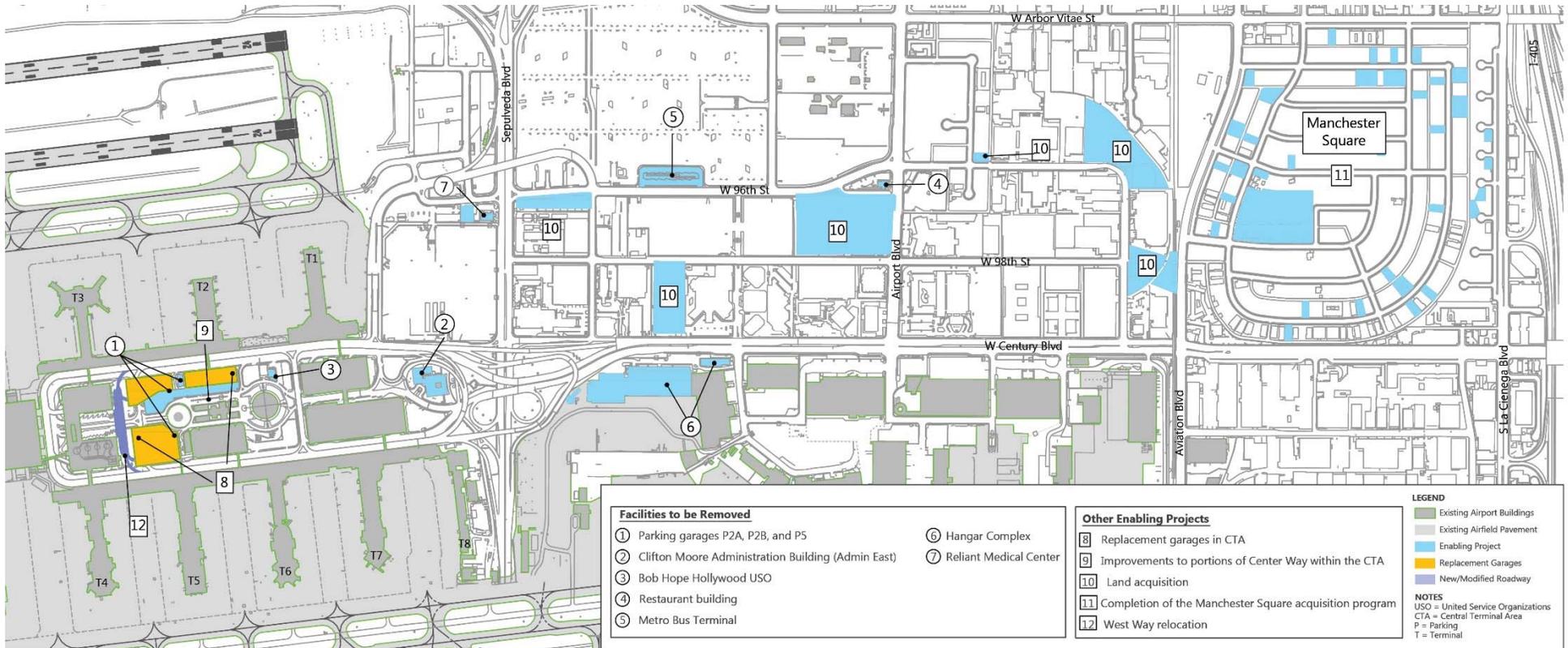
NOTES:

USO = United Service Organizations

SOURCE: MapLAX, "Landside Access Modernization Program at Los Angeles International Airport (LAX) Program Definition Draft," September 4, 2015; HNTB, "Airport Layout Plan," July 6, 2012.

PREPARED BY: Ricondo & Associates, Inc., September 2015.

Figure 44: Enabling Projects and Property Acquisition



Source: Ricondo & Associates

6. UTILITIES

6.1. Utility Relocation

The Program includes demolition, reconstruction, and construction of new facilities and roadways or roadway modifications in the LAX area. As many utility lines are located within the roadway rights-of-way, any modifications to roadways around LAX may result in the necessary relocation of utility lines. Where existing utility service is located in an affected roadway, the utility would need to be re-routed before the land can be redeveloped. Some utility lines may be protected in place.

Some of the utilities are private facilities owned by LAWA or provided by the respective public utility providers. LAWA typically provides the physical infrastructure for utilities (conduits, pipe, duct banks, etc.) whether they are private or public. The operating authority typically provides the supply infrastructure (such as high voltage or low voltage cable), or the utility commodity (such as water and gas, etc.). LAWA provides drainage infrastructure from LAWA properties in the CTA to the appropriate public main infrastructure such as major storm drains or wastewater sewers.

Potential utility relocations resulting from implementation of the Program may include:

Electrical

As part of the Program, existing power lines may need to be relocated to allow for roadway improvements and construction of the APM guideway; this may require the installation of new poles for overhead wires and/or moving a portion of existing lines underground. Any electrical line relocation would be coordinated with the Los Angeles Department of Water and Power (LADWP).

Water

Conflicts with existing water lines, including the adjacent LADWP water mains located in the utility corridors along W. Century Boulevard, S. Sepulveda Boulevard, and Westchester Parkway/W. Arbor Vitae Street should be avoided. However, as part of the APM guideway construction and some of the proposed roadway improvements, it may be necessary to relocate some smaller lines. If required, water line relocation(s) will be coordinated with LADWP.

Sewer

As part of the construction of the APM guideway and proposed roadway improvements, it may be necessary to relocate some sewer lines; however, no sewer trunk line relocation is anticipated. Any necessary relocation(s) shall be coordinated with the Bureau of Sanitation Wastewater Technical Engineering Services Division.

Natural Gas

As with other underground utilities, it may be necessary to relocate some lines as part of the APM guideway construction, or proposed roadway improvements. Any potential conflicts and relocations shall be coordinated with Sempra Energy.

6.2. Utility Improvements

Program-related utility improvements are required to support the operation of the proposed facilities, including relocation of existing utility lines impacted by construction. (*Refer to Section 6.1 for further discussion of utilities relocation.*)

All buildings constructed as part of the Program require new or relocated utility connections for their operations, and may require some level of new infrastructure within the adjacent roadways, depending on the quantity and quality of existing service. Utilities included in the Program include new and/or reclaimed water, power, storm and wastewater drains, natural gas, communications, and private utilities. New structures outside of the CTA will not likely be able to use the LAX Central Utility Plant as an economical source of hot and chilled water. For this reason, the Program also includes such utilities as domestic water, firewater, chilled and heated water, reclaimed water, electrical and communication systems, natural gas and fuel systems, storm water, and wastewater drainage systems.

Provided below is an overview of existing utility infrastructure.

Electrical

The LADWP supplies water and electrical power to the airport. LADWP will also serve the proposed ground transportation facilities located east of the CTA. LAWA has an agreement with the LADWP to commit to 15 percent Green Power use in all LAWA facilities.

In addition to the TPSS, the Program includes substations to supply power (connected load) at the M&SF and the CONRAC, the size and configuration of such to be coordinated with LADWP. LAWA will coordinate with LADWP to identify and implement potential reliability systems to ensure that power needs are maintained.

Water

LADWP also supplies water to the Airport. The Program requires water for potable consumption, restroom fixtures, washing of the APM train cars and rental car vehicles, and landscaping purposes. 375 acre-feet of water annually is the anticipated supply needed to support the Program.

Water Supply

LADWP maintains two high-pressure water mains located in utility corridors along W. Century Boulevard, S. Sepulveda Boulevard, and Westchester Parkway/W. Arbor Vitae Street. LAWA connects to the LADWP high-pressure water mains at the outside perimeter of the CTA, including multiple service connections at both S. Sepulveda Boulevard and Pershing Drive. These water mains serve the CTA and the other LAWA-owned properties to the east of Sepulveda Boulevard. Firewater is also supplied to LAX from LADWP via the same water system that feeds the domestic water supply.

The Central Utility Plant (CUP), located between existing parking garages P2B and P5, produces hot and chilled water to serve all of the buildings within the CTA.

Sewer

The City of Los Angeles maintains local sewers from east of S. Sepulveda Boulevard to the I-405 Freeway. New connections to these utilities requires coordination with the City. During the design process of the Program, the City of Los Angeles Bureau of Sanitation Wastewater Technical Engineering Services Division will generate a Sewer Capacity Availability Report to document any sewer capacity deficiencies. LAWA would then implement any required upgrades to address potential deficiencies caused the Program.

LAWA maintains the local sewers serving the CTA terminals. Sewage is disposed to the major City of Los Angeles sewers (Central Outfall Sewer and North Outfall Relief Sewer) that cross through LAX. The Program requires wastewater disposal for various aspects of the Program, including restrooms, restaurant and concession areas, drinking fountains, train and car washing, and other cleaning uses. Throughout the Program area, connections to local sewers will be required.

Storm Drain

Analysis of the existing Storm Drain system to support the Program is ongoing.

Telecommunications

Numerous communication and data lines exist within the CTA. The Program would integrate new systems with these existing systems. Additionally, communication and data systems necessary for public use will be incorporated into the various facilities (APM stations, ITFs, CONRAC, etc.). Private companies may provide such systems and services, or the LAWA Information Technology (IT) Group may provide them. The Program will also use telephone and internet services supplied by a variety of technology providers.

Natural Gas

Sempra Energy supplies natural gas near LAX. Program-related construction of passenger facilities outside of the CTA, mainly the customer service building of the CONRAC, may require a connection to natural gas for a new boiler heating system.

Fuel Systems

LAWA has enacted an Alternative Fuels Conversion Policy that applies to all on-road vehicles weighing 8,500 pounds or larger. This policy requires alternative-fuel conversion of rental car company courtesy shuttles, trucks and other large vehicles in use at LAX. As such, the Program may require implementation of alternative fuel systems.

On-site fueling of rental car vehicles will occur at the multi-level QTA at the CONRAC facility. Fuel will be stored in underground fuel storage tanks in a size and quantity to support an estimated 35,000 gallons of fuel dispensed through standard fleet gasoline dispensing equipment.