

### 3 CONOURSE EXTENSION

#### 3.1 Program vs. Actual

Table 4 shows that comparison of space requirements developed during the program phase with the actual space recommended for development in the CIP. In general, the CIP space allocations are relatively close to the calculated requirements. Differences between these two are primarily related to existing and future building geometries.

Table 4 Comparison of Program Space Requirements with Recommended CIP Austin-Bergstrom International Airport Master Plan Level 1 Phasing Plan					
	Existing 2007	CIP	Program 2016	Units	Notes
<b>Arrivals Level</b>					
<b>Airline Space</b>					
Baggage Claim Belts	722	1,096	1,153	lf	Includes Aero Mexico International bag claim carousel to the east
Baggage Service Office	2,382	3,158	-	sf	
<b>Public Space</b>					
Landside Meeter-Greeter Lobby	27,709	34,001	-	sf	Expansion per planning layout
Baggage Claim	31,339	40,455	-	sf	Includes circulation around carousel and carousel footprint. Expansion per planning layout.
<b>Concessions</b>					
Rent a Car	4,196	4,089	-	sf	Program calls for incremental growth
Storage	6,180	10,079	30%	sf	
<b>DOA</b>					
Offices	9,466	9,710	-	sf	Further expansion can be provided off-site. 20% subtracted from expansion provided in west infill (CIP 18) for circulation.
Services	13,554	15,239	-	sf	Subject to detailed planning
<b>Federal</b>					
FIS	11,634	11,634	-	sf	FIS is unchanged

Table 4 continued					
<b>Ramp Level</b>					
<b>Baggage Processing</b>					
Makeup	87	136	115	cart positions	
Outbound Baggage Makeup	34,011	67,423	-	sf	21,600 under new concourse, 12,412 in west infill
Apron Circulation	85,654	101,254	-	sf	15,600 new tug road
<b>Services / Support</b>					
Ramp Operations	28,057	44,857	-	sf	14 bays under concourse expansion. Subtractions for mechanical and restrooms anticipated.
<b>Federal</b>					
TSA Baggage Screening	18,348	30,909	-	sf	Expansion per planning layout
FIS	463	463	-	sf	Unchanged
<b>DOA Space</b>					
Offices	11,554	11,554	-	sf	Expansion can provided off-site
Services	26,553	26,553	-	sf	Subject to detailed planning
<b>Concourse / Departure Level</b>					
<b>Airline Space</b>					
Ticketing	111	157		positions	23 pairs added (9 west + 14 east)
Counters					
Curbside	19	25		positions	One bay each, east and west
Check in					
Ticketing Counters / Queue	16,830	24,694		sf	
Airline Ticket Office	12,300	15,455		sf	
Holdrooms	73,426	99,000	80,510	sf	86,300 SF in Phase 1
Gates	24	33	27	positions	28 in Phase 1
<b>Public Space</b>					
Landside Ticket Lobby	21,502	24,377	-	sf	Expansion per planning layout
Airside Concourse Circulation	74,942	90,346	-	sf	Expansion per planning layout
Curbside	680	760		lf	Addition of 2 bays with curbside check-in
<b>Federal</b>					
TSA Passenger Screening	14,983	24,284	-	sf	Includes new bypass lanes. Expansion per planning layout
Checkpoints	9	12	11	positions	
TSA Baggage Screening	275	275	-	sf	

**Table 4 continued**  
**Concessions**

Fast Food	7,100	10,750	16,100	sf	
Restaurant / Bar	11,300	26,600	16,500	sf	11,650 SF at Mezzanine Level with additional 4,800 SF available in garden
<u>Sub Total</u>	18,400	37,350	32,600		
Newsstand	5,200	10,200	10,800	sf	
Specialty	5,500	10,700	10,400	sf	
Retail					
<u>Sub Total</u>	10,700	20,900	21,200		
<b>DOA Space</b>					
Offices / Space	1,835	393	-	SF	1,440 SF replaced by TSA passenger screening. DOA office expansion can be provided off site.
Services	16,305	18,705	-	sf	Additional area per building systems design. One new restroom block provided in east concourse expansion

**Mezzanine Level**

<b>Airline Space</b>					
Lounge	11,842	17,300	-	sf	~1,190 SF demo. of existing President's Club
<b>DOA Space</b>					
Offices	15,488	14,023	-	sf	~ 1,465 allocation to Restaurant. DOA expansion can be provided off site
Services	16,835	16,835	-	sf	Subject to detailed planning, 670 SF toilet rooms allocated to restaurant
<b>Federal</b>					
TSA General Area	3,250	3,250	-	sf	Unchanged

Source: Jacobs Consultancy Team.



**3.2 Building Dimensions**

Figure 8 shows the extended concourse at ramp level. The new concourse will extend the building by 15 structural bays to the east, approximately 600 feet, and will be 3 structural bays wide, approximately 90 feet. The elevation of the concourse departures level will match and tie into the existing concourse.

The new east concourse will be three bays longer (120 feet) than the existing west concourse. There is an opportunity to provide 3 outbound baggage carousels under the extended concourse at ramp level.

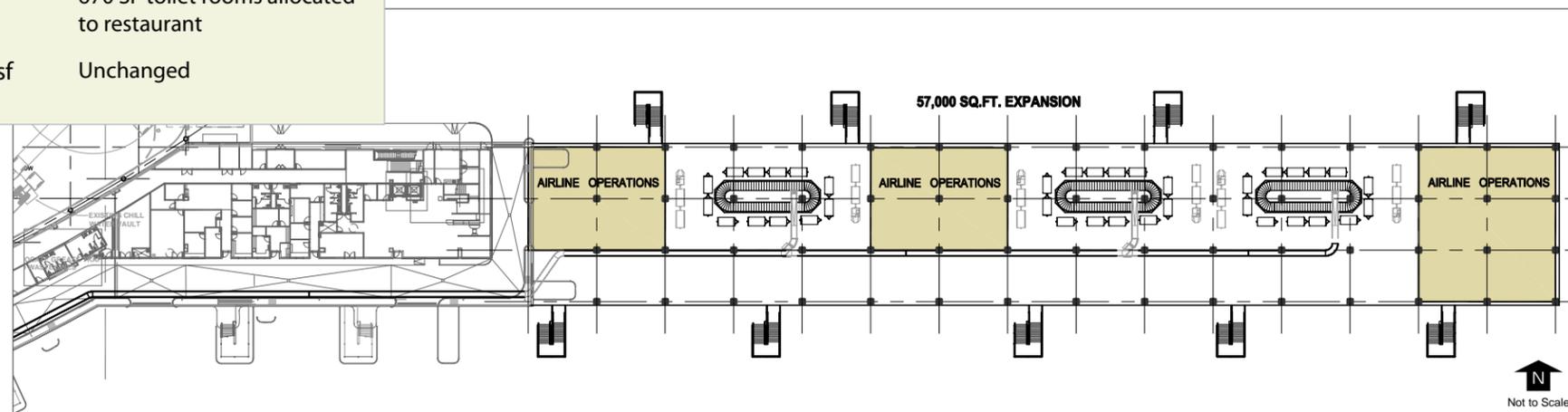


Figure 8 Level 2—Ramp Concourse Expansion

### 3.3 Gate Locations

Figure 9 shows the extended concourse gate location plan. New gates are located to the north and the south of the new concourse on either side of a central walkway. A large concessions area will also be provided at the head of the new concourse immediately adjacent to the new gates. A cluster of five gates will be provided at the end of the new concourse utilizing a common shared holdroom. These five gates can

be commissioned as a second phase of the development, therefore the completion of this part of the concourse (interior finish, loading bridges and the construction of the gates on the airside) can follow in a future phase, but the entire new concourse shell, envelope and base facilities should be provided during a single initial phase of construction.

It is strongly recommended that the City designate the new east gates for common use. Given the dynamics of the airline market and the potential for new entrant carriers to the Austin market, the City should

maximize flexibility through common use gates. It should be noted that the City will need to actively manage these gates and this will primarily require dedicated staff resources.

### 3.4 Holdrooms

New holdrooms have been planned to be contiguous where possible. Gate 2 would be the only gate to have a dedicated holdroom. Gates

have been sized per the requirements of the dominant design aircraft, B757 for the majority of new gates and widebody (typical MD-11) for gate 11.

The holdrooms were sized using a formula based on percentage of seats on aircraft occupied. For example, a typical holdroom for B757 is sized on the basis of 175 aircraft seats available, using 140 occupied (80% load factor). By allowing 12.5 square feet per passenger whether seated or standing, a total of 1,750 square feet is needed for passengers in each holdroom. With additional space for a podium, queuing, and deplaning, a program of 2,650 square feet per holdroom has been recommended. The new holdrooms are proposed to be approximately 15% smaller than existing holdrooms. Actual areas provided in the plan are illustrated on Figure 9.

### 3.5 Restrooms

One additional restroom block will be provided on the new concourse. The restroom block will match existing west concourse restrooms in size and configuration. The restroom block will be approximately 500 feet from the existing restrooms adjacent to gate 2. The provision is in line with existing planning standards for the building, however specific plumbing code requirements have not been addressed in this CIP.

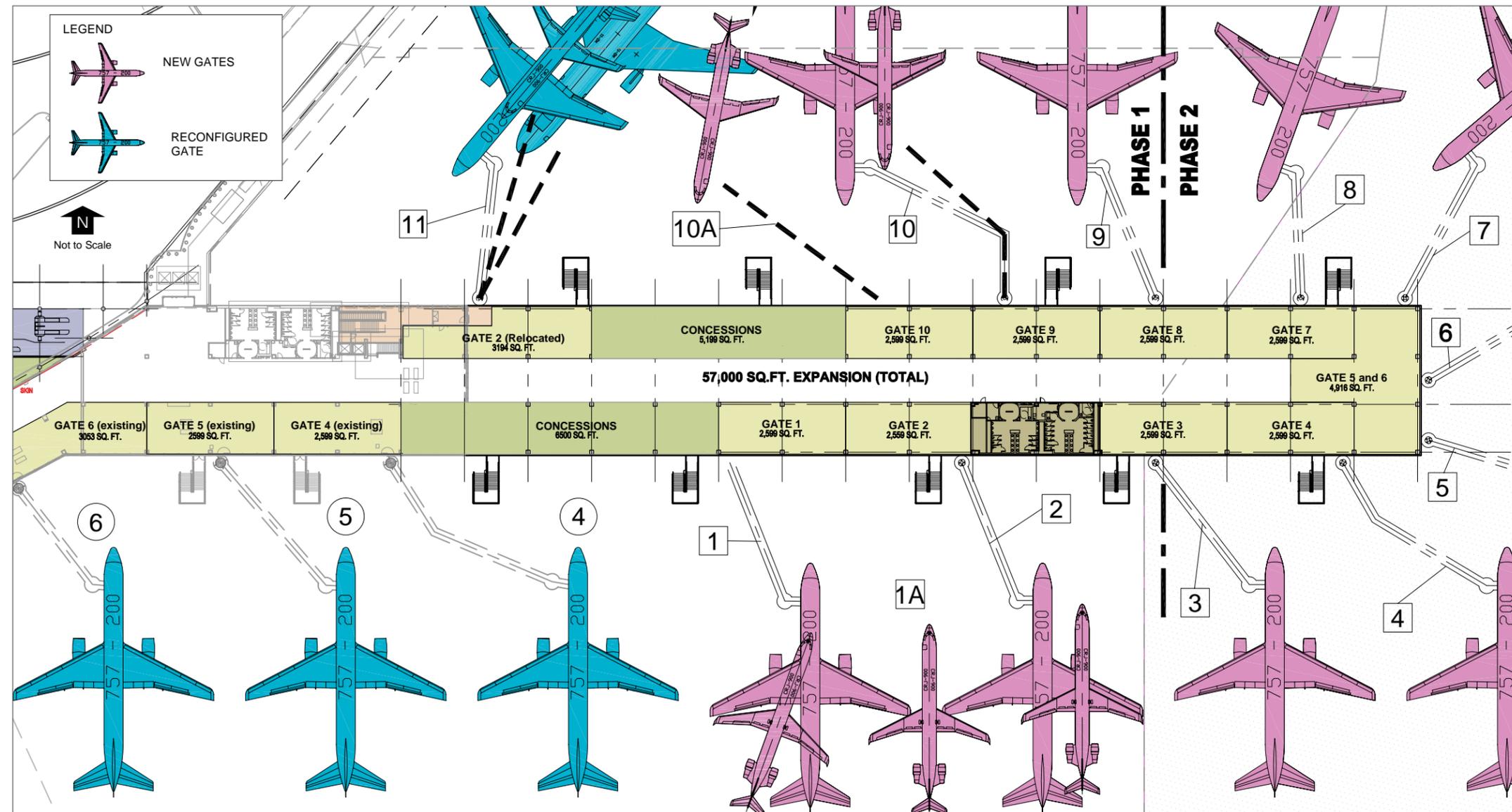


Figure 9 Level 3—Concourse Expansion

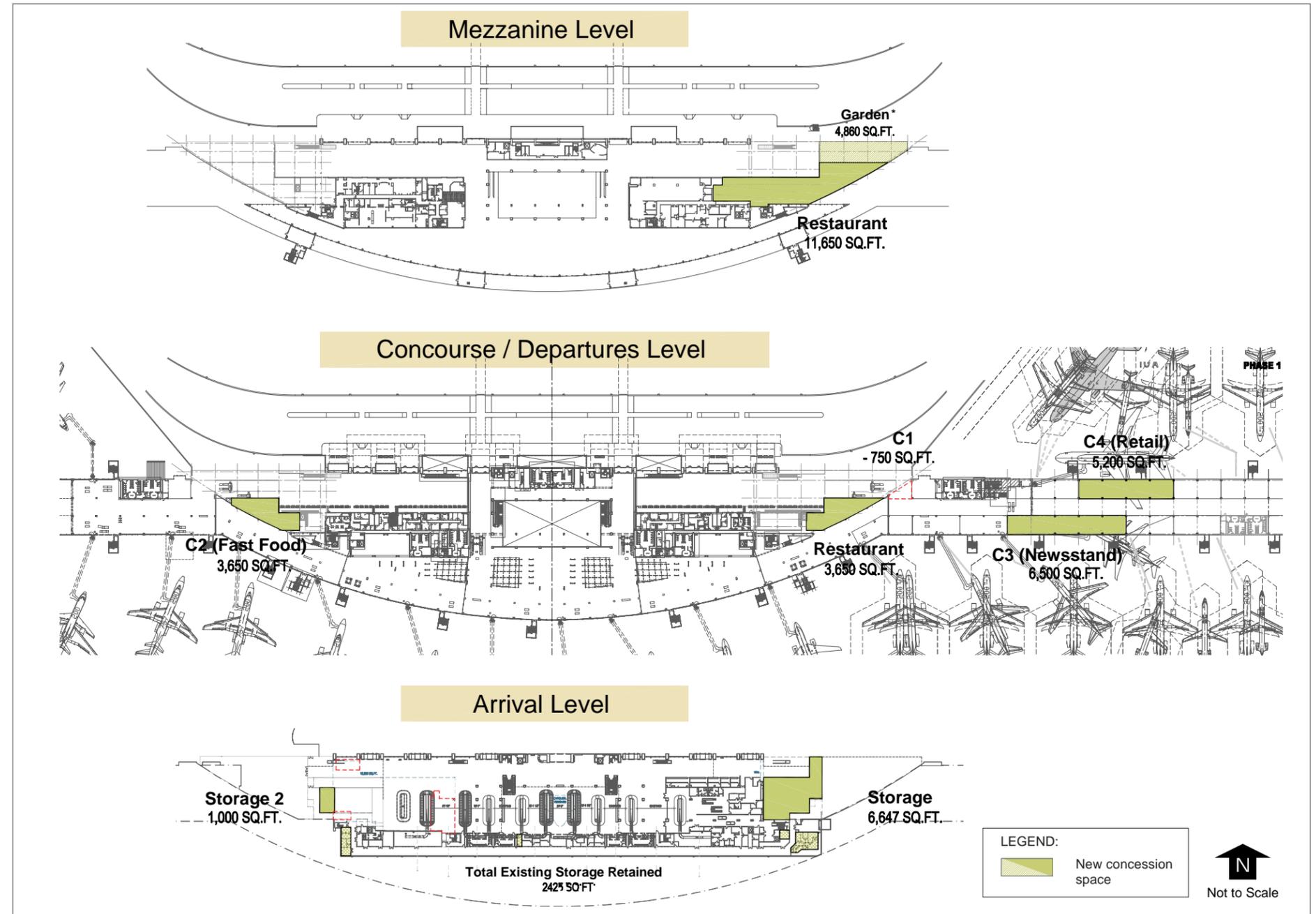


Figure 10 Concessions Summary

### 3.6 Concessions Program Summary

Opportunities for additional concessions will be gained in the extended concourse as well as the east and west infill areas (discussed below). Figure 10 shows the overall concessions expansion opportunities for

the entire program. Two concessions areas have been identified in the new concourse, located opposite each other and immediately adjacent to the holdrooms. This provides in excess of 11,000 square feet of new

concessions directly accessible from the new concourse, probably for news and gift, retail and light food and beverage such as coffee. In addition, a full-service restaurant is proposed where the concourse meets

the main terminal building as part of the east terminal expansion. **Table 5** compares the concessions space provided by the CIP plan with the existing concessions space and the concessions space requirements for the year 2016. Specific concessions opportunities are discussed with the building expansion sections below.

meet the main terminal building.

To the east, additional ticketing and security processing can be provided in tandem with expanded baggage handling and passenger screening areas. At concourse and mezzanine levels, much of the needed concessions program can be provided in a destination restaurant, possibly occupying both levels within the departures concourse. On the lowest level, the additional building capacity can be utilized as concessions storage. Later, there may be need for the FIS to expand to the east and the concessions storage space can be repurposed over the long term. Under this concept, concessions storage would be relocated to a stand-alone remote facility to allow for the FIS expansion. However, this scenario is not within the near term planning horizon, and therefore is not considered as part of this CIP.

To the west, security checkpoint 3 occupies a bridge leading to the west concourse. There are significant advantages to considering an expansion within this area to the west. This will most likely require the demolition of the bridge structure and carefully planned phasing to keep the security checkpoint in operation during construction. The long-term capacity and operational enhancements would be considerable, with new office space on the lowest level allowing a baggage claim expansion, additional baggage make-up facilities area, and space for expanded checked bag screening, ticketing, retail and airline club facilities.

## 4.2 East Infill Terminal Expansion

The east lobby expansion, concourse level is shown in **Figure 11**.

### Ticket Counters and ATO

Three full building bays of ticketing would be provided in the east lobby expansion representing up to 28 traditional ticket agent positions, as shown in Figure 11. A new oversized outbound baggage belt would be

Concessions Type	Existing (sf)		2016 Projection (sf)		CIP Proposed (sf)	
	Airside	Landside	Airside	Landside	Airside	Landside
Fast Food	6,600	500	12,400	3,700	6,600	500
Full service restaurant/bar	9,300	2,100	12,400	4,100	9,300	2,100
Newsstand	5,200	0	7,700	3,100	5,200	0
Specialty Retail	5,500	0	10,400	0	5,500	0
Revised Storage					800	
C1	0	0	0	0	(750)	0
C2	0	0	0	0	3,620	0
C3	0	0	0	0	6,500	0
C4	0	0	0	0	5,200	0
Restaurant - Concourse	0	0	0	0	2,930	0
Restaurant - Mezzanine	0	0	0	0	11,300	0
R1 - Garden *	0	0	0	0	4,860	0
Storage 1	0	0	0	0	6,600	0
Storage 2	0	0	0	0	1,000	0
<b>Total Retail</b>	<b>26,600</b>	<b>2,600</b>	<b>42,900</b>	<b>10,900</b>	<b>55,400</b>	<b>2,600</b>
<b>Total Storage</b>	<b>30%</b>	<b>25%</b>	<b>12,870</b>	<b>2,725</b>	<b>8,400</b>	<b>0</b>
<b>Sub-Total</b>	<b>26,600</b>	<b>2,600</b>	<b>55,770</b>	<b>13,625</b>	<b>63,800</b>	<b>2,600</b>
<b>Total</b>		<b>29,200</b>		<b>69,395</b>		<b>66,400</b>

\* Potential restaurant garden area not included in totals.  
Source: Jacobs Consultancy Team.

## 4 LANDSIDE TERMINAL EXPANSIONS

### 4.1 Introduction

There is an opportunity to increase the passenger processing capacity by expanding the terminal both to the east and the west. This will involve infilling the east and west "triangle areas" where the concourses

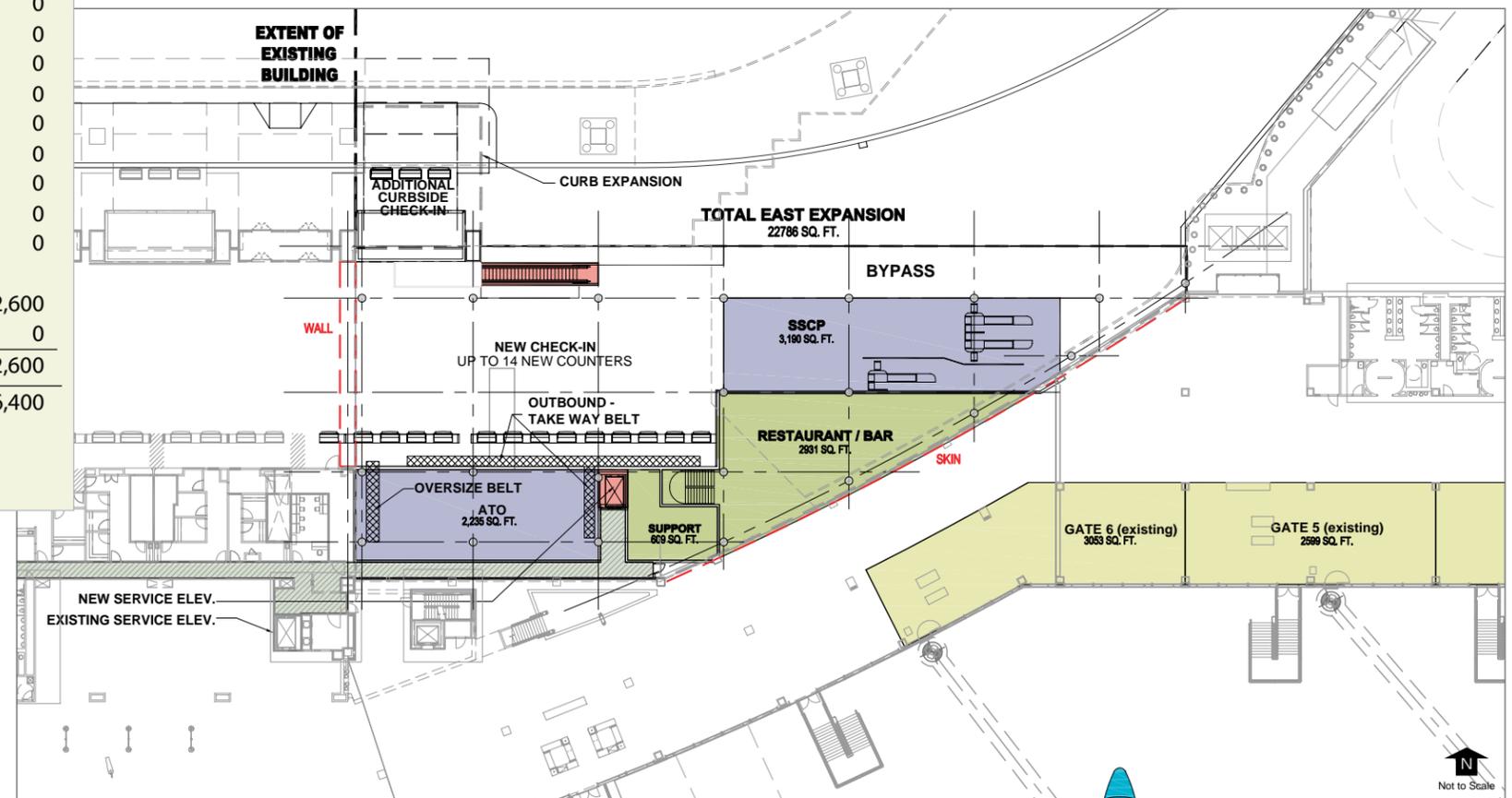


Figure 11 Level 3—East Infill Terminal Expansion

provided, also shown in Figure 11. Two full bays of Airline Ticket Office (ATO) have been provided behind the ticket counter line, approximately 2,000 square feet. **Figure 12** shows a typical ATO module that should be used in the design phase.

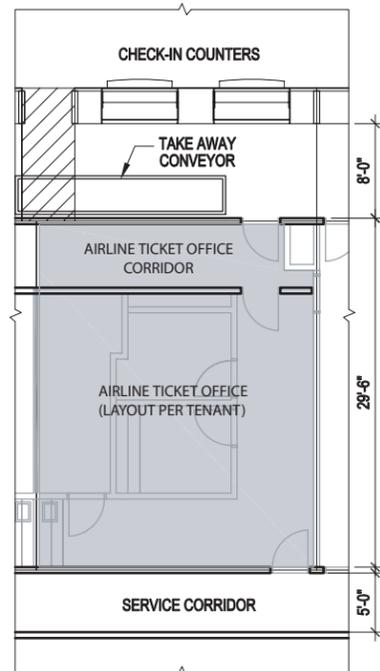


Figure 12 Typical Airline Ticket Office Dimensions

### Curbside Check-in

One additional bay of curbside check-in can be provided to the east if required, as shown in Figure 11. The curb and canopy would need to be extended to accommodate the new curbside check-in.

### Passenger Security Screening

A new fourth passenger security checkpoint would be provided to access the east concourse (see Figure 11). The checkpoint would have three lanes; the suggested layout is similar to the existing lane configurations of checkpoint 3. In addition, a return bypass lane is provided which should significantly reduce the arriving passenger walking distances from the gate to the terminal landside functional elements. It should be noted that under current

rules, this bypass would need to be staffed by the Transportation Security Administration.

### Vertical Circulation

A new escalator will be provided for passengers transiting from the bypass lane at the ticketing level down to the baggage claim level. This will help maintain shorter walking distances and is needed for passenger convenience. Without this escalator, passengers would be channeled through the ticket lobby to access vertical circulation, contributing to lobby congestion.

### Concessions

A small concessions area adjacent to the restroom block to the east will need to be removed in order to accommodate the new security checkpoint. However, a large concession, perhaps a destination restaurant or sports-theme bar can be accommodated immediately south of the new checkpoint and accessible from the concourse (see Figure 11). This

would be a good location for a full service restaurant, with heavy foot traffic in the area and “back of house” access available from the extended service corridor. In addition, level 4 above ticketing can provide a second level restaurant bar and seating area, as shown in **Figure 13**. If security issues between airside and landside can be adequately addressed, an outdoor garden or patio could be provided overlooking the City, and this would offer a unique customer draw. The two-level restaurant could be approximately 14,000 square feet with an additional 4,500 square feet in the garden area.



New Concessions Area

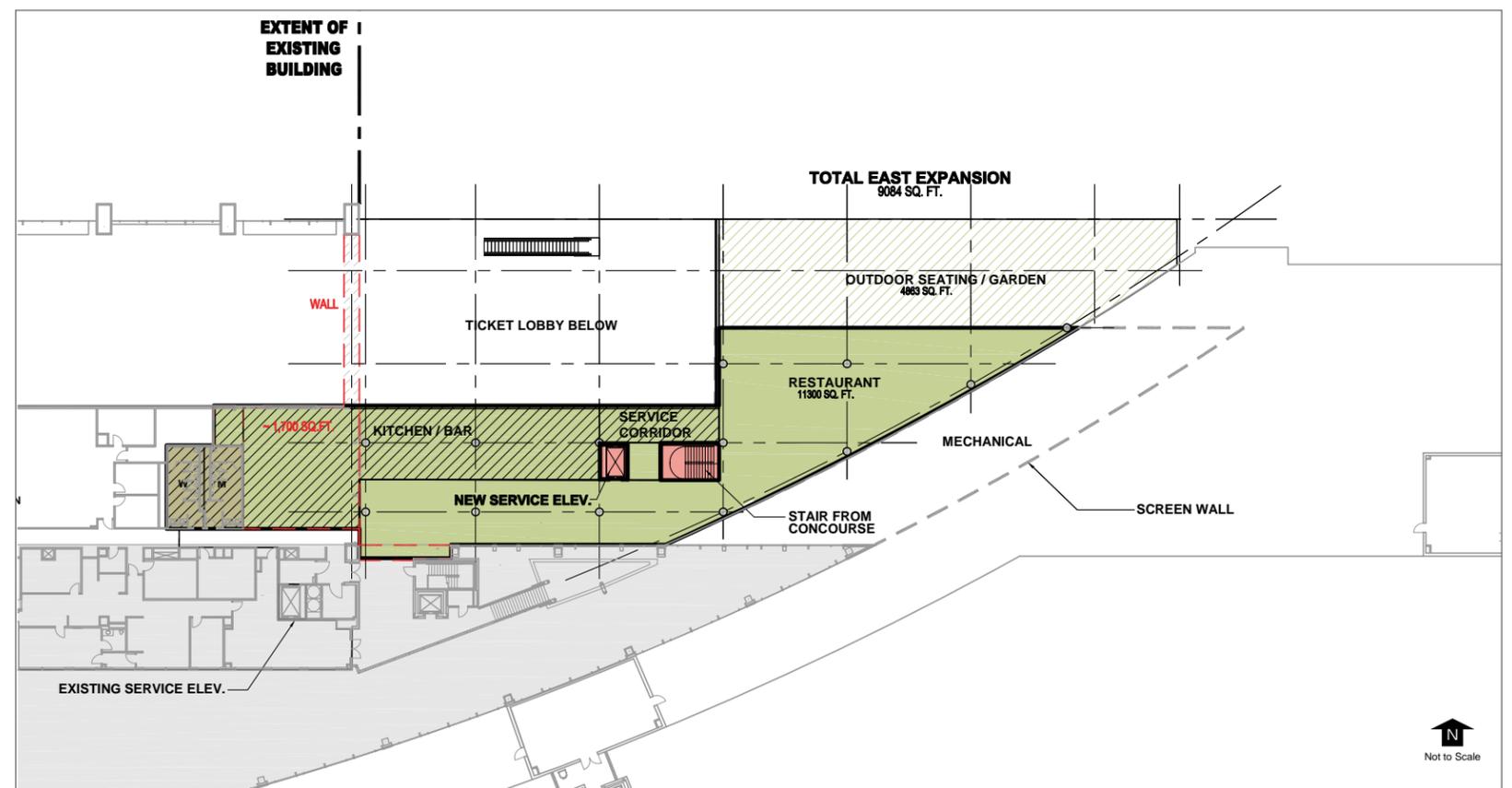


Figure 13 Level 4—Mezzanine East Infill

**Storage and Service Elevator**

A concessions storage area has been provided at the arrivals level, as shown in Figure 14. This is located immediately adjacent to the reconfigured loading dock. A second service elevator needed for redundancy would be located off the service corridor and adjacent to the loading dock. This elevator will serve all building levels on the airside and “back of house” functions.

**Checked Baggage Screening Facilities**

As shown in Figure 15, the east infill provides an expansion area for the checked baggage screening matrix and facilities. Note that the figure also shows the new oversized takeaway belt from the new ticket counters.

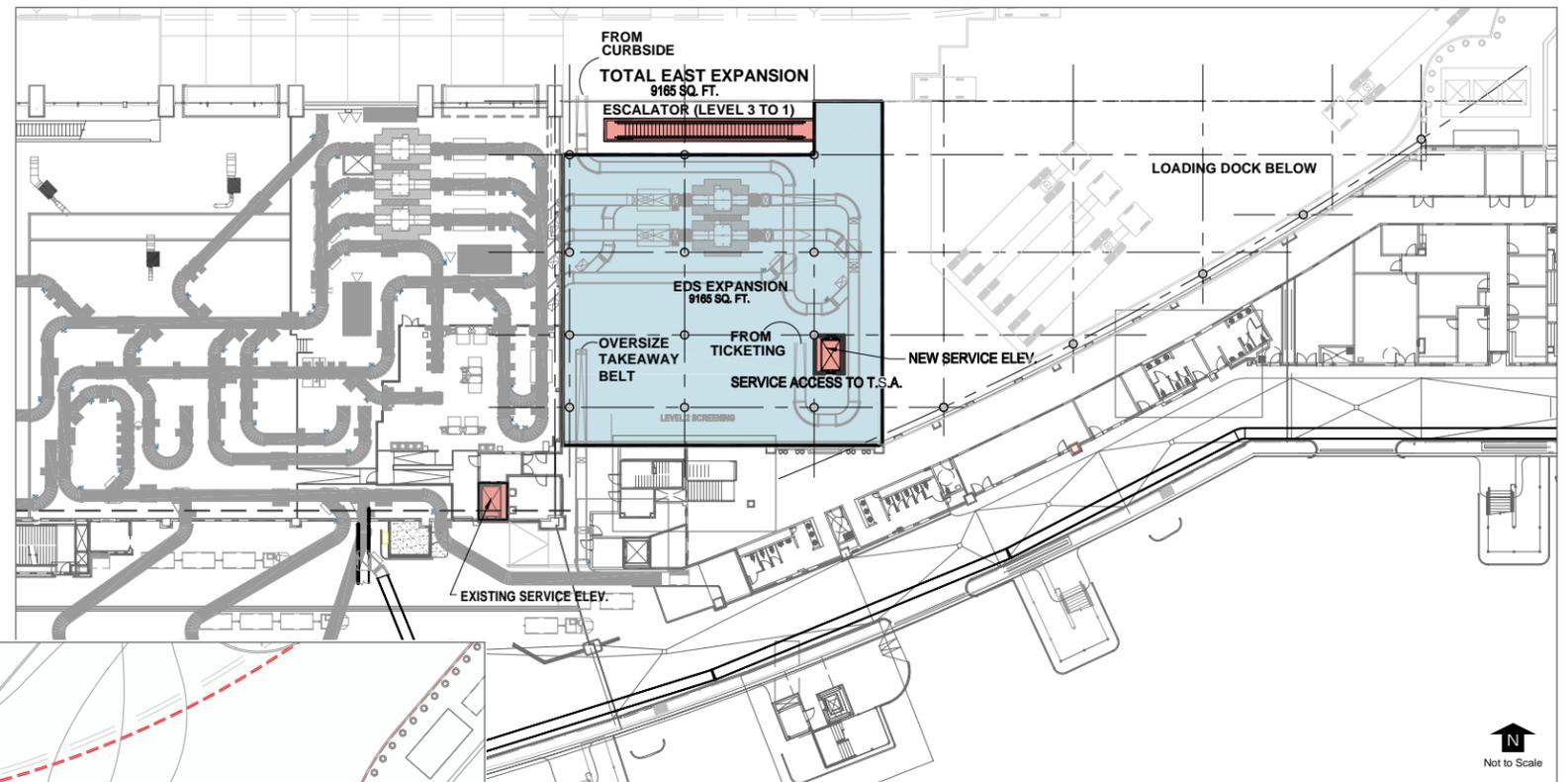


Figure 15 Level 2—East Infill Expansion

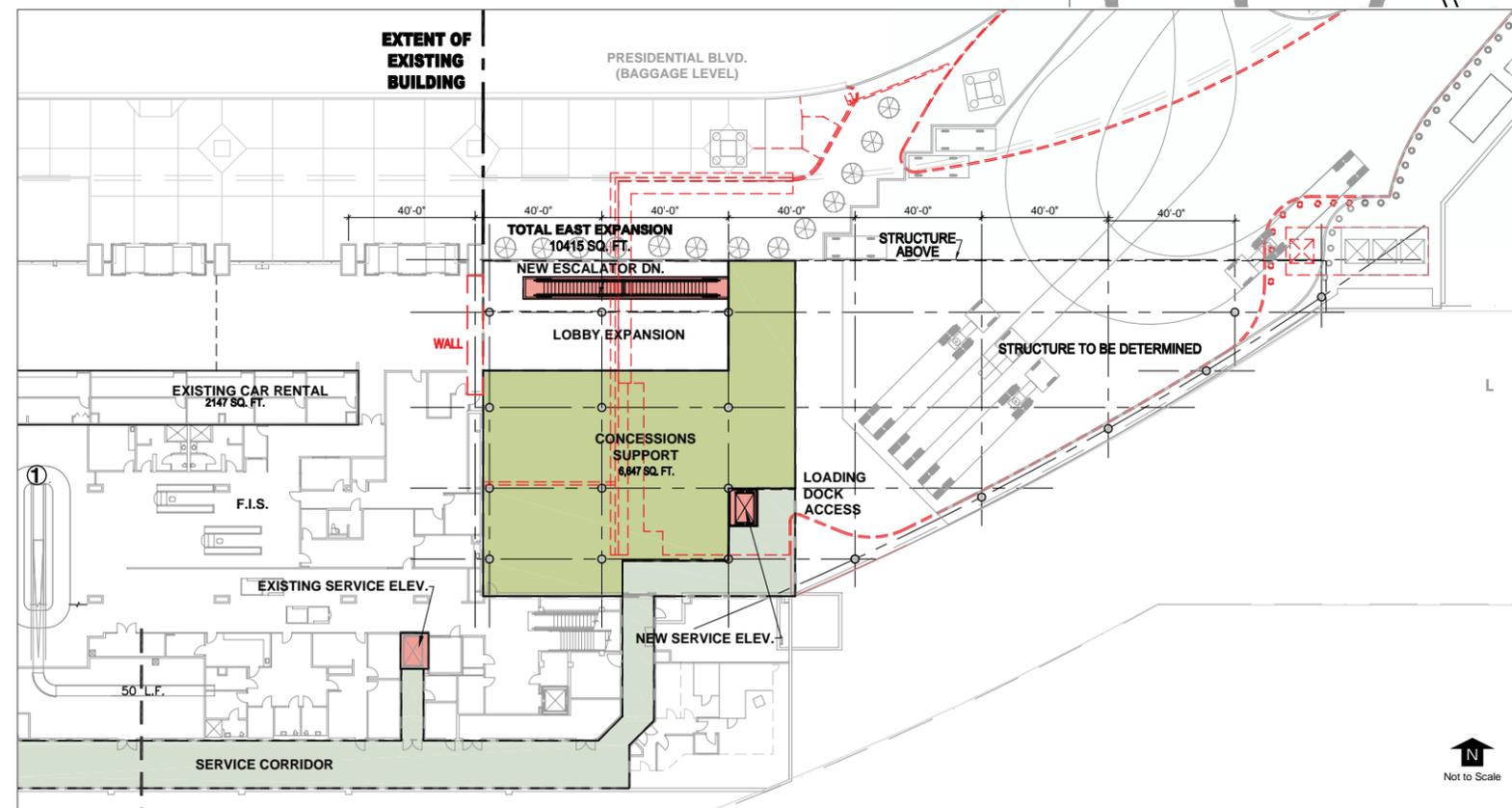


Figure 14 Level 1—East Infill Expansion



New Security Screening for East Concourse

### Loading Dock

The loading dock will be relocated to the east by approximately 100 feet (see Figure 16). Modeling of truck turning movements in the remaining area indicates that if a portion of the space under the upper level roadway is incorporated into the dock area a WB-50 vehicle (50-foot long semi-trailer) will be able to approach and park at the new loading dock location. The structure associated with the east infill building will need to be carefully designed with some larger than typical bay spans to accommodate vehicle turning; this detailed level of planning is not illustrated within this report. The dock will be connected to the existing service corridor for convenient movement of supplies. The CIP planning provides significant increased concessions storage area and new service elevators to facilitate the movement of concessions supplies in the terminal. It is also anticipated that the new area will provide space for security screening of materials and supplies arriving at the loading dock.

The existing dog walk area also can be relocated as shown in Figure 16.

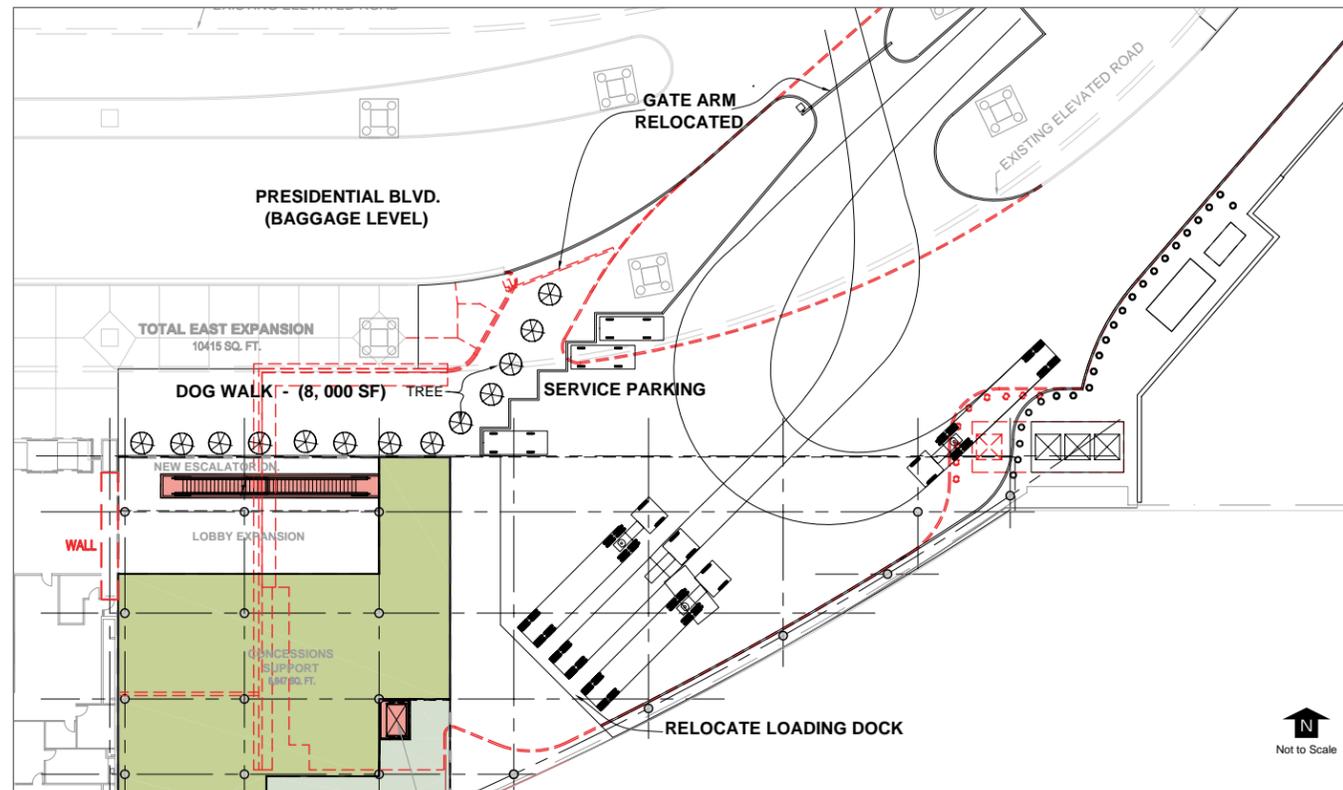


Figure 16 Level 1—East Infill Relocated Loading Dock

## 4.3 West Infill Terminal Expansion

### Ticket Counters and ATO

Two full building bays of ticketing can be built in an expansion of the west lobby, as shown in Figure 17. This will provide space for up to 18 traditional ticket agent positions. Two bays of ATO can be provided behind the ticket counter line, approximately 1,000 square feet in size.

### Curbside Check-in

One additional bay of curbside check-in can be provided to the west if required (see Figure 17). The curb and canopy would need to be extended to accommodate the new curbside check-in.

### Passenger Security Screening

A three-lane passenger security checkpoint has been maintained to the west, and a bypass for arriving passengers would be added north of the screening lanes. As shown in Figure 17, this will significantly reduce the walking distances from the west concourse gates to the curb.

### Vertical Circulation

A new escalator will be provided for passengers transiting from the bypass lane at the ticketing level down to the baggage claim level. Similar to the east lobby expansion, the intent is to provide improved passenger access routes and minimize congestion in the ticketing lobby.

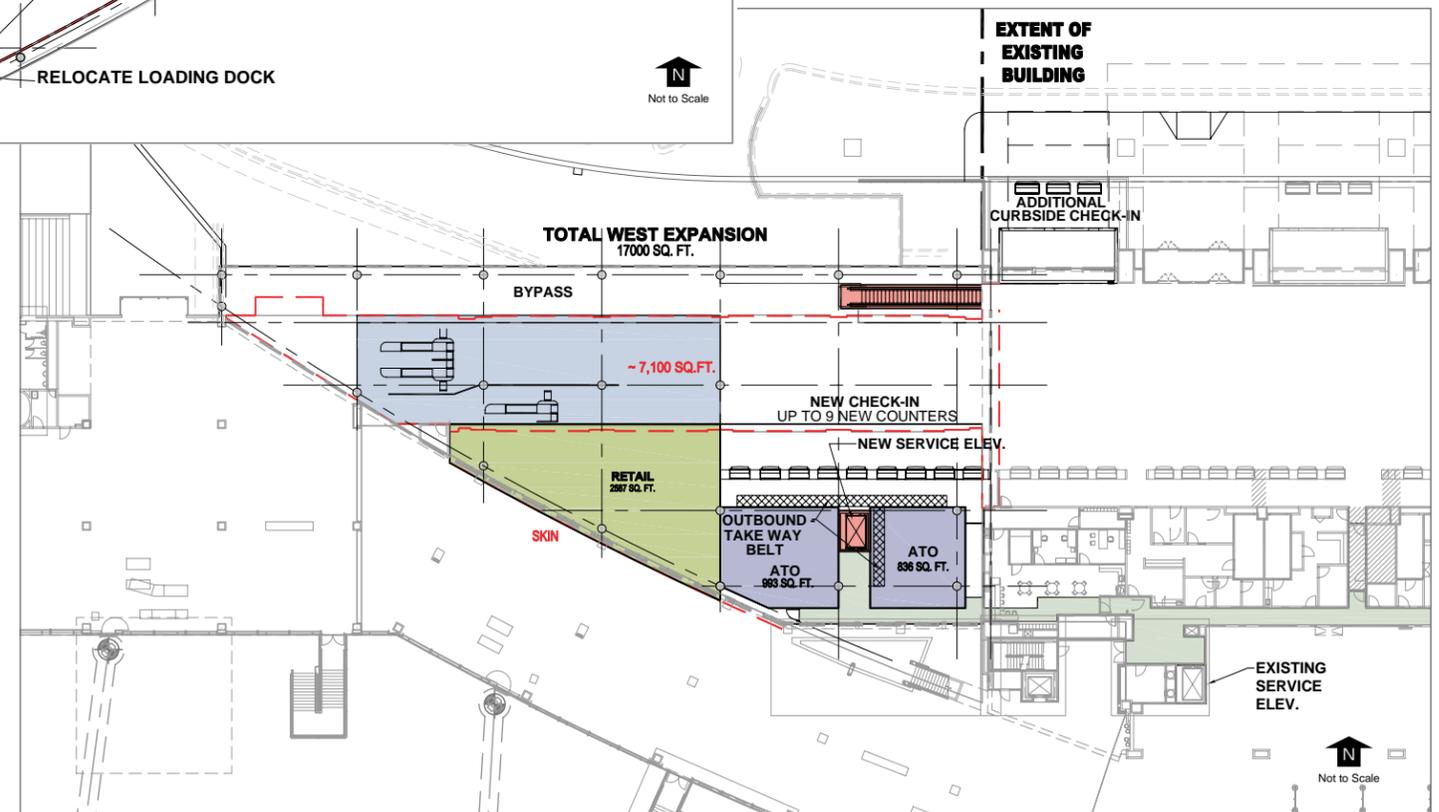


Figure 17 Level 1—West Infill Terminal Expansion

### Concessions

A new retail space of approximately 3,600 square feet can be provided to the west with access from the concourse departures level. As shown in Figure 17, this area can provide additional concessions with food court seating (currently needed) and it would be highly accessible from gates 13, 14, and 15.

### Storage and Service Elevator

A small concessions storage area has been provided at the arrivals level adjacent to a new service elevator. Service access is provided from a secondary loading area on the north face of the building off the service road. Access will be for small vehicles only. The new service elevator will serve all building levels on the airside and “back of house” functions.

**Airline Club/Conference Room Expansion Space**

There is an opportunity to develop additional conference room and airline club space on the mezzanine level, as shown in **Figure 18**. This area would have access to a new service elevator and new restroom facilities. Other functions would be possible in this space as well, such as additional concessions and offices. The space allocations should be developed during the facility design phase.

**Checked Baggage Screening Facilities**

As shown in **Figure 19**, the west infill provides an expansion area for the checked baggage screening matrix and facilities.

**Relocated Department of Aviation Facilities**

With the expansion of baggage claim facilities (discussed below), there is a need to relocate facilities operated by the Department of Aviation. This includes the public safety/police function as well as the badging unit and other operational units. As shown in **Figure 20**, this can be accommodated on Level 1 of the west infill.

**Auto Parking**

The construction of the west triangle will eliminate an area of parking adjacent to the terminal. This parking requirement can be replaced

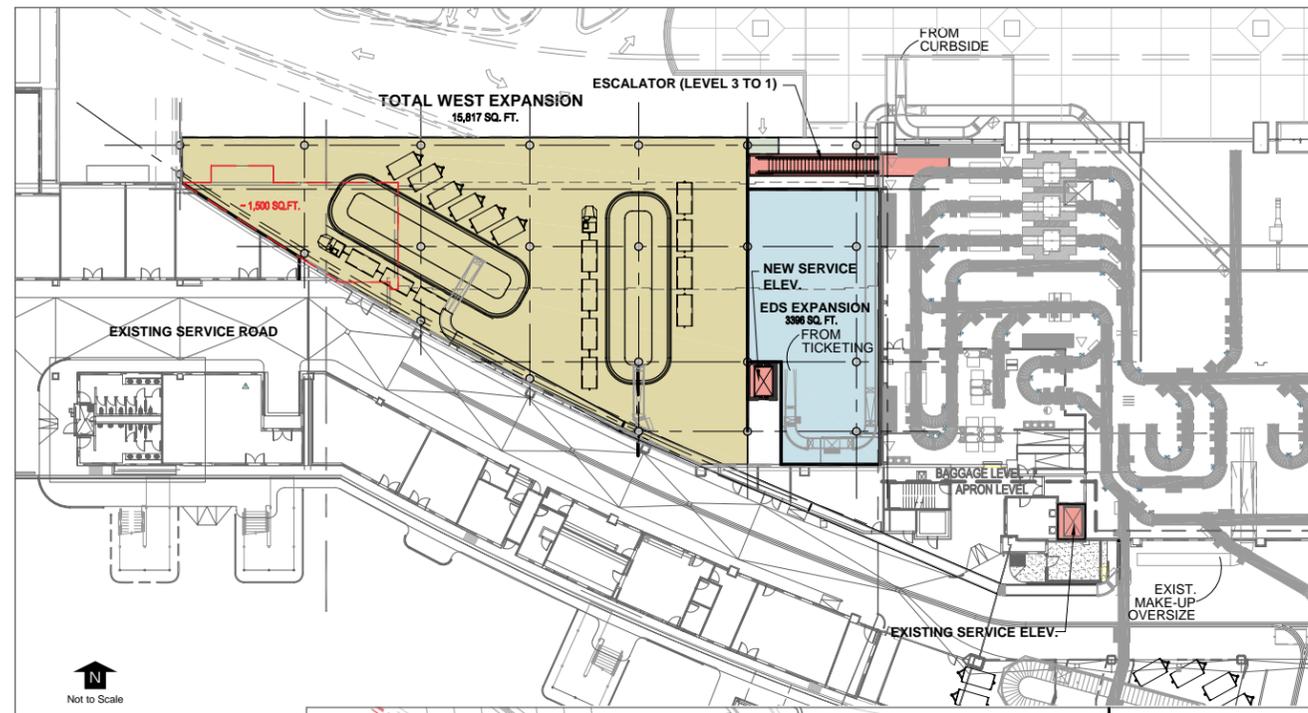


Figure 19  
Level 2—  
West Infill

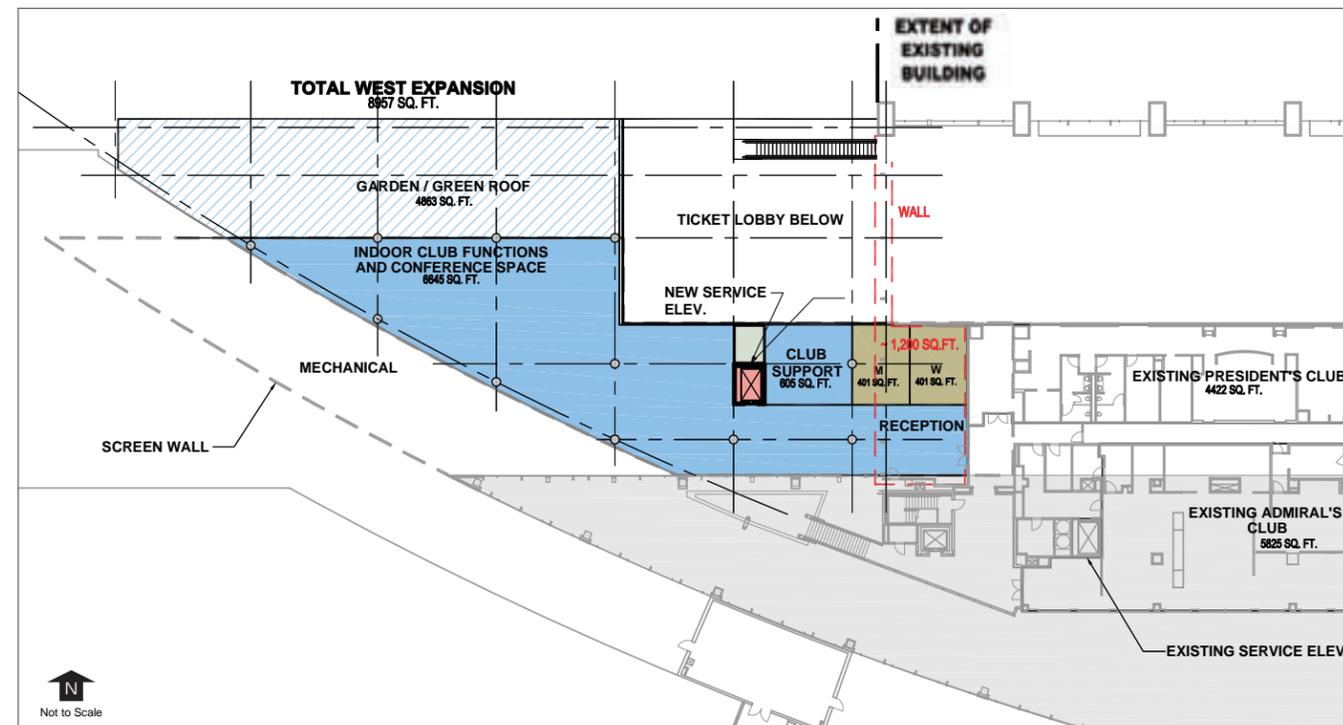


Figure 18 Level 4—Mezzanine West Infill

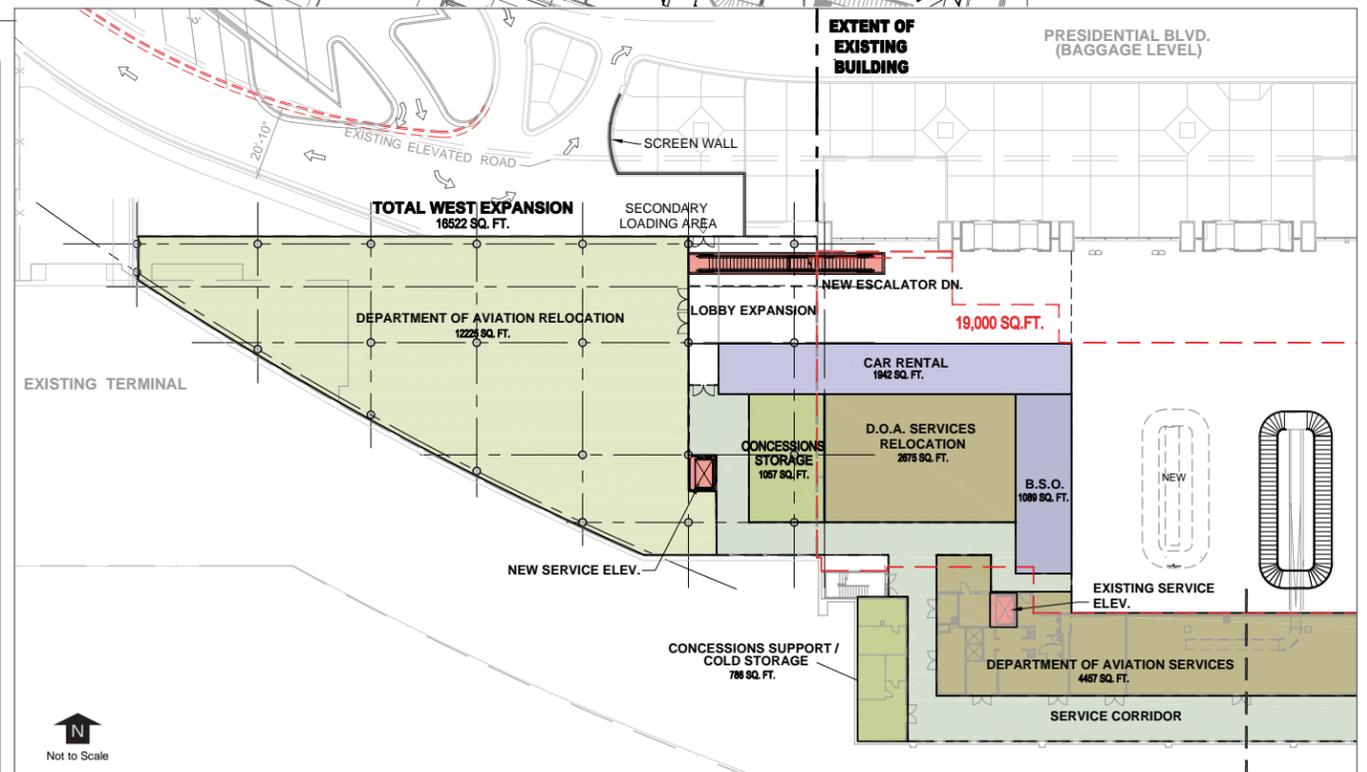


Figure 20 Level 1—West Infill



2016 planning horizon. The initial expansion of the baggage claim area to the west will also set aside sufficient space for a third carousel to be conveniently added in the future as the demand requires.

A new zone of baggage service offices should be established along the western face of the expanded baggage claim area with good visual connection to the claim area. Airline bag service office space will have approximately twice the available space compared with existing facilities. The RAC counters and offices will also be relocated to the west in same configuration as the existing layout.

Phasing of the expansion of baggage claim capacity will be necessary to maintain the current level of passenger service as well as alleviate the current demand requirement as quickly as possible. The proposed phasing for the baggage claim area is as follows:

- Install device #8 in the open bay at the west end of the existing claim area and make the

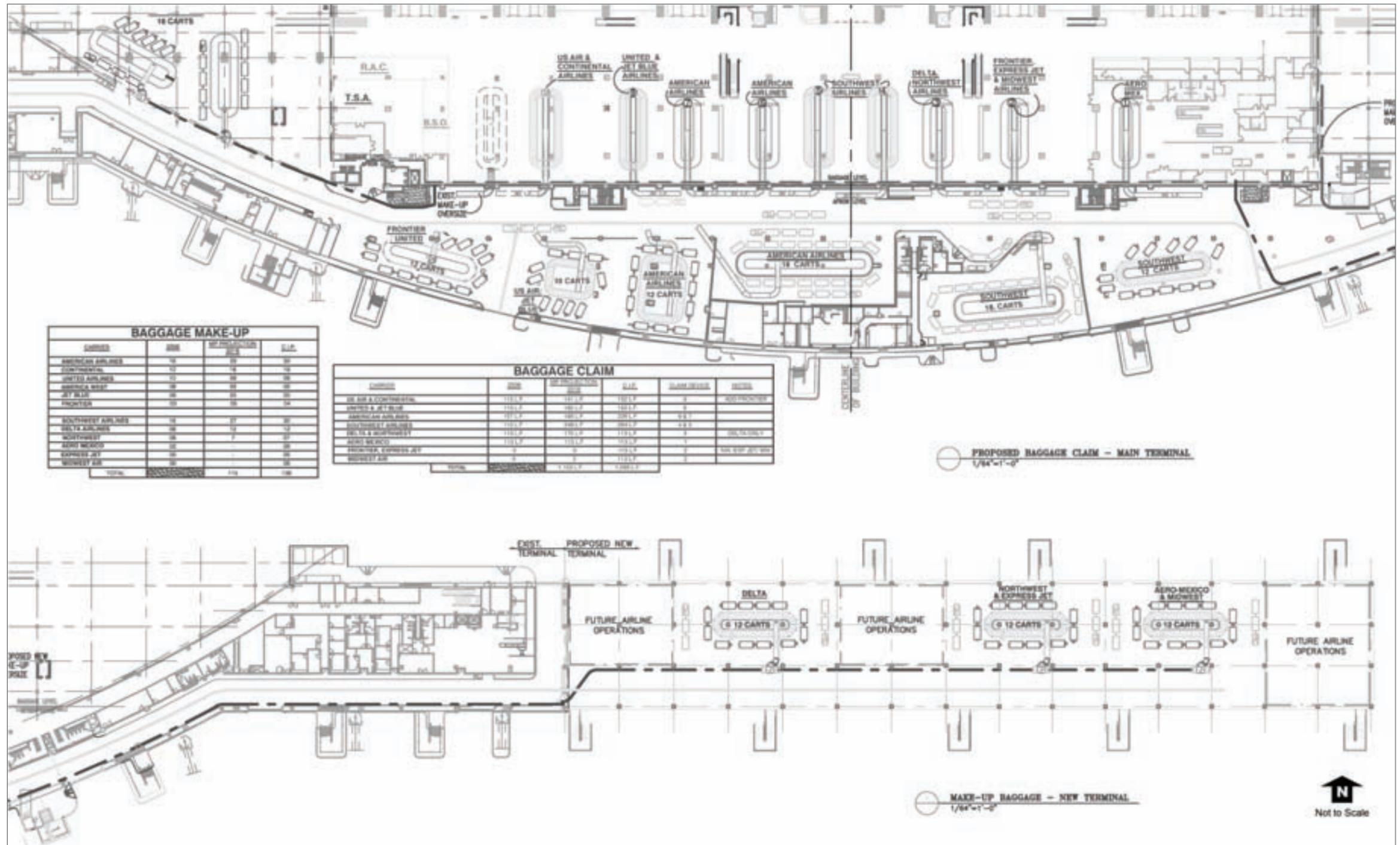


Figure 24 Outbound Baggage Facilities Expansion

necessary modifications to the input belts on the apron level. The initial congestion along the walls will be eliminated when the claim area is expanded.

- Remove the central triangular device and install the two new linear carousels (#4 and #5) in the central area with the necessary modifications to the input belts on the apron level.
- Once the construction of the east and west triangle areas is sufficiently advanced, the removal of the existing concessions storage and Department of Aviation offices can be started to facilitate the baggage claim area expansion. Following this work, the construction claim device #9 can be added.

## 6 OUTBOUND BAGGAGE FACILITIES

The existing outbound baggage facilities area is at capacity and currently the City is in progress with an expansion. The City continues to make enhancements to the existing facilities to meet growing demand but new space is required for this function.

The facilities requirements analysis projects the existing capacity of 85 cart positions will need to be increased to a minimum of 115 cart positions to account for existing carriers plus additional capacity for new and future carriers. This can be accomplished by creating new baggage makeup areas to the west and east of the existing area within the new concourse and west triangle expansions (see **Figure 24** on previous page).

The replacement of the remaining indexing belts with a new linear carousel makeup in the existing area should also be planned. With these expansions and enhancements in place the total capacity of 136 cart positions will be available in locations closer to the aircraft. All of this expansion can be constructed independent of the existing makeup area so there will be minimal operational impacts during construction.

The development of the new east concourse will provide apron level space for new makeup areas located under the new concourse and adjacent to the aircraft and airline operations offices. The connection of these new makeup areas to the existing TSA in-line bag screening system will require the routing of an existing makeup feed to the new makeup areas. This is feasible using the next to the last feed belt and routing the conveyor along the south edge of the existing tug road. This alignment will require the relocation of an existing electrical bus duct that feeds the loading bridges and the natural gas line that supplies this side of the terminal. The last feed belt from the east TSA matrix is proposed to be converted into an oversize baggage belt from the east concourse. This new oversize belt will be fed from the new ticket lobby constructed in the east triangle.

On the west side, new baggage makeup areas are proposed for the apron level of the west triangle expansion. This area is capable of holding two new makeup carousels. These new carousels can be fed from the west TSA in-line matrix by installing a diverter on the feed line to the current Frontier/ Jet Blue/ US Airways device and routing a conveyor feed into the new triangle area. The existing tug road will be opened up to this area for tug access.

	2006 Existing	2016
Required spaces (facility requirements program)	1818	1970
Additional spaces needed	-	152

Source: Jacobs Consultancy Team.

The remaining indexing makeup devices would be those used by Delta, Northwest, and Express Jet. Once the new makeup areas are in place under the new east concourse, these belts can be replaced by a single large linear makeup carousel.

It is recommended that with the addition of new ticket lobby and ATO space on the east and west ends, new takeaway belts be installed on the outbound baggage system that will increase the functional requirements of the existing TSA matrices. The proposed plan includes expansion into the east and west triangle areas and sets aside spaces for expansion of the TSA matrices at the apron level within these triangle areas. It is considered to be more economical and easier to expand the building in these areas than to expand the matrices to the North, which would require a building expansion to be supported and constructed over an active curbside.

While exact design and layout of the matrix expansion will need additional data accumulation and modeling, the CIP provides space for the addition of new collector belts from the ticket counters, additional EDS equipment, and connection to the existing TSA Level 2 and Level 3 screening facilities. It is also anticipated that the relocation of the existing TSA Level 2 resolution area to the new enlarged space within the east matrix expansion will make way for more ATO space. Figure 19 shows the space reserved for expansion of the matrix facilities in the west.

## 7 PARKING GARAGE IN LOT A

**Table 6** summarizes Parking Lot A requirements at ABIA.

Based on the requirements in Table 6, the proposed parking garage has been planned using the following assumptions:

- Lot A will not be expanded.
- The proposed garage will result in 144 lost spaces in Lot A due to ramps and infrastructure.
- The proposed garage would be planned for 3 levels initially, with expansion capability to 5 levels (i.e. adding 2 more levels in the future).
- The initial garage should add the 152 needed new Lot A spaces to meet the requirements and make up the 144 lost Lot A spaces, resulting in a total of 296 more spaces than are in the garage facility requirements.

**Table 7** provides a summary of the parking garage requirements.

	2006 (existing)	2016
Required garage public parking spaces	2397	3900
Additional spaces needed	-	1503 + 296 = 1799 Add 3 levels above Lot A
Recommended garage program	-	East end of Lot A 600 spaces per level

Source: Jacobs Consultancy Team.

Lot A will remain operational as generally configured and its parking spaces are not included in the garage parking space count.

The proposed parking garage has been planned to follow the established pattern of vehicular circulation on the site and two-way flows within the garage. The garage should be located on the eastern half of Lot A to minimize the impact to Lot A and maximize the number of new spaces. In the future, the garage could be expanded to the western half of Lot A as needed.

## 7.1 Levels and Spaces

The requirement for approximately 1,800 new parking spaces will require the construction of three levels of parking structure above existing Lot A. **Figure 25** shows the area recommended for development of the garage and the access routes. **Figures 26, 27, and 28** show the proposed parking garage levels 2, 3, and 4, respectively.

A pedestrian connection from the new parking structure to the existing parking structure is shown in Figure 26. This bridge would connect new garage level 2 to existing garage level 3.

## 7.2 Access and Revenue Control

The proposed parking garage traffic would use the existing entrance to the parking lot with a driving lane to the garage at the east end. The current exit(s) can be enlarged and remain roughly in the same locations. Adding TxTAG or patron self credit card payment to the parking system would enhance exit flow.

## 7.3 Development Phasing

There is an immediate need for close-in public parking. Therefore the new parking structure development should be initiated immediately. This construction is independent of construction at the terminal and potentially can be completed more quickly, which would meet the existing demand requirement sooner. This project is a good candidate for alternative project delivery methods such as design/build which could accelerate the project completion.

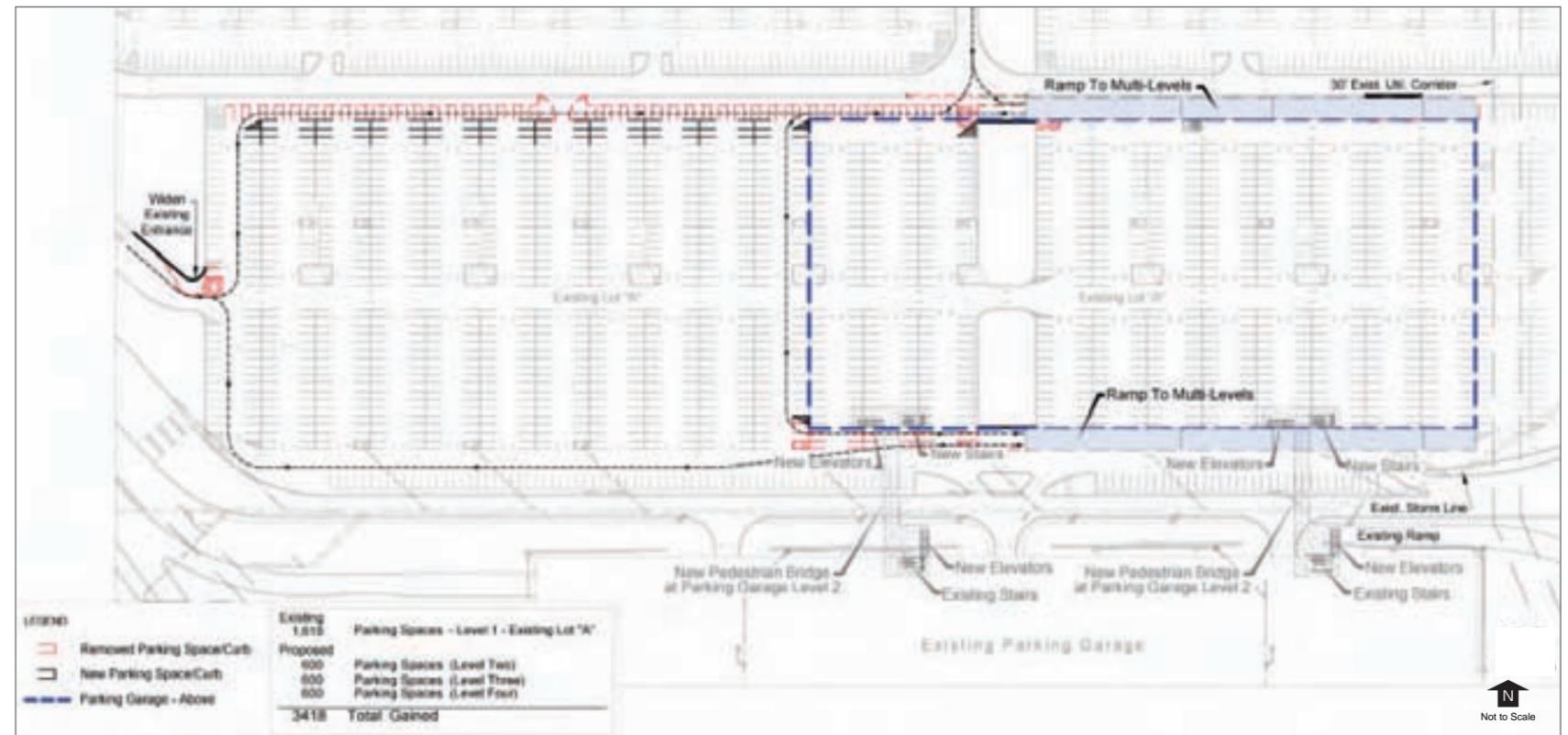


Figure 25 Parking Garage Lot A Level 1

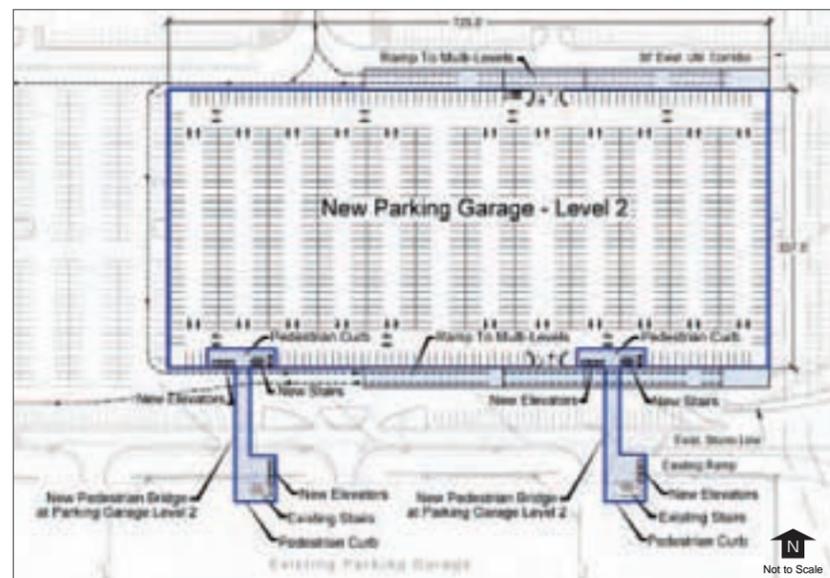


Figure 26 Parking Garage Level 2

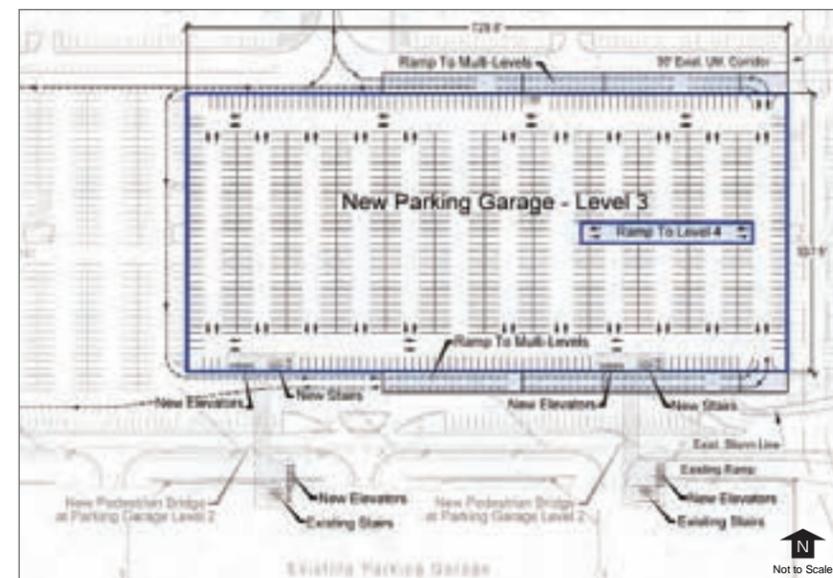


Figure 27 Parking Garage Level 3

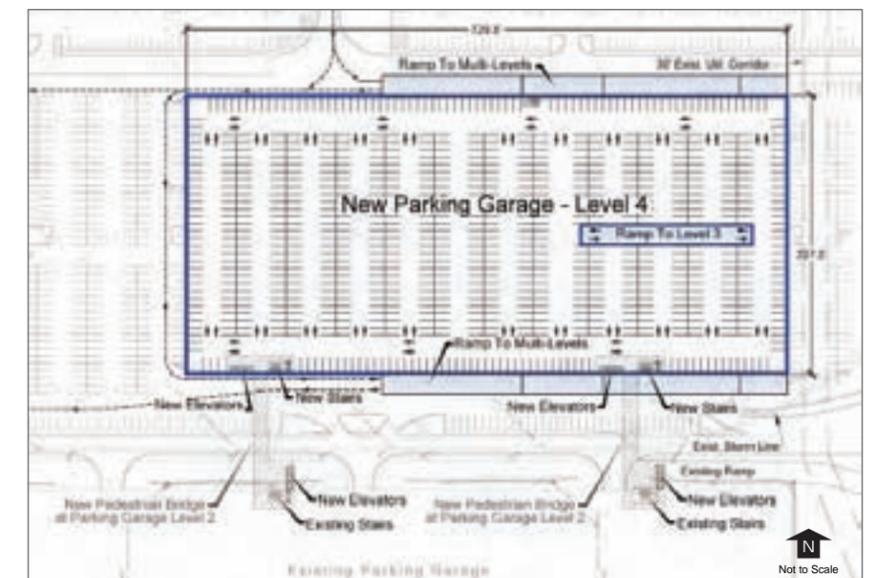


Figure 28 Parking Garage Level 4