

**E Parking Narrative**

**E**

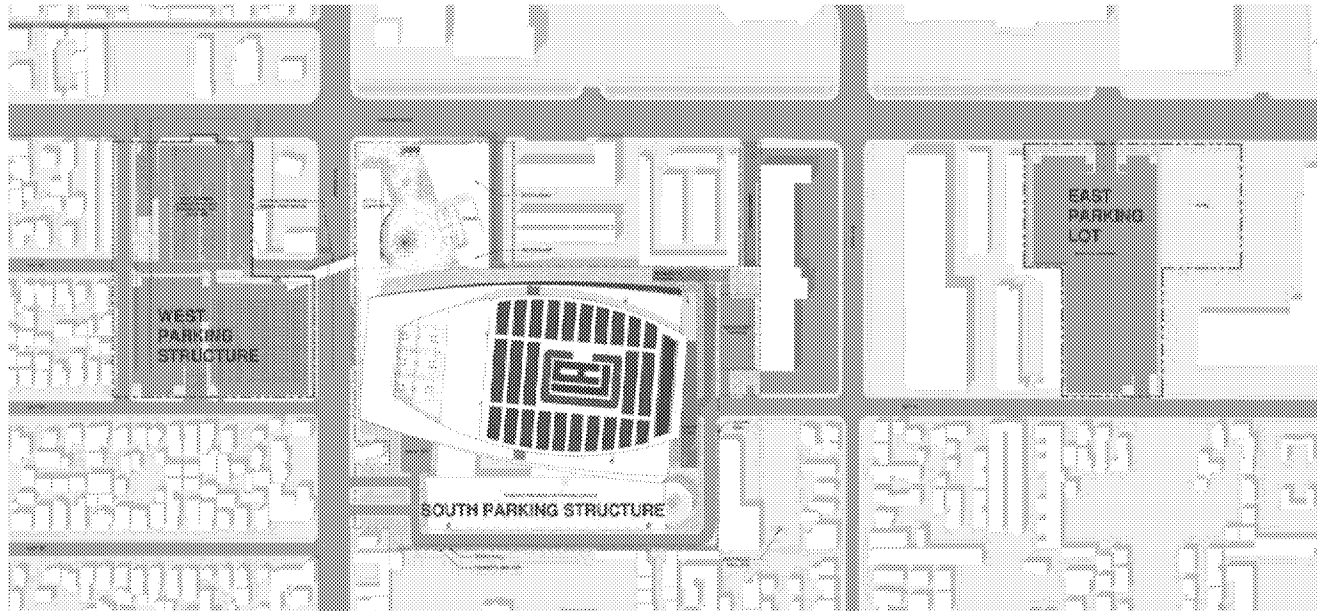
**PARKING**

Automobile Parking Spaces, as defined in the Inglewood Municipal Code Section 12 will be provided in accordance with the following calculations. The ordinance requires 4,192 spaces; an adjustment for shared parking has been taken given that the Medical Facility will be closed to the public during a major event.

**Table 5-1: Parking Required versus Parking Provided**

	<b>Parking Provided</b>
South Parking Structure =	650
East Parking Lot=	420
West Parking Structure (Automobile Parking)	2,940
West Parking Structure (TNC) =	166
Subtotal Automobile Parking Spaces =	<b>4,176</b>
West Parking Structure (Coaches) =	23
West Parking Structure (Mini Bus) =	20
Total Provided =	4,219

4,176 off-street automobile parking spaces will be provided including 4,010 traditional self-park spaces and 166 spaces for TNC (Transportation Network Companies such as Uber and Lyft) automobiles to wait for assignment to departing fans. In addition, parking will be provided for 23 coaches for private/charter buses and 20 minibuses. It is presumed that coaches will park during the event. The minibus stalls are 20' to 30' long and would serve buses with up to 30 passengers. These might be private groups who park during the event, paratransit vehicles (dial-a-ride services for persons with disabilities) or microtransit. Some microtransit would be on demand and with the route determined on the fly, similar to TNC rides; others would be prearranged, with express service from a regional park and ride lot or other pickup point. There will likely be some turnover for the minibus stalls before and after events as many of these vehicles may not park during the event. If there is overflow for buses, they will be parked at the East Lot. This is typically only required for family-oriented shows, and in particular those that generate school buses. When more people arrive by bus, the demand for car parking spaces declines, so there will be adequate capacity at the East Lot for car parking.

**Figure 5-1: Overall Site and Parking**

All automobile parking is provided with 9' by 18' stalls, on a 90-degree module of 60'0". The Inglewood code (12-51) allows 8' by 18' standard stalls and compact spaces at 8' by 16'. Compact spaces (8' in width) will only be used where space is constrained either in length or width and will be negligible in count. The 90-degree parking module per code (12-54) is 60'0" and is provided. The parking structure design is predicated on having 18' column spacing so that the columns fall on the stall line, minimizing impact of encroachment of columns into the stall length.

Tandem and/or valet parking is not proposed at this time. The Developer reserves the right to employ valet parking in the future.

Each segregated area of parking (i.e., where circulation is not provided between areas without exiting to and reentering from the public street) will have 8% of the spaces designated for Electric Vehicle Charging Spaces, which is the Tier 1 Voluntary level, and exceeds the minimum of 6%. The design has accessible EVCS stalls per California Code. It is noted that 8% of the stalls do not have

to be equipped with charging units at opening day, but the EV Infrastructure must be provided.<sup>1</sup> The drawings show 3% of spaces with charging units at opening day. The design will then allow them to be easily added as demand is demonstrated. To obtain credit for EVCS for LEED v4 the following is required:

“Option 1. Electric vehicle charging

Install electrical vehicle supply equipment in 2% of all parking spaces used by the project. Clearly identify and reserve these spaces for the sole use by plug-in electric vehicles. Parking spaces that include EVSE must be provided separate from and in addition to 5% preferred parking spaces for green vehicles.

The EVSE must:

- Provide a Level 2 charging capacity (208 – 240 volts) or greater.
- Comply with the relevant regional or local standard for electrical connectors, such as SAE Surface Vehicle Recommended Practice J1772, SAE Electric Vehicle Conductive Charge Coupler or IEC 62196 of the International Electrotechnical Commission for projects outside the U.S.
- Be networked or internet addressable and be capable of participating in a demand-response program or time-of-use pricing to encourage off-peak charging.”<sup>2</sup>

3% of the spaces in each facility should be equipped with EVCS at opening day, with electrical capacity and layout provided for an additional 5% of the parking capacity per CA Code. Similarly, accessible parking is provided for the remaining spaces per the CA code and ADA. Layouts are cognizant of requirements that prohibit passing behind parked vehicles to traverse from an accessible stall to the pedestrian portal/accessible route to the destination. All automobile parking in structures will have a minimum signed clearance of 8’2” with 8’6” vertical clearance as defined in the local code. The typical floor-to-floor height is 11’6”.

It is noted that the parking structures do not meet the local code requirement (12-27.4) of 30’ setback from all property lines. This activity zone is not suburban; a dense look and feel is desirable. The setbacks from the streets and side property lines are further described for each facility. The East Parking lot will have the required walls and landscaping per 12-55.5.

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<sup>1</sup> Division of State Architect, 2016. “Access California: New Accessibility Regulations for Electric Vehicle Charging Stations” California Department of General Services

<sup>2</sup> <https://www.usgbc.org/credits/new-construction-core-and-shell-retail-new-construction-healthcare-hospitality-new-constru-0>

We have prepared queuing analysis for the gated entry/exits to confirm that adequate reservoirs exist to allow the 95<sup>th</sup> percentile queue without backing into the public right-of-way. This exceeds the requirements of local code 12-54.4 and 12-55. This analysis as well as the ramp capacity analysis is presented at the end of this section for all three parking facilities.

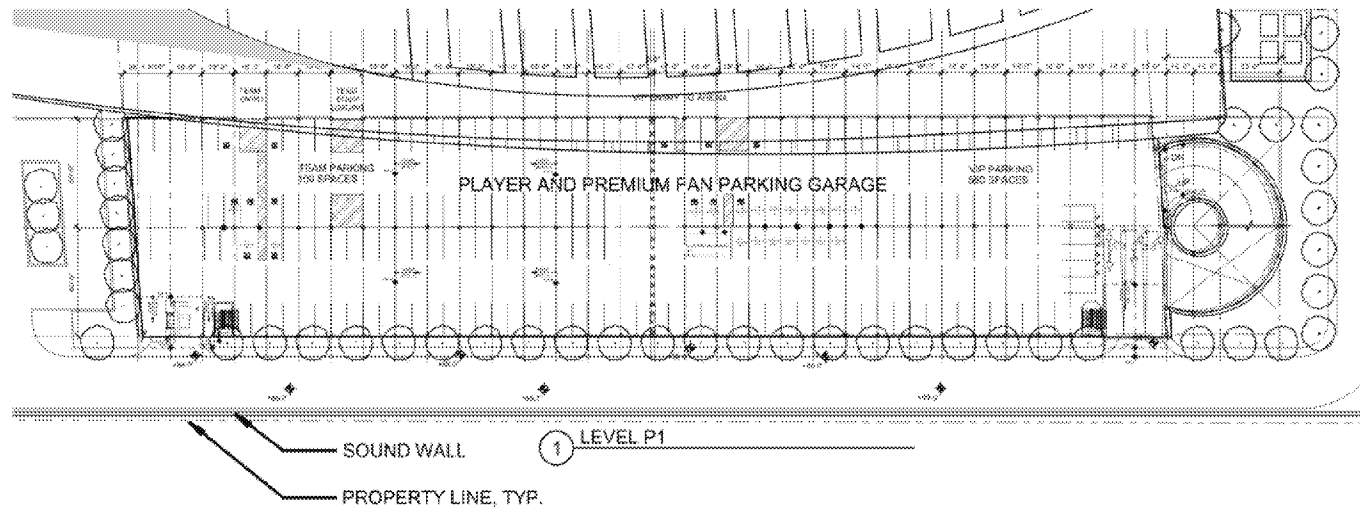
Another element of the local code (12-55.4) which we take exception to is the requirement for curbs and wheel stops. Curbs and wheels stops pose significant tripping hazards, and lead to more injuries to persons in parking facilities than any other cause. We recommend that curbs only be provided were necessary to protect landscaping, parking equipment, and vulnerable **light** construction. Where spandrel and other walls are provided on parking levels they will be adequately designed to meet code required bumper loads without curbs, although curbs may be provided to protect structural connections for spandrel walls. We will be happy to further discuss the reasons why extensive use of curbs and wheel stops is not recommended for any of the parking in this project.

The parking facilities are further described as follows:

### **South Parking Structure**

A 650 space parking structure will be provided immediately south of the Arena to serve key team personnel (including players) and suite holders (aka VIP parking.) The garage has a grade level and two above-grade levels. Each level has a horizontal connection to the Arena.

The west end of the first floor will provide 100 Team spaces for both players and key Team employees, with secured parking. Access will be from the west end of the structure, with Automatic Vehicle ID (AVI) controls allowing ingress; this technology is similar to toll tags and recognizes and raises the gate as a vehicle approaches, often without coming to a full stop. This technology is not only convenient for the users but is necessary due to the slope of the entry driveway. Exit will be “free out” (gate automatically raises as vehicle approaches.) A security booth is provided for monitoring the parking as required. Most of the Team parking area is depressed 4’9” from the remaining parking at grade level in order to allow the Team equipment truck to enter and exit to load and unload gear. The structural clearance will be 13’3” (posted 13’0”). The team uses an 18’ long box truck, which is 12 to 13’ high, and built on the chassis of heavy duty pickup trucks. We employed the AASHTO P vehicle which is 7’ by 19’ to check turning movements for the team equipment truck as the turning radius and vehicle dimensions are similar. The loading stall will exceed the 10’ width required by local code.

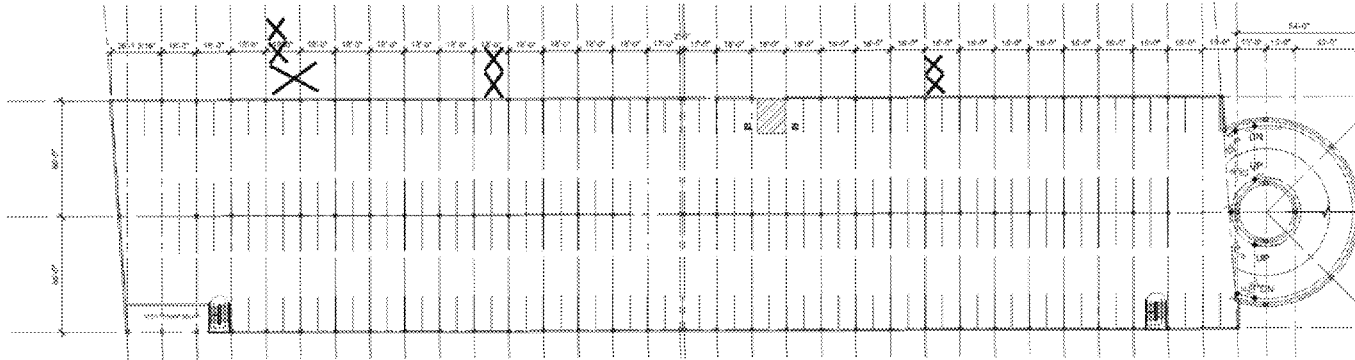
**Figure 5-2: South Parking Structure Grade Level**

The VIP parking will encompass 550 spaces on the remainder of grade, as well as P2 and P3. 8'2" vehicular clearance (posted; actual structural clearance is 8'6") will be provided throughout the VIP parking. EVCS and accessible parking has been provided per State of California Building Code. The EVCS spaces are at grade level near a central electrical room that will minimize cost of distribution of electrical service. Additional space for some equipment storage and mechanical and electrical rooms can be provided under the circular helix.

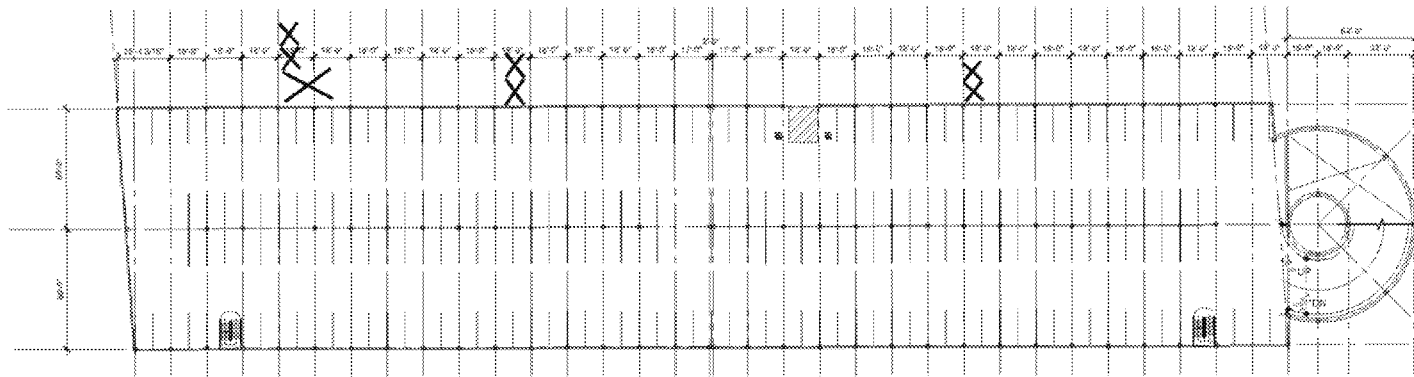
The ramping system will be a "half-helix" that circulates from floor to floor. Vehicles will enter at the east end of the structure from 102<sup>nd</sup> St and will either remain on grade or go up to P2 or P3. The turning radius on the inside lane edge (upbound traffic) will be 18'-0" which we classify as LOS C. The outer, downbound lane will have LOS A++ turning radius. The slope along the inside lane edge is 14.8% (less than the 20% maximum slope permitted by local code 12-54.1); the outside lane edge of the outside lane will have 6.6% slope. Transition slopes of 6.67% will be provided with 10' length.

The second and third levels are similar and are shown below.

Figure 5-3: South Structure P2 and P3



Level P2



Level P3

The table below summarizes the car counts and parking efficiency by type of stall. The area tabulation includes the area of the half-helix. At 330 sq ft per space efficiency, the design is relatively efficient for one with express ramps. However, the framing of a circular helix is more expensive per sq ft than for the typical parking structure floor.

**Table 5-2: South Parking Structure Summary**

PARKING SPACE COUNT												
LEVEL	TEAM	STANDARD	CAR ACCESSIBLE	VAN ACCESSIBLE	EVCS 3%	EVCS READY 8%	CAR ACCESSIBLE	VAN ACCESSIBLE	AMBULATORY ACCESSIBLE	TOTAL	AREA (SQ FT)	EFFICIENCY (SQ FT/SP)
P1 (+90'9")		48	2	2	13	26	2	1	1	95	35900	378
TEAM @ P1	87		3	1		6	1	1	1	100	34870	349
P2 (+102'3")		222	2	1						225	73102	325
P3 +(113'9")		228	1	1						230	70772	308
	87	498	8	5	13	32	3	2	2	650	214644	330

Notes:  
 Area includes area of circular helix.

EVCS OPENING DAY	20
FUTURE EVCS (READY)	32
TOTAL EVCS READY	52

**West Parking Structure**

The West parking structure will have 2,940 automobile self-parking spaces on six levels. Most of the grade level is allocated to a Transportation Hub with capacity for 23 full size coaches, 20 minibuses (30' stall length) and 166 spaces for TNCs to queue and be ready to pick up patrons after events. The structure is located west of Prairie on an L-shaped combination of parcels extending from Century to 102<sup>nd</sup> Street. 101<sup>st</sup> Street is to be vacated under the parking structure. We have provided approximately 43'3" from the west face of the structure to the property line to allow for the development of a new north-south street from Century to 102<sup>nd</sup>, which will also serve as a 26' fire lane for the west side of the structure. The bus and TNC traffic will exit to this new street at 101<sup>st</sup> Street; the traffic consultants have recommended that all buses and TNCs turn right or left and proceed to Century or 102<sup>nd</sup> respectively. Buses enter from Century via a right turn to a driveway under the structure at Century. An additional two-way roadway is provided in the 43'3" setback from the eastern property line, north of 101<sup>st</sup> St; this road will serve some of the minibus stalls as well as provide a roadway from 101<sup>st</sup> St north to Century.

The southern half of the parking structure extends to Prairie; there are effectively fire lanes around all of the perimeter. We presume 101<sup>st</sup> St. will remain open but be vacated at the property line between Lots 561 and 562. It appears from the surveys and Google Earth that the corner property (Lot 561) only uses 101<sup>st</sup> St as an exit, but it will remain two-way (26' width) for their use. The only users of the structure who will enter from 101<sup>st</sup> will be bicyclists, who will have access to racks that are placed under the stadium ramp (for pedestrians to get up to P2) where the clearance exceeds 10' fl to fl. Racks accommodating at least 23 bicyclists will be provided.



The TNC vehicles will enter from 102<sup>nd</sup> Street and queue in lines, picking up passengers in a long passenger loading zone parallel to 101<sup>st</sup> street. The passenger loading zone will meet ADA requirements.

60% of the parkers are projected to enter and exit from Century and 40% from 102<sup>nd</sup> Street. The 102<sup>nd</sup> entry/ exit goes through four gated entry lanes then up one lane of a two-way express ramp to P2. At P2 it becomes a single-threaded ramp with parking along the path of travel that goes full height to P6. Single-threaded means you drive up to the floor, then circulate back to through the floor to a ramp up to the next the floor. With 40% of the parkers using this entry, they will generally park on P2-3. There is a small parking area with 105 spaces at grade accessible from this entry, which is designed to allow expansion of TNC vehicle storage and pickup in the future.

The parkers arriving at Century also pass through four gated entry lanes, and then merge to two lanes, before cascading up to P3, bypassing P2, and then continuing on to P4. This ramp has three lanes with the middle lane reversible, providing two lanes up before the event and two lanes down after. At P4 parkers can park on that floor or transfer to the internal parking ramp system (that began at 102<sup>nd</sup> St) and continue up to P5 and P6. Exiting, those at P5 and P6 and most of P4 will join the cascading ramp at P4, with two lanes down to Century.

All pedestrians at the West Structure will be directed to cross Prairie on a pedestrian bridge at level P2 which is at +17'6". We have provided a "stadium" ramp from grade to P6, to enhance the pedestrian entering and exiting. The ramp will meet all requirements of ADA for an accessible ramp. Located near the knuckle of the L-shaped structure and south of 101<sup>st</sup> St, it will also serve as a code-required exit (in lieu of a stair.) With 10' clear width, the peak hour volume at Fruin's<sup>3</sup> LOS D density is 8,400 persons. For exiting of 85% of the pedestrians after the event in 30 minutes, the capacity of the stadium ramp is 4,200 persons. We then paired the stadium ramp with three elevators for the remaining parkers as well as those arriving by TNC or bus.

A security check zone is provided on P2 before entering the pedestrian bridge. 10 lanes are provided. According to AECOM, the processing rate of lanes with a walkthrough metal detector and bag X ray machine is 600 persons per hour per lane. Before the event we expect a total of 5,772 persons in the peak hour as seen below. Using the traffic engineering profession's queuing equations, we have calculated two queues. The first is what we call the Design Queue, which is the maximum queue expected with 95% confidence; the design queue is 5.2 persons per lane, which means 6 people each queued in two of the lanes, and 5 each in the remaining 8 lanes. The average queue is also calculated and converted to an average wait in the queue, which is 12.4 seconds. Note that the queue does not include the person being processed.

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<sup>3</sup> Fruin, J.J., 1987. *Pedestrian Planning and Design*, revised edition. Mobile AL: Elevator World Inc.

The pedestrian bridge across Prairie will be conveniently accessed from both the stadium ramp and elevators. It is located at level 2 (+17'6") south of 101<sup>st</sup> St. There will be a dedicated walkway from the elevator core to the bridge. The bridge is currently drawn as 25' width, which matches the AECOM layout for the return to grade at the Arena end with three escalators (reversible) and a cascading stair. With a clear width of 23' (conservatively), it would be able to accommodate roughly one-third more than the total number of pedestrians at the West Garage. (Fruin's LOS D capacity is 12,600 persons in 30 minutes after the event versus 8,921 pedestrians expected.) The Pedestrian Analysis is seen in the table below.

**Table 5-3: Pedestrian Analysis**

West Parking Structure	% Attendees	Total People	Before	After						
			55% in	85% out						
Self-parkers	39.7%	7,350	4,043	6,248						
TNC	10.0%	1,850	1,018	1,573						
Minibuses/MicroTransit	2.0%	370	204	315						
Charter Coaches (park)	5.0%	925	509	786						
		10,495	5,772	8,921						
<b>Components of Pedestrian Routes</b>										
<b>Analysis for Post Event</b>										
			Walkways			Elevators		Stair	Escalator	Total Ped Capacity Provided
	Total Volume	Exit Volume 85% 30 minutes	Clear Width (ft)	Effective Width (ft)	Fruin LOS D /ft eff width 600	Stakosch 3500# 395	Fruin LOS D /ft eff width 390	Stakosch 40" Step 2026		
<b>Person per 30 minutes</b>										
<b>Stadium Ramp</b>										
from P6 to P2	5,788	4919	10	7	4200	2 elev 790		NA		4990
P2 parkers	1,300	1105								
from P1 to P2										
Selfparkers	263									
TNC	1,850									
Microbuses	370									
Coaches	925					1 elev 395				
	3,408	2896	7.5	4.5	2700			NA		3095
	10,495	8921								8085
<b>Pedestrian Bridge Width</b>										
Drawing Width		8921	24	2.1	12600	NA		NA		12600
Required Width			14	1.1	6600					
		Entry Volume 55% 1 hr	Processing Rate 600 pph per lane	Design Queue per/lane	Average Queue per/lane	Average Delay Sec				
Security Check: Mag/Bag		5772		5.2	2.1	12.4				

Levels 1, 2, 4, and 6 of the West Deck are shown below, following the car counts and parking efficiency. The Transportation Hub at grade negatively impacts the efficiency of the structure as a whole. The efficiency of the parking areas when the Transportation Hub is excluded is relatively good at about 346 sq ft per space. Typically structures with express ramps have efficiencies exceeding 350 sq ft per space or more. This design is both efficient and cost-effective because of cascading express ramps placed in the 60' bays, with parking over and under the ramps, as well as stopping the express ramps at P4 and using parking ramps above.

**Table 5-4: West Structure Summary**

PARKING SPACE COUNT												
LEVEL	STANDARD	CAR	VAN	EVCS	EVCS READY	CAR	VAN	AMBULATORY		TOTAL	AREA	EFFICIENCY
		ACCESSIBLE	ACCESSIBLE	3%	8%	ACCESSIBLE	ACCESSIBLE	ACCESSIBLE			(SQ FT)	(SQ FT/SP)
P6 (+63'6")	580	4	1							585	187492	320
P5 (+52'0")	605	4	1							610	195492	320
P4 (+40'6")	565	4	1							570	192313	337
P3 (+29'0")	410	4	1	40	84	2	2	2		545	188741	346
P2 (+17'6")	374	7	4	46	85	5	3	1		525	189387	361
P2 (+0'0")	97	6	2							105	63966	609
	2631	29	10							2940	1017391	346
	<b>COACH</b>	<b>MINIBUS</b>	<b>TNC</b>									
TRANS HUB	23	20	166							209	128097	613
										3149	1145488	364

It is noted that the structure is designed to allow the demolition of the short leg of the L, east of the expansion joint, to allow redevelopment of the property fronting Prairie should parking demand significantly decline in the future due to autonomous vehicles. This would reduce the parking capacity by about 900 parking spaces, resulting in a supply of 2040 spaces.

There is space for storage/electrical/mechanical rooms shown under the ramp from Century. The EVCS spaces are stacked vertically on three floors to reduce electrical distribution cost, and also to provide spaces as close to the pedestrian portals as well as provide access from both sets of ramps.

Figure 5-4: West Structure Level 1

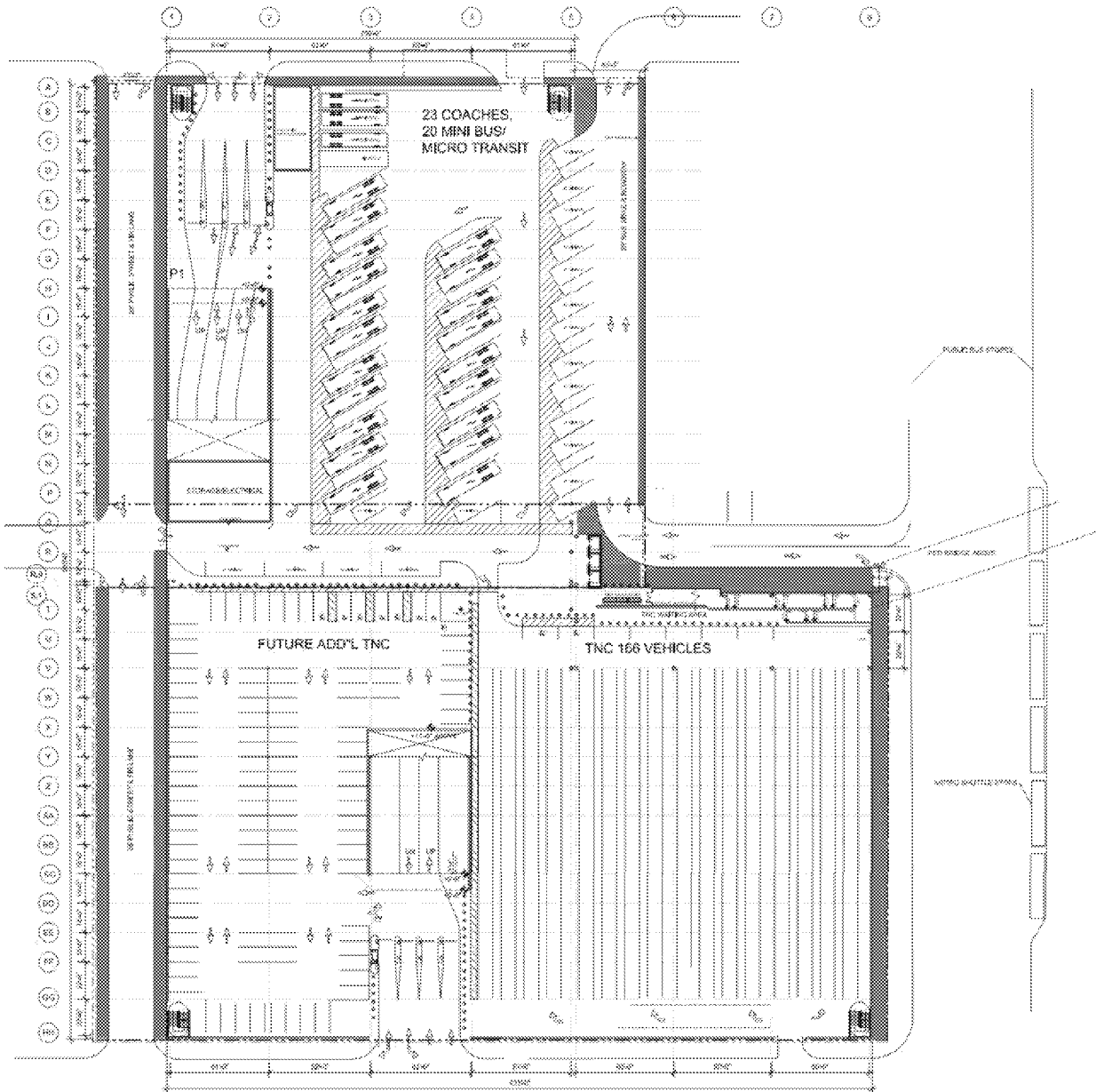


Figure 5-5: West Structure Level 2

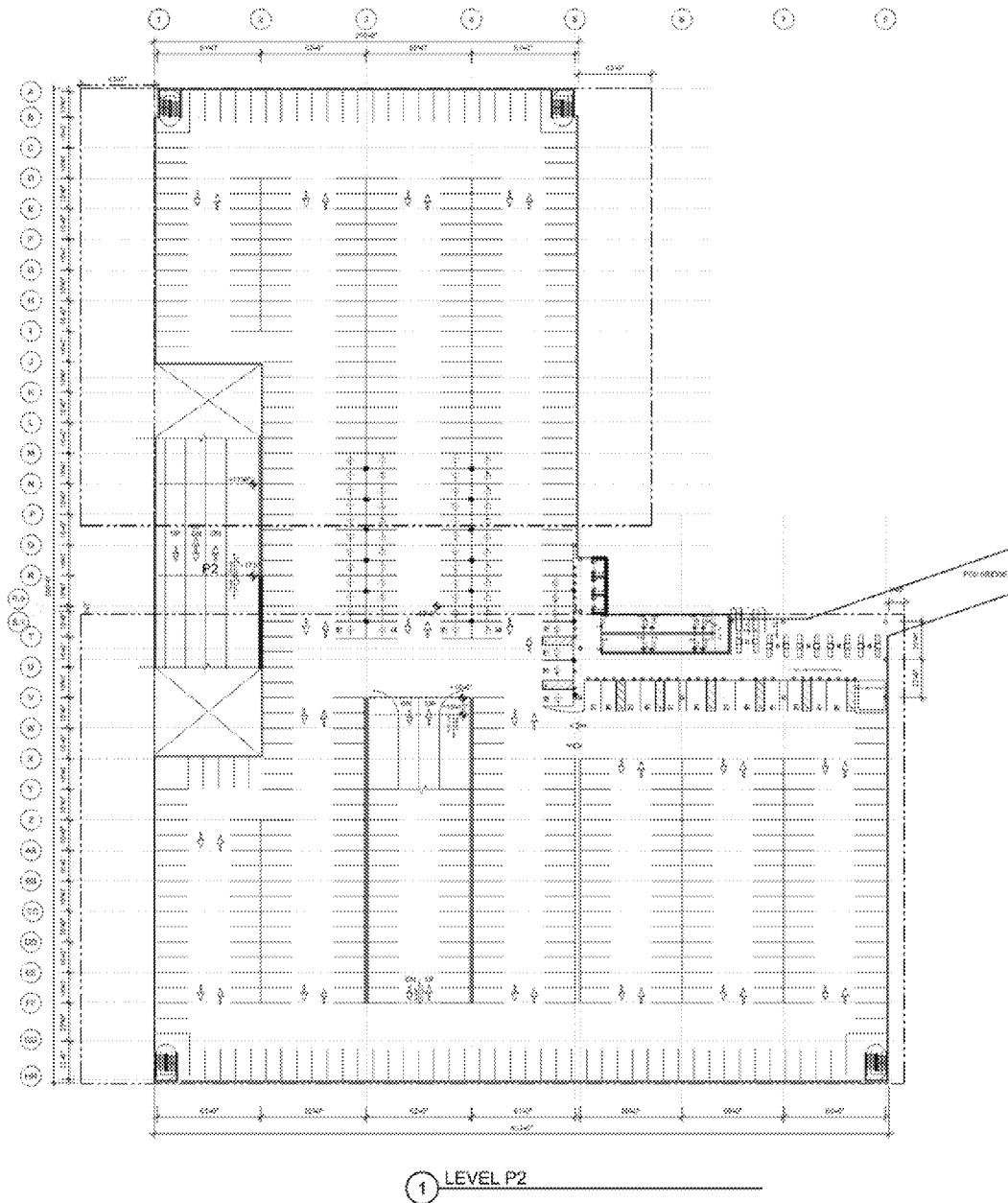


Figure 5-6: West Structure Level 3

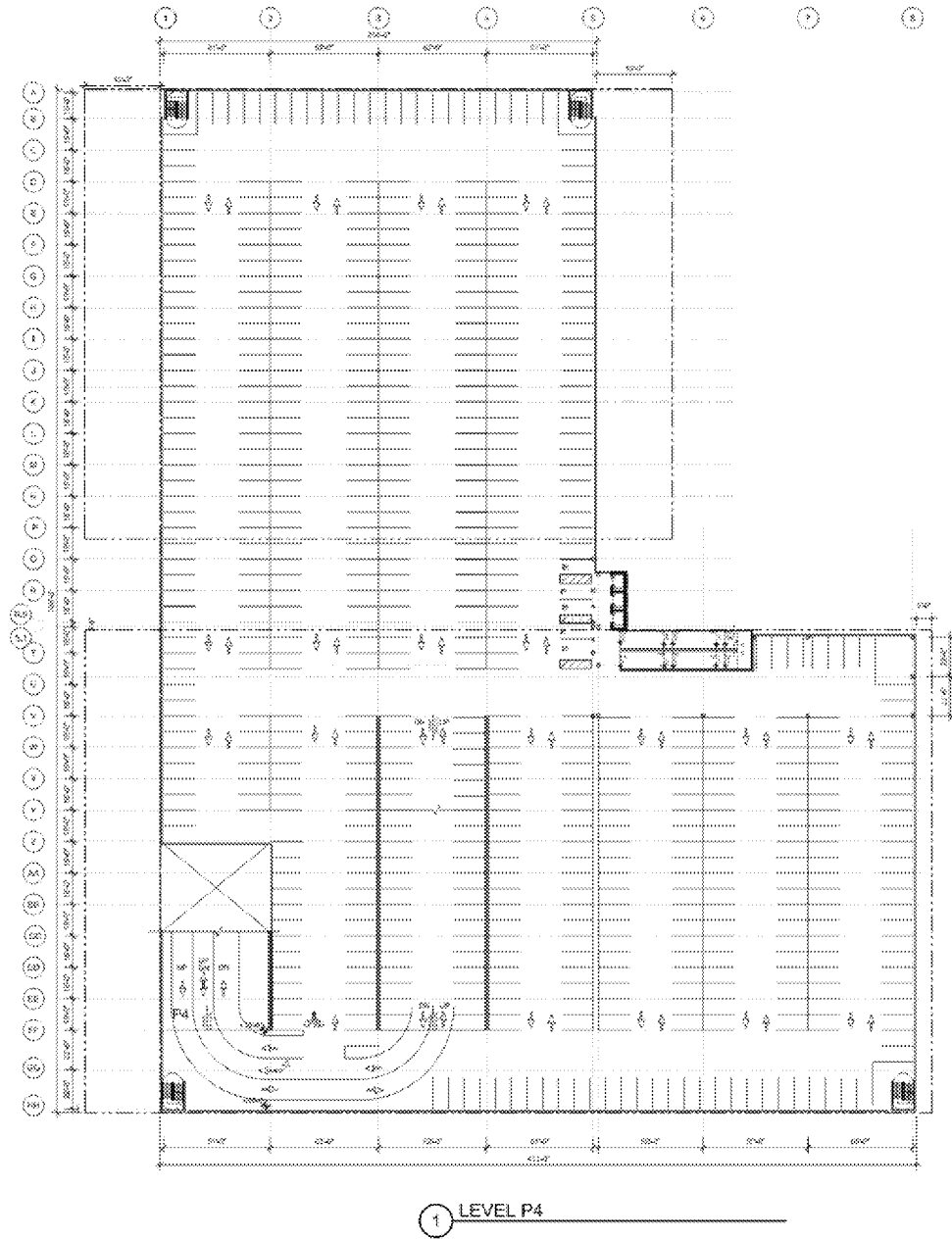
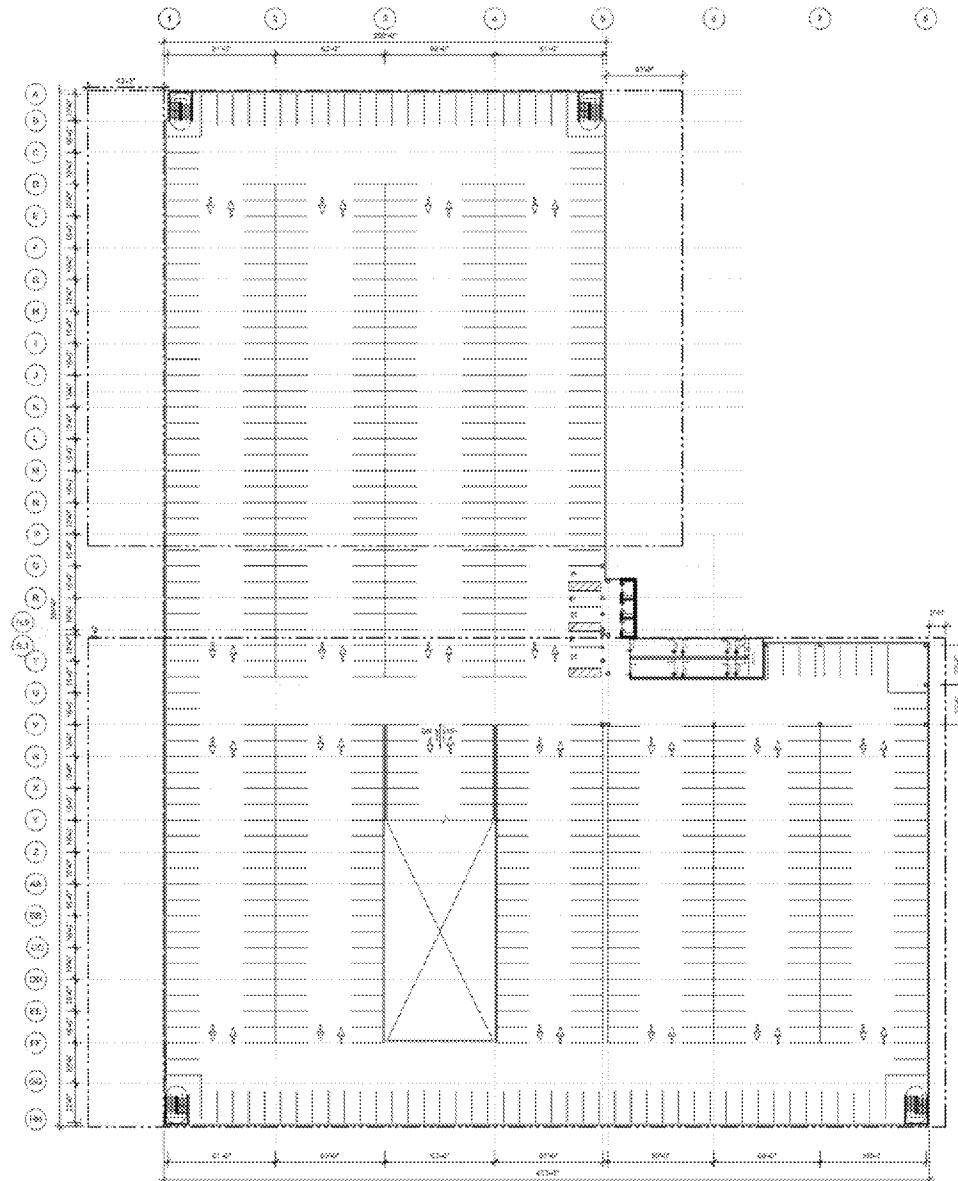


Figure 5-7: West Structure Level 6



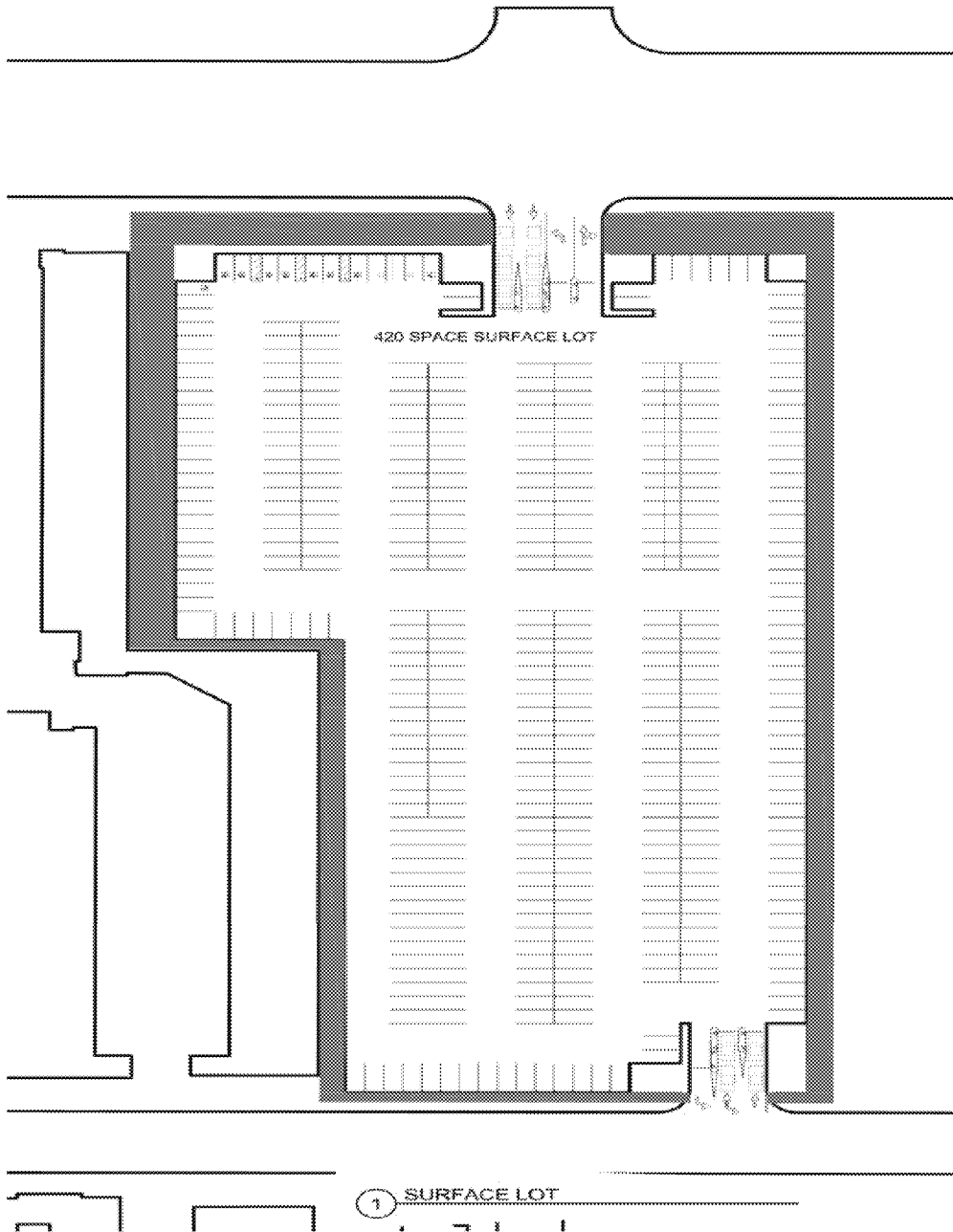
1 LEVEL P6

## **East Parking Lot**

This lot is located on property east of Doty between Century and 102<sup>nd</sup> St. A portion of the property to the east will be reserved for a hotel. The lot will have 420 spaces. The main entry/exit will be at the signalized intersection of the Casino and Century. A secondary entry/exit can be located on 102<sup>nd</sup> if desired. EVCS spaces will also be provided in this lot, with accessible parking meeting the California Building Code.



Figure 5-8: East Lot



## Flow Capacity Analysis

We employ standard traffic engineering theory, known as a queue analysis to determine how many lanes are required in at each location. Walker's queuing model projects two different things, the average queue and the "design queue". The design queue is the maximum queue projected in the peak hour with 95% confidence which means we are 95% confident, based on standard probability theory, that the queue will be the maximum ever experienced at the lane(s). Our Level of Service rating is based on the average wait, which in turn is based on the average queue in the peak hour. In each case, the "queue" is vehicles waiting in line at each lane and does not count the vehicle being serviced at the lane.

The steps in the process are:

- Determine peak hour volumes and distribution to lanes
- Determine processing rates for each user group and location
- Determine number of lanes required to meet the desired LOS.

The event volumes are based on our database and experience with arena event parking. For purposes of this analysis we assume 55% of the patron vehicles arrive in the peak hour before the event and 85% depart en masse following the event. These volumes are based on Walker's extensive experience and were confirmed by the Team's arena operational staff and consultants. The calculation of peak hour trips is shown below for reference. Note that TNC trips are not included in this analysis. Also, we did not include the Team spaces in the peak hour volumes as they will arrive earlier and depart later.

**Table 5-5: Parking Vehicle and Trip Calculations**

Location	% of Patrons	# of People	Persons per Vehicle	On-Site Capacity	Game Day Vehicle Volume -			
					Arriving to Event		Departing Event	
					55% in	out	in	85% out
East Parking - Surface Lot	5.7%	1,050	2.5	420 spaces	231	-	-	357
West Parking Structure	39.7%	7,350	2.5	2940 spaces	1,617	-	-	2,499
South Parking Team <sup>1</sup>				100 spaces	-			-
South Parking Structure	7.4%	1,375	2.5	550 spaces	303	-	-	468
<b>Subtotal</b>	<b>52.8%</b>	<b>9,775</b>		<b>4,010 spaces</b>	<b>2,151</b>	<b>-</b>	<b>-</b>	<b>3,324</b>

<sup>E</sup> We assumed that 60% of the users enter and exit at Century and 40% enter and exit from 102nd Street both for the West Structure (2940 spaces) and the East Lot (420 spaces.) There is only one entry to the South Structure for VIPs, all of which are presumed to be prepaid parkers.

For event parking we assumed pay-on-entry operation, with the gate left raised between transactions. Parkers are to be processed with hand-held event parking units, which accept credit cards and cash and have bar-code scanners for prepaid parkers. We ran two scenarios: an NBA game with 75% of the parkers having prepaid passes and 25% paying cash or credit, and a concert with 50% prepaid and 50% paying cash or credit. We initially ran the analysis with one lane dedicated for cash and credit and the remaining lanes dedicated for prepaid. However, for the final analysis, we used a blended processing rate for all lanes at each location due to the minimal queueing that occurs at all locations. This minimizes confusion by less frequent parkers.

Walker has researched and published processing rates for a wide variety of parking equipment used for control of access and to collect parking revenues for 30 years. Walker's rates are frequently quoted in industry publications. The following summarizes the queuing at entries. The gates are presumed to be raised after events, and the queuing is controlled by the traffic management team at the street. Therefore, queueing is not calculated for exit.

For the West Structure, four entry lanes at each location are more than adequate and provide LOS A with minimum queueing. For the concert with more cash/credit parkers, the design queue is 1 vehicle per lane, which means one vehicle queued in each of the four lanes, at Century PLUS the service position. There is one vehicle each in two of the four lanes at 102nd. The queueing at the West entries is slightly less for an NBA game with more prepaid parkers. At the South Parking Structure VIP parking and East Lot the queueing is negligible at all of the locations.

**Table 5-6: Queuing Analysis**

Location	Volume Vph	Entry				
		Lanes Rec'd	Des Q (V/Ln)	Avg Q (V/Ln)	Wait (Sec)	LOS
<b>Concert 6-7 PM</b>						
West Century	982	4	1.0	0.3	2.6	A
West 102nd	655	4	0.3	0.1	0.5	A
South 102nd	311	2	-	0.0	0.0	A
East Century	139	2	-	0.0	0.1	A
East 102nd	92	2	-	0.0	0.0	A
<b>NBA Game 6-7 PM</b>						
West Century	982	4	0.5	0.1	1.1	A
West 102nd	655	4	-	0.0	0.3	A
South 102nd	311	2	-	0.0	0.2	A
East Century	139	2	-	0.0	0.1	A
East 102nd	92	2	-	0.0	0.0	A

**Parking Equipment Assumptions**

**Processing Rate**

Pay on Entry: 20% cash, 80% credit    346 Vph/Ln    10.4 Sec/Trans  
 Bar Code Scan    435 Vph/Ln    8.3 Sec/Trans

Note: Gate up between transactions

**Notes**

1. Design queue is maximum queue expected in the peak hour and is used to design reservoir.
2. Average queue is converted to average delay and is used to determine Level of Service.

Average Wait	LOS
0 to 10 seconds	A
10 to 30 seconds	B
30 to 60 seconds	C
60 to 120 seconds	D

## Ramp Capacity

The most definitive methodology for analysis of parking ramp capacity is contained in two publications by the British Transport and Road Research Laboratory<sup>4</sup> ("TRRL"). In the text *Parking Structures*<sup>5</sup> the methodology has been adapted for US vehicle sizes as compared to the automobiles used in the British testing.

The analysis evaluates four different types of movements which affect the flow capacity. The number of vehicles parking on the primary path of travel from the entry to the farthest space on the roof, the entering vehicles which park on the flat floors off the ramps, the vehicles unparking from spaces on the ramps, and the vehicles that parked on flat floors that have to merge into the traffic on the ramps. We have evaluated these movements and then classified the congestion at critical points based on the percent of capacity used:

LOS A: <60% capacity used

LOS B: <70% used

LOS C: <80% used

LOS D: <90% used Not Recommended by Walker

LOS E: <100% used Not Recommended by Walker

We generally recommend that additional routes be added if the LOS falls below C. Below is the output of the analysis. All entering movements are LOS A, with less than 60% of the capacity used by the peak hour volumes. Our goal for Arenas is to have 85% of the capacity be able to exit in 30 +/- 5 minutes and presuming the streets serving the decks are free flow. The West Garage would be able exit in 34 minutes, and the South Garage in 20. More than likely, the management of the traffic on the streets after the events will result in longer exit times from these facilities. However, the internal design of the structures would allow exiting in +/-30 minutes. We did not evaluate exit times for either the Team Parking in the South Structure or the East Lot.

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<sup>4</sup> Ellson, P.B. *Parking: Dynamic Capacities of Car Parks* (1969) and *Parking: Turnover Capacities of Car Parks* (1984). Crowthorne, Berkshire, UK: Transportation and Road Research Laboratory.

<sup>5</sup> Chest et al, 2001. *Parking Structures: Planning, Design, Construction, Maintenance and Repair*, Third Edition. Norwell MA: Kluwer Academic Publishers.

**Table 5-7: Ramp Capacity and Exit Time Analysis**

	West Structure				South Structure	
	Express ramp		Express Ramp		Half Helix	
	2 lanes		1 lane		102nd	
	Century		102nd		102nd	
	v/c	LOS	v/c	LOS	v/c	LOS
<b>Peak hour Before Event</b>						
Inbound Lane	48%	A	51%	A	29%	A
<b>85% Capacity Exit Time</b>	32 minutes		34 minutes		20 minutes	

**Notes**

1. Analysis is based on methodology adapted by per *Parking Structures* Third Edition
2. Level of service is based on percent of capacity "used" (v/c) by the expected traffic volume at the critical points.

v/c	LOS
<60%	A
<70%	B
<80%	C
<90%	D Not recommended by Walker
>90%	E Not recommended by Walker