



August 7, 2024
Revised September 20, 2024

Dr. Phillip Rylands
The Society of the Four Arts
100 Four Arts Plaza
Palm Beach, Florida 33480

RE: ***Society of the Four Arts – Valet Queuing Statement
Palm Beach, Florida
Kimley-Horn #245350000***

Dear Dr. Rylands:

As requested, Kimley-Horn and Associates, Inc. has undertaken a review of valet queuing operations for the valet operations for the auditorium at the Society of the Four Arts campus in Palm Beach, Florida. Valet operation is currently provided for the Society of the Four Arts however, it is only used during events. The following letter summarizes the evaluation undertaken.

Valet Demand Determination

As the first step in the evaluation, a demand determination was undertaken to quantify anticipated need for valet service at the site. This determination was conducted assuming a peak event condition, in which the auditorium would be at full capacity. With the redevelopment plan on site, the auditorium will have 656 fixed seats. The Town of Palm Beach Parking Code assumes 1 parking space per four seats; therefore, it is assumed that 164 vehicles would be staged on site for an event. This analysis assumes that 50% of the patron vehicles would utilize the valet, while the other 50% would self-park. Therefore, for purposes of this evaluation, it was assumed that 82 patron vehicles would use the valet stand.

Valet Queuing Calculations

The valet stand and the pick-up/drop-off area is provided on the north side of the auditorium. This pick-up/drop-off area includes a total of four spaces to accommodate vehicles for valet operations. The location of the valet stand and the four spaces are shown in Figures 3 and 4.

Two sets of analyses have been conducted:

- (1) Length of queue determination at the valet stand, to determine number of vehicle queuing positions needed at the valet stand
- (2) Valet attendant service times, to determine number of valet attendants needed at the valet stand

Following is a summary of the calculations undertaken.

Valet stand queue lengths:

At the valet stand itself, 30 seconds is assumed to be a typical time for “handover” of the vehicle between an arriving patron and valet or the valet and the departing patron. However, to add a buffer for the purposes of calculation, this has been assumed to be 60 seconds in the analysis of the valet stand queue lengths below. Following is a summary of the calculations undertaken:

Highest peak hour: 82 vph, calculated as follows:

Assumed average vehicle dwell time for passenger loading/unloading: 60 seconds / vehicle

Assumed number of valet unloading/loading positions at stand at all times: 3 positions*

**Note: multiple additional valet attendants will be present during a peak event. The value in this calculation assumed there will be a minimum of 3 attendants physically present at the stand when any vehicle arrives or is departing, and therefore three loading/unloading positions available. Other staff members will be retrieving and/or parking vehicles simultaneously.*

Calculations are provided in the attached Table A -1. As noted in that table, the 95th percentile valet queue calculation was 2.858 vehicles, which would require a minimum of 3 valet positions. As shown, the stand provides 4 valet positions.

Valet attendant service times:

Calculations were also undertaken to outline the valet attendant service times, in order to determine the number of valet staff needed at the site. Following is a summary of the parameters undertaken for this analysis:

Customer Arrival/Valet Park

Vehicle Route: Customer arrives at valet stand. Customer exits vehicle, valet attendant takes vehicle and proceeds east. Attendant parks the vehicle in either the stabilized grass surface in the center median or the paved parking lot on the north side of the site. For the purposes of this measurement, the furthest provided parking stall was assumed. ***Total distance: approximately 760 feet.***

Valet Attendant route: Valet attendant proceeds from the parking stall on foot back to the valet stand. ***Total distance on foot: approximately 250 feet.***

Vehicular driving assumption: 14.67 feet/second (10 MPH)

Valet walking/jogging assumption: 4.5 feet/second

Calculation:

60 sec vehicle handoff + (760 feet / 14.67 feet/sec) + (250 feet / 4.5 feet/sec) = **2 min, 47 sec**

Maximum number of vehicles serviced by 1 attendant per hour: **21 vehicles**

Customer Departure/Valet Park

The same route would be followed in reverse, and it is assumed that the distances involved would be similar. Therefore, the departing calculations will be similar.

Given the following assumptions:

(82 vehicles to be serviced / 21 vehicles serviced per attendant) + 3 attendants consistently at stand = minimum of 7 attendants

Therefore, a minimum of 7 attendants solely dedicated to parking vehicles are anticipated to be needed during the peak hours before and after an event on campus. Additional attendants may be needed to manage the stand itself and/or to help manage traffic flow.

Figure 1 illustrates the route for patron arrival, and Figure 2 illustrates the route for patron departure.

Please contact me via telephone at (561) 840-0248 or via e-mail at chris.heggen@kimley-horn.com should you have any questions regarding this evaluation.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.



Christopher W. Heggen, P.E.
Transportation Engineer

Attachments

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TABLE A-1

Valet Queuing Analysis
Valet Lane - Inbound or Outbound

Assumptions:

Service Rate = 1.0 minute per vehicle (time dwelling at stand)

Volume = 82 veh/hr

Valet attendants = 3

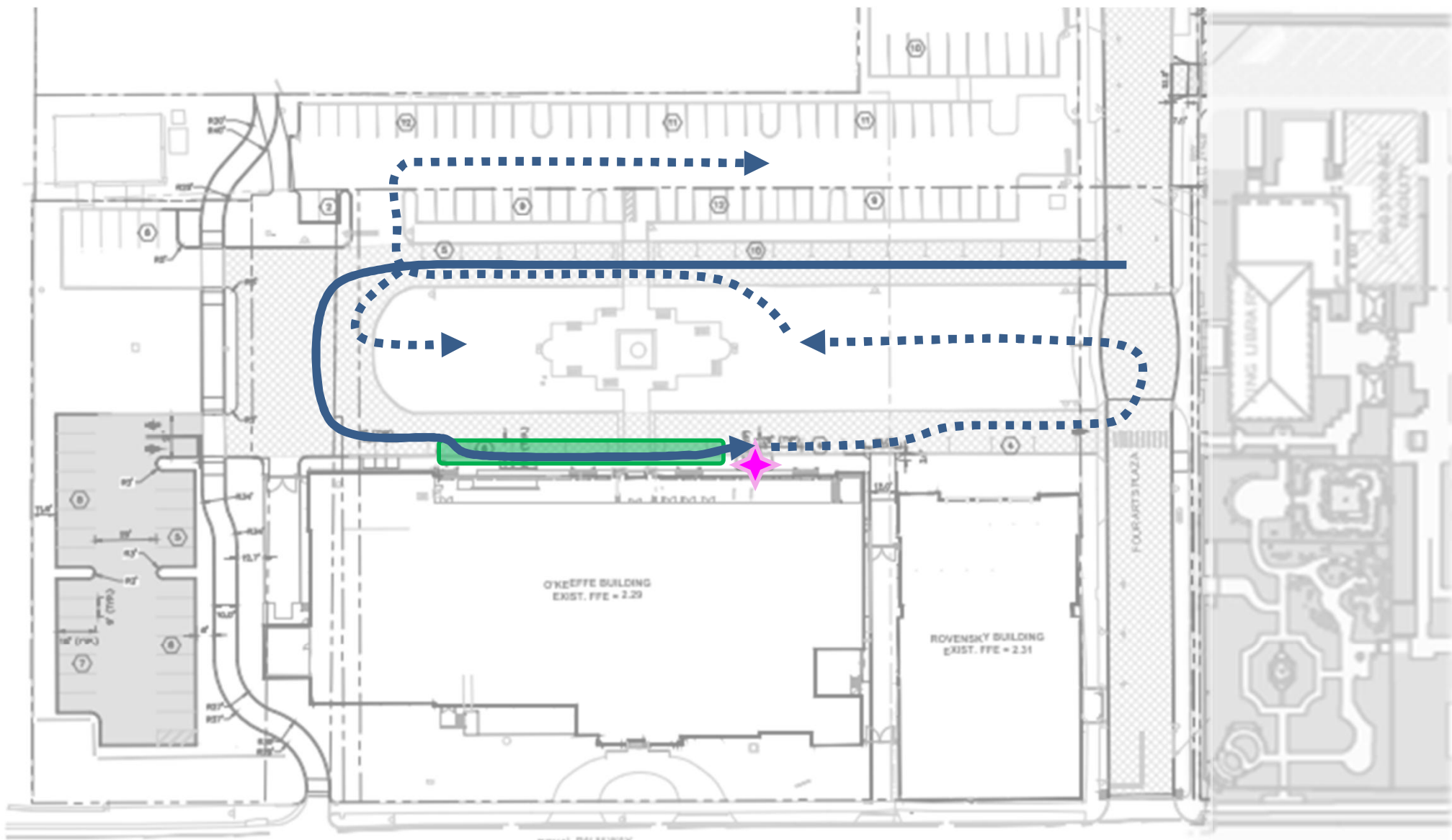
Probability of the queue occurring 95% of the time

Calculations

$$Q = \frac{60 \text{ min/hr}}{(1.0 \text{ min/veh} / 3 \text{ attendants})} = 180 \text{ veh/hr}$$

$$\rho = \frac{82 \text{ veh/hr}}{180 \text{ veh/hr}} = 0.46$$

$$\text{Queue} = \left[\frac{\ln(0.05) - \ln(0.51)}{\ln(0.51)} \right] = 2.858 \text{ veh}$$



LEGEND



Valet stand



Valet Queuing Location



Patron Arrival – INBOUND route



Valet route (parking)



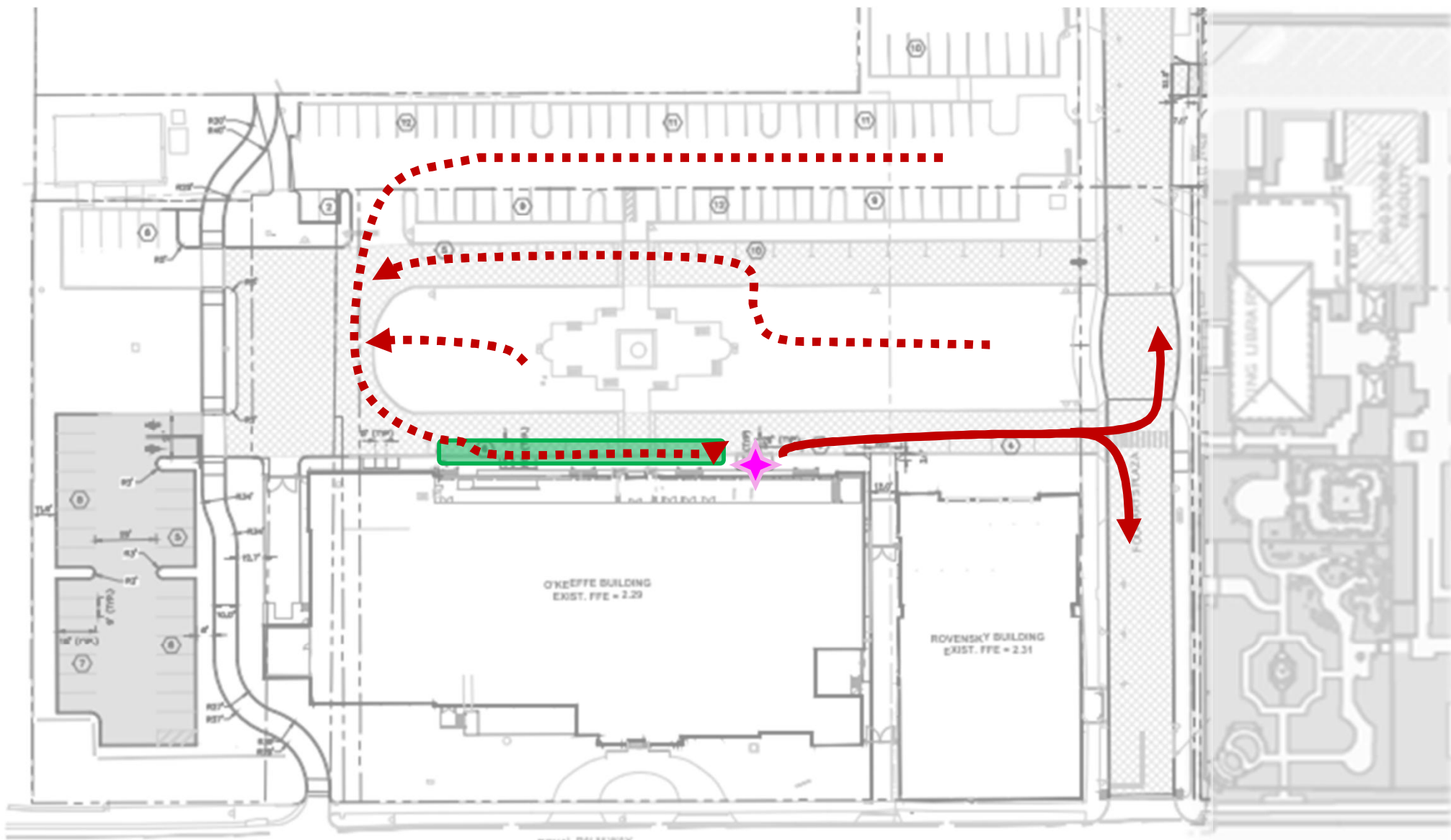
FIGURE 1

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Valet Parking (Inbound) Routes

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LEGEND



Valet stand



Valet Queuing Location



Patron Departure – OUTBOUND route



Valet route (retrieval)



FIGURE 2

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Valet Departure (Outbound) Routes

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