



April 1, 2020

Firat Akcay
City of Miami Beach
Transportation Department
1688 Meridian Avenue, Suite 801
Miami Beach, FL 33139

**Re: Lehrman Community Day School Improvement
Traffic Assessment**

Dear Mr. Akcay:

The purpose of this correspondence is to summarize the traffic assessment conducted for the proposed improvement of the Lehrman Community Day School located at 727 77th Street in Miami Beach, Florida. Currently, the existing school is permitted for an enrollment of 548 students. The proposed improvement includes the addition of a cafeteria, kitchen, and multi-purpose space and will not increase the school's enrollment. The improvement also includes access modifications that will allow student drop-off/pick-up operations to be completed internal to the site. A project location map and conceptual site plan are included in Attachment A. The following sections summarize data collection, vehicle queueing assessment, and maneuverability analysis.

ARRIVAL/DIMISSAL OPERATIONS

Lehrman Community Day School serves grades pre-kindergarten through grade 5. The school currently has two (2) arrival periods and two (2) dismissal periods. The first arrival period begins at 7:45 A.M. for kindergarten-5th grade students and the second arrival period begins at 8:00 A.M. for pre-kindergarten students. The first dismissal period begins at 3:00 P.M. for pre-kindergarten students and the second dismissal period begins at 3:30 P.M. for kindergarten-5th grade students. Note that dismissal periods begin 50 minutes earlier on Fridays.

The school currently provides one (1) ingress point along 77th Street and one (1) egress point along Tatum Waterway Drive. The school currently provides two drop-off/pick-up areas, one within the school parking lot accessed from 77th Street and utilized for pre-kindergarten student drop-off/pick-up operations, and one along 77th Street, west of Dickens Avenue, utilized for kindergarten-5th grade drop-off/pick-up operations. The existing school parking lot is currently the only vehicle accumulation space available within the site.

Vehicles utilizing the pre-kindergarten drop-off/pick-up area currently queue within the site and extend on to 77th Street. Vehicles utilizing the drop-off/pick-up area along 77th Street currently queue east of the drop-off/pick-up point along 77th Street and southbound along Dickens Avenue.

The improvement proposes to eliminate both existing drop-off/pick-up areas and include one (1) drop-off/pick-up area within the site. The on-site drop-off/pick-up area will allow for stacking of up to nine (9)

vehicles within the site. Furthermore, to improve site circulation, the improvement also includes the addition of a second driveway along 77th Street and a second driveway along Tatum Waterway Driveway.

ACCUMULATION ASSESSMENT

Existing vehicle queuing data was collected during arrival (7:00 AM to 9:15 AM) and dismissal (1:15 PM to 4:00) periods on Thursday, February 6, 2020. Vehicle queuing data was collected in one (1) minute intervals. Furthermore, existing processing times were determined during on-site field observations at the existing student drop-off/pick-up areas. Detailed accumulation data is included in Attachment B.

As the data indicates, the maximum observed accumulation during the drop-off period for the pre-kindergarten students was 12 vehicles and the maximum observed accumulation during the drop-off period for the kindergarten-5th grade students was 5 vehicles. During the pick-up period, the maximum observed accumulation for the pre-kindergarten students was 13 vehicles and the maximum observed accumulation for the kindergarten-5th grade students was 4 vehicles.

As the school implements staggered arrival and dismissal times for pre-kindergarten and kindergarten-5th grade students, the proposed improvement will accommodate or reduce the off-site vehicle queues as summarized in Table 1.

Table 1: Current and Expected Off-Site Vehicle Queues				
Grade Level	Drop-Off Queues		Pick-Up Queues	
	Current Site Plan	Proposed Site Plan	Current Site Plan	Proposed Site Plan
Pre-Kindergarten	12	3	13	4
Kindergarten-5 th Grade	5	0	4	0

MANEUVERABILITY ANALYSIS

A maneuverability analysis for the proposed student drop-off/pick-up area was performed utilizing Transoft Solutions' *AutoTURN* software. The analysis demonstrates that all required maneuvers can be accommodated within the proposed site. Furthermore, as the improvement proposes to relocate the school's loading area to the northern boundary of the site, a maneuverability analysis was also prepared using delivery trucks (SU-30).

Detailed maneuverability analysis exhibits are included in Attachment C.

CONCLUSION

A traffic assessment was conducted for the proposed improvement of the Lehrman Community Day School. Along with the addition of a cafeteria, kitchen, and multi-purpose space, the proposed improvement also includes access modifications that will allow student drop-off/pick-up operations to

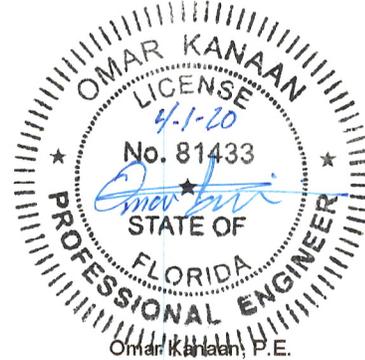
be completed internal to the site. Vehicle queuing data was collected in order to quantify the benefit of the proposed internal student drop-off/pick-up area which will reduce the number of vehicles currently queuing along 77th Street and Dickens Avenue. The assessment determined that the proposed improvement will reduce the off-site vehicle queues for pre-kindergarten drop-off/pick-up operations from 13 vehicles to four (4) vehicles. Furthermore, the proposed improvement will accommodate all expected vehicle queues associated with kindergarten-5th grade drop-off/pick-up operations on-site.

Sincerely,
KIMLEY-HORN AND ASSOCIATES, INC.



Omar Kannan, P.E.

Attachments



Omar Kannan, P.E.
Florida Registration Number 81433
Kimley-Horn and Associates, Inc.
600 North Pine Island Road, Suite 450
Plantation, Florida 33324
Registry 00000696

K:\FTL_TPTO\143137000 - Lehman School Expansion\Correspondence\Letter\04 01 20 accumulation assesment ltr.docx

Attachment A

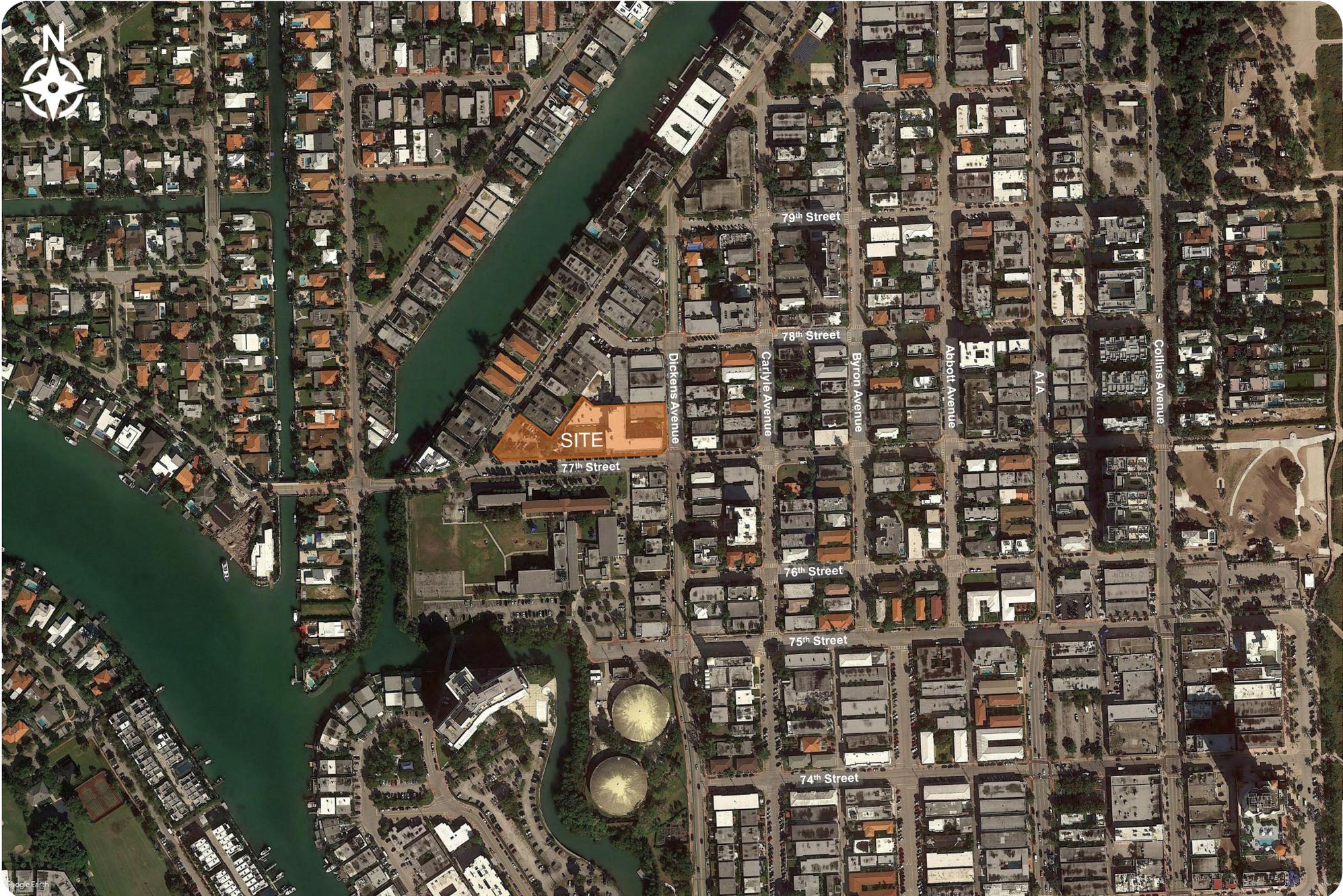
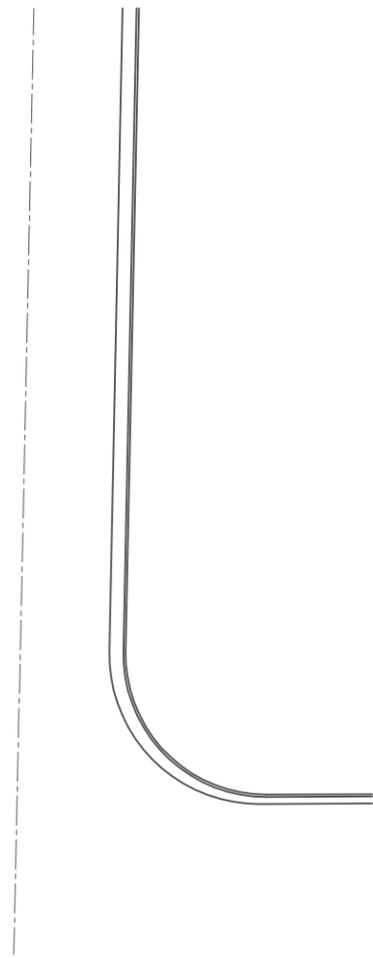
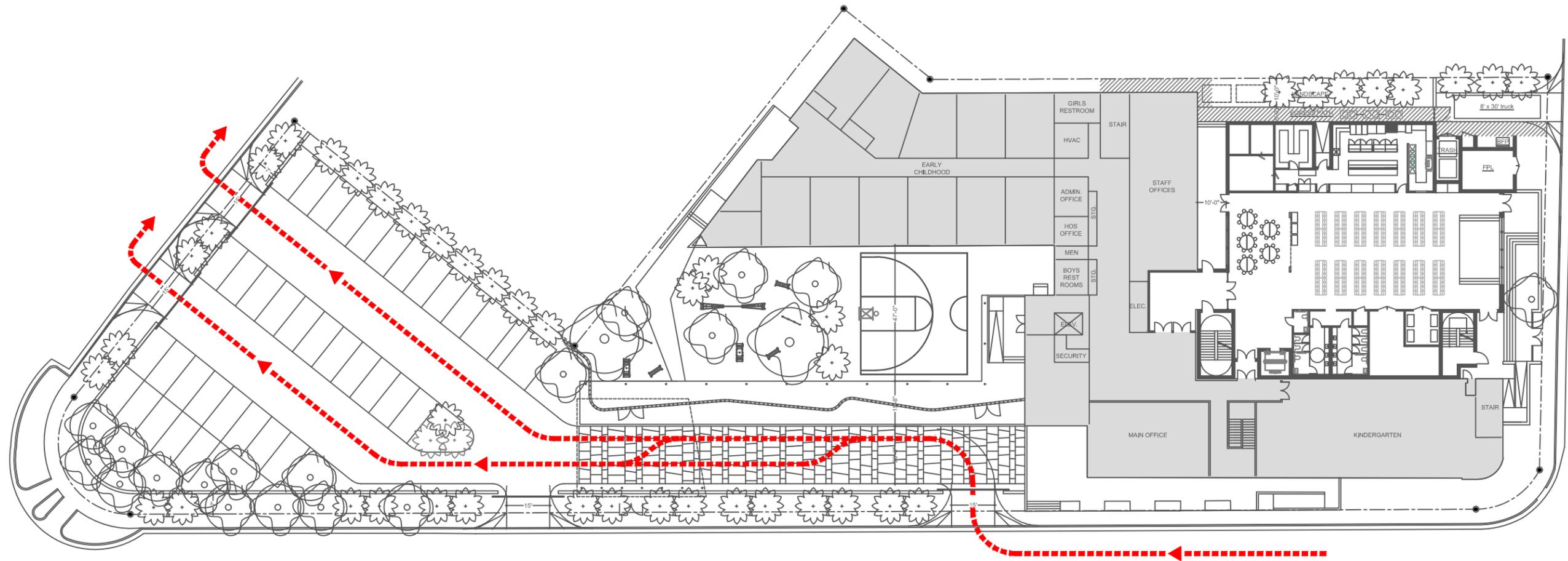
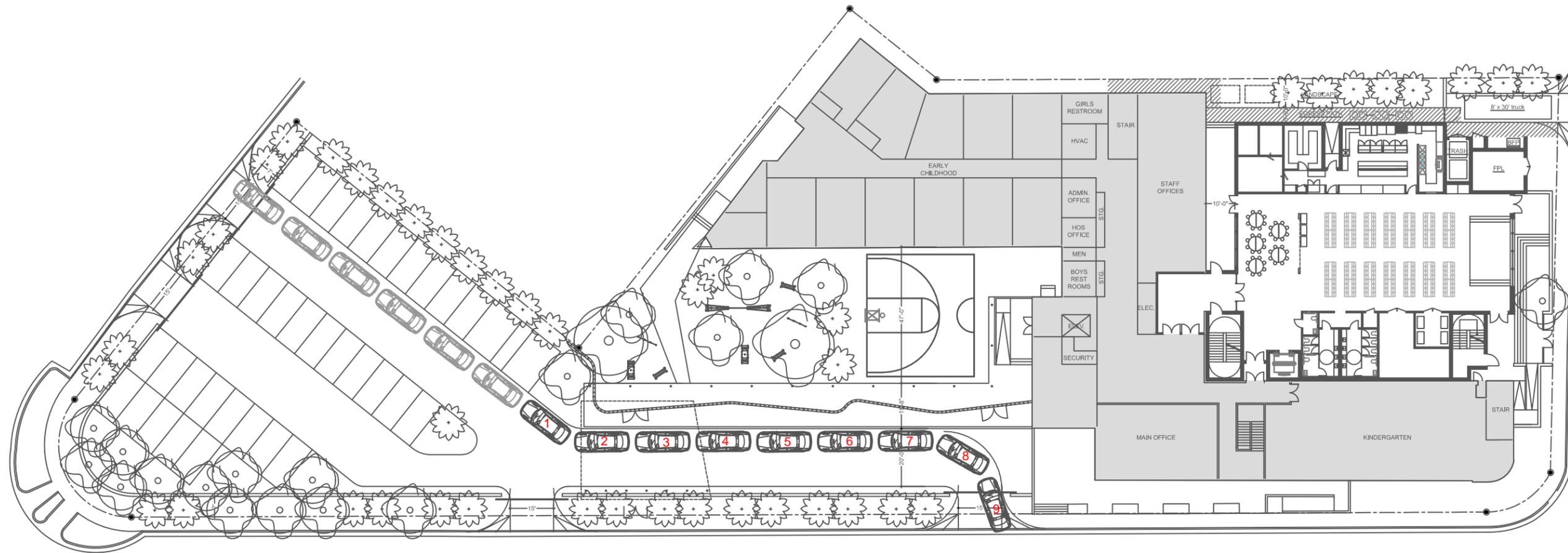


Figure 1
Location Map
Lehrman Community Day School Expansion
Miami Beach, Florida





Legend:

-  Proposed Stacking
-  Additional Stacking

Attachment B

Table 1: Arrival Period Queues (7:00 AM - 9:15 AM)							
START	Drop-Off 1						Total Drop Off Queue
	QUEUE 001	QUEUE 002	QUEUE 003	Total Drop Off 1	QUEUE 005	Total Drop Off 2	
7:00	0	0	0	0	0	0	0
7:01	0	0	0	0	0	0	0
7:02	0	0	0	0	0	0	0
7:03	0	0	0	0	0	0	0
7:04	0	0	0	0	0	0	0
7:05	0	0	0	0	0	0	0
7:06	0	0	0	0	0	0	0
7:07	0	0	0	0	0	0	0
7:08	0	0	0	0	0	0	0
7:09	0	0	0	0	0	0	0
7:10	0	0	0	0	0	0	0
7:11	0	0	0	0	0	0	0
7:12	0	0	0	0	0	0	0
7:13	0	0	0	0	0	0	0
7:14	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0
7:16	0	0	0	0	0	0	0
7:17	0	0	0	0	0	0	0
7:18	0	0	0	0	0	0	0
7:19	0	0	0	0	0	0	0
7:20	0	0	0	0	0	0	0
7:21	0	0	0	0	0	0	0
7:22	0	0	0	0	0	0	0
7:23	0	0	0	0	0	0	0
7:24	0	0	0	0	0	0	0
7:25	0	0	0	0	0	0	0
7:26	0	0	0	0	0	0	0
7:27	0	0	0	0	0	0	0
7:28	0	0	0	0	0	0	0
7:29	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0
7:31	0	0	0	0	0	0	0
7:32	0	0	0	0	0	0	0
7:33	0	0	0	0	0	0	0
7:34	0	0	0	0	0	0	0
7:35	0	0	0	0	0	0	0
7:36	0	0	0	0	0	0	0
7:37	0	0	0	0	0	0	0
7:38	0	0	0	0	0	0	0
7:39	0	0	0	0	0	0	0
7:40	0	0	0	0	0	0	0
7:41	0	0	0	0	0	0	0
7:42	1	0	0	1	0	0	1
7:43	1	0	0	1	0	0	1
7:44	1	0	0	1	0	0	1
7:45	1	0	0	1	0	0	1
7:46	0	0	0	0	0	0	0
7:47	0	0	0	0	0	0	0
7:48	1	0	0	1	0	0	1
7:49	4	0	0	4	0	0	4
7:50	2	0	0	2	0	0	2
7:51	0	0	0	0	0	0	0
7:52	0	0	0	0	0	0	0
7:53	1	0	0	1	0	0	1
7:54	0	0	0	0	0	0	0
7:55	0	0	0	0	0	0	0
7:56	3	0	0	3	0	0	3
7:57	0	0	0	0	4	4	4
7:58	0	0	0	0	3	3	3
7:59	0	0	0	0	2	2	2
8:00	2	0	0	2	0	0	2
8:01	4	0	0	4	0	0	4
8:02	3	0	0	3	0	0	3
8:03	1	0	0	1	0	0	1
8:04	5	1	2	8	0	0	8
8:05	5	0	0	5	4	4	9
8:06	2	0	0	2	4	4	6
8:07	0	0	2	2	2	2	4
8:08	6	0	0	6	0	0	6
8:09	6	0	0	6	0	0	6
8:10	4	0	0	4	4	4	8
8:11	3	0	0	3	4	4	7
8:12	5	1	0	6	5	5	11
8:13	4	0	6	10	0	0	10
8:14	6	2	4	12	0	0	12
8:15	5	0	3	8	0	0	8
8:16	4	0	0	4	0	0	4
8:17	6	0	0	6	0	0	6
8:18	3	0	0	3	0	0	3
8:19	3	0	0	3	0	0	3
8:20	5	0	0	5	0	0	5
8:21	2	0	0	2	0	0	2
8:22	4	0	0	4	0	0	4
8:23	2	0	0	2	0	0	2
8:24	2	0	0	2	0	0	2
8:25	0	0	0	0	0	0	0
8:26	0	0	0	0	0	0	0
8:27	0	0	0	0	0	0	0
8:28	2	0	0	2	0	0	2
8:29	3	0	0	3	4	4	7
8:30	4	2	1	7	3	3	10
8:31	4	0	0	4	4	4	8
8:32	4	0	0	4	2	2	6
8:33	4	0	0	4	2	2	6
8:34	5	0	0	5	2	2	7
8:35	3	0	0	3	0	0	3
8:36	1	0	0	1	0	0	1
8:37	3	0	0	3	0	0	3
8:38	0	0	0	0	0	0	0
8:39	3	0	0	3	0	0	3

Table 2: Dismissal Period Queues (7:00 AM - 9:15 AM)							
START	Drop-Off 1						Total Drop Off Queue
	QUEUE 001	QUEUE 002	QUEUE 003	Total Drop Off 1	QUEUE 005	Total Drop Off 2	
13:15	0	0	0	0	0	0	0
13:16	0	0	0	0	0	0	0
13:17	0	0	0	0	0	0	0
13:18	0	0	0	0	0	0	0
13:19	0	0	0	0	0	0	0
13:20	0	0	0	0	0	0	0
13:21	0	0	0	0	0	0	0
13:22	0	0	0	0	0	0	0
13:23	0	0	0	0	0	0	0
13:24	0	0	0	0	0	0	0
13:25	0	0	0	0	0	0	0
13:26	0	0	0	0	0	0	0
13:27	0	0	0	0	0	0	0
13:28	0	0	0	0	0	0	0
13:29	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0
13:31	0	0	0	0	0	0	0
13:32	0	0	0	0	0	0	0
13:33	0	0	0	0	0	0	0
13:34	0	0	0	0	0	0	0
13:35	0	0	0	0	0	0	0
13:36	0	0	0	0	0	0	0
13:37	0	0	0	0	0	0	0
13:38	0	0	0	0	0	0	0
13:39	0	0	0	0	0	0	0
13:40	0	0	0	0	0	0	0
13:41	0	0	0	0	0	0	0
13:42	0	0	0	0	0	0	0
13:43	0	0	0	0	0	0	0
13:44	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0
13:46	0	0	0	0	0	0	0
13:47	0	0	0	0	0	0	0
13:48	0	0	0	0	0	0	0
13:49	0	0	0	0	0	0	0
13:50	0	0	0	0	0	0	0
13:51	0	0	0	0	0	0	0
13:52	0	0	0	0	0	0	0
13:53	0	0	0	0	0	0	0
13:54	0	0	0	0	0	0	0
13:55	0	0	0	0	0	0	0
13:56	0	0	0	0	0	0	0
13:57	0	0	0	0	0	0	0
13:58	0	0	0	0	0	0	0
13:59	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0
14:01	0	0	0	0	0	0	0
14:02	0	0	0	0	0	0	0
14:03	0	0	0	0	0	0	0
14:04	0	0	0	0	0	0	0
14:05	0	0	0	0	0	0	0
14:06	0	0	0	0	0	0	0
14:07	0	0	0	0	0	0	0
14:08	0	0	0	0	0	0	0
14:09	0	0	0	0	0	0	0
14:10	0	0	0	0	0	0	0
14:11	0	0	0	0	0	0	0
14:12	0	0	0	0	0	0	0
14:13	0	0	0	0	0	0	0
14:14	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0
14:16	0	0	0	0	0	0	0
14:17	0	0	0	0	0	0	0
14:18	0	0	0	0	0	0	0
14:19	0	0	0	0	0	0	0
14:20	0	0	0	0	0	0	0
14:21	0	0	0	0	0	0	0
14:22	0	0	0	0	0	0	0
14:23	0	0	0	0	0	0	0
14:24	0	0	0	0	0	0	0
14:25	0	1	0	1	0	0	1
14:26	0	1	0	1	0	0	1
14:27	0	2	0	2	0	0	2
14:28	0	2	0	2	0	0	2
14:29	0	2	0	2	0	0	2
14:30	0	2	0	2	0	0	2
14:31	0	2	0	2	0	0	2
14:32	0	2	0	2	0	0	2
14:33	3	0	0	3	0	0	3
14:34	3	0	0	3	0	0	3
14:35	3	0	0	3	0	0	3
14:36	4	0	0	4	0	0	4
14:37	4	0	0	4	0	0	4
14:38	4	0	0	4	0	0	4
14:39	4	0	0	4	0	0	4
14:40	4	0	0	4	0	0	4
14:41	5	0	0	5	0	0	5
14:42	5	0	0	5	0	0	5
14:43	6	0	0	6	0	0	6
14:44	6	0	0	6	0	0	6
14:45	6	0	0	6	0	0	6
14:46	7	0	0	7	0	0	7
14:47	7	1	0	8	0	0	8
14:48	7	2	0	9	2	2	11
14:49	7	4	0	11	1	1	12
14:50	7	4	0	11	2	2	13
14:51	7	5	0	12	0	0	12
14:52	7	5	0	12	0	0	12
14:53	7	5	0	12	0	0	12
14:54	7	5	0	12	0	0	12

Table 1: Arrival Period Queues (7:00 AM - 9:15 AM)							
START	Drop-Off 1						Total Drop Off Queue
	QUEUE 001	QUEUE 002	QUEUE 003	Total Drop Off 1	QUEUE 005	Total Drop Off 2	
8:40	2	0	1	3	0	0	3
8:41	5	0	0	5	0	0	5
8:42	4	0	0	4	0	0	4
8:43	4	1	0	5	2	2	7
8:44	2	0	0	2	2	2	4
8:45	0	0	0	0	0	0	0
8:46	1	0	0	1	0	0	1
8:47	3	0	0	3	0	0	3
8:48	0	0	0	0	0	0	0
8:49	0	0	0	0	0	0	0
8:50	0	0	0	0	0	0	0
8:51	0	0	0	0	0	0	0
8:52	0	0	0	0	0	0	0
8:53	0	0	0	0	0	0	0
8:54	0	0	0	0	0	0	0
8:55	0	0	0	0	0	0	0
8:56	0	0	0	0	0	0	0
8:57	0	0	0	0	0	0	0
8:58	0	0	0	0	0	0	0
8:59	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0
9:01	0	0	0	0	0	0	0
9:02	0	0	0	0	0	0	0
9:03	0	0	0	0	0	0	0
9:04	0	0	0	0	0	0	0
9:05	0	0	0	0	0	0	0
9:06	0	0	0	0	0	0	0
9:07	0	0	0	0	0	0	0
9:08	0	0	0	0	0	0	0
9:09	0	0	0	0	0	0	0
9:10	0	0	0	0	0	0	0
9:11	0	0	0	0	0	0	0
9:12	0	0	0	0	0	0	0
9:13	0	0	0	0	0	0	0
9:14	0	0	0	0	0	0	0
9:15	0	0	0	0	0	0	0

Table 2: Dismissal Period Queues (7:00 AM - 9:15 AM)							
START	Drop-Off 1						Total Drop Off Queue
	QUEUE 001	QUEUE 002	QUEUE 003	Total Drop Off 1	QUEUE 005	Total Drop Off 2	
14:55	7	6	0	13	0	0	13
14:56	7	6	0	13	0	0	13
14:57	7	6	0	13	0	0	13
14:58	7	5	0	12	0	0	12
14:59	7	6	0	13	0	0	13
15:00	7	4	0	11	2	2	13
15:01	7	3	0	10	2	2	12
15:02	7	2	0	9	2	2	11
15:03	7	3	0	10	1	1	11
15:04	4	0	0	4	0	0	4
15:05	4	0	0	4	0	0	4
15:06	7	0	0	7	3	3	10
15:07	7	0	0	7	2	2	9
15:08	2	0	0	2	0	0	2
15:09	5	0	0	5	0	0	5
15:10	7	2	0	9	0	0	9
15:11	6	2	0	8	0	0	8
15:12	3	0	0	3	0	0	3
15:13	3	0	0	3	4	4	7
15:14	4	0	0	4	2	2	6
15:15	3	0	0	3	4	4	7
15:16	2	0	0	2	0	0	2
15:17	2	0	0	2	0	0	2
15:18	2	0	0	2	3	3	5
15:19	1	0	0	1	2	2	3
15:20	1	0	0	1	2	2	3
15:21	0	0	0	0	0	0	0
15:22	0	0	0	0	0	0	0
15:23	0	0	0	0	0	0	0
15:24	0	0	0	0	0	0	0
15:25	0	0	0	0	0	0	0
15:26	0	0	0	0	0	0	0
15:27	0	0	0	0	0	0	0
15:28	0	0	0	0	0	0	0
15:29	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0
15:31	0	0	0	0	0	0	0
15:32	0	0	0	0	1	1	1
15:33	0	0	0	0	2	2	2
15:34	0	0	0	0	0	0	0
15:35	0	0	0	0	3	3	3
15:36	0	0	0	0	3	3	3
15:37	0	0	0	0	1	1	1
15:38	0	0	0	0	1	1	1
15:39	0	0	0	0	0	0	0
15:40	0	0	0	0	0	0	0
15:41	0	0	0	0	2	2	2
15:42	0	0	0	0	0	0	0
15:43	0	0	0	0	0	0	0
15:44	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0
15:46	0	0	0	0	0	0	0
15:47	0	0	0	0	0	0	0
15:48	0	0	0	0	0	0	0
15:49	0	0	0	0	0	0	0
15:50	0	0	0	0	0	0	0
15:51	0	0	0	0	0	0	0
15:52	0	0	0	0	0	0	0
15:53	0	0	0	0	0	0	0
15:54	0	0	0	0	0	0	0
15:55	0	0	0	0	0	0	0
15:56	0	0	0	0	0	0	0
15:57	0	0	0	0	0	0	0
15:58	0	0	0	0	0	0	0
15:59	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0

Attachment C

