McDonough & Rea Associates, Inc.

Traffic and Transportation Consulting

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April 16, 2021

Delaware Township Board of Adjustment
570 Rosemont Ringoes Road
PO Box 500
Sergeantsville, NJ 08557

Re: Traffic Impact Study
Proposed Tennis Training Center
30 Sandy Ridge Road
Block 55, Lot 2
Delaware Township, Hunterdon County, NJ
MRA File No. 21-166

Dear Board Members:

McDonough & Rea Associates (MRA) has prepared this *Traffic Impact Study* pursuant to plans prepared by Frey Engineering for a proposed tennis training center on the noted property. The indoor tennis training center will be housed in a 16,800 SF building with a two-way access driveway to Sandy Ridge Road and a parking lot containing 45 parking spaces. The approximate location of the subject property is shown in Figure 1, Site Location Map (attached).

SCOPE OF STUDY

In order to prepare this traffic study, MRA completed the following tasks:

1. A site visit and field investigation in order to establish existing roadway and traffic conditions in the area.

2. Preparation of estimates of traffic to be generated by the tennis training center during site and roadway peak hours.

3. Analysis of the on-site traffic circulation pattern and parking supply to confirm that it is adequate to support the traffic and parking demand generated at the site.

Please reply to:
❑ **1431 Lakewood Road, Suite C, Manasquan, NJ 08736 • (732) 528-7076 • Fax (732) 528-6673**
■ **105 Elm Street, Lower Level, Westfield, NJ 07090 • (908) 789-7180 • Fax (908) 789-7181**

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The following report sets forth our analysis of the traffic impact of the proposed tennis training center.

EXISTING TRAFFIC CONDITIONS & SITE ACCESS

The subject property will be accessed by a 24-foot-wide two-way driveway connection to Sandy Ridge Road, just east of Route 523. Sandy Ridge Road is approximately 20 feet wide and is a two lane local roadway with a single travel lane and gravel shoulder in each direction with a posted speed limit of 35 miles per hour in the vicinity of the site. Sandy Ridge Road runs from southwest to northeast and provides access to higher order County roadways on either end (Route 523 to the southwest and Rosemont Ringoes Road to the northeast).

PROPOSED OPERATION OF TENNIS TRAINING CENTER

As an indoor facility, the peak season for this use will be November to March when players need to be indoors. The applicant has prepared a color coded chart showing the typical weekly schedule during peak season for a single indoor tennis court (see Appendix). The maximum traffic impact of this use can be predicted based on analysis of the times when the facility will be busiest during peak season, as follows:

- The tennis training center will be open 7 days a week beginning at 8:00 AM each day.
- The weekday AM peak hour traffic impact will occur between 7:45 and 8:00 AM with vehicle arrivals generated by a maximum of 6 adults and 1 instructor per court (14 entering trips).
- The maximum use of each court will occur on weekday and Saturday afternoons during junior classes when 8 students and 1 instructor could occupy each court.
- There will be back-to-back junior classes on Monday, Wednesday, Friday and Saturday with a 6 PM changeover between classes on weekdays and changeovers at 12 Noon, 2 PM and 4 PM on Saturdays.

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- The weekday PM and Saturday changeover periods will create the highest traffic and parking demand with potentially 8 vehicle arrivals and 8 vehicle departures per court.

SITE GENERATED TRAFFIC

Based on analysis of the maximum court usage data, it is expected that the proposed tennis training center will generate its maximum traffic impact on weekday evenings between 5:30 and 6:30 PM and on Saturday afternoons during the 12 noon, 2 PM and 4 PM changeover times, as summarized in Table 1.

TABLE 1
TRIP GENERATION
PROPOSED TENNIS TRAINING CENTER

WEEKDAY PM PEAK HOUR			SATURDAY PEAK HOUR		
ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
16	16	32	16	16	32

The site generated traffic derived from analysis of the tennis court scheduling data has been compared to industry standard data published by the Institute of Transportation Engineers (ITE) in the "Trip Generation" manual, 10th Edition under Land Use 491, Racquet/Tennis Club. The ITE data predicts that a 16,800 SF building will generate a total of 33 trips during the weekday PM peak hour (highest site peak hour), which is nearly identical to the trip generation pattern predicted by the tennis court scheduling data.

Based on the ITE publication "Transportation Impact Analysis for Site Development", "it is suggested that a transportation impact study be conducted whenever a proposed development will generate 100 or more added (new) trips during the adjacent roadways' peak hour or the development's peak hour." The site generated traffic volumes shown in Table 1 are well short of generating a significant impact to adjoining roadways, which demonstrates that the proposed site will not have a measurable impact on traffic conditions in Delaware Township.

In addition, this is a worst case trip generation scenario during peak changeover times because it does not account for classmates arriving and departing as part of a carpool or for parents who may stay on site, instead of leaving and returning.

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SITE PLAN AND PARKING

The site plan shows a 45 space parking lot with angled parking spaces and a one-way counterclockwise traffic circulation pattern that will promote efficient traffic flow during peak times of junior class changeover. The on-site traffic circulation pattern is simple and will be intuitive to drivers using the site. The maximum expected parking demand is 34 vehicles, which is based on 16 vehicles for each tennis court during the peak junior class changeover time plus two instructor vehicles. There will still be 11 extra parking spaces under this scenario so that site users will always be able to find a parking space when arriving at the site.

CONCLUSIONS

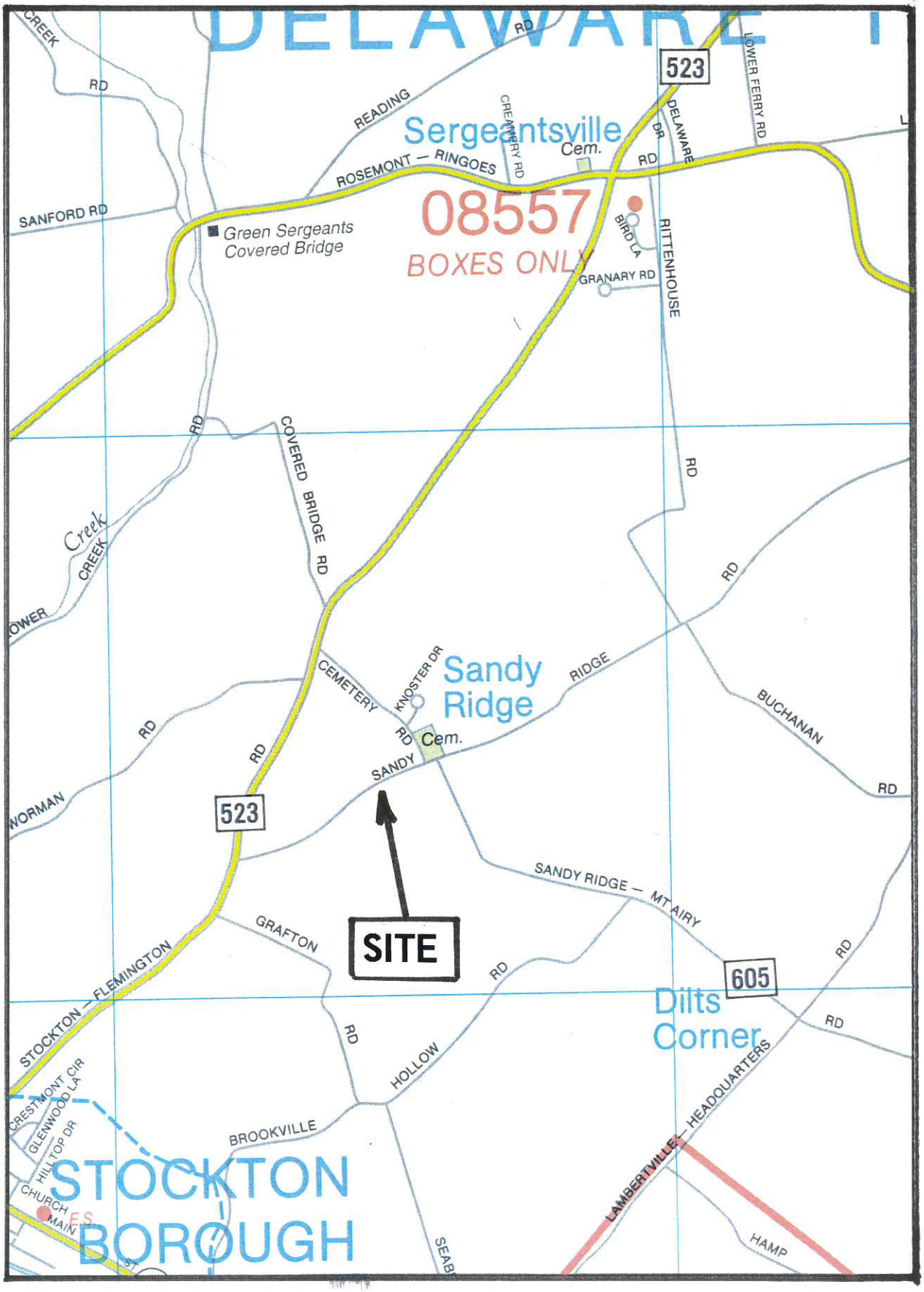
Based on the projected traffic and parking impact that will be generated by the proposed tennis training center, it is our professional opinion that the proposed building, parking lot and driveway access is more than adequate to accommodate peak traffic that will be generated by the proposed use. The on-site parking supply and traffic circulation pattern has been properly designed to accommodate peak traffic flows and parking demand during class changeover periods. This peak activity will only occur on 3 weekdays and on Saturdays during the limited season of November to March. Therefore, the proposed land use will not have an adverse or detrimental impact to traffic conditions in the area.

A representative from MRA will be in attendance at an upcoming Delaware Township Board of Adjustment hearing to provide expert testimony and to answer any questions board members, board experts or the public may have.

Very truly yours,

Jay S. Troutman, Jr., PE
Principal

Figure 1 – Site Location Map



APPENDIX

Time	Mon	Tues	Wed	Thu	Fri	Sat	Sun
8:00	6	6	6	6	6	4	4
8:30							
9:00						4	4
9:30	6	4	6	4	6		
10:00						8	4
10:30		4		4			
11:00	4		4		4		4
11:30		4		4			
12:00	4		4		4	8	4
12:30		4		4			
1:00	4		4		4		4
1:30		4		4			
2:00	4		4		4	8	4
2:30							
3:00	1	1	1	1	1		4
3:30							
4:00	8	1	8	1	8	8	4
4:30							
5:00		1		1			4
5:30							
6:00	8	8	8	8	8	4	4
6:30							
7:00						4	4
7:30							
8:00							

Table 1 Single Court Anticipated Use

TYPE OF CLASS	NUMBER OF PEOPLE	INSTRUCTOR(S)
Adult Classes:	2-6 people,	1 instructor:
Rented Time:	1-4 people	1 instructor
Private Time:	1 person	1 instructor
Junior Classes:	2-8 people	1-2 instructors