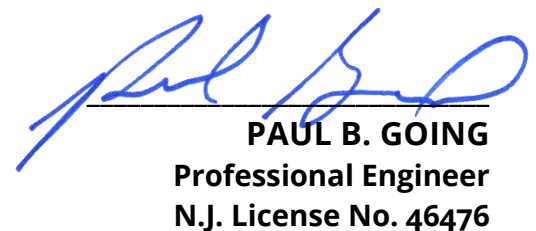


**TRAFFIC STATEMENT**  
**for**  
**HELLER PROPERTY PARTNERS, LP**

**Proposed Office Building**  
**Block 2001; Lots 19, 20, 21, 22 & 23**  
**176-180 Main Street (NJSH Route 124)**  
**Borough of Madison**  
**Morris County, New Jersey**

  
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Revised: June 18, 2020  
August 6, 2019

Atlantic Traffic & Design Engineering, LLC (ATDE) has prepared this Traffic Statement to examine the future traffic characteristics of a proposed office "complex" consisting of an existing office building and a new office building. The site is located along westbound Main Street (NJSH Route 124) in the Borough of Madison, Morris County, New Jersey as shown on **Figure 1** in the **Appendix**.

This revision has been prepared to reflect a correction to the area of occupied space in the existing building. The storage and fitness center total square footage had previously been reported as 2,804 square feet, but has been recalculated to be 3,075 square feet.

176 and 178 Main Street (NJSH Route 124) are currently vacant and appear to have been formerly developed with single family homes. 178 Main Street (NJSH Route 124) was served by a full-movement driveway along the state highway; which driveway currently remains. Access to 176 Main Street (NJSH Route 124) was provided via a Main Street (NJSH Route 124) driveway shared with the neighboring property to the west; which driveway is the subject of a separate application by the neighbor.

180 Main Street (NJSH Route 124) is occupied by an existing 2-story office building with a 5,640 square foot footprint. In addition to the 2 stories of office uses, there is 3,075 square feet of occupied basement space, consisting of storage space and an 875 square foot fitness center, which is for exclusive private use by the owner/occupant, Heller Property Partners. Other tenants in the building include a dentist.

Access to 180 Main Street is provided via a driveway at the easterly end of the Main Street (NJSH Route 124) frontage, where left-turn egress is currently prohibited. 35 parking stalls are currently provided in a parking field to the rear of the site, and an additional 10 parking stalls are currently landbanked.

Under the development proposal, a new 2-story office building with a 5,040 square foot footprint would be constructed on the vacant properties at 176 and 178 Main Street (NJSH Route 124). A basement level in the proposed building would consist entirely of mechanical space. While no tenants are presently lined up for the building, it's anticipated that tenants in the 2 buildings could include 1 additional doctor or dentist for a total of 2 in the proposed condition.

The parking field behind 180 Main Street (NJSH Route 124) would be expanded to the rear of the new building with a combined supply of 88 stalls; and the tax lots would be consolidated. The existing driveway at 178 Main Street (NJSH Route 124) would be eliminated. All vehicular access to the 2 buildings would be made via the existing driveway at 180 Main Street (NJSH Route 124), where it is proposed to eliminate the left-turn egress prohibition.

This study has been performed to evaluate the proposed office building from a traffic engineering perspective. Accordingly, this Traffic Statement includes the following:

- A review of existing roadway conditions in the vicinity of the site including roadway geometrics;
- Projection of the volume of traffic expected to be generated by the proposed office building; and
- An evaluation of the site access design, on-site circulation and parking supply.

## EXISTING CONDITIONS

### EXISTING SUBJECT PROPERTY

The subject property is located along westbound Main Street (NJSH Route 124), west of its signalized intersection with Rosedale Avenue in the Borough of Madison, Morris County, New Jersey. The following characteristics describe the subject property:

- › Located in the Community Commercial (CC) zone, where an office building is permitted.
- › The vacant westerly portion of the site was formerly occupied by 2 residential homes.
- › The easterly portion of the site is developed with 14,355 square feet of office space in two floors plus a portion of the basement.
- › Land uses along the Main Street (NJSH Route 124) corridor are primarily commercial in the vicinity of the subject property, with some residential uses, and a middle school located to the west of the site.

### EXISTING ROADWAY NETWORK

The subject property has frontage along westbound Main Street (NJSH Route 124). The following is a description of the adjacent roadway network:

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#### Main Street (NJSH Route 124)

- › Classified as an Urban Principal Arterial.
- › Under New Jersey Department of Transportation (NJDOT) jurisdiction.
- › Designated as an east/west roadway.
- › Provides one travel lane in each direction.
- › Has a posted speed limit of 30 miles per hour along the site frontage; with a 25 mile per hour "when children are present" School Zone at the westerly end of the frontage.
- › Sidewalks and shoulders are provided along both sides of the roadway.

- Parking is not permitted.
- Carries an Annual Average Daily Traffic (AADT) volume of approximately 19,500 vehicles according to 2016 NJDOT data.

## PROPOSED DEVELOPMENT TRAFFIC CHARACTERISTICS

### TRIP GENERATION

Traffic projections for the proposed development have been prepared using rates published by the Institute of Transportation Engineers (ITE) in the 10th Edition of *Trip Generation*, September 2017. This ITE reference includes compilations of trip generation data collected for a wide variety of land uses throughout the United States, including office buildings.

**Table I** summarizes the peak hour trip generation of the existing and proposed office building developments, calculated per ITE Land Use Code 710: “General Office Building.” NJDOT has adopted the ITE rates and equations for this use in their Highway Access Permit System (HAPS). The HAPS trip generation summary printout and is located in the **Appendix**.

**Table I**  
**HAPS Trip Generation**  
**Existing and Proposed Office Buildings**

Peak Hour	Existing 14,355 SF			Total Proposed 24,435 SF			Difference		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Weekday Morning	26	4	30	41	7	48	+15	+3	+18
Weekday Evening	13	68	81	15	77	92	+2	+9	+11
Saturday Midday	4	4	8	7	6	13	+3	+2	+5

The particular ITE trip generation equations that have been adopted by NJDOT for office building weekday evening peak hour includes a relatively high Y-axis intercept; which is to say, the equation implies 65 weekday evening peak hour trips for 0 square feet. In practice, the equation results in overly high trip generation for small office spaces. The trip generation for the proposed 10,080 square feet of office has therefore been calculated based on a comparison of the trip generation of the total 24,435 square feet in the proposed condition to the 14,355 square feet in the existing condition.

The ITE and NJDOT do not consider an increase of fewer than 100 peak hour vehicular trips to be "significant." Based on the ITE and HAPS trip generation projections, the proposed office building is a low-intensity land use and would not create a significant increase in traffic along the adjacent roadway network during any of the critical peak hours.

## SITE ACCESS AND CIRCULATION

An evaluation has been made of the Site Layout Plan for the proposed office building prepared by Bohler Engineering, last revised June 17, 2020. In particular, an evaluation has been made focusing on site access and parking supply. The following items summarize our review:

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### Access

- › In the existing condition the overall site is served by 2.5 driveways along westbound Main Street (NJSH Route 124).
- › In the proposed condition, only 1 driveway would serve the combined sites. The half driveway at the westerly end of the site is being removed by others, and the existing driveway near the midpoint of the state highway frontage would be removed by the proposed project.
- › The proposed reduction in the number of Main Street (NJSH Route 124) driveways benefits the travelling public.
- › As the proposed project involves the removal of an existing driveway and a lot consolidation, a new Minor Access Permit will be required. NJDOT review of the previous site plan focused on drainage items (letter dated December 18, 2019 provided in the Appendix) with no significant traffic-related issues.
- › Left-turn egress is not currently permitted at the 180 Main Street (NJSH Route 124) driveway. This condition results in eastbound demand circulating the block formed by Main Street (NJSH Route 124), Alexander Avenue, Brittin Street and Rosedale Avenue; circulating past both the front and rear of Madison Junior School.
- › The NJDOT Minor Access Permit Application for the project includes a request to permit left-turn egress at the shared site driveway, which would reduce traffic circulating on two sides of Madison Junior School. NJDOT has had no comment on the proposed change.

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### Parking

- › Parking stalls are proposed to be 9 feet wide and 18 feet deep, which dimensions meet Borough requirements.



- Two-way circulation aisles are proposed to be 24 feet in width which meets accepted engineering design standards
- The Borough requires 4 parking stalls per 1,000 square feet of gross floor area (GFA) for office buildings. An additional 4 stalls are required for each doctor or dentist.
- 61 stalls are therefore required for the existing 14,355 square foot office building with one dentist. 35 stalls are currently provided, plus 10 landbanked stalls. The total of 45 parking stalls therefore is provided at a ratio of **3.13** stalls per 1,000 square feet.
- Without the landbanked stalls, the existing supply ratio is **2.44** stalls per 1,000 square feet. According to the owner/occupant Heller Property Partners, the 35-stall supply has always greatly exceeded demand.
- The proposed building increases the parking requirement by **45** stalls, for a total requirement of 106 parking stalls (98 stalls for the 24,435 square feet of total building area plus 8 stalls for 2 doctors).
- It is proposed to construct **53** additional stalls. A total of 88 parking stalls would be provided, inclusive of 5 ADA accessible stalls. It is not proposed to landbank any parking stalls.
- Based on data published by the Institute of Transportation Engineers (ITE) in the 5th Edition of *Parking Generation*, 2019, the 85th percentile peak parking demand for office buildings is **3.30** vehicles per 1,000 square feet GFA; while the ITE average peak demand is **2.39** vehicles per 1,000 square feet.
- 3.30 stalls per 1,000 square feet rounds up to 81 vehicles for the proposed office building floor area.
- The 88 proposed stalls would provide a net parking ratio of **3.60** stalls per 1,000 square feet; an approximately 15% higher ratio than the ratio, including landbanked stalls, that exists today.
- Without consideration of the existing landbanked stalls, the proposed parking ratio is 48% higher than exists today.
- .

In summary, it has been determined from review of future site-generated traffic volumes that the proposed office building would be a low-intensity land use and would **not** significantly impact traffic conditions in the vicinity of the site. The proposed office building is projected to generate a maximum of 18 additional trips during peak hours which falls below the NJDOT and ITE 100-trip threshold for a “significant” increase in traffic.

Site access for the proposed office building would be shared with the Main Street (NJSH Route 124) access at the existing office building, resulting in a net reduction in access points. A new Minor Access Permit is required for the project and is being sought.

The site would be constructed with 53 additional parking stalls, while the proposed building with one potential doctor or dentist increases the parking requirement by 45 stalls. The proposed supply represents a 15% increase in the ratio of stalls to square feet in comparison to the existing office building, including landbanked stalls. The parking stall and aisle dimensions have been designed consistent with accepted traffic engineering practices.



PROPOSED OFFICE BUILDING  
BOROUGH OF MADISON  
MORRIS COUNTY, NEW JERSEY

SITE LOCATION MAP



\\WADCSTOR01\ATDE-PROJECTS\2019\A119050\DATA COLLECTION-PHOTOS\FIGURES\ATD FIGURES-NU-1-1-1-LAYOUT: LOCATION MAP

LAND USE CODE	LAND USE DESCRIPTION	UNITS OF MEASURE (X)	AM PEAK HOUR *	PM PEAK HOUR *	WEEKDAY DAILY TRIPS *	WEEKEND PEAK HOUR *	WEEKEND DAILY TRIPS *
710	General Office Building	SQ. FEET	$EXP(0.88*LN(x/1000))+1.06$	$1.10*(x/1000)+65.39$	$EXP(0.97*LN(x/1000))+2.50$	$0.53*(x/1000)$	$2.21*(x/1000)$
24,164	sq. feet	Added Trips	48	92	268	13	53
710	General Office Building	SQ. FEET	$EXP(0.88*LN(x/1000))+1.06$	$1.10*(x/1000)+65.39$	$EXP(0.97*LN(x/1000))+2.50$	$0.53*(x/1000)$	$2.21*(x/1000)$
14,084	sq. feet	Less Trips	30	81	158	7	31
0%	Alternative Access	Trips:	18	11	110	6	22
Permit:	NJDOT Minor	NJDOT Trips:	18	11	110	6	22

These rates should be used in determining what type of NJDOT Access Permit is needed and any Traffic Analysis

These are the rates and equations that were being used by the HAPS program as of July 1, 2018 and they will be updated as new information is available.

LAND USE CODE	LAND USE DESCRIPTION	UNITS OF MEASURE (X)	AM PEAK HOUR *	PM PEAK HOUR *	WEEKDAY DAILY TRIPS *	WEEKEND PEAK HOUR *	WEEKEND DAILY TRIPS *
0	Vacant Lot	LOT	x*0	x*0	x*0	x*0	x*0
30	Intermodal Truck Terminal	SQ. FEET	$x/1000*2.14$	$x/1000*2.02$	$x/1000*21.4$	$x/1000*2.02$	$x/1000*20.2$
90	Park-and-Ride Lot with Bus or Light Rail Service	PRKG SPACES	$0.71*(x)$	$0.44*(x)$	$x*2.81$	$0.71*(x)$	$x*2.81$
110	General Light Industrial	SQ. FEET	$x/1000*0.92$	$x/1000*0.83$	$x/1000*4.96$	$x/1000*0.69$	$x/1000*5.00$
130	Industrial Park	SQ. FEET	$x/1000*0.41$	$x/1000*0.40$	$x/1000*3.37$	$x/1000*0.44$	$x/1000*2.54$
140	Manufacturing	SQ. FEET	$0.61*(x/1000)+34.25$	$0.62*(x/1000)+29.00$	$3.16*(x/1000)+160.04$	$(x/1000)*0.94$	$(x/1000)*6.42$
150	Warehousing	SQ. FEET	$0.11*(x/1000)+30.07$	$0.15*(x/1000)+22.52$	$1.58*(x/1000)+45.54$	$(x/1000)*0.05$	$(x/1000)*0.15$
151	Mini Warehouse	SQ. FEET	$x/1000*0.20$	$x/1000*0.20$	$x/1000*1.51$	$x/1000*0.31$	$(x/1000)*1.95$
154	High-Cube Transload and Short-Term Storage Warehouse	SQ. FEET	$x/1000*0.12$	$x/1000*0.16$	$x/1000*1.40$	$x/1000*0.12$	$(x/1000)*0.94$
155	High-Cube Fulfillment Center Warehouse	SQ. FEET	$x/1000*0.59$	$x/1000*1.37$	$x/1000*8.18$	$x/1000*0.20$	$x/1000*8.18$
156	High-Cube Parcel Hub Warehouse	SQ. FEET	$x/1000*0.88$	$x/1000*0.71$	$x/1000*7.75$	$x/1000*0.88$	$x/1000*7.75$
157	High-Cube Cold Storage Warehouse	SQ. FEET	$0.11*(x/1000)$	$0.12*(x/1000)$	$2.12*(x/1000)$	$0.12*(x/1000)$	$2.12*(x/1000)$
210	Single Family Detached Housing	UNITS	$EXP(0.91*LN(x)+0.20)$	$EXP(0.94*LN(x)+0.34)$	$EXP(0.92*LN(x)+2.71)$	$0.84*x+17.99$	$EXP(0.94*LN(x))+2.56$
220	Multifamily Housing (Low-Rise)	UNITS	$EXP(0.94*LN(x)-0.29)$	$0.66*x+1.41$	$(7.56*x-40.86)$	$0.70*x$	$8.14*x$
221	Multifamily Housing (Mid-Rise)	UNITS	$x*0.36$	$x*0.44$	$5.45*(x)-1.75$	$x*0.44$	$x*4.91$
222	Multifamily Housing (High-Rise >10 Floor)	UNITS	$0.31*x+12.91$	$0.35*x+15.40$	$3.94*x+211.81$	$0.31*x+24.03$	$4.08*x+185.69$
225	Off-Campus Student Apartment	BEDROOMS	$x*0.20$	$0.33*x-7.94$	$4.09*x-78.98$	$0.33*x-7.94$	$4.09*x-78.98$
240	Mobile Home Park	UNITS	$x*0.26$	$x*0.49$	$x*5.00$	$x*0.43$	$x*4.61$
251	Senior Adult Housing -- Detached	UNITS	$0.26*x+36.52$	$0.26*x+56.53$	$EXP(0.88*LN(x)+2.28)$	$0.23*x$	$2.73*x$
252	Senior Adult Housing -- Attached	UNITS	$0.20*x-0.18$	$0.36*x-4.50$	$4.02*x-25.37$	$0.35*x-1.67$	$3.97*x-60.09$
253	Congregate Care Facility	UNITS	$0.17*x-1.10$	$0.22*x-2.85$	$x*2.02$	$0.22*x-2.85$	$x*2.02$
254	Assisted Living	BEDS	$x*0.19$	$x*0.34$	$x*2.60$	$x*0.28$	$x*3.15$
310	Hotel	ROOMS	$0.50*x-5.34$	$0.75*x-26.02$	$11.29*x-426.97$	$0.69*x+4.32$	$9.62*x-294.56$
311	All Suites Hotel	ROOMS	$0.34*x$	$0.45*x-14.07$	$5.20*x-119.26$	$0.45*x-14.07$	$5.20*x-119.26$
320	Motel	ROOMS	$x*0.43$	$x*0.44$	$3.62(x)-29.43$	$x*0.44$	$3.62(x)-29.43$
330	Resort Hotel	ROOMS	$0.50*x-47.88$	$0.48*x+8.67$	$10*(0.48*x+8.67)$	$0.48*x+8.67$	$10*(0.48*x+8.67)$
411	Public Park	ACRES	$x*0.15$	$0.08*x+15.36$	$0.64*x+88.46$	$0.18*x+36.85$	$x*2.19$
416	Campground/Recreational Vehicle Park	ACRES	$x*0.52$	$x*1.06$	$x*10.6$	$x*1.06$	$x*10.6$
420	Marina	BERTHS	$x*0.12$	$x*0.21$	$x*2.41$	$x*0.31$	$x*3.49$
430	Golf Course	HOLES	$x*2.96$	$x*3.68$	$x*30.38$	$x*3.03$	$x*19.89$
432	Golf Driving Range	TEES	$x*1.02$	$x*1.65$	$x*13.65$	$x*1.32$	$x*17.68$
437	Bowling Alley	SQ. FEET	$x/1000*0.81$	$x/1000*1.16$	$x/1000*11.60$	$x/1000*1.16$	$x/1000*11.60$
444	Movie Theater (# of Screens <=9)	SCREENS	$x*9.5$	$x*37.83$	$x*220.00$	$x*102.87$	$x*546.86$
445	Multiplex Movie Theater (# of Screens =>10)	SCREENS	$x*9.5$	$x*25.84$	$x*292.50$	$x*65.07$	$x*292.50$
465	Ice Skating Rink	SQ. FEET	$(x/1000)*0.49$	$(x/1000)*1.33$	$(x/1000)*13.30$	$(x/1000)*2.63$	$(x/1000)*26.30$
480	Amusement Park	ACRES	$x*3.16$	$x*4.99$	$x*53.41$	$x*19.55$	$x*198.97$
488	Soccer Complex	FIELDS	$x*1.77$	$x*16.90$	$x*71.33$	$x*40.10$	$x*404.88$
492	Health/Fitness Club	SQ. FEET	$x/1000*1.40$	$x/1000*3.92$	$x/1000*39.20$	$x/1000*3.19$	$x/1000*31.90$
493	Athletic Club	SQ. FEET	$x/1000*3.40$	$x/1000*6.36$	$x/1000*63.60$	$x/1000*8.60$	$x/1000*86.00$

LAND USE CODE	LAND USE DESCRIPTION	UNITS OF MEASURE (X)	AM PEAK HOUR *	PM PEAK HOUR *	WEEKDAY DAILY TRIPS *	WEEKEND PEAK HOUR *	WEEKEND DAILY TRIPS *
495	Recreational Community Center	SQ. FEET	1.76*x/1000	2.31*x/1000	28.82*x/1000	1.48*x/1000	13.60*x/1000
520	Elementary School	STUDENTS	x*0.67	x*0.34	x*1.89	x*0.10	x*0.58
522	Middle School/Junior High School	STUDENTS	x*0.70	x*0.35	x*2.12	x*0.10	x*0.58
530	High School	STUDENTS	x*0.55	x*0.33	x*2.03	x*0.10	x*0.58
534	Private School (K-8)	STUDENTS	0.88*x+14.85	0.63*x-1.93	x*4.11	x*0.10	x*0.58
536	Private School (K-12)	STUDENTS	x*0.81	x*0.58	x*2.48	x*0.10	x*0.58
540	Junior/Community College	STUDENTS	x*0.12	x*0.13	x*1.15	x*0.05	x*0.42
550	University/College	STUDENTS	EXP(0.95*LN(x))-1.63	EXP(0.97*LN(x))-1.69	1.38*(x)+2108.83	EXP(0.97*LN(x))-1.69	1.38*(x)+2108.83
560	Church	SQ. FEET	(x/1000)*0.65	(x/1000)*0.80	(x/1000)*6.95	(x/1000)*9.99	(x/1000)*27.63
561	Synagogue	SQ. FEET	(x/1000)*2.41	(x/1000)*2.92	(x/1000)*29.20	(x/1000)*7.83	(x/1000)*78.30
565	Day Care Center	SQ. FEET	(x/1000)*11.73	(x/1000)*11.82	(x/1000)*47.62	(x/1000)*1.75	(x/1000)*6.22
566	Cemetery	ACRES	x*1.23	x*1.26	4.65*(x)+70.83	x*2.63	x*13.94
590	Library	SQ. FEET	7.21*x/1000-14.35	8.48*x/1000+0.80	EXP(0.99*LN(x/1000))+4.28	(x/1000)*12.60	(x/1000)*80.09
610	Hospital	SQ. FEET	0.74*(x/1000)+126.36	0.83*(x/1000)+118.28	10.72(x/1000)	x/1000*4.85	x/1000*7.72
620	Nursing Home	BEDS	x*0.22	x*0.37	x*3.06	x*0.40	x*2.41
630	Clinic	SQ. FEET	x/1000*5.22	x/1000*4.64	x/1000*38.16	x/1000*5.22	x/1000*38.16
640	Animal Hospital/Veterinary Clinic	SQ. FEET	3.73*x/1000	3.83*x/1000	21.50*x/1000	3.83*x/1000	21.50*x/1000
710	General Office Building	SQ. FEET	EXP(0.88*LN(x/1000))+1.06	1.10*(x/1000)+65.39	EXP(0.97*LN(x/1000))+2.50	0.53*(x/1000)	2.21*(x/1000)
712	Small Office Building	SQ. FEET	(x/1000)*3.26	(x/1000)*3.73	(x/1000)*16.19	(x/1000)*0.40	(x/1000)*4.00
714	Corporate Headquarters Building	SQ. FEET	(x/1000)*1.46	(x/1000)*1.40	6.16*(x/1000)+462.50	(x/1000)*0.10	(x/1000)*10.00
720	Medical-Dental Office Building	SQ. FEET	3.43*(x/1000)+2.57	4.10*(x/1000)	34.80*(x/1000)	(x/1000)*3.10	x/1000*8.57
730	Government Office Building	SQ. FEET	x/1000*3.69	x/1000*3.19	x/1000*22.59	x/1000*3.69	x/1000*22.59
731	State Motor Vehicles Department	SQ. FEET	(x/1000)*8.86	(x/1000)*7.68	(x/1000)*11.21	(x/1000)*8.86	(x/1000)*11.21
732	United States Post Office	SQ. FEET	(x/1000)*12.38	(x/1000)*15.11	(x/1000)*103.94	(x/1000)*5.33	(x/1000)*43.83
760	Research and Development Center	SQ. FEET	x/1000*1.22	x/1000*1.11	10.23*(x/1000)+204.68	x/1000*0.24	x/1000*1.90
810	Tractor Supply Store	SQ. FEET	(x/1000)*1.40	(x/1000)*1.40	(x/1000)*14.00	(x/1000)*3.17	(x/1000)*31.70
812	Building Materials and Lumber Store	SQ. FEET	2.37*(x/1000)	2.77*(x/1000)	18.05*(x/1000)	EXP(0.95*LN(x/1000))+2.35	36.74*(x/1000)+137.42
814	Variety Store	SQ. FEET	x/1000*4.52	x/1000*7.42	x/1000*63.47	x/1000*7.42	x/1000*63.47
815	Free-Standing Discount Store	SQ. FEET	x/1000*5.43	x/1000*5.33	x/1000*53.12	x/1000*7.87	x/1000*70.76
816	Hardware/Paint Store	SQ. FEET	1.07*(x/1000)+4.31	0.98*(x/1000)+2.27	9.94*(x/1000)-12.22	2.25*(x/1000)	22.50*(x/1000)
817	Nursery (Garden Center)	SQ. FEET	x/1000*8.0	x/1000*8.37	x/1000*68.10	x/1000*20.06	x/1000*133.31
818	Nursery (Wholesale)	SQ. FEET	(x/1000)*3.03	(x/1000)*5.18	(x/1000)*39.00	(x/1000)*5.70	(x/1000)*29.94
820	Shopping Center	SQ. FEET	(x/1000)*0.94	EXP(0.72*LN(x/1000))+3.02	EXP(0.68*LN(x/1000))+5.57	EXP(0.79*LN(x/1000))+2.79	(x/1000)*46.12
823	Factory Outlet Center	SQ. FEET	2.06*x/1000	2.29*x/1000	26.59*x/1000	3.79*x/1000	40.97*x/1000
843	Automobile Parts Sales	SQ. FEET	4.41*x/1000	5.83*x/1000	55.34*x/1000	11.53*x/1000	115.30*x/1000
848	Tire Store	SQ. FEET	(x/1000)*3.73	(x/1000)*3.98	(x/1000)*28.52	(x/1000)*5.05	(x/1000)*50.50
850	Supermarket	SQ. FEET	x/1000*6.67	x/1000*9.24	x/1000*106.78	x/1000*18.94	x/1000*177.62
851	Convenience Market	SQ. FEET	x/1000*68.83	x/1000*53.51	x/1000*762.28	x/1000*79.12	x/1000*1084.17
853	Convenience Market With Gas Pumps(<3000 SF)	SQ. FEET	x/1000*42.19	x/1000*49.59	x/1000*624.20	x/1000*49.59	x/1000*624.20
854	Discount Supermarket	SQ. FEET	8.06*(x/1000)-162.88	EXP(0.89*LN(x/1000))+2.59	(x/1000)*90.87	EXP(0.78*LN(x/1000))+3.21	(x/1000)*111.86
857	Discount Club	SQ. FEET	(x/1000)*3.37	(x/1000)*4.61	(x/1000)*41.80	(x/1000)*6.37	(x/1000)*53.75
862	Home Improvement Superstore	SQ. FEET	(x/1000)*2.75	(x/1000)*3.29	(x/1000)*30.74	(x/1000)*7.05	(x/1000)*56.72
863	Electronics Superstore	SQ. FEET	7.02*(x/1000)-125.74	8.87*(x/1000)-162.71	84.01*(x/1000)-1576.41	(x/1000)*7.02	(x/1000)*55.12
864	Toy/Children's Superstore	SQ. FEET	(x/1000)*5.00	(x/1000)*5.00	(x/1000)*50.00	(x/1000)*5.53	(x/1000)*55.3
869	Discount Home Furnishing Superstore	SQ. FEET	x/1000*0.57	x/1000*1.57	x/1000*20.00	x/1000*3.40	x/1000*33.29
880	Pharmacy/Drugstore without Drive-Through Window	SQ. FEET	(x/1000)*7.71	(x/1000)*11.07	90.08*(x/1000)	(x/1000)*10.68	(x/1000)*106.80
881	Pharmacy/Drugstore with Drive-Through Window	SQ. FEET	(x/1000)*9.13	(x/1000)*11.32	(x/1000)*109.16	(x/1000)*8.75	(x/1000)*114.89

LAND USE CODE	LAND USE DESCRIPTION	UNITS OF MEASURE (X)	AM PEAK HOUR *	PM PEAK HOUR *	WEEKDAY DAILY TRIPS *	WEEKEND PEAK HOUR *	WEEKEND DAILY TRIPS *
890	Furniture Store	SQ. FEET	(x/1000)*0.52	(x/1000)*0.70	(x/1000)*6.30	(x/1000)*1.29	(x/1000)*7.15
899	Liquor Store	SQ. FEET	4.14*(x/1000)+1.97	17.12*x/1000	x/1000*101.49	17.12*x/1000	x/1000*171.20
912	Drive-in Bank	WINDOWS	x*17.55	x*27.15	x*124.76	x*27.67	x*276.70
931	Quality Restaurant	SQ. FEET	x/1000*4.47	x/1000*8.28	x/1000*83.84	x/1000*10.68	x/1000*90.04
932	High Turnover (Sit-Down) Restaurant	SQ. FEET	x/1000*14.04	x/1000*17.41	x/1000*112.18	x/1000*18.46	x/1000*142.64
933	Fast Food Restaurant without Drive Through Window	SQ. FEET	x/1000*47.66	x/1000*48.70	x/1000*346.23	x/1000*54.60	x/1000*696.00
934	Fast Food Restaurant with Drive Through Window	SQ. FEET	x/1000*50.97	x/1000*51.36	x/1000*470.95	x/1000*55.15	x/1000*616.12
935	Fast Food Restaurant with Drive Through Window and No Indoor Seating	SQ. FEET	x/1000*65.81	x/1000*67.44	x/1000*459.20	x/1000*67.44	x/1000*459.20
936	Coffee/Donut Shop without Drive-Through Window	SQ. FEET	x/1000*101.14	x/1000*36.31	x/1000*1011.40	x/1000*59.01	x/1000*590.10
937	Coffee/Donut Shop with Drive-Through Window	SQ. FEET	x/1000*97.96	x/1000*43.38	x/1000*820.38	x/1000*87.70	x/1000*877.00
941	Quick Lubrication Vehicle Shop	SERVICE BAYS	x*4.00	x*4.60	x*40.00	x*4.50	x*42.00
942	Automobile Care Center	SQ. FEET	x/1000*2.83	x/1000*3.51	x/1000*35.10	x/1000*2.37	x/1000*23.72
943	Automobile Parts and Service Center	SQ. FEET	x/1000*2.75	x/1000*2.62	x/1000*16.28	x/1000*6.62	x/1000*66.20
947	Self Service Car Wash	WASH STALLS	x*8.00	x*8.00	x*108	x*15.25	x*132.80
948	Automated Car Wash	TUNNELS	x*77.50	x*77.50	x*775.00	x*41	x*410.00
950	Truck Stop	SQ. FEET	x/1000*34.60	x/1000*36.44	x/1000*455.53	x/1000*36.44	x/1000*455.53
960	Super Convenience Market/Gas Station (> 3,000 SF)	SQ. FEET	x/1000*83.14	x/1000*69.28	x/1000*837.58	x/1000*63.80	x/1000*700.00
W09	Banquet Hall	SEATS	x*0.16	x*0.3	x*2.86	x*0.33	x*2.81
X01	Service Station With Gas Only	STATIONS	x*71	x*92	x*1012	x*92	x*1012
X02	Service Station With Gas & Service Bays	STATIONS	x*81	x*86	x*781	x*86	x*781
X04	Service Station With Gas & Car Wash	STATIONS	x*108	x*94	x*1174	x*108	x*1174
Y01	Water Tower	TOWERS	x*2	x*2	x*4	x*2	x*4
Y02	Water Treatment Facility	PRKNG SLOTS	x*1	x*1	x*4	x*1	x*4
Y03	Maintenance Yard	EMPLOYEES	x*2	x*2	x*4	x*2	x*4
Y07	Ice Cream Parlor (Sit-Down, no take out)	SQ. FEET	x/1000*71.428	x/1000*71.428	x/1000*521.428	x/1000*71.428	x/1000*546.428
Y09	Firehouse	EMPLOYEES	x*2	x*2	x*4	x*2	x*4
Y10	State Police Headquarters	SQ. FEET	x/1000*1.01	x/1000*1.962	x/1000*11.679	x/1000*1.01	x/1000*4.279
Y14	Parking Lot	SPACES	x*1	x*1	x*10	x*1	x*10
Y15	Farm Stand/Market	FACILITY	x*20	x*38	x*375	x*52	x*480
Y16	Emergency Entrance	LOT	x*1	x*1	x*4	x*1	x*2
Y17	Parking Lot (Long Term Parking)	PRK SPACES	x*0.053	x*0.052	x*0.695	x*0.053	x*0.534
Y18	Funeral Home	FACILITY	x*20	x*24	x*124	x*16	x*53
Y23	Cellular Tower	TOWERS	x*2	x*2	x*4	x*2	x*4
Y27	Car Rental	FACILITY	x*20	x*21	x*140	x*21	x*140
Y31	Auction Facility	PRK SPACES	x*1	x*1	x*2.52	x*1	x*2.52
Y32	Rita's Water Ice	FACILITY	x*55	x*55	x*435	x*70	x*545
Y33	Motorcycle Dealer	SQ. FEET	x/1000*0.604	x/1000*1.02	x/1000*6.4175	x/1000*1.1875	x/1000*7.395
Y40	Cultural Center	SEATS	x*0.16	x*0.2	x*1.5	x*0.33	x*2.81
Y53	Specialty Retail Center	SQ. FEET	4.91*(x/1000)+115.59	(x/1000)*5.02	(x/1000)*44.32	4.91*(x/1000)+115.59	(x/1000)*42.04
Y55	Recreation Parking Lot	PRK SPACES	x*0.25	x*0.25	x*0.25	x*0.90	x*0.90
Y56	Boat Sales / Service Facility	SQ. FEET	x/1000*0.604	x/1000*1.02	x/1000*6.4175	x/1000*1.1875	x/1000*7.395
Y60	Automobile New & Used Sales	SQ. FEET	x/1000*2.22	x/1000*2.80	x/1000*32.30	x/1000*4.02	x/1000*29.74
Y61	Convenience Store with Drive-Thru Restaurant (<3,000 SF)	SQ. FEET	x/1000*50.63	x/1000*59.51	x/1000*624.20	x/1000*59.51	x/1000*624.20
Y62	Convenience Store with Drive-Thru Restaurant (>=3,000 SF)	SQ. FEET	x/1000*99.77	x/1000*83.14	x/1000*1005.10	x/1000*76.56	x/1000*840.00
Y63	Movie Theater without Matinee (XXX) - 9th Edition	SCREENS	x*9.5	x*37.83	x*220.0	x*64.5	x*376.0

\*The units of measure is the quantity that should be substituted for the "X" in the equations. It should be noted that the actual SF should be entered into these equations unlike the equations in the ITE books which are based upon 1,000 SF.

Example: A 125,000 sf shopping center will generate the following PM peak hour trips ( X would equal 125,000):

LAND USE CODE	LAND USE DESCRIPTION	UNITS OF MEASURE (X)	AM PEAK HOUR *	PM PEAK HOUR *	WEEKDAY DAILY TRIPS *	WEEKEND PEAK HOUR *	WEEKEND DAILY TRIPS *
Number of PM peak hour trips = $\text{EXP}(0.66 \cdot \text{LN}(X/1000) + 3.40) = \text{EXP}(0.66 \cdot \text{LN}(125,000/1000) + 3.40) = \text{EXP}(0.66 \cdot \text{LN}(125) + 3.40) = \text{EXP}(0.66 \cdot 4.828 + 3.40) = \text{EXP}(6.586) = 725$							



## General Office Building (710)

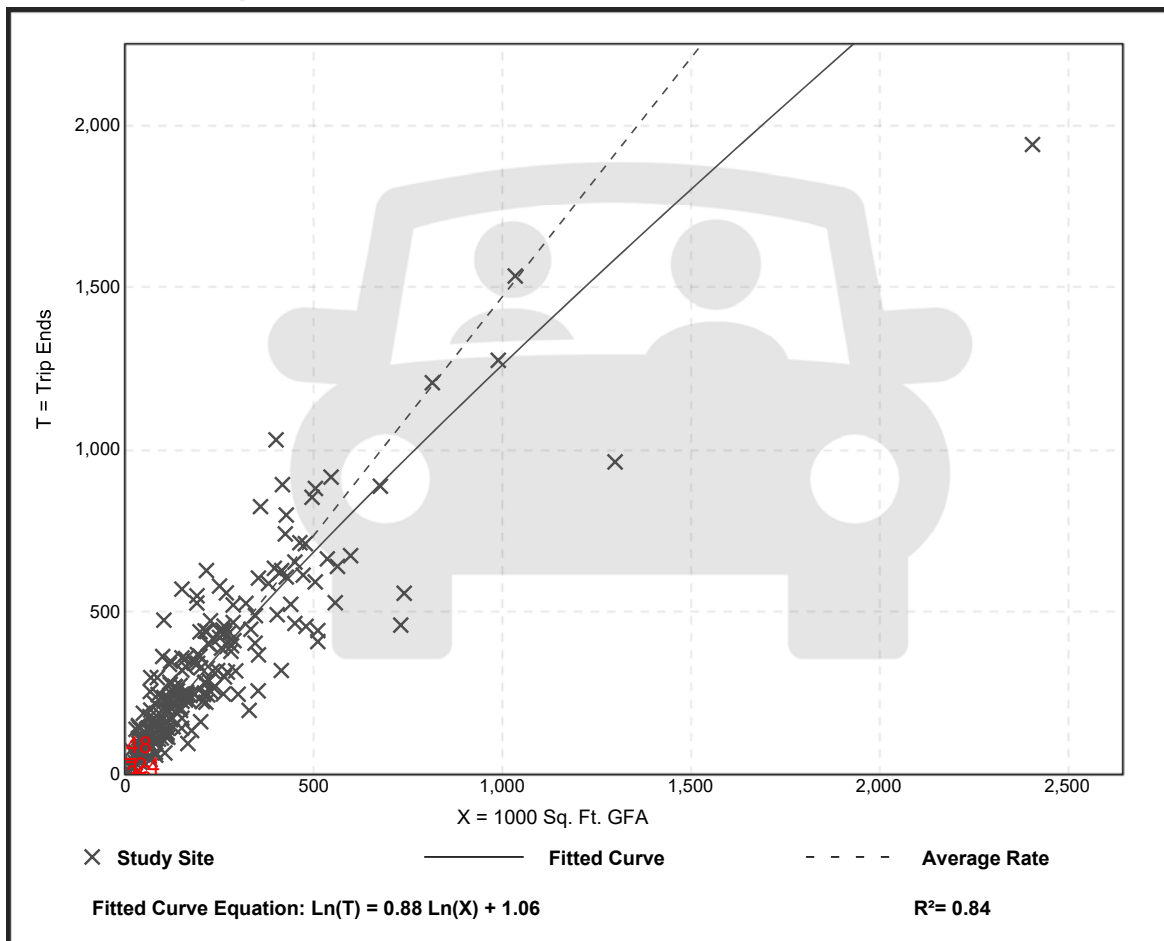
**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**AM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 228  
 Avg. 1000 Sq. Ft. GFA: 209  
 Directional Distribution: 88% entering, 12% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.47	0.57 - 4.93	0.60

### Data Plot and Equation



*Trip Gen Manual, 10th Ed + Supplement* • Institute of Transportation Engineers

# General Office Building (710)

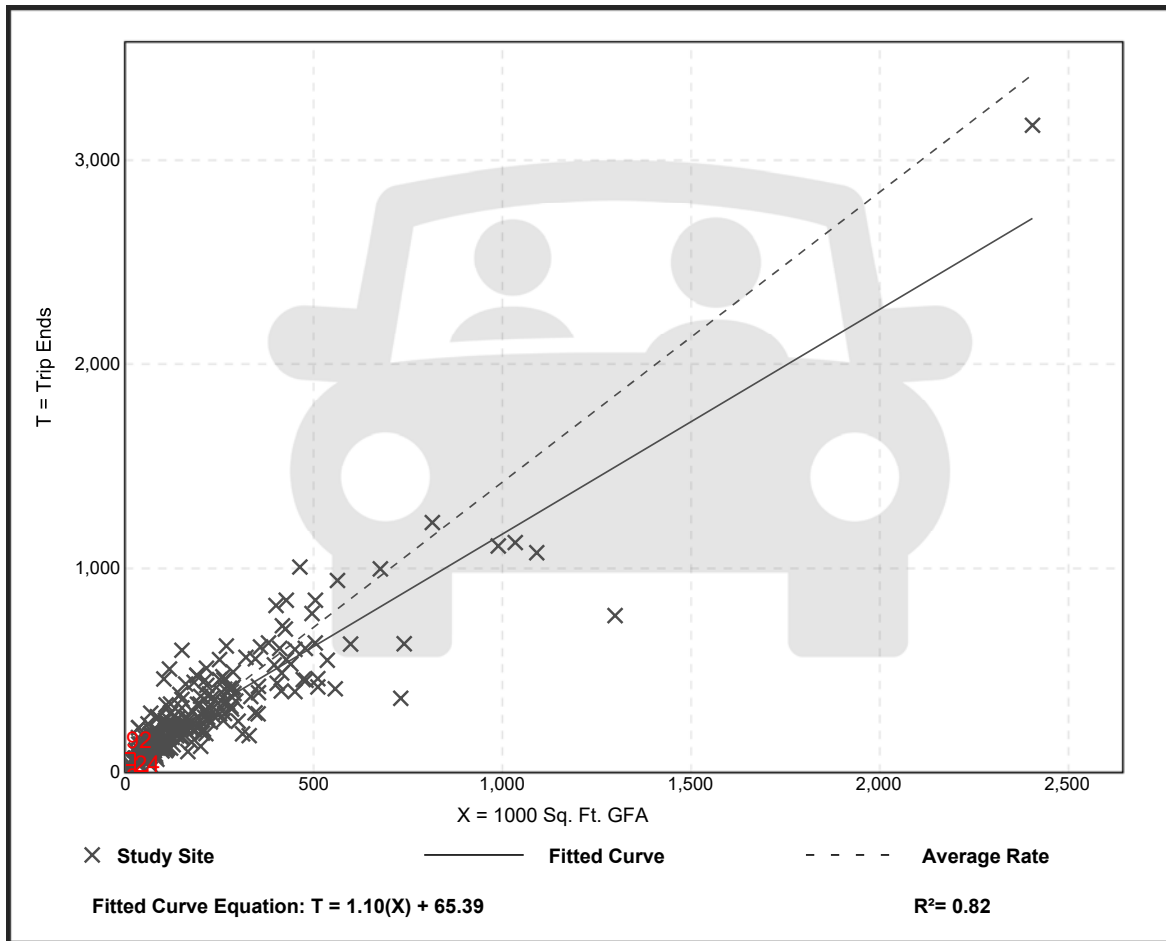
**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**PM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 243  
 Avg. 1000 Sq. Ft. GFA: 205  
 Directional Distribution: 18% entering, 82% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.42	0.49 - 6.20	0.61

### Data Plot and Equation



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# General Office Building (710)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Saturday, Peak Hour of Generator**

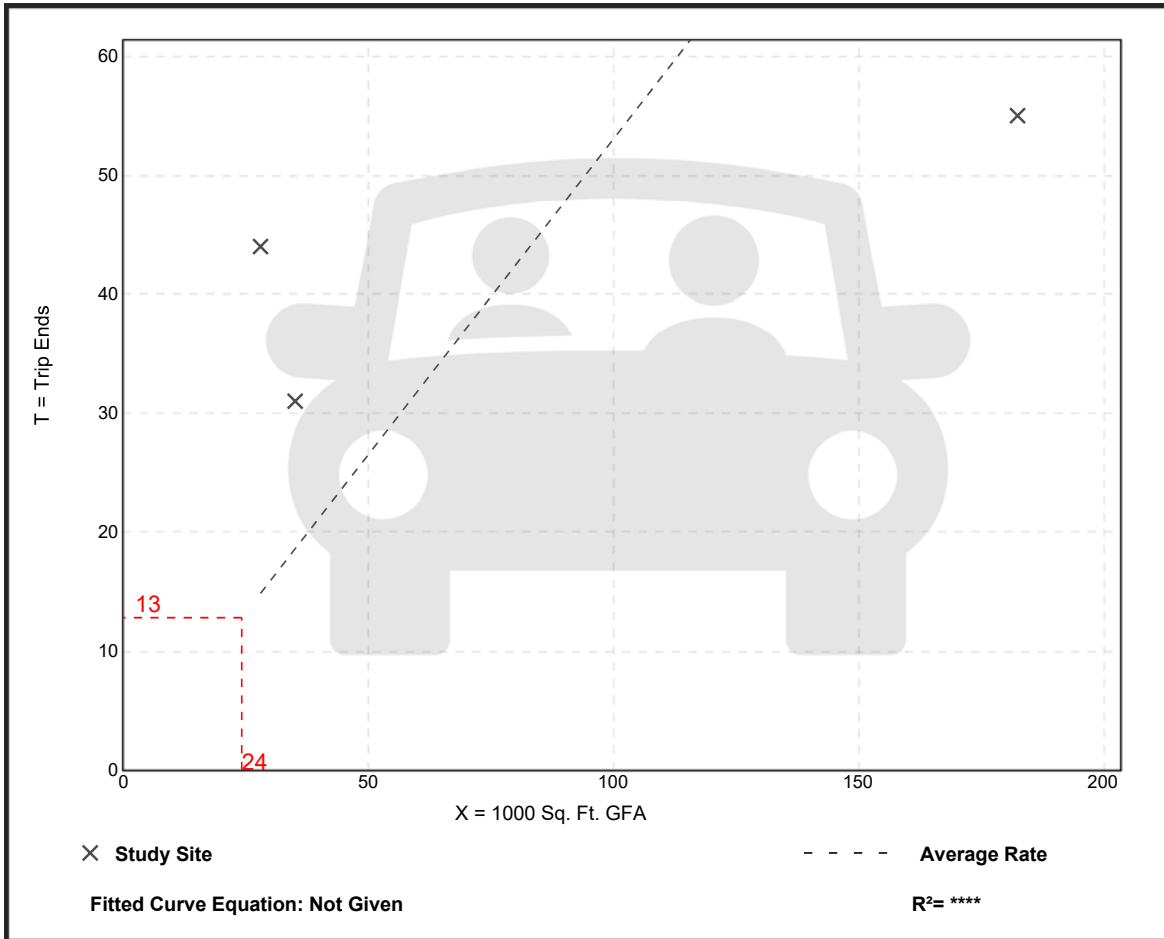
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 3  
 Avg. 1000 Sq. Ft. GFA: 82  
 Directional Distribution: 54% entering, 46% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.53	0.30 - 1.57	0.52

## Data Plot and Equation

*Caution – Small Sample Size*



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## State of New Jersey

DEPARTMENT OF TRANSPORTATION  
P.O. Box 600

Trenton, New Jersey 08625-0600

PHILIP D. MURPHY

Governor

SHEILA Y. OLIVER

Lt. Governor

DIANE GUTIERREZ-SCACCETTI

Commissioner

December 18, 2019

Heller Property Partners, L.P.  
180 Main St  
Madison NJ 07940

In Reply Please Refer To:

**Application #** : A-124-N-21556-2019

**Route** : 124

**Municipality** : Madison Borough

**County** : Morris

To Whom It May Concern:

The New Jersey Department of Transportation has reviewed the plans for the above-referenced application and finds that prior to approving a permit, your plans must be revised as follows:

- 1- "Separate utility permit applications will be required for each proposed utility work (gas, electric, water, sewer, etc.) and Applicant has to be the respective Utility Company".  
Add this note on plan.
- 2- Please complete form **MT - 156 "Power of attorney"** if an authorize representative of the lot owner will be signing form MT-32.
- 3- Provide the **new assigned lot number** after consolidation. Provide copy of township resolution for lot consolidation. Copy of executed deed with county seal is required.
- 4- Include NJDOT Standard Pavement latest standards section on construction detail plan sheet for roadway reconstruction. Hot Mix Asphalt (HMA) surface course (**2"** layer) should be 12.5M64 mix design, Hot Mix Asphalt intermediate course (**3"** layer) should be 19M64 mix design, Hot Mix Asphalt base course (**5"** layer) should be 25M64 mix design, (**6"** layer) Dense Graded Aggregate base course and (**6"** layer) Sub-Base Designation.
- 5- Existing concrete sidewalk is on substandard condition. Remove and replace along entire property frontage. Add note on site plan.
- 6- Existing reveal Curb is on substandard condition. Remove and replace along entire property frontage. Add note on site plan.

- 7- Method of installation of the new curb must be included on the plans. If the curb is to be installed using a repair strip, show the repair strip on the Site Plan. If the curb is to be installed using the face form method (to avoid pavement disturbance), add a call out indicating such.

## **Grading & Drainage Comments:**

### **General:**

This office has completed its review of the drainage and stormwater management requirements for the subject project and we offer the following comments and questions:

1. The design and associated calculations for any proposed infiltration basin must be designed in accordance with the NJDEP's BMP Manual, including, but not limited to the following:
  - a. Infiltration cannot be included in the routing calculations for quantity control;
  - b. The maximum design volume in each basin must be fully drained within 72 hours for all storm events. This analysis of drain down time must take into account reductions in infiltration rate based on the mounding analysis. The supporting documentation on the parameters used for the analysis must be provided. Please refer to the <http://pubs.usgs.gov/sir/2010/5102/> for additional guidance.
2. Please provide a chart/graph demonstrating interactive mounding and distribution from all basins. It should include Seasonal High Water Table (SHWT) elevation, location or testing, permeability rates and depth of restricted layer sample was taken.
3. Please separate the pervious and impervious runoff for the proposed conditions per N.J.A.C. 7:8-5.6(a)4.
4. Groundwater mounding analysis was not provided. Please include with the next submission. Note, if the depth of water infiltration is 1/6<sup>th</sup> or less the distance between the bottom of the basin and the SHWT can be demonstrated then groundwater mounding analysis is not required.
5. A minimum of two soil profile pits that are distributed to reflect the entire basin must be provided at the location of each proposed basin and shown in the report. All soil evaluation must be performed in accordance with Appendix E of the NJ Stormwater Manual BMP.
  - a. Please show that the bottom of each detention facility is at least one foot above the seasonal high water table (SHWT) and that the bottom of each infiltration facility is at least two feet above the SHWT.
  - b. If SHWT is based on zone of saturation, the soil evaluation must be performed between January to April.

- c. The permeability test must be taken at the most restrictive layer of the soil profile pit below the elevation of any proposed infiltration basin.
  - d. Please include detailed plan sheets that include the ground elevation, elevation of SHWT, and the elevation of the permeability test location.
6. PDA 1 shows a sheet flow length of greater than 250 feet. 150 feet is the maximum allowable length for sheet flow. Please address.
  7. When a minimum time of concentration is assumed please use the NRCS recommended value of 6 minutes.
  8. Please use Storm Type NOAA 24-hr with Storm Curve D.

Upon receipt of the six (6) sets of revised plans (if applicable), we will further process your application. Also please return the plans marked in red (if applicable).

**IF A REPLY TO THIS TRANSACTION IS NOT RECEIVED WITHIN 30 DAYS FROM THE DATE LISTED ABOVE, SUBJECT APPLICATION WILL AUTOMATICALLY BECOME NULL AND VOID.**

If you have any questions regarding the above, please feel free to contact Alaa Mattari of this office by email [Alaa.Mattari@dot.nj.gov](mailto:Alaa.Mattari@dot.nj.gov) or at (609) 475-5593.

Sincerely,

*Alaa Mattari*

(for) Paul D. Menz  
Supervising Engineer, Operations Permit Office