



# Parking Facility Planning Study

**DRAFT**

**Woodbridge Township – Downtown District**  
**December 12, 2017**

### Parking Facility Planning Study and Preliminary Financial / Break Even Analysis

Smart parking planning, development and management is critical to the economic development and vibrancy of downtown Woodbridge. Accordingly, as a result of redevelopment planning and initiatives underway in downtown Woodbridge and the findings of the Parking Adequacy Study dated June 20, 2017, TimHaahs was engaged by the Township of Woodbridge (Woodbridge) to undertake a Parking Facility Planning Study and Preliminary Financial Analysis to evaluate downtown sites for a parking structure to support redevelopment initiatives. The study focuses on the North James Street Redevelopment Area and the Station Redevelopment Area (See study area map on the next page).

To undertake this study the following parking planning and design considerations are evaluated :

1. The garage's proximity and integration with proposed development sites;
2. The garage's proximity to the NJ Transit station and downtown businesses;
3. The ability of facility to accommodate various parking demands thereby improving its financial viability;
4. The efficiency and number of spaces yielded given the constraints of the various sites;
5. The vehicular and pedestrian circulation within, to and from the facility; and
6. To the extent possible, opportunities to incorporate retail and commercial elements into the facility to create street level vibrancy and complement the downtown.

Based on the parking structure concept plans for each redevelopment area, we prepared a shared parking analysis to confirm that the proposed mix of uses and the associated parking demand will be accommodated in the proposed facilities. Lastly, we prepared a preliminary financial analysis including the following:

1. Estimated project cost for the development of the selected site. Development costs include design, soft costs, construction, construction supervision and contingencies (Land cost to be estimated by Township officials);
2. Estimated costs to finance the project including debt service, legal fees and consultant fees;
3. Operating cost of the facility including an appropriate capital reserve fund;
4. A recommend Payment in Lieu of Parking Payment (PILOP) to be contributed by developers for each space they do not provide for their projects on site;
5. A fee schedule that attempts to achieve adequate revenue to cover debt service, and operating expenses; and
6. A projected operating proforma of cash flows and expenses forecasted for a period of ten (10) years.



*Millburn Parking Garage, Millburn, New Jersey*



*Rahway Transit Center Garage, Rahway, New Jersey*









### Existing Conditions

The North James Redevelopment Area is bounded to the north by Ross Street, to the south by North James Street, to the west by Amboy Avenue, and to the east by Ross Street. This area totals approximately 105,000 square feet (2.4 acres) and is almost 900 feet to the Woodbridge Train Station along North James Street.

A parking garage in this area is contemplated to support mid-rise residential development of about 110 units in the same block, and mixed use redevelopment on Main Street with an estimated 131 residential units and 20,000 square feet of retail / commercial space.

In addition to providing parking for the referenced redevelopment initiatives, the garage would need to replace the Board of Education Parking Lot and the Business Permit Lot which would be displaced due to redevelopment.

Existing Public Parking	# of Spaces
Business Permit Spaces	53
Board of Education Spaces	53
<b>Total Spaces</b>	<b>106</b>

Existing Uses	
Single Family Houses	4
Parking Lots	2
Commercial Building	1
Auto Repair	1
<b>Total Lots</b>	<b>8</b>

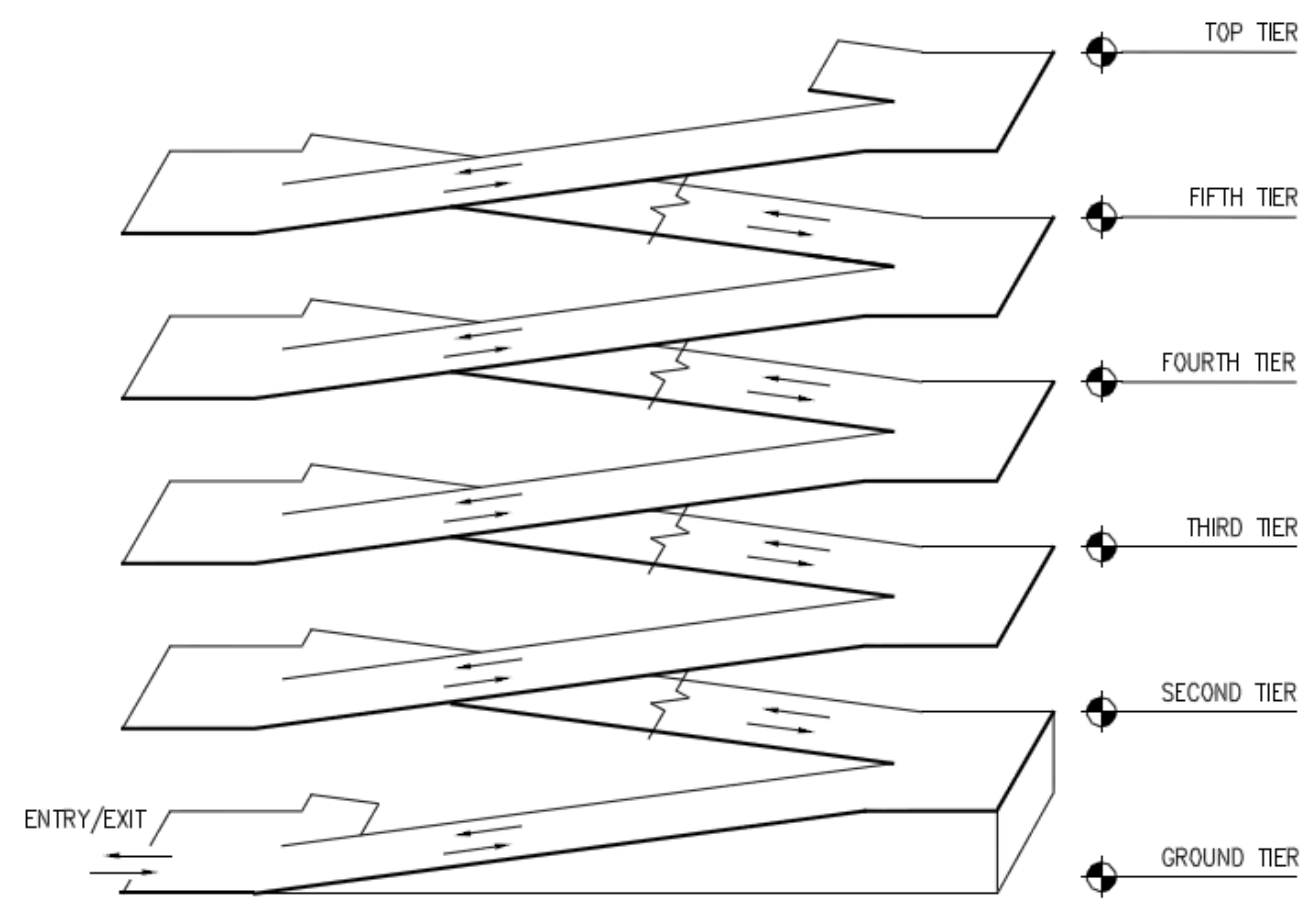
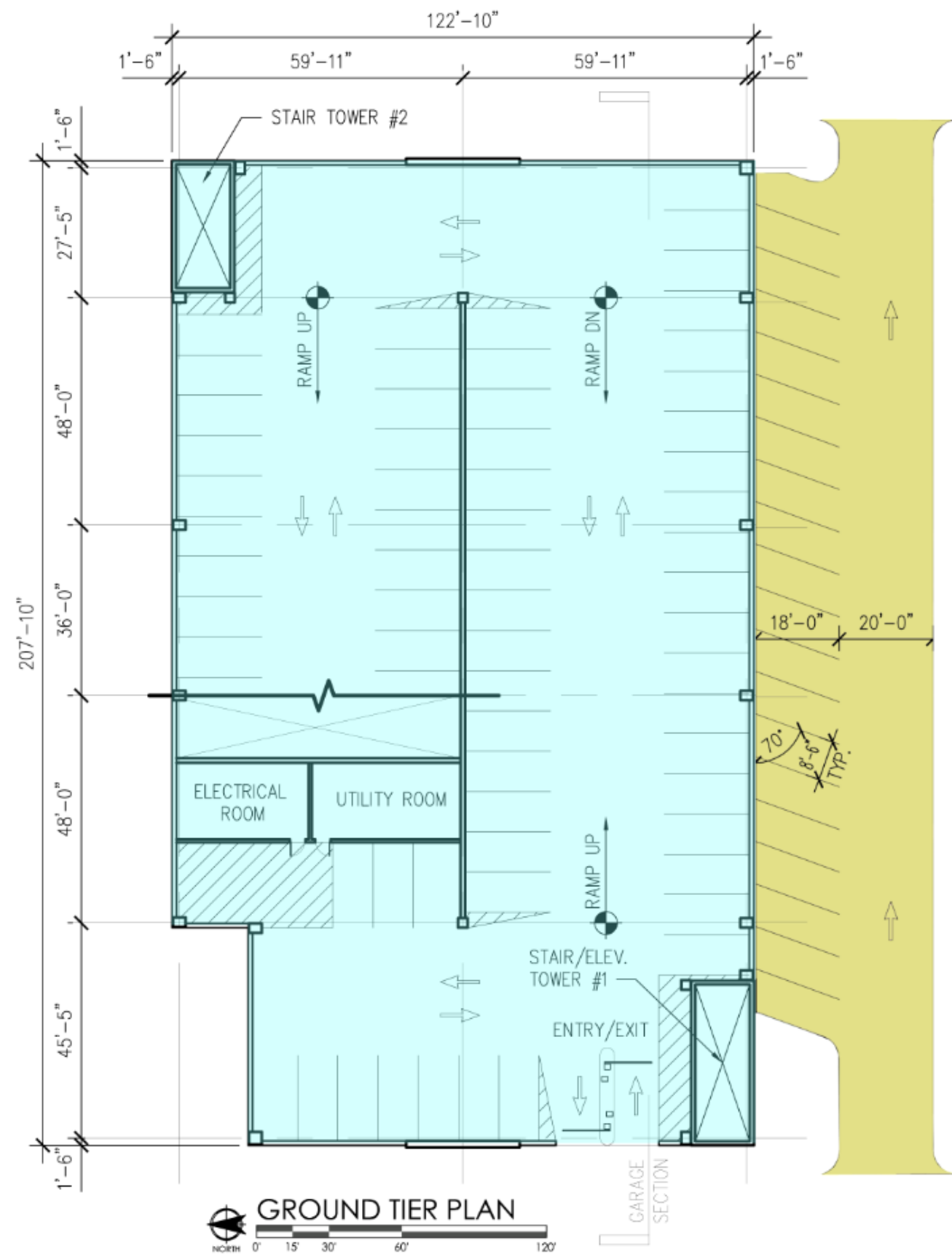


# North James Street Redevelopment Area – Parking Option 1

Parking Facility Planning Study  
Woodbridge Township





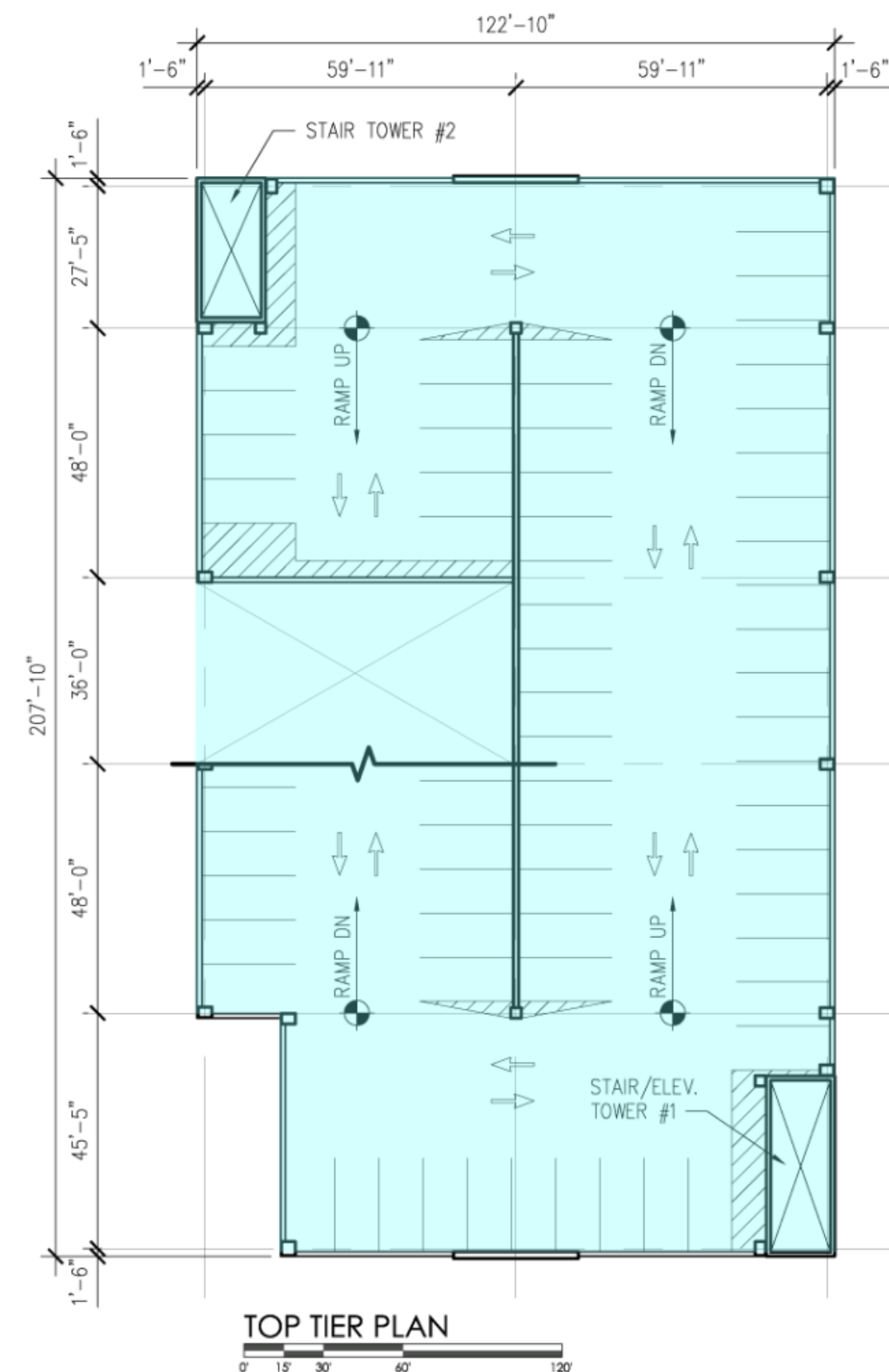
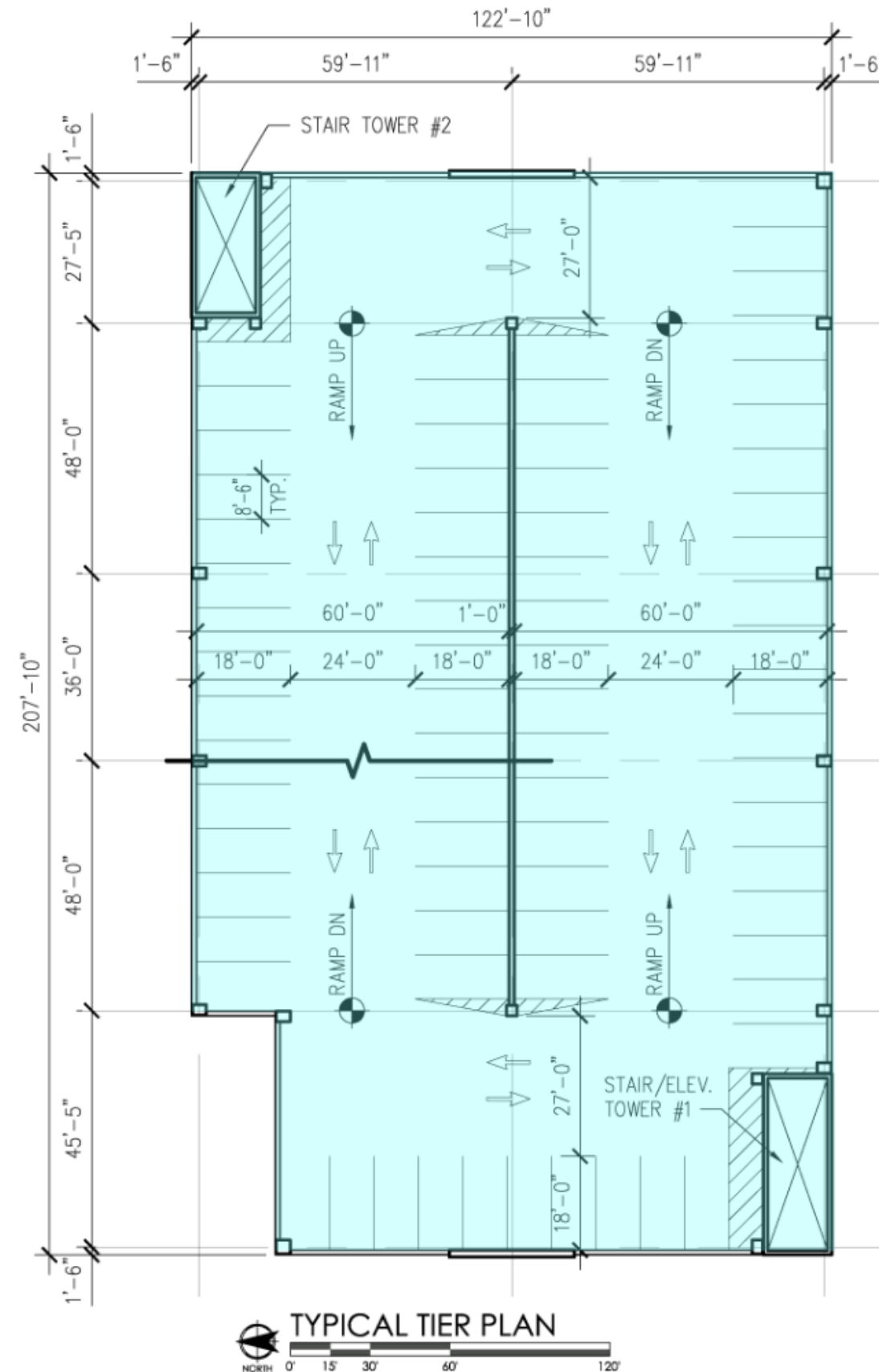


Car Tabulation

Level	Total
Top	64
5th	75
4th	75
3rd	75
2nd	75
Ground	65
Garage	429
Surface Lot	20
<b>Total</b>	<b>449</b>

# North James Street Redevelopment Area – Parking Option 1

Parking Facility Planning Study  
Woodbridge Township



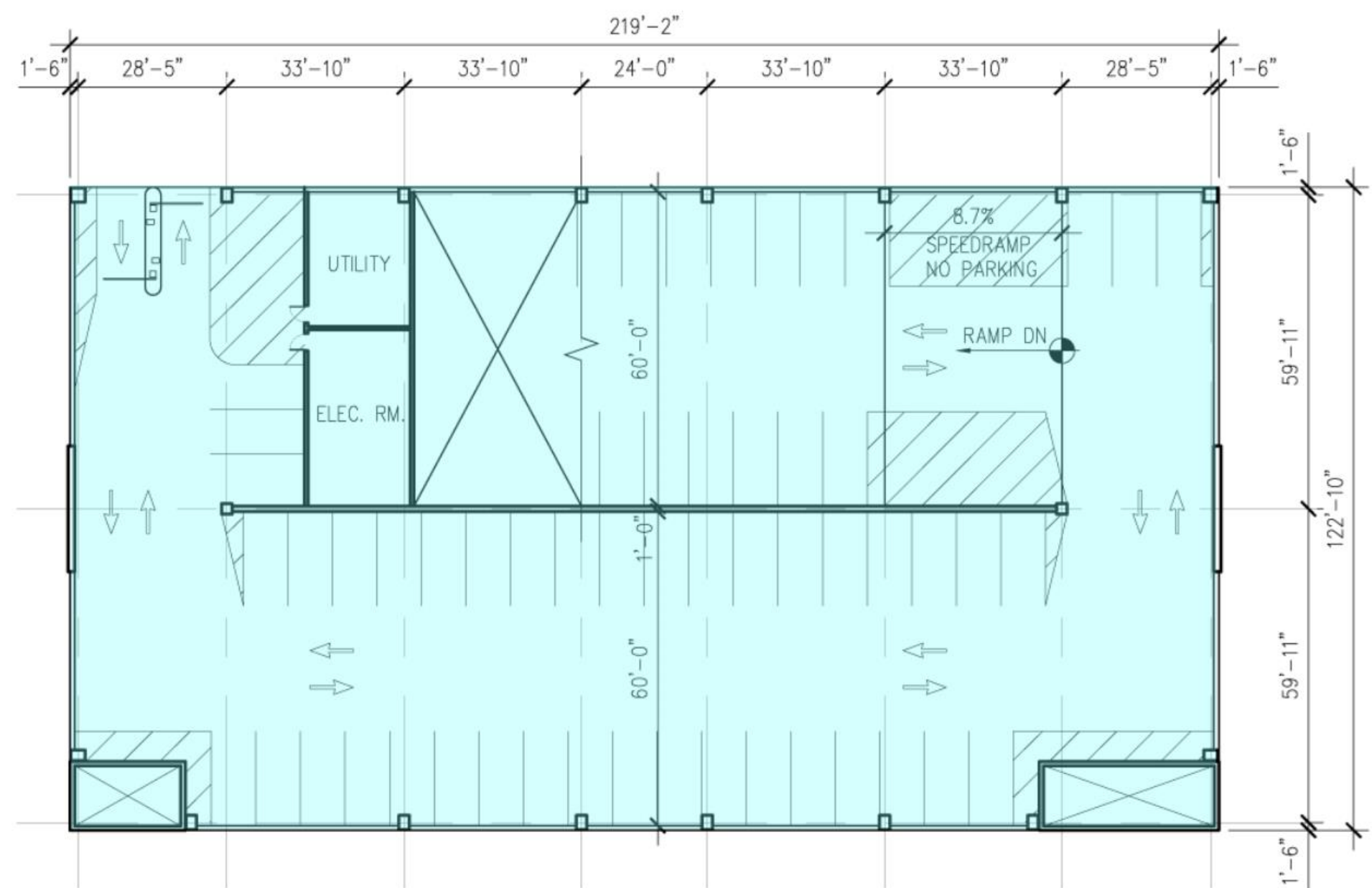


# Parking Facility Planning Study

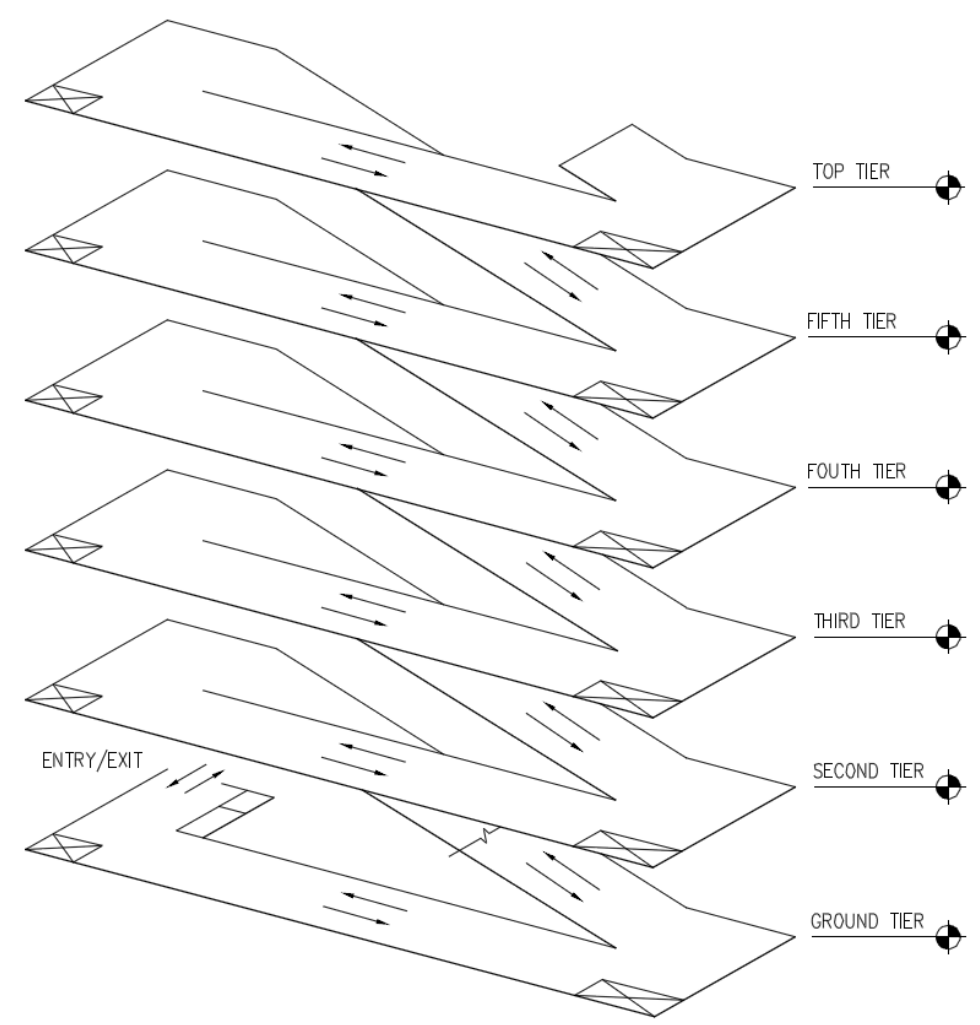
## Woodbridge Township







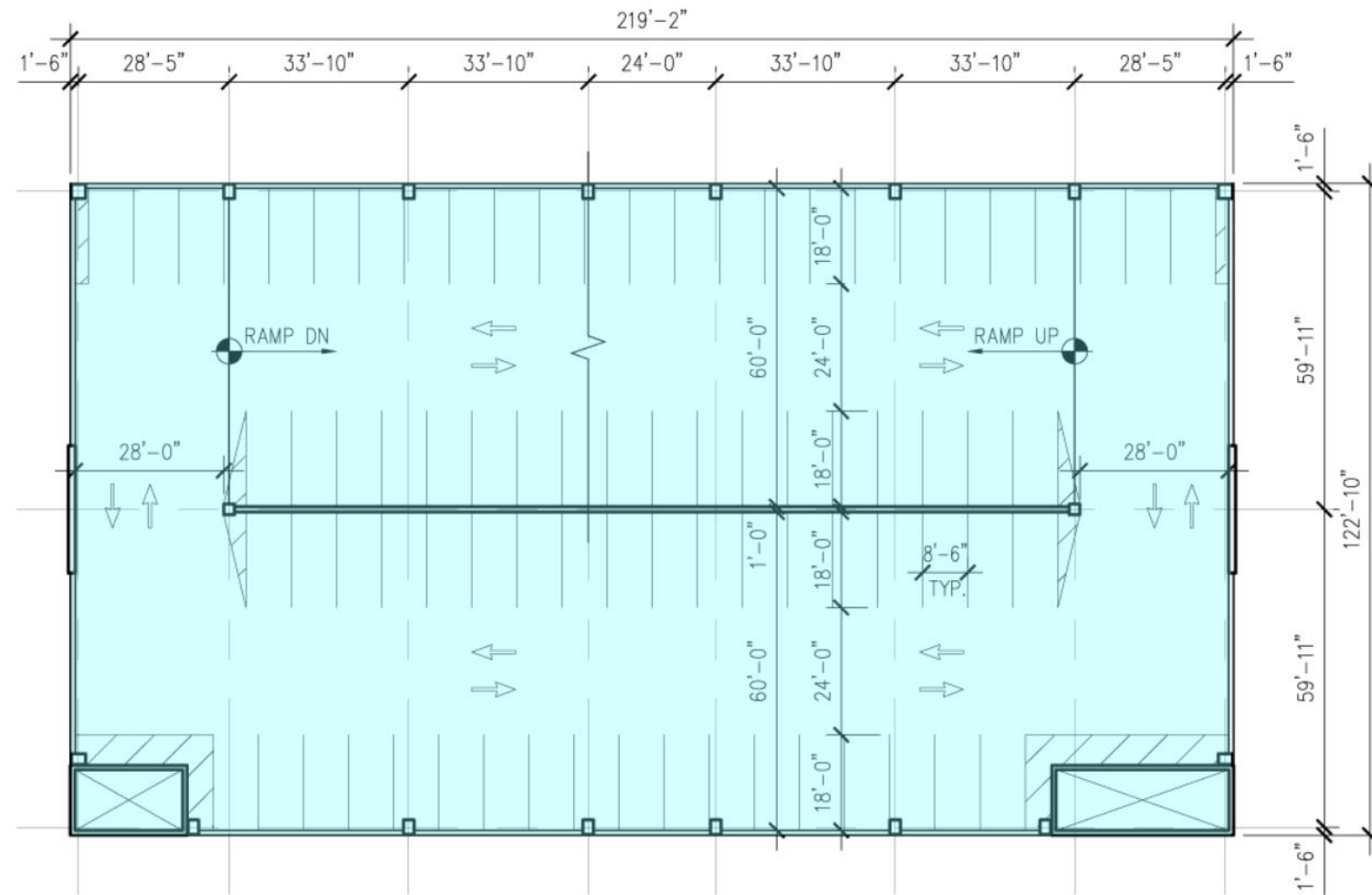
 **GROUND TIER PLAN**  
0' 15' 30' 60' 120'



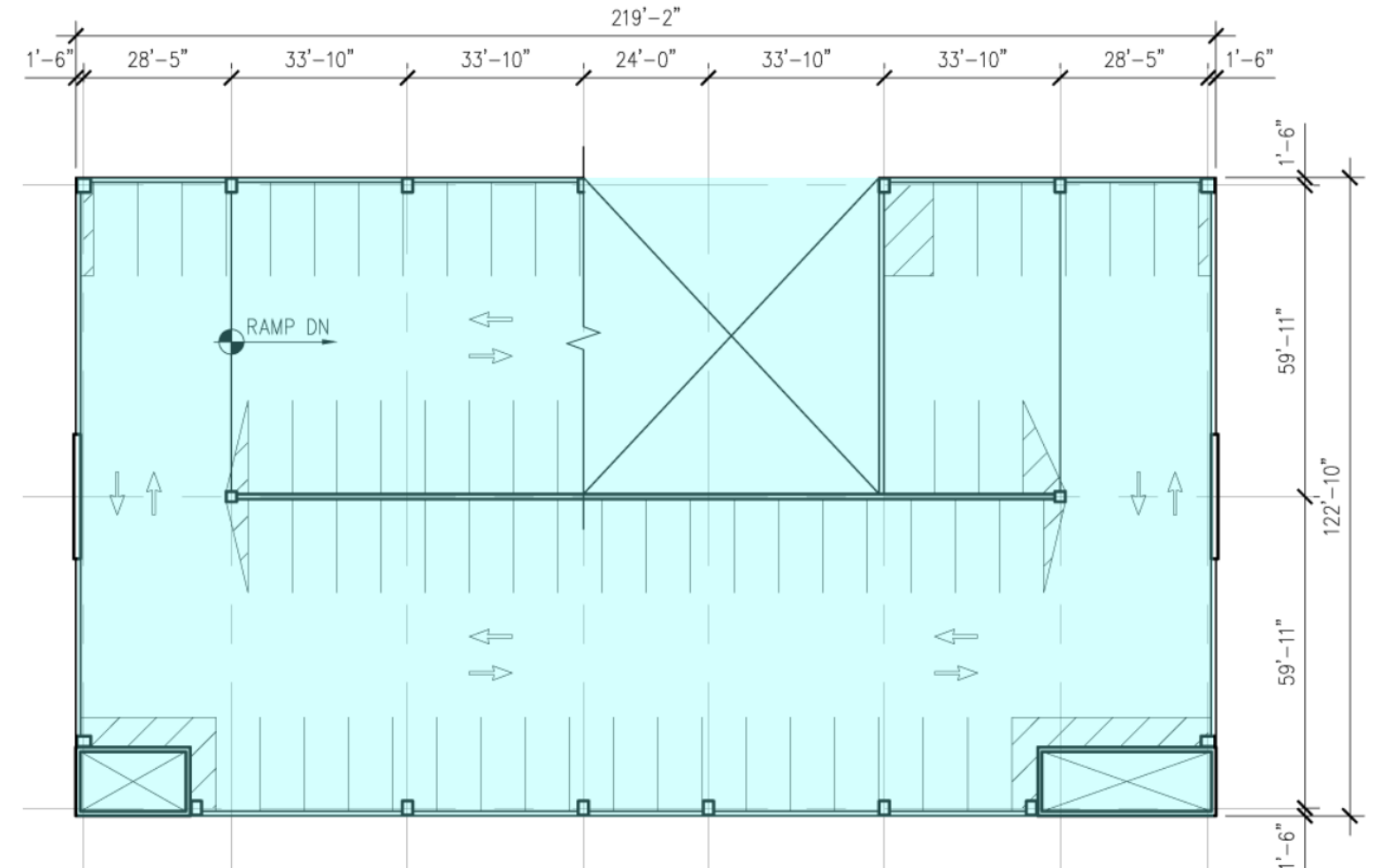
**Car Tabulation**

Level	Total
Top	63
5th	79
4th	79
3rd	79
2nd	79
Ground	56
<b>Total</b>	<b>435</b>





TYPICAL TIER PLAN



TOP TIER PLAN



Shared parking is a strategy that allows for the optimization of parking resources to meet the parking demands of several uses and to reduce the overall supply of parking to be developed. This strategy is becoming increasingly common as more mixed-use, transit oriented projects come on line. Shared parking is defined as parking that can be used to serve two or more individual land uses without conflict. As part of our analysis we performed a preliminary shared parking analysis to forecast the opportunity to share the proposed parking facility amongst multiple projects. Sharing of the parking facility reduces the amount to be constructed and improves the financial viability of the garage to be self liquidating.

## Key Assumptions

We have made the following assumptions in the shared preliminary parking model which utilizes standard ULI parking demand ratios along with calibrations based on your specific program and our experience:

**Residential Parking:** Residential apartments will average an estimated 1.25 spaces /unit. Residents will not have dedicated spaces for their individual use. We estimate that on weekdays 40% of resident will “drive out” using their car to commute.

**Convenience Retail Parking:** On both weekdays and weekends, 5% of the *customers* will utilize an alternate mode of transportation and 15% will be on site for another purpose. On both weekdays and weekends, 5% of the *employees* will utilize an alternate mode of transportation and 5% will be on site for another purpose.

**Service Retail Parking:** On both weekdays and weekends, 10% of the customers will utilize an alternate mode of transportation and 10% will be on site for another purpose. On both weekdays and weekends, 5% of the employees will utilize an alternate mode of transportation and 5% will be on site for another purpose.

**Restaurant Parking:** On both weekdays and weekends, 10% of the customers will utilize an alternate mode of transportation and 5% will be on site for another purpose. On both weekdays and weekends, 10% of the employees will utilize an alternate mode of transportation, and 5% will be on site for another purpose.

## Proposed Development Program

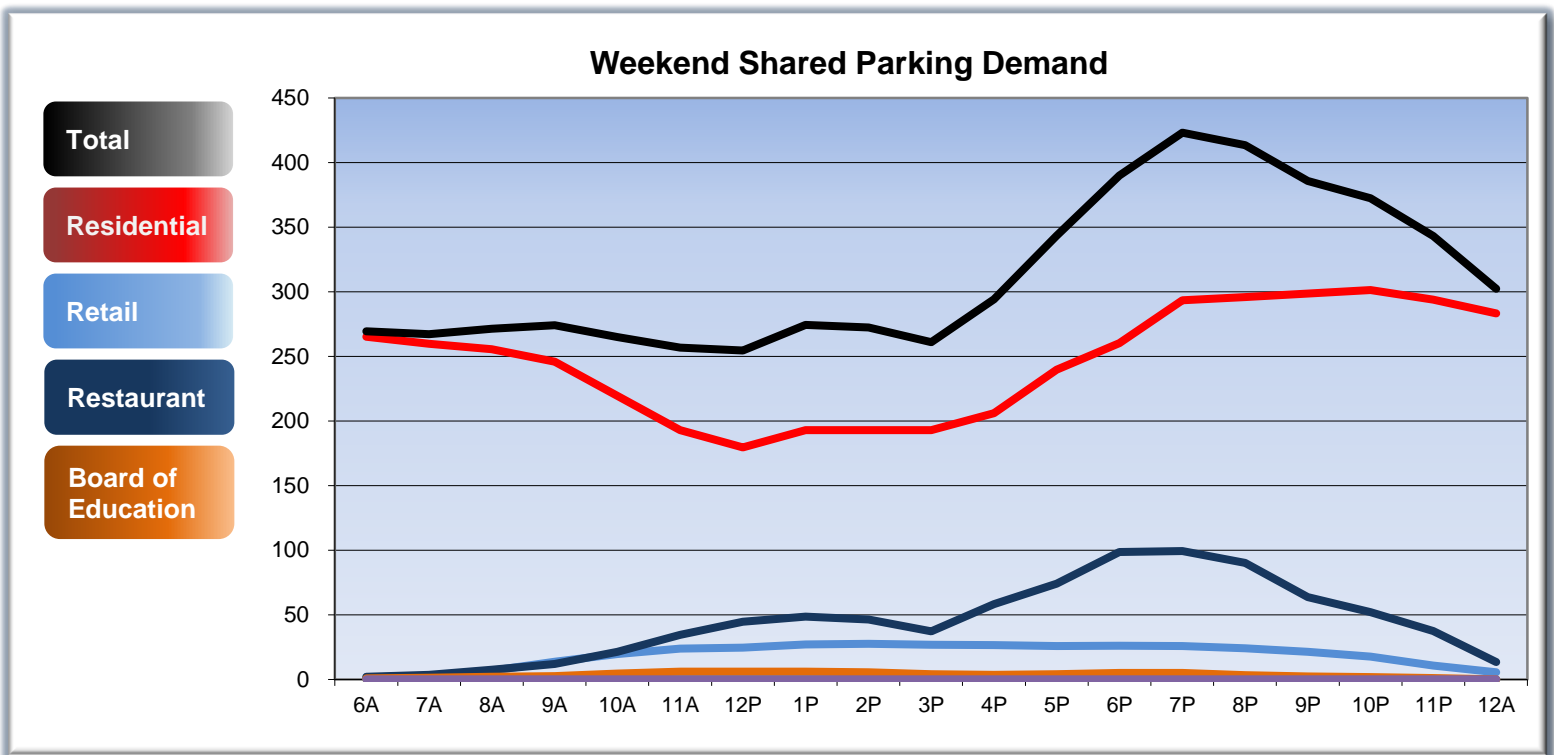
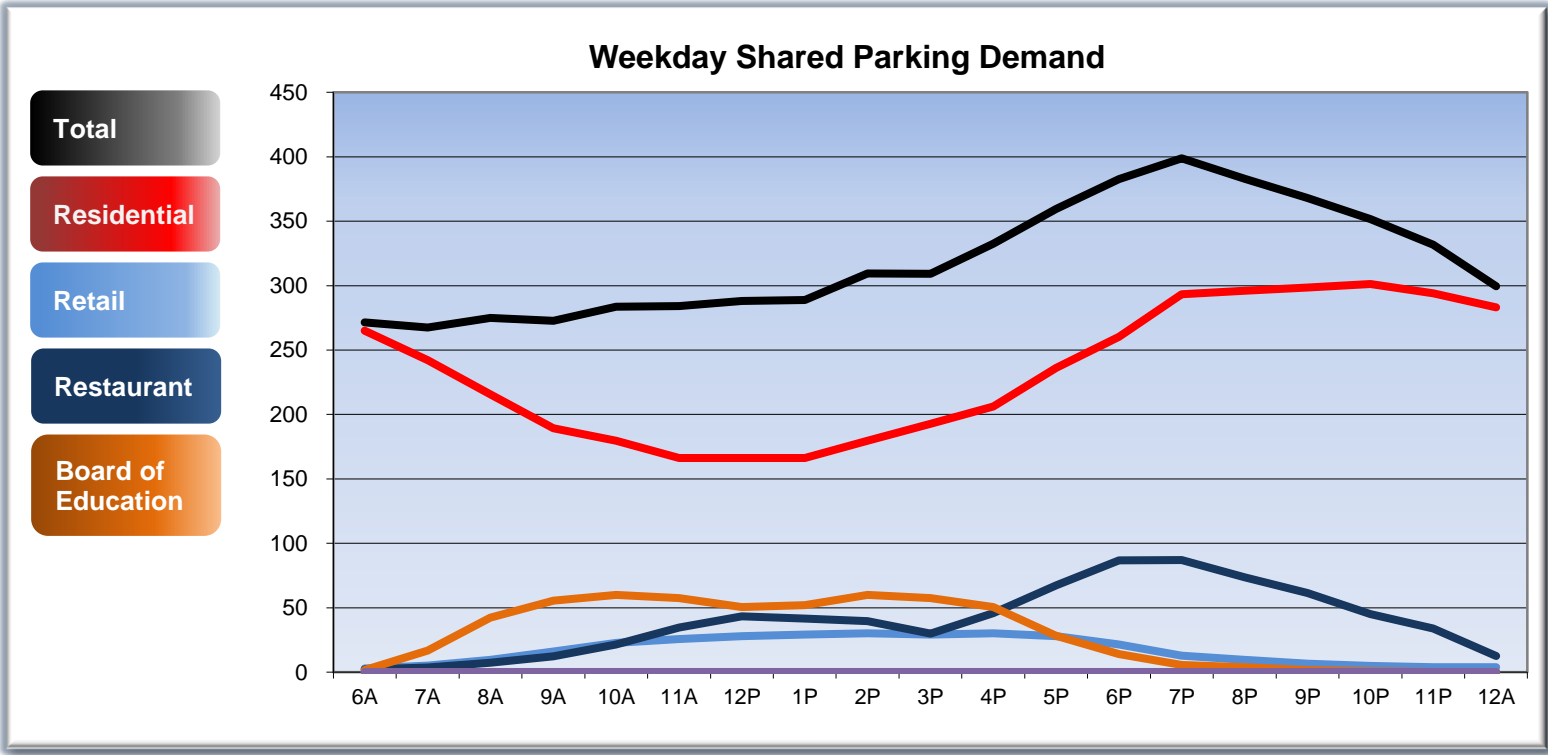
	Unit/SF	Type	Parking Ratio	Parking Spaces
Residential	241		1.25 space/unit	301
Retail	2,500	Convenience Retail	6 space/1000sf	15
	6,000	Service Retail	3.5 space/1000sf	21
Restaurant	2,500	Fine Dining	18 space/1000sf	45
	2,500	Family Restaurant	10.5 space/1000sf	26
	2,500	Fast Food	15 space/1000sf	38
Board of Education	N/A	N/A	N/A	60
<b>Total</b>				<b>506</b>



# North James Street Redevelopment Area – Shared Parking Analysis

Land Use	Peak Demand	
	Weekday 7pm	Weekend 7pm
Residential	293	293
Retail	13	26
Restaurant	87	99
Board of Education	6	5
Total	399	423

	Parking Spaces	Peak Demand	Parking Surplus
Option 1	449	423	26
Option 2	435	423	12



Land Use	6A	7A	8A	9A	10A	11A	12P	1P	2P	3P	4P	5P	6P	7P	8P	9P	10P	11P	12A
Residential	265	242	216	189	180	166	166	166	180	193	206	236	260	293	296	299	301	294	283
Retail	3	5	10	16	23	26	28	29	30	29	30	28	22	13	9	6	5	4	4
Restaurant	2	4	7	12	21	35	43	42	40	30	46	67	87	87	74	61	45	34	13
Board of Edu	2	17	42	55	60	57	50	52	60	57	50	28	14	6	4	2	1	0	0
Total	272	268	275	273	284	284	288	289	309	309	332	360	383	399	383	368	352	332	300

Land Use	6A	7A	8A	9A	10A	11A	12P	1P	2P	3P	4P	5P	6P	7P	8P	9P	10P	11P	12A
Residential	265	260	255	246	219	193	180	193	193	193	206	240	260	293	296	299	301	294	283
Retail	1	3	7	14	20	24	24	27	28	27	27	26	26	26	24	21	18	11	6
Restaurant	2	3	7	12	21	34	45	49	46	37	58	74	99	99	90	64	52	37	13
Board of Edu	1	1	2	3	5	6	6	6	6	4	3	4	5	5	3	2	2	1	0
Total	269	267	271	274	265	257	255	274	272	261	294	343	390	423	414	386	372	343	302



## Order of Magnitude Cost Estimate (429 Garage Spaces, 20 Surface Spaces)

#	Item	Cost	Percent
1	Sitework	\$1,100,000	10.0%
2	Cast in Place Concrete (foundations & washes)	\$1,100,000	10.0%
3	Precast Concrete	\$5,300,000	48.0%
4	Masonry	\$110,000	1.0%
5	Structural & Misc. Metals	\$550,000	5.0%
6	Carpentry	\$25,000	0.2%
7	Roofing, Waterproofing	\$230,000	2.1%
8	Alum. Curtainwall, storefront, doors, hardware	\$400,000	3.6%
9	Painting	\$55,000	0.5%
10	Specialties (signage, fire extinguishers, etc.)	\$55,000	0.5%
11	Equipment & Furnishings (PARC)	\$300,000	2.7%
12	Fire Protection	\$110,000	1.0%
13	Elevator	\$660,000	6.0%
14	Mechanical	\$170,000	1.5%
15	Electrical	\$680,000	6.2%
16	Parking Access Revenue Control System & CCTV	\$200,000	1.8%
<b>Total Construction Cost</b>		<b>\$11,045,000</b>	<b>100.0%</b>

### Notes:

- This is an order of magnitude construction cost estimate only
- The estimate does not contemplate any environmental or geotechnical premiums
- The estimate does not include soft costs, permitting fees, performance bond fees and construction contingency

Parking Area (Typical Level)	24,856 SF
Parking Efficiency (Typical Level)	332 SF/ Space



# North James Street Redevelopment Area – Parking Option 1

## Parking Facility Planning Study Woodbridge Township

### Preliminary Financing Assumptions

North James Street Development Area		435 Parking Spaces
CONSTRUCTION & FINANCE PROFORMA:		2017 dollars
Land Cost		\$ 400,000
Garage Construction Costs		
Hard Construction - Garage		
435 spaces @ \$ 25,000 per space		\$ 10,875,000
Parking Access Revenue Control (PARC) System & CCTV		
0 spaces @ per space		\$ 200,000
Hard Construction - Total		\$ 11,075,000
Construction Contingency @ 10.00% of Hard Total		\$ 1,107,500
Soft Costs:		
Design, Supervision, Survey, Testing, Geotech, Traffic,		
Owners Rep., Const. Management @ 10.00% of Hard Total		\$ 1,107,500
Owners Risk Insurance 1.00% of Hard Total		\$ 110,750
Base Construction Costs		\$ 13,290,000
Site Mobilization & General Conditions 2.50% of Hard Total		\$ 276,875
Total Development Cost		\$ 13,966,875
Bond Financing		
Cost Of Issuance		\$ 150,000
Gross Bond Insurance Premium		\$ -
Deposit to R&R Fund		\$ -
Deposit to D/S Reserve Fund		\$ -
Deposit to Capitaized Interest Fund (12 months)		\$ -
Deposit to (net funded) Construction Fund		\$ 13,966,875
Unadjusted Development and Financing Costs		\$ 14,116,875
Land Value to Woodbridge		\$ 1,000,000
PILOP @ \$7,500 per Space 418 spaces		\$ 3,135,000
Par Amount of Bonds		\$ 9,981,875
Annual Debt Service Payment		
30 Year D/S @ 2.00%, level payment schedule		\$ 442,739
TOTAL ANNUAL DEBT SERVICE		\$ 442,739

THA to obtain land cost estimate from North James Street Development Area

Estimate by Township  
Eliminate - Per Township  
Eliminate - Per Township  
Eliminate - Per Township  
Eliminate - Revenue Anticipation Notes - per Township

418 Spaces = Developer parking obligation as per preliminary shared parking analysis

Interest Rate As per municipality



# North James Street Redevelopment Area – Parking Option 1

## Parking Facility Planning Study Woodbridge Township

### Preliminary Financial Feasibility Analysis (Option 1: 449 Parking Spaces)

Monthly Parking Rate	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Residents Parking	\$110	\$113	\$117	\$120	\$124	\$128	\$131	\$135	\$139	\$144
Business Permits	\$40	\$41	\$42	\$44	\$45	\$46	\$48	\$49	\$51	\$52
Hourly / Daily Parking (\$1.50 per hour)	\$1.5	\$1.5	\$1.5	\$2.0	\$2.0	\$2.0	\$2.5	\$2.5	\$2.5	\$2.5
Parking Utilization										
Residents Monthly Parking (N James St)	110	110	110	110	110	110	110	110	110	110
Residents (Main St)	191	191	191	191	191	191	191	191	191	191
Business Permits	30	30	30	30	30	30	30	30	30	30
Hourly / Daily Parking (\$1.50 per hour)	100	100	100	100	100	100	100	100	100	100
Revenue	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
North James St Residents Parking	\$ 145,200	\$ 149,556	\$ 154,043	\$ 158,664	\$ 163,424	\$ 168,327	\$ 173,376	\$ 178,578	\$ 183,935	\$ 189,453
Other Residents Parking	\$ 252,120	\$ 259,684	\$ 267,474	\$ 275,498	\$ 283,763	\$ 292,276	\$ 301,044	\$ 310,076	\$ 319,378	\$ 328,959
Business Permits	\$ 14,400	\$ 14,832	\$ 15,277	\$ 15,735	\$ 16,207	\$ 16,694	\$ 17,194	\$ 17,710	\$ 18,241	\$ 18,789
Hourly / Daily Parking (\$1.50 per hour)	\$ 45,000	\$ 45,000	\$ 45,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000
Parking System Revenue	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
<b>Total Revenue</b>	<b>\$ 496,720</b>	<b>\$ 509,072</b>	<b>\$ 521,794</b>	<b>\$ 549,898</b>	<b>\$ 563,394</b>	<b>\$ 587,296</b>	<b>\$ 616,615</b>	<b>\$ 631,364</b>	<b>\$ 646,555</b>	<b>\$ 662,201</b>
Operating Expenses										
Utilities	\$ 25,000	\$ 25,625	\$ 26,266	\$ 26,922	\$ 27,595	\$ 28,285	\$ 28,992	\$ 29,717	\$ 30,460	\$ 31,222
Repairs & Maintenance	\$ 7,000	\$ 7,175	\$ 7,354	\$ 7,538	\$ 7,727	\$ 7,920	\$ 8,118	\$ 8,321	\$ 8,529	\$ 8,742
Insurance (Self-Insured)	\$ 14,000	\$ 14,350	\$ 14,709	\$ 15,076	\$ 15,453	\$ 15,840	\$ 16,236	\$ 16,642	\$ 17,058	\$ 17,484
Salary & Wages	\$ 60,000	\$ 61,500	\$ 63,038	\$ 64,613	\$ 66,229	\$ 67,884	\$ 69,582	\$ 71,321	\$ 73,104	\$ 74,932
Health, Pension & Work's Comp	\$ 15,000	\$ 15,375	\$ 15,759	\$ 16,153	\$ 16,557	\$ 16,971	\$ 17,395	\$ 17,830	\$ 18,276	\$ 18,733
Payroll Tax & Burden	\$ 6,600	\$ 6,765	\$ 6,934	\$ 7,107	\$ 7,285	\$ 7,467	\$ 7,654	\$ 7,845	\$ 8,041	\$ 8,242
Advertising, Signage, etc	\$ 2,000	\$ 2,050	\$ 2,101	\$ 2,154	\$ 2,208	\$ 2,263	\$ 2,319	\$ 2,377	\$ 2,437	\$ 2,498
Uniforms	\$ 1,000	\$ 1,025	\$ 1,051	\$ 1,077	\$ 1,104	\$ 1,131	\$ 1,160	\$ 1,189	\$ 1,218	\$ 1,249
Printing / Postage / Supplies	\$ 3,000	\$ 3,075	\$ 3,152	\$ 3,231	\$ 3,311	\$ 3,394	\$ 3,479	\$ 3,566	\$ 3,655	\$ 3,747
Phone and Communications	\$ 5,000	\$ 5,125	\$ 5,253	\$ 5,384	\$ 5,519	\$ 5,657	\$ 5,798	\$ 5,943	\$ 6,092	\$ 6,244
Systems Maintenance (Elevator / Fire Alarm)	\$ 10,000	\$ 10,250	\$ 10,506	\$ 10,769	\$ 11,038	\$ 11,314	\$ 11,597	\$ 11,887	\$ 12,184	\$ 12,489
Revenue Control System Maintenance	\$ -	\$ 10,000	\$ 10,250	\$ 10,506	\$ 10,769	\$ 11,038	\$ 11,314	\$ 11,597	\$ 11,887	\$ 12,184
Snow Removal (performed by DPW)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Misc Expennses	\$ 4,000	\$ 4,100	\$ 4,203	\$ 4,308	\$ 4,415	\$ 4,526	\$ 4,639	\$ 4,755	\$ 4,874	\$ 4,995
<b>Total Operating Expenses</b>	<b>\$ 152,600</b>	<b>\$ 166,415</b>	<b>\$ 170,575</b>	<b>\$ 174,840</b>	<b>\$ 179,211</b>	<b>\$ 183,691</b>	<b>\$ 188,283</b>	<b>\$ 192,990</b>	<b>\$ 197,815</b>	<b>\$ 202,761</b>
Per Space Expenses	\$ 351	\$ 383	\$ 392	\$ 402	\$ 412	\$ 422	\$ 433	\$ 444	\$ 455	\$ 466
<b>Revenue Less Operating Expenses</b>	<b>\$ 344,120</b>	<b>\$ 342,657</b>	<b>\$ 351,218</b>	<b>\$ 375,058</b>	<b>\$ 384,184</b>	<b>\$ 403,605</b>	<b>\$ 428,332</b>	<b>\$ 438,373</b>	<b>\$ 448,739</b>	<b>\$ 459,441</b>
Debt Service										
Debt Service	\$ 442,739	\$ 442,739	\$ 442,739	\$ 442,739	\$ 442,739	\$ 442,739	\$ 442,739	\$ 442,739	\$ 442,739	\$ 442,739
Capital Reserve	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625
<b>Net Income</b>	<b>(131,244)</b>	<b>(132,708)</b>	<b>(124,146)</b>	<b>(100,307)</b>	<b>(91,181)</b>	<b>(71,759)</b>	<b>(47,033)</b>	<b>(36,991)</b>	<b>(26,625)</b>	<b>(15,924)</b>
Debt Service Coverage Ratio	0.70	0.70	0.72	0.77	0.79	0.84	0.89	0.92	0.94	0.96

### Assumptions

**Note:** This is a break even analysis with preliminary estimated revenue and expense projections. Given that there is presently no fee parking in Woodbridge and associated historical revenue data, projected revenue is based on the parking fees for similar towns with train stations.

#### Residential Parking

- Monthly Permit rate for residents is \$110 per month. This rate is equal to the present monthly parking rate at the Rahway Transit Center Garage and the Pearl Street Garage in Metuchen.

#### Hourly / Daily Parking

- Hourly / Daily parking - \$1.5 per hour / 100 parkers per day/ 300 days per year

#### Board of ED Permits

- Permit rate = \$110 per month

#### Business Permits

- Monthly permit rate for merchants and their employees is \$40 per month. Presently no parking fee is charged to merchants or their employees

#### Parking System Revenue

- We assume that the Township can retain net revenue of \$40,000 / year from NJ Transit parking management

#### Other

- Monthly parking fee increases 3% per year
- Hourly / daily parking fees increase \$0.50 every 3 years
- Operating Expenses increase 2.5% per year
- Capital reserve = \$75 per space / year
- Assumes Developer PILOP of \$7500 per space not provided on-site



## Order of Magnitude Cost Estimate

#	Item	Cost	Percent
1	Sitework	\$1,087,500	9.8%
2	Cast in Place Concrete (foundations & washes)	\$1,087,500	9.8%
3	Precast Concrete	\$5,437,500	49.1%
4	Masonry	\$87,000	0.8%
5	Structural & Misc. Metals	\$543,750	4.9%
6	Carpentry	\$21,750	0.2%
7	Roofing, Waterproofing	\$217,500	2.0%
8	Alum. Curtainwall, storefront, doors, hardware	\$380,625	3.4%
9	Painting	\$54,375	0.5%
10	Specialties (signage, fire extinguishers, etc.)	\$54,375	0.5%
11	Equipment & Furnishings (PARC)	\$326,250	2.9%
12	Fire Protection	\$108,750	1.0%
13	Elevator	\$652,500	5.9%
14	Mechanical	\$163,125	1.5%
15	Electrical	\$652,500	5.9%
16	Parking Access Revenue Control System & CCTV	\$200,000	1.8%
Total Construction Cost		\$11,075,000	100.0%

### Notes:

- This is an order of magnitude construction cost estimate only
- The estimate does not contemplate any environmental or geotechnical premiums
- The estimate does not include soft costs, permitting fees, performance bond fees and construction contingency

Parking Area (Typical Level)	26,937 SF
Parking Efficiency (Typical Level)	341 SF/ Space



# North James Street Redevelopment Area – Parking Option 2

## Preliminary Financing Assumptions

North James Street Development Area CONSTRUCTION & FINANCE PROFORMA:		435 Parking Spaces 2017 dollars
Land Cost		\$ 1,000,000
Garage Construction Costs		
Hard Construction - Garage		
435 spaces @ \$ 25,000 per space		\$ 10,875,000
Parking Access Revenue Control (PARC) System & CCTV		
0 spaces @ per space		\$ 200,000
Hard Construction - Total		\$ 11,075,000
Construction Contingency @ 10.00% of Hard Total		\$ 1,107,500
Soft Costs:		
Design, Supervision, Survey, Testing, Geotech, Traffic,		
Owners Rep., Const. Management @ 10.00% of Hard Total		\$ 1,107,500
Owners Risk Insurance 1.00% of Hard Total		\$ 110,750
Base Construction Costs		\$ 13,290,000
		\$ -
Site Mobilization & General Conditions 2.50% of Hard Total		\$ 276,875
Total Development Cost		\$ 14,566,875
Bond Financing		
Cost Of Issuance		\$ 150,000
Gross Bond Insurance Premium		\$ -
Deposit to R&R Fund		\$ -
Deposit to D/S Reserve Fund		\$ -
Deposit to Capitaized Interest Fund (12 months)		\$ -
Deposit to (net funded) Construction Fund		\$ 14,566,875
Unadjusted Development and Financing Costs		\$ 14,716,875
Land Value to Woodbridge		\$ 1,000,000
PILOP @ \$7,500 per Space 418 spaces		\$ 3,135,000
Par Amount of Bonds		\$ 10,581,875
Annual Debt Service Payment		
30 Year D/S @ 2.00%, level payment schedule		\$ 469,352
TOTAL ANNUAL DEBT SERVICE		\$ 469,352

THA to obtain land cost estimate from North James Street Development Area

Estimate by Township  
Eliminate - Per Township  
Eliminate - Per Township  
Eliminate - Per Township  
Eliminate - Revenue Anticipation Notes - per Township

418 Spaces = Developer parking obligation as per preliminary shared parking analysis

Interest Rate As per municipality



# North James Street Redevelopment Area – Parking Option 2

## Parking Facility Planning Study Woodbridge Township

### Preliminary Financial Feasibility Analysis (Option2: 435 Parking Spaces)

Monthly Parking Rate	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Residents Parking	\$110	\$113	\$117	\$120	\$124	\$128	\$131	\$135	\$139	\$144
Business Permits	\$40	\$41	\$42	\$44	\$45	\$46	\$48	\$49	\$51	\$52
Hourly / Daily Parking (\$1.50 per hour)	\$1.5	\$1.5	\$1.5	\$2.0	\$2.0	\$2.0	\$2.5	\$2.5	\$2.5	\$2.5
Parking Utilization										
Residents Monthly Parking (N James St)	110	110	110	110	110	110	110	110	110	110
Residents (Main St)	191	191	191	191	191	191	191	191	191	191
Business Permits	30	30	30	30	30	30	30	30	30	30
Hourly / Daily Parking (\$1.50 per hour)	100	100	100	100	100	100	100	100	100	100
Revenue	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
North James St Residents Parking	\$ 145,200	\$ 149,556	\$ 154,043	\$ 158,664	\$ 163,424	\$ 168,327	\$ 173,376	\$ 178,578	\$ 183,935	\$ 189,453
Other Residents Parking	\$ 252,120	\$ 259,684	\$ 267,474	\$ 275,498	\$ 283,763	\$ 292,276	\$ 301,044	\$ 310,076	\$ 319,378	\$ 328,959
Business Permits	\$ 14,400	\$ 14,832	\$ 15,277	\$ 15,735	\$ 16,207	\$ 16,694	\$ 17,194	\$ 17,710	\$ 18,241	\$ 18,789
Hourly / Daily Parking (\$1.50 per hour)	\$ 45,000	\$ 45,000	\$ 45,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000
Parking System Revenue	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
<b>Total Revenue</b>	<b>\$ 496,720</b>	<b>\$ 509,072</b>	<b>\$ 521,794</b>	<b>\$ 549,898</b>	<b>\$ 563,394</b>	<b>\$ 587,296</b>	<b>\$ 616,615</b>	<b>\$ 631,364</b>	<b>\$ 646,555</b>	<b>\$ 662,201</b>
Operating Expenses										
Utilities	\$ 25,000	\$ 25,625	\$ 26,266	\$ 26,922	\$ 27,595	\$ 28,285	\$ 28,992	\$ 29,717	\$ 30,460	\$ 31,222
Repairs & Maintenance	\$ 7,000	\$ 7,175	\$ 7,354	\$ 7,538	\$ 7,727	\$ 7,920	\$ 8,118	\$ 8,321	\$ 8,529	\$ 8,742
Insurance (Self-Insured)	\$ 14,000	\$ 14,350	\$ 14,709	\$ 15,076	\$ 15,453	\$ 15,840	\$ 16,236	\$ 16,642	\$ 17,058	\$ 17,484
Salary & Wages	\$ 60,000	\$ 61,500	\$ 63,038	\$ 64,613	\$ 66,229	\$ 67,884	\$ 69,582	\$ 71,321	\$ 73,104	\$ 74,932
Health, Pension & Work's Comp	\$ 15,000	\$ 15,375	\$ 15,759	\$ 16,153	\$ 16,557	\$ 16,971	\$ 17,395	\$ 17,830	\$ 18,276	\$ 18,733
Payroll Tax & Burden	\$ 6,600	\$ 6,765	\$ 6,934	\$ 7,107	\$ 7,285	\$ 7,467	\$ 7,654	\$ 7,845	\$ 8,041	\$ 8,242
Advertising, Signage, etc	\$ 2,000	\$ 2,050	\$ 2,101	\$ 2,154	\$ 2,208	\$ 2,263	\$ 2,319	\$ 2,377	\$ 2,437	\$ 2,498
Uniforms	\$ 1,000	\$ 1,025	\$ 1,051	\$ 1,077	\$ 1,104	\$ 1,131	\$ 1,160	\$ 1,189	\$ 1,218	\$ 1,249
Printing / Postage / Supplies	\$ 3,000	\$ 3,075	\$ 3,152	\$ 3,231	\$ 3,311	\$ 3,394	\$ 3,479	\$ 3,566	\$ 3,655	\$ 3,747
Phone and Communications	\$ 5,000	\$ 5,125	\$ 5,253	\$ 5,384	\$ 5,519	\$ 5,657	\$ 5,798	\$ 5,943	\$ 6,092	\$ 6,244
Systems Maintenance (Elevator / Fire Alarm)	\$ 10,000	\$ 10,250	\$ 10,506	\$ 10,769	\$ 11,038	\$ 11,314	\$ 11,597	\$ 11,887	\$ 12,184	\$ 12,489
Revenue Control System Maintenance	\$ -	\$ 10,000	\$ 10,250	\$ 10,506	\$ 10,769	\$ 11,038	\$ 11,314	\$ 11,597	\$ 11,887	\$ 12,184
Snow Removal (performed by DPW)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Misc Expennses	\$ 4,000	\$ 4,100	\$ 4,203	\$ 4,308	\$ 4,415	\$ 4,526	\$ 4,639	\$ 4,755	\$ 4,874	\$ 4,995
<b>Total Operating Expenses</b>	<b>\$ 152,600</b>	<b>\$ 166,415</b>	<b>\$ 170,575</b>	<b>\$ 174,840</b>	<b>\$ 179,211</b>	<b>\$ 183,691</b>	<b>\$ 188,283</b>	<b>\$ 192,990</b>	<b>\$ 197,815</b>	<b>\$ 202,761</b>
Per Space Expenses	\$ 351	\$ 383	\$ 392	\$ 402	\$ 412	\$ 422	\$ 433	\$ 444	\$ 455	\$ 466
<b>Revenue Less Operating Expenses</b>	<b>\$ 344,120</b>	<b>\$ 342,657</b>	<b>\$ 351,218</b>	<b>\$ 375,058</b>	<b>\$ 384,184</b>	<b>\$ 403,605</b>	<b>\$ 428,332</b>	<b>\$ 438,373</b>	<b>\$ 448,739</b>	<b>\$ 459,441</b>
Debt Service										
Debt Service	\$ 469,352	\$ 469,352	\$ 469,352	\$ 469,352	\$ 469,352	\$ 469,352	\$ 469,352	\$ 469,352	\$ 469,352	\$ 469,352
Capital Reserve	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625	\$ 32,625
<b>Net Income</b>	<b>(157,857)</b>	<b>(159,320)</b>	<b>(150,759)</b>	<b>(126,919)</b>	<b>(117,793)</b>	<b>(98,372)</b>	<b>(73,645)</b>	<b>(63,604)</b>	<b>(53,238)</b>	<b>(42,536)</b>
Debt Service Coverage Ratio										
	0.66	0.66	0.68	0.73	0.75	0.79	0.84	0.86	0.89	0.91

### Assumptions

**Note:** This is a break even analysis with preliminary estimated revenue and expense projections. Given that there is presently no fee parking in Woodbridge and associated historical revenue data, projected revenue is based on the parking fees for similar towns with train stations.

#### Residential Parking

- Monthly Permit rate for residents is \$110 per month. This rate is equal to the present monthly parking rate at the Rahway Transit Center Garage and the Pearl Street Garage in Metuchen.

#### Hourly / Daily Parking

- Hourly / Daily parking - \$1.5 per hour / 100 parkers per day/ 300 days per year

#### Board of ED Permits

- Permit rate = \$110 per month

#### Business Permits

- Monthly permit rate for merchants and their employees is \$40 per month. Presently no parking fee is charged to merchants or their employees

#### Commuter Parking Revenue

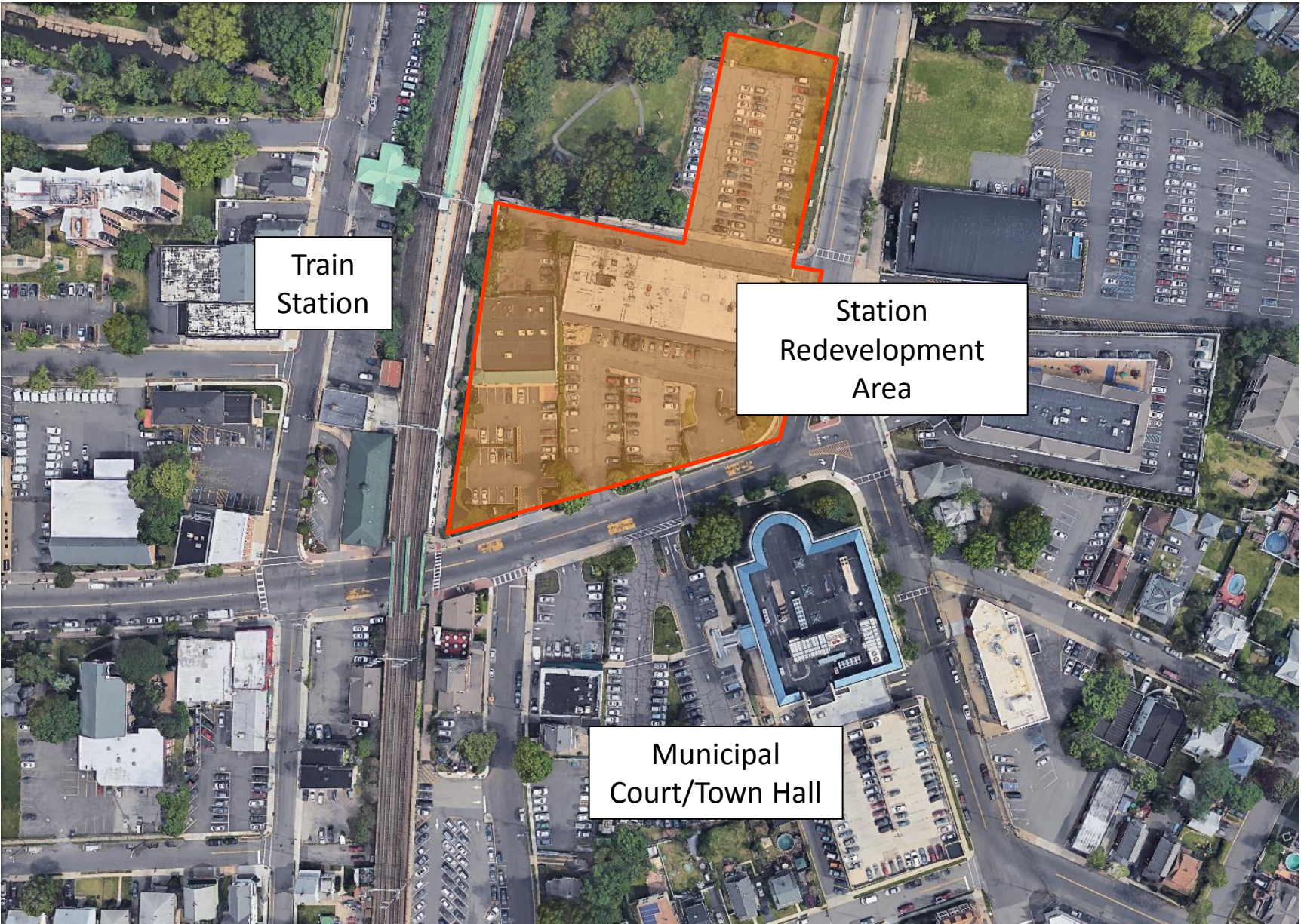
- We assume that the Township can retain net revenue of \$40,000 / year for NJ Transit Parking Management

#### Other

- Monthly parking fee increases 3% per year
- Hourly / daily parking fees increase \$0.50 every 3 years
- Operating Expenses increase 2.5% per year
- Capital reserve = \$75 per space / year
- Assumes Developer PILOP of \$7500 per space not provided on-site



Aerial Photograph of Site



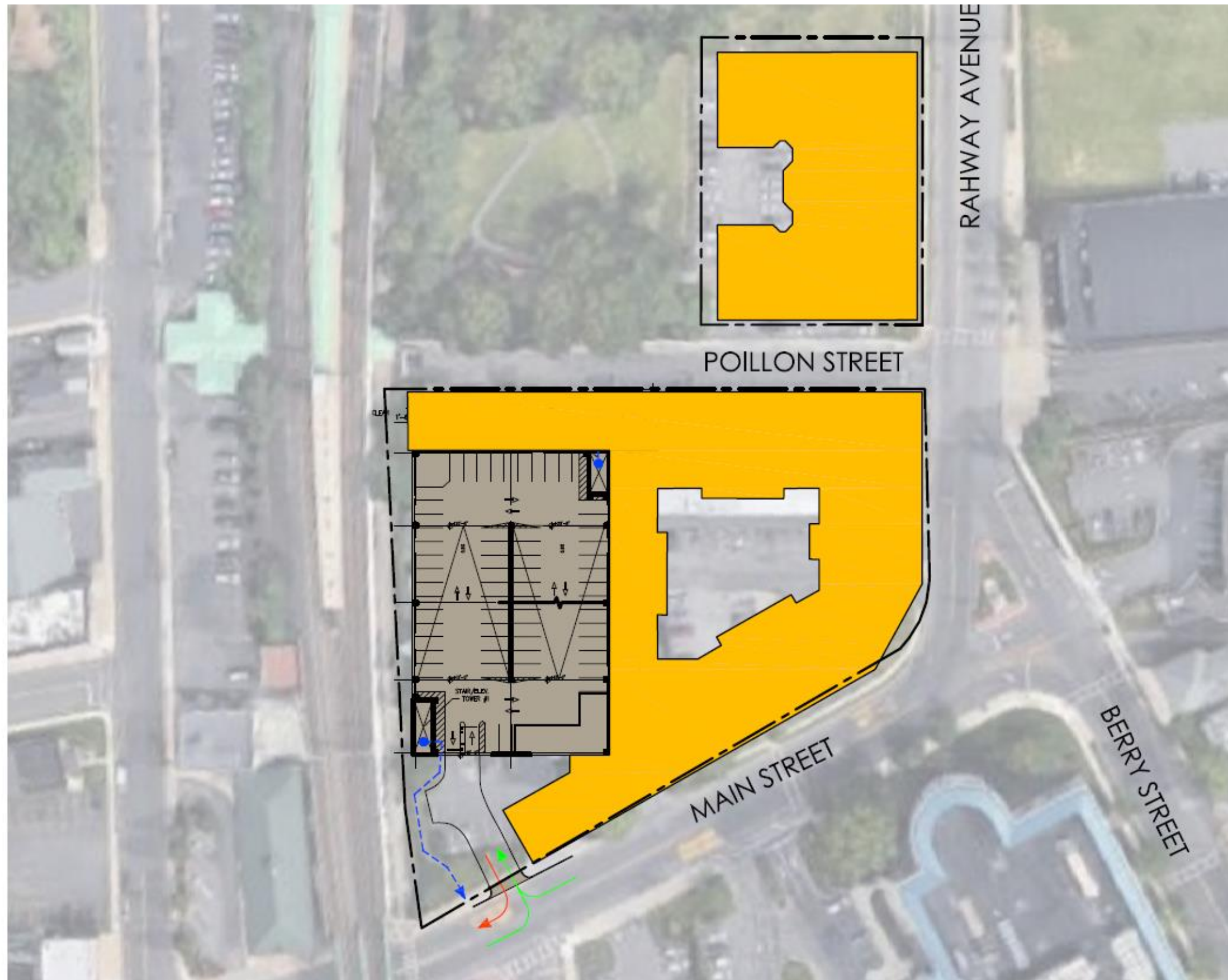
Existing Conditions

The subject area is bounded by the James Parker Park to the north, Rahway Avenue to the east, Main Street to the south and the North Jersey Coastline tracks to the west. This property is approximately 200 feet from the Woodbridge Train Station.

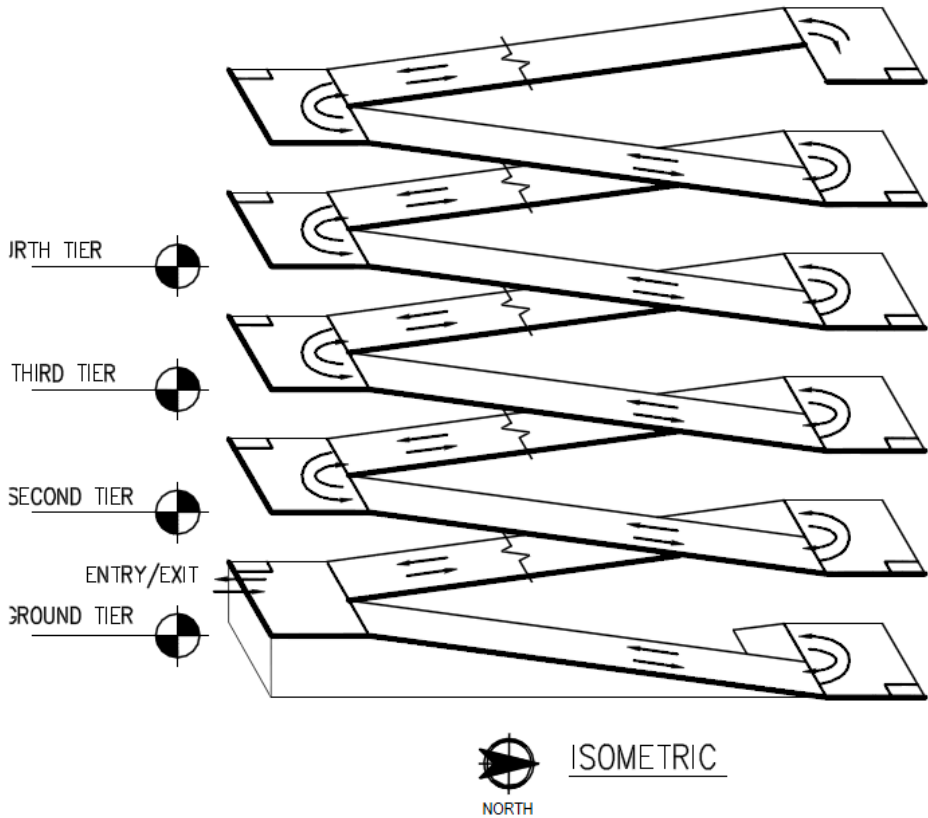
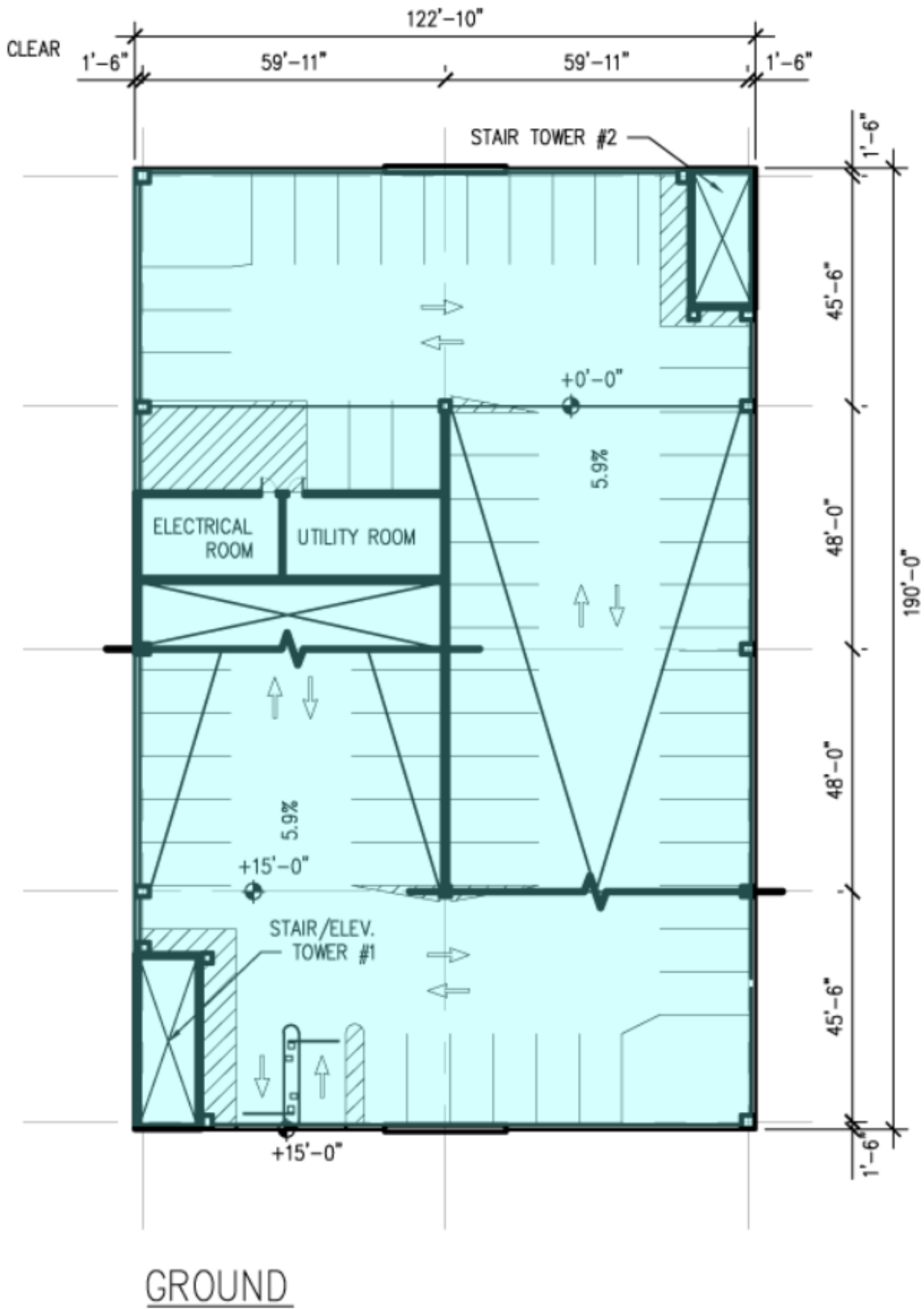
Total Existing Spaces	# of Spaces
Customer Parking Spaces	104
Commuter Parking Spaces	79
<b>Total</b>	<b>183</b>

Existing Uses	
Bank/Financial Institution	2
Restaurant	3
UPS Store	1
Nail Salon	1
Cleaner Service	1
<b>Total Lots</b>	<b>8</b>





# Station Redevelopment Area – Parking Option 1

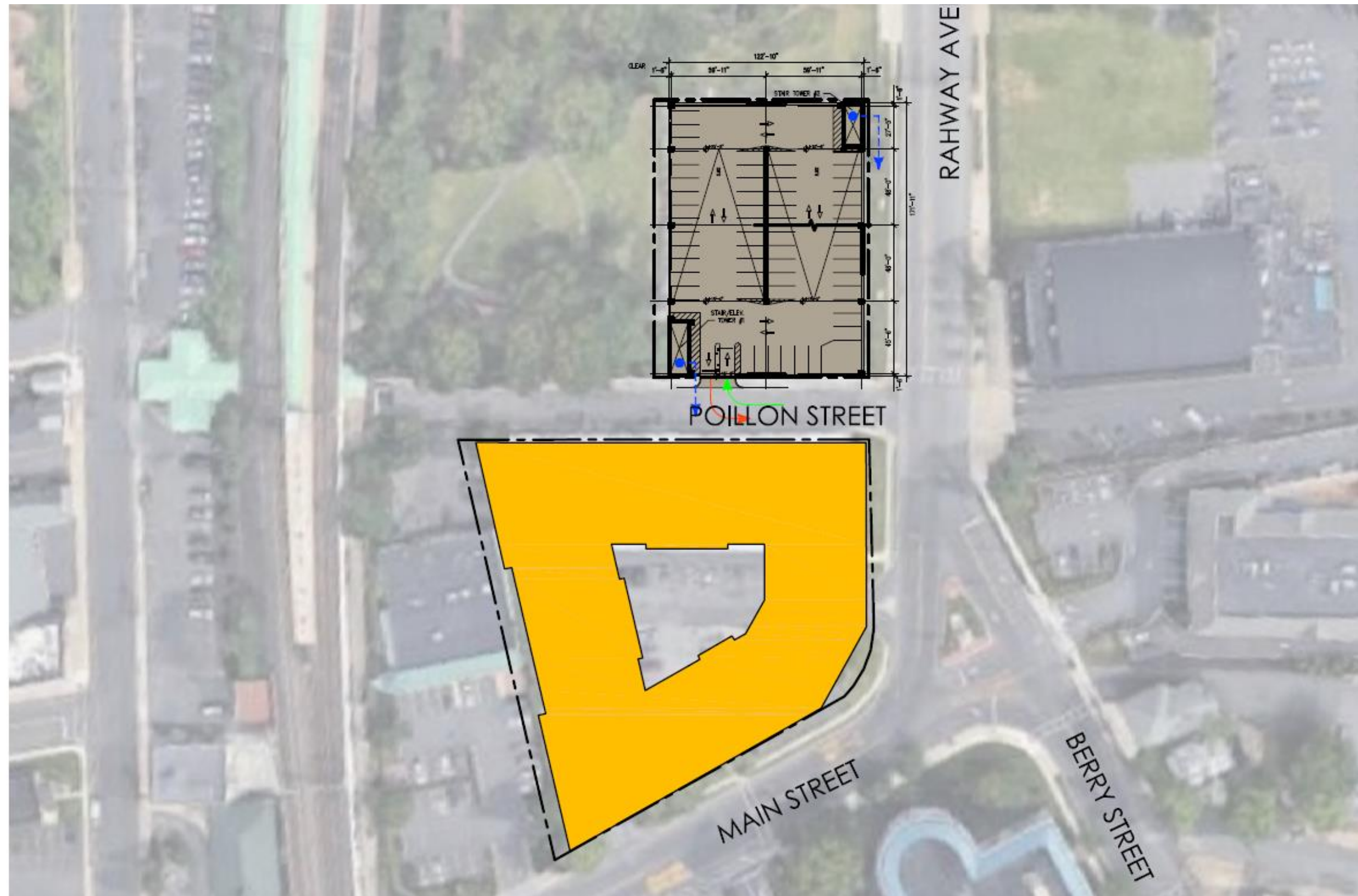


Car Tabulation

Level	Total
5th	83
4th	71
3rd	71
2nd	71
Ground	71
<b>Total</b>	<b>367</b>

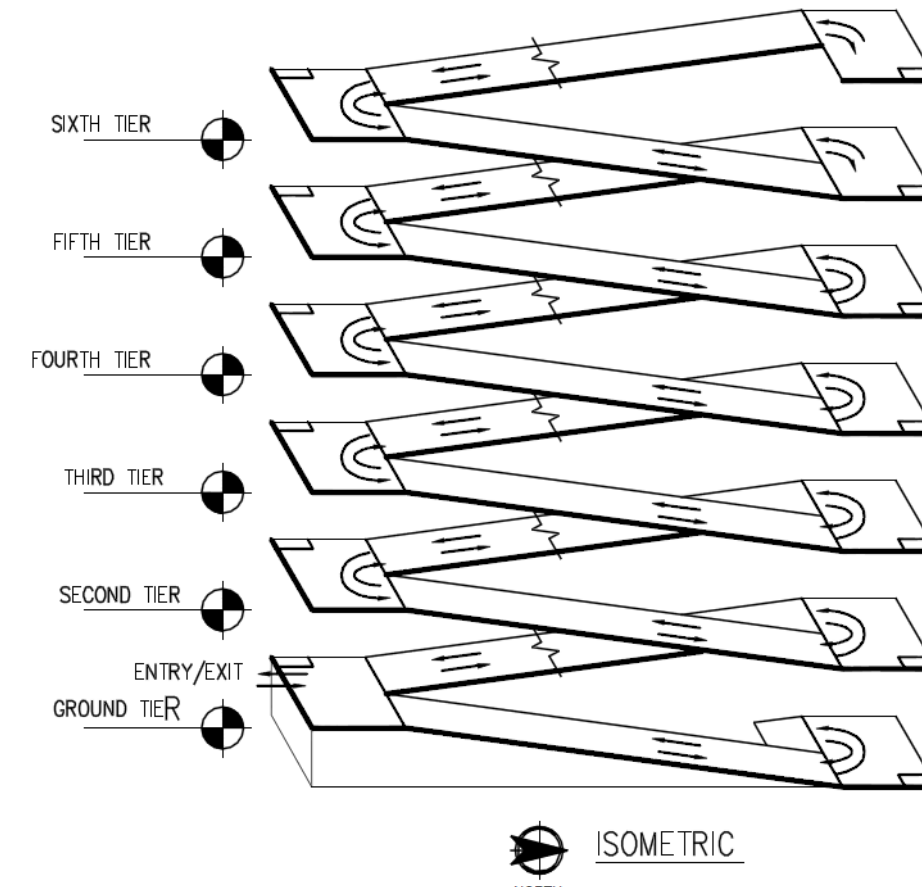
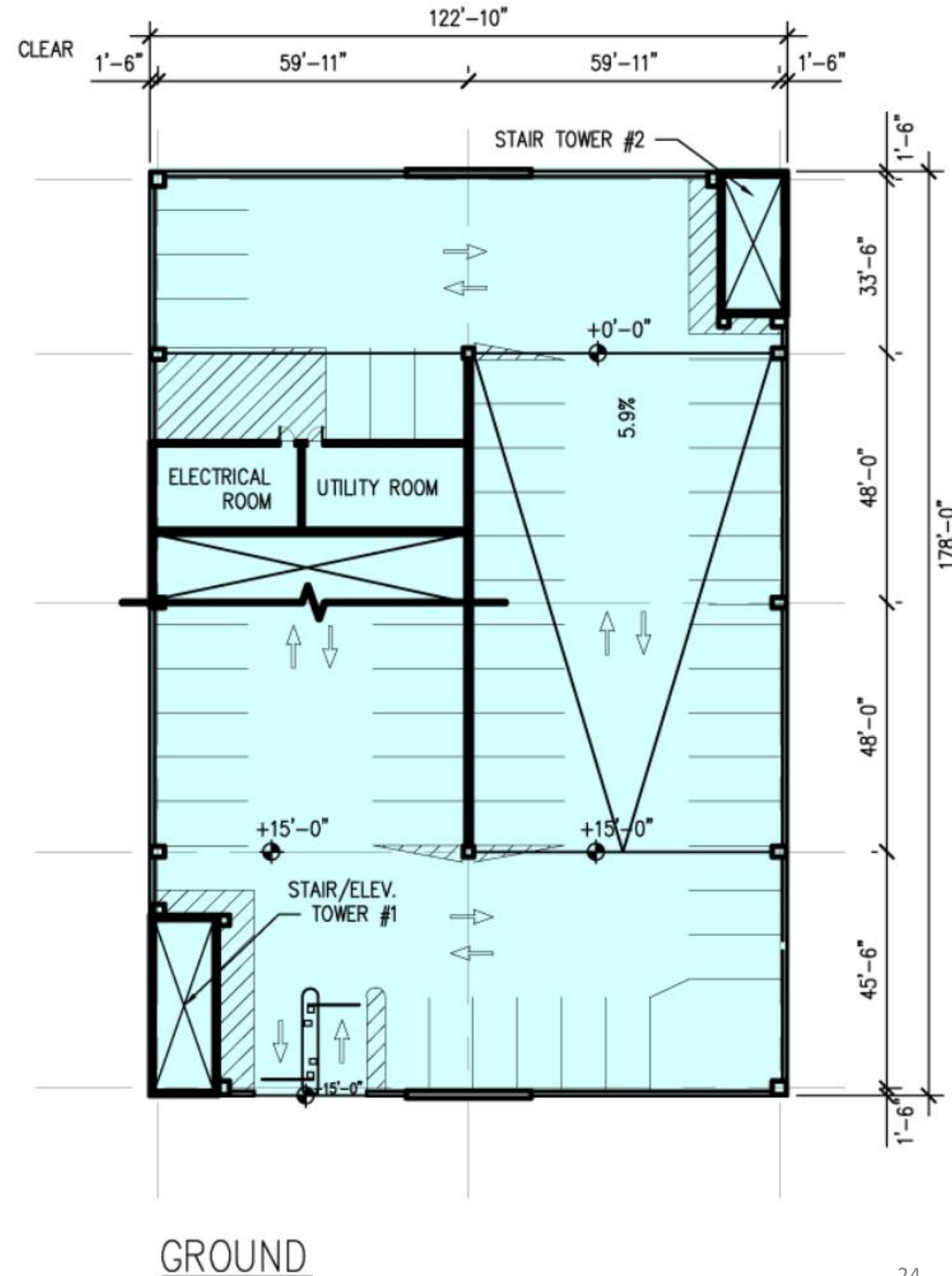






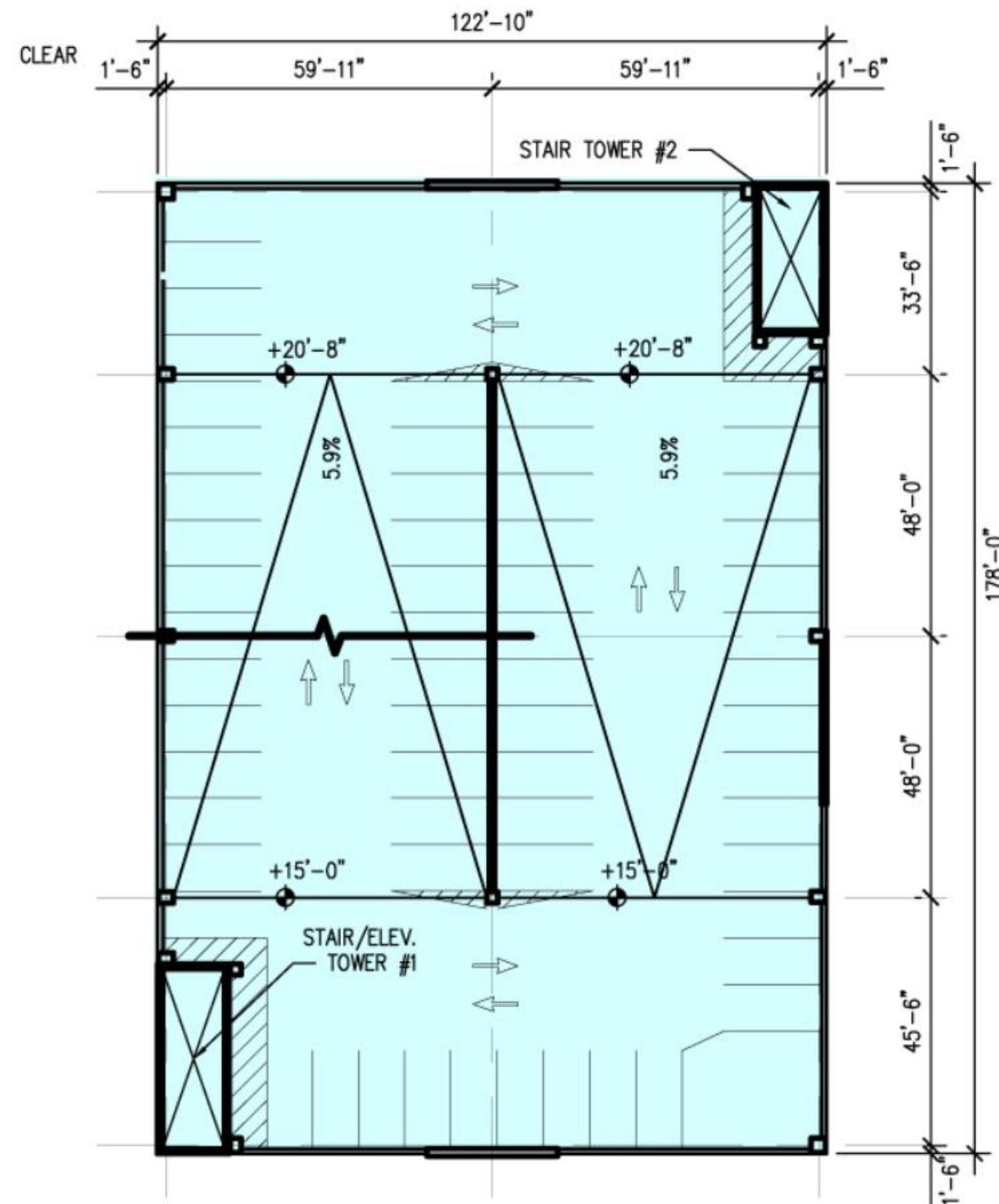


# Station Redevelopment Area – Parking Option 2

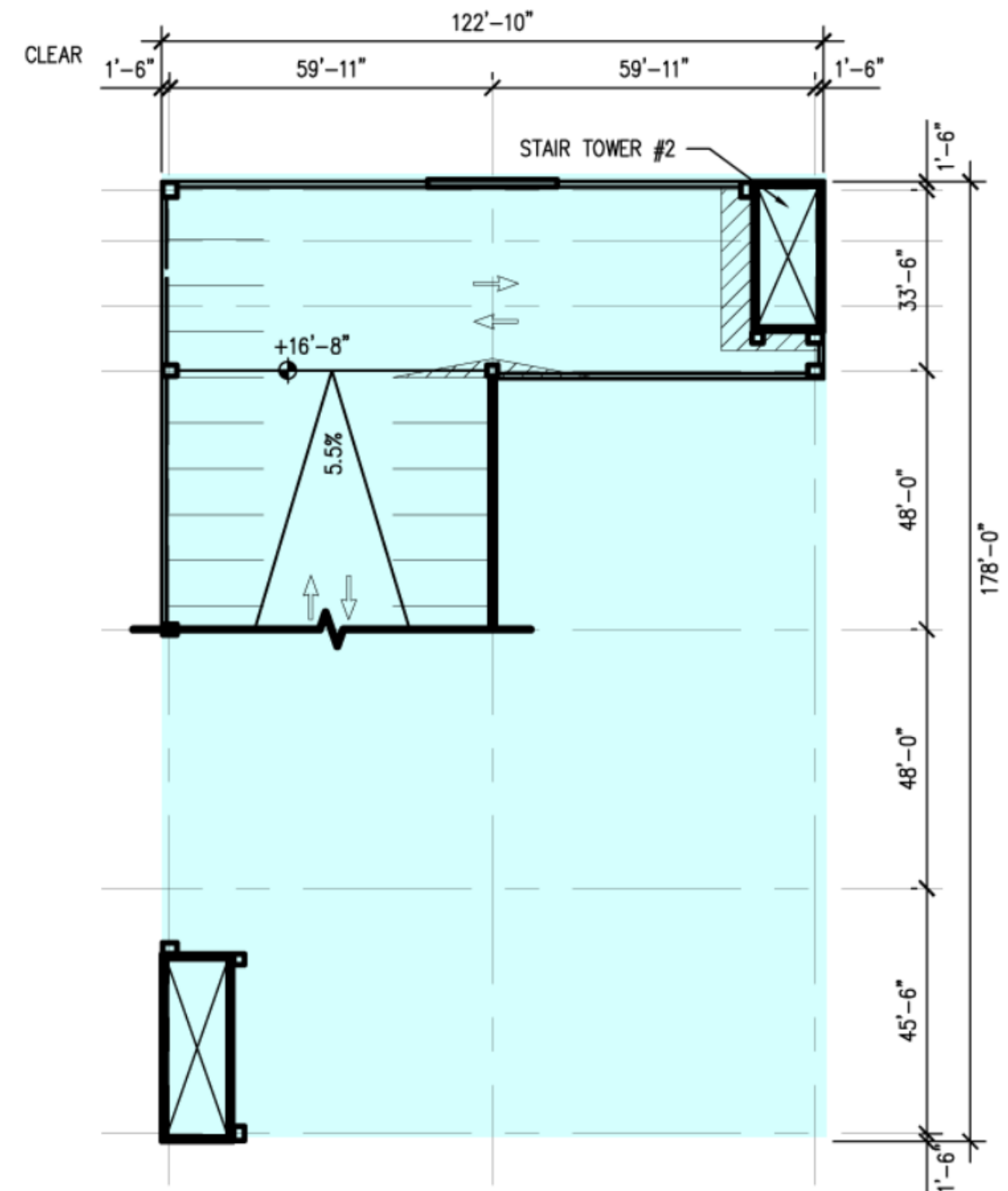


Car Tabulation

Level	Total
6th	65
5th	61
4th	61
3rd	61
2nd	61
Ground	60
<b>Total</b>	<b>369</b>



TYP – 2ND, 3RD, 4TH, 5TH, 6TH



TOP



## Key Assumptions

We have made the following assumptions in our model which utilizes standard ULI parking demand ratios along with calibrations based on your specific program and our experience:

**Resident Parking:** Residential apartments will average an estimated 1.25 spaces /unit. Residents will not have dedicated spaces for their individual use. We estimate that on weekdays 40% of resident will “drive out” using their car to commute.

**Convenience Retail Parking:** On both weekdays and weekends, 5% of the *customers* will utilize an alternate mode of transportation and 15% will be on site for another purpose. On both weekdays and weekends, 5% of the employees will utilize an alternate mode of transportation and 5% will be on site for another purpose.

**Fast Food Parking:** On both weekdays and weekends, 15% of the *fast food restaurant customers* will utilize an alternate mode of transportation, and 10% will be on site for another purpose. On both weekdays and weekends, 10% of the *restaurant employees* will utilize an alternate mode of transportation.

**Commuter Parking:** Based on the Parking Adequacy Study dated June 20, 2017, the commuter parking at the Poillon Street lot is fully occupied (80 spaces) and will be incorporated into the project.

## *Proposed Development Program*

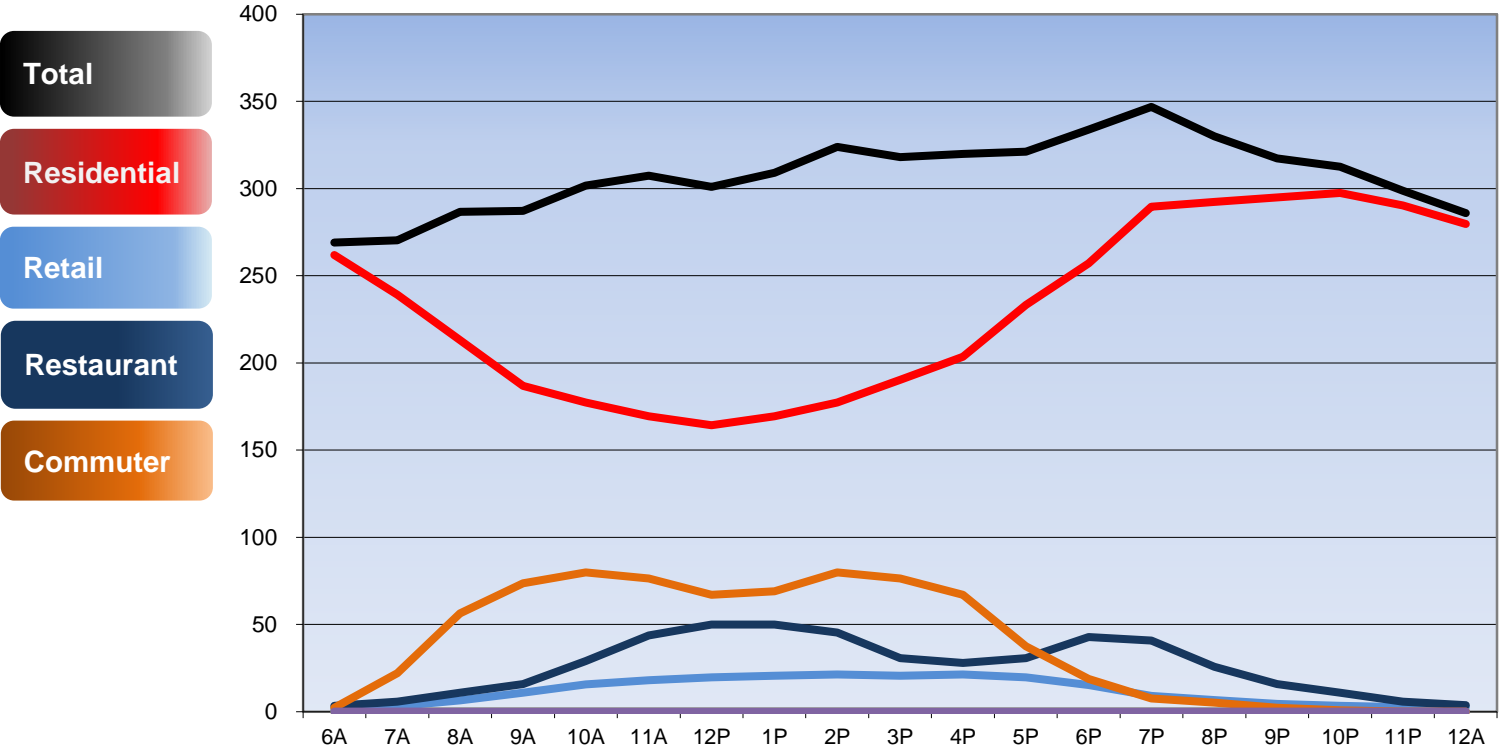
	Unit/SF	Type	Parking Ratio	Parking Spaces
Residential	238		1.25 space/unit	298
Retail	4,325	Convenience Retail	6 space/1000sf	26
Restaurant	4,325	Fast Food	15 space/1000sf	65
Commuters	N/A	NJT Commuters	N/A	80
<b>Total</b>				<b>469</b>

# Station Redevelopment Area – Shared Parking Analysis

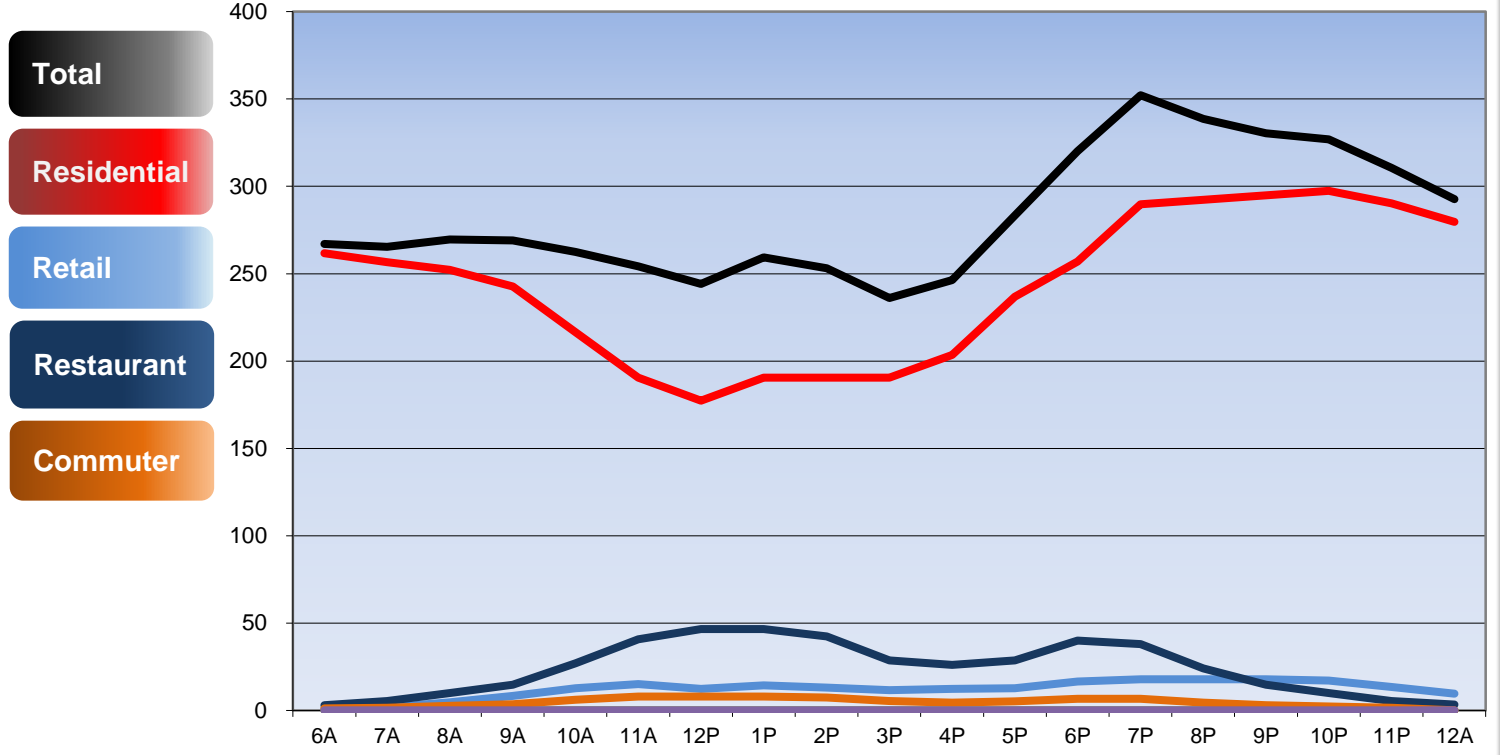
Land Use	Peak Demand	
	Weekday	Weekend
Residential	290	290
Retail	9	18
Restaurant	42	39
Commuter	7	7
Total	348	353

	Parking Spaces	Peak Demand	Parking Surplus
Option 1	367	353	14
Option 2	369	353	16

Weekday Shared Parking Demand



Weekend Shared Parking Demand



Land Use	6A	7A	8A	9A	10A	11A	12P	1P	2P	3P	4P	5P	6P	7P	8P	9P	10P	11P	12A
Residential	262	239	213	187	177	169	164	169	177	190	203	233	257	290	292	295	298	290	280
Retail	2	3	6	11	16	18	20	21	21	21	21	20	15	9	7	4	3	3	3
Restaurant	3	6	11	16	30	45	51	51	46	31	28	31	44	42	26	16	11	6	4
Commuter	2	22	56	74	80	76	67	69	80	76	67	37	19	7	5	2	1	0	0
Total	269	270	287	288	302	308	302	310	325	319	320	322	335	348	330	318	313	299	286

Land Use	6A	7A	8A	9A	10A	11A	12P	1P	2P	3P	4P	5P	6P	7P	8P	9P	10P	11P	12A
Residential	262	257	252	243	217	190	177	190	190	190	203	237	257	290	292	295	298	290	280
Retail	1	2	5	8	13	15	12	14	13	12	12	13	16	18	18	18	17	13	10
Restaurant	3	6	10	15	28	42	47	47	43	29	27	29	41	39	25	15	10	6	4
Commuter	1	2	3	3	6	8	8	8	7	5	5	5	7	7	4	3	2	1	0
Total	267	265	270	269	263	255	245	260	254	237	247	284	321	353	339	331	327	311	293



# Station Redevelopment Area – Parking Option 1 & 2 – Cost Estimate

**Parking Facility Planning Study**  
Woodbridge Township

## Order of Magnitude Cost Estimate

#	Item	Cost	Percent
1	Sitework	\$920,000	9.8%
2	Cast in Place Concrete (foundations & washes)	\$920,000	9.8%
3	Precast Concrete	\$4,588,000	48.7%
4	Masonry	\$75,000	0.8%
5	Structural & Misc. Metals	\$458,750	4.9%
6	Carpentry	\$19,000	0.2%
7	Roofing, Waterproofing	\$184,000	2.0%
8	Alum. Curtainwall, storefront, doors, hardware	\$320,000	3.4%
9	Painting	\$45,000	0.5%
10	Specialties (signage, fire extinguishers, etc.)	\$50,250	0.5%
11	Equipment & Furnishings (PARC)	\$280,000	3.0%
12	Fire Protection	\$95,000	1.0%
13	Elevator	\$560,000	5.9%
14	Mechanical	\$150,000	1.6%
15	Electrical	\$560,000	5.9%
16	Parking Access Revenue Control System & CCTV	\$200,000	2.1%
<b>Total Construction Cost</b>		<b>\$9,425,000</b>	<b>100.0%</b>

### Notes:

- This is an order of magnitude construction cost estimate only
- The estimate does not contemplate any environmental or geotechnical premiums
- The estimate does not include soft costs, permitting fees, performance bond fees and construction contingency

Parking Area (Typical Level)	21,880 SF
Parking Efficiency (Typical Level)	336 SF/ Space

# Station Redevelopment Area – Parking Option 1 & 2 – Cost Estimate

## Preliminary Financing Assumptions

<b>Station Site</b>		<b>369 Parking Spaces</b>
<b>CONSTRUCTION &amp; FINANCE PROFORMA:</b>		<b>2017 dollars</b>
<b>Land Cost</b>		\$ -
<b>Garage Construction Costs</b>		
Hard Construction - Garage		
369 spaces @	\$ 25,000 per space	\$ 9,225,000
Parking Access Revenue Control (PARC) System & CCTV		
0 spaces @	per space	\$ 200,000
<b>Hard Construction - Total</b>		<b>\$ 9,425,000</b>
Construction Contingency @ 10.00% of Hard Total		\$ 942,500
<b>Soft Costs:</b>		
Design, Supervision, Survey, Testing, Geotech, Traffic, Owners Rep., Const. Management @ 10.00% of Hard Total		\$ 942,500
Owners Risk Insurance 1.00% of Hard Total		\$ 94,250
<b>Base Construction Costs</b>		<b>\$ 11,404,250</b>
Site Mobilization & General Conditions 2.50% of Hard Total		\$ 235,625
<b>Total Development Cost</b>		<b>\$ 11,639,875</b>
<b>Bond Financing</b>		
Cost Of Issuance		\$ 150,000
Gross Bond Insurance Premium		\$ -
Deposit to R&R Fund		\$ -
Deposit to D/S Reserve Fund		\$ -
Deposit to Capitalized Interest Fund (12 months)		\$ -
Deposit to (net funded) Construction Fund		\$ 11,639,875
<b>Unadjusted Development and Financing Costs</b>		<b>\$ 11,789,875</b>
<b>Land Value to Woodbridge</b>		
<b>PILOP @</b>	<b>\$7,500 per Space</b>	
	<b>346 spaces</b>	<b>\$ 2,595,000</b>
<b>Par Amount of Bonds</b>		<b>\$ 9,194,875</b>
<b>Annual Debt Service Payment</b>		
30 Year D/S @ 2.00%, level payment schedule		\$ 407,833
<b>TOTAL ANNUAL DEBT SERVICE</b>		<b>\$ 407,833</b>

Assumes swap of parking site for Poillon Street Lot

Estimate by Township  
Eliminate - Per Township  
Eliminate - Per Township  
Eliminate - Per Township  
Eliminate - Revenue Anticipation Notes - per Township

346 Spaces = Developer parking obligation as per preliminary shared parking analysis

Interest Rate as Per Township



# Station Redevelopment Area – Parking Option 1 & 2

## Parking Facility Planning Study Woodbridge Township

### Financial Feasibility Analysis

Monthly Parking Rate	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Residents Parking	\$110	\$113	\$117	\$120	\$124	\$128	\$131	\$135	\$139	\$144
Commuter Permits	\$110	\$110	\$110	\$115	\$115	\$115	\$120	\$120	\$120	\$120
Hourly / Daily Parking (\$1.50 per hour)	\$1.5	\$1.5	\$1.5	\$2.0	\$2.0	\$2.0	\$2.5	\$2.5	\$2.5	\$2.5
Parking Utilization										
Residents Monthly Parking	298	298	298	298	298	298	298	298	298	298
Commuter Permits	80	80	80	80	80	80	80	80	80	80
Hourly / Daily Parking (\$1.50 per hour)	43	43	43	43	43	43	43	43	43	43
Revenue	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Station Area Residents Parking	\$ 393,360	\$ 405,161	\$ 417,316	\$ 429,835	\$ 442,730	\$ 456,012	\$ 469,692	\$ 483,783	\$ 498,297	\$ 513,246
Commuter Permits	\$ 105,600	\$ 105,600	\$ 105,600	\$ 110,400	\$ 110,400	\$ 110,400	\$ 115,200	\$ 115,200	\$ 115,200	\$ 115,200
Hourly / Daily Parking (\$1.50 per hour)	\$ 38,700	\$ 38,700	\$ 38,700	\$ 51,600	\$ 51,600	\$ 51,600	\$ 64,500	\$ 64,500	\$ 64,500	\$ 64,500
Parking System Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Revenue</b>	<b>\$ 537,660</b>	<b>\$ 549,461</b>	<b>\$ 561,616</b>	<b>\$ 591,835</b>	<b>\$ 604,730</b>	<b>\$ 618,012</b>	<b>\$ 649,392</b>	<b>\$ 663,483</b>	<b>\$ 677,997</b>	<b>\$ 692,946</b>
Operating Expenses										
Utilities	\$ 22,000	\$ 22,550	\$ 23,114	\$ 23,692	\$ 24,284	\$ 24,891	\$ 25,513	\$ 26,151	\$ 26,805	\$ 27,475
Repairs & Maintenance	\$ 6,000	\$ 6,150	\$ 6,304	\$ 6,461	\$ 6,623	\$ 6,788	\$ 6,958	\$ 7,132	\$ 7,310	\$ 7,493
Insurance (Self-Insured)	\$ 14,000	\$ 14,350	\$ 14,709	\$ 15,076	\$ 15,453	\$ 15,840	\$ 16,236	\$ 16,642	\$ 17,058	\$ 17,484
Salary & Wages	\$ 60,000	\$ 61,500	\$ 63,038	\$ 64,613	\$ 66,229	\$ 67,884	\$ 69,582	\$ 71,321	\$ 73,104	\$ 74,932
Health, Pension & Work's Comp	\$ 15,000	\$ 15,375	\$ 15,759	\$ 16,153	\$ 16,557	\$ 16,971	\$ 17,395	\$ 17,830	\$ 18,276	\$ 18,733
Payroll Tax & Burden	\$ 6,600	\$ 6,765	\$ 6,934	\$ 7,107	\$ 7,285	\$ 7,467	\$ 7,654	\$ 7,845	\$ 8,041	\$ 8,242
Advertising, Signage, etc	\$ 2,000	\$ 2,050	\$ 2,101	\$ 2,154	\$ 2,208	\$ 2,263	\$ 2,319	\$ 2,377	\$ 2,437	\$ 2,498
Uniforms	\$ 1,000	\$ 1,025	\$ 1,051	\$ 1,077	\$ 1,104	\$ 1,131	\$ 1,160	\$ 1,189	\$ 1,218	\$ 1,249
Printing / Postage / Supplies	\$ 2,500	\$ 2,563	\$ 2,627	\$ 2,692	\$ 2,760	\$ 2,829	\$ 2,899	\$ 2,972	\$ 3,046	\$ 3,122
Phone and Communications	\$ 5,000	\$ 5,125	\$ 5,253	\$ 5,384	\$ 5,519	\$ 5,657	\$ 5,798	\$ 5,943	\$ 6,092	\$ 6,244
Systems Maintenance (Elevator/Fire Alarm)	\$ 10,000	\$ 10,250	\$ 10,506	\$ 10,769	\$ 11,038	\$ 11,314	\$ 11,597	\$ 11,887	\$ 12,184	\$ 12,489
Revenue Control System Maintenace	\$ -	\$ 10,000	\$ 10,250	\$ 10,506	\$ 10,769	\$ 11,038	\$ 11,314	\$ 11,597	\$ 11,887	\$ 12,184
Snow Removal (performed by DPW)	\$ 5,000	\$ 5,125	\$ 5,253	\$ 5,384	\$ 5,519	\$ 5,657	\$ 5,798	\$ 5,943	\$ 6,092	\$ 6,244
Misc Expennses	\$ 3,000	\$ 3,075	\$ 3,152	\$ 3,231	\$ 3,311	\$ 3,394	\$ 3,479	\$ 3,566	\$ 3,655	\$ 3,747
<b>Total Operating Expenses</b>	<b>\$ 152,100</b>	<b>\$ 165,903</b>	<b>\$ 170,050</b>	<b>\$ 174,301</b>	<b>\$ 178,659</b>	<b>\$ 183,125</b>	<b>\$ 187,703</b>	<b>\$ 192,396</b>	<b>\$ 197,206</b>	<b>\$ 202,136</b>
Per Space Expenses (367 Parking Spaces)	\$ 414	\$ 452	\$ 463	\$ 475	\$ 487	\$ 499	\$ 511	\$ 524	\$ 537	\$ 551
<b>Revenue Less Operating Expenses</b>	<b>\$ 385,560</b>	<b>\$ 383,558</b>	<b>\$ 391,566</b>	<b>\$ 417,534</b>	<b>\$ 426,071</b>	<b>\$ 434,887</b>	<b>\$ 461,689</b>	<b>\$ 471,087</b>	<b>\$ 480,791</b>	<b>\$ 490,809</b>
Debt Service	\$ 407,833	\$ 407,833	\$ 407,833	\$ 407,833	\$ 407,833	\$ 407,833	\$ 407,833	\$ 407,833	\$ 407,833	\$ 407,833
Capital Reserve	\$ 27,525	\$ 27,525	\$ 27,525	\$ 27,525	\$ 27,525	\$ 27,525	\$ 27,525	\$ 27,525	\$ 27,525	\$ 27,525
<b>Net Income</b>	<b>(49,798)</b>	<b>(51,799)</b>	<b>(43,792)</b>	<b>(17,824)</b>	<b>(9,286)</b>	<b>(471)</b>	<b>26,331</b>	<b>35,730</b>	<b>45,433</b>	<b>55,452</b>
Debt Service Coverage Ratio	<b>0.88</b>	<b>0.87</b>	<b>0.89</b>	<b>0.96</b>	<b>0.98</b>	<b>1.00</b>	<b>1.06</b>	<b>1.09</b>	<b>1.11</b>	<b>1.14</b>

### Assumptions

**Notes:** This is a break even analysis with preliminary estimated revenue and expense projections. Given that there is presently no fee parking in Woodbridge and associated historical revenue data, projected revenue is based on the parking fees for similar towns with train stations.

#### Residential Parking

- Monthly Permit rate for residents is \$110 per month. This rate is equal to the present monthly parking rate at the Rahway Transit Center Garage and the Pearl Street Garage in Metuchen.

#### Hourly / Daily Parking

- Hourly / Daily parking - \$1.5 per hour / 86 parkers per day/ 300 days per year

#### Board of ED Permits

- Permit rate = \$110 per month

#### Business Permits

- Monthly permit rate for merchants and their employees is \$40 per month. Presently no parking fee is charged to merchants or their employees

#### Commuter Parking Revenue

- Commuter parking - 80 permits starting at \$110 per month.

#### Other

- Monthly parking fee increases 3% per year
- Hourly / daily parking fees increase \$0.50 every 3 years
- Operating Expenses increase 2.5% per year
- Capital reserve = \$75 per space / year
- Assumes Developer PILOP of \$7500 per space not provided on-site

### Parking Planning and Design

The planning, integration, design and user convenience of structured parking serving downtown and TOD projects is critical to the overall success of the project and requires the application of smart parking planning principles. Parking facilities become the “front door” of these projects serving several user groups and providing meaningful impressions to their users including, residents, visitors, restaurant patrons, shoppers and commuters.

As such, parking facilities should be planned and designed to contribute to the overall project as a “people place,” and as a structure that will be a part of the downtown realm and experience, not as just a storage facility for cars.

- To the extent possible, retail and mixed-use development should be integrated at the ground level of the garage to enliven the streetscape and maintain the connectivity between the land uses adjacent to the garage.
- Pedestrian and vehicular access and exits and sections of the façade should be adorned with architectural elements that contribute to the aesthetic character of the community.
- Stair and elevator towers serve as desirable architectural features, and should be designed using glass with maximum visual access and exposure to vibrant streets to enhance user comfort and security.
- Lighting levels may be increased beyond typical levels, and components of the structure should be painted or stained to promote brightness.
- Passive security measures include long, clear sight lines, bright lighting, and the elimination of dark areas. These measures should be incorporated to provide patrons with a high level of user comfort.
- Incorporate sustainable design features to reduce the facilities environmental impact and utility costs.



Pearl Street Garage  
Metuchen, New Jersey



Lincoln Road Garage  
Miami, Florida





### Parking Planning

- Plan for future development
- Design for the long term
  - ✓ Aesthetics
  - ✓ Durability
- Include public / civic space
- Generate foot-traffic – enhance the pedestrian experience
- Connect the facility to public places
- Incorporate quality materials / landscaping

### Integration of Parking with Transit

- Ensure customer convenience – payment and access
- Direct pedestrian connectivity to station
- Provide amenities serving commuters
- Consider interim parking / construction logistics







### Safety, Security and User Comfort

- Maximize glazing at stair/elevator towers
- Increase lighting levels- Interior: 7 to 8 fc's
- Design for visibility and openness
- Minimize interior walls, maximize wall openings
- Incorporate traffic calming within facility
- Generate activity– share facility amongst multiple users
- Add façade / perimeter lighting to enhance streetscape
- Use decorative fencing at grade to limit pedestrian access
- Maintain open stairways
- Include CCTV's, emergency call system, etc.





### Interior Enhancements

- Parking is often first and last experience of a downtown visit
- Parking structures are gateways to communities
- Facilities can enhance user comfort with vibrant design and colors
- Facilities can communicate a downtown theme
- Exterior wraps and graphics enliven the streetscape and can provide revenue opportunity





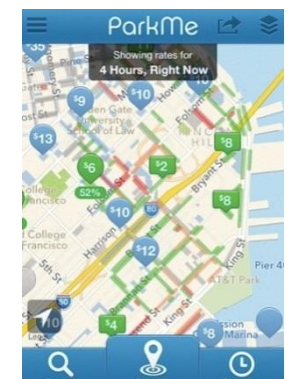


### Sustainability Opportunities

- Ensure energy and cost-efficient design
- Use Efficient lighting systems and controls
- Design for photovoltaic array - roof top alternative
- Provide preferred parking for fuel efficient vehicles
- Include electric car charging stations and bike storage
- Use drought resistant landscaping
- Consider parking guidance systems and occupancy signage

### Parking Operations

- Generate revenue to cover operational costs and reserves
- Identify the best parking operations and revenue collection systems
- Provide convenient payment options - credit card, cash, pay by cell.
- Offer validation systems for merchants
- Photocell receptors, timers, or occupancy sensors to regulate short term spaces





# Parking Planning and Design Downtown - Garage Precedents

## Parking Facility Planning Study Woodbridge Township



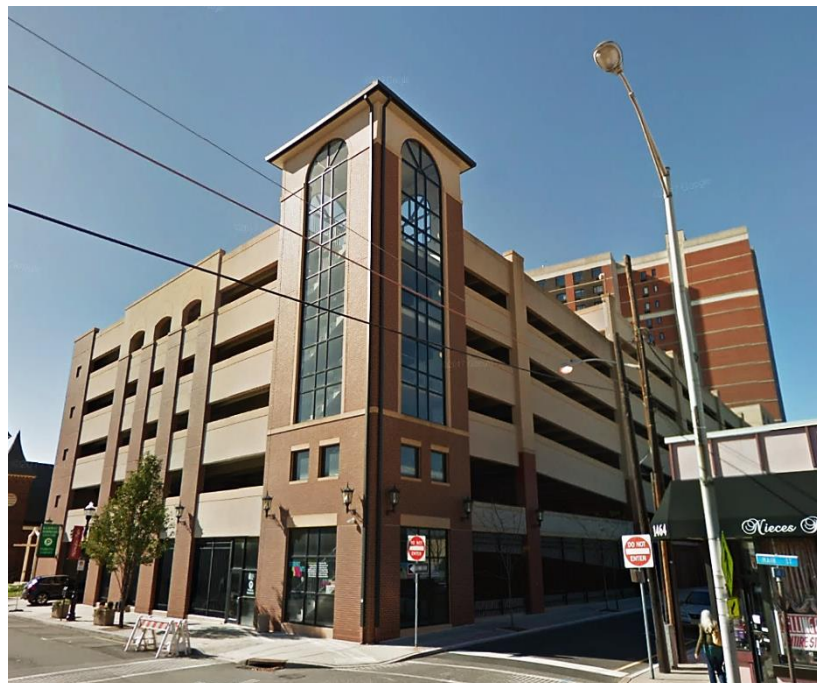
Borough of Fort Lee Parking Garage  
Fort Lee, New Jersey



Wellness Plaza Parking Garage  
New Brunswick, New Jersey



Princeton Spring Street Garage  
Princeton, New Jersey



Rahway Transit Center Garage  
Rahway, New Jersey



Pearl Street Garage  
Metuchen, New Jersey



Millburn Parking Garage  
Millburn, New Jersey



