

DRAFT

REFERENCE REPORT FOR 2026 PUBLIC HEARING

Contract P200.716, Operational Improvements, Milepost 78.8 to 84.5



New Jersey Turnpike Authority

No Net Loss Compensatory Reforestation Plan

August 25, 2026



Stantec

Stantec Consulting Services Inc.



ARORA and ASSOCIATES, P.C.
Consulting Engineers

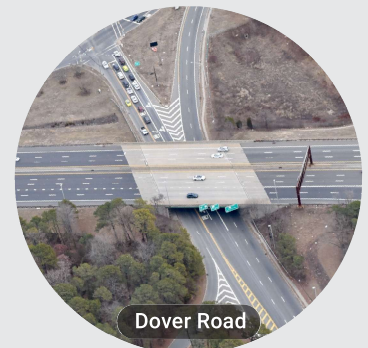


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Project Narrative

Arora and Associates, P.C. is pleased to present this No Net Loss Reforestation Plan prepared in compliance with the No Net Loss (NNL) Compensatory Reforestation Act, N.J.S.A. 13:1L-14.1 et. seq., for the New Jersey Turnpike Authority (Authority) for OPS P3885 Garden State Parkway (GSP) Operational Improvements MP 78.8 to 84.5. This plan is to be submitted to the NJ Department of Environmental Protection (NJDEP) New Jersey State Forest Service(NJFS). It has been determined that the proposed improvement will remove more than 0.5 acres of forested area on state owned property.

The project is spread across four municipalities. Note that there is no deforestation in Beachwood Borough.

- **Beachwood Borough** MP 78.8 to MP 80.1
- **South Toms River Borough** MP 80.1 to MP 81.2
- **Berkeley Township** MP 81.2 to MP 81.3
- **Toms River Township** MP 81.3 to MP 84.5

The State Plane Coordinates (SPCs) for the project limits are as follows:

- Southern project terminus: Easting (X) 573,675, Northing (Y) 400,890
- Northern project terminus: Easting (X) 573,059, Northing (Y) 420,490

A USGS Quad Location map is in **Appendix A**

Project Purpose

The purpose of this project is to increase safety for the traveling public, increase accessibility to local roads, reduce traffic delays from vehicular volume, and improve or replace substandard design features where feasible.

Deficiencies concerning Interchanges 81 and 82/82A were identified in the Authority's 2011 Garden State Parkway Southern Interchanges Improvement Study, P3287. This section of the Garden State Parkway (GSP) intersects the local roadway network at four closely spaced Interchanges (Interchanges 80, 81, 82/82A, and 83). The project corridor exhibits high traffic volumes, crash rates. In addition, Interchange 80 is only a partial interchange and is missing a southbound entrance ramp and northbound exit ramp.

Description of the Work

Improvements from Milepost 78.8 to 84.5 along GSP northbound and southbound lanes include Collector-Distributor (C-D) service and auxiliary roads (four lanes in each direction), reconstruction of ramps and interchanges, local roadway improvements, guide rail replacements, drainage improvements, stormwater management basins, and assorted utility improvements. The roadway improvements include physical separation of C-D service roads from the GSP mainline through lanes and creating an entrance and exit lane to local roads from the CD service roads at Interchange 80. Seven (7) bridges are widened or replaced, including one (1) bridge that carries over a regulated water, the Toms River. Culvert pipes are also in need of replacement, three (3) of which are regulated crossings per the Flood Hazard Area Control Act Rules (N.J.A.C. 7:13).

Retaining walls and noise wall(s) will be constructed to lessen environmental impacts done near the regulated activities. Soil erosion and sediment control will be conducted throughout the entire construction process. Upon the completion of construction, replacement of impacted riparian zone areas will begin immediately unless delayed due to seasonal weather conditions.

To complete these safety improvements, tree removal must occur. More than 0.5-acres of tree removal is proposed to be conducted on State owned property so compensatory reforestation under the No Net Loss guidelines is required. Tree removal has been minimized to the extent practicable and approved under Freshwater Wetlands Individual Permit, Coastal Wetlands Permit, Waterfront Development Individual In-Water Permit, CAFRA Individual Permit, Flood Hazard Area Individual Permit, Flood Hazard Verification Method-6, and Water Quality Certificate pursuant to N.J.A.C. 7:7 (Permit Number 1500-22-0002.2 LUP 240002) and Pinelands Public Development Application Number 1997-0257.021.

Existing Forest

There is approximately 127-acres of existing forest found within the Authority right of way and interchanges of the project area. The GSP passes through both developed and undeveloped areas and the north and southbound roadways are separated in multiple areas by grassed medians or median barriers. All of the forest to be removed is within the current or to be acquired right of way of the GSP. Most of the deforestation is along the outside of the roadways but also includes some areas in the median between the roadways. Photos of the forested areas are included in **Appendix A**

Forested areas within the developed right of way exclude areas that are routinely cleared for safety purposes which includes most of the area within 30 feet of the edge of the shoulder, within stormwater management areas and scattered areas in the median. The portion of the project south of Dover Road (0.6 miles) is within the Pinelands area.

Forest Cover Type

Forests can be considered one of the following according to 2020 land use/land cover data:

- Deciduous wooded wetlands
- Mixed wooded wetlands (deciduous dominant)
- Mixed wooded wetlands (coniferous dominant)
- Mixed deciduous/coniferous brush/scrubland
- Mixed forest (>50% coniferous with >50% crown closure)
- Coniferous forest (>50% crown closure)

According to the NJDEP GeoWeb land use land cover layer, the dominant forests are coniferous with closed canopies or mixed deciduous coniferous greater than 50% with crown closure.

Forest Maturity

According to the No Net Loss (NNL) Compensatory Reforestation Act, forests are divided into three maturity levels.

- **Established Forest** - trees predominately have a diameter at breast height (DBH) greater than 4-inches.
- **Emerging Forest** - trees are predominately saplings and have a DBH 4-inches or less and are greater than 2 feet in height.
- **Seedling Forest** - a new or regenerating forest with predominately seedling trees 2 feet in height or less.

Given the limited accessibility to the Garden State Parkway, forest types were determined primarily using existing Aerial and ground level imagery provided by Google Maps 2025 supplemented by cover types determined in NJDEP GeoWeb Mapping. A vast majority of the forest within the project area is established forest with smaller emerging forest in the vicinity of the Route 37 interchange in Toms River.

Extent of Deforestation & Compensatory Reforestation Obligation

Using ArcGIS Pro and current aerial photography, the NNL half-acre grid layer was plotted over the delineated project area. The area to be cleared and associated shapefiles was provided by the designer Stantec. Any grids that exceeded 33% coverage (or 0.17-acres) were flagged as being “existing forested area” and included in compensatory reforestation obligations. The amount of deforestation within each cell was calculated and the sum of the cleared areas. Total deforestation is rounded to the nearest half-acre.

Deforestation by municipality

Toms River Township:	29.6-acres 29.0 acres established forest , 0.6 acres emergent
Berkeley Township:	1.4-acres established forest
South Toms River Borough:	4.9-acres established forest
Beachwood Borough:	0.0 acres
Total deforestation :	35.9 acres (estimated using preliminary plans)

Deforestation Estimate Plans are included in **Appendix B**.

Reforestation Obligation Calculation

Tree replacement will occur within the following hierarchy: on-site within the right of way of the Garden State Parkway, township-owned property, then county-owned property. Remaining area will be compensated at the rate determined in the No Net Loss Compensatory Reforestation Program Guidelines.

The number of trees was calculated using the following formula:

Reforestation Obligation (# Trees) = # of Acres Deforested X Tree Replacement Factor

- Tree Replacement Factor for an Established Forest = 204 trees balled and Burlapped (B&B) per acre
- Tree Replacement Factor for an Emerging Forest = 408 whip/container trees per acre
- Seedling Forest = 1,210 tree seedlings per acre

On-site Restoration:

A total of 11.3 -acres are planned for on-site restoration and proposed areas based on preliminary plans are shown on the Deforestation Estimate Plans. These areas will be planted consistent with Authority and NJFS requirements. The areas chosen are primarily areas to be reforested post disturbance or areas currently within the NJTA ROW without tree cover. These areas are tentative and may change as the design is completed and reviewed by operations staff.

The 2-2 ½ inch caliper trees is required for restoring established forest as they are commonly available nursery stock. Species chosen will consist of those found in the Pinelands to mimic areas that are deforested from the project. Upland areas will contain a mixture of relatively fast-growing early successional species such as eastern red-cedar, black cherry, and pitch pine. All of these species, but most notably pitch pine, are well suited to sandy, drained soils, are salt tolerant, and are well adapted to disturbance, including fire, but are not tolerant of interspecific competition.

As the soil within this area is sandy and fast-draining, trees should include a watering requirement. Plants should be inspected for pests or diseases during the peak growing season. There should be protection of saplings to limit deer browse.

Monetary Compensation for Off Site Reforestation

The Authority intends on contributing to the NJDEP conservation fund for all reforestation obligation not provided by onsite planting on GSP rights of way.

Reforestation Cost(RC) = Compensatory Reforestation Obligation (204 Trees) x Per tree rate (\$300.00) as noted in the NNJL rules and consistent with recent wholesale cost of trees in Southern New Jersey prepared for the Green Acres Diversion Application. RC =\$61,200 per acre

Offsite replacement = (Deforestation ac - onsite replacement in acres)

Monetary Compensation = (Offsite Replacement) + (10% of RC)

Summary of Authority's Recommendation for Reforestation

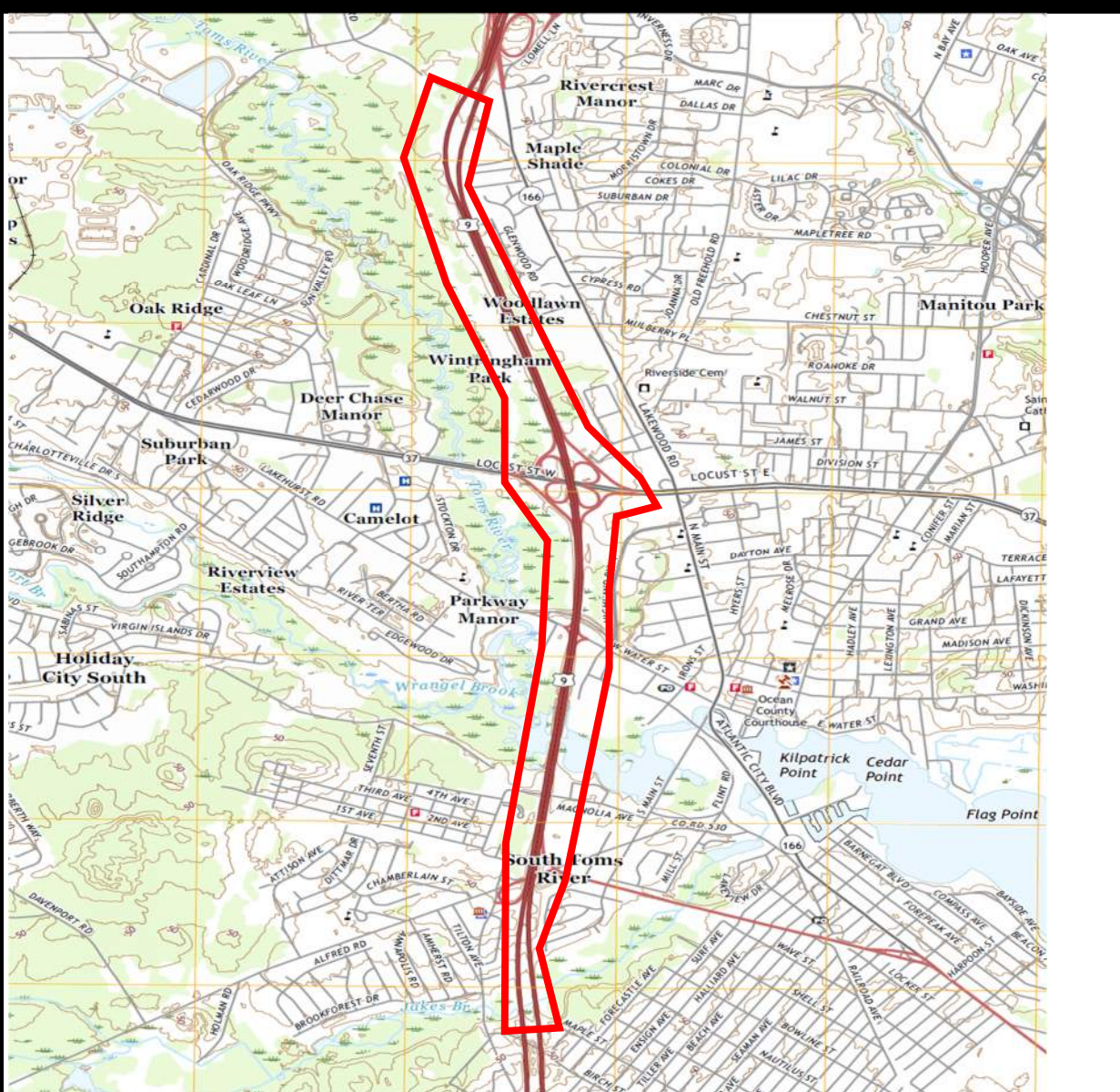
Municipality	Deforestation (ac)	Onsite Replacement (ac)	Offsite Replacement (ac)	Reforestation Cost \$	Monetary Compensation \$
Toms River	29.6	10.0	19.6	\$1,199,520	\$1,319,472
Berkeley	1.4	0.0	1.4	\$85,600	\$94,248
South Toms River	4.9	1.3	3.6	\$220,320	\$242,352
Beachwood	0.0	0.0	0.0	0.0	0.0
Total	35.9	11.3	24.6	\$1,505,520	\$1,747,627

To inform the NJDEP Division of Parks and Forestry, municipal sites within a 5-mile radius of the project area were explored as potential planting alternative locations. Multiple municipal parks fell within this area but were either forested or had land set aside for active recreation. Winding River Park contained a few open areas, one for recreation and the other for maintained powerline right of way. Neither of these options would be viable alternatives. Aerial photos and a brief assessment of each potential site is included in **Appendix C**.

Appendix A

USGS Location Map

Color Photographs



SOURCE: Toms River, NJ U.S.G.S. 7.5 Minute Quadrangle, 2019

APPENDIX A: USGS LOCATION MAP

GREENMAN-PEDERSEN, INC.
520 US Highway 22, Suite 200
Bridgewater, New Jersey 08807
TEL: (908) 236 - 9001
FAX: (908) 236 - 9669

**Preliminary Engineering & Environmental
Permitting for Operation Improvements, MP 80-
83, Garden State Parkway
Ocean County, NJ**

October 2024

NTS

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Appendix A
Site Photos
All Photos from Google Maps July 2026



Photo 1: View looking east at GSP NB Milepost 80.2



Photo 2: View looking west at GSP SB Milepost 80.6



Photo 3: View looking west at GSP SB Milepost 81.2



Photo 4: View looking west at GSP SB Milepost 81.6



Photo 5: View looking east at GSP NB Milepost 81.9



Photo 6: View looking west at GSP SB Milepost 82.2



Photo 7: View looking East at GSP NB Milepost 82.7



Photo 8: View looking west at GSP SB Milepost 83.1



Photo 9: View looking west at GSP SB Milepost 83.6

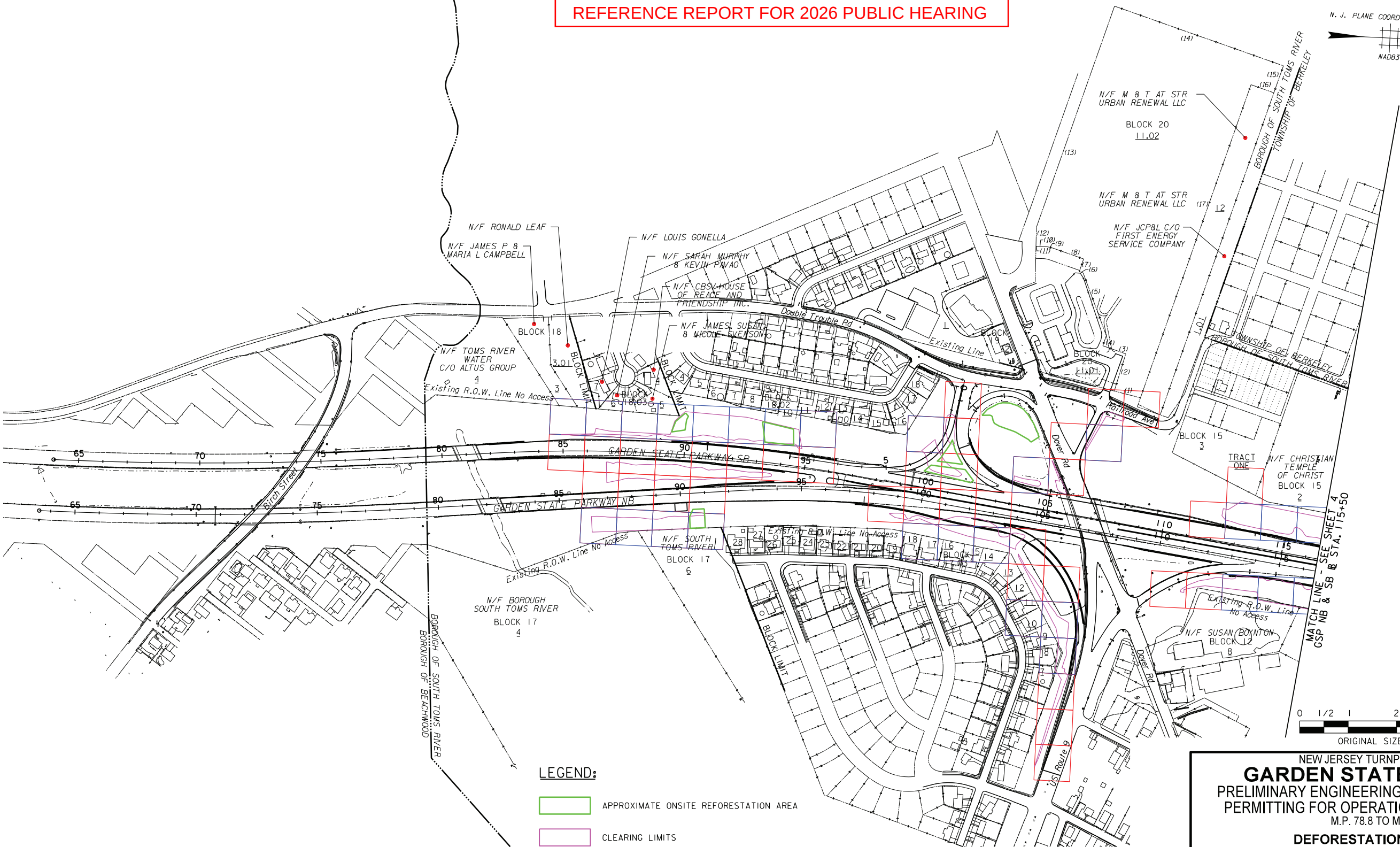
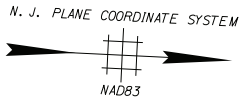
Appendix B

Deforestation Estimate Plans

BOROUGH OF SOUTH TOMS RIVER
BOROUGH OF BEACHWOOD
TOWNSHIP OF BERKELEY

COUNTY OF OCEAN

REFERENCE REPORT FOR 2026 PUBLIC HEARING



LEGEND:

- APPROXIMATE ONSITE REFORESTATION AREA
- CLEARING LIMITS
- HALF ACRE GRID MEETS DEFORESTATION THRESHOLD
- HALF ACRE GRID DOES NOT MEET DEFORESTATION THRESHOLD

NEW JERSEY TURNPIKE AUTHORITY
GARDEN STATE PARKWAY
PRELIMINARY ENGINEERING AND ENVIRONMENTAL
PERMITTING FOR OPERATIONAL IMPROVEMENTS
M.P. 78.8 TO M.P. 84.5
DEFORESTATION ESTIMATE
TOWNSHIP OF BERKELEY & TOMS RIVER,
BOROUGH OF BEACHWOOD & SOUTH TOMS RIVER,
OCEAN COUNTY, NEW JERSEY

SCALE: 1" = 200'
DATE: JULY 2026
SHEET No. 1 OF 4

	BY	DATE
MADE		
TRACED		
CHECKED		
SUPERVISED		

No.	DATE	REVISION

FILE NAME:

Plot By: \$\$\$\$\$\$
Plot Date: \$\$\$\$
Road File: \$\$\$\$

COUNTY OF OCEAN



SCALE: 1" = 200'
DATE: JULY 2026
SHEET No.2 OF 4

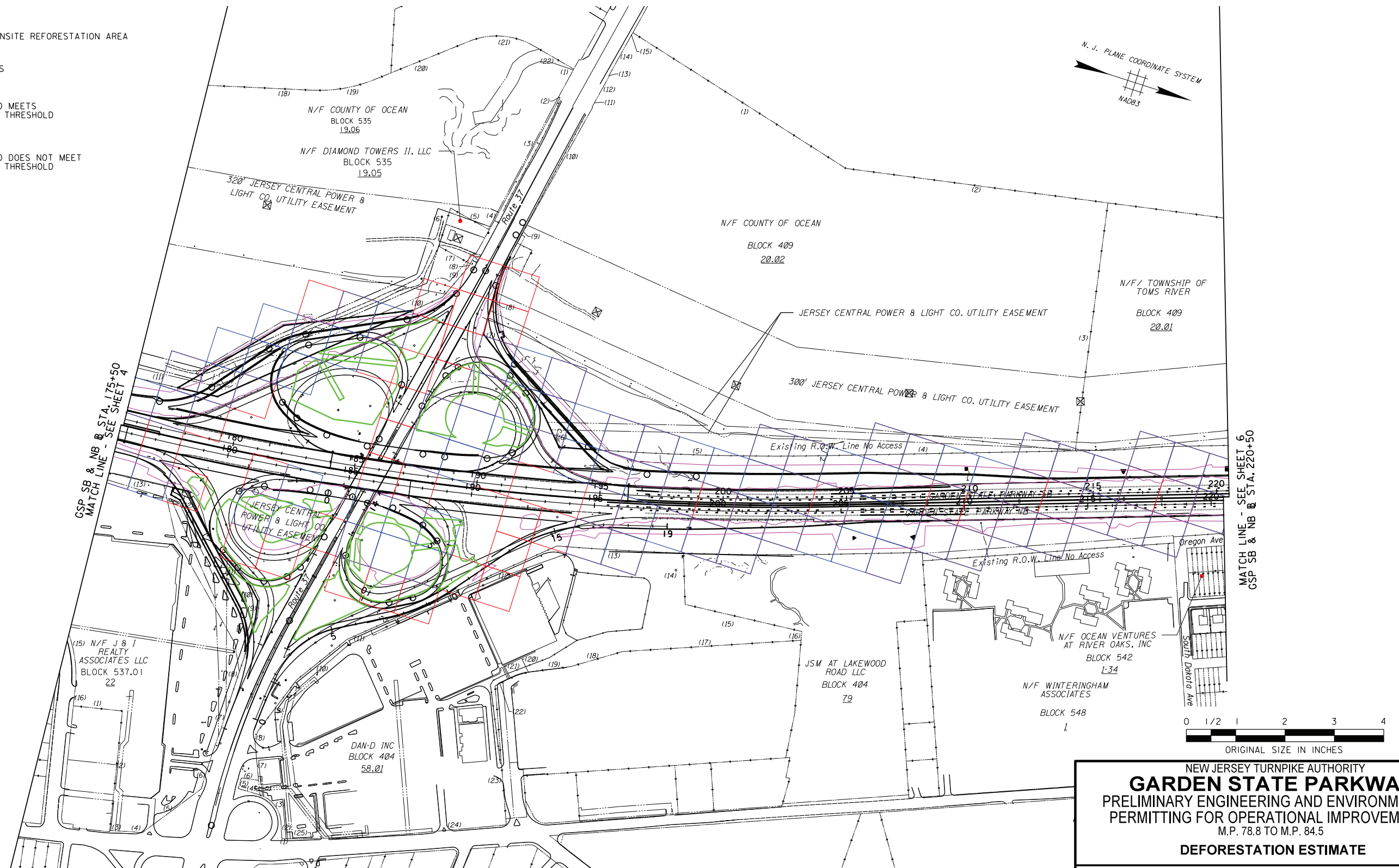
No.	DATE	REVISION

FILE NAME:

PLOT BY:	\$\$\$USERNAME\$\$\$
PLOT DATE:	\$\$\$DATE\$\$\$TIME\$\$\$
CADD FILE:	\$\$\$FILE\$\$\$

LEGEND:

- APPROXIMATE ONSITE REFORESTATION AREA
- CLEARING LIMITS
- HALF ACRE GRID MEETS DEFORESTATION THRESHOLD
- HALF ACRE GRID DOES NOT MEET DEFORESTATION THRESHOLD



NEW JERSEY TURNPIKE AUTHORITY
GARDEN STATE PARKWAY
PRELIMINARY ENGINEERING AND ENVIRONMENTAL
PERMITTING FOR OPERATIONAL IMPROVEMENTS
M.P. 78.8 TO M.P. 84.5

DEFORESTATION ESTIMATE

TOWNSHIP OF BERKELEY & TOMS RIVER,
BOROUGH OF BEACHWOOD & SOUTH TOMS RIVER,
OCEAN COUNTY, NEW JERSEY

SCALE: 1" = 200'

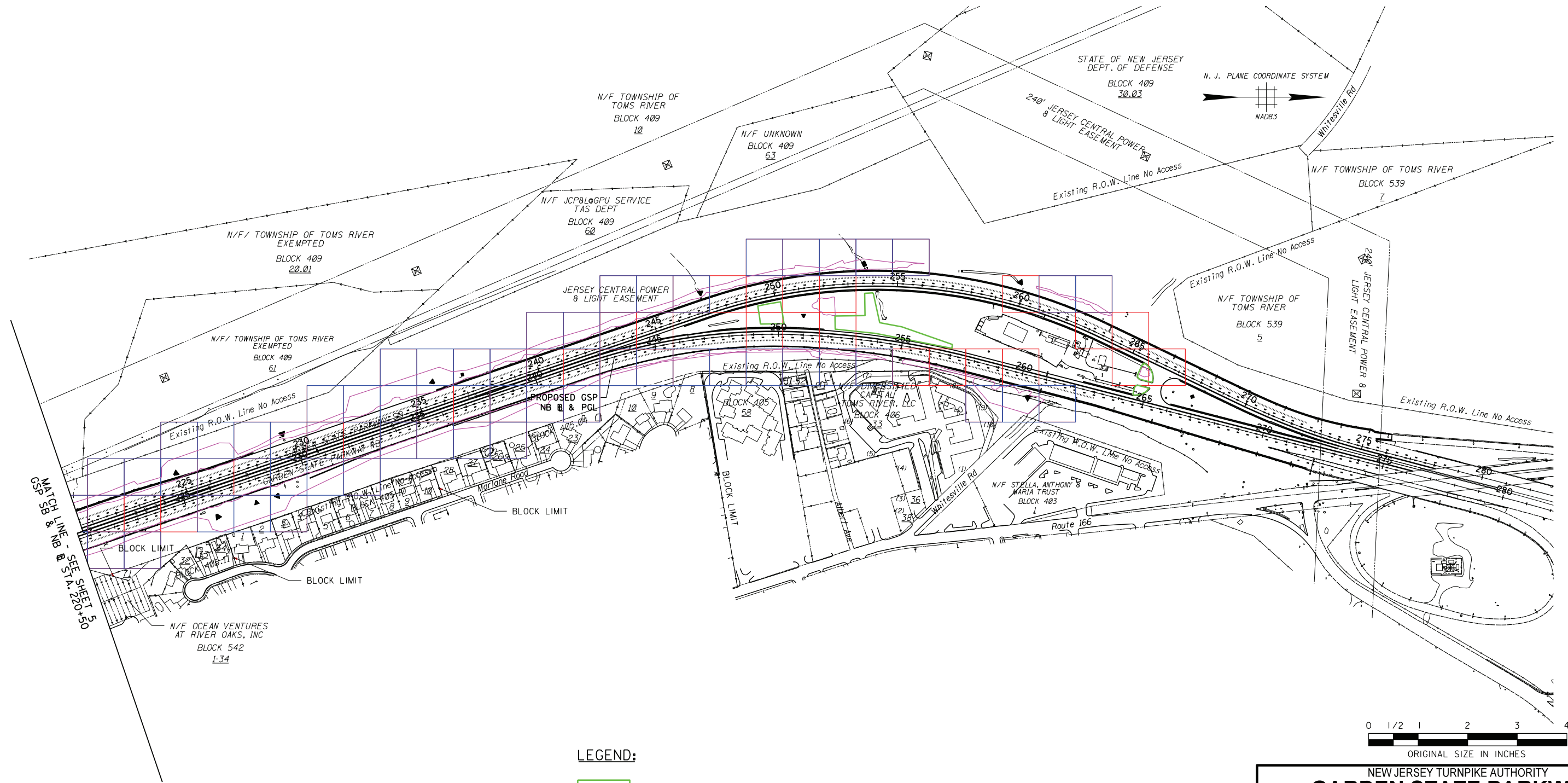
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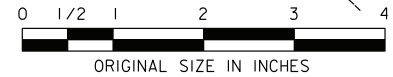
No.	DATE	REVISION

FILE NAME:



LEGEND:

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- HALF ACRE GRID MEETS DEFORESTATION THRESHOLD
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NEW JERSEY TURNPIKE AUTHORITY
GARDEN STATE PARKWAY
PRELIMINARY ENGINEERING AND ENVIRONMENTAL
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M.P. 78.8 TO M.P. 84.5
DEFORESTATION ESTIMATE
TOWNSHIP OF BERKELEY & TOMS RIVER,
BOROUGH OF BEACHWOOD & SOUTH TOMS RIVER,
OCEAN COUNTY, NEW JERSEY

No.	DATE	REVISION

SCALE: 1" = 200'
DATE: JULY 2026
SHEET No. X OF X

FILE NAME:
PLOT BY: \$\$\$\$
PLOT DATE: \$\$\$\$
PLOT FILE: \$\$\$\$

	BY	DATE
MADE		
TRACED		
CHECKED		
SUPERVISED		

Appendix C

Alternative Reforestation Location Analysis

Appendix C

Alternative Reforestation Location Analysis



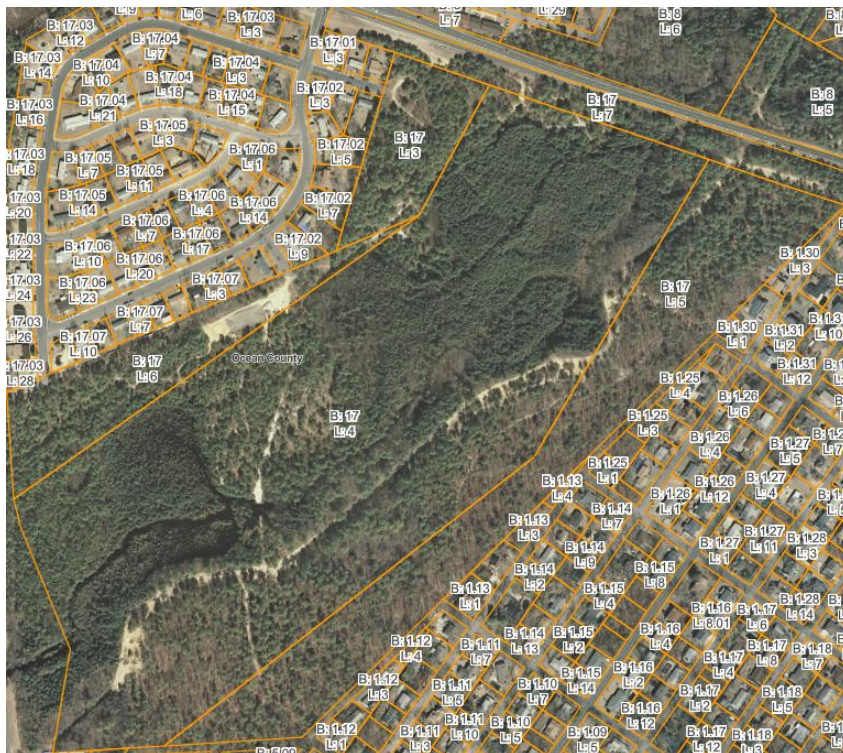
Property Name: Manitou Baseball Park

Owner: Berkeley Township

Berkeley Township

Block: 4 Lot: 67.03

Site is actively used for recreation. Open areas outside the baseball park are trails, driveways or JCP&L access roads to the nearby sub-station. Not suitable for replanting.



Property Name: Center Homes Park

Owner: South Toms River Borough

South Toms River Borough

Block: 17 Lots: 3, 4, 5, & 6

Site is used for recreation or fully forested. Open areas consist of a parking lot for the park and walking trails. Not suitable for replanting.



Property Name: Cedar Point

Owner: South Toms River Borough

South Toms River Borough

Block: 5 Lots: 5 & 6

Site is mostly used for recreation or is forested. Most open areas consist of a parking lot for the park and walking trails. Small area immediately west of the northeastern parking lot may be a potential replanting location.



Property Name: Bey Lea Park

Owner: Toms River Township

Toms River Township

Block: 573 Lots: 1, 3, & 4

Site is mostly used for recreation or is forested. Most open areas consist of a parking lot for the park and walking trails. Based on aerial mapping, there are areas that had been planted in the past decade in the southwestern and northeastern corners of the park that may provide small replanting opportunities.



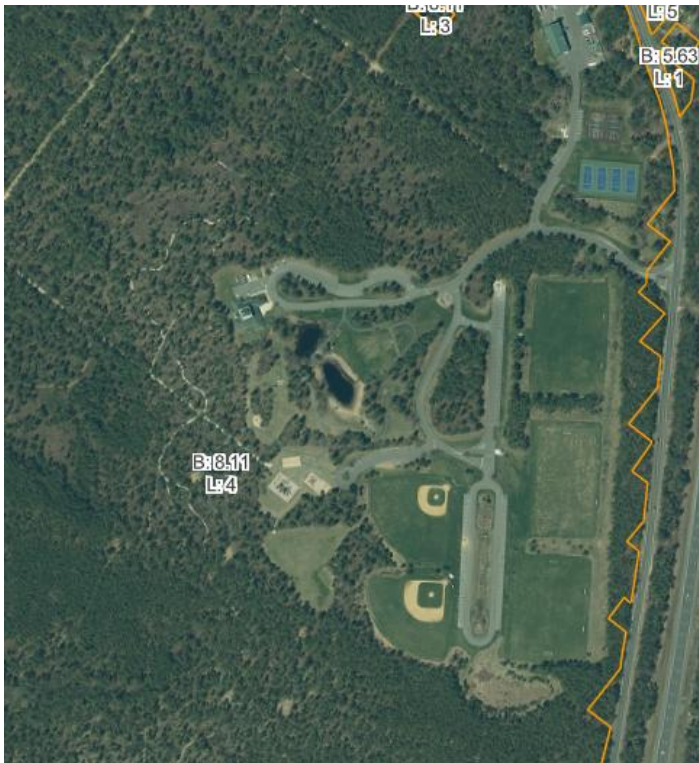
Property Name: Ocean County Conservation Area

Owner: Ocean County

Toms River Township

Block: 394 **Lot:** 136

Site is mostly preserved forested areas, as are the surrounding county-owned lots. Area around clearing has been planted prior and open area is a detention basin not suitable for planting.



Property Name: Jakes Branch Park

Owner: Ocean County

Beachwood Boro

Block: 8.11 **Lot:** 4

Site is mostly preserved forested areas. Cleared areas are for active recreation and not suitable for replanting.