

Memorandum of Agreement
Between the New Jersey Pinelands Commission
and Stafford Township Regarding Development of
an Accessible Trail at Forecastle Lake Park
_____, 2024

I. PURPOSE

This Memorandum of Agreement (“MOA”) is entered into between the New Jersey Pinelands Commission (“Commission”), an independent political subdivision of the State of New Jersey, having its offices at 15 Springfield Road, P.O. Box 359, New Lisbon, New Jersey 08064; and the Township of Stafford (the “Township”), a municipality, with its offices at 260 East Bay Avenue, Manahawkin, New Jersey 08050.

The Township is proposing to improve existing walking trails located adjacent to Forecastle Lake. These improvements will render the trails accessible to individuals with mobility (ambulatory) disabilities as well as provide a better experience for residents and visitors to enjoy the scenic nature of this area and easier access for fishing.

The existing trails run along the top of banks of Forecastle Lake and are located within the 300-foot buffer to wetlands. The elevation of the trail runs from approximately 2 ft. to 10 ft. above the lake surface. Currently, the trail consists of a hardpacked non-level soil surface. A spillway exists along the southerly edge of the lake to control the lake’s water surface with a pipe outlet beneath Route 72 to the south.

The Pinelands Comprehensive Management Plan (“CMP”) authorizes the development of trails within wetlands and wetland buffers provided: (1) there is no feasible alternative route that does not involve development in a wetland/buffer, or, if none, that another feasible route which results in less significant adverse impacts on wetlands/buffers does not exist; (2) the need for the proposed linear improvement cannot be met by existing facilities or modification thereof; (3) the use represents a need which overrides the importance of protecting the wetland/buffer; (4) development of the facility will include all practical measures to mitigate the adverse impact on the wetland; and (5) the resources of the Pinelands will not be substantially impaired as a result of the facility and its development as determined exclusively based on the existence of special and unusual circumstances. N.J.A.C. 7:50-6.13.

As discussed below, Stafford Township proposes to pave a 6 ft portion of the existing 10 ft wide trail, which is located within wetlands buffers. There are other practical measures, such as installation of gravel or boardwalks, that would have less impact on wetland buffers. Stafford Township has advised that use of an asphalt surface, in lieu of wood, mulch or stone requires less maintenance and provides a level, more suitable surface for wheelchair and or other ambulatory assistive device access. Consequently, absent the Commission's approval of this MOA permitting a deviation from the wetland buffer standards of the Pinelands CMP at N.J.A.C. 7:50-6.6, -6.13 and 6.14, respectively, the project would not be able to proceed. This MOA will also establish an alternative application process in accordance with N.J.A.C. 5:50-4.52(c)1.

II. BACKGROUND

Forecastle Lake Park is a 7.45-acre area consisting of Block 44.117, Lot 8; Block 44.118, Lot 27; and Block 44.119, Lots 29.01 and 30 in the Ocean Acres section of Stafford Township. The park is adjacent to Forecastle Lake, an excavated, human created lake, and also to NJ Route 72, Forecastle Drive and Breakers Drive. Forecastle Lake Park is located in a Regional Growth Area.

The existing trails are located in an area that was formed during the creation of the lake by the placement of soils excavated from a wetland area along a branch of the Mill Creek. The trails are sparsely vegetated and approximately 10 ft. wide. The trails currently consist of uneven, unimproved and erodible compacted soil aggregate surface. The trails start at a stone-surfaced parking area adjacent to Breakers Drive and head toward Forecastle Lake. There is a loop section located between the Breakers Drive Parking Area and the shore of Forecastle Lake that then reconnects to the main trail and traverses the bank of Forecastle Lake to the spillway. Currently, there is no connection from the portion of the trail that ends at the spillway to the section located adjacent to Canal Avenue.

Forecastle Lake Park is a good candidate for a place for accessible nature recreation. The park is located close to many homes and is readily accessible to residents of Stafford, especially those residents living in Ocean Acres. The trail is relatively short and offers lovely views of the lake and places to fish along its length.

III. THE PROJECT

The Pinelands National Reserve represents an important recreational resource and contains a wide assortment of public open spaces including, but not limited to, two national wildlife refuges, numerous State-owned parks, forests and wildlife management areas, and county and municipal parks. Hundreds of miles of trails suitable for hiking and bicycling exist throughout the Pinelands as well as countless unmarked sand roads that are also used for these purposes.

The Pinelands CMP protects natural resources and promotes recreational opportunities and minimizes land use conflicts by permitting low-intensity, recreational uses in undeveloped areas and directing more intensive recreational uses to developed areas. In order to be certified by the Commission, municipal master plans and land use ordinances must contain a program to protect and enhance recreational resources.

There is a growing interest among public and nonprofit land managers to provide better opportunities for people with disabilities to access recreational resources in the Pinelands and coastal areas of the State through low impact and affordable improvements to suitable, existing trails.

A. Need for Accessible Trails

People with disabilities that impair their ability to enjoy natural places make up a large portion of the population. According to the 2022 U.S. Census estimates, the total population of the seven counties located within the Pinelands National Reserve is about 2.4 million people. Approximately 14% of these individuals, just over 340,000, identify as having a disability. Ambulatory challenges account for 49% of these disabilities.

The percentage of people with disabilities in Stafford Township is 10.2%. Of these individuals, 6.1% identify as having ambulatory difficulties.

The United States Department of Agriculture, Forest Service's Accessibility Guidebook for Outdoor Recreation and Trails, dated 2013, defines accessibility as a facility that complied with accessibility guidelines/standards when it was built or altered. To comply with these standards, trails must be firm and stable, at least 36 inches wide, with no more than a 5% grade (except for short segments), and without gaps or protruding obstacles. Based on these standards, it is likely that the vast majority of existing trails in Stafford Township and the Pinelands National Reserve as a whole are not accessible, because they (1) are not flat due to gaps in the soil, slopes, protruding tree roots and puddles, (2) have sand that is too soft in places for regular wheelchairs or walkers, and (3) are not maintained, so the condition of these trails changes over time.

According to the Forest Service, the best way to integrate accessibility is to design programs and facilities to the greatest extent possible, without separate or segregated access for people with disabilities. The goal is independence, integration, and dignity for all visitors.

B. Health Benefits from Spending Time Outdoors

Although it is intuitive that human health is deeply intertwined with outdoor spaces and the environment, studies have proven the health benefits of spending time outside.¹ This growing body of research supports the theory that that exposure to the natural world has beneficial effects on health, reducing stress and promoting healing.² These studies suggest that nature is not only nice to have, but it's a have-to-have for physical health and cognitive function.

C. Proposed Improvements

Stafford Township is proposing to pave .34 acres (2468.4 linear feet) of the existing trail with asphalt, pave an existing .0275 acre (1,200 sq. ft.) existing stone parking area and construct a 35 ft. x 6 ft. pedestrian footbridge over the spillway. The project is depicted in the plans entitled "Township of Stafford – Forecastle Lake Park, Plan of Footpath and Accessible Parking Construction," dated October 23, 2023 and prepared by Owens, Little & Associates Inc. (attached hereto as Exhibit A.) The entire project is located within wetland buffers. The trail is 0.66 miles (3,470 ft.) long and consists of 4 parts: 1) a 1,580 ft. section from Breakers Avenue to Forecastle Lake, 2) a 220 ft. loop in the vicinity of the lake, 3) an 800 ft section from Forecastle Avenue to Canal Avenue and a 870 ft. loop at the Canal Avenue section of the park with a stub connecting the Canal Avenue.

¹ *Prescribing Nature: A Physician's Perspective on Wellness and the Outdoors*
<https://www.landscapeforms.com/blog/Pages/Prescribing-Nature-Article.aspx>

² *Ecopsychology: How immersion in Nature Benefits Your Health*, Jim Robbins, Yale Environment 360 (2020), <https://e360.yale.edu/features/ecopsychology-how-immersion-in-nature-benefits-your-health>, See also. *Nature and mental health: An Ecosystem Service Perspective*, Bratman et al., Science Advances, July 24, 2019, <https://www.science.org/doi/10.1126/sciadv.aax0903>

Consistent with the United States Forest Service Guidelines³, Stafford Township proposes to make improvements to the existing dirt trail to make it firm, stable and flat from side to side, with a width of 6 ft. and no more than a 2% grade along its entire length. The Township proposes to fill and grade a 6 ft. wide portion of the trail, within its existing 10 ft width, to create the compacted subgrade. Six inches of dense base aggregate will then be placed on top of the subgrade followed by the placement of 2 inches of a HMA (hot mix asphalt) surface course⁴. Stafford Township intends to seed the remaining width of the existing 10 ft wide trail to stabilize it. It will address stormwater runoff generated from the paved trail through installation of stone trenches at the downward sloping edge of the pavement. (See plan entitled "Township of Stafford – Forecastle Lake Park, Footpath and Accessible Parking Construction Details,": dated March 18, 2024, prepared by Owens, Little & Associates, Inc. (Attached hereto as Exhibit B.)

Stafford Township plans to install a 35 linear foot, prefabricated footbridge over the existing spillway located at the southerly edge of the lake near NJ Route 72. The footbridge would rest on 2 ft. x 2 ft. concrete abutments that would sit upon 10-inch diameter timber pilings. (See Exhibit B for a typical piling and abutment layout. The final piling and abutment design will be made upon the Township's selection of the footbridge and would be based on the loading and design detail for same.) The pilings would be vibrated into place to avoid the need for excavation.

Additionally, the Township intends to pave 0.0275 acre of an existing stone-surfaced parking area located off Breakers Drive and to construct four accessible parking spaces there. The parking spaces will measure 8 ft. by 18 ft. Two of the spaces will have an adjacent 5 ft. wide aisle, and the other two spaces will be van accessible with an 8 ft wide aisle. A 6 ft wide aisle will connect the parking area to the accessible trail. The accessible parking spaces will be marked with appropriate signage.

Stafford Township intends to conduct the proposed trail improvements using existing Township staff and resources. Additionally, once the improvements are completed, signage will be installed at each end of the trail advising that the trail is designed to be accessible to those using

³ US Forest Service Trail Accessibility Guidelines (FSTAG) dated 2013, <https://www.fs.usda.gov/sites/default/files/FSTAG-2013-Update.pdf>. See also <https://www.fs.usda.gov/sites/default/files/FSORAG-2013-Update.1.pdf>

⁴ HMA is a combination of approximately 95% stone, sand or gravel bound together by asphalt cement.

wheelchairs and that use of motorized vehicles, bicycles and horses is prohibited on the trail. The availability of the accessible trail will be promoted on various websites. Additionally, the Township intends to maintain the trail by conducting quarterly inspections and making repairs as necessary.

IV. MEASURES PROPOSED TO AFFORD AN EQUIVALENT OR BETTER LEVEL OF PROTECTION FOR THE RESOURCES OF THE PINELANDS

The proposed project is expected to result in 0.55 acres of disturbance of wetland buffers, which includes 0.34 acres of asphalt paving for the trail surface. To offset these impacts, Stafford Township is proposing to revegetate a 33,500 sq. ft. area and a 1,500 sq. ft. area, both located in the portion of Forecastle Lake Park adjacent to Canal Avenue. (See Reforestation Plan for Forecastle Lake Walking Path, attached hereto as Exhibit C, See also page 3 of Exhibit A.) Stafford is proposing to restore these areas to their forested state prior to the establishment of the Ocean Acres Residential Community. Prior to clearing, the site was a typical pine-oak upland forest associated with the upper stream terrace of the Mill Creek drainage area. Based on a review of aerial photography, the site has been devoid of forest cover since 1972. Various herbaceous cover types have occupied the field during the ensuing year. Today the site is a sparsely vegetated area dominated by native warm season grasses and punctuated with 47 mature pines, cedars and oaks. Stafford Township is proposing to plant the 33,500 sq. ft. area with 303 new trees intermixed with forest shrubs. Forest Shrubs would also be planted under and between the existing pines, cedars and oaks. In the 1,500 sq. ft. area between the proposed accessible trail and the rear of the homes facing Forecastle Avenue, Stafford is proposing to create a visual buffer comprised of 24 evergreen species and 24 dense shrubs.

V. THE BASIS FOR THE MOA

The Pinelands CMP at N.J.A.C. 7:50-4.52(c)2 authorizes the Commission to enter into intergovernmental memoranda of agreement with any agency of the Federal, State or local government to authorize such agency to carry out specified development activities that may not be fully consistent with the provisions of the CMP. To qualify for a MOA, the governmental entity must demonstrate, and the Commission must find, that any proposed development that may not be fully consistent with the provisions of the Pinelands CMP is accompanied by measures that will, at a minimum, afford a level of protection for the resources of the Pinelands equivalent to that provided by strict application of the standards of the Plan. As discussed above in Paragraph IV, Stafford Township has proposed measures designed to offset the wetland buffer impacts

attributable to the project and these measures will afford, at a minimum, an equivalent level of protection for the resources of the Pinelands.

In accordance with N.J.A.C. 7:50-4.52(c)i, the Commission may also enter into intergovernmental memoranda of agreement with any agency of the Federal, State or local government which authorizes such agency to carry out specified development activities without securing individual development approvals from the Commission, provided that the specified development activities are consistent with the provisions of N.J.A.C. 7:50-5 and 6. Execution of this MOA also warrants alternative application procedures because the Township is proposing measures that will afford an equivalent level of protection of the resources of the Pinelands as would be accomplished by application of the standards in Subchapters 5 and 6, which makes the MOA consistent with requirements of the Pinelands CMP.

VI. AGREEMENTS

A. The Township agrees:

1. The proposed improvements to existing Forecastle Lake Park trails will be constructed in accordance with following:
 - a. The Plan entitled "Township of Stafford – Forecastle Lake Park, Plan for Footpath and Accessible Parking, Block 44.117, Lot 8; Block 44.118, Lot 27 and Block 44.119, Lot 29.01, Township of Stafford, Ocean County, New Jersey," prepared by Owen, Little & Associates, Inc., dated October 23, 2023, consisting of 3 sheets, incorporated herein by reference;
 - b. "Stormwater Management Report, Forecastle Lake Park Footpaths and Accessible Parking, Stafford Township, Tax Block 44.117, Lot 8; Tax Block 44.118, Lot 27; Tax Block 44.119, Lot 29.01, Ocean Acres, Township of Stafford, Ocean County, New Jersey," prepared by Owen, Little & Associates, Inc., dated October 23, 2023, revised March 18, 2024, incorporated herein by reference; and
 - c. The Plan entitled "Township of Stafford – Forecastle Lake Park, Plan for Footpath and Accessible Parking, Construction Details, Block 44.117, Lot 8; Block 44.118, Lot 27 and Block 44.119, Lot 29.01, Township of Stafford, Ocean County, New Jersey," prepared by Owen, Little & Associates, Inc., dated March 18, 2024, consisting of 1 sheet, incorporated herein by reference.

2. It will undertake the following to provide an equivalent level of protection for the resources of the Pinelands:
 - a. Reforestation Areas adjacent to Canal Avenue – 35,000 sq. ft.
 - i. It will revegetate the existing cleared 33,500 sq. ft. and 1,500 sq. ft. areas located within the portion of Forecastle Lake Park adjacent to Canal Avenue in accordance with the standards of the Pinelands CMP at N.J.A.C. 7:50-6.23 through -6.27.
 - b. Accessible Parking at Breakers Avenue Parking Area (1,200 sq. ft.)
 - i. It will construct four (4) accessible parking spaces in the parking area adjacent to Breakers Avenue, two of which will be van accessible. The accessible parking spaces will be marked with appropriate signage.
 - c. Other Offsets
 - i. It will install bollards at the trailhead at each end of the improved trail that is designed to permit pedestrians, wheelchairs, walkers, electric scooters and other mobility assisting devices to enter the trail, while prohibiting entry by off-road vehicles.
 - ii. It will install signage at each end of the trail advising that the trail is designed to be accessible to those using wheelchairs and that use of motorized vehicles, bicycles and horses is prohibited on the trail. It will also promote the availability of the accessible trail on various websites of its choosing.
 - iii. It will conduct quarterly inspections of the trail and make repairs as necessary.
 - iv. Upon completion of reforestation activities in the portion of Forecastle Lake Park adjacent to Canal Avenue, it will monitor the offset areas and, as necessary, replace any vegetation that has withered or died, and maintain these areas in their reforested state in perpetuity. No portion of these areas may be converted into any use other than forested open space, including, but not limited to active recreational facilities.

3. At least thirty (30) days prior to commencing construction of the proposed improvements to the Forecastle Lake Park Trails, Stafford Township shall provide the following information to the Commission's Executive Director:
 - a. A final reforestation plan for the 33,500 sq. ft. and 1,500 sq. ft. areas in the portion of Forecastle Lake Park adjacent to Canal Avenue. Such reforestation plan shall include:
 - i. A list of the specific type and number of native Pinelands trees and shrubs that will be used in the revegetation of the areas. Temporary fencing shall be installed to protect the reforested areas during maturation of the planted vegetation.
 - ii. A plan showing the locations of the plantings and temporary fencing.
 - iii. A plan for replacement of vegetation that does not survive after planting, and percentage survival rate for replanted vegetation required to ensure viability of the replanted areas in perpetuity.
 - b. A final construction detail for the prefabricated footbridge to be constructed over the spillway near NJ Route 72.
4. To ensure that its staff, as well as any volunteers, who assist with the construction of the proposed project, comply with the obligations of this MOA and all requirements of the Pinelands CMP, unless a deviation therefrom is expressly authorized by this Agreement.
5. To obtain any and all certificates, licenses, consents, approvals, or permits required from any other State and/or Federal entity. No part of this MOA is intended to release the Township and/or any of its consultants, staff, volunteers, assignees, or successors from the responsibility to obtain all required approvals for the project.
6. Incorporate the terms of this MOA, as well as the obligation to comply with all requirements of the Pinelands CMP from which a deviation has not been expressly authorized by this Agreement, into any agreements, contracts, or other legal documents pertaining in any way to the construction of the improvements to the Breakers Drive Parking Area and the trails within Forecastle Lake Park.

7. Any material addition, deviation, or modification to the proposed for the Forecastle Lake Park Trails project as delineated in Exhibit A, shall require the Township to submit a formal public development application in accordance with N.J.A.C. 7:50-4.52(b) to the Commission and seek formal Commission approval of such addition, deviation, or modification. Any construction activities that may have commenced on the Forecastle Lake Park Trails project shall cease and no further development may proceed until the public development application review process has been completed and the Commission has issued a resolution approving the addition, deviation, or modification to the Forecastle Lake Trails project.
8. To the extent that new information becomes available or changes are made to the scope or design of the proposed Forecastle Lake Park Trails project that would result in more than a de minimis change to the impacts to wetland buffers but would not be considered material and subject to Paragraph VI.A.7., the Township shall submit the new information or changes to the Executive Director who shall determine whether the proposed development remains consistent with the terms of this MOA, the requirements of N.J.A.C. 7:50-5 or 6 not addressed by this MOA, and Exhibit A and issue a written consistency determination.
9. If the Executive Director determines that as a result of the new information or any de minimis change to the scope or design of the proposed Forecastle Lake Park Trails project is inconsistent with the terms of this MOA or a standard of the Pinelands CMP from which a deviation has not been expressly authorized by this Agreement or results in increased impacts to threatened or endangered animal species habitat or plant species, or wetland buffers associated with the proposed Forecastle Lake Park Trails project, the Township shall modify the proposed development project(s) until the Executive Director determines that it is consistent with all requirements of this MOA and the Pinelands CMP. If the Township disagrees with the Executive Director's determination, it may file an application for public development pursuant to N.J.A.C. 7:50-4.52(b) and seek formal approval from the Pinelands Commission of the project. The proposed development project may not proceed until the public development application review process has been completed and the Commission has issued a resolution approving the development project.

10. The terms of this MOA shall immediately be suspended in the event that the Executive Director determines that an unresolved violation of the terms of this MOA, a requirement of the Pinelands CMP for which a deviation is not authorized by this Agreement, or a written authorization issued by the Executive Director has occurred on the site of the Forecastle Lake Park Trails project (Block 44.117, Lot 8; Block 44.118, Lot 27 and Block 44.119, Lot 29.01, Township of Stafford, Ocean County, New Jersey.) The Township shall have thirty (30) days to seek reinstatement of this MOA by providing the Commission with a written agreement itemizing the steps the Township will take to remedy the violation and a timeline for completion of such steps. If the measures and timeline for completion proposed by the Township are acceptable to the Executive Director, following Commission concurrence, she shall issue a letter to the Township reinstating the terms of this MOA. Failure of the Township to complete the measures required to cure the violation or make changes to its submission following staff review within the specified timeline may result in reinstatement of the suspension.
 11. The Township shall attend a meeting of the Commission's CMP Policy & Implementation Committee to provide a summary of the project following its completion.
 12. The Township shall notify the Commission upon the completion of each component of the project, including improvements to the existing Forecastle Lake Park trails, revegetation of the cleared areas in the portion of Forecastle Lake Park adjacent to Canal Avenue, completion of the paving of the parking area at Breakers Drive and the construction of the accessible parking spots and installation of the gates and signage required in Paragraphs VI.A. 2 above.
- B. The Pinelands Commission agrees:
1. The Commission shall not require the filing of formal public development applications in accordance with N.J.A.C. 7:50-4.52(b) for the proposed improvements to the Forecastle Lake Trail and implementation of the offsetting measures set forth in Paragraphs VI.A.1 and 2 above, unless:

- a. Any of the proposed offsetting measures set forth in Paragraph VI.A.2 are inconsistent with the requirements of this MOA and/or any of the standards of Subchapter 5 and 6 of the Pinelands CMP for which a deviation has not been expressly provided by this MOA, and the Township has not modified the proposed development project to render it consistent with such requirements;
 - b. There is a material addition to, deviation from, or modification to any of the proposed development projects; or
 - c. As a result of new information or any change to the scope or design of the proposed development project(s) submitted to the Executive Director in accordance with Paragraph VI.A.8., the proposed development project is inconsistent with the requirements of this MOA or a standard of the Pinelands CMP from which a deviation has not been authorized by this Agreement or will result in a material increase in the wetland buffers impacts associated with the proposed project for which deviations have been authorized by this MOA, and the Township has not modified the proposed development project to render it consistent with such requirements.
2. Within thirty (30) days of receipt of the information submitted pursuant to Paragraphs VI.A.3 or VI.A.8, the Executive Director will provide written authorization in accordance with Paragraph VI.B.4 or the Commission staff will provide a written explanation of deficiencies in accordance with Paragraph VI.B.3.
 3. If the Executive Director determines that any portion of a proposed project is inconsistent with this MOA and/or the provisions of the CMP from which a deviation has not been authorized by this Agreement, then the Commission staff shall provide a written explanation of the deficiencies and identify specific actions that must be taken by the Township to remedy such deficiencies.
 4. If the Commission staff determines, after review of information submitted in accordance with Paragraphs VI.A.3 or VI.A.8 and/or in response to any deficiency letter issued by the Commission pursuant to Paragraph VI.B.3, that a proposed project is consistent with this MOA and the provisions of the CMP from which a deviation has not been authorized by this Agreement, it shall issue a written authorization to the Township setting forth this determination.

This written authorization shall constitute a public development approval and no further action by the Commission shall be required.

5. In the event of a suspension of the terms of this MOA in accordance with Paragraph VI.A.10, the Executive Director shall, following the Commission's concurrence, issue a letter to the Township reinstating the terms of this MOA following the Township's submission of a written agreement in accordance with Paragraph VI.A.10 and the acceptance of same by the Executive Director and the Commission. The Executive Director retains the right to deem a violation unresolved until such time as the Township has implemented all measures set forth within its written agreement.

VII. EFFECTIVE DATE, DURATION AND SIGNATURES

1. In accordance with N.J.S.A. 13: 18A-5(h), this MOA shall take effect following the conclusion of the Governor's review period and approval of the Pinelands Commission meeting minutes authorizing execution of this MOA and then upon approval and signature by the authorized representatives of all parties.
2. This agreement shall remain in effect unless amended by written consent of both Parties or otherwise terminated or suspended by the Pinelands Commission or terminated by both parties upon sixty (60) days written notice or suspended by the Commission in accordance with Paragraph VI.A.10.
3. This MOA, along with any exhibits, appendices, addendums, or schedules, attached hereto and incorporated herein by reference and any subsequent written amendments executed by the parties, constitutes the entire agreement of the parties, and supersedes all previous understandings and agreements between the parties, whether oral or written. The Parties hereby acknowledge and represent that said parties have not relied on any representation, assertion, guarantee, warranty, collateral contract or other assurance, except those set forth in this MOA, made by or on behalf of any other party or any other person whatsoever, prior to the execution of this MOA.
4. This MOA may be executed in counterparts. All such counterparts shall constitute an original and all of which together shall constitute one and the

same agreement, binding upon the parties. Faxed and electronic signatures shall constitute original signatures.

IN WITNESS WHEREOF, the parties have caused their duly authorized representatives to execute this MOA on and as of the day and year written below. This MOA shall be executed in at least three (3) original copies, one of which is to be delivered to Stafford Township and two (2) of which are to be delivered to the Pinelands Commission.

Stafford Township

Witnessed:

By: _____
Name: _____
Title: _____
Date: _____

By: _____
Name: _____
Title: _____
Date: _____

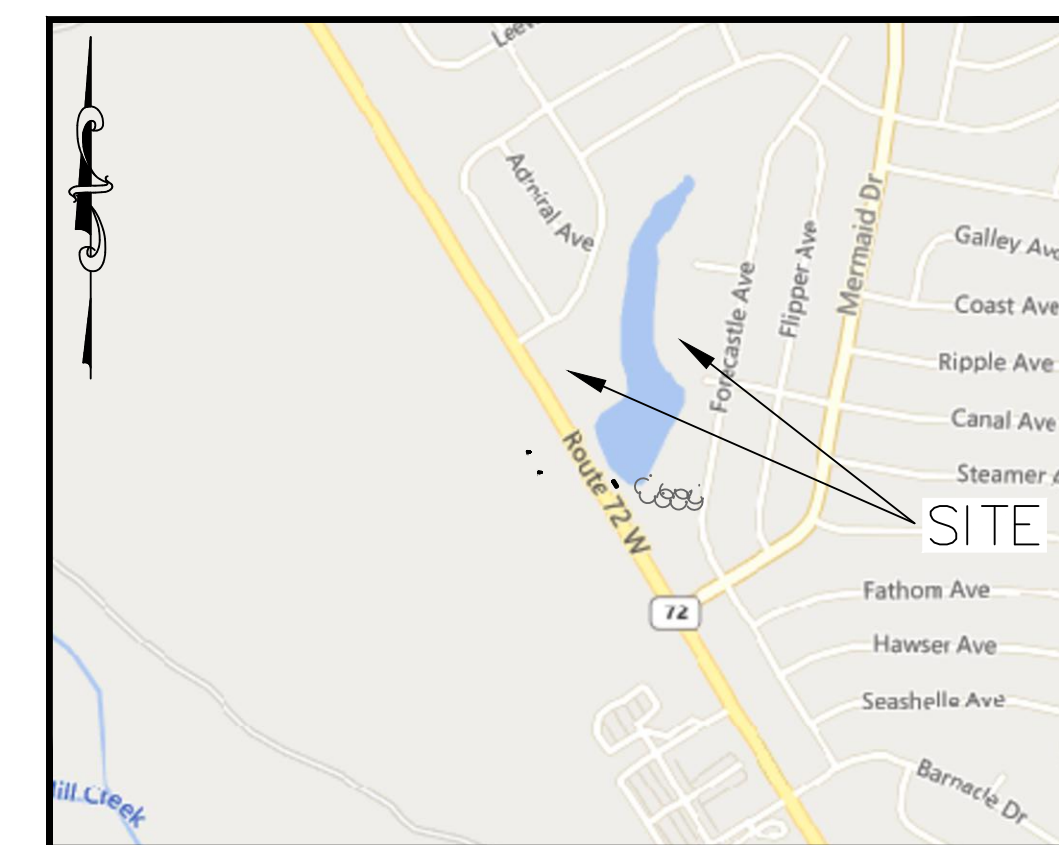
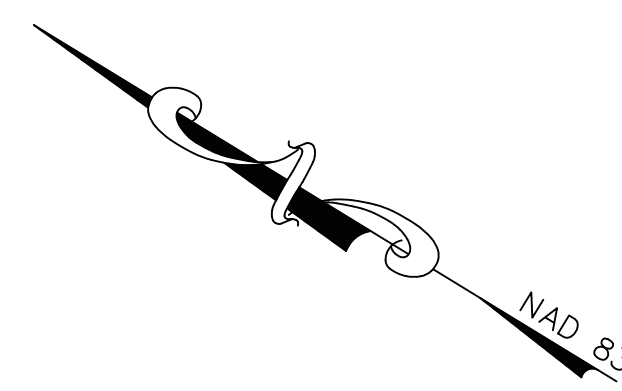
New Jersey Pinelands Commission

Witnessed:

By: _____
Susan R. Grogan
Executive Director
Date: _____

By: _____
Name: _____
Title: _____
Date: _____

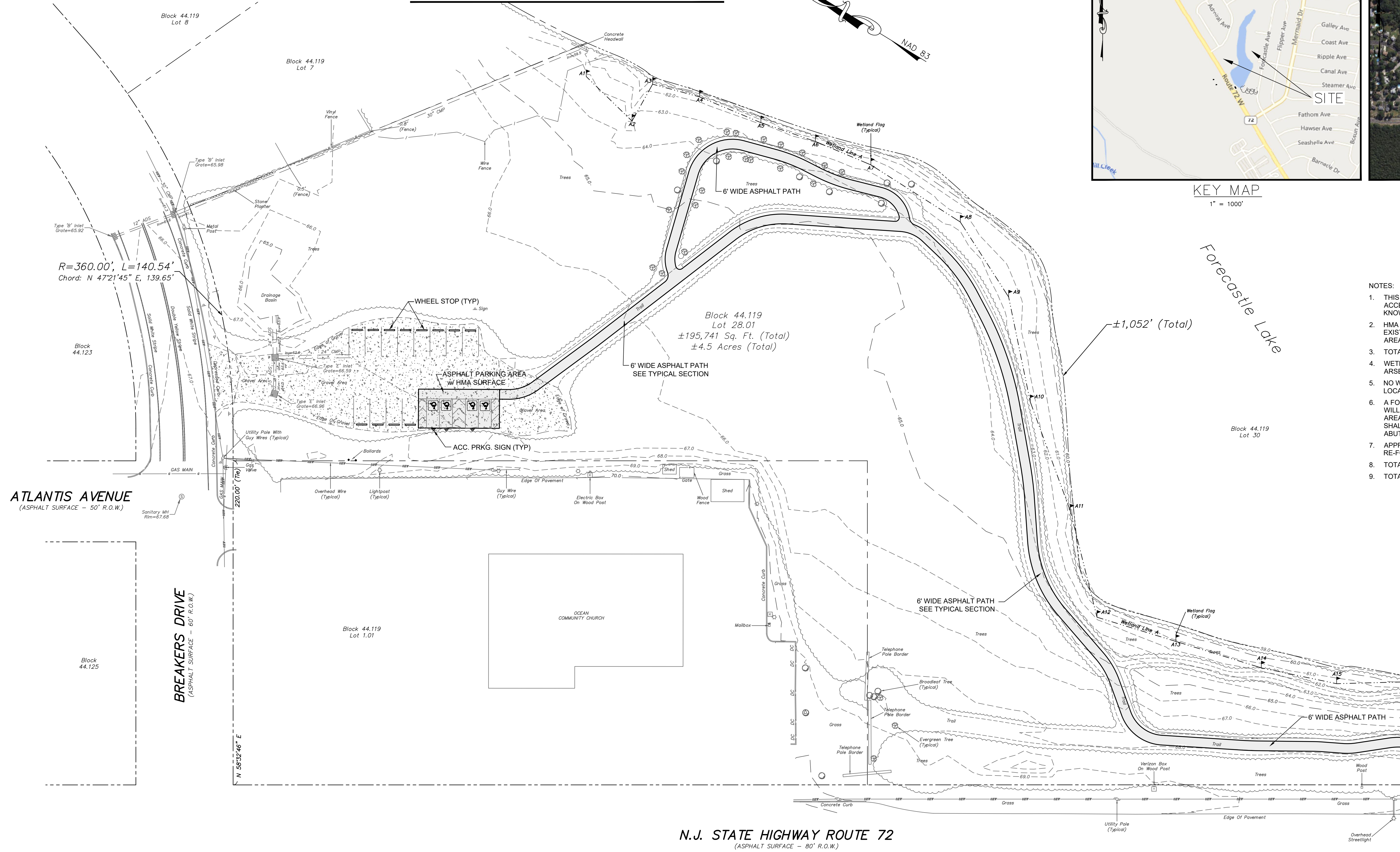
MATCH LINE - SHEET 3



KEY MAP
1" = 1000'



LOCATION MAP
1" = 500'



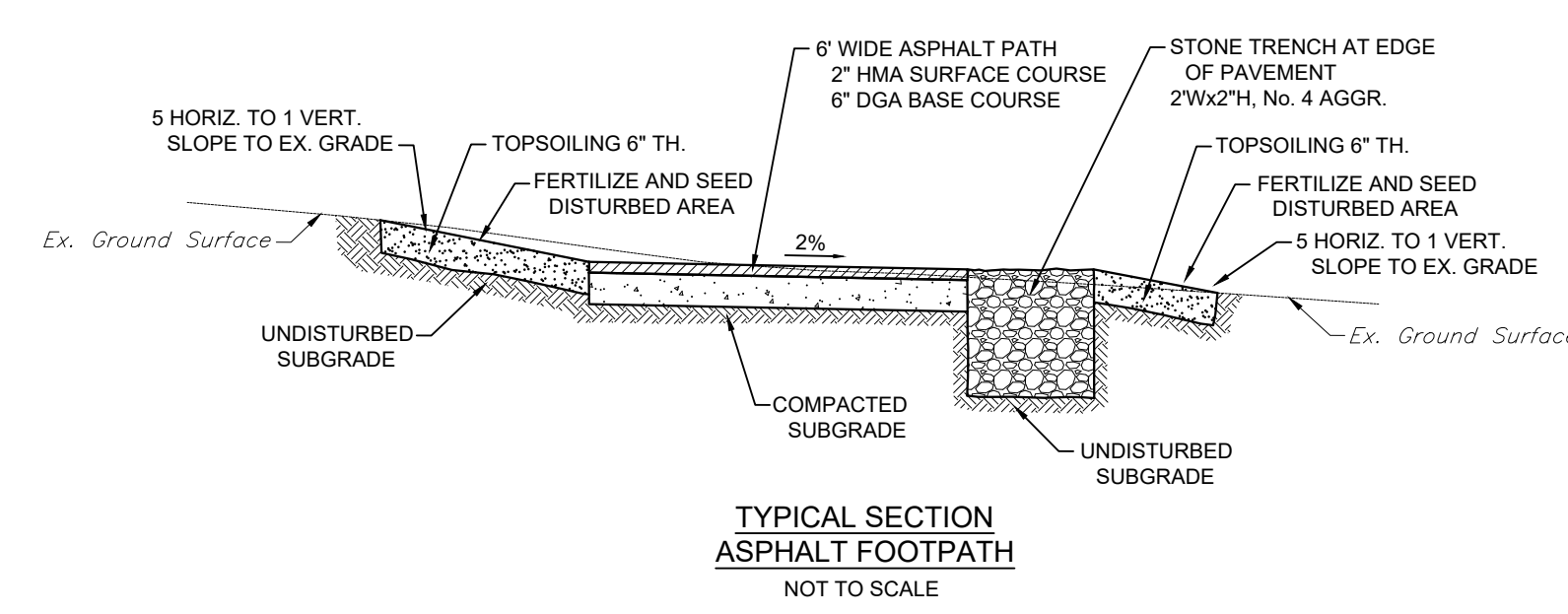
NOTES:

1. THIS PLAN IS FOR THE CONSTRUCTION OF ASPHALT FOOTPATHS AND AN ACCESSIBLE PARKING AREA WITHIN THE STAFFORD TOWNSHIP LANDS KNOWN AS FORECASTLE LAKE PARK.
2. HMA PAVED FOOTPATHS WILL BE CONSTRUCTED WITHIN AREAS OF EXISTING UN-SURFACED TRAILS AND WITHIN EXISTING GRAVEL SURFACED AREAS. NO VEGETATION IS TO BE REMOVED.
3. TOTAL AREA OF PROPOSED PAVING IS APPROX. 0.37 ACRE (15,900 SF).
4. WETLANDS LINES FLAGGED IN SEPTEMBER, 2023 BY JOSEPH R ARSENAULT ENVIRONMENTAL CONSULTING, FRANKLINVILLE.
5. NO WETLANDS AREAS ARE TO BE DISTURBED. CONSTRUCTION IS LOCATED WITHIN THE BUFFER AREA AT 300' FROM THE WETLAND AREAS.
6. A FOOTBRIDGE WITH A SPAN OF 35 FEET AND A TREAD WIDTH OF 6 FEET WILL CROSS THE AREA OF THE OUTLET CHANNEL FROM THE LAKE DAM. AREA BELOW THE FOOTBRIDGE TO REMAIN OPEN TO FLOODWATERS. IT SHALL HAVE OPEN RAILINGS. BRIDGE SHALL BE ANCHORED TO ABUTMENTS TO PREVENT ANY MOVEMENT BY FLOODWATERS.
7. APPROX. 0.85 ACRE OF AREA AT THE CANAL AVENUE PARK SHALL BE RE-FORESTED.
8. TOTAL AREA OF DISTURBANCE IS 0.55 ACRE.
9. TOTAL AREA OF NET IMPERVIOUS COVERAGE IS 0.34 ACRE.

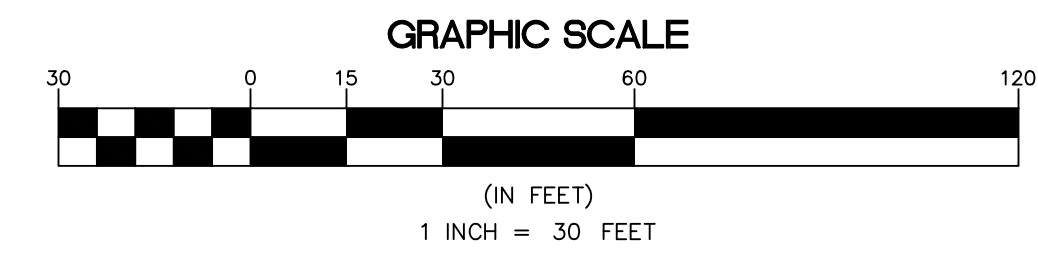
ATLANTIS AVENUE
(ASPHALT SURFACE - 50' R.O.W.)

BREAKERS DRIVE
(ASPHALT SURFACE - 60' R.O.W.)

N.J. STATE HIGHWAY ROUTE 72
(ASPHALT SURFACE - 80' R.O.W.)



TYPICAL SECTION
ASPHALT FOOTPATH
NOT TO SCALE



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ANY MODIFICATION, ALTERATION, OR USE OF THIS SIGNED AND SEALED PLAN FOR ANY OTHER PROJECT OR FOR INSTITUTING A FIELD CHANGE DURING CONSTRUCTION Voids ANY LIABILITY OF OWEN, LITTLE & ASSOCIATES, INC., AND IS ILLEGAL AND PUNISHABLE BY LAW.

THIS DRAWING HAS BEEN PREPARED FOR THE PURPOSE OF MUNICIPAL AND REGULATORY AGENCY REVIEW AND APPROVAL AND SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND THE DRAWINGS HAVE BEEN INITIALED TO INDICATE "APPROVED FOR CONSTRUCTION."

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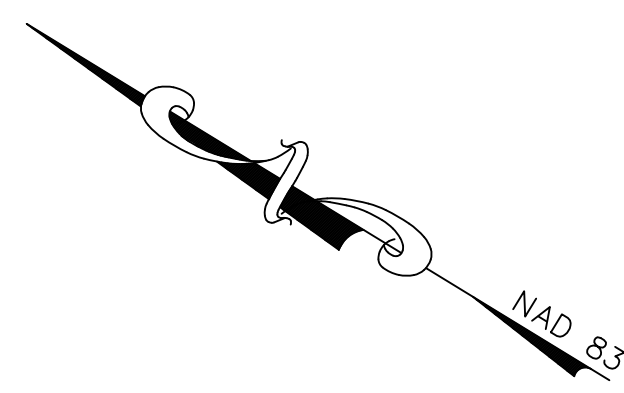
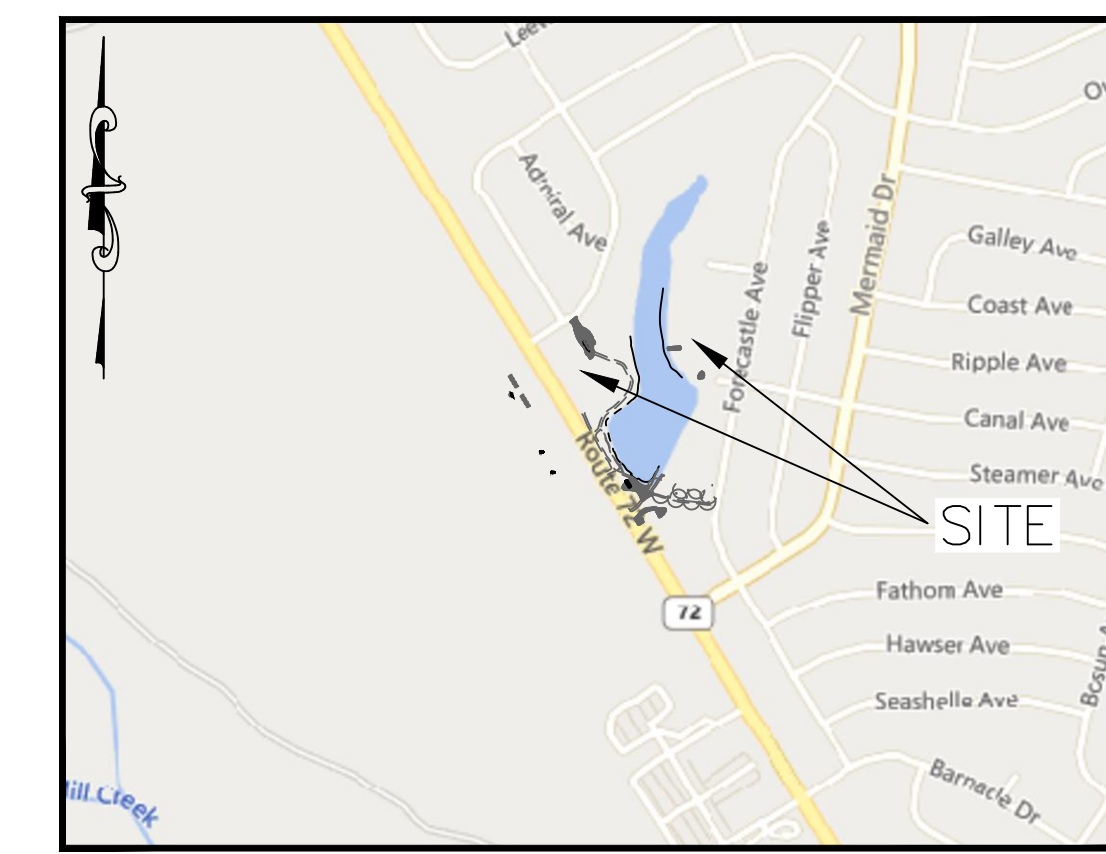
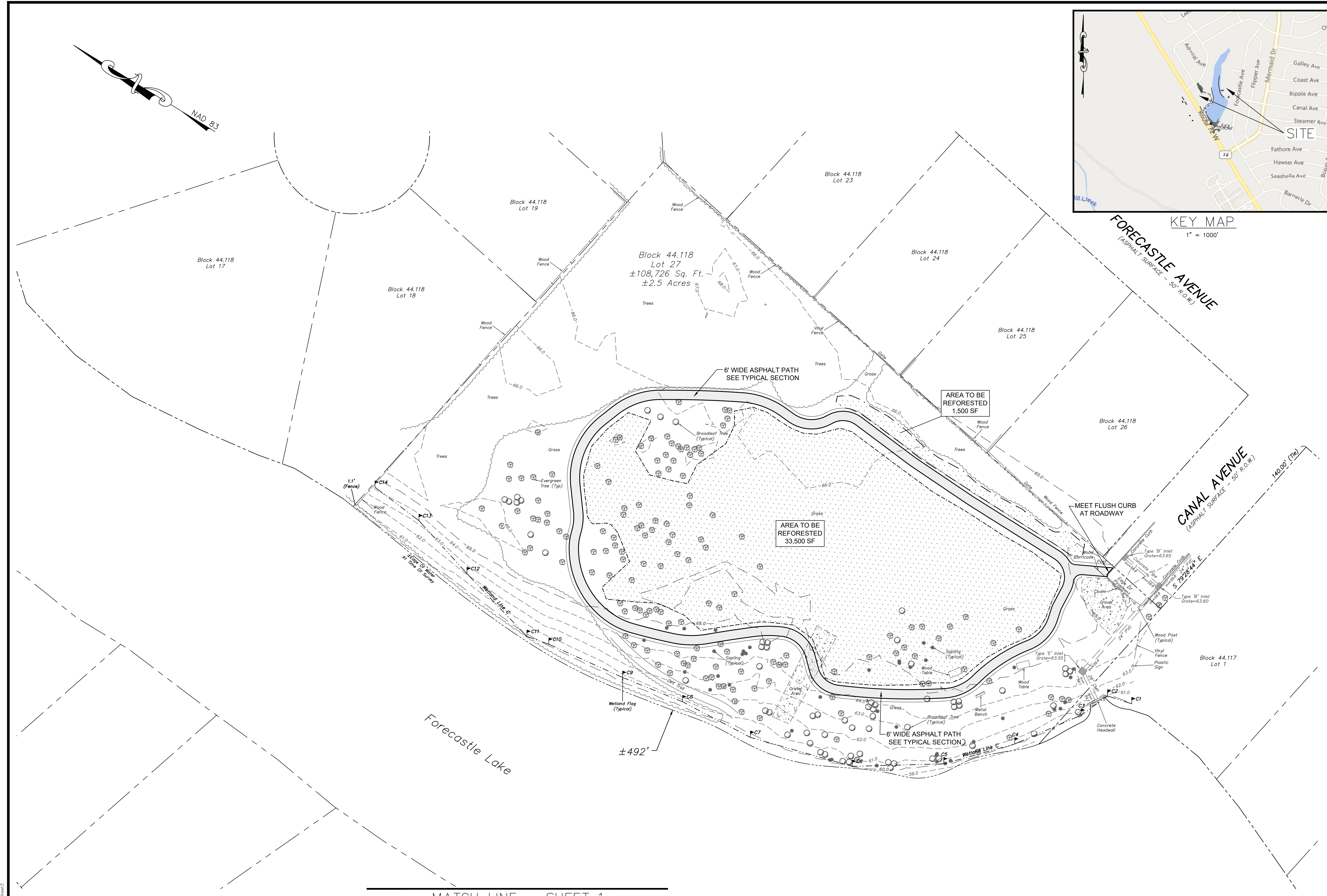
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NO.	DATE	REVISION DESCRIPTION	DRAWN	CHK'D

<p>OWEN, LITTLE & ASSOCIATES, INC. 443 Atlantic City Blvd. Beachwood, NJ 07002 Tel: 732/244-1392 Fax: 732/241-3412</p>		<p>FRANK J. LITTLE, JR. P.E., P.P.</p> <p>PROFESSIONAL ENGINEER N.J. LIC. NO. 248E02708500 PROFESSIONAL PLANNER N.J. LIC. NO. 03096</p>	<p>TOWNSHIP OF STAFFORD - FORECASTLE LAKE PARK</p> <p>PLAN OF FOOTPATH AND ACCESSIBLE PARKING</p> <p>BLOCK 44.119, LOT 8 BLOCK 44.119, LOT 27 BLOCK 44.119, LOT 29.01 TOWNSHIP OF STAFFORD</p>	<p>OCEAN COUNTY</p> <p>SCALE: 1" = 30'</p> <p>DATE: 10/23/23</p> <p>DRAWN: JMW</p> <p>CHK'D: WJB</p> <p>APPROVED FOR CONSTRUCTION: [Signature]</p> <p>SURVEY & BILLING NO.: 23-084501</p> <p>DRAWING NO.: STAFF(23)FORE 1</p>	<p>NEW JERSEY</p> <p>1</p> <p>3</p>
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C:\Users\jlp\OneDrive\Work\New\Map\Bldg_168453_1_086-Plan\dwg - Sheet1



MATCH LINE - SHEET 1

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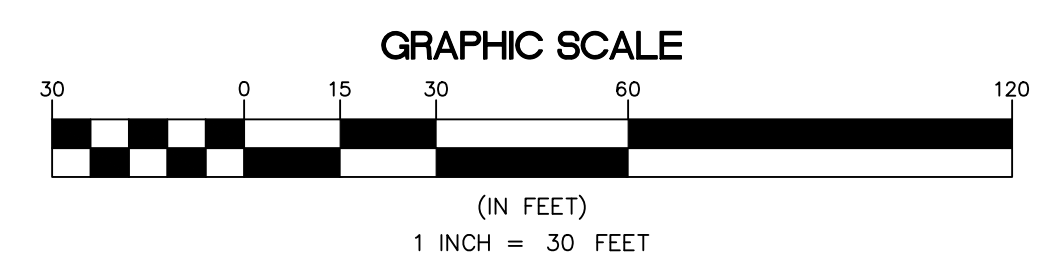
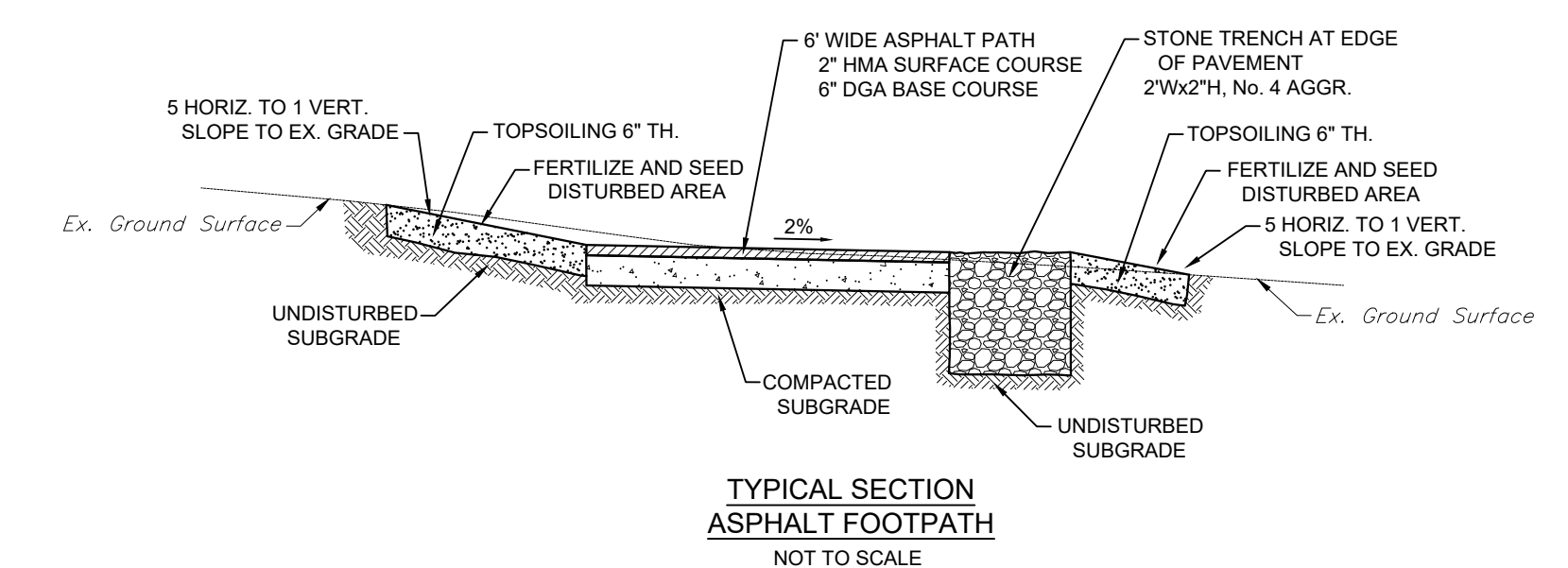
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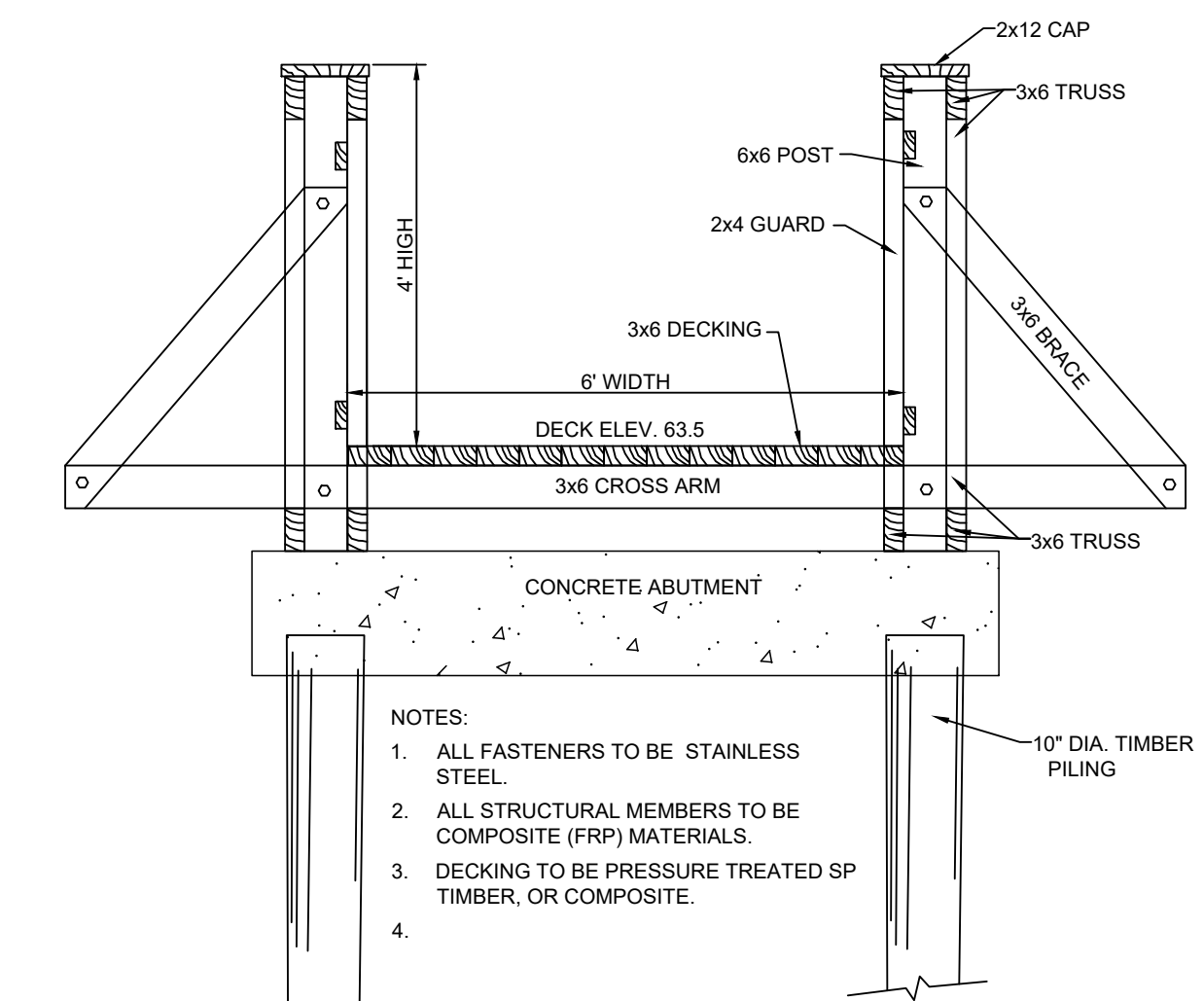
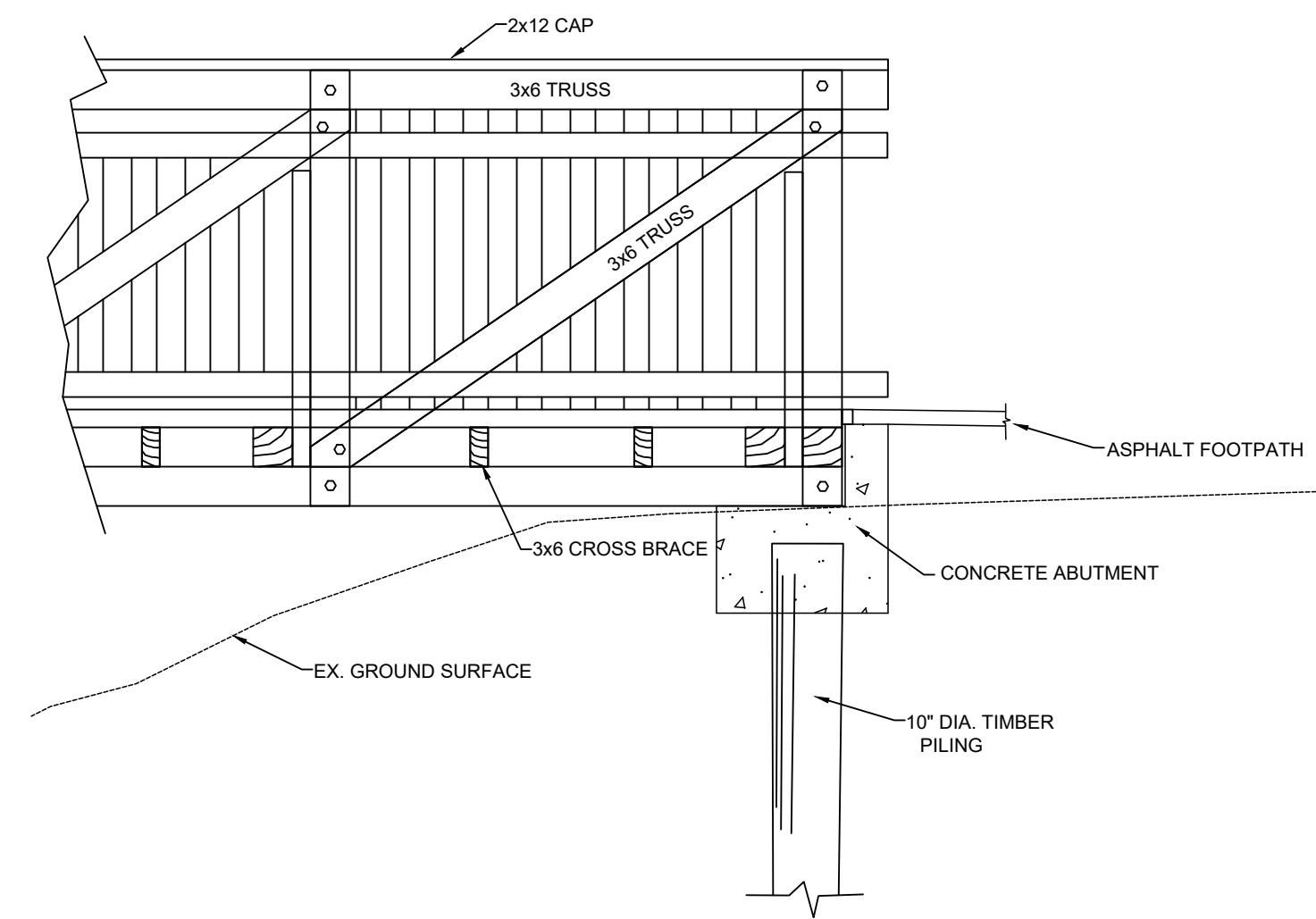
- NOTES:
- THIS PLAN IS FOR THE CONSTRUCTION OF ASPHALT FOOTPATHS AND AN ACCESSIBLE PARKING AREA WITHIN THE STAFFORD TOWNSHIP LANDS KNOWN AS FORECASTLE LAKE PARK.
 - HMA PAVED FOOTPATHS WILL BE CONSTRUCTED WITHIN AREAS OF EXISTING UN-SURFACED TRAILS AND WITHIN EXISTING GRAVEL SURFACED AREAS. NO VEGETATION IS TO BE REMOVED.
 - TOTAL AREA OF PROPOSED PAVING IS APPROX. 0.37 ACRE (15,900 SF).
 - WETLANDS LINES FLAGGED IN SEPTEMBER, 2023 BY JOSEPH R ARSENAULT ENVIRONMENTAL CONSULTING, FRANKLINVILLE.
 - NO WETLANDS AREAS ARE TO BE DISTURBED. CONSTRUCTION IS LOCATED WITHIN THE BUFFER AREA AT 300' FROM THE WETLAND AREAS.
 - A FOOTBRIDGE WITH A SPAN OF 35 FEET AND A TREAD WIDTH OF 6 FEET WILL CROSS THE AREA OF THE OUTLET CHANNEL FROM THE LAKE DAM. AREA BELOW THE FOOTBRIDGE TO REMAIN OPEN TO FLOODWATERS. IT SHALL HAVE OPEN RAILINGS. BRIDGE SHALL BE ANCHORED TO ABUTMENTS TO PREVENT ANY MOVEMENT BY FLOODWATERS.
 - APPROX. 0.85 ACRE OF AREA AT THE CANAL AVENUE PARK SHALL BE RE-FORESTED.
 - TOTAL AREA OF DISTURBANCE IS 0.55 ACRE.
 - TOTAL AREA OF NET IMPERVIOUS COVERAGE IS 0.34 ACRE.

NO.	DATE	REVISION DESCRIPTION	DRAWN	CHK'D
TOWNSHIP OF STAFFORD - FORECASTLE LAKE PARK PLAN OF ACCESSIBLE PARKING AND FOOTPATH BLOCK 44,118, LOT 8 BLOCK 44,118, LOT 27 BLOCK 44,119, LOT 29.01 TOWNSHIP OF STAFFORD				
OCEAN COUNTY		NEW JERSEY		
SCALE	DATE	DRAWN	CHK'D	APPROVED FOR CONSTRUCTION
1" = 30'	10/23/23	JMW	WJB	
SURVEY & BILLING NO.		DRAWING NO.		
23-084501		3		
STAFF(23)FORE				

OWEN, LITTLE & ASSOCIATES, INC.
 Authorization No. 24627885700
 Engineers, Planners, Surveyors
 23 Spadecreek
 443 Atlantic City Blvd.
 Beachwood, NJ 07812
 Tel: 732/244-1390
 Fax: 732/244-3412

FRANK J. LITTLE, JR. P.E., P.P.

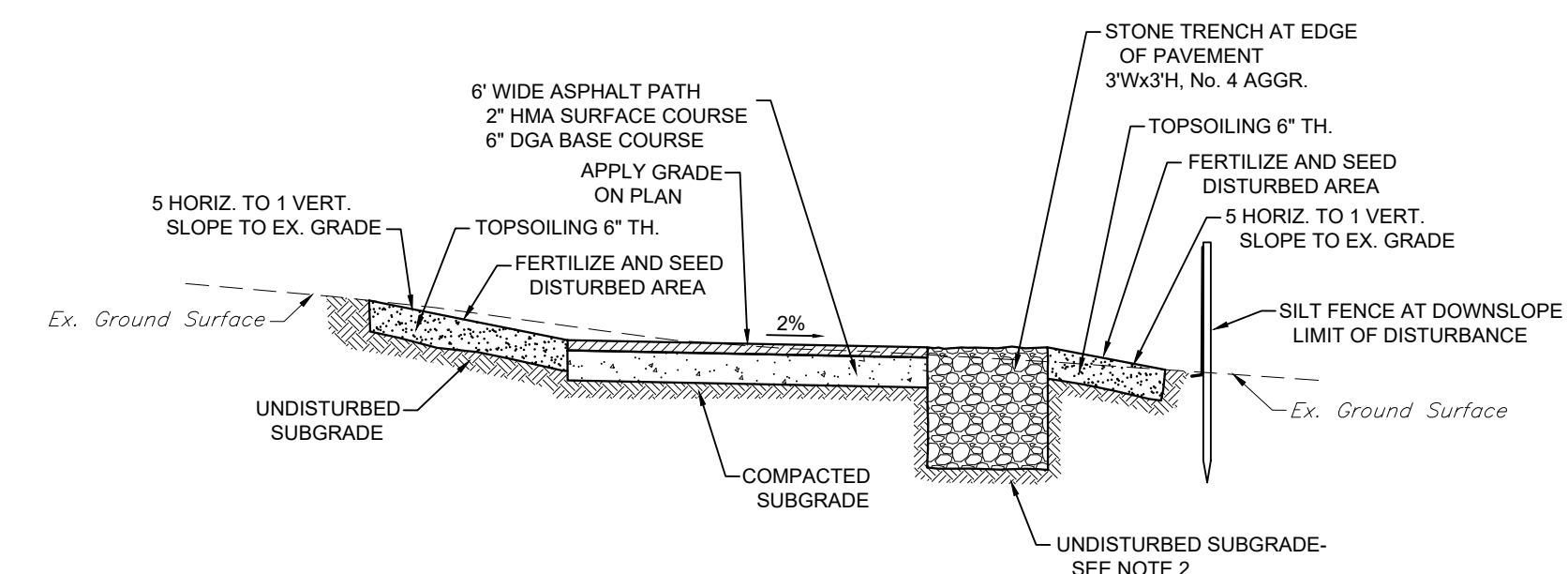
PROFESSIONAL ENGINEER
 N.J. LIC. NO. 246202708500
 PROFESSIONAL PLANNER
 N.J. LIC. NO. 03096



- NOTES:
1. ALL FASTENERS TO BE STAINLESS STEEL.
 2. ALL STRUCTURAL MEMBERS TO BE COMPOSITE (FRP) MATERIALS.
 3. DECKING TO BE PRESSURE TREATED SP TIMBER, OR COMPOSITE.
 - 4.

**TIMBER TRUSS FOOTBRIDGE
SCHEMATIC CROSS SECTION**

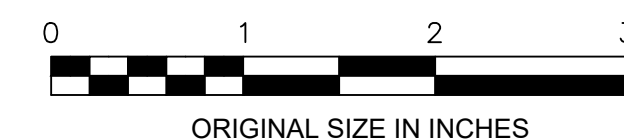
NOT TO SCALE



**TYPICAL SECTION
ASPHALT FOOTPATH**

NOT TO SCALE

- NOTES:
1. IMPERMEABLE BARRIER OF PVC PLASTIC SHEETING MIN. 10 MIL. THICK (OR EQUIVALENT), TO BE INSTALLED ACROSS STONE TRENCH AT LOCATIONS SHOWN ON PLAN TO SERVE AS WATERSTOP.
 2. WHERE SOILS, AS DETERMINED BY THE ENGINEER, DO NOT MEET THE REQUIREMENT FOR K3 PERMEABILITY, BASED ON INSPECTION OF THE SOILS ENCOUNTERED DURING CONSTRUCTION, THE MUNICIPAL ENGINEER WILL REQUIRE SUITABLE SOIL REPLACEMENT TO A DEPTH OF 2 FEET BELOW THE BOTTOM OF THE TRENCH. THE SOIL PERMEABILITY FOR ANY SOIL REPLACEMENT SHALL BE K3 SOILS OR GREATER.



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<p>OWEN, LITTLE & ASSOCIATES, INC. 443 Atlantic City Blvd. Beachwood, NJ 07002 Tel: (732) 244-1392 Fax: (732) 241-3412</p>	<p>FRANK J. LITTLE, JR. P.E., P.P.</p> <p>Authorization No. 24627985700 Engineers, Planners, Surveyors 25 Specialists</p>	<p>TOWNSHIP OF STAFFORD - FORECASTLE LAKE PARK FOOTPATH AND ACCESSIBLE PARKING CONSTRUCTION DETAILS</p>		
		<p>BLOCK 44.117, LOT 8 BLOCK 44.118, LOT 27 BLOCK 44.119, LOT 29.01 TOWNSHIP OF STAFFORD</p>		
<p>OCEAN COUNTY</p>		<p>NEW JERSEY</p>		
SCALE	DATE	DRAWN	CHK'D	APPROVED FOR SURVEY & BILLING NO.
NO SCALE	3/18/24	JMW	WJB	CONSTRUCTION
				<p>23-084501 STAFF(23FORE)</p>
			4	4

Restoration Plan for Forecastle Lake Walking Path

The Township of Stafford has applied to the Pinelands Commission to create a walking path in the vicinity of Forecastle Lake. The trail would provide public access to Forecastle Lake via an improved path made specifically for the enjoyment of the citizens of Stafford.

The Area: As part of the path design, a 35,000 SF open field at the end of Canal Avenue would be allowed to re-vegetate and become the forest it once was prior to the establishment of the Ocean Acres residential development. Prior to clearing, the site was a typical pine-oak upland forest associated with the upper stream terrace of the Mill Creek drainage. Based on aerial photography, the site has been without a forest cover since 1972. Various herbaceous cover types have occupied the field during the ensuing years, and today it is a thinly covered old field dominated by native warm season grasses punctuated with large, specimen pine and oak trees.

The Plan: The restoration concept is to replace what was there, using the adjacent forest as the template for species selection. The selected species would be dependent on the native nursery availability, as well as the size and quantity availability. The opening supports a scattered open canopy of 47 mature pine, cedars, and oaks. Although included in the 35,000 SF area, no forest trees would be planted under or around the existing specimens. The number of forest trees selected is based on an artificial grid of 10 foot squares, with one tree occupying each square or one per 100 SF. The result is 350 forest trees, minus the existing 47 specimens, to yield a total of 303 forest trees. The forest trees will be planted in 30 clusters of 10 specimens randomly selected from the available stock. They will be spaced 8-10 foot apart, intermixed with forest shrubs. The clusters would be spaced evenly until open area is planted. Shrubs within the re-planted forest would be set at a rate of one shrubs per tree, or 300 shrub specimens. Ten shrubs will be planted within each tree cluster, and the remaining specimens planted under and between the existing pine, cedars, and oaks.

The land between the path and the rear of the homes facing Forecastle Avenue would be visually separated by a planting of 24 evergreen specimens and 24 dense shrubs. White pine and eastern red cedar would be selected as buffer trees, and groundsel bush used as the dense woody shrubs planted in gaps between the evergreen trees.

The tree species: The selection will include 303 specimens from the following list. Three species minimum should be selected from highlighted species, otherwise the choice is based on availability and size. Three wetland tree species, red maple, sweet gum, and black gum, have been added to the selection based on their presence in adjacent forests.

Acer rubrum
Liquidambar styraciflua
Nyssa sylvatica
Pinus echinata
Pinus rigida
Quercus coccinea
Quercus prinus
Quercus alba

Quercus stellata
Sassafras albidum

Sub-canopy Tree Specimens. These specimens are planted at 1/8 rate of the forest tree selection (38). They would be planted between tree clusters, and under existing forest trees.

Amelanchier canadensis
Ilex opaca
Betula populifolia

Buffer Specimens: Planted on a staggered 12' on center pattern, with white pine nearest to homes, eastern red cedar filling the gaps between the pines, and groundsel bush filling gaps between cedars and pines.

Baccharis halimifolia
Pinus strobus
Juniperus virginiana

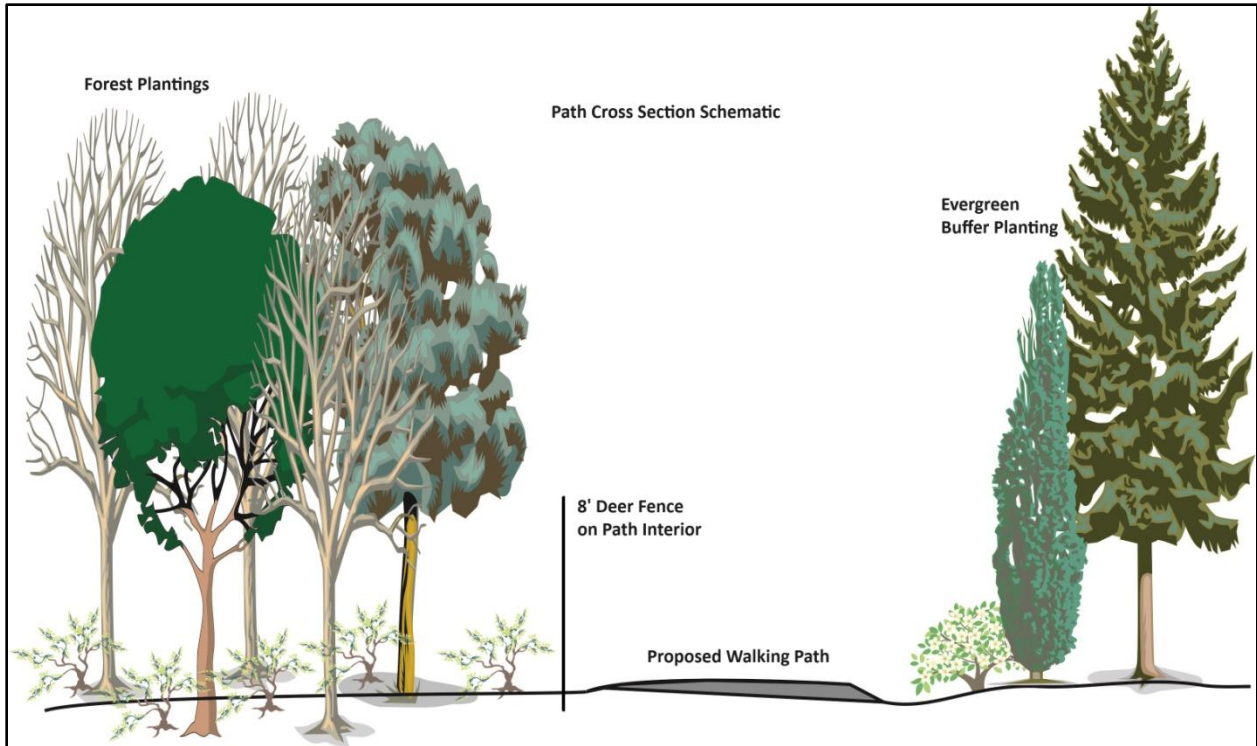
Forest Shrubs: These plants are planted at a rate of 1 shrubs per forest tree. This would provide 300 shrubs, 10 per cluster, remaining planted under existing forest trees.

Ilex glabra-evergreen with black berry
Ilex vericilata-deciduous with red berry
Morella pensylvanica-semi-evergreen with dry berries
Quercus ilicifolia/prinodites-dense multi-stem shrub oaks
Rhus copallina-dense multi-stem shrubs with brilliant red leaves in autumn

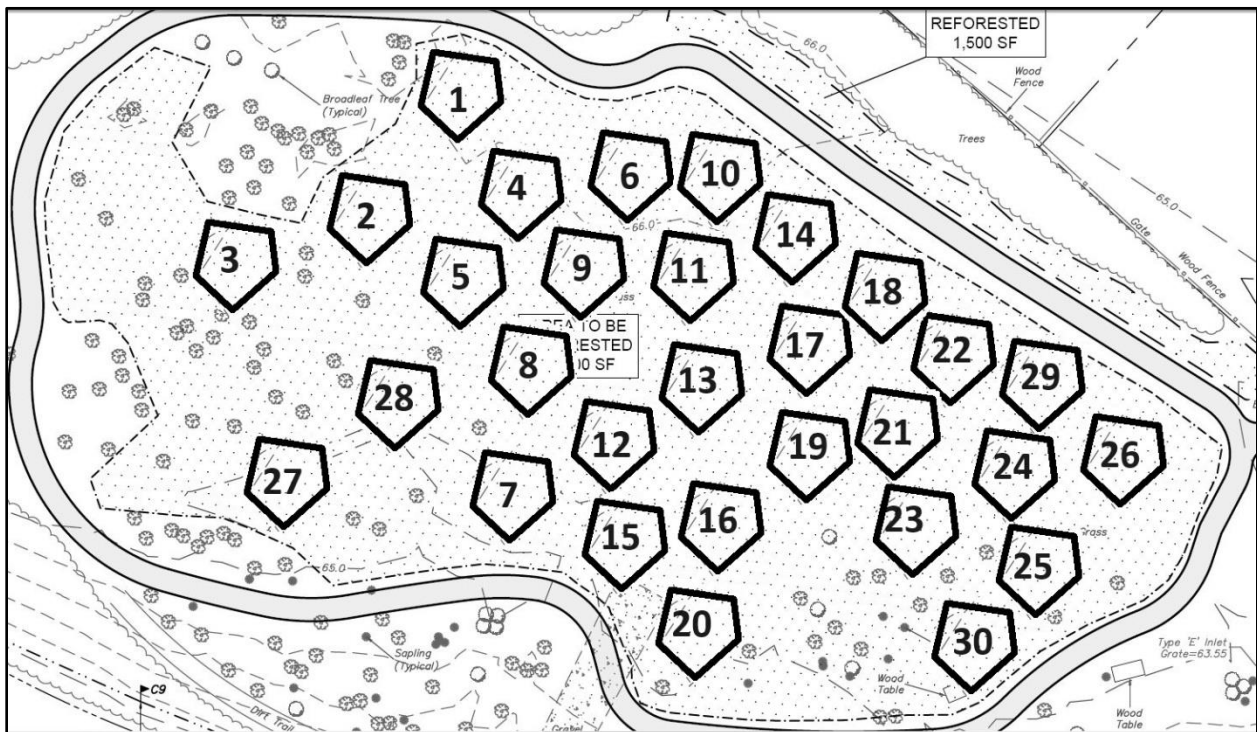
No herbs or seed is specified. The nearby native sources will fill in open areas once the site is planted and isolated from deer and humans.

Total specimens: ~665

forest trees-303
sub-canopy trees-38
buffer trees/shrubs~24 t/s each
forest shrubs-300



Cross section illustration showing path side plantings nearest evergreen buffer.



Thirty clusters to re-establish canopy. Shrubs and sub-canopy trees are planted in between and among clusters. This is to show the number of clusters can occupy the space; their location would be field located.