

Major Subdivision – Flexible Design Residential Project
Preliminary Application Review
North Woods Subdivision
Curtis Corner Road
South Kingstown, RI 02879

April 20, 2022

NORTH WOODS SUBDIVISION PRELIMINARY APPLICATION

NARRATIVE DESCRIPTION OF PROPOSED DRAINAGE IMPROVEMENTS

The Preliminary Application Plan proposes several minor deviations from the Master Plan Approval. The changes were made to improve the design of the proposed subdivision in relation to its conformity with the Town of South Kingstown’s “Flexible Design Residential Project Objectives” and the Rhode Island Dept. of Environmental Management’s “Stormwater Management, Design and Installation Rules.” A detailed and engineered grading and utility plan was created to give insight into what the Master Plan (MP) layout would result in (See plan sheet titled “North Woods Subdivision Master Plan Concept”, dated April 20, 2022) compared to what is proposed in the Preliminary Application Plan (PAP) (See “North Woods Subdivision Proposed Grading & Utilities Plan” sheet E2 of E7, revised April 20, 2022). The proposed changes between the application plan and the Master Plan layout are outlined below:

1. The Master Plan designates an area of 6,062 square feet to be utilized for stormwater management within the open space area adjacent to the cemetery in the southwestern portion of the Open Space. This stormwater area is labeled as “Infiltration Basin-X” on the MP. The application plan removes said stormwater area and relocates it as “Infiltration Basin-A”, “Sand Filter-C”, and “Infiltration Basin-C” located adjacent to the proposed roadway along the frontage of Lot 14, Lot 6, and Lot 15 respectively.

The changes outlined above create new BMPs in locations that were not originally shown on the Master Plan. The reasons and logic propelling said changes are to improve the original design in a way that increases its conformity with the Flexible Design Residential Project Purpose written within the “Town of South Kingstown, R.I. Subdivision and Land Development Regulations” (Town Regulations) and the Rhode Island Dept. of Environmental Management’s “Stormwater Management, Design and Installation Rules.” Through greater conformity with these two documents the project shall mitigate environmental degradation and protect the values, social and aesthetic, held by the Town of South Kingstown with greater success.

Flexible Design Residential Project Purpose:

The Purpose of Flexible Design Residential Projects is outlined as nine (9) notes in the Town Regulations. Each note is written below with comment(s) to describe how the Preliminary Application Plan better suits the “Flexible Design Residential Project Purpose” compared to the Master Plan Approval layout:

1. “To encourage the preservation of open space for its beauty and the appropriate use thereof”
 - a. The PAP results in 5,000 square feet (SF) more open space versus the MP.
 - b. The PAP results in 9,000 SF of less forest to be clear cut and less area to be disturbed versus the MP.
2. “To preserve historical and archeological resources”
 - a. The PAP removes stormwater BMPs from the area adjacent to the cemetery in the southwester corner of the Open Space.
3. “To protect the natural environment, including South Kingstown’s Varied Landscapes”
 - a. The PAP utilizes existing flow paths of stormwater runoff to reduce the required cut and fill, grading, and total earthwork activities.
 - i. 650 linear feet (LF) of less trenching for stormwater pipes versus the MP
 - ii. 9,000 SF of less area of forest to be clear cut and less area to be disturbed versus the MP
4. “To protect the value of real property”
 - a. The PAP relocates and replaces the stormwater BMP of the MP in the southwestern open space (“Infiltration Basin-X”) as three BMPs, which are all greater than 200’ from the abutting properties.
 - b. The PAP results in 5,000 SF more open space versus the MP.
5. “To promote more sensitive siting of buildings and better overall site planning consistent with the ‘South Kingstown Residential Design Manual’”
 - a. The siting of the proposed buildings is consistent between the PAP and MP.
6. “To perpetuate the appearance of South Kingstown’s traditional New England Landscape”
 - a. The PAP results in 5,000 SF more open space versus the MP.
 - b. The PAP results in 9,000 SF of less forest to be clear cut and less area to be disturbed versus the MP.
7. “To allow landowners a reasonable return on their investment and to reward landowners with reduced infrastructure costs and density bonuses”
 - a. The PAP results in 650 LF of less trenching and piping for stormwater management
 - b. The PAP results in seven (7) less drain manhole structures
 - c. The PAP results in 9,000 SF of less forest to be clear cut and less area to be disturbed
8. “To facilitate the construction and maintenance of streets, utilities, and public services in a more economical and efficient manner”
 - a. The PAP locates “Infiltration Basin-A”, “Sand Filter-C”, and “Infiltration Basin-C” adjacent to the proposed roadway which facilitates an efficient manner for construction and maintenance versus the MP stormwater BMP, “Infiltration Basin-X”, located in the southwestern corner of the open space. Said BMP would require over 400’ of cross-country travel to provide maintenance to it.
9. “To offer an alternative to conventional subdivision development”
 - a. The PAP and MP are both are an attractive alternative to the conventional subdivision development.

RI DEM Stormwater Management Rules & Regulations Minimum Standard 1:

The Minimum Standard 1: Low Impact Development (LID) Site Planning and Design Strategies of the Rhode Island Dept. of Environmental Management's "Stormwater Management, Design and Installation Rules" dictates that "LID site planning and design strategies must be used to the maximum extent practicable in order to reduce the generation of the water runoff volume for both new and redevelopment projects" Each note pertaining to LID Site Planning and Design Strategies is written below with comment(s) to describe how the Preliminary Application Plan (PAP) better suits the DEM document as compared to the Master Plan (MP) Approval layout:

1. "Protect as much undisturbed open space as possible to maintain pre-development hydrology and allow precipitation to naturally infiltrate into the ground"
 - a. The PAP results in 5,000 square feet (SF) more open space versus the MP.
 - b. The PAP results in 9,000 SF of less forest to be clear cut and land area to be disturbed versus the MP.
2. "Maximize the protection of natural drainage areas, streams, surface waters, wetlands, and other regulated areas"
 - a. The PAP replaces the MP "Infiltration Basin-X" as "Infiltration Basin-A", "Sand Filter-C", and "Infiltration Basin-C" which are located 100', 150, and 400', respectively, further from the wetland areas, and therefore provide greater protection to the wetland areas.
3. "Minimize land disturbance, including clearing and grading, and avoid areas susceptible to erosion and sediment loss"
 - a. The PAP results in 5,000 SF more open space versus the MP.
 - b. The PAP results in 9,000 SF of less forest to be clear cut and land area to be disturbed versus the MP.
4. "Minimize soil compaction and restore soils compacted as a result of construction activities or prior development"
 - a. The PAP reduces potential compaction of soils due to lesser land area being disturbed (9,000 SF less disturbance)
5. "Provide low-maintenance, native vegetation that encourages retention and minimizes the use of lawns, fertilizers, and pesticides"
 - a. Lawn areas are reduced to provide space for stormwater BMPs (Infiltration Basin-A & C, Sand Filter-C & D) and said BMPs shall be planted with low-maintenance vegetation.
6. "Minimize Impervious Surfaces"
 - a. Impervious surfaces are consistent between the PAP and MP
7. "Minimize the decrease in the 'time of concentration' from pre-construction to post construction, where 'time of concentration' means the time it takes for runoff to travel from the hydraulically most distant point of the drainage area to the point of interest within a watershed"
 - a. The decrease in the 'time of concentration' is less for the PAP than the MP because the PAP utilizes surface swales to mitigate stormwater whereas the MP utilizes pipes.

8. "Infiltrate precipitation as close as possible to the point it reaches the ground using vegetated conveyance and treatment systems"
 - a. The PAP promotes infiltration of precipitation as close as possible to the point it reaches the ground (the source) in greater effect than the MP.
 - i. "Infiltration Basin-B" and "Sand Filter-C" both infiltrate precipitation as close to the source (roadway) as possible (approximately 15'), while "Infiltration Basin-X" of the MP infiltrates runoff approximately 200' away from the source.
 - ii. "Infiltration Basin-C" infiltrates precipitation as close to the source (roadway area in front of Lot 15) as possible (approximately 15'), while "Infiltration Basin-X" is located approximately 270' away from said source.
 - iii. Vegetative conveyance is utilized for both "Infiltration Basin-A", "Sand Filter-C", and "Infiltration Basin-C" whereas pipe conveyance is necessary for "Infiltration Basin-X".
9. "Break up or disconnect the flow of runoff over impervious surfaces"
 - a. The PAP creates more flow of runoff over vegetated swales, versus the MP, which requires greater amounts of runoff to be retained on the pavement via bituminous berms so that the catch basins may collect the runoff. The PAP reduces the amount of runoff flow over impervious surfaces versus the MP.
10. "Provide Source controls to prevent or minimize the use or exposure of pollutants into stormwater runoff at the site in order to prevent or minimize the release of those pollutants into stormwater runoff"
 - a. Measures shall be taken to prevent pollutants from entering the stormwater runoff during construction in either plan.

Conclusion

It is important that the North Woods Subdivision be designed as close as possible to the governing documents, the "Town of South Kingstown, R.I. Subdivision and Land Development Regulations" and the "Stormwater Management, Design and Installation Rules" to provide the most environmentally friendly and socially viable product for the Town of South Kingstown. The deviations proposed in the Preliminary Application Plan are minor in nature and create an improved product for the potential people living in the subdivision and for the surrounding area. The amount of open space is increased by 5,000 SF, the amount of forest to be cleared is reduced by 9,000 SF, and the values and functions of the freshwater wetlands and upland areas are further protected.

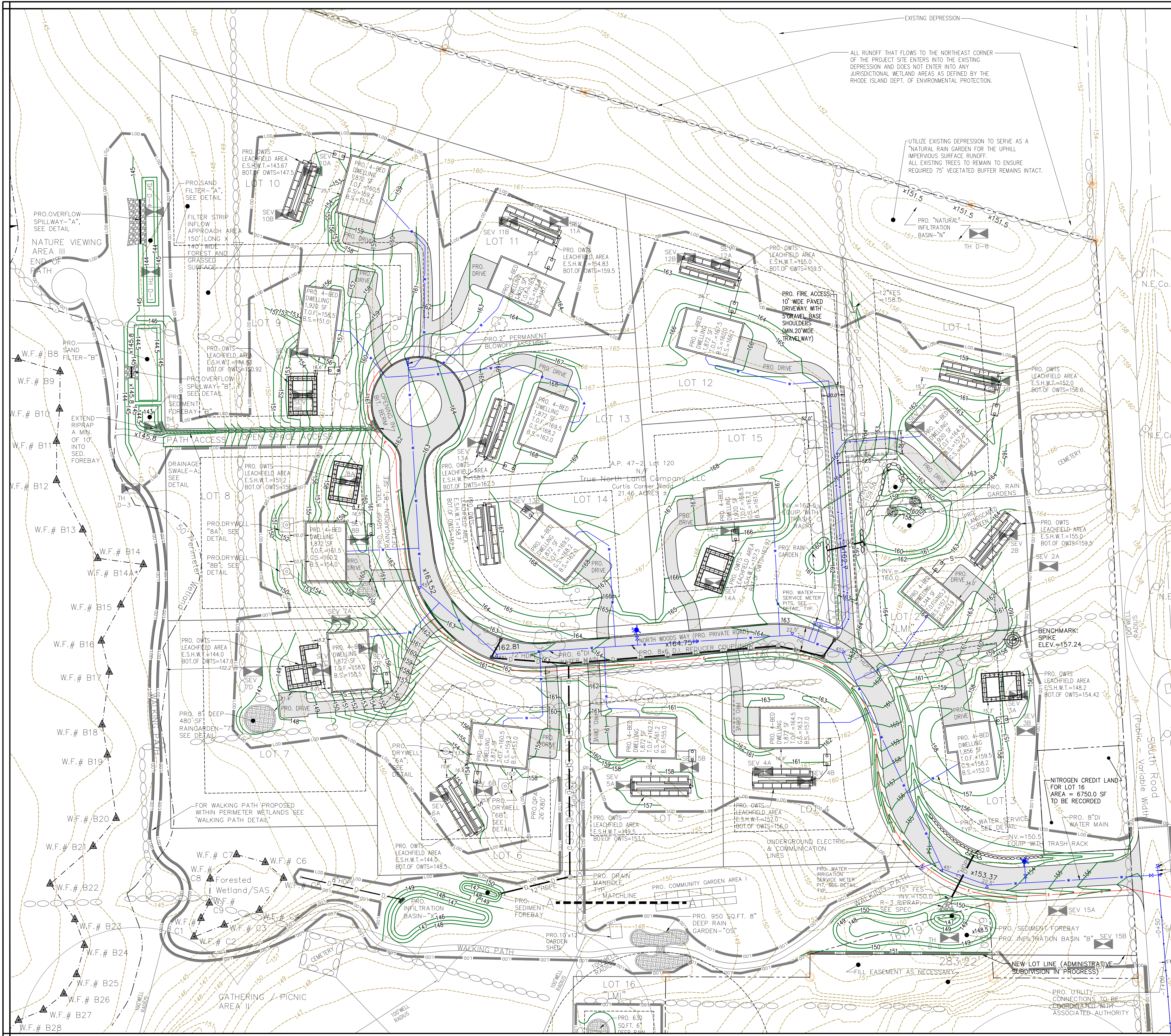
Sincerely,



David K. Manoni, P.E.

cc: EG/MO'B

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PURPOSE:
 THIS PLAN HAS BEEN CREATED FOR THE SOLE PURPOSE OF PROVIDING INSIGHT INTO WHAT AN ENGINEERED PLAN UTILIZING ONLY THE STORMWATER BMP AREAS DEPICTED IN THE MASTER PLAN APPROVAL WOULD LOOK LIKE. THIS IS NOT AN APPLICATION PLAN NOR CONSTRUCTION PLAN. SEE THE REPORT TITLE "NORTH WOODS SUBDIVISION PRELIMINARY APPLICATION NARRATIVE DESCRIPTION AND REASONING OF INCONSISTENCIES FROM MASTER PLAN APPROVAL" FOR MORE INFORMATION.

MAJOR SUBDIVISION FLEXIBLE DESIGN RESIDENTIAL PROJECT

**NORTH WOODS SUBDIVISION
 MASTER PLAN CONCEPT**

A.P. 47-2, LOT 120
 SOUTH KINGSTOWN, RHODE ISLAND
 SCALE: AS SHOWN DATE: 04/20/22 SHEET 1 of 1

REGISTRATION:

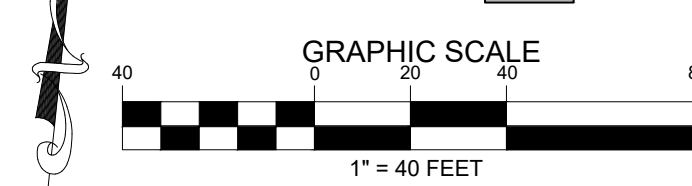
REVISIONS:

NO.	DATE	DESCRIPTION	BY

JOB NO.: 20.01

LEGEND

- EXISTING SUBJECT PROPERTY LINE
- ABUTTER PROPERTY LINES
- EX. CONTOUR LINE
- WETLAND EDGE DELINEATION
- 50' PERIMETER WETLANDS
- FEMA FLOODZONE BOUNDARY
- SOIL BOUNDARY LINE
- EX. TREE/BUSH
- EX. EDGE OF VEGETATION
- PERFORMED TEST HOLE
- EX. UTILITY POLE
- EX. HYDRANT
- PRO. SUBDIVISION LOT LINE
- PRO. CONTOUR
- PRO. STONEWALL/RET. WALL
- PRO. DRAIN LINE
- PRO. OWTS SEWER LINE
- PRO. WATER LINE
- PRO. HYDRANT
- PRO. UNDERGROUND ELECTRIC & COMMUNICATION LINES
- PRO. FLARED END SECTION
- PRO. PAVED SURFACE



INFORMATIONAL ONLY, NOT FOR CONSTRUCTION, NOR APPLICATION

**GROUND BREAKING
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