



GRADY CONSULTING, L.L.C.

Civil Engineers ♦ Land Surveyors ♦ Landscape Architects

February 10, 2020

Pembroke Planning Board
Town Hall
Pembroke, MA 02359

RE: Definitive Subdivision Plan – Old Cart Path Lane Ext. (#70 Old Cart Path Lane)
Applicant – Stephen Saia

Dear Board Members:

On behalf of the applicant, Grady Consulting, L.L.C. hereby submits two copies of the revised Definitive Subdivision Plan and Drainage Calculations. The plans were revised in response to comments from Review Engineer, Peter G. Palmieri, P.E., in a letter to Matthew Heins, Planning Board Assistant, dated February 3, 2020.

Comments from the review letter are shown in *italic* font and the response to comments are shown in **bold** font. The response to comments are as follows:

ZONING BY-LAWS

Section IV. Use and Dimensional Regulations

1. Residence District A

D.2. "Front Yards: In this district where the way is 40 feet or more in width, no building or structures shall be erected or placed within 40' of the way line except in those instances where a setback from the way line of 40' would not be in conformance with the adjacent dwellings, in which case a lesser setback maybe permitted but not a little less than 25'.

It appears that a portion of a rear deck may be located in the front yard setback. This should be addressed by the applicant/engineer.

A portion of the existing deck is proposed to be removed. A note has been added to sheet 2 of the plan.

RULES AND REGULATIONS GOVERNING THE SUBDIVISION OF LAND

III.B.3 CONTENTS

a. The location of the benchmark and datum for the project should be specified on the

cover sheet as required. A legend showing both existing and proposed features as well as a list of abbreviations should be presented on the plans.

The location of the benchmark and datum for the project have been added to the plan as requested. A legend has been added to sheet 3 as requested.

- g. The location of the existing septic systems located on abutting property should be presented on the plans. The location and size of the existing watermain on Old Cart Path Lane is shown on the plan and profile sheet (sheet 4). We recommend that the existing watermain also be shown on the Existing Conditions Plan (sheet 3) and the Grading Plan (sheet 5). The material of the watermain should also be provided. Based on Dig-safe pavement markings, it appears that gas may be present on Old Cart Path Lane adjacent to the property. If so it should be shown on the plans. The drainage system at the intersection of Old Cart Path Lane and Orchard Drive should also be presented on the plan.*

The location of the abutting septic systems have been added to the plan as requested. The existing watermain has been added to sheet 3 and sheet 5 as requested. The proposed water main shall be CL 52 Ductile Iron. The location of the existing gas main has been added to the plan as requested. The drainage system at the intersection of Old Cart Path Lane and Orchard Drive have been added to the plan as requested.

- i. The Planning Board signature block presented on all of the plan sheets should be updated to reflect the current year.*

The Planning Board signature block has been revised to reflect the current year as requested.

- l. A proposed 6 inch watermain is shown on the westerly side of the proposed roadway terminating at the cul-de-sac. We recommend that the pipe material be specified and that the design be reviewed and approved by the Department of Public Works.*

The proposed water main material has been provided by the Water Department and shall be 6" CL 52 D.I pipe. The proposed material is noted on the plan as requested.

- p. We recommend that the roadway profile presented on sheet 4 of the plan be revised to show the proposed 18 inch RCP at STA 2+35± which carry flow from stormwater basin #1 to the outlet. We also recommend that the slope of the pipes and flow arrows be presented on the profile and plan view.*

The roadway profile on sheet 4 has been revised to show the proposed 18 inch RCP

as requested. The slope of the pipes and slope arrows have been added to the plan as requested.

q. Construction details have been presented on sheets 8-11 as required by the Rules and Regulations. We offer the following comments:

- A Typical Roadway Section for a Minor Street Layout is presented on sheet 8 of the plans as required. We recommend that a Typical Roadway Section for the Cul-de-Sac also be provided.*

A Typical Roadway Section for the Cul-de-Sac has been added to sheet 8 as requested.

- We recommend that a hydrant detail be added to the plan.*

A hydrant detail is shown on sheet 11 as requested.

- We recommend that the detail of the overflow outlet control structure presented on sheet 10 of the plans be revised to specify that the 24 inch cover be cast into the structure and not placed on top.*

The detail has been revised to specify that the 24 inch cover be cast into the structure as requested.

- A detail of the Rip-Rap Slope is presented on sheet 8 of the plans. We recommend that this detail be revised to show the placement of a guard rail at the uphill side of the slope between the sidewalk and the slope. The applicable dimensions as shown on the Typical Roadway Section should be shown as well. In addition, a detail of the guard rail itself should also be provided.*

The Rip-Rap Slope has been revised to show a guardrail as requested. The applicable dimensions as shown on the Typical Roadway section have been added to the detail as requested. A guardrail detail has been added to sheet 9 as requested.

s. The following information should be specified on the plan sheets:

- Curve radius of all curbing and along the roadway.*
The curve radius of all curbing has been added to the plan as requested.
- The type and limits of the curbing should be clearly specified.*
The type and limits of curbing has been identified as requested.
- We recommend that the proposed cape cod berm be extended to the existing berm and curbing at the intersection at Orchard Drive.*

The proposed cape cod berm shall extend to the existing berm as requested.

- *The roadway centerline geometry should be provided on the plan and profile sheet*

The roadway centerline geometry has been added to the plan and profile sheet as requested.

- t. The placement of the erosion control is presented on sheet 5 of the plans and a Construction Sequence is presented on sheet 9 of the plans. The location of the stockpile locations, equipment storage locations, and temporary sedimentation basin locations should also be shown. Calculations for the sizing of the temporary sedimentation basin should also be provided. Due to the proposed disturbance, an EPA NPDES Construction General Permit and associated Stormwater Pollution Prevention Plan (SWPPP) will be required prior to Construction.*

The location of the stockpiles, equipment and storage, and temporary sediment basins have been added to the plan as requested. Calculations for sizing the temporary sedimentation basins is shown on sheet 5 as requested. A SWPPP shall be provided prior to construction.

- z. A Landscaping Sheet (sheet 7) is provided as required. This sheet does show the street trees along the roadway as necessary with additional plantings at the proposed cul-de-sac.*

A waiver has been requested for the requirement of street trees.

- aa. A Lot Development sheet (sheet 6) showing the house size and placement, driveway location and grading has been provided. Calculations demonstrating compliance with the Lot Characterization Number has also been presented on this sheet. We recommend that the proposed grading shown on the Lot Development plan for Lot 3 and Lot 4 be revised to clearly show that the stormwater runoff from these lots will be directed away from abutting properties.*

A proposed swale has been added to the northerly property line on lots 3 and 4 to clearly show that the stormwater runoff will be directed away from abutting properties.

V.B DRAINAGE

The Stormwater Management System as designed, proposes to collect the stormwater runoff from the roadway and sidewalk as well as a portion of the overland flow and direct it to Stormceptor water quality units and two (2) stormwater infiltration basins located within drainage easements on the Lot 1 and Lot 3. A Stormwater Report for this subdivision indicates that the overall stormwater management system will attenuate the post

development stormwater flows to a level not exceeding the existing conditions. We offer the following comments regarding the drainage design and analysis:

- *We disagree with the easterly limit of the tributary areas for both the pre- development and post-development condition. It is our opinion that the tributary areas extend further to the east for both #37 Orchard Drive and #31 Orchard Drive.*

The pre and post development tributary areas have been revised to extend further to the east of #37 and #31 Orchard Drive as requested. The drainage calculations have been revised to reflect this change.

- *The Total Suspended Solids (TSS) Removal Calculation Worksheet lists; Deep Sump and Hooded Catch Basins, Stormceptor water quality units and an Infiltration Basin as the treatment train for this project. Since the 80% removal rate includes the pre-treatment, we recommend that the calculations be revised to remove the credit for the deep sump and hooded catch basin.*

The TSS calculation has been revised to remove credit for the deep sump and hooded catch basin as requested.

- *We recommend that the elevation of the berm at Infiltration Basin #2 be raised slightly in order to provide 1 foot freeboard above the 100 year storm event.*

The berm at infiltration basin #2 has been raised to provide 1 foot of freeboard as requested.

- *In the Operation and Maintenance Plan it appears that the "Post Construction" section is incorrectly labelled as "During Construction". We recommend that this be reviewed and revised as necessary*

The Operation and Maintenance Plan has been revised as requested.

- *Since Stormceptor Water Quality Units are proposed for this project, their use should be reviewed and approved by the Pembroke Department of Public Works.*

The Stormceptor Units shall be reviewed by the Department of Public Works as requested.

- *We recommend that the proposed flared end section for 18 inch RCP at STA 2+35± LT be moved closer to the toe of the rip rap slope.*

The flared end section has been moved closer to the toe of slope as requested.

It is general practice to design sites to comply with Massachusetts DEP Stormwater Management Regulations. The following section describes the 10 Standards for

compliance with Stormwater Management Regulations and the status of the submittal relative to each standard.

Standard 1 – Untreated Stormwater

Additional information required.

Drainage Calculations have been revised as requested.

Standard 2 – Post Development Peak Discharge Rate

Additional information required.

Drainage Calculations have been revised as requested.

Standard 3 – Recharge to Groundwater

This Standard has been satisfactorily addressed.

Standard 4 – 80% TSS Removal

Additional information required.

Drainage Calculations have been revised as requested.

Standard 5 – Higher Potential Pollutant Loads

The project is not considered a source of higher pollutant loads, this standard is not applicable.

Standard 6 – Protection of Critical Areas

Based on information presented on MassGIS and the Town of Pembroke GIS web page, the project site is not in a Critical Area.

Standard 7 – Redevelopment Projects

This project is not considered a redevelopment project and consequently this standard is not applicable.

Standard 8 – Erosion/Sediment Control

Additional information required. As previously stated, the placement of the erosion control is presented on sheet 5 of the plans and a Construction Sequence is presented on sheet 9 of the plans. The location of the stockpile locations, equipment storage locations, and temporary sedimentation basin locations should also be shown. Calculations for the sizing of the temporary sedimentation basin should also be provided. Due to the proposed disturbance, an EPA NPDES Construction General Permit and associated Stormwater Pollution Prevention Plan (SWPPP) will be required prior to Construction.

The location of the stockpiles, equipment and storage, and temporary sediment basins have been added to the plan as requested. Calculations for sizing the temporary sedimentation basins is shown on sheet 5 as requested. A SWPPP shall be provided prior to construction.

Standard 9 – Operation and Maintenance Plan

Additional information required.

The Operation and Maintenance Plan has been revised as requested.

Standard 10 – Illicit Discharges

Additional information required. In order to meet this standard, an “Illicit Discharge Compliance Statement” meeting the requirements specified in the Stormwater Management Regulations should be submitted.

An “Illicit Discharge Compliance Statement” shall be provided as requested.

V.C. WATER PIPES

A proposed 6 inch watermain is shown on the westerly side of the proposed roadway terminating at the cul-de-sac. We recommend that the pipe material be specified and that the design be reviewed and approved by the Department of Public Works. Typically the Department requires that the watermain be looped.

The proposed 6 inch watermain shall be constructed of CL 52 D.I. pipe. The design shall be reviewed by the DPW. A hydrant is proposed at the end of the watermain to avoid the need for a looped system.

V.D. SIDEWALKS

Sidewalks are proposed on both side of the street for this subdivision and terminate with accessible ramps at the limit of the subject property. A sidewalk is located on the southerly side of Old Cart Path Lane approximately 150 feet away from the subject property. We recommend that the possibility of extending the proposed sidewalk to meet the existing sidewalk be considered. It should be noted that the Right of Way for the existing Old Cart Path Lane is only 40 feet.

A waiver has been requested for the requirement of sidewalks on both sides of the road.

V.J. STREET TREES

A Landscaping Plan has been provided. The size of trees have been specified in tabular form along with the number of each type of tree. The plan also shows the cul-de-sac island as a “Landscaped Island” but no other information on the type of plantings for the island are shown. The Planning Board should determine whether this plan as submitted is satisfactory.

The landscape plan (sheet 7) proposes three thornless common honeylocust plantings within the cul-de-sac as shown on the plan view and listed on the Plant Schedule. A waiver has been requested for the requirement of street trees.

V.L. STREET LIGHTS

No street lights are proposed as part of this project.

The project does not propose any street lights. There are currently no street lights located on Orchard Drive or Old Cart Path Lane. A waiver has been requested for the requirement of street lights.

ADDITIONAL COMMENTS

1. Due to the proximity of the wetlands and other resource areas, an Order of Conditions approving the project will be required from the Pembroke Conservation Commission.

A Notice of Intent has been filed with the Pembroke Conservation Commission.

2. The plans should be reviewed by the Pembroke Fire Department relative to access and fire protection.

The plans shall be reviewed by the Pembroke Fire Department.

3. Due to the proposed disturbance an EPA NPDES Construction General Permit and associated Stormwater Pollution Prevention Plan (SWPPP) will be required prior to Construction.

A SWPPP shall be provided prior to construction.

4. The design of the proposed septic systems will need to be reviewed and approved by the Pembroke Board of Health.

The Definitive Subdivision Plan has been submitted to the Board of Health for review.

On behalf of the applicant we hereby request the following Waiver Requests to the Town of
Pembroke Rules and Regulations Governing the Subdivision of Land.

Section V.D. Sidewalks – To waive the requirement of sidewalks on both sides of the street

Section V.J. Street Trees – To waive the requirement of street trees

Section V.L. Street Lights – To waive the requirement of street lights

If you have any questions please do not hesitate to contact us.

Sincerely,

GRADY CONSULTING, L.L.C.



Paul Seaberg
Project Manager

cc: Stephen Saia
70 Old Cart Path Lane
Pembroke, MA 02359

Conservation Commission
Town Hall
Pembroke, MA 02359