

Horsley Witten Group

Sustainable Environmental Solutions

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January 5, 2014

Emilie Cademartori
Town of Wenham
Zoning Board of Appeals
Wenham Town Hall
2nd Floor
138 Main Street
Wenham, Massachusetts 01938

RE: Peer Review for Maple Woods
Comprehensive Permit Application

Dear Ms. Cademartori and Board Members:

The Horsley Witten Group, Inc. (HW) is pleased to provide the Wenham Zoning Board of Appeals (ZBA) and the Wenham Conservation Commission with this peer review of the Maple Woods Comprehensive Site Plan submission located at 62 Maple Street in Wenham, Massachusetts. The proposed Chapter 40B residential development is located on approximately 3.5 acres of undeveloped woodlands. The Applicant proposes a new age-restricted residential community with 60 one-bedroom homes located within one three-story building. The access driveway is approximately 600-feet long, the parking area provides 66 spaces, including 3 handicap accessible spaces, and the stormwater management system includes deep sump catch basins and subsurface infiltration chambers. The proposed development is located to the south of a large bordering vegetated wetland (BVW) system which is considered part of the Great Swamp of the Ipswich River watershed. The proposed development is located to the east of Burley Brook, which has been determined to be intermittent through a previously obtained Order of Resource Area Delineation dated January 27, 2014.

The following documents and plans were reviewed by HW:

- Letter/Application to the Wenham Zoning Board of Appeals, prepared by Regnante, Sterio & Osborne LLP, dated October 9, 2014;
- Application for Notice of Intent for 62 Maple Street, Wenham, Massachusetts, prepared by Meridian Associates, dated November 6, 2014;
- Stormwater Management Report for 62 Maple Street, Wenham, Massachusetts, prepared by Meridian Associates, dated November 6, 2014; and
- Permit Site Development Plans for 62 Maple Street, Wenham, Massachusetts, prepared by Meridian Associates, dated November 6, 2014 including:
 - Cover Sheet
 - Record Conditions Plan, Sheet 2 of 6
 - Permit Site Grading Plan, Sheet 3 of 6

- Permit Site Utility Plan, Sheet 4 of 6
- Permit Site Details, Sheet 5 of 6
- Permit Site Details, Sheet 6 of 6

HW conducted a site visit on December 30, 2014 with Charles Wear of Meridian Associates. Based on the materials submitted and reviewed to date, together with the site visit, HW provides the following comments and recommendations on the project.

Stormwater Management Review

Under the Comprehensive Permit Law, this project is required to meet the Massachusetts Stormwater Management Standards (MASWMS) in accordance with the Massachusetts Wetlands Protection Act. Therefore we have used the MASWMS as the basis for organizing our comments.

1. MASWMS Standard #1: *Standard 1 states that no new stormwater conveyances may cause erosion in wetlands of the Commonwealth.*
 - a. The Applicant proposes to discharge the emergency stormwater overflow from the subsurface infiltration facility into the adjacent wetland system to the north. The HydroCAD modeling indicates that this pipe will have minimal or no discharge and a riprap apron has been proposed to further minimize any potential erosion therefore it is unlikely to cause erosion into the adjacent BVW. It appears that the Applicant is in compliance with Standard 1.
 - b. The 12-inch emergency discharge pipe is proposed within the 30-foot no disturb zone. HW recommends that the Applicant pull the discharge pipe as far from the edge of the BVW as possible.
 - c. For clarity, HW recommends the Applicant illustrate the emergency overflow pipe with inverts on the Permit Site Grading Plan, Sheet 3 of 6.
2. MASWMS Standard #2: *Standard 2 requires that post-development runoff does not exceed pre-development runoff off-site.*

The Applicant has described the pre- and post-development watershed areas in the stormwater report and provided the discharge values to the wetland resource area to the north and west of the proposed development. HydroCAD calculations were included in the Stormwater Analysis and Calculations section of the Stormwater Management Report. HW offers the following comments regarding the HydroCAD calculations:

- a. For clarity HW recommends the Applicant provide the pre- and post-development watershed maps with the subcatchment areas and design points clearly labeled

- consistent with the descriptions found in the Stormwater Analysis and Calculations.
- b. The Applicant has provided the Unofficial Soil Logs for the three test pits in the vicinity of the subsurface infiltration system on Sheet 6 of 6. All three tests pits indicate the soil is loamy medium sand consistent with a Rawles infiltration rate of 2.41 inches/hour. The Applicant has utilized an exfiltration rate of 8.27 inches/hour in the HydroCAD modeling. HW recommends the Applicant adjust their HydroCAD calculations utilizing the 2.41 inches/hour rate or further justify their use of 8.27 inches/hour with additional soil testing.
 - c. The proposed roof drain from the proposed Apartment Building is not clearly shown entering the infiltration chambers. HW recommends that the Applicant verify that the roof drains are directed appropriately to the subsurface infiltration chambers. HW also recommends that the Applicant verify that the architect is aware of where the roof runoff is to be collected to coordinate the building design accordingly.
 - d. To verify the design meets the requirements outlined in the MASWMS, HW recommends the Applicant conduct additional test pits within the area proposed to be subsurface infiltration chambers prior to final approval. In accordance with Volume 2, Chapter 2, page 90, a minimum of three test pits should be conducted for each infiltration system.
 - e. HW recommends that the final design includes clear specifications for any fill material to be placed beneath the subsurface infiltration system. The Applicant should provide specifications for the fill maintaining the exfiltration rate utilized in the final approved HydroCAD model.
3. MASWMS Standard #3: *Standard 3 requires that the annual recharge from post-development shall approximate annual recharge from pre-development conditions.*
- a. The Applicant has provided recharge calculations in accordance with the MASWMS, however HW recommends that the calculations be revised utilizing an exfiltration rate of 2.41 inches/hour as discussed previously.
4. MASWMS Standard #4: *Standard 4 requires that the stormwater system be designed to remove 80% Total Suspended Solids and to treat 1.0-inches of volume from the impervious area for water quality.*
- a. The Applicant has provided the required documentation and calculations per the MASWMS. It appears that the Applicant is in compliance with Standard 4.
5. MASWMS Standard #5: *Standard 5 is related to projects with a Land Use of Higher Potential Pollute Loads (LUHPPL).* This standard is not applicable to this project.

6. MASWMS Standard #6: *Standard 6 is related to projects with stormwater discharging into a critical area, a Zone II or an Interim Wellhead Protection Area of a public water supply. This standard is not applicable to this project.*
7. MASWMS Standard #7: *Standard 7 is related to projects considered Redevelopment. This standard is not applicable to this project.*
8. MASWMS Standard #8: *Standard 8 requires a plan to control construction related impacts including erosion, sedimentation or other pollutant sources.*
 - a. HW recommends that the Applicant provide additional erosion and sedimentation controls around the emergency overflow pipe.
 - b. HW recommends that the catch basins within Maple Street within 100-feet of the access driveway be provided with inlet protection during construction.
 - c. The Applicant has provided a Construction Period Pollution Prevention Plan for a Proposed Stormwater Management System in the Stormwater Report. The document is not consistent with the Erosion Control and Sedimentation Notes provided on Sheet 6 of 6. There is a reference to a rain garden and a drainage swale which are not apparent on the design plans. HW recommends that a detail be provided for the storm drain inlet protection and that the Area Drain be staked in the field to avoid snow being deposited over it in the winter. The Conservation Commission may choose to provide final authorization on the acceptable placement and the removal of the siltation devices.
 - d. The property will be disturbing more than 1 acre of land and will therefore be required to develop a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Stormwater Program. HW recommends that the Applicant provide the Wenham Conservation Commission with a copy of its SWPPP and Notice of Intent to EPA prior to construction.
 - e. HW recommends that note 2 of the Erosion Control and Sedimentation Notes on Sheet 6 of 6 be revised to state that stock piles should be located at least 100 feet from the limits of the BVW.
9. MASWMS Standard #9: *Standard 9 requires a Long Term Operation and Maintenance Plan to be provided.*
 - a. The Applicant has provided a Long Term Operation and Maintenance (O&M) Plan. The plan includes an O&M schedule and identifies the person or party responsible for

the ongoing O&M. HW recommends that the Conservation Commission reference the O&M plan in any conditions they develop during their review process. The Applicant appears to be compliance with Standard 9.

10. MASWMS Standard #10: Standard 10 requires an Illicit Discharge Compliance Statement to be provided.

- a. To be in compliance with Standard 10, HW recommends that the Applicant provide an Illicit Discharge Compliance Statement signed by the property owner.

11. Additional Comments: As part of our review process HW noted the following items that the Applicant should consider.

- a. It appears that a drainage easement may be necessary for the emergency overflow pipe.
- b. The Applicant has proposed an 18-foot wide fire access around two sides of the proposed building. HW recommends that the proposed surface material be labeled on the drawings for verification that this fire access will be porous.
- c. The Applicant has also proposed a walking path to the south of the parking lot. HW recommends that the proposed surface material be labeled on the drawings for verification that this walking path will be porous.
- d. HW recommends that the Landscape Plan incorporated with the Comprehensive Permit drawings be provided to the Wenham Conservation Commission to verify the proposed plantings within the 100 foot buffer zone are native species.
- e. HW recommends that the Subsurface Infiltration Facility profile detail be verified for consistency with the minimum depth to estimated seasonal high groundwater.
- f. HW recommends that the Subsurface Infiltration Facility #1 plan view detail be revised to include the inlets from the roof drain, the stormceptors, the area drain and the outlet to the emergency overflow, including all invert elevations.
- g. For clarity the Applicant should revisit the LID Measures marked as incorporated on the Checklist for Stormwater Report. The use of country drainage and bioretention cells is not apparent on the design plans.

Conclusion

HW recommends that the Wenham Conservation Commission and Wenham ZBA require the Applicant to provide a written response to these comments to be considered during your decision process. The Applicant is advised that provision of these comments does not relieve him/her of the responsibility to comply with all Commonwealth of Massachusetts laws, and federal regulations as applicable to this project. Please contact Janet Carter Bernardo at 857-263-8193 (jbernardo@horsleywitten.com) if you have any questions regarding this review.

Sincerely,

HORSLEY WITTEN GROUP, INC.



Janet Carter Bernardo, P.E., LEED AP
Senior Project Manager

Cc: Meridian Associates