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May 21, 2015

Mr. Nathaniel Strosberg, Town Planner
101 Main Street
Town of Ashland
Ashland, MA 01721

RE: "83 Nickerson Road, Ashland, MA
Site Plan and Drainage Design Review

Dear Mr. Strosberg:

GCG Associates, Inc. has reviewed the following information for the proposed Site Plan for 83 Nickerson Road in Ashland, MA.

Plan References: "Proposed Site Plan for 83 Nickerson Road – Ashland, MA ", dated April 9, 2015, prepared by: Guerriere & Halnon.

Documents: "Stormwater Report 83 Nickerson Road – Ashland, MA ", dated February 10, 2015, prepared by: Guerriere & Halnon.

Based upon our review of the above information, we offer the following general comments and comments with respect to compliance with Town Bylaws: Chapter 282 - Zoning, Chapter 343 - Stormwater Management, Chapter 326 – Sewers, and Chapter 334 - Water. The numerical section of the regulations is referenced at the beginning of each comment unless it is a general comment.

GENERAL PLAN COMMENTS

The following are general comments with respect to the plans and drainage report.

Plan C-2.0 Site Layout Plan:

1. GCG would recommend the proposed modified cape cod berm between the two buildings at the end of Nickerson Road be changed to granite curbing. The curbing is vital to the stormwater design working and most likely the cape cod berm would be severely damaged during winter snow plowing periods. The stormwater would then discharge directly to the wetlands and by pass the basins.
2. An automobile would have a difficult time backing out of the two end spaces in the northeasterly corner parking area. The proposed number of spaces exceeds the

required number per the chart so the loss of these two spaces does not impact compliance with the requirements per the chart.

3. The snow storage areas shown on the plan are small for the size of the proposed paved surface.

Plan C-3.0 Grading and Drainage Plan:

4. Inverts should be shown on the 6" roof drains which connect to the proposed drain manhole.
5. Stormwater flows over the spillways during most storm events. The down gradient slopes should have some protection against erosion.
6. No grading is shown in the northwesterly corner of the proposed parking lot adjacent to the proposed retaining wall. The proposed 94 elevation contour ties into the existing 96 contour
7. The proposed wall in the northeasterly corner of the project is approximately 10 feet high. A design for the wall with footings should be provided to demonstrate that adequate space is provided to allow construction adjacent to the abutting property. A fence will be required on the top of the wall. No details are provided regarding the wall on the detail sheets.
8. The proposed drainage system use 8" PVC pipe. The minimum standard drain line used should be 12" per industry standard for connecting Catch Basins to Drain Manholes.

Plan C 4.0 Utility Plan:

9. The plan shows both a force main and a water line connecting into the existing sewer. The water line should be removed. The force main should run straight into the existing sewer manhole. The plan should call out that the openings in the existing sewer manhole would be cored and Kor-n-seal boots installed. Also, the invert shall be reconstructed.
10. The sewer is approximately 3 feet deep. It should be installed below the frost line which would be five feet deep. Also, the water line and services will pass under the sewer as designed required concrete encasement of utilities.
11. A flushing manhole or hydrant should be placed at the end of the proposed 8" water main.
12. The proposed connection of the new 8" water main should be detailed with respect to valves/tapping tees, etc.

Plan C 5.0 Erosion Control Plan

13. The proposed settling basins are located in the proposed infiltration basins areas which could adversely impact the infiltration basins once constructed. A means of protecting these areas should be called out on the plan.

Plan C 6.0 Detail Sheet

14. A detail should be added for the retaining wall.
15. The bedding around the copper water service should be sand instead of 2" minus material.
16. Construction details of forebay should be provided.
17. The size of stone in the Spreader Detail should be shown.

18. The E-One detail should be increased in size so it can be read. A design of the station should be provided. The detail appears to be a catalog cut.
19. The roof drain /cleanout shows a 10" pipe and the plan calls out a 6" pipe. The correct size should be shown.
20. The water / sewer crossing detail address if the sewer is under the water and within 18" of the sewer. A detail should be added showing how a crossing will be constructed when the water is placed under the sewer.
21. The drainage structure details should show castings which meet the DPW standards.

General comments with respect to drainage report

22. The freeboard provided in the two infiltration basins is 0.03 feet (Pond 2) and 0.35 feet (Pond 1). One foot of freeboard should be provided.
23. The t_c (time of concentration) for the pre development condition should be changed to 5 minutes instead of 2.1 minutes. The minimum allowed is a 5 minute time of concentration. The post development time of concentrations used are 5 minutes. This may impact the stormwater design.
24. The time for the basins to drain should be provided to insure that they drain in the required time per stormwater policy regulations.
25. The required volume to recharge uses 84,684 square feet. Please provide information of how this number was developed.
26. In basin #2, the recharge volume provided calculations use the entire depth of the basin as the volume. The volume should use only the volume which is infiltrated.
27. The TSS removal spread sheet for basin 2 takes credit for grass channels. The grass channels are 10 feet long. The channels should be of a length to allow for TSS removal to take this credit.
28. Test holes in the basin areas should be provided to determine the water table to properly evaluate if the basin will function as infiltration basins.
29. The infiltration rate was not accounted for in the design of the basins.
30. The design of the closed drainage system has not been provided.

CHAPTER 282 – ZONING

- 282-5.1.3 The parking spaces on the southerly side of lot 5 are within 10 feet of the street layout.
- 282-5.1.4.1 The parking spaces on the northerly side of lot 4 would need to back out into Nickerson Road. This area has only 5 spaces and the regulation applies to areas of more than 8 spaces. The overall number is over 8. This may not be an issue but GCG felt it should be brought to your attention.
- 282-5.2: Intended areas for loading shall be marked on plans for compliance with section requirements.
- 282-5.3.13: Any proposed signs shall be in compliance with this section for industrial zones. No signs are shown on the plans.
- 282-5.4: No landscaping is proposed. A plan should be provided showing landscaping to allow for evaluation of compliance with the regulations.

- 282-9.4.4(4) A plan showing that emergency vehicles can access the back of the site and maneuver around the buildings should be provided. Visually it appears that it may be difficult for a fire truck to make it to the buildings on lot 4.
- 282-9.4.4(5) See comments above regarding the sewer and water system.
- 282-9.4.4(6) No landscaping has been shown on the plans. This information should be shown to allow for proper evaluation.
- 282-9.4.4(7) No sign is shown on the plans.
- 282-9.4.4(8) The location of exterior lighting on the site should be shown on the plan.
- 282-9.4.8 Traffic data was not provided for the proposed use and how it may impact Nickerson Road. An analysis of turning movements should be provided to verify that vehicles can maneuver around the site and how emergency vehicle will be able to turn around at the end of Nickerson Road.
- 282-9.4.9 See comments above regarding drainage.
- 282-9.4.10 No landscaping is proposed on the plans. This information should be provided to allow for proper evaluation.

CHAPTER 343 – STORMWATER MANAGEMENT

- 343-7.6.10.1: Plans should show Wellhead Protection Zones or indicate that the site is not located within or near the same.
- 343-7.6.10.6 The site is on an assumed datum. Elevations should be on NVGD of 1929 as required or If NAVD 88 is used, a waiver should be requested.
- 343-7.6.10.7 and 8 No test pit information was provided. Test pits should be performed to allow for proper evaluation of drainage system.
- 343-7.6.11 See comments above regarding pipe sizes.
- 343-7.6.12 See comments above regarding the drainage calculations provided.
- 343-7.6.16:
 - 7.6.16.b.11 Test hole information is required to proper evaluate groundwater impacts.
 - 7.6.16.b.13.e: Stockpile locations and methods of protection should be shown and earthwork information should be provided.
 - 7.6.16.c.2 See comments above regarding time of concentrations.
 - 7.6.16.c.8 Flow velocities of the swales should be provided to evaluate erosion potential.

7.6.16.c.12 No soil testing has been provided as required.

7.6.16.c.13 No landscaping information was provided as required.

CHAPTER 326 - SEWERS

General:

1. Sewer system construction should meet the requirements of Bylaw Chapter 326 – Sewers. See plan comments above regarding compliance with Sewers.

326-15 & 16 The sewer system details or notes should indicate fitting types as required in Sections 326-15 and 326-16.

326-15.F. Gravity sewer should be PVC SDR-35 for standard depths or shall be ductile iron where cover is less than three and five-tenths feet or greater than thirteen feet. Plans should specify as such. Connection at building shows invert < 3.5'.

326-17.B. Backwater valves to be installed for each sanitary building sewer installation. The backwater valve shall be six-inches in size and constructed of PVC with solvent-welded joints to six-inch SDR 35 PVC sewer pipe. Shall be shown on plan.

CHAPTER 334 - WATER

General:

1. Water main and service construction should meet the requirements of Bylaw Chapter 334 – Water. See comments above regarding connection and extension of the water system.

334-56/57 The water notes should indicate valve, appurtenances and fitting types conforming to these sections.

If you have any questions regarding this matter, please contact our office.

Respectfully Submitted,
GCG Associates

Michael J. Carter

Michael J. Carter, P.E.
Project Manager