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June 22, 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
Peer Review #2

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, Revised: June 3, 2015, Prepared By: Guerriere & Halnon.
Documents:	"Stormwater Report 83 Nickerson Road – Ashland, MA ", Dated: February 10, 2015, Revised: June 2, 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.

Original comments are from GCG review letter dated May 21, 2015 with Guerriere & Halnon's response from letter dated June 8, 2015 in italics. All new comments are bold.

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. *The proposed curb at the end of Nickerson Road has been converted to granite.* **Comment addressed.**
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. *The parking on Lot 5 has been rearranged per Planning Board request as well as peer review request. Please see Site Plan for new layout.* **Comment addressed.**
3. The snow storage areas shown on the plan are small for the size of the proposed paved surface. *Additional snow storage areas have been added to the site plan.* **Comment addressed**.

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. *Inverts to the 6" roof drains have been added to the plan. All 6" roof drains wil discharge in basins and not in any drain manholes.* **Inverts are shown. Comment addressed.**
5. Stormwater flows over the spillways during most storm events. The down gradient slopes should have some protection against erosion. *The down gradient slope of spillaway has additional rip-rap added to the 25 foot no disturb line.* **Additional rip-rap is not shown on current plan set.**
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. *Grading in northwest corner of lot has been revised.* **Comment addressed.**
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. **Wall grading has been revised to a 6' wall height consistent with new included wall detail. Grading adjacent to wall is shown at a 2:1 slope and does not show whether this will require grading on the adjacent property. Grading behind wall must maintain a 3:1 slope.**
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. *The proposed drainage system has been revised to use 12" poly and 8" pvc has been removed.* **Proposed pipe material should be stated on plans.**

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. *Notes have been added to Utility Plan calling out connection to sewer manhole.* **Notes regarding boots and invert have been addressed. The force main shall be shown running straight into SMH without bends in the force main.**

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. *Gravity sewer has been revised to five feet deep.* **Sewer profiles shall be shown in locations with proposed water service lines to ensure there are no conflicts.**

11. A flushing manhole or hydrant should be placed at the end of the proposed 8" water main. *Flushing manhole has been added to the end of water line. Installation will follow the Ashland Water Department specifications.* **Comment addressed.**

12. The proposed connection of the new 8" water main should be detailed with respect to valves/tapping tees, etc. *Note has been added to plan indicating that contract to contact Ashland Water Department for specifications on extending water main.* **Comment addressed.**

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. *Infiltration areas in basins shall be protected and forebay areas in basins shall have silt removed after every major storm event to prevent silt from collecting in infiltration areas.* **Comment addressed.**

Plan C 6.0 Detail Sheet

14. A detail should be added for the retaining wall. *Retaining wall detail has been added to detail sheet.* **Comment addressed.**
15. The bedding around the copper water service should be sand instead of 2" minus material. *Note has been added to water service detail indicating sand bedding.* **Comment addressed.**
16. Construction details of forebay should be provided. *Forebay detail has been added to detail sheet.* **Detail has been added showing 3:1 slopes. Design plans show 2:1 grading in location of forebays and basins. Grading of 3:1 maximum slope is required at each.**
17. The size of stone in the Spreader Detail should be shown. *Stone size has been added to spreader detail.* **Stone size 1/2" to 2-1/2" is shown on detail. Is stone size large enough to withstand stormwater velocity exiting pipe?**
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. *E-One detail has been adjusted to be more specific for this development.* **Comment addressed.**
19. The roof drain /cleanout shows a 10" pipe and the plan calls out a 6" pipe. The correct size should be shown. *Detail has been revised to 6" pipe.* **Comment addressed.**
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. *Detail has been added to the detail sheet.* **Sewer has been lowered. Comment addressed.**

21. The drainage structure details should show castings which meet the DPW standards. *Note has been added to Details indicating that contractor to contact DPW for standard castings that are allowed.* **Comment addressed.**

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. **Comment addressed.**
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. **Comment addressed.**
24. The time for the basins to drain should be provided to insure that they drain in the required time per stormwater policy regulations. *The time for basin to drain has been calculated. See attached HydroCAD table.* **Table shows both basins draining in less than 72 hours. Comment addressed.**
25. The required volume to recharge uses 84,684 square feet. Please provide information of how this number was developed. **Comment addressed.**
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. **Volume calculations now only include basin volumes below the spillway. Comment addressed.**
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. *The grass swale was increased in length and TSS removal was revised for drainage channel. Refer to spreadsheets.* **Channels removed from TSS calculations. Comment addressed.**
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. **Comment addressed.**
29. The infiltration rate was not accounted for in the design of the basins. **Comment addressed.**
30. The design of the closed drainage system has not been provided. **Comment remains. Use rational method to demonstrate pipe sizing.**

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. *Parking on lot 5 has been revised.* **Comment remains.**

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. **Comment remains.**

282-5.2: Intended areas for loading shall be marked on plans for compliance with section requirements. *Loading areas have been added.* **Comment addressed.**

282-5.3.13: Any proposed signs shall be in compliance with this section for industrial zones. No signs are shown on the plans. **Location shown, details not included and shall comply with 282-5.3.13.**

282-5.4: No landscaping is proposed. A plan should be provided showing landscaping to allow for evaluation of compliance with the regulations. *No landscaping will be proposed for this project because of use and location of the project.* **GCG recommends meeting landscaping requirements of this section or waiver requested. Matter deferred to Planning Board.**

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. *No accessing being proposed behind building for fire trucks but there is access on three sides of metal buildings and pedestrian access around buildings.* **Comment remains.**

282-9.4.4(5) See comments above regarding the sewer and water system. **Comments addressed.**

282-9.4.4(6) No landscaping has been shown on the plans. This information should be shown to allow for proper evaluation. *No landscaping proposed*. **GCG recommends meeting landscaping requirements of this section or waiver requested. Matter deferred to Planning Board.**

282-9.4.4(7) No sign is shown on the plans**. Location shown, details not included and shall comply with 282-5.3.13.**

282-9.4.4(8) The location of exterior lighting on the site should be shown on the plan. Only security lighting mounted on buildings. *The type of use will not require lighting at night because buildings will be mainly open during work hours.* **GCG recommends exterior lighting for safety. Matter deferred to Planning Board.**

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. *Due to the proposed use of buildings minimal traffic is estimated. Buildings will be condos for plumbers, electricians and carpenters, etc.* **Proposed use is not similar with condo units. Emergency vehicle maneuverability must be verified. Comment remains.**

282-9.4.9 See comments above regarding drainage. **Comments addressed.**

282-9.410 No landscaping is proposed on the plans. This information should be provided to allow for proper evaluation. *No landscaping being proposed. Waiver request*. **All waiver requests shall be formally submitted to the Planning Board. Matter deferred to Board.**

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. *Not in a wellhead protection zone.* **This shall be indicated on plans.**

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. *Requesting waiver.* **All waiver requests shall be formally submitted to the Planning Board. Matter deferred to Board.**

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. **Comment addressed.**

343-7.6.11 See comments above regarding pipe sizes. **Comments addressed**.

343-7.6.12 See comments above regarding the drainage calculations provided. **Comments addressed.**

343-7.6.16:

7.6.16.b.11 Test hole information is required to proper evaluate groundwater impacts. **Comments addressed.**

7.6.16.b.13.e: Stockpile locations and methods of protection should be shown and earthwork information should be provided. **Comment addressed.**

7.6.16.c.2 See comments above regarding time of concentrations. **Comment addressed.**

7.6.16.c.8 Flow velocities of the swales should be provided to evaluate erosion potential. *Information added.* **Per Stormwater Vol2 Ch2 velocity shall be less than 0.1 fps to prevent erosion. Comment remains.**

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

7.6.16.c.13 No landscaping information was provided as required. **Waiver being requested. Matter deferred to Board.**

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. *Changes made to plans and notes added.* **Comment addressed.**

326-15 & 16 The sewer system details or notes should indicate fitting types as required in Sections 326-15 and 326-16. **Include note on plans. Comment remains.**

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'. **Comment addressed.**

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. **Comment remains.**

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. **Note added, detail not revised.**

334-56/57 The water notes should indicate valve, appurtenances and fitting types conforming to these sections. **Note added, detail not revised.**

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