

August 4, 2025

Ms. Farinacci, Director of Planning and Community Development
Town of Ashland
101 Main Street
Ashland, MA 01721

RE: Peer Review – Planning Board Site Plan Review & Special Permit, Conservation Commission
Notice of Intent for Team Hoyt Community YMCA Site Plan - 30 Memorial Drive (Assessor's
Map 13, Lot 178)

Dear Jasmin:

GCG Associates, Inc. has reviewed the following information for the proposed YMCA Development Site
Plan at 30 Memorial Drive in Ashland, MA.

Documents:

1. Planning Board application package consists of Cover letter, Application, Narrative, Arborist Report, Abutter's List, and property Card, for the proposed Team Hoyt Community YMCA (Young Man's Christian Associates) Site Development at 30 Memorial Drive, in the Town of Ashland, prepared by Fletcher Tilton Attorneys at Law, dated June 4, 2025
2. Drainage Report for Team Hoyt Community YMCA, 30 Memorial Drive, Ashland, Massachusetts, Middlesex County, prepared by Bohler Engineering (Bohler), dated April 25, 2025.
3. Notice of Intent & Stormwater Management Application for proposed Team Hoyt Community YMCA, prepared by Bohler, dated June 24, 2025.

Plan References:

1. "Proposed Site Plan Documents for the proposed Team Hoyt Community YMCA, location of site, 30 Memorial Drive, Town of Ashland, Middlesex County, Massachusetts Map 13, Lot 178), prepared by BOHLER, dated 04/25/2025, consists of 40 sheets as following:
C-101 Cover Sheet
C-102 General Notes and Legend
C-103 Jurisdictional Notes
C-201 Existing Conditions/Demolition Plan
C-301 Overall Site Plan
C-302 Site Plan A
C-303 Site Plan B
C-401 Overall Grading Plan
C-402 Grading Plan A
C-403 Grading Plan B
C-501 Utility Plan
C-801 Overall Erosion and Sediment Control Plan
C-802 Erosion Control and Sediment Control Notes and Details

C-901 Construction Details
 C-902 Construction Details
 C-903 Construction Details
 C-904 Construction Details
 C-905 Construction Details
 C-906 Construction Details
 C-907 Construction Details
 L-101 Overall Landscape Plan
 L-102 Landscape Plan A
 L-103 Landscape Plan B
 L-104 Landscape Notes and Details
 L-105 Landscape Details
 L-201 Overall Lighting Plan
 L-202 Lighting Plan A
 L-203 Lighting Plan B
 L-204 Lighting Details
 EX-101 Fire Truck Turning Plan
 Existing Conditions Plan (By Allen & Major Associates, Inc.), 1 sheet.
 Architectural Drawings, (by CBT), 9 sheets.

2. "Proposed Site Plan Documents for the proposed Team Hoyt Community YMCA, location of site, 30 Memorial Drive, Town of Ashland, Middlesex County, Massachusetts Map 13, Lot 178), prepared by BOHLER, dated 06/25/2025, consists of 31 sheets. This plan set appeared to be identical to the Planning Board plan set without the Architectural Drawings (by CBT).

This Site Plan application requires a Stormwater Management Permit (SMP) per Chapter 247-6 A, B, and D with Ashland Conservation Commission, and compliance with Chapter 343 Stormwater Management. The property is in the Ashland Rail Transit District (RTD) Area C and Area D. This development is in the Area of Minimal Flood Hazard Zone 'X' per FIRM map number 25017C0513F, effective date July 7, 2014. There are BVW (Bordering Vegetated Wetland) resource areas delineated by Goddard Consulting, LLC., on January 17, 2025, along the eastern, northern, and western property boundary, identified by wetland flags GC1 to GC100 as shown on the Existing Conditions plan. There is no perennial stream and riverfront area, NHESP estimated habitats of rare wildlife, NHESP priority habitats of rare species, or vernal pool identified nearby the project site per MassMapper layers. The wetland boundary delineation requires Conservation Commission approval. Furthermore, the northern portion of the site is specified as "Grant of Environmental Restriction & Easement Area A-2, (Book 62400/Page 377; Plan 590 of 2013)"

Based upon our review of the above information, we offer the following comments with respect to compliance with Town of Ashland Zoning Bylaw, Stormwater Management requirements and Massachusetts Stormwater Handbook (MSH), Wetland Protection regulations (310 CMR 10 and Chapter 280) The numerical section of the regulations is referenced at the beginning of each comment unless it is a general comment.

GENERAL COMMENTS:

The project exceeded the 1-acre limit of work threshold and requires a NPDES Construction General Permit and associates SWPPP to be filed at least 14 days prior to start of construction.

This is a new development project. The site consists of 546,641+/- s.f. (12.55+/- acres), Assessors Map 13, Lot 178), in the Ashland Rail Transit District (RTD) Area C and Area D Zoning District. The site plan proposed a 3-story membership building for the Young Man's Christian Associates (YMCA) use and a separate single-story building for the early learning center (ELC) use. (Chapter 282 Section 8.4.4) - The YMCA building consists of Rail Transit Use (g), Indoor Commercial Recreation use; use (j), Parking in compliance with section 5.1 to service a use permitted; and use (l), Outdoor Commercial Recreation other than campground. The ELC building consists of use (n), Day Care Facility, and (d) Educational uses, or by a nonprofit educational group. Kitchen facility is proposed in the YMCA and ELC buildings as shown on the Architectural floor plan, Level 01, sheet A1.2. Which under use (o) Accessory uses, (ii) Food preparation and eating facilities. All these proposed uses are permitted in the RTD areas C and D Zone as By Right.

The northern portion of the proposed soccer field is inside the Environmental Restriction and Easement Area A-2. The applicant should clarify how the proposed use complies with the easement restrictions.

SITE PLAN SET

C-101 – Cover Sheet

1. No comment.

C-102 – General Notes & Legend

2. GCG recommends adding the NPDES (National Pollutant Discharge Elimination System), CGP (Construction General Permit), and the associated SWWWP (Stormwater Pollution Prevention Plan) requirements as part of the Soil Erosion & Sediment Control Notes.

C-103 – Jurisdictional Notes

3. No comment.

C-201 – Existing Conditions/Demolition Plan

4. GCG recommends field locating the existing bike trail pavement, handicap ramp, steel guardrails, crosswalk, rectangular rapid flashing beacon (RRFB) sign, and large boulders in front of the southwesterly site corner frontage. Where the proposed site walkway will be connected. (See C-302 comments below).

C-301 – Overall Site Layout Plan

5. The Zoning Table should include the RTD C – Rail Transit District C zoning district, which is located at the western portion of the site.
6. 282-8.4.6.11 - The applicant is requesting maximum building height relief through the special permit approval, maximum permitted height 30' by right and 50' by special permit. A 46'-5" building height is proposed. GCG recommends providing mean building height calculations for the Building Department to review. (The Architectural plan shows YMCA building with three levels and partial 2 levels in the north elevation (54.5' height) and two levels in the south elevation (40' height), a mean building height calculation should be provided.)

7. The proposed 72.7' building separation shown on the Zoning Table should be clarified. However, the building separation dimensions shown on C-302 were 71.8' without building expansion and 30.4' with the building expansion.
8. 282-8.4.7 – The applicant has requested a relief to reduce the rear/side landscape screen from 50' to 20.6'.
9. The proposed 262 parking spaces should be verified, GCG counted 263 spaces (the 27 spaces in front of the YMCA building appeared to be 28 spaces).
10. Parking space calculations should be provided. The ELC use should be calculated based on Section 5.1.2 - Day care & nursery schools use parking area requirements; the YMCA use is under Section 5.1.2 - Others use and require Building Inspector advisory.
11. The proposed 9.0' x 18.0' parking stall dimensions do not meet standard 9' x 20' requirements (Ch. 282, Section 10, Definitions - Parking space).
12. Chapter 164-2 – Handicap accessible spaces calculations should be provided. Section 164-2 requires additional handicap accessible spaces than the ADA/AAB requirements.

C-302 – Site Plan A

13. The proposed 9' x 18' parking stall dimensions do not meet the standard 9' x 20' requirements (Section 10, Definitions), the (27) parking spaces label in front of the YMCA building should be 28 spaces.
14. There should not be any bollards proposed in front of the handicap spaces access aisle. The plan should show all wheelchair ramp locations with warning panel requirements. Curbing in front of the access aisle should be flush with the parking pavement and wheelchair ramp landing. (Grading plan should be adjusted accordingly).
15. The proposed westerly pavement area is being designated/hatched as snow storage area. This area could provide addition 26 parking spaces during the non-winter periods. The proposed 263 parking spaces and the 26 non-winter spaces provide 289 parking spaces combined which is required to meet the peak parking demand (268 vehicles on Saturday per MDM Transportation Impact Assessments (TIA) report, page 22). Since the ELC uses parking demands are not seasonal. GCG recommends laying out the pavement area as parking spaces with the required parking striping and landscape requirements and seeks additional snow storage areas on-site. Furthermore, snow storage on top of the two sets of double catch basins should be avoided to prevent blocking and creating icy hazardous conditions. Furthermore, snow storage area should be provided for the main southern parking lot.
16. The westerly parking lot is intended to serve ELC building use, this area may have frequent drop-off parking with heavy parent and toddler pedestrian traffic. GCG recommends providing additional walkways within the parking areas.
17. All ADA/AAB accessible parking areas should be equipped with striped (no-parking) access aisles with level landing and warning panels. Curbing should be eliminated or set to flush between pavement and wheelchair ramp landing. Transitional curbs should be utilized for the ramps. No bollard or sign should be placed within the access path. Wheelchair ramps should be called out/and shown on the layout plan.
18. Sections 5.2.1. and 5.2.6. Loading area should be provided.
19. Section 5.3 - No freestanding sign proposed.
20. The 1,040 s.f. maintenance shed referred to architectural plans. But Architectural shed plans were not provided.
21. The plan shows a "Do Not Enter" sign at the western driveway access which conflicts with the two-way driveway arrows and "Stop" sign shown on the plan. There appears to be driveway intersection safety sight distance issues due to the grading. If the intention is for a one-way ingress only driveway this should be shown on the plans.

22. There is no sidewalk along the northern side of Memorial Drive, a paved multipurpose (sidewalk and bike path) path exists along the southern side of the road. There is an existing paved bike path in front of the southwesterly site frontage with RRFB sign, wheelchair ramp, guardrail, and crosswalk crossing Memorial Drive. The proposed sidewalk along the proposed western driveway (see additional grading comments below) should connect to the bike path crosswalk landing and utilize the existing crosswalk. Relocation of the guardrail or builders/ledge should be addressed. (Existing bike path details were requested under the Existing Conditions/Demolition Plan, C-201 comments).
23. The project proposes a 5' wide walkway connecting the center of YMCA building to the existing multipurpose path with a crosswalk crossing Memorial Drive. GCG recommends having MDM Transportation Consultants' Inc. (Project Traffic Consultant) evaluate the proposed midblock crosswalk between the existing bike path crosswalk and another existing crosswalk at the Memorial Drive West Union Street intersection. This new midblock crosswalk is being proposed approximately 420'+/- east of the existing bike path midblock crosswalk. The proximity of two midblock crosswalks in a roadway with 85% percentile vehicle travel speed at 37 to 38 mph should be reviewed by the traffic engineer.
24. Label gravel trail and width on the plan.

C-303 – Site Plan B

25. The project proposes tree clearing and constructing a portion of the soccer field within the Grant Environmental Restriction & Easement Area (A-2), The applicant should clarify how the proposed work meets the restriction in the easement.
26. Label gravel trail and width on the plan.

C-401 – Overall Grading and Drainage Plan (See C-402 and C-403 Comments Below)

C-402 – Grading and Drainage Plan A

27. Section 5.6. – Corner Clearance, the proposed eastern driveway has a cut along the western shoulder area and blocking the safety sight line, both driveways consist of steep slope at the Memorial Road intersection. GCG recommends providing a leveling grading transition at each driveway.
28. Section 5.7.3.1 – The proposed grading at these locations, the west side of the eastern driveway, the steep slope at the eastern end of YMCA building, (east of the southeasterly building corner between stairway and walkway grass strip, and the opening area behind northeastern side of YMCA building) where the three horizontal to one vertical (3H:1V) slope is exceeded should be addressed.
29. The proposed western driveway consists of 6%+/- longitudinal slope and the abutting sidewalk along the western driveway shoulder would not meet the maximum 5% ADA/AAB slope requirements. GCG recommends providing a grass strip between the driveway and sidewalk to reduce the walkway slope to meet the ADA/AAB requirements.
30. There is an unlabeled contour between the handicap parking spaces and the YMCA building. There is a contour 253 shown in the parking lot and the building doors are at elevation 254. There should not be any contour between contour 253 and the building finish floor at 254. In addition, there should be wheelchair ramp landing(s) installed in front of the handicap spaces with warning panels. The sidewalk in front of the handicap accessible spaces could be graded flush with the parking pavement, with warning panels installed along the walkway parking space transition, accessible spaces sign on bollard could be utilized in front of each space, but no bollard should be installed in front of the access aisles. The proposed accessible route in front

of the handicap spaces should not exceed the 2% maximum slope to meet the landing requirements. (5% maximum slope was specified.)

31. Handicap ramp and spot grades should be provided in front of the handicap accessible spaces near the ELC building.
32. Leveling landing is required at the sidewalk/walkway and Memorial Road connection, and all driveway, parking lot, internal crosswalk connections, add wheelchair ramps, as necessary.
33. There appeared to be incomplete contours at the west side of the concrete dumpster pad lawn area. The proposed contours should be labeled. There appeared to be an extra contour 250 shown, a high point (approximately 252) should be shown behind the dumpster pad between the two 252-contours and adjust the 251 contours to direct the runoff flow northward and southward.
34. The proposed retaining wall is approximately 11.5' in height at the highest point with proposed 4-foot high chain link fence. The wall exceeds 4 feet in height, which requires a building permit, final wall design and chain link fence should be approved by the Building Department.
35. Soil test pit locations should be shown in the plan set.
36. Proposed underground infiltration Basin 3 – (160 Retain-It concrete units), with proposed bottom of system stone elevation at 241.50, which is approximately 15.5 feet below the high surface contour 257. GCG recommends additional test pits to be performed at the location. The nearest TP-4 soil test pit was 242.25, at the limit of the excavator's reach. 12 test pits, all indicated silt sand materials in the 'C' soil horizon/layer. Based on the nearby development (Cirrus Apartments and Arbella at Ashland) projects experience, the soil materials in the area are either sandy or with very high silt contents, poorly drained soil, GCG recommend performing soil sieve analysis to evaluate the on-site materials.
37. The proposed underground (chambers) infiltration basins 1, 2, and 4 utilize the Stormtech Isolator Row Plus and deep-sump hooded catch basin for stormwater runoff pre-treatments. GCG concurs with the treatment requirements. However, the Isolator row plus chambers is intended to provide pretreatment storage volume, typically based on the required 1-inch water quality volume (WQV), with a woven textile (impermeable) fabric bottom liner to retain the first flush runoff for sediment. Therefore, the isolator row plus chambers volume should be excluded from the stormwater HydroCAD model calculations. In addition, basins 3's bottom of stone and chamber invert elevations do not match with the HydroCAD calculations. The infiltration basin 4 shows 12 MC-3500 Stormtech chambers embedded in stone bed. However, the calculations were based on 15 chamber units.
38. Basin 2 chambers are being proposed below the excavator refusal at elevation 244.75, (GEO-TP-1B). Additional test pits at the exact system location should be performed, with soil material sieve analysis to evaluate the silt content.
39. The plan shows a proposed roof drain #4 directed northward to the soccer field, this is not part of the drainage calculations and should be removed.
40. The proposed driveway at the northern side of the buildings is proposed with curbing at the northern edge and directs runoff to the soccer field, the open field is utilized as vegetated filter strip pre-treatment. Therefore, concentrated runoff flow should be avoided, GCG recommends modifying the contours to create a level spreader for sheet flow over the open field.
41. The 18" drainpipe between OCS A-30 and DMH A-10 with 4.04% slope should be reduced to lower the flow velocity to below 10 feet per second, as shown on the Storm Sewers calculations line 23, during the 25-year return events.
42. A30 outlet pipe sized was shown 18" on the plan, calculations were based on a 12" pipe.
43. B30 outlet pipe sized was shown 15" on the plan, calculations were based on a 12" pipe.
44. Drainpipe from B-50 to B-40 should be labeled, with 18' – 15" diameter at 0.5% slope.
45. Structure C20's proposed rim grade at 243.00 is below the nearby proposed contour 245 and should be raised to the finish grade.

46. Underground infiltration systems dimensions should be shown on the plan.
47. Underground infiltration system should be equipped with cleanout/inspection ports suitable for cleaning and maintenance. The isolator row plus chambers would require an inlet and a suction port at the two ends. Basins 1 and 4 need suction ports.

C-403 – Grading and Drainage Plan B

48. Infiltration basin #5's top of berm contour 233.50 should be shown on the plan, the proposed earth berm is constructed in fill and approximately 6 feet wide at the top. GCG recommends widening the top of berm to a minimum of 10 feet wide, (which also serve as an access maintenance path), the earth berm should be constructed with low permeable core and keyed at least two feet below the existing grade. The infiltration basin should be sized with 1 foot freeboard during the 100-year storm event. An emergency spillway should be provided and sized with brimful conditions without impinging upon the structural integrity of the basin, per SMH Vol.2, Ch. 2, Pg. 91. (i.e., No overtopping earth berm). Spillway should be sized with erosion armor protection.
49. The western soccer field is part of the vegetated filter strip pretreatment BMP and should be maintained accordingly. Both soccer fields should be constructed with natural turf, no synthetic turf should be used without drainage mitigation. The northern soccer field is partially in the Environmental Restriction and Easement Area A-2. The plan should specify that no groundwater should be utilized for irrigation or any other use restricted under record document - Book 62400 Page 377.

C-501 – Utility Plan

50. Verify sewer pipe slope between SMH 30 to SMH 20, it calculated to be 0.76%.
51. Proposed grease trap for the ELC building should have a standard internal drop of 3-inch per 1,500 Gallon Precast Concrete Grease Trap detail (C-902). Hence, the inlet invert elevation should be 249.20, and the 6" PVC sewer service pipe slope to the building should be 2.29% slope.
52. The applicant should clarify that there is no natural gas service connection to the ELC building.
53. Water pressure and flow tests should be performed to verify fire flow capacity.
54. Estimated site sewage flow should be provided and approved by DPW Sewer Division.

C-801 – Overall Erosion and Sediment Control Plan

55. Install erosion control silt sack at the Memorial Drive downstream catch basins.

C-802 – Erosion and Sediment Control Notes and Details

56. Massachusetts Erosion and Sediment Control Note #6's 2:1 slope does not agree with Chapter 282, Section 5.7.3.1 – which require minimum slope of a 3H:1V except under special permit from Planning Board.

C-901 – Construction Details

57. Pavement Section details, the plan should specify the 'Light Duty' and 'Heavy Duty' bituminous concrete course locations. Pavement thickness within Memorial Drive roadway should be 1-1/2" bituminous concrete/hot mix asphalt (HMA) top course over 3" HMA binder (intermediate) course, with 4" dense grade gravel base over 12" gravel borrow base on top of the compacted

subgrade; Pavement thickness within Memorial Drive's Multi-Use Path should be 1-1/2" HMA top course over 1-1/2" HMA intermediate course, with 4" select gravel base over 8" gravel borrow base on top of compacted subgrade.

C-902 – Construction Details

58. Final 'Reinforced Segmental Block Retaining Wall' details shall be certified by a Massachusetts Registered Professional Structural Engineer and submitted for Building Permit approval.

C-903 – Construction Details

59. Outlet control structures A-30 (Basin 1) and B30 (Basin 2) rectangular weir width dimensions should be provided. (2' wide per HydroCAD calculations), outlet pipe diameters should match with the drainage plan and calculations. (Both pipes were based on 12" diameter in the calculations but shown 18" diameter on the drainage plan.)

60. There were some discrepancies with the outlet control structures A-20 (Basin 4) and C20 (Basin 3), with the plan and calculations. The details drawings should be adjusted accordingly. (See additional Drainage Report comments below).

61. Specify 3/8" gravel surfacing topcoat thickness on the Gravel Trail Surface Detail.

C-904 – Construction Details

62. Underground infiltration (MC-4500 Chambers) system's overall dimensions should be provided.

C-905 – Construction Details

63. Underground infiltration (MC-3500 chambers) system(s) overall dimensions should be provided.

C-906 – Construction Details

64. Retain-It Underground Infiltration Basin Details' Typical Infiltration, (Elevation and Plan View) details did not match with the structures number, layout, under drain, invert elevations, and finish grade shown on plan sheet C-402 and C-403, which should be revised to apply to this project.

65. Access/inspection ports and clean-out ports should be provided.

C-907 – Construction Details

66. Generic sewer ejection pump details, to be reviewed by the DPW Sewer Division.

L-101 – Overall Landscape Plan (See L-102 and L-103 Comments Below)

L-102 & L-103 – Landscape Plans A and B

67. The proposed westerly paved snow storage area is intended to be parking area during the non-winter periods and should be designed as parking lot, based on the pavement dimensions, it will fit 26 parking spaces. GCG recommends providing the required interior landscaping in parking areas features per Section 5.4.4. (1 tree per eight spaces required.)

68. Section 5.6 Corner Clearance – the proposed driveways consist of steep cut at the Memorial Drive intersection, GCG recommends creating a leveling area at the driveway entrance/exit and

evaluate the safety sight line at the intersections with the proposed steep driveway shoulder grade and landscape features.

69. The applicant is seeking relief with Section 8.4.7, which requires a distance of fifty (50) feet, minimum, of side and rear yard boundaries, in place landscape greenery or other screening method(s) existing at the time of development shall remain undisturbed or shall be landscaped in accordance with a plan approved by the Planning Board.

L-104 – Landscape Notes and Details

70. No comment.

L-105 – Landscape Details

71. No comment.

L-201 – Overall Lighting Plan

72. The applicant should verify the Luminaire Schedule's lighting fixtures quantities. The schedule Label P4M appeared to be P4 label shown on the plan; Label P-4M-D appeared to be P4-D shown on the plan; D-BEGA label appeared to be D1 shown on the plan. The schedule calls for eight (8) - P4M-D lighting units and nineteen (19) - D-BEGA units. However, GCG counted 7 - P4-D units and 22 - D1 units on the plan.
73. The mounting height for the P4M, P3-S, P2-S, and P4M-D fixtures are 25'-0" above finish grade. And the D-BEGA lighting fixtures mounting height are proposed at 20'-0". The applicant should clarify the D-BEGA lighting fixtures mounting height, is it 20'-0" or 20". There are no specific requirements for light fixture mounting height in the RTD zoning district, the photometric plan shows minor luminance (1.4 foot-candle) overspilled onto the Memorial Drive right-of-way. However, there are existing streetlights on the multi-use path across street from the project site. The light fixture mounting heights and fixture styles require Board approval.
74. Hours of operation should be provided on the plan.

L-202 – Lighting Plan A (see L-201 Comments Above)

L-203 – Lighting Plan B

75. No lighting was proposed in the two soccer field areas.

L-204 – Lighting Details

76. Parking lot lighting fixtures are similar to the existing streetlight installed along the Memorial Drive multi-use path. The B84404 light fixtures mounting height should be specified.

EX-101 – Fire Truck Turning Plan

77. Fire truck maneuvering paths deem reasonable. The turn around area in the back of YMCA building is tight with the site lightings and should be reviewed by the Fire Department.

V-101 – Existing Conditions

78. GCG has requested adding the existing bike path, wheelchair ramp, and crosswalk information, and soil test pit locations on the plan set.

Architectural Plan – 9 Sheets

79. The Architectural Plan did not include the future 3,888 s.f. YMCA building expansion. Future site plan modification would be required.

Drainage Report

1. Chapter 343.7.6.16.c).9) – Data on the increase in rate and volume of runoff for the specified design storms should be provided. Drainage report - Table 1.1 - shows increased runoff peak rates during the 10-year, 25-year, and 100-year storm events. Runoff volume comparison data was not provided. However, based on the pre- and post-development HydroCAD reports, there are runoff volume increases during the 10-, 25-, and 100-year storm events. The 100-year storm event HydroCAD calculations showed increase in runoff volume from 0.461 acre-feet (pre-) to 0.947 acre-feet (post-), which is approximately 158,363 gallons of increased runoff volume flow to the abutting properties, which should be mitigated. Post development peak runoff and volume should be controlled to meet the pre-development conditions for all study events.
2. Post-development HydroCAD sub-catchment P1.3 does not match the grading plan ridge line at the top of the proposed western driveway, Portion of the P1.3 sub-catchment surface (south of the proposed ridge line) should be transferred to sub-catchments P1.4 and P1.5 per proposed grading.
3. Sub-catchment P1.7 should model the infiltration basin ponding surface as water surface with CN 98.
4. HydroCAD Model Pond B1:UG Basin SE Parking's outlet pipe was based on a 12" culvert, but plan called for 18" diameter drain.
5. HydroCAD Model Pond B2:UG Basin ELC Parking's outlet pipe was based on a 12" culvert, but plan called for 15" diameter drainpipe; Basin length 79.92'L should be verified, and system dimensions should be specified on the plan. Based on the 79.92'L, the end stone requires approximately 14.15" at the two ends. Based 2
6. HydroCAD Model Pond B3:UG Basin West Driveway with inflow from sub-catchment P1.9 (eastern driveway area), should this basin be Basin 4 – East Driveway? Pond B3 consists of 15 MC-3500 chambers, but plan shown 12 chambers, and system inverts do not match with the drainage plan.
7. HydroCAD Model Pond B4:UG Basin East Driveway with inflow from sub-catchment P1.4 (western driveway area), should this basin be Basin 3 – West Driveway? Pond B4 consists of 15 MC-3500 chambers, which matches the drainage layout. However, the system inverts do not match the drainage plan. B4 outlet pipe is connected to a catch basin, please clarify the intent.
8. HydroCAD Model Pond B5: Bioretention A. Please clarify the intent of the bioretention title. The plan labeled the BMP as infiltration basin without the engineered soil mix media, and there is no bioretention planting shown on the landscape plan. This BMP should be an infiltration basin and titled as such. The top of berm 233.00 contour should be shown on the grading plan to match the 10,930+/- s.f. surface area, a 1' freeboard should be provided during the 100-year storm event. An emergency spillway should be provided and sized to handle the inflow with brimful conditions without overtopping the earth berm, (MSH Vol.2, Ch.2, Pg. 91). Spillway should be equipped with erosion armor.

9. As presented, the HydroCAD drainage calculations were inconclusive with the above discrepancies. However, peak runoff and volume should be controlled to below the pre-development conditions for the study storms.
10. Additional soil test pits should be performed to determine the soil drainage classes and estimated seasonal high ground water (ESHGW), (soil logs provided were based on the surface elevation to the closest even foot) and restricted layer refusal elevations. Basin 2 is proposed below the nearby TP-1 and TP-1B refusal elevation at 244.75+/- . The proposed Retain-It infiltration system Basin 1 is proposed below the nearby TP-4's bottom of excavation. This bottom of the basin 1 system stone is approximately 15.5' below the existing surface contour 257. There is no test pit nearby basins 1, 4, and 5. All test pits show silt sand materials in the 'C' horizon, based on the nearby developments along Memorial Drive, the silt content could be high and not suitable for infiltration BMPs. GCG recommends performing sieve analysis to determine the silt contents to determine the Rawls (exfiltration) rates used in the calculations.
11. Storm Sewers calculations table: Drain Line numbers 1, 4, 5, 12, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27, 30, 31, 33, 34, and 36 did not match the drain data shown on the plan; line 23 should be A30-A10; line 35's rim elevation is below finish grade surface; line A10-HDWL analysis is missing. Flow rate (Q) should be provided for each drain line, for example, A42-A41's flow Q should consist of inflows from CB A-43 and Roof Drain 3. Drain lines 21, 23, and 28 have flow velocities exceeding 10 feet per second, which should be controlled to below 10 feet per second, Lines 22 and 23 were shown 18" pipe size, but HydroCAD calculations were based on 12" diameter pipes. Line 23's velocity showed flow velocity at 13.79 feet per second with 18" pipe diameter, the calculated velocity with 12" diameter should result with even higher velocity, which should be addressed.
12. TSS removal worksheets – infiltration basin's 80% TSS removal credit requires pre-treatment BMPs. No additional credit should be claimed through the pre-treatment BMPs. GCG recommends utilizing the EPA Region-1 BMPs performance work sheets or performance curve to address the 343-7.1.6 (a through d)'s TSS and Nutrient (TP and TN) removal requirements.
13. Long Term Operation and Maintenance (O&M) Plan – roof leader, gutter/roof drain inlet should be included in the O&M plan, inspected and cleaned at least twice per year. The eastern soccer field was utilized as a vegetated filter strip pre-treatment for the infiltration basin #5. and should be included in the O&M plan and maintained as such. GCG recommends creating a level spreader at the rear driveway's end of curb to provide a sheet flow across the soccer field to receive vegetated filter strip pre-treatment.

Transportation Impact Assessment (TIA)

1. The applicant should verify the proposed parking spaces provided onsite. GCG counted 263 proposed spaces and the westerly paved area that is to be reserved for snow storage can only fit 26 spaces. Which brings the total parking supply to 289 spaces.
2. The Development-Related Growth should include the "Arbella at Ashland," 180 residential age restricted units (Chapter 40B) development off Memorial Drive, (next to Cirrus Apartments). should be included in the No-Build traffic volumes.
3. The proposed driveways were scaled with an approaching slope of 8% to 9%, GCG recommends providing a 3% maximum slope leveling transition area at the driveway intersections.
4. Stopping sight distance analysis – GCG recommends analyzing the proposed steep grading at the two driveways' shoulder area, which appears blocking the driveways' safety sight line and address the Chapter 282, Section 5.6 - Corner Clearance requirements.

5. The existing Bike Path crosswalk and proposed new crosswalk in front of the YMCA building walkway are approximately 430 feet apart in a section of roadway with 85th percentile travel speed of 37 and 38 mph. The traffic consultant should evaluate the proximity of these two mid-block crosswalks.
6. The traffic consultant should assess the pedestrian access adequacy within the ELC building parking lot, the use would demand frequent short term (drop off) parking and heavy foot traffic for parents with small children. However, there is only a single sidewalk in front of the ELC building with no walkway within the parking lot.
7. In general, the development should not create any major adverse impacts to the traffic network. However, the safety sight line with the steep grading along the proposed driveway should be addressed.

Conservation Commission NOI.

1. Section 280-4 – No work is proposed within the twenty-five (25) foot No Disturb Zone.
2. Site stormwater management and drainage mitigation should be addressed as stated in the Planning Board review comments above.

Summary

The proposed driveway intersections at Memorial Drive safety sight distance and should be assessed with the steep slope at the driveway side slopes. There are some discrepancies on the drainage calculations and the drainage layout shown on the plan. Drainage calculations as presented show net increases of peak flow rates and volumes during the 10-year, 25-year, and 100-year storm events. Additional soil analysis should be provided at the infiltration system locations to support the ESHGW or refusal, and exfiltration rates.

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

Respectfully submitted,
GCG ASSOCIATES, INC.

Michael J. Carter

Michael J. Carter, P.E.
Project Manager