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June 8, 2021

Mr. Peter Matchak, Town Planner/Director
101 Main Street
Town of Ashland
Ashland, MA 01721

RE: Comprehensive Permit Site Plan Review
Arbella at Ashland, Memorial Drive
Ashland (Assessor's Map 13, Lot 154)

Dear Mr. Matchak:

GCG Associates, Inc. has reviewed the following information for Arbella at Ashland, Comprehensive Permit Site Plan, off Memorial Drive in Ashland, MA.

Documents:
1. Response to Comments Letter package, prepared by A&M, dated May 12, 2021.

Plan References:

"Comprehensive Permit, (Site Plan), Arbella at Ashland, Ashland, MA." Prepared by CUBE 3 Studio, LLC. and A&M., Dated: September 04, 2020, last revised May 11, 2021.

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This is a Comprehensive Permit application through Zoning Board of Appeals (ZBA) under M.G.L. Ch. 40B. The proposed project is an age restricted development in the Rail Transit District (RTD) "Area - A, E, and F". This proposal consists of two (2) multi-family buildings contain 76 and 80 dwelling units with

99 bedrooms and 115 bedrooms, respectively. And four (4) detached town houses buildings consists of six (6) two-bedroom units per building. (Combined 180 units and 262 bedrooms, all units are age-restricted (62+, details of age restriction should be presented to the Board for review) for rent unit with 45 units (25%) to be designated as affordable per DHCD Guidelines.

The site is identified on the Ashland Assessor's Map 13 Lot 154 consists of 37.99+/- acres. There are existing wetland resource areas located at the southwesterly corner and northeasterly corner of the lot, delineated by wetland flags #197 to #218 (southwest) and flags #H9 to #H12 and un-numbered flags, (northeast). The site is not in a hazard flood zone per FIRM panel 25017C0513F effective date July 07, 2014. There is no NHESP estimated and priority habitats of wildlife and rare species on site, nor within a Wellhead Protection Zone per MassGIS data.

Based upon our review of the above information, we offer the following comments with respect to compliance with Town of Ashland Zoning Bylaws and Stormwater Management requirements. The numerical section of the regulations is referenced at the beginning of each comment unless it is a general comment. GCG latest comments shown in "Red".

Project Narrative Section 8.0 – Requested Waivers

The Applicant has requested the following preliminary waivers:

1. Ashland General Bylaw, Chapter 242 - Soil Removal. This project would require a Soil Removal Permit under Planning Board's jurisdiction. This project is being filed under M.G.L. Chapter 40B, Massachusetts Comprehensive Permit Act through the Ashland Zoning Board of Appeals (ZBA). Approval of this Comprehensive Permit and with forthcoming issuance of building permit, this project would meet the Section 242-4 Exemptions, Section C, as "surplus earth resulting from a bona fide construction project." Therefore, granting this waiver should meet the intent of Chapter 242. Subject to ZBA approval.

2. Chapters 247 and 343, Stormwater Management - this project requires a Stormwater Management Permit (SMP) per Chapter 247 and to comply with Chapter 343 requirements. Waivers for Chapters 247 and 343 have been requested, both chapters are under the Conservation Commission jurisdiction. This peer review will be based on meeting the SMP and Chapter 343 standards. Granting a waiver for Chapters 247 & 343 should not have any negative impacts to the Stormwater Management bylaws. However, this project disturbs more than one acre of land and exceeded the NPDES General Permit for Stormwater Discharges from Construction Activity threshold. An USEPA - NPDES filing and associated SWPPP shall be filed 14 days prior to the start of land clearing. Subjects to ZBA approval. There are some concerns with the inspection requirements under the Stormwater Management Permit. This Comprehensive Permit approval is a prerequisite for issuing of a building permit. All site works, utilities and building constructions will be subject to Inspection Service Department (building constructions), Department of Public Works (water, sewer, and underground utilities), and Conservation Commission (administers Stormwater Management Regulations) inspections. This project is required to meet the Ashland Stormwater Management regulations with or without the SMP. Therefore, Conservation Department inspections are still required. The Town also has the right to require third-party inspection, testing, and certification to meet the Comprehensive Permit and Building Permit conditions as they see fit. Subject to ZBA approval.

3. Chapter 280 – Wetlands Protection. The applicant is proposed to subdivide the property to two separate parcels/lots through Planning Board, Approval Not Required (ANR) process and conveying an approximately 20 acres lot to the Town. The existing wetland resource areas would be subdivided into the conveying lot. GCG recommends the applicant to file an Abbreviated Notice of Resource Area Delineation (ANRAD) or a Request for Determination of Applicability (RDA) with Ashland Conservation Commission for the entire parcel (37.99 Acres) to verify the wetland

boundary. Once a determination issued. The proposed project would be contained within its own ANR lot with no wetland resource area, and the proposed development would be outside the 100 feet wetland buffer. Hence, 310 CMR 10.00 is not applicable, and the applicant does not need to request a waiver for Chapter 280. (Presuming the Town would accept the ANR lot. Otherwise, Notice of Intent (NOI) or RDA filing would be required under 310 CMR 10.00 and subjects to Conservation Commission approval. A WPA Form 2 - Determination of Applicability has been issued by the Ashland Conservation Commission on 11/17/2020 and determined that this project meets the Negative 1 determination, "The area described in the Request is not an area subject to protection under the Act or the Buffer Zone." And no further action under the Wetlands Protection Act is required by the applicant.

4. Chapter 282 – Zoning, Section 5.1.2. Schedule of Parking Area Requirements. Section 5.1 Off-Street Parking Requirement compliance is required under Section 8.4.8 for development within RTD. Section 5.1.2 requires 2 spaces per dwelling unit. The applicant has proposed 109 parking spaces (combined 108 standard stalls, 8 accessible stalls and 43 garage stalls) for the 156 apartment units, 1.02 spaces per unit; 48 parking spaces (combined 24 garage stalls and 24 tandem parking stalls, in front of each garage) for the 24 townhouse style units; and 40 parking spaces (combined 35 standard spaces and 5 accessible spaces) for the club house.

   The town house parking spaces appear to be exclusive tandem parking arrangement and should meet the 2 spaces per dwelling unit requirement. (If and only if the tandem parking arrangement is approved by the Board). The applicant has not provided an official floor plan for the club house. Parking spaces requirements should be determined by the uses of the floor area or per seats as determined by the Inspector of Buildings. However, based on the typical accessory service building in a residential development, which is typically restricted to the development residents and their guests use. The proposed 40 parking spaces seems reasonable. The applicant should provide additional data to support their proposed 1 space per dwelling unit for the apartment buildings. Section 4.0 -Transportation of the project narrative report was based on the June 11, 2019 preliminary traffic data with the Ashland Commuter Rail Station in full operation and 288 residential occupied units at Cirrus Apartments. (Cirrus Apartments was approved for 398 units). The report also presented an estimated ITE trip generation based on Senior Adult Housing - Attached (252) uses. The applicant should provide additional details for the age restrictions for this development, including minimum age restriction of residents. Does this development provide shuttle bus arrangement to the commuter rail station? Would the garage parking spaces be exclusive to an assigned unit? As work from home trend being more acceptable, which demands higher parking stalls in residential development. GCG recommends the applicant to provide additional traffic study for the trip generation, with consideration of full occupancy in Cirrus Apartments and land use code (LUC 221) Multifamily Housing (Mid Rise), and if a left turn exit lane to the MBTA Station is necessary, (narrowing the site entrance to reduce the impact of the existing streetlights. Provide parking demands for the age restricted apartment buildings. At a minimum, GCG recommends providing additional reserve/future parking spaces with associated drainage mitigation layout on site. For reference, Section 8.4.14.12.a. requires 1.8 parking spaces per each dwelling unit for Transit Village Community (TVC) development in RTD.

   Evaluation of the intersection of West Union and Memorial Drive intersections and other controlled intersections along West Union should be reviewed to address potential impact. This project proposed 159 parking spaces for the 156 apartment units, 48 tandem parking spaces for the 24 townhouse units, and 40 parking spaces for the club house (consists of approximately 480+/- square feet office uses). Subjects to ZBA approval. GCG recommends keeping the 14 future/additional parking spaces with Grass Pavers surface treatment, which is pervious grass surface (mow-able) with structure support. Applicant should install parking signs in front of the parking areas to indicate as surplus parking stalls. Applicant requests to provide signage at the time the additional spaces are utilized, subject to ZBA approval.

5. Section 282 - 5.2 Loading Requirements. Section 5.2.1, loading space is required for the nonresidential building (Building 3 - Club House). Considering that the club house being an accessary facility of this residential uses. Loading would mostly be limited to single unit trucks and occasional only. There is a potential by-pass lane in front of building 6. Therefore, granting a waiver for 282 - 5.2 should have minimal impacts to this project. Subject to ZBA approval.

6. Section 282 - 5.2.8 Special Permit, Loading Requirements. Under M.G.L. Section 40 B Comprehensive Permit approval, the ZBA has the authority to require the same standards as stated in Section 5.2. Granting this waive should not have any adverse impacts to Section 5.2. Subject to ZBA approval.

7. Section 282 – 5.4.4 Interior Landscaping in Parking Areas. The landscaping plan meets the required number of trees associated with each parking cell. Some of the proposed tree locations do not meet the 5' from parking cell requirements. As the tree matures, their root systems may cause pavement damage within their canopy area. Further set back from the parking area may extend the longevity of the pavement and sidewalk area. (See additional comments for the walkway in front of building 2 and landscape island between buildings 1 and 2 below.) Landscape islands have been revised per comments, layout subject to ZBA approval.

8. Section 282 – 5.4.4.3. Landscaped Islands. This regulation is specified for Commercial H and Commercial V Districts for parking areas containing twenty-five or more spaces. As this is a residential development in RTD district. 282 – 5.4.4.3 is not applicable. No action required.

9. Section 282 - 5.7.3.1 – Environmental Standards, Erosion Control. This plan has proposed adequate provisions to protect against erosion, soil instability, and surface water runoff, with loam and seed with erosion control fabric in steep area. Granting this waiver should not have any adverse impacts to the environment. During construction of a project of this size the erosion control procedures are critical due to the significant earthwork. The ZBA may want to consider measures requiring a proper SWPPP be reviewed by the Town prior to construction. The Conservation administers the stormwater management regulations and erosion control (SWPPP) during and after the construction. Erosion Control SWPPP would be under NPDES/MassDEP & Conservation Commission's jurisdiction. Waiver subject to ZBA approval.

10. Section 282 – 5.8 Site Alternation Special Permit. Under this Comprehensive Permit approval, this project should meet the intent and purpose of 5.8.1 and 5.8.2. The applicant has proposed to preserve approximately 20 acres of open area and conveying the lot to the Town, which preserved a natural buffer and limiting the development within an 18+/- acre parcel. Subject to ZBA approval.

11. Section 282 – 8.4.4. Permitted Uses. Rail Transit Use Table, Permitted Residential component uses: (d). Dwelling Multi-family, For Rent, (N), not permitted. Applicant has requested waiver for 8.4.4. GCG recommends adding waiver request for permitting the proposed club house and outdoor recreation facilities to be part of the Residential Component (for rent) Uses in Area A. These waivers have no impact to the engineering aspects of this project. ZBA approval is required. Waiver requested and subject to ZBA approval.

12. Section 282 - 8.4.6.4. Dimensional Requirements. The applicant has requested a waiver to permit 20 units per acre for Dwelling Multifamily, for rent in area A. (Subject to waiver #11 approval). GCG recommends adding waiver request for permitting the proposed club house and outdoor recreation facilities to be part of the Residential Component Uses in Area A. Considering that majority of the dwelling units in Area A are the town houses, the club house, and the southeasterly corner of building #1. This waiver has no impacts to the engineering aspects of this project. ZBA approval is required. Subject to ZBA approval.

13. Section 8.4.6.11. Building/Structure Height. This section restricts the building height to 3 stories (4 stories at the rear of the building if the slope of the land permits) for multifamily for Rent structure and 2 stories (3 stories at the rear of the building if the slope of the land permits) for age restricted buildings. This waiver request would reduce site disturbance as shown. ZBA approval is required. Subject to ZBA approval.

14. Section 282 – 8.4.8 Parking and Loading Requirements (See waiver requests #4 and #5 comments above). Subject to ZBA approval.

15. Section 282 – 8.4.13 Site Development Plan and meeting Section 9.4 Site Plan Review. This Comprehensive Permit approval would be based on the bylaws and regulations as the Planning Board Site Plan Review and with the ZBA's authority to waiver local requirements. The development still must meet all environmental, public health and safety related standards. Therefore, waiver of 8.4.13 should not have any major adverse impacts to the Town. Subject to ZBA approval.

16. Section 282 - 9.4 Site Plan Review. This is required under 8.4.13, see comment #15. Subject to ZBA approval.

17. Section 282 – 9.6 Design Plan Review. This is associated with Section 9.4 Site Plan Review, see comment #15. Subject to ZBA approval.

18. Section 282 -9.7.3 Rate of Development Bylaw, Building Permit Limitation. This bylaw has been expired. (Four years following its effective date, November 28, 2016). Review whether a waiver is required. No action required.

19. Chapter 343 - Stormwater Management. This requirement is associated with Section 247, (comment #2). The stormwater management requirements are part of the public safety standards to protect and prevent flooding to the downstream properties and would be enforced in full extend according to the Massachusetts Stormwater Standards. Also see comments #2 and #3. However, granting waiver for Chapter 343 does not relieve the requirements of the Stormwater Management requirements to protect the public. Subject to ZBA approval, see additional drainage comments below.

20. Chapter 348 – Wetland Protection Regulations. This chapter is associated with Chapter 280, Chapter 247, and Chapter 343. See comments #2, #3 and #19 above. Upon the acceptance of the ANR Lot, (Development Agreement, 20-24 acres lot to be conveyed to Town). The development site would be outside the wetland protection buffer. GCG recommends the applicant file an ANRAD or RDA with the Conservation Commission to confirm the wetland boundary per comment #2. Granting waiver for Chapter 348 does not relief this project to comply with the Massachusetts Wetland Protection Act and stormwater mitigation requirements. Subject to ZBA approval. A negative determination has been issued.

21. This plan does not meet the intent of 282 - 8.4.1.1 - feature and site layouts that are conducive to walking, biking and transit riding. 8.4.1.2 - pedestrian friendliness, alternative suburban living/working environments. GCG recommends adding an ADA compliant walkway to connect the development to Memorial Drive and incorporate a bike path in the design. Pedestrian access is the main objective of Section 8.4. Waivers from section 8.4.1.1 and 8.4.1.2 have been requested. GCG recommends the applicant provide a pedestrian access along the proposed driveway and matching the road grade, as recommended by the PROWAG (Public Right of Way Accessibility Guidelines). Applicant could alter the paved shoulder width to accommodate a walkway and/or bike path to provide the non-ADA compliance access. Even though A&M and the applicant are consistent in the approach to not provide a sidewalk along the site drive. GCG

recommends sidewalk(s) be established along the driveway. Massachusetts 720 CMR 9.09(4)(c), stated that, "Where sidewalks are provided, it shall be unlawful for any pedestrian to walk along and upon an adjacent roadway whenever the sidewalk is open to pedestrian use." While it would be unenforceable to restrict residents not walking along and upon the site drive. It is in the developer's best interest to limit the liability within the development. The applicant has improved the lane stripping to reflect an 11' travel lane with 5' paved shoulder and proving that sidewalk(s) are feasible within the layout. GCG recommends providing additional visual and physical separation between the paved shoulder and travel lane for pedestrian protection.

22. A waiver for Section 8.4.6.5. Building Separation is required. Buildings 4 and 5 has less than 20 feet separation (14.7' provided). This waiver has no impacts to the engineering aspects of this project. ZBA approval is required. Waiver from section 8.4.6.5 requested, subject to ZBA approval.

23. A waiver for Section 8.4.6.8. Side Yard is required. Regulations requires a minimum 25' side yard, the proposed side yard at the northeast side of building 11 (garage) is only 15.3'. Due to the 22+/- feet elevations different along the property line, a retaining wall has been proposed and the proposed building #11 is on top of the wall reinforcement zone. GCG recommends the 25' side yard setback be provided. Resolved.

GENERAL COMMENTS:

Plan Sheet – Cover

Land Usage Table:

1. Ch. 282 Sect. 8.4.4 dwelling multifamily, for rent is not permitted in RTD Area A and 8.4.6.4, Building Area, requires 20 units per acre for age restricted multifamily for Rent development is permitted in Area E only. The table's Proposed Lot Area of 17.97+/- acres does not meet the uses requirements (rental unit in Area A). Waivers have been requested for 8.4.4. & 8.4.6.4. The subject property consists of 37.99 acres (per Assessor's record). The plan set is showing an undefined interior property lines, which laid out approximately 17.97 acres of land for this development. The proposed lot area would meet the required 20 units per acre density if the waivers are granted for 8.4.4 and 8.4.6.4. The applicant stated that the subdivided 20+/- acres lot through ANR process would be conveyed to the Town. This review assumes that the Town will accept the open area parcel. Subject to ZBA's waivers approval and conditions with Planning Board ANR process.
2. Section 8.4.6.(8), requires minimum 25' side yard, the proposed side yard at the northeast side of building 11 (garage) is only 15.3'. Waiver is required. Resolved.
3. Section 8.4.6.(11) requires building to limited to 2 stories above grade (3 stories at the rear of the building if the slope of the land permits), the proposed multi-family buildings #1 and #2 are 4/5 stories. Waiver requested. Subject to ZBA approval.
4. Section 8.4.14.(12)(a) – requires 1.8 parking spaces per dwelling unit. This development proposed 180 units with 247 parking spaces. (1.37 spaces per dwelling unit proposed.) Waiver requested, GCG recommend addition support data and provide reserve/future parking spaces layout. Subject to ZBA approval. See additional parking layout comments below.

Plan Sheets V-101 – V-102 Existing Conditions Plan

1. Plan should show entire lot boundary, the southeasterly lot corner should be shown on the plan. Resolved.
2. Verify deed book number, it appears to be book 63650 page 314. Resolved.
3. Turnoff proposed interior lot lines on the existing conditions plan. Resolved.

4. Show existing sidewalk and grass strip on Memorial Drive (plan sheets V-101 & C-104). Resolved.
5. Show Zoning boundary line, Area A, E, and F. Resolved.
6. Verify existing grade at the east end of S75˚17'41" E, 147.04' lot line, (west side of the proposed building #10's northwest corner). The adjacent Ashland Transit Apartments site plan shows existing grade approximately 10 feet higher. Mapping standards are +/- half of a contour; this existing grade could eliminate the proposed ten feet high retaining wall section shown on the grading plan. Resolved.
7. Show existing drainage culvert at the southeasterly lot corner, downstream of the drainage outlet PFES 3. Resolved.

Plan Sheets C-001 – C-002, Abbreviations & Notes

1. General Notes - note #3 final lot area to be adjusted with waivers approval. Resolved.
2. Note #8, there is no sidewalk connection to the Memorial Drive (MBTA Access Road). Sect. 8.4.1.1 and 8.4.1.2 require pedestrian access and bike path to the neighboring streets. Waivers from 8.4.1.1 and 8.4.1.2 have been requested. GCG concurs that an ADA compliance sidewalk/walkway may not be feasible for the existing physical topography constraints. GCG recommends a "pedestrian circulation path" be installed along the steep driveway/street as recommended by the Public Right-of-Way Accessibility Guidelines, (PROWAG). The residents are expected will utilize the 4 feet wide paved shoulders as walkway or bicycle path as available. Applicant could add grass paver strip (for structural vehicle support) to provide separation to pedestrian path and promote drainage treatments by reducing flow velocity and sediment/filtration. See comment #21 above. Applicant is expecting further discussion with the Board.
3. Note #30, proposed signage is not a part of this application, stated signage to be approved by separate application. Subject to ZBA approval.
4. Erosion & Sedimentation Control Notes – note #34, should include inspections of erosion control after each major storm event in addition to at least once every 7 days. GCG recommends to callout the major storm as precipitation of greater than 0.5 inch over 24 hours, as recommended by the 2017 SWPPP template. Resolved.

Plan Sheet C-101, Erosion Control Plan

1. A General NPDES Permit (Notice of Intent) with associated SWPPP is required for this project and should be filed at least 14 days prior to start of construction with USEPA. Resolved.

Plan Sheets C-102 – C-104, Layout & Materials Plan

1. Show snow storage location/area. A snow removal general note has been added to sheet C-001 #31. However, the site available snow storage is limited, especially along the curvy and steep drive. GCG recommends adding grass paver strip for temporary snow storage and utilize sidewalk snow thrower to clear snow outside the drainage swale and catch basin areas. See comments #21 above.
2. Identify the 4' driveway shoulder area surface treatment. Provide additional separation to the roadside drainage swale for snow storage. Incorporate the paved shoulder areas for pedestrian circulation path layout. See comments #21 above.
3. Provide traffic study for the level of service (LOS) at the Memorial Drive intersection and the necessary of left turn lane. If possible, narrowing the curb opening to avoid relocating existing lighting(s) at the entrance. As shown, the two sidewalk light poles are inside the curb opening. Show wheelchair ramps connection (with grading) at the Memorial Drive sidewalk. GCG concurs with the MDM Transportation Consultants, Inc.'s traffic study. However, the plan did not address the existing light poles at the driveway entrance. GCG recommends tightening the curb opening and maintain the two existing light poles at the entrance. See additional Photometric Plan comments below. Resolved.

4. Provide site entrance/exit intersection horizontal and vertical sight distance (in the plan set). Resolved.
5. Multiple sections of the Zoning regulations emphasize special attention and pedestrian friendliness within the RTD development (8.4.1.(2); 8.4.12.(4), and 8.4.14.(12). Pedestrian sidewalk/walkway connecting to Memorial Drive sidewalk is critical. Bike path should be incorporating in the design. Waivers requested. The residents will use the 4-feet wide shoulders as pedestrian walkway as physically available regardless the layout. GCG recommends modifying the paved shoulders to pedestrian circulation path as recommended by PROWAG. See comment #21 above.
6. The proposed lot(s) layout should meet Section 344-4, "Rule of 22 for a Lot" requirements. Drainage outlet at the west side of building 7 and stormwater basin discharge pipe are outside the proposed property boundary. GCG recommends proposed lot to include both drainage pipes and outlets or provide drainage easements for both systems. Waiver from section 344-4 has been requested. The new lot will be created for the purpose of transferring approximately 20 acres of land to the Town of Ashland. Granting a waiver from section 344-4 should not affect the physical layout of this project, a drainage easement has been proposed along Memorial Drive to accommodate the drainage mitigation. Subject to ZBA approval. Resolved.
7. The main driveway connecting Memorial Drive to the loop driveway consists of a set of reverse curves (center radii 90' and 92') with a relatively short tangent, 80'+/-, (between Stations 6+50 to 11+50). In comparison, the Ashland Subdivision of Land regulations Chapter 344 Section 12.A (5) requires a center-line offsets of street jogs with a minimum length of 125'. This driveway serves 180 dwelling units and GCG estimated 1,200+/- vehicle traffic trips per day for age restricted uses. (The applicant shall provide a formal traffic study to verify this assumption). Based on Ch. 344 Article II - Definitions, the proposed driveway function as a Collector Street. However, due to the limited access (private driveway) and reduced speed limit (based on the 15 MPH sign detail) setting. The driveway may be considered a Minor Street. (Minor Street is defined to serve up to 50 dwelling units and between 250 to 1,000 vehicle traffic trips per day. Section 344-12. A(6)(b) requires a minimum center radius of 150' for minor street. Waiver from the conditions of the Subdivision of Land Regulations has been requested. This is a private driveway and meeting the AASHTO standards for street design for 15 MPH speed limit. Incorporate sidewalk and bike path with the paved shoulders are recommended. See comment #21 above.
8. Verify proposed 15 MPH speed limit, add physical traffic calming devices (speed hump and/or raised crosswalk or similar). GCG recommends installing additional (R2-1) signs along the steep driveway and within the site to emphasis the 15 MPH speed limit. Subject to ZBA approval. Resolved.
9. Section 282-8.4.6 (8) - Building 11 (Garage) location does not meet the 25' side yard setback requirement, (15.3' provided). In addition, the grading plan shows 22' elevation drop at this property corner. Tall (6'+) chain link fence should be installed along the top of retaining wall for safety. Detail sheet C-504 calls for 24' retaining wall tie back (reinforced zone fill). GCG recommends relocate building #11 to outside the reinforced soil zone. Resolved.
10. Section 282-8.4.6.5. – buildings 4 and 5 do not meet the required 20' separation (14.7' provided.) Waiver should be required. Waiver requested, granting of this waiver should have no adverse impact to the engineering aspect of the layout. Subject to ZBA approval.
11. Section 282-8.4.6.11. - buildings 1 & 2 appear exceeded the 2/3 stories building height. Provide town house building stories and height. Waiver for building story/height has been requested. Architectural elevation plans should be provided for ZBA review. Subject to ZBA approval.
12. Rotate dumpster pad (south of building 5) to face the club house driveway opening. Resolved.
13. Section 5.4.4 - provide landscape island with trees in front (northwest) of building #2, between two set of handicap parking spaces to break up the parking cells and provide snow storage area. Resolved.
14. Relocate landscape island walkway (between buildings 1 & 2) to two sides to align with walking areas in front of garages. Resolved.
15. Stormwater basin should be equipped with an access gate and clear path with suitable grading for maintenance. Preferable not through the Memorial Drive sidewalk. Resolved.

16. Section 282-8.4.14 (12)(a) – requires 1.8 parking spaces per each dwelling unit for TVC development, similar to this project. The 24 Town House units are equipped with single car garage and second tandem parking space in front of each garage. These spaces are typically deeded with exclusive right to each town house unit. (Tandem parking layout needs ZBA approval.) 40 parking spaces (including 4 accessible spaces) are assigned for the club house used. And 159 spaces (including garage and accessible spaces) are proposed for the 2 multi-family buildings with 156 units, averaged 1.02 spaces per dwelling unit. Waiver has been requested. GCG suggests additional traffic and parking demand study be provided and layout optional reserve/future parking spaces, as utilized by the abutting Cirrus Apartments development. The proposed tandem parking layout for the Townhouse units are commonly acceptable for this type of (single-family use) dwelling unit. The proposed 35 standard parking stalls (14 spaces with grass pavers surface) and 5 accessible stalls for the clubhouse facility appears to be more than adequate, considering the facility is intended to service the development's residents and their guests. The proposed 159 spaces for the 156 apartment dwelling units are at a ratio of approximately 1 space per each unit. The applicant has stated that, "It is the applicant's opinion this suffices for parking demand." Since age restricted housing development is relatively new and has not meet its peak demand, parking demand could be fluctuated by tenant's age. Therefore, ZBA approval is required. If deems necessary, there appears to be some areas suitable for future parking expansion available at the southwest side of building 1 and across from building 5. Additional parking layout with grass pavers surface finish should have minimum impact to the drainage system. Subject to ZBA approval.

Plan Sheet C-105 – C-107, Grading & Drainage Plan

1. Provide ADA compliance walkway connection to Memorial Drive. The proposed main driveway center slope is at 7.24%, with the inside curve slope of 9+/-%, which meets minor street design (10% maximum) standard, if acceptable by the Board. However, a sidewalk along the driveway would exceed 5% slope and not meeting ADA requirements. GCG recommends incorporate pedestrian path with the paved shoulders layout per PROWAG recommendations. See comment #21 above.
2. Identify if there is any legal restriction within the Shell Oil Company Easement. This plan calls for 7' cut (within stormwater basin) and 11' fill (west of building 10) within the existing easement. The report stated an abandon Shell Oil Company Easement with the functional use of the easement has been vacated but has not been extinguished. Thus, the Shell Oil Company has right to install utilities within the easement. The deep cut for the stormwater basin could affect the utility company's easement uses and possible interrupting the proposed infiltration basin. GCG recommends moving the basin cut area outside the easement. Resolved.
3. Verify existing grade/contour along the property line at the west side of building # 10 (northwest corner). The Ashland Transit (Cirrus) Apartments site plan showing existing grade 343+/- at property corner. This plan is showing 333+/-. A section of a 10+/- feet retaining wall could be eliminated. Resolved.
4. Consider providing additional side yard setback at the building #11 southwest corner by rotating buildings #1 and #11 toward the landscape area, to reduce the heigh of the proposed retaining wall, as shown the retaining wall is over 22' high. Resolved.
5. Perform deep hole soil test pits to determine ESHGW for stormwater infiltration basin and the two chamber systems. The proposed Stormtech DC-780 Chambers system is 13.5+/- 'below existing grade, with assumed ESHGW 15.5' below surface. GCG recommends multiple test pits be performed per Massachusetts Stromwater Handbook. Soil testing equipment should be suitable to excavate below 16'. Verify soil exfiltration capacity, within the Hydrologic Soil Group (HSG) 'C/D' soil. The proposed Stormtrap (UIC Class V well) system does not meet the 10' setback to water supply line. Resolved.
6. Update drainage systems to match post-development watershed plan. Assure 'DC-780' chambers to be specified to meet the deep cover soil loading (SC740 chamber was used in the drainage calculations with similar storage volume.) Clarify Stormtrap label Bottom Chamber invert

elevation shown on C-106. The Stormtrap Design Criteria uses system invert at the top of stone bed, which is 3" above the bottom of chamber, see Stormtrap Design Criteria detail #1 shown on sheet C-505. GCG recommends using the exact manufacturer's terminology (system Invert) in the plan label. Resolved.

7. The parking layout in front of the club house shown on the site plan should match the post-development watershed plan. Verify the latest layout. Resolved.
8. Adjust grading behind building 7 to provide 15' setback from chambers system to downhill slope. Resolved.
9. Earth berm (with swale) should be provided along the southside of PCB 22A & PCB 24A to prevent sub-catchment P-3 runoff entering P-1 as shown on the post-development watershed plan. Resolved.
10. Add PAD 1 (rear of buildings 6 & 7) and roof drainpipes. Update drainage labels to match Stormwater Conveyance Sizing Report. PCBs 14 & 15 should be PDMHs. Update infiltration basin outlet pipe and provide drainage easement for the two outfalls including overland flow through the conveying lot. Resolved.
11. Connection Building 5 roof drain to DMH instead of CB to prevent resuspension of sediments in large storms. Resolved.
12. Verify PDMH-12 outlet invert, which is higher than the inlet. Resolved.
13. The drainage trunk lines with 4% to 5% slopes have excessive high velocity (for 25-year storm event), addition comments on the drainage report below. May consider increase the drops in manhole to reduce pipe slope or utilize corrugated (interior) drainpipe. Resolved.
14. Provide infiltration basin emergency overflow spillway and maintenance access path. Resolved

Plan Sheet C-108, Profile Plan

1. Driveway profile meets Minor Street requirements. Update drainage system profile per drainage report. Resolved.

Plan Sheet C-109 – C-111, Utilities Plan

1. Sewer and water system to be reviewed by others.

Plan Sheet C-501 – C-505, Details

1. Catch basin – Detail 13, catch basin weep hole should be plugged. Resolved.
2. Precast drain manhole – detail 12, specified cement concrete or brick and mortar invert similar to MassDOT E202.4.0 Standard Details. Call out interior diameter, drainage plan shown difference diameter manhole. Resolved.
3. Provide drop manhole detail. Resolved.
4. Provide roadside swale section. Resolved.
5. Provide infiltration basin and Strom chamber Outlet Control Structure detail. Orifices plate, frame, and cover, etc. Provide trash rack in front of the infiltration basin outlet orifice. Resolved.
6. Provide driveway cross-section, should area gravel base and surface treatment. (if gravel finish should be modeled as such in the drainage calculations. Resolved.
7. Provide SC310 Chamber detail and setback to downhill slope. Resolved.
8. Provide CDS unit(s) detail. Specify CDS units and Stormceptor structure number per Grading and Drainage Plan labels. As shown the drainage plan labels called for (WQS) without specifying model. Resolved.

Plan Sheet CC-601 – C-602, Vehicle Movement Plan

1. Verify intersection sight distance and dumpster pickup between buildings 5 & 6. Resolved.

Plan Sheet L-101 – L-103, Landscape Plan

1. Add interior parking cell landscape island with tree in front of building #2. Resolved.
2. Revise tree/walkway in the parking cell landscape island between buildings #1 & #2. Resolved.
3. Provide infiltration basin access path. Resolved.
4. Relocate landscape tree on top of the Stormtrap concrete chamber (near PCB 11). Resolved.

Provide project timetable/schedule per Section 9.4.4.11 Applicant will provide updated schedule.
Provide architectural rendering and/or cross-section per Section 9.4.4.12 Resolved.
(provide floor plans to confirm units and bedrooms and club house uses.) Resolved.
Provide lighting detail and photometric plan per 9.4.4.8

1. Proposed light poles along the driveway are 18-foot height with fixture mounting height at 20'-6". In comparison, 8.6.10.(7) – requires lighting fixture mounted no higher than 15 feet. And the existing light poles along the Memorial Drive sidewalk are 12-foot height. Waiver from Section 8.6.10, 7 requested.
2. The Photometric plan sheet C-114 shows 2.7 foot-candles overspill at the Memorial Drive curb opening right-of-way line, which should blend in with the two existing pole lights at intersection. Applicant should address the two existing pole lights within the curb opening. These two poles would require extensive works to be relocated. GCG recommends reconfiguring the curb opening to avoid pole lights relocation. If necessary, provide new photometric analysis with pole lights relocation to assure sufficient illumination along Memorial Drive sidewalk. The Photometric plan shows slight luminaire overspill onto the Memorial Drive intersection. However, the overspill should blend in with the two existing light poles at the intersection. ZBA approval required.
3. Verify double pole light and single pole light symbols shown on Legend. The Legend shown on sheet C-112 has not been revised. However, the symbols are self-explanatory and should not have any impact for the layout.

Traffic Report as deemed necessary per 9.4.8

1. GCG recommends a traffic study to analysis the necessary of two exit lanes and the proposed one parking space per dwelling unit for this age (62+) restricted multi-family uses. Majority of the age restricted residents would still be in the work force, a professional opinion for these matters should be considered. GCG concurs with the MDM Transportation Consultants report for this development. GCG recommends revisiting the intersection configuration to avoid pole lights relocation. Resolved.
2. Evaluation of the intersection of West Union and Memorial Drive intersections and other controlled intersections along West Union should be reviewed to address potential impact. Resolved.

Stormwater Report:

Massachusetts Stormwater management Standards Analysis:

1. This report referenced 90% Total Suspended Solids (TSS) removal and 60% average annual load of Total Phosphorus (TP) removal requirements under NPDES MS4 General Permit. However, the current Stormwater Management bylaws Chapter 247 and 343 have not been updated to reflect these requirements. Section 343-8.1.6 calls for using the most recent version of the Massachusetts DEP Stormwater Management Standards and BMPs must be designed to remove 80% of TSS, 40% TP, and 30% for total nitrogen (TN). Furthermore, the Massachusetts Stormwater Handbook (MSH) is based on the 80%TSS removal standards and thus reflected in their BMPs rating. GCG review would be based on MSH requirements and with consideration to meet the MS4 requirements. The proposed treatment chain entering the Stormtrap infiltration

system consists of deep sump hooded catch basin and/or proprietary separator (water quality structure, WQS) for pre-treatments and subsurface structures (Stormtrap concrete chambers) for infiltration. The outflow discharges through another WQS and onto the infiltration basin. MassDEP MSH rated 80% TSS removal credit for the subsurface structure with pre-treatment. And stated that there is insufficient data to support Nutrients (Nitrogen, Phosphorus) removal efficiencies for deep sump hooded catch basin, proprietary separator, and subsurface structures. Since this discharge received addition infiltration basin system treatment. This treatment chain should qualify for 96% TSS removal credit. And the downstream infiltration basin treatment does qualify for 60% to 70% TP, and 50% to 60% TN. The second treatment chain consists of deep sump hooded catch basin and proprietary separator and discharges onto the infiltration basin. The third treatment consists of deep sump hooded catch basin and WQS only. GCG would consider these three treatment chains average meets with the MS4's TSS, TP and TN removal requirements.

2. Verify Table 3.2C, and table 3.2D Design Point 2 Existing runoff and volume peak. It appears to have discrepancy with the HydroCAD report. The revised Table 3.2.B shows a 37.2% discharge volume increase during the 100-year storm event. According to the HydroCAD report Pond 4P: Stormtrap model, the calculations were based on 40 Stormtrap chambers in 2 rows layout, which did not match the proposed 88 chambers shown on the Stormtrap Chambers detail #3 shown on plan sheet C-505. GCG recommends the applicant to utilize the Chamber Wizard option within the HydroCAD program to analysis the Stormtrap chambers application as recommended by manufacturer. The 88 chambers system should increase the storage volume significantly, which affect the discharge rate and volume. Verify Table 3.2.C and Table 3.2.D, Existing peak flow and runoff volume for all four storm events, verify Table 3.2.C, proposed 10-year storm event. And update the difference column accordingly. HydroCAD Pond 3P outlet culvert invert should be 353.50. (Not expecting any impact to the drainage model result but should be verified.) The drainage report Stormtrap plan sheet 1.0 shown a 4'-2" height between the system invert elevation 323.5 to HWL 357.67 does not match Plan sheet C-505, Stormtrap Design Criteria-1, which shown 4'-0" height. Overall, the drainage design should meet the no increase of peak runoff rate and volume requirements.
3. Verify the grass cover area in the existing conditions HydroCAD report. The Existing Watershed Plan shown tree line along the Memorial Drive frontage. Submit revised pre-development HydroCAD report. Resolved.
4. HydroCAD time span should be expanded to 24 hours minimum to account for full volume. Resolved.
5. Remove Catch Basin Areas 1 & 2 from sub-catchment P-1. These two areas do not flow through infiltration basin. Which affect the peak runoff rate and volume to the (proposed flared end section) PFES 3. Recalculate pre-and post- peak rate and volume accordingly. Resolved.
6. P-1 infiltration surface should be modeled with pervious area with CN 98. Clarify driveway shoulders (4' each side) finish surface (gravel?) model accordingly. P-1 infiltration basin surface should be modeled with water surface (CN 98). Resolved.
7. Infiltration basin and storm chamber systems are subject to soil testing to verify ESHGW. A 2 feet separation to the bottom of infiltration system is required. The USDA Web Soil Survey report does not support the depth to water table and depth the restrictive feature for (312B – Woodbridge fine sandy loam, HSG 'C/D') at the DC-780 chamber system location. Abutting Cirrus Apartments development experienced extremely silty soil and trapped water for days. GCG recommends perform soil testing prior to finalize the drainage design. Resolved.
8. The proposed CDS proprietary treatment units should be called out on the plan and locations. The CDS treatment unit was approved by NJDEP similar to Massachusetts TARP certification, for TSS Removal Rate of 50% (NJDEP letter dated January 9, 2015, available through Contech web site). GCG concurs that the CDS unit combined with the deep sump catch basin pretreatment meets the 44% TSS removal pre-treatment prior to discharge to a rapid infiltration basin and comply with MassDEP infiltration basin standards. However, the deep sump catch basin 24A or 24B combining with CDS treatment unit discharges to PDMH 30, which only provides 62.5% TSS removal, does not meet the 80% TSS removal standards. MassDEP qualify the infiltration basin and with pre-treatment (44% TSS removal required for rapid infiltration soil) with 80% TSS

removal credit. MassDEP does not break down TSS credit for infiltration basin alone. Based on GCG's experience the infiltration basin chain should meet the 90% TSS removal and 60% TP removal annual rate. However, the storm chambers with deep sump catch basin and CDS unit pre-treatment should meet the 90% TSS removal rate, but not necessary the 60% TP. MassDEP stated insufficient data for nutrients removal for subsurface structures system (Chamber's system). Nutrients (nitrogen and phosphorus) are normally removed by vegetation roots uptake and ultraviolet light in above ground treatments. The deep sump catch basin with CDS unit at the Memorial Drive intersection does not meet the MassDEP non MS4 General Permit requirements. Reference each WQS model on the drainage plan sheet or QWS detail drawings. Under the current MSH rating, the proposed treatment trains meet the MS4 requirements. Resolved.

9. Pipe flow velocity for PDMHs 11, 12, 18, 19, 20, 21, 22, and 23 have full flow velocity between 12.32 to 17.39 ft/s during 25-year storm event, with partial flow could reaching 115% of the full flow velocity. GCG recommends sizing the pipe and slope to control the full flow capacity to 10 ft/s and hence controlling the partial flow velocity below the 12 ft/s target. Resolved.
10. Provide drainage channel/swale flow capacity calculations, and velocity to evaluate erosion control. Resolved.
11. Provide soil testing and calculate drawing down time and water mounding calculations accordingly. Update Stormtrap chambers and drawdown time calculations. Resolved.
12. Operation and maintenance plan – Deep Sump Hooded Catch Basin shall be inspected and cleaning 4 times per year. Call out mowing drainage channel to maintain grass height not to exceed 6" height and removal debris at least once per year. Provide annual maintenance budget and sample O&M Log. Non WQS catch basin should be inspected and grate and sump cleaned 4 times per year as required by MSH. Subsurface structure inlets cleaning should include building gutter system, where applicable.
13. Register Storm Chambers (Shallow UIC Class V Injection Wells) to MassDEP prior to installation and operation. Statement, no response required.

GCG is aware that the Ashland DPW is requesting an update of the TP40 precipitation data with NOAA Atlas 14. The NOAA Atlas 14 is a more intense and conservative set of rainfall data, which better matching with the current rainfall patterns. GCG agrees that the use of this data would be appropriate..

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

Respectfully Submitted,
GCG Associates

Michael J. Carter

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Project Manager