

September 25, 2025

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

RE: Peer Review – Chapter 40B, Comprehensive Permit, Site Plan, 55 West Union Street  
(Assessor’s Map 19, Parcel 62), Stormwater Peer Review.

Dear Jasmin:

GCG Associates, Inc. has reviewed the following information regarding the proposed 40B Development Site Plan at 55 West Union Street in Ashland, MA. This peer review is limited to stormwater management only.

Documents:

1. Stormwater Report, Proposed Residential Development at 55 West Union Street, Ashland, MA., prepared by Connorstone Engineering, Inc. (CSEI), dated June 25, 2025.
2. WPA Form 4B - Order of Resource Area Delineation, issued by the Ashland Conservation Commission, dated 10/24/2024.

Plan References:

1. “Proposed Site Plan of 55 West Union Street, Ashland, Massachusetts, prepared by Connorstone Engineering, Inc. (CSEI), dated 07/03/2025, last revised 08/01/2025, consists of 9 sheets as following:  
Sheet 1 of 9 Existing Conditions Plan, Locus Plan/Cover Page  
Sheet 2 of 9 Overall Site Plan  
Sheet 3 of 9 Grading & Drainage Plan  
Sheet 4 of 9 Utility Plan  
Sheet 5 of 9 Parking Layout Plan  
Sheet 6 of 9 Erosion Control Plan  
Sheet 7 of 9 Construction Details  
Sheet 8 of 9 Construction Details  
Sheet 9 of 9 Construction Details
2. Architectural Plan Set - 55 West Union Street, Ashland, MA 01721, prepared by Studio Cann, dated 03/31/2025, consists of 10 sheets. (A-000, A-003, A-101, A-102, A-103, A-200, A-201, A-202, A-301, A-601). Only sheet A-103 - Roof Plan was related with the stormwater design and reviewed.

This is a Comprehensive Permit application under the M.G.L. Chapter 40B, for a multi-family residential development Site Plan at 55 West Union Street (Map 19 Parcel 62). A 40B comprehensive permit would be based on a preliminary site plan in nature, further development/construction details should be provided with the Building Permit application according to the Comprehensive Permit approval conditions. This Site Plan would require a Stormwater Management Permit (SMP) per Chapter 247-6 B and C with the Ashland Conservation Commission and compliance with Chapter 343 Stormwater Management. However, the applicant could request a waiver with the local Bylaw Chapter 247 Stormwater Management and associated Chapter 343 regulations through the Comprehensive Permit application. Based on the WPA Form 4B - Order of Resource Area Delineation referenced above. There are wetland resource areas, Bordering Vegetated Wetland (BVW) and Riverfront Area delineated within the property and this project would require filing a wetland Notice of Intent with the Ashland Conservation Commission. The site plan would also be required to meet the Stormwater Management requirements under M.G.L. Chapter 313, Section 40, Massachusetts Wetland Protection Act and associated 310 CMR 10.00. The site is in an "Area of Minimal Flood Hazard Zone X" per FIRM panel 25017C0153F, effective date 7/7/2014. There is no NHESP estimated habitats of rare wildlife and priority habitats of rare species identified in the property vicinity per Massmapper/MassGIS layers.

Based upon our review of the above information, we offer the following stormwater comments with respect to compliance with Town of Ashland, Stormwater Management requirements and Massachusetts Stormwater Handbook (MSH). 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 (National Pollutant Discharge Elimination System) CGP Construction General Permit and associates SWPPP to be filed at least 14 days prior to start of construction.

### **SITE PLAN SET**

The site plan shows a dash-single-dot line at the southeastern corner of the project parcel. The line appeared to be the Riverfront Area associated with the perennial stream on the eastern side of West Union Street. This line should be identified on the plan.

### **Sheet 1 - Existing Conditions Plan, Locus Plan/Cover Page**

1. General note #3 stated "Topography shown is from Lidar data obtained from NOAA data and does not constitute and on-the-ground topography performed by Connorstone Engineering Inc." GCG recommends revising the topography contours along the existing Memorial Drive sidewalk (cape cod berm) CCB curbing in front of the site. Especially contour 244 and contour 246, which will affect the proposed contours along the back of Memorial Drive sidewalk for drainage flow path.
2. The existing buildings and surface conditions should be shown on Map 19 Parcel 63. This lot's surface runoff drains directly to the proposed catch basin (CB-6), which would affect the peak surface runoff rate.
3. There is an existing catch basin on the western side of West Union Street in front of 41 West Union Street, which should be shown on the plan and protected with silt sack during construction.

## Sheet 2 – Overall Site Plan.

See plan sheet 3 of 9 comments below.

## Sheet 3 – Grading & Drainage Plan

4. The proposed roof drain divide line at the middle of the building is on top of the roof drain inlet depression/low point, (see Architectural Plan sheet A-103). The roof drain divide line should be aligned with the ridge of roof surface.
5. CB-6 and CB-11 should be equipped with double inlet grates. (See Drain-Pipe Sizing Calculations comment below).
6. GCG does not recommend connecting CB-11 to STC-5 (which appeared to be Stormceptor STC450i) with an open grate. The (Massachusetts Stormwater Handbook) MSH, Vol. 2, Ch.2, Pg.4 requires deep sump catch basin to be installed as off-line design to enhances pollution removal and prevents the resuspension of sediments in large storms.
7. The applicant should specify the water quality control (STC-1 to STC-5) units with the exact make and model. GCG recognized the 450, 450i, and 900 units are Stormceptor units by Contech Engineered Solutions and confirmed by the Stormwater Report. The “Stormceptor” name and exact model numbers STC450i or STC900 should be shown on the plan, and/or provide details drawings per unit, approved equal is acceptable, but must match the capacity and volume per specified unit.
8. The outlet control structure (OCS) at the Stormwater Basin should be OCS-1.
9. Drainpipe size and pipe material should be shown on the plan; drainpipe from CB-1 to STC-1 and (Drop Inlet) DI-1 to STC-1 should be 8” diameter. DI-1 outlet pipe has approximately 1.5-feet of pipe cover, pipe material should be specified accordingly. D.I. structure should be equipped with a sump to prevent sediment entering the pipe.
10. Roof drainpipe size should be specified for both pipes, upper pipe inverts should be shown on the plan to determine pipe slope.
11. Landscape/lawn area spot finish grades should be provided between the northern side of proposed building to the proposed contour 256 to assure surface runoff flow to CB-1.
12. Existing sidewalk contours along Memorial Drive should be revised to match the existing cape cod berm (CCB) in front of the sidewalk. Proposed contours 244 and 246 should be modified to assure landscape area surface runoff drains to CB-1.
13. MSH Vol.2, Ch.2, Pg.88 Table IB.1 Item 7. - The proposed infiltration basin does not meet the minimum 50 feet distance from any surface water of the commonwealth (BVW wetland).
14. Standard Design Guideline for Shallow UIC Class V Injection Wells – the proposed concrete drywell system does not meet the minimum 15-foot setback distance from the naturally-occurring downhill slope which is not steeper than 3:1 (horizontal to vertical) requirement.
15. The applicant should consider relocating the OCS-2 and FE-4 westward to direct emergency overflow toward the Memorial Drive catch basin instead of discharges to the West union Street intersection. The drywell system was designed to retain the 100-year storm event. The emergency overflow was for extreme storm events only.

## Sheet 4 – Utility Plan

16. The proposed drywell system is a shallow (Underground Injection Control) UIC Class V Inject Well and the pre-treatment device (deep sump catch basin CB-1) is within the minimum 10-foot setback to the water supply line. GCG recommends relocating the proposed water lines (fire protection and domestic) westward further away from CB-1.

## Sheet 5 – Parking Layout Plan

Not Stormwater related.

## Sheet 6 – Erosion Control Plan

17. Erosion control silt sacks should be installed at the catch basins near the Memorial Drive and West Union Street intersection. The catch basin at the southern side of Memorial Drive near SMH-D and the catch basin at the western side of West Union Street in front of #41. These two catch basins should be protected during utilities connection and driveway entrance/exit construction.
18. Provide procedures and construction sequence for the proposed temporary sediment trap at the concrete drywell location.

## Sheet 7 – Construction Details

19. Typical Earth Berm Section shows a 'Impervious Core' within the earth berm, this berm is construction in fill and approximately 10 feet above existing grade, the structural details and impervious core materials are critical to prevent seepage and breach of the earth embankment.
20. Anti-seep collar dimensions and materials should be specified.
21. Manhole Outlet Structure should be specified as OCS-1.
22. Outlet control structure OCS-2 with buffer details should be provided.

## Sheet 8 – Construction Details

23. Precast 2'x2' Drop Inlet should be provided with a sump to collect sediment as additional pre-treatment.
24. Precast concrete drain manhole should be equipped with an invert channel, similar to MassDOT detail drawing E202.4.0.

## Stormwater Report

1. Sub-catchment E1's 'Grass Cover' should be modeled as Meadow cover with CN 30 value. Based on the Google street-view image, the area along the Memorial Drive property line was not regularly mowed. GCG recommends using meadow surface coverage with CN 30 value. The existing sidewalk impervious pavement was not modelled in the HydroCAD calculations. However, as long as the pre- and post-development models are consistent, which should not affect the overall drainage design. Sub-catchment E1's northeasterly divide corner between E1 and E2 should end at the Memorial Drive's catch basin.
2. Sub-catchment E2 – there appeared to be existing buildings and paved area located on the middle portion of Map 19, parcel 63, (41 west Union Street), with surface runoff possibly drains toward E2. GCG recommends showing the existing impervious surface on the abutting lot which could affect the proposed drywell system.
3. Sub-catchment E4 appeared to include the 3,800+/-s.f. (square feet) utility, existing slope and drainage easement (upland) area at the western side of the wetland resource area and sub-catchment E5 is the wetland resource area, but without the time-of-concentration (Tc) input. The HydroCAD model should analysis the impacts to the wetland but not including the wetland. GCG recommends excluding the wetland resource area (sub-catchment E5) and the western portion of the E4 upland area from the modeling.

4. The applicant should verify the impervious area used in sub-catchment P-1, GCG scaled approximately 580+/- s.f. of pavement area between CB-1 & DI-1 to the property line, and 500 s.f. of proposed patio area. The existing impervious sidewalk surface was not included in the model, same as the pre-development condition, which is acceptable. The minimum Tc used in TR-55 is 0.1 hour or 6 minutes. Sub-catchment P1's northeasterly divide corner between P1 and P4 should be ended at the Memorial Drive's catch basin.
5. Sub-catchments P-2's Tc should be 6 minutes minimum.
6. Sub-catchments P-3's Tc should be 6 minutes minimum. The off-site (Map 19, Parcel 63) runoff should be updated according to Sub-catchment E4 comments above, (item 2).
7. Sub-catchments P-4's Tc should be 6 minutes minimum.
8. Sub-catchment P5, the proposed stormwater basin surface (ponding area) should be modelled as water surface with CN 98.
9. Sub-catchment P6 appeared to include the 3,800+/- s.f. of upland area located at the western side of the wetland resource area, like sub-catchment E4. GCG recommends excluding the 3,800+/- s.f. upland area in P6 and the sub-catchment P-7 (wetland resource area with no Tc) from the HydroCAD post-development modeling.
10. Model Pond P8 stone void calculations should be based on the concrete Dry Well exterior height of 36" (H-20) instead of 34". The available storage volume #1 for the stone void volume should be 4,416 c.f. instead of 4,994 c.f. shown. Exfiltration should be limited to the bottom surface area only. (MSH, Vol. 3, Ch. 1. Pg.20, item d.) Drawdown calculations should be provided based on the bottom surface area exfiltration only, (MSH, Vol. 3, Ch. 1. Pg.25, item d.)
11. Model Pond P9, the applicant should verify the surface area at elevation 248, GCG scaled approximately 5,830+/- s.f., calculations used 4,000 s.f. and surface area at elevation 252, GCG scaled approximately 10,200+/- s.f. Exfiltration should be limited to the bottom surface area only. Drawdown calculations should also be limited to bottom surface area only. The emergency spillway elevation should be 251.0 to match the plan. A 24" x 24" horizontal opening with rim elevation at 240.5 should be included at the outlet. Emergency spillway sizing calculations should be provided based on the brimful conditions (assuming all other outlets were blocked) without impinging upon the structural integrity of the basin (without overtopping the minimum 1 foot freeboard earth berm). (MSH Vol.2, Ch.2, Pg. 91).
12. Drain Pipe Sizing Calculations – Pipes from CB-1 and DI-1 to STC-1 calculations were based on 12" diameter pipes, but plan shows 8" pipes.
13. Drains from CB-3 to STC-2 pipe length appeared to be 12-foot length.
14. Drains from CB-4 and CB-5 to STC-3 pipe length should be 15-feet. Pipe length measurements were inconsistent, some were measured from center to center of structures, and some were measured from face to face of the structures. GCG accept both methods for measuring pipe length between drainage structures but should be consistent.
15. CB-6 and CB-11 collects 1.94 cfs and 1.75 cfs inflows, respectively, and should be equipped with double inlet grates.
16. Drains between DMH-2 and DMH-3 was undersized.
17. Drains between DMH-3 and STC-4's downstream invert 249.65 did not match with the plan, plan shown 249.90.
18. STC-5 should be equipped with solid cover to avoid catch basin to catch basin connection. Add additional catch basin as necessary.
19. Roof drain sizing calculations should be provided.
20. The stormwater report did not provide a comparison of the pre- and post-development runoff discharge volume for the study events which is required under the Ashland Stormwater Management Bylaw, Chapter 247, and Stormwater Management Regulations, Chapter 343. GCG is expecting a waiver with Chapters 247 and 343 will be requested through the Zoning Board of Appeals Comprehensive Permit application. However, MSH requires "Proponents must

also evaluate the impact of peak discharge from the 100-year 24-hour storm. If this evaluation shows that increased off-site flooding will result from peak discharge from the 100-year 24-hour storms, BMPs must also be provided to attenuate these discharges." Based on the HydroCAD calculations, which indicates substantial increase of runoff volume (approximately 0.25+/- acre feet during the 100-year storm event) toward the wetland resource area, which connects to the large wetland area within the abutting Map 19, Parcel 67. GCG recommends comparing the post-development runoff volume with the pre-development conditions and analysis and flooding impacts to the abutting property.

21. Although Stormceptor's manufacturer's TSS removal rates were calculated at 82% to 90%. GCG recommends accepting the maximum TSS removal rate of 50% per NJDEP letter dated September 1, 2011 which exceeded 44% TSS removal pretreatment requirements for rapid soil infiltration system. Furthermore, the system appeared to have sufficient storage (final storage volume should updated according to the drainage comments), to retain the required 1" water quality volume. The infiltration system appeared to meet the 65% rule.
22. The drywell system has sufficient test pits to show 4 feet separation between the infiltration system bottom stone to refusal, no water mounding analysis required. However, the stormwater basin has less than 4 feet separation between the bottom of the basin (elevation 246) to refusal (DTH-4, refusal at 242.15). The existing topography is relatively steep (4H:1V), and the northern portion of the basin may have shallower separation from refusal. The applicant should provide mounding calculations below the Stormwater Basin.
23. The Operation and Maintenance plan for construction period shown on plan sheet 6 was relatively brief and should be referenced to work with the required SWPPP associated with the NPDES CGP filing.

### **Summary**

The proposed stormwater/drainage system mitigation design was in accordance with the Massachusetts Stormwater Handbook standards. There are some minor discrepancies with the dry well storage volume calculations and increased post-development runoff volume concerns as commented above. There are sufficient areas to enlarge the stormwater storage volume to address the issues.

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