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Ms. Kathleen Bradley-Colwell
Planning Division Director
Department of Economic and Community Development
City of Methuen
41 Pleasant Street
Methuen, MA 01844

September 23, 2024

Ref. T0222.00.02

Re: Proposed Warehouse Development – 501 & 600 Griffin Brook Drive
Civil & Traffic Engineering Peer Review #1

Ms. Bradley-Colwell and Members of the Planning Board:

On behalf of the City of Methuen, TEC, Inc. (TEC) has reviewed documents as part of the civil engineering peer review for a proposed Warehouse Development at 501 & 600 Griffin Brook Drive in Methuen, Massachusetts ("the Project"). The Project consists of removing the existing landscape and overgrown vegetation within 600 Griffin Brook Drive and constructing a 95,700 square feet (sf) steel frame warehouse. The proposed project provides access to the western side of the warehouse by extending Griffin Brook Drive to the west of the existing parking lot located within 501 Griffin Brook Drive. Additionally, the existing parking east of the building located within 501 Griffin Brook Drive will be extended to provide access to the eastern side of the proposed warehouse. The following documents were considered as part of our review:

- "*Application for Site Plan Approval*" prepared by The Morin-Cameron Group, Inc., dated August 30, 2024;
- *"Site Development Plans*" prepared by The Morin-Cameron Group, Inc., dated September 3, 2024;
- *"Technical Report in Support of Site Plan Approval"* prepared by The Morin-Cameron Group, Inc., dated September 4, 2024;
- "*Traffic Impact Assessment*" prepared by Fuss & O'Neill, dated August 15,2024.

Upon review of the documents and plans, TEC has compiled the following comments for the Board's consideration:

Site Plan Review

1. It should be noted that the Applicant was granted a zoning height variance approved by Methuen Zoning Board of Appeals on February 23, 2022.

2. It should be noted that the Applicant is requesting a variance to exceed lot coverage from 35% to 39% (4%). TEC requests that a graphic or calculation be provided to confirm the site does not exceed the requested 39% lot coverage threshold.

3. The following comments relate to inconsistencies and clarifications throughout the site plans:
   a) TEC recommends the Applicant be consistent between the Parking Calculation Table and what is being proposed within the plan set.

   b) It appears the Applicant is proposing a stop sign (R1-1) near the southern "exit" drive aisle of the proposed warehouse. TEC recommends the location of the sign be included within the plan set.

   c) It is unclear what the width of the drive aisle northwest of Basin P2 is. TEC recommends clarifying the width to ensure that it meets the City of Methuen's bylaws.

   d) It appears the Applicant calls out the catch basin near the northwest corner of the site as CB-11 and CB-15.

4. The following comments relate to site grading:
   a) It appears the Applicant is proposing accessible parking stalls along the northeastern perimeter of the proposed warehouse. TEC recommends including spot grades for the proposed curb ramps to ensure they meet ADA requirements.

   b) According to the Grading & Drainage Plan there is a highpoint between CB-18 and the existing 60' contour at the site entrance. TEC recommends the Applicant regrade this area, as it indicates a slope greater than 1H:1V to tie into existing grades as shown.

   c) According to the Grading & Drainage Plan, DMH-11 has a rim elevation of 67.2' and is located adjacent to the 68' contour. TEC recommends the Applicant revise the rim elevation or contour.

   d) According to the Drainage Details, the rim elevation of OCS-1 is 80.90', and is located between the 78' and 80' contours on the plans. TEC recommends the Applicant revise the rim elevation or contours.

   e) According to the Drainage Details, the rim elevation of OCS-2 is 61.0', and is located between the 58' and 60' contours on the plans. TEC recommends the Applicant revise the rim elevation or contours.

   f) It appears the 68' and 70' contour south of HW-1 has a slope of 1.5H:1V. TEC recommends either relocating the proposed retaining wall or regrading this area to ensure soil stability at the toe of the proposed retaining wall.

   g) TEC recommends the Applicant include all drainage structures and pipes within the Drainage Schedule.

5. According to Volume 3 Chapter 1 of the Massachusetts's Stormwater Handbook, "The area at the top of the basin must provide unimpeded vehicular access around the entire basin perimeter. The access area shall be no less than 15 feet." TEC recommends the applicant display or describe the ability to access and maintain all parts of the proposed basins.

6. According to the "WB-65 backing up to loading dock" vehicle tracking analysis, it appears the tire path crosses the curbline along the northwestern perimeter. TEC recommends revising the analysis or site design to ensure vehicular access.

Stormwater Management Review

7. TEC recommends the Applicant be consistent between the peak discharge rates in the narrative of the Technical Report and what is computed within the hydraulic analysis.

8. The following comments relate to the Soil Logs:
   a) According to the HydroCAD model, Basins P1, P2, P5, and Subsurface P3 all infiltrate and therefore should have at least one associated test pit within the proposed footprint. TEC recommends including the test pit locations and the proposed basins on the same plan to confirm test pit and basin association.

   b) According to Volume 3 Chapter 1 of the Massachusetts's Stormwater Handbook, "Mounding analysis is required when the vertical separation from the bottom of an exfiltration system to seasonal high groundwater is less than four (4) feet *and* the recharge system is proposed to attenuate the peak discharge from a 10-year or higher 24-hour storm." TEC recommends a Mounding analysis for each basin where the seasonal high groundwater is not shown to be at least 4 feet below the proposed bottom of basin for all basins proposed for infiltration attenuating the 10-year storm or greater.

9. The following comments relate to the Subsurface Retention System (P3):
   a) It appears the elevation of the control weir is inconsistent between the Drainage Detail sheet and the Technical Report. TEC recommends the Applicant revise the plans and/or report to remain consistent.

   b) According to the Technical Report, the peak elevation of a 100-year storm exceeds the elevation of the 100-year control weir. TEC recommends the Applicant revise the subsurface chamber and/or the drainage network to ensure the peak elevation does not exceed the control weir.

   c) It should be noted that the Construction Details state all retaining walls exceeding 42" must be designed by a registered professional structural engineer. TEC recommends considering the constructability of the retaining wall bearing on the subsurface chamber P3.

10. The following comments relate to the TSS Treatment Train:
   a) It appears the Applicant includes a Rain Garden in one of the treatment trains. TEC recommends clarifying where the Rain Garden is proposed within the plan set, or remove from treatment train.

   b) It appears Subcatchment PS2 and PS3 sheet flows with no pretreatment to Design Point 2. TEC recommends rerouting the sub catchment area or adding a pretreatment structure before reaching the design point.

   c) It appears Subcatchment PS5A sheet flows with no pretreatment to Retention Basin P5 where it is designed to infiltrate. The Applicant should add applicable pretreatment to all infiltration BMPs.

11. No rip rap sizing calculations are detailed for any of the newly proposed outfalls located across the proposed site. These calculations, and their associated details, should be completed to ensure no erosion is created by these proposed outlets, per Standard 1 of the Stormwater Handbook.

12. TEC recommends including the Outlet Control Structures within the Long-Term Pollution Prevention Plan.

Traffic Impact Study Review

13. The updated TIA prepared by Fuss & O'Neill and Bayside Engineering reconfirms the background developments and growth rate, trip distribution pattern, trip generation methodology, and the capacity and queue analyses procedures from their last Traffic Impact and Access Study (TIAS) that was originally prepared by Bayside Engineering for the Project in April 2022 with original proposal. *No response required.*

14. TEC agrees with the use of the 2024 traffic counts as baseline conditions given the higher value in comparison to 2022 counts obtained as part of the traffic study with original proposal during post pandemic conditions. *No response required.*

15. The TIA presents updated motor vehicle crash data for each of the study area intersections to investigate safety deficiencies related to the crashes between 2017 and 2023. Ten (10) crashes were reported at the intersection of Lowell Street and Griffin Brook Drive and no specific crash trends were identified and the intersection is not on MassDOT's Highway Safety Improvement Program (HSIP) list of top crashes for 2019 through 2021. *No response required.*

16. Site trip generation calculations are performed for a 95,700 SF warehouse development and based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition LUC 150 – Warehousing. The fitted curve rates were used for warehousing which provides higher trip generation in compared to average rate. TEC concurs with this methodology. *No response required.*

17. The Applicant should clarify and define the peak truck traffic characteristics associated with the Project's operations. This should include specifying the types of trucks and the expected time of day for these operations.

18. The current development program trip generation was compared with the trip generation of the previously approved development program. The current development trip generation will result in a decrease over the previously approved development by 35 fewer vehicle trips during weekday morning and 21 fewer vehicle trips during weekday evening peak hour. TEC concurs that the Project-related traffic represents a minimal increase at the study area intersection and along Lowell Street. *No response required.*

19. The updated TIA provides capacity analyses with the new 'Build' condition with majority of the movements to operate under LOS D or better. The Project-related traffic results in a minor degradation in overall LOS, with a minimal increase in delay of 1.3 seconds. *No response required.*

20. TEC concurs that, overall, the Project is not expected to result in a noticeable impact to the traffic operations within the study area. MassDOT owns and controls the traffic signal at the intersection

of Route 110 / Griffen Brook Drive. Any potentially desired improvements at this location fall under their jurisdiction. *No response required.*

21. The TIAS originally outlined a Transportation Demand Management (TDM) plan that includes:

    a. Assign a transportation coordinator to coordinate and promote the TDM plan.

    b. Promote public transportation use by posting local bus schedules.

    c. Promote ridesharing via carpool for employees and designate two (2) carpool/vanpool parking spaces.

    d. Provide site amenities including a break room, direct deposit of paychecks, allowing for telecommuting or flex work opportunities, where feasible.

    e. Providing bicycle racks throughout the site.

    The Applicant should commit to provide these TDM measures. In addition, TEC encourages the Applicant to consider the following additional measures:

    a. Locate a safe, efficient pick up/drop off location for rideshare services that is outside of any heavy truck traffic flow.

    b. Consider installing electric vehicle (EV) charging stations.

Traffic Engineering Site Plan Review

22. The Site Layout Plan issued September 3, 2024 (sheet C-5) indicates that 200 parking spaces are required for the existing building and 80 parking spaces are required for the proposed building (total of 281 spaces). TEC counted 202 parking spaces in the vicinity of the existing building, including 43 new spaces, and 79 parking spaces in the vicinity of the proposed building. Overall, the Zoning requirements appear to be met, with 280 required and 281 provided throughout the site.

23. TEC recommends the Applicant coordinate with the Town of Methuen Fire Department to review site emergency access considerations for the existing and proposed buildings. The Applicant's engineer should provide a truck turning analysis using a City of Methuen fire apparatus to ensure that emergency vehicles are able to navigate acceptably around each structure.

24. The Applicant should provide truck circulation plans for the largest tractor trailer expected at this facility.

25. The Applicant should confirm that the loading area is sufficient to queue heavy vehicles on-site, ensuring no additional trailer storage, parking, queuing, or waiting areas are required.

26. The Applicant should confirm that the Project is not last-mile delivery facility (i.e. Amazon, etc.).

27. Marked stop line should be extended from double yellow line to the edge of curb.

28. A note should be added stating: "All Signs and pavement markings to be installed within the Project site shall conform to the applicable specifications of the Manual on Uniform Traffic Control Devices (MUTCD).

29. Maintain and design site vegetation and snowbanks to not impede the sight triangle areas for on-site intersections and the intersection of the site access with Griffin Brook Drive. TEC recommends requiring this maintenance as a condition of any approval.

Please do not hesitate to contact us if you have any questions concerning this peer review at 978-794-1792. Thank you for your consideration.

Sincerely,
TEC, Inc.
*"**T**he **E**ngineering **C**orporation"*

David Nader, PE
Project Manager