



November 7, 2024

Mr. David Williams, Chair
Zoning Board of Appeals
9 Cordaville Road
Southborough, MA 01772
c/o Lara Davis, Principal Assistant

Re: Peer Review- Civil Engineering and Landscape Architecture- Third Review
Comprehensive Permit Application
120 Turnpike Road
Southborough, Massachusetts, 01772

Dear Mr. Williams and Members of the Board:

Project Understanding

Land Design Collaborative (LDC) has completed our Third Review of an application for a Comprehensive Permit on a proposed project located at 120 Turnpike Road, Southborough, MA (the Property). The Applicant seeks to subdivide the existing property into three (3) parcels, referred on the site plans as Lot 4A, 4B and 4C. The Applicant proposes to construct a five-story multifamily apartment style building containing 60 dwelling units with associated drive aisles, parking, two garages (ten and twelve vehicles), stormwater management systems, utility services, landscaping, dog park, playground, and an on-site sewage disposal system on Lot 4B (the Project). The focus of our review has been on Lot 4B, though we also reviewed the Project's effects on Lots 4A and 4C.

Submittal Documents

LDC reviewed the following recently revised/prepared Submittal Documents, provided by you, Expedited Engineering, and Ferris Development via email:

Site Plans:

"Site Plan of Land At 120 Turnpike Road" in Southborough, Massachusetts prepared by Expedited Engineering, LLC dated October 25, 2023, and most recently revised on October 30, 2024 (34 Sheets);

Stormwater Management Report & Plan:

"Drainage Report at 120 Turnpike Road, Southborough, MA" prepared Expedited Engineering, LLC dated October 25, 2023, and most recently revised on October 30, 2024 (28 Pages);

"Stormwater Report Checklist for 120 Turnpike Road" prepared by Expedited Engineering, LLC dated October 30, 2024 (67 Pages);

"Postdevelopment Drainage Area Plan" prepared by Expedited Engineering, LLC dated October 25, 2023, and most recently revised on September 16, 2024 (1 Sheet);

Comprehensive Waiver List:

"List of Requested Waivers from Applicable Town of Southborough By-laws and Regulations" (17 Pages) forwarded by George T. Bahman, Esq, Assistant General Counsel, Ferris Development Group, LLC, and dated October 30, 2024;

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Associated Comprehensive Permit Documents Specific to Civil/Site/Stormwater/Environmental/Landscape Architecture:

Two letters to the Southborough ZBA related to the written comments of the Conservation Commission and those of Lucas Environmental (Commission's peer review consultant). Both letters were prepared by Expedited Engineering and dated November 4, 2024 (each being 6 Pages).

Findings

LDC reviewed the Submittal Documents for consistency with the following documents from which the Applicant has requested waivers

- *Town of Southborough Zoning By-Laws (Comments #1-9);*
- *Town of Southborough Wetlands Regulations (Comments #1);*
- *Town of Southborough Subdivision Regulations (Comments #1-8);*
- *Town of Southborough Stormwater and Erosion Control Regulations (Comment #1);*
- *Town of Southborough Comprehensive Permit Regulations and Guidelines (Comment #1);*
- *Town of Southborough Charter, General By-Laws (Comment #1).*

Our firm also reviewed the Submittal Documents for consistency with Site Plan Review standards, the MassDEP Stormwater Management Standards, and generally accepted engineering practices from which the Applicant has not requested waivers or is a matter of general engineering practices inconsistent with the regulations stated below.

- *General Comments - Town of Southborough Zoning By-Laws (Comments #1-3)*
- *General Comments - MassDEP Stormwater Management Standards (Comment #4)*
- *General Comments - Town of Southborough Stormwater and Erosion Control Regulations (Comment #5)*
- *General Comments - Stormwater Design and Wetlands Protection (Comment #6)*

As previously stated, it is understood the Town's By-laws and Regulations do not strictly apply in the case of a Comprehensive Permit; however, it is customary for an Applicant to provide a list of waivers seeking relief to those specific sections of the local by-laws and regulations, providing justification to the Board for each waiver requested. The application includes the requisite list of waivers from the applicable by-laws and regulations, hence our review. Additionally, local regulations are a guide to accepted practices in a community, and it is beneficial for municipal officials and residents to understand how closely a Comprehensive Permit plan conforms to the local requirements and where it deviates. Unless cited below, we found the Submittal Documents to comply with the applicable By-laws or Regulations.

Below, you will find the comments as noted in our initial review letter. Following each section or comment of the initial review, you will find a secondary review comment (in italics) stating whether each item has been resolved, not addressed, or further action is required.

Comprehensive Waiver List

Based on our experience, it is incumbent upon the Applicant to cite the location(s) and provide an explanation as to why compliance is not feasible with a by-law or regulation. For your convenience, we've presented the referenced Sections of the By-law or Regulation in "*italics*" and the LDC comment in a conventional font.

Town of Southborough Zoning By-laws

1. *§174-6, Applicability - §174-6*

The location of the proposed multi-family development is situated adjacent to business uses and in proximity to single family uses, not uncommon for 40B housing communities.

Resolved.

2. *§174-8, Schedule of Use Regulations -
§174-8(A)*

The location of the proposed multi-family development is situated adjacent to business uses and in proximity to single family uses, not uncommon for 40B housing communities.

Resolved.

§174-8(B)

Though a waiver has been requested, the necessity for the waiver is not defined, that is the location(s) and frequency of non-compliance have not been provided in the list of waivers. We suggest the Board ask the Applicant to cite or indicate the specific instances on the plans or in the supporting documents where the non-compliant conditions(s) are proposed so the Board can understand the scope and scale of the particular deviation(s) from the Town's local standards.

Resolved.

3. *§174-8.5, BH Highway Business District -
§174-8.5(D)*

The location of the proposed multi-family development is situated adjacent to business uses and in proximity to single family uses, not uncommon for 40B housing communities.

Resolved.

§174-8.5(E) Development Standards as follows:

§174-8.5(E)(2)

The proposed parcel (Lot 4B) on which the building is proposed contains no frontage. Pursuant to M.G.L, Title VII, Chapter 41, Section 81L – "Such frontage shall be of at least such distance as is then required by zoning or other ordinance or by-law, if any, of said city or town for erection of a building on such lot, and if no distance is so required, such frontage shall be of at least twenty feet."

Resolved.

§174-8.5(E)(4)

The maximum allowable height of a building in any district in town is 45-feet, three stories. The Fire Department should be consulted as to whether the proposed building height of 66 feet is acceptable and be accommodated with the apparatus in their fleet. If not already performed, LDC recommends a balloon test be conducted, representing the 66-foot-tall structure at the four main corners of the building. The elevation of each balloon should be calculated and adjusted accordingly based on existing ground grade at each location. The Board may want to also consider lines of sight profiles during winter conditions from abutting properties and public ways that may be visually impacted.

Resolved.

§174-8.5(E)(6)

The location of the proposed multi-family development is situated adjacent to business uses and in proximity to single family uses, not uncommon for 40B housing communities.

Resolved.

4. *§174-10, Site Plan Approval -
§174-10(A)*

While relief from this requirement is requested, one element of the requirement that should be demonstrated is that of safety of the public. Though a waiver has been requested, the necessity for the waiver is not defined, that is the location(s) and frequency of non-compliance has not been provided in the list of waivers. We suggest the Board ask the Applicant to cite or indicate the specific instances on the plans or in the supporting documents where the non-compliant conditions(s) are proposed so the Board can understand the scope and scale of the particular deviation(s) from the Town's local standards.

Resolved, the Applicant is no longer requesting a waiver from Site Plan Approval.

§174-10(D)(1)

Though a waiver has been requested, the necessity for the waiver is not defined, that is the location(s) and frequency of non-compliance has not been provided in the list of waivers. We suggest the Board ask the Applicant to cite or indicate the specific instances on the plans or in the supporting documents where the non-compliant conditions(s) are proposed so the Board can understand the scope and scale of the particular deviation(s) from the Town's local standards.

Resolved, the Applicant is no longer requesting a waiver from Site Plan Approval.

5. *§174-11, Signs -*

Regulation Reference: §174-11(C)(2)(d)

LDC suggests that the Applicant discuss their justification for illuminated signage on Route 9 with the public safety officials to establish the period in which the sign will be illuminated and whether the Town and/or MassDOT requires lower intensity lighting between 10 PM and 6 AM.

Resolved.

§174-11(D)

The Applicant should identify on the site plans the location of the additional monument sign, or is the sign meant to be a two sided/bi-directional sign, as well as a detail of the sign for the Board's reference.

Resolved, the Applicant has provided a sign sketch that is consistent with the revised waiver. We note it does not appear the larger sign would negatively impact sight lines or create a new roadside hazard.

§ 174-11(E)(1)

The Waiver List incorrectly references *§174-11(C)(2)(d) for this waiver*. Though a waiver has been requested, the necessity for the waiver is not defined, that is the location(s) and frequency of non-compliance has not been provided in the list of waivers. We suggest the Board ask the Applicant to cite or indicate the specific instances on the plans or in the supporting documents where the non-compliant conditions(s) are proposed so the Board can understand the scope and scale of the particular deviation(s) from the Town's local standards.

Resolved.

6. *§174-12, Parking and Loading Regulations -*

§ 174-12(C)(2)

Lot 4A parking stall widths of 9 feet are common in many communities. The proposed site design seeks to convey existing spaces from proposed Lot 4A to proposed lot 4B to increase the total number of spaces for the 40B development. The Applicant should demonstrate that reducing the overall parking total from proposed Lot 4A will not adversely impact the parking requirements for the office uses on the lot.

Resolved, as we understand the ZBA has issued a variance for the parking as defined in the revised waiver list. We note the revised Site Plans shows 104 parking spaces on Lot 4B.

§ 174-12(E)(1)

LDC suggest that the Applicant provide the board with a breakdown of parking distribution for 1- ,2- and 3-bedroom units and consult with the traffic peer review consultant to offer some perspective on the issue. The Board may consider a visit and monitor similar developments in the area, which may offer some assistance when considering this waiver. The Applicant should also discuss the impacts of the parking totals required for the office uses on proposed Lot 4A with some of those existing spaces now being designated as parking for the proposed 40B development.

Resolved, as we understand the ZBA has issued a variance for the parking as defined in the revised waiver list. We note the revised Site Plans shows 104 parking spaces on Lot 4B.

7. §174-13, Landscaping -

§174-13(B)(10)

The Applicant states that they are in communication with the Board on the subject. Though a waiver has been requested, the necessity for the waiver is not defined, that is the location(s) and frequency of non-compliance has not been provided in the list of waivers. LDC requests the Applicant cite or indicate the specific instances on the plans or in the supporting documents where the non-compliant conditions(s) are proposed so the Board can understand the scope and scale of the particular deviation(s) from the Town's local standards.

Resolved.

§174-13(E)(2)

The Applicant states that they are in communication with the Board on the subject of landscaping. LDC suggests that the Applicant provide the Board with a concept plan depicting the impacts of landscaped islands on the site circulation and number of parking spaces.

Resolved.

8. §174-13.2, Major Residential Development -

§174-13.2(A)(1)

Though a waiver has been requested, the necessity for the waiver is not defined, that is the location(s) and frequency of non-compliance has not been provided in the list of waivers. We suggest the Board ask the Applicant to cite or indicate the specific instances on the plans or in the supporting documents where the non-compliant conditions(s) are proposed so the Board can understand the scope and scale of the particular deviation(s) from the Town's local standards.

Resolved, the Applicant is no longer requesting a waiver from the requirements of Major Residential Development standards. We suggest the ZBA confirm the Applicant's contention is that they have provided or intend to provide sufficient information for approval of a Definitive Subdivision Plan and the Comprehensive Permit. Specifically, the additional documentation and plans discussed during the 11/6/2024 working session.

9. §174-13.3, Lower Impact Development -

§174-13.3(C)(1)

§174-13.3(C)(2)

§174-13.3(C)(3)

Though a waiver has been requested, the necessity for the waiver is not defined, that is the location(s) and frequency of non-compliance has not been provided in the list of waivers. We suggest the Board ask the Applicant to cite or indicate the specific instances on the plans or in the supporting documents where the non-compliant conditions(s) are proposed so the Board can understand the scope and scale of the particular deviation(s) from the Town's local standards.

Resolved, the Applicant is no longer requesting a waiver from the requirements of the Lower Impact Development standards. We suggest the ZBA confirm the Applicant's contention that they have provided sufficient information

for approval of a Comprehensive Permit from the Board and an Order of Conditions from the Conservation Commission.

Town of Southborough Wetlands Regulations

1. Chapter 170, Wetland Protection

§170-2, Jurisdiction

The Applicant states that compliance would incur significant hardship and expense. LDC suggests that Applicant revisit the layout to explore an option that would reduce the impacts with the 20-foot no disturb zone. The pond is a resource area being utilized as a stormwater management basin with collected stormwater directed to it as point source discharges, which is not allowed under the provisions of the Wetlands Protection Act and Wetland Protection Regulations without proper supporting calculations for water quality and erosion prevention. At a minimum, calculations for riprap sizing/stability and outlet velocities should be provided.

Resolved, to the extent that the proposed work related to the building and parking has been relocated beyond the 20-foot buffer zone. The work that remains in the local 20-foot buffer zone is related to mitigation for the small Isolated Vegetated Wetland (Z series flagging). We defer to the Conservation Commission and Lucas Environmental regarding the specifics of mitigation. Additionally, the Conservation Commission must evaluate the proposed work within the 100-foot buffer zone, though we note there is nothing unusual or unique proposed within the 100-foot buffer zone. The recharge system (i.e., porous pavers) has been relocated to be more than 50 feet from the wetland edge, consistent with the MassDEP requirements for infiltration BMP's.

Please note the detail of the rip-rap apron on the top left of sheet D2 is inconsistent with other plan sheets as it shows the apron in the 20-foot buffer as well as conflicting information relative to the parking and garage compared to the other plan views. We suggest the Board require an updated set of Site Plans upon completion of the Conservation Commission's review.

Town of Southborough Subdivision Regulations

Chapter 244, Subdivision of Land

1. §244-4, Jurisdiction

Pursuant to M.G.L. Part 1, Title VII, Chapter 41, Section 81L - Such frontage shall be of at least such distance as is then required by zoning or other ordinance or by-law, if any, of said city or town for erection of a building on such lot, and if no distance is so required, such frontage shall be of at least twenty feet. Conveyances or other instruments adding to, taking away from, or changing the size and shape of, lots in such a manner as not to leave any lot so affected without the frontage above set forth, or the division of a tract of land on which two or more buildings were standing when the subdivision control law went into effect in the city or town in which the land lies into separate lots on each of which one of such buildings remains standing, shall not constitute a subdivision.

LDC understands that Town Counsel has provided an opinion on this matter.

2. §244-6, Limit one dwelling on a lot

LDC understands that Town Counsel has provided an opinion on this matter.

3. §244-8 Access Agency –

§244-8(A)

LDC understands that Town Counsel has provided an opinion on this matter.

§244-8(C)

LDC understands that Town Counsel has provided an opinion on this matter.

4. §244-9 Preliminary Plan –
§244-9(A)(1)

Pursuant to M.G.L Part I, Title VII, Chapter 40B, Section 21 – The Zoning Board of Appeals “shall have the same power to issue permits or approvals as any local board or official who would otherwise act with respect to such application.” Pursuant to 310 CMR 15.211, Minimum Setback Distances (1), All systems must conform to the minimum setback distance for septic tanks, holding tanks, pump chambers, treatment units and soil absorption systems, including reserve area, measured in feet. Where more than one setback applies, all setback requirements shall be satisfied.

Resolved to the extent that the Applicant’s engineer committed to providing a sketch plan showing an alternative location for the sand filter. It is our understanding the Applicant is still seeking this waiver with the understanding that should it be granted, the Conservation Commission or MassDEP may not find the proposed location unacceptable and require the sand filter be moved to a suitable location. The Applicant’s engineer indicated he understood this matter would be discussed and likely decided upon by the Commission. We note again that the Applicant should seek MassDEP approval for the new location, as it is inconsistent with the requirements for new construction. We suggest the Board require an updated set of Site Plans upon completion of the Conservation Commission’s review.

§244-9(A)(2)

LDC understands that Town Counsel has provided an opinion on this matter.

§244-9(C)

LDC understands that Town Counsel has provided an opinion on this matter.

5. §244-10, Definitive Plan –
§244-10(A)

LDC understands that Town Counsel has provided an opinion on this matter.

6. §244-13, Streets –
§244-14(A)

LDC understands that Town Counsel has provided an opinion on this matter.

7. §244-14 Open Space –
§244-14(A)

The Applicant is proposing a playground and dog park as amenities to the residents and should include the percentage of gross area of the entire property consumed by the dog park and playground for the Board's reference. The Board may want to consider requiring the Applicant, in the future, file a Modification to the Comprehensive Permit should there be changes to these amenities.

Resolved.

§244-14(B)

Though a waiver has been requested, the necessity for the waiver is not defined. We suggest the Board ask the Applicant to cite or indicate the specific instances on the plans where 10% of permanently protected open space can be achieved.

Resolved to the extent that the Applicant has indicated the open space is less than required and that the dog park is to be located within the open space. We suggest the open space parcel/area should be shown on a recordable plan. If the Applicant’s intent is still to provide a Definitive Subdivision Plan, it would be appropriate to define the open space and any easements necessary for maintenance of the infrastructure serving the buildings on Lots 4A and 4B.

8. §244-16, Drainage –

§244-16(A)

The Applicant indicates that they will own and maintain Lot 4A and therefore grading and drainage interference with the lot is not of great concern. LDC suggests that easements be created and recorded in the event either lot is sold in the future. The Board should note the following:

- The presentation of the Drainage Report (an analysis solely based on Subcatchments) makes it difficult to determine the extent to which the Project would impact the new Lot 4A as the lots are analyzed as one area.
- Soil conditions in the area of proposed infiltration have not been confirmed by field testing, nor has an O & M plan been provided for the permeable pavers to ensure that the proposed permeable surface treatment remains functional.

Resolved, however, we suggest the Board discuss the need for a Condition that the Applicant review the stormwater management system and address any concerns prior to sale of the down gradient property.

We suggest the Applicant provide additional documentation, including routing of flows through the site to the outlet/discharge points, so the Board (and Conservation Commission) can better understand downstream impacts.

Resolved.

Southborough Stormwater and Erosion Control Regulations – Chapter 154

1. §154-3, Applicability.

Though a waiver has been requested, the necessity for the waiver is not defined, that is the location(s) and frequency of non-compliance has not been provided in the list of waivers. We suggest the Board ask the Applicant to cite or indicate the specific instances on the plans or in the supporting documents where the non-compliant conditions(s) are proposed so the Board can understand the scope and scale of the particular deviation(s) from the Town's local standards. We cite a few specific deviations below.

Resolved to the extent the waiver request, plans and supporting documents have been revised to comply with the comments of the Conservation Commission and Lucas Environmental as well as those made by LDC during working sessions with Expedited Engineering.

Town of Southborough Comprehensive Permit Regulations and Guidelines

1. §4.0 Filing, Time Limits and Notice –

§4.1.2

LDC's review does not include this section.

Resolved.

§4.1.3.13

Deep test hole and percolation test data is shown on the sewage disposal system plan. LDC understands that this plan was included in this filing more for reference by the Board to better understand how the sewage disposal system is situated on the site. The plan will be subject to the approval of the Board of Health who may require additional soil testing due to the size of the primary and reserve disposal areas. Deep test pits should be observed in areas proposed for stormwater infiltration.

Resolved.

§4.1.3.16

This waiver request should be further discussed between the Board and the Applicant as the situation warrants. We note the proposed use does not constitute an obvious threat to groundwater or source of hazardous or toxic materials.

Resolved.

Town of Southborough Charter, General By-Laws

1. *Charter and General By-laws.*

This waiver request is a broad and sweeping all-inclusive request and should be carefully discussed between the Board, town staff and town counsel.

Resolved to the extent that the Applicant has cited a specific deviation related to the proposed use of non-native species that they consider "better suited for the proposed development". We understand that the Conservation Commission may not concur with the Applicant's contention and require different plant material than presently proposed. We suggest the Board require an updated set of Site Plans upon completion of the Conservation Commission's review.

General Comments

General Comments - Town of Southborough Zoning By-Laws

1. *§174-8.5 BH Highway Business District -
§174-8.5(C)(10)*

The proposed site plan depicts 2 private garages intended for 10 cars each. This would require a Special Permit within the BH district. No waiver has been requested from this section.

Resolved, as we understand the ZBA has issued a variance for the parking as defined in the revised waiver list and depicted on the Site Plans. We note the revised Site Plans shows 104 parking spaces on Lot 4B and that the Site Plans now show a 10-car and a 12-car garage.

2. *§174-12 Parking and Loading Regulations -
§174-12(G)(1)*

The site access driveway is located on Route 9 where there is no existing or proposed acceleration or deceleration lane provided. Furthermore, Route 9 narrows from 3 lanes to 2 in front of the driveway. During a site visit, we had trouble exiting the site due to the speed of vehicles travelling eastbound in the decel lane. Based on subsequent site visits, it is apparent many drivers use the decel lane as a through lane and the short merge just past of the site driveway effectively means three lanes (decel lane, site driveway, and outer/southern travel lane) merge just east of the site driveway. We understand Route 9 is within MassDOT's jurisdiction, so this comment is simply meant to be informative for the Board.

Resolved, to the extent that the entrance is within MassDOT's jurisdiction, the Applicant will be required to obtain a permit due to the change of use at the site.

3. *§174-13 Landscaping -
§174-13(B)(4)*

There is no note on the Landscape Plan stating that the shrubs to be planted on-site are to be 36" in height at the time of building occupancy. No waiver has been requested from this section.

Resolved.

§174-13(B)(5)

Staking is shown on the planting detail, but no note is provided stating removal of the staking after one full growing season. No waiver has been requested from this section.

Resolved.

§174-13(B)(6)

No note stating that “the Property owners are to ensure the survival and health of required trees. If any plant material life expires, the property owner must replace it within 180 days” is shown on the Landscape Plan. No waiver has been requested from this section.

Resolved.

§174-13(B)(9)

No permanent water supply system or method is provided for planting areas. No waiver has been requested from this section.

Resolved.

§174-13 (D)

Grading is proposed within the 10-foot buffer strip required to side and rear property lines located behind the private garages. No planting is proposed on the slope. No waiver has been requested from this section.

Resolved.

§174-13(E)(1)

Applicant should tabulate the required number of shade trees to be placed on-site at a rate of two shade trees or three ornamental trees for every 10 spaces or fraction thereof to demonstrate compliance. No waiver has been requested from this section.

Resolved, to the extent that the updated Site Plans include a Landscaping =Plan (sheet LS1) with a tabulation that reports 13 trees are provided where 10 (more than the calculated 9.8) are required. It appears there are 61 parking spaces rather than 49 for which landscaping is required. At 61 spaces the proposed 13 trees are sufficient. We suggest the Applicant verify our assessment of the parking count and the number of Hawthorn (CV) and flowering dogwood (CK), as there are discrepancies between the plan and list. It appears the table should read 4 CV and 21 CK. As noted above, we understand the Conservation Commission may require further changes to the landscape materials. We suggest the Board require an updated set of Site Plans upon completion of the Conservation Commission’s review.

Though not directly related to the proposed plantings and seeding, the buildings and parking layout for the lighting shown on the second Landscaping Plan (sheet LS2) are not consistent with the updated layout on the other sheets. This sheet should be updated accordingly. This could be part of an updated set of Site Plans upon completion of the Conservation Commission’s review.

Stormwater Management Review

The Applicant requests a waiver from Chapter 154-3 of the By-law (Stormwater and Erosion Control, section on Applicability) asking for relief from “this section to the extent the proposed development shown on the Plans is not in compliance” with the Town’s Stormwater and Erosion Control Rules & Regulations.

LDC reviewed the Submittal Documents for compliance with MassDEP Stormwater Management Standards as well as generally accepted engineering/design practices (the Guidance Documents). Unless noted below and excluding an extensive review of the design’s compliance with the Town of Southborough’s local Stormwater and Erosion Control Rules and Regulations, we found the Site Plans and Stormwater Management Report to satisfy the requirements of the Guidance Documents and Standards.

4. General Comments - MassDEP Stormwater Standards 310 CMR 10.05(6)(k)

The Applicant has not provided the MassDEP 'Checklist for Stormwater Report' as part of the submittal materials. At a minimum, a completed checklist should be provided. Should the Board decide not to grant waivers to the Stormwater By-laws, then the Applicant will be required to complete and submit the Town of Southborough's 'SMP Eligibility Worksheet' and 'Stormwater Management Application Checklist'.

Resolved.

The following are the 10 Stormwater Standards from the Massachusetts Stormwater Handbook and LDC's comments as to how the proposed plan addresses The Standards.

Standard 1: The Project proposes two new outfalls directing and discharging 'clean' rooftop and overland (woodland) runoff toward the existing pond directly north of the Project area, not requiring treatment. Stormwater is conveyed toward these outfalls via varying methods consisting of pipes, French drains, or riprap drainage swales, with only a portion of the upland runoff conveyed to the pond, as the other portion is collected and diverted toward an existing drainage swale. This swale drains to an existing catch basin located north of wetland flags A-1 and A-33 and piped to a headwall discharging to an intermittent stream. To mitigate the increased impervious cover, porous pavers are proposed. It appears much of the stormwater management system in the existing parking lot will remain unchanged except for the relocation of a catch basin to a location beyond the proposed porous pavers. It is unclear in the Drainage Report if the stormwater conveyances will have the hydraulic capacity to adequately accommodate the stormwater flows.

Resolved.

Standard 2: The Stormwater Management Report documents that the post-development rates of runoff for the 2-,10-,25-, and 100-year storm events have been reduced. The Project complies with this Standard, to the extent the following assumptions are valid. The Applicant correctly classifies the various Hydrologic Soil Groups (HSG) providing the Pre- and Post- development drainage maps, and soil testing results for the proposed stormwater management system(s), except where permeable pavers are proposed. The soil conditions should be verified at this location to confirm a three-foot separation to estimated seasonal high groundwater or two feet to refusal. The Applicant uses pre- and post- Subcatchments as their means of analysis. This method does not quantify the impact the proposed porous pavers will have in mitigating the rates and volumes. The Applicant rationalizes the performance of the 22-inch-deep porous pavers by estimating a volumetric storage (40% void ratio). Should a waiver not be granted, the Applicant should perform the hydrologic calculations using the NOAA-14 rainfall data to comply with the local requirements. for all analyzed storms to comply with the local requirements

Resolved. Additional soil testing information has been provided and the porous pavement has been relocated to be more than 50 feet from a wetland. We also note that half or more of the porous pavement is now designed with no pitch, reducing the likelihood of bypass flows, a comment in our previous review. While no pitch may be ideal to capture stormwater, we suggest the Applicant consider nominal pitch to reduce icing conditions that could occur that would create slip/fall potential but also reduce infiltration. We suggest the Board require an updated set of Site Plans upon completion of the Conservation Commission's review.

In some instances, the Applicant uses a Time of Concentration (Tc) of under three minutes. TR-55 states the minimum Tc should be 0.1 hrs. (or 6 minutes) (210-VI-TR-55, Second Ed., June 1986; Pg. 3-5).

Resolved, though we note several instances remain where Tc values below those recommended in TR-55 are utilized, however, we consider the analysis to be conservative as a result.

The Applicant proposes drainage swales and connections to an existing 24" RCP. To ensure these drainage features can handle the given flow rates and volumes received during the various storm events, the Applicant should model these drainage features and provide supporting documentation. This would also help determine if the proposed riprap and existing pipes will adequately accommodate the proposed flows.

Resolved.

Standard 3: The Project is a combination of redevelopment and new development; groundwater recharge is required for any increase in impervious surfaces from the pre- and post- site conditions. Although, it is likely the Applicant will more than meet this requirement with the proposed stormwater management system, the Applicant should provide the recharge volume calculations to quantify and demonstrate this Standard is met. The Applicant should also provide additional information to take credit for 80% TSS removal for the porous pavers with the bed retaining the 1-inch Water Quality Volume, while draining within 72-hours. The Applicant should provide the recharge and water quality calculations to confirm the system(s) will recharge the required water quality volume for the additional impervious area.

Resolved.

Standard 4: The Stormwater Management Report does not include documentation for TSS removal, specifically what level of TSS removal the proposed permeable pavers would provide. At best, permeable pavers provide 80% TSS removal, but only when certain criteria are met and maintained. As previously mentioned, permeable pavers need to be designed to hold the requisite water quality volume and drawdown within 72 hours. The Applicant should provide a thorough and complete O & M plan to ensure that system is properly maintained, and functions as designed.

Resolved to the extent that the Project constitutes a mix of redevelopment and new development. The areas of new development are satisfactorily mitigated. Reasonable mitigation is provided in the areas of redevelopment.

Standard 5: This Standard is not applicable for the Project.

Resolved.

Standard 6: This Standard is not applicable for the Project.

Resolved.

Standard 7: A portion of the Project constitutes redevelopment and partially complies with this Standard meeting the requirements of Standard 2. The Applicant should provide the information referenced under Standards 3 & 4 in order that compliance with Standard 7 is demonstrated. Standards 5 & 6 are not applicable.

Resolved to the extent that the Project constitutes a mix of redevelopment and new development. The areas of new development are satisfactorily mitigated. Reasonable mitigation is provided in the areas of redevelopment.

Standard 8: The Site Plans provide erosion control measures as shown on sheet ESC1-ESC4 and a Pollution Prevention Plan on sheet D4. The Project complies with this Standard. The plans should be revised to include inlet sediment traps for the catch basins located throughout the existing parking lot.

Resolved, as this is indicated on the Site Plans and in the letter to the Conservation Commission.

Standard 9: An O & M Plan and an LTPPP for the proposed components of the Stormwater Management system are not provided and should be added to the plans or stormwater management report.

Resolved to the extent that the Applicant has addressed the comments from the Conservation Commission and Lucas Environmental. Should either require additional revisions during their review of the Notice of Intent, we suggest the Board require an updated set of Site Plans and other supporting materials (as may be applicable) upon completion of the Conservation Commission's review.

Standard 10: An Illicit Discharge statement is not provided in the Stormwater Management Report and should be provided.

Resolved.

5. General Comments - Town of Southborough Stormwater and Erosion Control Rules & Regulations

The following are some key local regulations/requirements for which a specific waiver has not been requested by the Applicant:

- a) Rainfall data from NOAA Atlas-14 should be used in the stormwater calculations.

Resolved.

- b) Provide flow velocities to ensure that conveyances are being protected to MassDEP's standards.

Resolved.

- c) At a minimum, removal rates of, Total Phosphorous (TP) (60%) and Nitrogen (N) (30%) loading. The proposed porous pavers do not receive any credit for removal of these pollutants.

Partially Resolved. The Applicant has not provided documentation relative to the TP or N removal. As previously stated, LDC agrees porous pavers are a method of infiltration, and that other infiltration BMP's receive credit for removal of TP and N. Per V2C2, there is not yet sufficient data to verify these removal rates may be attained using porous pavers. TP and N removal will not be required if a waiver to this Town regulation is granted.

- d) SMP Eligibility Worksheet and local Stormwater Checklist to help the Board better understand the Project.

Resolved to the extent that the Applicant has addressed the comments from the Conservation Commission and Lucas Environmental. Should either require additional revisions during their review of the Notice of Intent, we suggest the Board require an updated set of Site Plans and other supporting materials as may be applicable upon completion of the Conservation Commission's review.

6. General Comments on Stormwater Design and Wetlands Protection

V.2 C. 2: Structural BMP Specifications for the Massachusetts Stormwater Handbook

- a) (Pg. 121) cites an additional design consideration for permeable pavers, that is the installation of perforated pipes along the bed bottom to assist in the distribution of the collected stormwater throughout the system. The Applicant does not propose a piped underdrain.

Resolved.

Mr. David Williams, Chair
Southborough Zoning Board of Appeals
November 7, 2024

- b) Page 97 of the V2C2 document states that infiltration should occur a minimum of 150' (downslope) or 100' (upslope) of any water of the Commonwealth. The permeable pavers propose infiltration within roughly 25' of such waters.

Resolved to the extent that the porous pavers have been moved to be more than 50 feet from the wetland and this Project constitutes a mix of development and redevelopment, in which case some of the standards can be relaxed. The design of the retaining wall north of the porous pavers should consider the possible effects of the porous pavers and be designed according to minimize break out through the wall. Should the Conservation Commission require additional revisions during their review of the Notice of Intent, we suggest the Board require an updated set of Site Plans and other supporting materials as may be applicable upon completion of the Conservation Commission's review.

- c) Page 97 of the V2C2 document states that infiltration should not occur within 150' of a slope greater than 20%. We have seen these criteria applied to retaining walls. The design of the wall must account for the additional stormwater infiltration, or some means of removing the water from behind the walls must be added.

Resolved, although we note that the Applicant has previously stated "We now call for this wall to be made of large Conigliaro Block pieces and to have an impermeable liner on its south side." The final wall design should account for the hydrostatic pressure generated by the infiltration system.


- d) We suggest the Applicant inventory, clean and inspect the existing drainage structures for compliance with the Stormwater Standards to bring non-compliant components into compliance with current stormwater design. This would include replacing catch basin structures without sumps and adding hoods to catch basins that lack hoods.

Resolved.

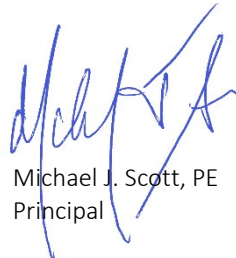
We appreciate the opportunity to provide this review to the Town of Southborough Zoning Board of Appeals and trust the information contained herein represents a fair and accurate assessment of the Submittal Documents. Please call LDC at 508-952-6300 should you have any questions regarding our comments/findings.

Sincerely,

LAND DESIGN COLLABORATIVE



Wayne M. Belec
Principal



Michael J. Scott, PE
Principal

cc: Mr. George T. Bahnan, Esq., Assistant General Counsel, Ferris Development Group, LLC
Mr. James L. Tetreault, PE, Expedited Engineering, LLC