



## PROJECT STATUS REPORT

Project No. 179411159

Invoice No. 2

Client: Upton Board of Appeals

Project: 47 Main Street (Route 140) - Upton Apartments  
Comprehensive Permit Application (40B)  
Upton, Massachusetts

Status Report (Through 04/05/24)

- Prepared for and attended a working session at the Town Hall with Michael Antonellis, Town Planner and the Applicant's Design Team on January 3, 2024, to review Stantec's peer review comments of December 15, 2023.
- Review the first resubmittal of the traffic impact assessment and traffic-related plan and response items listed: VAI's Updated Traffic Impact Assessment, with Updated date January 26, 2024; VAI's Response to Traffic Impact Assessment Peer Review Letter, dated January 26, 2024
- • D&L Design Group's Response to Traffic Impact Assessment Peer Review Letter, dated February 2, 2024
- Prepared and submitted 2<sup>nd</sup> traffic technical review comments, dated February 16, 2024
- Prepared for and attended Board of Appeals meeting on December 21, 2023, and February 21, 2024
- Written response letter dated January 8, 2024, to Stantec's peer review letter, dated December 15, 2023; "Upton Apartments Preliminary Residential Development Plans" (16 Sheets), revised January 8, 2024; Hydraulic/Hydrologic Calculations, revised January 8, 2024, and supporting documentation as prepared by D&L Design Group, Inc (DLDG).
- Prepared and submitted 2<sup>nd</sup> civil-stormwater technical review comments, dated February 16, 2024

- Review written response letter dated February 20, 2024, to Stantec's peer review letter, dated February 16, 2024; "Upton Apartments Preliminary Residential Development Plans" Sheet Nos. C-4.0, C-6.0, C-11.0 and Fire Truck Turning Movement Plan(C-4.0), each revised February 20, 2024; Hydraulic/Hydrologic Calculations, revised February 20, 2024, and supporting documentation as prepared by D&L Design Group, Inc (DLDG).
- Prepared and submitted 3<sup>rd</sup> civil-stormwater technical review comments, dated March 20, 2024
- Coordination with Client and Applicant's Design Team.



**Memo**

To: Mr. William Andrews, Chair  
Upton Board of Appeals  
1 Main Street, P.O. Box 163  
Upton, MA 01568

From: Evan Drew, PE PTOE  
David Glenn, PE

CC: Michael Antonellis  
Director of Land Use and Inspectional Services

Stantec Consulting Services, Inc.  
45 Blue Sky Drive, 3<sup>rd</sup> Floor  
Burlington, MA 01803

Project/File: 179411159 Date: February 16, 2024

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**Reference: Comprehensive Permit Application (40B) 47 Main Street Residential Development – Traffic Impact Assessment Resubmittal #1 - Peer Review**

Stantec Consulting Services, Inc. ("Stantec") had previously reviewed the *Transportation Impact Assessment – Proposed Multifamily Residential Development – Main Street (Route 140) Upton, Massachusetts* dated June 15, 2023, for Lobisser Building Corporation and prepared by Vanasse & Associates (VAI). The applicant is proposing approximately 68 units of multifamily residential development on approximately 6.75 acres on an undeveloped parcel on the north side of Main Street (MA Route 140) in Upton, Massachusetts. This location requires a new access driveway, proposed 700 feet west of School Street.

Stantec has now reviewed the first resubmittal of the traffic impact assessment and traffic-related plan and response items listed:

- VAI's *Updated Traffic Impact Assessment*, with Updated date January 26, 2024
- VAI's *Response to Traffic Impact Assessment Peer Review Letter*, dated January 26, 2024
- D&L Design Group's *Response to Traffic Impact Assessment Peer Review Letter*, dated February 2, 2024

VAI's Updated Traffic Impact Assessment and Response to Traffic Impact Assessment Peer Review Letter Review

Notable inclusions to the original Traffic Impact Assessment included the traffic data collection, inventory, and analysis of the existing intersection of Main Street at Fiske Avenue and the inclusion of at least descriptions of impact derived from MassDOT's ongoing project along Main Street in Upton (Project No. 608490).

After reviewing the data and analysis of the intersection operations of Main Street at Fiske Avenue, Stantec concurs with the findings in VAI's *Updated Traffic Impact Assessment* as it relates to their development's impacts to the intersection. After reviewing the descriptions provided regarding the MassDOT Main Street project and found the descriptions sufficient for the study.

Reference: **Comprehensive Permit Application (40B) 47 Main Street Residential Development – Traffic Impact Assessment Resubmittal #1 - Peer Review**

Stantec reviewed VAI's *Response Letter* to determine addressal of comments from the first submittal review of the Traffic Impact Assessment and found VAI sufficiently addressed all comments.

Stantec has only one additional comment regarding VAI's Updated Traffic Impact Assessment.

1. Within Figure 1, Fiske Avenue North 19 naming is derived from Google Maps adjacent to Memorial Elementary School. This roadway is officially Fiske Avenue and Stantec recommends this revision for final publication but is accepted as noted.

**D&L Design Group's Response to Traffic Impact Assessment Peer Review Letter Review**

Stantec reviewed D&L Design Group's Letter to determine addressal of comments within the Site Plan related to the traffic and pedestrian comments from Stantec's first review. Generally, D&L Design Group accepted the comments, including providing a STOP sign and supplemental stop line as identified in VAI's Traffic Impact Assessment and Stantec's review, and revisions to the proposed crosswalk crossing the site driveway and associated sidewalks.

The sidewalk accessing the proposed development, shown on Plan Sheets C-3.0 and C-4.0 appears to be provided a ramp and detectable warning field parallel to the site driveway, adjacent to the STOP sign location. The remaining pedestrian pathway for this corner of the intersection appears to be located at roadway grade and curves before the new proposed ramp terminus of the site driveway crosswalk as a pedestrian would be heading west.

Stantec's only remaining comments regarding the plans is as follows:

1. Stantec recommends the Applicant's Engineer review Massachusetts Department of Transportation's (MassDOT's) Engineering Directive E-12-005, dated March 27, 2012, as guidance for appropriate mitigation of the sidewalk and crosswalk transitions occurring at this western corner of the site driveway's intersection. Drawing E 107.6.4R of MassDOT's Construction Standards is most applicable to the treatment of the condition shown at the site driveway and appropriate for maintaining the operability and safety for pedestrians at this proposed site driveway.
  - a. Stantec notes that the sidewalk, STOP sign, and transitions required for the crosswalk of the site driveway shall be within the right-of-way of the roadway and the Applicant's parcel, including any earthwork removed or adjusted to grade the outside edges of the impacts required for construction of these elements, unless agreements have been made with the abutter. The property corner is very close to the abutter's property corner and should be monitored through construction and final conditions.



**Stantec**

**Stantec Consulting Services Inc.**  
45 Blue Sky Drive 3rd Floor, Burlington MA 01803-2767

February 16, 2024  
File: 179411159

**Attention:** **Mr. William Andrews, Chair**  
UPTON ZONING BOARD OF APPEALS  
One Main Street  
P.O. Box 163  
Upton, Massachusetts 01568

**Reference:** **Comprehensive Permit Application (40B)**  
**Upton Apartments**  
**47 Main Street (Route 140)**

Dear Mr. Andrews,

Subsequent to our letter report of December 15, 2023, and pursuant to the Board's request, Stantec has reviewed the Revised Comprehensive Permit submittal for Upton Apartments, the proposed 68 units, single 4 story building, multifamily rental housing development with access off Main Street in Upton.

Materials received to date relative to this submittal include the following:

- Written response letter dated January 8, 2024, to Stantec's peer review letter, dated December 15, 2023; "Upton Apartments Preliminary Residential Development Plans" (16 Sheets), revised January 8, 2024; Hydraulic/Hydrologic Calculations, revised January 8, 2024, and supporting documentation as prepared by D&L Design Group, Inc (DLG).

**The Revised Comprehensive Permit submittal was reviewed for conformance with the Town's Zoning Board of Appeals Comprehensive Permit Rules and Regulations, the Town's Site Plan Approval Rules & Regulations, and generally accepted engineering practice.**

Stantec attended a working session at the Town Hall with Michael Antonellis, Town Planner and the Applicant's Design Team on January 3, 2024. We offer the following comments and recommendations in bold italic text regarding the civil/site and stormwater aspects of the Revised 47 Main Street Comprehensive Permit submittal which are cross-referenced to our December 15, 2023, peer review letter for the Board's consideration.

#### **SITE PLAN APPROVAL REGULATIONS**

Section 308-8 Site Plan Approval Regulations require the applicant to submit specific information describing the proposed project to assist the Town in its review of the application. The Comprehensive Permit Application submittal contains information on the proposed project.



February 16, 2024

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**Reference: Comprehensive Permit Application (40B)  
149 Main Street (Route 140)**

**Stantec offers the following technical comments with respect to Section 308-8.**

(8) Landscaping – We recommend the site plan further identify the existing landscape features to be retained including trees (6) inches or more in diameter.

**Stantec (02/16/2024)**

***The limit of work and existing area to remain undisturbed are identified in red on Sheet No. C-3.0 and C-4.0. Comment addressed.***

(11) We recommend size of the existing/proposed water main and status of review by the Upton DPW and Fire Department regarding the proposed water main extension layout including location of fire hydrants as shown on Sheet No. C-6.0

**Stantec (02/16/2024)**

***We recommend size of existing water line be added to Sheet No. C-6.0 and response to the Fire Department Review/Comment Letter, dated January 19, 2024, be addressed by DLDG.***

(12) Stantec recommends size of the existing sewer main and status of review by the Upton DPW regarding the proposed 8-inch pvc sewer main extension layout as shown on Sheet No. C-6.0 We recommend the applicant provide a profile of the proposed sewer main extension.

**Stantec (02/16/2024)**

***We recommend size of existing sewer line be added to Sheet No. C-6.0 and status of review by the Upton DPW be addressed by the applicant. The proposed sewer main profile is shown on Sheet No.C-12.1. We note the vertical separation between the existing water line and proposed sewer line within Main Street is less than 12-inches and recommend further review by DLDG.***

(13) We recommend the applicant provide a profile of the proposed drainage system as shown on Sheet No. C-5.0

**Stantec (02/16/2024)**

***Profiles of the proposed drainage system are shown on Sheet No.C-12.1 and 12.2. Comment Addressed.***

(14) See comments below regarding stormwater management system.

**Stantec (02/16/2024)**

***See comments below regarding stormwater management system.***



February 16, 2024

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**Reference: Comprehensive Permit Application (40B)  
149 Main Street (Route 140)**

(18) We recommend the applicant provide a profile of the proposed sewer system as shown on Sheet No. C-6.0

**Stantec (02/16/2024)**

***The proposed sewer main profile is shown on Sheet No.C-12.1. We note the vertical separation between the existing water line and proposed sewer line within Main Street is less than 12-inches and recommend further review by the DLDG.***

(20) Parking – We recommend location of proposed loading areas, fire lanes, compact, visitor spaces and parking calculations showing the required and proposed number of parking spaces.

**Stantec (02/16/2024)**

***Proposed loading areas and fire lanes are identified on Sheet No. C-4.0. We recommend provisions for compact; visitor and electric vehicle (EV) parking spaces be discussed by the applicant with the Board. A total of 105 parking spaces including 8 accessible parking spaces or approximately 1.5 spaces per unit are identified on the Sheet No. C-4.0***

(21) Rubbish Collection – We recommend detail of screening and type of container be added to the site plan.

**Stantec (02/16/2024)**

***Detail of proposed dumpster and screening are identified on Sheet No C-7.4. Comment addressed.***

(23) Note - Proposed note "The Contractor shall give twenty-four notice to pertinent Town Departments before commencing any work in the field "should be added to the site plan

**Stantec (02/16/2024)**

***Proposed "Note" is shown on Sheet No. C-4.0. Comment addressed.***

**STORMWATER MANAGEMENT SYSTEM**

The Comprehensive Permit Preliminary Residential Development Plans submittal provides a layout of the proposed open and closed storm drainage system facilities, including drain manholes, catch basins, piping, stormwater basins, and subsurface infiltration chamber system.

**We offer the following comments on the proposed stormwater management system, specifically for compliance with the ten performance standards as outlined in the MassDEP Stormwater Management Standards.**

1. No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.



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Reference: Comprehensive Permit Application (40B)  
149 Main Street (Route 140)

The project is designed with no untreated stormwater discharge. We recommend the applicant provide rip-rap sizing calculations to confirm no erosion or scouring occurs at the drainage pipe outfalls and subsurface infiltration chambers. The design storm peak flow should be indicated on the calculations and in agreement with the HydroCAD analysis.

As shown on the Sheet No. C-5.0 the proposed footprint and rip rap outfall of Settling Basin #3 is located within the 30-foot No Disturbance Line from Wetland. We recommend this layout be reviewed by the Conservation Commission.

Stantec (02/16/2024):

As noted by DLDG, rip-rap stone sizing calculations are included in the drainage report as part of this submission. We note that the rip-rap stone sizing calculations and the rip rap apron dimensions identified on the Sheet C-5.0 are not in agreement for Basin #1, Basin #2, and Basin #3. We recommend comment be addressed by DLDG.

We note the proposed footprint/grading of Stormwater Basin Nos. 1,2,3 and segment of the roadway/access drive are located within the 30-foot No Disturbance Line from Wetland. DLDG has noted the site plans will be submitted to Conservation Commission for review.

2. Standard 2 – Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development discharge rates.

We recommend the existing culvert located on Main Street adjacent to the proposed access drive be identified (pipe size and inverts) on the drainage area maps and request the design engineer confirm no stormwater runoff from the project site flows to the culvert.

The Hydraulic/Hydrologic Report includes a pre- and post-development condition site hydrology analysis for the 2-, 10-, 25- and 100-year storm events at two points of interest areas (POI). Review of the peak flows as shown on the summary table and the HydroCAD peak flow analysis for POI No. 2 are not in agreement for the 2 thru 100-year storm events.

As per the Hydraulic/Hydrologic calculations, proposed infiltration basins and subsurface infiltration chamber systems are designed for the 2 through 100-year storm events. We recommend design engineer provide hydraulic calculations of the closed drainage system identifying the drainage areas and system capacities for the 25 through 100-year storm events.

Stantec (02/16/2024):

The pre and post development maps have been updated to include drainage area to the existing 18-inch culvert located on Main Street (Drainage Area No.3) As per HydroCAD calculations, there is no increase in runoff at Drainage Area 3. Comment addressed.



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**Reference: Comprehensive Permit Application (40B)  
149 Main Street (Route 140)**

*Review of the peak flows as shown on the summary table and the HydroCAD peak flow analysis, peak flow for POI No. 1 is not in agreement for the Pre-Development 25-year storm event. We recommend comment be addressed by DLDG.*

*We recommend DLDG review the estimated rainfall intensity identified in the submitted pipe sizing calculations based on the time of concentration/design storm frequency. We recommend comment be addressed by DLDG.*

3. Loss of annual recharge to groundwater should be eliminated or minimized using infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type.

**The proposed recharge volume is provided by two (2) infiltration basins (nos.1&2) and subsurface infiltration chamber system. We note review of the submitted soil logs within the infiltration basin footprints indicated the estimated depth of seasonal high groundwater (SHGW) varies between 24-inches and 28 inches. In general, grading of the infiltration basin bottom results in an excavation between 1 and 3 feet. As such, Stantec questions the feasibility of installing the infiltration basins at the selected locations while providing a two-foot separation to SHGW from the bottom of each infiltration basin. We recommend these items be further addressed by the design engineer.**

**Recommend cross sections of the proposed infiltration basins (nos.1&2) and subsurface infiltration chamber system identifying items such as existing and proposed grades, refusal and/or seasonal high groundwater be provided on the plans.**

**Request the stage-storage worksheets be reviewed and label the (2) infiltration basins (nos.1&2), subsurface infiltration chamber system and volume provided for each stormwater control measure.**

**We note the 72-hour drawdown calculations for the infiltration basins and subsurface infiltration system identified a K value associated with a Hydrologic Soil Group (HSG) A which is not in agreement with the HSG C as identified in the HydroCAD analysis.**

**Stantec (02/16/2024)**

**As noted by DLDG, infiltration basins (nos.1&2) and subsurface infiltration chamber system have been raised to provide a minimum 2-foot separation to groundwater. Comment addressed.**

**Cross sections of the proposed infiltration basin nos.1 and subsurface infiltration chamber system have been provided on Sheet C-11.0. We recommend cross section of infiltration basin no.2 be revised to include proposed subsurface infiltration chamber system. We recommend comment be addressed by DLDG.**



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**Reference: Comprehensive Permit Application (40B)  
149 Main Street (Route 140)**

**Request the stage-storage worksheets be reviewed and label the (2) infiltration basins (nos. 1&2), subsurface infiltration chamber system and volume provided for each stormwater control measure. We recommend comment be addressed by DLDG.**

**We note the resubmitted 72-hour drawdown calculations for the infiltration basins and subsurface infiltration system identified a K value are associated with a Hydrologic Soil Group (HSG) A and B which is not in agreement with the HSG C as identified in the HydroCAD analysis. We recommend comment be addressed by DLDG.**

4. Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:
  - a) Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained.
  - b) Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and
  - c) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook

**We request TSS Removal worksheets at each discharge point be provided to document the treatment train meets the 80% TSS Removal Requirement.**

**Review of the submitted require water quality volume table identifies an increase in impervious area of 64,390 square feet which is not in agreement with increase in impervious area of 86,790 square feet as noted on the Recharge Volume Summary Table. We note the required water quality volume is based on the total increase in impervious area.**

**Stantec (02/16/2024): TSS Removal worksheet for Basin #1 and Basin #2 are included as part of this submission. We recommend TSS Removal worksheet for Basin #3 and #4 be provided for review. We note review of the submitted water quality volume calculations, the paved area for P-3 and P-4 are not in agreement with the HydroCAD calculations provided. We recommend comments be addressed by DLDG.**

5. For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Water Act, M.G.L. c. 21, §§26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.



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**Reference: Comprehensive Permit Application (40B)  
149 Main Street (Route 140)**

**The project area is not associated with a land use with higher potential pollutant load; therefore, this standard is not applicable.**

**Stantec (02/16/2024): No additional comments.**

6. Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, considering site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "stormwater discharge" as defined in 314 CMR 3.04(2)(a) 1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

**The project is not associated with stormwater discharges near a critical area; therefore, this standard is not applicable.**

**Stantec (02/16/2024): No additional comments.**

7. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable.  
A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

**This project is a redevelopment; therefore, this standard is applicable.**

**Stantec (02/16/2024): No additional comments.**

8. A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

**Stantec recommends the submitted Erosion Control Plan and Narrative include a construction sequence, maintenance, and inspection program during construction. The design engineer should review the need for additional erosion control measures in areas of land disturbance. Proposed location construction staging equipment and areas of where earth and construction materials will be stockpiled on-site should be identified on the plan. We further recommend the Stormwater**



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**Reference: Comprehensive Permit Application (40B)  
149 Main Street (Route 140)**

**Pollution Prevention Plan, as required by the NPDES General Permit, be submitted to the Board prior to the start of any construction activities.**

**Stantec (02/16/2024):**

**The Revised Erosion Control Plan includes a construction sequence, additional erosion control measures, stockpile, and staging area. An operation and maintenance plan is included in the hydraulic/hydrologic calculations report. DLDG has noted that a Stormwater Pollution Prevention Plans SWPPP will be filed prior to construction. Comment addressed.**

9. A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

**An operation and maintenance plan are included as part of the Stormwater Report submittal.**

**Stantec (02/16/2024): No additional comments.**

10. All illicit discharges to the stormwater management system are prohibited.

**An illicit discharge statement was not included as part of this submission.**

**Stantec (02/16/2024): As noted by DLDG, an illicit discharge statement is included in the revised drainage report. Comment addressed.**

If there are any questions regarding our comments and recommendations, please do not hesitate to call at 1-800-835-8666.

Regards,  
**STANTEC CONSULTING SERVICES INC.**

*Vannary Tan*

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Civil Designer  
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Vannary.tan@stantec.com

*David Glenn*

David Glenn, P.E.  
Senior Civil Engineer  
Phone: 781-221-1134  
david.glenn@stantec.com

cc. Mr. Michael Antonellis, Town Planner



**Stantec**

**Stantec Consulting Services Inc.**  
45 Blue Sky Drive 3rd Floor, Burlington MA 01803-2767

March 20, 2024  
File: 179411159

**Attention: Mr. William Andrews, Chair**  
UPTON ZONING BOARD OF APPEALS  
One Main Street  
P.O. Box 163  
Upton, Massachusetts 01568

**Reference: Comprehensive Permit Application (40B)**  
**Upton Apartments**  
**47 Main Street (Route 140)**

Dear Mr. Andrews,

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Materials received to date relative to this submittal include the following:

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**The Revised Comprehensive Permit submittal was reviewed for conformance with the Town's Zoning Board of Appeals Comprehensive Permit Rules and Regulations, the Town's Site Plan Approval Rules & Regulations, and generally accepted engineering practice.**

**We offer the following comments and recommendations in bold italic text regarding the civil/site and stormwater aspects of the Revised 47 Main Street Comprehensive Permit submittal which are cross-referenced to our February 16, 2024, peer review letter for the Board's consideration.**

#### **SITE PLAN APPROVAL REGULATIONS**

Section 308-8 Site Plan Approval Regulations require the applicant to submit specific information describing the proposed project to assist the Town in its review of the application. The Comprehensive Permit Application submittal contains information on the proposed project.



March 20, 2024

Page 2 of 10

**Reference: Comprehensive Permit Application (40B)  
149 Main Street (Route 140)**

**Stantec offers the following technical comments with respect to Section 308-8.**

(8) Landscaping – We recommend the site plan further identify the existing landscape features to be retained including trees (6) inches or more in diameter.

Stantec (02/16/2024)

*The limit of work and existing area to remain undisturbed are identified in red on Sheet No. C-3.0 and C-4.0. Comment addressed.*

(11) We recommend size of the existing/proposed water main and status of review by the Upton DPW and Fire Department regarding the proposed water main extension layout including location of fire hydrants as shown on Sheet No. C-6.0

Stantec (02/16/2024)

*We recommend size of existing water line be added to Sheet No. C-6.0 and response to the Fire Department Review/Comment Letter, dated January 19, 2024, be addressed by DLDG.*

**Stantec (03/20/2024)**

***Existing water line and size are shown on Sheet No. C-6.0. We recommend a template with dimensions of the fire truck be identified on the Fire Truck Turning Movement Plan (C-4.0) and status of response to the Fire Department Review/Comment Letter, dated January 19, 2024, be addressed by DLDG.***

(12) Stantec recommends size of the existing sewer main and status of review by the Upton DPW regarding the proposed 8-inch pvc sewer main extension layout as shown on Sheet No. C-6.0 We recommend the applicant provide a profile of the proposed sewer main extension.

Stantec (02/16/2024)

*We recommend size of existing sewer line be added to Sheet No. C-6.0 and status of review by the Upton DPW be addressed by the applicant. The proposed sewer main profile is shown on Sheet No.C-12.1. We note the vertical separation between the existing water line and proposed sewer line within Main Street is less than 12-inches and recommend further review by DLDG.*

**Stantec (03/20/2024)**

***Size of existing sewer line and note to encase proposed sewer line in concrete at crossing of existing water line within Main Street is shown on Sheet No. C-6.0. We recommend the note be added to Sheet C-12.1 and status of review by the Upton DPW be addressed by the applicant.***



March 20, 2024

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**Reference: Comprehensive Permit Application (40B)  
149 Main Street (Route 140)**

(13) We recommend the applicant provide a profile of the proposed drainage system as shown on Sheet No. C-5.0

Stantec (02/16/2024)

Profiles of the proposed drainage system are shown on Sheet No. C-12.1 and 12.2. Comment addressed.

(14) See comments below regarding stormwater management system.

Stantec (02/16/2024)

See comments below regarding stormwater management system.

Stantec (03/20/2024)

**See comments below regarding stormwater management system.**

(18) We recommend the applicant provide a profile of the proposed sewer system as shown on Sheet No. C-6.0

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The proposed sewer main profile is shown on Sheet No. C-12.1. We note the vertical separation between the existing water line and proposed sewer line within Main Street is less than 12-inches and recommend further review by the DLDG.

Stantec (03/20/2024)

**Size of existing sewer line and note to encase proposed sewer line in concrete at crossing of existing water line within Main Street is shown on Sheet No. C-6.0. We recommend the note be added to Sheet C-12.1 and status of review by the Upton DPW be addressed by the applicant.**

(20) Parking – We recommend location of proposed loading areas, fire lanes, compact, visitor spaces and parking calculations showing the required and proposed number of parking spaces.

Stantec (02/16/2024)

Proposed loading areas and fire lanes are identified on Sheet No. C-4.0. We recommend provisions for compact; visitor and electric vehicle (EV) parking spaces be discussed by the applicant with the Board. A total of 105 parking spaces including 8 accessible parking spaces or approximately 1.5 spaces per unit are identified on the Sheet No. C-4.0



March 20, 2024

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**Reference: Comprehensive Permit Application (40B)**  
**149 Main Street (Route 140)**

**Stantec (03/20/2024)**

**Proposed two electric vehicle (EV) parking spaces and charging stations are identified on Sheet No. C-4.0. Comment addressed.**

(21) Rubbish Collection – We recommend detail of screening and type of container be added to the site plan.

**Stantec (02/16/2024)**

**Detail of proposed dumpster and screening are identified on Sheet No C-7.4. Comment addressed.**

(23) Note - Proposed note "The Contractor shall give twenty-four notice to pertinent Town Departments before commencing any work in the field "should be added to the site plan

**Stantec (02/16/2024)**

**Proposed "Note" is shown on Sheet No. C-4.0. Comment addressed.**

**STORMWATER MANAGEMENT SYSTEM**

The Comprehensive Permit Preliminary Residential Development Plans submittal provides a layout of the proposed open and closed storm drainage system facilities, including drain manholes, catch basins, piping, stormwater basins, and subsurface infiltration chamber system.

**We offer the following comments on the proposed stormwater management system, specifically for compliance with the ten performance standards as outlined in the MassDEP Stormwater Management Standards.**

1. No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

The project is designed with no untreated stormwater discharge. We recommend the applicant provide rip-rap sizing calculations to confirm no erosion or scouring occurs at the drainage pipe outfalls and subsurface infiltration chambers. The design storm peak flow should be indicated on the calculations and in agreement with the HydroCAD analysis.

As shown on the Sheet No. C-5.0 the proposed footprint and rip rap outfall of Settling Basin #3 is located within the 30-foot No Disturbance Line from Wetland. We recommend this layout be reviewed by the Conservation Commission.



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**Stantec (02/16/2024):**

As noted by DLDG, rip-rap stone sizing calculations are included in the drainage report as part of this submission. We note that the rip-rap stone sizing calculations and the rip rap apron dimensions identified on the Sheet C-5.0 are not in agreement for Basin #1, Basin #2, and Basin #3. We recommend comment be addressed by DLDG.

**Stantec (03/20/2024)**

**Revised rip rap apron dimensions are identified on the Sheet C-5.0. Comment addressed.**

**Stantec (02/16/2024)**

**We note the proposed footprint/grading of Stormwater Basin Nos. 1,2,3 and segment of the roadway/access drive are located within the 30-foot No Disturbance Line from Wetland. DLDG has noted the site plans will be submitted to Conservation Commission for review.**

**Stantec (03/20/2024)**

**We recommend status of review by the Conservation Commission be addressed by the applicant.**

2. Standard 2 – Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development discharge rates.

We recommend the existing culvert located on Main Street adjacent to the proposed access drive be identified (pipe size and inverts) on the drainage area maps and request the design engineer confirm no stormwater runoff the project site flows to the culvert.

The Hydraulic/Hydrologic Report includes a pre- and post-development condition site hydrology analysis for the 2-, 10-, 25- and 100-year storm events at two points of interest areas (POI). Review of the peak flows as shown on the summary table and the HydroCAD peak flow analysis for POI No. 2 are not in agreement for the 2 thru 100-year storm events.

As per the Hydraulic/Hydrologic calculations, proposed infiltration basins and subsurface infiltration chamber systems are designed for the 2 through 100-year storm events. We recommend design engineer provide hydraulic calculations of the closed drainage system identifying the drainage areas and system capacities for the 25 through 100-year storm events.

**Stantec (02/16/2024):**

**The pre and post development maps have been updated to include drainage area to the existing 18-inch culvert located on Main Street (Drainage Area No.3) As per HydroCAD calculations, there is no increase in runoff at Drainage Area 3. Comment addressed.**



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Review of the peak flows as shown on the summary table and the HydroCAD peak flow analysis, peak flow for POI No. 1 is not in agreement for the Pre-Development 25-year storm event. We recommend comment be addressed by DLDG.

**Stantec (03/20/2024)**

**Revised peak flow summary table is provided in the Hydraulic/Hydrologic Calculations.  
Comment addressed.**

**Stantec (02/16/2024)**

**We recommend DLDG review the estimated rainfall intensity identified in the submitted pipe sizing calculations based on the time of concentration/design storm frequency. We recommend comment be addressed by DLDG.**

**Stantec (03/20/2024)**

**Comment remains to be addressed.**

3. Loss of annual recharge to groundwater should be eliminated or minimized using infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type.

The proposed recharge volume is provided by two (2) infiltration basins (nos.1&2) and subsurface infiltration chamber system. We note review of the submitted soil logs within the infiltration basin footprints indicated the estimated depth of seasonal high groundwater (SHGW) varies between 24-inches and 28 inches. In general, grading of the infiltration basin bottom results in an excavation between 1 and 3 feet. As such, Stantec questions the feasibility of installing the infiltration basins at the selected locations while providing a two-foot separation to SHGW from the bottom of each infiltration basin. We recommend these items be further addressed by the design engineer.

Recommend cross sections of the proposed infiltration basins (nos.1&2) and subsurface infiltration chamber system identifying items such as existing and proposed grades, refusal and/or seasonal high groundwater be provided on the plans.

Request the stage-storage worksheets be reviewed and label the (2) infiltration basins (nos.1&2), subsurface infiltration chamber system and volume provided for each stormwater control measure.



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We note the 72-hour drawdown calculations for the infiltration basins and subsurface infiltration system identified a K value associated with a Hydrologic Soil Group (HSG) A which is not in agreement with the HSG C as identified in the HydroCAD analysis.

**Stantec (02/16/2024)**

As noted by DLDG, infiltration basins (nos.1&2) and subsurface infiltration chamber system have been raised to provide a minimum 2-foot separation to groundwater. Comment addressed.

Cross sections of the proposed infiltration basin nos.1 and subsurface infiltration chamber system have been provided on Sheet C-11.0. We recommend cross section of infiltration basin no.2 be revised to include proposed subsurface infiltration chamber system. We recommend comment be addressed by DLDG.

**Stantec (03/20/2024)**

**Revised cross section of infiltration basin no.2 with proposed subsurface infiltration chamber system is shown on Sheet c-11.0 Comment addressed.**

Request the stage-storage worksheets be reviewed and label the (2) infiltration basins (nos.1&2), subsurface infiltration chamber system and volume provided for each stormwater control measure. We recommend comment be addressed by DLDG.

**Stantec (03/20/2024)**

**Revised stage storage worksheets are provided in the revised Hydraulic/Hydrologic Calculations. Comment addressed.**

We note the resubmitted 72-hour drawdown calculations for the infiltration basins and subsurface infiltration system identified a K value are associated with a Hydrologic Soil Group (HSG) A and B which is not in agreement with the HSG C as identified in the HydroCAD analysis. We recommend comment be addressed by DLDG.

**Stantec (03/20/2024)**

**Revised 72-hour drawdown calculations are provided in the revised Hydraulic/Hydrologic Calculations. Comment addressed.**

4. Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:
  - a) Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained.
  - b) Structural stormwater best management practices are sized to capture the



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required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and

- c) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook

We request TSS Removal worksheets at each discharge point be provided to document the treatment train meets the 80% TSS Removal Requirement.

Review of the submitted require water quality volume table identifies an increase in impervious area of 64,390 square feet which is not in agreement with increase in impervious area of 86,790 square feet as noted on the Recharge Volume Summary Table. We note the required water quality volume is based on the total increase in impervious area.

**Stantec (02/16/2024): TSS Removal worksheet for Basin #1 and Basin #2 are included as part of this submission. We recommend TSS Removal worksheet for Basin #3 and #4 be provided for review. We note review of the submitted water quality volume calculations, the paved area for P-3 and P-4 are not in agreement with the HydroCAD calculations provided. We recommend comments be addressed by DLDG.**

**Stantec (03/20/2024): TSS Removal worksheet for Basin #3 and Basin #4 are included in the revised Hydraulic/Hydrologic Calculations. We note Basin #3 treatment train includes a Water Quality Unit/Stormceptor 900. We recommend a detail be provided on the construction details and the Water Quality Unit/Stormceptor 900 be identified on Sheet No.C-5.0.**

5. For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Water Act, M.G.L. c. 21, §§26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

The project area is not associated with a land use with higher potential pollutant load; therefore, this standard is not applicable.

**Stantec (02/16/2024): No additional comments.**



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6. Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, considering site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "stormwater discharge" as defined in 314 CMR 3.04(2)(a) 1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

The project is not associated with stormwater discharges near a critical area; therefore, this standard is not applicable.

Stantec (02/16/2024): No additional comments.

7. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

This project is a redevelopment; therefore, this standard is applicable.

Stantec (02/16/2024): No additional comments.

8. A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

Stantec recommends the submitted Erosion Control Plan and Narrative include a construction sequence, maintenance, and inspection program during construction. The design engineer should review the need for additional erosion control measures in areas of land disturbance. Proposed location construction staging equipment and areas of where earth and construction materials will be stockpiled on-site should be identified on the plan. We further recommend the Stormwater Pollution Prevention Plan, as required by the NPDES General Permit, be submitted to the Board prior to the start of any construction activities.



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Stantec (02/16/2024):

The Revised Erosion Control Plan includes a construction sequence, additional erosion control measures, stockpile, and staging area. An operation and maintenance plan is included in the hydraulic/hydrologic calculations report. DLDG has noted that a Stormwater Pollution Prevention Plans SWPPP will be filed prior to construction. Comment addressed.

9. A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.  
An operation and maintenance plan are included as part of the Stormwater Report submittal.

Stantec (02/16/2024): No additional comments.

10. All illicit discharges to the stormwater management system are prohibited.

An illicit discharge statement was not included as part of this submission.

Stantec (02/16/2024): As noted by DLDG, an illicit discharge statement is included in the revised drainage report. Comment addressed.

If there are any questions regarding our comments and recommendations, please do not hesitate to call at 1-800-835-8666.

Regards,  
**STANTEC CONSULTING SERVICES INC.**

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