TOWN OF SOUTH WINDSOR
PLANNING & ZONING COMMISSION
APPLICATION FORM

Application Number: 19-39P
Official Receipt Date: 8-20-19
Munis Application #: 201901771

RECEIVED
AUG 15 2019
SOUTH WINDSOR PLANNING DEPT.

718065

APPLICANT: Buckland East, LLC

PROJECT NAME: 6 Executive Drive, Suite 100, Farmington CT 06032

COMPLETE LOCATION OF PROPERTY: 190 Buckland Road (to be known as 200 Gateway Blvd.)

OWNER OF RECORD ON LAND RECORDS: 190 Buckland Road, LLC

OWNER ADDRESS: 6 Executive Drive, Suite 100, Farmington CT 06032

GIS PIN # 15300190 ZONE GD

NAME, ADDRESS, TELEPHONE & EMAIL ADDRESS OF PERSON TO WHOM INQUIRIES SHOULD BE DIRECTED:
Benjamin Wheeler, Design Professionals, Inc., 21 Jeffrey Drive, South Windsor CT

(860) 291-8755; bwheeler@dpinc.co Estimated presentation time: 15

THIS APPLICATION IS FOR: (Check all that apply):

- ☐ Zone Change to _____ (Public Hearing and Certificate of Mailing Required)
- ☐ Open Space Subdivision/Resubdivision (Public Hearing and Certificate of Mailing Required)
- ☐ Subdivision ☐ Minor ☐ Major
- ☐ Resubdivision (Public Hearing Required) ☐ Minor ☐ Major
- ☐ Conditional Subdivision
- ☐ Special Exception to Table _____ (Public Hearing and Certificate of Mailing Required)
- ☑ Site Plan of Development ☑ New ☐ Modification Building(s) Sq Ft 19,209
- ☐ General Plan of Development
- ☐ Earth Filling (Sec. 7.6) and/or Earth Removal (Sec. 7.16) (Public Hearing and Certificate of Mailing Required)
- ☐ Regulation Amendment ☐ Zoning ☐ Subdivision - Attach proposed amendment (Public Hearing Required)
- ☐ Temporary and Conditional Permit (Public Hearing Required) for _____
- ☐ Temporary and Conditional Permit Renewal for _____
- ☐ Detached In Law Apartment or ☐ Accessory Apartment (Public Hearing and Certificate of Mailing Required)
- ☐ Major Home Occupation (Certificate of Mailing Required) for _____
- ☐ Other (explain in detail) _____

PLEASE NOTE: An Application Pending Sign is required to be posted on the property for all applications ten (10) days prior to being heard by the Commission.

Signature of Applicant — Buckland East, LLC By: Farm Glen Management, LLC Geoffrey W. Sager, Its Manager

Print Name of Applicant

Signature of Property Owner — Buckland East, LLC By: Farm Glen Management, LLC Geoffrey W. Sager, Its Manager

Print Name of Property Owner

Revised 1/9/2017

design professionals INC

P.O. BOX 1167
21 JEFFREY DRIVE
SOUTH WINDSOR, CT 06074
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www.designprofessionalsinc.com

CIVIL & TRAFFIC ENGINEERS / LAND SURVEYORS / PLANNERS / LANDSCAPE ARCHITECTS
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LETTER OF TRANSMITTAL

To: Town of South Windsor
Planning Department
1540 Sullivan Avenue
South Windsor CT 06074

Date: 08/15/2019 **DPI Project No.** 3530.M

Re: Aldi
200 Gateway Boulevard
South Windsor CT 06074

WE ARE SENDING YOU: ☑ Attached ☐ Under separate cover via _____ the following items:

☐ Shop Drawings ☑ Prints ☐ Renderings ☐ Specifications

☐ Copy of Letter ☐ Change Order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1	8/15/19		PZC application
1			Sample letter to mailed within 7 days of filing
2	8/2019		Stormwater Management Report + Drainage maps (Full size)
1	8/8/19		Payment for submission (Buckland East LLC #64)
3	8/15/2019		Site Plans
10	8/14/19		Traffic Impact Executive summary
4	8/14/19		Full Traffic Impact Study report
2	8/15/19		Site Plan checklists
13			Aldi Cart Management Plan

THESE ARE TRANSMITTED AS CHECKED BELOW:

☑ For Approval ☐ For review and comment ☐ No exceptions taken

☑ For your use ☐ For bids due ☐ Make corrections

☐ As requested ☐ Prints returned after loan to us ☐ Make corrections

REMARKS:

RECEIVED
AUG 15 2019
SOUTH WINDSOR PLANNING DEPT.

SIGNED: Suzanne P. Choate, P.E. **CC:**

TOWN OF SOUTH WINDSOR CHECKLIST
REQUIRED INFORMATION SITE PLANS

APPLICANT Buckland East, LLC

PROJECT NAME Aldi

This checklist must be signed by plan preparer (P.E./L.S.) declaring that all required information is provided. Items 1-7 are required for all applications; items 8-11 required where appropriate.

Check mark for each item supplied.

✓ 1. On each sheet for plans or maps, title block with the following information:

✓ a. Name, address and telephone of applicant.

✓ b. Name, address and telephone number of Land Surveyor or Professional Engineer.

✓ c. Name of Development.

✓ d. Date when drawings were made.

✓ 2. Key Map: An overall map drawn to a scale of 1 inch equals either 100 feet or 200 feet. This map will show the overall design of the Development and surrounding property within 500 feet.

✓ a. Data block which gives needed zoning information such as percentage of lot coverage, acreage of tract, number of apartment units, parking requirements, etc.

✓ b. Outline of buildings.

✓ c. Layout of streets.

✓ d. Surrounding property boundaries-within 500 feet.

✓ e. Names of abutting property owners.

✓ f. Proposed open spaces and recreation areas.

✓ g. Driveway cuts on abutting properties and any properties across from proposed site.

✓ h. Distance to and name of nearest intersection street.

✓ 3. Architectural Elevations: See attached checklist for Architecture and Design Review.

✓ 4. Plot Plan: A layout map of the proposed site drawn to a scale of 1 inch equals 40 feet on either of the following size sheets: (1) 24" x 36" with a 3/4" ruled margin; (2) 18" x 24" with a 1/2" ruled margin, containing the following data:

✓ a. Distance and bearings of all boundary lines and acreage of site. Iron pins required at all property angle points and shown on map.

✓ b. Proposed streets and street lines with center line station, curve data, and parking spaces.

✓ c. Building lines in accordance with zoning regulations.

✓ d. Proposed buildings and other structures, including signs, outside lighting, and dumpsters (on concrete pad and screened).

✓ e. Easements, noting grantors, grantees, and purpose must be shown in table format, e.g. below

Grantor	Grantee	Type of Easement	Date Filed	Vol/Pg

✓ f. Names of abutting property owners.

✓ g. Monuments will be indicated at corners and angles of all streets and at all points of curvature and tangency. The monumented points within proposed site shall be coordinated. These coordinates shall appear in tabular form on the plot plan. The accessibility of these CGS points shall be determined by the Town Engineer.

✓ h. All open space or other common or public land uses shall be indicated.

✓ i. A-2 certification; P.E./L.S. Seal.

✓ 5. Topographic Map: A map drawn to a scale of 1 inch to 40 feet on sheets not exceeding 24 inches by 36 inches, including ruled margins shall in addition to the requirements of the plot plans show the following:

✓ a. All existing and proposed buildings.

✓ b. Curb Lines and pavement width, sidewalks.

✓ c. Existing and proposed sanitary sewers.

✓ d. Existing and proposed water and all existing utilities.

✓ e. Present wooded area indicated by foliage lines. Any trees to be saved should be shown.

✓ f. Existing and proposed contours shall be shown in not less than two-foot intervals, but in cases of relatively level land, the contours shall be one-foot intervals and spot elevations.

✓ g . Regulated wetlands and 100-year floodplain or note that none are present.

✓ h. Proposed storm drainage system, showing all catch basins, endwalls, manholes, lengths and sizes of pipes and elevations of structures. (Maximum distance between catch basins shall be 300 feet and minimum size of storm drain lines shall be 15 inches, within Town ROW.) If plan/profile sheet is provided all of this does not need to be shown. Only top of frame elevations and inverts of open discharge pipe shall be shown on this plan.

N/A i. Connections of all springs into proposed storm drainage system as needed.

✓ j. Location and indications of existing brook channels, and 100-year flood limits.

✓ k. A-2 & T-2 Certification; P.E & L.S. Seals.

✓ 6. Landscaping plan

✓ 7. Drainage calculations: - Zero Runoff Increase per attached guidelines.

✓ 8. Traffic Report

✓ 9. Site Lighting Plan

N/A 10. Plans and Profiles: A plan and profile of the proposed streets drawn on plan/profile paper of scales 1 inch to 40 feet horizontally, and 1 inch to 4 feet vertically on sheets not exceeding 24 inches by 36 inches, including ruled margins and containing the following:

N/A a. Layout of streets in sections coordinated by stations with the profile.

N/A b. Street plan showing roadways, drainage, sanitary sewer (including house sewer), foundation drains, lot lines, buildings including all utilities with elevations (top frame and inverts), size, type, length, slopes of pipes.

N/A c. Sight line at driveway & street intersections.

N/A

d. Profile of roadway showing existing and finished grades. Roadway profile will show all tangent grade and all vertical curve information.

N/A

e. Profile will show all catch basins and all drainage lines between catch basins with all invert and top of frame elevations, sizes, lengths and slopes of pipes.

N/A

f. Where any storm drainage line discharges into an existing brook sufficient profile of this brook will be shown to determine conditions.

N/A

g. CGS datum shall be used on all sites accessible to these controls. The Town Engineer shall, based on standard engineering practices, determine the accessibility of these controls.

N/A

h. Profiles shall show all sanitary sewer lines and manholes, including elevations, (inverts, top of frame) sizes, lengths, and slopes of pipes. Top of foundation elevations for building shall be shown.

✓

11. Open Space Site Improvement Plans: For sites which require or include a provision for open spaces, a plan which contains data for site improvement may be required. This map shall be drawn to a scale of 1 inch equals 40 feet.

N/A

12. Sanitary Report: Where individual sanitary sewage disposal systems are proposed, the final plans shall include a Sanitary Report certified by a Professional Engineer. The report shall demonstrate the feasibility of the proposed individual systems.

Suzanne P. Choate, P.E.

PLAN PREPARER (P.E./L.S.)

8/15/19

DATE

February 2002; Rev. 4-04

design professionals INC.

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21 JEFFREY DRIVE
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CIVIL & TRAFFIC ENGINEERS / PLANNERS / SURVEYORS / GIS ANALYSTS / LANDSCAPE ARCHITECTS
Serving Connecticut, Massachusetts, & Rhode Island

August 13, 2019

WILLIAM J KRAWSKI
130 BUCKLAND ROAD
SOUTH WINDSOR, CT 06074- 0000

Re: Aldi
Inland Wetlands & Watercourses / Planning & Zoning Applications
190 Buckland Road

Dear WILLIAM J KRAWSKI,

In accordance with Section 7.3b of the "Town of South Windsor Inland Wetlands, Watercourses, and Conservation Regulations", we are required to notify you that an application has been filed on the property abutting yours and is subject to a hearing by the Inland Wetlands Agency/Conservation Commission. The application and plans are on file with the South Windsor Planning Department.

As an abutting property owner, you are invited to the hearing to ask questions and/or give comments, however, you are not required to attend. You may also submit written comments regarding the application prior to the hearing if you so desire. For further information regarding the specific date this will heard please contact Jeff Folger, Environmental Planner/Conservation Officer, Planning Department, 860-644-2511, ext. 229.

Furthermore, in accordance with the Rules & Regulations of the South Windsor Planning & Zoning Commission, you are hereby notified that an application has been filed on the property located at 595 Nutmeg Road North, abutting your property, and is subject to a hearing by the Planning & Zoning Commission. The application and plans are on file with the South Windsor Planning Department.

As an abutting property owner, you are invited to the hearing(s) to ask questions and/or give comments, however, you are not required to attend. You may also submit written comments regarding the application(s) prior to the meeting if you so desire. For further information regarding the specific date this application will be heard, please contact Michele Lipe, AICP, Town Planner, at the South Windsor Planning Department at 860-644-2511, ext. 252.

If you have any questions regarding the specifics of the plans, please feel free to contact our office at 860-291-8755. Thank you.

Sincerely,
DESIGN PROFESSIONALS, INC.

Benjamin P. Wheeler, PLA
Director of Operations

G:\Jobs\3530\Docs\Applications\Aldi\Abutters\PZC Abutter Notice.doc

design professionals INC

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CIVIL & TRAFFIC ENGINEERS / LAND SURVEYORS / PLANNERS / LANDSCAPE ARCHITECTS
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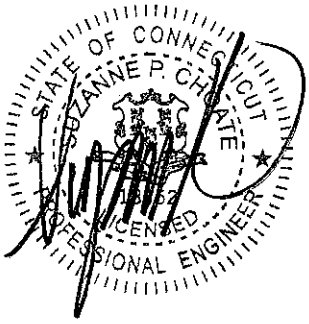
Aldi Cart Management Plan
200 Gateway Boulevard
South Windsor, Connecticut
DPI Project No. 3530
Applicant: Buckland East, LLC
August 13, 2019

On July 23, 2019, the South Windsor Planning & Zoning Commission adopted a zoning text amendment to Section 4.2.10 F. in the Gateway Development Zone, requiring a Commission-approved cart management plan for any retail business that uses shopping carts outside of the building, specifying the retail operation's cart management program to prevent the accumulation of carts in the parking lot, and in the case of grocery stores, a requirement that the carts be returned to an approved cart storage area immediately following use by the customer. The location and design of the cart storage area is also subject to approval by the Commission.

Aldi grocery stores employ a grocery cart rental system, in which the shopper unlocks a cart by inserting a quarter in a slot, uses the cart in the store and back out to their car for unloading, and then retrieves their quarter upon returning their cart to the designated cart storage area. This system has been proven to be a reliable method for cart management, with cooperation and acceptance by their customers. Grocery carts are typically returned immediately after use. If left in the parking lot, other customers grab the cart for their use, or return it to the designated storage area to collect the 25 cent deposit. A simple system that is successfully used daily at thousands of Aldi stores nationwide. It serves to keep parking lots free of carts, greatly reduces the potential for stray carts striking or blocking vehicles, and saves on operational costs, including labor, to keep costs low for this discount grocery retailer. Savings are passed on to their customers. Staff are thus available to serve their customers and restock shelves and display cases.

The proposed Aldi store will have 19,209 square feet of gross floor area. There are two convenient locations where grocery carts are stored, both on either side of the entrance and blocked from view by a decorative spec-brick concrete masonry veneer wall, 3 feet 4 inches in height, which matches the building's exterior walls. One side has a capacity for 54 carts, and the other 90, for a total storage capacity of 144 carts. To the rear of the cart storage area is a similar wall, which reaches up to a canopy, which covers the entire cart storage area and the building's entrance. This design is reflected on the engineered site plan, and in the architectural drawings.

Stormwater Management Report
ALDI
200 Gateway Boulevard
South Windsor, Connecticut



Prepared by:

Design Professionals, Inc.
21 Jeffrey Drive
South Windsor, CT 06074

July 11, 2019

Design Professionals INC

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B Post-Development Drainage HydroCAD Report
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F Drainage Area Maps
    Existing Condition Drainage Area Map
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Introduction

The Metro Realty Group, Ltd., is proposing a development at 190 Buckland Road, South Windsor, Connecticut. The property is referenced on the Town of South Windsor Tax Assessors map as Map-Lot 27-8. The proposed development will include the construction of a 19,209± sf Retail building. Associated site improvements will include but not be limited to new access driveway, parking areas for vehicles, sidewalks, landscaping, lighting, utilities, and stormwater management BMP's.

Of the 12.99 acre parcel, approximately 4.64± acres are proposed to be disturbed for the construction of the retail building and access driveway. This report supersedes the Stormwater Management Report for previously approved Chase Bank Site Plan titled "Stormwater Management Report ~ Chase Bank ~ 190, 218 & 240 Buckland Road ~ South Windsor, Connecticut" prepared by Design Professionals, Inc., and dated January 3, 2019, and revised to March 6, 2019. The proposed development will maintain existing peak flow conditions to the existing stormwater sewer system in Buckland Road. For more information, please refer to the plans entitled "Aldi ~ Site Plan ~ 200 Gateway Boulevard ~ South Windsor, CT" prepared by Design Professionals, Inc., and dated January 11, 2019, as amended.

Pre-Development Site Conditions

The existing surficial characteristics of the area to be developed can be primarily classified as farmland with woodland areas surrounding the outskirts. Review of the topography from the offsite woodland areas along the north and east property lines, indicated that runoff from this upland area currently drains through the farmlands onsite. Design Professionals, Inc. (DPI) conducted a topographic survey of this area (referenced on the Existing Conditions Drainage Area Map included in **Appendix F**). The topography of the survey indicated that in the area near the east property line within **Existing Watershed E2**, man-made wetland irrigation ditches exist. Evaluation of the topography in this area indicate that the wetlands act as a pond with an 18' broad crested weir outlet that discharges within the subject site. These wetland areas were modeled with a spillway to account for the storage that occurs there. The spill over from this area was combined with the remaining drainage area, **Existing Watershed E1**, to determine the total runoff generated. All runoff from the site will ultimately reach the stormwater sewer system in Buckland Road along the western property boundary and as such, the adjacent catch basin was selected as **Design Point #1** for the drainage analysis.

To accurately assess the impacts of the proposed development on the existing wetlands and its outlets, the limit of the area draining directly to the wetland/pond was delineated and utilized in the drainage analysis. Existing conditions watershed delineations are identified in the Existing Conditions Drainage Map located in **Appendix F**.

Based on Natural Resources Conservation Service (NRCS) Hydrologic Soil Group (HSG) mapping, soils types A, B, C, & C/ D are located on site. See **Appendix C** for The NRCS Soil Map & Data.

An evaluation was performed to quantify the peak rate of stormwater discharge offsite to **Design Point #1**. The Natural Resources Conservation Service's TR-55 Manual was followed in predicting the peak rates of runoff and volumes. HydroCAD computer modeling software was utilized.

Peak rates of stormwater runoff discharging to **Design Point #1** were evaluated for the 2-, 10-, 25-, 50- and 100-year storm events. For more information, please refer to the enclosed Pre-Development Drainage HydroCAD Report located in **Appendix A**.

Post-Development Site Conditions

The subject project proposes the construction of a 19,209± sf Retail building. All runoff generated from the parking and landscaped areas will be collected in an underground storm water catchment system and be conveyed to a proposed water quality basin (Pond P3P). All detained runoff will be treated in the wet pool volume of the basin before discharging to the storm system for Gateway Boulevard.

Flows leaving the upland wetland pond in the post-development condition exit through a proposed 30" pipe / riser. This pipe will run along the southern edge of the proposed parking lot and access driveway entrance from Buckland Road to connect into proposed manhole DMH-1 (to be conveyed to the exiting storm drainage system in Buckland Road **Design Point #1**). The existing overflow from the wetland pond will be rerouted to discharge to the proposed detention pond (Pond P3P). The proposed parking area and driveway access area will be collected by catch basins and discharged to the water quality basin. The outlet control structure for flows discharging from the basin has been sized to match / reduce the existing condition flow rates for the 2-, 10-, 25-, 50- & 100-year storm events. A small area (approximately 1,300 sf) of the proposed access drive pavement will drain toward the wetlands on 240 Buckland Road by way of a paved leak off. The additional flow (0.09, 0.15, .018, 0.21 and 0.23 cfs for the 2-, 10-, 25-, 50- and 100-year storms respectively) will be offset by the flow being removed from the existing drainage area as a result of the access road pavement. A paved leak-off will collect and discharge this additional flow to a rip-rap swale prior to reaching the existing wetland.

Borings on the adjacent site indicate groundwater conditions of 4-6 ft below the existing surface. Since our site is geologically similar, adjacent conditions are assumed to be the same. Therefore, no credit for infiltration was utilized in sizing the detention basin. Model results indicated that the proposed water quality basin (Pond P3P) will allow for 1' of free board for the 100-yr storm around the basin. Underdrains are also proposed in areas were the existing grade will be cut more than 1 foot. The underdrain system will regulate ground water elevations, should they occur, for any unexpected highwater condition.

The grading for the proposed Chase pond were slightly modified to accommodate new proposed roadway grades for Gateway Boulevard. Model results indicate that even with the modifications, the proposed water quality basin (Pond P1P) will allow for 1' of free board for the 100-yr storm around the basin and in the catch basins within the parking areas.

See **Appendix B** for the Post Development Condition HydroCAD report. The Proposed Conditions Drainage Map for the site is located in **Appendix F**.

Analysis of Results

The pre-development and post-development conditions were analyzed using HydroCAD consistent with National Resource Conservation Service (NRCS) hydrology methods. The discharge location **(Design Point #1)** was identified as a point of interest for assessing downstream effects. The following table contains the data generated from the HydroCAD software:

Reach		2 year	10 year	25 year	50 year	100 year
DP#1 – Existing Catch Basin in Buckland Road at Western Property Boundary	Pre	11.56	32.03	46.60	58.47	70.69
	Post	11.10	31.04	43.73	50.34	55.25

As seen in the table above, the subject project will result in peak runoff rates in the proposed condition that are less than the peak runoff rates of the existing condition for 2-, 10-, 25- and 100-year design storms.

Onsite Storm Sewer Collection System

The proposed subsurface stormwater collection and conveyance system was designed to adequately convey proposed runoff under 10- year storm event conditions. The design of the storm sewers followed the guidelines set forth in the Connecticut Department of Transportation's Drainage Manual. It is estimated that during a 10-year storm event, all proposed subsurface culverts will convey storm runoff without resulting in any unacceptable flooding conditions. Hydraflow Storm Sewers computer software was used for analysis. The computations are included as **Appendix D**.

Buckland Road Storm Sewer Collection System Analysis

Town as-built maps in combination with invert elevations obtained from our survey department was used to construct the model for the existing storm sewer system in Buckland Road. Observed inverts from the surveyed observations are displayed in the Proposed Conditions drainage area map attached with this report. Review of the topography for the area indicated that the outlet basin was located at the bottom of a sag for over 2,300'of Buckland Road (approximately 1,300' and 1,000' of contributing on grade catchments to the North and South of the outlet respectively). 18 contributing catchbasins were identified to the north of the outlet location, and 15 were identified to the south. Catchment area delineations for all 33 catchbasins was conducted to quantify overland bypass flow and/or underground piped flow contributed to the outfall from each basin. Of the 33 catchment areas evaluated, 13 (CB-N1 through N12 and

CB-S3) contributed directly to our evaluated outlet. Review of the pipe capacity analysis focused on the hydraulic grade line and total flow properties of these 13 storm lines. The other 23 catchment areas were included to account for contributed overland bypass conditions. The computations are included as **Appendix D**.

Buckland Road Storm Sewer Collection System Analysis Results

The analysis performed was conducted to determine whether the existing storm pipes in Buckland Road have capacity to accommodate storm flows from the proposed development without causing increases in HGL. Suitable HGL conditions were evaluated based on whether one foot of free board was provided between the observed HGL and TF of the subject catch basin as specified in chapter 11 of the CTDOT Drainage. Results indicated 7 highlighted areas of breached conditions as defined by these standards. These results are summarized below:

1. **Existing CB-N5 to Existing CB-N2 (Line 17):** 30" RCP Pipe was evaluated to be +1.63 cfs over capacity. HGL in the upstream and downstream sections of the pipe however indicated over one foot of freeboard to the top of frame.

2. **Existing CB-N6 to Existing CB-N5 (Line 18):** 30" RCP Pipe was evaluated to be +9.85 cfs over capacity. HGL in the upstream and downstream sections of the pipe however indicated over one foot of freeboard to the top of frame.

3. **Proposed (onsite) DMH-1 to Existing CB-N7 (Line 20):** Proposed 30" HDPE connection to existing catchbasin was determined to have adequate capacity. The HGL however was observed to be 0.43 ft below the top of frame of EX CB-N7. The pipe leaving EX CB-N7 however was observed to have adequate capacity and one foot of freeboard (Line 19).

4. **Existing CB-N8 to Existing CB-N7 (Line 26):** 15" RCP Pipe was determined to have adequate capacity. Just as in line 20, The HGL was observed to be 0.43 ft below the top of frame of EX CB-N7. The pipe leaving EX CB-N7 however was observed to have adequate capacity and one foot of freeboard (Line 19).

5. **Proposed WQU-1 to proposed (onsite) DMH-1 (Line 41):** Proposed 15" HDPE was determined to have adequate capacity. The HGL however was observed to be 0.68 ft below the top of frame of Proposed WQU-1.

6. **Proposed CB-1 to Proposed (onsite) WQU-1 (Line 42):** Proposed 15" HDPE was determined to have adequate capacity. The HGL however was observed to be 0.18 ft and 0.67 ft below the top of frame of Proposed CB-1 and WQU-1 respectively.

7. **Proposed CB-2 to Proposed (onsite) CB-1 (Line 43):** Proposed 15" HDPE was determined to have adequate capacity. The HGL however was observed to be 0.35 ft and 0.13 ft below the top of frames of proposed CB-2 and CB-1 respectively.

8. **Proposed YD-6 to Proposed (onsite) CB-2 (Line 44):** Proposed 15" HDPE was determined to have adequate capacity. The HGL however was observed to be 0.29 ft below the top of frames of both proposed YD-6 and CB-2.

9. **Proposed Chase Roof Drain to Proposed (onsite) CB-2 (Line 45):** Proposed 12" HDPE was determined to have adequate capacity. The HGL however was observed to be 0.29 ft below the top of frame of proposed CB-2.

10. **Proposed CB-6 to Proposed (onsite) CB-5 (Line 44):** Proposed 15" HDPE was determined to have adequate capacity. Due to proposed changes to the Chase Pond, the HGL was observed to be 0.76 ft below the top of frame of proposed CB-6.

The results indicated no conditions where the HGL is expected to be elevated above the top of frame of any proposed or existing catch basin.

Water Quality

The proposed water quality basin and forebay were sized in accordance with the 2004 Connecticut Stormwater Quality Manual, to provide a pond volume that exceeds the determined water quality volume. The proposed forebay provides storage for 74% of this water quality volume which is more that the recommended 10% by the 2004 Connecticut Stormwater Quality Manual. All catch basins will also include trap hoods for additional stormwater pre-treatment. See **Appendix E** for water quality volume calcs, and pond, and forebay stage storage reports.

ADS Barracuda Stormwater separation devices will be utilized to address water quality from the proposed catchbasin's CB-4A & CB-5A. Based on the determined water quality flow and manufacturer specs for treated peak flow rates, the hydrodynamic separator will be more than adequate to treat the required water quality flow rate. See **Appendix E** for water quality flow calculations, and ADS Barracuda manufacturer's sizing.

Conclusion

The proposed stormwater management system as discussed herein and shown on the referenced plans is appropriate for the proposed development on the subject site and should not pose any detrimental impacts to the environment.

NOTE:

RE: Project Name ALDI Site Plan of Development Appl # 19-39P

Address: 190 Buckland Road to be known as 200 Gateway Boulevard

The complete STORMWATER MANAGEMENT REPORT is available for review in the Town of South Windsor Planning Department located on the second floor of Town Hall, 1540 Sullivan Avenue.

By: _____

Traffic Impact Study

Proposed Supermarket
200 Gateway Boulevard
South Windsor, Connecticut
August 13, 2019

Prepared for:
Mr. Ben Tripp
Metro Realty Group, Ltd.
6 Executive Drive, Suite 100
Farmington, Connecticut 06032

MMI #3571-41-01

Prepared by:
MILONE & MACBROOM, INC.
99 Realty Drive
Cheshire, Connecticut 06410
203-271-1773
www.mminc.com

MILONE & MACBROOM
ENGINEERING | PLANNING | LANDSCAPE ARCHITECTURE | ENVIRONMENTAL SCIENCE

MILONE & MACBROOM

August 13, 2019

Mr. Ben Tripp
Metro Realty Group, Ltd.
6 Executive Drive, Suite 100
Farmington, CT 06032

RE: Traffic Impact Study
Proposed Supermarket
200 Gateway Boulevard
South Windsor, Connecticut
MMI #3571-41-01

Dear Ben:

Milone & MacBroom, Inc. (MMI) has completed a traffic impact study for a proposed 20,000-square-foot (SF) supermarket development at 200 Gateway Boulevard in South Windsor, Connecticut. The supermarket will be located to the east of the recently approved drive-in bank of 190 Buckland Road. Site access will be provided via the 190 Buckland Road site driveway, which intersects with Hemlock Drive. Figure 1 shows the location of the site.

This traffic study involved a number of tasks including data collection, the determination of future background traffic, an estimation of site traffic volumes for the proposed development, and an evaluation of safety as well as expected traffic impacts and improvements. This report summarizes our data collection, analyses, and findings.

Proposed Development

The proposed development will consist of a 20,000-SF supermarket and will be located on the east side of Buckland Road. Access to the site will be via the 190 Buckland Road site driveway opposite Hemlock Drive, which serves as the northern access to the Promenade Shops at Evergreen Walk, an outdoor retail mall. This intersection is currently signalized and is being upgraded to accommodate the 190 Buckland Road approach.

Study Area Roadway and Site Environs

Buckland Road is classified as a minor urban arterial and is home to the Promenade Shops at Evergreen Walk and numerous other retail shopping centers. Buckland Road runs north-south to the west of the site. In the vicinity of the site, the roadway is characterized by two southbound and two northbound travel lanes with dedicated turn lanes at the intersection with a raised median. There are approximately 1- to 2-foot shoulders as well as sidewalks along both sides of the road. The posted speed limit is 40 miles per hour (mph).

For the purpose of this traffic study, the following signalized intersections were included in the study area for analysis:

- Buckland Road at Hemlock Drive
- Buckland Road at Tamarack Avenue
- Buckland Road at Cedar Avenue

Intersection Sight Distance

Visibility from the site driveway for the proposed development was reviewed using minimum intersection sight distance (ISD) guidelines from the Connecticut Department of Transportation (CTDOT). For the posted speed limit of 40 mph, the CTDOT minimum ISD guideline is 445 feet. The sight distances looking left and right from the location of the site driveway meet or exceed the 445-foot ISD guidelines.

Crash History

Traffic crash data for the latest 3-year period on record, August 1, 2016, through August 1, 2019, for the study intersections was obtained from the University of Connecticut's Connecticut Crash Data Repository. The crash data collected for this 3-year period is depicted in Table 1 and is summarized by intersection, crash severity, and collision type.

TABLE 1
Crash Summary

LOCATION	CRASH SEVERITY				TYPE OF COLLISION						
	Fatal	Injury	Property Damage Only	TOTAL	Angle	Head-On	Rear-End	Sideswipe, Same Direction	Sideswipe, Opposite Direction	Other	TOTAL
Buckland Road at Cedar Avenue	1	1	4	**6**	1	0	3	1	0	1	**6**
Buckland Road at Hemlock Drive	1	2	8	**11**	0	0	11	0	0	0	**11**
Buckland Road at Tamarack Avenue	1	7	15	**23**	3	0	19	0	0	1	**23**
TOTAL	**3**	**10**	**27**	**40**	**4**	**0**	**33**	**1**	**0**	**2**	**40**

Source: University of Connecticut's Connecticut Crash Data Repository from August 1, 2016, to August 1, 2019

A total of 40 accidents were reported during the latest 3-year period on record at the intersections within the study area. Sixty-seven percent of reported collisions resulted in property damage only with the remaining 33 percent resulting in minor or possible injuries. No fatalities or pedestrian involvement were reported. The most common collision type was rear-end collisions, accounting for 85 percent of all collisions.

Existing Traffic Volumes

Manual turning movement traffic counts were previously conducted at the study intersections to capture peak travel periods in October 2018. The counts were conducted from 7:00 a.m. to 9:00 a.m. for the weekday morning peak, 4:00 p.m. to 6:00 p.m. for the weekday evening peak, and 11:00 a.m. to 1:00 p.m. for the Saturday midday peak. Based on discussions with the CTDOT Bureau of Policy and Planning, we were directed to use CTDOT-approved 2017 buildout traffic volumes from the Evergreen Walk development as the existing traffic volumes for our traffic evaluation.

The existing weekday morning, weekday afternoon, and Saturday midday peak-hour traffic volumes are illustrated in Figures 2, 3, and 4, respectively.

New Site Traffic

The site traffic for the proposed supermarket was estimated using standard statistical data published by the Institute of Transportation Engineers (ITE)[1] and applying an adjustment factor for internally captured trips and pass-by trips. "Internally captured trips" are trips to the proposed development from another destination on the same site. These trips are not new vehicles trips to the site directly impacting the adjacent roadway network. The recently approved drive-in bank should be in place at this time and, therefore, expected to generate to internal capture. A 5 percent reduction factor was used to account for internally captured trips. "Pass-by trips" refer to site trips made by patrons who were already on the roadway with an original destination other than to the site. Based on CTDOT guidelines, a 20 percent pass-by trip reduction in total vehicle trips was applied.

TABLE 2
New Site Traffic – 200 Gateway Boulevard
South Windsor, Connecticut

LAND USE	NUMBER OF VEHICLE TRIPS								
	WEEKDAY MORNING PEAK HOUR			WEEKDAY AFTERNOON PEAK HOUR			SATURDAY MIDDAY PEAK HOUR		
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
Supermarket (20,000 SF)	47	29	76	89	96	185	106	101	207
Internal Capture (5%)	- 2	- 2	- 4	- 5	- 5	- 10	- 6	- 6	- 12
Pass-by (20%)	- 8	- 8	- 16	- 20	- 20	- 40	- 20	- 20	- 40
Net New Trips – Adjusted (75%)	***37***	***19***	***56***	***64***	***71***	***135***	***80***	***75***	***155***

Source: *Trip Generation, 10th Edition*, Institute of Transportation Engineers, 2017 (ITE #850 – Supermarket)

After adjusting for expected pass-by trips, it is estimated that the proposed supermarket would generate approximately 56 total new vehicle trips (37 entering and 19 exiting) during the morning peak hour, 135 total new vehicle trips (64 entering and 71 exiting) during the afternoon peak hour, and 155 total new vehicle trips (80 entering and 75 exiting) during the Saturday midday peak hour.

[1] *Trip Generation, 10th Edition*, Institute of Transportation Engineers, 2017

New Site Traffic Distribution

The anticipated directional distribution of site-generated traffic was based on the review of census data and travel patterns observed from existing traffic volumes. It is estimated that approximately 35 percent of the new site traffic would approach/depart the site to the north and 65 percent from the south.

Figure 5 illustrates the site traffic distribution for the proposed supermarket. Figures 6, 7, and 8 show the assignment of the anticipated site traffic on the adjacent road network during the weekday morning, weekday afternoon, and Saturday midday peak hours, respectively.

Future Background Traffic

For the purpose of this study, a future horizon year of 2021 was used for analysis. It is anticipated that the supermarket development will be opened by this time as will the drive-in bank. For continuity purposes, the future 2020 combined/buildout traffic volumes from the 190 Buckland Road drive-in bank study were projected to year 2021 using an annual growth rate of 0.6 percent as suggested by CTDOT's Bureau of Policy and Planning. Previous discussions with the town and CTDOT's Bureau of Policy and Planning indicate that there are no other approved significant developments within the study area at this time to include in background traffic volumes aside from the drive-in bank. The future background (no-build) volumes for the weekday morning, weekday afternoon, and Saturday midday peak periods are shown in Figures 9, 10, and 11, respectively.

Future Combined Traffic

The estimated site traffic volumes were then added to the 2021 background traffic volumes to derive the future combined (build) traffic volumes. The combined traffic volumes constitute future volumes with the supermarket development in place. Figures 12, 13, and 14 depict the future 2021 combined traffic volumes at the study intersections for the weekday morning, weekday afternoon, and Saturday midday peak hours, respectively.

Traffic Impact

The study intersections were evaluated by means of capacity analysis techniques. Levels of Service (LOS) were then determined, which are qualitative measures of the efficiency of operations in terms of delay and inconvenience to motorists. A description of the various LOS designations, A through F, is given in the Appendix. LOS A describes operations with very short average control delay per vehicle while LOS F describes operations with longer than average delays. LOS D is generally considered acceptable in urban environments.

It should be noted that the traffic signal upgrades and geometric improvements at the site driveway were assumed in place for both the future background and combined conditions. The analysis worksheets are also enclosed in the Appendix. Table 3 summarizes the findings of LOS at the study intersections under future (2021) conditions without (background) and with (combined) the estimated new site traffic generated by the proposed development.

TABLE 3
Capacity Analysis Summary

INTERSECTION	WEEKDAY MORNING PEAK HOUR		WEEKDAY AFTERNOON PEAK HOUR		SATURDAY MIDDAY PEAK HOUR	
	BACKGROUND	COMBINED	BACKGROUND	COMBINED	BACKGROUND	COMBINED
Buckland Road at Cedar Avenue						
Eastbound Left	C	C	C	C	D	D
Eastbound Right	B	B	A	A	A	A
Northbound Left	A	A	A	A	B	B
Northbound Through	A	A	A	A	A	A
Southbound Through	A	A	B	B	B	B
Southbound Right	A	A	A	A	A	A
Overall LOS	**A**	**A**	**B**	**B**	**B**	**B**
Buckland Road at Hemlock Drive/Site Driveway						
Eastbound Left	B	C	C	C	C	C
Eastbound Through/Right	A	A	A	B	B	B
Westbound Left	B	B	C	C	C	C
Westbound Through/Right	B	B	C	B	B	B
Northbound Left	A	A	C	C	C	D
Northbound Through/Right	A	A	B	C	C	B
Southbound Left	A	A	A	B	C	A
Southbound Through/Right	A	B	C	D	C	D
Overall LOS	**A**	**A**	**C**	**C**	**C**	**C**
Buckland Road at Tamarack Avenue/Private Driveway*						
Eastbound Left/Through	C	C	D	D	D	D
Eastbound Right	A	A	A	A	B	B
Westbound Left	C	C	E	E	E	E
Westbound Through	C	C	D	D	D	D
Westbound Right	A	A	A	A	A	A
Northbound Left	C	C	D	D	E	E
Northbound Through	B	B	C	C	C	C
Northbound Right	A	A	A	A	A	A
Southbound Left	C	C	E	E	E	E
Southbound Through/Right	B	B	D	D	E	F (E)
Overall LOS	**B**	**B**	**C**	**C**	**D**	**D**

* *Future combined LOS results account for signalization upgrades.*
( ) – reflects timing adjustments

Findings and Recommendations

Based on the LOS analysis conducted, the following are our findings and recommendations with regard to traffic operations at the study intersections with the proposed supermarket in place.

1. Buckland Road at Cedar Avenue – The intersection of Buckland Road at Cedar Avenue is expected to operate at an acceptable overall LOS B or better under future (2021) proposed supermarket build conditions; all movements are also expected to operate at LOS D or better and will therefore not require any mitigation.

2. Buckland Road at Hemlock Drive/Site Driveway – This intersection is expected to operate at an acceptable overall LOS C or better under future (2021) proposed supermarket build conditions. All movements are also expected to operate at LOS D or better.

3. Buckland Road at Tamarack Avenue – The Buckland Road/Tamarack Avenue intersection is expected to operate at overall LOS D or better during the future 2021 build conditions. Some movements (specifically the northbound and southbound left turns and westbound left) are anticipated to operate at LOS E under future background conditions without the proposed supermarket in place and to continue to operate at LOS E under future build conditions without any improvements. Traffic signal timing revisions are proposed to mitigate any impacts of the proposed supermarket traffic.

Summary and Conclusions

A study was conducted to assess the traffic impacts of the proposed supermarket development in South Windsor, Connecticut. Traffic generated by the planned development was estimated based on review of industry standards. Future traffic conditions were estimated with and without the supermarket in place, and capacity analysis of future scenarios was performed.

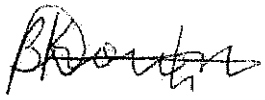
Based on our analysis, it is our opinion that the surrounding roadway system would be able to accommodate traffic that would be generated by the proposed supermarket development with the necessary intersection and traffic signal revisions.

Furthermore, after review of driveway sight lines and crash history, it does not appear that there will be any significant safety concerns at the site driveway or on the existing roadway system.

We hope this report is useful to you and the Town of South Windsor in assessing the traffic impact from this development. If you have any questions or need any further information, please do not hesitate to contact me.

Very truly yours,

MILONE & MACBROOM, INC.



Kwesi Brown, PE, PTOE, Associate
Manager of Transportation Engineering

Enclosures

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NOTE:

RE: Project Name ____ALDI Site Plan of Development____Appl # __19-39P____

Address: _____190 Buckland Road to be known as 200 Gateway Boulevard

The complete TRAFFIC IMPACT STUDY is available for review in the Town of South Windsor Planning Department located on the second floor of Town Hall, 1540 Sullivan Avenue.

By:_____