

Town of Richmond, Rhode Island 5 Richmond Townhouse Road, Wyoming, RI 02898 <u>www.richmondri.com</u>

Date:May 23, 2023To:Planning BoardFrom:Shaun Lacey, AICP, Town Planner

STAFF REPORT

Agenda Item D1: Major Land Development Master Plan application of GX3 LLC, 250 David Court, Calverton, NY 11933 for a proposed warehouse and distribution facility totaling 200,000 square feet

*Plat/Lot: 5B/59

*Address: 38 Kingstown Road

*Zone: General Business (GB) and Industrial (I)

*Acreage: 48 acres (approximate)

*Current Use: Lumber, construction materials sales

*Proposed Use: Warehouse

*Owner/Applicant: GX3 LLC

Recommended Board Action

Approve the Master Plan application subject to the listed findings and condition(s)

Project Overview

The applicant has filed a Master Plan application for a warehouse and distribution facility at Riverhead Building Supply located at 38 Kingstown Road, encompassing approximately 17 acres. The proposal adds a new warehouse that would be constructed in two phases along a forested portion of the property totaling 200,000 square feet. The building would be used for storage and distribution of building and lumber materials, and will include an area for office use. Portions of the site adjacent to the new building would provide outdoor stockpiling of lumber and building materials. Due to the commercial nature of the use and the coordinated siting of structures, the project is considered a major land development project and requires four stages of review: Pre-application, Master Plan, Preliminary Plan and Final Plan. Pre-application review occurred on January 24, 2023. A Planning Board site walk at the property occurred on February 18, 2023. The minutes from the January 24, 2023 Planning Board meeting and February 18, 2023 site walk are attached for reference.

The subject property is located at 38 Kingstown Road. The site totals just over 48 acres in area and is irregular in shape, but generally flat in topography. Riverhead Building Supply, a lumber and construction materials sales business, operates along the front and center of the property. The remainder of the site is vegetated along the north and easterly portions of the

property. There are several existing structures on the premises used for sales, storage, and distribution. Other areas of the site are used for outdoor stockpiling of construction materials. Wetlands are located along the east side of the property, but away from any current or proposed business activities. The west side of the site is located within a Natural Heritage Area. Correspondence from the RI Department of Environmental Management (RIDEM) identified sensitive plant and insect species on or in near proximity to the site. The applicant has requested to forego a flora and fauna assessment of the property since RIDEM has authority to require a study at the time that a RIPDES permit application is submitted for review. Soils include variations of Hinckley and Udorthents. Abutting properties to the site include a supermarket (Stop & Shop) and a gravel extraction and quarrying operation (Richmond Sand and Stone). The site is split-zoned, with the existing and proposed activities located within the General Business (GB) zoning district. The east side of the property is zoned Industrial (I). Surrounding properties are zoned GB and Planned Unit Development – Village Center (PUD-VC). The Future Land Use Map designation for the site is General Business and Industrial.

Proposal and Analysis

The project proposes to maintain the existing structures on site and construct a new warehouse in two phases, totaling 200,000 square feet in area. The first phase would construct a 120,000 square foot warehouse with an office and docking and loading areas. A second phase would provide an additional 80,000 square feet of warehouse space along with additional docking and loading areas. Other improvements around the perimeter of the building include stormwater runoff treatment areas, an outdoor stockpiling area, parking, landscaping, lighting, refuse collection, and utilities. Warehouse design elements and building materials include a shallow-pitched roof with translucent paneling, awnings along door and window openings, metal panel siding, and a standing seam metal roof. One, 97 square-foot wall-mounted sign would be affixed to the building above the entry. The proposed building height is 31 feet. The siting of the warehouse complies with all dimensional requirements prescribed for the GB zoning district, providing 75 feet from the rear (north) property line and 95 feet from the side (west) property line. The floor plans and building elevations are attached for reference. Since the limit of disturbance associated with the proposal encompasses several acres, the project will require a RIPDES permit from RIDEM.

The site is accessed by a driveway along Kingstown Road. A paved interior driveway provides access and parking to each of the existing buildings. To accommodate access to the proposed warehouse, the paving would be extended and vegetative clearing would be necessary along the north side of the property. A 25-foot-wide paved road is proposed around the perimeter of the warehouse for enhanced access. The Fire Department shall require that this perimeter road remain unobstructed.

The design concept provides a total of 83 parking spaces (49 new spaces) where 266 spaces are required. The applicant's project narrative anticipates a parking demand of 76 total spaces based upon staffing resources. Chapter 18.29.080 of the Zoning Ordinance permits the Planning Board to increase or decrease the number of parking spaces associated with development applications provided that the basis for the increase or decrease is included in

its written approval. Staff supports a reduction in parking requirements based upon the current disposition of the property and its operations, along with the anticipated staffing needs provided by the applicant. One ADA-compliant parking stall is located in front of the entry to the warehouse.

The project will connect to town water service and rely upon an onsite wastewater treatment system to serve the new warehouse (including the office space contain within). Hydraulic modeling of fire flow requirements and impact upon the water distribution system pressures and pressure gradient was prepared by the applicant. The Water Department has reviewed and accepted the analysis. Due to the anticipated delivery and loading schedule associated with the development, a traffic impact analysis was performed to ensure that any potential traffic impacts are mitigated. The analysis identifies a trip generation addition of 48 peak hour morning and 50 peak hour afternoon trips. In addition, there would be 18 weekend (Saturday) peak hour morning trips generated. A peer review of the traffic impact analysis accepted the methodology and conclusions found within the report with minor recommendations and/or considerations. Staff recommends a condition of approval that the applicant revise the traffic impact analysis in accordance with the suggestions provided by the Town's on-call traffic consultant (Bryant Associates, Inc.) at the time of Preliminary Plan review.

The project includes a lighting and landscape plan. A total of 63 lighting fixtures are proposed around the building perimeter, stockpiling area, and parking areas. All fixtures are angled downwards and dark-sky compliant, in-keeping with Town regulations. A photometric study included with the project plans indicates that the proposed lighting would maintain a net change of zero footcandles along the rear and side property boundaries. The landscape plan proposes a range of groundcover, shrubs and trees along the front, side, and rear of the property. Plantings include maple, cedar, sweetgum, crabapple, spruce, pine, oak and hemlock trees, chokeberry, butterfly, hinoki, witchhazel, hydrangea, inkberry, bayberry, rhododendron, and spirea bushes, and assorted grasses and groundcover. The project also includes wayfinding signage to guide internal circulation to all buildings, including the proposed warehouse.

Comprehensive Community Plan Consistency

The project complies with the Comprehensive Community Plan in the following ways:

- Land Use Goal LU 1: Support development without adversely affecting public health or degrading the quality of man-made and natural environments, or the Town's rural character. The project provides a 200,000 square-foot warehouse and distribution facility within the Wyoming/Route 138 Infill and Growth Area, as identified on the Future Land Use Map, where public water and adequate supporting infrastructure exist. The project is carefully planned to ensure that impacts associated with grading, drainage, traffic, and lighting will be appropriately mitigated.
- Economic Development Goal ED1: Promote economic activities that enhance and complement the rural character and natural environment of Richmond; and Policy ED4: Optimize the supply and choice of land capable of supporting business and industries. The project enhances an existing

lumber and building supplies business by introducing a warehouse and distribution facility along an arterial roadway where commercial development is encouraged.

Zoning Ordinance and RIGL Compliance

The proposal is located within the General Business zone, which provides areas for commercial uses that depend on greater volumes of vehicular traffic and highway related uses. The addition of a 200,000 square-foot warehouse and distribution facility supports an existing business and promotes economic development along the Route 138 corridor. The project meets all dimensional requirements within the General Business zoning district, as well as all submission and procedural requirements as defined in Chapter 18.38 of the Town of Richmond's Zoning Ordinance.

The project meets the intent of the following state laws:

RIGL 45-24-30:

(2) Providing for a range of uses and intensities of use appropriate to the character of the city or town and reflecting current and expected future needs.

(3) Providing for orderly growth and development that recognizes:

(i) The goals and patterns of land use contained in the comprehensive plan of the city or town adopted pursuant to chapter 22.2 of this title;

(ii) The natural characteristics of the land, including its suitability for use based on soil characteristics, topography, and susceptibility to surface or groundwater pollution;

(iii) The values and dynamic nature of coastal and freshwater ponds, the shoreline, and freshwater and coastal wetlands;

(iv) The values of unique or valuable natural resources and features;

(vii) The use of innovative development regulations and techniques.

(13) Providing for the coordination of land uses with contiguous municipalities, other municipalities, the state, and other agencies, as appropriate, with regard to resources and facilities that extend beyond municipal boundaries or have a direct impact on that municipality.

(15) Providing for procedures for the administration of the zoning ordinance, including, but not limited to, variances, special-use permits, and procedures for modifications where appropriate.

Land Development and Subdivision Regulations Consistency

The project meets the required findings for approval as detailed in Article 3.1.1 of the Land Development and Subdivision Regulations:

- a) The proposal is consistent with the Comprehensive Community Plan, or, if there are inconsistencies, they have been satisfactorily addressed;
- b) The proposal complies with the zoning ordinance.
- c) The proposal, including any conditions of approval, will not have any significant negative impact on the environment.
- d) The proposal does not create any lots for development with physical constraints that would make construction on any lot impracticable.
- e) Each lot has adequate permanent physical access to a public street.
- f) The proposal provides safe circulation of pedestrian and vehicular traffic, adequate stormwater control, suitable building sites, and preserves natural, historical, or cultural features that contribute to the attractiveness of the community.
- g) The design and location of streets, building lots, utilities, drainage improvements and other improvements minimize flooding and soil erosion.
- h) The amount, location, use, nature and design of the open space satisfies the standards and requirements of these regulations.

<u>Summary</u>

The proposal complies with the Town's Comprehensive Community Plan, Land Development and Subdivision Regulations, Zoning Ordinance and Rhode Island General Laws. Staff therefore recommends approval of the application subject to the recommended findings and condition(s).

Recommended Condition(s) of Approval

1. At the time of Preliminary Plan review, the applicant shall revise the traffic impact analysis to address the recommendations provided by Bryant Associates, Inc., as described in the peer review response summary dated May 2023.

Attachments:

- 1. Planning Board meeting minutes dated January 24, 2023
- 2. Planning Board site walk meeting minutes dated February 18, 2023
- 3. Master Plan application dated March 15, 2023
- 4. Application Notification List
- 5. Owner Authorization form
- 6. Project narrative
- 7. Master Plan Checklist
- 8. Property notification list
- 9. Hydraulic modeling assessment correspondence prepared by C&E Engineering dated February 20, 2023
- 10. Water Department (Northeast Water Solutions, Inc.) correspondence to applicant dated March 16, 2023

- 11. RIDEM Soil Evaluation Form
- 12. RIDEM OWTS Inspection Report dated February 28, 2023
- 13. Traffic Impact Analysis prepared by F.A. Hesketh & Associates, Inc. dated January 6, 2023 (revised April 10, 2023)
- 14. Traffic Impact Analysis peer review response letter prepared by Bryant Associates, Inc. dated May 2023
- 15. Project plans prepared by CLA Engineers, Inc. dated January 31, 2023
- Floor plans and building elevations prepared by Tecton Architects dated March 30, 2023
- Land survey prepared by Loureiro Engineering Associates, Inc. dated October 16, 2018
- 18. CLA Engineers, Inc. correspondence dated May 8, 2023

Click 🕑 to view the entire meeting or click any video icon below to jump to that section of the meeting.

PLANNING BOARD MEETING MINUTES January 24, 2023 – 6:30 PM

Present were: Vice Chair Phil Damicis, Andrea Baranyk, Dan Madnick, and Bryce Kelley

Richmond Staff Present: Town Planner Shaun Lacey, Town Solicitor Karen Ellsworth

A. Call to Order 🕑

Chair P. Damicis called the meeting to order at 6:30 p.m.

B. Minutes: 🕨

1) December 13, 2022 (continued from January 10, 2023)

D. Madnick moved to approve the minutes of December 13, 2022 as amended. A. Baranyk seconded the motion. Voting in favor: D. Madnick, P. Damicis, and B. Kelley. A. Baranyk abstained.

2) January 10, 2023

D. Madnick moved to approve the minutes of January 10, 2023 as amended. B. Kelley seconded the motion. Voting in favor: D. Madnick, P. Damicis, Andrea Baranyk, and B. Kelley.

C. New Business

 Major Land Development <u>Pre-application</u> of GX3 LLC, 250 David Court, Calverton, NY 11933 for a proposed warehouse and distribution facility totaling 200,000 square feet located at 38 Kingstown Road, AP 5B Lot 59, zoned GB and I

S. Lacey presented an overview of the pre-application to Board members. The project proposes 200,000 square feet of warehouse and office space designed in two phases. The first phase would construct 120,000 square feet of warehouse and office space, while phase two would add 80,000 square feet of warehouse space. A total of 89 parking spaces are proposed. The total limit of disturbance pertaining to the development is approximately 16 acres. The property is zoned General Business and Industrial.

S. Lacey asked that the Board consider the warehouse use as an extension of the existing lumber yard or as an independent use. He noted that warehousing as an independent use would not permit outdoor stockpiling areas. D. Madnick noted that Riverhead Building Supply already has stockpiling areas on the site, and did not believe that the proposed warehouse should be considered a separate activity. P. Damicis agreed and thought that the warehouse was an extension of the lumberyard. S. Lacey recommended that a traffic impact analysis be prepared and that a biological survey of the site be conducted since a portion of the project area falls within a State-identified Natural Heritage Area.

Bob DeLuca, on behalf of CLA Engineers, Inc. walked the Board through the pre-application. He introduced his client, Kevin Goodell of Riverhead Building Supply, Tom Foley on behalf of Carlin Construction, and the project architect Justin Hopkins from Tecton Architects. B. DeLuca discussed the site context map, existing conditions and resources map, land use cover, soils, siting of the building, the proposed parking, and the proposed drainage and utilities. He noted that a traffic impact analysis has been performed and will be submitted with the Master Plan filing. The parking plan is based upon 50 total employees.

5/16/23, 10:42 AM

Richmond RI - ClerkBase

J. Hopkins discussed the building design and space needs of the warehouse and office area. The building relies on simple design forms and includes a shallow-pitched gabled roof and canopies over loading docks and door openings.

K. Goodell stated that the warehouse will not include any retail activities but allows for distribution and storage of materials within a controlled environment. He said this warehouse location supplements Riverhead Building Supply operations in Connecticut, Massachusetts, and other parts of Rhode Island. He also stated that the roof design would provide for solar panels.

A. Baranyk asked about the parking ratio. S. Lacey replied that the parking calculation was based upon one parking space for every 750 square feet of warehouse space. The Board agreed that a reduction of parking spaces was appropriate based upon the anticipated operations. A. Baranyk asked if the project was located within an aquifer overlay. S. Lacey replied that it does not.

D. Madnick stated that he would like to see a delineated traffic circulation plan that includes striping and wayfinding signage within the property at the time of Master Plan review. He also requested that a lighting plan and landscaping plan be provided. Lighting must be dark-sky compliant. He requested that the drainage improvements follow LID methods and include a raingarden to manage the stormwater runoff and that the existing portions of the lumberyard include new landscaping. The Board stated that a vegetated buffer along the west and north property lines are important to maintain or install.

The Board agreed to conduct a site walk with the applicant prior to the Master Plan filing. They asked staff to coordinate an appropriate time.

2) Discussion of <u>recreational</u> marijuana sales 🕩

S. Lacey stated that voters approved a referendum question on November 8, 2022 to allow for recreational sales of marijuana in Richmond. He noted that the use regulations should be amended to reflect support for that type of activity.

K. Ellsworth suggested that staff reach out to other communities to better understand traffic impacts associated with recreational sales. P. Damicis suggested that a separate use code be created and that such uses be subject to development plan review.

D. Announcements and/or Informational Items 🕨

1) Updated list of subdivision, land development and development plan review applications

S. Lacey provided the most recent list of approved and pending projects to the Board. The Board asked that the title of the spreadsheet be changed to reflect the list of land development projects.

E. Adjournment

B. Kelley moved to adjourn. A. Baranyk seconded the motion. All ayes.

Meeting ended at 7:36 p.m.

Town of Richmond PLANNING BOARD

Minutes of February 18, 2023 – 8:00 a.m.

SITE WALK – 38 Kingstown Road, AP 5B/59

Planning Board members present:	Andrea Baranyk
Freedom	Kevin Stacey
	Melissa Chalek
	Bryce Kelley
Also Present:	Shaun Lacey, Town Planner
	Miles Lacey
	Darren Heyward, CLA
	Engineers, Inc.
	Justin Hopkins, Tecton
	Architects
	Kevin Goodell, Riverhead
	Building Supply
	Bob DeLuca, CLA Engineers,
	Inc.

The site walk began at Riverhead Building Supply located at 38 Kingstown Road at 8:00 a.m. The meeting was informal. Planning Board members did not make any motions or vote on any matter.

Attendees introduced themselves. The project applicant, Kevin Goodell, welcomed all those in attendance and provided a brief overview of the development proposal. The project proposes to construct 200,000 square feet of office and warehouse space at the rear of the property, along with updated landscaping, wayfinding signage, circulation, and lighting improvements.

The site visit began by examining the street frontage. K. Goodell indicated an intent to relandscape the front of the property to help balance the loss of vegetation at the rear of the site. He also stated that the development will improve circulation patterns internal to the property. Board members and members of the applicant's design team walked the area intended for new development and observed the property gradient and the geologic features found throughout the site. Members of the Board and development team discussed the vegetated buffer to the proposed building and site improvements from the north and west property boundaries. S. Lacey noted that the proposed vegetated buffer should provide a mix of existing and proposed plantings and incorporate pollinator-friendly groundcover for the proposed detention basins as discussed at the time of pre-application review.

Darren Heyward of CLA Engineers, Inc. stated that although the site is located partially within a Natural Heritage Area, his client would prefer to not provide a field survey to determine if any sensitive plant or insect species are observed on the property since RIDEM evaluates the topic at the time of freshwater wetland and/or RIDPES permitting. S. Lacey noted that previous field studies assist the State in its decision-making. The Board noted that they could consider waiving a field survey but reserved any final decision to Master Plan review.

The site tour concluded at the front of the property. S. Lacey thanked everyone for their attendance. The site walk adjourned at approximately 9:00 am.

Attested by:

5/16/23, 10:42 AM Town Planner



Town of Richmond, Rhode Island

Town Hall, Wyoming, RI 02898 Planning Department 401/539-9000 Ext. 6

Application for Land Development or Subdivision Approval

This application is submitted pursuant to the Richmond Land Development and Subdivision Regulations. Review stage: □ Pre-application conference X Master Plan □ Preliminary Plan □ Final Plan

□ Administrative Subdivision

Date:

Applicant and Owner:

Applicant: <u>GX3 LLC</u>	Phone: (631) 300-5859
Address: 250 DAVID COURT	Town, State, Zip:CALVERTON, NY 11933
Owner (if the applicant is not the owner):	
Address:	Town, State, Zip:
Property Address (street number and street): _	38 Kingstown Road (Route 138)
Assessor's Map: <u>5B</u> Lot Number:	59 Zoning District: GB & I

Sec. 5.1 of the Land Development and Subdivision Regulations requires the following materials to be submitted for this application:

- 1. The material required by the applicable checklist in Article 15.
- 2. A letter of transmittal.
- 3. An Owner Authorization form if the applicant is not the owner.
- 4. A copy of the applicable checklist in Article 15 with notations indicating what is being submitted.
- 5. The application fee and a deposit for the project review fees. See Sec. 11.3.1
- 6. The Application Notification List, if applicable. See Article 15 J.

Applications are reviewed on an ongoing basis. Applications that have been certified complete two weeks prior to a scheduled Planning Board meeting will be placed on the agenda. No application material will be accepted by the Planning Board for consideration the night of a meeting.

Signature: I hereby attest that the information contained in this application is true to the best of my knowledge. By signing this application the applicant and owners of the subject property agree to allow the Planning Board and other Town representatives to inspect the subject property.

Signature of Applicant: .

APPLICATION NOTIFICATION LIST

Please list the name, ad	dress, phone number(s), and email for each person who represents you	ır
application who requires	s notification of meetings or correspondence regarding actions.	
Date:	Project Name: Riverhead Building Supply - Richmond Expansion	

Plat/Lot 5	B/59 Address/Stree	et 38 K	(ingstown Road (Route 138)
Applicant:	GX3, LLC		
Address	250 David Court, Calver	ton, NY ⁻	11933
Phone		Email	
Owner (if d	ifferent than applicant):		
Address			
Phone		Email	
Attorney:			
Address			
Phone		Email	
Engineer:	CLA Engineers, Inc		
Address	317 Main Street, Norwich, C	CT 06360)
Phone	(860) 886-1966	Email	dhayward@claengineers.com
Surveyor:			
Address			
Phone		Email	
<u>Architect:</u>	Tecton Architects		
Address	17 Railroad Ave, Westerly	y, RI 02	891
Phone (86	60) 990-6498	Email	justinh@tectonpc.com
Landscape .	Architect:		
Address			
Phone		Email	
	resentatives Requiring No		on:
	Carlin Construction Comp	•	
Address 4	5 Shaw's Cove, Suite 103.		
Phone (860)) 444-2567	Email	jcarlin@carlinconstruction.com

Other Representatives Requiring Notification:

Name DME-Design

Address 470 James Street, STE 007, New Haven, CT 06513

Phone (860) 704-9082 Email rmartinez@dme-design.com

OWNER'S AUTHORIZATION

Town of Richmond, Rhode Island APPLICATION FOR APPROVAL OF SUBDIVISION OR LAND DEVELOPMENT PROJECT

If the owner of the property is a business entity:

I authorize submission of the application for subdivision or land development approval to the Richmond Planning Department.

I further authorize officers and employees of the Town of Richmond, including the Administrative Officer and members of the Planning Board, to enter on to the above property at reasonable times with prior notice while the application is pending.

DATE: 11/3/22 SIGNATURE:

NAME OF BUSINESS: GX3 LLC

TITLE OF PERSON SIGNING THIS AUTHORIZATION: OWNER

STATE OF RHODE ISLAND COUNTY OF WASHINGTON

Candise M. Bouchard NOTARY PUBLIC Print name: Candise M. Bouchard My commission expires: 12/27/2025 Application for Master Plan – Town of RichmondProject: Riverhead Building Supply - Richmond ExpansionApplicant: GX3 LLCAddress: 138 Kingstown Road, RichmondAssessor's Plat: 5BLot #: 59

General Description:

The property is 138 Kingstown Road, Richmond. The existing parcel's area is approximately 48.3 Acres. Approximately one-third of the property is currently developed as commercial storage and retail sale of lumber and building products for the Riverhead Supply business. The remainder of the site is undeveloped land comprising woodland. Wetlands exist on the east side of the property, which have been delineated. These will not be impacted by the development. The topography is undulating and ranges in elevation from approximately 120' to 210'. Geotechnical investigations confirmed the underlying soils to be sand and gravel.

The proposed development involves expansion of the existing developed property to include a new 200,000 S.F. storage building, external paved lay-down areas and associated parking. The area of new development is approximately 716,000 S.F. (16.5 Acres). Access to the new building will be via the existing driveway located on Kingstown Road (Route 138). New stormwater management will include catch basins and subsurface pipe that will discharge to infiltration/water quality basins. Power and communications will be brought to the new building via an existing utility pole located on the property. A new water connection is proposed to the existing public water main in Kingstown Road.

A new septic system is proposed to service the proposed building. Test pits were conducted in the area of the proposed leach fields on February 28, 2023. Soil evaluation was performed a RI licensed soil Evaluator and test pits witnessed by RIDEM. Copies of the Site Evaluation Forms are included in this application.

Business hours of operations will be 05:00 to 17:00 and vehicle deliveries will occur throughout the day up until 16:00, as currently exists. The new development will generate approximately 15 additional incoming and outgoing material deliveries. The development will also introduce new employees. The total number of employees expected work between the existing and new development will be approximately 25 to 30.

Proposed Parking Requirements:

There are currently twenty-four (24) employees working at the existing site. There are 34 parking spaces adjacent to the existing retail building that serve both employees and customers. The proportion of parking spaces to employees is therefore 34 / 24 = 1.4 spaces per employee.

There will be 25-30 employees working in the new building with some of these being transferred from the existing building. There will be approximately 50 employees in total.

The proposed building is comprised of storage/distribution (warehousing) with minimal office area. Retail operations are proposed to operate in a similar fashion as they do today. The proposed area of warehousing is approximately 198,890 sq. ft. In accordance with Chapter 18.29.040 Off-Street Parking and

Loading, if the parking rate for 'Warehouse' (1 per 750 sq. ft.) is applied, the required number of spaces is approximately 266±. This is clearly not proportional to the level of parking required.

It is proposed that parking spaces for the new development be based on the existing employee to parking ratio. Using 30 new employees, the number of parking spaces required to support the new building is 30 employees x 1.4 spaces/employee = 42 spaces, (requiring a total of 76 spaces). The proposed development site plan proposes an additional 49 spaces bring the total number of parking spaces provided to 83 spaces.

Supplemental Information

- 1. A list with the names and addresses of property owners within a 500-ft boundary of the property has been compiled and attached to this Application.
- 2. The proposed development will connect to the Richmond public water supply located in Kingstown Road. As requested by Northeast Water Solutions, Inc. a water impact study was conducted by their preferred sub-consultant C&E Engineering. The study concluded that the system has the ability to provide the proposed development's domestic and fire flow needs. A copy of the study is enclosed with this Application.
- 3. Soil evaluation reports for the area of the proposed OWTS are enclosed with this Application. The location of the test pits are shown on Sheet 8 of the Plan Set.

E. MASTER PLAN CHECKLIST MAJOR LAND DEVELOPMENT PROJECT OR MAJOR SUBDIVISION

Use this checklist to prepare an application for approval of a Master Plan for a major land development project or a major subdivision.

- A. Application contents. The application shall contain the following items:
- 1. <u>Application form for Master Plan approval of a major land development project or a major subdivision.</u>
- 2. \checkmark Application notification list.
- 3. <u>Owner's authorization form.</u>
- 4. Y Filing fee (Sec. 11.3.1).
- 5. _____ Project review fee deposit if required (Sec. 11.3.2).
- 6. A general description, in narrative form, of the physical characteristics of the property, the current use of the property, and the proposed use of the property. At least fifteen copies of the narrative shall be submitted.
- 7. Site Context Plan, Existing Conditions and Resources Plan, Yield Plan (if applicable), and Development Overlay Plan.
- 8. Supplemental plans for commercial, industrial, multi-family or mixed-use land development projects.
- 9. <u>Supplemental information</u>.
- 10. \checkmark A notated copy of this checklist.

B. Preparation of plans

The plans shall be prepared at a scale of 1 inch = 40 feet unless the Administrative Officer authorizes a different scale. The number of sheets shall be sufficient to show all the information required. Sheets shall be numbered consecutively. At least six sets of full-sized 24-by-36-inch plans and fifteen sets of 11-by-17-inch reductions shall be submitted. The Administrative Officer or the Planning Board may ask that some or all of the plans be submitted in a digital format.

The Existing Conditions and Resources Plan and the Development Overlay Plan must include a stamped certification by a professional land surveyor that perimeter lot lines and street lines conform to the standards for a comprehensive boundary survey and Class I measurement standard in the current R.I. Rules and Regulations for Professional Land Surveying.

Each plan that shows engineered construction details shall be stamped by a professional engineer registered in Rhode Island.

Each set of plans shall include the following information on every sheet:

- 1. \checkmark Name of the subdivision or development.
- 2. \checkmark Name and address of the property owner(s) and the applicant(s).
- 3. <u>Name</u>, address, and telephone number of person or firm who prepared the plan.
- 4. \checkmark Date of plan preparation, with revision date(s).
- 5. \checkmark Graphic scale and true north arrow.
- 6. Plat and lot number of the lot(s) being subdivided or developed, street address, and a notation that the property is located in the Town of Richmond, Rhode Island.

C. Site Context Plan.

The Site Context Plan that was submitted for Pre-Application review, with any modifications necessary as a result of Pre-Application review, shall be submitted.

D. Existing Conditions and Resources Plan.

The Existing Conditions and Resources Plan that was submitted for Pre-Application review, with any modifications necessary as a result of Pre-Application review, shall be submitted, with the following additional items shown:

1. $\underline{N/A}$ Base flood elevation data.

2. Areas located in a zoning overlay district or in a DEM Natural Heritage area.

E. Yield Plan.

If the proposal includes residential development, the Yield Plan that was submitted for Pre-Application review, with any modifications necessary as a result of Pre-Application review, shall be submitted.

F. Development Overlay Plan.

The Development Overlay Plan submitted for Pre-Application review, with any modifications necessary as a result of Pre-Application review, shall be submitted, with the following additional items shown:

- 1. Names of owners of abutting property and owners of property immediately across any adjacent street.
- 2. <u>N/A</u> Pedestrian walkways, including footpaths and trails.
- 3. Location of water table test holes and soil exploration tests.
- 4. Above-ground and underground utilities, including water, gas, electric, telephone, cable, fire alarm and communications lines, fire hydrants, and utility poles.
- 5. <u>Permanent bounds, including bounds marking the location of open space areas.</u>
- 6. \checkmark Proposed phasing, if applicable.
- 7. For commercial, industrial, multi-family residential, or mixed-use land development projects, parking areas, loading areas and refuse holding and collection areas.

G. Supplemental plans.

1. A landscaping plan, including landscaping for areas that will require soil stabilization or sedimentation control. The plan shall include street trees or, if street trees are not required, the plan shall show the location of existing vegetation and the limits of disturbance adjacent to streets.

For commercial, industrial, multi-family or mixed-use land development projects, the following additional plans also shall be submitted:

- 1. \checkmark A signage plan showing the location, size, and design of each sign.
- 2. A lighting plan showing fixture locations, pole heights, illumination type and anticipated lighting levels.
- 3. \checkmark Architectural drawings.

F. Supplemental information.

- 1. The names and addresses of property owners, agencies and communities who must receive notice of the Public Informational Meeting.
 - Information about proposed connection to a public water supply if applicable.
- 3. Soil test data for area of proposed OWTS sites. Soils must be suitable at the approximate location where an OWTS is to be located in compliance with R.I. Department of Environmental Management regulations.

- 4. <u>N/A</u> For residential development, a fiscal impact statement based on the estimated population of the development and the estimated average number of school-aged children in the population.
- 5. $\underline{N/A}$ A narrative description of how the open space will be used, who will own it, and how it will be protected from development.

Comments and reviews:

Lo	cal agencies	Date received
1.	Town Planner/Administrative Officer	
2.	Public Works Department	
3.	Conservation Commission	
4.	Town Solicitor	
5	Police Department.	
6.	Fire District (including recommendation on need for cistern)	
7.	Richmond Rural Preservation Land Trust	
8.	Other agencies, at the discretion of the Administrative Officer:	
	1	
	2	
	3	
01	her communities	Date received
	1	
	2	
	3	
St	ate agencies	Date received
1.	Department of Environmental Management	
2.	Department of Transportation	
3.	R.I. Agricultural Land Preservation Commission	
4.	R.I. Water Resources Board	
Fe	deral agencies	Date received
1.	U.S. Army Corps Engineers	
2.	FEMA	
	U.S. Natural Resources Conservation Service	
3.	U.S. Matural Resources Conservation Service	

(Amended 4/25/17; 10/24/17)

PID	Property ID Site Address	Owner Name	Co-Owner Name	Owner Address	Owner City	Owner State	e Owner Zip	Owner Country Last Sale Book	Last Sale Page State Class County
887	05B-033-000 7 KINGSTOWN RD	LAMOUNTAIN JOSEPH T JR + WALGREEN EASTERN CO. INC.,	EILEEN F	153 TERRACE AVENUE	EAST PROVIDENCE	RI	02915		0054
888	05B-034-000 21 KINGSTOWN RD	A NEW YORK CORP		200 WILMOT ROAD	DEERFIELD	IL	60015		0060
890	05B-036-000 35 KINGSTOWN RD	BRIGHTMAN DONNA M LIVING TRUST	BRIGHTMAN DONNA M & JOSEPH E TRUSTEES	P O BOX 93	WYOMING	RI	02898		0494
891	05B-037-000 39 KINGSTOWN RD	CRN REALTY INC.	JUSEITIE TRUSTEES	55 SMALL POX TRAIL	WEST KINGSTON	RI	02892		0968
031	030-037-000 39 KINGSTOWN IND	LAVOIE GERARD R		55 SMALL FOX TIVAL	WESTRINGSTON		02092		0300
899	05B-051-000 50 KINGSTOWN RD	IRREVOCABLE TRUST	LIST DONNA L TRUSTEE	50 KINGSTOWN RD	WYOMING	RI	02898		0
901	05B-053-000 30 KINGSTOWN RD	DIPIETRO FRANK D +	LUANN (TE)	140 ARCADIA RD	HOPE VALLEY	RI	02832		0395
2432	05B-062-000 22 KINGSTOWN RD	AGREE RICHMOND RI LLC		C/O RYAN LLC	HOUSTON	ТХ	77056		0140
				80 CENTRE OF NEW					
1008	82 04B-061-001 STILSON RD	RICHMOND 208 REALTY LLC		ENGLAND BLVD	COVENTRY	RI	02816		0236
2498	05B-056-000 18 KINGSTOWN RD	TDS REALTY HOLDING LLC THE PRESERVE AT BOULDER		729 COUNTY STREET	TAUNTON	MA	02780		0036
2589	05B-038-000 KINGSTOWN RD	HILLS III LLC WOOD RIVER REAL ESTATE		87 KINGSTOWN ROAD	WYOMING	RI	02898		0463
2670	05B-054-000 28 KINGSTOWN RD 35 STILSON RD(BUTTONWOOD	HOLDINGS LLC		28 KINGSTOWN RD 80 CENTRE OF NEW	WYOMING	RI	02889		0297
269 ⁻	Ŷ,	RICHMOND 208 REALTY LLC KINGSTON ROAD PROPERTY		ENGLAND BLVD	COVENTRY	RI	02816		0225
3080	05B-065-000 46-60 KINGSTOWN RD	OWNER LLC		133 PEARL STREET	BOSTON	MA	02110		0465
3243	05B-062-002 5 STILSON RD	HZL LLC		91 METROPOLITAN ROAD	PROVIDENCE	RI	02908		0691
02.1		KINGSTOWN MANAGEMENT CO							
2935	05B-055-000 26 KINGSTOWN RD	LLC		251 SMITH STREET	PROVIDENCE	RI	02908		0498
297	05B-062-001 1 STILSON RD	OCEANVIEW PARTNERS L.P.	C/O HARVEY BENNETT	887 GREENWICH AVE	WARWICK	RI	02886-1857		0639

ENGINEERING P.O. Box 788 Woonsocket, RI CIVIL ENGINEERS. ENVIRONMENTAL PROJECTS. www.ceengineer.com

401.345.1910

February 20, 2023

Tim Foley Chief Estimator CARLIN CONSTRUCTION COMPANY, LLC 5 Shaw's Cove, Suite 103 New London, CT 06320

Re: **Richmond Water Supply System** Hydraulic Model Assessment Proposed Development - Riverhead Building Supply 38 Kingstown Road Richmond, RI C&E Project No. J2002

Dear Mr. Foley:

As per requirement of the Richmond Town Ordinance requiring computer hydraulic modeling to be conducted for proposed developments, C&E Engineering Partners, Inc.(C&E) has completed a hydraulic evaluation to determine the ability of the Town of Richmond Water Supply System to effectively supply domestic and fire flows to the above captioned development project located off 38 Kingstown Road (Route 138) in Richmond, RI. Assessor's Map 05B, Lot 059. The Subject Development is to be located on the north side of Kingstown Road. The connection to the water system will be via a 8" CLDI pipe connecting to the existing 12" pipe located in Kingstown Road. The results of our findings and conclusions are presented herein. C&E has been authorized by the Town to perform such assessments to determine compliance with the aforementioned Ordinance.

As detailed in correspondence from Carlin Construction Company, LLC, the project consists of evaluating a proposed water main service changes in an existing development to serve the addition of two new buildings to be located adjacent to the existing structures on site. This includes the sizing of a new piping that will provide the required fire flows to accommodate the new buildings. This work will be completed off 38 Kingstown Road in Richmond RI. C&E has received the project drawings regarding the proposed project and we confirmed that this meets the minimum required data to properly perform this evaluation. This project consists of utilizing the Town's hydraulic model to determine the capability of the Richmond Water Supply System to supply the proposed development with domestic and fire flows.

As requested and per requirement of the Richmond Town's ordinances requiring computer hydraulic modeling to be conducted for proposed developments, C&E is hereby providing the results, conclusions and recommendations for the hydraulic modeling relative to the above captioned project.

Tim Fol	ey
Chief Es	stimator

This project consists of utilizing the Town's hydraulic model to determine the capability of the Richmond Water Supply System to supply the proposed development with domestic and fire flows.

Background

The project consists of evaluating a proposed commercial development located off Kingstown Road (RI 138), approximately 2,000 feet east of the intersection with Interstate 95. This is the location of an existing retail building materials business. This project consists the expansion of this existing business by the installation of two new buildings, one 120,000 SF and one 80,000 SF. This development will connect to the 12-inch water main on Kingstown Road with, an 8-inch connection feeding to the commercial development. This onsite 8-inch water main will be installed with a hydrant on the development grounds and there hydrants on Kingstown Road. This is as depicted on plans provided by CLA Engineers Inc. (CLA). This new water main connection will be meant to serve a proposed commercial development. This project consists of utilizing the Town of Richmond's hydraulic model to determine the capability of the Richmond Water Supply System to supply the proposed development with adequate domestic and fire flows and suitable pressures.

A required fire flow of 1,500 gallons per minute (gpm) at a residual pressure of 20 pounds per square inch (psi) was provided for this proposed development in correspondence from CLA. This volume was agreed to by the local Fire Chief. This fire flow requirement was utilized in the model.

The elevation at the location of the proposed development, as indicated on the plans, was shown as 135 feet Mean Sea Level (MSL). These elevations were utilized in the hydraulic model to calculate domestic and fire flow rates and corresponding pressures at the proposed development.

In modeling this project, the scope of the hydraulic evaluation is solely based upon the water distribution system's ability to provide the needed domestic and fire demand. It will be incumbent upon the project engineer for the development to determine the size of the domestic and fire service lines, any required master meter and backflow prevention assemblies, and any losses associated with the meter and backflow preventors and their impact on available flow and pressure at the development.

C&E evaluated the ability of the Town of Richmond's water supply and distribution system to supply domestic and fire flows to the proposed development. This hydraulic evaluation was performed in accordance with the Town of Richmond's water supply ordinances.

Evaluation

This evaluation was performed utilizing the Town of Richmond computerized hydraulic model of the Town's water supply and distribution system. The hydraulic model allows proposed improvements to the water system to be evaluated by means of computer



simulation in order that the impacts of the proposed development on the water system can be considered prior to physical construction. The primary purpose of this assessment has been to determine the domestic and fire flows (along with corresponding pressures) available to service the proposed development.

As required per the Ordinance, all needed fire flows (NFF's) are to be based on Insurance Services Office (ISO) or applicable National Fire Protection Association (NFPA) requirements. The calculated fire flow shall be available at all times in design analysis and shall be available a minimum of one (1) hour for flows of 1,000 gpm or more at a minimum of 20 psi residual pressure under a maximum day demand condition. Further, according to American Water Works Association (AWWA) M32, Distribution Network Analysis for Water Utilities and AWWA M31, Distribution System Requirements for Fire Protection, the volume of the needed fire flow over its required duration should be available from the water system's storage tank(s). These constraints must also be met with system operations consisting of removing the largest well station from service with an appropriate number of remaining well stations in service to meet system demands. ISO also requires that the NFF be superimposed upon the maximum day domestic demand. Therefore, the maximum day scenario for the water system was utilized when evaluating fire flow capabilities for the proposed development.

The configuration of the geometry in the model is depicted on Attachment 1. The domestic demands were assigned to a single junction node labeled "J-27" which correspond to the demands for the proposed commercial development. This node is located along the proposed water main serving the development. This assessment was based on evaluating the available domestic and fire flows at this existing water main supplying the development.

CLA Engineering provided a description of the proposed development from which the average day, Maximum Day and peak Hourly demand for the proposed development as follows:

Developm			Daily Max I (GPM) (GP	Day Flow Peak Hourly PM) Flow (GPM)
38 Kingstown	n Road 2.	025 1	.4 2.	.1 8.5

These average days demand was utilized in the model. The multipliers to determine the maximum day and peak hour demands were established as 1.5 and 4.0, respectively.

Simulations were performed to determine the ability of the existing water system to meet anticipated domestic demands under various demand scenarios (i.e. average day, maximum day and peak hour). The domestic demands were allocated to one (1) junction node located at the end of the pipe serving the development. The model results indicate that



pressures at the location of the proposed developments range from approximately 60 psi to 62 psi under the various demand scenarios. These results are depicted in Attachment 2. These pressures are above the 30 psi minimum service pressure recommendation provided by AWWA (American Water Works Association) M32, Distribution Network Analysis for Water Utilities.

Secondly, the hydraulic model was utilized to determine the available fire flows at the location of the proposed development. As previously indicated, a needed fire flow requirement of 1,500 gpm at a residual pressure of 20 psi was identified for this project. As such, this fire flow requirement was utilized in the model. This fire flow was allocated to the same junction node as the domestic demands. This location is at the end of the roadway serving the project. This location was selected as it represents the worse case scenario for fire flow. For the purpose of the fire flow evaluation, the Needed Fire Flow was superimposed upon the maximum day domestic demand. Simulations were performed with an 8-inch CLDI pipe serving the proposed development. The model simulations indicate that a fire flow of 1,500 gpm at a residual pressure of 35 psi is available at the location of the proposed development (i.e. 8-inch main at point of connection to the water system). Simulations indicate that a fire flow is above the minimum requirement of 1,500 GPM at 20 psi and therefore meets the minimum fire flow requirement for the project.

It should be noted that these calculated fire flows are representative of the available capacity in the water main at this particular location and does not represent that these flows are directly available from a single hydrant assembly or service connection. These model output results are presented in Attachment 2.

Conclusions

The hydraulic model simulations indicate that the Richmond Water Supply System has the ability to provide the proposed development with adequate domestic demands. The results of the hydraulic model simulations indicate that pressures at the location of the development range from approximately 60 psi to 62 psi under all of the demand scenarios (i.e. average day, maximum day and peak hour).

As previously noted, a fire flow requirement of 1,500 gpm at a residual pressure of 20 psi was identified for this project. This fire flow requirement was utilized in the model. The model simulations indicate that by serving the development with an 8-inch water main connecting to the Richmond Water System, the stated required fire flow can be met. The calculated available fire flow at the location of the proposed development is above the recommended minimum residual pressure requirement of 20 psi and it also meets the minimum fire flow requirement of 1,500 gpm.

The results presented herein are based on the information for the project that was made available at the time of the assessment. It is understood that this assessment report shall be presented to the Town and other agencies having jurisdiction (i.e. Richmond Water Division, local Fire and Building officials, etc.) for final approval and acceptance. C&E



does not represent that the results presented herein constitute acceptance by these aforementioned authorities having jurisdiction in relation to final approval of the project.

This assessment report was prepared in accordance with requirements of the Town's Ordinance for Adequate Water Supply for Fire Protection and was specific to the evaluation of the proposed development and the overall capability of the water system infrastructure to provide an adequate pressure under the given conditions. This assessment makes no representation with respect to providing an adequate source of supply (i.e. availability of water from the Water Department to supply this new development) within the Town's service system and the overall capability to meet this increase in water demand.

C&E appreciates the opportunity to provide our services for your project. We trust that this information meets your needs. Please review the enclosed and should you have any questions or comments do not hesitate to contact me directly at (401) 345-1910.

Sincerely,

C&E-ENGINEERING PARTNERS, INC.

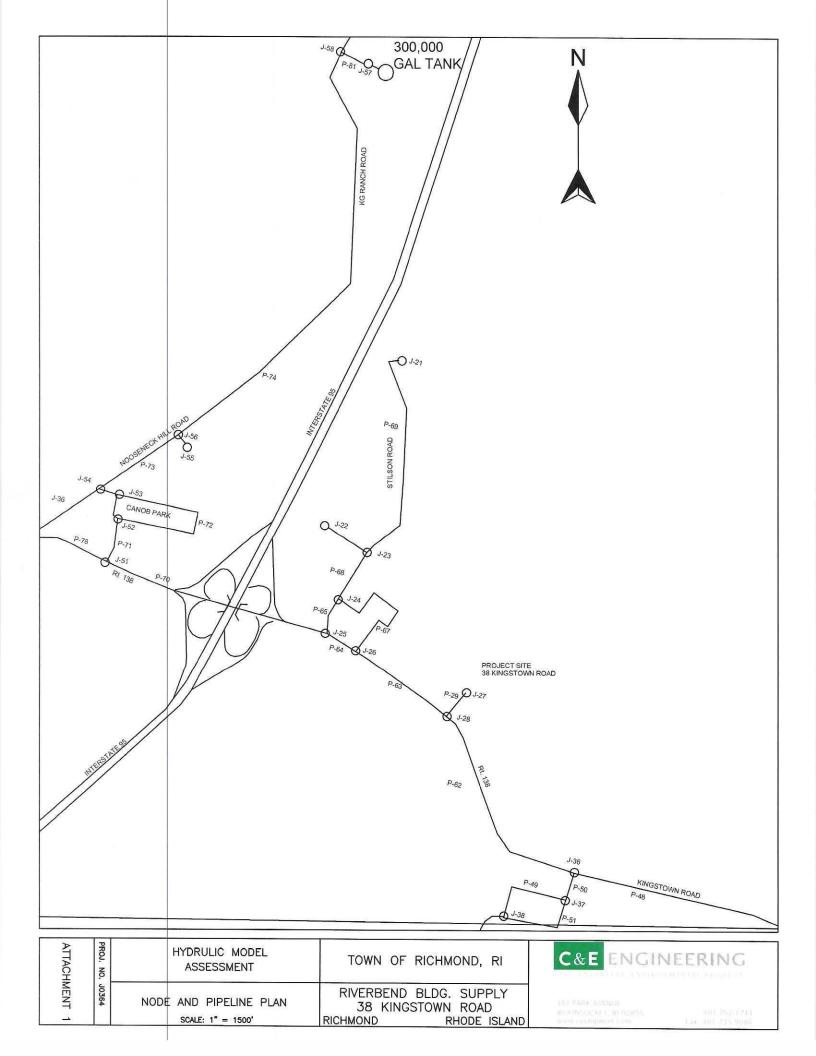
Thomas & Micholson, P.E. President Chief Engineer

Enclosures

Cc: Karen Pinch, Richmond Town Administrator



ATTACHMENT No. 1



ATTACHMENT No. 2

Active Scenario: AVE DAY

FlexTable: FlexTable: 38 Kingstown Road Development Junction Nodes

Lable	Elevation (Feet)	Zone	Description	Notes	Demand (gpm)	Hydraulic Grade (Feet)	Pressure (psi)
27	135	173:1	End of Development Roadway		1.4	275	60
1							
1							
1							
= [



Active Scenario: AVE PEAK HOUR FlexTable: 38 Kingstown Road Development Junction Nodes

Lable 27	Elevation (Feet) 135	Zone 173:1	Description End of Development Roadway	Notes	Demand (gpm) · 8.5	Hydraulic Grade (Feet) 275	Pressure (psi) 62
-	155	175.1	End of Development Roadway		0.3	275	02

Active Scenario: Fire Flow FlexTable: 38 Kingstown Road Development Junction Nodes Model of 8-inch Extension

Lable	Satisfied Flow Constraints	Fire Flow Available	Pressure Calculated	Fire Flow Needed	Fire Flow Iterations	Flow Total Available	Pressure Lower Limit
27	TRUE	1960	20	1500	14.3	1960	20

Darren:

I have reviewed the report prepared by C&E Engineering. I concur with the conclusions that the system will meet fire flow (1,500 gpm) requirements with a residual pressure (35 psi) at that location exceeding the minimum (20 psi) requirement. This report and the findings are acceptable and meet the requirements of the Water Department.

Regards,

Robert F. Ferrari, PE President Northeast Water Solutions, Inc.

From: D Hayward <<u>dhayward@claengineers.com</u>>
Sent: Tuesday, March 14, 2023 1:36 PM
To: Bob Ferrari <<u>rferrari@nwsi.net</u>>
Subject: RE: Riverhead Building Supply Pre-App, Richmond

Hi Bob,

Not sure if the attached Report from C&E reached you. We plan on submitting our Master Plan application to the town to be received at the April 11 meeting. I will be including the Report as supporting information in our Application.

Regards, Darren

Darren Hayward, P.E. CLA Engineers, Inc. 317 Main Street Norwich, CT 06360 P: (860) 886-1966 F: (860) 886-9165 dhayward@claengineers.com www.claengineers.com

Consulting Civil Engineers Since 1984

From: Bob Ferrari <<u>rferrari@nwsi.net</u>>
Sent: Tuesday, January 3, 2023 2:23 PM
To: D Hayward <<u>dhayward@claengineers.com</u>>
Subject: RE: Riverhead Building Supply Pre-App, Richmond



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management Office of Water Resources Onsite Wastewater Treatment System Program



Site Evaluation Form Part A – Soil Profile Description

n Application Number #2329-0137

Property Owner: GX3 LLC

	_{itor:} Susar Cloudy; Lt				77.9				Number: D-40 : Yes D No	X Time:	10:00	
TH_1			oundaries	Soil C	olors		Re-Do	Martin Children	1			Soil
Horizon	Depth	Dist	Торо	Matrix	Re-Dox Features	Ab.	S.	Contr.	Texture	Structure	Consistence	Category
А	0-6"	с	S	10YR4/3					SL	GR	VFR	4
Bw	6-27"	с	s	10YR 5/4					VGLCOS	SG0	L	1M
C1	27-48"	с	S	2.5Y5/4					VGCBCOS	SG0	L	1M
C2	48-84"	С	S	2.5Y5/2					s	SG0	L	1
C3	84-156"	-	-	2.5Y5/2					GS	SG0	L	1M
TH_2	Depth	Horizon B	loundaries	Soil C			Re-Do	X	Texture	Structure	ure Consistence	Soil
Horizon	Depui	Dist	Торо	Matrix	Re-Dox Features	Ab.	S.	Contr.	Texture		Consistence	Category
А	0-8"	С	s	10YR4/3					SL	GR	VFR	4
BW	8-30"	С	s	10YR5/4					LCOS	SG0	L	1M
C1	30-42"	С	S	2.5Y5/4					VGCBCOS	SG0	L	1M
C2	42-102"	С	S	2.5Y5/2					S	SG0	L	1
C3	102-114"	С	S	2.5Y5/2					GS	SG0	L	1M
C4	114-156"	-	-	2.5Y5/3					S	SG0	L	1
н <u>1</u>	_ Soil Class _	с	Total D	epth 13'	Impervious/L	imiting	Layer D	epth 1	<u>3' (og)</u> GW	Seepage Depth	None SHWT	<u>11' (</u> 0
											None SHWT	

Part B Site Evaluation – to be completed by Soil Evaluator or Class II or III Designer Please use the area below to locate: 1. Test holes and bedrock test holes, 2. Approximate direction of due north, 3. Offsets from all test holes to fixed points such as street, utility pole, or other permanent, marked object.* *OFFSETS MUST BE SHOWN	Key: Approximate location of te Approximate location of be x% Estimated gradient and dir Approximate direction of d	edrock test holes rection of slope
		Bedrock THs TH Depth
Paliet and Sizer: 4' 20%		
Relief and Slope: 4' 20%		X50 D
. Presence of any watercourse, wetlands or surface water bodies, within 200 feet of test holes? If yes, locate on al . Restrictive Layer or Bedrock within 4' below original ground within 25 feet of test hole? Provide all test hole locati		
. Presence of existing or proposed private drinking water wells within 200 feet of test holes? If yes, locate on abov		
. Public drinking water wells within 500 feet of test holes? If yes, locate on above sketch.	NO 🛛	
. Is site within the watershed of a public drinking water reservoir or other critical area defined in Rule 38?	NO 🖾	YES 🗆
. Has soil been excavated from or fill deposited on site? If yes, locate on above sketch.	NO 🛛	
Landscape position: Backslope	RE 🗆	
0. Vegetation: Pines, Oaks		
 Indicate approximate location of property lines and roadways. 		
2. Additional comments, site constraints or additional information regarding site:		
Certification The undersigned hereby certifies that all information on this application and accompanying forms, submittals and sk tuthorized by the owner(s) to conduct these necessary field investigations and submit this request. Part A prepared by: Augustume D-4028 Signature D-4028 Signature Signature	etches are true and accurate and th	D-4028
DO NOT WRITE IN THIS SPACE		
	aim 🗖	
	aim 🗖	
Vet Season Determination required Additional Field Review Required xplanation:		
ignature Authorized Agent	Date	



Rhode Island Department of Environmental Management

Onsite Wastewater Treatment System Program

INSPECTION REPORT

Phone: 401-222-3961 Fax: 401-222-6177

APPLICATION NUMBER: 2329-	0137		
STREET: 38 Kingstown	Road		INSPECTOR: Sutter
CITY/TOWN: 5B 59			INSPECTION DATE: 02/28/2023
PLAT/LOT:	POI Unknown XXXXX	LE NO: Designer: D4028	ARRIVAL TIME:
OWTS INSTALLER:	UNKIOWII AAAAA		WEATHER CONDITIONS:
PHONE NO:	INSPECTION NUM	BER:	Suan, 30'5
TYPE OF INSPECTION: Dry Season Inspection	for Alteration		2010-1.30
scheduled @ noon			
	FINDING	GS/COMMENTS	
	12	wt	SEEP
THI	13'	11'	SEEPE
	Children Taylor Children (1925)		.10
THZ	13	and the second	NIM
		and the second	
		CAT (n	1
Religion Contractory States			
and all the series of the s			
		CTION/ACTION REQL	

CONSTRUCTION - DESIGNER MUST INSPECT/APPROVE PRIOR TO DEM INSPECTION

- Bottom inspected
- Cover inspected
- Correct items listed
- □ (REI) Address items listed and call for re-inspection.
- (ASB) Designer must submit As-Builts
- (RPREQ) Redesign required. Submit new application.
- □ (RFAD) Stop Construction. Contact OWTS office. DO NOT CONTINUE.
- (COC) Designer submit COC
- O&M) O&M agreement and permit must be recorded in Land Evidence Records.
- □ (Fee) A \$100.00 fee is required before re-inspection.
- Inspection waived

Signature of Inspector .

SITE TESTING

- Soil Evaluation Concur
- Soil Evaluation Do not concur
- Soil Evaluation Inconclusive
- Alteration Test Hole Verified
- Alteration Test Hole Unacceptable
- Ledge Test
- G Fill Tests
- Repair Test Hole



Civil & Traffic Engineers • Surveyors • Planners • Landscape Architects

F. A. Hesketh & Associates, Inc.

January 6, 2023 Revised April 10, 2023

CLA Engineers, Inc. 317 Main Street Norwich, CT 06360

Attn: Mr. Robert DeLuca

RE: Riverhead Building Supply 38 Kingstown Road (Route 138) Richmond, RI Our File # 22094

Dear Mr. DeLuca:

Pursuant to your request our office has prepared this report to document our findings related to the potential traffic impact of a proposed expansion of an existing Building and lumber supply facility located at 38 Kingstown Road, RI Route 138, in the Town of Richmond, Rhode Island. The expansion is to consist of a 200,000 s.f. warehouse for the inside storage of materials for sale. The site location is presented in Figure 1 with respect to the surrounding roadway network. This report presents our findings.

Site Plan

The site proposed for an expansion is an existing building and lumber supply facility known as Riverhead Building Supply. The site is located on the north side of Kingstown Road immediately east of the Stop & Shop Plaza. The existing facility consists of five buildings with a total floor area of 41,237 s.f. and a large outdoor storage area. Access to the site is provided by a single un-signalized driveway to Route 138. The site provides a total of 47 parking spaces.

The proposed site plan depicts the addition of a 200,000 s.f. warehouse building located at the rear of the parcel. The facility will provide a total of 22 loading bays, 18

depressed bays and 4 at grade loading bays. A total of 55 new parking spaces will be provided, for a total of 102 spaces. The site will be accessed by the existing site driveway.

Description of Area

The site proposed for development is located on the north side of Kingstown Road adjacent to the existing Stop & Shop Plaza. Kingstown Road carries the designation of Rhode Island Route 138. Route 138 enters the State of Rhode Island from the Town of Voluntown, Connecticut and extends in a southeasterly direction providing access to Interstate 95. The roadway continues past the subject site and continues easterly into the Town of Kingstown, RI. Route 138 is listed as a Principal Arterial on the State of Rhode Island Functional Classification Map.

Across the site frontage, the roadway provides approximately 30 feet of pavement with a single 12 foot lane and painted shoulder in each direction of travel, separated by a painted double yellow centerline. The posted speed limit is 40 miles per hour. Traffic signals are provided at Route 3, the northbound and southbound I-95 ramps, at Stilson Road, and at the Stop & Shop Plaza driveway. Land use in the area is commercial in the vicinity of I-95 and a mix of commercial and residential uses east of the site.

Current Traffic Volumes

Traffic volume data for Route 138 was not available from the RIDOT. Therefore, our office arranged for the installation of an automated traffic volume counter on Route 138, immediately east of the Riverhead site driveway during the month of September 2022. The count indicates that Route 138 has an Average Daily Traffic volume (ADT) of 12,495 vehicles with peak hour volumes of 890 vehicles during the a.m. peak hour (8:00 a.m.) and 1,266 vehicles during the p.m. peak hour (4:00 p.m.). Saturday volumes were observed to be 13,572 daily with a peak hour volume of 1,175 during the 12:00 hour. The count is presented in Table 1.

An automated traffic counter was placed on the site driveway to document the current trip generation of the existing retail facility. The counts indicate an ADT of 464 vehicles with peak hour volumes of 75 vehicles during the a.m. peak hour (7:00 a.m.) and 47 vehicles during the p.m. peak hour (3:00 p.m.). Saturday volumes were observed to be 170 daily with a peak hour volume of 36 during the 10:00 a.m. hour. These volumes are presented in Table 2.

Figure 2 presents the observed traffic volumes for the intersection of Route 138 and the site driveway for the morning, afternoon, and Saturday peak hours. A 2% per year growth rate, or 6% total, was applied to the Route 138 volumes to grow traffic to a design year of 2025. The resultant volumes are presented in Figure 2 as the 2025 background traffic volumes.

Site Generated Traffic

To determine the trip generation for the proposed site, the Institute of Transportation Engineers (ITE) *Trip Generation* Report was consulted. *Trip Generation* presents trip generation estimates for many land uses based on counts conducted at existing facilities throughout the country. Included within the ITE database are two land uses that are applicable to the site. They are Land Use Code (LUC) 812: Building Material and Lumber Store and LUC 150 - warehousing. Trip generation for each land use is based on the square footage of the building.

As indicated by the counts above, the existing 41,237 s.f. facility is currently generating 464 trips daily, with peak hour volumes of 75 trips and 47 trips, during the morning and afternoon peak hours, respectively. Saturday volumes were 170 trips daily with a peak hour volume of 36 trips. For comparison purposes we have calculated the trips for the existing 41,237 s.f. facility using the ITE *Trip Generation* report. Based on *Trip Generation*, the existing site is expected to have a trip generation potential of 703 trips

daily, with peak hour volumes of 66 trips during the morning peak hour and 93 trips during the afternoon peak hour. A Saturday daily volume of 2,128 trips is calculated with a peak hour volume of 395 trips. The ITE generation is very high on Saturdays. This is likely because the subject site deals mostly with contractors and not the general public, and because the subject facility is only open for a portion of the day on Saturday, when the uses in the ITE database are likely open all day.

A 200,000 square foot warehouse facility is proposed. The facility is intended for the distribution of materials to other Riverhead Lumber retail facilities and not as a retail facility. The materials will be delivered to the retail outlets by tractor trailer. We have estimated the trip generation using ITE LUC: 150 – Warehouse. Based on this methodology, the 200,000 s.f. warehouse has a trip generation potential of 354 trips daily, with peak hour volumes 48 trips and 50 trips during the morning and afternoon peak hours. A Saturday volume of 30 trips with a peak hour volume of 10 trips is also calculated.

For comparison, we have estimated the site generated traffic based on information provided to us by the end user. Riverhead Building Supply has indicated to us that they anticipate an additional 20 to 25 employees and an additional 15 incoming deliveries and 15 outgoing deliveries per day. We have projected an increase in business of 10%. Based on these assumptions, we project a total of 185 new trips daily, with 46 new trips during the morning peak hour, and 50 new trips during the afternoon peak hour. We also project a total of 27 new trips on Saturday with 18 new trips during the peak hour.

To be conservative, we have chosen the above methodology with the highest trip generation for each of the peak hours. Based on this methodology, we project that the proposed expansion will generate 48, 50 and 18 new trips during the morning, afternoon, and Saturday peak hours, respectively. By adding the new trips to the driveway volumes, the expanded development has a trip generation of 123 trips during

the morning peak hour, 97 trips during the afternoon peak hour, and 54 trips during the Saturday peak hour. The trip generation is summarized in Table 3.

The site generated traffic was then applied to the existing roadway network with a directional distribution of 65% to and from the west and 35% to and from the east along Route 138. Figure 2 presents the trip generation for the site driveway. By adding the site generated traffic to the background traffic to the background traffic, the combined traffic for the site driveway can be determined. These volumes are presented in Figure 2 as well.

Capacity Analysis

Capacity analyses were conducted for the background and combined traffic volumes for the intersection of Route 138 and the proposed site driveway. The analysis was conducted for the morning, afternoon, and Saturday peak hours. The analysis was completed utilizing the intersection capacity analysis program called SYNCHRO. Copies of the SYNCHRO worksheets are included in the appendix. The results are summarized in Table 4 and described below.

Route 138 at Proposed Site Driveway – The intersection is an existing un-signalized intersection with Route 138 oriented in the east/west direction. The site driveway approaches from the north. The eastbound and westbound Route 138 approaches each provide a single lane and operate free. The site driveway provides a single lane approach and operates under stop sign control. The analysis indicates that under the background traffic volumes the Route 138 approaches operate at a LOS A during peak hours. The site driveway approach operates at a LOS C during peak hours. With the introduction of the site generated traffic the Route 138 approaches will continue to operate at a LOS A during peak hours. The site driveway approach will operate at a LOS C during the morning and Saturday peak hours and at a LOS D during the afternoon peak hour.

Sight Distances

Observations at the proposed site driveway location indicates that Route 138 is generally level and tangent providing no restrictions to intersection sight distances (ISD's). The roadway is posted for 40 miles per hour in the vicinity of the site. Speed counts conducted by our office indicate 85% speed in both the eastbound and westbound directions are 43 mph. The AASHTO recommended ISD for an approach speed of 43 mph is 478 feet for passenger vehicles, 602 feet for single unit trucks, and 731 feet for tractor trailers. Observations at the proposed site driveway location indicate that the available ISD exceeds 500 feet for passenger vehicles and 750 feet, for trucks, in both directions.

Left Turn Lane Warrant

An analysis was performed utilizing the procedures from AASHTO to determine if an exclusive eastbound left turn lane is required at the proposed site driveway. The analysis indicates that a left turn lane should be considered at the site driveway. However, since the eastbound Route 138 approach operate at a LOS A with delays under 1.5 seconds per vehicle, it is my professional opinion that a left turn lane is not needed at this location.

Accident Data

Our office has requested accident data from the Richmond Police depart for a portion of Route 138 in the vicinity of the site. Accident data was obtained for Route 138 from the Stop & Shop driveway east to the Westerly Community Credit Union Driveway. Data was obtained for the time period between November 1, 2019 and November 1, 2022. A list of accidents occurring in the area is included in the appendix.

The 3-year accident history indicates a total of 33 accidents involving a total of 65 vehicles and one pedestrian. 18 of the accidents occurred in parking lots. There were

three accidents at the Dunkin / Walgreens Driveways, two accidents at the Riverhead Building Supply Driveway, and one each at the stop & Shop driveway, Lickety Splits Driveway, the I-95 SB Ramps, and the Westerly Credit Union Driveway. There were 3 single vehicle accidents. Of the 15 accidents that did not occur in parking lots, there were 6 rear end accidents, two head on accidents, two angle accidents, three fixed objects and one unknown. Three accidents occurred during the morning commuter period, and six during the afternoon commuter period. Of the 15 accidents recorded, only four had passengers that were removed from the scene by ambulance. There were no fatalities recorded. There does not appear to be any patterns of accidents that could be mitigated with geometric improvements.

Conclusion

The proposed 200,000 s.f. expansion to the existing Riverhead Building Supply facility is projected to generate a total of 48 new trips during the morning peak hour, 50 new trips during the afternoon peak hour and 18 new trips during the Saturday peak hour. A capacity analysis indicates that the intersection of Route 138 and the site driveway will operate at acceptable levels of service during peak hours under the combined traffic volumes.

The site driveway is properly located with respect to available sight distances and is properly designed to accommodate the anticipated driveway volumes. The site driveway radii have been designed to accommodate a WB-67 design vehicle without encroachment on either the Route 138 or driveway centerlines.

Based on our analysis, it is our professional opinion that the traffic volumes associated with the proposed development can readily be accommodated by the existing roadway network.

We appreciate the opportunity to provide this analysis to you. A representative from our firm will be available to present testimony in support of your application before local planning agencies upon your request. If you require additional information regarding this application, please do not hesitate to contact our office.

Very truly yours,

F. A. Hesketh & Assøciates, Inc.

Scott F. Hesketh, P.E. Manager of Transportation Engineering

cc: Darren Hayward, CLA Engineers, Inc. Bob Deluca, CLA Engineers, Inc.

T:\pf\2022\22094\TRAFFIC\Traffic 2023.02.20

Guy A. Hesketh, P.E.

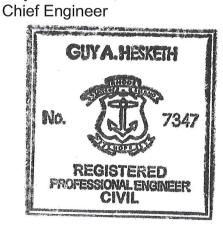
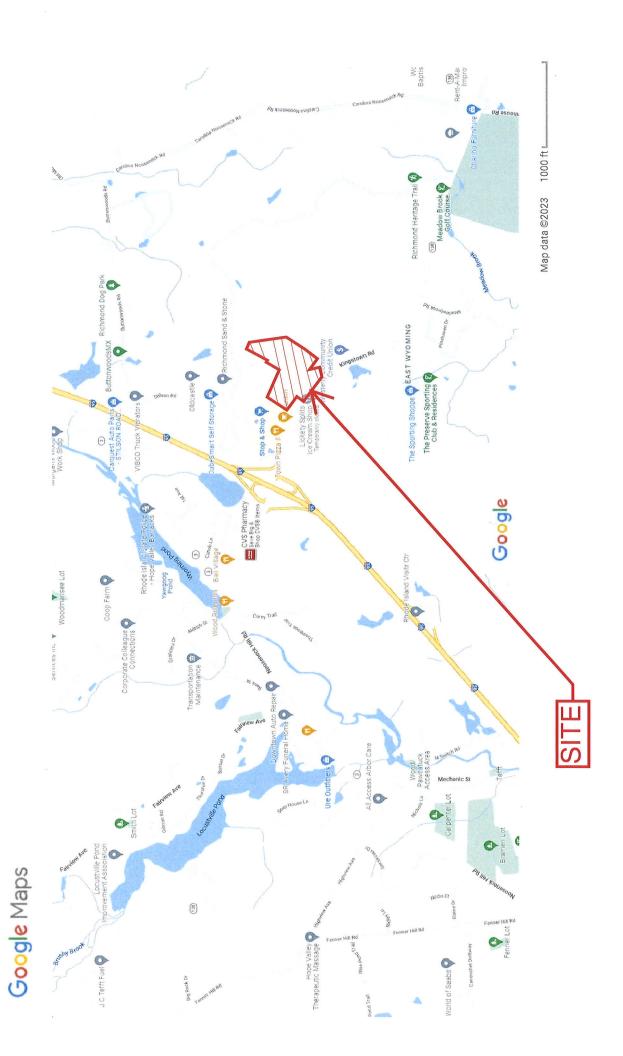


FIGURE 1



F.A. Hesketh & Associates, Inc.

3 Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Route 138 East of Riverhead Site drive Richmond, RI 02898 Job No. 22094

TABLE 1

Page 1

Date Start: 08-Sep-22 Date End: 15-Sep-22

10-Sep-22 Saturday	ENTER	0	7	4	12	15	16	19	12	0	0	0	0	0	0	0	85
10-Se Satu	EXIT	0	2	9	22	12	20	14	8	0	0	0	0	0	0	0	85
9-Sep-22 Friday	ENTER	2	14	18	29	26	15	38	23	23	11	19	14	0	0	0	232
9-Se Fri	EXIT	£	11	7	25	28	27	45	18	21	13	17	18	0	0	0	232
Sept 15 / Sept 8 Thursday	ENTER	1	16	41	33	27	21	31	33	22	16	24	11	0	0	0	276
Sept 15 Thur	EXIT	0	20	34	24	32	24	36	24	13	24	23	21	0	0	0	276
14-Sep-22 Vednesday	ENTER	0	19	30	7	21	26	31	33	26	22	13	18	0	н		248
14-Sep-22 Wednesday	EXIT	0	22	24	7	16	21	40	27	21	27	22	19	0	0	0	247
ep-22 sday	ENTER	2	16	20	21	20	13	15	23	23	6	12	17	0	0	0	191
13-Sep-22 Tuesday	EXIT	7	9	15	16	19	25	22	24	18	15	18	13	0	0	0	191
12-Sep-22 Monday	ENTER	2	14	27	19	21	22	31	22	15	12	14	15	0	0	0	214
12-Sep-22 Monday	EXIT	0	20	12	22	29	10	39	20	24	10	15	10	0	0	0	213
	Hour	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	

Weekday ADT

Table 3 Trip Generation Summary Riverhead Building Supply Richmond, RI

		Weekday	A.N	1. Peak H	our	P.N	1. Peak H	our	Saturday	Satur	day Peak	Hour
Land Use	Size	ADT	Enter	Exit	Total	Enter	Exit	Total	ADT	Enter	Exit	Total
Existing Facility												
Driveway Counts	41,237 s.f.	552	41	34	75	24	23	47	170	16	20	36
ITE Trip Generation	41,237 s.f.	703	41	25	66	43	50	93	2128	201	194	395
Proposed Expansion												
Reported by Client	200,000 s.f.	185	3 1	15	46	14	29	43	27	9	9	18
New Business (10% Inc.)	55	4	4	8	3	2	5	17	2	2	4
employee	s	70	25	5	30	5	25	30		5	5	10
deliverie	s	60	2	6	8	6	2	8	10	2	2	4
Warehouse	200,000 s.f.	354	37	11	48	14	36	50	30	6	4	10
Combined Development	241,237 s.f.	906	78	45	123	38	59	97	200	22	24	46

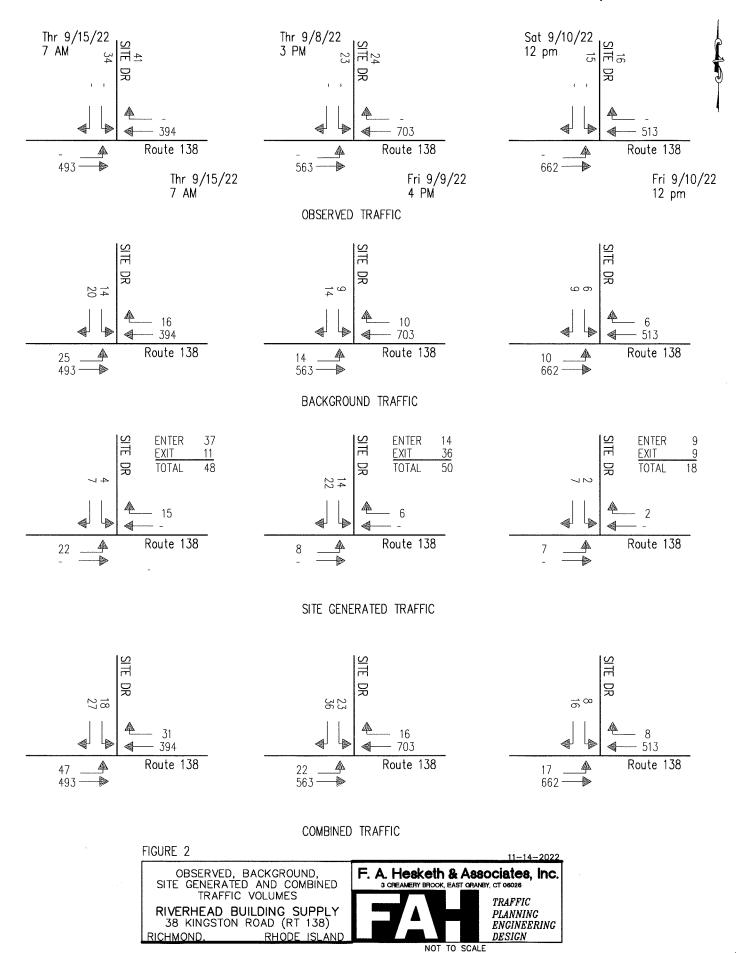


Table 4

Level of Service Summary

Proposed expansion - Riverhead Building Supply Route 138 Richmond, RI

Time Period	LOS	Backgrou <u>delay</u>	nd Traff <u>v/c</u>	ic <u>Queue</u>	(LOS	Combine <u>delay</u>	d Traffi <u>v/c</u>	c Queue					
Route 138 at Site			<u>.,,</u>			<u></u>							
		way		A.M. Peal	(Hour								
EB	А	0.7	0.02	2	А	1.3	0.05	4					
WB	А	0.0	0.26	0	А	0.0	0.27	0					
SB	С	15.2	0.09	8	С	16.4	0.13	12					
				P.M. Peal	(Hour								
EB	А	0.5	0.02	1	А	0.8	0.03	2					
WB	А	0.0	0.46	0	А	0.0	0.46	0					
SB	С	21.8	0.10	9	D	25.9	0.27	27					
	Saturday Peak Hour												
EB	А	0.3	0.01	1	А	0.5	0.02	1					
WB	А	0.0	0.33	0	А	0.0	0.33	0					
SB	С	18.3	0.06	5	С	17.9	0.09	7					
				I									

l.

Appendix

Automated Traffic Volume Counts

Route 138 east of

Riverhead Building Supply Site Driveway

Route 138 East of Riverhead Site drive Richmond, RI 02898 Job No. 22094

F.A. Hesketh & Associates, Inc. 3 Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Date Start: 08-Sep-22 Date End: 15-Sep-22

Start	05-Sep-22	06-Sep-22	07-Sep-22	08-Sep-22	09-Sep-22	Weekday	10-Sep-22	11-Sep-22
Time	Mon	Tue	Wed	Thu	Fri	Average	Sat	Sun
12:00 AM	*	*	*	*	43	43	94	71
01:00	*	*	*	*	22	22	44	34
02:00	*	*	*	*	16	16	40	36
03:00	*	*	*	*	32	32	30	31
04:00	*	*	*	*	65	65	49	30
05:00	*	*	*	*	188	188	105	78
06:00	*	*	*	*	533	533	244	190
07:00	*	*	*	*	804	804	459	333
08:00	*	*	*	*	890	890	706	501
09:00	*	*	*	*	755	755	923	763
10:00	*	*	*	*	807	807	1125	924
11:00	*	*	*	640	859	750	1114	1108
12:00 PM	*	*	*	928	953	940	1175	1191
01:00	*	*	*	769	856	812	1073	1012
02:00	*	*	*	902	1028	965	1064	919
03:00	*	*	*	1076	1197	1136	980	905
04:00	*	*	*	1167	1266	1216	955	884
05:00	*	*	*	1148	1083	1116	844	801
06:00	*	*	*	743	862	802	721	652
07:00	*	*	*	672	565	618	640	514
08:00	*	*	*	379	424	402	460	341
09:00	*	*	*	242	258	250	334	205
10:00	*	*	*	166	227	196	232	125
11:00	*	*	*	68	142	105	161	88
Total	0	0	0	8900	13875		13572	11736
Percentage	0.0%	0.0%	0.0%	66.1%	103.1%		100.8%	87.2%
AM Peak	-	.	-	11:00	08:00	-	10:00	11:00
Vol.	-	-	-	640	890	-	1125	1108
PM Peak	-	-	-	16:00	16:00	-	12:00	12:00
Vol.	-	-	-	1167	1266	-	1175	1191

Page 1

Route 138 East of Riverhead Site drive Richmond, RI 02898 Job No. 22094

F.A. Hesketh & Associates, Inc. 3 Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Date Start: 08-Sep-22 Date End: 15-Sep-22

Start	12-Sep-22	13-Sep-22	14-Sep-22	15-Sep-22	16-Sep-22	Weekday	17-Sep-22	18-Sep-22
Time	Mon	Tue	Wed	Thu	Fri	Average	Sat	Sun
12:00 AM	37	46	37	47	*	42	*	*
01:00	32	24	30	26	*	28	*	*
02:00	19	11	14	15	*	15	*	*
03:00	31	26	20	37	*	28	*	*
04:00	60	68	62	60	*	62	*	*
05:00	185	179	192	209	*	191	*	*
06:00	480	482	527	522	*	503	*	*
07:00	825	785	878	887	*	844	*	*
08:00	841	764	887	847	*	835	*	*
09:00	704	652	653	754	*	691	*	*
10:00	674	667	710	735	*	696	*	*
11:00	726	665	737	234	*	590	*	*
12:00 PM	797	789	825	*	*	804	*	*
01:00	768	773	781	*	*	774	*	*
02:00	883	827	897	*	*	869	*	*
03:00	1051	950	1100	*	*	1034	*	*
04:00	984	1014	1115	*	*	1038	*	*
05:00	862	957	990	*	*	936	*	*
06:00	585	635	657	*	*	626	*	*
07:00	435	460	542	*	*	479	*	*
08:00	294	304	365	*	*	321	*	*
09:00	185	194	237	*	*	205	*	*
10:00	110	143	128	*	*	127	*	*
11:00	66	75	71	*	*	71	*	*
Total	11634	11490	12455	4373	0		0	0
Percentage	98.5%	97.3%	105.5%	37.0%	0.0%		0.0%	0.0%
AM Peak	08:00	07:00	08:00	07:00	-	-	-	-
Vol.	841	785	887	887	-	-	-	-
PM Peak	15:00	16:00	16:00	-	-	-	-	-
Vol.	1051	1014	1115	-	-	-	-	-
Total		11490	12455					

Route 138 East of Riverhead Site drive Richmond, RI 02898
Job No. 22094

F.A. Hesketh & Associates, Inc. ³ Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Date Start: 08-Sep-22 Date End: 15-Sep-22

Start	05-Sep-22	~ '	06-Sep-22	-22	7-Sep-2	• ·	8-Sep-	N	09-Sep-22	0-22	Weekday	Average	10-Sep-22	27-d	77-dac-11	77-0
Time	EB	WB	EB	WB	EB	NB	EB	WB	EB	WB	EB WB	WB	EB	WB	EB	WB
12:00 AM	*	*	*	*	*	*	*	*	17	26	17	26	53	41	42	
01:00	*	*	*	*	*	*	*	*	14	œ	14	80	26	18	13	
02:00	*	*	*	*	*	*	*	*	80	œ	Ø	œ	17	23	7	
03:00	*	*	*	*	*	*	*	*	13	19	13	19	11	19	14	
04:00	*	*	*	*	*	*	*	*	33	32	33	32	32	17	15	
05:00	*	*	*	*	*	*	*	*	06	98	06	98	58	47	43	
06:00	*	*	*	*	*	*	*	*	271	262	271	262	136	108	96	
02:00	*	*	*	*	*	*	*	*	469	335	469	335	260	199	180	153
08:00	*	*	*	*	*	*	*	*	459	431	459	431	373	333	259	N
00:60	*	*	*	*	*	*	*	*	423	332	423	332	476	447	360	4
10:00	*	*	*	*	*	*	*	*	421	386	421	386	547	578	427	4
11:00	*	*	*	*	*	*	312	328	442	417	377	372	611	503	509	5
12:00 PM	*	*	*	*	*	*		447	448	505	464	476	662	513	543	9
01:00	*	*	*	*	*	*		386	402	454	392	420	559	514	452	S
02:00	*	*	*	*	*	*		464	491	537	464	500	542	522	379	S
03:00	*	*	*	*	*	*		589	529	668	508	628	473	202	392	513
04:00	*	*	*	*	*	*		621	563	703	554	662	424	531	383	5
05:00	*	*	*	*	*	*		595	526	557	540	576	385	459	307	4
06:00	*	*	*	*	*	*		391	439	423	396	407	352	369	294	e
02:00	*	*	*	*	*	*		393	280	285	280	339	260	380	221	2
08:00	*	*	*	*	*	*	199	180	211	213	205	196	185	275	151	<i>–</i>
00:60	*	*	*	*	*	*		129	123	135	118	132	132	202	98	~
10:00	*	*	*	*	*	*		77	134	93	112	85	104	128	86	
11:00	*	*	*	*	*	*	29	39	74	68	52	54	85	76	50	
Total	0	0	0	0	0	0		4639	6880	6995	6680	6784	6763	6809	5321	64
Day	0		0		0		8900		13875		13464		13572		11736	6
AM Peak	T	1	ı		т 			11:00	07:00	08:00	02:00	08:00	11:00	10:00	11:00	11:
Vol.	·	n.	T	¢	т	ı	312	328	469	431	469	431	611	578	509	599
PM Peak		a	T	1	T	1		16:00	16:00	16:00	16:00	16:00	12:00	16:00	12:00	12:
Vol	1	,							001	001			000			•

Route 138 East of Riverhead Site drive Richmond, RI 02898 Job No. 22094

Date Start: 08-Sep-22 Date End: 15-Sep-22

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		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0		[J.	,		ι.		
18-Sep-22	WB																															11736	
18-S	EB	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	ı	1		ľ	~	
22	WB	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0		ı	,	1	T	72	
17-Sep-22	EB	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	·		ï	r	13572	
Average	WB	18	11	9	17	37	101	251	380	391	331	351	300	418	386	445	558	570	485	322	256	162	66	59	34	5988	7	08:00	391	16:00	570	25271	
Weekday Average	EB	23	17	80	11	26	06	252	464	444	360	345	290	386	388	424	476	468	451	304	223	159	106	68	36	5819	11807	02:00	464	15:00	476	25	
0	WB	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0				1	ſ		
6-Sep-2	EB	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	1	,	1	L	13875	
-22	WB	19	12	80	21	32	107	256	394	381	336	343	129	*	*	*	*	*	*	*	*	*	*	*	*	2038		01:00	394		ī	173	
15-Sep-22	EB	28	14	7	16	28	102	266	493	466	418	392	105	*	*	*	*	*	*	*	*	*	*	*	*	2335	4373	02:00	493		I	13273	
p-22	WB	16	Ø	9	12	38	105	264	398	400	309	331	342	424	398	472	582	617	519	351	286	. 183	132	59	40	6292		08:00	400	16:00	617	12455	
14-Sep-22	EB	21	22	80	00	24	87	263	480	487	344	379	395	401	383	425	518	498	471	306	256	182	105	69	31	6163	12455	08:00	487	15:00	518	12	
p-22	WB	21	7	5	16	36	95	236	351	362	343	381	362	400	378	406	532	528	496	305	254	158	86	67	34	5859	0	10:00	381	15:00	532	11490	AADT 12,468
13-Sep-22	EB	25	17	9	10	32	84	246	434	402	309	286	303	389	395	421	418	486	461	330	206	146	108	76	41	5631	11490	02:00	434	16:00	486	5	AAD ⁻
0-22	WB	18	18	9	20	41	96	249	375	420	337	350	367	429	381	457	560	564	441	310	229	144	79	51	29	5971		08:00	420	16:00	564	34	ADT 12,468
12-Sep-22	EB	19	14	13	11	19	89	231	450	421	367	324	359	368	387	426	491	420	421	275	206	150	106	59	37	5663	11634	07:00	450	15:00	491	11634	AD
Start	Time	12:00 AM	01:00	02:00	03:00	04:00	02:00	00:00	02:00	08:00	00:60	10:00	11:00	12:00 PM	01:00	02:00	03:00	04:00	02:00	00:00	02:00	08:00	00:60	10:00	11:00	Total	Day	AM Peak	Vol.	PM Peak	Vol.	Comb. Total	ADT

Automated Traffic Volume Counts Riverhead Building Supply Site Driveway

F.A. Hesketh & Associates, Inc. 3 Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Riverhead Building Supply Drive Northeast of Rt 138 Richmond, RI 02898 Job No. 22094

Date Start: 08-Sep-22 Date End: 15-Sep-22

Start	05-Sep-22	06-Sep-22	07-Sep-22	08-Sep-22	09-Sep-22	Weekday	10-Sep-22	11-Sep-22
Time	Mon	Tue	Wed	Thu	Fri	Average	Sat	Sun
12:00 AM	*	*	*	*	0	0	0	0
01:00	*	*	*	*	0	0	0	0
02:00	*	*	*	*	0	0	0	0
03:00	*	*	*	*	0	0	0	0
04:00	*	*	*	*	0	0	0	0
05:00	*	*	*	*	4	4	0	0
06:00	*	*	*	*	22	22	8	0
07:00	*	*	*	*	23	23	7	0
08:00	*	*	*	*	47	47	23	0
09:00	*	*	*	*	46	46	21	0
10:00	*	*	*	*	34	34	26	0
11:00	*	*	*	*	70	70	26	0
12:00 PM	*	*	*	*	36	36	16	0
01:00	*	*	*	32	38	35	0	0
02:00	*	*	*	34	20	27	0	0
03:00	*	*	*	41	31	36	0	1
04:00	*	*	*	27	27	27	0	1
05:00	*	*	*	0	0	0	0	0
06:00	*	*	*	0	0	0	0	0
07:00	*	*	*	0	0	0	0	0
08:00	*	*	*	0	0	0	0	0
09:00	*	*	*	0	0	0	0	0
10:00	*	*	*	0	0	0	0	0
11:00	*	*	*	0	0	0	0	0
Total	0	0	0	134	398		127	2
Percentage	0.0%	0.0%	0.0%	32.9%	97.8%		31.2%	0.5%
AM Peak	-	-	-	-	11:00	-	10:00	-
Vol.	-	-	-	-	70	-	26	-
PM Peak	-	-	-	15:00	13:00	-	12:00	15:00
Vol.	-	-	-	41	38	-	16	1

Page 1

F.A. Hesketh & Associates, Inc. 3 Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Riverhead Building Supply Drive Northeast of Rt 138 Richmond, RI 02898 Job No. 22094

Date Start: 08-Sep-22 Date End: 15-Sep-22

Start	12-Sep-22	13-Sep-22	14-Sep-22	15-Sep-22	16-Sep-22	Weekday	17-Sep-22	18-Sep-22
Time	Mon	Tue	Wed	Thu	Fri	Average	Sat	Sun
12:00 AM	0	0	0	0	*	0	*	*
01:00	0	0	0	0	*	0	*	*
02:00	0	0	0	0	*	0	*	*
03:00	0	0	0	0	*	0	*	*
04:00	0	0	0	0	*	0	*	*
05:00	2	3	0	1	*	2	*	*
06:00	26	20	34	31	*	28	*	*
07:00	34	30	46	66	*	44	*	*
08:00	32	32	12	51	*	32	*	*
09:00	38	33	32	51	*	38	*	*
10:00	28	30	40	39	*	34	*	*
11:00	54	30	58	*	*	47	*	*
12:00 PM	34	39	51	*	*	41	*	*
01:00	29	35	40	*	*	35	*	*
02:00	18	19	40	*	*	26	*	*
03:00	23	24	28	*	*	25	*	*
04:00	21	26	31	*	*	26	*	*
05:00	0	0	0	*	*	0	*	*
06:00	0	0	1	*	*	0	*	*
07:00	0	0	1	*	*	0	*	*
08:00	0	0	0	*	*	0	*	*
09:00	0	0	0	*	*	0	*	*
10:00	0	0	0	*	*	0	*	*
11:00	. 0	0	0	*	*	0	*	*
Total	339	321	414	239	0		0	0
Percentage	89.7%	84.9%	109.5%	63.2%	0.0%		0.0%	0.0%
AM Peak	11:00	09:00	11:00	07:00	-	-	-	-
Vol.	54	33	58	66	-	-	-	-
PM Peak	12:00	12:00	12:00	-	-	-	-	-
Vol.	34	39	51	-	-	-		-
Total		321	414					

Riverhead Building Supply Drive Northeast of Rt 138 Richmond, RI 02898 Job No. 22094

F.A. Hesketh & Associates, Inc. ^{3 Creamery Brook} East Granby, CT 06026 Phone: (860) 653-8000

Date Start: 08-Sep-22 Date End: 15-Sep-22

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Time	Exit Enter	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit	Enter
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01:00	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	
02:00	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0
03:00	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0
04:00	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0
05:00	*	*	*	*	*	*	*	*	2	2	2	2	0	0	0	0
00:90	*	*	*	*	*	*	*	*	80	14	80	14	-	7	0	U
02:00	*	*	*	*	*	*	*	*	5	18	5	18	e	4	0	0
08:00	*	*	*	*	*	*	*	*	18	29	18	29	11	12	0	
00:60	*	*	*	*	*	*	*	*	20	26	20	26	9	15	0	0
10:00	*	*	*	*	*	*	*	*	19	15	19	15	10	16	0	
11:00	*	*	*	*	*	*	*	*	32	38	32	38	7	19	0	0
DO PM	*	*	*	*	*	*	*	*	13	23	13	23	4	12	0	0
01:00	*	*	*	*	*	*	10	22	15	23	12	22	0	0	0	0
02:00	*	*	*	*	*	*	18	16	6	11	14	14	0	0	0	0
03:00	*	*	*	*	*	*	17	24	12	19	14	22	0	0	0	
04:00	*	*	*	*	*	*	16	11	13	14	14	12	0	0	٢	0
05:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
00:90	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
02:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
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00:60	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
10:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
11:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	61	73	166	232	171	235	42	85	-	
Day	0		0		0		134		398		406		127		2	
AM Peak	Т	a	1	ı	1	1	1	•	11:00	11:00	11:00	11:00	08:00	11:00	1	
Vol.		,	ı	ı	ı	,	ı	ı	32	38	32	38	11	19	,	
PM Peak	1			1	1		14:00	15:00	13:00	12:00	14:00	12:00	12:00	12:00	16:00	15:00
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* - VolumES 1. TABLE 2 REPLECT ADJUSTED VOLUMES EXITING TRAFFIC WAS INCREMENTO TO MARE DAILY ENTERING AND EXITUR VOLUMES MATCH.

Riverhead Building Supply Drive Northeast of Rt 138 Richmond, RI 02898 Job No. 22094

F.A. Hesketh & Associates, Inc. ³ Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Date Start: 08-Sep-22 Date End: 15-Sep-22

Start	12-Sep-22	22	Tue	e	Wed	p	Thu	n	Fni		Weekdav	Average	0	Sat		Sun
Time	Exit	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit Enter	Enter	Exit	Enter	Exit	Enter
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01:00	0	0	0	0	0	0	0	0	*	*	0	0	*	*	*	*
02:00	0	0	0	0	0	0	0	0	*	*	0	0	*	*	*	*
03:00	0	0	0	0	0	0	0	0	*	*	0	0	*	*	*	*
04:00	0	0	0	0	0	0	0	0	*	*	0	0	*	*	*	*
05:00	0	2	-	2	0	0	0	-	*	*	0	-	*	*	*	*
06:00	12	14	4	16	15	19	15	16	*	*	12	16	*	*	*	*
02:00	7	27	10	20	16	30	25	41	*	*	14	30	*	*	*	*
08:00	13	19	11	21	5	7	18	33	*	*	12	20	*	*	*	*
00:00	17	21	13	20	11	21	24	27	*	*	16	22	*	*	*	*
10:00	9	22	17	13	14	26	18	21	*	*	14	20	*	*	*	*
11:00	23	31	15	15	27	31	*	*	*	*	22	26	*	*	*	*
12:00 PM	12	22	16	23	18	33	*	*	*	*	15	26	*	*	*	*
01:00	14	15	12	23	14	26	*	*	*	*	13	21	*	*	*	*
02:00	9	12	10	0	18	22	*	*	*	*	11	14	*	*	*	*
03:00	0	14	12	12	15	13	*	*	*	*	12	13	*	*	*	*
04:00	9	15	6	17	13	18	*	*	*	*	6	17	*	*	*	*
02:00	0	0	0	0	0	0	*	*	*	*	0	0	*	*	*	*
06:00	0	0	0	0	0	~	*	*	*	*	0	0	*	*	*	*
02:00	0	0	0	0	0	-	*	*	*	*	0	0	*	*	*	*
08:00	0	0	0	0	0	0	*	*	*	*	0	0	*	*	*	*
00:60	0	0	0	0	0	0	*	*	*	*	0	0	*	*	*	*
10:00	0	0	0	0	0	0	*	*	*	*	0	0	*	*	*	*
11:00	0	0	0	0	0	0	*	*	*	*	0	0	*	*	*	*
Total	125	214	130	191	166	248	100	139	0	0	150	226	0	0	0	0
Day	339		321	-	414		239		0		376		0			0
AM Peak	11:00	11:00	10:00	08:00	11:00	11:00	02:00	02:00	ı	Т	11:00	02:00	ï	,	•	'
Vol.	23	31	17	21	27	31	25	41	,	1	22	30	1	,	'	1
PM Peak	13:00	12:00	12:00	12:00	12:00	12:00	1	ı	ı	•	12:00	12:00	ı	1		ï
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Comb. Total	339	_	.,	321	7	414		373		398		782		127		7
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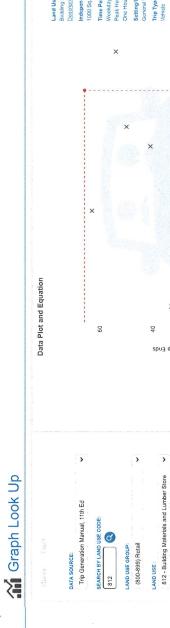
ITE Trip Generation Worksheets

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C Help O Scott Hesketh

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DATA STATISTICS





LAND USE SUBCATEGORY: All Sites

SETTING/LOCATION: General Urban/Suburban

INDEPENDENT VARIABLE (IV): 1000 Sq. Ft. GFA

Weekday, Peak Hour of Adjacent Street Traffi. 🗸 TIME PERIOD:

> TRIP TYPE: Vehicle



ENTER IN VALUE TO CALCULATE TRIPS 41.24 Calculate

Average Rate 40 30 X = 1000 Sq. Ft. GFA Reset Zoom Restore 20 10 X Study Site 6 40 20 sbn3 qirT = T

Land Use: Building Matenals and Lumber Store (812) <u>Click for</u> Description and Data Plots Directional Distribution: 62% entering, 35% exiting Calculated Trip Ends: Average Rate' 66 (Total), 41 (Entry), 25 (Exit) Street Traffic Hour Between 7 and 9 a.m. vg. 1000 Sq. Ft. GFA: dependent Variable: 00 Sq. Ft. GFA itted Curve Equatio hber of Studies: Hour of Adiac ting/Location: nge of Rates. erage Rate: te Period: ip Type: 50

Use the mouse wheel to Zoom Out or Zoom In. Hover the mouse pointer on data points to view X and T values.

C Help O Scott Hesketh **C ()**

DATA STATISTICS

👬 Graph Look Up

Data Plot and Equation

>

DATA SOURCE: Trip Generation Manual, 11th Ed

812

LAND USE GROUP: (800-899) Retail

LAND USE SUBCATEGORY: All Sites

812 - Building Materials and Lumber Store

LAND USE :

SETTING/LOCATION: General Urban/Suburban

INDEPENDENT VARIABLE (IV): 1000 Sq. Ft. GFA

Weekday, Peak Hour of Adjacent Street Traffic 🗙 TIME PERIOD:

TRIP TYPE: Vehicle

>

ENTER IN VALUE TO CALCULATE TRIPS: 41.24 Calculate

Land Use: Building Matenals and Lumber Store (812) <u>Clitick for</u> Description and Data Plots alculated Trip Ends: verage Rate: 93 (Total), 43 (Entry), 50 (Exit) k Hour of Adjacent Street Traffic Hour Between 4 and 6 p.m. Directional Distribution: 6% entering, 54% exiting ndependent Variable: 000 Sq. FL GFA Vg. 1000 Sq. Ft. GFA: itted Curve Equation mber of Studies: tandard Deviation etting/Location: Range of Rates. verage Rate: ne Period: 0.17 - 10.26 rip Type: .25 50 × Average Rate 40 30 X = 1000 Sq. Ft. GFA Reset Zoom Restore х 20 X ×× 10 X Study Site 00 60 80 40 20 spug dint = 1

Use the mouse wheel to Zoom Out or Zoom In. Hover the mouse pointer on data points to view X and T values.

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Caution – Small Sample Size DATA STATISTICS	Land Use: Building Materials and Lumber Store (312) Cjuck for Destroption-and Data Plots Independent Data Plots Independent Control Plots	X tuo est fr. Lerk Time Period: Salurday Salurday	The Type: The Type: Vehicle Number of Studies:	X X 9 9 Average Rate	51.51 Range of Rites 4.3.70 - 76.08 Standard Deviation 12.08	10 15 20 Trited Curve Equation: 7 15 20 7 20 7 137.42 X = 1000 Sq. Ft. GFA 1,00	Reset Zoom Restore Directional Distribution: 50% entering, 50%
Data Plot and Equation	1,000	008	9 spuq.	ηήτ = T 6 6	200 2	0 0	× Study Site
Query Filler	DATA SOURCE: Trip Generation Manual, 11th Ed	85 ARCH BY LAND USE CODE: 812 0	(800-899) Retail (800-899) Retail LAND USE 813 - Building Materials and Lumber Store	AND USE SUBCATEGORY: All Sites	SETTINGLOCATION: General Urban/Suburban INDEFEUDRY VANABLE (IV):	HUU 94. FL GFA TMR FERIOD: Saturday	TRIP TYPE: Vehicle ENTER IN VALUE TO CALCULATE TRIPS: 41.24 Calculate

Use the mouse wheel to Zoom Out or Zoom In. Hover the mouse pointer on data points to view X and T values.

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Land Use: Building Materials and Lumber Store (812) <u>Ouck for</u> Description and Data Plots

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DATA STATISTICS

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Data Plot and Equation

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DATA SOURCE: Trip Generation Manual, 11th Ed

812 BY LAND USE CODE:

(800-899) Retail

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LAND USE SUBCATEGORY. All Sites

812 - Building Materials and Lumber Store

LAND USE :

SETTING/LOCATION: General Urban/Suburban

INDEPENDENT VARIABLE (IV): 1000 Sq. Ft. GFA

Saturday, Peak Hour of Generator TIME PERIOD:

TRIP TYPE: Vehicle

ENTER IN VALUE TO CALCULATE TRIPS 41.24 Calculate

Catculated Trip Ends: Average Rate: 395 (Total), 201 (Entry), 194 (Exit) Fitted Curve: 359 (Total), 183 (Entry), 176 (Exit)

Directional Distribution: 51% entering. 49% exiting

Average Rate

— Fitted Curve

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Fitted Curve Equation: $n(T) = 0.95 \ln(X) + 2.35$

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10 X = 1000 Sq. Ft. GFA Reset Zoom

standard Deviation Range of Rates 6.60 - 13.26

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Use the mouse wheel to Zoom Out or Zoom In. Hover the mouse pointer on data points to view X and T values.

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DATA STATISTICS

👬 Graph Look Up

Data Plot and Equation

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DATA SOURCE: Trip Generation Manual, 11th Ed

812 SEARCH BY LAND USE CODE:

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800

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(800-899) Retail LAND USE GROUP:

LAND USE SUBCATEGORY:

812 - Building Materials and Lumber Store

LAND USE :

All Sites

SETTING/LOCATION: General Urban/Suburban

INDEPENDENT VARIABLE (IV): 1000 Sq. FL. GFA TIME PERIOD:

Weekday

TRIP TYPE: Vehicle

ENTER IN VALUE TO CALCULATE TRIPS: 41.24 Calculate

50 × Average Rate 40 × Reset Zoom Restore 30 × X = 1000 Sq. Ft. GFA 20 10 × X Study Site 00 600 400 200 sbn3 qinT = T

Land Use: Building Materials and Lumber Slore (812) Click for Description and Data Pols Independent Variable: 1000 Sq. Ft, GFA Calculated Trip Ends: Average Rate: 703 (Total), 351 (Entry), 352 (Exit) Directional Distribution: 50% entering, 50% exiting vg. 1000 Sq. Ft. GFA: mber of Studies: Range of Rates 3.02 - 80.45 age Rate he Period: tandard Dev rip Type:

Use the mouse wheel to Zoom Out or Zoom In. Hover the mouse pointer on data points to view X and T values.

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	IN VALUE TO C			AVELAGE KALE	Average Rate: 342 (Total), 171 (Entry), 171 (Exit)	49%
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eet Traffi 💙 1,000 2,000 3,000 eet Traffi 💙 X = 1000 Sq. Ft. GFA X = 1000 Sq. Ft. GFA X = 1000 Sq. Ft. GFA X = 1000 Sq. Ft. GFA Average Rate			××××××			
eet Traffi. < X = 1000 Sq. Ft. GFA Reset Zoom Restare Average Rate X Study Site — Fitted Curve Average Rate Use the mouse wheel to Zoom Out or Zoom In.	TIME	E PERIOD:			3,000	0.13
X = 100 Sq. Fl. GFA Rest Zoom Rest Zoom Restore X Study Site Disc the durve Average Rate Use the mouse wheel to Zoom Out or Zoom In.	We	Jeekday Deak Hour of Adjacent Street Traffi.				Fitted Curve Equation:
Carte Restare Average Rate Average Rate Average Rate Average Rate Average Rate Average Rate				X = 1000 Sq. Ft. GFA		T = 0.12(X) + 23.62
	dig1	D TVDF.		l		R ² .
X Study Site Fitted Curve Average Rate Vues the mouse wheel to Zoom Out or Zoom In.				_		0.60
X Study Site Fitted Curve Average Rate Verage Rate Use the mouse wheel to Zoom Out or Zoom In.	Ve					
Use the mouse wheel to Zoom Out or Zoom In.			< Chiefe Cites	Etted Cinne	Average Date	Directional Distribution:
Calculate Use the mouse wheel to Zoom Out or Zoom in.	ENTE	TER IV VALUE TO CALCULATE TRIPS:	Sind are		uner age ivere	77% entering, 23% exiting
Use the mouse wheel to Zoom Out or Zoom In.	200					Calculated Trip Ends:
		ן				Average Pater 34 (Total) 26 (Entry) 8 (Evit)
						Filted Curve 48 (Total) 37 (Entrol) 11 (Evit)
Use the mouse wheel to Zoom Out or Zoom In.						
Use the mouse wheel to Zoom Dut or Zoom In.						
				Itse the motice wheel to Zoom Out or Zoom In		

Auto-ons to do more

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Collection 2011 (1000) OF A SALACE MADE COLORADOR COLORADOR DESCRIPTION (NO

Pelp Scott Hesketh

C ()

Land Use: Warehousing (150) Click for Description and Data

Independent Variable: 1000 Sq. Ft. GFA

Plots

Time Period: ekday

×

Peak Hour of Adjacent Street Traffic One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Sub

Irip Type:

DATA STATISTICS

Graph Look Up

Data Plot and Equation

600

>

500

400

>

(100-199) Industrial

LAND USE :

>

>

DATA SOURCE: Trip Generation Manual, 11th Ed

150 SEARCH BY LAND USE CODE:

LAND USE GROUP:

LAND USE SUBCATEGORY: 150 - Warehousing

All Sites

General Urban/Suburban SETTING/LOCATION:

INDEPENDENT VARIABLE (IV): 1000 Sq. Ft. GFA

TIME PERIOD:

Weekday, Peak Hour of Adjacent Street Traffic 🗸 TRIP TYPE:

Vehicle

 ENTER IN VALUE TO CALCULATE TRIPS:

 200
 Calculate

>

X Study Site

Avg. 1000 Sq. Ft. GFA:

Average Rate:

nber of Studies:

×

×

300

Trip Ends

200

Fitted Curve Equation T = 0.12(X) + 26.48 Standard Deviation. Range of Rates: 0.01 - 1.80 0.18

3,000

2,000 X = 1000 Sq. Ft. GFA Reset Zoom Restore Fitted Curve

1,000

× 100 × × Directional Distribution: 28% entering, 72% exiting

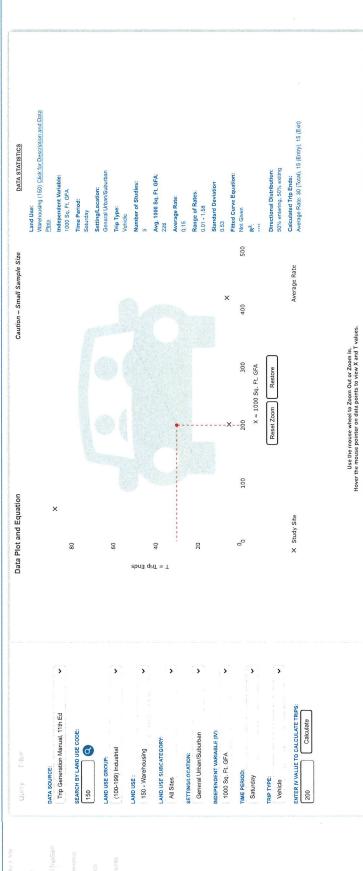
Calculated Trip Ends: Average Rate: 35 (Total), 10 (Entry), 26 (Exit) Fitted Curve: 50 (Total), 14 (Entry), 35 (Exit)

Average Rate

Use the mouse wheel to Zoom Out or Zoom In. Hover the mouse pointer on data points to view X and T values.

Q Help O Scott Heskelh

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Auth-ons to do hid

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ITETripGen Web-based App

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Scott H	
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Help	

()		
	DATA STATISTICS Land Use: Marthousting (150) Clieck for Description and Deat Plots Independent Variable: 1000 So. F. GFA Time Period: Saturdy and Generator Saturdy and Generator Saturdy and Generator Generat UbanSkubrian Tip Type: Tip T	
	Caution - Small Sample Size	Use the mouse wheel to coom Out or zoom in. Hover the mouse pointer on data points to view X and T values.
	Data Plot and Equation 15 20 15 20 15 20 16 20	Hover the mouse point
👬 Graph Look Up	Outry Filter PATA SOURCE: Trip Generation Manual, 11th Ed Trip Generation Manual, 11th Ed SEACH BY LAND USE CODE: 5 150 SEACH PARADUSE CODE: 150 Outro USE canoure: 150 LAND USE canoure: 150 Canual Landor 200 Canual Landor	
	 11: Trup one. West West West Graph Look Up How to Use iTETrigGen TGM Denances Support Donantents Aud Users Camments 	

Add-ons to do mu

Iny OTISS Pro

COPENDARY 2022 FOL 2010 OF DE NOT IN COLUMPORION UN UTH TRANSOFT SOLUTION ON OF

SYNCHRO Capacity Analysis Worksheets

	٦		+	*	1	1
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		<u>स</u>	4	WEIT (Y	OBIT
Traffic Volume (veh/h)	25	493	394	16	14	20
Future Volume (Veh/h)	25	493	394	16	14	20
Sign Control	20	Free	Free	10	Stop	20
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	536	428	17	15	22
Pedestrians	<u>_</u> 1	000	720		10	LL
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)		NOTE	None			
Upstream signal (ft) pX, platoon unblocked						
vC, conflicting volume	445				1026	436
	440				1020	430
vC1, stage 1 conf vol						
vC2, stage 2 conf vol vCu, unblocked vol	115				1000	100
supply offerers and offerers and a set of the party of th	445				1026	436
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)	0.0				0.5	0.0
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	96
cM capacity (veh/h)	1115				254	620
Direction, Lane #	EB 1	WB 1	SB 1			Sa mar 1
Volume Total	563	445	37			
Volume Left	27	0	15			
Volume Right	0	17	22			
cSH	1115	1700	391			
Volume to Capacity	0.02	0.26	0.09			
Queue Length 95th (ft)	2	0	8			
Control Delay (s)	0.7	0.0	15.2			
Lane LOS	А		C			
Approach Delay (s)	0.7	0.0	15.2			
Approach LOS			С			
Intersection Summary		N.				
Average Delay			0.9		Sec. Park	
Intersection Capacity Utiliz	zation		56.3%	IC		of Service
Analysis Period (min)			15			
			10			

	≯	-	-	*	1	1
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ર્લ	Þ	100 COLOR 100 COLOR 100 COL	W	
Traffic Volume (veh/h)	14	563	703	10	9	14
Future Volume (Veh/h)	14	563	703	10	9	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	612	764	11	10	15
Pedestrians		Park-on	10000			anna anna
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)		110110	110110			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	775				1412	770
vC1, stage 1 conf vol	110				1-714	
vC2, stage 2 conf vol						
vCu, unblocked vol	775				1412	770
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					U.T	J.L
tF (s)	2.2				3.5	3.3
p0 queue free %	98				93	96
cM capacity (veh/h)	841				149	401
	EB 1	WB 1	SB 1		UTU	TVT
Direction, Lane #	the second s	the second s	and the second se			
Volume Left	627 15	775	25			
		0	10			
Volume Right	0	11	15			
cSH	841	1700	240			
Volume to Capacity	0.02	0.46	0.10			
Queue Length 95th (ft)	1	0	9			
Control Delay (s)	0.5	0.0	21.8			
Lane LOS	A		С			
Approach Delay (s)	0.5	0.0	21.8			
Approach LOS			С			
Intersection Summary						
Average Delay		1.31.2	0.6	C.C.M.		
Intersection Capacity Utilizat	tion		50.9%	IC	U Level o	of Service
Analysis Period (min)			15			
			10			

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ર્લ	(Î)		W	
Traffic Volume (veh/h)	10	662	513	6	6	9
Future Volume (Veh/h)	10	662	513	6	6	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	720	558	7	7	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	565				1304	562
vC1, stage 1 conf vol						No.
vC2, stage 2 conf vol						
vCu, unblocked vol	565				1304	562
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)	NAME OF COMPANY				THE REAL PROPERTY.	CONTRACTOR OF
tF (s)	2.2				3.5	3.3
p0 queue free %	99				96	98
cM capacity (veh/h)	1007				175	527
Direction, Lane #	EB 1	WB 1	SB 1			021
Volume Total	731	565	17			
Volume Left	11	0	7			
Volume Right	0	7	10			
cSH	1007	1700	288			
Volume to Capacity	0.01	0.33	0.06			
Queue Length 95th (ft)	0.01	0.55	0.00			
	0.3	0.0	18.3			
Control Delay (s) Lane LOS		0.0	10.3 C			
	A 0.3	0.0				
Approach Delay (s)	0.3	0.0	18.3 C			
Approach LOS			U			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilizat	ion		52.8%	IC	U Level o	of Service
Analysis Period (min)			15			

	۶	-	-		1	1	
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		र्स	Þ		Y		
Traffic Volume (veh/h)	47	493	394	31	18	27	
Future Volume (Veh/h)	47	493	394	31	18	27	
Sign Control		Free	Free	NACKS!	Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	51	536	428	34	20	29	
Pedestrians		THE REAL	La se				
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage veh)		Home	Home				
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	462				1083	445	
vC1, stage 1 conf vol	102				1000	110	
vC2, stage 2 conf vol							
vCu, unblocked vol	462				1083	445	
tC, single (s)	4.1				6.4	6.2	
tC, 2 stage (s)	1.1				0.4	0.2	
tF (s)	2.2				3.5	3.3	
p0 queue free %	95				91	95	
cM capacity (veh/h)	1099				229	613	
					220	010	
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	587	462	49				
Volume Left	51	0	20				
Volume Right	0	34	29				
cSH	1099	1700	364				
Volume to Capacity	0.05	0.27	0.13				
Queue Length 95th (ft)	4	0	12				
Control Delay (s)	1.3	0.0	16.4				
Lane LOS	А		С				
Approach Delay (s)	1.3	0.0	16.4				
Approach LOS			С				
Intersection Summary							
Average Delay			1.4				
Intersection Capacity Utilization	tion		64.5%	l	CU Level o	of Service	
Analysis Period (min)			15				

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Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		ર્સ	f.		Y		
Traffic Volume (veh/h)	22	563	703	16	23	36	
Future Volume (Veh/h)	22	563	703	16	23	36	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	24	612	764	17	25	39	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	781				1432	772	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	781				1432	772	
tC, single (s)	4.1				6.4	6.2	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	97				83	90	
cM capacity (veh/h)	837				144	399	
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	636	781	64				
Volume Left	24	0	25				
Volume Right	0	17	39				
cSH	837	1700	235				
Volume to Capacity	0.03	0.46	0.27				
Queue Length 95th (ft)	2	0	27	×			
Control Delay (s)	0.8	0.0	25.9				
Lane LOS	А		D				
Approach Delay (s)	0.8	0.0	25.9				
Approach LOS			D				
Intersection Summary							
Average Delay		C. Cardella	1.4				
Intersection Capacity Utilization	าท		57.6%	IC	CU Level o	of Service	В

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		र्स	4Î		Y	
Traffic Volume (veh/h)	17	662	513	8	8	16
Future Volume (Veh/h)	17	662	513	8	8	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	720	558	9	9	17
Pedestrians				(NY)	STREET, ST	
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)		TOTO	110110			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	567				1318	562
vC1, stage 1 conf vol	001				1010	002
vC2, stage 2 conf vol						
vCu, unblocked vol	567				1318	562
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					0.1	0.2
tF (s)	2.2				3.5	3.3
p0 queue free %	98				95	97
cM capacity (veh/h)	1005				170	526
			004		170	020
Direction, Lane #	EB 1	WB 1	SB 1	and the second		
Volume Total	738	567	26			
Volume Left	18	0	9			
Volume Right	0	9	17			
cSH	1005	1700	305			
Volume to Capacity	0.02	0.33	0.09			
Queue Length 95th (ft)	1	0	7			
Control Delay (s)	0.5	0.0	17.9			
Lane LOS	А		С			
Approach Delay (s)	0.5	0.0	17.9			·
Approach LOS			С			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilizati	on		58.5%	IC	U Level c	of Service
Analysis Period (min)			15			

Left Turn Warrant Analysis

LEFT TURN LANE WARRANT ANALYSIS WORKSHEET

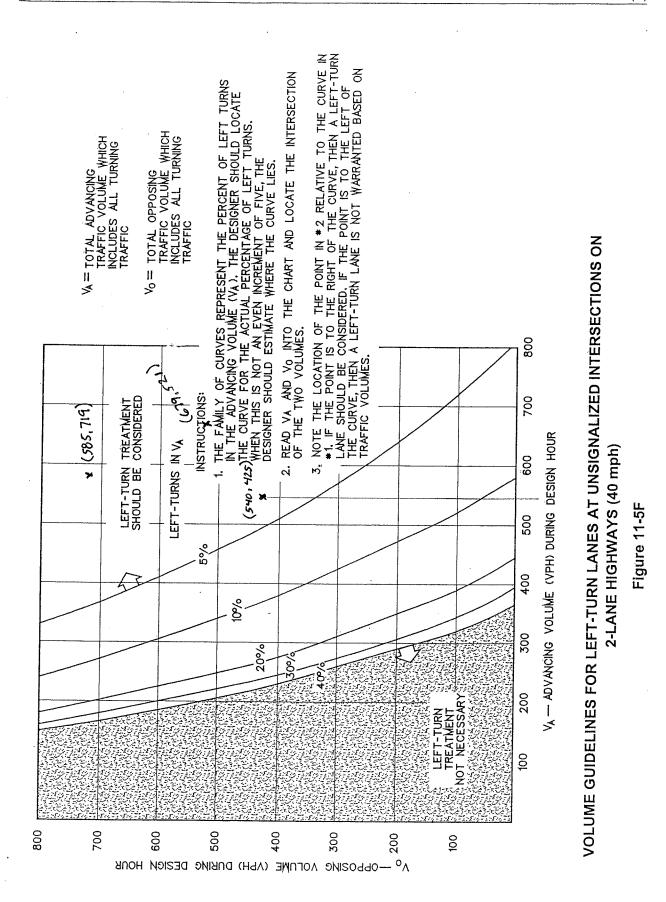
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Riverhead Building Supply Route 138 - Richmond, RI

		AM PEAK	<u> PM PEAK</u>
VOLUME ADVANCING	Va =	540	585
LEFT TURN VOLUME	VI =	47	22
VOLUME OPPOSING	Vo =	425	719
% OF LEFT TURNS	L =	9%	4%
SPEED OF MAINLINE TRAFFIC	V =	40 mph	40 mph
		SAT PEAK	

VOLUME ADVANCING	Va =	679
LEFT TURN VOLUME	VI =	17
VOLUME OPPOSING	Vo =	521
% OF LEFT TURNS	L =	3%
SPEED OF MAINLINE TRAFFIC	V =	40 mph

STORAGE LENGTH REQUIRED



INTERSECTIONS AT-GRADE

December 2004

Automated Speed Counts

Route 138 east of

Riverhead Building Supply Site Driveway

Inc.	
Associates,	rv Brook
8	I viamea
Hesketh	3 Cre
F.A.	

3 Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Route 138 (Kingstown Rd) East of Riverhead Site Drive Richmond, RI 02898 Job No. 22094

Date Start: 08-Sep-22 Date End: 15-Sep-22

Number	in Pace	*	*	*	*	*	*	*	*	*	*	*	207	317	245	281	282	358	399	258	170	120	78	70	18						
Pace	Speed	*	*	*	*	*	*	*	*	*	*	*	31-40	31-40	36-45	36-45	31-40	36-45	36-45	36-45	31-40	36-45	36-45	36-45	36-45						
	Total	*	*	*	*	*	*	*	*	*	*	*	312	481	383	438	487	546	553	352	279	199	113	89	29	4261		11:00	312	17:00	553
76	666	*	*	*	*	*	*	*	*	*	*	*	-	0	0	0	0	2	-	0	-	0	0	0	0	5	0.1%	11:00	-	16:00	2
71	75	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%				
66	20	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%				
61	65	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	۲	0	0	0	0	0	0	0	٢	0.0%			16:00	.
56	60	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	-	-	0	-	0	-	0	0	4	0.1%			16:00	ر
51	55	*	*	*	*	*	*	*	*	*	*	*	0	-	ო	ო	2	ო	2	4	2	9	~	٢	0	28	0.7%			20:00	9
46	50	*	*	*	*	*	*	*	*	*	*	*	5	15	16	15	17	25	22	23	16	12	19	12	7	204	4.8%	11:00	Ŋ	16:00	25
41	45	*	*	*	*	*	*	*	*	*	*	*	46	87	96	100	106	133	142	103	60	49	36	29	5	992	23.3%	11:00	46	17:00	142
36	40	*	*	*	*	*	*	*	*	*	*	*	111	199	149	181	170	225	257	155	110	71	42	41	13	1724	40.5%	11:00	111	17:00	257
31	35	*	*	*	*	*	*	*	*	*	*	*	96	118	81	16	112	96	78	51	60	40	11	9	4	850	19.9%	11:00	96	12:00	118
26	30	*	*	*	*	*	*	*	*	*	*	*	32	28	18	12	36	29	18	ო	0	7	-	0	0	193	4.5%	11:00	32	15:00	36
21	25	*	*	*	*	*	*	*	*	*	*	*	7	11	ო	7	12	7	2	-	4	ო	0	0	0	57	1.3%	11:00	7	15:00	12
16	20	*	*	*	*	*	*	*	*	*	*	*	-	80	2	10	4	e	5	0	ო	4	0	0	0	40	0.9%	11:00	~	14:00	10
۲-	15	*	*	*	*	*	*	*	*	*	*	*	13	14	15	13	28	21	25	12	13	7	2	0	0	163	3.8%	11:00	13	15:00	28
Start	Time	09/08/22	01:00	02:00	03:00	04:00	02:00	06:00	02:00	08:00	00:00	10:00	11:00	12 PM	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total	Percent	AM Peak	Vol.	PM Peak	Vol.

26		31 36			51	56	61	66	71	76		Pace	Number
30					55	60	65	20	75	666	Total	Speed	in Pace
				3 2	0	0	0	0	0	0	17	36-45	10
					-	0	0	0	0	0	14	36-45	12
0					0	0	0	0	0	0	ω	36-45	ω
					0	0	0	0	0	0	13	36-45	0)
0					0	0	0	0	0	0	33	36-45	22
-		13 29	28	8 16	-	-	0	0	0	0	06	36-45	57
12					2	0	0	0	0	0	271	36-45	187
16					2	~	0	0	0	۲	469	36-45	336
16	~				2	0	0	0	0	0	459	31-40	307
11	-	05 175			2	0	0	0	0	2	423	31-40	280
30	-				4	0	0	0	0	0	421	31-40	277
26	-				0	0	0	0	0	0	442	31-40	287
33					2	0	0	0	0	-	448	36-45	272
28					9	0	0	0	0	0	402	36-45	243
15					4	0	0	0	0	0	491	36-45	332
26	~				ი	0	0	0	0	~	529	31-40	337
22					4	0	0	0	0	0	563	36-45	383
5				7 35	ო	0	0	0	0	.	526	36-45	38
16					ო	0	0	0	0	0	439	36-45	31
23					-	0	0	0	0	0	280	36-45	178
9					2	0	0	0	0	0	211	31-40	140
S					2	0	0	0	0	0	123	36-45	80
S					-	0	0	0	0	0	134	36-45	67
0					-	0	0	0	0	0	74	36-45	2
298	13	1308 2803		1 358	46	2	0	0	0	9	6880		
4.3%	19.0%		~	6 5.2%	0.7%	0.0%	0.0%	0.0%	0.0%	0.1%			
10:00	08:00	00:20 00:00			10:00	05:00				00:60	02:00		
30					4	-				2	469		
12:00		15-00 16-00	17-00	18.00	00.01					10.00	10.00		
	5				13:00					12.00	10:00		

Route 138 (Kingstown Rd) East of Riverhead Site Drive Richmond, RI 02898 Job No. 22094

F.A. Hesketh & Associates, Inc. ³ Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Date Start: 08-Sep-22 Date End: 15-Sep-22		Number	in Pace	46	20	12	80	25	40	66	188	263	271	356	371	453	346	366	323	271	266	232	156	129	29	20	61						
ate Start:) ate End:		Pace	Speed	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	35-44	31-40	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45						
Ğ			Total	53	26	17	11	32	58	136	260	373	476	547	611	662	559	542	473	424	385	352	260	185	132	104	85	6763		11:00	611	12:00	662
		76	666	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	~	0	0	0	0	0	0	0	-	0.0%			16:00	~
		71	75	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0.0%			12:00	~
		66	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%				
		61	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	7	0	0	ო	0.0%			21:00	2
		56	60	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	-	2		0	0	0	0	ø	0.1%	00:90	2	18:00	2
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		46	50	-	2	2	-	-	10	14	33	26	16	25	33	20	44	46	52	20	60	15	18	12	18	18	10	497	7.3%	02:00	33	17:00	60
		41	45	18	10	Ø	5	12	24	45	89	105	91	117	136	143	136	159	132	98	127	66	64	60	34	30	38	1780	26.3%	11:00	136	14:00	159
		36	40	28	10	4	ო	13	16	54	66	158	180	239	235						139		92							10:00	239	12:00	310
		31	35	5	ო	ю	-	5	7	6	25	49	89	117	131	135	112	80	54	58	28	58	48	32						11:00		12:00	
		26	30	0	0	0	1	0	0	2	9	ø	50	18	35	18	20	16	15	35	2	20	18	ო	10	-	0			00:60		16:00	35
		21	25	0	0	0	0	0	0	1	0	12	19	1	5	8	9	9	0	11	0	5	1	0	0	0	0	75	1.1%	00:60	19	16:00	11
		16	20	0	0	0	0	0	0	-	4	2	9	00	9	ო	2	10	თ	9	4	ю	2	0	۲	0				10:00		14:00	
		-	15	٢	0	0	0	0	0	ო	ი	ი	22	21	30	24	24	15	13	20	21	14	16	7	0	0						12:00	
Job No. 22094	EB	Start	Time	09/10/22	01:00	02:00	03:00	04:00	05:00	06:00	02:00	08:00	00:60	10:00	11:00	12 PM	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00		Percent				Vol.

Route 138 (Kingstown Rd) East of Riverhead Site Drive Richmond, RI 02898 Job No. 22094

F.A. Hesketh & Associates, Inc. ³ Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Page 4	-Sep-22 -Sep-22	Number in Pace	30	8	9	10	10	31	61	115	194	268	286	363	352	317	263	275	273	219	217	152	95	20	69	31						
	Date Start: 08-Sep-22 Date End: 15-Sep-22	Pace	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45						
		Total	42	13	7	14	15	43	96	180	259	360	427	509	543	452	379	392	383	307	294	221	151	98	86	50	5321		11:00	509	12:00	543
		76 999	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	٢	0.0%			13:00	~
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		66 70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%				
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F.A. Hesketh & Associates, Inc. ^{3 Creamery Brook} East Granby, CT 06026	0	56 60	0	0	0	0	0	-	~	0	2	0	0	0	0	-	0	0	0	-	-	0	0	-	0	~	6	0.2%	08:00	2	13:00	-
keth & Associa 3 Creamery Brook East Granby, CT 06026	Phone: (860) 653-8000	51 55	0	-		~	0		4	00	4	-	4	-	ო	ო	7	5	e	Ð	2	S	2	2	2	-	66	1.2%	07:00	ω	14:00	2
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d) Drive		16 20	0	0	0	0	0	0	0	0	4	9	-	4	7	9	9	5	ო	2	-	9	2	~	0	0	54	1.0%	00:60	9	12:00	2
(ingstown F head Site I	RI 02898 94	15	0	0	0	0	0	0	-	ო	9	9	20	18	36	17	11	11	19	17	12	4	œ	-	0	0	190	3.6%	10:00	20	12:00	36
Route 138 (Kingstown Rd) East of Riverhead Site Drive	Richmond, RI 02898 Job No. 22094	EB Start Time	09/11/22	01:00	02:00	03:00	04:00	05:00	00:90	02:00	08:00	00:60	10:00	11:00	12 PM	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total	Percent	AM Peak	Vol.	PM Peak	Vol.

Page 5	-Sep-22 -Sep-22	Number in Pace	15	10	ກແ	12	59	156	284	268	235	219	235	254	262	286	295	305	350	200	145	102	72	46	26						
	Date Start: 08-Sep-22 Date End: 15-Sep-22	Pace N		31-40	36-45	36-45	36-45	36-45	31-40	36-45	36-45	36-45	36-45	36-45	31-40	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45						
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		76 999	0	00	00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	-	0.0%			13:00	~
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F.A. Hesketh & Associates, Inc. ^{3 Creamery Brook} East Granby, CT 06026		56 60	0	00		00	0	0	0	0	٢	0	-	0	0	٢	0	0	0	0	0	0	0	0	0	ო	0.1%	00:60	۴	14:00	~
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Route 138 (Kingstown Rd) East of Riverhead Site Drive	Richmond, RI 02898 Job No. 22094	EB Start Time	09/12/22	01:00	03-00	04:00	05:00	00:00	02:00	08:00	00:60	10:00	11:00	12 PM	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total	Percent	AM Peak	Vol.	PM Peak	Vol.

8-Sep-22 5-Sep-22	Number	in Pace	22	11	9	χ	20	007	190	300	260	213	177	209	257	254	280	276	344	346	237	144	94	71	59	26						
Date Start: 08-Sep-22 Date End: 15-Sep-22	Pace	Speed	36-45	36-45	35-44	30-45	35-44	30-40	30-45	36-45	31-40	31-40	36-45	36-45	31-40	36-45	36-45	36-45	36-45	36-45	36-45	36-45	31-40	36-45	36-45	36-45						
		Total	25	17	9 9	01	32	040 040	240	434	402	309	286	303	389	395	421	418	486	461	330	206	146	108	76	41	5631		02:00	434	16:00	486
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3 Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000	51	55	-	-	0 0		- (0	2	~	2	-	0	2	2	2	~	~	-	~	0	-	~	2	24	0.4%	08:00	2	13:00	5
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ingstown R head Site E 1 02898 4	-	15	0	0	0 0	0 0	0 0	- c	י ת	15	14	13	10	10	15	19	15	18	17	14	16	9	ო	-	~	0	196	3.5%	07:00	15	13:00	19
Route 138 (Kingstown Rd) East of Riverhead Site Drive Richmond, RI 02898 Job No. 22094	Start	Time	09/13/22	01:00	02:00	03:00	04:00	00.00	00:00	02:00	08:00	00:60	10:00	11:00	12 PM	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total	Percent	AM Peak	Vol.	PM Peak	Vol.

F.A. Hesketh & Associates, Inc. ³ Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

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F.A. Hesketh & Associates, Inc. 3 Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Route 138 (Kingstown Rd) East of Riverhead Site Drive Richmond, RI 02898 Job No. 22094

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Associates,	eamery Brook
8	ean
Hesketh	3 Cr
F.A.	

3 Creamery brook East Granby, CT 06026 Phone: (860) 653-8000

Route 138 (Kingstown Rd) East of Riverhead Site Drive Richmond, RI 02898 Job No. 22094

Date Start: 08-Sep-22 Date End: 15-Sep-22

Number	in Pace	*	*	*	*	*	*	*	*	*	*	*	176	306	279	291	370	409	416	292	219	101	97	56	25						
Pace	Speed	*	*	*	*	*	*	*	*	*	*	*	36-45	36-45	36-45	36-45	31-40	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45						
	Total	*	*	*	*	*	*	*	*	*	*	*	328	447	386	464	589	621	595	391	393	180	129	17	39	4639		11:00	328	16:00	621
76	666	*	*	*	*	*	*	*	*	*	*	¥	0	0	0	0	0	٢	0	0	0	0	0	0	0	-	0.0%			16:00	Ţ
71	75	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%				
66	20	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	۲	0	0	0	0	0	0	۲	0.0%			17:00	~
61	65	*	¥	*	*	*	*	*	*	*	*	*	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0.0%			15:00	Ţ
56	60	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	٢	0	-	0.0%			22:00	Ţ
51	55	*	*	*	*	*	*	*	*	*	*	*	0	2	0	0	2	0	-	2	2	-	0	2	2	14	0.3%			12:00	0
46	50	*	*	*	*	*	*	*	*	*	*	*	6	19	11	12	16	17	23	20	7	10	11	9	с	164	3.5%	11:00	6	17:00	23
41	45	*	*	*	*	*	*	*	*	*	*	*	64	105	112	93	93	154	150	128	77	39	33	21	16	1085	23.4%	11:00	64	16:00	154
36	40	*	*	*	*	*	*	*	*	*	*	*	112	201	167	198	219	255	266	164	142	62	64	35	6	1894	40.8%	11:00	112	17:00	266
31	35	*	*	*	*	*	*	*	*	*	*	*	52	71	55	70	151	93	104	41	75	33	19	12	9	782	16.9%	11:00	52	15:00	151
26	30	*	*	*	*	*	*	*	*	*	*	*	29	10	22	35	45	34	17	12	35	20	-	0	2	262	5.6%	11:00	29	15:00	45
21	25	*	*	*	*	*	*	*	*	*	*	*	2	13	5	17	20	15	o	4	14	Ø	0	0	1	108	2.3%	11:00	2	15:00	20
16	20	*	*	*	*	*	*	*	*	*	*	*	19	n	0	11	12	15	2	9	22	2	0	0	0	92	2.0%	11:00	19	19:00	22
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Start	Time	09/08/22	01:00	02:00	03:00	04:00	02:00	06:00	02:00	08:00	00:00	10:00	11:00	12 PM	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total	Percent	AM Peak	Vol.	PM Peak	Nol

	F.A. Hesketh
Route 138 (Kingstown Rd)	3 Q
East of Riverhead Site Drive	East G
Richmond, RI 02898	Phone
Job No. 22094	

Hesketh & Associates, Inc. ³ Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Date Start: 08-Sep-22 Date End: 15-Sep-22

Number	in Pace	13	7	5	15	16	73	195	229	280	201	273	262	322	317	319	336	418	375	291	196	123	94	74	47						
Pace	Speed	36-45	36-45	41-50	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	31-40	31-40	36-45	36-45	36-45	35-44	31-40	36-45	36-45						
	Total	26	Ø	00	19	32	98	262	335	431	332	386	417	505	454	537	668	703	557	423	285	213	135	93	68	6995		08:00	431	16:00	703
76	666	0	0	0	0	0	0	0	-	-	0	0	-	٢	0	0	0	0	0	0	0	0	0	0	0	4	0.1%	02:00	-	12:00	.
71	75	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0.0%	10:00	٢		
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41	45	S	5	2	0	12	29	114	108	107	93	103	66	152	118	138	87	117	142	138	51	43	22	34	19	1747	25.0%	06:00	114	12:00	152
36	40	ω	2	0	9	4	44	81	121	173	108	170	163	170	199	181	212	275	233	153	145	80	58	40	28	2654	37.9%	08:00	173	16:00	275
31	35	ო	0	-	0	6	10	15	28	74	64	45	67	89	73	96	124	143	72	59	46	41	36	10	4	1109	15.9%	08:00	74	16:00	143
26	30	0	0	0	0	0	0	2	0	22	15	16	13	18	80	33	61	47	14	ო	2	23	9	-	2	295	4.2%	08:00	22	15:00	61
21	25	۲	0	0	0	0	-	2	8	2	10	ი	9	8	6	19	50	24	16	10	٢	ო	0	0	0	179	2.6%	00:60	10	15:00	50
16	20	-	0	0	0	-	2	4	5	5	9	ო	11	5	2	0	46	26	14	5	10	Ø	-	0	0	164	2.3%	11:00	11	15:00	46
.	15	-	0	0	0	~	4	7	19	26	13	15	29	24	16	31	71	54	28	18	16	2	7	-	0	378	5.4%	11:00	29	15:00	71
Start	Time	09/09/22	01:00	02:00	03:00	04:00	05:00	00:90	02:00	08:00	00:60	10:00	11:00	12 PM	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total	Percent	AM Peak	Vol.	PM Peak	Vol.

Nichtriadia, Ki uzasa Job No. 22094	0						LINUIG. (000)									
															Date Start: 08-Sep-22 Date End: 15-Sep-22)8-Sep-2 15-Sep-2
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04:00	0	0	0	-	4	8	2	-	-	0	0	0	0	17	36-45	12
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	22 4	12	25	79	179	104	18	4	0	0	0	0	0	447	36-45	283
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11:00	28 3	10	15	88	214	126	18	-	0	0	0	0	0	503	36-45	340
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21:00	7 2	2	28	40	67	50	9	0	0	0	0	0	0	202	36-45	117
22:00	1	-	5	19	39	52	10	0	-	0	0	0	0	128	36-45	91
23:00	2	-	-	12	25	22	8	5	0	0	0	0	0	76	36-45	47
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1011																

F.A. Hesketh & Associates, Inc. ³ Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

Page 12	Sep-22 Sep-22	Number in Pace	26	17	17	12	80	18	64	108	181	301	370	366	372	333	349	346	368	297	264	171	111	75	29	24					
LL.	Date Start: 08-Sep-22 Date End: 15-Sep-22	Pace N		36-45	36-45	36-45	31-40	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	31-40	36-45	36-45	36-45	36-45					
	Date	Total			29						242			299				513							39		6415		11:00	288	12:00 648
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keth & Assoc 3 Creamery Brook East Granby, CT 060	(860)	46 50	8-	4	80	2	5	10	17	24	25	18	24	28	30	26	39	23	41	22	13	17	18	10	-	4	410	6.4%	11:00	07	16:00 41
F.A. Hesketh & Associates, Inc. 3 Creamery Brook East Granby, CT 06026		41 15	₽ ₽	11	7	7	-	7	34	67	66	131	163	140	147	145	149	175	195	129	107	65	47	30	13	7	1889	29.4%	10:00	103	16:00 195
F.A. H		36	13	9	10	5	9	11	30	41	82	170	207	226	225	188	200	171	173	168	157	98	64	45	16	17	2329	36.3%	11:00	077	12:00 225
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igstown Rd ead Site Dr	02898	ר ע	0	0	0	0	0	0	ო	ო	11	15	15	44	41	25	36	18	21	39	13	12	9	2	0	e	307	4.8%	11:00	44	12:00 41
Route 138 (Kingstown Rd) East of Riverhead Site Drive	Richmond, RI 02898 Job No. 22094	WB Start Time	09/11/22	01:00	02:00	03:00	04:00	05:00	00:90	02:00	08:00	00:60	10:00	11:00	12 PM	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total	Percent	AM Peak	. ION	PM Peak Vol.

Date Start: 08-Sep-22 Date End: 15-Sep-22		Number	in Pace	15	10	5	15	30	53	172	238	276	229	240	216	284	247	333	310	367	304	227	152	100	54	32	15						
ate Start: Date End:		Pace	Speed	36-45	36-45	31-40	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	36-45	31-40	36-45	36-45	36-45	31-40	36-45	36-45	36-45	35-44						
			Total	18	18	9	20	41	96	249	375	420	337	350	367	429	381	457	560	564	441	310	229	144	62.	51	29	5971		08:00	420	16:00	564
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		71	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%				
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		41	45	9	4	-	8	15	22	84	108	102	103	89	75	105	86	110	81	138	152	107	60	41	24	15	9	1542	25.8%	02:00	108	17:00	152
		36	40	თ	9	e	7	15	31	88	130	174	126	151	141	179	161	223	186	229	152	120	92	59	30	17	6	2338	39.2%	08:00	174	16:00	229
		31																		82								1058				15:00	124
		26	30	0	2	0	0	0	4	9	17	12	11	7	25	11	14	10	45	6	о	7	9	4	0	-	1	201	3.4%	11:00	25	15:00	45
		21	25	0	0	0	0	0	-	2	10	2	ω	5	19	9	12	5	32	9	14	4	0	ო	0	0	0	129	2.2%	11:00	19	15:00	32
		16	20	0	0	0	0	0	-	5	Ø	2	4	ო	17	4	2	2	27	16	ø	-	5	ო	0	-	0	112	1.9%	11:00	17	15:00	27
0007		-	15	0	ო	0	0	2	0	ø	21	19	12	10	12	17	12	18	56	55	11	5	2	2	-	0	0	275	4.6%	07:00	21	15:00	56
Job No. 22094	WB	Start		2																16:00										AM Peak		PM Peak	

Page 13

Route 138 (Kingstown Rd) East of Riverhead Site Drive Richmond, RI 02898 Job No. 22094

F.A. Hesketh & Associates, Inc. ³ Creamery Brook East Granby, CT 06026 Phone: (860) 653-8000

East of Riverhead Site Drive Richmond RI 02898	East of Riverhead Site Drive Richmond RI 02898					5 Cre East Gra Phone: (amery anby, 860)	/ Brook CT 06026 653-8000								÷
Job No. 22094	2														Date Start: 08-Sep-22 Date End: 15-Sep-22	8-Sep-22 5-Sep-22
WB Start	1 16	21	26	31	36	41	46	51	56	61 65	66 70	71	76	Loto F	Pace	Number
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03:00		0	0	4	9	9	0	0	0	0	0	0	0	16	36-45	12
04:00	0	0	0	2	16	14	4	0	0	0	0	0	0	36	36-45	30
05:00		0	-	13	34	33	13	0	-	0	0	0	0	95	36-45	67
		4	5	16	96	84	25	0	0	0	0	0	0	236	36-45	180
	16 5	12	11	51	134	102	19	0	-	0	0	0	0	351	36-45	236
		5	19	89	157	58	11	0	0	0	0	0	0	362	31-40	246
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		2	19	20	140	93	23	-	0	0	0	0	0	381	36-45	233
		ო	15	80	152	82	13	٢	0	0	0	0	0	362	35-44	234
		80	14	35	174	126	25	5	0	0	0	0	0	400	36-45	300
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14:00	19 3	6	6	65	157	112	25	5	2	0	0	0	0	406	36-45	269
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		12	12	82	209	147	12	-	0	0	0	0	0	496	36-45	356
18:00		2	4	28	128	106	28	-	0	0	0	0	0	305	36-45	234
19:00		0	10	69	120	40	5	0	0	0	0	0	0	254	31-40	189
20:00		0	10	35	64	34	8	2	0	0	0	0	0	158	31-40	66
21:00	0	0	0	10	32	30	0	ო	0	0	0	0	0	86	36-45	62
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Richmond, RI 02898 Job No. 22094						Eas	East Granby,	2					s			
						Phone: (ne: (860)) 653-8000	0						Date Start: 08-Sep-22 Date End: 15-Sep-22	38-Sep-22 15-Sep-22
-	16	21	26	31	36	41	46	51	56	61	66	71	76		Pace	Number
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0	0	0	0	1	2	4	1	1	0	0	0	0	0	12	36-45	6
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14	6	6	17	51	126	128	41	ო	0	0	0	0	0	398	36-45	254
23	5	7	ო	40	182	123	15	-	0	0	0	0	-	400	36-45	305
16	9	7	0	38	118	92	22	1	0	0	0	0	0	309	36-45	210
12	e	7	13	63	124	87	19	e	0	0	0	0	0	331	36-45	211
10	2	ю	4	55	154	85	25	4	0	0	0	0	0	342	36-45	239
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16	4	13	12	17	167	89	17	e	0	0	0	0	0	398	36-45	256
22	œ	10	36	103	167	111	13	-	0	0	0	0	~	472	36-45	278
39	14	16	65	131	203	101	12	0	0	-	0	0	0	582	31-40	334
31	14	12	42	115	264	119	17	2	-	0	0	0	0	617	36-45	383
33	13	18	22	103	195	111	24	0	0	0	0	0	0	519	36-45	306
16	2	e	8	63	129	112	15	-	2	0	0	0	0	351	36-45	241
10	5	ო	32	89	106	32	თ	0	0	0	0	0	0	286	31-40	195
ო	2	0	ო	52	65	47	თ	-	0	-	0	0	0	183	31-40	117
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F.A. Hesketh & Associates, Inc. 3 Creamery Brook East Granby, CT 06026

> Route 138 (Kingstown Rd) East of Riverhead Site Drive Richmond, RI 02898 Job No. 22094

Accident Data Summary

Route 138

Stop & Shop drive to Westerly Credit Union drive Nov 1, 2019 thru Nov 1, 2022

Accider Route 1 Nov 1, 2	Accident Data - Richmond Police Department Route 138 From Stop & Shop Driveway to We Nov 1, 2019 thru Nov 1, 2022	nmond Polic p & Shop D v 1, 2022	ce Depar Iriveway	Accident Data - Richmond Police Department Route 138 From Stop & Shop Driveway to Westrly Credit Union Driveway Nov 1, 2019 thru Nov 1, 2022	riveway					
No.	Report No	Date	Time	Intersection	Dir	Dist	type of accident	Injuries	Vehilces Dir Trave	Dir Trave
+		11/26/2019	15:38	Stilson Road	East	1 mi	rear end	Prop Dam Only	2	WB
2	19-180-AC	19-180-AC 11/26/2019	17:55	Parking Lot Dunkin					2	
m	20-4-AC	20-4-AC 1/7/2020	15:33	Stop & Shop Parking Lot					2	

Dir Travel 2	WB			WB							EB				EB	EB			NB				EB	SB	NB				EB		WB		
Dir Travel 1	WB			EB				EB			WB				EB	EB			EB				EB	SB	EB		-		EB		WB		
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Injuries	Prop Dam Only			Transp by Rescue											transp by Rescue				Prop Dam Only			Prop Dam Only	Prop Dam Only	Prop Dam Only	Transp by Rescue				Transp by Rescue				
type of accident	rear end			Head On				fixed object (tree)			Head On				Rear End				Angle			Tree fall		rear end	Angle	Pedestrian	rear end		rear end		rear end		
Dist	1 mi							500 ft			1000 ft					500 ft			400 ft			1 mile	50 ft				100 ft			2000 ft	200 ft		1600 ft
Dir	East							east			East					east			east			west	west				east			north	east		east
Intersection	Stilson Road	Parking Lot Dunkin	Stop & Shop Parking Lot	46 Kingstown Road	Stop & Shop Parking Lot	Stop & Shop Parking Lot	Rite Aide Parking Lot	Stilson Road	Stop & Shop Parking Lot	Citizens Bank Parking Lot	Riverhead Building Sup Driveway	Stop & Shop Parking Lot	Stop & Shop Parking Lot	Dunkin Parking Lot	Westerly Credit Union Driveway	Stilson Road	Stop & Shop Parkong Lot	Westerly Credit Uion Lot	Stilson Road	Dunkin Parking Lot	Stop & Shop Parkong Lot	Stilson Road	Stop & Shop Driveway	I-95 SB Ramp	Walgreens / Dunkin Drives	Stop & Shop Parking Lot	Stilson Road	Stop & Shop Parking Lot	Riverhead Building Sup Driveway	Stilson Road (Parking Lot)	Lickety Splits	Stop & Shop Parking Lot	Stilson Road
Time	15:38	17:55	15:33	18:50	14:50	13:19	11:18	4:09	11:54	14:18	11:33	16:48	17:01	10:27	10:41	15:09	12:45	14:10	14:13	12:17	12:40	14:44	9:02	16:43	10:35	14:42	7:08	18:47	6:47	15:41	14:56	16:43	2:12
te	6	19	50	20	20	20	20	20	20	20	020	020	020	2020	2020	020	2020	10/5/2020	10/23/2020	10/31/2020	11/30/2020	11/30/2020	2/12/2021	2/17/2021	2/23/2021	3/20/2021	3/25/2021	3/27/2021	3/31/2021	2021	2021	6/11/2021	7/7/2021
Date	11/26/2019	11/26/2019	1/7/2020	2/3/2020	2/11/2020	2/17/2020	2/21/2020	5/15/2020	6/2/2020	6/7/2020	6/19/2020	6/19/2020	6/20/2020	7/11/2020	8/11/2020	9/5/2020	9/20/2020	10/5/	10/23	10/3	11/3	11/3	2/12	2/17	2/23	3/20	3/25	3/27	3/31,	4/29/2021	6/8/2021	6/11	11/1
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Town of Richmond Department of Building, Planning, & Zoning | Planning Department

Riverhead Building Supply Expansion

38 Kingstown Road Richmond, Rhode Island

Traffic Engineering Peer Review



May 2023





Improving lives through infrastructure

640 George Washington Hwy Building C, Suite 100 Lincoln, RI 02865 401.722.7660

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Richmond, Rhode Island

1.0 Introduction

1.1 Purpose of Study

This report was prepared at the request of the Town of Richmond in connection with their review of the master plan submission for the expansion of the existing developed property at 38 Kingstown Road in Richmond. The Town has requested a comprehensive review of the traffic report and the traffic aspects found within the application for the master plan.

1.2 Description of Project

GX3 LLC is proposing to construct a new 200,000 square-foot storage building, external paved laydown areas, and associated parking. There are currently five buildings on the property with a total floor area of 41,237 square-foot with an outdoor storage area. The site will be accessed by the existing unsignalized driveway on Kingstown Road, see Figure 1. The business hours are anticipated to remain the same between 5:00 A.M. and 5:00 P.M. It is anticipated that there will be approximately 25 to 30 additional employees and 15 additional incoming and outgoing material deliveries.





Richmond, Rhode Island

1.3 Traffic Report Review

Bryant Associates has reviewed the traffic related materials and offer the following summary and findings of the documents. The traffic impact analysis (TIA) report dated January 6, 2023, revised April 10, 2023, for the subject project has been prepared by F.A. Hesketh & Associates, Inc. (Hesketh). The "Application for Master Plan" (Application for Master Plan) was included in the Town's "Application for Land Development or Subdivision Approval" form prepared by GX3 LLC. The TIA letter discussed the proposed project summary, the existing conditions of roadways and intersections in the vicinity of the site, a description of their data collection, a trip generation summary, an accident data review, a sight distance analysis, and their conclusions.

Bryant Associates conducted a field review, including traffic operations, posted speed limits, traffic control devices, etc., on May 12, 2023.

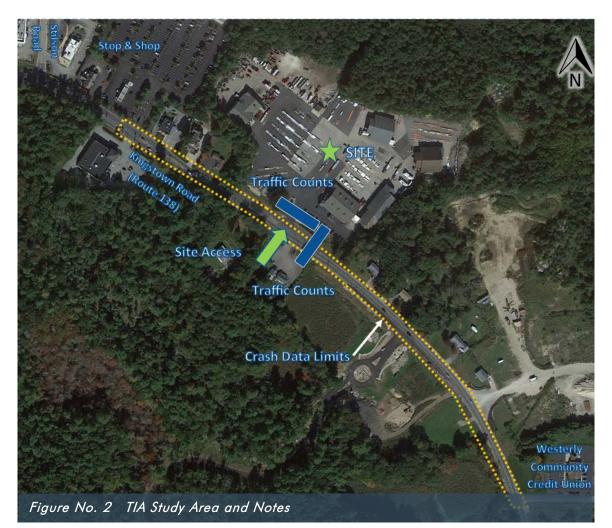
1.4 TIA Data Collection Summary

The TIA summarized the existing conditions of the unsignalized site driveway, at 38 Kingstown Road, as shown in Figure 2. Hesketh conducted a field review of the study area, as well as collected traffic counts and speed counts using automatic traffic counters. Two-way traffic counts were collected on Kingstown Road, east of the site driveway, and on the site driveway, north of Kingstown Road, between 11:00 AM, Thursday September 8, 2022, and 10:00 A.M., Thursday September 15, 2022. Crash data for Kingstown Road between the Stop & Shop driveway and the Westerly Community Credit Union driveway was obtained for the three-year period between November 1, 2019, and November 1, 2022, from the Richmond Police Department. Turning movement counts were not conducted for this TIA.



Riverhead Building Supply Traffic Report Peer Review

Richmond, Rhode Island



2.0 Traffic Report Review

2.1 Site Plan Review

The TIA summarized the existing and proposed conditions of 38 Kingstown Road. The number of parking spaces and loading docks in the write-up is not consistent with the Development Overlay Plan (Site Plan), dated April 6, 2023, however, the Application for the Master Plan is consistent with of the site plan indicating 34 existing parking spaces and 23 loading docks/bays.

2.1.1 Application for Master Plan – Proposed Parking Requirement Review

The Town's Zoning Ordinance (Ordinance) requires 1 parking space per 750 square-foot of gross floor area. The proposed expansion is approximately 200,000 square feet which would require approximately 266 parking spaces. The applicant provided an alternative approach to determine the number of proposed parking spaces for the expansion in the Application for the Master Plan.



Riverhead Building Supply Traffic Report Peer Review

Richmond, Rhode Island

Compared to the existing number of spaces, the number of spaces required by the Town's Ordinance appears to be excessive for what will be needed under proposed conditions.

In the application, the proposed number of parking spaces was calculated using the existing ratio of employees to parking spaces. Although it is typical to determine the parking demand from the floor area, many of the buildings are mostly storage/distribution (warehouse) with small office areas. There are currently 24 employees with 34 parking spaces, which results in a ratio of 1.4 spaces per employee. The calculations for the proposed number of parking spaces were conservative by using an additional 30 employees, since it is anticipated that only 26 new employees will be hired due to the expansion. The parking demand was calculated to be 76 spaces (42 new spaces based on 30 new employees plus the existing 34 spaces). The proposed site plan provides 83 proposed and existing spaces.

Bryant Associates also calculated the parking demand using Institute of Transportation Engineers (ITE) Parking Generation (5th edition) Land Use Code 150, Warehousing, and Land Use 812, Building Material and Lumber Store, which are the land use codes that most closely resemble the proposed expansion. The parking demand was calculated using the proposed 200,000 square-foot building area and the anticipated number of employees, see Table No. 1.

Parking Dem	and for the Prop	osed Expansion
Calculated Using	LU 150: Warehousing	LU 812: Building Material and Lumber Store
Floor Area (200,000 SF)	78	55
No. of Employees (30 Employees)	23	38

Table No 1

Based on the number of employees, the parking demand calculated in the application for the master plan is conservative and it appears that a reasonable number of additional parking spaces for this development is proposed.

2.1.2 Application for Master Plan – Proposed Loading Requirement Review

The Town's Ordinance requires at least one loading area be provided for every building. The Site Plan indicates 19 depressed loading docks and four at-grade loading bays for the proposed expansion. The number of proposed loading spaces satisfies the Town's Ordinance.

2.2 **Description of Area Review**

The site will be accessed via Kingstown Road, which is classified as a Rural Principal Arterial, as presented in Technical Paper 165, Rhode Island Statewide Planning Program, Department of



Riverhead Building Supply Traffic Report Peer Review

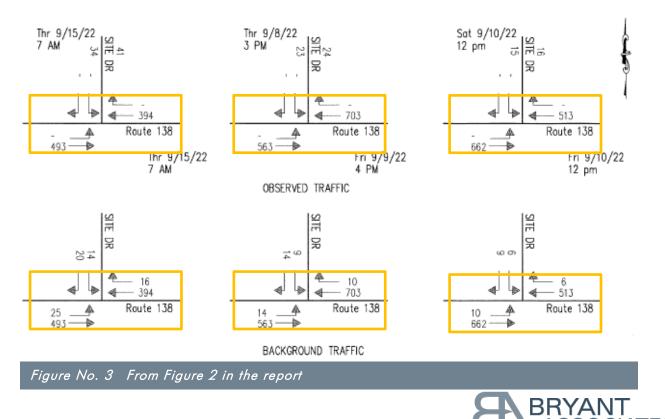
Richmond, Rhode Island

Administration, 2014. The TIA indicated that the posted speed limit is 40 mph, however, it was observed that the site driveway is located within a speed limit zone posted at 25 mph in both directions. The speed limit to the east of the site is posted at 40 mph. The TIA does not mention the 25 mph speed limit at the driveway.

2.3 Current Traffic Volumes Review

The existing counts conducted on the site driveway were adjusted by Hesketh to reflect equal entering and exiting traffic volumes. The exiting traffic that was counted was consistently lower than the entering traffic. The daily exit counts had to be increased between 40% and 102%. Bryant Associates concurs it is anticipated for this site to have an equal number of trips entering and exiting throughout the day. Bryant Associates does have concerns due to the inconsistent entering and exiting traffic data provided, that the traffic volumes may not be accurate. It is recommended that turning movement counts of the peak periods be performed to verify the traffic volume data.

The TIA indicates that a growth rate was applied to the background traffic to estimate 2025 volumes on Kingstown Road, however, a growth rate does not appear to have been applied, see the yellow boxes in Figure No. 3 below. Growth rates should be applied to get 2025 design year volumes on Kingstown Road. It is also noteworthy to state that were multiple typographical errors regarding the dates and times listed in the Observed Traffic diagrams in the TIA's Figure 2. Also in Figure 2, the Saturday peak hour observed traffic is shown as 15 exiting trips from the driveway but it should be 20 exiting trips according to Table 2 and Table 3 in the TIA. This volume discrepancy should be resolved between the tables, figures and capacity analysis.



Richmond, Rhode Island

2.4 Site Generated Traffic Review

Hesketh used the ITE <u>Trip Generation</u> and end user anticipated trip generation to calculate the number of trips generated by the proposed expansion. Land Use 150, Warehousing, was used to determine the trip generation for the A.M. and P.M. weekday peak hours and the end user estimated Saturday trip generation, which was conservative compared to the ITE Land Use 150 calculations. Land Use 812, Building Materials and Lumber Store, was not used because the existing trip generation calculations using Land Use 812 appears to be excessive when compared to the number of existing trips that were collected entering and exiting the site.

Bryant Associates agree that Land Use 812 trip generation is excessive when compared to existing trips generated by the site.

The TIA states that the directional distribution of the existing roadway network is 65% to and from the west and 35% to and from the east. It is not apparent from the data collected how the distribution was calculated. Although due to the proximity of Interstate 95 (I-95) to the west, it is anticipated that the majority of the traffic will be coming from and going to the west and Bryant Associates are agrees with the directional distribution presented in the TIA.

2.5 Capacity Analysis Review

The exiting traffic during Saturday peak hour should be updated in the capacity analysis as discussed in Section 2.3. According to Table 2 and Table 3 in the TIA there are 20 exiting vehicles, and the capacity analysis and Figure 2 has 15 exiting vehicles. The capacity analysis needs to be updated with Kingstown Road volumes with growth rate applied, as stated in Section 2.3. It is also recommended to update the analysis with turning movement counts, if they are acquired.

The Synchro reports show all the peak hour factors are set to Synchro's default of 0.92. Actual peak hour factors should be used. Also, the Synchro reports do not list the heavy vehicle percentage which can be a factor in the level of service at the driveway. The heavy vehicle percentages should be provided, especially since many of the vehicles will be larger trucks.

Based on the guidelines provided in Table 2-3 of the ITE <u>Transportation Impact Analysis for Site</u> <u>Development</u>, it is recommended that the signalized intersection of the Walgreens driveway, the Stop & Shop driveway, and Kingstown Road, to the west of the site, also be analyzed as it is within the suggested study area limits.

2.6 Sight Distances Review

Bryant concurs with this section based on the existing 85th percentile speeds and field review.



Richmond, Rhode Island

2.7 Left Lane Warrant Review

Hesketh used a figure provided by the Connecticut Department of Transportation that is based on the 2004 AASHTO Geometric Design of Highways and Streets (Green Book) Exhibit 9-75: Guide for Left Turn Lanes on Two-Lane Highways to determine if a left turn lane is warranted. Exhibit 9-75 is no longer included in the 2018 Green Book and has been replaced by Table 9-25/Figure 9-36: Suggested Left-Turn Treatment Guidelines Based on Results from Benefit-Cost Evaluations for Intersections on Two-Lane Highways in Rural Areas. Based on the 2004 and 2018 Green Book a left turn lane would be desirable. As stated in the TIA the Synchro analysis shows that eastbound traffic on Kingstown Road will experience delays under 1.5 seconds. Bryant concurs that a left turn lane is not required on the eastbound approach of Kingstown Road based on the provided capacity analysis. The capacity analysis should be updated, as discussed in Section 2.5, to verify the proposed delays on Kingstown Road remain acceptable without an added left turn lane.

2.8 Accident Data Review

The following are the discrepancies/comments for the accident data section in the report and the accident data table in the appendices:

- Three crashes are indicated at the Dunkin/Walgreen driveways in the report, however, the table only lists one crash.
- The crash at the I-95 ramps is outside the defined limits defined in the TIA.
- The report indicated the locations of the crashes that did not occur in the parking lots, except the following locations:
 - Seven crashes at Stilson Road are not indicated in the report. It should be noted that Stilson Road is outside the defined limits.
 - o The crash at 46 Kingstown Road is not indicated in the report.
- The report indicated that 15 crashes occurred outside of parking lots but only 14 crashes have the crash type identified in the subsequent discussion text in the report.
- The unknown crash discussed in the report is not identified in the table.
- Two fixed object crashes are listed in the report, however, there is only one identified in the table.

These discrepancies should be addressed and resolved in the accident data section and/or table.

2.9 Conclusion Review

A summary of the Application for Master Plan and TIA report conclusions:

• "It is proposed that the parking spaces for the new development be based on the existing employee to parking ratio. Using 30 new employees, the number of parking spaces required to support the new building is...42 spaces, (requiring a total of 76 spaces)."

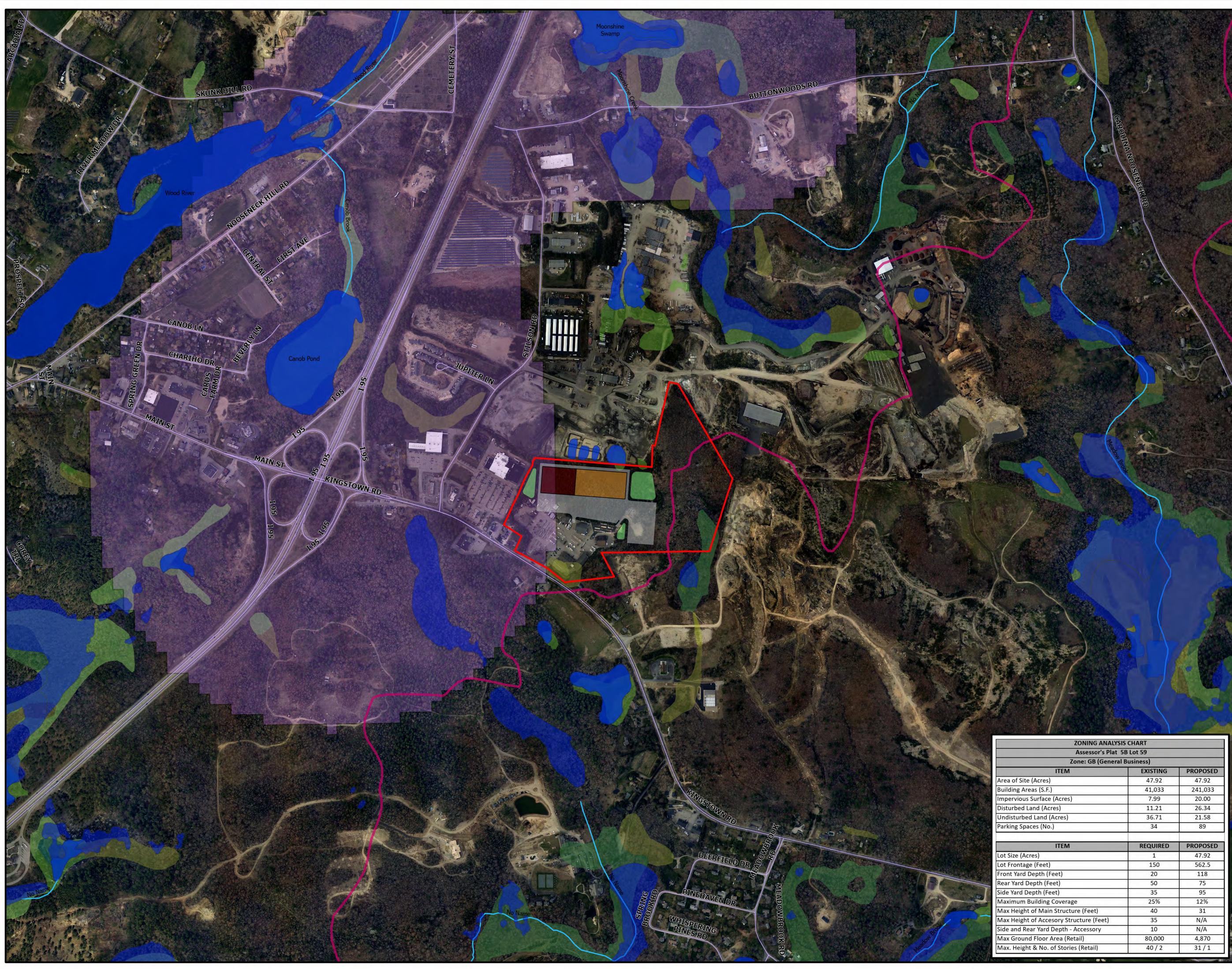


Riverhead Building Supply Traffic Report Peer Review

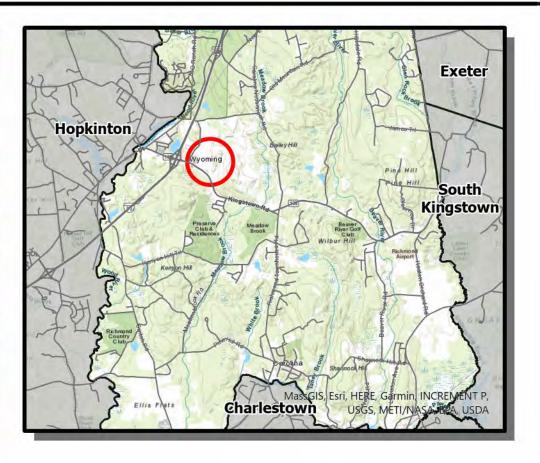
Richmond, Rhode Island

- Bryant Associates concurs that the Town's Ordinances parking requirements would be an excessive estimation of the parking demand. The method utilized to calculate the parking demand is conservative compared to the ITE <u>Parking Generation</u> for LU 150 – Warehousing and LU 812 – Building Materials and Lumber Store when calculated by number of employees.
- "The proposed 200,000 s.f. expansion to the existing Riverhead Building Supply facility is projected to generate a total of 48 trips during the morning peak hour, 50 new trips during the afternoon peak hour and 18 new trips during the Saturday peak hour."
 - Bryant Associates concurs with Hesketh's methodology for calculating trip generation for the proposed expansion.
- "A capacity analysis indicates that the intersection of Route 138 and the site driveway will operate at acceptable levels of service during the peak hours under the combined traffic volumes."
 - Bryant Associates recommends that the capacity analysis be updated to reflect the 2025 growth rate factors, the existing exiting traffic during the Saturday peak hour, and adjustment of the peak hour factors, as well as turning movement counts, if they are determined to be performed.
 - Since the site is anticipated to have heavy vehicle traffic, Hesketh should verify that the percent of heavy traffic is reflected accurately in the Synchro analysis.
- "The site driveway is properly located with respect to the available sight distances and is properly designed to accommodate a WB-67 design vehicle without encroachment on either the Route 138 or driveway centerline."
 - o Bryant Associates concurs that there is sufficient sight distance.
 - Bryant Associates concurs that the driveway can accommodate a WB-67 design vehicle, however, there will be encroachment over the driveway centerline for the westbound right turn and eastbound left turn into the driveway and the vehicle needs to go over the proposed shoulder line for southbound right turns from the driveway to Route 138. There are existing indications that vehicles are going beyond the paved driveway limits to take the southbound right turn onto Route 138 based on Bryant's field review. It is likely that large vehicles are utilizing the existing gravel areas adjacent to the site driveway to minimize encroachments to opposing travel lanes.
- "Based on our analysis, it is our professional opinion that the traffic volumes associated with the proposed development can readily be accommodated by the existing roadway network."
 - Bryant Associates anticipates that the capacity analysis with revisions stated in Section
 2.5 will show that the traffic volumes generated by the proposed expansion would be accommodated by the existing site driveway.
 - Bryant Associates recommends consideration for the signalized intersection of Walgreens driveway, the Stop & Shop driveway, and Kingstown Road to be included in the capacity analysis.





and (Acres)	11.21	20.54
Land (Acres)	36.71	21.58
ces (No.)	34	89
ITEM	REQUIRED	PROPOSED
res)	1	47.92
e (Feet)	150	562.5
epth (Feet)	20	118
epth (Feet)	50	75
epth (Feet)	35	95
uilding Coverage	25%	12%
of Main Structure (Feet)	40	31
of Accesory Structure (Feet)	35	N/A
ar Yard Depth - Accessory	10	N/A
l Floor Area (Retail)	80,000	4,870
& No. of Stories (Retail)	40/2	31/1





	ey	EII	u	

Property Line	
LAYER	
Proposed Water Quality Basin	
Proposed Building - Phase 1	
Proposed Building - Phase 2	
Proposed Pavement	
National Wetlands Inventory (RIGIS)	
Road	
Rivers and Streams (RIGIS)	
Lakes and Ponds (RIGIS)	
Watershed_Boundaries	
Natural Heritage Area	
Wetland Type	
ESTUARINE EMERGENT WETLAND	
EMERGENT WETLAND: MARSH/WET MEADOW	
EMERGENT WETLAND: EMERGENT FEN OR BOG	
MARINE/ESTUARINE ROCKY SHORE	
ESTUARINE SCRUB-SHRUB WETLAND	
MARINE/ESTUARINE UNCONSOLIDATED SHORE	
FORESTED WETLAND: CONIFEROUS	
FORESTED WETLAND: DECIDUOUS	
FORESTED WETLAND: DEAD	
PALUSTRINE OPEN WATER	
RIVERINE NONTIDAL OPEN WATER	
RIVERINE TIDAL OPEN WATER	
SCRUB-SHRUB WETLAND: SHRUB SWAMP	
SCRUB-SHRUB WETLAND: SHRUB FEN OR BOG	
0 200 400 800 1,200	1,600 US Feet
1 inch equals 400 feet	
CLA Engineers	Inc
STATE STATESTORIAL SOLVE	

317 Main Street Norwich, Connecticut

(860) 886–1966 Fax (860) 886–9165 e-mail: cla@claengineers.com

ject No.:

CLA-7056

D.P.H.

1/31/2023

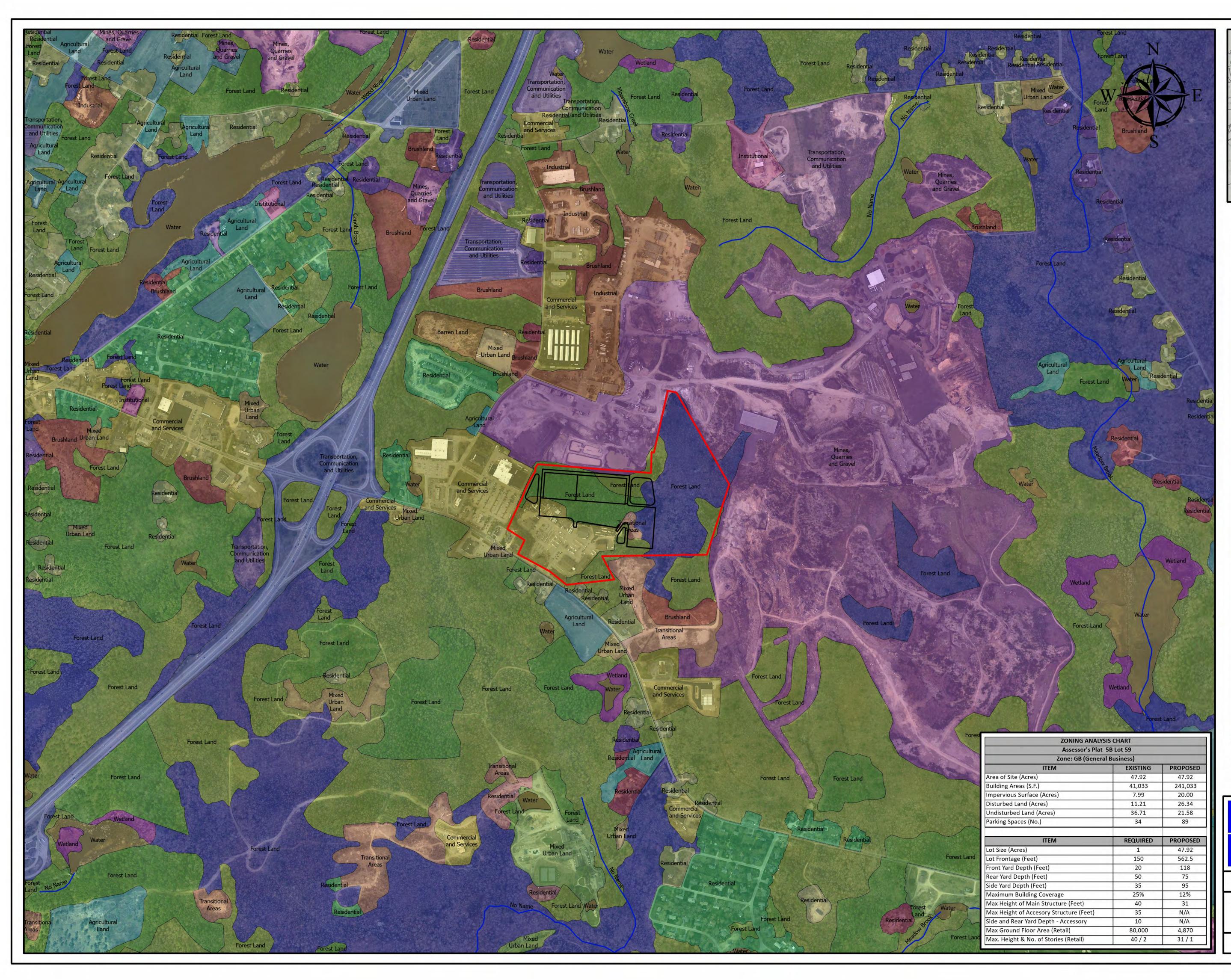
oject Engineer:

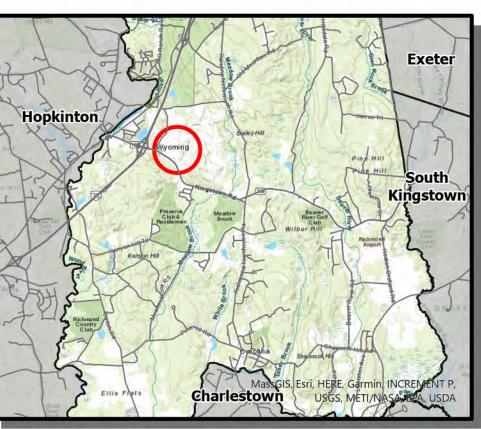
GX3, LLC (RIVERHEAD BUILDING SUPPLY) 250 David Court, Calverton, NY 11933

38 KINGSTOWN ROAD (ROUTE 138)

RICHMOND, RI 05B / 059 / 000

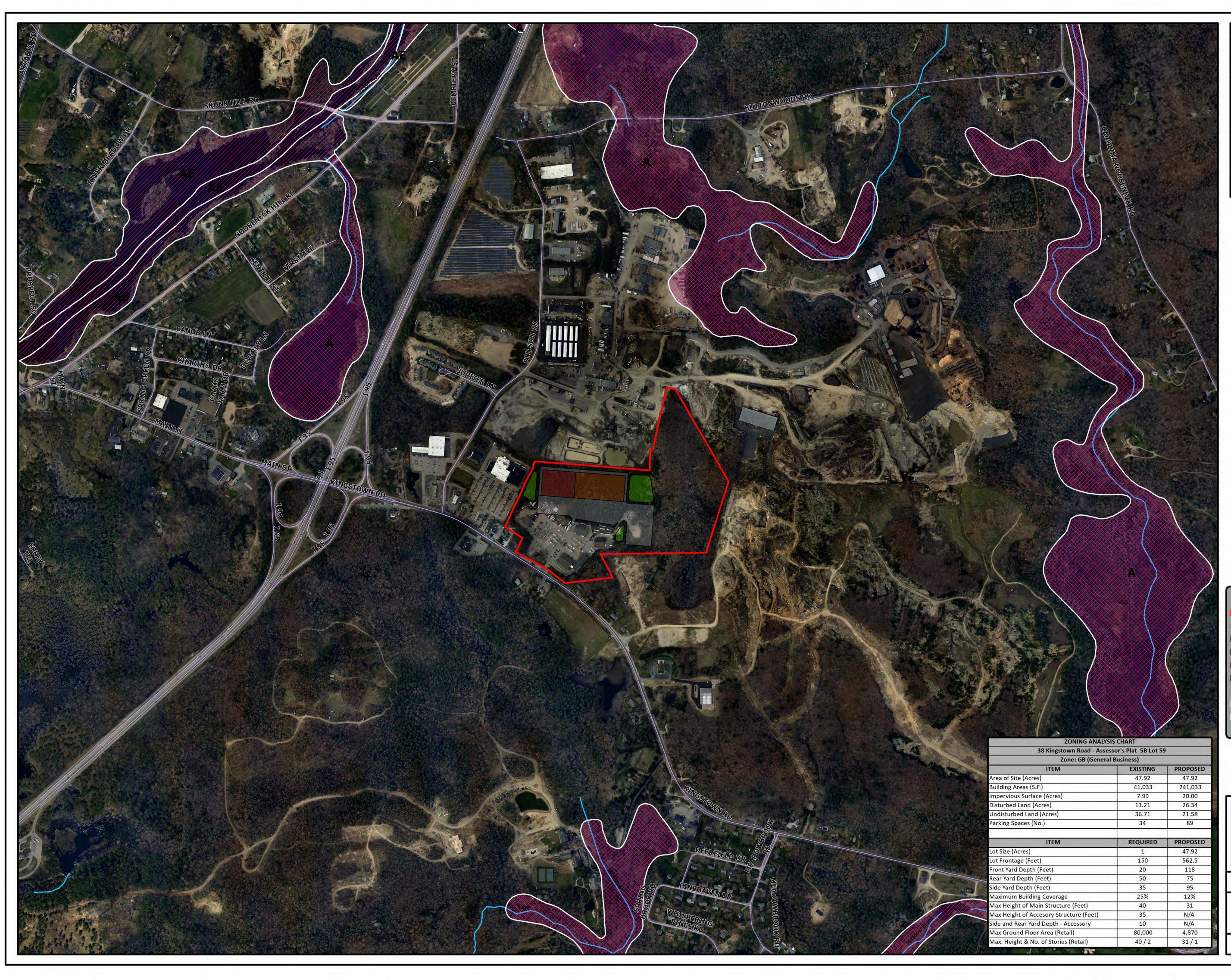
MASTER PLAN - SITE CONTEXT MAP (1) (Natural Resources)





Legend

D	erty Line			
	osed Developm			
	s and Streams			
and the second second	& Cover (2020)			
	orts (and associ	lated facilities)		
Beac			6 [.]	
		nd brush areas,	reforestation)	
	eteries			
		f products and :	services)	
and the second	mercial/Industr mercial/Resider			
	ined Feeding O			
	land (tillable)	peradons		
		>80% hardwoo	d)	
		on (all recreatio		
		olar Energy Sys		
		ential (<1/8 acr		
		andoned fields		1000
Indu	strial (manufac	turing, design,	assembly, etc.)	
		ls, hospitals, ch		
1 million 1		ntial (>2 acre l		
Medi	um Density Res	sidential (1 to 1	./4 acre lots)	
Medi	um High Densit	ty Residential (1/4 to 1/8 acre lo	ts)
Medi	um Low Densit	y Residential (1	to 2 acre lots)	1000
Mine	s, Quarries and	l Gravel Pits		
Mixe	d Barren Areas			
Mixe	d Forest			1.00
Orch	ards, Groves, N	lurseries		
		n (terminals, de		
		l not suitable fo	or tillage)	
	er Lines (100' o	and the second		
		ciated facilities		
Road	ls (divided high) us related facilities	;)
Road	ls (divided high Outcrops	ways >200' plu		;)
Roace Rock	ls (divided high Outcrops ly Areas (not be	iways >200' plu eaches)	us related facilities	;)
Roace Rock	ls (divided high Outcrops ly Areas (not be	aways >200' plu eaches) 80% softwood)	us related facilities	;)
Roace Rock	ls (divided high Outcrops ly Areas (not be vood Forest (>4	aways >200' plu eaches) 80% softwood)	us related facilities	;)
Roace Rock	ls (divided high Outcrops ly Areas (not be vood Forest (>) sitional Areas (u nt Land	aways >200' plu eaches) 80% softwood)	us related facilities	;)
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Roace Rock Sand Softw Trans Vaca Wast	ls (divided high Outcrops ly Areas (not be vood Forest (> sitional Areas (u nt Land re Disposal (lan	aways >200' plu eaches) 80% softwood) urban open) dfills, junkyards	us related facilities	;)
Roace Rock Sand Softw Trans Vaca Wast	ls (divided high Outcrops ly Areas (not be vood Forest (>4 sitional Areas (u nt Land e Disposal (lan er ar and Sewage	aways >200' plu eaches) 80% softwood) urban open) dfills, junkyards	us related facilities	;)
Road	ls (divided high Outcrops ly Areas (not be vood Forest (>4 sitional Areas (u nt Land e Disposal (lan er ar and Sewage	aways >200' plu eaches) 80% softwood) urban open) dfills, junkyards	us related facilities	;)
Road	ls (divided high Outcrops ly Areas (not be vood Forest (>4 sitional Areas (u nt Land te Disposal (lan er and Sewage and	aways >200' plu eaches) 80% softwood) urban open) dfills, junkyards	us related facilities	;)
Road	ls (divided high Outcrops ly Areas (not be vood Forest (>4 sitional Areas (u nt Land te Disposal (lan er and Sewage and	aways >200' plu eaches) 80% softwood) urban open) dfills, junkyards	us related facilities	1,600
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Road	ls (divided high Outcrops ly Areas (not be vood Forest (>) sitional Areas (u nt Land e Disposal (lan er and l Energy System 400	aways >200' plu eaches) 80% softwood) urban open) dfills, junkyard: Treatment	us related facilities s, etc.)	1,600
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 Road Rock Sand Softwind Softwind Vaca Waste Wate <!--</th--><th>Is (divided high Outcrops by Areas (not be vood Forest (>) sitional Areas (u nt Land te Disposal (lan er and I Energy System 400 1 inch</th><th>aways >200' plu eaches) 80% softwood) urban open) dfills, junkyards Treatment ns 800 equals 4</th><td>1,200 00 feet</td><td>1,600 US Feet</td>	Is (divided high Outcrops by Areas (not be vood Forest (>) sitional Areas (u nt Land te Disposal (lan er and I Energy System 400 1 inch	aways >200' plu eaches) 80% softwood) urban open) dfills, junkyards Treatment ns 800 equals 4	1,200 00 feet	1,600 US Feet
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Road Rock Rock Sand Softw Vaca Wate Wate Wate Wate Wate Wate CC CC CC CC CC CC CC CC CC CC CC CC CC	Is (divided high Outcrops by Areas (not be vood Forest (>4 sitional Areas (u int Land te Disposal (lan er and Energy System 400 1 inch 1 inch INIL • ST Main St 0) 886– e-mail: (RIVERHEA	avays >200' plu eaches) 80% softwood) urban open) dfills, junkyards Treatment ns 800 equals 4 Engin rRUCTUR treet No 1966 F cla@cla	1,200 1,200 00 feet AL • SURV orwich, Co ax (860) aengineers NG SUPPLY)	1,600 US Feet 5, Inc. VEYING Onnecticut 886–9165 s.com Project No.: CLA-7056
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Legend	_
Property Line	
Proposed Development	
Proposed Water Quality Basin	
Proposed Building - Phase 1	
Proposed Building - Phase 2	
Proposed Pavement	
FEMA Flood Zone	
🚧 A (Without Base Flood Elevation (BFE))	
AE (With Base Flood Elevation (BFE))	
Rivers and Streams (RIGIS)	
0 200 400 800 1,200 1 inch equals 400 feet 1 <	
317 Main Street Norwich, Con (860) 886-1966 Fax (860) 8 e-mail: cla@claengineers.	886-9165 .com
GX3, LLC (RIVERHEAD BUILDING SUPPLY) 250 David Court, Calverton, NY 11933	Project No.: CLA-7056
38 KINGSTOWN ROAD (ROUTE 138) RICHMOND, RI	Project Engineer: D.P.H.
	Date:

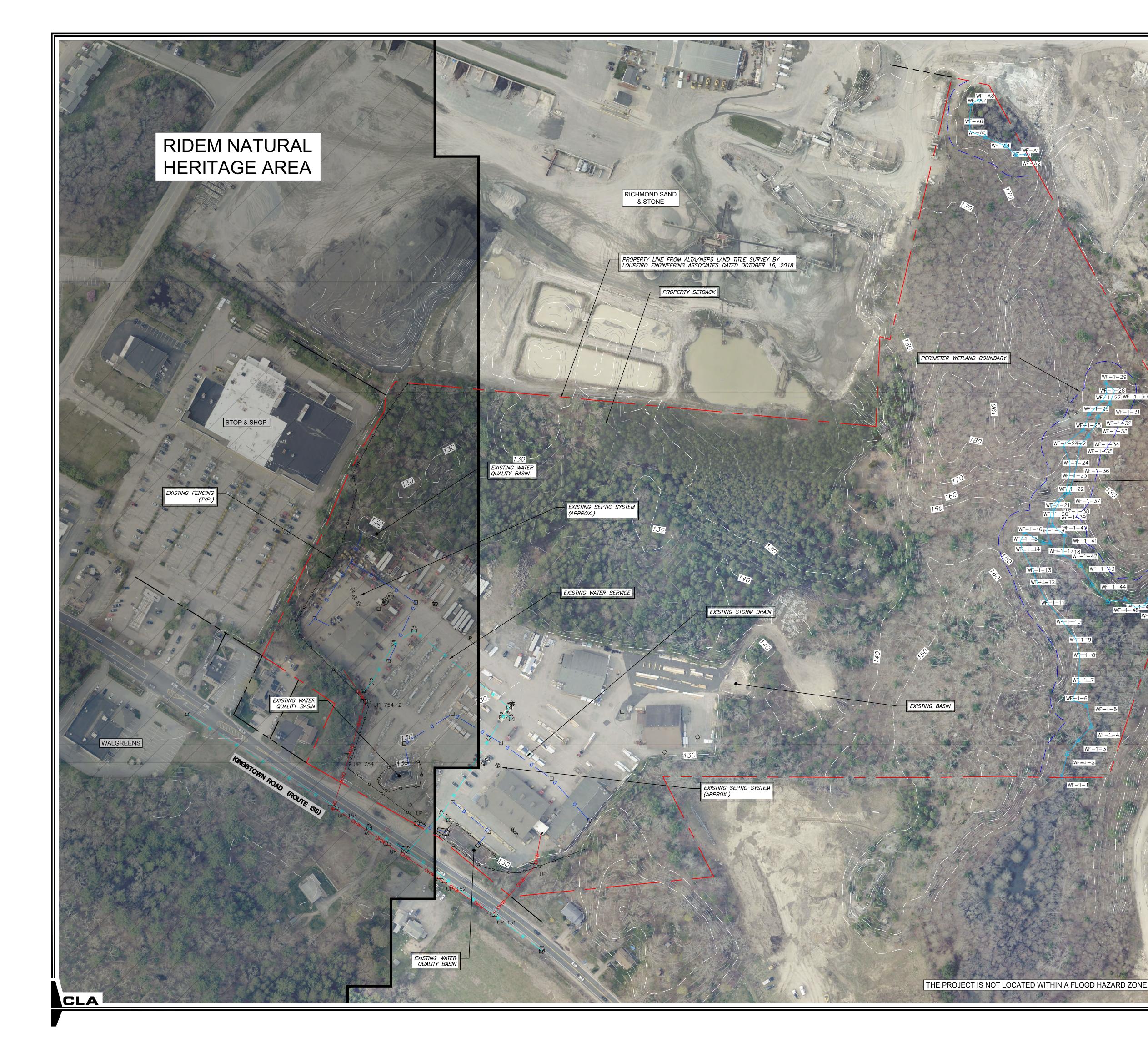
05B / 059 / 000

SITE CONTEXT MAP (3)

(FEMA Flood Zones)

3/8/2023

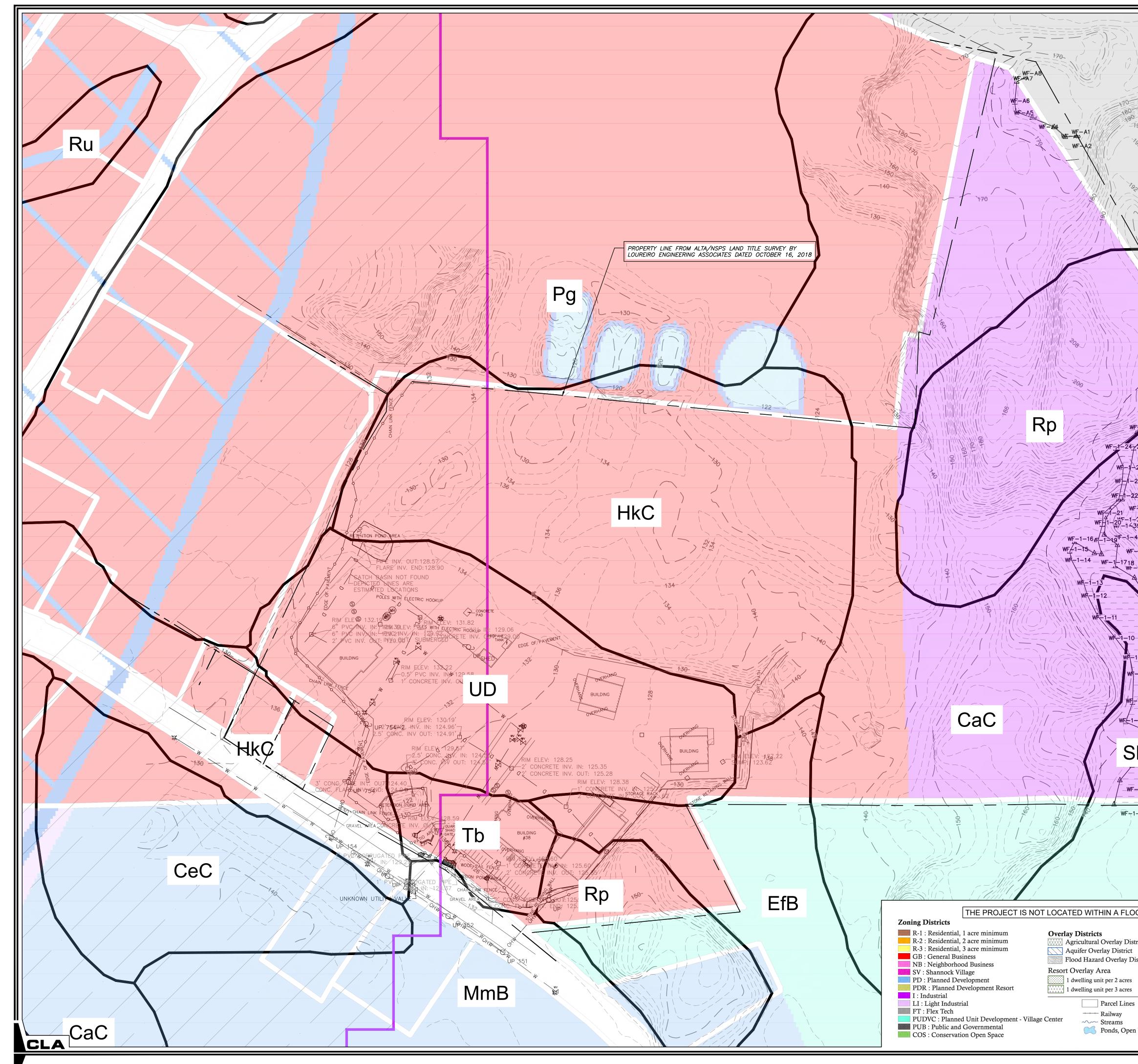
3



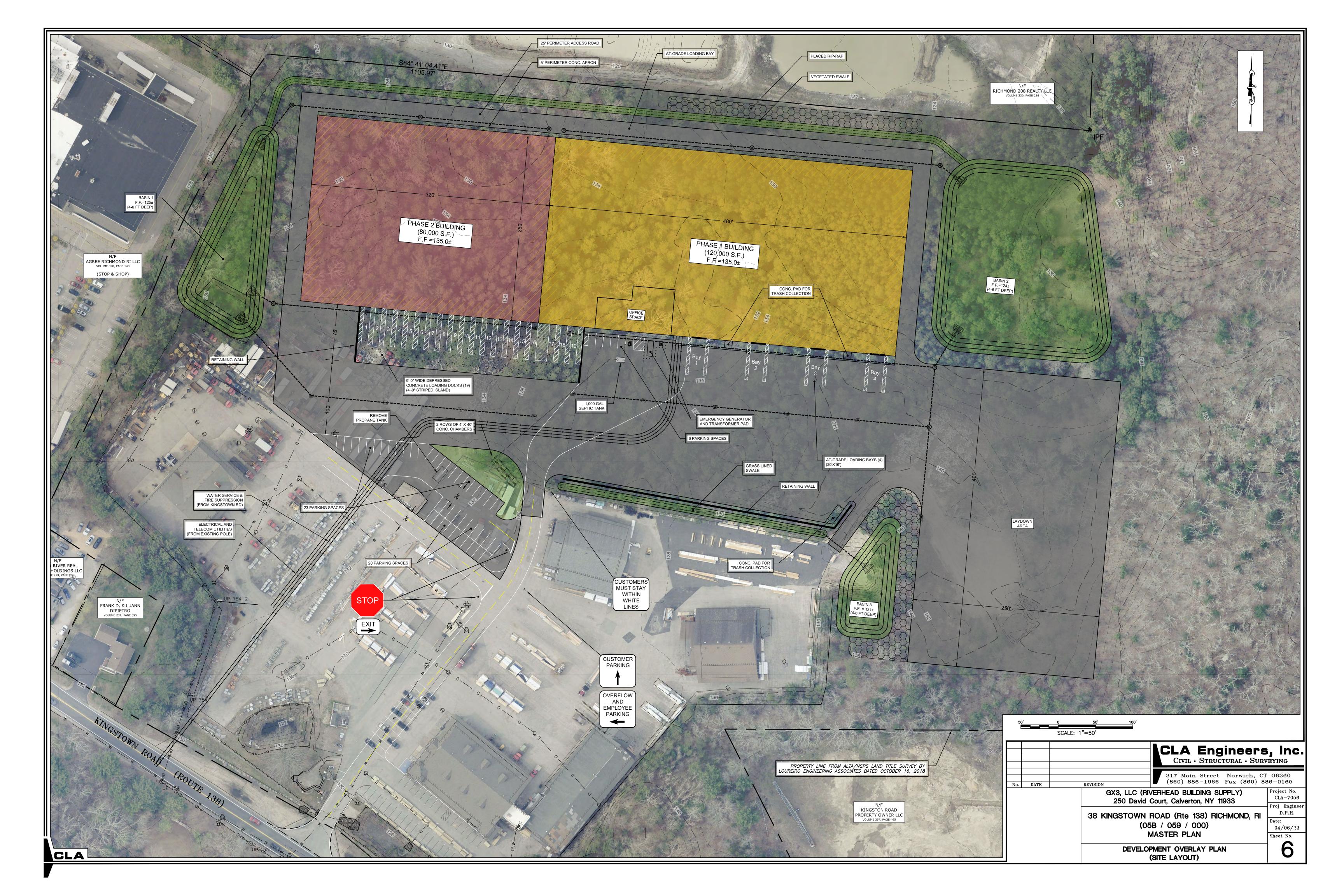
Zone: GB (General I	Business)		
ITEM	EXISTING	PROPOSED	
Area of Site (Acres)	47.92	47.92	and a second
Building Areas (S.F.)	41,033	241,033	-
Impervious Surface (Acres)	7.99	20.00	1
Disturbed Land (Acres)	11.21	26.34	4
Undisturbed Land (Acres)	36.71	21.58	
Parking Spaces (No.)	34	83	
ITEM	REQUIRED	PROPOSED	1 ton
Lot Size (Acres)	1	47.92	10
Lot Frontage (Feet)	150	562.5	1
Front Yard Depth (Feet)	20	118	
Rear Yard Depth (Feet)	50	75	300
Side Yard Depth (Feet)	35	95	14
Maximum Building Coverage	25%	12%	-
Max Height of Main Structure (Feet)	40	31	14
Max Height of Accesory Structure (Feet)	35	N/A	
Side and Rear Yard Depth - Accessory	10	N/A	1
Max Ground Floor Area (Retail)	80,000	4,870	
Max. Height & No. of Stories (Retail)	40/2	31/1	
		al and the second	and a

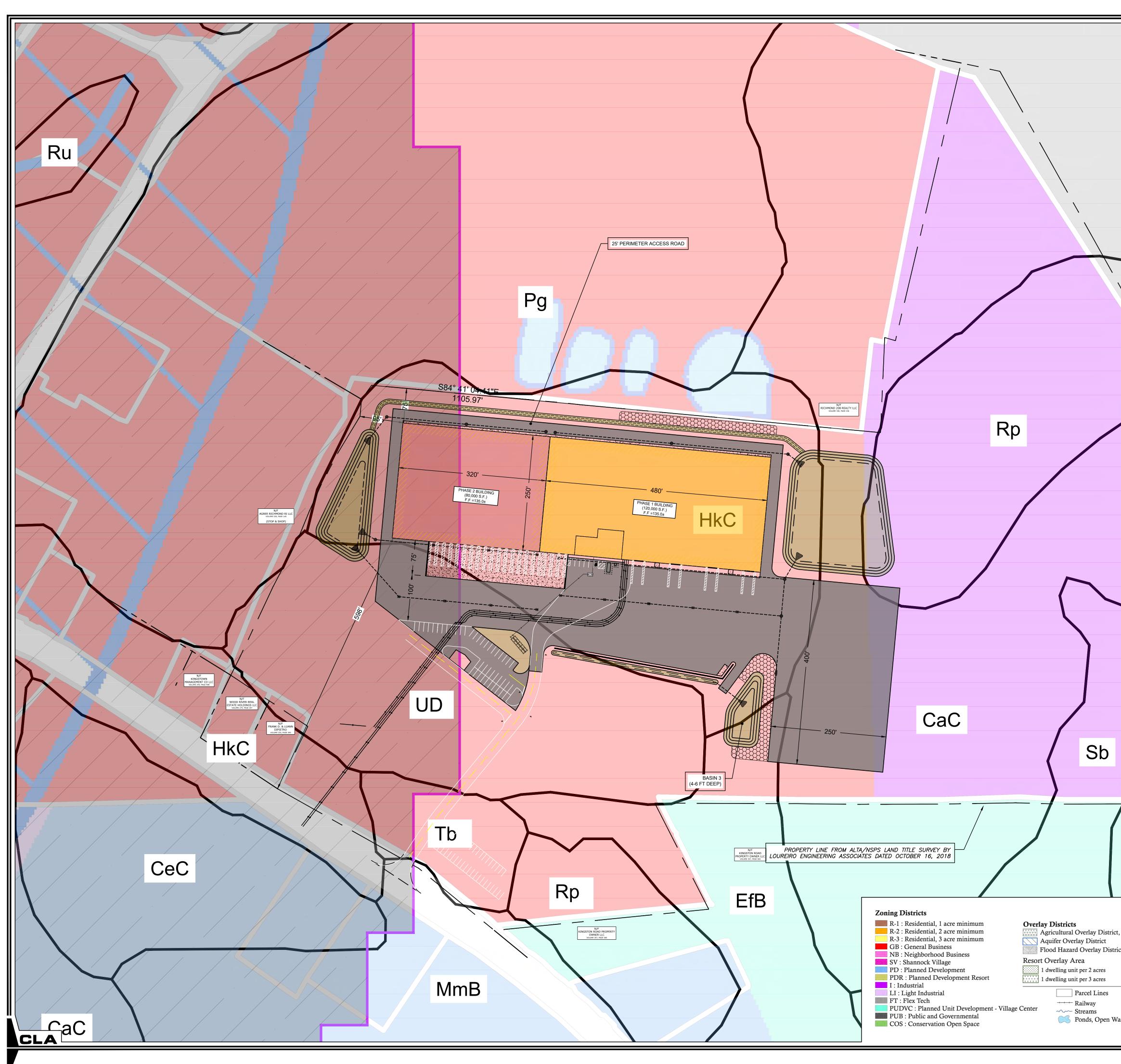
			CIVIL · STRUCTURAL · ST	
	No.	DATE	317 Main Street Norwich, REVISION (860) 886-1966 Fax (860)	
2			GX3, LLC (RIVERHEAD BUILDING SUPPLY) 250 David Court, Calverton, NY 11933	Project No. CLA-7056 Proj. Engineer
			38 KINGSTOWN ROAD (Rte 138) RICHMOND, F (05B / 059 / 000) MASTER PLAN	
			EXISTING CONDITIONS AND RESOURCE PLAN (AERIAL MAP - 2-FT CONTOURS)	4

FRESHWATER WETLANDS



WF - 1 - 29 $WF - 1 - 28$ $WF - 1 - 26$ $WF - 1 - 30$ $WF - 1 - 32$ $WF - 1 - 33$ $WF - 1 - 35$ -24 $WF - 1 - 36$ -23 $WF - 1 - 36$ -23 $WF - 1 - 43$ $WF - 1 - 43$ $WF - 1 - 44$	190 190 180 180 180 180 180 180 180 18	ZONING ANALYS 38 Kingstown Road - Asses Zone: GB (General ITEM Area of Site (Acres) Building Areas (S.F.) Impervious Surface (Acres) Disturbed Land (Acres) Undisturbed Land (Acres) Parking Spaces (No.) ITEM Lot Size (Acres) Lot Frontage (Feet) Front Yard Depth (Feet) Rear Yard Depth (Feet)	sor's Plat 5B Lot 59 I Business) EXISTING P 47.92 41,033 7.99 11.21 36.71 34	ROPOSED 47.92 241,033 20.00 26.34 21.58 83 20.00 26.34 21.58 83
D -1-9 -1-8 -1-7 -1-7 -1-7 -1-6 -1-7 -1-6 -1-7 -1-7 -1-6 -1-7 -1-	Legend to Soils CaC Canton-Charlton Rock CeC Canton and Charlton F CkC Canton and Charlton F EfB Enfield Silt Loam (HSC HkC Hinckley Loamy Sand MmB Merrimac Fine Sandy Pg Pits, Gravel Rp Rock Outcrop - Cantor Ru Rippowam Fine Sandy	Side Yard Depth (Feet) Maximum Building Coverage Max Height of Main Structure (Feet) Max Height of Accesory Structure (Feet) Side and Rear Yard Depth - Accessory Max Ground Floor Area (Retail) Max. Height & No. of Stories (Retail) Max. Height & No. of Stories (Retail) Acoutcrop (HSG B) Fine Sandy Loams (Very Rocky) (HSG B) Fine sandy Loams (Extremely Stony) (HSG B) G B) (HSG A) Loam (HSG A) n Complex y Loam (HSG B/D) Sandy Loam (HSG A/D) G C)	35 25% 40 35 10 80,000 40 / 2	95 12% 31 N/A N/A 4,870 31/1
DOD HAZARD ZONE. strict, 5-acre min. density District sen Water	No. DATE	ge Area	¹¹⁹³³	YING 06360
II WATEI		EXISTING CONDITIONS AND RESOL	JRCE PLAN	5



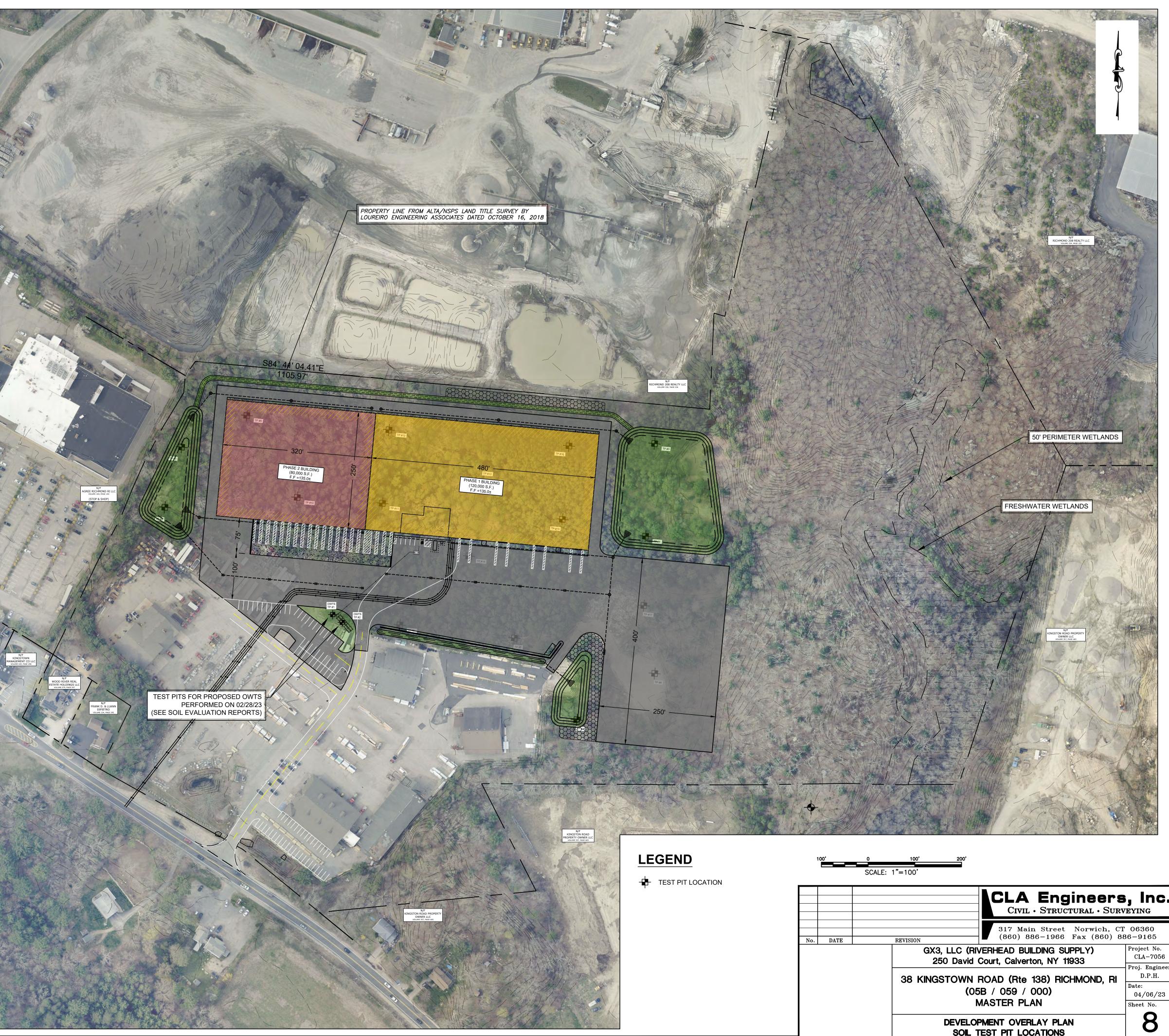


		ZONING ANALYS Assessor's Plat 5	5B Lot 59	
	NF KINGSTON RÖAD PROPERTY DWNER LLC	Zone: GB (GeneralITEMArea of Site (Acres)Building Areas (S.F.)Impervious Surface (Acres)Disturbed Land (Acres)Undisturbed Land (Acres)Parking Spaces (No.)ITEMLot Size (Acres)Lot Frontage (Feet)Front Yard Depth (Feet)Rear Yard Depth (Feet)Side Yard Depth (Feet)	EXISTING PF 47.92 41,033 2 41,033 2 2 11.21 36.71 34	ROPOSED 47.92 241,033 20.00 26.34 21.58 89 ROPOSED 47.92 562.5 118 75 95
J.	volume 377, page 465	Maximum Building Coverage	25% 40 35 10 80,000 40 / 2	12% 31 N/A N/A 4,870 31/1
		ne Sandy Loams (Very Rocky) (HSG B) ne sandy Loams (Extremely Stony) (HSG B) B) HSG A) oam (HSG A) Complex Loam (HSG B/D) ndy Loam (HSG A/D) C) d Complex (HSG A)	0 100' SCALE: 1"=100'	200'
			ngineers vructural • Surv	, Inc.
ct, 5-acre min. density	1 12/29/22 ADDRESS PRE-APP	UCATION COMMENTS 317 Main Str	reet Norwich, CT	06360
rict	No. DATE F	GX3, LLC (RIVERHEAD BUILDING		9165 Project No. CLA-7056
		250 David Court, Calverton, N 38 KINGSTOWN ROAD (Rte 138) (058 / 059 / 000)	RICHMOND, RI	Proj. Engineer D.P.H. Date:
Vater		(05B / 059 / 000) MASTER PLAN		04/06/23 Sheet No.
		DEVELOPMENT OVERLAY (ZONING)	PLAN	7

TEST PIT DATA

TEST PITS AS WITNESSED AND DESCRIBED BY CLA ENGINEERS 12/30/2021

TP #1 0-12"	SAMPLE = 10' TOPSOIL (DARK BROWN FINE SANDY LOAM) SUBSOIL (YELLOW BROWN VERY FINE SAND)
45 - 144	SUBSOIL (YELLOW BROWN VERY FINE SAND) LIGHT BROWN SAND & GRAVEL W/ FEW COBBLES – GW; NONE – LEDGE: NONE – RESTRICTIVE: NONE
TP #2	SAMPLE = 12'
0 – 23" 23 – 92" 92 – 144" MOTTLES: NO	TOPSOIL (DARK BROWN SANDY LOAM) YELLOW BROWN, COBBLY, COARSE SAND & GRAVEL LIGHT YELLOW BROWN SAND & GRAVEL W/ TRACE COBBLES – GW; NONE – LEDGE: NONE – RESTRICTIVE: NONE
TP #3 0 — 54"	SAMPLE = NONE LIGHT BROWN SANDY LOAM W/ BOULDERS (FILL)
90 - 111	LIGHT BROWN SANDY LOAM W/ BOULDERS (FILL) BROWN MEDIUM SAND & GRAVEL W/COBBLES LIGHT BROWN MEDIUM SAND BROWN SAND & GRAVEL W/ COBBLES IE – GW: 106" – LEDGE: NONE – RESTRICTIVE: 106"
TP #4 0 — 11"	SAMPLE = 8' TOPSOIL (BROWN LOAMY SAND)
	TOPSOIL (BROWN LOAMY SAND) VERY LIGHT BROWN MEDIUM SAND E — GW: 96" — LEDGE: NONE — RESTRICTIVE: 96"
0 – 28"	SAMPLE = 8' TOPSOIL (VERY DARK BROWN LOAMY SAND)
48 — 107"	BROWN MEDIUM SAND W/ GRAVEL, COBBLES, STONES BROWN COARSE SAND W/ GRAVEL AND COBBLES LIGHT BROWN MEDIUM SAND, TRACE GRAVEL
	– GW; NONE – LEDGE: NONE – ROOTS: NONE RESTRICTIVE: 130"
TP #6 0 - 8"	TOPSOIL (DARK GRAY LOAMY SAND)
29 – 68"	SUBSOIL (YELLOW BROWN LOAMY SAND) BROWN COARSE SAND & GRAVEL BROWN COARSE SAND & GRAVEL W/ COBBLES
MOTTLES: NO	- GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE
0 - 10"	SAMPLE =NONE TOPSOIL (DARK BROWN FINE LOAMY SAND)
33 – 140" MOTTLES: NO	SUBSOIL (YELLOW BROWN FINE LOAMY SAND) LIGHT BROWN SAND AND GRAVEL W/ COBBLES - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE
	SAMPLE =NONE FILL (BROWN SANDY LOAM W/ SCRAP METAL & PLASTIC & STONES) NATURAL MATERIAL = BROWN LOAMY SAND
	NATURAL MATERIAL = BROWN LOAMY SAND - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE
TP #9	SAMPLE =NONE
0 - 22 22 - 80" 80 - 108"	TOPSOIL (DARK BROWN SANDY LOAM) YELLOW BROWN FINE LOAMY SAND LIGHT BROWN FINE SAND
108 - 144	VERY LIGHT BROWN FINE TO MEDIUM SAND W/ TRACE COBBLES - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE
	SAMPLE = NONE TOPSOIL (DARK BROWN SANDY LOAM)
14 - 28" 28 - 46"	YELLOW BROWN FINE SAND BROWN SAND & GRAVEL W/ COBBLES
46 - 70" 70 - 120"	LIGHT BROWN FINE SAND LIGHT BROWN SAND & GRAVEL W/ COMMON COBBLES (BONEY)
	LIGHT BROWN MEDIUM SAND - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE
0 - 14"	SAMPLE = NONE TOPSOIL (DARK BROWN FINE SANDY LOAM)
58 - 144"	YELLOW BROWN FINE LOAMY SAND BROWN COBBLYSAND & GRAVEL W/STONES (BONEY) – GW; NONE – LEDGE: NONE – RESTRICTIVE: NONE
TP #12	SAMPLE = NONE
0 - 12'' 12 - 60'' 60 - 108''	TOPSOIL (DARK BROWN LOAMY SAND) SUBSOIL (BROWN SAND & GRAVEL W/COBBLES) LIGHT BROWN MEDIUM SAND
108 - 125″	BROWN SAND & GRAVEL W/COBBLES & STONES – GW; NONE – LEDGE: NONE – ROOTS: NONE RESTRICTIVE: NONE
TP #13	SAMPLE = NONE
14 – 44" 44 – 136"	TOPSOIL (DARK BROWN SANDY LOAM) SUBSOIL (YELLOW BROWN SANDY LOAM) LIGHT BROWN MEDIUM SAND & GRAVEL (STONES AND BOULDERS AT 8')
MOTILES: NO	- GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE
1 P #14 0 - 24" 24 - 66"	SAMPLE = NONE FILL (VERY DARK GRAY LOAMY SAND) GRAY BROWN COARSE SAND & GRAVEL W/ COBBLES
66 — 130"	BROWN SAND & GRAVEL W/ COBBLES - GW; NONE - LEDGE: NONE - RESTRICTIVE: 130"
TP #15	SAMPLE = NONE TOPSOIL (BROWN LOAMY SAND)
4 - 65" 65 - 125"	BROWN LOAMY SAND & GRAVEL W/STONES (FILL) VERY LIGHT BROWN MEDIUM SAND (NATURAL)
MOTTLES: NO	- GW; NONE - LEDGE: NONE - ROOTS: NONE RESTRICTIVE: NONE
0 – 5" 5 – 32"	SAMPLE = NONE DARK BROWN SANDY LOAM BROWN SANDY LOAM (FILL)
32 - 130"	LIGHT BROWN SAND W/TRACE GRAVEL – GW; 95" – LEDGE: NONE – RESTRICTIVE: 95"
TP #17	SAMPLE = NONE TOPSOIL (BROWN SANDY LOAM)
3 – 22" 22 – 42"	YELLOW BROWN SANDY LOAM YELLOW BROWN SAND & GRAVEL W/ COBBLES
42 - 48" 48 - 127"	LIGHT GRAY VERY FINE SAND YELLOW BROWN COARSE SAND & GRAVEL W/ COMMON COBBLES
WUTTLES: NU	- GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE



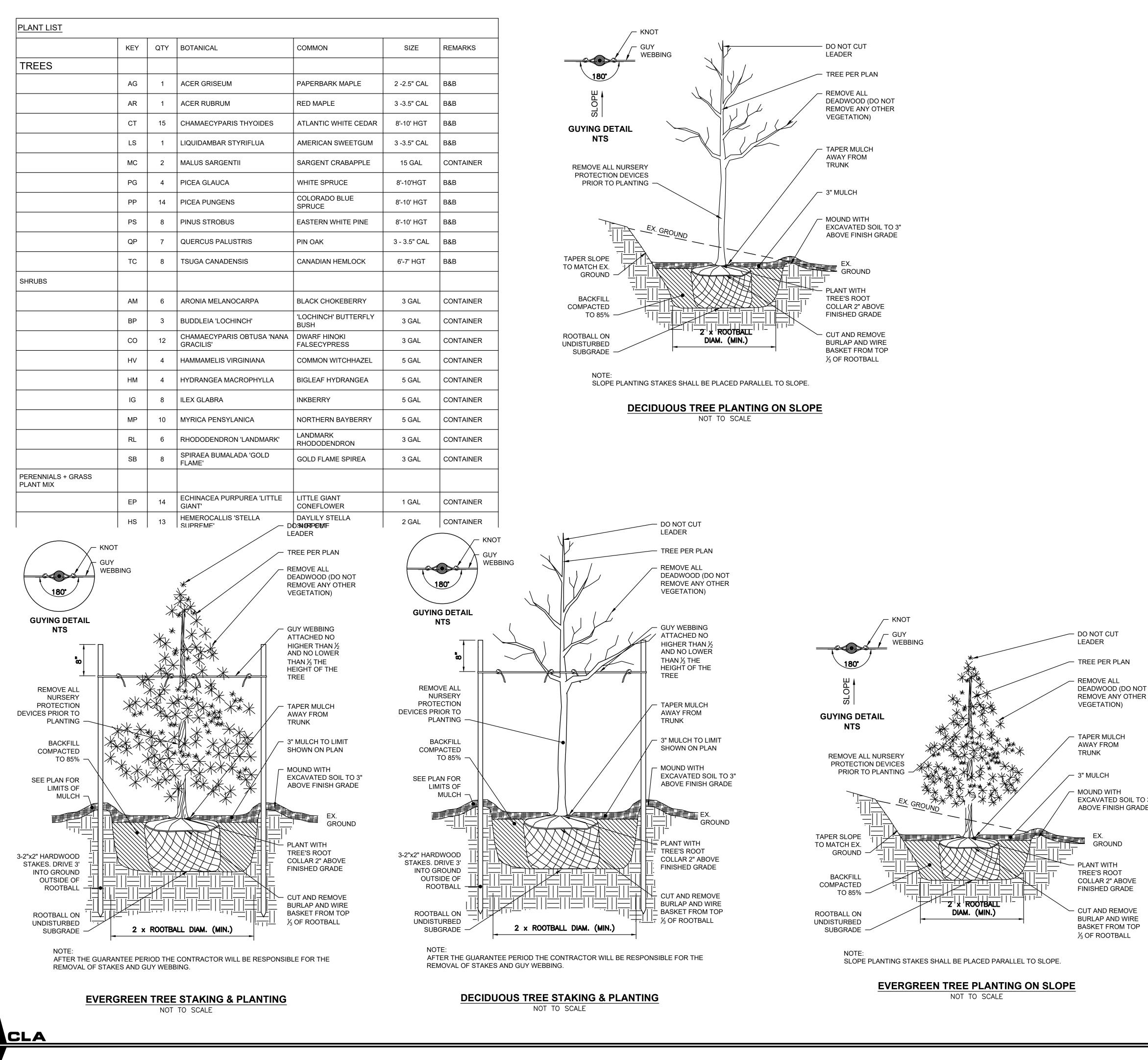
			CIVIL · STRUCTURAL · SURV	
No.	DATE	REVISION	317 Main Street Norwich, CT REVISION (860) 886-1966 Fax (860)	
		· · · · ·	C (RIVERHEAD BUILDING SUPPLY) David Court, Calverton, NY 11933	Project No. CLA-7056 Proj. Enginee
		38 KINGSTO	WN ROAD (Rte 138) RICHMOND, RI (05B / 059 / 000) MASTER PLAN	D.P.H. Date: 04/06/23 Sheet No.
			VELOPMENT OVERLAY PLAN SOIL TEST PIT LOCATIONS	8

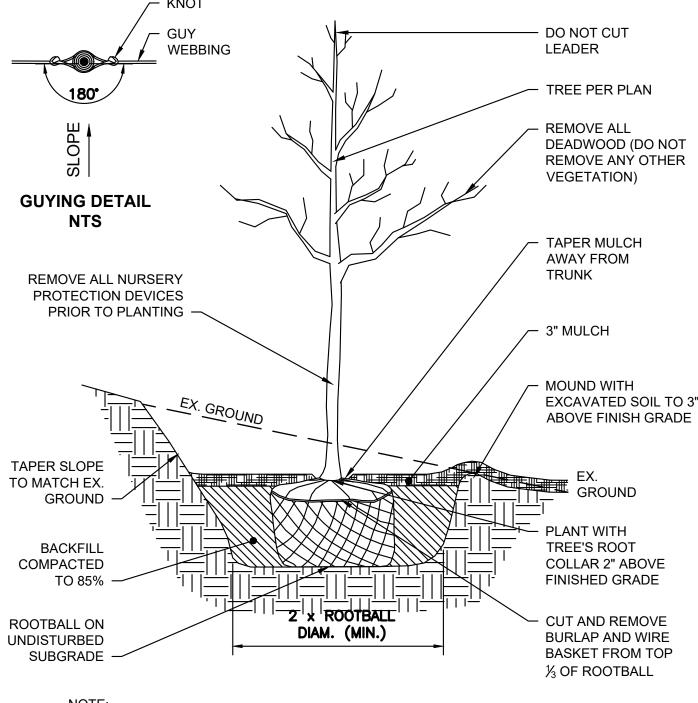


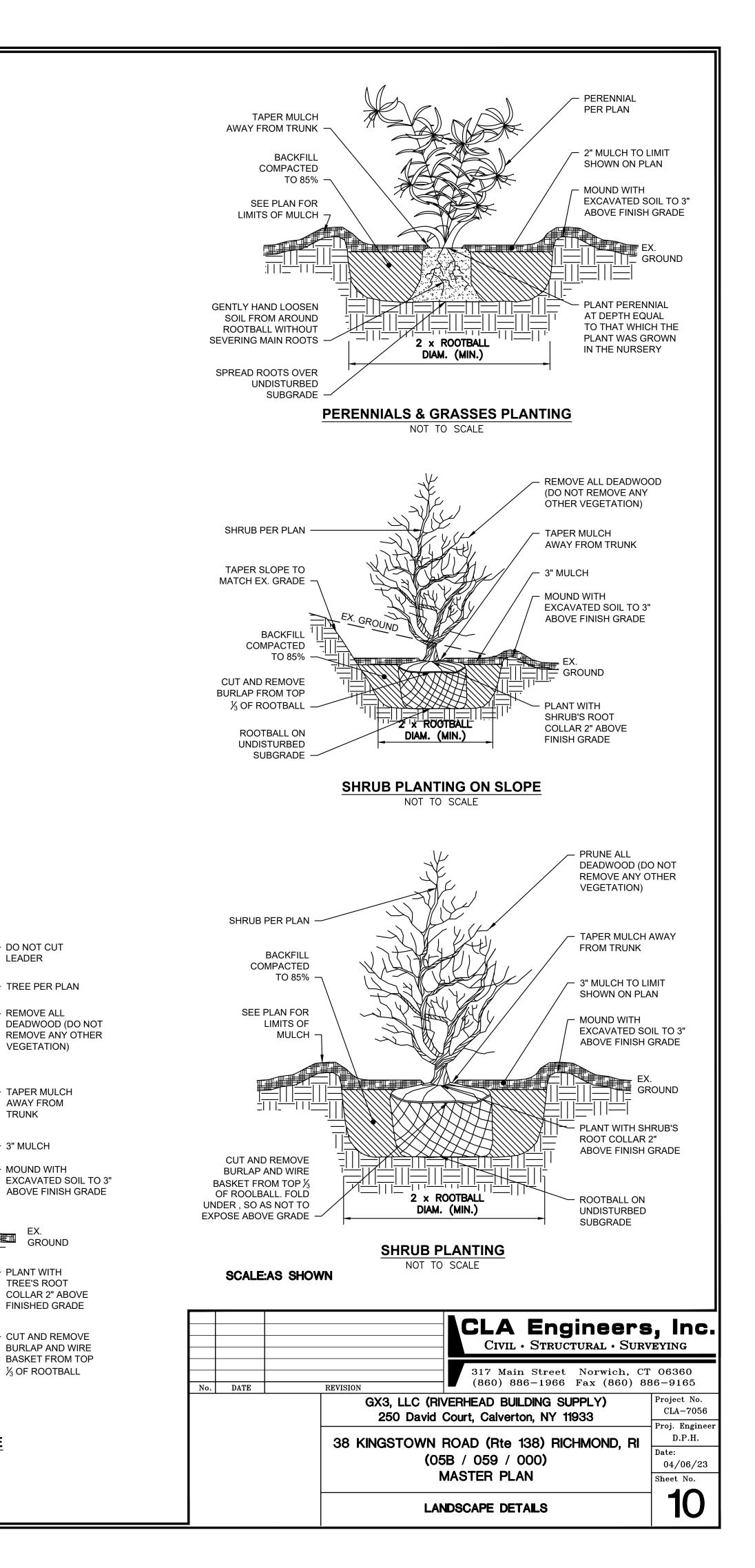
) ತ	LEGEND EVERGREEN TREE	
	+ SHADE TREE	
	⊗ EVERGREEN TREE	
	+ DECIDUOUS SHRUB	
	PERENNIALS + GRASS	
FROM MIXES FOR	EACH AREA CALLED OUT.	

- 1. ALL EXTERIOR GROUND AREAS DISTURBED BY CONSTRUCTION AND NOT COVERED BY BUILDINGS, STRUCTURES, PAVING, CONTINUOUS PLANTING BEDS OR OTHER SITE IMPROVEMENTS SHALL BE GRADED, TOPSOILED TO A MINIMUM DEPTH OF 6" AND GRASS SEEDED.
- 2. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE REQUIREMENTS OF THE CT ASSOCIATION OF LANDSCAPE CONTRACTORS SPECIFICATIONS AND THE AMERICAN LANDSCAPE & NURSERY ASSOCIATION STANDARDS FOR NURSERY STOCK.
- 3. WEED FABRIC SHALL PROVIDE FULL COVERAGE OVER TOPSOIL THROUGHOUT PLANTING BEDS. OVERLAP ALL INDIVIDUAL PIECES OF FABRIC. WRAP FABRIC A MINIMUM OF 2" UP SIDES OF ABUTTING EDGING, SITE AMENITIES (BOLLARDS, LIGHTS, WALLS, ECT.) AND CONCRETE WALKS. THERE SHALL BE NO GAPS IN FABRIC. FABRIC SHALL NOT BE VISIBLE AT GRADES OR ABOVE THE MULCHING SOIL.
- 4. ALL TREE STAKING OR GUYING SHALL BE DONE IMMEDIATELY AFTER PLANTING, BUT IN NO INSTANCE MORE THAN 24 HOURS AFTER PLANTING. SEE STAKING/GUYING DETAIL. AT COMPLETION OF MAINTENANCE PERIOD REMOVE ALL STAKES, FLAGS, GUYS, TREE WRAP, AND ANCHORS.
- 5. MULCH ALL NEW SHRUB BEDS AND PLANT PITS TO ACHIEVE A 4" DEPTH (3" AFTER SETTLEMENT). MULCH ALL GROUND COVER BEDS TO ACHIEVE A 3" DEPTH (2" AFTER SETTLEMENT). MULCH FOR SAUCERS AND PLANTING AREAS TO BE A DOUBLE SHREDDED BARK MULCH.
- 6. ALL LAWN AND PLANTING AREA SOIL PREPARATION SHALL BE FERTILIZED AND AMENDED ACCORDING TO RECOMMENDATIONS OF A SOIL ANALYSIS PROVIDED BY AN APPROVED SOIL TESTING LABORATORY.
- 7. SEE SPECIFICATIONS FOR LAWN AREA SEED MIXTURE PROVIDE LAWN DEVELOPMENT IN ALL AREAS OF SELECTIVE CLEARING AS DIRECTED.
- 8. FINAL LOCATION OF PLANT MATERIAL TO BE APPROVED BY ARCHITECT IN THE FIELD.
- 9. THE PLANT LIST APPEARS ON THE DRAWINGS FOR THE CONTRACTOR'S INFORMATION ONLY AND NO GUARANTEE IS EXPRESSED OR IMPLIED THAT QUANTITIES THEREIN ARE CORRECT OR THAT THE LIST IS COMPLETE. CONTRACTOR SHALL GUARANTEE THAT ALL PLANT MATERIALS SHOWN ON THE DRAWINGS ARE INCLUDED IN THE FINAL PROJECT. THE SUBMISSION OF A BID BY THE CONTRACTOR ACKNOWLEDGES THAT THE PLANT MATERIAL TYPES AND SIZES SHOWN ON THE CONTRACT DOCUMENTS ARE AVAILABLE.

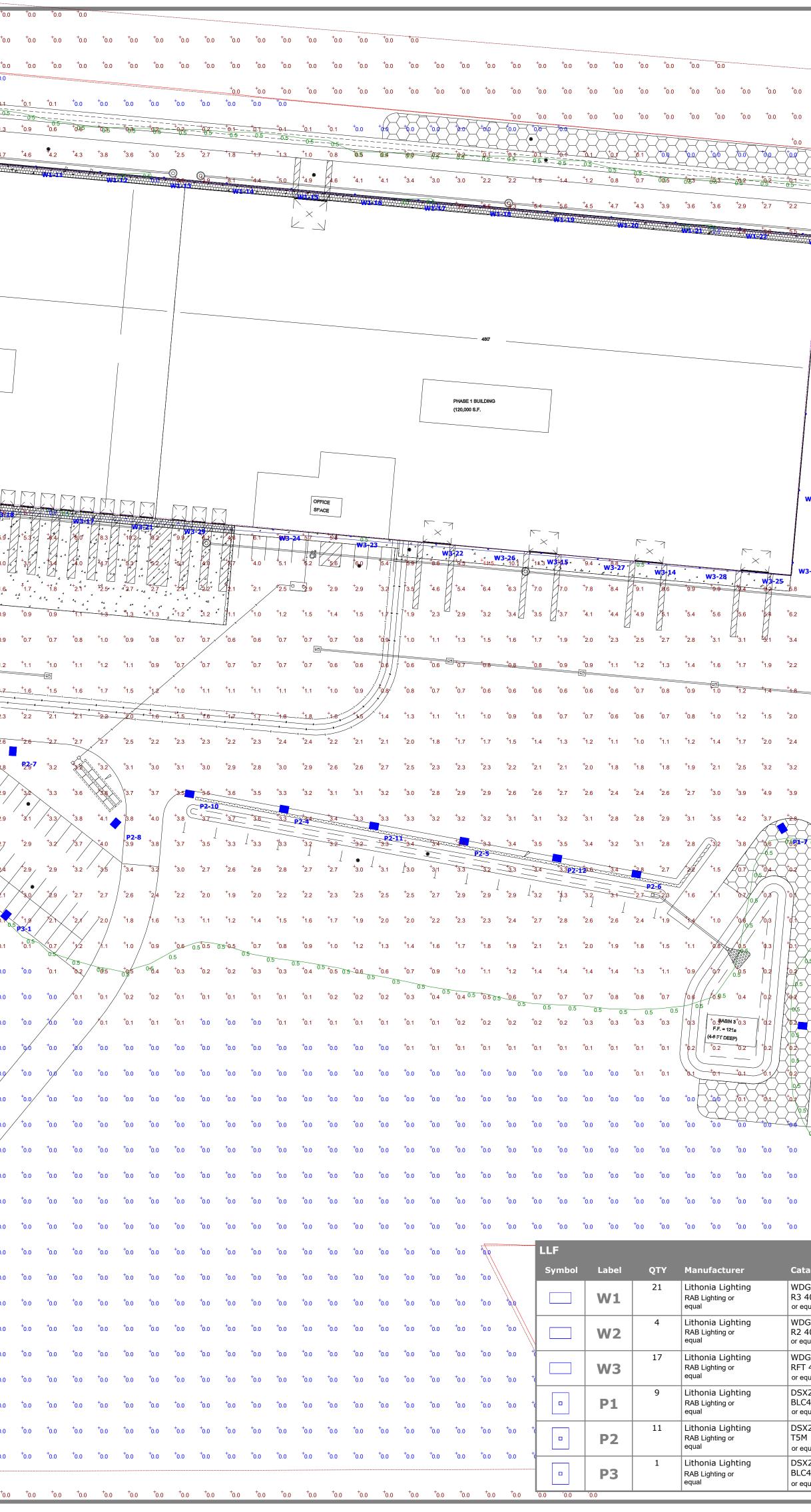
SCALE: 1"=60' CLA Engineers, Inc. CIVIL · STRUCTURAL · SURVEYING 317 Main Street Norwich, CT 06360 (860) 886-1966 Fax (860) 886-9165 REVISION GX3, LLC (RIVERHEAD BUILDING SUPPLY) Project No. CLA-7056 250 David Court, Calverton, NY 11933 Proj. Engineer D.P.H. 38 KINGSTOWN ROAD (Rte 138) RICHMOND, RI Date: (05B / 059 / 000) 04/06/23 MASTER PLAN Sheet No. 9 LANDSCAPE PLAN







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BEYOND PROPERTY LINE	+ 0.0 fc	0.0 fc 0.0 fc	N/A	N/A +0.0	⁺ 0.0 ⁺ 0.0 ⁺ 0.0 ⁺ 0.0 ⁺ 0.0 ⁺ 0.0
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1.5	+1.3	0.5 ⁺ 0.2	+0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	+0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	11	P1	1281.84	370.36	35.00
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i i	12-2											//	\backslash			17	P1	1021.30	513.12	35.00
0.5	⁺ 3.0	0.5 0.2		+0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	+0.0	⁺ 0.0	⁺ 0.0	\ ⁺ 0.0	+0.0	+0.0	+0.0	10	P2	529.84	559.59	35.00
0.5	+	0.5								т	т			т		11	P2	674.37	534.51	35.00
F	+2.4	0.5 0.2	0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	+0.0	⁺ D.0	⁺ 0.0	+0.0	12 13	P2 P2	817.86 282.54	509.28 614.19	35.00 30.00
4.3	+2.5	0,5 0.1	+o.0	+0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0		W1	172.81	827.43	23.00
W2-				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	3	W1	178.08	887.93	23.00
⁺ 3.5	+2.1	0 ₊ 5 0.1	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	+0.0	to.o	+0.0	+0.0	4	W1	183.20	948.19	23.00
																5	W1	188.38	1008.12	23.00
⁺ 2.5	+1.7	0.5 0.1	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	+0.0	⁺ 0.0	+0.0	+0.0	⁺ 0.0	⁺ 0.0	+0.0	7	W1 W1	210.25 259.78	1069.31 1064.92	13.00 13.00
+	ļ	0.5 0.1	1	+	+	+	+	+	+	+	+	+		+	+	8 9	W1 W1	310.34	1064.92	13.00
⁺ 5.4 W2-4	1.6	0.1	To.o	⁺ 0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	+0.0	⁺ 0.0	⁺ 0.0	⁺ 0.0	+0.0	0.0	+0.0	+0.0	2	W2	1023.40	977.29	23.00
+4.1	+1.2	0.5 0.1	+0.0	+0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	⁺ 0.0	+0.0	+0.0	+0.0	+0.0	+0.0	3	W2	1018.27	917.27	23.00
	1.2		1	0.0		BASIN 2		0.0	0.0	0.0	0.0	0.0		0.0	0.0	4	W2	1013.01	857.29	23.00
⁺ 2.8	+1.0	0.5+ 0.1	+0.1	⁺ 0.0		F.F.=124± Fr ⁺ DEEP)	⁺ 0.0	⁺ 0.0	+0.0	+0.1	+0.0	+0.0	+0.0	⁺ 0.0	+0.0	5	W2	1007.70	797.52	23.00
																10 11	W1 W1	359.89 409.57	1056.01 1051.52	13.00 13.00
⁺ 5.2	+0.7	.5 +0.2	+0.1	⁺ 0.1	+0.1	⁺ 0.0	⁺ 0.1	⁺ 0.1	⁺ 0.1	+0.1	⁺ 0.1	+0.1	+0.1	⁺ 0.0	+0.0	12	W1	459.99	1031.32	13.00
W2-5 +	+	0.5	+	+	+	+	+	+	+	+	+	+	+		+	13	W1	509.88	1042.75	13.00
⁺ 4.9	+1.4	0.6	+0.3	⁺ 0.1	⁺ 0.1	⁺ 0.1	⁺ 0.1	⁺ 0.1	0.1	⁺ 0.1	⁺ 0.1	⁺ 0.1	⁺ 0.1	+ <mark>0</mark> .1	+0.0	14	W1	558.90	1038.37	13.00
⁺ 5.2	⁺ 2.3		0.4	⁺ 0.2	+0.1	⁺ 0.1	⁺ 0.1	⁺ 0.1	⁺ 0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.1	15	W1	609.67	1033.95	13.00
0.2	2.0		0.5				0.1	0.1	0.2	0.2	0.2	0.2	Ĵ		0	16	W1	659.42	1029.63	13.00
⁺ 8.1	⁺ 2.8	1.1	+0.4	+0.2	⁺ 0.1	+0.1	+0.1	+0.2 -	+ 0. 3 -	<u>+0.4</u>	+0.4	+0.4	⁺ 0.4	+0.3	⁺ 0.1	17 18	W1 W1	709.20 760.54	1025.15 1020.58	13.00 13.00
3-13			0.5							0.5	0.5	0.5	0.5	2		19	W1	810.15	1016.30	13.00
*8.9	+5/9	+1.7	+0.5	+0.3	⁺ 0.2	⁺ 0.1 0.5	+0.2	0.2	+0.4 0.5	+0.6	+0.8	0.8	+0.7	0.5	+0.0	20	W1	860.38	1011.86	13.00
t a a	€0 +	+	P1-16					0.5	+ 0.7	+	t	+	+	0.5		21	W1	910.68	1007.50	13.00
⁺ 6.2	⁻5.8	⁺ 4.6	⁺ 3.8	+0.7	⁺ 0 .9	⁺ 1.4	+1.3	0.7	0.7 P1-1	+ <u>0.9</u>	+1.3	+1.6	+1.5	+1.1	⁺ 0.0 0.5	22	W1	961.16	1003.14	13.00
⁺ 3.7	+4.3	⁺ 4.9	⁺ 4.1	⁺ 3.8	2.0	⁺ 2.9	⁺ 3.8	+4.4	⁺ 4.2	⁺ 4.5	⁺ 3.8	⁺ 2.9	⁺ 2.9	+2.3	+0.1	23 13	W1 W3	1010.38 1002.69	998.69 740.82	13.00 23.00
0.1				0.0	2.0	2.0	0.0				0.0	2.0	2.0	2.0	0.5	14	W3	889.59	740.02	25.00
⁺ 2.5	+2.7	+3.3	⁺ 3.5	⁺ 3.5	+3.3	⁺ 3.2	⁺ 3.9	⁺ 5.0	⁺ 5.2	+4.7	+4.4	⁺ 4.1	+4.0	⁺ 3.5	⁺ 0.1	15	W3	805.36	748.09	25.00
															0.5	16	W3	217.72	799.78	25.00
+ <u>2.2</u>) +2.2	+2.5	⁺ 3.0	⁺ 3.2	⁺ 3.0	+3.2	⁺ 3.3	⁺ 3.7	⁺ 4.1	⁺ 4.2	⁺ 4.3	⁺ 4.9	+5.2	+3.1	+0.2	17	W3	433.89	779.78	25.00
+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	0.5	18 19	W3 W3	371.17 324.45	785.27 789.86	25.00 25.00
+2.3	⁺ 2.1	+2.3	⁺ 2.7	+2.7	+2.7	⁺ 2.8	⁺ 3.1	⁺ 3.4	⁺ 3.6	⁺ 3.9	⁺ 4.2	⁺ 4.9	⁺ 4.9		P1⁺d12).5	20	W3	278.69	794.62	25.00
⁺ 2.9	⁺ 2.5	+2.5	⁺ 2.5	⁺ 2.4	+2.4	+2.6	⁺ 2.9	⁺ 3.1	⁺ 3.5	⁺ 3.8	⁺ 4.1	⁺ 4.3	⁺ 4.1	+d.7	+0.2	21	W3	480.02	775.44	25.00
														0.5		22	W3	723.06	754.84	25.00
⁺ 4.0	⁺ 3.6	+2.7	+2.3	⁺ 2.3	⁺ 2.3	⁺ 2.5	⁺ 2.6	⁺ ₽2-3	⁺ 3.3	+3.7	⁺ 4.1	⁺ 4.1	⁺ 3.6	+0.6	+0.1	23	W3	656.02	761.38	25.00
				1										0.5		24	W3	595.36	766.61	25.00
⁺ 5.4	⁺ 3.5	+2.7	+2.4	⁺ 2.3	+2.2	⁺ 2.3	⁺ 2.5	+2.7	⁺ 3.0	+3.3	⁺ 3.7	⁺ 3.7	⁺ 3.1	0.8	⁺ 0.1 5	25 26	W3 W3	973.74 763.82	732.97	25.00 25.00
+2.4	+3.7	⁺ 3.6	⁺ 2.7	+2.5	+2.3	+2.2	⁺ 2.3	+2.5	+2.7	⁺ 3.0	⁺ 3.5	⁺ 3.9	⁺ 3.6	+	⁺ 0.1		W3	849.74	743.60	25.00
2.4	3.7	3.0	2.1	2.5	2.3	2.2	2.3	2.5	2.1	3.0	3.5	3.9	3.0	0,6	0.1	28	W3	929.56	736.55	25.00
00.4	+3.7	+4.6	⁺ 3.2	⁺ 2.8	+2.5	+2.3	⁺ 2.3	⁺ 2.5	⁺ 2.6	⁺ 3.0	⁺ 3.8	⁺ 4.9	⁺ 3.7	+0.4	+0.1	29	W3	521.05	771.86	25.00
														0.5		7	P1	994.29	532.70	35.00
+0.2	A - 1 7 0	⁺ 4.2	⁺ 3.3	⁺ 2.9	+2.6	+2.4		+ 2.5 ₩N	+2.7	⁺ 3.1	⁺ 4.1	⁺ 5.4	⁺ 3.8	0.3 0.5	+0.1	⁺ 0.1	+0.0	⁺ 0.0	⁺ 0.0 ⁺ 0.0	
	+	+	+	+	+	+			+	+	+	+	+	0.5 P1-1		+	+	+	+ +	
+0.5	⁺ 3.2	⁺ 3.5	⁺ 3.1	⁺ 3.0	⁺ 2.7	⁺ 2.5	⁺ 2.5	⁺ 2.6	⁺ 2.9	⁺ 3.2	⁺ 3.9	4.5	⁺ 4.0	⁺ 0.2 0.5	⁺ 0.1	⁺ 0.0) ⁺ 0.0	⁺ 0.0	⁺ 0.0 ⁺ 0.0	
	⁺ 1.3	+2.7	⁺ 2.9	+2.8	+2.8	+2.7	⁺ 2.7	⁺ 2.8	⁺ 3.0	⁺ 3.5	⁺ 3.7	⁺ 3.8	⁺ 2.8	+0.2	+0.1	+0.0) ⁺ 0.0	+0.0	+0.0 +0.0	
\nearrow			2.0		2.0				0.0	0.0		2.0	2.0	⁺ 0.2 0.5	5.1	0.0	0.0	0.0		
/0.\$ /9.5	⁺ 1.5	+2.4	+2.6	⁺ 2.6	+2.6	⁺ 2.7	2.5	⁺ 2.9	⁺ 3.2	⁺ 3.5	⁺ 3.7	⁺ 3.2	+1.7	⁺ 0.1 0.5	+0.1	+0.0) ⁺ 0.0	+0.0	⁺ 0.0 ⁺ 0.0	
55							Р	2-2												
< <u>+</u> }₽	⁺ 2.7	⁺ 2.9	⁺ 2.9	⁺ 2.6	+2.5	⁺ 2.6	⁺ 2.8	⁺ 2.9	⁺ 3.1	⁺ 3.3	⁺ 3.4	⁺ 3.5	+2.1	⁺ 0.1 0.5	+0.1	+0.0) ⁺ 0.0	+0.0	⁺ 0.0 ⁺ 0.0	
\sum_{+}	+.	+	+	+	+	+.	+	+.	+	+	+	+	+		+	+	+	+	++	
	+3.7	⁺ 3.4	⁺ 2.9	⁺ 2.6	⁺ 2.4	+2.5	⁺ 2.6	⁺ 2.7	⁺ 2.9	⁺ 3.2	⁺ 3.8	⁺ 3.9	+3.1	⁺ 0.1 0.5	+0.1	⁺ 0.0) ⁺ 0.0	⁺ 0.0	⁺ 0.0 ⁺ 0.0	
∠_ 8.5	⁺ 5.0	+4.0	⁺ 3.1	+2.8	+2.5	2.4250	+2. 5	+2.6	⁺ 2.9	⁺ 3.3	⁺ 4.5	⁺ 4.8	+1.9	+0 1	+0.1	+0.0) ⁺ 0.0	+0.0	+0.0 +0.0	
P1-8	5.0	- T.U	0.1	2.0	2.0	L.7 -30	2.0	<u> </u>	2.0	0.0	- T.U	-r.0	/	0.5 ⁺ 0.1	U. I	0.0	0.0	0.0	0.0	
3.5	+4.7	⁺ 3.8	⁺ 3.2	⁺ 3.0	+2.7	+2.6	+2.7	⁺ 2.9	⁺ 3.2	⁺ 3.5	⁺ 4.5	⁺ 4.3	+0.65	P1-101	⁺ 0.1	+0.0	0.0 ⁺ 0.0	+0.0	⁺ 0.0 ⁺ 0.0	
$\langle]$																				
∫ ⁺ 3.4	⁺ 3.5	⁺ 3.1	⁺ 3.1	+3.2	+3.3	⁺ 3.4	+3.3	+3.2	⁺ 3.4	⁺ 3.5	⁺ 3.7	⁺ 3.6	053	+0.1	⁺ 0.1	⁺ 0.0	0.0 ⁺ 0.0	+0.0	+0.0 +0.0	
X_{+}	+	+_	+	+_	+	+	+	+	+_	+	+	+	dt.e	+.	+.	+	+	+	++	
⁺ 2.1	⁺ 2.6	⁺ 2.5	⁺ 2.9	⁺ 3.5	⁺ 4.1	⁺ 4.9	⁺ 4.4	⁺ 3.6	⁺ 3.5	⁺ 2.9	⁺ 2.8	+2.6	0.00	⁺ 0.1	⁺ 0.1	+0.0) ⁺ 0.0	⁺ 0.0	⁺ 0.0 ⁺ 0.0	
+0.8	+1.2	⁺ 1.5	⁺ 1.9	⁺ 3.1	⁺ 3.9	+3.6	⁺ 3.6	⁺ 3.5	+2.7	⁺ 1.9	⁺ 1.5	+1.1	0.5 ⁺ 0.2	⁺ 0.1	+0.0	+0.0) ⁺ 0.0	+0.0	+0.0 +0.0	
0.5			4												0.0	0.0	0.0	2.0		
+0.4 0	.5 +0.5	+0.6	+0.6	+0.50.5	⁺ 0.4 0.5	⁺ 0.4 P 1	-9 ⁺ 0.50.5	0.50.5	+0.6	+ 0.7	+0.7	0.5 +0.4	+0.1	⁺ 0.0	+0.0	+0.0	0.0 ⁺ 0.0	+0.0	⁺ 0.0 ⁺ 0.0	
	0.	.5 0.5							0.5	0.0	0.5									
+0.2	⁺ 0.3	+0.3	⁺ 0.3	⁺ 0.4	+0.3	+0.3	⁺ 0.3	⁺ 0.3	+0.3	⁺ 0.3	+0.3	+0.1	+0.0	⁺ 0.0	+0.0	+0.0) ⁺ 0.0	⁺ 0.0	⁺ 0.0 ⁺ 0.0	
+	+	+	+	+	+	+	+	+	+	+	+	+	+_	+	+.	+	+	+	+0.0 +.	
0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	⁺ 0.0	0.0	[.] 0.0	0.0 [°]	+0.0	⁺ 0.0 ⁺ 0.0	
+0 1	+0 1	⁺ 0 1	+0.1	+0.1	⁺ 0 1	+0.1	+0.1	+0.1	⁺ 0 1	⁺ 0 1	+0.1	+0 0	+0 0	+n n	+ 0 0	+ 0 0) ⁺ n o	+0.0	+0.0 +0.0	
															5.0		0.0			

talog	Description	Filename	Lumens per lamp	Efficiency	Notes
DGE3 LED P2 70CRI 40K equal	WDGE3 LED WITH P2 - PERFORMANCE PACKAGE, 4000K, 70CRI, TYPE 3 OPTIC	WDGE3 LED P2 70CRI R3 40K.ies	8519	100%	
DGE3 LED P1 70CRI 40K equal	WDGE3 LED WITH P1 - PERFORMANCE PACKAGE, 4000K, 70CRI, TYPE 2 OPTIC	WDGE3 LED P1 70CRI R2 40K.ies	7649	100%	
DGE4 LED P6 70CRI T 40K equal	WDGE4 LED WITH P6 - PERFORMANCE PACKAGE, 4000K, 70CRI, FORWARD THROW OPTIC	WDGE4 LED P6 70CRI RFT 40K.ies	25586	100%	
X2 LED P8 40K 70CRI C4 equal	D-Series Size 2 Area Luminaire P8 Performance Package 4000K CCT 70 CRI Type 4 Extreme Backlight Control	DSX2 LED P8 40K 70CRI BLC4.ies	42306	100%	LIGHT POLES ARE TO BE WOOD
X2 LED P5 40K 70CRI M _{equal}	D-Series Size 2 Area Luminaire P5 Performance Package 4000K CCT 70 CRI Type 5 Medium	DSX2 LED P5 40K 70CRI T5M.ies	41964	100%	LIGHT POLES ARE TO BE WOOD
X2 LED P2 40K 80CRI C4 equal	D-Series Size 2 Area Luminaire P2 Performance Package 4000K CCT 80 CRI Type 4 Extreme Backlight Control	DSX2 LED P2 40K 80CRI BLC4.ies	17180	100%	LIGHT POLES ARE TO BE WOOD

IVERHEAD BUILDING SUPP KINGSTOWN ROAD (ROUTE RICHMOND, RI

'≻ m

Designer MG Date 03/21/2023 Scale 1" = 50' Drawing No. Summary

1 of 2

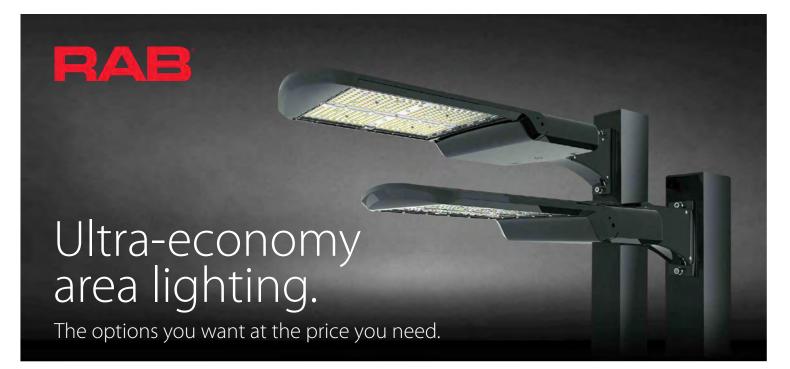
TYPE P FIXTURE OPTIONS

r		[ries Size (ea Luminaire	Notes		
		L. L	PREMIUM				to see all interactive elements.
Specific EPA: Length: Width: Height H1: Height H2: Weight:	1.06 ft ² (0.10 m ²) 40.59" (103.1 cm) 16.76" (42.6 cm) 8.11" (20.6 cm) 2.06"		0 0		highly refi with its er benefits o a high pe luminaire. The outst results in pole spac number o applicatio to 80% vs	ern styling of the ned aesthetic avironment. The of the latest in lef formance, hig anding photores sites with exce ing and lower ng photometry f poles require ons with typical	ne D-Series features a that blends seamlessly e D-Series offers the LED technology into h efficacy, long-life metric performance llent uniformity, greater power density. D-Series y aids in reducing the ed in area lighting energy savings of up nd expected service life
Order DSX2 LED Series DSX2 LED	ing Informa LEDs Forward optics	tion Color temperature ² (this section 70CRI only)	EXA Color Rendering Index ²	MPLE: DSX2 LED Distribution AFR Automotive front row	P7 40K 70CRI T3M	Voltage	NLTAIR2 PIRHN DDBXD
	P1 P5 P2 P6 P3 P7 P4 P8 Rotated optics P10 ¹ P13 ¹ P11 ¹ P14 ¹ P12 ¹ P14 ¹	30K 3000K 40K 4000K 50K 5000K (this section 80CRI only, extended lead times apply) 27K 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI 80CRI	T1S Type I short T2M Type II medium T3M Type III medium T3LG Type III low glare ³ T4M Type IV medium T4LG Type IV low glare ³ TFTM Forward throw medium	TSLG Type V low glare TSW Type V wide BLC3 Type III backlight control ³ BLC4 Type IV backlight control ³ LCC0 Left corner cutoff ³ RCC0 Right corner cutoff ³	HVOLT (347V-480V) XVOLT (277V - 480V	(10 -1-11
Control opti	ons				Other options		Finish (required)
Shipped ins NLTAIR2 PIRI PIR	HN nLight AIR gen 2 en ambient senso, 8-4 sensor enabled at 2 High/low, motion/a	abled with bi-level motion / 2' mounting height, ambient (c, 11, 12, 20, 2) mbient sensor, 8-40' mounting or enabled at 2/c ^{(13, 20, 21} ceptacle only (controls ordered	FAO Field ac BL30 Bi-level BL50 Bi-level DMG 0-10v o	pin receptacle only (controls Iseparate) ^{14,21} Jjustable output ^{15,21} I switched dimming, 30% ^{16,21} I switched dimming, 50% ^{16,21} dimming wires pulled outside (for use with an external	Shipped installed SPD20KV 20KV surge protection HS Houseside shield (blaw L90 Left rotated optics 1 R90 Right rotated optics 1 CCE Coastal Construction 2	ck finish standard) ²²	DDBXD Dark Bronze DBLXD Black DNAXD Natural Aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black



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DSX2-LED Rev. 01/24/23 Page 1 of 10

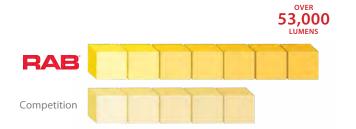


One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com

Available from 70W through 375W models, and with four IES distributions and numerous control options, the A17 gives you the right light for the right application, all without breaking the budget.

7 Lumen Packages

The A17 is available in everything from 10,000 lumens to up to 53,700 lumens, while leading competitors only offer up to 5 lumen packages.



Consistently High Efficacy

Not only does the A17 offer an ultra-high efficacy of up to 153 lm/W, but it delivers high efficacy throughout its entire portfolio.



Mounting Flexibility

With several mounting options available, the A17 can be used throughout various areas for one unified look: parking lots, building façades, adjacent walkways, etc.







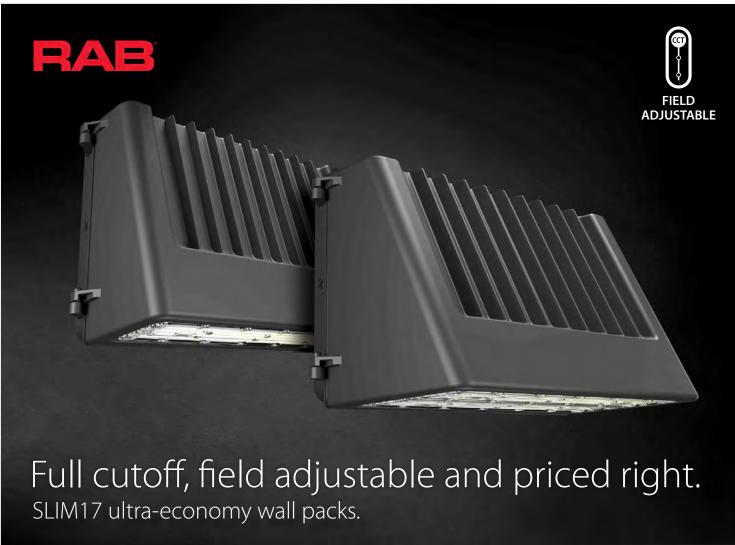
A17-SF-KIT



Adjustable Universal Pole Mount A17-ADJ-KIT

TYPE W FIXTURE OPTIONS

				E3 LEI ural Wall S		Catalog Number				
						Notes				
				BA	Α	Туре				
]		Hit the Tab key o	or mouse over th	ne page to se	ee all interacti	ve elements.
			CERTIFIED IN TITLE 20			Introduct		io pogo to oc		
Decificat Ppth (D1): Ppth (D2): Pight: Pight: thout optio	8" 1.5" 9" 18" 19.5 lbs		-w			in four size 1,200 to 25 solution. E controls, th energy sav WDGE3 ha 12,000 lum	every wall ccepted sl re. The cle s with lum 5,000 lume mbeddec me WDGE rings and as been d nens throu distributio	-mounten hape that han rectil hen pack ens, prov d with nL family p code co esigned igh a pre-	ed lightir at blends linear de kages rar viding a t Light® A provides ompliance I to delive ectision re ect for au	ng need in s with any sign comes nging from true site-wid IR wireless additional e. er up to efractive ler gmenting t
VDGE L	ED Family C	Overview								
Luminaire	Standard EM, 0°C	Cold EM, -20°C	Sensor				(4000K)			
				P1	P2	P3	P4		P5	P6
WDGE1 LED	4W			1,200	2,000					
WDGE2 LED	10W	18W	Standalone / nLight	1,200 7,500	2,000	3,000	4,500		6,000	
WDCF21FD	1511				8,500	10,000	12,000			
WDGE3 LED WDGE4 LED Ordering	15W Informatio	18W n	Standalone / nLight Standalone / nLight	12,000	16,000	18,000 DGE3 LED P	20,000	CRI R3	22,000	25,000
WDGE4 LED Drdering rries	Package C		Standalone / nLight CRI I 70CRI	12,000	16,000	OGE3 LED P Mounting Shipped includer	20,000 3 40K 70		MVOLT	
WDGE4 LED Drdering ries	Package C	 In Iolor Temperature 30K 3000K	Standalone / nLight CRI CRI 70CRI 80CRI	12,000 EX Distribution R2 Type 2	16,000 CAMPLE: WI Voltage	DGE3 LED P Mounting Shipped included SRM Surface mu ICW Indirect Ca Washer br	20,000 3 40K 70	Shipped AWS	MVOLT separately 3/8inch Archite Surface-mount	SRM DDB ectural wall spacer ted back box (top, left ntry). Use when there
WDGE4 LED Drdering ries VDGE3 LED	Package C P1 P2 P3	 iolor Temperature 30K 3000K 40K 4000K	Standalone / nLight CRI CRI 70CRI 80CRI	12,000 EX Distribution R2 Type 2 R3 Type 3 R4 Type 4	16,000 XAMPLE: WI Voltage MVOLT 347 ¹	DGE3 LED P Mounting Shipped included SRM Surface mu ICW Indirect Ca Washer br	20,000 3 40K 70 d bunting bracket nopy/Ceiling acket (dry/	Shipped AWS	MVOLT separately 3/8inch Archite Surface-mount right conduit ei	SRM DDB ectural wall spacer ted back box (top, left ntry). Use when there
WDGE4 LED Drdering ries VDGE3 LED Stions 15WH Emern Title 2 20WC Emern Title 2	Package C P1 P2 P3	in iolor Temperature 30K 3000K 40K 4000K 50K 5000K fied in CA fied in CA fied in CA	Standalone / nLight CRI CRI 70CRI 80CRI alone Sensors/Contre Bi-level (100, circuits with Bi-level (100,	12,000 EX Distribution R2 Type 2 R3 Type 3 R4 Type 4 For ward Throw	16,000 CAMPLE: VVI Voltage MVOLT 347 ¹ 480 ¹	Mounting Shipped included SRM Surface m ICW Indirect Ca Washer br, damp loca	20,000 3 40K 70 d butting bracket nopy/Ceiling acket (dry/ tions only) ⁴ itched	Shipped AWS PBBW Finish DDBXD DBXD DBXD DBXD DDAXD DWHXD	MVOLT separately 3/8inch Archite Surface-mount right conduit er is no junction b Dark bronze Black Natural alum White	SRM DDB ectural wall spacer ted back box (top, lefi ntry). Use when there ox available.
WDGE4 LED Drdering ries /DGE3 LED tions 1SWH Emen Title 2 20WC Emen Title 2 E ² Photo MG ³ 0-100 fixtur	Package C Package C P1 P2 P3 P4 gency battery backup, Certi 20 MAEDBS (15W, 5°C min, gency battery backup, Certi 20 MAEDBS (18W, -20°C m	iolor Temperature 30K 3000K 40K 4000K 50K 5000K fied in CA in PIRH itside PIRTFG	Standalone / nLight CRI CRI TOCRI BOCRI alone Sensors/Contro Bi-level (100, circuits with Bi-level (100, dusk to dawn	12,000 EX Distribution R2 Type 2 R3 Type 3 R4 Type 4 RFT Forward Throw ols visition sensor for a external dusk to dawn sw /35%) motion sensor for 8 visition sensor for 8 visition sensor for 8	16,000 CAMPLE: WI Voltage <u>WVolt</u> 347 ¹ 480 ¹ 3-15' mounting heights itching. 15-30' mounting height sub-	Mounting Mounting Shipped includee SRM Surface mi ICW Indirect Ca Washer br. damp loca Intended for use on sw s. Intended for use on sw vith photocell pre-progra	20,000 3 40K 70 d unting bracket nopy/Ceiling acket (dry/) tions only) ⁴ itched witched mmed for	Shipped AWS PBBW Finish DDBXD DBXD DBXD DNAXD	MVOLT separately 3/8inch Archite Surface-mount right conduit er is no junction b Dark bronze Black Natural alum	SRM DDB3 ectural wall spacer ted back box (top, lef ntry). Use when then ox available. inum bronze
WDGE4 LED Drdering ries VDGE3 LED Stions 15WH Emer Title 2 20WC Emer Title 2 20WC Emer Title 2 Photo MG ³ 0-100 fixtur order	Informatio Package C P1 P2 P3 P4 P4 C gency battery backup, Certi C 0 MAEDBS (15W, 5°C min) G gency battery backup, Certi C 0 MAEDBS (15W, 5°C min) G gency battery backup, Certi C 0 MAEDBS (18W, -20°C m C 0 cell, Button Type / / dimming wires pulled ou e (ef or use wirth an external e e (d separately) m conduit entry for back b	rin Color Temperature Color Temperature Color Temperature Color Temperature Color Temperature Control,	Standalone / nLight CRI	12,000 EX Distribution R2 Type 2 R3 Type 3 R4 Type 4 Forward Throw ols /35%) motion sensor for 7 x35%) motion sensor for 7 x35%) motion sensor for 7 x35%) motion sensor for 1 x35%) motion sensor for 1 x35%) motion sensor for 1	16,000 CAMPLE: WI Voltage <u>WVolt</u> 347 ¹ 480 ¹ 3-15' mounting heights itching. 15-30' mounting height sub-	Mounting Mounting Shipped includee SRM Surface mi ICW Indirect Ca Washer br. damp loca Intended for use on sw s. Intended for use on sw vith photocell pre-progra	20,000 3 40K 70 d unting bracket nopy/Ceiling acket (dry/) tions only) ⁴ itched witched mmed for	Finish DDBXD DBXD DBXD DBXD DBXD DBXD DBXD DB	MVOLT separately 3/8inch Archite Surface-mount right conduit er is no junction b Dark bronze Black Natural alum White Sandstone Textured dark Textured blact Textured natu	SRM DDB SRM DDB ectural wall spacer ted back box (top, lefi ntry). Use when there in when t
WDGE4 LED Drdering ries VDGE3 LED Stions 15WH Emer Title 2 20WC Emer Title 2 20WC Emer Title 2 Phote MG ³ 0-10 fixtur order CE Botto (PBB) PD10KV 10kV	Package C Package C P1 P2 P3 P4 gency battery backup, Certi 20 MAEDBS (15W, 5°C min, gency battery backup, Certi 20 MAEDBS (15W, 5°C min, gency battery backup, Certi 20 MAEDBS (15W, 5°C min, gency battery backup, Certi 20 MAEDBS (18W, -20°C m ocell, Button Type V dimming wires pulled ou e (for use with an external ed separately)	rin Color Temperature Color Temperature Color Temperature Color Temperature Color Temperature Color Temperature Control,	Standalone / nLight CRI	12,000 EX Distribution R2 Type 2 R3 Type 3 R4 Type 4 Forward Throw ols /35%) motion sensor for for 4 /35%) motion sensor for 7 /35%) motion sensor for 1 wn operation. /35% eless enabled bi-level motion reless enabled bi-level motion	16,000 CAMPLE: WI Voltage MVOLT 347 ¹ 480 ¹ 3-15' mounting heights itching. 15-30' mounting heights tion/ambient sensor for	Mounting Mounting Shipped includee SRM Surface m ICW Indirect Ca Washer br, damp loca Intended for use on sw s. Intended for use on sw with photocell pre-progra with photocell pre-progra	20,000 3 40K 70 d builting bracket nopy/Ceiling acket (dry/ tions only) ⁴ itched witched witched itched	Finish DDBXD DBLXD DWHXD DSXD DBLXD DBXXD DWHXD DSXD DBLBXD	MVOLT separately 3/8inch Archite Surface-mount right conduit er is no junction b Dark bronze Black Natural alum White Sandstone Textured dark Textured blacd	SRM DDB SRM DDB ectural wall spacer ted back box (top, left ntry). Use when there ox available. inum bronze k ral aluminum ie
WDGE4 LED Drdering ries /DGE3 LED tions tive z 20WC Emen Title z 20WC Emen Title z CE Phote MG 3 0-100 fixtur order CE Botto (PBB)	Package C Package C Package C P1 P2 P3 P4 gency battery backup, Certi 20 MAEDBS (15W, 5°C min) gency battery backup, Certi 20 MAEDBS (15W, 5°C min) gency battery backup, Certi 20 MAEDBS (15W, 20°C m ccell, Button Type / dimming wires pulled ou e (for use with an external ed separately) um conduit entry for back t W). Total of 4 entry points. Surge pack	rian control c	Standalone / nLight CRI	12,000 EX Distribution R2 Type 2 R3 Type 3 R4 Type 4 Forward Throw ols /35%) motion sensor for for 4 /35%) motion sensor for 7 /35%) motion sensor for 1 wn operation. /35% eless enabled bi-level motion reless enabled bi-level motion	16,000 CAMPLE: WI Voltage MVOLT 347 ¹ 480 ¹ 3-15' mounting heights itching. 15-30' mounting heights tion/ambient sensor for	Mounting Mounting Shipped includee SRM Surface m ICW Indirect Ca Washer br, damp loca Intended for use on sw s. Intended for use on sw with photocell pre-progra with photocell pre-progra	20,000 3 40K 70 d Junting bracket nopy/Ceiling acket (dry/) tions only) ⁴ itched witched mmed for rammed	Shipped AWS PBBW Finish DDBXD DBLXD DNAXD DWHXD DSSXD DBLBXD DBLBXD DBLBXD DNATXD DWHGXD DSSTXD	MVOLT separately 3/8inch Archite Surface-mount right conduit er is no junction b Dark bronze Black Natural alum White Sandstone Textured dark Textured blact Textured hatu Textured sand	SRM DDB SRM DDB ectural wall spacer ted back box (top, left ntry). Use when there ox available. inum bronze k ral aluminum ie





Field-adjustable control. The SLIM17 comes with a field-adjustable CCT switch that's easily accessed on the side of the fixture and allows you to choose between 3000, 4000 and 5000K.



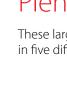
EASY INSTALL

PREMIUM I

IP65 RATING

(5)2

5-YEAR, LIMITED WARRANTY





Ordering

WALLPACK FU Family SLIM17FA

energy savings.





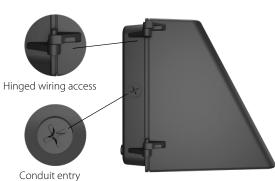
These larger SLIM17s come in two sizes and are available in five different wattages: 40, 60, 100, 120 and 150W.





The proof is in the performance.

Tight budgets don't mean having to sacrifice on performance. The SLIM17 delivers 80+ CRI and a high efficacy of up to 145 lm/W, all with 0-10V dimming. Its diffuse, uniform output comes without the flickering or humming often found in ultra-economy lighting.

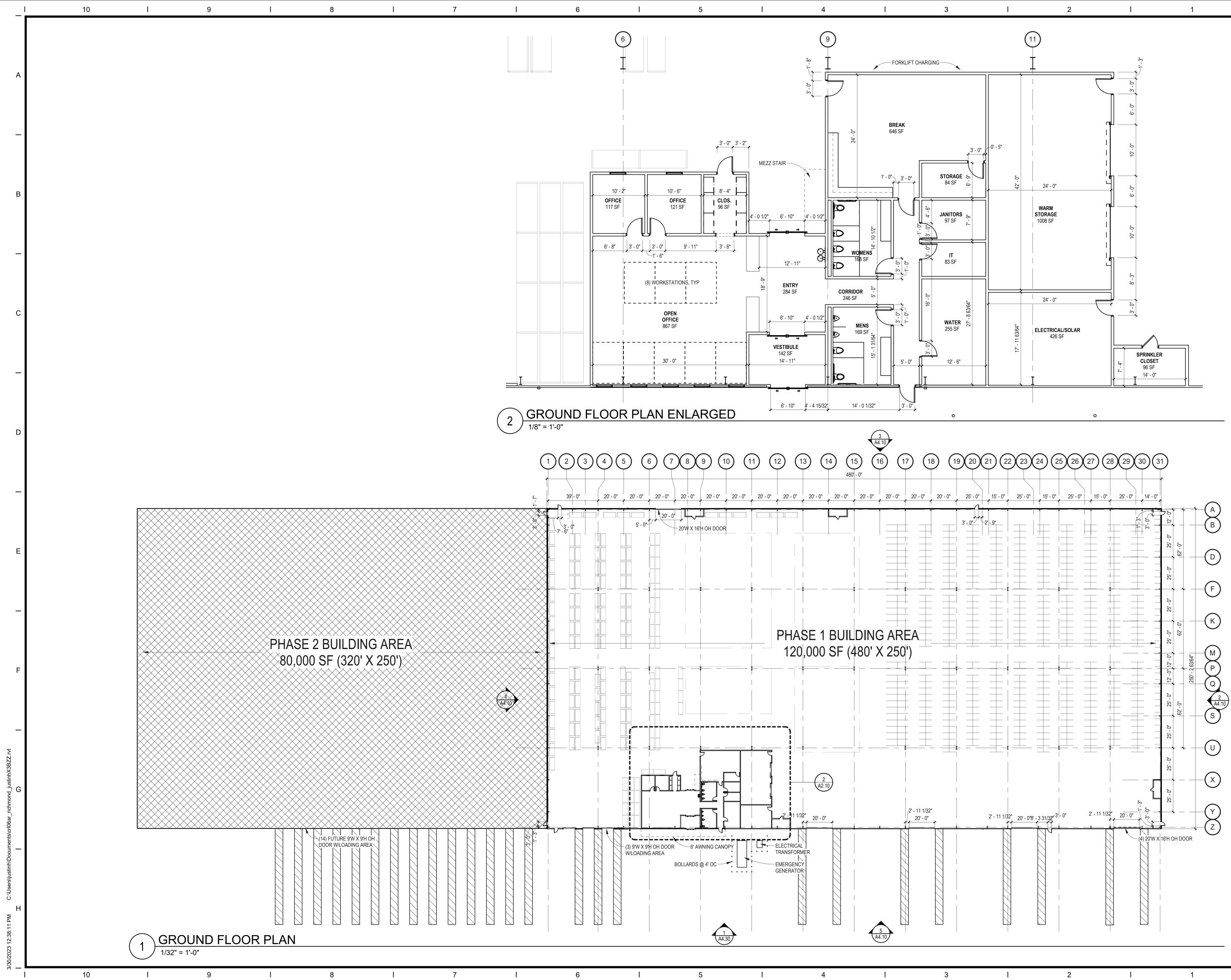


Easy installation.

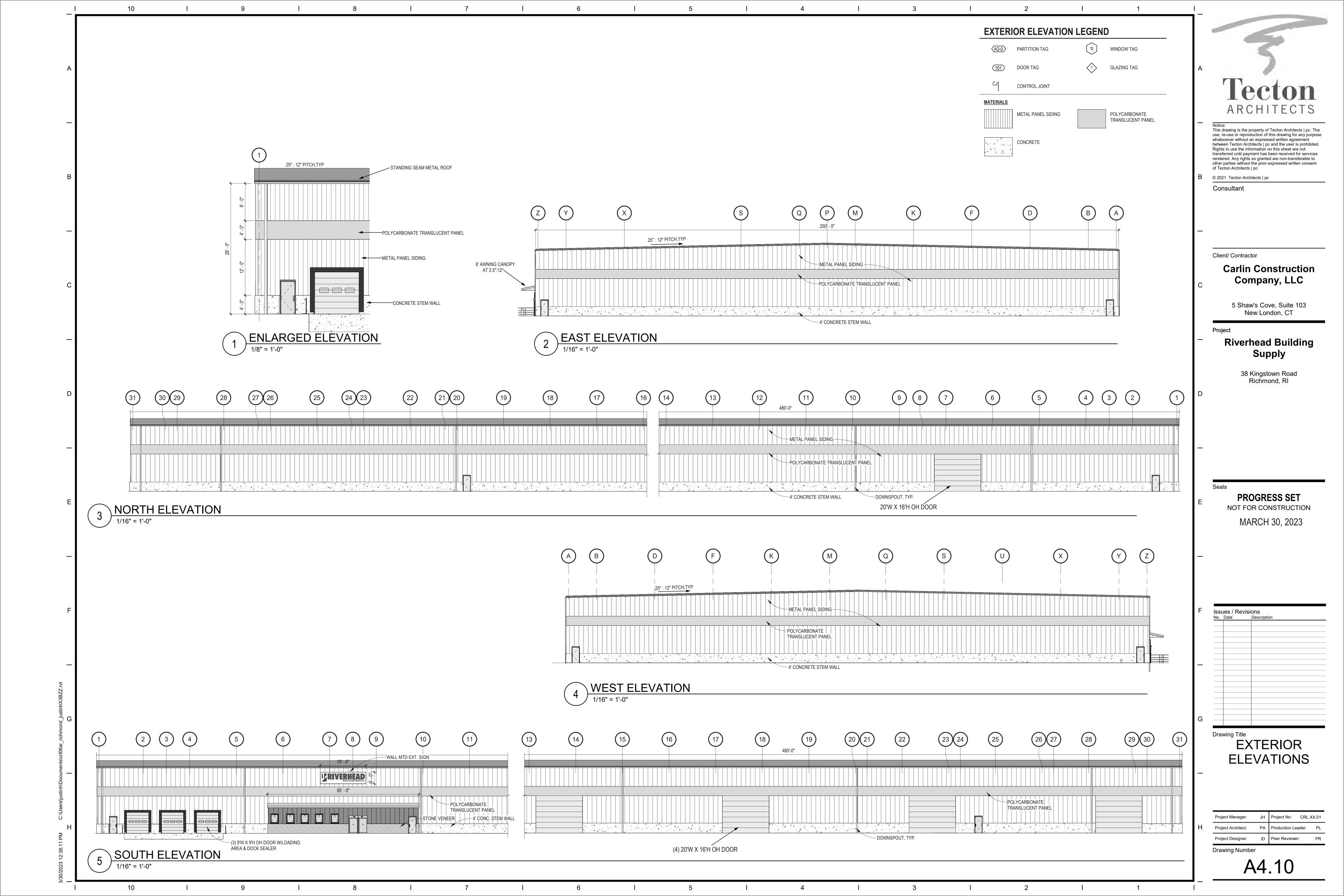
Hinged wiring access and conduit entries on the back, sides, top and bottom make installation a snap.

	atrix — ситоғғ										
	Style Wattage		Color Temp		Finish		Driver/Voltage		Options		
FC	Full Cutoff	40 60 100 120 150	40W 60W 100W 120W 150W	Blank	5000K/4000K/3000K selectable	Blank	Bronze	Blank	120-277V	Blank	Selectable photocell

Designer MG Date 03/21/2023 Scale 1" = 50' Drawing No. Summary



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ALTA/NSPS LAND TITLE SURVEY PROPERTY OF NEW CASTLE REALTY COMPANY

LEGAL DESCRIPTION - BY SURVEY

A CERTAIN PARCEL OF LAND LOCATED ON THE NORTHERLY SIDE OF KINGSTOWN ROAD IN THE TOWN OF RICHMOND, COUNTY OF WASHINGTON AND STATE OF RHODE ISLAND, SAID PARCEL BEING SHOWN ON A PLAN TITLED: " ALTA / NSPS LAND TITLE SURVEY PROPERTY OF NEW CASTLE REALTY COMPANY, PLAT 5B - LOT 59 38 KINGSTOWN ROAD RICHMOND, RHODE ISLAND DATE: OCTOBER 16, 2018 SCALE: 1" = 100' LOUREIRO ENGINEERING ASSOCIATES INC. GROTON, CONNECTICUT AND IS MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

REGINNING AT A POINT MARKED BY A REBAR AND SHOWN AS "P.O.B" ON THE NORTHERLY HIGHWAY LINE OF KINGSTOWN ROAD AT THE SOUTHEASTERLY CORNER OF LAND NOW OR FORMERLY OF FRANK D. & LUANN DIPIETRO AND THE SOUTHWESTERLY CORNER OF THE HEREIN DESCRIBED PARCEL;

THENCE DEPARTING SAID NORTHERLY HIGHWAY LINE AND RUNNING N 25° 55' 22" E BOUNDED WESTERLY BY LAND NOW OR FORMERLY OF FRANK D. & LUANN DIPIETRO FOR A DISTANCE OF 150.00' TO A POINT;

THENCE RUNNING N 56° 24' 12" W BOUNDED SOUTHERLY IN PART BY SAID LAND OF PIETRO AND IN PART BY LAND NOW OR FORMERLY AND IN PART BY LAND NOW OR FORMERLY OF WOOD RIVER REAL ESTATE HOLDINGS LLC FOR A DISTANCE OF 200.05' TO A GRANITE BOUND

THENCE RUNNING IN A GENERALLY NORTHEASTERLY DIRECTION BOUNDED NORTHWESTERLY BY AGREE RICHMOND RI LLC THE FOLLOWING NINE COURSES:

N 26º 43' 31" E, A DISTANCE OF 43.45' TO AN IRON PIPE;

N 25º 13' 56" E, A DISTANCE OF 170.08' TO AN IRON PIPE;

N 27º 27' 02" E, A DISTANCE OF 29.38' TO AN IRON PIPE

N 27° 50' 59" E, A DISTANCE OF 81.67' TO A POINT;

N 22º 17' 08" E, A DISTANCE OF 71.03' TO A GRANITE BOUND;

N 24º 10' 53" E, A DISTANCE OF 61.71' TO AN IRON PIPE

N 27º 43' 15" E, A DISTANCE OF 77.92' TO A POINT;

N 31° 16' 56" E, A DISTANCE OF 91.24' TO AN IRON PIPE

N 05º 13' 12" E, A DISTANCE OF 37.17' TO A REBAR;

THENCE RUNNING N 35° 39' 32" E BOUNDED NORTHWESTERLY BY LAND NOW OR FORMERLY OF RICHMOND 32 REALTY LLC FOR A DISTANCE OF 37.39' TO A POINT, SAID POINT BEING THE NORTHWEST CORNER OF THE HEREIN DESCRIBE PARCEL:

THENCE RUNNING EASTERLY AND NORTHERLY BOUNDED NORTHERLY AND WESTERLY BY LAND NOW OR FORMERLY OF RICHMOND 32 REALTY LLC THE FOLLOWING TEN COURSES;

S 85° 01' 26" E, A DISTANCE OF 27.92' TO AN IRON PIPE; 5 84º 48' 27" E, A DISTANCE OF 83.47' TO A POINT;

S 84° 19' 48" E, A DISTANCE OF 66.21' TO A POINT;

S 84° 54' 33" E, A DISTANCE OF 164.19' TO A POINT;

S 84° 40' 26" E, A DISTANCE OF 80.16' TO A POINT;

S 83º 35' 13" E, A DISTANCE OF 29.18' TO A POINT;

5 84º 41' 03" E, A DISTANCE OF 654.85' TO AN IRON PIPE;

N 02° 32' 54" E, A DISTANCE OF 206.01' TO A POINT;

S 73º 17' 07" E, A DISTANCE OF 24.15' TO A REBAR IN A ROCK;

N 13º 19' 06" E, A DISTANCE OF 617.49' TO A POINT;

THENCE RUNNING EASTERLY AND SOUTHEASTERLY BOUNDED NORTHERLY AND NORTHEASTERLY BY LAND NOW OR FORMERLY OF RICHMOND 208 REALTY LLC THE FOLLOWING FIVE COURSES:

S 77º 49' 20" E, A DISTANCE OF 86.00 TO A POINT;

S 29° 10' 32" E, A DISTANCE OF 466.67' TO AN IRON PIPE;

CONTINUING S 29° 10' 32" E, A DISTANCE OF 273.77' TO A REBAR IN A ROCK;

CONTINUING S 29° 10' 32" E, A DISTANCE OF 113.44' TO AN IRON PIPE;

CONTINUING S 29° 10' 32" E, A DISTANCE OF 179.65' TO A REBAR IN A BOULDER;

THENCE RUNNING, SOUTHWESTERLY, WESTERLY, SOUTHEASTERLY AN WESTERLY BOUNDED SOUTHEASTERLY, SOUTHERLY, NORTHEASTERLY AND SOUTHERLY BY LAND NOW OR FORMERLY OF RICHMOND REALTY ASSOCIATES LLC THE FOLLOWING ELEVEN COURSES:

S 18º 43' 28" W FOR A DISTANCE OF 527.00' TO A DRILL HOLE;

S 18° 08' 42" W ALONG A STONE WALL A DISTANCE OF 192.95' TO AN IRON PIPE;

S 89° 47' 43" W ALONG A STONE WALL A DISTANCE OF 141.75' TO A DRILL HOLE;

S 88° 19' 20" W ALONG A STONE WALL A DISTANCE OF 97.35' TO A DRILL HOLE;

S 89º 02' 33" W ALONG A STONE WALL A DISTANCE OF 170.01' TO A DRILL HOLE;

S 89° 54' 02" W ALONG A STONE WALL A DISTANCE OF 189.69' TO A POINT;

S 89° 20' 01" W ALONG A STONE WALL A DISTANCE OF 117.71' TO A POINT;

S 89° 46' 25" W ALONG A STONE WALL A DISTANCE OF 19.25' TO A POINT;

S 89º 44' 10" W ALONG A STONE WALL A DISTANCE OF 285.94' TO A DRILL HOLE;

S 26° 56' 20" E, A DISTANCE OF 257.65' TO A POINT;

POINT;

POINT:

S 84° 21' 28" W, A DISTANCE OF 466.23' TO A POINT IN THE NORTHERLY HIGHWAY LINE OF KINGSTON ROAD; THENCE RUNNING N 50° 35' 32" W BY AND WITH SAID HIGHWAY LINE FOR A DISTANCE OF 72.63' TO AN ANGLE

THENCE RUNNING N 50° 35' 31" W BY AND WITH SAID HIGHWAY LINE FOR A DISTANCE OF 138.97' TO AN ANGLE

THENCE RUNNING N 60° 36' 07" W BY AND WITH SAID HIGHWAY LINE FOR A DISTANCE OF 350.89 TO THE POINT AND

PLACE OF BEGINNING.

THE ABOVE DESCRIBED PARCEL CONTAINS 2,087,424 SQUARE FEET (47.92 ACRES MORE OR LESS).

LEGAL DESCRIPTION - OF RECORD FIRST TRACT: A CERTAIN TRACT OR PARCEL OF LAND WITH ALL BUILDINGS AND IMPROVEMENTS THEREOF LOCATED IN THE TOWN OF RICHMOND, COUNTY OF WASHINGTON AND STATE OF RHODE ISLAND AND ESCRIBED AS FOLLOWS: SAID TRACT CONTAINS APPROXIMATELY FORTY-FIVE (45) ACRES AND BEING THE SAME PREMISES DESCRIBED IN A CERTAIN DEED TO IDA S. CLARKE FROM SUSAN F. C. WILBUR, DATED JUNE 30, 1917 AND RECORDED IN THE RECORDS OF LAND EVIDENCE OF THE TOWN OF RICHMOND IN THE DEED BOOK NO. 17 AT PAGE 426, REFERENCE TO SAID DEED AND TO THE RECORD IEREOF BEING HEREBY HAD FOR A MORE PARTICULAR DESCRIPTION OF THE PREMISES HEREBY REMISES HEREBY CONVEYED HAVE BEEN KNOWN AS "THE ARNOLD PLACE" AND LIE WESTERLY OF THE HOME PLACE FORMERLY OCCUPIED BY HALSEY P. CLARKE. A PLAN OF THE CONVEYED PREMISES IS ON RECORD IN THE TOWN CLERK'S OFFICE OF RICHMOND, REFERENCE TO WHICH IS HEREBY HAD AND MADE. BEING THE SAME PREMISES CONVEYED TO ARTHUR W. SLOCOMB AND AMEY W. SLOCOMB AS JOINT TENANTS BY DEED FROM IDA S. CLARKE BEARING DATE OF JANUARY 8, 1927 AND RECORDED IN THE RECORDS OF LAND EVIDENCE OF THE TOWN OF RICHMOND IN BOOK NO. 19 AT PAGE 467.

SECOND TRACT: A CERTAIN TRACT OR PARCEL OF LAND SITUATED ON THE NORTHERLY SIDE OF THE STATE HIGHWAY THE SAID TRACT BEING A TRIANGULAR STRIP OF LAND. SAID STATE HIGHWAY MENTIONED ABOVE WAS BUILT IN THE YEAR 1905 AND IS THE SAME HIGHWAY WHICH RUNS FROM WYOMING TO THE RICHMOND TOWN HALL, SAID STRIP OF LAND IS LOCATED IN FRONT OF THE FARM NOW OWNED BY SAID ARTHUR W. SLOCOMB ET UX. (SAID STRIP WAS FORMERLY A TOWN HIGHWAY). BEING THE SAME PREMISES CONVEYED TO ARTHUR W. AND AMEY W. SLOCOMB BY DEED FROM REYNOLDS L. CARD BEARING DATE OF JUNE 18, 1927 AND RECORDED IN SAID RECORDS OF LAND EVIDENCE IN SAID TOWN OF RICHMOND IN BOOK NO. 19 AT PAGE 519.

THIRD TRACT: A CERTAIN TRIANGULAR PARCEL OF LAND LOCATED IN THE TOWN OF RICHMOND, COUNTY OF WASHINGTON AND STATE OF RHODE ISLAND AND BOUNDED AND DESCRIBED AS FOLLOWS: BEGINNING AT AN IRON ROD OR BAR DRIVEN IN THE GROUND AT THE END OF THE LOCATION OF A WALL WHICH FORMERLY DIVIDED THE PREMISES HEREIN DESCRIBED FROM THE OLD HIGHWAY; THENCE RUNNING SOUTHEASTERLY BY THE LOCATION OF THE OLD WALL AND BY THE NORTHEAST LINE OF THE OLD HIGHWAY ONE HUNDRED AND TWENTY-SIX (126) FEET TO A FENCE; THENCE RUNNING NORTHEASTERLY BY SAID FENCE AND BOUNDING SOUTHEASTERLY ON OTHER LAND OF SAID HALSEY C. KENYON ONE HUNDRED FORTY-SIX AND FIVE-TENTHS (146.5) FEET TO AN IRON FENCE POST AT LAND NOW OR FORMERLY OF ARTHUR W. SLOCOMB ET UX, AND AT A CORNER, THENCE RUNNING APPROXIMATELY N. 76° W. BY LAND OF SAID SLOCOMBS 200.9 FEET TO THE POINT OF BEGINNING, TOGETHER WITH ALL THAT PORTION OF THE OLD HIGHWAY WHICH LIES SOUTHERLY AND ADJACENT TO THE WITHIN DESCRIBED PREMISES. MEANING AND INTENDING HEREBY TO DESCRIBE THAT SAME PROPERTY WHICH WAS CONVEYED TO ARTHUR AND AMEY W. SLOCOMB BY DEED OF HALSEY C. KENYON, DORCAS A. AND IDA S. CLARKE AS APPEARS OF RECORD IN RECORDS OF LAND EVIDENCE OF THE TOWN OF RICHMOND IN BOOK NO. 20 AT PAGE 95.

FOURTH TRACT: A CERTAIN RECTANGULAR PARCEL OF LAND, CONTAINING BY ESTIMATION TWO ACRES, MORE OR LESS, LOCATED IN SAID TOWN OF RICHMOND, COUNTY OF WASHINGTON, STATE OF RHODE ISLAND AND BOUNDED AND DESCRIBED AS FOLLOWS, TO WIT: FROM AN IRON BAR SET ON THE STATE BOARD HIGHWAY BOUND ON A LINE BETWEEN LAND OF ARTHUR W. AND AMEY W. SLOCOMB AND LAND NOW OR FORMERLY OF HALSEY C. KENYON; THENCE ALONG SAID LINE FORTY-TWO (42) FEET TO AN OLD STONE WALL; THENCE CONTINUING 146.5 FEET TO ANGLE POINT; THENCE SOUTH 80° EAST ALONG THE STONE WALL 400 FEET TO AN IRON PIPE; THENCE SOUTHEAST 262 FEET TO AN IRON PIPE ALONG LAND NOW OR FORMERLY OWNED BY HALSEY C. KENYON 473 FEET TO AN IRON BOLT SET IN THE OLD ROADWAY; THENCE ALONG THE STATE HIGHWAY LINE 251 FEET TO THE POINT OF BEGINNING. BEING THE SAME PREMISES CONVEYED TO ARTHUR W. AND AMEY W. SLOCOMB BY HALSEY C. KENYON BY DEED DATED JULY 9, 1945 AND RECORDED IN RECORDS OF LAND EVIDENCE OF THE TOWN OF RICHMOND, BOOK NO. 21 AT PAGE 277.

EXPRESSLY EXCEPTING, HOWEVER, THOSE PARCELS WHICH HAVE HERETOFORE BEEN CONVEYED AND CARVED OUT OF THE ABOVE DESCRIBED TRACTS, WHICH SAID PARCELS ARE DESCRIBED IN DEED TO EARLE H. BROWN ET UX, WHICH SAID DEED BEARS DATE OF JULY 30, 1948 AND APPEARS OF RECORD IN THE RECORDS OF LAND EVIDENCE OF THE TOWN OF RICHMOND, BOOK 22 AT PAGE 119, AND ALSO IN DEED TO LLOYD RUSSELL DUMAS ET UX WHICH SAID DEED BEARS DATE OF JUNE 9, 1952 AND APPEARS OF RECORD IN LAND EVIDENCE RECORDS OF SAID TOWN OF RICHMOND IN BOOK NO. 23 AT PAGE 118; AND ALSO EXCEPTING ANY OTHER CONVEYANCES OF RECORD.

PLAT 5B - LOT 59 **38 KINGSTOWN ROAD** RICHMOND, RHODE ISLAND DATE: OCTOBER 16, 2018



Loureiro Engineering Associates, Inc. DUTEIRO 100 Fort Hill Road • Groton, Connecticut 06340 Phone: 860-448-0400 • Fax: 860-448-0899 Engineering • Construction • EH&S • Energy • Waste An Employee Owned Company • www.Loureiro.com



NOTES

- 1. THIS PLAN AND THE SURVEY IT IS BASED ON HAVE BEEN PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS FOR PROFESSIONAL LAND SURVEYING IN THE STATE OF RHODE ISLAND. THE TYPE OF SURVEY IS A COMPREHENSIVE BOUNDARY SURVEY, THE HORIZONTAL ACCURACY CONFORMS TO TYPE I SURVEY.
- 2. REFERENCE IS MADE TO TOWN OF RICHMOND, RI LAND EVIDENCE RECORDS VOLUME 206 AT PAGE 318 FOR A QUIT CLAIM DEED DATED DECEMBER 20, 2004 REGARDING RECORD TITLE TO THE SUBJECT PROPERTY. ALSO SEE VOLUME 80 AT PAGE 422 REGARDING A PROPERTY LINE ACKNOWLEDGEMENT DATED MARCH 25, 1992.
- 3. THE PROPERTY SHOWN HEREON MAY BE SUBJECT TO OR BENEFIT BY THE FOLLOWING EASEMENTS RIGHTS OF WAY AND/OR AGREEMENTS
- A. SEE VOLUME 78 AT PAGE 229 REGARDING A NOTICE OF DEVIATION TO ALLOW 2 1/2 FEET ABOVE THE ALLOWABLE HEIGHT REQUIREMENT FOR AN ACCESSORY BUILDING.
- B. SEE VOLUME 80 AT PAGE 541 FOR A NOTICE OF DEVIATION FOR THE HEIGHT OF A FREE STANDING SIGN LOCATED 30 FEET BACK FROM THE PROPERTY LINE WILL NOT BE MORE THAN 12' 0".
- 4. THE SUBJECT PROPERTY IS LOCATED WITHIN THE GB (GENERAL BUSINESS) AND I (INDUSTRIAL) DISTRICTS.
- 5. "NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP WASHINGTON COUNTY, RHODE ISLAND ALL JURISDICTIONS PANEL 68 OF 368, TOWN OF RICHMOND, MAP NUMBER 44009C0068H EFFECTIVE DATE OCTOBER 19, 2010 FEDERAL EMERGENCY MANAGEMENT AGENCY" INDICATES THE SUBJECT PROPERTY IS LOCATED WITHIN FLOOD HAZARD X (OUTSIDE 0.2% ANNUAL FLOOD CHANCE FLOODPLAIN).
- 6. THE SUBJECT PROPERTY IS SHOWN ON RICHMOND, RI TAX ASSESSOR PLAT 05B AS LOT 59 AND HAS AND ADDRESS OF 38 KINGSTOWN ROAD, RICHMOND, RI 02822.
- 7. THE BASIS FOR BEARINGS IS RHODE ISLAND COORDINATE SYSTEM NAD83 DETERMINED EMPLOYING
- 8. THIS PLAN REPRESENTS THE LOCATION OF THE BOUNDS AND SITE CONDITIONS DETERMINED BY FIELD SURVEY ON OCTOBER 3, 2018. RECORD TITLE AND ADJOINER INFORMATION WAS OBTAINED FROM TAX ASSESSOR AND LAND EVIDENCE RECORDS ON OCTOBER 16, 2018.

1843

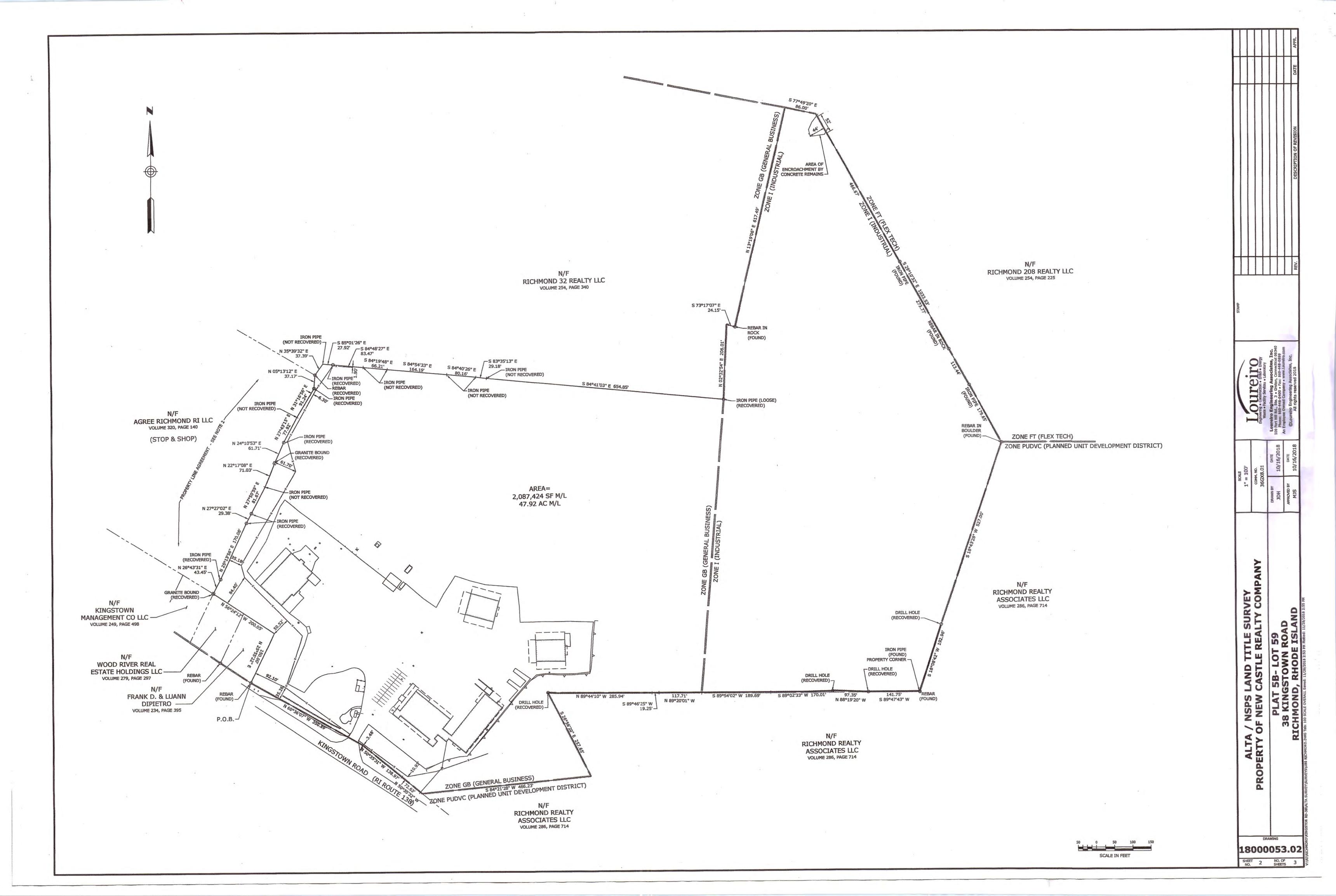
TO GX3 LLC. ABSTRACTS, INCORPORATED (ST-38721), STEWART TITLE COMPANY (RITF1100-02) PEOPLE'S UNITED BANK, NATIONAL COOPERATIVE BANK (NCB), AMBROSE & STRAZZA, LLC AND NATIONAL ASSOCIATION, ITS SUCCESSORS AND/OR ASSIGNS:

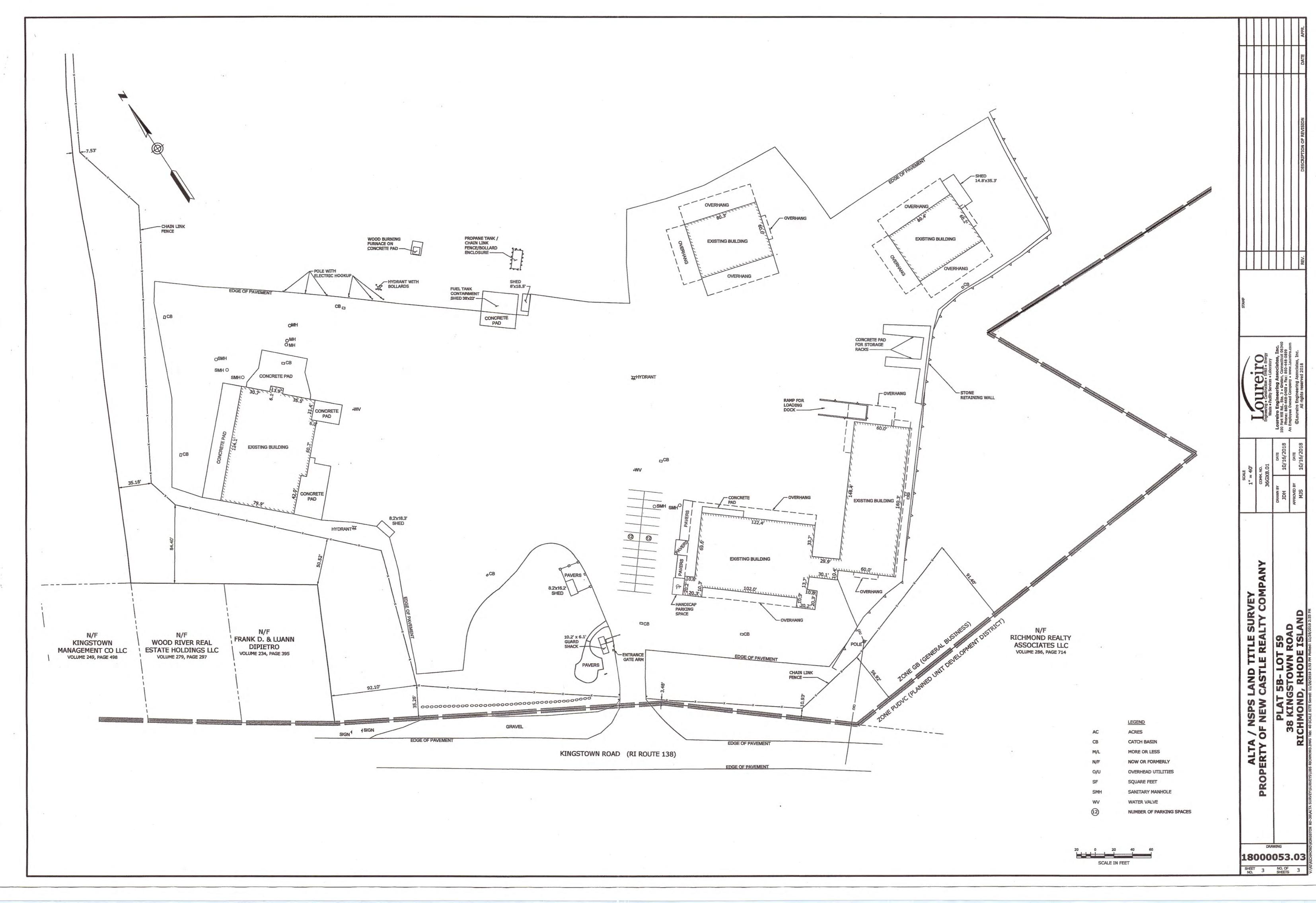
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 7a, 8, 9 AND 13 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON OCTOBER 3, 2018.

DATE OF PLAT OR MAP: OCTOBER 16, 2018 10-16-18

MICHAEL J. SCANLON RILICENSE # 1843

SHEET 1 OF 3 DWG NO.: 18000053.01

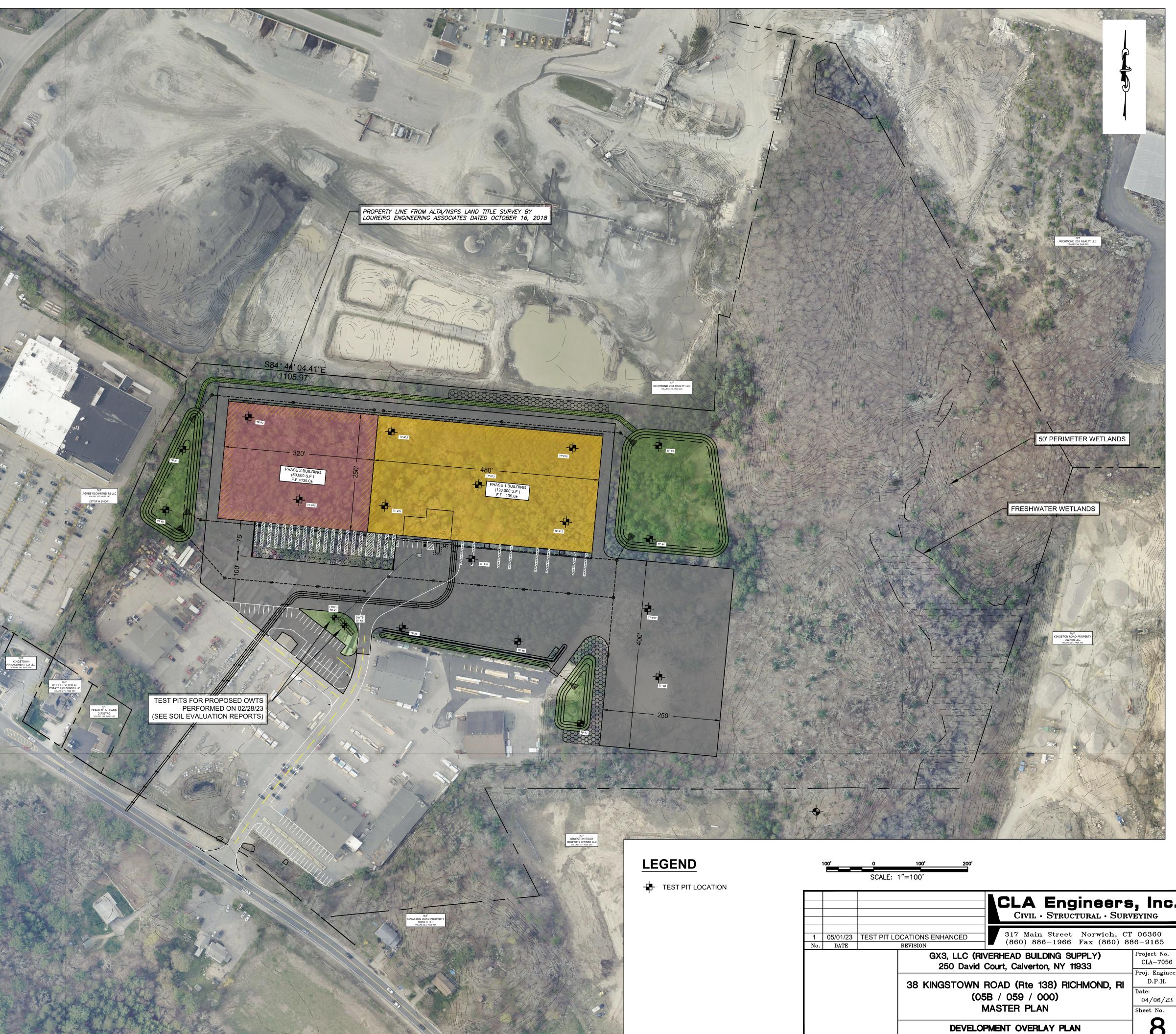




TEST PIT DATA

TEST PITS AS WITNESSED AND DESCRIBED BY CLA ENGINEERS 12/30/2021

TP #1SAMPLE = 10'0-12"TOPSOIL (DARK BROWN FINE SANDY LOAM)12 - 45"SUBSOIL (YELLOW BROWN VERY FINE SAND)45 - 144"LIGHT BROWN SAND & GRAVEL W/ FEW COBBLESMOTTLES: NO - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE	
TP #2SAMPLE = 12'0 - 23"TOPSOIL (DARK BROWN SANDY LOAM)23 - 92"YELLOW BROWN, COBBLY, COARSE SAND & GRAVEL92 - 144"LIGHT YELLOW BROWN SAND & GRAVEL W/ TRACE COBBLESMOTTLES: NO - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE	
TP #3SAMPLE = NONE0 - 54"LIGHT BROWN SANDY LOAM W/ BOULDERS (FILL)54 - 72"BROWN MEDIUM SAND & GRAVEL W/COBBLES72 - 90"LIGHT BROWN MEDIUM SAND90 - 111"BROWN SAND & GRAVEL W/ COBBLESMOTTLES: NONE - GW: 106" - LEDGE: NONE - RESTRICTIVE: 106"	
TP #4SAMPLE = 8'0 - 11"TOPSOIL (BROWN LOAMY SAND)11 - 96"VERY LIGHT BROWN MEDIUM SANDMOTTLES: NONE - GW: 96" - LEDGE: NONE - RESTRICTIVE: 96"	
TP #5SAMPLE = 8'0 - 28"TOPSOIL (VERY DARK BROWN LOAMY SAND)28 - 48"BROWN MEDIUM SAND W/ GRAVEL, COBBLES, STONES48 - 107"BROWN COARSE SAND W/ GRAVEL AND COBBLES107 - 130"LIGHT BROWN MEDIUM SAND, TRACE GRAVELMOTTLES: NO - GW; NONE - LEDGE: NONE - ROOTS: NONE RESTRICTIVE: 130"	
TP #6SAMPLE = 10'0 - 8"TOPSOIL (DARK GRAY LOAMY SAND)8 - 29"SUBSOIL (YELLOW BROWN LOAMY SAND)29 - 68"BROWN COARSE SAND & GRAVEL68 - 138"BROWN COARSE SAND & GRAVEL W/ COBBLESMOTTLES: NO - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE	
TP #7SAMPLE =NONE0 - 10"TOPSOIL (DARK BROWN FINE LOAMY SAND)10 - 33"SUBSOIL (YELLOW BROWN FINE LOAMY SAND)33 - 140"LIGHT BROWN SAND AND GRAVEL W/ COBBLESMOTTLES: NO - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE	
TP #8SAMPLE =NONE0 - 144"FILL (BROWN SANDY LOAM W/ SCRAP METAL & PLASTIC & STONES)144"NATURAL MATERIAL = BROWN LOAMY SANDMOTTLES: NO - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE	
TP #9SAMPLE =NONE0 - 22"TOPSOIL (DARK BROWN SANDY LOAM)22 - 80"YELLOW BROWN FINE LOAMY SAND80 - 108"LIGHT BROWN FINE SAND108 - 144"VERY LIGHT BROWN FINE TO MEDIUM SAND W/ TRACE COBBLESMOTTLES: NO - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE	
TP #10SAMPLE = NONE0 - 14"TOPSOIL (DARK BROWN SANDY LOAM)14 - 28"YELLOW BROWN FINE SAND28 - 46"BROWN SAND & GRAVEL W/ COBBLES46 - 70"LIGHT BROWN FINE SAND70 - 120"LIGHT BROWN SAND & GRAVEL W/ COMMON COBBLES (BONEY)120 - 144"LIGHT BROWN MEDIUM SANDMOTTLES: NO - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE	
TP #11SAMPLE = NONE0 - 14"TOPSOIL (DARK BROWN FINE SANDY LOAM)14 - 58"YELLOW BROWN FINE LOAMY SAND58 - 144"BROWN COBBLYSAND & GRAVEL W/STONES (BONEY)MOTTLES: NO - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE	
TP #12SAMPLE = NONE0 - 12"TOPSOIL (DARK BROWN LOAMY SAND)12 - 60"SUBSOIL (BROWN SAND & GRAVEL W/COBBLES)60 - 108"LIGHT BROWN MEDIUM SAND108 - 125"BROWN SAND & GRAVEL W/COBBLES & STONESMOTTLES: NO - GW; NONE - LEDGE: NONE - ROOTS: NONE RESTRICTIVE: NONE	
TP #13SAMPLE = NONE0 - 14"TOPSOIL (DARK BROWN SANDY LOAM)14 - 44"SUBSOIL (YELLOW BROWN SANDY LOAM)44 - 136"LIGHT BROWN MEDIUM SAND & GRAVEL (STONES AND BOULDERS AT 8'MOTTLES: NO - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE)
TP #14SAMPLE = NONE0 - 24"FILL (VERY DARK GRAY LOAMY SAND)24 - 66"GRAY BROWN COARSE SAND & GRAVEL W/ COBBLES66 - 130"BROWN SAND & GRAVEL W/ COBBLESMOTTLES: NO - GW; NONE - LEDGE: NONE - RESTRICTIVE: 130"	
TP #15SAMPLE = NONE0 - 4"TOPSOIL (BROWN LOAMY SAND)4 - 65"BROWN LOAMY SAND & GRAVEL W/STONES (FILL)65 - 125"VERY LIGHT BROWN MEDIUM SAND (NATURAL)MOTTLES: NO - GW; NONE - LEDGE: NONE - ROOTS: NONE RESTRICTIVE: NONE	
TP #16SAMPLE = NONE0 - 5"DARK BROWN SANDY LOAM5 - 32"BROWN SANDY LOAM (FILL)32 - 130"LIGHT BROWN SAND W/TRACE GRAVELMOTTLES: NO - GW; 95" - LEDGE: NONE - RESTRICTIVE: 95"	
TP #17SAMPLE = NONE0 - 3"TOPSOIL (BROWN SANDY LOAM)3 - 22"YELLOW BROWN SANDY LOAM22 - 42"YELLOW BROWN SAND & GRAVEL W/ COBBLES42 - 48"LIGHT GRAY VERY FINE SAND48 - 127"YELLOW BROWN COARSE SAND & GRAVEL W/ COMMON COBBLESMOTTLES: NO - GW; NONE - LEDGE: NONE - RESTRICTIVE: NONE	



				Engineers	
1 No.	05/01/23 DATE	TEST PIT LO		n Street Norwich, CT 36-1966 Fax (860) 88	
			GX3, LLC (RIVERHEAD BUI 250 David Court, Calvert		Project No. CLA-7056 Proj. Engineer
			38 KINGSTOWN ROAD (Rte (05B / 059 / 0 MASTER PL/	000)	D.P.H. Date: 04/06/23 Sheet No.
			DEVELOPMENT OVER SOIL TEST PIT LOC		8

CLA Engineers, Inc.

Civil • Structural • Survey

317 MAIN STREET • NORWICH, CT 06360 • (860) 886-1966 • (860) 886-9165 FAX

May 8, 2023

Mr. Shaun Lacey Building/Planning/Zoning Department 5 Richmond Town Road, Wyoming, RI 02898

RE: Major Land Development Master Plan Application 38 Kingstown Road (Route 138) – 48+/- acres Richmond, RI CLA – 7056

Dear Mr. Lacey

Thank you for your letter dated April 27, 2023. The following provides our responses to your comments to the Master Plan Application for the above referenced site.

Survey of the perimeter lot lines and street lines was performed by Loureiro Engineering Associates, Inc. and is shown on plans titled "ALTA/NSPS LAND TITLE SURVEY" dated October 16, 2018. These were included in the Master Plan Application. This boundary survey was prepared in accordance with the Rules and Regulations for Professional Land Surveying in the State of Rhode Island and is a comprehensive boundary survey confirming to a Class I Survey. A digital copy of the survey was obtained from Loureiro, and inserted into CLA's plans using NAD83 Rhode Island State Plan coordinate system. We hereby certify the perimeter lot lines and street lines depicted on CLA plans conform to the survey standards referenced.

Please find enclosed a check for \$48,750 for the Master Plan review fee.

The Development Overlay Plan depicting the soil test pit locations (Sheet 8) has been revised to enhance the visibility of the test pit locations and the appropriate plan copies are enclosed.

We acknowledge comments from the town's external traffic engineer are pending. We acknowledge comments from the Richmond Police Department are pending.

Comments from the Hope Valley-Wyoming Fire District have been reviewed and will be addressed in the Preliminary Plan Application.

We appreciate the opportunity to respond to your comments and look forward to appearing before the Planning Board on Tuesday May 23,

Sincerely,

RS

Darren Hayward, P.E. Project Engineer

Cc: Tim Foley - Carlin Construction