TOWN OF VERNON

Planning & Zoning Commission (PZC)

Meeting Notice & Agenda

Thursday, March 3, 2022, 7:30 PM

Town Council Chambers 3rd Floor

14 Park Place

Vernon, CT 06066

AGENDA

1. **Call to Order & Roll Call by Roland Klee, Chairman**

2. **Administrative Actions/Requests**

   2.1 Amendment/Adoption of Agenda - Additional business to be considered under agenda item #6 "Other Business" requires Commission vote.

   2.2 Approval of the Minutes from the **February 17, 2022**

3. **New Application(s) for receipt, if any:**

   3.1 PZ 2022-07, 32 South St., 38 White St., 40 White St. An Application of JoAnn Goodwin for a Zone Change from Commercial (C) to Residential-15 (R-15) for 3 parcels: 32 South St. (Tax Map 46, Block 0078, Parcel 00024), .3 acres; 38 White St. (Tax Map 46, Block 0078, Parcel 00026), .24 acres; 40 White St. (Tax Map 46, Block 0078, Parcel 00025).

4. **Public Hearing(s) and Action on Applications:**

   4.1 PZ-2022-05, 501 Talcottville Rd. An Application of Vernon Development LLC for a Site Plan and Special Permits to develop a 10,000 sq.ft. day care center at 501 Talcottville Rd. (Tax Map 09, Block 007, Parcel 0001D). Special permits requested include Section 4.9.4.15.1 (more than 40 parking spaces); Section 4.9.4.15.2 (structure within 200 feet of a residence); Section 4.9.4.15.3 (parking within 100 feet of a residence). The property is zoned Commercial.

   4.2 PZ-2002-06, 501 Talcottville Rd. An Application of 501 Talcottville Rd. LLC to permit the re-subdivision of land into one additional parcel, located at 501 Talcottville Rd. (Tax Map 09, Block 0007, Parcel 0001D). The property is zoned Commercial.

5. **8-24 Referrals, If any**

6. **Other Business/Discussion**

7. **Adjournment**

Roland Klee, Chair
Planning & Zoning Commission

DRAFT MINUTES

TOWN OF VERNON

Planning & Zoning Commission (PZC)

Thursday, February 17, 2022, 7:30 PM

VIA Zoom

Zoom Meeting Information

https://us02web.zoom.us/j/6149852850?pwd=NUZwVkEwWkRxS1EweC94cFNHVUxBdz09

Meeting ID: 614 985 2850 **Passcode:** h72Vs7

By Phone: 646 876 9923 **Meeting ID:** 614 985 2850 **Passcode:** 786221

DRAFT MINUTES

1. **Call to Order & Roll Call by Roland Klee, Chairman at 7:30 PM**
   - Regular members present: Roland Klee, Carl Bard, Robin Lockwood, Mike Mitchell and Iris Mullan
   - Alternate Member: Yelena Damsky sitting for Mike Baum
   - Absent Members: Mike Baum and Joseph Miller
   - Staff present: George McGregor, Town Planner, Shaun Gately, EDC
   - Recording secretary: Jill Rocco

2. **Administrative Actions/Requests**

   2.1 Amendment/Adoption of Agenda - Additional business to be considered under agenda item #6 "Other Business" requires Commission vote.

   Robin Lockwood **MOVED** to **ADOPT** the agenda. Iris Mullan seconded and the motion carried unanimously.

   2.2 Approval of the Minutes from the **February 03, 2022**

   Mike Mitchell **MOVED** to **APPROVE** the minutes from February 03, 2022. Robin Lockwood seconded and the motion carried unanimously.

3. **New Application(s) for receipt, if any:**

   NONE

4. **Public Hearing(s) and Action on Applications:**

   4.1 PZ-2022-02, 95 Hartford Tpke. CT Golf Land LLC has requested modifications to an approved Site Plan of Development and special permits for site grading, new construction, additions, and other activities on property located at 95 Hartford Tpke. (Assessor ID: Map 1, Block 158, Parcel 00095).

   - George McGregor, Town Planner, explained the details of the application and read the Public Notice posted in the Journal Inquirer February 5, 2022 and February 12, 2022.
   - Chairman Roland Klee read the following teleconference rules into the record:
     1. Any member of the public who wishes to provide public comment may participate remotely via computer with a microphone and ZOOM link or via telephone call-in number

2. We ask that all participants "MUTE" their phones and that the meeting organizer may mute participants if excessive noise or feedback interrupts the meeting.
3. Speakers are encouraged to use the ZOOM Chat function to alert the host that they would like to speak.
4. At the appropriate time, the Chairman will call for public comment. Speakers should unmute their phones by pressing *6 and then clearly identify their name and address.
5. Speakers should direct their comments though the Chairman
6. Please be patient.

- Mark Peterson, Engineer with Gardner & Peterson Associates, LLC, 170 Hartford Tpke. Tolland, CT spoke representing the applicant providing detailed maps and information.
- Chairman Roland Klee open the floor for any questions from the Commission.
- Commission asked in regards to soil and erosion.
- Mark Peterson responded.
- Roland Klee opened the Public Hearing at 7:44 PM.
- No one spoke in favor of
- No one spoke in opposition
- George McGregor, Town Planner, shared information from other Town Commissions and Staff comments.

Robin Lockwood **MOVED** to **CLOSE** the Public Hearing at 7:46 PM. Iris Mullan seconded and the motion passed unanimously.

Robin Lockwood **MOVED** that the Planning and Zoning Commission **APPROVE** PZ-2022-02, Golf land Phase II, a Site Plan of Development with Special Permits located at 95 Hartford Tpke. This approval is based upon a finding the application meets the site plan requirements of Section 14 and that the special permits requested meet and exceed the review criteria set forth in Section 5 and Section 17.3.1, subject to the Site Plan dated December 1, 2021 revised February 10, 2022, prepared by Gardner and Peterson, and the additional details set presented on 2-17-22. Iris Mullan seconded and the motion carried unanimously.

4.2 PZ-2022-03, 57 Hartford Tpke. An Application by Jerry Fornarelli for a modification to an approved site plan and special permits from Section 5 of the Zoning Regulations, in order to construct a deck addition, pavilion structure, and storage building at 57 Hartford Turnpike (Tax Map 01, Block 0158, Parcel 00057).

- George McGregor, Town Planner, explained the details of the application and read the Public Notice posted in the Journal Inquirer February 5, 2022 and February 12, 2022.
- Mark Peterson, Engineer with Gardner & Peterson Associates, LLC, 170 Hartford Tpke. Tolland, CT spoke representing the applicant providing detailed maps and information.
- Chairman Roland Klee open the floor for any questions from the Commission.
- Commission asked in regards to the bridge and screening on rooftop.
- Mark Peterson responded.
- George McGregor, Town Planner, responded and clarified.
- Jerry Fornarelli, applicant, 396 Strickland St., Glastonbury, CT, responded.
- Discussion ensued.
- Roland Klee opened the Public Hearing at 7:59 PM.
- No one spoke in favor of
- No one spoke in opposition
- George McGregor, Town Planner, shared information from other Town Commissions and Staff comments.

Mike Mitchell **MOVED** to **CLOSE** the Public Hearing at 8:02 PM. Carl Bard seconded and the motion passed unanimously.

Mike Mitchell **MOVED** that the Planning and Zoning Commission **APPROVE** PZ-2022-03, a Site Plan of Development with Special Permits located at 57 Hartford Tpke. This approval is based upon a finding the application meets the site plan requirements of Section 14 and that the special permits requested meet and exceed the review criteria set forth in Section 5 and Section 17.3.1, subject to the Site Plan dated December 10, 2021, revised February 10, 2022 by Gardner and Peterson, the additional details set presented on 2-17-22, and the conditions attached to the Wetland Permit Approval. Robin Lockwood added an amendment in regards to the rooftop screen being eliminated. Carl Bard seconded and the motion carried unanimously.

5. **8-24 Referrals, If any**

NONE

6. **Other Business/Discussion**

George McGregor, Town Planner, reminded everyone that the meetings will return to in person starting March 1, 2022.

7. **Adjournment**

Mike Mitchell **MOVED** to **ADJOURN** at 8:07 PM. Iris Mullan seconded and the motion carried unanimously.

Jill Rocco
Recording Secretary

APPLICATION

For Receipt

PZ 2022-07

TOWN OF VERNON PLANNING & ZONING COMMISSION (PZC)

APPLICATION

This form is to be used to apply to the Vernon Planning & Zoning Commission (PZC) for a change of zoning district, amendment of the Zoning Regulations, Site Plan of Development (POD), Special Permit(s), amendment of the Subdivision Regulations, and/or approval of a (re) subdivision, or DMV location approval. **Provide all the information requested.**

The applicant must be the property owner, the property owner's agent, the Town of Vernon, or someone with a direct financial interest in the subject property; said interest shall be explained and written permission for this application must be obtained from the property owner and submitted with this application if the applicant is not the property owner (ZR Section 2.3).

The list of approvals and the references to sections of the Regulations are for informational purposes only to assist with preparation of the PZC application and are not a definitive statement of the sole requirements that may apply to a specific project.

The applicant understands that the application is complete only when all information and documents required by the PZC have been submitted and, further, that any approval by the PZC relies upon complete and accurate information being provided by the applicant. **Incorrect information provided by the applicant may make the approval invalid.** The PZC may require additional information to be provided by the applicant in the course of reviewing the application and during the monitoring of the project.

Provide all the information requested:

I. APPLICANT:

Name: JoAnn Goodwin

Title: President

Company: South Street Vernon, Inc.

Address: 32 South St. Vernon, CT 06066

Telephone: (860) 875-9566 Fax: (860) 875-0514

E-mail jpaul@goodwinandpaul.com

II. PROPERTY OWNER (S):

Name: South Street Vernon, Inc.

Title: —

Company: —

Address: 32 South St. Vernon, CT 06066

Telephone: (860) 875-9566 Fax (860) 875-0514

E-mail: jpaul@goodwinandpaul.com

TOWN OF VERNON PLANNING & ZONING COMMISSION (PZC)

APPLICATION

This form is to be used to apply to the Vernon Planning & Zoning Commission (PZC) for a change of zoning district, amendment of the Zoning Regulations, Site Plan of Development (POD), Special Permit(s), amendment of the Subdivision Regulations, and/or approval of a (re) subdivision, or DMV location approval. **Provide all the information requested.**

The applicant must be the property owner, the property owner's agent, the Town of Vernon, or someone with a direct financial interest in the subject property; said interest shall be explained and written permission for this application must be obtained from the property owner and submitted with this application if the applicant is not the property owner (ZR Section 2.3).

The list of approvals and the references to sections of the Regulations are for informational purposes only to assist with preparation of the PZC application and are not a definitive statement of the sole requirements that may apply to a specific project.

The applicant understands that the application is complete only when all information and documents required by the PZC have been submitted and, further, that any approval by the PZC relies upon complete and accurate information being provided by the applicant. **Incorrect information provided by the applicant may make the approval invalid.** The PZC may require additional information to be provided by the applicant in the course of reviewing the application and during the monitoring of the project.

Provide all the information requested:

I. APPLICANT:

Name: SAME

Title: _____

Company: _____

Address: _____

_____

Telephone: _____ Fax: _____

E-mail _____

II. PROPERTY OWNER (S):

Name: DANIEL J. AND SONJA J. HILLS

Title: —

Company: —

Address: 38 WHITE STREET

_____

Telephone: (860) 305-5342 Fax —

E-mail: —

TOWN OF VERNON PLANNING & ZONING COMMISSION (PZC)

APPLICATION

This form is to be used to apply to the Vernon Planning & Zoning Commission (PZC) for a change of zoning district, amendment of the Zoning Regulations, Site Plan of Development (POD), Special Permit(s), amendment of the Subdivision Regulations, and/or approval of a (re) subdivision, or DMV location approval. **Provide all the information requested.**

The applicant must be the property owner, the property owner's agent, the Town of Vernon, or someone with a direct financial interest in the subject property; said interest shall be explained and written permission for this application must be obtained from the property owner and submitted with this application if the applicant is not the property owner (ZR Section 2.3).

The list of approvals and the references to sections of the Regulations are for informational purposes only to assist with preparation of the PZC application and are not a definitive statement of the sole requirements that may apply to a specific project.

The applicant understands that the application is complete only when all information and documents required by the PZC have been submitted and, further, that any approval by the PZC relies upon complete and accurate information being provided by the applicant. **Incorrect information provided by the applicant may make the approval invalid.** The PZC may require additional information to be provided by the applicant in the course of reviewing the application and during the monitoring of the project.

Provide all the information requested:

I. APPLICANT:

Name: SAME

Title: _____

Company: _____

Address: _____

_____

Telephone: _____ Fax: _____

E-mail _____

II. PROPERTY OWNER (S):

Name: KERRY WASSERSTEIN, LORI LONGSDALE,

~~Title~~: TRACY GEOGHAN

~~Company~~: 40 WHITE ST

Address: MAILING: 96 ABBEY RD

GLASTONBURY, CT 06033

Telephone: (860) 402-7975 Fax —

E-mail: dandK1989@comcast.net

III. PROPERTY

Address: 32 SOUTH ST

Assessor's ID Code: Map # 46 Block # 78 Lot/Parcel # 24

Land Record Reference to Deed Description: Volume: 2042 Page 311

Does this site contain a watercourse and/or wetlands? (See the Inland Wetlands Map and IWR Section 2.14, 2.15, 2.23, 2.24, 3.11; 4)

✓ No ___ Yes

___ No work will be done in regulated area
___ Work will be done in the regulated area

___ IWC application has been submitted
___ IWC application has not been submitted

Zoning District COMMERCIAL

Is this property located within five hundred (500) feet of a municipal boundary?

✓ No
___ Yes:

___ Bolton
___ Coventry
___ Ellington
___ Manchester
___ South Windsor
___ Tolland

Check if Historic Status Applies:

___ Located in historic district:

___ Rockville
___ Talcottville

___ Individual historic property

III. PROPERTY

Address: 40 WHITE ST.

Assessor's ID Code: Map # 46 Block # 78 Lot/Parcel # 25

Land Record Reference to Deed Description: Volume 1067 Page 10

Does this site contain a watercourse and/or wetlands? (See the Inland Wetlands Map and IWR Section 2.14, 2.15, 2.23, 2.24, 3.11; 4)

✓ No __ Yes

____No work will be done in regulated area
____Work will be done in the regulated area

___ IWC application has been submitted
___ IWC application has not been submitted

Zoning District COMMERCIAL

Is this property located within five hundred (500) feet of a municipal boundary?

✓ No
____Yes:

____Bolton
____Coventry
____Ellington
____Manchester
____South Windsor
____Tolland

Check if Historic Status Applies:

____Located in historic district:

____Rockville
____Talcottville

____Individual historic property

III. PROPERTY

Address: 38 WHITE ST.

Assessor's ID Code: Map # 46 Block # 78 Lot/Parcel # 26

Land Record Reference to Deed Description: Volume: 2064 Page 4

Does this site contain a watercourse and/or wetlands? (See the Inland Wetlands Map and IWR Section 2.14, 2.15, 2.23, 2.24, 3.11; 4)

✓ No ___ Yes

___ No work will be done in regulated area
___ Work will be done in the regulated area

___ IWC application has been submitted
___ IWC application has not been submitted

Zoning District COMMERCIAL

Is this property located within five hundred (500) feet of a municipal boundary?

✓ No
___ Yes:

___ Bolton
___ Coventry
___ Ellington
___ Manchester
___ South Windsor
___ Tolland

Check if Historic Status Applies:

___ Located in historic district:

___ Rockville
___ Talcottville

___ Individual historic property

IV. PROJECT

Project Name: CHANGE OF ZONE REQUEST COMMERCIAL TO RESIDENTIAL-15

Project Contact Person:

Name: JOANN GOODWIN

Title: PRESIDENT

Company: SOUTH STREET VERNON, INC.

Address: 32 SOUTH ST.
VERNON, CT 06066

Telephone: (860) 875-9566 Fax: (860) 875-0514

E-mail: jpaul@goodwinandpaul.com

V. PZC APPLICATION
PROJECT SUMMARY

Describe the project briefly in regard to the purpose of the project and the activities that will occur. Attach to this application a complete and detailed description with maps and documentation as required by the **"Town of Vernon Zoning Regulations"** and **"Town of Vernon Subdivision Regulations"**.

Purpose: ZONE CHANGE COMMERCIAL to RESIDENTIAL-15

General Activities: FOR USE OF the THREE PROPERTIES AS SINGLE FAMILY RESIDENCES

VI. APPROVAL (S) REQUESTED

____ **Subdivision or Resubdivision**

____ Subdivision (Sub. Sec. 4, 5, 6)
____ Resubdivision (Sub. Sec. 4, 5, 6)
____ Minor modification f subdivision or resubdivision (Sub. Sec. 4.6)
____ Town acceptance of a road (Sub. Sec. 6.5-6. 8 & 9)
____ Amendment of Subdivision Regulations (Sub. Sec. II)

See Subdivision Regulations Sec. 4 for application fee schedules.

____ **Soil Erosion and Sediment Control Plan (ESCP)** (ZR Sec. 2.117; 18) (Sub. 6.14)

____ **Site Plan of Development (POD)** (ZR Sec. 14)

____ POD approval (ZR Sec. 14.1.1.1; 14.1.2)
____ Modification of an approved POD (ZR Sec. 14.1.1.1)
____ Minor modification of a site POD (ZR Sec. 14.1.1.2)

____ **Special Permit(s)** (ZR Section 17.3)

____ Special Permit in an aquifer area (ZR Sec. 2.4; 2.5; 2.119; 20)
____ Special Permit for excavation (ZR Sec. 2.52; 2.79; 15)
____ Special Permit for use in a district (ZR Sec. 1.2 & 4)

____ Special Permit for lot coverage (ZR Sec. 1.2; 2.61; 2.68; 4)
____ Special Permit for signs (ZR Sec. 1.2; 2.106-115; 4; 16; 21.7)
____ Special Permit for parking (ZR Sec. 4; 12; 21.4

____ Special Permit for elderly housing (ZR Sec. 2.60; 17.4)
____ Special Permit for Bed & Breakfast (B & B) (ZR Sec. 2.9; 17.3.4)
____ Special Permit for serving alcohol (ZR Sec. 2.103, 17.1)

____ Special Permit for massage (ZR Sec. 2.76-78; 4)
____ Special Permit for telecommunications (ZR Sec. 2.21; 3.23 & 23)
____ Special Permit for dumps and/or incinerators (ZR Section 8)

____Other Special Permit(s). Cite ZR Section and describe activity:

_____

_____

____ Special Permit modifications (ZR Sec. 17.3.2.2). Cite ZR Section and describe activity.

_____

_____

_____

_____

✓ **Zoning:**

✓ Site specific change of zoning district and map (ZR Sec. 1.2; 1.3; 4)
____ Amendment of Zoning Regulations (Sec. 1.2; 1.3; 4)

____Site specific change to the Aquifer Protection Overlay Zone Map (ZR Sec. 20.3.2)

See Zoning Regulations Section 22 for application fee schedules.

_____ Dealer or Repairer License (location approval for DMV)

Per Connecticut General Statutes (CGS) Section 8-26: If an application submitted to the Planning & Zoning Commission (PZC) involves any activity or area regulated under the wetlands statutes, an application for this activity must be filed with the Inland Wetlands Commission (IWC) on or before the day the Planning & Zoning Commission (PZC) application is filed by the applicant. (IWR Sec. 3.11)

Per CGS Sec. 8-31: If the proposed activity is to take place within a watershed of a Water company, the applicant is required to file a copy of the application with the Water Company via certified mail within seven (7) days of the date of the application. (IWR Sec. 4.3.6).

The applicant, undersigned, has reviewed the "Town of Vernon Planning and Zoning Regulations and Inland Wetlands and Watercourses Regulations" and has prepared this application with complete and accurate information:

Property Owner, Applicant, or Applicant's Agent:

Signature	2/23/22 Date
Signature	Date

TO BE FILLED IN BY THE PLANNING DEPARTMENT

Date Application Submitted _____

Date Application Received by Commission_____

PZC File: _____

February 16, 2022

TO: Members of the Town of Vernon Planning & Zoning Commission

RE: Application for Change of Zone from Commercial to Residential-15

I, along with my sisters, Lori Longsdale and Tracy Geoghan, am the owner of property known as 40 White Street, Vernon, CT. Tax Assessor ID 46-0078-00025

I join in the application of South Street Vernon, Inc. to change the zone of my property from commercial to residential-15 and give JoAnn Goodwin, as representative of South Street Vernon, Inc., the authority to file said application on our behalf and appear before the Commission at public hearing to present the application.

KERRY WASSERSTEIN

February 15, 2022

TO: Members of the Town of Vernon Planning & Zoning Commission

RE: Application for Change of Zone from Commercial to Residential-15

I, along with my husband, Daniel J. Hills, am the owner of property known as 38 White Street, Vernon, CT. Tax Assessor ID 46-0078-00026

I join in the application of South Street Vernon, Inc. to change the zone of my property from commercial to residential-15 and give JoAnn Goodwin, as representative of South Street Vernon, Inc., the authority to file said application on my behalf and appear before the Commission at public hearing to present the application.

SONJA J. HILLS

NARRATIVE RE: ZONE CHANGE APPLICATION
38 WHITE STREET 40 WHITE STREET 32 SOUTH STREET

The owners of the above listed properties request a change of zone from Commercial to Residential-15.

The three properties are located on the east side of White Street, beginning at its intersection with South Street. All driveways are accessed from White Street.

The properties identify as single family homes, ranging in size from approximately 720 to 1327 square feet. Lot sizes range from approximately .15 acres to .3 acres. Viewed from White Street, they do not present as commercial spaces.

The houses were built in the 1940s and have consistently been used as single family homes, with the exception of 32 South Street. For 60 years or so it was used as a residence, but it has been used as a two person law office since 2006, although no modifications have been done to the house to change its character and potential use as a residence. The use of 38 and 40 White Street as residences is presently nonconforming.

The properties are located in a largely residential area. All along White Street are single family homes of similar size and vintage. The rear of the subject parcels abut the parking area of Mitchell's Restaurant Plaza. They are currently screened from the plaza by fencing and foliage.

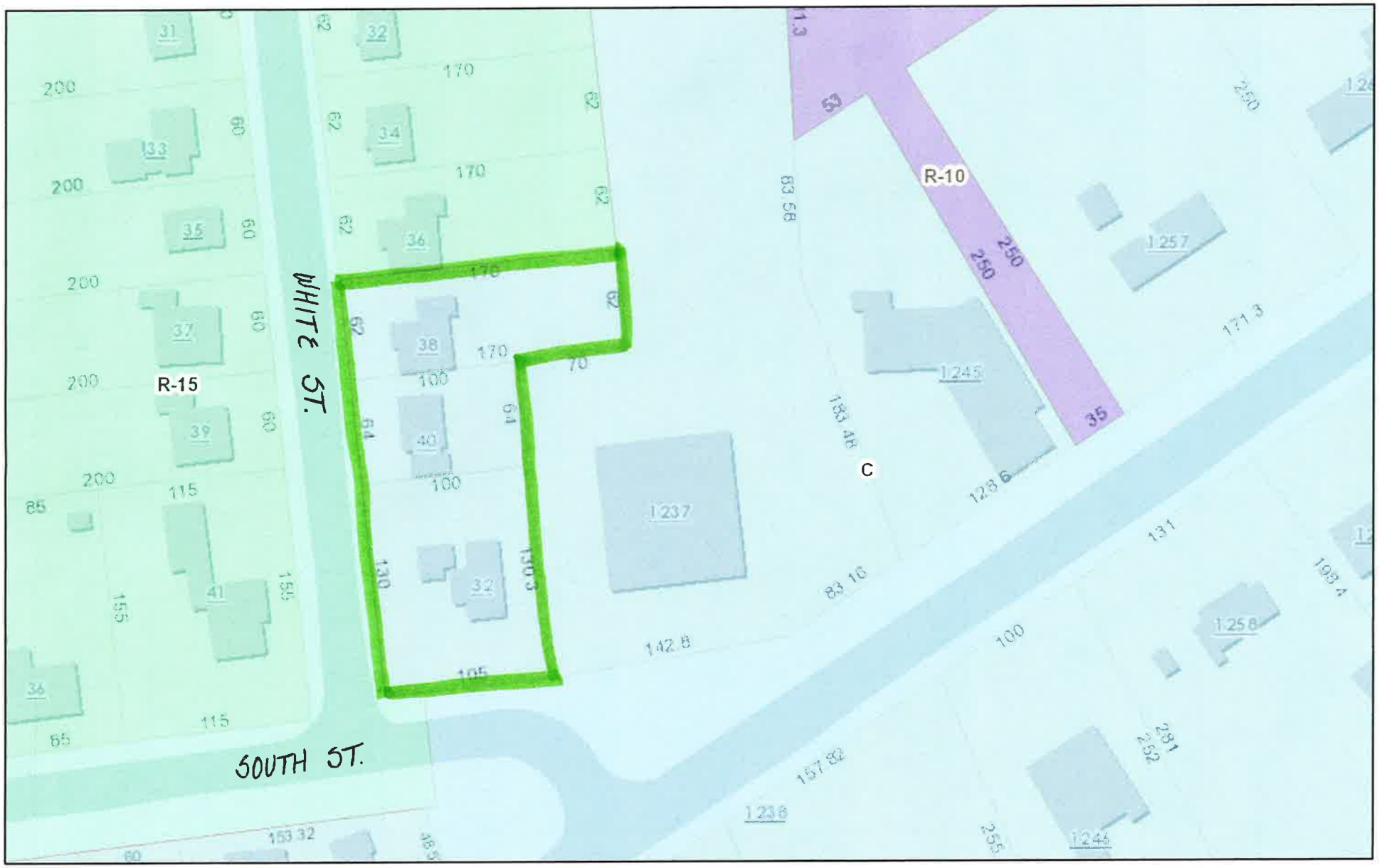
The best use for these properties is as residences. A residential use is consistent with the character of the neighborhood. Standing alone, the houses are too small for almost any commercial use other than very small professional offices, which are not in demand. Moreover, onsite parking is limited, so any business with any significant client contact would likely cause parking to overflow onto White Street.

The most likely use of these parcels if they remained zoned commercial, is to raze the houses and use the lots as additional parking or expansion of the structure for the commercial lot currently housing Mitchell's Restaurant. If this occurred, it would bring the impact of a large scale commercial use directly on to White Street, eliminating the present houses as buffers for the other residential properties.

This request to change the zone from Commercial to Residential-15 is also consistent with the 2021 proposed Plan of Conservation and Development. The Future Land Use Plan identifies this neighborhood as Residential-Village Density. The demographic discussion in the proposed plan supports the retention of small, lower cost single family residences. The population demographic of the Town of Vernon skews to the over 65 age group and the younger 25-44 age group, both of which favor smaller residences as places to start their home buying careers or downsize to more affordable and manageable spaces. The income averages in Vernon also support the need for more affordable housing. Only 16% of the current housing stock is priced under $200,000. These small houses provide an alternative to apartment or condominium living.

CONCLUSION: The use of these properties as residential spaces is consistent with the character of the neighborhood and supported by the Plan of Conservation and Development.

Town of Vernon, CT



February 1, 2022

TaxParcelPublishing

Zoning

C

CMFD, HD-I, HD-RC, I, MHP, NR-10, Open Space, PC, PDZ, PDZ-EXT 67, PND, PRD, R-10, R-15, R-22, R-27, R-40, RC

1:1,000

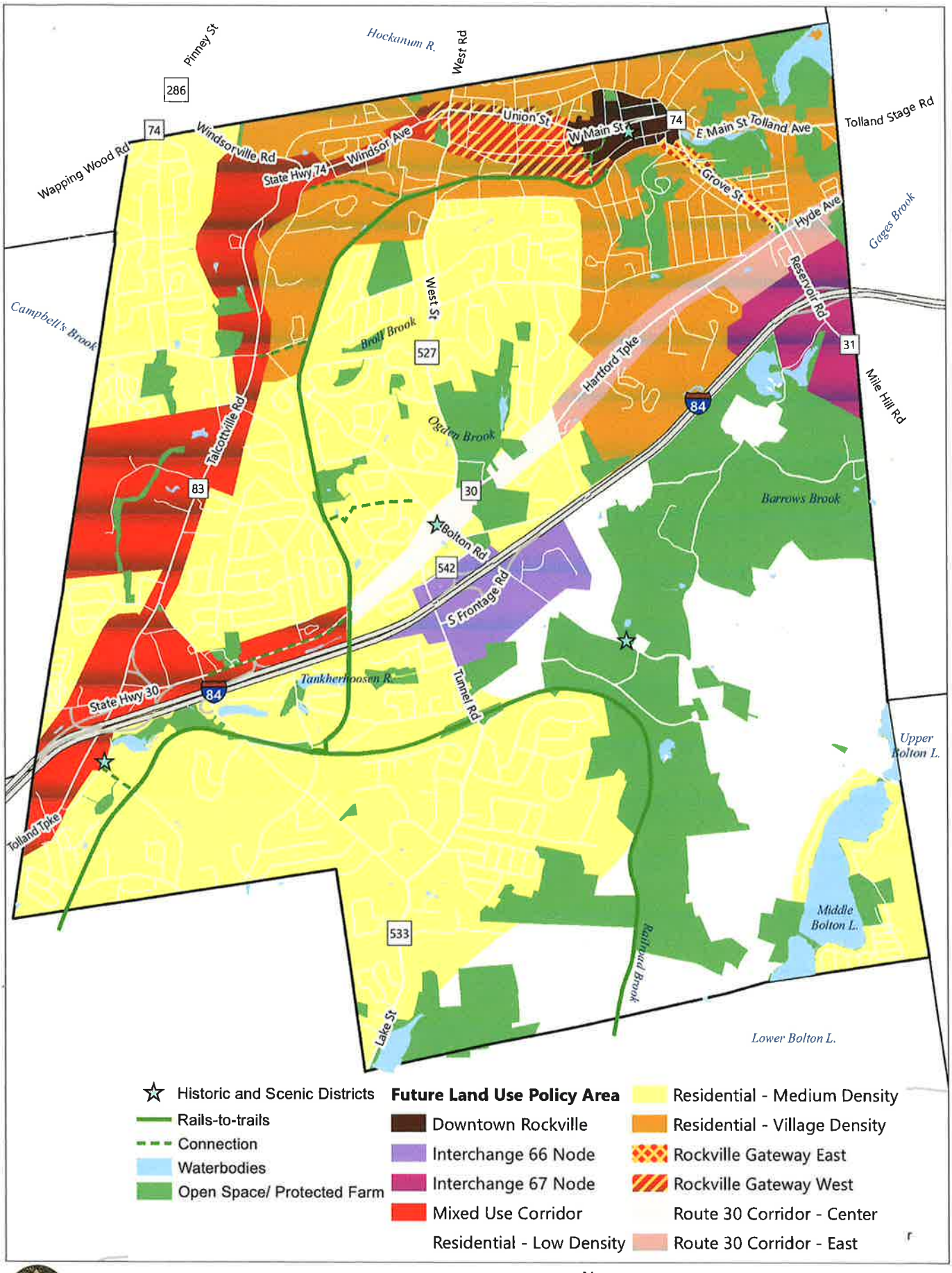
0 0.01 0.01 0.03 mi

0 0.01 0.03 0.05 km

Town of Vernon, CT, Aaron Nash, Town of Vernon

GIS Dept

Copyright 2020



Appendix B: Future Land Use Plan

N

0 0.5 Mile

MILONE & MACBROOM

VOL 2064 PG 4
INST: 3232

CONVEYANCE TAX RECEIVED
STATE $ 675.00
TOWN $ 337.50
Bernice K. Dixon
TOWN CLERK OF VERNON

Please return to:
Daniel J. Hills
Sonja J. Hills
38 White Street
Vernon, CT 06066

WARRANTEE DEED (SURVIVORSHIP)

TO ALL PERSONS TO WHOM THESE PRESENTS SHALL COME GREETING:

KNOW YE, THAT WE, JOSEPH S. PARKER and **STACEY M. PARKER**, formerly known as **STACY M. NISSAN**, also formerly known as **STACEY M. NISSEN**, both of the Town of Vernon, County of Tolland and State of Connecticut, for the consideration of **ONE HUNDRED THIRTY-FIVE THOUSAND AND 00/100 ($135,000.00) DOLLARS** received to our full satisfaction of **DANIEL J. HILLS** and **SONJA J. HILLS**, both of the Town of Vernon, County of Tolland and State of Connecticut, do give grant, sell and confirm unto said **DANIEL J. HILLS** and **SONJA J. HILLS**, and unto the survivor of them, and unto the heirs and assigns of said survivor of them, forever the following described real property:

A certain piece or parcel of land, with the buildings thereon, known as 38 White Street in the Town of Vernon, County of Tolland and State of Connecticut, being a portion of the premises shown on a map entitled "Land of Chas. A. Benton, Rockville, Conn., Surveyed Nov. 19 & 22, 1943, Area 2 ½ sq. rd., Scale: 40 feet = 1 inch., C. H. Bancroft, Surveyor", and more particularly bounded and described as follows:

Beginning at a point in the approximately eastern line of White Street, which point is North 6° 37' West, 64.3 feet in said line from an iron pin or pipe at the approximately northwestern corner of land now or formerly of Corrine K. Lee; thence continuing in said line of White Street, North 6° 37' West, 62 feet to a point in line of land now or formerly of Herbert F. Little and Anna M. Little; thence generally East, 170 feet, more or less, in line of said land now or formerly of Little, et ux, to a point in line of land formerly of said Benton; thence South 6° 37' East, 62 feet in a line parallel with the first described line and in line of said land of Benton to a point; thence generally West, 170 feet in line of other land of said Benton to the place of beginning.

Bounded North by land of said Little, et ux; East and South by land, now or formerly, of said Benton; and West by said White Street.

This description is derived from the above-entitled map to which reference is hereby made.

Said premises are conveyed subject to any and all provisions of any ordinance, municipal regulation, or public or private law, any easements, restrictions, covenants, building lines and zoning restrictions as of record may appear, and to taxes owing to the Town of Vernon on the List of October 1, 2008 and thereafter, which taxes the Grantees herein assume and agree to pay as part consideration of this deed.

Being the same premises as conveyed to Joseph S. Parker and Stacy M. Nissan by deed of Rilla M. Browning dated and recorded March 31, 2004 in Volume 1618 at Page 230 of the Vernon Land Records. Reference is also made to a Name Change Certificate which is recorded prior to this deed.

TO HAVE AND TO HOLD the above granted and bargained premises, with the appurtenances thereof, unto the said Grantees and the survivor of them, and unto the heirs and assigns of the survivor of them forever, and to their own proper use and behoof. And also, we, the said Grantors, do for ourselves and our heirs and assigns covenant with said Grantees, their survivor and such survivor's heirs and assigns, that at and until the ensealing of these premises, we are well seised of the premises, as a good indefeasible estate in **FEE SIMPLE**; and have good right to bargain and sell the same in manner and form as is above written; and that the same is free from all encumbrances whatsoever, except as above written.

AND FURTHERMORE, We, the said Grantors, do by these presents bind ourselves and our heirs and assigns forever to **WARRANT AND DEFEND** to the above granted and bargained premises to the said Grantees and to the survivor of them and to such survivor's heirs and assigns against all claims and demands whatsoever, except as above written.

IN WITNESS WHEREOF, We have set our hands and seals this 9th day of July, 2009.

Signed and delivered
in the presence of:

WITNESSES: (as to both)

Ronald F. Storms
RONALD F. STORMS

Owen A. Kloter
OWEN A. KLOTER

GRANTORS:

JOSEPH S. PARKER

Stacey M Parker
STACEY M. PARKER, f/k/a

STATE OF CONNECTICUT)
) ss: Windsor Locks July 9, 2009
COUNTY OF HARTFORD)

Personally appeared, **JOSEPH S. PARKER** and **STACEY M. PARKER**, formerly known as **STACY M. NISSAN**, also formerly known as **STACEY M. NISSEN**, Signers and Sealers of the foregoing instrument, and acknowledged the same to be their free act and deed, before me.

Ronald F. Storms
RONALD F. STORMS
Commissioner of the Superior Court

Grantees' Address:
38 White Street,
Vernon, CT 06066

RECORDED IN
VERNON LAND RECORDS
Bernice K. Dixon
VERNON TOWN CLERK
ON Jul 28,2009 AT 10:59A

VOL 2042 PG 311
INST: 1301

RETURN TO: SOUTH STREET VERNON, INC.
32 SOUTH STREET
VERNON, CT 06066

QUIT CLAIM DEED - STATUTORY FORM

Know Ye, that SOUTH STREET VERNON, LLC, of the Town of Vernon, County of Tolland and State of Connecticut, for NO consideration, grant to SOUTH STREET VERNON, INC. of the Town of Vernon, County of Tolland and State of Connecticut with **QUIT CLAIM COVENANTS** the property known as 32 South Street, Vernon, Connecticut, as more particularly described in Schedule A attached hereto and made part hereof. Being all and the same premises conveyed to the grantor herein by quitclaim deed dated December 20, 2005 and recorded in Volume 1799 at page 70 of the Vernon land records.

This Deed is made upon the statutory condition.

Signed this 1ST day of ~~March~~ April, 2009.

Witnessed by:

Witness: Rosy Cruz

Witness David M. S. Shaiken

South Street Vernon, LLC

By JoAnn Goodwin, Its Member

STATE OF CONNECTICUT)
) SS. Vernon ~~March~~ April 1, 2009
COUNTY OF TOLLAND)

Personally appeared JoAnn Goodwin, Member of South Street Vernon, LLC., signer of the foregoing instrument, and acknowledged the same to be her free act and deed and the free act and deed of said entity before me.

Rosy Cruz
Notary Public

Rosy Cruz
Notary Public
My Commission Expires 1/31/2011

LATEST MAILING ADDRESS OF GRANTEE:

32 South Street
Vernon, CT 06066

CONVEYANCE TAX RECEIVED
STATE $ .00
TOWN $ .00
Bernice K. Dixon
TOWN CLERK OF VERNON

SCHEDULE A

A certain piece or parcel of land situated in the Town of Vernon, County of Tolland and State of Connecticut known as 32 South Street and more particularly bounded and described as follows:

NORTHERLY:	by land now or formerly of Raymond G. and Hazle D. Wohllebe, One Hundred (100.00) feet;
EASTERLY:	by land now or formerly of Emmanuel H. and Helen H. Kloter, One Hundred Thirty and 3/10 (130.30) feet;
SOUTHERLY:	by South Street, One Hundred Five (105.00) feet;
WESTERLY:	by White Street, One Hundred Thirty (130.00) feet.

RECORDED IN
VERNON LAND RECORDS
Bernice K. Dixon
VERNON TOWN CLERK
ON Apr 03,2009 AT 11:10A

Record + Return to:
Kerry Wasserstein
4 Barbara Rd
Tolland, CT 06084

WARRANTY DEED

TO ALL PEOPLE TO WHOM THESE PRESENTS SHALL COME, GREETING:

KNOW YE, THAT **CHRISTIAN PATRICK HEIDKAMP and ERIN E. HEIDKAMP**, both of Vernon, Connecticut

for the consideration of **ONE HUNDRED FOURTY-SEVEN THOUSAND FIVE HUNDRED DOLLARS AND 00/100 ($147,500.00)**

received to their full satisfaction of **KERRY WASSERSTEIN**, of Tolland, Connecticut, **LORI LANGSDALE**, of Ridgewood, New Jersey, and **TRACY GEOGHAN**, of West Orange, New Jersey

do give, grant, bargain, sell and confirm unto the said **KERRY WASSERSTEIN, LORI LANGSDALE,** and **TRACY GEOGHAN**, *as Tenants in Common and not as Joint Tenants,* their heirs, successors and assigns forever, a certain piece or parcel of land situated in the Town of Vernon County of Tolland and State of Connecticut known as 40 White Street, and more particularly described in *Schedule A* attached hereto and made a part hereof.

TO HAVE AND TO HOLD the above granted and bargained premises, with the appurtenances thereof, unto them the said grantees their heirs, successors and assigns forever, to them and their own proper use and behoof.

AND ALSO, the said grantors do for their heirs, executors and administrators, covenant with the said grantees their successors, heirs and assigns, that at and until the ensealing of these presents, they are well seized of the premises, as a good indefeasible estate in FEE SIMPLE; and have good right to bargain and sell the same in manner and form as is above written; and that the same is free from all encumbrances whatsoever, except as hereinbefore mentioned.

AND FURTHERMORE, the said grantors do by these presents bind themselves and their heirs, executors and administrators forever to WARRANT AND DEFEND the above granted and bargained premises to them the said grantees, their successors, heirs and assigns, against all claims and demands whatsoever, except as hereinbefore mentioned.

IN WITNESS WHEREOF, We have hereunto set my hand and seal this 13th day of August, 2009.

Signed, Sealed and Delivered in presence of:

Martin B. Burke

Michael Bonanno

CHRISTIAN PATRICK HEIDKAMP

ERIN E. HEIDKAMP

STATE OF CONNECTICUT)
) SS. Manchester
COUNTY OF HARTFORD)

On this 13th day of August, 2009, before me, the undersigned officer, personally appeared Christian Patrick Heidkamp and Erin E. Heidkamp known to me (or satisfactorily proven) to be the persons whose names are subscribed to the within instrument and acknowledged that they executed the same for the purposes therein contained, as their free act and deed.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Martin B. Burke
Commissioner of the Superior Court

CONVEYANCE TAX RECEIVED
STATE $ 737.50
TOWN $ 368.75
Bernice K. Dixon
TOWN CLERK OF VERNON

SCHEDULE A
(40 White Street, Vernon, CT)

A certain piece or parcel of land, with the buildings thereon situated in the Town of Vernon, County of Tolland and State of Connecticut, more particularly bounded and described as follows:

Beginning at an iron pin set in the generally easterly line of White Street, which pin is at the generally northwesterly corner of land now or formerly of William Casavant; thence in said line of said street, N 6° 37' W., sixty-four (64) feet, more or less, to a point in line of land now or formerly of Joseph C. and Rita a. Rasulis; thence in said line of said Rasulis generally east one hundred (100) feet, more or less, to a point; thence generally south in line of land now or formerly of Charles A. Benton sixty-four(64) feet to an iron pin at the generally northeasterly corner of said land of Casavant; thence in line of said land of Casavant S. 83° 42' West, one hundred (100) feet to the point or place of beginning.

Said premises are subject to Taxes on the October 1, 2008 Grand List Due the Town of Vernon which the grantee herein agrees and assumes to pay as part consideration for this deed.

RECORDED IN
VERNON LAND RECORDS
Bernice K. Dixon
VERNON TOWN CLERK
ON Aug 13,2009 AT 01:57P

SOUTH STREET VERNON INC
32 SOUTH ST
VERNON, CT 06066
CENSUS TRACT: 530200

Neighborhood Number
11550
Neighborhood Name
Residential
TAXING DISTRICT INFORMATION

Jurisdiction Name	Town of Vernon
Area	146
Routing Number	7088

Transfer of Ownership

Owner	Consideration	Transfer Date	Deed Book	Page	Deed Type
SOUTH STREET VERNON LLC	0	04/03/2009	2042	311	Q
GOODWIN WILLIAM B & JOANN	0	01/04/2006	1799	70	Q
BURVENICH ELIZABETH	166000	11/23/2005	1789	75	W
NA	54000	10/03/1983	469	101	

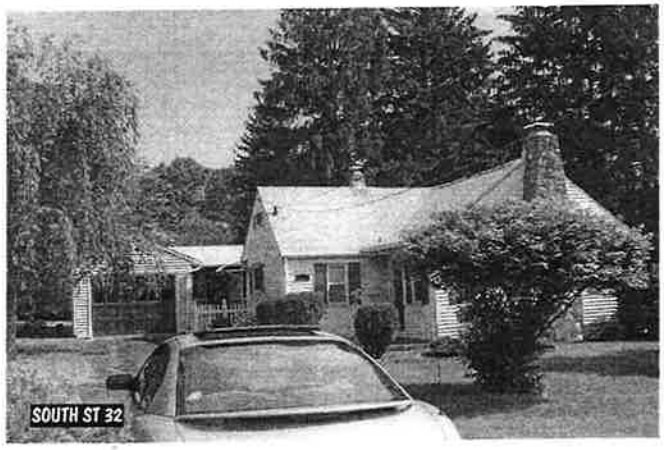
Site Description

Topography
Level
Public Utilities
Water, Sewer, Electric
Street or Road
Paved
Neighborhood

Zoning:
Commercial
Legal Acres:
0.3000

Valuation Record

Assessment Year		2011	2016	2018					
Reason for Change		2011 REVAL	2016 Reval	2018 ASMT					
Market	L	66500	53600	53600					
	I	90900	96780	96780					
	T	157400	150380	150380					
70% Assessed/Use	L	46550	37520	37520					
	I	63630	67740	67740					
	T	110180	105260	105260					



Land Size

Land Type	Rating, Soil ID - or - Actual Frontage	Acreage - or - Effective Frontage	Square Feet - or - Effective Depth	Influence Factor

Physical Characteristics

Style: Ranch
Occupancy: Single family

Story Height: 1.0
Finished Area: 1186
Attic: None
Basement: 1/4

ROOFING

Material: Asphalt Shingles
Type: Gable
Framing: Standard
Pitch: NOT AVAILABLE

FLOORING

Slab B
Sub & Joists 1.0

EXTERIOR COVER

Alum or Vinyl 1.0

INTERIOR FINISH

Typical 1.0

ACCOMMODATION

Finished Rooms 5
Bedrooms 2

HEATING AND AIR CONDITIONING

Primary Heat: Hot Water- Oil

	Lower	Full	Part
	/Bsmt 1	Upper	Upper

PLUMBING

	#	TF
3 Fixt. Baths	1	3
Kit Sink	1	1
Water Heat	1	1
TOTAL		5

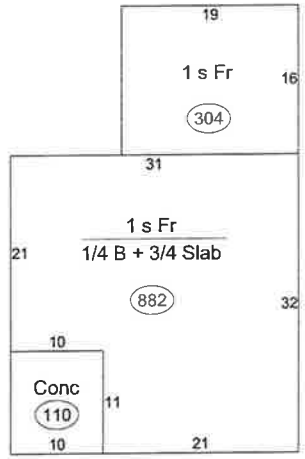
REMODELING AND MODERNIZATION

	Amount	Date

01

OFP-s (165)

02



Special Features

Description
D : Remod 1987
Fireplace - Masonry

Summary of Improvements

ID	USE	Story Height	Const Type	Grade	Year Cons	Eff Year	Cond	Size or Area
D	DWELL	0.00		Avg+	1945	1980	AV	1406
01	DETGAR	1.00	1	Avg	1959	1979	AV	246
02	UTLSHED	0.00	1	Avg	1959	1959	AV	96

Tax ID 46-0078-00026 Printed 02/02/2019 Card No. 1 of 1

HILLS DANIEL J & SONJA J
38 WHITE ST
VERNON, CT 06066
CENSUS TRACT: 530100

Neighborhood Number
11550
Neighborhood Name
Residential
TAXING DISTRICT INFORMATION

Jurisdiction Name	Town of Vernon
Area	146
Routing Number	7090

Transfer of Ownership

Owner	Consideration	Transfer Date	Deed Book	Page	Deed Type
PARKER JOSEPH S & STACEY M	135000	07/28/2009	2064	4	W
PARKER JOSEPH S & NISSAN STACY M	0	07/28/2009	2064	3	N
BROWNING RILLA M	145000	03/31/2004	1618	230	W
BROWNING BRADFORD J & RIL	0	09/30/1992	897	79	
NA	0	01/01/1900	172	572	

Valuation Record

Assessment Year		2011	2016	2018					
Reason for Change		2011 REVAL	2016 Reval	2018 ASMT					
Market	L	61470	52640	52640					
	I	78070	88970	88970					
	T	139540	141610	141610					
70% Assessed/Use	L	43030	36850	36850					
	I	54650	62280	62280					
	T	97680	99130	99130					

Site Description

Topography
Level
Public Utilities
Water, Sewer, Electric
Street or Road
Paved
Neighborhood

Zoning:
Commercial
Legal Acres:
0.2400



Land Size

Land Type	Rating, Soil ID - or - Actual Frontage	Acreage - or - Effective Frontage	Square Feet - or - Effective Depth	Influence Factor

Physical Characteristics

Style: Cape
Occupancy: Single family

Story Height: 1.5
Finished Area: 1327
Attic: None
Basement: Full

ROOFING

Material: Asphalt Shingles
Type: Gable
Framing: Standard
Pitch: NOT AVAILABLE

FLOORING

Slab B
Sub & Joists 1.0, 1.5

EXTERIOR COVER

Aluminum 1.0, 1.5

INTERIOR FINISH

Typical 1.0

ACCOMMODATION

Finished Rooms 6
Bedrooms 4
Rec Type: 2
Room Area: 210

HEATING AND AIR CONDITIONING

Primary Heat: Steam - Oil

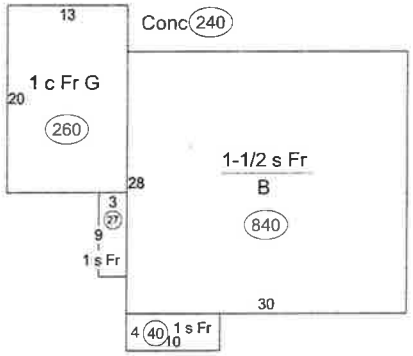
	Lower /Bsmt	Full	Part
	1	Upper	Upper

PLUMBING

	#	TF
3 Fixt. Baths	1	3
2 Fixt. Baths	1	2
Kit Sink	1	1
Water Heat	1	1
TOTAL		7

REMODELING AND MODERNIZATION

	Amount	Date



Special Features

Description
D : Fireplace - Masonry

Summary of Improvements

ID	USE	Story Height	Const Type	Grade	Year Cons	Eff Year	Cond	Size or Area
D	DWELL	0.00		Avg	1946	1976	AV	2587
G01	ATTGAR	0.00	1				AV	260

Tax ID 46-0078-00025 Printed 02/02/2019 Card No. 1 of 1

WASSERSTEIN KERRY LONGSDALE LORI &
GEOGHAN TRACY
40 WHITE ST
VERNON, CT 06066
CENSUS TRACT: 530100
8/13/09 TENANTS IN COMMON

Neighborhood Number
11550
Neighborhood Name
Residential
TAXING DISTRICT INFORMATION

Jurisdiction Name	Town of Vernon
Area	146
Routing Number	7089

Transfer of Ownership

Owner	Consideration	Transfer Date	Deed Book	Page	Deed Type
HEIDKAMP CHRISTIAN PATRICK & ERIN E	147500	08/13/2009	2067	10	W
WOHLLEBE HAZLE D	143000	07/29/2004	1655	306	W
WOHLLEBE RAYMOND G & HAZLE D	0	04/20/2004	1623	170	
NA	0	11/10/1966	162	420	

Site Description

Topography
Level
Public Utilities
Water, Sewer, Electric
Street or Road
Paved
Neighborhood

Zoning:
Commercial
Legal Acres:
0.1500

Valuation Record

Assessment Year		2011	2016	2018
Reason for Change		2011 REVAL	2016 Reval	2018 ASMT
Market	L	62000	50500	50500
	I	67300	68690	68690
	T	129300	119190	119190
70% Assessed/Use	L	43400	35350	35350
	I	47110	48090	48090
	T	90510	83440	83440



Land Size

Land Type	Rating, Soil ID - or - Actual Frontage	Acreage - or - Effective Frontage	Square Feet - or - Effective Depth	Influence Factor

Tax ID 46-0078-00025 Printed 02/02/2019

Physical Characteristics

Style: Ranch
Occupancy: Single family

Story Height: 1.0
Finished Area: 720
Attic: None
Basement: Full

ROOFING

Material: Asphalt Shingles
Type: Gable
Framing: Standard
Pitch: NOT AVAILABLE

FLOORING

Slab B
Sub & Joists 1.0

EXTERIOR COVER

Alum or Vinyl 1.0

INTERIOR FINISH

Typical 1.0

ACCOMMODATION

Finished Rooms	4
Bedrooms	2

HEATING AND AIR CONDITIONING

Primary Heat: Hot Water - Oil

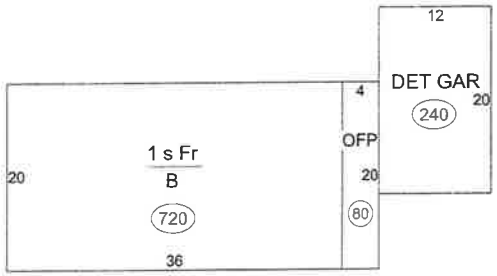
		Full	Part
Lower /Bsmt	1	Upper	Upper

PLUMBING

	#	TF
3 Fixt. Baths	1	3
Kit Sink	1	1
Water Heat	1	1
TOTAL		5

REMODELING AND MODERNIZATION

	Amount	Date



Special Features

Description

Summary of Improvements

ID	USE	Story Height	Const Type	Grade	Year Cons	Eff Year	Cond	Size or Area
D	DWELL	0.00		Avg	1954	1982	AV	1440
01	DETGAR	0.00	1	Avg	1954	1978	GD	240

APPLICATION

1

RUSSO
SURVEYORS • ENGINEERS

January 24, 2022

George McGregor
Town Planner
55 West Main Street, 2nd Floor
Vernon, CT 06066

Re: The Learning Experience (TLE)
501 Talcottville Road, Vernon

Dear George,

On behalf of the Vernon Development LLC, I am pleased to submit the attached application for approval of a Site Plan of Development and Special Permits associated with the development of The Learning Experience (TLE) Academy of Early Education at 501 Talcottville Road in Vernon, Connecticut. The subject parcel currently consists of 4.6 acres of undeveloped woodland located at the intersection of Dart Hill Road and Talcottville Road (Rte. 83). In conjunction with the proposed TLE development, the owner is proposing to divide the existing parcel into two lots, including a 2.0 acre lot adjacent to Dart Hill Road to be developed with the TLE facility, and a remaining 2.6 acre lot fronting on Talcottville Road for potential future development. The subdivision application to split the parcel will be submitted to be considered concurrently with the site plan/special permit applications for the TLE development.

The proposed TLE development will involve the construction of a 10,000 square foot building, 5,000 square foot playground and associated parking. Access to the site will be provided via a driveway on Dart Hill Road directly across from the western Walgreens drive. A traffic study prepared by Fuss & O'Neill is included with the application materials. The traffic study concludes that the proposed development will not have a significant impact to the traffic operations in the vicinity of the site.

Runoff from the building and parking lot will be directed to a subsurface infiltration system and surface infiltration basin designed to provide treatment, groundwater recharge and detention prior to discharge at the edge of the existing on-site wetland. A retaining wall is proposed along the southern edge of the development in order prevent any direct wetland disturbance.

If there are any questions, or you require further information, please call me at (860) 623-0569.

Very truly yours,

Timothy A. Coon

Timothy A. Coon, P.E.
J.R. Russo & Associates, LLC

Attachments
cc: Vernon Traffic Authority
Eric Spungin

TOWN OF VERNON PLANNING & ZONING COMMISSION (PZC)

APPLICATION

This form is to be used to apply to the Vernon Planning & Zoning Commission (PZC) for a change of zoning district, amendment of the Zoning Regulations, Site Plan of Development (POD), Special Permit(s), amendment of the Subdivision Regulations, and/or approval of a (re) subdivision, or DMV location approval. **Provide all the information requested.**

The applicant must be the property owner, the property owner's agent, the Town of Vernon, or someone with a direct financial interest in the subject property; said interest shall be explained and written permission for this application must be obtained from the property owner and submitted with this application if the applicant is not the property owner (ZR Section 2.3).

The list of approvals and the references to sections of the Regulations are for informational purposes only to assist with preparation of the PZC application and are not a definitive statement of the sole requirements that may apply to a specific project.

The applicant understands that the application is complete only when all information and documents required by the PZC have been submitted and, further, that any approval by the PZC relies upon complete and accurate information being provided by the applicant. **Incorrect information provided by the applicant may make the approval invalid.** The PZC may require additional information to be provided by the applicant in the course of reviewing the application and during the monitoring of the project.

Provide all the information requested:

I. APPLICANT:

Name: Eric Spungin

Title: Member

Company: Vernon Development LLC

Address: 56 East Main St., Avon, CT 06001

Telephone: 860-677-5607 Fax: _____

E-mail espungin@hotmail.com

II. PROPERTY OWNER (S):

Name: James Basile

Title: _____

Company: 501 Talcottville Road LLC

Address: 43 Ridgecrest Lane
Bristol, CT 06010-2910

Telephone: 860-202-9540 Fax _____

E-mail: _____

III. PROPERTY

Address: 501 Talcottville Road

Assessor's ID Code: Map # 09 Block # 007 Lot/Parcel # 0001D

Land Record Reference to Deed Description: Volume: 2026 Page 51

Does this site contain a watercourse and/or wetlands? (See the Inland Wetlands Map and IWR Section 2.14, 2.15, 2.23, 2.24, 3.11; 4)

__ No X Yes

___No work will be done in regulated area
X Work will be done in the regulated area

X IWC application has been submitted
__ IWC application has not been submitted

Zoning District Commercial

Is this property located within five hundred (500) feet of a municipal boundary?

X No
____Yes:

____Bolton
____Coventry
____Ellington
____Manchester
____South Windsor
____Tolland

Check if Historic Status Applies:

____Located in historic district:

____Rockville
____Talcottville

____Individual historic property

IV. PROJECT

Project Name: The Learning Experience

Project Contact Person:

Name: Timothy Coon

Title: Project Engineer

Company: J.R. Russo + Associates LLC

Address: P.O. Box 938
East Windsor, CT 06088

Telephone: 860-623-0569 **Fax:** 860-623-2485

E-mail: tcoon@jrrusso.com

V. PZC APPLICATION
PROJECT SUMMARY

Describe the project briefly in regard to the purpose of the project and the activities that will occur. Attach to this application a complete and detailed description with maps and documentation as required by the "Town of Vernon Zoning Regulations" and "Town of Vernon Subdivision Regulations".

Purpose: Construction of a 10,000 SF Daycare Facility

General Activities: Filling, excavation + building and parking lot construction

VI. APPROVAL (S) REQUESTED

___ **Subdivision or Resubdivision**

___ Subdivision (Sub. Sec. 4, 5, 6)
___ Resubdivision (Sub. Sec. 4, 5, 6)
___ Minor modification f subdivision or resubdivision (Sub. Sec. 4.6)
___ Town acceptance of a road (Sub. Sec. 6.5-6. 8 & 9)
___ Amendment of Subdivision Regulations (Sub. Sec. II)

See Subdivision Regulations Sec. 4 for application fee schedules.

X **Soil Erosion and Sediment Control Plan (ESCP)** (ZR Sec. 2.117; 18) (Sub. 6.14)

X **Site Plan of Development (POD)** (ZR Sec. 14)

___ POD approval (ZR Sec. 14.1.1.1; 14.1.2)
___ Modification of an approved POD (ZR Sec. 14.1.1.1)
___ Minor modification of a site POD (ZR Sec. 14.1.1.2)

X **Special Permit(s)** (ZR Section 17.3)

___ Special Permit in an aquifer area (ZR Sec. 2.4; 2.5; 2.119; 20)
___ Special Permit for excavation (ZR Sec. 2.52; 2.79; 15)
___ Special Permit for use in a district (ZR Sec. 1.2 & 4)

___ Special Permit for lot coverage (ZR Sec. 1.2; 2.61; 2.68; 4)
___ Special Permit for signs (ZR Sec. 1.2; 2.106-115; 4; 16; 21.7)
X Special Permit for parking (ZR Sec. 4; 12; 21.4 4.9.4.15.1

___ Special Permit for elderly housing (ZR Sec. 2.60; 17.4)
___ Special Permit for Bed & Breakfast (B & B) (ZR Sec. 2.9; 17.3.4)
___ Special Permit for serving alcohol (ZR Sec. 2.103, 17.1)

___ Special Permit for massage (ZR Sec. 2.76-78; 4)
___ Special Permit for telecommunications (ZR Sec. 2.21; 3.23 & 23)
___ Special Permit for dumps and/or incinerators (ZR Section 8)

X Other Special Permit(s). Cite ZR Section and describe activity:

Special Permit for structure within 200' of resid. structure (4.9.4.15.2)

Special Permit for parking within 100' of resid. structure (4.9.4.15.3)

____ Special Permit modifications (ZR Sec. 17.3.2.2). Cite ZR Section and describe activity.

_____

_____

_____

_____

____ **Zoning:**

____ Site specific change of zoning district and map (ZR Sec. 1.2; 1.3; 4)
____ Amendment of Zoning Regulations (Sec. 1.2; 1.3; 4)

____ Site specific change to the Aquifer Protection Overlay Zone Map (ZR Sec. 20.3.2)

See Zoning Regulations Section 22 for application fee schedules.

_____ Dealer or Repairer License (location approval for DMV)

Per Connecticut General Statutes (CGS) Section 8-26: If an application submitted to the Planning & Zoning Commission (PZC) involves any activity or area regulated under the wetlands statutes, an application for this activity must be filed with the Inland Wetlands Commission (IWC) on or before the day the Planning & Zoning Commission (PZC) application is filed by the applicant. (IWR Sec. 3.11)

Per CGS Sec. 8-31: If the proposed activity is to take place within a watershed of a Water company, the applicant is required to file a copy of the application with the Water Company via certified mail within seven (7) days of the date of the application. (IWR Sec. 4.3.6).

The applicant, undersigned, has reviewed the "Town of Vernon Planning and Zoning Regulations and Inland Wetlands and Watercourses Regulations" and has prepared this application with complete and accurate information:

Property Owner, Applicant, or Applicant's Agent:

Eric Spungin Member
Eric Spungin

Vernon Development LLC — 12/23/21
Signature — Date

Member — 12/23/21
Signature — Date
James J. Basile
Soil Talcottville Road, LLC

TO BE FILLED IN BY THE PLANNING DEPARTMENT

Date Application Submitted _____

Date Application Received by Commission _____

PZC File: _____

PLEASE RETURN TO:
M. STIEGEL
86 FARMINGTON AVE.
HARTFORD, CT. 06105

VOL 2026 PG 51
INST: 55

QUITCLAIM DEED

VICTOR J. BASILE ("**Releasor**"), of 43 Ridgecrest Lane, Bristol, Connecticut, for no consideration paid, grants to **501 TALCOTTVILLE ROAD, LLC** of 43 Ridgecrest Lane, Bristol, Connecticut ("**Releasee**") all that certain piece or parcel of land together with all improvements thereon and appurtenances thereto in the Town of Vernon, Connecticut, as more particularly described on Exhibit A attached hereto and made a part hereof ("**Premises**"). Releasee herein assumes and agrees to pay all real property taxes attributable to the Premises on the list of October 1, 2006 and thereafter.

SAID PREMISES IS CONVEYED SUBJECT TO, WITHOUT LIMITATION:

1. Taxes of the Town of Vernon on the List of October 1, 2006 now due and payable and thereafter, which Releasee herein assumes and agrees to pay.

2. Any and all provisions of any ordinance, municipal regulation, or public or private law.

3. Declarations, restrictions, covenants, matters and easements of record and any state of facts an accurate survey or personal inspection of the Premises might reveal.

Signed this 7th day of February, 2007

Witnessed by:

MICHAEL S. STIEGEL, as witness

VICTOR J. BASILE

ROBERT A. FIRGE, as witness

STATE OF CONNECTICUT)
) ss: Hartford
COUNTY OF) (town)

On this the 7th day of February, 2007, before me, the undersigned officer, personally appeared Victor J. Basile, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained and as his free act and deed.

In witness whereof I hereunto set my hand.

Commissioner of the Superior Court
Notary Public
My Commission Expires:

Grantee's Address: 43 Ridgecrest Lane
Bristol, Connecticut 06010

CONVEYANCE TAX RECEIVED
STATE $ .00
TOWN $ .00
Bernice K. Dixon
TOWN CLERK OF VERNON

Exhibit A

A certain piece or parcel of land situated on the westerly side of Talcottville Road (Route 83) and the southerly side of Dart Hill Road in the Town of Vernon, County of Tolland and State of Connecticut, being shown as "Parcel 3 Parcel contains 200,968 S.F.±, 4.6136 AC±", on a certain map or plan entitled "Subdivision Plan Prepared For John J. Mahr, Sr. Boundary Map Talcottville Rd. & Dart Hill Rd. Vernon, Conn. AR Lombardi Associates, Inc. Consulting Civil and Sanitary Engineers Land Surveyors Vernon Connecticut Comm. No: 84-1091 Date: March 7, 1985 Scale: 1" = 40' Sht. No: 1 of 2", which map or plan is on file or to be filed in the Vernon Town Clerk's Office and to which reference may be had for a more particular description thereof. Said Parcel 3 is more particularly bounded and described as follows:

Commencing at a point in the southerly street line of Dart Hill Road, which point marks the northwesterly corner of the hereindescribed premises and the northeasterly corner of land now or formerly of Antoine F. Bourcher, as shown on said map; thence proceeding in a southerly direction along said land now or formerly of Antoine F. Bourcher, land now or formerly of Thomas A. & Linda M. Shirshac, and land now or formerly of Eilean M. Strube, partly by each, a distance of 408.91 feet to a point; thence turning an obtuse interior angle of 179° 35' 27" and proceeding along land now or formerly of Alice M. Coro, land now or formerly of Peggy O. Tracy, land now or formerly of Nelson J. and Teresa M. Chiasson, land now or formerly of Paul J. and Linda Jobkowiak and land now or formerly of David M. Glenn Jr. and Sharon L. Glenn, partly by each, as shown on said map, a distance of 470.12 feet to a point; thence turning an obtuse interior angle of 103° 44' 36" and proceeding along Parcel 1, as shown on said map, a distance of 11.73 feet to a point; thence turning an acute interior angle of 76° 53' 42" and proceeding along land now or formerly of Cardinal Industries, Inc., as shown on said map, a distance of 211.66 feet to a point; thence turning an obtuse interior angle of 180° 04' 41" and proceeding along land now or formerly of Gregory Gozzo and David J. Sweeney, as shown on said map, a distance of 268.00 feet to a point; thence turning an obtuse interior angle of 289° 53' 43" and proceeding along said land now or formerly of Gregory Gozzo and David J. Sweeney, a distance of 403.00 feet to a point in the westerly street line of Talcottville Road; thence proceeding along the arc of a curve to the left having a radius of 2,506.67 feet, a distance of 322.92 feet along the westerly street line of Talcottville Road to a Connecticut Highway Department Monument in said westerly street line of Talcottville Road; thence proceeding along said westerly street line of Talcottville Road, a distance of 41.55 feet to a point; thence turning an acute interior angle of 82° 53' 05" and proceeding along Parcel No. 2, as shown on said map, a distance of 200.86 feet to a point; thence turning an interior obtuse angle of 277° 06' 55" and proceeding along Parcel No. 2, as shown on said map, a distance of 159.68 feet to a point; thence turning an interior acute angle of 77° 09' 29" and proceeding along the southerly street line of Dart Hill Road, as shown on said map, a distance of 352.53 feet to the point or place of beginning.

RECORDED IN
VERNON LAND RECORDS
Bernice K. Dixon
VERNON TOWN CLERK
ON Dec 05,2008 AT 12:30P

LID CHECKLIST

Applicants must complete and submit the following checklist with the application.

Date: 12/22/21 **Project:** The Learning Experience, 501 Talcottville Road

Conformance with the following criteria shall be initialed in the spaces provided below by a Connecticut Registered Professional Engineer, Land Surveyor, or Certified Soils Scientist as appropriate. If conditions cannot be met comments addressing each item should be provided by the applicant in the space provided below. Comments will be reviewed with Town Staff at the scheduled Development Staff Meeting and documented.

Item	Description	Verified	Comments
1	An Existing Conditions Plan is provided documenting sensitive natural resources including but not limited to existing wetlands (as designated by a Certified Soils Scientist in Connecticut), streams, ponds, vernal pools, flood zones, stream channel encroachment lines, soil types and infiltration rates, wells, tree lines, property boundaries, and other items that may be requested by the Town.	TAC	
2	Utilizing the Existing Conditions Plan as a guide, development has been located to maximize preservation of contiguous natural sensitive areas.	TAC	
3	Proposed site developments for residential or two family dwellings on more than one individual parcel, all commercial, industrial, and retail developments have been guided by the applicable requirements of the Town's Low Impact Development Stormwater Quality Manual and the Connecticut Storm Water Quality Manual.	TAC	
4	Bioretention Basins or Rain Gardens have been incorporated within yards, median strips, cul-de-sacs islands, and parking lot islands.		All runoff diverted to an infiltration basin for treatment + groundwater recharge.

Date: 12/22/21 **Project:** The Learning Experience, 501 Talcottville Rd

Conformance with the following criteria shall be initialed in the spaces provided below by a Connecticut Registered Professional Engineer, Land Surveyor, or Certified Soils Scientist as appropriate. If conditions cannot be met comments addressing each item should be provided below. Comments will be reviewed with Town Staff at the scheduled development staff meeting and documented.

Item	Description	Verified	Comments
5	Dry Wells have been incorporated into the design to control roof and pavement runoff.		Roof runoff diverted directly to infiltration basin.
6	Permeable (Porous) Pavement has been incorporated into areas of low traffic, parking lots, residential and light commercial use driveways, walkways, bike paths, etc.		Infiltration provided at infiltration basin.
7	Natural areas including woodlands, regulated wetland areas, naturally vegetated areas have been preserved/ and or replicated to the maximum extent practical.	TAC	
8	Post Development stormwater runoff is at or less than the predevelopment runoff.	TAC	
9	Stormwater infiltration has been provided by the use of underground storage units, devices, and/or infiltration swales/trenches.	TAC	
10	Level spreaders/vegetation have been provided at storm drainage outfalls to enhance water quality and mitigate erosion.	TAC	

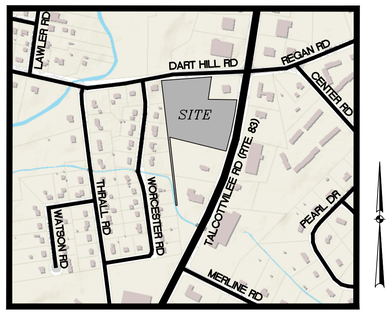
Date: 12/22/21 Project: The Learning Experience 501 Talcottville Rd

Conformance with the following criteria shall be initialed in the spaces provided below by a Connecticut Registered Professional Engineer, Land Surveyor, or Certified Soils Scientist as appropriate. If conditions cannot be met comments addressing each item should be provided below. Comments will be reviewed with Town Staff at the scheduled development staff meeting and documented.

Item	Description	Verified	Comments
11	On-Site retention/detention facilities have been provided to address water quality and storm water runoff.	TAC	
12	Rain Barrels, cisterns, and/or other rainwater harvesting techniques to reuse rainwater for irrigation and other non-potable uses are incorporated into the design.		Not applicable.
13	An Erosion and Sedimentation Control Plan conforming to the Standards of the Connecticut Guidelines for Soil Erosion and Sediment Control is included in the design.	TAC	
14	A yearly maintenance plan of all components of best management practices associated with storm water management has been provided.	TAC	
15	Impervious area percentages for pre and post development have been provided.	TAC	
16	When conflicts exist between the Town's Low Impact Development Stormwater Quality Manual and the Connecticut Storm Water Quality Manual the State Manual shall govern.	TAC	

THE LEARNING EXPERIENCE
ACADEMY OF EARLY EDUCATION

501 Talcottville Road
Vernon, Connecticut



KEY PLAN MAP
1"=500'

Applicant

Vernon Development LLC
56 East Main Street
Avon, CT 06001
(860) 677-5607

Owner

501 Talcottville Road LLC
43 Ridgecrest Lane
Bristol, CT 06010-2910

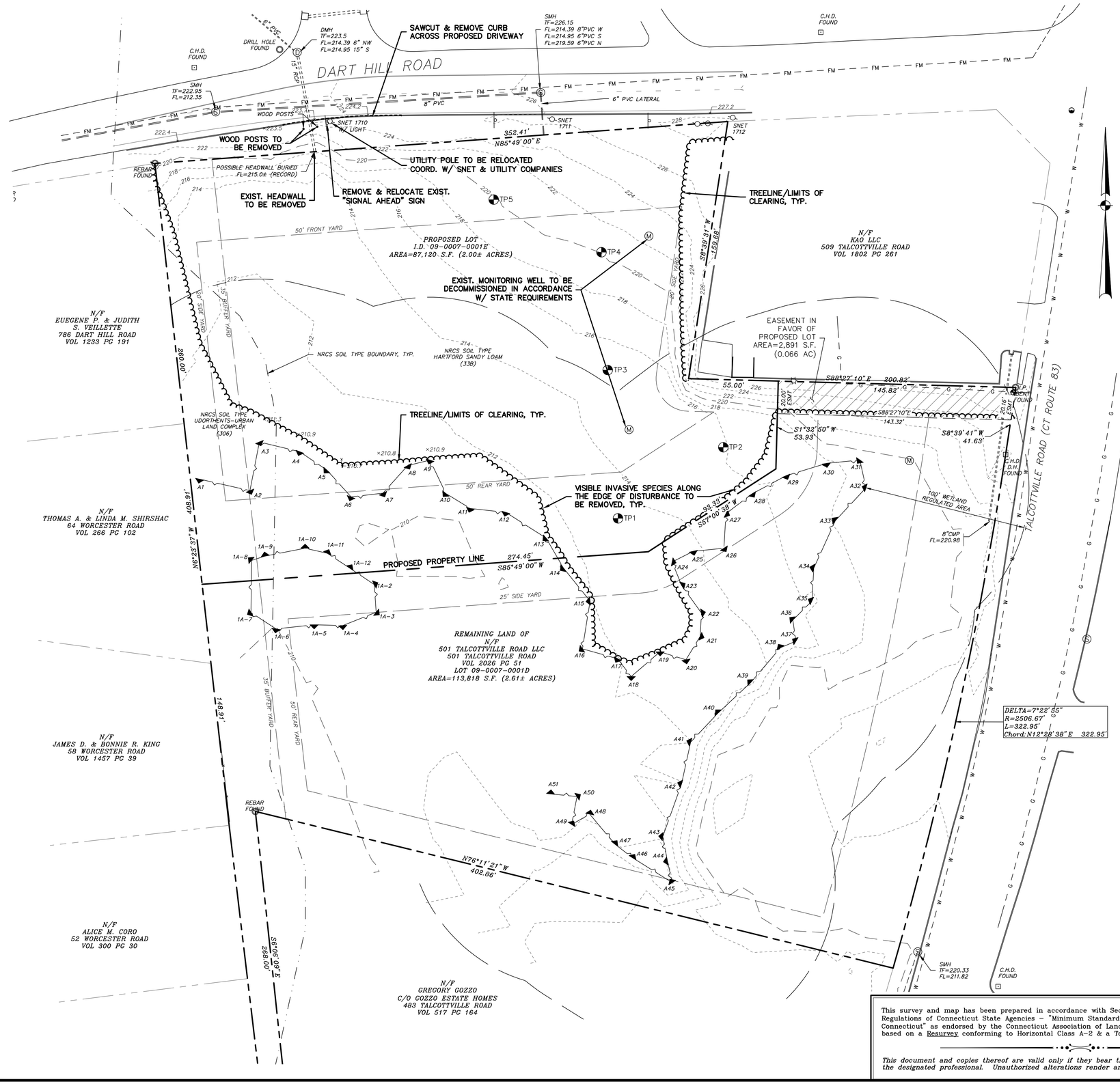
LADA, P.C.
Land Planners
104 West Street
Simsbury, CT 06070 (860) 651-4971
Brewster, NY 10509 (845) 278-7424
Email: ladapc@snet.net

RUSSO
SURVEYORS • ENGINEERS
SERVING CT & MA
J.R. Russo & Associates, LLC
1 Shoham Rd East Windsor CT 06088 • CT 860.623.0569 • MA 413.785.1158
www.jrrusso.com • info@jrrusso.com

DRAWING INDEX

SHEET TITLE	SHEET NO.	LATEST REVISION
CIVIL		
COVER SHEET	1 of 12	2-14-22
EXISTING CONDITIONS & DEMOLITION PLAN	2 of 12	2-14-22
LAYOUT PLAN	3 of 12	2-14-22
GRADING & EROSION & SEDIMENT CONTROL PLAN	4 of 12	2-14-22
STORM SEWER PLAN	5 of 12	2-14-22
UTILITY PLAN	6 of 12	2-14-22
PLANTING PLAN	7 of 12	2-14-22
EROSION & SEDIMENT CONTROL NOTES	8 of 12	2-14-22
DETAILS	9 of 12	2-14-22
DETAILS	10 of 12	2-14-22
DETAILS	11 of 12	2-14-22
DETAILS	12 of 12	2-14-22

S:\Acad\2021 Civil 3D\2021-083 Vernon Development - 501 Talcottville Rd\Russo Drawings\2021-083.dwg



Reference Maps:

1. "Boundary Survey Prepared for 501 Talcottville Road LLC, 501 Talcottville Road (CT Route 83) & Dart Hill Road, Vernon, Connecticut" Sheet SV.01, Scale: 1"=50' Date: May 2021 by Alfred Benesch & Company.
2. "Topographic Survey Prepared for 501 Talcottville Road LLC, 501 Talcottville Road (CT Route 83) & Dart Hill Road, Vernon, Connecticut" Sheet SV.02Scale: 1"=30' Date: May 2021 by Alfred Benesch & Company.

Notes:

1. Portion of the parcel is located in inland wetlands as delineated by Rema Ecological Services per reference map #2.
2. Proposed lot does not lie within a special flood hazard area per "FEMA flood insurance rate map, town of Vernon, Connecticut community panel number 09013I0005C, revised August 9, 1999".
3. Horizontal and vertical datums are based upon map references prepared by Alfred Benesch & Company.
4. All underground utility locations on this plan are approximate and may not be complete. Anyone using this information without verifying the locations does so at their own risk. No construction will be done on this site prior to utility mark out. "Call Before You Dig 1-800-922-4455".
5. Boundary and existing conditions shown hereon are based on map references prepared by Alfred Benesch & Company.

LEGEND

	EXISTING UTILITY POLE
UG	PROPOSED UNDERGROUND ELECTRIC
G	EXISTING GAS LINE
G	PROPOSED GAS LINE
W	EXISTING WATER LINE
W	PROPOSED WATER LINE
FP	PROPOSED FIRE PROTECTION LINE
	EXISTING CATCH BASIN
	PROPOSED CATCH BASIN
M	EXISTING DRAINAGE MANHOLE
	PROPOSED DRAINAGE MANHOLE
	EXISTING STORM SEWER
	PROPOSED STORM SEWER
RL	PROPOSED ROOF LEADER
S	EXISTING SANITARY MANHOLE
	EXISTING SANITARY SEWER
FM	EXISTING SANITARY FORCE MAIN
S	PROPOSED SANITARY SEWER
	EXISTING SIGN
	PROPOSED SIGN
	EXISTING IRON PIN (FOUND)
	PROPOSED IRON PIN (TO BE SET)
	EXISTING MONUMENT (FOUND)
135x5	EXISTING SPOT GRADE
135.5	PROPOSED SPOT GRADE
136	EXISTING CONTOUR
136	PROPOSED CONTOUR
	LIMIT OF WETLANDS
	PROPERTY LINE
	EASEMENT LINE
	BUILDING LINE
	STAKED HAYBALES OR SILT FENCE

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

This survey and map has been prepared in accordance with Sections 20-300b-1 thru 20-300b-20 of the Regulations of Connecticut State Agencies - "Minimum Standards for Surveys and Maps in the State of Connecticut" as endorsed by the Connecticut Association of Land Surveyors, Inc. It is a Property Survey based on a Resurvey conforming to Horizontal Class A-2 & a Topographic Survey conforming to Class T-2.

This document and copies thereof are valid only if they bear the live signature and embossed seal of the designated professional. Unauthorized alterations render any declaration hereon null and void.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

RUSSO SURVEYORS·ENGINEERS SERVING CT & MA
J.R. Russo & Associates, LLC
1 Shoham Rd East Windsor, CT 06088 • CT 860.623.0569 • MA 413.785.1158
www.jrrusso.com • info@jrrusso.com

Applicant
Vernon Development LLC
56 East Main Street
Avon, Connecticut 06001

REVISIONS	
BY: LF/TAC	CHK: JEU
2-14-22	PAGE NUMBERS

The Learning Experience
Property Of
501 Talcottville Road, LLC
501 Talcottville Road
Vernon, Connecticut 06010
Parcel ID: 09-0007-0001D (Zone: C)

Existing Conditions & Demolition Plan

DATE	1-11-22
SCALE	1"=30'
JOB NUMBER	2021-083
SHEET	2 of 12

S:\Acad\2021 Civil 3D\2021-083 Vernon Development - 501 Talcottville Rd\Russo Drawings\2021-083.dwg

DART HILL ROAD

RELOCATE UTILITY POLE COORD. W/ SNET & UTILITY COMPANIES

"DO NOT BLOCK ENTRANCE" SIGN

RELOCATED "SIGNAL AHEAD" SIGN

TERMINATE SIDEWALK AT PROPERTY LINE

PROVIDE CLEAN SAWCUT & TACK COAT EDGES PRIOR TO INSTALLMENT OF NEW PAVEMENT

SIDEWALK RAMP, (TYPE C)

PROP. MAILBOX FINAL LOCATION TO BE DETERMINED W/ USPS

TEMPORARY CONSTRUCTION SIGN, MAX. AREA=32 SF

PROP. 5' CONC. SIDEWALK

6" BIT. CONC. LIP CURB, TYP.

PERMANENT MONUMENT SIGN MAX. AREA=80 SF

12" WIDE STOP BAR, 4" DOUBLE YELLOW CENTERLINE & STOP SIGN (31-0552)

PRE-CAST CONC. CURB ADJACENT TO SIDEWALK, TYP.

PROVIDE CLEAN SAWCUT & CONNECT TO EXIST. SIDEWALK AT PROPERTY LINE

SIDEWALK RAMP (TYPE B)

CANOPY AT ENTRANCE

GATE

LOADING SPACE

SIDEWALK RAMP (TYPE A)

BOLLARD MOUNTED STANDARD ADA PARKING SIGN

BOLLARD MOUNTED VAN ACCESSIBLE PARKING SIGNS

BUILDING MOUNTED SIGNAGE (SEE ARCH DWGS)

PROPOSED LOT
I.D. 09-0007-0001E
AREA=87,120 S.F. (2.00± ACRES)

PROP. 1-STORY BUILDING (10,000 S.F.) FIN.FL.=221.5

SIDEWALK LANDING

SIDEWALK RAMP, (TYPE C)

TRANSFORMER

4' HIGH SOLID WHITE PVC FENCE

10'X20' DUMPSTER ENCLOSURE

PLAYGROUND 4,500 S.F.

6' HIGH SOLID WHITE PVC FENCE SURROUNDING PLAYGROUND

STORMWATER MANAGEMENT BASIN

220LF RETAINING WALL

CLEARING LIMIT, TYP.

PROPOSED PROPERTY LINE

WETLAND CREATION AREA (2,100±) SEED W/ NEW ENGLAND WETMIX BY NEW ENGLAND WETLAND PLANTS, INC OR APPROVED EQUAL BOT. ELEV. =210.5

WETLAND ENHANCEMENT PLANTINGS (2,500±) SEE PLANTING LIST THIS SHEET

EASEMENT IN FAVOR OF PROPOSED LOT AREA=2,891 S.F. (0.066 AC)

100' WETLAND REGULATED AREA

TALCOTTVILLE ROAD (CT ROUTE 83)

N/F
EUEGENE P. & JUDITH S. VEILLETTE
786 DART HILL ROAD
VOL 1233 PG 191

N/F
THOMAS A. & LINDA M. SHIRSHAC
64 WORCESTER ROAD
VOL 266 PG 102

N/F
KAO LLC
509 TALCOTTVILLE ROAD
VOL 1802 PG 261

REMAINING LAND OF
N/F
501 TALCOTTVILLE ROAD LLC
501 TALCOTTVILLE ROAD
VOL 2026 PG 51
LOT 09-0007-0001D
AREA=113,818 S.F. (2.61± ACRES)

DMH TF=223.5 FL=214.39 6" NW FL=214.95 15" S

SMH TF=226.15 FL=214.39 8"PVC W FL=214.95 6"PVC S FL=219.59 6"PVC N

SMH TF=222.95 FL=212.35

8" PVC

6" PVC LATERAL

6" PVC

15" RCP

C.H.D. FOUND

DRILL HOLE FOUND

REBAR FOUND

SNET 1711

SNET 1712

I.P. BENT FOUND

C.H.D. D.H. FOUND

352.41' N85°49'00"E

274.45' S85°49'00"W

408.91' N6°23'37"W

S8°39'41"W 169.68'

S1°32'50"W 53.93'

S8°39'41"W 41.63'

S57°00'38"W 93.33'

S88°27'10"E 143.32'

S88°27'10"E 200.88'

145.82'

55.00'

20.00' EASMT

20.16' EASMT

20' R

30'

50' FRONT YARD

50' REAR YARD

25' SIDE YARD

20' SIDE YARD

35' BUFFER YARD

74'±

88'±

150'

66.47'

36'

Reference Maps:

1. "Boundary Survey Prepared for 501 Talcottville Road LLC, 501 Talcottville Road (CT Route 83) & Dart Hill Road, Vernon, Connecticut" Sheet SV.01, Scale: 1"=50' Date: May 2021 by Alfred Benesch & Company.
2. "Topographic Survey Prepared for 501 Talcottville Road LLC, 501 Talcottville Road (CT Route 83) & Dart Hill Road, Vernon, Connecticut" Sheet SV.02Scale: 1"=30' Date: May 2021 by Alfred Benesch & Company.

Notes:

1. Portion of the parcel is located in inland wetlands as delineated by Rema Ecological Services per reference map #2.
2. Proposed lot does not lie within a special flood hazard area per "FEMA flood insurence rate map, town of Vernon, Connecticut community panel number 0901310005C, revised August 9, 1999".
3. Horizontal and vertical datums are based upon map references prepared by Alfred Benesch & Company.
4. All underground utility locations on this plan are approximate and may not be complete. Anyone using this information without verifying the locations does so at their own risk. No construction will be done on this site prior to utility mark out. "Call Before You Dig 1-800-922-4455".
5. Boundary and existing conditions shown hereon are based on map references prepared by Alfred Benesch & Company.

LEGEND

- EXISTING UTILITY POLE
- UG — PROPOSED UNDERGROUND ELECTRIC
- EXISTING GAS LINE
- G — PROPOSED GAS LINE
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- FP — PROPOSED FIRE PROTECTION LINE
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- EXISTING DRAINAGE MANHOLE
- PROPOSED DRAINAGE MANHOLE
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- RL — PROPOSED ROOF LEADER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- FM — EXISTING SANITARY FORCE MAIN
- S — PROPOSED SANITARY SEWER
- EXISTING SIGN
- PROPOSED SIGN
- EXISTING IRON PIN (FOUND)
- PROPOSED IRON PIN (TO BE SET)
- EXISTING MONUMENT (FOUND)
- 135.5 — EXISTING SPOT GRADE
- 135.5 — PROPOSED SPOT GRADE
- 136 — EXISTING CONTOUR
- 136 — PROPOSED CONTOUR
- LIMIT OF WETLANDS
- PROPERTY LINE
- EASEMENT LINE
- BUILDING LINE
- STAKED HAYBALES OR SILT FENCE

DATA BLOCK (ZONE C)

MIN. LOT AREA:	22,000 S.F.
PROP. LOT AREA:	87,120 S.F. (2.0± AC)
MIN. LOT WIDTH:	100'
PROP. LOT WIDTH:	352.41'
MIN. FRONT YARD:	50'
MIN. SIDE YARD:	20'
MIN. REAR YARD:	50'
PROP. BLDG HT:	26'
PROP. LOT COVERAGE:	44.5% (38,754 SF)

PARKING REQUIREMENTS
DAYCARE: 1 SPACE/1 EMPLOYEE * 26 EMPLOYEES = 26 SPACES
1 SPACE/5 STUDENTS * 153 STUDENTS = 30.6 SPACES

TOTAL SPACES REQUIRED: 57 SPACES
TOTAL SPACES PROVIDED: 57 SPACES (3 HANDICAP ACCESSIBLE)

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

This survey and map has been prepared in accordance with Sections 20-300b-1 thru 20-300b-20 of the Regulations of Connecticut State Agencies – "Minimum Standards for Surveys and Maps in the State of Connecticut" as endorsed by the Connecticut Association of Land Surveyors, Inc. It is a Property Survey based on a Resurvey conforming to Horizontal Class A-2 & a Topographic Survey conforming to Class T-2.

This document and copies thereof are valid only if they bear the live signature and embossed seal of the designated professional. Unauthorized alterations render any declaration hereon null and void.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

RUSSO SURVEYORS·ENGINEERS
SERVING CT & MA
J.R. Russo & Associates, LLC
1 Shoham Rd East Windsor, CT 06088 • CT 860.633.0569 • MA 413.785.1918
www.jrrusso.com • info@jrrusso.com

Applicant
Vernon Development LLC
56 East Main Street
Avon, Connecticut 06001

REVISIONS	
BY: LF/TAC	CHK: JEU

2-14-22 WETLAND MITIGATION, LEAK-OFF, BASIN OUTLET

The Learning Experience
Property Of
501 Talcottville Road, LLC
501 Talcottville Road
Vernon, Connecticut 06010
Parcel ID: 09-0007-0001D (Zone: C)

Layout Plan

DATE 1-11-22
SCALE 1"=20'
JOB NUMBER 2021-083
SHEET 3 of 12

S:\Acad\2021 Civil 3D\2021-083 Vernon Development - 501 Talcottville Rd\Russo Drawings\2021-083.dwg

DART HILL ROAD

DMH
TF=223.5
FL=214.39 6" NW
FL=214.95 15" S

SMH
TF=226.15
FL=214.39 8"PVC W
FL=214.95 6"PVC S
FL=219.59 6"PVC N

SMH
TF=222.95
FL=212.35

DMH2
TF=224.30

6" PVC LATERAL

8" PVC

DRILL HOLE FOUND

C.H.D. FOUND

REBAR FOUND

SNET 1711

SNET 1712

CB1
TF=219.60

CB2
TF=220.00

CB3
TF=220.0

AD1
TF=220.5

DMH1
TF=220.81

TP1

TP2

TP3

TP4

TP5

N/F
EUEGENE P. & JUDITH S. VEILLETTE
786 DART HILL ROAD
VOL 1233 PG 191

N/F
THOMAS A. & LINDA M. SHIRSHAC
64 WORCESTER ROAD
VOL 266 PG 102

N/F
KAO LLC
509 TALCOTTVILLE ROAD
VOL 1802 PG 261

REMAINING LAND OF
N/F
501 TALCOTTVILLE ROAD LLC
501 TALCOTTVILLE ROAD
VOL 2026 PG 51
LOT 09-0007-0001D
AREA=113,818 S.F. (2.61± ACRES)

PROPOSED LOT
I.D. 09-0007-0001E
AREA=87,120 S.F. (2.00± ACRES)

PROP. 1-STORY BUILDING
(10,000 S.F.)
FIN.FL.=221.5

PLAYGROUND
4,500 S.F.

50' FRONT YARD

50' REAR YARD

25' SIDE YARD

35' BUFFER YARD

DUMPSTER PAD

TRANSFORMER PAD

TEMPORARY TOPSOIL STOCKPILE

RETAINING WALL

INSTALL JUTE NETTING OR TEMPORARY EROSION CONTROL BLANKET ON SLOPES 3:1 OR STEEPER, TYP.

BACK SILT FENCE W/ 1' HIGH WOOD CHIP MOUND, TYP.

STORMWATER MANAGEMENT BASIN
BOT. ELEV. =214.0

WETLAND CREATION
AREA (2,100±)
SEED W/ NEW ENGLAND WETMIX BY NEW ENGLAND WETLAND PLANTS, INC OR APPROVED EQUAL
BOT. ELEV. =210.5

WETLAND ENHANCEMENT PLANTINGS (2,500±)
SEE PLANTING LIST SHEET 13

100' WETLAND REGULATED AREA

8"CMP
FL=220.98

I.P. BENT FOUND

C.H.D. D.H. FOUND

TALCOTTVILLE ROAD (CT ROUTE 83)

Test Pit Data:
Observed by J.R. Russo & Associates on 12-17-2021

TP 1
0"-12" Topsoil/Organics
12"-20" Brown Fine Sandy Loam
20"-68" Red-Brown, Firm Loamy Sand & Gravel
Water @ 66"
Mottles @ 21"
No Ledge

TP 2
0"-12" Topsoil/Organics
12"-24" Brown Fine Sandy Loam
24"-62" Red-Brown, Firm Loamy Sandy & Gravel
Water @ 60"
Mottles @ 48"
No Ledge

TP 3
0"-12" Topsoil/Organics
12"-30" Brown Fine Sandy Loam
30"-64" Red-Brown, Firm Sand & Gravel
Water @ 60"
Mottles @ 40"
No Ledge

TP 4
0"-8" Topsoil/Organics
8"-24" Brown Fine Sandy Loam
24"-90" Red-Brown Loose Sand & Gravel
No Water
No Mottles
No Ledge

TP 5
0"-6" Topsoil/Organics
6"-18" Brown Fine Sandy Loam
24"-64" Red-Brown Loose Sand & Gravel
No Water
No Mottles
No Ledge

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

This survey and map has been prepared in accordance with Sections 20-300b-1 thru 20-300b-20 of the Regulations of Connecticut State Agencies - "Minimum Standards for Surveys and Maps in the State of Connecticut" as endorsed by the Connecticut Association of Land Surveyors, Inc. It is a Property Survey based on a Resurvey conforming to Horizontal Class A-2 & a Topographic Survey conforming to Class T-2.

This document and copies thereof are valid only if they bear the live signature and embossed seal of the designated professional. Unauthorized alterations render any declaration hereon null and void.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

EROSION & SEDIMENT CONTROL PLAN KEY

PS	PERMANENT SEEDING
TS	TEMPORARY SEEDING
CE	CONSTRUCTION ENTRANCE
GSF	GEOTEXTILE SILT FENCE
RR	RIPRAP
OP	OUTLET PROTECTION

LEGEND

- EXISTING UTILITY POLE
- UG — PROPOSED UNDERGROUND ELECTRIC
- EXISTING GAS LINE
- G — PROPOSED GAS LINE
- EXISTING WATER LINE
- W — PROPOSED WATER LINE
- FP — PROPOSED FIRE PROTECTION LINE
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- EXISTING DRAINAGE MANHOLE
- PROPOSED DRAINAGE MANHOLE
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- RL — PROPOSED ROOF LEADER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- FM — EXISTING SANITARY FORCE MAIN
- S — PROPOSED SANITARY SEWER
- EXISTING SIGN
- PROPOSED SIGN
- EXISTING IRON PIN (FOUND)
- PROPOSED IRON PIN (TO BE SET)
- EXISTING MONUMENT (FOUND)
- 1.35x5 — EXISTING SPOT GRADE
- 135.5 — PROPOSED SPOT GRADE
- 1.36 — EXISTING CONTOUR
- 1.36 — PROPOSED CONTOUR
- LIMIT OF WETLANDS
- PROPERTY LINE
- EASEMENT LINE
- BUILDING LINE
- STAKED HAYBALES OR SILT FENCE

RUSSO
SURVEYORS · ENGINEERS
SERVING CT & MA
J.R. Russo & Associates, LLC
1 Shoham Rd East Windsor, CT 06088 • CT 860.633.0569 • MA 413.785.1158
www.jrrusso.com • info@jrrusso.com

Applicant
Vernon Development LLC
56 East Main Street
Avon, Connecticut 06001

REVISIONS	
BY: LF/TAC	CHK: JEU
2-14-22 WETLAND MITIGATION, LEAK-OFF, BASIN OUTLET	

The Learning Experience
Property Of
501 Talcottville Road, LLC
501 Talcottville Road
Vernon, Connecticut 06010
Parcel ID: 09-0007-0001D (Zone: C)

Grading & Erosion & Sediment Control Plan

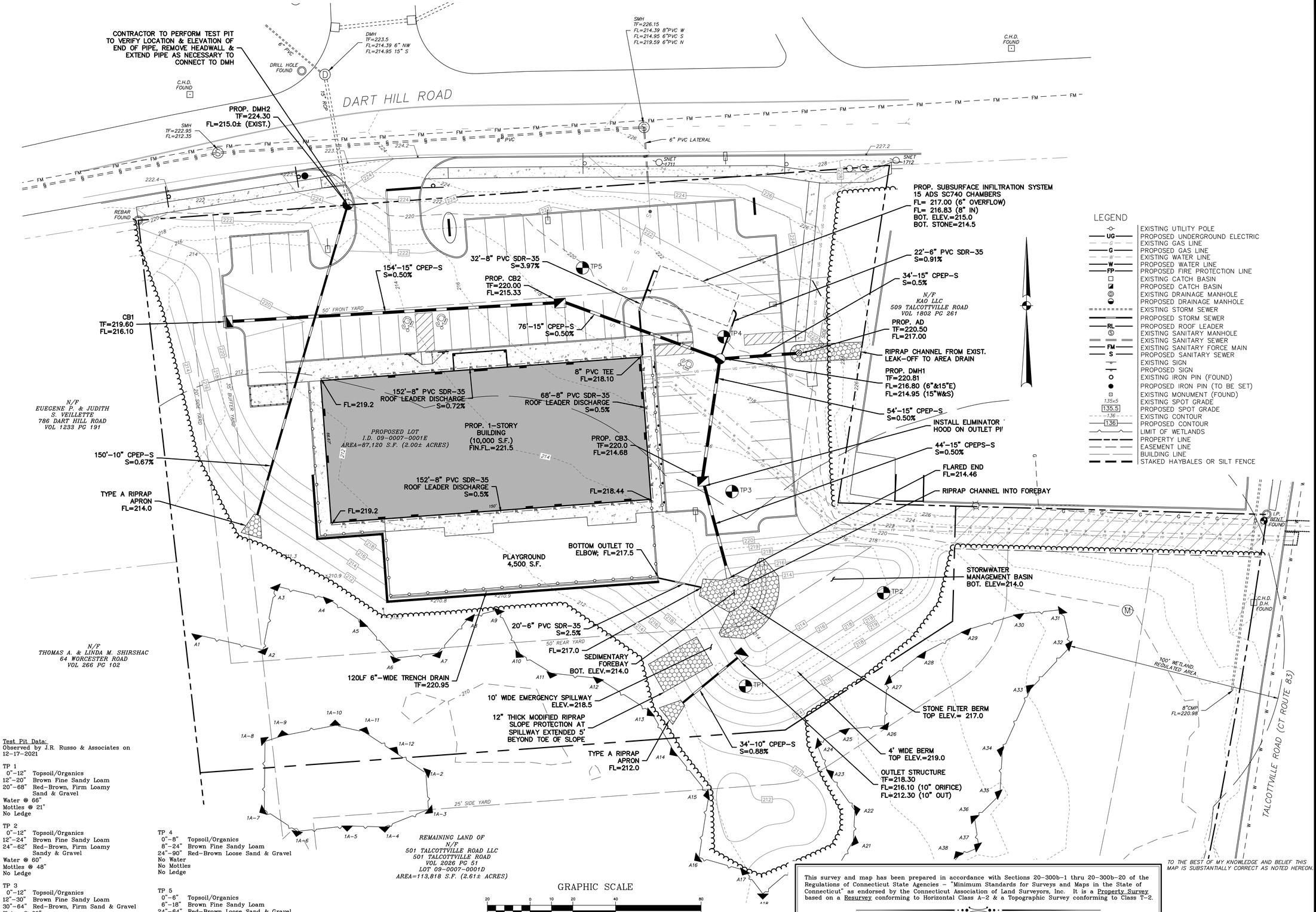
DATE
1-11-22

SCALE
1"=20'

JOB NUMBER
2021-083

SHEET
4 of 12

S:\Acad\2021 Civil 3D\2021-083 Vernon Development - 501 Talcottville Rd\Russo Drawings\2021-083.dwg



LEGEND

- EXISTING UTILITY POLE
- UG — PROPOSED UNDERGROUND ELECTRIC
- G — EXISTING GAS LINE
- G — PROPOSED GAS LINE
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- FP — PROPOSED FIRE PROTECTION LINE
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- EXISTING DRAINAGE MANHOLE
- PROPOSED DRAINAGE MANHOLE
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- RL — PROPOSED ROOF LEADER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- FM — EXISTING SANITARY FORCE MAIN
- S — PROPOSED SANITARY SEWER
- EXISTING SIGN
- PROPOSED SIGN
- EXISTING IRON PIN (FOUND)
- PROPOSED IRON PIN (TO BE SET)
- EXISTING MONUMENT (FOUND)
- 135x5 — EXISTING SPOT GRADE
- 135.5 — PROPOSED SPOT GRADE
- 136 — EXISTING CONTOUR
- 136 — PROPOSED CONTOUR
- LIMIT OF WETLANDS
- PROPERTY LINE
- EASEMENT LINE
- BUILDING LINE
- STAKED HAYBALES OR SILT FENCE

Test Pit Data:
Observed by J.R. Russo & Associates on 12-17-2021

TP 1
0"–12" Topsoil/Organics
12"–20" Brown Fine Sandy Loam
20"–68" Red-Brown, Firm Loamy Sand & Gravel
Water @ 66"
Mottles @ 21"
No Ledge

TP 2
0"–12" Topsoil/Organics
12"–24" Brown Fine Sandy Loam
24"–62" Red-Brown, Firm Loamy Sandy & Gravel
Water @ 60"
Mottles @ 48"
No Ledge

TP 3
0"–12" Topsoil/Organics
12"–30" Brown Fine Sandy Loam
30"–64" Red-Brown, Firm Sand & Gravel
Water @ 60"
Mottles @ 40"
No Ledge

TP 4
0"–8" Topsoil/Organics
8"–24" Brown Fine Sandy Loam
24"–90" Red-Brown Loose Sand & Gravel
No Water
No Mottles
No Ledge

TP 5
0"–6" Topsoil/Organics
6"–18" Brown Fine Sandy Loam
24"–64" Red-Brown Loose Sand & Gravel
No Water
No Mottles
No Ledge

This survey and map has been prepared in accordance with Sections 20-300b-1 thru 20-300b-20 of the Regulations of Connecticut State Agencies – "Minimum Standards for Surveys and Maps in the State of Connecticut" as endorsed by the Connecticut Association of Land Surveyors, Inc. It is a Property Survey based on a Resurvey conforming to Horizontal Class A-2 & a Topographic Survey conforming to Class T-2.

This document and copies thereof are valid only if they bear the live signature and embossed seal of the designated professional. Unauthorized alterations render any declaration hereon null and void.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

RUSSO SURVEYORS • ENGINEERS
SERVING CT & MA
J.R. Russo & Associates, LLC
1 Shoham Rd East Windsor, CT 06088 • CT 860.623.0569 • MA 413.785.1158
www.jrrusso.com • info@jrrusso.com

Applicant
Vernon Development LLC
56 East Main Street
Avon, Connecticut 06001

REVISIONS

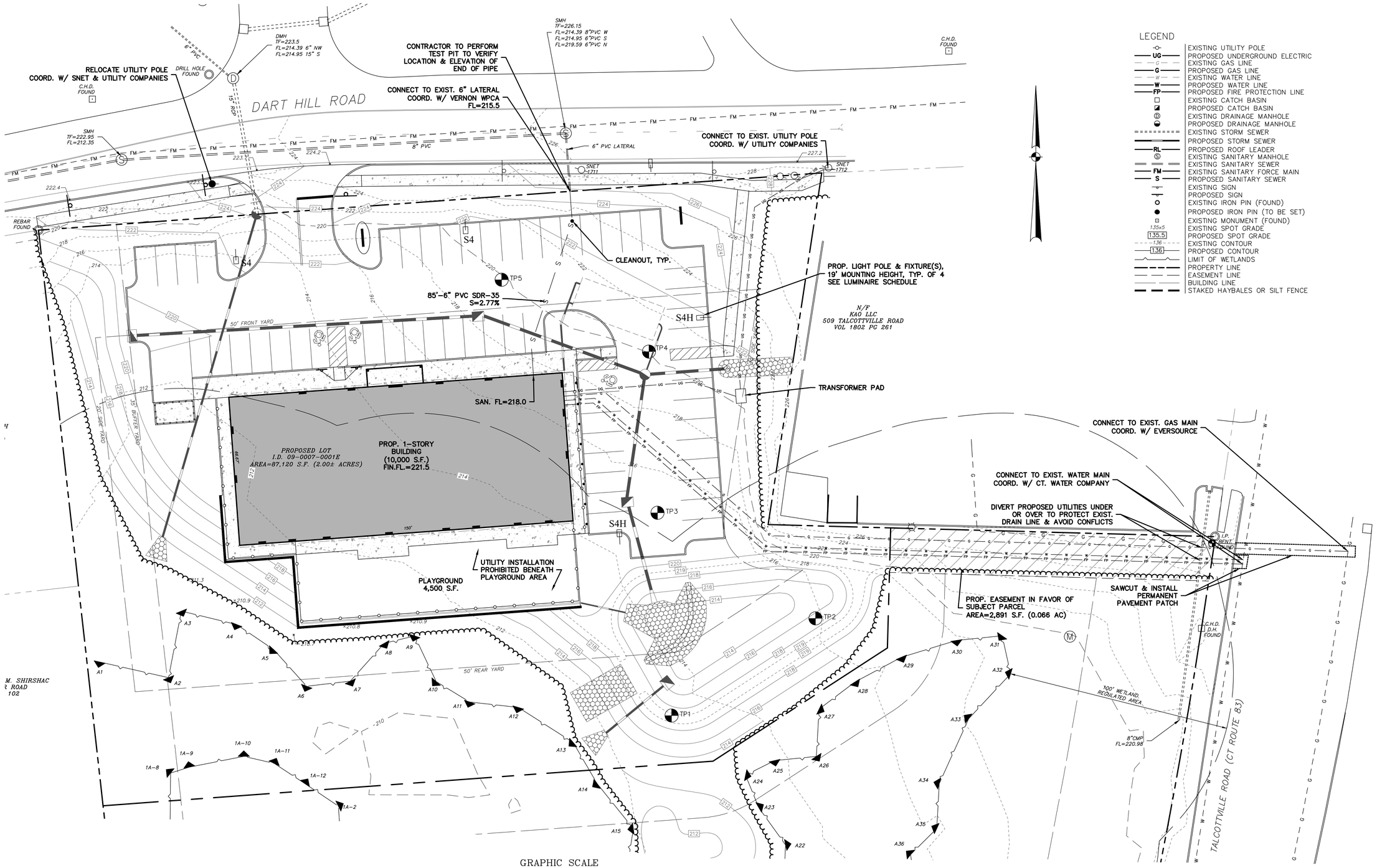
BY:	CHK:	
LF/TAC	JEU	2-14-22 WETLAND MITIGATION, LEAK-OFF, BASIN OUTLET

The Learning Experience
Property Of
501 Talcottville Road, LLC
501 Talcottville Road
Vernon, Connecticut 06010
Parcel ID: 09-0007-0001D (Zone: C)

Storm Sewer Plan

DATE 1-11-22
SCALE 1"=20'
JOB NUMBER 2021-083
SHEET 5 of 12

S:\Acad\2021 Civil 3D\2021-083 Vernon Development - 501 Talcottville Rd\Russo Drawings\2021-083.dwg



LEGEND

- EXISTING UTILITY POLE
- UG — PROPOSED UNDERGROUND ELECTRIC
- G — EXISTING GAS LINE
- G — PROPOSED GAS LINE
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- FP — PROPOSED FIRE PROTECTION LINE
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- EXISTING DRAINAGE MANHOLE
- PROPOSED DRAINAGE MANHOLE
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- RL — PROPOSED ROOF LEADER
- EXISTING SANITARY MANHOLE
- FM — EXISTING SANITARY FORCE MAIN
- S — PROPOSED SANITARY SEWER
- EXISTING SIGN
- PROPOSED SIGN
- EXISTING IRON PIN (FOUND)
- PROPOSED IRON PIN (TO BE SET)
- EXISTING MONUMENT (FOUND)
- 135x5 — EXISTING SPOT GRADE
- 135.5 — PROPOSED SPOT GRADE
- 136 — EXISTING CONTOUR
- 136 — PROPOSED CONTOUR
- LIMIT OF WETLANDS
- PROPERTY LINE
- EASEMENT LINE
- BUILDING LINE
- STAKED HAYBALES OR SILT FENCE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

Luminaire Schedule									
Symbol	Qty	Label	Arrangement	Luminaire Lumens	Luminaire Watts	LLF	BUG Rating	Mounting Height	Description
	2	S4	Single	12574	102	0.900	B2-U0-G3	19	Lithonia DSX1 LED P3 40K TFTM MVOLT SPA DBLXD - SSS 18 4C DM19A DBLXD 18FT POLE on 1FT BASE
	2	S4H	Single	11312	125	0.900	B2-U0-G2	19	Lithonia DSX1 LED P4 40K TFTM MVOLT SPA HS DBLXD - SSS 18 4C DM19AS DBLXD 18FT POLE on 1FT BASE

This survey and map has been prepared in accordance with Sections 20-300b-1 thru 20-300b-20 of the Regulations of Connecticut State Agencies – "Minimum Standards for Surveys and Maps in the State of Connecticut" as endorsed by the Connecticut Association of Land Surveyors, Inc. It is a Property Survey based on a Resurvey conforming to Horizontal Class A-2 & a Topographic Survey conforming to Class T-2.

This document and copies thereof are valid only if they bear the live signature and embossed seal of the designated professional. Unauthorized alterations render any declaration hereon null and void.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

RUSSO
SURVEYORS • ENGINEERS
SERVING CT & MA
J.R. Russo & Associates, LLC
1 Shoreham Rd East Windsor, CT 06088 • CT 860.623.0569 • MA 413.785.1158
www.jrrusso.com • info@jrrusso.com

Applicant
Vernon Development LLC
56 East Main Street
Avon, Connecticut 06001

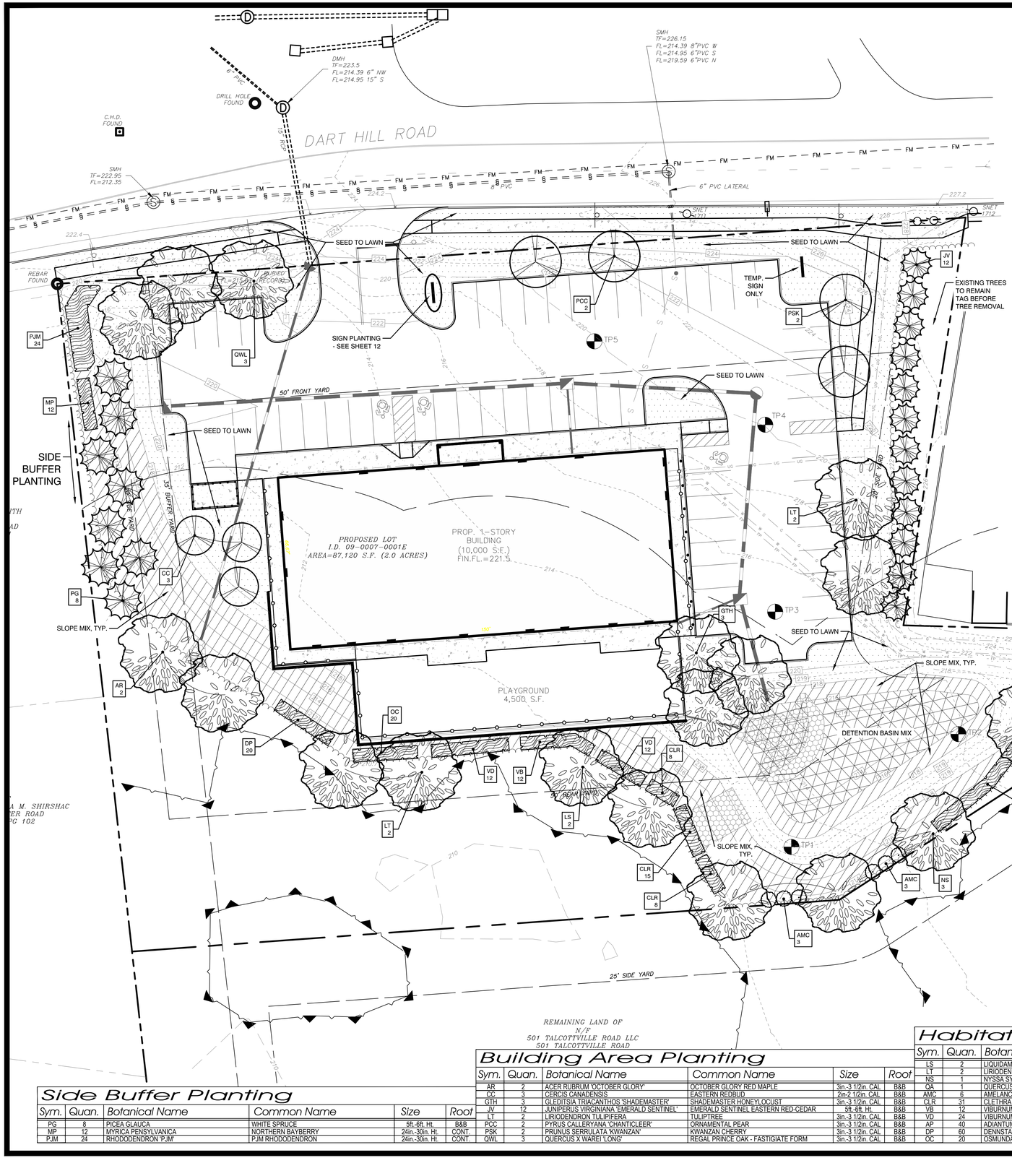
REVISIONS		
BY: LF/TAC	CHK: JEU	
		2-14-22 WETLAND MITIGATION, LEAK-OFF, BASIN OUTLET

The Learning Experience
Property Of
501 Talcottville Road, LLC
501 Talcottville Road
Vernon, Connecticut 06010
Parcel ID: 09-0007-0001D (Zone: C)

Utility Plan

DATE
1-11-22
SCALE
1"=20'
JOB NUMBER
2021-083
SHEET
6 of 12

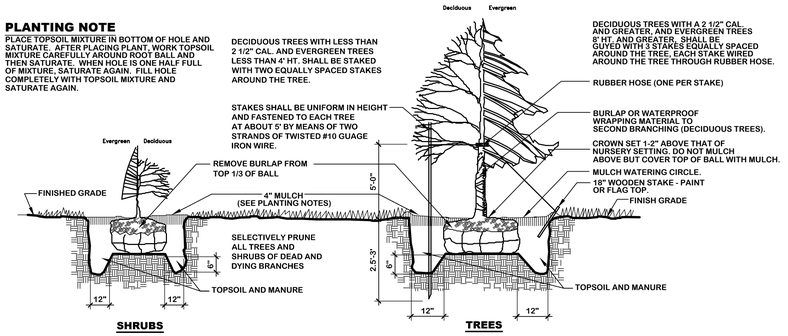
S:\Acad\2021 Civil 3D\2021-083 Vernon Development - 501 Talcottville Rd\Russo Drawings\2021-083.dwg



PLANTING NOTE

PLACE TOPSOIL MIXTURE IN BOTTOM OF HOLE AND SATURATE. AFTER PLACING PLANT, WORK TOPSOIL MIXTURE CAREFULLY AROUND ROOT BALL AND THEN SATURATE. WHEN HOLE IS ONE HALF FULL OF MIXTURE, SATURATE AGAIN. FILL HOLE COMPLETELY WITH TOPSOIL MIXTURE AND SATURATE AGAIN.

DECIDUOUS TREES WITH LESS THAN 2 1/2" CAL. AND EVERGREEN TREES LESS THAN 4' HT. SHALL BE STAKED WITH TWO EQUALLY SPACED STAKES AROUND THE TREE.



31 PLANTING DETAILS
N.T.S.

PLANT LIST NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING PLANT QUANTITIES BY COUNT ON THE PLAN. IF THERE IS A DISCREPANCY BETWEEN THE PLAN AND THE PLANT LIST, THE PLAN WILL PREVAIL.
2. SUBSTITUTIONS ARE ALLOWED DUE TO AVAILABILITY AND HEALTH OF PLANTS. ALL SUBSTITUTIONS SHALL BE APPROVED BY PROJECT LANDSCAPE ARCHITECT.
3. ALL PLANTS TO BE NURSERY STOCK.
4. ALL SHRUBS AND PERENNIALS TO BE INSTALLED IN PLANT BED WITH 4" PINE BARK MULCH. PROVIDE SHOVEL EDGE ON BED.
5. DO NOT OVER MULCH TREE PLANTING. USE ONLY PINE BARK MULCH.
6. ALL MATERIAL - PLANTS, SOIL, GROWING MEDIUM-MUST BE FREE OF INVASIVE SPECIES - ESPECIALLY PURPLE LOOSESTRIFE.

SEEDING OPERATIONS

A. FERTILIZER AND LIMESTONE

CONTRACTOR SHALL CONDUCT APPROPRIATE SOIL TESTS TO DETERMINE AMOUNT OF FERTILIZER AND LIMESTONE REQUIRED TO ENSURE AN ACCEPTABLE LAWN.
GROUND LIMESTONE: 100LBS/1000S.F.
COMMERCIAL FERTILIZER: * 20LBS/1000S.F.

*PERCENTAGES OF NITROGEN, PHOSPHORIC ACID AND POTASH TO BE DETERMINED BY SOIL TESTS.

B. LAWN SEED

SEED MIXTURE FOR: LATE SUMMER / EARLY FALL / EARLY SPRING PLANTING. SOW AT RATE OF 4 LBS/1000 S.F.

CREEPING RED FESCUE	35 PARTS
CHEWINGS RED FESCUE	20 PARTS
KENTUCKY 31 TALL FESCUE	15 PARTS
ROUGH BLUEGRASS	10 PARTS
BARON BLUEGRASS	20 PARTS

SEED MIXTURE FOR PLANTING MAY 1 TO LATE SUMMER. SOW AT A RATE OF 6 LBS/1000 S.F.

CREEPING RED FESCUE	35 PARTS
CHEWINGS RED FESCUE	20 PARTS
KENTUCKY 31 TALL FESCUE	20 PARTS
DOMESTIC RYEGRASS	25 PARTS

C. SLOPE MIX

SOW AT RATE OF 6 LBS/1000 S.F.

CREEPING RED FESCUE	42 PARTS
FIESTA II PERENNIAL RYEGRASS	34 PARTS
RED TOP	8 PARTS
ALSIKE CLOVER	8 PARTS
BIRDSFOOT TREFOIL	8 PARTS

D. DETENTION BASIN MIX

USE "RETENTION BASIN FLOOR SEED" FROM NEW ENGLAND SEED CO. AT A RATE OF 2LB./1000 S.F. MIX WITH ANNUAL RYEGRASS AT A RATE OF 1/2LB./1000 S.F.

E. MEADOW MIX

USE NEW ENGLAND SEED CO. "NEW ENGLAND HORSE PASTURE MIXTURE" AT A RATE OF 100 LB./ACRE. MIX WITH VERMONT WILDFLOWER FARM [(802) 425-3500] DROUGHT TOLERANT PERENNIAL MIX AT A RATE OF 51 LB./ACRE. MIX WITH 20% ADDITIONAL COMMON TALL FESCUE.

33 SEEDING OPERATIONS & MIXES
N.T.S.

LEGEND

- PROPERTY LINE
- WETLAND LINE
- 100' UPLAND REVIEW AREA
- PROPOSED DECIDUOUS TREE
- PROPOSED FLOWERING TREE
- PROPOSED EVERGREEN TREE
- PROPOSED SHRUB
- PLANT LABEL & COUNT (ZZ 1)
- EXISTING TREELINE
- DETENTION BASIN MIX
- LAWN SEED MIX
- SLOPE MIX
- MEADOW MIX

Side Buffer Planting

Sym.	Quan.	Botanical Name	Common Name	Size	Root
PG	8	PICEA GLAUCA	WHITE SPRUCE	5ft.-6ft. Ht.	B&B
MP	12	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	24in.-30in. Ht.	CONT.
PJM	24	RHODODENDRON 'PJM'	PJM RHODODENDRON	24in.-30in. Ht.	CONT.

Building Area Planting

Sym.	Quan.	Botanical Name	Common Name	Size	Root
AR	2	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3in.-3 1/2in. CAL	B&B
CC	3	CERCIS CANADENSIS	EASTERN REDBUD	2in-2 1/2in. CAL	B&B
GTH	3	GLEDITSIA TRIACANTHOS 'SHADEMASTER'	SHADEMASTER HONEYLOCUST	3in.-3 1/2in. CAL	B&B
JV	12	JUNIPERUS VIRGINIANA 'EMERALD SENTINEL'	EMERALD SENTINEL EASTERN RED-CEDAR	5ft.-6ft. Ht.	B&B
LT	2	LIRIODENDRON TULIPIFERA	TULIPTREE	3in.-3 1/2in. CAL	B&B
PCC	2	PYRUS CALLERYANA 'CHANTICLEER'	ORNAMENTAL PEAR	3in.-3 1/2in. CAL	B&B
PSK	2	PRUNUS SERRULATA 'KWANZAN'	KWANZAN CHERRY	3in.-3 1/2in. CAL	B&B
QWL	3	QUERCUS X WAREI 'LONG'	REGAL PRINCE OAK - FASTIGIATE FORM	3in.-3 1/2in. CAL	B&B

Habitat Planting

Sym.	Quan.	Botanical Name	Common Name	Size	Root
LS	2	LIQUIDAMBAR STYRACIFLUA	AMERICAN SWEETGUM	3in.-3 1/2in. CAL	B&B
LT	2	LIRIODENDRON TULIPIFERA	TULIPTREE	3in.-3 1/2in. CAL	B&B
NS	1	NYSSA SYLVATICA	BLACK TUPELO	3in.-3 1/2in. CAL	B&B
QA	1	QUERCUS ALBA	WHITE OAK	2in.-2 1/2in. CAL	B&B
AMC	6	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY - MULTISTEM SHRUB FORM	4ft.-5ft.	CONT.
CLR	31	CLETHRA ALNIFOLIA 'RUBY SPICE'	RUBY SPICE SUMMERSWEET	24in.-30in. Ht.	CONT.
VB	12	VIBURNUM X BURKWOODII	BURKWOOD VIBURNUM	24in.-30in. Ht.	CONT.
VD	24	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	24in.-30in. Ht.	CONT.
AP	40	ADIANTUM PEDATUM	MAIDENHAIR FERN		CONT.
DP	60	DENNSTAEDTIA PUNCTILOBULA	HAY SCENTED FERN		CONT.
OC	20	OSMUNDA CINNAMOMEA	CINNAMON FERN		CONT.

RUSSO
SURVEYORS • ENGINEERS
SERVING CT & MA
J.R. Russo & Associates, LLC
19 Graham Rd East Windsor, CT 06088 • CT (860) 623-0569 • MA 4378518
www.jrrusso.com • info@jrrusso.com

LADA, P.C.
Land Planners
10 Wood Street
Simsbury, CT 06070 (860) 651-4971
Brewster, NY 10509 (845) 278-7424
Email: lada@ladapc.net

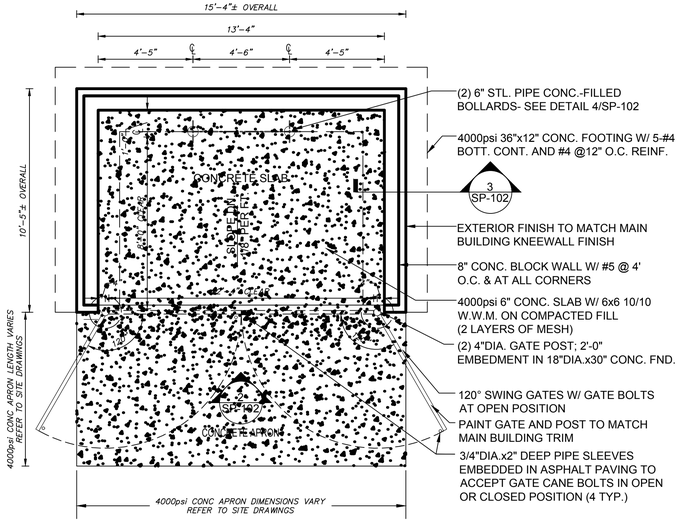
REVISIONS

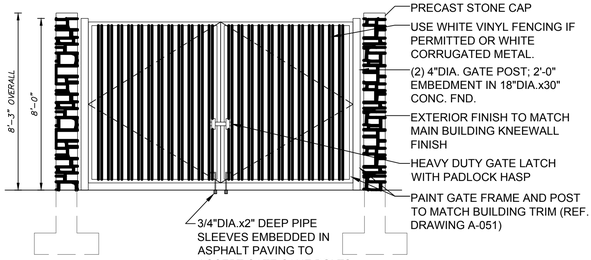
BY: DFM	CHK: TPH

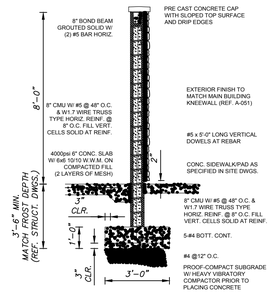
The Learning Experience
Property Of
501 Talcottville Road, LLC
501 Talcottville Road
Vernon, Connecticut 06010
Parcel ID: 09-0007-0001D (Zone: C)

Planting Plan

DATE 01-06-2022
SCALE 1"=20'
JOB NUMBER 2021-083
SHEET 7 of 12







2 TYP. PVC FENCE AND GATE WITH PANIC HARDWARE
SCALE 1/2" = 1'-0"

3 4'-0" PVC FENCE AND GATE DETAIL
SCALE 1/2" = 1'-0"

TABLES OF PLANTING MATERIALS FOR WETLAND CREATION & ENHANCEMENT AREAS
501 TALCOTVILLE ROAD, VERNON, CONNECTICUT

Table 1. Shrubs

Scientific Name	Zone	Common Name	Size	Shade tolerant?	Wetland Creation Area	Wetland Enhancement Area	Totals
SHRUBS							
Photinia pyrifolia	C	Chokeberry	3'-4'	N	0	4	4
Clethra alnifolia	B,C	Sweet pepperbush	3'-4'	Y	4	0	4
Ilex verticillata	A,B,C	Winterberry	3'-4'	Y	3	2	5
Sambucus nigra	B	Common elderberry	3'-4'	N	0	2	2
Swida amomum	B,C	Silky dogwood	3'-4'	N	0	3	3
Swida racemosum	B,C	Gray dogwood	3'-4'	Y	5	2	7
Vaccinium corymbosum	B,C	Highbush blueberry	3'-4'	Y	2	0	2
Viburnum cassinoides	B	Wild raisin	3'-4'	Y	2	0	2
Viburnum opulus	B,C	Cranberry viburnum	3'-4'	Y	0	3	3
Totals:					***16***	***16***	32

Table 2. Herbs

Hydrologic Zones: Zone A: Saturated/Shallow inundation; **Zone B**:temporary saturation/flooding; **Zone C:** moist, poorly to moderately well drained

Scientific Name	Zone	Common Name	Form	NWI*	Spacing	Wetland Creation Area	Wetland Enhancement Area	Totals
Asclepias incarnata	B, C	Swamp milkweed	2"plug	OBL	2'OC	10	40	**50**
Carex crinita	A, B	Fringed sedge	2"plug	OBL	2'OC	25	25	**50**
Osmundastrum cinnamomeum	B, C	Cinnamon fern	#1 pot	FACW	2'OC	5	5	**10**
Eutrochium maculatum	B	Spotted Joe Pye weed	2" plug	FACW	1.5'OC	10	40	**50**
Carex lupulina	A, B	Hop sedge	2" plug	FACW+	2'OC	10	40	**50**
Total:						***60***	***150***	210

***Seed Mix to be applied at Wetland Creation Area** : New England Wetmix at 1lb/2,500 sq. ft. (Supplier: New England Wetland Plants, Inc.)*

RUSSO
SURVEYORS · ENGINEERS
SERVING CT & MA
J.R. Russo & Associates, LLC
1 Shoham Rd East · Windsor, CT 06088 · 860.623.0969 · MA 413.786.1958
www.jrrusso.com · info@jrrusso.com

Applicant
Vernon Development LLC
56 East Main Street
Avon, Connecticut 06001

REVISIONS

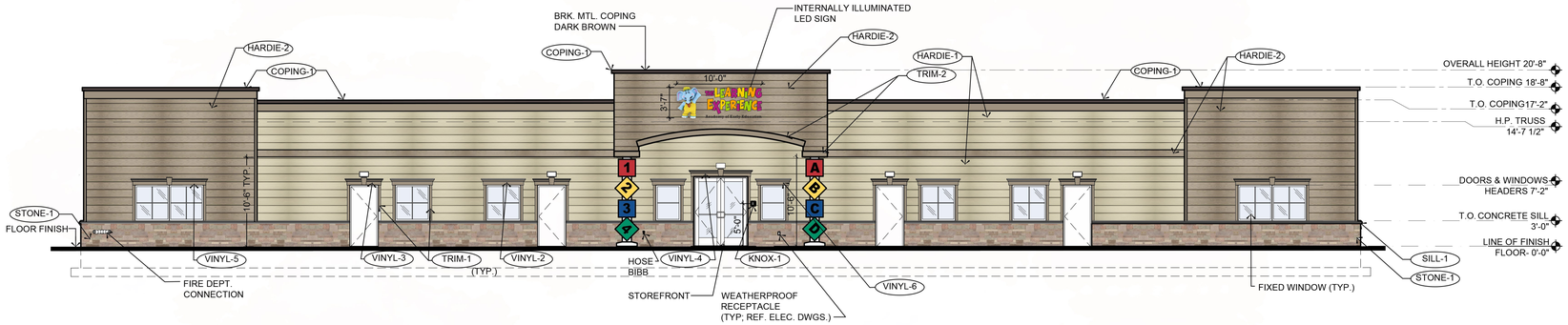
BY: LF/TAC	CHK: JEU

The Learning Experience
Property Of
501 Talcottville Road, LLC
501 Talcottville Road
Vernon, Connecticut 06010
Parcel ID: 09-0007-0001D (Zone: C)

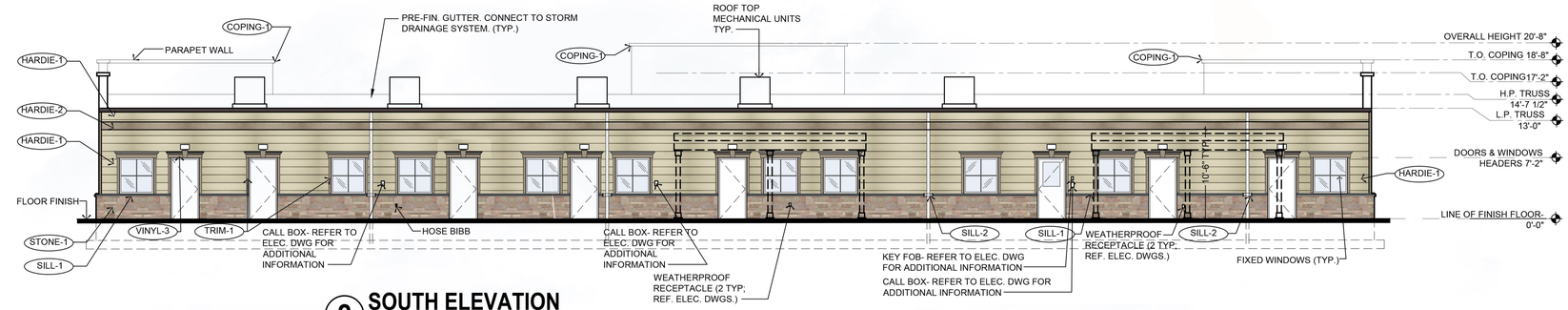
Details

DATE
2-14-22
SCALE
1"=20'
JOB NUMBER
2021-083
SHEET
12 of 12

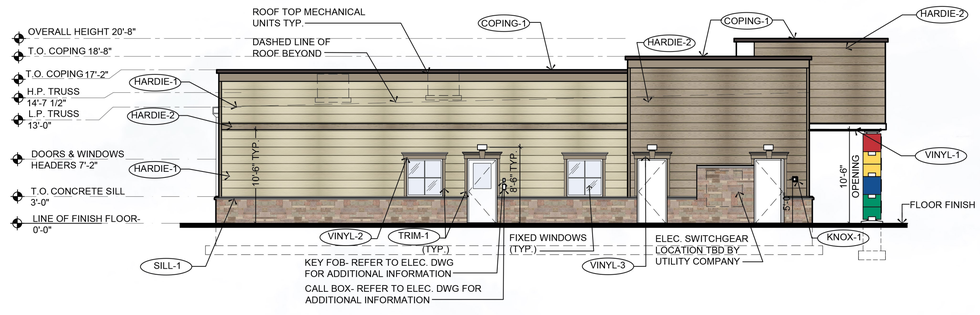
S:\Acad\2021 Civil 3D\2021-083 Vernon Development - 501 Talcottville Rd\Russo Drawings\2021-083.dwg



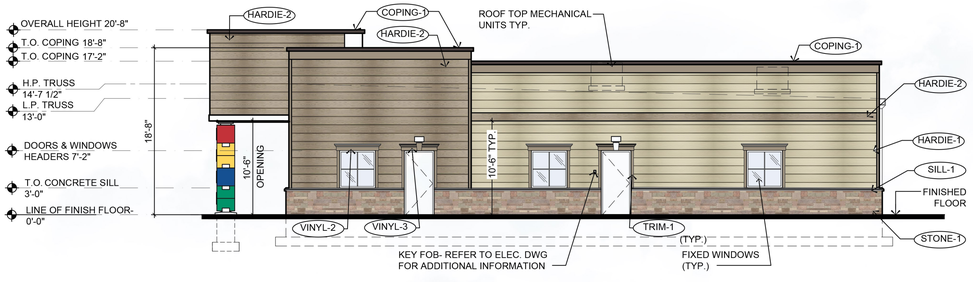
1 NORTH ELEVATION
SCALE: 1/8"=1'-0"



2 SOUTH ELEVATION
SCALE: 1/8"=1'-0"



3 EAST ELEVATION
SCALE: 1/8"=1'-0"



4 WEST ELEVATION
SCALE: 1/8"=1'-0"

1. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTOR'S BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS TECHNIQUES, SEQUENCE, AND JOB SITE SAFETY.

2. GC MUST PROVIDE & INSTALL ALL PRODUCTS PER PLANS. ONLY SUBSTITUTED PRODUCTS NEED TO BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. UNAPPROVED SUBSTITUTIONS WILL BE REPLACED AT THE EXPENSE OF THE GC.

3. VERBAL REPRESENTATION HAS NO VALUE AND ALL REQUESTS TO CHANGE ANY PRODUCTS OR SPECIFICATIONS PER PLANS, MUST BE SUBMITTED IN WRITING TO THE ARCHITECT & TLE FOR APPROVAL.

EXTERIOR MATERIAL SCHEDULE

LABEL	MANUFACTURER	SIZE / TYPE	FINISH / COLOR
STOREFRONT	KAWNEER	TRIFAB 451T / 350 PER DOOR SCHEDULE	BONE WHITE
DOOR	-	PER DOOR SCHEDULE	FACTORY PRIMED
FIXED WINDOW	PLY GEM	SILVER LINE V1 SERIES PER WINDOW SCHEDULE	WHITE
STONE-1	BUECHEL STONE CORP.	5" FULL DEPTH STONE	CHILTON TAILORED BLEND
SILL-1	MODERN PRECAST	3 3/4"Hx6"W W/ 2" FLAT W/ 1/4" DRIP EDGE	REGULAR (LIGHT GREY)
SILL-2	MODERN PRECAST	CUSTOM SILL 3 3/4"Hx4"W W/ 2" FLAT REF. DTL. 6/A-032	REGULAR (LIGHT GREY)
HARDIE-1	JAMES HARDIE	WIDTH: 8.25"	COLOR: NAVAJO BEIGE
HARDIE-2	JAMES HARDIE	WIDTH: 8.25"	COLOR: KHAKI BROWN
TRIM-1	JAMES HARDIE	5/4 M3 SMOOTH TRIM BOARD WIDTH: 3.5"	COLOR: KHAKI BROWN
TRIM-2	JAMES HARDIE	5/4 M3 SMOOTH TRIM BOARD WIDTH: 11.25"	COLOR: KHAKI BROWN
VINYL-1	ROYAL BUILDING PRODUCTS	COLORSCAPES TRIPLE 4 PERFORATED SOFFIT NOM. THICKNESS 0.042"	WHITE (REF. NOTE 2 BELOW)
VINYL-2	FYPON	WINDOW CROSSHEAD WIDTH 56", HEIGHT 9"	PAINT TO MATCH HARDIE-2 PRODUCT: WCH56X9
VINYL-3	FYPON	DOOR CROSSHEAD WIDTH 48", HEIGHT 9"	PAINT TO MATCH HARDIE-2 PRODUCT: WCH48X9
VINYL-4	FYPON	DOOR CROSSHEAD WIDTH 84", HEIGHT 9"	PAINT TO MATCH HARDIE-2 PRODUCT: WCH84X9
VINYL-5	FYPON	WINDOW CROSSHEAD WIDTH 103", HEIGHT 9"	PAINT TO MATCH HARDIE-2 PRODUCT: WCH103X9
VINYL-6	FYPON	WINDOW CROSSHEAD WIDTH 44", HEIGHT 9"	PAINT TO MATCH HARDIE-2 PRODUCT: WCH44X9
COPING-1	FABRAL (OR EQUAL)	BREAK METAL	DARK BRONZE
KNOX-1	KNOX BOX	3200 SERIES W/ RECESSED MOUNT FLANGE, HINGE DOOR, & TAMPER SWITCH	DARK BRONZE (REF. NOTE 2 BELOW)

FINISH SCHEDULE NOTES:
1. G.C. SHALL VERIFY KNOX BOX MODEL(S) AND LOCATION(S) WITH AUTHORITY HAVING JURISDICTION PRIOR TO ORDERING AND INSTALLATION.
2. G.C. SHALL ENSURE ALL EXTERIOR FINISHES ARE INSTALLED AND FINISHED IN COMPLIANCE WITH MANUFACTURER'S WARRANTY REQUIREMENTS.

Jarmel Kizel
ARCHITECTS AND ENGINEERS INC.
42 OKNER PARKWAY
LIVINGSTON, NEW JERSEY 07039
TEL: 973-994-9669
FAX: 973-994-4069
www.jarmelkizel.com
Architecture
Engineering
Interior Design
Implementation Services

THE LEARNING EXPERIENCE
ACADEMY OF EARLY EDUCATION
501 TALCOTTVILLE ROAD
VERNON, CONNECTICUT

ISSUE

NO.	DATE	DESCRIPTION	INT.

REVISION

NO.	DATE	DESCRIPTION	INT.

PROFESSIONAL CERTIFICATION
MATTHEW B. JARMEL, AIA, MBA
CT. LICENSE NUMBER: ARI-0011415

Project Number:	Scale:
TLECT21-041	1/8"=1'-0"
Drawn By: AM	Approved By: MBJ

Drawing Name:
PROPOSED ELEVATIONS

Drawing Number:
SA-1.2

1. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTORS BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS TECHNIQUES, SEQUENCE, AND JOB SITE SAFETY.

2. GC MUST PROVIDE & INSTALL ALL PRODUCTS PER PLANS. ONLY SUBSTITUTED PRODUCTS NEED TO BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. UNAPPROVED SUBSTITUTIONS WILL BE REPLACED AT THE EXPENSE OF THE GC.

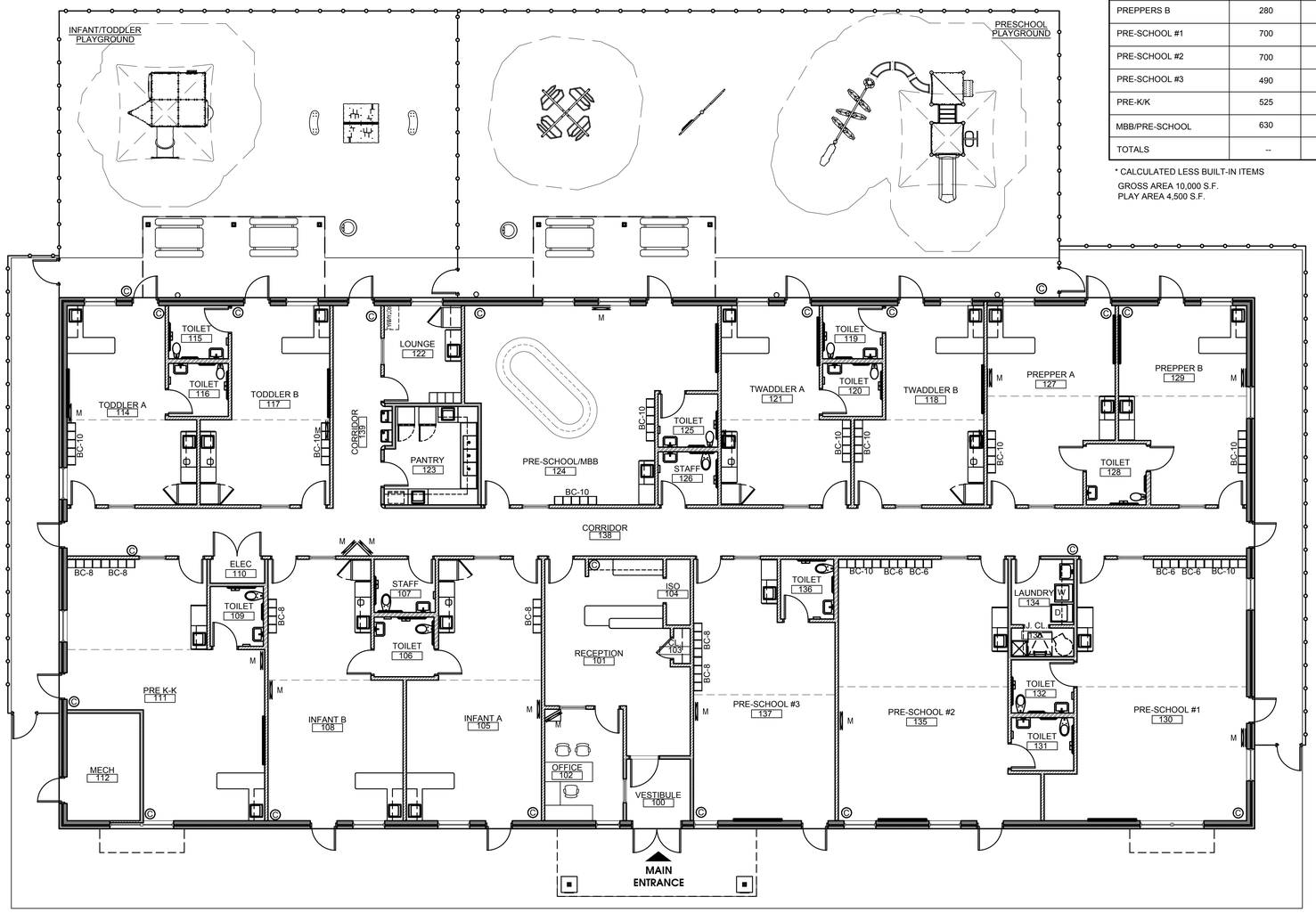
3. VERBAL REPRESENTATION HAS NO VALUE AND ALL REQUESTS TO CHANGE ANY PRODUCTS OR SPECIFICATIONS PER PLANS, MUST BE SUBMITTED IN WRITING TO THE ARCHITECT & TLE FOR APPROVAL.

LICENSING CALCULATIONS
Learning Experience, Vernon, CONNECTICUT

ROOM	STATE REQUIRED S.F.(40 S.F. PER CHILD)	NET* S.F.	ACTUAL S.F.	RATIO CHILD PER S.F.	# OF CHILDREN	# OF TEACHERS	TEACHER RATIO	AGE GROUP
INFANTS A	440	440	494	1/55	8	2	1/4	6 WK-12 MO.
INFANTS B	440	440	494	1/55	8	2	1/4	12 MO.-18 MO.
TODDLERS A	280	287	350	1/35	8	2	1/4	18-24 MO.
TODDLERS B	280	287	350	1/35	8	2	1/4	18-24 MO.
TWADDLERS A	280	287	350	1/35	8	2	1/4	24-36 MO.
TWADDLERS B	280	287	350	1/35	8	2	1/4	24-36 MO.
PREPPERS A	280	312	369	1/35	8	2	1/4	24-36 MO.
PREPPERS B	280	312	369	1/35	8	2	1/4	24-36 MO.
PRE-SCHOOL #1	700	701	722	1/35	20	2	1/10	3-5 YRS.
PRE-SCHOOL #2	700	701	722	1/35	20	2	1/10	3-5 YRS.
PRE-SCHOOL #3	490	504	525	1/35	14	2	1/10	3-5 YRS.
PRE-K/K	525	541	598	1/35	15	2	1/10	3-5 YRS.
MBB/PRE-SCHOOL	630	631	652	1/35	18	2	1/10	VARIES
TOTALS	--	--	--	--	151	26	--	--
					+2 ADMIN. STAFF			
					TOTAL	179		

* CALCULATED LESS BUILT-IN ITEMS

GROSS AREA 10,000 S.F.
PLAY AREA 4,500 S.F.



1 PROPOSED FLOOR PLAN
SCALE: 1/8"=1'-0"

Jarmel Kizel
ARCHITECTS AND ENGINEERS INC.
42 OKNER PARKWAY
LIVINGSTON, NEW JERSEY 07039
TEL: 973-994-9669
FAX: 973-994-4069
www.jarmelkizel.com
Architecture
Engineering
Interior Design
Implementation Services

THE LEARNING EXPERIENCE
ACADEMY OF EARLY EDUCATION
501 TALCOTTVILLE ROAD
VERNON, CONNECTICUT

ISSUE

NO.	DATE	DESCRIPTION	INT.

REVISION

NO.	DATE	DESCRIPTION	INT.

PROFESSIONAL CERTIFICATION

MATTHEW B. JARMEL, AIA, MBA
CT. LICENSE NUMBER: ARI-0011415

Project Number:	Scale:
TLECT21-041	1/8"=1'-0"
Drawn By: CS	Approved By: MBJ

Drawing Name:

PROPOSED FLOOR PLAN

Drawing Number:

SA-1.1

Traffic Impact Study

"The Learning Experience" Day Care Center

Vernon, Connecticut

January 2022

Town of Vernon Planning and Zoning Commission
Land Use Applications

FUSS & O'NEILL

146 Hartford Road
Manchester, CT 06040

Prepared for:
Mr. Eric Spungin
Vernon Development LLC
56 East Main Street
Avon, CT 06001

2021.1031.A10

FUSS & O'NEILL

Table of Contents

Traffic Impact Study
"The Learning Experience" Day Care Center
Vernon, Connecticut

1 Executive Summary 1

2 Development Characteristics 2

3 Introduction 1

4 Existing Condition 1
- 4.1 Site of Development 1
- 4.2 Adjacent Roadway Network 1
- 4.3 Study Area Intersections 2
- 4.4 Traffic Volumes, Speeds and Counts 3

5 Background Traffic Conditions 3
- 5.1 Volume Adjustments 3
- 5.2 Background Developments 3
- 5.3 Planned Roadway Improvement Projects 3

6 Proposed Conditions 4
- 6.1 Development 4
- 6.2 Site Access and Circulation 4
- 6.3 Trip Generation 4
- 6.4 Trip Distribution 5
- 6.5 Combined Volumes 5

7 Analyses 5
- 7.1 Crash Data Review 5
- 7.2 Sight Distance Analysis 6
- 7.3 Intersection Capacity Analysis 6
- 7.4 Queue Analysis 8

8 Conclusions 9

Table of Contents
(continued)

Traffic Impact Study
"The Learning Experience" Day Care Center
Vernon, Connecticut

Appendices **End of Report**

Appendix A - Tables

1. Peak Hour Site Generated Traffic Volumes
2. Intersection Crash Data Summary
3. Unsignalized Intersection Level of Service Summary
4. Signalized Intersection Level of Service Summary
5. Weekday Morning Peak Hour Queue Length Summary
6. Afternoon Peak Hour Queue Length Summary

Appendix B - Figures

1. Site Location Map
2. 2021 Existing Conditions
3. 2023 Background Conditions
4. Site Generated Traffic Arrival/Departure Distribution
5. Site Generated Traffic Volumes
6. 2023 Combined Conditions

Appendix C

ITE Trip Generation Rates

Appendix D

Intersection Capacity Analysis Worksheets – Weekday Morning Peak Hour

Appendix E

Intersection Capacity Analysis Worksheets – Weekday Afternoon Peak Hour

Appendix F

Turning Movement Count (TMC) Data

Appendix G

Crash Data Records

1 Executive Summary

Vernon Development, LLC proposes to construct a 10,000 square foot day care center at 501 Talcottville Road (Route 83) in Vernon, Connecticut. The development site is located between Route 83 (Talcottville Road) and Worcester Road, just south of Walgreens, with access provided on Dart Hill Road directly across from the western Walgreens Drive.

Expected trip generation for the weekday morning and afternoon peak hours was calculated using the ITE land use code 565 "Day Care Center." For a day care center approximately 10,000 square feet in size, a total of 110 vehicle trips (58 entering, 52 exiting) is anticipated during the morning peak hour and during the afternoon peak hour, a total of 111 vehicle trips (52 entering, 59 exiting) is expected.

The capacity analysis revealed that neither of the study intersection approaches will experience any noticeable increase in delay as a result of the proposed development traffic and neither of the intersections, with the exception of the Walgreens site driveway approach, sustain a decrease in level of service or a significant increase in the volume to capacity ratio. Following optimization of the signalized intersection of Route 83 at Dart Hill Road and Regan Road to reduce overall intersection delays, the queues for the eastbound through/right turn lane will increase by up to five vehicle lengths, the westbound left turn lane queue will increase by up to three vehicle lengths, the northbound left turn lane queue will increase by up to two vehicle lengths, and the northbound and southbound through lanes will decrease by up to seven vehicle lengths. Ample queue storage exists to accommodate these minor queue changes.

Review of the most recent three years of available crash data provided by the University of Connecticut Crash Data Repository indicated that the type and frequency of crashes reported at the study area intersections was not abnormal for the traffic volumes and geometric characteristics of the study area intersections. The proposed CTDOT full traffic signal equipment replacement project at the intersection of Route 83 at Dart Hill Road and Regan Road will improve the safety and efficiency of traffic operations at this intersection in the future.

Upon grading and the removal of vegetation along the site frontage, the sight distance triangle from the proposed site driveway location, in both directions, is not obstructed and does not encroach upon abutting landowner property. The sight distances exceed CTDOT criteria to allow for safe egress of passenger cars from the site.

Based on the results of the foregoing analysis it is the professional opinion of Fuss & O'Neill, Inc. that the proposed development will not have a significant impact to the traffic operations in the vicinity of the site.

2 Development Characteristics

As an aid to reviewers, this Summary Sheet has been included to outline the various study parameters utilized in this report. Although a full explanation of the study methodologies is included in the text of the report, this summary can serve as a useful reference for reviewers.

Applicant:
Vernon Development, LLC

Site Location:
501 Talcottville Road (Route 83)

Site Acreage:
4.6

Development Size/Type:
10,000 SF proposed day care center

Parking:
57 total parking spaces

Applications:
Town of Vernon Planning and Zoning Commission

Build/Design Year:
2023

Background Traffic Growth Factor:
0.6%

Traffic Counts:
Fuss & O'Neill – December 2021 (Turning Movement Counts)

Peak Hours Analyzed:
Weekday Morning Peak Hour – 7:00 a.m. - 8:00 a.m.
Weekday Afternoon Peak Hour – 4:30 p.m. - 5:30 p.m.

Expected Trip Generation:
Weekday Morning Peak Hour – 110 Trips (58 entering, 52 exiting)
Weekday Afternoon Peak Hour – 111 Trips (52 entering, 59 exiting)

3 Introduction

Vernon Development, LLC proposes to construct a 10,000 square foot day care center at 501 Talcottville Road (Route 83) in Vernon, Connecticut. The development site is located between Route 83 (Talcottville Road) and Worcester Road, just south of Walgreens, with access provided on Dart Hill Road directly across from the western Walgreens Drive. The development site is shown on the site location map, *Figure No. 1* of *Appendix B*. A total of 57 parking spaces will be provided. The development is expected to open in 2023.

Fuss & O'Neill has been retained to study the impact of the proposed development on traffic conditions throughout the adjacent roadway network. This report has been prepared to document the findings of the study and is being submitted to the Town of Vernon Planning and Zoning Commission in support of the project's land use applications.

4 Existing Condition

4.1 Site of Development

The existing site is identified as 501 Talcottville Road by the Town of Vernon and is located in the C (Commercial) zone. 501 Talcottville Road consists of approximately 4.6 acres. The existing site is currently vacant. The site is bounded by Walgreens to the north, commercial land use to the south, Route 83 (Talcottville Road) and a restaurant to the east, and residential land use to the west.

4.2 Adjacent Roadway Network

The adjacent roadway network consists of the following roadways:

- Dart Hill Road
- Route 83 (Talcottville Road)
- Regan Road

Dart Hill Road runs primarily east/west under town jurisdiction and extends approximately 2.2 miles from its intersection with Ellington Road and Miller Road in Vernon to its terminus at the intersection with Route 83 and Regan Road just east of the site. The roadway provides access to primarily residential land uses, commercial uses, and the Hockanum River Park Trail. In the vicinity of the site, Dart Hill Road is classified by the CTDOT as an urban collector that provides one 11-foot travel lane and a 1 to 4-foot shoulder in each direction. The roadway widens in the eastbound direction to provide two lanes along the site frontage on its approach to the traffic signal at Route 83. The posted speed limit is 30 miles per hour. A sidewalk is located on the northern side of Dart Hill Road.

Route 83 runs primarily north/south under state jurisdiction in the Town of Vernon and is designated as Talcottville Road for approximately 3.1 miles between its intersection with Route 74 (Windsorville Avenue) to the north and its intersection with Route 30 (Hartford Turnpike) to the south. The roadway provides access to the Town of Manchester to the southwest and the Town of Ellington to the north. In

the vicinity of the site, Route 83 (Talcottville Road) is classified by CTDOT as an urban principal arterial that provides four 10–12-foot lanes of travel, two in each direction, and 2–3-foot shoulders. The roadway widens for left turn lanes at the intersection with Dart Hill Road and Regan Road. The posted speed limit is 40 miles per hour. Sidewalks are available on both sides of Route 83 (Talcottville Road) north of Dart Hill Road and Regan Road and primarily on the east side of the road only south of Dart Hill Road and Regan Road.

Regan Road runs primarily east/west under town jurisdiction and extends approximately 1 mile from its intersection with Route 83 (Talcottville Road) and Dart Hill Road and continues east to its terminus at West Street. The roadway provides access to primarily residential and commercial land uses. In the vicinity of the site, Regan Road is classified by CTDOT as an urban collector that provides two 10.5-foot travel lanes, one in each direction, along with two one-foot shoulders. The posted speed limit is 25 miles per hour. Sidewalks are provided on both sides of the road between Talcottville Road and Center Road and then only on the south side of Regan Road to the east of Center Road.

4.3 Study Area Intersections

The following study area intersections were reviewed:

- Dart Hill Road at the Western Walgreens Driveway (opposite the future site driveway location)
- Route 83 (Talcottville Road) at Dart Hill Road and Regan Road

Dart Hill Road at the Western Walgreens Driveway is a stop-controlled t-intersection. The intersection provides eastbound and westbound approaches on Dart Hill Road and a southbound approach from the Western Walgreens Driveway. In the vicinity of the site, Dart Hill Road is free flowing and carries three lanes of travel, one on the westbound approach and is in the process of widening from one to two lanes on the eastbound approach. The full access Walgreens driveway provides a combined left/right turn lane on the stop controlled southbound approach. Sidewalks are provided on the north side of Dart Hill Road; however, crosswalks and bicycle facilities are not provided at this intersection.

Route 83 (Talcottville Road) at Dart Hill Road and Regan Road is a four-way signalized intersection. The intersection is part of a coordinated signal system along Route 83. The intersection provides northbound and southbound approaches on Route 83, an eastbound approach on Dart Hill Road, and a westbound approach on Regan Road. Route 83 provides a dedicated left turn lane, a through lane, and a combined through/right turn lane on both the northbound and southbound approaches. The eastbound approach on Dart Hill Road provides a dedicated left turn lane and a combined through/right turn lane. The westbound approach on Regan Road provides a dedicated left turn lane and a combined through/right turn lane. Sidewalks and crosswalks are provided on every corner of the intersection and crossing is permitted during an exclusive pedestrian signal phase. Bicycle facilities are not provided at this intersection.

4.4 Traffic Volumes, Speeds and Counts

The greatest potential for traffic impact on the roadway network by the proposed development will occur during the morning and afternoon peak hours, the periods when commuter related trips are at their highest levels.

In order to determine the impact on adjacent street traffic, Fuss & O'Neill conducted Turning Movement Counts (TMCs) at each of the two study intersections during the weekday morning and weekday afternoon peak hours on December 7, 2021. The traffic count data collected indicates that the weekday morning peak hour of traffic is 7:00 am to 8:00 a.m. and the weekday afternoon peak hour is 4:30 p.m. to 5:30 p.m. These peak hours were subsequently analyzed for impacts. The existing traffic volumes counted for these peak hours are shown in *Figure No. 2* of *Appendix B*. Copies of the TMC traffic data have been included in Appendix F of this report.

5 Background Traffic Conditions

5.1 Volume Adjustments

Upon consultation with the Connecticut Department of Transportation (CTDOT) the 2021 existing traffic volumes were projected to the 2023 design year using a 0.6 percent annual peak hour growth factor to account for normal traffic growth in the study area. These Background traffic volumes are illustrated in *Figure No. 3* of *Appendix B*.

5.2 Background Developments

Fuss & O'Neill contacted the Office of the State Traffic Administration (OSTA) and the Town of Vernon Planning and Development office to identify any other pending or approved developments having site related traffic in the study area. Neither OSTA nor the Town of Vernon identified any other development plans that would affect traffic volume or behavior in the vicinity of the study area.

5.3 Planned Roadway Improvement Projects

Fuss & O'Neill contacted the Connecticut Department of Transportation and the Town of Vernon Engineering office and Public Works office to identify any roadway improvements scheduled within the study area.

The Connecticut Department of Transportation announced that the intersection of Route 83 (Talcottville Road) at Dart Hill Road and Regan Road will receive a full traffic signal equipment replacement to meet current standards under Project No. 0171-0471. The project is currently under the design phase and construction is expected to begin in the Summer of 2025. Upon completion, the project will improve the safety and efficiency of vehicular and pedestrian traffic at this intersection.

The Town of Vernon announced the Safe Routes to School initiative under State Project No. 0146-0197. Under this initiative, the existing asphalt sidewalks along both sides of Route 83 from Dart Hill Road and Regan Road to Loveland Hill Road and the east side of Loveland Hill Road to the southern entrance to Rockville High School have been replaced with new concrete sidewalks. According to the Department of Transportation, the Safe Routes to School initiative is aimed at encouraging students to increase their physical activity while also improving the safety of their commute to school.

The Bridge on Dart Hill Road and Thrall Road is scheduled for replacement. The proposed improvement includes replacing the existing bridge with a precast deck unit, upgrading the bridge rail and approach guiderail, realignment of roadway, utility relocations, and installation of storm drainage. The project is currently under the bidding process and all bids are currently under review as of December 14, 2021.

6 Proposed Conditions

6.1 Development

Vernon Development, LLC proposes to construct a 10,000 square foot day care center at 501 Talcottville Road (Route 83) in Vernon, Connecticut as shown on the location map, *Figure No. 1* of *Appendix B*. A total of 57 supporting parking spaces will be provided for the day care center. The development is expected to open in 2023.

6.2 Site Access and Circulation

Access to the proposed site will be provided via one new full access driveway. The driveway will be constructed on Dart Hill Road, directly across from the existing Walgreens full access drive and approximately 500 feet west of Route 83. The driveway will provide one unrestricted lane of travel in each direction and is proposed to be stop-controlled.

6.3 Trip Generation

The expected site generated traffic for the morning and afternoon peak hours was calculated using existing empirical data from the Institute of Transportation Engineers (ITE) publication *Trip Generation*, 11th edition, 2021. This publication is an industry-accepted resource for determining trip generation.

Trip generation for the weekday morning and afternoon peak hours were calculated using the ITE land use code 565 "Day Care Center." For a day care center with approximately 10,000 square feet of space, a total of 110 vehicle trips (58 entering, 52 exiting) is anticipated during the morning peak hour and during the afternoon peak hour, a total of 111 vehicle trips (52 entering, 59 exiting) is expected. A summary of the peak hour trip generation information for the proposed development is provided in *Table 1* of *Appendix A*.

6.4 Trip Distribution

The distribution of traffic entering and exiting the proposed site was applied to the road network based on the existing regional traffic distributions and the layout of the adjacent roadway network. During the peak hours, the following arrival distributions of traffic are anticipated:

- 15 percent from Dart Hill Road west of the site
- 40 percent from Route 83 (Talcottville Road) north of the site
- 30 percent from Route 83 (Talcottville Road) south of the site
- 15 percent from Regan Road east of the site

A regional arrival/departure distribution for the new site generated traffic traveling to and from the project site is shown in *Figure No. 4* of *Appendix B*.

6.5 Combined Volumes

The site generated traffic was distributed to the roadway system based on the arrival/departure distributions with the results shown in *Figure No. 5* of *Appendix B*. These volumes were then added to the background volumes in *Figure No. 3* of *Appendix B* to yield the year 2023 peak hour Combined traffic volumes shown in *Figure No. 6* of *Appendix B*.

7 Analyses

7.1 Crash Data Review

Crash data was gathered from CTDOT and the University of Connecticut Crash Repository for the following intersections:

- Dart Hill Road at the Western Walgreens Drive
- Route 83 (Talcottville Road) at Dart Hill Road and Regan Road

The records were gathered for the most recent three years of available data, 2018 through 2020. A summary of the crash data per intersection is provided in *Table 2* of *Appendix A*. Copies of the crash data records have been provided in *Appendix* G.

The intersection of Dart Hill Road and the Western Walgreens Drive experienced two crashes during the study period, averaging 0.67 crashes per year. The intersection experienced one front to rear crash and one front to front crash. Of the two crashes, one resulted in property damage only and the other resulted in non-fatal injuries. There were no crashes involving a vehicle turning into or out of the Walgreens Drive.

The intersection of Route 83 at Dart Hill Road and Regan Road experienced an average of 25 crashes per year. The majority of these crashes (38) were front to rear collisions. Additionally, the intersection experienced 24 angle crashes, seven same directions sideswipes, two non-applicable crashes, one front to

front crash, one unidentified crash, one rear to rear crash, and one rear to side crash. Of the total crashes reported, 14 resulted in non-fatal injuries while the remainder were property damage only collisions. The pattern of rear end crashes and angled crashes is not uncommon on arterial signalized intersections. CTDOT's pending complete replacement of the traffic signal at this intersection should improve the safety and efficiency of operations at this intersection.

The proposed development traffic is not expected to exacerbate existing crash patterns or negatively impact overall traffic safety within the study area.

7.2 Sight Distance Analysis

Intersection sight distances were calculated at the proposed site driveway location in accordance with criteria set forth in the 2003 CTDOT *Highway Design Manual*. Intersection sight distance is measured from a point 15 feet back from the edge of travel-way at a height of 3.5 feet, the standard height of a driver's eye.

Dart Hill Road has a posted speed limit of 30 miles per hour in both directions in the vicinity of the proposed site. A design speed of 35 miles per hour, 5 miles per hour above the posted speed limit, was utilized for analysis.

In an effort to be conservative, it was assumed that passenger cars turning left (west) out of the site driveway will cross two full lanes of traffic travelling eastbound. In accordance with criteria set forth in the 2003 CTDOT *Highway Design Manual*, 415 feet of intersection sight distance is required for a passenger car turning left (west) and 390 feet of intersection sight distance is required for a passenger car turning right (east) from the proposed site driveway.

At the unsignalized intersection of Dart Hill Road, the western Walgreens Drive, and the proposed site driveway, over 1,000 feet of intersection sight distance looking right (east) and approximately 750 feet of intersection sight distance is provided looking left (west). Sufficient sight distance exists to allow for safe egress of passenger cars attempting to turn right or left from the proposed site driveway onto Dart Hill Road.

Upon grading and the removal of vegetation as part of the site construction at the proposed driveway location, the sight distance triangle, in both directions, will not be obstructed and will not encroach upon abutting landowner property. The sight distances in both directions exceed CTDOT criteria for safe egress from the site.

7.3 Intersection Capacity Analysis

Capacity analyses for both signalized and unsignalized intersections were conducted using Synchro Professional Software, version 10.0.

In discussing intersection capacity analyses results, two terms are used to describe the operating condition of the road or intersection. These two terms are volume to capacity ratio (v/c) and level of service (LOS).

The v/c ratio is a ratio of the volume of traffic using an intersection to the total capacity of the intersection (the maximum number of vehicles that can utilize the intersection during an hour). The v/c ratio can be used to describe the percentage of capacity utilized by a single intersection movement, a combination of movements, an entire intersection approach, or the intersection as a whole.

LOS is a measure of the delay experienced by stopped vehicles at an intersection. LOS is rated on a scale from A to F, with A describing a condition of very low delay (less than 10 seconds per vehicle), and F describing a condition where delays will exceed 50 seconds per vehicle for unsignalized intersections and 80 seconds per vehicle for signalized intersections. Delay is described as a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Therefore, intersections with longer delay times are less acceptable to most drivers.

LOS is generally used to describe the operation (based on delay time) of both signalized and unsignalized intersections, while v/c ratio is applied to signalized intersections only. These definitions for v/c ratio and LOS, as well as the methodology for conducting signalized and unsignalized intersection capacity analyses, are taken from the "2000 Highway Capacity Manual" and the "6th Edition Highway Capacity Manual" published by the Transportation Research Board.

In discussing two way stop controlled unsignalized intersection capacity analyses, LOS is used to provide a description of the delay and operational characteristics of the turns from the minor street (stop sign controlled) to the major street, and turns from the major street to the minor street. Through vehicles are not delayed by the minor street and do not experience delay, therefore they are not rated with a level of service.

Using the above referenced methodologies, weekday morning and weekday afternoon peak hour capacity analyses were conducted at the following signalized intersection:

- Route 83 (Talcottville Road) at Dart Hill Road and Regan Road

Weekday morning and weekday afternoon peak hour capacity analyses were also conducted at the following unsignalized intersection:

- Dart Hill Road at the Western Walgreens Drive and future site driveway location

Tables No. 3 and *4* of *Appendix A* present summaries of the levels of service at the unsignalized and signalized intersections for both the background and combined condition traffic volumes. Copies of the analysis worksheets can be found in *Appendices D and E*, for the morning and afternoon peak hours, respectively.

The determination of the traffic impact from the proposed development is made through a comparison of the background condition LOS (without the proposed development) versus the combined condition LOS (with the proposed development).

The capacity analysis at Route 83 and Dart Hill Road/ Regan Road revealed that the signalized intersection operates acceptably at an overall LOS C in the background and combined conditions of the

weekday morning peak hour and operates with more significant delay at LOS F in the background and combined conditions of the weekday afternoon peak hour. The traffic from the proposed development will have little impact to the overall intersection delay and volume to capacity ratio at the intersection. Upon optimization of signal timings at this intersection, the LOS can be improved to LOS E operations during the afternoon peak hour.

The capacity analysis at Dart Hill Road and the Walgreens driveway and the proposed site driveway revealed that the stop-controlled Walgreens southbound approach will drop from LOS B to LOS C but continue to operate acceptably after the addition of the site driveway during the weekday morning and afternoon peak hours. The site driveway northbound approach will operate efficiently at LOS B in the morning and afternoon peak hour of traffic in the combined condition. Left turns from Dart Hill Road into both driveways will operate efficiently at LOS A during the Combined condition peak hours.

7.4 Queue Analysis

Background and Combined Condition 95th percentile (design) queue lengths were reviewed at each intersection in the study area. The 95th percentile (design) vehicle queue lengths represent the maximum queue lengths that can be expected at each of the critical approach lanes of the study area intersections. The queue lengths are provided in the Synchro capacity analysis worksheets, which are located in *Appendices D and E. Tables No. 5 and No. 6 of Appendix A* provide a summary of the queue lengths for the critical lanes at each intersection.

At the unsignalized intersection of Dart Hill Road and the Walgreens driveway, the 95th percentile queue length for each approach will have a negligible increase (one vehicle length or less) on all four of the intersection approach lanes during both peak hours.

At the signalized intersection of Route 83 at Dart Hill Road and Regan Road, the 95th percentile length for each approach will have negligible increases (one vehicle length or less) on all the intersection approach lanes with the exception of the eastbound through/right lane which will experience a queue increase of two vehicle lengths during both peak hours of the combined condition. Ample queue storage exists to accommodate these minor queue increases.

Upon optimization of signal timings at the intersection of Route 83 at Dart Hill Road and Regan Road to reduce overall intersection delays, the queues for the eastbound through/right turn lane will increase by up to five vehicle lengths, the westbound left turn lane queue will increase by up to three vehicle lengths, the northbound left turn lane queue will increase by up to two vehicle lengths, and the northbound and southbound through lanes will decrease by up to seven vehicle lengths during the afternoon peak hour. Sufficient storage exists on the eastbound through/right lane, the westbound through/right lane, and the northbound left turn lane to accommodate the queue increases in these lanes.

8 Conclusions

The purpose of preparing this Traffic Impact Study is to identify the impact of the proposed development's site generated traffic. The study efforts have indicated that the proposed day care center will generate a total of 110 new trips (58 entering, 52 exiting) during the weekday morning peak hour and a total of 111 new trips (52 entering, 59 exiting) during the afternoon peak hour.

The capacity analysis revealed that neither of the study intersection approaches will experience any noticeable increase in delay as a result of the proposed development traffic and with the exception of the Walgreens driveway approach, neither of the intersections sustain a decrease in level of service nor a significant increase in the volume to capacity ratio. Upon optimization of signal timings at the intersection of Route 83 (Talcottville Road) at Dart Hill Road and Regan Road, the LOS can be improved from LOS F to LOS E operation during the afternoon peak hour.

Upon review of the queue analysis, it has been determined that no queue length in the study area is expected to increase by more than one vehicle length, with the exception of the eastbound through/right turn lane at the intersection of Route 83 at Dart Hill Road and Regan Road, which will experience a queue length increase of up to two vehicle lengths during both peak hours of the combined condition. Additionally, the queue on the site driveway is expected to be approximately one vehicle length or less for both the morning and afternoon peak hour combined conditions.

The proposed optimization of signal timings at the intersection of Route 83 at Dart Hill Road and Regan Road will increase the overall efficiency of the intersection and reduce the northbound and southbound through vehicle queues on Route 83 by up to seven vehicle lengths during the afternoon peak hour. Following optimization, queue lengths for the eastbound through/right turn lane will increase by up to five vehicle lengths, the westbound left turn lane queue will increase by up to three vehicle lengths, and the northbound left turn lane queue will increase by up to two vehicle lengths. Sufficient storage exists on the eastbound through/right lane, the westbound left turn lane, and the northbound left turn lane to accommodate the minor queue increases in these lanes.

Review of the most recent three years of available crash data provided by the University of Connecticut Crash Data Repository indicated that the type and frequency of crashes reported at the study area intersections was not abnormal for the traffic volumes and geometric characteristics of the study area intersections. The proposed CTDOT full traffic signal equipment replacement project at the intersection of Route 83 at Dart Hill Road and Regan Road will improve the safety and efficiency of traffic operations at this intersection in the future.

Upon grading and the removal of vegetation along the site frontage, the sight distance triangle from the proposed site driveway location, in both directions, is not obstructed and does not encroach upon abutting landowner property. The sight distances exceed CTDOT criteria to allow for safe egress of passenger cars from the site.

Based on the results of the foregoing analysis, it is the professional opinion of Fuss & O'Neill, Inc. that the proposed development will not have a significant impact to traffic operations within the study area.

Appendix A

Tables

FUSS & O'NEILL

Table 1

Peak Hour Site Generated Traffic Volumes
"The Learning Experience" Daycare Center
Vernon, Connecticut

Land Use	Total Trips	Trips Entering	Trips Exiting
Weekday Morning Peak Hour			
10,000 SF of Day Care Center	110	58	52
Weekday Afternoon Peak Hour			
10,000 SF of Day Care Center	111	52	59

Note: Trip generation based on Rate per Land use Code 565 (Day Care Center), as published in *Trip Generation,* 11th Edition, 2021.

FUSS & O'NEILL

Table 2

Intersection Crash Data Summary
"The Learning Experience" Daycare Center
Vernon, Connecticut

Intersections/Road Segments	Crashes Per Year			
	2018	2019	2020	Average/Year
Dart Hill Road at Walgreens Driveway	1*	1	0	0.67
Route 83 at Dart Hill Road and Regan Road	25	29	21	25

*Values indicated are number of crashes within 200 feet of each intersection during time period shown.
Data provided by the Connecticut Department of Transportation via the UConn Crash Repository.

FUSS & O'NEILL

Table 3

Unsignalized Intersection Level of Service Summary
"The Learning Experience" Daycare Center
Vernon, Connecticut

Unsignalized Intersections (Critical Movements)	2023 Weekday Morning Peak Hour		2023 Weekday Afternoon Peak Hour	
	Background	Combined	Background	Combined
Dart Hill Road at Walgreens Drive and Site Driveway (TWSC)				
Dart Hill Road Eastbound Left Turns	LOS A	LOS A	LOS A	LOS A
Dart Hill Road Westbound Left Turns	N/A	LOS A	N/A	LOS A
Site Driveway Northbound Approach	N/A	LOS B	N/A	LOS B
Walgreens Southbound Approach	LOS B	LOS C	LOS B	LOS C

*Values indicated are critical movement Level of Service (LOS)

FUSS & O'NEILL

Table 4

Signalized Intersection Level of Service Summary
"The Learning Experience" Daycare Center
Vernon, Connecticut

Signalized Intersections	2023 Weekday Morning Peak Hour		2023 Weekday Afternoon Peak Hour		
	Background	Combined	Background	Combined	Improved**
Route 83 (Talcottville Road) at Dart Hill Road and Regan Road	0.64/LOS C*	0.66/LOS C	1.02/LOS F	1.08/LOS F	1.08/LOS E

*Values Indicated are v/c Ratios/Intersection LOS
** Indicates v/c ratio and LOS with proposed signal timing optimization

FUSS & O'NEILL

Table 5

Weekday Morning Peak Hour Queue Length Summary
"The Learning Experience" Daycare Center
Vernon, Connecticut

Intersection	Approach Lane	2023 Background Queue (ft)	2023 Combined Queue (ft)	Available Storage (ft)
Dart Hill Road at Walgreens Drive	EB Left/Through/Right Turn	0 Feet	0 Feet	190 Feet
	WB Left/Through/Right Turn	N/A	5 Feet	365 Feet
	NB Left/Through/Right Turn	N/A	10 Feet	30 Feet
	SB Left/Through/ Right Turn	5 Feet	5 Feet	230 Feet
Route 83 (Talcottville Road) at Dart Hill Road and Regan Road	EB Left Turn	30 Feet	45 Feet	320 Feet
	EB Through/Right Turn	215 Feet	270 Feet	635 Feet
	WB Left Turn	120 Feet	105 Feet	260 Feet
	WB Through/Right Turn	140 Feet	150 Feet	260 Feet
	NB Left Turn	40 Feet	55 Feet	185 Feet
	NB Through/Right Turn	145 Feet	145 Feet	>1,000 Feet
	SB Left Turn	100 Feet	100 Feet	195 Feet
	SB Through/Right Turn	260 Feet	280 Feet	985 Feet

NOTE: Values indicated represent 95th percentile (design) vehicle queue lengths. Values are rounded to the nearest 5 feet.

FUSS & O'NEILL

Table 6

Weekday Afternoon Peak Hour Queue Length Summary
"The Learning Experience" Daycare Center
Vernon, Connecticut

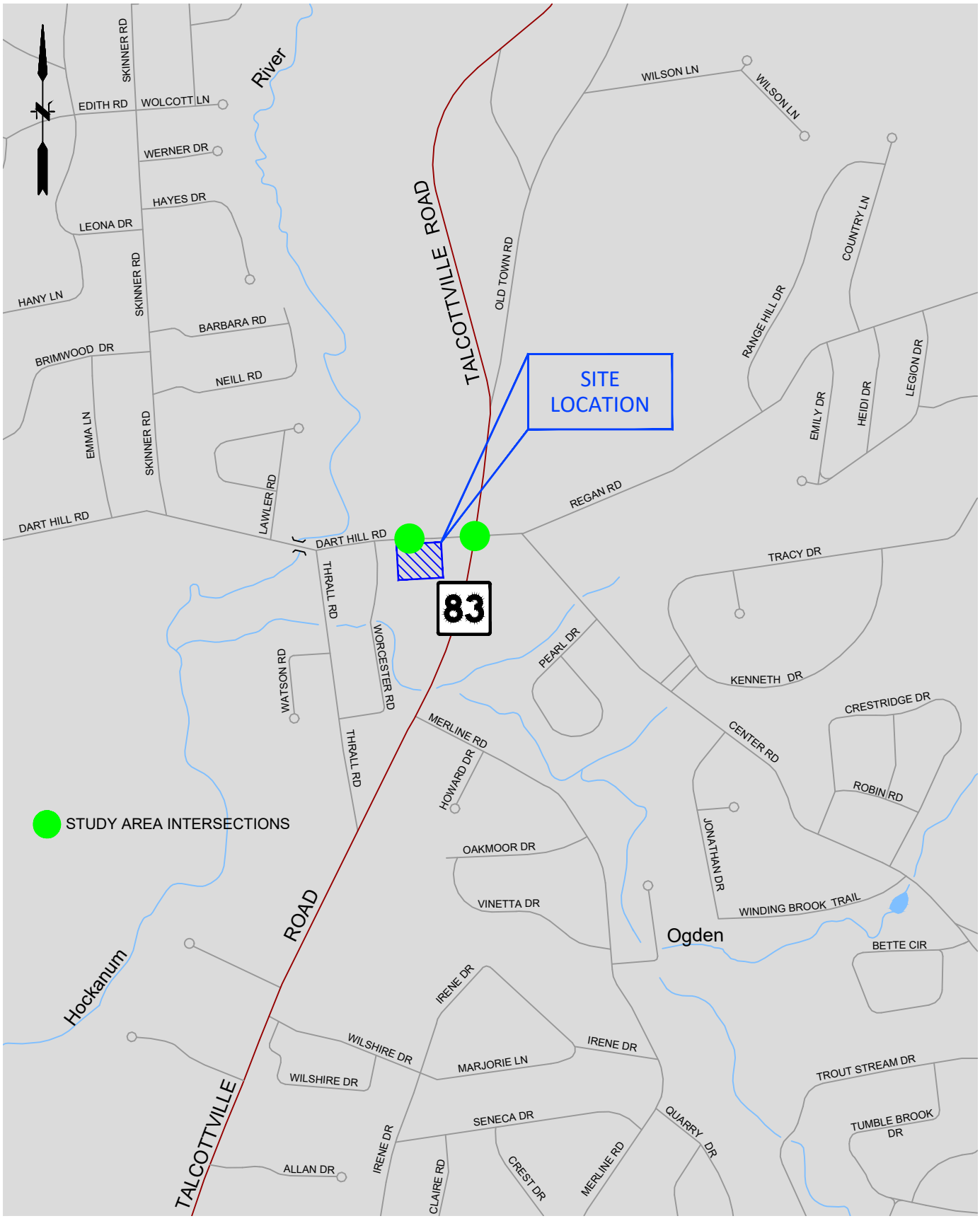
Intersection	Approach Lane	2023 Background Queue (ft)	2023 Combined Queue (ft)	2023 Improved** Queue (ft)	Available Storage (ft)
Dart Hill Road at Walgreens Drive	EB Left/Through/Right Turn	0 Feet	0 Feet	N/A	190 Feet
	WB Left/Through/Right Turn	N/A	5 Feet	N/A	365 Feet
	NB Left/Through/Right Turn	N/A	10 Feet	N/A	30 Feet
	SB Left/Through/ Right Turn	15 Feet	25 Feet	N/A	230 Feet
Route 83 (Talcottville Road) at Dart Hill Road and Regan Road	EB Left Turn	5 Feet	25 Feet	30 Feet	320 Feet
	EB Through/Right Turn	135 Feet	170 Feet	245 Feet	635 Feet
	WB Left Turn	75 Feet	75 Feet	135 Feet	260 Feet
	WB Through/Right Turn	140 Feet	150 Feet	170 Feet	260 Feet
	NB Left Turn	170 Feet	200 Feet	210 Feet	185 Feet
	NB Through/Right Turn	490 Feet	490 Feet	325 Feet	>1,000 Feet
	SB Left Turn	110 Feet	110 Feet	140 Feet	195 Feet
	SB Through/Right Turn	585 Feet	600 Feet	425 Feet	985 Feet

NOTE: Values indicated represent 95th percentile (design) vehicle queue lengths. Values are rounded to the nearest 5 feet.

** Values indicate 95th percentile queues with proposed signal timing improvements

Appendix B

Figures



SCALE:
HORZ.: 1" = 1000'
VERT.:
DATUM:
HORZ.:
VERT.:
0 500 1000
GRAPHIC SCALE

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

VERNON DEVELOPMENT, LLC

LOCATION FIGURE

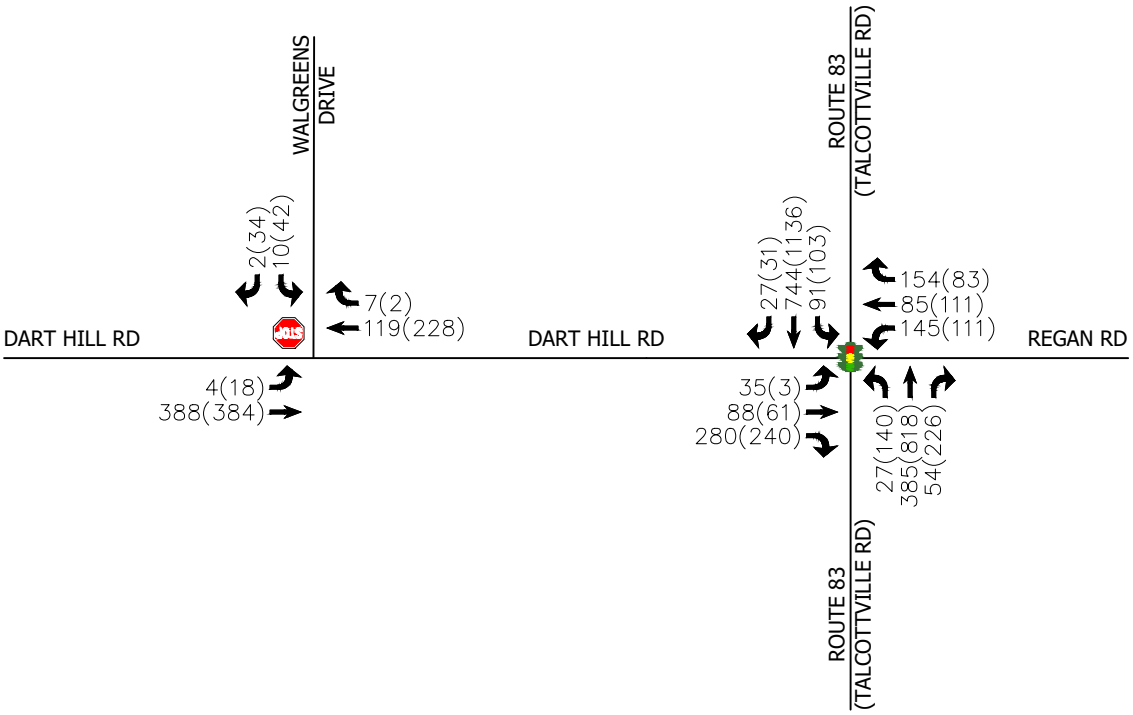
501 TALCOTTVILLE ROAD

VERNON CONNECTICUT

PROJ. No.: 20211031.A10
DATE: JANUARY 2022

LOC-01

File Path: J:\DWG\P2021\1031\A10\Civil\Traffic Figures\20211031.A10_LOC01.dwg Layout: LOC-01 Plotted: Mon, January 03, 2022 - 8:22 AM User: tle
Plotter: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB
MS VIEW: LAYER STATE:



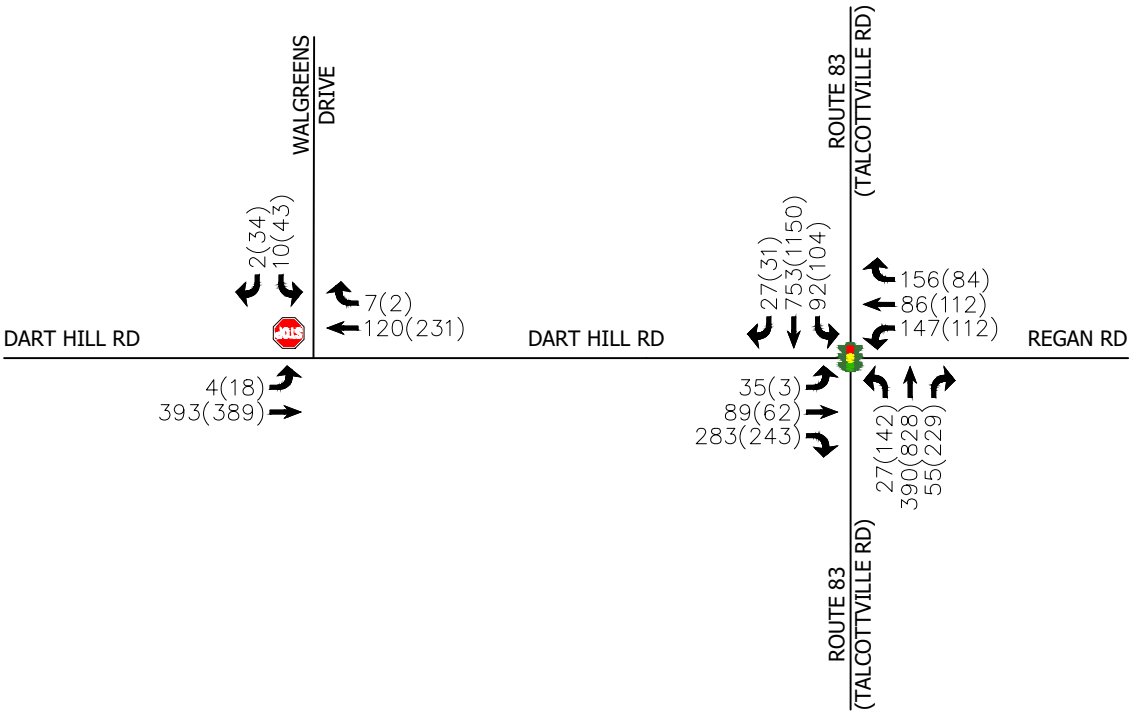
XX(XX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY AFTERNOON PEAK HOUR)

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

FIGURE 2: 2021 EXISTING CONDITIONS

PROJ. NO: 20211031.A10 "THE LEARNING EXPERIENCE" DAY CARE CENTER JANUARY 2022

File Path: J:\DWG\P2021\10311A10\Civil\Traffic Figures\20211031.A10_TVF01.dwg Layout: FIG. 2 - 2021 EXISTING Plotted: Wed, January 12, 2022 - 2:52 PM User: TAI LE



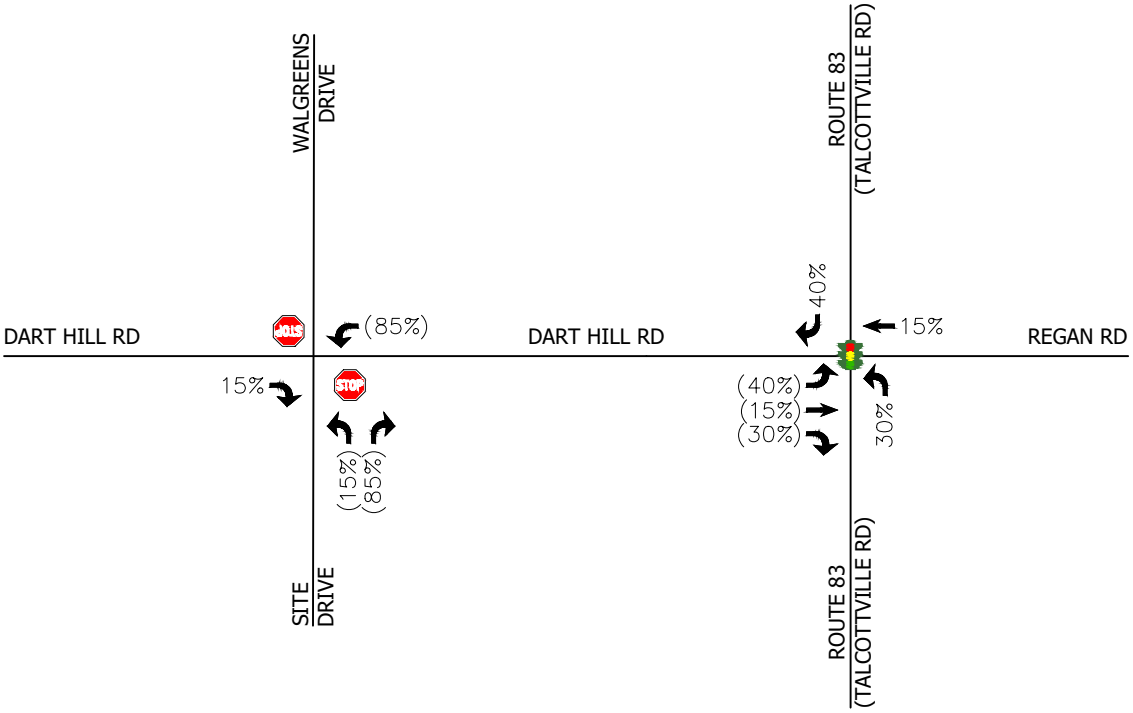
XX(XX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY AFTERNOON PEAK HOUR)

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

FIGURE 3: 2023 BACKGROUND CONDITIONS

PROJ. NO: 20211031.A10 "THE LEARNING EXPERIENCE" DAY CARE CENTER JANUARY 2022

File Path: J:\DWG\P2021\10311A10\Civil\Traffic Figures\20211031.A10_TVF01.dwg Layout: FIG. 3 - 2023 BACKGROUND Plotted: Wed, January 12, 2022 - 2:52 PM User: TAILE



XX(XX) = ENTERING TRAFFIC (EXITING TRAFFIC)

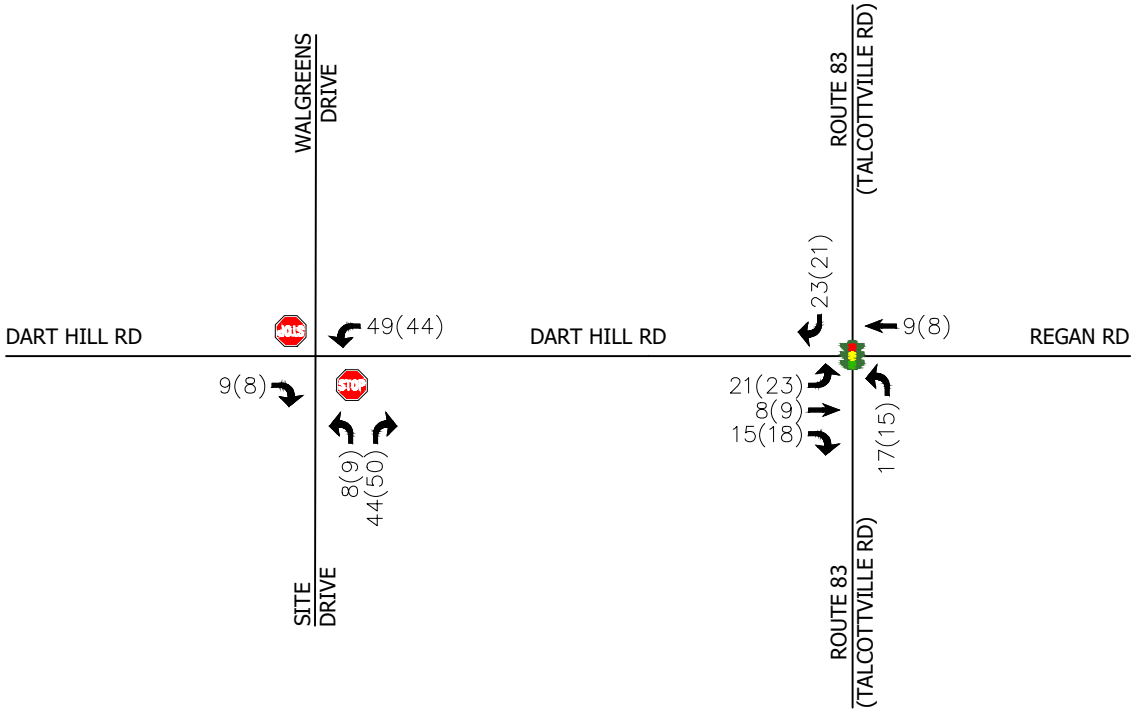
FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

FIGURE 4: TRIP DISTRIBUTION

PROJ. NO: 20211031.A10 "THE LEARNING EXPERIENCE" DAY CARE CENTER JANUARY 2022

File Path: J:\DWG\P2021\10311A10\Civil\Traffic Figures\20211031.A10_TVF01.dwg Layout: FIG. 4 - TRIP DISTRIBUTION Plotted: Wed, January 12, 2022 - 2:52 PM User: TAI LE

SITE GENERATED TRAFFIC VOLUMES			
	ENTER	EXIT	TOTAL
MORNING	58	52	110
AFTERNOON	52	59	111



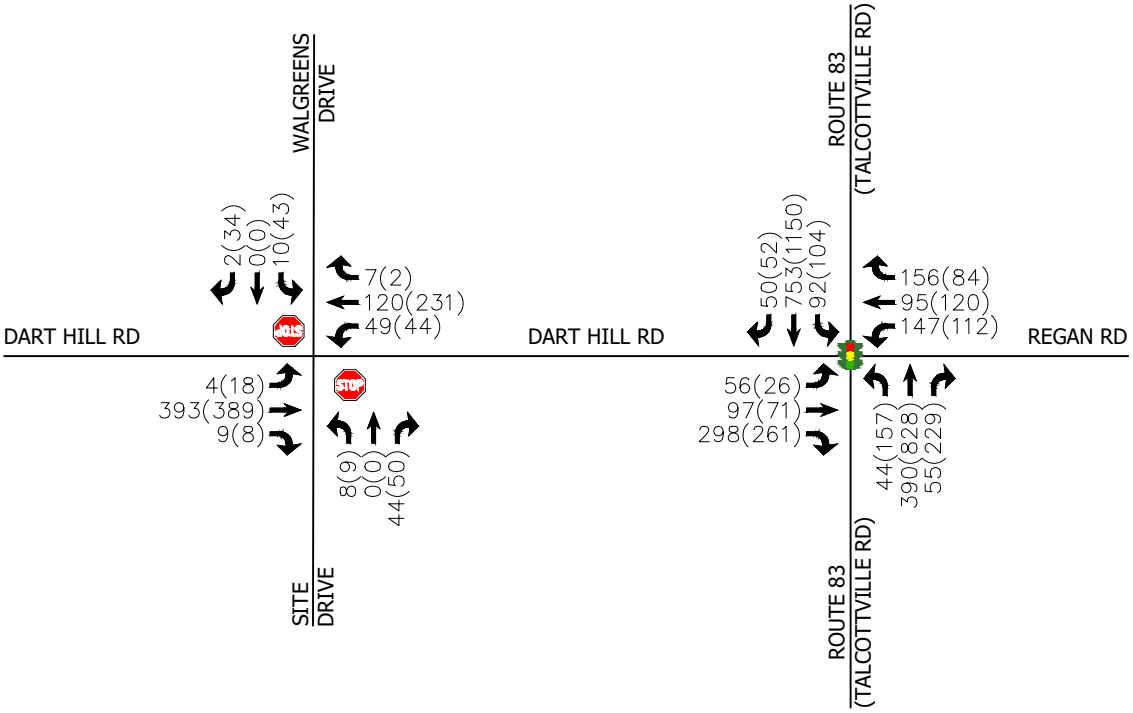
XX(XX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY AFTERNOON PEAK HOUR)

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

FIGURE 5: SITE GENERATED TRIPS

PROJ. NO: 20211031.A10 "THE LEARNING EXPERIENCE" DAY CARE CENTER JANUARY 2022

File Path: J:\DWG\P2021\10311A10\Civil\Traffic Figures\20211031.A10_TVF01.dwg Layout: FIG. 5 - TRIP GENERATION Plotted: Wed, January 12, 2022 - 2:52 PM User: TAI LE



XX(XX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY AFTERNOON PEAK HOUR)

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

FIGURE 6: 2023 COMBINED CONDITIONS

PROJ. NO: 20211031.A10 "THE LEARNING EXPERIENCE" DAY CARE CENTER JANUARY 2022

File Path: J:\DWG\P2021\10311A10\Civil\Traffic Figures\20211031.A10_TVF01.dwg Layout: FIG. 6 - COMBINED Plotted: Wed, January 12, 2022 - 2:52 PM User: TAI LE

Appendix C

ITE Trip Generation Rates

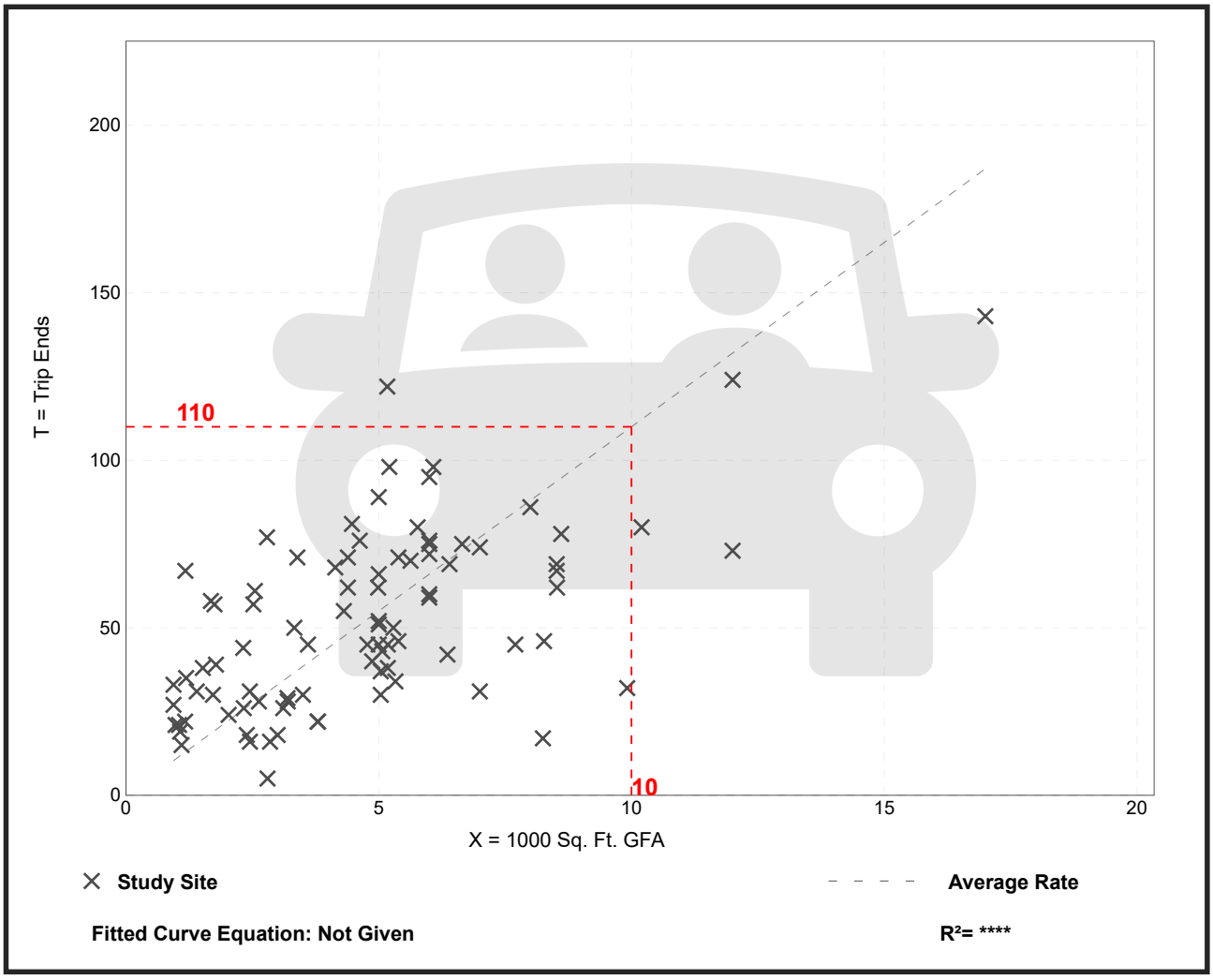
Day Care Center
(565)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 89
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.00	1.79 - 57.02	6.08

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

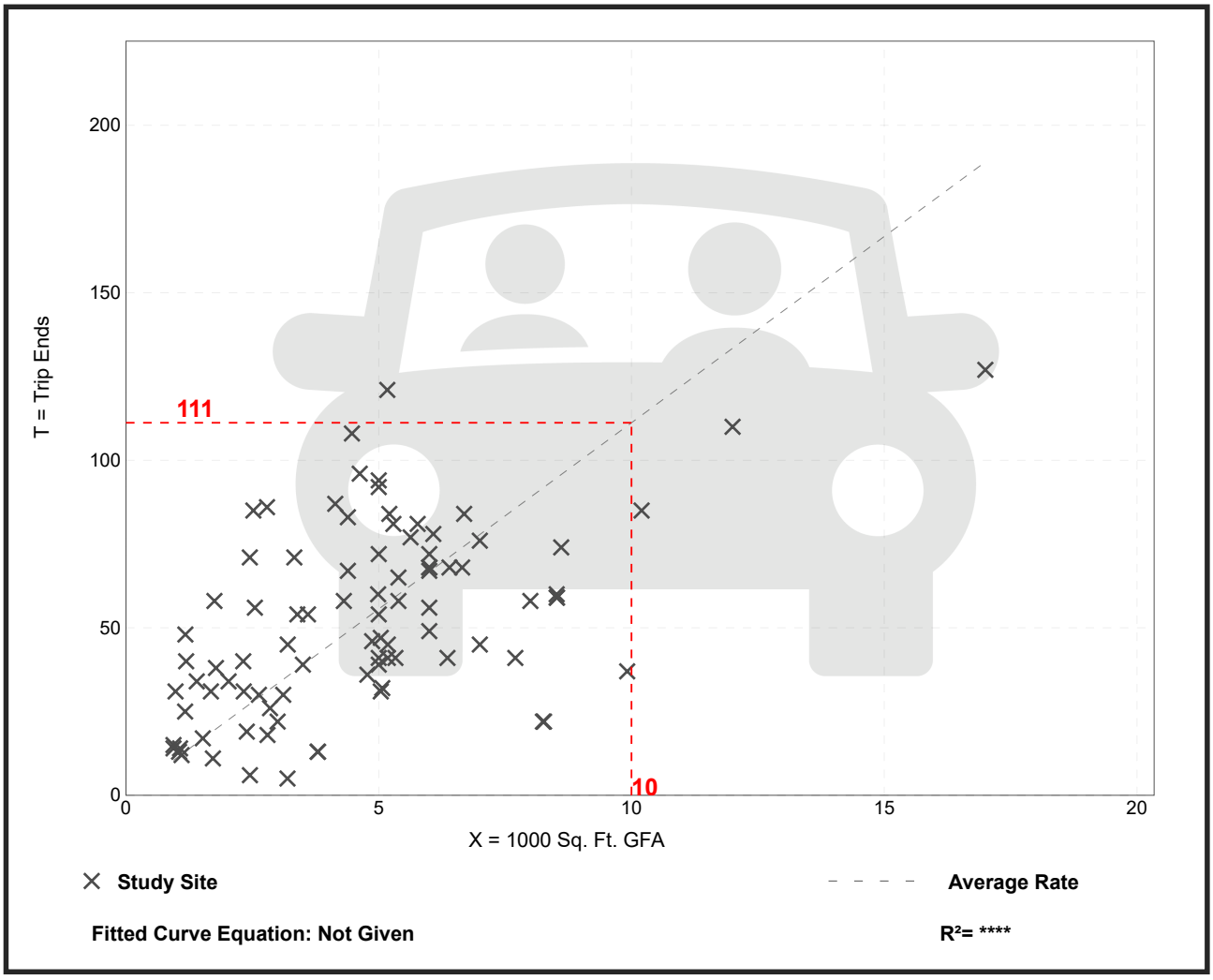
Day Care Center
(565)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 90
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.12	1.56 - 40.85	6.28

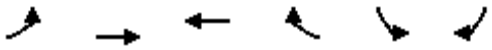
Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Appendix D

Intersection Capacity Analysis Worksheets
2023 Background Traffic Volumes
Morning Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	393	120	7	10	2
Future Volume (vph)	4	393	120	7	10	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992		0.979	
Flt Protected					0.959	
Satd. Flow (prot)	0	1863	1848	0	1749	0
Flt Permitted					0.959	
Satd. Flow (perm)	0	1863	1848	0	1749	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		227	485		104	
Travel Time (s)		5.2	11.0		2.4	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	4	442	135	8	11	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	446	143	0	13	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.9%		ICU Level of Service A	
Analysis Period (min) 15			

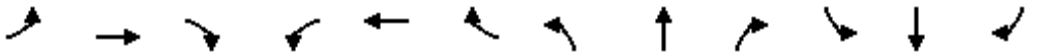
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	393	120	7	10	2
Future Vol, veh/h	4	393	120	7	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	442	135	8	11	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	143	0	-	0	589	139
Stage 1	-	-	-	-	139	-
Stage 2	-	-	-	-	450	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1440	-	-	-	471	909
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	642	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1440	-	-	-	469	909
Mov Cap-2 Maneuver	-	-	-	-	469	-
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	642	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1440	-	-	-	510
HCM Lane V/C Ratio	0.003	-	-	-	0.026
HCM Control Delay (s)	7.5	0	-	-	12.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1



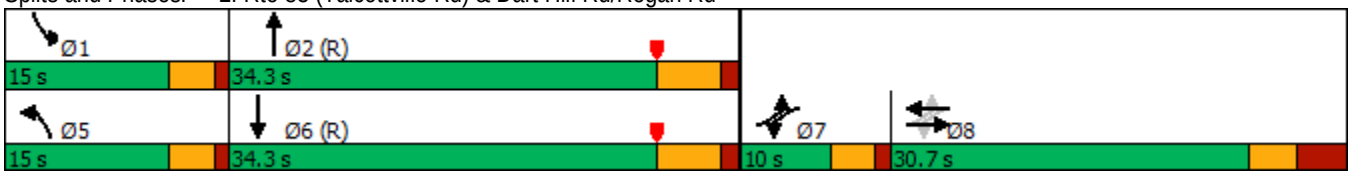
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	89	283	147	86	156	27	390	55	92	753	27
Future Volume (vph)	35	89	283	147	86	156	27	390	55	92	753	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	13	12	11	12	12	12	12	12
Storage Length (ft)	320		0	0		0	185		0	195		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	210			25			95			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.886			0.903			0.981			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1540	0	1652	1738	0	1711	3472	0	1770	3522	0
Flt Permitted	0.449			0.214			0.950			0.950		
Satd. Flow (perm)	781	1540	0	372	1738	0	1711	3472	0	1770	3522	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		173			99			18			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		485			290			331			352	
Travel Time (s)		11.0			6.6			7.5			8.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	36	92	292	152	89	161	28	402	57	95	776	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	384	0	152	250	0	28	459	0	95	804	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	8		7	8		5	2		1	6	
Permitted Phases	8			8								
Detector Phase	7	8		7	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	7.0		3.0	7.0		7.0	15.0		7.0	15.0	
Minimum Split (s)	7.0	13.7		7.0	13.7		11.0	20.7		11.0	20.7	
Total Split (s)	10.0	30.7		10.0	30.7		15.0	34.3		15.0	34.3	
Total Split (%)	11.1%	34.1%		11.1%	34.1%		16.7%	38.1%		16.7%	38.1%	
Maximum Green (s)	6.0	24.0		6.0	24.0		11.0	28.6		11.0	28.6	
Yellow Time (s)	3.0	3.2		3.0	3.2		3.0	4.3		3.0	4.3	
All-Red Time (s)	1.0	3.5		1.0	3.5		1.0	1.4		1.0	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0		2.0	4.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	27.4	18.7		27.4	18.7		7.2	38.0		9.1	44.3	
Actuated g/C Ratio	0.30	0.21		0.30	0.21		0.08	0.42		0.10	0.49	
v/c Ratio	0.12	0.84		0.77	0.57		0.20	0.31		0.53	0.46	
Control Delay	18.1	34.7		46.8	23.0		42.3	19.9		49.1	18.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.1	34.7		46.8	23.0		42.3	19.9		49.1	18.6	
LOS	B	C		D	C		D	B		D	B	
Approach Delay		33.3			32.0			21.2			21.8	

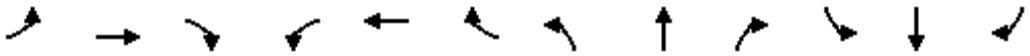
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	13	114		59	73		15	93		52	141	
Queue Length 95th (ft)	31	215		#118	140		41	146		99	262	
Internal Link Dist (ft)		405			210			251			272	
Turn Bay Length (ft)	320						185			195		
Base Capacity (vph)	295	537		198	536		209	1474		216	1734	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.72		0.77	0.47		0.13	0.31		0.44	0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 84 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 25.7		Intersection LOS: C	
Intersection Capacity Utilization 74.8%		ICU Level of Service D	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Rte 83 (Talcottville Rd) & Dart Hill Rd/Regan Rd



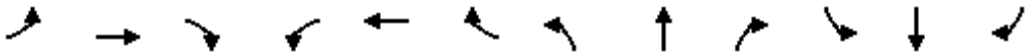


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	89	283	147	86	156	27	390	55	92	753	27
Future Volume (vph)	35	89	283	147	86	156	27	390	55	92	753	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	10	13	12	11	12	12	12	12	12
Total Lost time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89		1.00	0.90		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	1540		1652	1739		1711	3473		1770	3521	
Flt Permitted	0.45	1.00		0.21	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	781	1540		372	1739		1711	3473		1770	3521	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	36	92	292	152	89	161	28	402	57	95	776	28
RTOR Reduction (vph)	0	137	0	0	78	0	0	11	0	0	2	0
Lane Group Flow (vph)	36	247	0	152	172	0	28	448	0	95	802	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	8		7	8		5	2		1	6	
Permitted Phases	8			8								
Actuated Green, G (s)	24.7	18.7		24.7	18.7		3.0	37.2		7.7	41.9	
Effective Green, g (s)	24.7	18.7		24.7	18.7		3.0	37.2		7.7	41.9	
Actuated g/C Ratio	0.27	0.21		0.27	0.21		0.03	0.41		0.09	0.47	
Clearance Time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	272	319		187	361		57	1435		151	1639	
v/s Ratio Prot	0.01	0.16		c0.05	0.10		0.02	0.13		c0.05	c0.23	
v/s Ratio Perm	0.03			c0.17								
v/c Ratio	0.13	0.77		0.81	0.48		0.49	0.31		0.63	0.49	
Uniform Delay, d1	24.3	33.7		28.1	31.3		42.8	17.8		39.8	16.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	11.1		21.8	1.0		2.4	0.6		5.8	1.0	
Delay (s)	24.4	44.8		50.0	32.3		45.2	18.4		45.6	17.7	
Level of Service	C	D		D	C		D	B		D	B	
Approach Delay (s)		43.0			39.0			19.9			20.6	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Appendix D

Intersection Capacity Analysis Worksheets
2023 Combined Traffic Volumes
Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	393	9	49	120	7	8	0	44	10	0	2
Future Volume (vph)	4	393	9	49	120	7	8	0	44	10	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.995			0.886			0.979	
Flt Protected					0.986			0.992			0.959	
Satd. Flow (prot)	0	1857	0	0	1827	0	0	1637	0	0	1749	0
Flt Permitted					0.986			0.992			0.959	
Satd. Flow (perm)	0	1857	0	0	1827	0	0	1637	0	0	1749	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		227			485			184			104	
Travel Time (s)		5.2			11.0			4.2			2.4	
Confl. Peds. (#/hr)							3					
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	4	442	10	55	135	8	9	0	49	11	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	456	0	0	198	0	0	58	0	0	13	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.2%		ICU Level of Service A	
Analysis Period (min) 15			

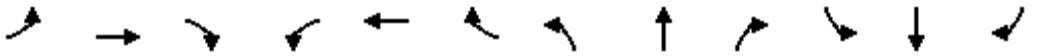
Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	393	9	49	120	7	8	0	44	10	0	2
Future Vol, veh/h	4	393	9	49	120	7	8	0	44	10	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	442	10	55	135	8	9	0	49	11	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	143	0	0	452	0	0	708	708	447	729	709	142
Stage 1	-	-	-	-	-	-	455	455	-	249	249	-
Stage 2	-	-	-	-	-	-	253	253	-	480	460	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1440	-	-	1109	-	-	350	360	612	338	359	906
Stage 1	-	-	-	-	-	-	585	569	-	755	701	-
Stage 2	-	-	-	-	-	-	751	698	-	567	566	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1440	-	-	1109	-	-	333	339	612	297	338	903
Mov Cap-2 Maneuver	-	-	-	-	-	-	333	339	-	297	338	-
Stage 1	-	-	-	-	-	-	583	567	-	752	663	-
Stage 2	-	-	-	-	-	-	707	660	-	519	564	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.3	12.4	16.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	542	1440	-	-	1109	-	-	334
HCM Lane V/C Ratio	0.108	0.003	-	-	0.05	-	-	0.04
HCM Control Delay (s)	12.4	7.5	0	-	8.4	0	-	16.2
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0.2	-	-	0.1



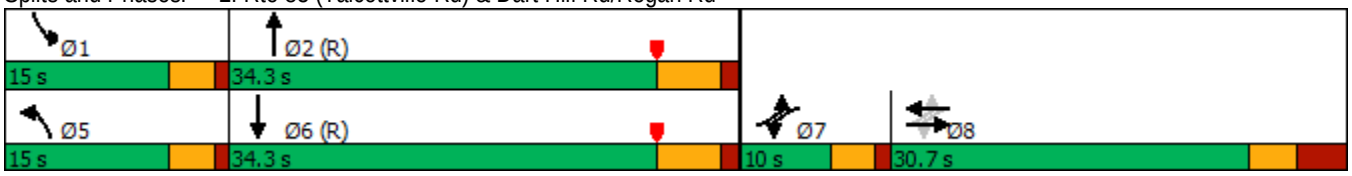
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	97	298	147	95	156	44	390	55	92	753	50
Future Volume (vph)	56	97	298	147	95	156	44	390	55	92	753	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	13	12	11	12	12	12	12	12
Storage Length (ft)	320		0	0		0	185		0	195		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	210			25			95			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.887			0.907			0.981			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1542	0	1652	1746	0	1711	3472	0	1770	3507	0
Flt Permitted	0.489			0.249			0.950			0.950		
Satd. Flow (perm)	850	1542	0	433	1746	0	1711	3472	0	1770	3507	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		167			90			18			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		485			290			331			352	
Travel Time (s)		11.0			6.6			7.5			8.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	58	100	307	152	98	161	45	402	57	95	776	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	407	0	152	259	0	45	459	0	95	828	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	8		7	8		5	2		1	6	
Permitted Phases	8			8								
Detector Phase	7	8		7	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	7.0		3.0	7.0		7.0	15.0		7.0	15.0	
Minimum Split (s)	7.0	13.7		7.0	13.7		11.0	20.7		11.0	20.7	
Total Split (s)	10.0	30.7		10.0	30.7		15.0	34.3		15.0	34.3	
Total Split (%)	11.1%	34.1%		11.1%	34.1%		16.7%	38.1%		16.7%	38.1%	
Maximum Green (s)	6.0	24.0		6.0	24.0		11.0	28.6		11.0	28.6	
Yellow Time (s)	3.0	3.2		3.0	3.2		3.0	4.3		3.0	4.3	
All-Red Time (s)	1.0	3.5		1.0	3.5		1.0	1.4		1.0	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0		2.0	4.0	
Recall Mode	None	Max		None	Max		None	C-Max		None	C-Max	
Act Effct Green (s)	32.7	24.0		32.7	24.0		7.7	32.7		9.1	36.3	
Actuated g/C Ratio	0.36	0.27		0.36	0.27		0.09	0.36		0.10	0.40	
v/c Ratio	0.16	0.76		0.64	0.49		0.31	0.36		0.53	0.58	
Control Delay	17.7	28.5		32.4	21.4		44.1	22.3		49.1	24.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.7	28.5		32.4	21.4		44.1	22.3		49.1	24.1	
LOS	B	C		C	C		D	C		D	C	
Approach Delay		27.1			25.5			24.2			26.6	

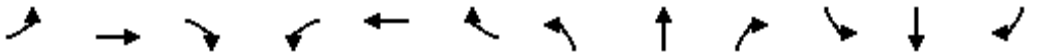
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	20	127		55	79		25	98		52	201	
Queue Length 95th (ft)	44	#268		#107	152		57	146		99	278	
Internal Link Dist (ft)		405			210			251			272	
Turn Bay Length (ft)	320						185			195		
Base Capacity (vph)	362	533		238	531		209	1272		216	1420	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.76		0.64	0.49		0.22	0.36		0.44	0.58	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 84 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 26.0 Intersection LOS: C
Intersection Capacity Utilization 76.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Rte 83 (Talcottville Rd) & Dart Hill Rd/Regan Rd



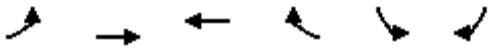


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	97	298	147	95	156	44	390	55	92	753	50
Future Volume (vph)	56	97	298	147	95	156	44	390	55	92	753	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	10	13	12	11	12	12	12	12	12
Total Lost time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89		1.00	0.91		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	1542		1652	1745		1711	3473		1770	3506	
Flt Permitted	0.49	1.00		0.25	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	851	1542		433	1745		1711	3473		1770	3506	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	58	100	307	152	98	161	45	402	57	95	776	52
RTOR Reduction (vph)	0	122	0	0	66	0	0	12	0	0	5	0
Lane Group Flow (vph)	58	285	0	152	193	0	45	447	0	95	823	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	8		7	8		5	2		1	6	
Permitted Phases	8			8								
Actuated Green, G (s)	30.0	24.0		30.0	24.0		4.9	31.9		7.7	34.7	
Effective Green, g (s)	30.0	24.0		30.0	24.0		4.9	31.9		7.7	34.7	
Actuated g/C Ratio	0.33	0.27		0.33	0.27		0.05	0.35		0.09	0.39	
Clearance Time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	337	411		225	465		93	1230		151	1351	
v/s Ratio Prot	0.01	c0.18		c0.04	0.11		0.03	0.13		c0.05	c0.23	
v/s Ratio Perm	0.05			0.18								
v/c Ratio	0.17	0.69		0.68	0.42		0.48	0.36		0.63	0.61	
Uniform Delay, d1	20.8	29.7		23.2	27.2		41.3	21.5		39.8	22.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	9.2		6.2	2.7		1.4	0.8		5.8	2.1	
Delay (s)	20.9	38.9		29.4	29.9		42.8	22.4		45.6	24.3	
Level of Service	C	D		C	C		D	C		D	C	
Approach Delay (s)		36.7			29.7			24.2			26.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Appendix E

Intersection Capacity Analysis Worksheets
2023 Background Traffic Volumes
Afternoon Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	389	231	2	43	34
Future Volume (vph)	18	389	231	2	43	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.999		0.940	
Flt Protected		0.998			0.973	
Satd. Flow (prot)	0	1859	1861	0	1704	0
Flt Permitted		0.998			0.973	
Satd. Flow (perm)	0	1859	1861	0	1704	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		227	485		104	
Travel Time (s)		5.2	11.0		2.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	19	418	248	2	46	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	437	250	0	83	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.2%		ICU Level of Service A	
Analysis Period (min) 15			

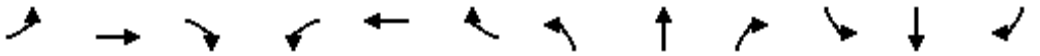
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	389	231	2	43	34
Future Vol, veh/h	18	389	231	2	43	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	418	248	2	46	37

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	250	0	-	0	705	249
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	456	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1316	-	-	-	403	790
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	638	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1316	-	-	-	395	790
Mov Cap-2 Maneuver	-	-	-	-	395	-
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	638	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	13.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1316	-	-	-	507
HCM Lane V/C Ratio	0.015	-	-	-	0.163
HCM Control Delay (s)	7.8	0	-	-	13.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	62	243	112	112	84	142	828	229	104	1150	31
Future Volume (vph)	3	62	243	112	112	84	142	828	229	104	1150	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	13	12	11	12	12	12	12	12
Storage Length (ft)	320		0	0		0	185		0	195		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	210			25			95			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.881			0.936			0.967			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1532	0	1652	1802	0	1711	3422	0	1770	3525	0
Flt Permitted	0.415			0.211			0.950			0.950		
Satd. Flow (perm)	722	1532	0	367	1802	0	1711	3422	0	1770	3525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		214			41			41			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		485			290			331			352	
Travel Time (s)		11.0			6.6			7.5			8.0	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Adj. Flow (vph)	4	85	333	153	153	115	195	1134	314	142	1575	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	418	0	153	268	0	195	1448	0	142	1617	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	8		7	8		5	2		1	6	
Permitted Phases	8			8								
Detector Phase	7	8		7	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	7.0		3.0	7.0		7.0	15.0		7.0	15.0	
Minimum Split (s)	7.0	13.7		7.0	13.7		11.0	20.7		11.0	20.7	
Total Split (s)	10.0	30.7		10.0	30.7		15.0	34.3		15.0	34.3	
Total Split (%)	11.1%	34.1%		11.1%	34.1%		16.7%	38.1%		16.7%	38.1%	
Maximum Green (s)	6.0	24.0		6.0	24.0		11.0	28.6		11.0	28.6	
Yellow Time (s)	3.0	3.2		3.0	3.2		3.0	4.3		3.0	4.3	
All-Red Time (s)	1.0	3.5		1.0	3.5		1.0	1.4		1.0	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0		2.0	4.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	27.7	19.0		27.7	19.0		12.6	34.5		10.1	32.0	
Actuated g/C Ratio	0.31	0.21		0.31	0.21		0.14	0.38		0.11	0.36	
v/c Ratio	0.01	0.85		0.77	0.65		0.82	1.08		0.71	1.29	
Control Delay	16.3	32.7		47.5	34.1		66.0	79.7		58.9	163.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.3	32.7		47.5	34.1		66.0	79.7		58.9	163.6	
LOS	B	C		D	C		E	E		E	F	
Approach Delay		32.5			39.0			78.1			155.2	

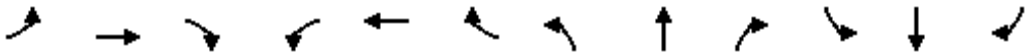
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			D			E			F	
Queue Length 50th (ft)	1	111		59	115		107	~528		77	~670	
Queue Length 95th (ft)	6	135		77	139		#171	#490		111	#586	
Internal Link Dist (ft)		405			210			251			272	
Turn Bay Length (ft)	320						185			195		
Base Capacity (vph)	284	565		198	510		239	1337		219	1256	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.01	0.74		0.77	0.53		0.82	1.08		0.65	1.29	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 84 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.29			
Intersection Signal Delay: 101.6		Intersection LOS: F	
Intersection Capacity Utilization 82.1%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Rte 83 (Talcottville Rd) & Dart Hill Rd/Regan Rd



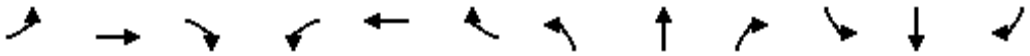


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	62	243	112	112	84	142	828	229	104	1150	31
Future Volume (vph)	3	62	243	112	112	84	142	828	229	104	1150	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	10	13	12	11	12	12	12	12	12
Total Lost time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.94		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	1531		1652	1801		1711	3424		1770	3525	
Flt Permitted	0.42	1.00		0.21	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	722	1531		366	1801		1711	3424		1770	3525	
Peak-hour factor, PHF	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Adj. Flow (vph)	4	85	333	153	153	115	195	1134	314	142	1575	42
RTOR Reduction (vph)	0	169	0	0	32	0	0	25	0	0	2	0
Lane Group Flow (vph)	4	249	0	153	236	0	195	1423	0	142	1615	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	8		7	8		5	2		1	6	
Permitted Phases	8			8								
Actuated Green, G (s)	25.0	19.0		25.0	19.0		12.6	34.5		10.1	32.0	
Effective Green, g (s)	25.0	19.0		25.0	19.0		12.6	34.5		10.1	32.0	
Actuated g/C Ratio	0.28	0.21		0.28	0.21		0.14	0.38		0.11	0.36	
Clearance Time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	262	323		187	380		239	1312		198	1253	
v/s Ratio Prot	0.00	0.16		c0.05	0.13		c0.11	0.42		0.08	c0.46	
v/s Ratio Perm	0.00			c0.17								
v/c Ratio	0.02	0.77		0.82	0.62		0.82	1.08		0.72	1.29	
Uniform Delay, d1	23.7	33.5		28.3	32.2		37.6	27.8		38.6	29.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	10.9		22.4	3.1		18.0	51.1		9.8	136.2	
Delay (s)	23.7	44.3		50.7	35.4		55.6	78.8		48.4	165.2	
Level of Service	C	D		D	D		E	E		D	F	
Approach Delay (s)		44.1			40.9			76.1			155.7	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	102.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Appendix E

Intersection Capacity Analysis Worksheets
2023 Combined Traffic Volumes
Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	389	8	44	231	2	9	0	50	43	0	34
Future Volume (vph)	18	389	8	44	231	2	9	0	50	43	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.999			0.886			0.940	
Flt Protected		0.998			0.992			0.992			0.973	
Satd. Flow (prot)	0	1853	0	0	1846	0	0	1637	0	0	1704	0
Flt Permitted		0.998			0.992			0.992			0.973	
Satd. Flow (perm)	0	1853	0	0	1846	0	0	1637	0	0	1704	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		227			485			204			104	
Travel Time (s)		5.2			11.0			4.6			2.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	19	418	9	47	248	2	10	0	54	46	0	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	446	0	0	297	0	0	64	0	0	83	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			

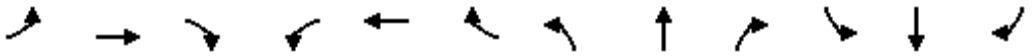
Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	18	389	8	44	231	2	9	0	50	43	0	34
Future Vol, veh/h	18	389	8	44	231	2	9	0	50	43	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	418	9	47	248	2	10	0	54	46	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	250	0	0	427	0	0	823	805	423	831	808	249
Stage 1	-	-	-	-	-	-	461	461	-	343	343	-
Stage 2	-	-	-	-	-	-	362	344	-	488	465	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1316	-	-	1132	-	-	292	316	631	289	315	790
Stage 1	-	-	-	-	-	-	581	565	-	672	637	-
Stage 2	-	-	-	-	-	-	657	637	-	561	563	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1316	-	-	1132	-	-	265	295	631	251	294	790
Mov Cap-2 Maneuver	-	-	-	-	-	-	265	295	-	251	294	-
Stage 1	-	-	-	-	-	-	570	554	-	659	606	-
Stage 2	-	-	-	-	-	-	597	606	-	503	552	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.3	12.9	18
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	521	1316	-	-	1132	-	-	359
HCM Lane V/C Ratio	0.122	0.015	-	-	0.042	-	-	0.231
HCM Control Delay (s)	12.9	7.8	0	-	8.3	0	-	18
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	71	261	112	120	84	157	828	229	104	1150	52
Future Volume (vph)	26	71	261	112	120	84	157	828	229	104	1150	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	13	12	11	12	12	12	12	12
Storage Length (ft)	320		0	0		0	185		0	195		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	210			25			95			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.882			0.938			0.967			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1533	0	1652	1805	0	1711	3422	0	1770	3518	0
Flt Permitted	0.417			0.193			0.950			0.950		
Satd. Flow (perm)	725	1533	0	336	1805	0	1711	3422	0	1770	3518	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		201			38			41			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		485			290			331			352	
Travel Time (s)		11.0			6.6			7.5			8.0	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Adj. Flow (vph)	36	97	358	153	164	115	215	1134	314	142	1575	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	455	0	153	279	0	215	1448	0	142	1646	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	8		7	8		5	2		1	6	
Permitted Phases	8			8								
Detector Phase	7	8		7	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	7.0		3.0	7.0		7.0	15.0		7.0	15.0	
Minimum Split (s)	7.0	13.7		7.0	13.7		11.0	20.7		11.0	20.7	
Total Split (s)	10.0	30.7		10.0	30.7		15.0	34.3		15.0	34.3	
Total Split (%)	11.1%	34.1%		11.1%	34.1%		16.7%	38.1%		16.7%	38.1%	
Maximum Green (s)	6.0	24.0		6.0	24.0		11.0	28.6		11.0	28.6	
Yellow Time (s)	3.0	3.2		3.0	3.2		3.0	4.3		3.0	4.3	
All-Red Time (s)	1.0	3.5		1.0	3.5		1.0	1.4		1.0	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0		2.0	4.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	29.4	20.7		29.4	20.7		13.1	32.9		10.0	29.8	
Actuated g/C Ratio	0.33	0.23		0.33	0.23		0.15	0.37		0.11	0.33	
v/c Ratio	0.12	0.90		0.78	0.63		0.87	1.13		0.73	1.41	
Control Delay	17.5	40.0		47.6	32.7		72.6	99.5		60.2	216.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.5	40.0		47.6	32.7		72.6	99.5		60.2	216.4	
LOS	B	D		D	C		E	F		E	F	
Approach Delay		38.3			38.0			96.0			204.0	

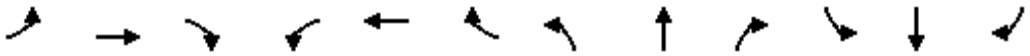
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			F			F	
Queue Length 50th (ft)	12	139		55	117		~132	~555		78	~688	
Queue Length 95th (ft)	25	168		77	148		#197	#490		111	#601	
Internal Link Dist (ft)		405			210			251			272	
Turn Bay Length (ft)	320						185			195		
Base Capacity (vph)	298	556		197	509		248	1277		216	1169	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.82		0.78	0.55		0.87	1.13		0.66	1.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 84 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.41			
Intersection Signal Delay: 128.0		Intersection LOS: F	
Intersection Capacity Utilization 85.2%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Rte 83 (Talcottville Rd) & Dart Hill Rd/Regan Rd



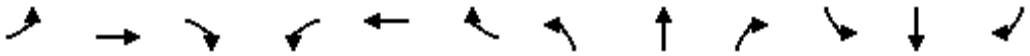


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	71	261	112	120	84	157	828	229	104	1150	52
Future Volume (vph)	26	71	261	112	120	84	157	828	229	104	1150	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	10	13	12	11	12	12	12	12	12
Total Lost time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.94		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	1533		1652	1806		1711	3424		1770	3516	
Flt Permitted	0.42	1.00		0.19	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	726	1533		336	1806		1711	3424		1770	3516	
Peak-hour factor, PHF	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Adj. Flow (vph)	36	97	358	153	164	115	215	1134	314	142	1575	71
RTOR Reduction (vph)	0	155	0	0	29	0	0	26	0	0	3	0
Lane Group Flow (vph)	36	300	0	153	250	0	215	1422	0	142	1643	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	8		7	8		5	2		1	6	
Permitted Phases	8			8								
Actuated Green, G (s)	26.7	20.7		26.7	20.7		13.1	32.9		10.0	29.8	
Effective Green, g (s)	26.7	20.7		26.7	20.7		13.1	32.9		10.0	29.8	
Actuated g/C Ratio	0.30	0.23		0.30	0.23		0.15	0.37		0.11	0.33	
Clearance Time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	277	352		187	415		249	1251		196	1164	
v/s Ratio Prot	0.01	c0.20		c0.05	0.14		c0.13	c0.42		0.08	c0.47	
v/s Ratio Perm	0.03			0.19								
v/c Ratio	0.13	0.85		0.82	0.60		0.86	1.14		0.72	1.41	
Uniform Delay, d1	23.0	33.2		27.2	31.0		37.6	28.6		38.7	30.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	17.8		22.4	2.5		24.5	71.8		10.7	190.2	
Delay (s)	23.0	51.0		49.5	33.4		62.0	100.3		49.3	220.3	
Level of Service	C	D		D	C		E	F		D	F	
Approach Delay (s)		48.9			39.1			95.4			206.7	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	130.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Appendix E

Intersection Capacity Analysis Worksheets
2023 Combined Traffic Volumes with Signal Timing Improvements
Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	389	8	44	231	2	9	0	50	43	0	34
Future Volume (vph)	18	389	8	44	231	2	9	0	50	43	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.999			0.886			0.940	
Flt Protected		0.998			0.992			0.992			0.973	
Satd. Flow (prot)	0	1853	0	0	1846	0	0	1637	0	0	1704	0
Flt Permitted		0.998			0.992			0.992			0.973	
Satd. Flow (perm)	0	1853	0	0	1846	0	0	1637	0	0	1704	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		227			485			204			104	
Travel Time (s)		5.2			11.0			4.6			2.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	19	418	9	47	248	2	10	0	54	46	0	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	446	0	0	297	0	0	64	0	0	83	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			

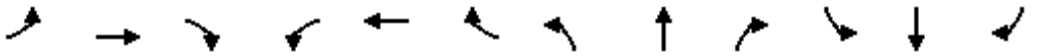
Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	18	389	8	44	231	2	9	0	50	43	0	34
Future Vol, veh/h	18	389	8	44	231	2	9	0	50	43	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	418	9	47	248	2	10	0	54	46	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	250	0	0	427	0	0	823	805	423	831	808	249
Stage 1	-	-	-	-	-	-	461	461	-	343	343	-
Stage 2	-	-	-	-	-	-	362	344	-	488	465	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1316	-	-	1132	-	-	292	316	631	289	315	790
Stage 1	-	-	-	-	-	-	581	565	-	672	637	-
Stage 2	-	-	-	-	-	-	657	637	-	561	563	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1316	-	-	1132	-	-	265	295	631	251	294	790
Mov Cap-2 Maneuver	-	-	-	-	-	-	265	295	-	251	294	-
Stage 1	-	-	-	-	-	-	570	554	-	659	606	-
Stage 2	-	-	-	-	-	-	597	606	-	503	552	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.3	12.9	18
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	521	1316	-	-	1132	-	-	359
HCM Lane V/C Ratio	0.122	0.015	-	-	0.042	-	-	0.231
HCM Control Delay (s)	12.9	7.8	0	-	8.3	0	-	18
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.9



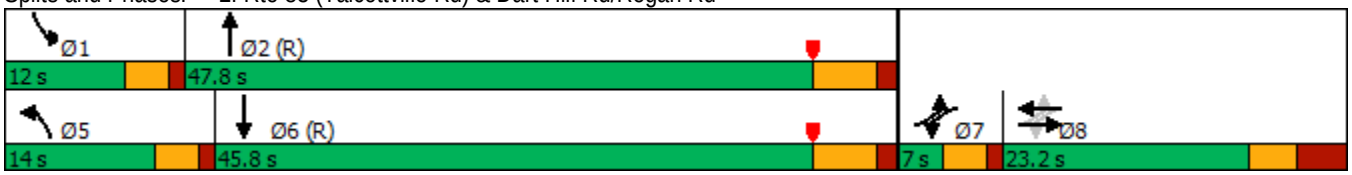
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	71	261	112	120	84	157	828	229	104	1150	52
Future Volume (vph)	26	71	261	112	120	84	157	828	229	104	1150	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	13	12	11	12	12	12	12	12
Storage Length (ft)	320		0	0		0	185		0	195		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	210			25			95			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.882			0.938			0.967			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1533	0	1652	1805	0	1711	3422	0	1770	3518	0
Flt Permitted	0.346			0.242			0.950			0.950		
Satd. Flow (perm)	602	1533	0	421	1805	0	1711	3422	0	1770	3518	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		181			34			53			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		485			290			331			352	
Travel Time (s)		11.0			6.6			7.5			8.0	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Adj. Flow (vph)	36	97	358	153	164	115	215	1134	314	142	1575	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	455	0	153	279	0	215	1448	0	142	1646	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	8		7	8		5	2		1	6	
Permitted Phases	8			8								
Detector Phase	7	8		7	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	7.0		3.0	7.0		7.0	15.0		7.0	15.0	
Minimum Split (s)	7.0	13.7		7.0	13.7		11.0	20.7		11.0	20.7	
Total Split (s)	7.0	23.2		7.0	23.2		14.0	47.8		12.0	45.8	
Total Split (%)	7.8%	25.8%		7.8%	25.8%		15.6%	53.1%		13.3%	50.9%	
Maximum Green (s)	3.0	16.5		3.0	16.5		10.0	42.1		8.0	40.1	
Yellow Time (s)	3.0	3.2		3.0	3.2		3.0	4.3		3.0	4.3	
All-Red Time (s)	1.0	3.5		1.0	3.5		1.0	1.4		1.0	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0		2.0	4.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	22.2	16.5		22.2	16.5		10.0	42.1		8.0	40.1	
Actuated g/C Ratio	0.25	0.18		0.25	0.18		0.11	0.47		0.09	0.45	
v/c Ratio	0.20	1.06		1.06	0.78		1.13	0.89		0.90	1.05	
Control Delay	26.2	84.9		125.9	47.3		144.2	29.4		93.5	62.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.2	84.9		125.9	47.3		144.2	29.4		93.5	62.5	
LOS	C	F		F	D		F	C		F	E	
Approach Delay		80.6			75.1			44.3			65.0	

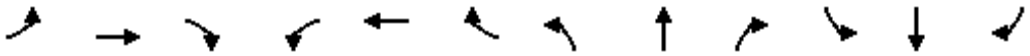
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			E			D			E	
Queue Length 50th (ft)	15	~196		~73	134		~143	368		82	~541	
Queue Length 95th (ft)	30	#244		#134	169		#208	324		#138	423	
Internal Link Dist (ft)		405			210			251			272	
Turn Bay Length (ft)	320						185			195		
Base Capacity (vph)	183	428		144	358		190	1628		157	1570	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.20	1.06		1.06	0.78		1.13	0.89		0.90	1.05	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 84 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 59.9	Intersection LOS: E
Intersection Capacity Utilization 85.2%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Rte 83 (Talcottville Rd) & Dart Hill Rd/Regan Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	71	261	112	120	84	157	828	229	104	1150	52
Future Volume (vph)	26	71	261	112	120	84	157	828	229	104	1150	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	10	13	12	11	12	12	12	12	12
Total Lost time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.94		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1652	1533		1652	1806		1711	3424		1770	3516	
Flt Permitted	0.35	1.00		0.24	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	602	1533		421	1806		1711	3424		1770	3516	
Peak-hour factor, PHF	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Adj. Flow (vph)	36	97	358	153	164	115	215	1134	314	142	1575	71
RTOR Reduction (vph)	0	148	0	0	28	0	0	28	0	0	3	0
Lane Group Flow (vph)	36	307	0	153	251	0	215	1420	0	142	1643	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	8		7	8		5	2		1	6	
Permitted Phases	8			8								
Actuated Green, G (s)	19.5	16.5		19.5	16.5		10.0	42.1		8.0	40.1	
Effective Green, g (s)	19.5	16.5		19.5	16.5		10.0	42.1		8.0	40.1	
Actuated g/C Ratio	0.22	0.18		0.22	0.18		0.11	0.47		0.09	0.45	
Clearance Time (s)	4.0	6.7		4.0	6.7		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	165	281		132	331		190	1601		157	1566	
v/s Ratio Prot	0.01	0.20		c0.04	0.14		c0.13	0.41		0.08	c0.47	
v/s Ratio Perm	0.04			c0.21								
v/c Ratio	0.22	1.09		1.16	0.76		1.13	0.89		0.90	1.05	
Uniform Delay, d1	28.5	36.8		36.3	34.9		40.0	21.8		40.6	24.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	80.9		127.4	9.6		105.1	7.7		44.0	36.8	
Delay (s)	28.7	117.6		163.7	44.5		145.1	29.4		84.6	61.7	
Level of Service	C	F		F	D		F	C		F	E	
Approach Delay (s)		111.1			86.7			44.4			63.5	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	63.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Appendix F

Turning Movement Count (TMC) Data

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Dart Hill Rd at Walgreen West Dr
Vernon, Connecticut

File Name : 22425
Site Code : 22425
Start Date : 12/7/2021
Page No : 1

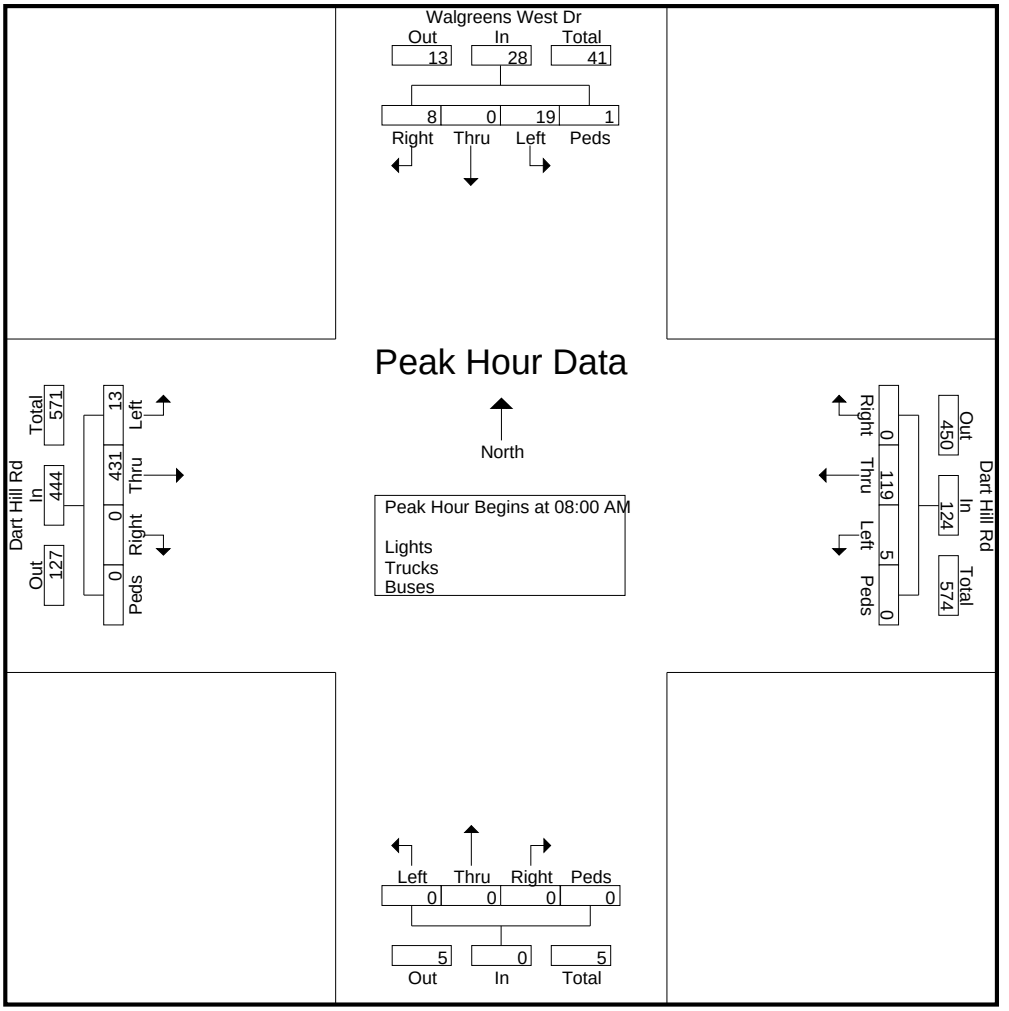
Groups Printed- Lights - Trucks - Buses

	Walgreens West Dr From North					Dart Hill Rd From East					From South					Dart Hill Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	0	0	0	1	1	26	0	0	27	0	0	0	0	0	0	91	0	0	91	119
07:15 AM	0	0	3	0	3	0	19	0	0	19	0	0	0	0	0	0	100	2	0	102	124
07:30 AM	0	0	3	0	3	4	37	0	0	41	0	0	0	0	0	0	103	2	0	105	149
07:45 AM	1	0	4	0	5	2	37	0	0	39	0	0	0	0	0	0	94	0	0	94	138
Total	2	0	10	0	12	7	119	0	0	126	0	0	0	0	0	0	388	4	0	392	530
08:00 AM	0	0	3	0	3	0	36	0	0	36	0	0	0	0	0	0	103	1	0	104	143
08:15 AM	2	0	4	0	6	0	36	0	0	36	0	0	0	0	0	0	85	4	0	89	131
08:30 AM	6	0	5	1	12	0	26	0	0	26	0	0	0	0	0	0	123	5	0	128	166
08:45 AM	0	0	7	0	7	0	21	5	0	26	0	0	0	0	0	0	120	3	0	123	156
Total	8	0	19	1	28	0	119	5	0	124	0	0	0	0	0	0	431	13	0	444	596
Grand Total	10	0	29	1	40	7	238	5	0	250	0	0	0	0	0	0	819	17	0	836	1126
Apprch %	25	0	72.5	2.5		2.8	95.2	2	0		0	0	0	0		0	98	2	0		
Total %	0.9	0	2.6	0.1	3.6	0.6	21.1	0.4	0	22.2	0	0	0	0	0	0	72.7	1.5	0	74.2	
Lights	10	0	28	1	39	7	227	5	0	239	0	0	0	0	0	0	805	17	0	822	1100
% Lights	100	0	96.6	100	97.5	100	95.4	100	0	95.6	0	0	0	0	0	0	98.3	100	0	98.3	97.7
Trucks	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	11
% Trucks	0	0	0	0	0	0	2.1	0	0	2	0	0	0	0	0	0	0.7	0	0	0.7	1
Buses	0	0	1	0	1	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	15
% Buses	0	0	3.4	0	2.5	0	2.5	0	0	2.4	0	0	0	0	0	0	1	0	0	1	1.3

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 22425
Site Code : 22425
Start Date : 12/7/2021
Page No : 2

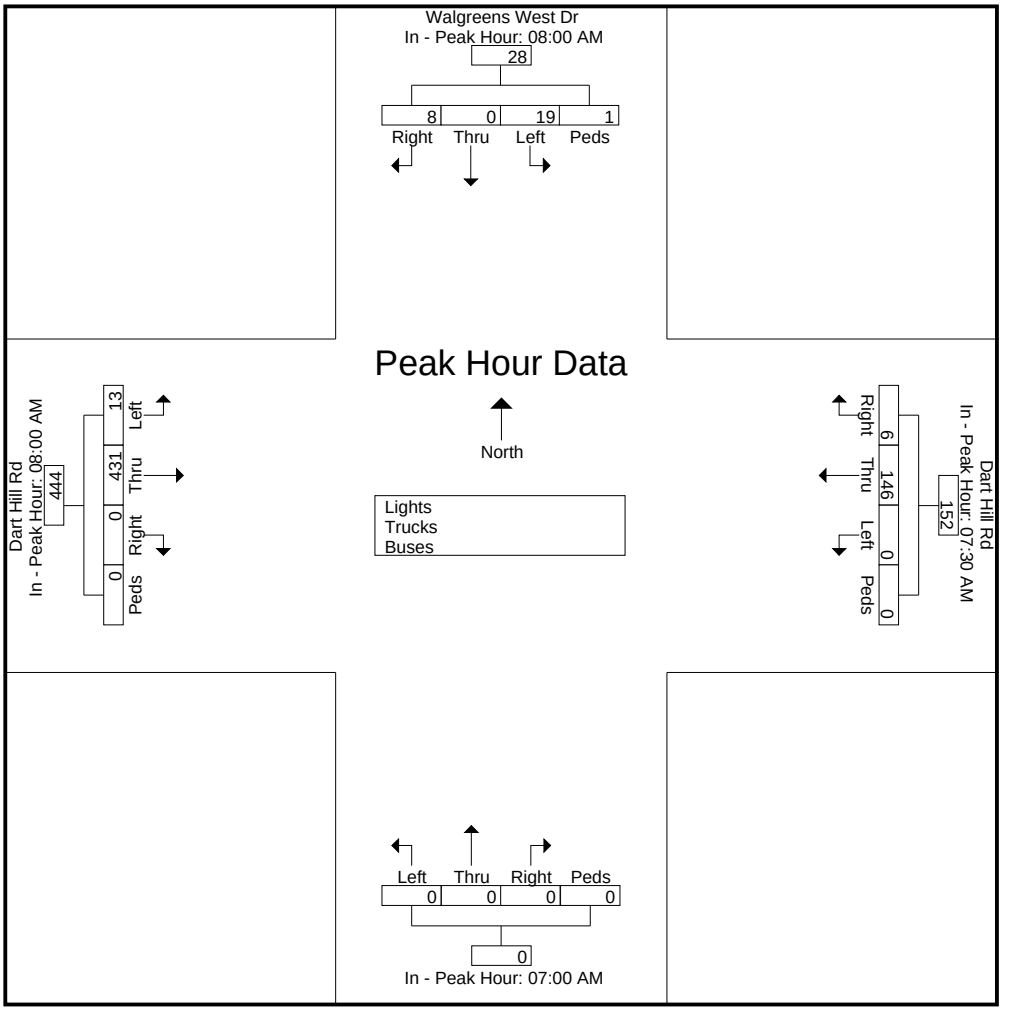
	Walgreens West Dr From North					Dart Hill Rd From East					From South					Dart Hill Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	3	0	3	0	36	0	0	36	0	0	0	0	0	0	103	1	0	104	143
08:15 AM	2	0	4	0	6	0	36	0	0	36	0	0	0	0	0	0	85	4	0	89	131
08:30 AM	6	0	5	1	12	0	26	0	0	26	0	0	0	0	0	0	123	5	0	128	166
08:45 AM	0	0	7	0	7	0	21	5	0	26	0	0	0	0	0	0	120	3	0	123	156
Total Volume	8	0	19	1	28	0	119	5	0	124	0	0	0	0	0	0	431	13	0	444	596
% App. Total	28.6	0	67.9	3.6		0	96	4	0		0	0	0	0		0	97.1	2.9	0		
PHF	.333	.000	.679	.250	.583	.000	.826	.250	.000	.861	.000	.000	.000	.000	.000	.000	.876	.650	.000	.867	.898



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 22425
Site Code : 22425
Start Date : 12/7/2021
Page No : 3

Start Time	Walgreens West Dr From North					Dart Hill Rd From East					From South					Dart Hill Rd From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	08:00 AM					07:30 AM					07:00 AM					08:00 AM					
+0 mins.	0	0	3	0	3	4	37	0	0	41	0	0	0	0	0	0	103	1	0	104	
+15 mins.	2	0	4	0	6	2	37	0	0	39	0	0	0	0	0	0	85	4	0	89	
+30 mins.	6	0	5	1	12	0	36	0	0	36	0	0	0	0	0	0	123	5	0	128	
+45 mins.	0	0	7	0	7	0	36	0	0	36	0	0	0	0	0	0	120	3	0	123	
Total Volume	8	0	19	1	28	6	146	0	0	152	0	0	0	0	0	0	431	13	0	444	
% App. Total	28.6	0	67.9	3.6		3.9	96.1	0	0		0	0	0	0		0	97.1	2.9	0		
PHF	.333	.000	.679	.250	.583	.375	.986	.000	.000	.927	.000	.000	.000	.000	.000	.000	.876	.650	.000	.867	



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Dart Hill Rd at Walgreen West Dr
Vernon, Connecticut

File Name : 22426
Site Code : 22426
Start Date : 12/7/2021
Page No : 1

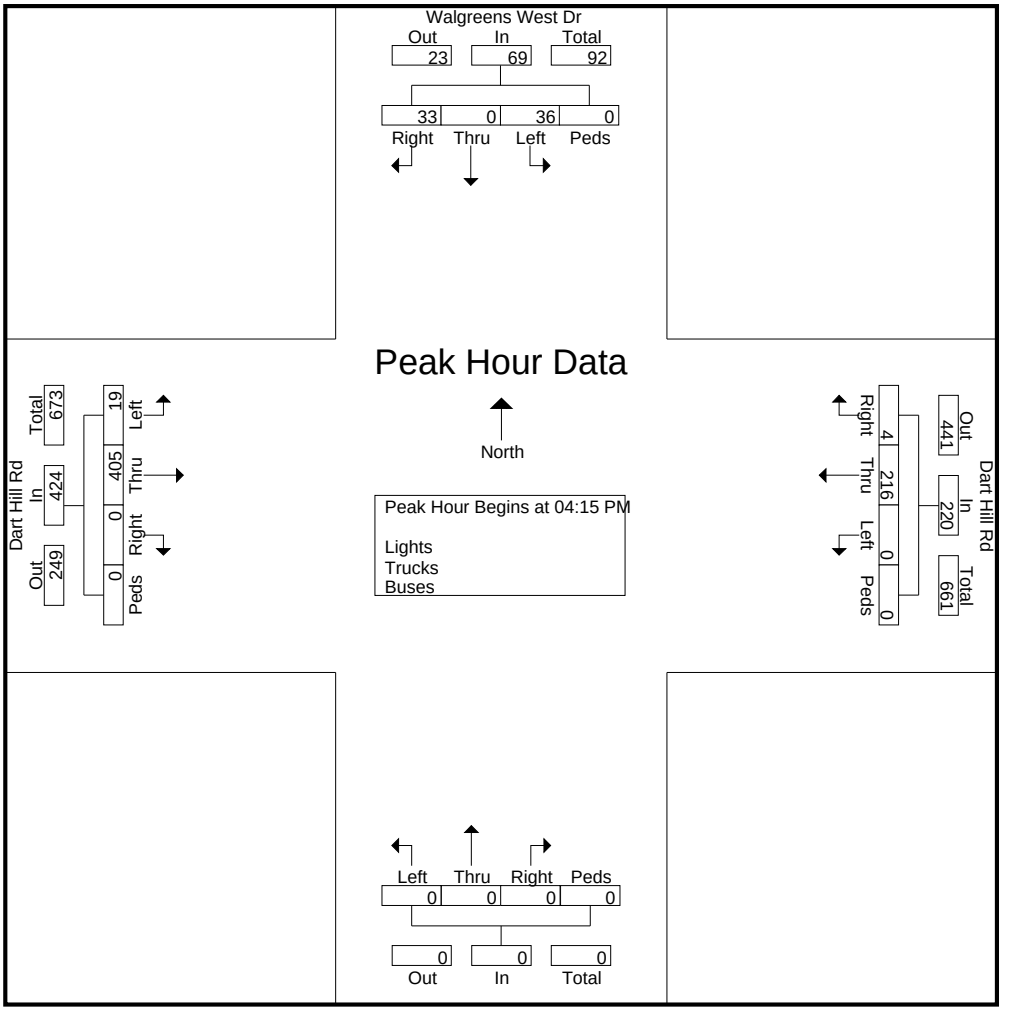
Groups Printed- Lights - Trucks - Buses

	Walgreens West Dr From North					Dart Hill Rd From East					From South					Dart Hill Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	10	0	13	0	23	0	43	0	0	43	0	0	0	0	0	0	78	7	0	85	151
04:15 PM	8	0	8	0	16	2	45	0	0	47	0	0	0	0	0	0	122	6	0	128	191
04:30 PM	7	0	6	0	13	1	55	0	0	56	0	0	0	0	0	0	96	8	0	104	173
04:45 PM	10	0	11	0	21	0	59	0	0	59	0	0	0	0	0	0	107	4	0	111	191
Total	35	0	38	0	73	3	202	0	0	205	0	0	0	0	0	0	403	25	0	428	706
05:00 PM	8	0	11	0	19	1	57	0	0	58	0	0	0	0	0	0	80	1	0	81	158
05:15 PM	9	0	14	0	23	0	57	0	0	57	0	0	0	0	0	0	101	5	0	106	186
05:30 PM	6	0	11	0	17	0	35	0	0	35	0	0	0	0	0	0	97	2	0	99	151
05:45 PM	5	0	5	0	10	0	41	0	0	41	0	0	0	0	0	0	79	8	0	87	138
Total	28	0	41	0	69	1	190	0	0	191	0	0	0	0	0	0	357	16	0	373	633
Grand Total	63	0	79	0	142	4	392	0	0	396	0	0	0	0	0	0	760	41	0	801	1339
Apprch %	44.4	0	55.6	0		1	99	0	0		0	0	0	0		0	94.9	5.1	0		
Total %	4.7	0	5.9	0	10.6	0.3	29.3	0	0	29.6	0	0	0	0	0	0	56.8	3.1	0	59.8	
Lights	63	0	79	0	142	4	391	0	0	395	0	0	0	0	0	0	759	41	0	800	1337
% Lights	100	0	100	0	100	100	99.7	0	0	99.7	0	0	0	0	0	0	99.9	100	0	99.9	99.9
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
% Buses	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0	0.1	0	0	0.1	0.1

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 22426
Site Code : 22426
Start Date : 12/7/2021
Page No : 2

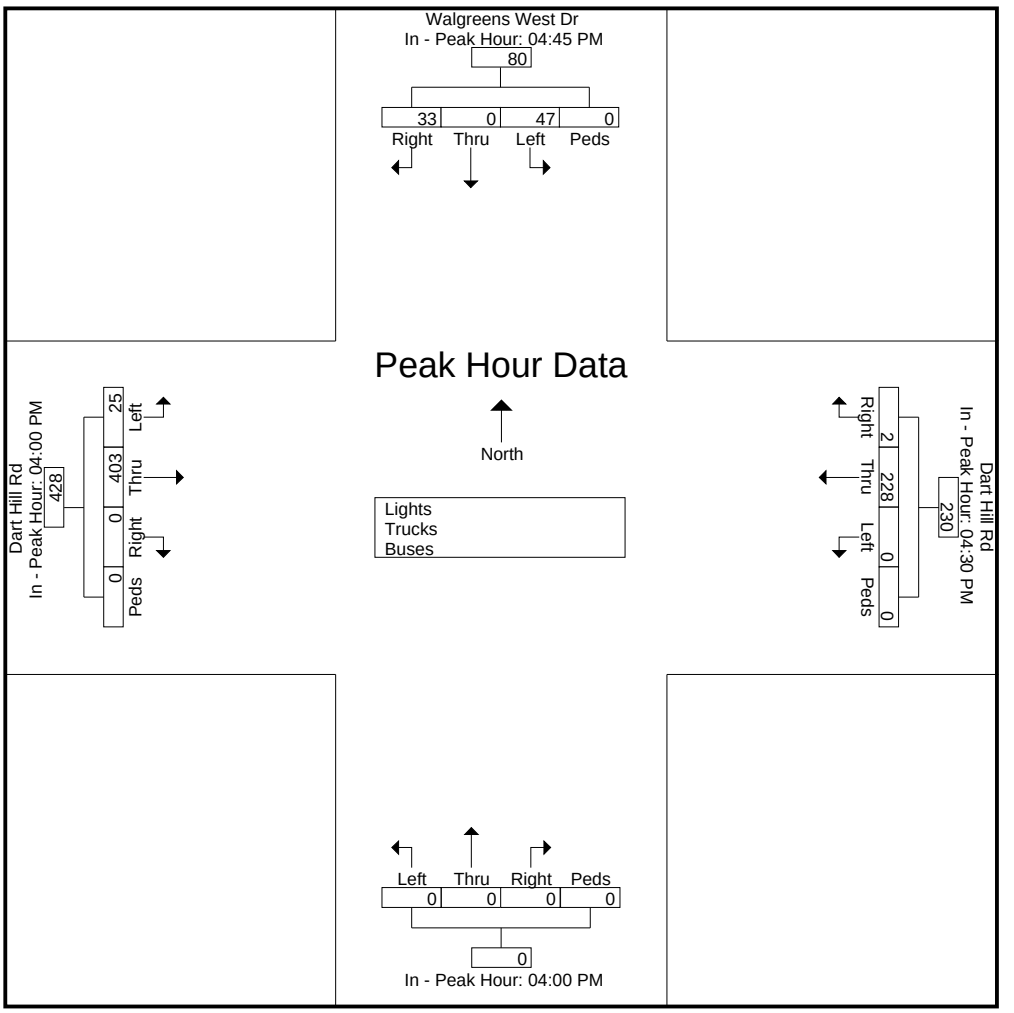
	Walgreens West Dr From North					Dart Hill Rd From East					From South					Dart Hill Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	8	0	8	0	16	2	45	0	0	47	0	0	0	0	0	0	122	6	0	128	191
04:30 PM	7	0	6	0	13	1	55	0	0	56	0	0	0	0	0	0	96	8	0	104	173
04:45 PM	10	0	11	0	21	0	59	0	0	59	0	0	0	0	0	0	107	4	0	111	191
05:00 PM	8	0	11	0	19	1	57	0	0	58	0	0	0	0	0	0	80	1	0	81	158
Total Volume	33	0	36	0	69	4	216	0	0	220	0	0	0	0	0	0	405	19	0	424	713
% App. Total	47.8	0	52.2	0		1.8	98.2	0	0		0	0	0	0		0	95.5	4.5	0		
PHF	.825	.000	.818	.000	.821	.500	.915	.000	.000	.932	.000	.000	.000	.000	.000	.000	.830	.594	.000	.828	.933



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 22426
Site Code : 22426
Start Date : 12/7/2021
Page No : 3

	Walgreens West Dr From North					Dart Hill Rd From East					From South					Dart Hill Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:45 PM					04:30 PM					04:00 PM					04:00 PM					
+0 mins.	10	0	11	0	21	1	55	0	0	56	0	0	0	0	0	0	78	7	0	85	
+15 mins.	8	0	11	0	19	0	59	0	0	59	0	0	0	0	0	0	122	6	0	128	
+30 mins.	9	0	14	0	23	1	57	0	0	58	0	0	0	0	0	0	96	8	0	104	
+45 mins.	6	0	11	0	17	0	57	0	0	57	0	0	0	0	0	0	107	4	0	111	
Total Volume	33	0	47	0	80	2	228	0	0	230	0	0	0	0	0	0	403	25	0	428	
% App. Total	41.2	0	58.8	0		0.9	99.1	0	0		0	0	0	0		0	94.2	5.8	0		
PHF	.825	.000	.839	.000	.870	.500	.966	.000	.000	.975	.000	.000	.000	.000	.000	.000	.826	.781	.000	.836	



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Route 83 at Dart Hill/Regan Rd
Vernon, Connecticut

File Name : 22423
Site Code : 22423
Start Date : 12/7/2021
Page No : 1

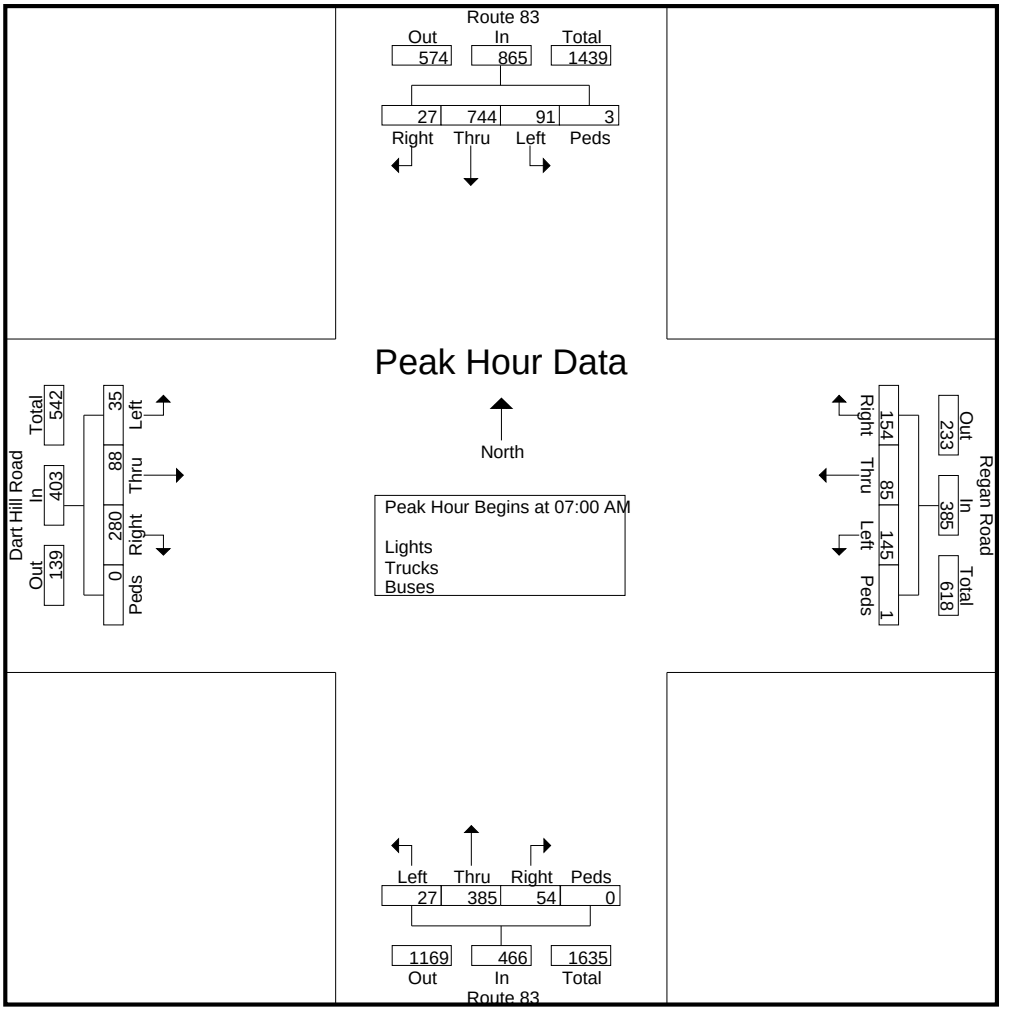
Groups Printed- Lights - Trucks - Buses

	Route 83 From North					Regan Road From East					Route 83 From South					Dart Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	6	164	36	0	206	76	16	35	1	128	5	109	7	0	121	53	23	12	0	88	543
07:15 AM	3	198	33	1	235	50	12	32	0	94	13	92	4	0	109	70	25	13	0	108	546
07:30 AM	12	205	12	1	230	15	33	46	0	94	19	89	8	0	116	75	16	6	0	97	537
07:45 AM	6	177	10	1	194	13	24	32	0	69	17	95	8	0	120	82	24	4	0	110	493
Total	27	744	91	3	865	154	85	145	1	385	54	385	27	0	466	280	88	35	0	403	2119
08:00 AM	4	157	18	1	180	20	23	35	0	78	23	109	12	0	144	70	20	11	0	101	503
08:15 AM	9	160	12	1	182	18	20	26	0	64	23	93	8	0	124	51	28	4	1	84	454
08:30 AM	6	146	11	1	164	13	15	32	1	61	10	86	6	1	103	81	24	21	1	127	455
08:45 AM	3	139	10	0	152	14	15	36	0	65	12	94	11	0	117	96	22	13	0	131	465
Total	22	602	51	3	678	65	73	129	1	268	68	382	37	1	488	298	94	49	2	443	1877
Grand Total	49	1346	142	6	1543	219	158	274	2	653	122	767	64	1	954	578	182	84	2	846	3996
Apprch %	3.2	87.2	9.2	0.4		33.5	24.2	42	0.3		12.8	80.4	6.7	0.1		68.3	21.5	9.9	0.2		
Total %	1.2	33.7	3.6	0.2	38.6	5.5	4	6.9	0.1	16.3	3.1	19.2	1.6	0	23.9	14.5	4.6	2.1	0.1	21.2	
Lights	43	1303																			
% Lights	87.8	96.8	93.7	83.3	96.2	95.4	98.7	97.8	100	97.2	93.4	95.2	95.3	100	95	99.1	95.6	98.8	100	98.3	96.5
Trucks	1	25	1	0	27	2	1	1	0	4	2	23	3	0	28	1	4	1	0	6	65
% Trucks	2	1.9	0.7	0	1.7	0.9	0.6	0.4	0	0.6	1.6	3	4.7	0	2.9	0.2	2.2	1.2	0	0.7	1.6
Buses	5	18	8	1	32	8	1	5	0	14	6	14	0	0	20	4	4	0	0	8	74
% Buses	10.2	1.3	5.6	16.7	2.1	3.7	0.6	1.8	0	2.1	4.9	1.8	0	0	2.1	0.7	2.2	0	0	0.9	1.9

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 22423
Site Code : 22423
Start Date : 12/7/2021
Page No : 2

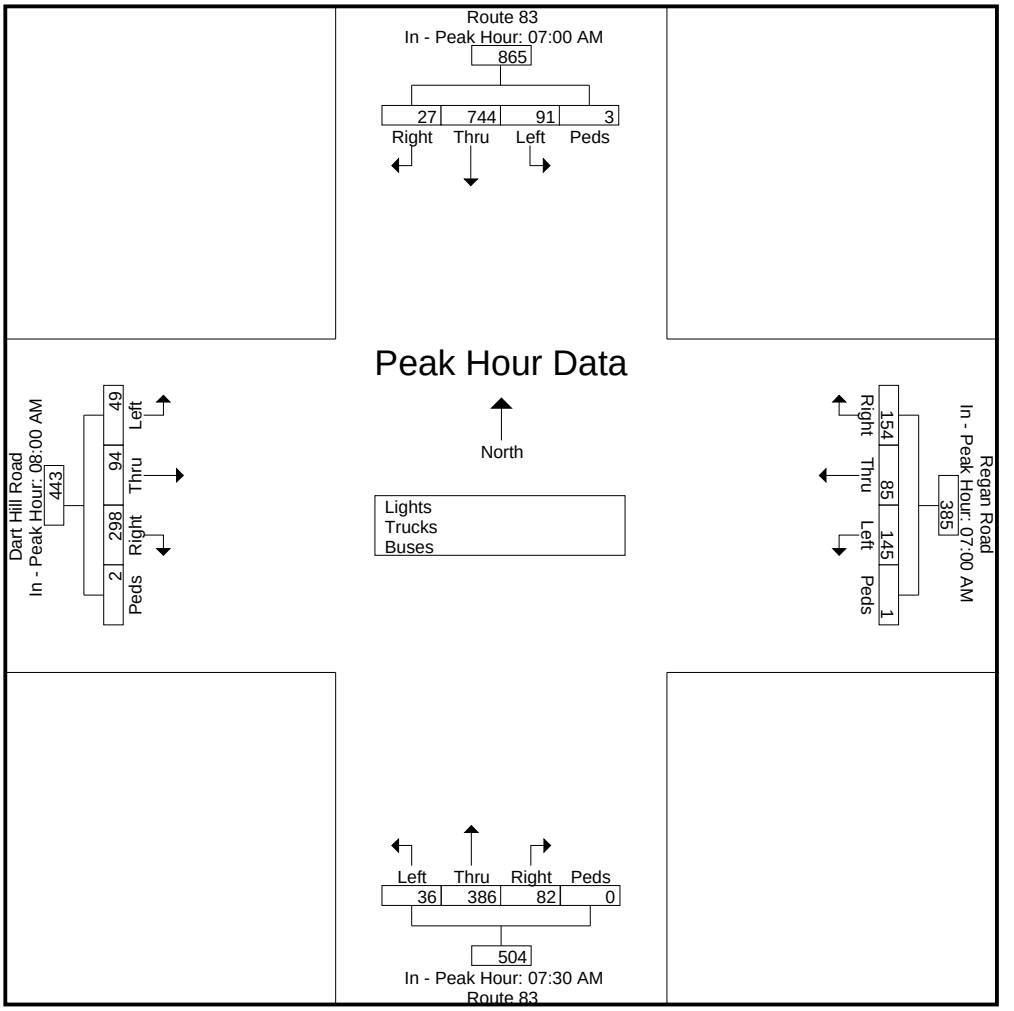
	Route 83 From North					Regan Road From East					Route 83 From South					Dart Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	6	164	36	0	206	76	16	35	1	128	5	109	7	0	121	53	23	12	0	88	543
07:15 AM	3	198	33	1	235	50	12	32	0	94	13	92	4	0	109	70	25	13	0	108	546
07:30 AM	12	205	12	1	230	15	33	46	0	94	19	89	8	0	116	75	16	6	0	97	537
07:45 AM	6	177	10	1	194	13	24	32	0	69	17	95	8	0	120	82	24	4	0	110	493
Total Volume	27	744	91	3	865	154	85	145	1	385	54	385	27	0	466	280	88	35	0	403	2119
% App. Total	3.1	86	10.5	0.3		40	22.1	37.7	0.3		11.6	82.6	5.8	0		69.5	21.8	8.7	0		
PHF	.563	.907	.632	.750	.920	.507	.644	.788	.250	.752	.711	.883	.844	.000	.963	.854	.880	.673	.000	.916	.970



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 22423
Site Code : 22423
Start Date : 12/7/2021
Page No : 3

Start Time	Route 83 From North					Regan Road From East					Route 83 From South					Dart Hill Road From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:00 AM					07:00 AM					07:30 AM					08:00 AM					
+0 mins.	6	164	36	0	206	76	16	35	1	128	19	89	8	0	116	70	20	11	0	101	
+15 mins.	3	198	33	1	235	50	12	32	0	94	17	95	8	0	120	51	28	4	1	84	
+30 mins.	12	205	12	1	230	15	33	46	0	94	23	109	12	0	144	81	24	21	1	127	
+45 mins.	6	177	10	1	194	13	24	32	0	69	23	93	8	0	124	96	22	13	0	131	
Total Volume	27	744	91	3	865	154	85	145	1	385	82	386	36	0	504	298	94	49	2	443	
% App. Total	3.1	86	10.5	0.3		40	22.1	37.7	0.3		16.3	76.6	7.1	0		67.3	21.2	11.1	0.5		
PHF	.563	.907	.632	.750	.920	.507	.644	.788	.250	.752	.891	.885	.750	.000	.875	.776	.839	.583	.500	.845	



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Route 83 at Dart Hill/Regan Road
Vernon, Connecticut

File Name : 22424
Site Code : 22424
Start Date : 12/7/2021
Page No : 1

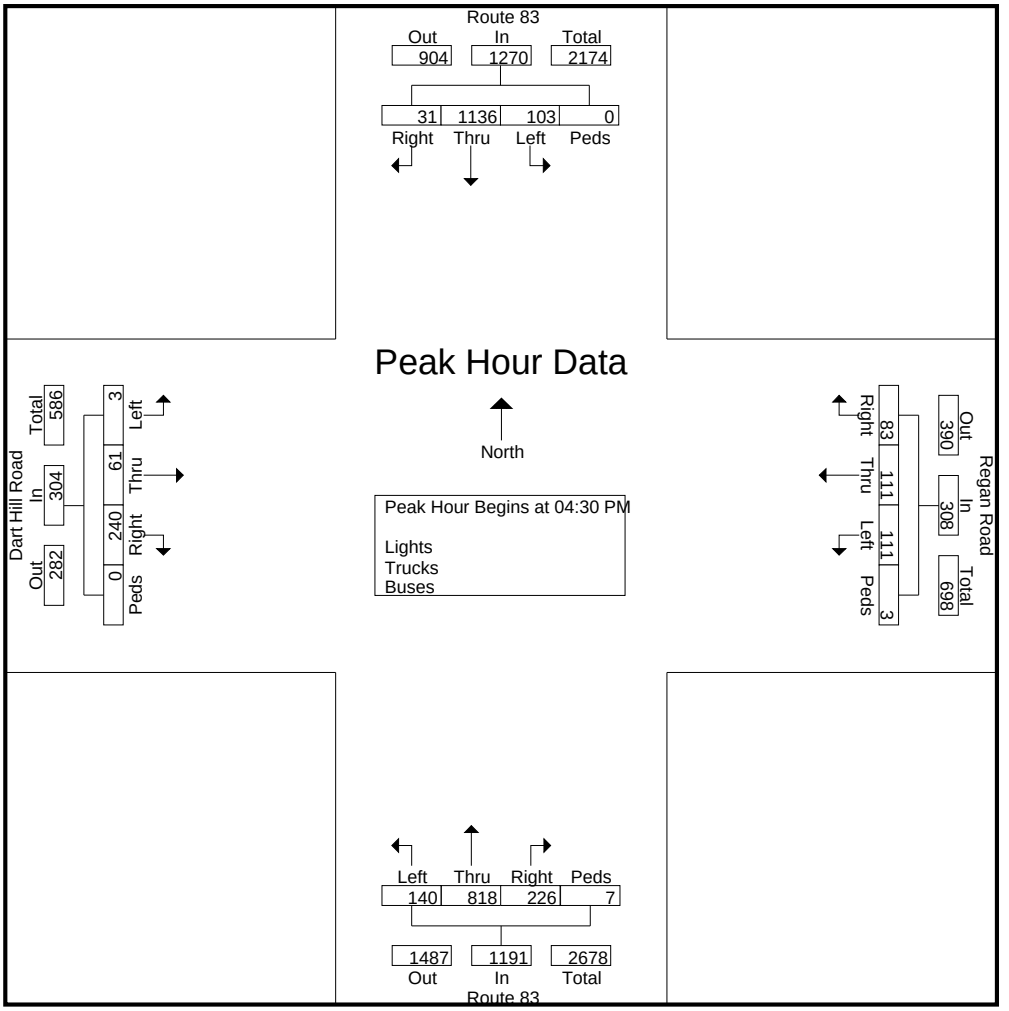
Groups Printed- Lights - Trucks - Buses

	Route 83 From North					Regan Road From East					Route 83 From South					Dart Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	9	207	18	3	237	15	22	35	1	73	38	198	27	0	263	42	21	0	0	63	636
04:15 PM	9	163	28	0	200	31	16	36	0	83	48	206	39	0	293	67	18	0	1	86	662
04:30 PM	5	161	31	0	197	17	25	35	2	79	52	211	40	0	303	61	15	2	0	78	657
04:45 PM	9	556	25	0	590	16	30	28	0	74	55	209	30	0	294	63	26	0	0	89	1047
Total	32	1087	102	3	1224	79	93	134	3	309	193	824	136	0	1153	233	80	2	1	316	3002
05:00 PM	8	218	21	0	247	29	32	32	0	93	67	191	32	7	297	54	5	0	0	59	696
05:15 PM	9	201	26	0	236	21	24	16	1	62	52	207	38	0	297	62	15	1	0	78	673
05:30 PM	3	162	19	0	184	12	23	18	0	53	44	182	20	1	247	52	18	1	0	71	555
05:45 PM	27	121	24	0	172	19	19	31	0	69	47	156	28	0	231	46	11	0	0	57	529
Total	47	702	90	0	839	81	98	97	1	277	210	736	118	8	1072	214	49	2	0	265	2453
Grand Total	79	1789	192	3	2063	160	191	231	4	586	403	1560	254	8	2225	447	129	4	1	581	5455
Apprch %	3.8	86.7	9.3	0.1		27.3	32.6	39.4	0.7		18.1	70.1	11.4	0.4		76.9	22.2	0.7	0.2		
Total %	1.4	32.8	3.5	0.1	37.8	2.9	3.5	4.2	0.1	10.7	7.4	28.6	4.7	0.1	40.8	8.2	2.4	0.1	0	10.7	
Lights	79	1774										1547									
% Lights	100	99.2	99.5	100	99.2	100	99.5	98.7	100	99.3	99	99.2	99.2	100	99.1	100	97.7	50	100	99.1	99.2
Trucks	0	6	0	0	6	0	0	1	0	1	0	9	2	0	11	0	2	2	0	4	22
% Trucks	0	0.3	0	0	0.3	0	0	0.4	0	0.2	0	0.6	0.8	0	0.5	0	1.6	50	0	0.7	0.4
Buses	0	9	1	0	10	0	1	2	0	3	4	4	0	0	8	0	1	0	0	1	22
% Buses	0	0.5	0.5	0	0.5	0	0.5	0.9	0	0.5	1	0.3	0	0	0.4	0	0.8	0	0	0.2	0.4

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 22424
Site Code : 22424
Start Date : 12/7/2021
Page No : 2

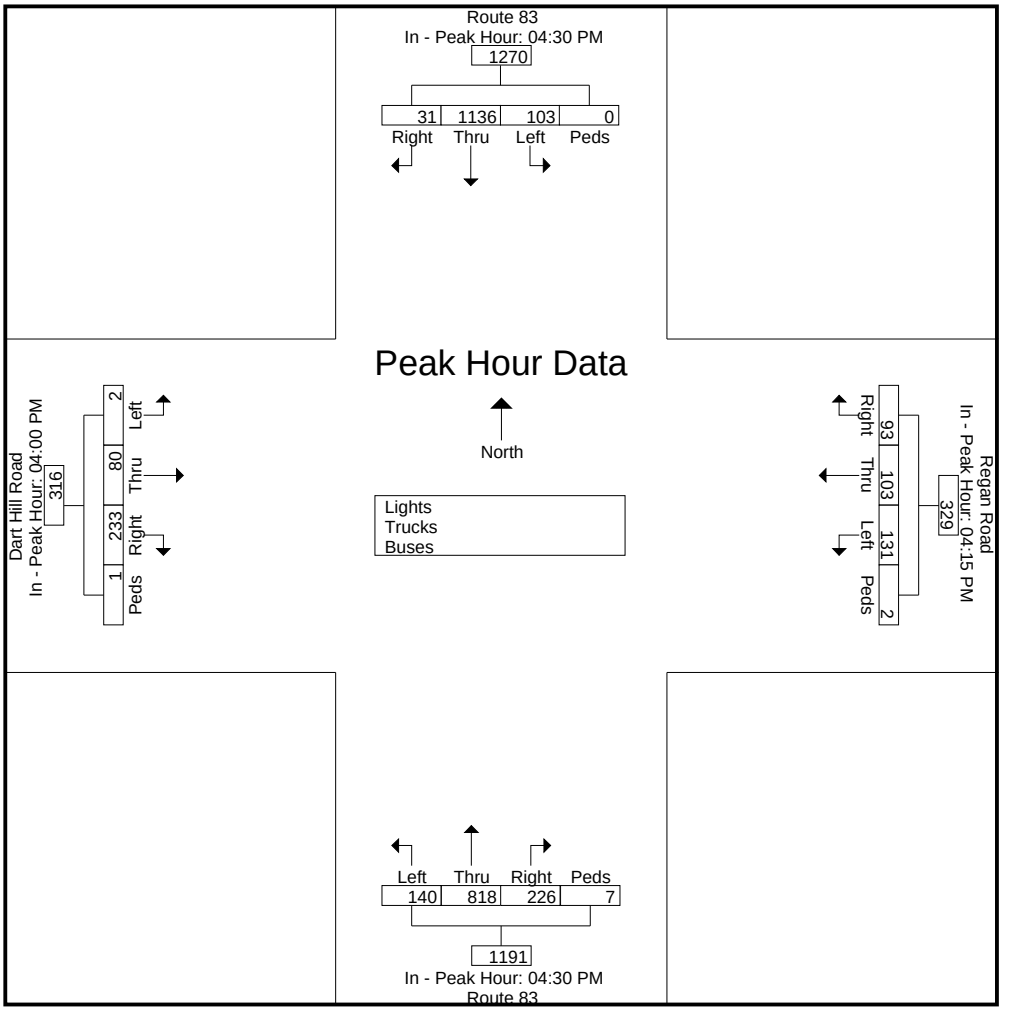
	Route 83 From North					Regan Road From East					Route 83 From South					Dart Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	5	161	31	0	197	17	25	35	2	79	52	211	40	0	303	61	15	2	0	78	657
04:45 PM	9	556	25	0	590	16	30	28	0	74	55	209	30	0	294	63	26	0	0	89	1047
05:00 PM	8	218	21	0	247	29	32	32	0	93	67	191	32	7	297	54	5	0	0	59	696
05:15 PM	9	201	26	0	236	21	24	16	1	62	52	207	38	0	297	62	15	1	0	78	673
Total Volume	31	1136	103	0	1270	83	111	111	3	308	226	818	140	7	1191	240	61	3	0	304	3073
% App. Total	2.4	89.4	8.1	0		26.9	36	36	1		19	68.7	11.8	0.6		78.9	20.1	1	0		
PHF	.861	.511	.831	.000	.538	.716	.867	.793	.375	.828	.843	.969	.875	.250	.983	.952	.587	.375	.000	.854	.734



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 22424
Site Code : 22424
Start Date : 12/7/2021
Page No : 3

Start Time	Route 83 From North					Regan Road From East					Route 83 From South					Dart Hill Road From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:30 PM					04:15 PM					04:30 PM					04:00 PM					
+0 mins.	5	161	31	0	197	31	16	36	0	83	52	211	40	0	303	42	21	0	0	63	
+15 mins.	9	556	25	0	590	17	25	35	2	79	55	209	30	0	294	67	18	0	1	86	
+30 mins.	8	218	21	0	247	16	30	28	0	74	67	191	32	7	297	61	15	2	0	78	
+45 mins.	9	201	26	0	236	29	32	32	0	93	52	207	38	0	297	63	26	0	0	89	
Total Volume	31	1136	103	0	1270	93	103	131	2	329	226	818	140	7	1191	233	80	2	1	316	
% App. Total	2.4	89.4	8.1	0		28.3	31.3	39.8	0.6		19	68.7	11.8	0.6		73.7	25.3	0.6	0.3		
PHF	.861	.511	.831	.000	.538	.750	.805	.910	.250	.884	.843	.969	.875	.250	.983	.869	.769	.250	.250	.888	



Appendix G

Crash Data Records

Uconn Crash Data

501 Talcottville Road
Vernon, Connecticut
January 1, 2018 - December 31, 2020

Date Of Crash	Time of Crash	Severity PDO = Property Damage Only	No. Of Veh.	No. Of Non-Motorists	Intersecting Roadway Name	Collision Type	Weather	Light Condition	Road Surface Condition	Contributing Circumstances
1) Dart Hill Road at Western Walgreens Drive										
12/21/2018	8:55:00	PDO	2	0	unknown	Front to rear	Rain	Daylight	Wet	None
6/4/2019	16:28:00	Possible Injury	2	0	unknown	Front to front	Clear	Daylight	Dry	None
2) Route 83 (Talcottville Road) at Dart Hill Road and Regan Road										
3/15/2018	17:59:00	PDO	2	0	DART HILL RD	Angle	Clear	Daylight	Dry	None
3/23/2018	10:51:00	Possible Injury	2	0	unknown	Angle	Clear	Daylight	Dry	None
4/1/2018	10:52:00	PDO	2	0	DART HILL RD	Sideswipe, same direction	Clear	Daylight	Dry	None
4/12/2018	17:18:00	PDO	2	0	DART HILL RD	Front to rear	Clear	Daylight	Dry	None
4/13/2018	21:19:00	PDO	2	0	unknown	Front to rear	Clear	Dark-Lighted	Dry	None
4/18/2018	8:28:00	PDO	2	0	unknown	Angle	Clear	Daylight	Dry	None
5/4/2018	9:11:00	PDO	3	0	unknown	Front to rear	Clear	Daylight	Dry	None
5/7/2018	17:06:00	PDO	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
5/8/2018	12:03:00	PDO	2	0	DART HILL RD	Sideswipe, same direction	Clear	Daylight	Dry	None
5/21/2018	22:32:00	PDO	2	0	DART HILL RD	Front to rear	Clear	Dark-Lighted	Dry	None
5/29/2018	17:15:00	PDO	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
6/9/2018	8:43:00	PDO	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
6/29/2018	19:38:00	PDO	2	0	DART HILL RD	Angle	Clear	Daylight	Dry	None
7/3/2018	12:53:00	PDO	2	0	REGAN RD	Front to rear	Clear	Daylight	Dry	None
8/25/2018	15:19:00	PDO	2	0	unknown	Angle	Clear	Daylight	Dry	Visual Obstruction(s)
8/30/2018	17:06:00	PDO	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
9/5/2018	16:07:00	Suspected Minor Injury	2	0	unknown	Angle	Clear	Daylight	Dry	None
9/16/2018	15:19:00	PDO	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
9/19/2018	17:32:00	PDO	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
10/18/2018	18:58:00	PDO	2	0	unknown	Front to rear	Clear	Dark-Lighted	Dry	None
11/8/2018	8:13:00	PDO	2	0	DART HILL RD	Front to rear	Clear	Daylight	Dry	None
12/11/2018	14:18:00	PDO	2	0	DART HILL RD	Front to rear	Clear	Daylight	Dry	None
12/22/2018	9:34:00	PDO	2	0	unknown	Angle	Clear	Daylight	Wet	None
12/27/2018	12:32:00	PDO	2	0	unknown	Angle	Clear	Daylight	Dry	None
12/31/2018	18:19:00	PDO	2	0	unknown	Angle	Rain	Dark-Lighted	Wet	None
1/1/2019	18:33:00	PDO	2	0	DART HILL RD	Angle	Clear	Dark-Lighted	Dry	None
1/3/2019	5:51:00	PDO	2	0	unknown	Front to rear	Clear	Dark-Lighted	Dry	None
1/13/2019	17:20:00	PDO	2	0	DART HILL RD	Angle	Clear	Dark-Lighted	Dry	None
1/19/2019	14:59:00	PDO	2	0	DART HILL RD	Front to rear	Clear	Daylight	Dry	None
1/22/2019	12:49:00	PDO	2	0	DART HILL RD	Front to rear	Clear	Daylight	Wet	None
2/5/2019	13:27:00	PDO	2	0	unknown	Rear to rear	Clear	Daylight	Dry	None
2/7/2019	7:23:00	PDO	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
2/23/2019	18:38:00	PDO	2	0	DART HILL RD	Angle	Clear	Dark-Lighted	Dry	None
4/11/2019	13:34:00	PDO	2	0	unknown	Angle	Clear	Daylight	Dry	None
4/17/2019	21:54:00	Suspected Minor Injury	1	0	unknown	Not Applicable	Clear	Dark-Lighted	Dry	None

Date Of Crash	Time of Crash	Severity PDO = Property Damage Only	No. Of Veh.	No. Of Non-Motorists	Intersecting Roadway Name	Collision Type	Weather	Light Condition	Road Surface Condition	Contributing Circumstances
5/5/2019	17:13:00	PDO	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
5/23/2019	13:42:00	PDO	2	0	DART HILL RD	Front to rear	Clear	Daylight	Dry	None
6/21/2019	15:09:00	PDO	2	0	DART HILL RD	Front to rear	Clear	Daylight	Dry	None
6/27/2019	8:16:00	PDO	2	0	DART HILL RD	Angle	Clear	Daylight	Dry	None
6/27/2019	14:36:00	Possible Injury	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
7/19/2019	17:42:00	PDO	2	0	DART HILL RD	Front to rear	Clear	Daylight	Dry	None
7/29/2019	10:28:00	Possible Injury	3	0	TALCOTVILLE	Sideswipe, same direction	Clear	Daylight	Dry	None
8/16/2019	21:14:00	PDO	2	0	unknown	Rear to side	Clear	Dark-Lighted	Dry	None
9/7/2019	19:32:00	PDO	2	0	DART HILL RD	Angle	Clear	Dark-Lighted	Dry	None
9/16/2019	15:53:00	PDO	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
9/21/2019	12:57:00	PDO	2	0	TALCOTTVILLE	Front to rear	Clear	Daylight	Dry	None
9/21/2019	17:16:00	PDO	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
9/30/2019	15:09:00	PDO	2	0	DART HILL RD	Sideswipe, same direction	Clear	Daylight	Dry	None
10/17/2019	20:19:00	Possible Injury	2	0	DART HILL RD	Front to rear	Clear	Dark-Lighted	Dry	None
10/30/2019	18:50:00	Possible Injury	2	0	DART HILL RD	Angle	Rain	Dark-Lighted	Wet	None
11/7/2019	13:57:00	PDO	5	0	unknown	Front to rear	Rain	Daylight	Wet	Weather Conditions
11/28/2019	12:23:00	PDO	2	0	unknown	Angle	Clear	Daylight	Dry	None
12/22/2019	17:23:00	Suspected Minor Injury	2	0	unknown	Front to front	Clear	Dark-Lighted	Dry	None
12/24/2019	11:58:00	PDO	2	0	unknown	Angle	Clear	Daylight	Dry	None
2/1/2020	10:37:00	PDO	2	0	unknown	Other	Clear	Daylight	Dry	None
2/16/2020	12:00:00	PDO	2	0	DART HILL RD	Front to rear	Cloudy	Daylight	Dry	None
3/2/2020	7:42:00	PDO	2	0	unknown	Angle	Clear	Daylight	Dry	Visual Obstruction(s)
3/2/2020	18:20:00	PDO	2	0	DART HILL RD	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None
3/11/2020	7:53:00	PDO	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
4/11/2020	23:24:00	Possible Injury	2	0	DART HILL RD	Front to rear	Clear	Dark-Lighted	Dry	None
5/13/2020	8:27:00	PDO	2	0	DART HILL RD	Angle	Clear	Daylight	Dry	None
5/13/2020	17:44:00	Suspected Minor Injury	2	0	DART HILL RD	Angle	Clear	Daylight	Dry	None
6/12/2020	19:48:00	PDO	2	0	DART HILL RD	Sideswipe, same direction	Clear	Daylight	Dry	None
6/23/2020	9:28:00	Possible Injury	2	0	TALCOTTVILLE RD	Front to rear	Clear	Daylight	Dry	None
7/17/2020	11:49:00	PDO	1	0	unknown	Not Applicable	Clear	Daylight	Dry	None
9/13/2019	9:23:00	PDO	2	0	unknown	Sideswipe, same direction	Clear	Daylight	Dry	None
8/13/2020	16:05:00	PDO	2	0	DART HILL RD	Front to rear	Clear	Daylight	Dry	None
9/1/2020	8:21:00	PDO	2	0	83-N	Front to rear	Clear	Daylight	Dry	None
9/5/2020	12:10:00	PDO	2	0	Regan Rd	Angle	Clear	Daylight	Dry	None
9/8/2020	9:58:00	PDO	2	0	unknown	Front to rear	Clear	Daylight	Dry	None
10/24/2020	14:53:00	Possible Injury	3	0	unknown	Front to rear	Clear	Daylight	Dry	None
11/9/2020	13:14:00	PDO	2	0	DART HILL RD	Front to rear	Clear	Daylight	Dry	None
11/21/2020	12:53:00	Possible Injury	2	0	unknown	Angle	Clear	Daylight	Dry	None
12/12/2020	11:51:00	PDO	2	0	unknown	Angle	Clear	Daylight	Dry	None
12/30/2020	18:22:00	Possible Injury	2	0	DART HILL RD	Front to rear	Clear	Dark-Lighted	Dry	None

DRAINAGE REPORT
The Learning Experience
501 Talcottville Road
Enfield, CT

Revised February 14, 2022

Prepared for:

Vernon Development, LLC
56 East Main Street
Avon, Connecticut 06001
(860) 677-5607

Project No. 2021-083

Prepared by:

J.R. Russo & Associates, LLC
Land Surveyors & Professional Engineers
P.O. Box 938
East Windsor, CT 06088
(860) 623-0569

I. INTRODUCTION

A. Project Description

Vernon Development, LLC and The Learning Experience are proposing the development of a 10,000 s.f. daycare center on Dart Hill Road near the intersection of Dart Hill Road and Talcottville Road (Rte. 83) in Vernon. The development will result in an impervious area of approximately 0.91 acres. Runoff from the development will be directed to a subsurface infiltration system and infiltration basin designed to provide treatment, ground water recharge, and peak flow attenuation in accordance with the Connecticut Stormwater Quality Manual.

B. Existing Conditions

The proposed 2.0 acre lot for the development will be split off of the existing 4.6 acre parcel at 501 Talcottville Road. The new lot for the development (the project site) will front Dart Hill Road to the north. The site currently consists of undeveloped woodlands, including a wooded wetland on the southern portion of the lot. The wetlands ultimately discharge to Ogden Brook further to the south. Starting at the edge of the road, the site slopes southerly toward the wetland. In addition to runoff from the parcel, stormwater from the building and parking lot at the adjacent Panda Palace to the east, discharges onto the property via a leak-off in the concrete curb at the edge of the parking lot. This runoff flows across the development site into the on-site wetland.

Stormwater overflow from an existing stormwater management basin serving the Walgreens development on the north side of Dart Hill Road is also piped underneath the road to discharge onto the site. The discharge from the stormwater basin consists of a 6" PVC pipe which terminates in an existing manhole in Dart Hill Road. The manhole discharges onto the site via a 15" RCP.

Based on a review of the USDA Soil Survey of Connecticut, the majority of the soil in the area to be developed consists of Hartford sandy loam and the remaining soil on the western portion of the site is Udorthents-Urban land complex. (see Soils Map in Appendix 2). The USDA Soil Survey defines groups of soils into Hydrologic Soil Groups (HSG) according to their runoff-producing characteristics. Soils are assigned to four groups (A, B, C, and D Groups). In group A, are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They typically are deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a hardpan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other nearly impervious material. The classification of the Hartford sandy loam is HSG A and the Udorthents-Urban land complex is HSG B.

On December 17, 2021, a series of 5 test pits were performed in the area of the proposed development to confirm the existing soil conditions. Test pits were excavated to depths ranging from 62-90 inches. Soils encountered included 6-12 inches of topsoil over brown fine sandy loam subsoils to a depth of 18-30 inches, overlying red-brown sand and gravel. Soil mottling indicative of the seasonal high water table was encountered in test pits TP1, TP2, and TP3. The

depths of the mottling indicate a seasonal high water table approximately at the elevation of 212.0. Test pit logs are provided the Site Plans.

Soil samples were collected from test pits 1 through 4 at depths ranging from 30-42 inches. These samples were submitted to New England Materials Testing Lab, LLC for permeability testing by ASTM D2434. Calculated permeabilities ranged from 1.10 in/hr for the sample collected at the bottom of the slope in TP1 to 33.95 in/hr for the sample collected mid-slope in TP4. Permeability test results are also provided in Appendix 3.

II. STORMWATER RUNOFF ANALYSIS

A. Methodology

Peak runoff flow rates were determined for pre- and post-development conditions using Applied Microcomputer System's HydroCAD™ Stormwater Modeling System. This computer software employs the SCS Technical Release 55 and 20 (TR-55 & TR-20) methodology. The potential stormwater impacts downstream were evaluated for the 2-yr, 10-yr, 25-yr, and 100-yr; 24-hour storm events. The rainfall for these storm events was taken from NOAA Atlas 14 provided in Appendix 1. Based on the present drainage patterns, all runoff from the proposed development area flows south into the on-site wetlands. As a result, the edge of the wetlands was selected as the design point. The runoff outlet from across the street will be diverted in order to bypass the on-site drainage system and discharge directly at the edge of the wetland. Thus, it acts independent from the site and was not included in these calculations.

B. Pre-Development Hydrology

The pre-development site was modeled as two subcatchments. Subcatchment PRE includes the approximately 1.86 acres of on-site development area that drains to the design point. Subcatchment PP includes the off-site runoff from the adjacent Panda Palace parcel. The pre-development drainage area map is provided in Appendix 4. The pre-development runoff characteristics of the contributing area is provided on the HydroCAD data sheets in Appendix 5. The pre-development discharge rates from the site during the design storms are summarized in Table 1.

C. Post-Development Hydrology

The proposed project will result in approximately 0.91 acres of new impervious area. The development will include a series of catch basins, trench drains, and piping to collect runoff from the development area and divert it to a new infiltration basin in the southeast corner of the site. This system will include a riprap swale and area drain installed downgradient of the leak-off from the Panda Palace parking lot. This runoff will be collected and diverted to the new infiltration basin as well. In addition, the roof runoff will be collected separately and diverted to a subsurface infiltration system under the parking lot which will overflow to the drainage system and ultimately the surface infiltration basin. The subsurface infiltration system and infiltration

basin have been designed in accordance with the CT Storm Water Quality Manual to provide treatment, groundwater recharge, and peak flow attenuation.

As discussed above, several test pits were completed at the site to verify soil conditions. Test pits TP1, TP2 and TP3 were all located within the vicinity of the proposed surface infiltration basin. Samples collected from these test pits at depths consistent with the proposed bottom of the basin were tested for permeability. The resulting permeabilities were 1.10 in/hr (TP1), 1.97 in/hr (TP2) and 2.34 in/hr (TP3). As a conservative measure, the slowest permeability rate of 1.10 in/hr was used as the basis for the design infiltration rate. This rate was further reduced by 50% to account for potential clogging resulting in a final design infiltration rate for the surface basin of 0.55 inches/hour. The subsurface infiltration basin will be constructed further up the slope to the north in the vicinity of test pits TP4 and TP5. The soils in these test pits at the elevation of the proposed infiltration system included loose, sand and gravel. The resulting permeability for the soil sample collected from TP4 was 33.95 in/hr. As a conservative measure and to account for potential clogging, the design infiltration rate used for the subsurface infiltration system was selected to be 15.0 in/hr.

The infiltration basin will be equipped with a forebay separated from the main part of the basin by a stone filter berm. The bottom of the basin will be set at elevation 214 which allows 2 feet of separation to the seasonal high water table that was encountered in the test pits. The basin will be equipped with a multi-stage outlet structure constructed from a standard Type CL catch basin. The structures primary outlet will consist of a 10" orifice set at an elevation of 216.1. The secondary outlet will consist of the frame and grate to be set at elevation 218.3. The structure will discharge via a 10" outlet pipe at the edge of the wetland. The basin will also be equipped with an emergency 10-foot wide earthen spillway at elevation 218.5. The subsurface infiltration system for the roof runoff will consist of 15 ADS SC740 chambers in stone. Flows from larger storm events exceeding the capacity of the storage and infiltration capacity of the chambers will discharge via an overflow pipe to the on-site drainage system and the surface infiltration basin. The proposed storage capacities of the surface infiltration basin below the primary outlet was sized to exceed the water quality volume. Likewise, the forebay was sized to contain a minimum of 25% of the WQV per the requirements for infiltration basins. WQV calculations are provided in Appendix 6.

The same design point for the pre-development analysis was used for the post development analysis. The post development site was divided into 9 subcatchments. Subcatchments S1, S2, and S3 include the areas that will be collected by the catch basins in the parking lot and discharge to the surface infiltration basin. Subcatchment S4 includes the roof runoff that will be discharged into the subsurface infiltration chambers. Subcatchment S5 includes runoff from the playground area that will be collected in a trench drain and piped directly to the infiltration basin. Subcatchment S6 includes the area that will directly sheet flow into the infiltration basin. Subcatchment S7 includes the area that will continue to drain overland directly to the design point (i.e. wetlands). Subcatchment PP includes the area of the adjacent Panda Palace that discharges to the development area.

The post development drainage area map is provided in Appendix 4. The post development runoff characteristics of the subcatchments are provided on the HydroCAD data sheets in

Appendix 5. As shown in the Table 1, the post-development peak rates of runoff from the site to the design point will be maintained or reduced in comparison to the pre-development rates.

TABLE 1 – COMPARISON OF PRE- & POST-DEVELOPMENT DISCHARGE RATES (CFS) TO DESIGN POINT

	2-year	10-year	25-year	100-year
Pre-Development	0.0	0.0	0.1	0.4
Post Development	0.0	0.0	0.1	0.4

D. Pipe Sizing

The piping proposed at the site consists of smooth bore corrugated high density polyethylene pipe with smooth interior walls (CPEP-S). The roughness coefficient used for this pipe type is 0.012. The analysis provided in Appendix 5 indicates headwater elevation in the structure at each pipe inlet for the design storms and compares it to the flood elevation, which corresponds to the top of frame of the structure. The calculations indicate that all proposed pipes will have sufficient capacity to convey the 10-year storm event without surcharging out of the top of the structures.

E. Outlet Protection

Outfall protection for the pipe discharge from the Walgreens Stormwater Management Basin overflow at the edge of the wetland will consist of a Type A riprap apron. Similarly, a riprap channel will be installed at the inlet to the infiltration basin to convey runoff down the slope into the forebay. Outlet protection for the infiltration's spillway will consist of a 12" thick modified riprap slope extended 5 feet beyond the toe of the slope.

F. Summary of Results

The proposed design and analysis indicates that the proposed development will not result in negative impacts downstream. In addition, the proposed stormwater management system will intercept and divert the untreated runoff from the Panda Palace leak-off to the surface infiltration basin where it will be treated prior to discharge, whereas previously is was discharged to the wetland without treatment.

Appendix 1:

RAINFALL DATA

NOAA Atlas 14, Volume 10, Version 3
Location name: Vernon Rockville, Connecticut, USA*
Latitude: 41.8502°, Longitude: -72.4855°
Elevation: 224.86 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.332 (0.254-0.434)	0.403 (0.308-0.528)	0.519 (0.395-0.684)	0.616 (0.466-0.814)	0.749 (0.551-1.03)	0.849 (0.614-1.20)	0.953 (0.672-1.39)	1.07 (0.716-1.60)	1.24 (0.803-1.92)	1.38 (0.875-2.16)
10-min	0.470 (0.359-0.615)	0.571 (0.436-0.748)	0.736 (0.560-0.967)	0.872 (0.660-1.15)	1.06 (0.780-1.46)	1.20 (0.868-1.69)	1.35 (0.951-1.97)	1.52 (1.02-2.27)	1.76 (1.14-2.72)	1.96 (1.24-3.08)
15-min	0.553 (0.423-0.724)	0.672 (0.513-0.880)	0.866 (0.658-1.14)	1.03 (0.778-1.36)	1.25 (0.918-1.72)	1.41 (1.02-1.99)	1.59 (1.12-2.32)	1.79 (1.20-2.67)	2.07 (1.34-3.20)	2.30 (1.46-3.63)
30-min	0.748 (0.571-0.979)	0.909 (0.694-1.19)	1.17 (0.892-1.54)	1.39 (1.05-1.84)	1.69 (1.25-2.34)	1.92 (1.39-2.71)	2.16 (1.52-3.15)	2.43 (1.63-3.62)	2.81 (1.82-4.34)	3.13 (1.98-4.93)
60-min	0.943 (0.720-1.23)	1.15 (0.875-1.50)	1.48 (1.13-1.95)	1.76 (1.33-2.32)	2.14 (1.57-2.95)	2.42 (1.75-3.42)	2.73 (1.92-3.99)	3.07 (2.05-4.58)	3.56 (2.30-5.49)	3.96 (2.51-6.23)
2-hr	1.21 (0.931-1.58)	1.47 (1.12-1.91)	1.88 (1.44-2.46)	2.23 (1.69-2.93)	2.70 (2.00-3.72)	3.05 (2.22-4.30)	3.43 (2.44-5.03)	3.89 (2.61-5.77)	4.57 (2.98-7.02)	5.15 (3.27-8.06)
3-hr	1.40 (1.08-1.82)	1.69 (1.30-2.19)	2.16 (1.66-2.82)	2.56 (1.95-3.36)	3.10 (2.30-4.26)	3.50 (2.56-4.93)	3.94 (2.82-5.78)	4.47 (3.01-6.62)	5.30 (3.44-8.10)	6.01 (3.82-9.36)
6-hr	1.76 (1.36-2.28)	2.13 (1.65-2.76)	2.74 (2.11-3.56)	3.25 (2.49-4.24)	3.95 (2.95-5.41)	4.46 (3.28-6.26)	5.02 (3.62-7.35)	5.72 (3.86-8.42)	6.82 (4.44-10.4)	7.75 (4.96-12.0)
12-hr	2.17 (1.69-2.80)	2.66 (2.06-3.42)	3.45 (2.67-4.46)	4.10 (3.16-5.33)	5.01 (3.76-6.83)	5.67 (4.19-7.92)	6.40 (4.63-9.32)	7.31 (4.95-10.7)	8.74 (5.71-13.2)	9.98 (6.36-15.3)
24-hr	2.56 (1.99-3.27)	3.16 (2.47-4.06)	4.16 (3.23-5.35)	4.98 (3.85-6.45)	6.12 (4.62-8.32)	6.95 (5.16-9.68)	7.87 (5.74-11.4)	9.04 (6.14-13.1)	10.9 (7.13-16.3)	12.5 (8.03-19.1)
2-day	2.88 (2.26-3.67)	3.61 (2.83-4.61)	4.81 (3.75-6.16)	5.80 (4.50-7.47)	7.17 (5.44-9.72)	8.16 (6.10-11.3)	9.28 (6.82-13.5)	10.7 (7.30-15.5)	13.1 (8.58-19.5)	15.2 (9.77-23.0)
3-day	3.13 (2.46-3.98)	3.94 (3.09-5.01)	5.25 (4.10-6.70)	6.33 (4.93-8.12)	7.83 (5.96-10.6)	8.91 (6.69-12.4)	10.1 (7.48-14.7)	11.7 (8.01-16.9)	14.3 (9.44-21.3)	16.7 (10.8-25.2)
4-day	3.37 (2.65-4.27)	4.22 (3.32-5.36)	5.61 (4.40-7.15)	6.77 (5.28-8.67)	8.36 (6.37-11.3)	9.52 (7.15-13.2)	10.8 (7.99-15.7)	12.5 (8.55-18.0)	15.3 (10.1-22.7)	17.8 (11.5-26.8)
7-day	4.00 (3.16-5.06)	4.96 (3.92-6.28)	6.53 (5.14-8.29)	7.83 (6.13-9.99)	9.62 (7.35-12.9)	10.9 (8.22-15.0)	12.4 (9.15-17.8)	14.3 (9.78-20.4)	17.3 (11.4-25.5)	20.0 (12.9-30.0)
10-day	4.64 (3.68-5.85)	5.66 (4.48-7.14)	7.32 (5.78-9.27)	8.70 (6.83-11.1)	10.6 (8.11-14.2)	12.0 (9.02-16.4)	13.5 (9.88-19.3)	15.5 (10.6-22.1)	18.6 (12.3-27.3)	21.3 (13.8-31.8)
20-day	6.67 (5.31-8.37)	7.75 (6.17-9.74)	9.63 (7.55-12.0)	11.0 (8.67-13.9)	13.0 (9.97-17.2)	14.5 (10.9-19.5)	16.1 (11.8-22.5)	18.0 (12.5-25.5)	20.8 (13.9-30.4)	23.2 (15.1-34.4)
30-day	8.40 (6.70-10.5)	9.51 (7.58-11.9)	11.3 (8.99-14.2)	12.6 (10.1-16.2)	14.8 (11.4-19.5)	16.5 (12.3-21.9)	18.1 (13.2-24.9)	19.9 (13.8-27.9)	22.3 (14.9-32.4)	24.3 (15.9-36.0)
45-day	10.6 (8.45-13.2)	11.7 (9.35-14.6)	13.6 (10.8-17.0)	15.1 (12.0-19.0)	17.2 (13.2-22.4)	18.9 (14.1-24.9)	20.5 (14.8-27.8)	22.1 (15.4-31.0)	24.3 (16.3-35.0)	25.8 (16.9-38.1)
60-day	12.4 (9.92-15.4)	13.5 (10.8-16.9)	15.4 (12.3-19.3)	17.0 (13.5-21.4)	19.2 (14.7-24.8)	20.9 (15.7-27.5)	22.6 (16.3-30.4)	24.1 (16.8-33.6)	26.0 (17.4-37.4)	27.3 (17.8-40.1)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

Appendix 2:

NRCS SOILS INFORMATION

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for State of Connecticut



November 19, 2021

Custom Soil Resource Report
Soil Map



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
33B	Hartford sandy loam, 3 to 8 percent slopes	3.3	91.3%
306	Udorthents-Urban land complex	0.3	8.7%
Totals for Area of Interest		3.7	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

State of Connecticut

33B—Hartford sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9lmw
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 54 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hartford and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hartford

Setting

Landform: Terraces, outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits derived from sandstone and/or basalt

Typical profile

Ap - 0 to 8 inches: sandy loam
Bw1 - 8 to 20 inches: sandy loam
Bw2 - 20 to 26 inches: loamy sand
2C - 26 to 65 inches: stratified very gravelly coarse sand to loamy fine sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Minor Components

Penwood

Percent of map unit: 5 percent
Landform: Terraces, outwash plains
Down-slope shape: Convex

Across-slope shape: Linear
Hydric soil rating: No

Ellington

Percent of map unit: 5 percent
Landform: Terraces, outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Manchester

Percent of map unit: 5 percent
Landform: Terraces, outwash plains, kames, eskers
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Branford

Percent of map unit: 5 percent
Landform: Terraces, outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

306—Udorthents-Urban land complex

Map Unit Setting

National map unit symbol: 9lmg
Elevation: 0 to 2,000 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 120 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 50 percent
Urban land: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Drift

Typical profile

A - 0 to 5 inches: loam
C1 - 5 to 21 inches: gravelly loam
C2 - 21 to 80 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: About 54 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Urban Land

Typical profile

H - 0 to 6 inches: material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Unnamed, undisturbed soils

Percent of map unit: 8 percent
Hydric soil rating: No

Udorthents, wet substratum

Percent of map unit: 5 percent
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent
Hydric soil rating: No

Appendix 3:

PERMEABILITY TEST RESULTS

NEW ENGLAND MATERIALS TESTING LAB, LLC.
NEW ENGLAND REGIONAL OFFICE
72 Bissell Street Manchester, CT 06040 • Tel: 860-783-5830 • Fax: 860-783-5832

Client: JR Russo Surveyors Engineers
P. O Box 938
East Windsor, CT. 06088

Report #: 001

Lab ID: 098-21

Project: 501Talcottville Road Vernon, CT.

Client ID: TP-1

Technician: Z. A

Date: 12/27/2021

LAB PERMEABILITY TEST

Sample description: Reddish brown silty clayey sand.

Location: Onsite (501Talcottville Red Vernon, CT).

Sample depth: 30" to 36"

Method: Permeability by ASTM D2434 (Constant Head Method)

$k = QL/ath$

Where k = coefficient of permeability,

Q = quantity of water discharged,	Q =	800 cm^3
L = length of sample in centimeters	L =	15.24 cm
A = cross sectional area of specimen,	A =	43.10 cm^2
t = total time for discharge, in seconds	t =	5940 sec
h = difference in head manometers,	h =	61.5 cm

k = 0.00077435 cm/sec.

k = 1.0975 inch/hour

Reported To: JR Russo Surveyors Engineers

Submitted By: New England Materials Testing Lab, LLC.

The above data is the property of the client. No reproduction of the above data without the sole permission of NEMT.
NEMT accepts no liability for work executed by others

NEW ENGLAND MATERIALS TESTING LAB, LLC.
NEW ENGLAND REGIONAL OFFICE
72 Bissell Street Manchester, CT 06040 • Tel: 860-783-5830 • Fax: 860-783-5832

Client: JR Russo Surveyors Engineers
P. O Box 938
East Windsor, CT. 06088

Report #: 002

Lab ID: 099-21

Project: 501Talcottville Road Vernon, CT.

Client ID: TP-2

Technician: Z. A

Date: 12/27/2021

LAB PERMEABILITY TEST

Sample description: Reddish brown sand bank run gravel and fines.

Location: Onsite (501Talcottville Red Vernon, CT).

Sample depth: 30" to 36"

Method: Permeability by ASTM D2434 (Constant Head Method)

$k = QL/ath$

Where k = coefficient of permeability,

Q = quantity of water discharged,	Q =	1000 cm^3
L = length of sample in centimeters	L =	15.24 cm
A = cross sectional area of specimen,	A =	43.10 cm^2
t = total time for discharge, in seconds	t =	4140 sec
h = difference in head manometers,	h =	61.5 cm

k = 0.001388776 cm/sec.

k = 1.968 inch/hour

Reported To: JR Russo Surveyors Engineers

Submitted By: New England Materials Testing Lab, LLC.

The above data is the property of the client. No reproduction of the above data without the sole permission of NEMT.
NEMT accepts no liability for work executed by others.

NEW ENGLAND MATERIALS TESTING LAB, LLC.
NEW ENGLAND REGIONAL OFFICE
72 Bissell Street Manchester, CT 06040 • Tel: 860-783-5830 • Fax: 860-783-5832

Client: JR Russo Surveyors Engineers
P. O Box 938
East Windsor, CT. 06088

Report #: 003

Lab ID: 100-21

Project: 501Talcottville Road Vernon, CT.

Client ID: TP-3

Technician: Z. A

Date: 12/27/2021

LAB PERMEABILITY TEST

Sample description: Dark brown silty clayey sand and gravel.

Location: Onsite (501Talcottville Red Vernon, CT).

Sample depth: 36" to 42"

Method: Permeability by ASTM D2434 (Constant Head Method)

$k = QL/ath$

Where k = coefficient of permeability,

Q = quantity of water discharged,	Q =	1000 cm^3
L = length of sample in centimeters	L =	15.24 cm
A = cross sectional area of specimen,	A =	43.10 cm^2
t = total time for discharge, in seconds	t =	3480 sec
h = difference in head manometers,	h =	61.5 cm

k = 0.001652165 cm/sec.

k = 2.341 inch/hour

Reported To: JR Russo Surveyors Engineers

Submitted By: New England Materials Testing Lab, LLC.

The above data is the property of the client. No reproduction of the above data without the sole permission of NEMT.
NEMT accepts no liability for work executed by others.

NEW ENGLAND MATERIALS TESTING LAB, LLC.
NEW ENGLAND REGIONAL OFFICE
72 Bissell Street Manchester, CT 06040 • Tel: 860-783-5830 • Fax: 860-783-5832

Client: JR Russo Surveyors Engineers
P. O Box 938
East Windsor, CT. 06088

Report #: 001

Lab ID: 101-21

Project: 501Talcottville Road Vernon, CT.

Client ID: TP-4

Technician: Z. A

Date: 12/27/2021

LAB PERMEABILITY TEST

Sample description: Reddish brown sand and little gravel.

Location: Onsite (501Talcottville Red Vernon, CT).

Sample depth: 30" to 36"

Method: Permeability by ASTM D2434 (Constant Head Method)

$k = QL/ath$

Where k = coefficient of permeability,

Q = quantity of water discharged,	Q =	1000 cm^3
L = length of sample in centimeters	L =	15.24 cm
A = cross sectional area of specimen,	A =	43.10 cm^2
t = total time for discharge, in seconds	t =	240 sec
h = difference in head manometers,	h =	61.5 cm

k = 0.023956388 cm/sec.

k = 33.953 inch/hour

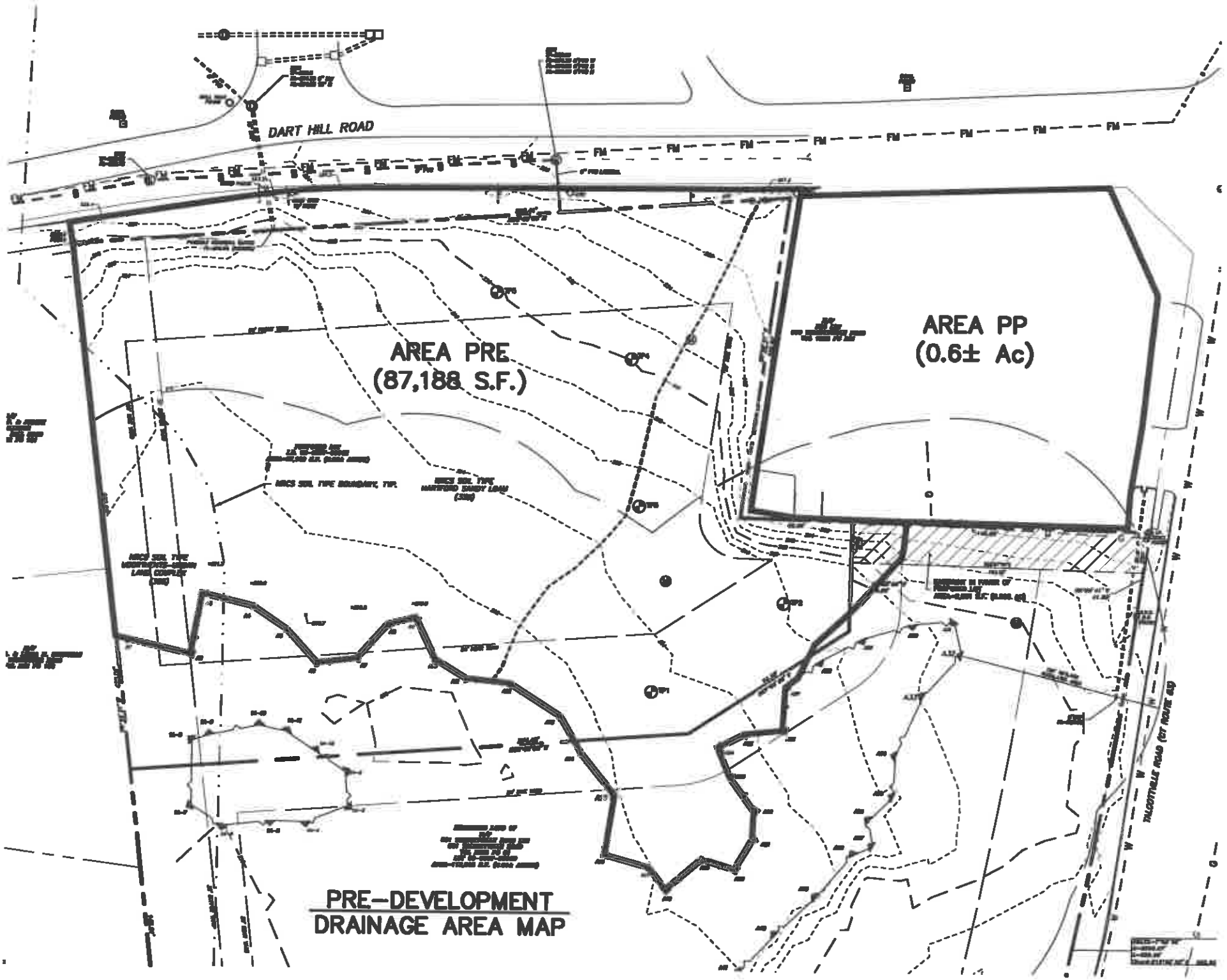
Reported To: JR Russo Surveyors Engineers

Submitted By: New England Materials Testing Lab, LLC.

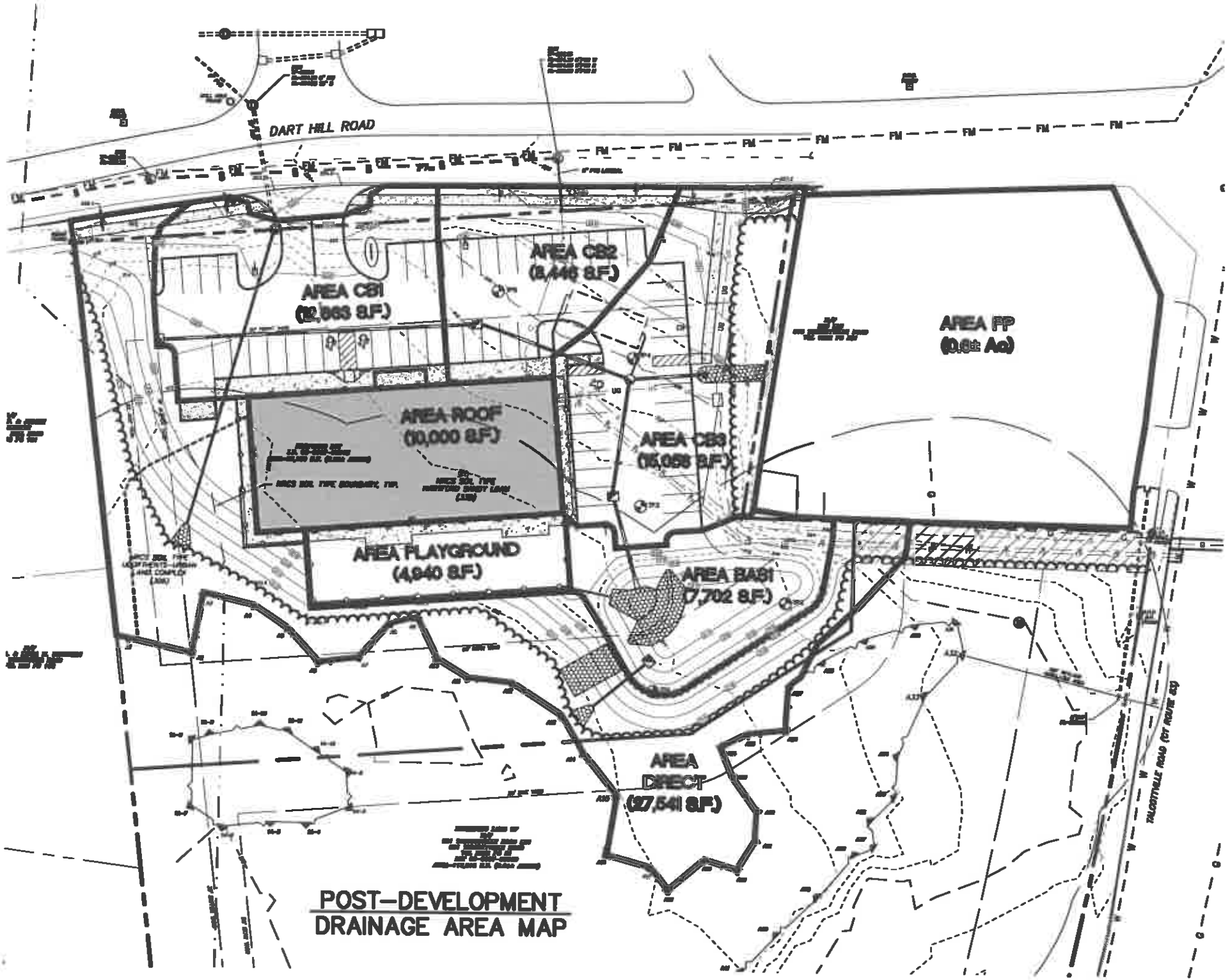
The above data is the property of the client. No reproduction of the above data without the sole permission of NEMT.
NEMT accepts no liability for work executed by others.

Appendix 4:

DRAINAGE AREA MAPS

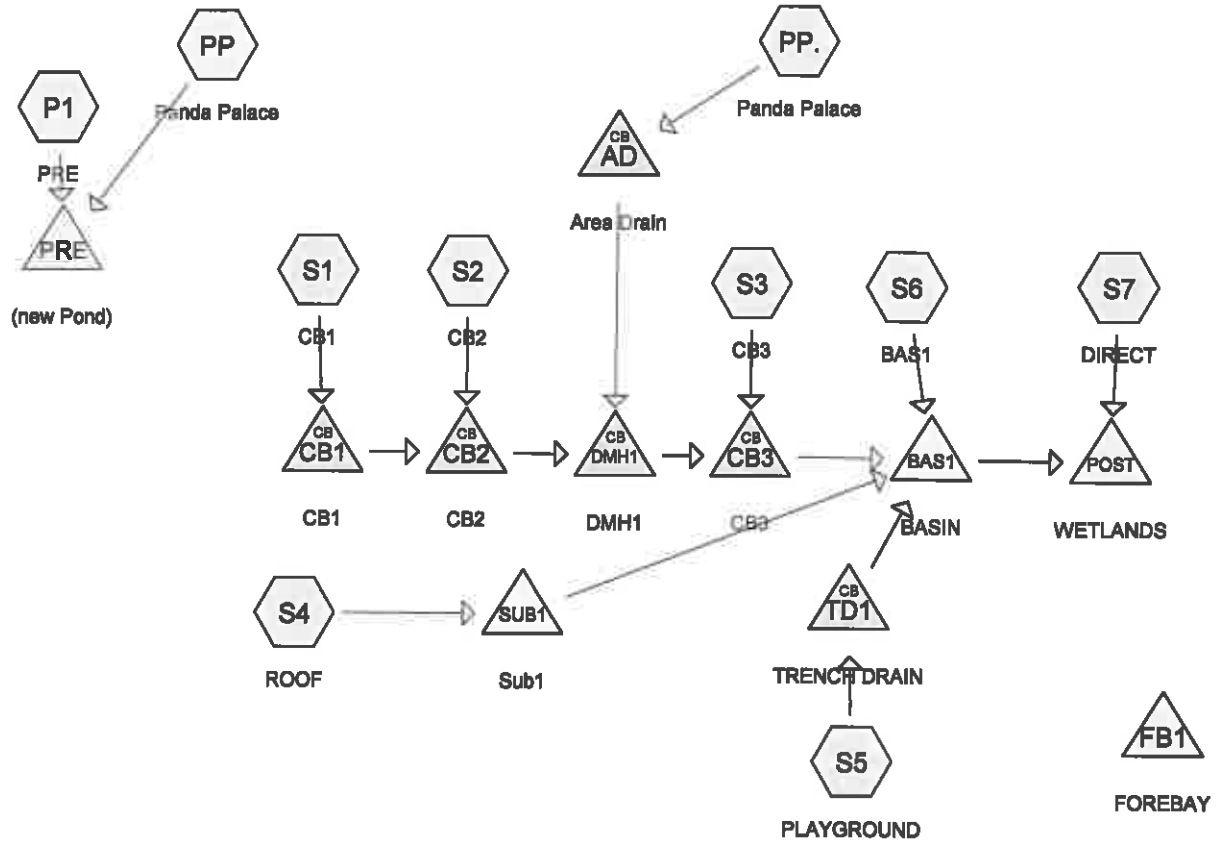


PRE-DEVELOPMENT
DRAINAGE AREA MAP


DART HILL ROAD
AREA CB1
(12,663 S.F.)
AREA CB2
(8,446 S.F.)
AREA FP
(0.6± Ac)
AREA ROOF
(10,000 S.F.)
AREA CB3
(15,058 S.F.)
AREA PLAYGROUND
(4,940 S.F.)
AREA BASI
(7,702 S.F.)
AREA
DIRECT
(27,541 S.F.)
POST-DEVELOPMENT
DRAINAGE AREA MAP

Appendix 5:

HYDROCAD ANALYSES



Subcat Reach Pond Link

Routing Diagram for 2021-083 Vernon TLE2
Prepared by {enter your company name here}, Printed 2/14/2022
HydroCAD® 10.00-25 s/n 02386 © 2019 HydroCAD Software Solutions LLC

Time span=1.00-72.00 hrs, dt=0.01 hrs, 7101 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment P1: PRE Runoff Area=87,188 sf 0.00% Impervious Runoff Depth=0.02"
Flow Length=276' Tc=14.3 min CN=32 Runoff=0.01 cfs 0.004 af

Subcatchment PP: Panda Palace Runoff Area=0.600 ac 100.00% Impervious Runoff Depth>4.74"
Tc=5.0 min CN=98 Runoff=3.03 cfs 0.237 af

Subcatchment PP.: Panda Palace Runoff Area=0.600 ac 100.00% Impervious Runoff Depth>4.74"
Tc=5.0 min CN=98 Runoff=3.03 cfs 0.237 af

Subcatchment S1: CB1 Runoff Area=12,663 sf 77.95% Impervious Runoff Depth=3.35"
Tc=5.0 min CN=85 Runoff=1.17 cfs 0.081 af

Subcatchment S2: CB2 Runoff Area=8,446 sf 70.89% Impervious Runoff Depth=2.97"
Tc=5.0 min CN=81 Runoff=0.70 cfs 0.048 af

Subcatchment S3: CB3 Runoff Area=15,058 sf 55.13% Impervious Runoff Depth=2.02"
Tc=5.0 min CN=70 Runoff=0.83 cfs 0.058 af

Subcatchment S4: ROOF Runoff Area=10,000 sf 100.00% Impervious Runoff Depth>4.74"
Tc=5.0 min CN=98 Runoff=1.16 cfs 0.091 af

Subcatchment S5: PLAYGROUND Runoff Area=4,940 sf 100.00% Impervious Runoff Depth>4.74"
Tc=5.0 min CN=98 Runoff=0.57 cfs 0.045 af

Subcatchment S6: BAS1 Runoff Area=7,702 sf 0.16% Impervious Runoff Depth=0.16"
Tc=5.0 min CN=38 Runoff=0.00 cfs 0.002 af

Subcatchment S7: DIRECT Runoff Area=27,541 sf 0.00% Impervious Runoff Depth=0.23"
Flow Length=147' Tc=23.0 min CN=40 Runoff=0.03 cfs 0.012 af

Pond AD: Area Drain Peak Elev=218.68' Inflow=3.03 cfs 0.237 af
15.0" Round Culvert n=0.012 L=50.0' S=0.0050 '/' Outflow=3.03 cfs 0.237 af

Pond BAS1: BASIN Peak Elev=217.27' Storage=8,274 cf Inflow=6.26 cfs 0.472 af
Discarded=0.09 cfs 0.197 af Primary=2.27 cfs 0.275 af Outflow=2.37 cfs 0.472 af

Pond CB1: CB1 Peak Elev=218.52' Inflow=1.17 cfs 0.081 af
15.0" Round Culvert n=0.012 L=154.0' S=0.0050 '/' Outflow=1.17 cfs 0.081 af

Pond CB2: CB2 Peak Elev=218.48' Inflow=1.87 cfs 0.129 af
15.0" Round Culvert n=0.012 L=76.0' S=0.0050 '/' Outflow=1.87 cfs 0.129 af

Pond CB3: CB3 Peak Elev=217.78' Inflow=5.71 cfs 0.424 af
15.0" Round Culvert n=0.012 L=44.0' S=0.0050 '/' Outflow=5.71 cfs 0.424 af

Pond DMH1: DMH1 Peak Elev=218.39' Inflow=4.89 cfs 0.366 af
15.0" Round Culvert n=0.012 L=54.0' S=0.0050 '/' Outflow=4.89 cfs 0.366 af

Pond FB1: FOREBAY Peak Elev=0.00' Storage=0 cf

Pond POST: WETLANDS Inflow=2.28 cfs 0.287 af
Primary=2.28 cfs 0.287 af

Pond PRE: (new Pond) Inflow=3.03 cfs 0.241 af
Primary=3.03 cfs 0.241 af

Pond SUB1: Sub1 Peak Elev=216.23' Storage=697 cf Inflow=1.16 cfs 0.091 af
Discarded=0.36 cfs 0.236 af Primary=0.00 cfs 0.000 af Outflow=0.36 cfs 0.236 af

Pond TD1: TRENCH DRAIN Peak Elev=218.12' Inflow=0.57 cfs 0.045 af
6.0" Round Culvert n=0.012 L=20.0' S=0.0250 '/' Outflow=0.57 cfs 0.045 af

Summary for Subcatchment P1: PRE

Runoff = 0.01 cfs @ 21.37 hrs, Volume= 0.004 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.98"

Area (sf)	CN	Description
81,137	30	Woods, Good, HSG A
6,051	55	Woods, Good, HSG B
87,188	32	Weighted Average
87,188		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0900	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	176	0.0570	1.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.3	276	Total			

Summary for Subcatchment PP: Panda Palace

Runoff = 3.03 cfs @ 12.07 hrs, Volume= 0.237 af, Depth> 4.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.98"

	Area (ac)	CN	Description
*	0.600	98	Impervious
	0.600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PP.: Panda Palace

Runoff = 3.03 cfs @ 12.07 hrs, Volume= 0.237 af, Depth> 4.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.98"

	Area (ac)	CN	Description
*	0.600	98	Impervious
	0.600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Summary for Subcatchment S1: CB1

Runoff = 1.17 cfs @ 12.07 hrs, Volume= 0.081 af, Depth= 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.98"

Area (sf)	CN	Description
9,871	98	Paved parking, HSG A
2,792	39	>75% Grass cover, Good, HSG A
12,663	85	Weighted Average
2,792		22.05% Pervious Area
9,871		77.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Summary for Subcatchment S2: CB2

Runoff = 0.70 cfs @ 12.07 hrs, Volume= 0.048 af, Depth= 2.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.98"

Area (sf)	CN	Description
5,987	98	Paved parking, HSG A
2,459	39	>75% Grass cover, Good, HSG A
8,446	81	Weighted Average
2,459		29.11% Pervious Area
5,987		70.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Summary for Subcatchment S3: CB3

Runoff = 0.83 cfs @ 12.08 hrs, Volume= 0.058 af, Depth= 2.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.98"

Area (sf)	CN	Description
8,302	98	Paved parking, HSG A
3,743	39	>75% Grass cover, Good, HSG A
3,013	30	Woods, Good, HSG A
15,058	70	Weighted Average
6,756		44.87% Pervious Area
8,302		55.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment S4: ROOF

Runoff = 1.16 cfs @ 12.07 hrs, Volume= 0.091 af, Depth> 4.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.98"

Area (sf)	CN	Description
10,000	98	Roofs, HSG A
10,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment S5: PLAYGROUND

Runoff = 0.57 cfs @ 12.07 hrs, Volume= 0.045 af, Depth> 4.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.98"

Area (sf)	CN	Description
4,940	98	Paved parking, HSG A
4,940		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment S6: BAS1

Runoff = 0.00 cfs @ 13.67 hrs, Volume= 0.002 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.98"

Area (sf)	CN	Description
7,112	39	>75% Grass cover, Good, HSG A
578	30	Woods, Good, HSG A
12	98	Paved parking, HSG A
7,702	38	Weighted Average
7,690		99.84% Pervious Area
12		0.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Summary for Subcatchment S7: DIRECT

Runoff = 0.03 cfs @ 12.73 hrs, Volume= 0.012 af, Depth= 0.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.98"

	Area (sf)	CN	Description
*	995	39	Disconnected Sidewalk, HSG A
	8,548	30	Woods, Good, HSG A
	3,631	55	Woods, Good, HSG B
	11,947	39	>75% Grass cover, Good, HSG A
	2,420	61	>75% Grass cover, Good, HSG B
	27,541	40	Weighted Average
	27,541		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	6	0.0200	0.78		**Sheet Flow, IM** Smooth surfaces n= 0.011 P2= 3.20"
1.8	22	0.0636	0.20		**Sheet Flow, GR** Grass: Short n= 0.150 P2= 3.20"
1.2	25	0.2400	0.35		**Sheet Flow, GR** Grass: Short n= 0.150 P2= 3.20"
1.4	20	0.1000	0.23		**Sheet Flow, GR** Grass: Short n= 0.150 P2= 3.20"
18.5	74	0.0160	0.07		**Sheet Flow, W** Woods: Light underbrush n= 0.400 P2= 3.20"
23.0	147	Total			

Summary for Pond AD: Area Drain

Inflow Area = 0.600 ac,100.00% Impervious, Inflow Depth > 4.74" for 10-year event
Inflow = 3.03 cfs @ 12.07 hrs, Volume= 0.237 af
Outflow = 3.03 cfs @ 12.08 hrs, Volume= 0.237 af, Atten= 0%, Lag= 0.6 min
Primary = 3.03 cfs @ 12.08 hrs, Volume= 0.237 af

Routing by Sim-Route method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 218.68' @ 12.12 hrs
Flood Elev= 221.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	217.50'	**15.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 217.50' / 217.25' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.88 cfs @ 12.08 hrs HW=218.54' TW=218.08' (Dynamic Tailwater)
↳**1=Culvert** (Outlet Controls 2.88 cfs @ 3.57 fps)

Summary for Pond BAS1: BASIN

Inflow Area = 1.950 ac, 76.81% Impervious, Inflow Depth = 2.90" for 10-year event
Inflow = 6.26 cfs @ 12.10 hrs, Volume= 0.472 af
Outflow = 2.37 cfs @ 12.34 hrs, Volume= 0.472 af, Atten= 62%, Lag= 14.3 min
Discarded = 0.09 cfs @ 12.34 hrs, Volume= 0.197 af
Primary = 2.27 cfs @ 12.34 hrs, Volume= 0.275 af

Routing by Sim-Route method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 217.27' @ 12.34 hrs Surf.Area= 3,671 sf Storage= 8,274 cf
Flood Elev= 219.00' Surf.Area= 5,027 sf Storage= 15,782 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 388.3 min (1,168.3 - 780.0)

Volume	Invert	Avail.Storage	Storage Description
#1	214.00'	15,782 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
214.00	1,466	0	0
216.00	2,747	4,213	4,213
216.10	2,814	278	4,491
218.00	4,210	6,673	11,164
219.00	5,027	4,619	15,782

Device	Routing	Invert	Outlet Devices
#1	Discarded	214.00'	**0.550 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 212.00'
#2	Primary	218.50'	**10.0' long x 7.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65 2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78
#3	Primary	212.30'	**10.0" Round Culvert** L= 34.0' Ke= 0.500 Inlet / Outlet Invert= 212.30' / 212.00' S= 0.0088 '/' Cc= 0.900 n= 0.012, Flow Area= 0.55 sf
#4	Device 3	216.10'	**10.0" Vert. Orifice/Grate** C= 0.600
#5	Device 3	218.30'	**18.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.09 cfs @ 12.34 hrs HW=217.27' (Free Discharge)
└1=**Exfiltration** (Controls 0.09 cfs)

Primary OutFlow Max=2.27 cfs @ 12.34 hrs HW=217.27' TW=0.00' (Dynamic Tailwater)
├2=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
└3=**Culvert** (Passes 2.27 cfs of 5.60 cfs potential flow)
├4=**Orifice/Grate** (Orifice Controls 2.27 cfs @ 4.17 fps)
└5=**Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond CB1: CB1

Inflow Area = 0.291 ac, 77.95% Impervious, Inflow Depth = 3.35" for 10-year event
Inflow = 1.17 cfs @ 12.07 hrs, Volume= 0.081 af
Outflow = 1.17 cfs @ 12.08 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.6 min
Primary = 1.17 cfs @ 12.08 hrs, Volume= 0.081 af

Routing by Sim-Route method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 218.52' @ 12.13 hrs
Flood Elev= 219.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	216.10'	**15.0" Round Culvert** L= 154.0' Ke= 0.500 Inlet / Outlet Invert= 216.10' / 215.33' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.08 hrs HW=217.92' TW=218.06' (Dynamic Tailwater)
└1=**Culvert** (Controls 0.00 cfs)

Summary for Pond CB2: CB2

Inflow Area = 0.485 ac, 75.12% Impervious, Inflow Depth = 3.20" for 10-year event
Inflow = 1.87 cfs @ 12.08 hrs, Volume= 0.129 af
Outflow = 1.87 cfs @ 12.09 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.6 min
Primary = 1.87 cfs @ 12.09 hrs, Volume= 0.129 af

Routing by Sim-Route method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 218.48' @ 12.12 hrs
Flood Elev= 220.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	215.33'	**15.0" Round Culvert** L= 76.0' Ke= 0.500 Inlet / Outlet Invert= 215.33' / 214.95' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=218.19' TW=218.23' (Dynamic Tailwater)
└1=**Culvert** (Controls 0.00 cfs)

Summary for Pond CB3: CB3

Inflow Area = 1.430 ac, 80.73% Impervious, Inflow Depth > 3.56" for 10-year event
Inflow = 5.71 cfs @ 12.09 hrs, Volume= 0.424 af
Outflow = 5.71 cfs @ 12.10 hrs, Volume= 0.424 af, Atten= 0%, Lag= 0.6 min
Primary = 5.71 cfs @ 12.10 hrs, Volume= 0.424 af

Routing by Sim-Route method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 217.78' @ 12.12 hrs
Flood Elev= 220.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	214.68'	**15.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 214.68' / 214.46' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=5.54 cfs @ 12.10 hrs HW=217.74' TW=216.86' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 5.54 cfs @ 4.52 fps)

Summary for Pond DMH1: DMH1

Inflow Area = 1.085 ac, 88.89% Impervious, Inflow Depth > 4.05" for 10-year event
Inflow = 4.89 cfs @ 12.08 hrs, Volume= 0.366 af
Outflow = 4.89 cfs @ 12.09 hrs, Volume= 0.366 af, Atten= 0%, Lag= 0.6 min
Primary = 4.89 cfs @ 12.09 hrs, Volume= 0.366 af

Routing by Sim-Route method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 218.39' @ 12.11 hrs
Flood Elev= 220.81'

Device	Routing	Invert	Outlet Devices
#1	Primary	214.95'	**15.0" Round Culvert** L= 54.0' Ke= 0.500 Inlet / Outlet Invert= 214.95' / 214.68' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.53 cfs @ 12.09 hrs HW=218.27' TW=217.68' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 4.53 cfs @ 3.69 fps)

Summary for Pond FB1: FOREBAY

Volume	Invert	Avail.Storage	Storage Description
#1	214.00'	1,207 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
214.00	144	0	0
216.00	473	617	617
217.00	707	590	1,207

Summary for Pond POST: WETLANDS

Inflow Area = 2.582 ac, 58.01% Impervious, Inflow Depth = 1.34" for 10-year event
Inflow = 2.28 cfs @ 12.34 hrs, Volume= 0.287 af
Primary = 2.28 cfs @ 12.35 hrs, Volume= 0.287 af, Atten= 0%, Lag= 0.6 min

Routing by Sim-Route method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond PRE: (new Pond)

Inflow Area = 2.602 ac, 23.06% Impervious, Inflow Depth > 1.11" for 10-year event
Inflow = 3.03 cfs @ 12.07 hrs, Volume= 0.241 af
Primary = 3.03 cfs @ 12.08 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.6 min

Routing by Sim-Route method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond SUB1: Sub1

Inflow Area = 0.230 ac,100.00% Impervious, Inflow Depth > 4.74" for 10-year event
Inflow = 1.16 cfs @ 12.07 hrs, Volume= 0.091 af
Outflow = 0.36 cfs @ 12.36 hrs, Volume= 0.236 af, Atten= 69%, Lag= 17.3 min
Discarded = 0.36 cfs @ 12.36 hrs, Volume= 0.236 af
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 216.23' @ 12.36 hrs Surf.Area= 618 sf Storage= 697 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 10.6 min (757.8 - 747.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	214.50'	589 cf	**15.75'W x 39.22'L x 3.50'H Field A** 2,162 cf Overall - 689 cf Embedded = 1,473 cf x 40.0% Voids
#2A	215.00'	689 cf	**ADS_StormTech SC-740 +Cap** x 15 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 15 Chambers in 3 Rows
#3	217.00'	39 cf	**Manhole (Prismatic)** Listed below (Recalc)
		1,317 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
217.00	13	0	0
220.00	13	39	39

Device	Routing	Invert	Outlet Devices
#1	Discarded	214.50'	**15.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 212.00'

#2	Primary	217.00'	**6.0" Round Culvert** L= 22.0' Ke= 0.500 Inlet / Outlet Invert= 217.00' / 216.80' S= 0.0091 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Discarded OutFlow Max=0.36 cfs @ 12.36 hrs HW=216.23' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.36 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=214.50' TW=214.00' (Dynamic Tailwater)
↑—**2=Culvert** (Controls 0.00 cfs)

Summary for Pond TD1: TRENCH DRAIN

Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth > 4.74" for 10-year event
Inflow = 0.57 cfs @ 12.07 hrs, Volume= 0.045 af
Outflow = 0.57 cfs @ 12.08 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.6 min
Primary = 0.57 cfs @ 12.08 hrs, Volume= 0.045 af

Routing by Sim-Route method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 218.12' @ 12.08 hrs
Flood Elev= 220.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	217.50'	**6.0" Round Culvert** L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 217.50' / 217.00' S= 0.0250 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.57 cfs @ 12.08 hrs HW=218.12' TW=216.74' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.57 cfs @ 2.91 fps)

Time span=1.00-72.00 hrs, dt=0.01 hrs, 7101 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment P1: PRE Runoff Area=87,188 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=276' Tc=14.3 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment PP: Panda Palace Runoff Area=0.600 ac 100.00% Impervious Runoff Depth=2.93"
Tc=5.0 min CN=98 Runoff=1.91 cfs 0.146 af

Subcatchment PP.: Panda Palace Runoff Area=0.600 ac 100.00% Impervious Runoff Depth=2.93"
Tc=5.0 min CN=98 Runoff=1.91 cfs 0.146 af

Subcatchment S1: CB1 Runoff Area=12,663 sf 77.95% Impervious Runoff Depth=1.72"
Tc=5.0 min CN=85 Runoff=0.61 cfs 0.042 af

Subcatchment S2: CB2 Runoff Area=8,446 sf 70.89% Impervious Runoff Depth=1.44"
Tc=5.0 min CN=81 Runoff=0.34 cfs 0.023 af

Subcatchment S3: CB3 Runoff Area=15,058 sf 55.13% Impervious Runoff Depth=0.80"
Tc=5.0 min CN=70 Runoff=0.30 cfs 0.023 af

Subcatchment S4: ROOF Runoff Area=10,000 sf 100.00% Impervious Runoff Depth=2.93"
Tc=5.0 min CN=98 Runoff=0.73 cfs 0.056 af

Subcatchment S5: PLAYGROUND Runoff Area=4,940 sf 100.00% Impervious Runoff Depth=2.93"
Tc=5.0 min CN=98 Runoff=0.36 cfs 0.028 af

Subcatchment S6: BAS1 Runoff Area=7,702 sf 0.16% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=38 Runoff=0.00 cfs 0.000 af

Subcatchment S7: DIRECT Runoff Area=27,541 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=147' Tc=23.0 min CN=40 Runoff=0.00 cfs 0.000 af

Pond AD: Area Drain Peak Elev=218.28' Inflow=1.91 cfs 0.146 af
15.0" Round Culvert n=0.012 L=50.0' S=0.0050 '/' Outflow=1.91 cfs 0.146 af

Pond BAS1: BASIN Peak Elev=216.51' Storage=5,692 cf Inflow=3.49 cfs 0.262 af
Discarded=0.07 cfs 0.181 af Primary=0.57 cfs 0.082 af Outflow=0.64 cfs 0.263 af

Pond CB1: CB1 Peak Elev=216.62' Inflow=0.61 cfs 0.042 af
15.0" Round Culvert n=0.012 L=154.0' S=0.0050 '/' Outflow=0.61 cfs 0.042 af

Pond CB2: CB2 Peak Elev=216.52' Inflow=0.94 cfs 0.065 af
15.0" Round Culvert n=0.012 L=76.0' S=0.0050 '/' Outflow=0.94 cfs 0.065 af

Pond CB3: CB3 Peak Elev=216.52' Inflow=3.14 cfs 0.235 af
15.0" Round Culvert n=0.012 L=44.0' S=0.0050 '/' Outflow=3.14 cfs 0.235 af

Pond DMH1: DMH1 Peak Elev=216.52' Inflow=2.84 cfs 0.211 af
15.0" Round Culvert n=0.012 L=54.0' S=0.0050 '/' Outflow=2.84 cfs 0.211 af

Pond FB1: FOREBAY Peak Elev=0.00' Storage=0 cf

Pond POST: WETLANDS Inflow=0.57 cfs 0.082 af
Primary=0.57 cfs 0.082 af

Pond PRE: (new Pond) Inflow=1.91 cfs 0.146 af
Primary=1.91 cfs 0.146 af

Pond SUB1: Sub1 Peak Elev=215.35' Storage=294 cf Inflow=0.73 cfs 0.056 af
Discarded=0.29 cfs 0.219 af Primary=0.00 cfs 0.000 af Outflow=0.29 cfs 0.219 af

Pond TD1: TRENCH DRAIN Peak Elev=217.90' Inflow=0.36 cfs 0.028 af
6.0" Round Culvert n=0.012 L=20.0' S=0.0250 '/' Outflow=0.36 cfs 0.028 af

Time span=1.00-72.00 hrs, dt=0.01 hrs, 7101 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment P1: PRE Runoff Area=87,188 sf 0.00% Impervious Runoff Depth=0.15"
Flow Length=276' Tc=14.3 min CN=32 Runoff=0.04 cfs 0.025 af

Subcatchment PP: Panda Palace Runoff Area=0.600 ac 100.00% Impervious Runoff Depth>5.88"
Tc=5.0 min CN=98 Runoff=3.73 cfs 0.294 af

Subcatchment PP.: Panda Palace Runoff Area=0.600 ac 100.00% Impervious Runoff Depth>5.88"
Tc=5.0 min CN=98 Runoff=3.73 cfs 0.294 af

Subcatchment S1: CB1 Runoff Area=12,663 sf 77.95% Impervious Runoff Depth=4.42"
Tc=5.0 min CN=85 Runoff=1.53 cfs 0.107 af

Subcatchment S2: CB2 Runoff Area=8,446 sf 70.89% Impervious Runoff Depth=3.99"
Tc=5.0 min CN=81 Runoff=0.93 cfs 0.065 af

Subcatchment S3: CB3 Runoff Area=15,058 sf 55.13% Impervious Runoff Depth=2.90"
Tc=5.0 min CN=70 Runoff=1.21 cfs 0.084 af

Subcatchment S4: ROOF Runoff Area=10,000 sf 100.00% Impervious Runoff Depth>5.88"
Tc=5.0 min CN=98 Runoff=1.43 cfs 0.113 af

Subcatchment S5: PLAYGROUND Runoff Area=4,940 sf 100.00% Impervious Runoff Depth>5.88"
Tc=5.0 min CN=98 Runoff=0.70 cfs 0.056 af

Subcatchment S6: BAS1 Runoff Area=7,702 sf 0.16% Impervious Runoff Depth=0.43"
Tc=5.0 min CN=38 Runoff=0.03 cfs 0.006 af

Subcatchment S7: DIRECT Runoff Area=27,541 sf 0.00% Impervious Runoff Depth=0.54"
Flow Length=147' Tc=23.0 min CN=40 Runoff=0.12 cfs 0.028 af

Pond AD: Area Drain Peak Elev=220.12' Inflow=3.73 cfs 0.294 af
15.0" Round Culvert n=0.012 L=50.0' S=0.0050 '/' Outflow=3.73 cfs 0.294 af

Pond BAS1: BASIN Peak Elev=217.75' Storage=10,130 cf Inflow=8.05 cfs 0.611 af
Discarded=0.11 cfs 0.203 af Primary=2.92 cfs 0.408 af Outflow=3.02 cfs 0.611 af

Pond CB1: CB1 Peak Elev=220.05' Inflow=1.53 cfs 0.107 af
15.0" Round Culvert n=0.012 L=154.0' S=0.0050 '/' Outflow=1.53 cfs 0.107 af

Pond CB2: CB2 Peak Elev=219.97' Inflow=2.46 cfs 0.171 af
15.0" Round Culvert n=0.012 L=76.0' S=0.0050 '/' Outflow=2.46 cfs 0.171 af

Pond CB3: CB3 Peak Elev=218.80' Inflow=7.37 cfs 0.549 af
15.0" Round Culvert n=0.012 L=44.0' S=0.0050 '/' Outflow=7.37 cfs 0.549 af

Pond DMH1: DMH1 Peak Elev=219.81' Inflow=6.18 cfs 0.466 af
15.0" Round Culvert n=0.012 L=54.0' S=0.0050 '/' Outflow=6.18 cfs 0.466 af

Pond FB1: FOREBAY Peak Elev=0.00' Storage=0 cf

Pond POST: WETLANDS Inflow=3.00 cfs 0.436 af
Primary=3.00 cfs 0.436 af

Pond PRE: (new Pond) Inflow=3.73 cfs 0.319 af
Primary=3.73 cfs 0.319 af

Pond SUB1: Sub1 Peak Elev=216.88' Storage=961 cf Inflow=1.43 cfs 0.113 af
Discarded=0.42 cfs 0.247 af Primary=0.00 cfs 0.000 af Outflow=0.42 cfs 0.247 af

Pond TD1: TRENCH DRAIN Peak Elev=218.31' Inflow=0.70 cfs 0.056 af
6.0" Round Culvert n=0.012 L=20.0' S=0.0250 '/' Outflow=0.70 cfs 0.056 af

Time span=1.00-72.00 hrs, dt=0.01 hrs, 7101 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment P1: PRE Runoff Area=87,188 sf 0.00% Impervious Runoff Depth=0.53"
Flow Length=276' Tc=14.3 min CN=32 Runoff=0.35 cfs 0.088 af

Subcatchment PP: Panda Palace Runoff Area=0.600 ac 100.00% Impervious Runoff Depth>7.63"
Tc=5.0 min CN=98 Runoff=4.80 cfs 0.381 af

Subcatchment PP.: Panda Palace Runoff Area=0.600 ac 100.00% Impervious Runoff Depth>7.63"
Tc=5.0 min CN=98 Runoff=4.80 cfs 0.381 af

Subcatchment S1: CB1 Runoff Area=12,663 sf 77.95% Impervious Runoff Depth=6.09"
Tc=5.0 min CN=85 Runoff=2.08 cfs 0.147 af

Subcatchment S2: CB2 Runoff Area=8,446 sf 70.89% Impervious Runoff Depth=5.62"
Tc=5.0 min CN=81 Runoff=1.30 cfs 0.091 af

Subcatchment S3: CB3 Runoff Area=15,058 sf 55.13% Impervious Runoff Depth=4.35"
Tc=5.0 min CN=70 Runoff=1.83 cfs 0.125 af

Subcatchment S4: ROOF Runoff Area=10,000 sf 100.00% Impervious Runoff Depth>7.63"
Tc=5.0 min CN=98 Runoff=1.84 cfs 0.146 af

Subcatchment S5: PLAYGROUND Runoff Area=4,940 sf 100.00% Impervious Runoff Depth>7.63"
Tc=5.0 min CN=98 Runoff=0.91 cfs 0.072 af

Subcatchment S6: BAS1 Runoff Area=7,702 sf 0.16% Impervious Runoff Depth=1.01"
Tc=5.0 min CN=38 Runoff=0.13 cfs 0.015 af

Subcatchment S7: DIRECT Runoff Area=27,541 sf 0.00% Impervious Runoff Depth=1.19"
Flow Length=147' Tc=23.0 min CN=40 Runoff=0.40 cfs 0.063 af

Pond AD: Area Drain Peak Elev=222.87' Inflow=4.80 cfs 0.381 af
15.0" Round Culvert n=0.012 L=50.0' S=0.0050 '/' Outflow=4.80 cfs 0.381 af

Pond BAS1: BASIN Peak Elev=218.38' Storage=12,818 cf Inflow=10.95 cfs 0.833 af
Discarded=0.12 cfs 0.212 af Primary=4.24 cfs 0.621 af Outflow=4.36 cfs 0.833 af

Pond CB1: CB1 Peak Elev=222.79' Inflow=2.08 cfs 0.147 af
15.0" Round Culvert n=0.012 L=154.0' S=0.0050 '/' Outflow=2.08 cfs 0.147 af

Pond CB2: CB2 Peak Elev=222.64' Inflow=3.37 cfs 0.238 af
15.0" Round Culvert n=0.012 L=76.0' S=0.0050 '/' Outflow=3.37 cfs 0.238 af

Pond CB3: CB3 Peak Elev=220.54' Inflow=9.95 cfs 0.745 af
15.0" Round Culvert n=0.012 L=44.0' S=0.0050 '/' Outflow=9.95 cfs 0.745 af

Pond DMH1: DMH1 Peak Elev=222.34' Inflow=8.16 cfs 0.620 af
15.0" Round Culvert n=0.012 L=54.0' S=0.0050 '/' Outflow=8.16 cfs 0.620 af

Pond FB1: FOREBAY Peak Elev=0.00' Storage=0 cf

Pond POST: WETLANDS Inflow=4.60 cfs 0.684 af
Primary=4.60 cfs 0.684 af

Pond PRE: (new Pond) Inflow=4.80 cfs 0.469 af
Primary=4.80 cfs 0.469 af

Pond SUB1: Sub1 Peak Elev=218.67' Storage=1,300 cf Inflow=1.84 cfs 0.146 af
Discarded=0.58 cfs 0.265 af Primary=0.52 cfs 0.001 af Outflow=1.10 cfs 0.266 af

Pond TD1: TRENCH DRAIN Peak Elev=218.67' Inflow=0.91 cfs 0.072 af
6.0" Round Culvert n=0.012 L=20.0' S=0.0250 '/' Outflow=0.91 cfs 0.072 af

Appendix 6:

MISCELLANEOUS CALCULATIONS

J.R. RUSSO & ASSOCIATES, LLC
Professional Engineers & Surveyors
SERVING CONNECTICUT & MASSACHUSETTS
1 Shoham Rd. • East Windsor, CT 06088
CONN (860) 623-0569 • MASS (413) 785-1158
www.jrrusso.com

JOB 2021-083
SHEET NO. 1 OF 1
CALCULATED BY TAC DATE 2-14-22
CHECKED BY DATE
SCALE

Water Quality Volume Calculations

WQV = (1") RA/12 where I = percent impervious
R = Volumetric runoff coeff.
A = contributing area

R = 0.05 + 0.009 I

For Basin: (excludes roof runoff which is infiltrated via subsurface system)
A = 74,967 SF
I = 73.72%

R = 0.05 + 0.009(73.72%) = 0.713

WQV = (1")(0.713)(74,967 SF)/12 = 4,457 CF

Forebay Requirement = 0.25 WQV = (0.25)(4,457 CF) = 1114 CF

Basin Volume below outlet = 4,491 CF Okay

Forebay Volume = 1,207 CF Okay

STAFF COMMENTS

TOWN OF VERNON

55 West Main St., VERNON, CT 06066-3291
(860) 870-3640
gmcgregor@vernon-ct.gov

OFFICE OF THE
TOWN PLANNER

MEMORANDUM

TO: Planning & Zoning Commission

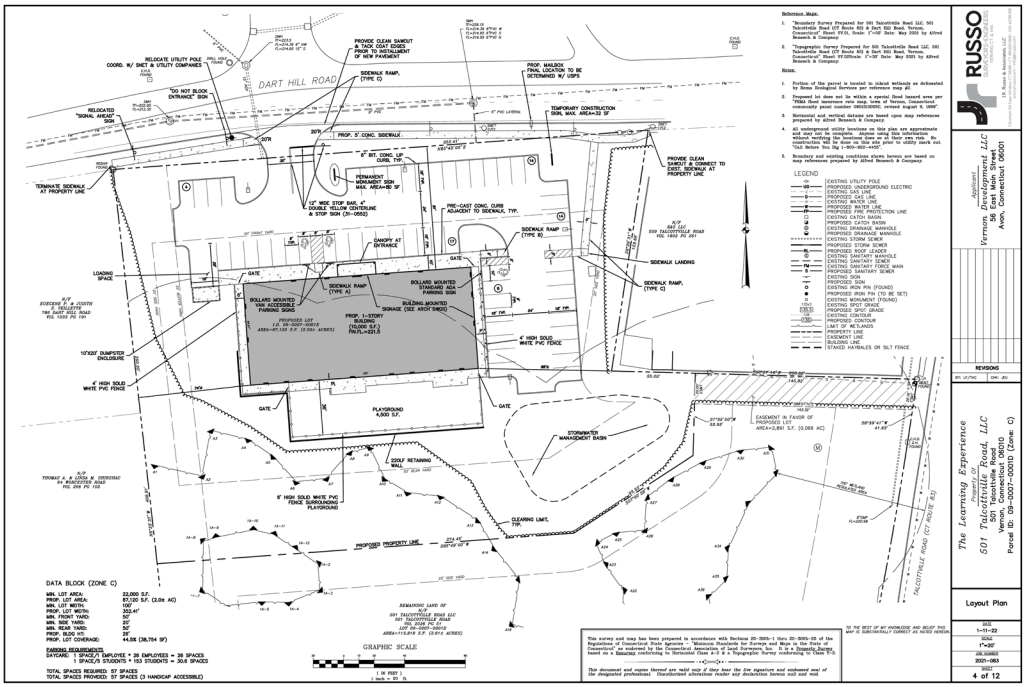
FROM: George K. McGregor, AICP, Town Planner

SUBJECT: PZ 2022-05, 501 Talcottville Rd. Site Plan & Special Permits Day Care Facility

DATE: March 3, 2022

Request

PZ-2022-05, 501 Talcottville Rd. An Application of Vernon Development LLC for a Site Plan and Special Permits to develop a 10,000 sq.ft. day care center at 501 Talcottville Rd. (Tax Map 09, Block 007, Parcel 0001D). Special permits requested include Section 4.9.4.15.1 (more than 40 parking spaces); Section 4.9.4.15.2 (structure within 200 feet of a residence); Section 4.9.4.15.3 (parking within 100 feet of a residence). The property is zoned Commercial and is 4.6 acres in size.





Site Location

Summary

The Applicant proposes to construct an approximately 10,000 sq. ft. day care facility, with a 5,000 sq. ft. play area, at 501 Talcottville Rd. Although addressed via parcel number on Talcottville Rd., the access to the site is proposed on Dart Hill Rd., with a proposed drive-way entrance across from the westernmost Walgreens entrance. Wetlands is present on the site. The development constitutes approximately .82 acres of disturbance in a regulated area. The Applicant has submitted a narrative, a site plan set, drainage plan, landscaping plan, traffic study, and architectural elevations, all included in the agenda packet.



Concurrent Review

Inland Wetlands Commission. The Applicant is processing a simultaneous Inland Wetlands Application for a re-designation of wetlands and a wetland permit. This application began review at the IWC on February 22; it was a continued to the March 22, 2022 meeting. A decision of the IWC application must take place before the Planning & Zoning Commission can act.

Planning & Zoning Commission. In addition, the property owner has filed a re-subdivision application (PZ 2022-06) to create a new, 2.6-acre lot out of the parent 4.6-acre tract, oriented toward Talcottville Rd.

Traffic Authority. The Application has been referred to the Vernon Traffic Authority. Unfortunately, the Authority could not achieve a quorum on February 10; it has been rescheduled for their next regular meeting on March 10, 2022.

Design Review Commission. The advisory Design Review Commission will take up the application's design elements on March 2, 2022.

Issues

Staff has identified two primary issues related to the site plan and special permit application: Traffic and access to the property and site development wetland impacts.

Traffic Impacts. Staff has raised a number of concerns related to access from Dart Hill Rd.: safe turning movements across multi-lanes, internal and external queuing conflicts, among other traffic concerns, in a congested part of the Vernon community[1]. The Applicant has responded to the traffic points; the email is attached to this memorandum. The Town Engineer, along with the Traffic Authority, will continue to review the responses and the issue. Staff notes that the Town Engineer had the occasion to observe site conditions on Tuesday, February 22, where he found the vehicle queue eastbound on Dart Hill Rd. extended to the Dart Hill Rd. bridge, well beyond the proposed driveway entrance. This appears to conflict with the Applicant's traffic study modeling. The Town Engineer is preparing formal comments under separate cover.

Site Impacts on the Wetland areas. The Inland Wetlands Commission is reviewing site impacts on the designated wetlands. The site development abuts quite closely to the established wetlands area and includes a retaining wall and significant fill. The Town Engineer and Town Wetlands agent continue to review the matter. The IWC has directed Staff to engage a third-party, wetland professional to review the technical documentation. In addition, the North Central Conservation District, which provides statutory review of erosion and sediment control plans, has identified several outstanding issues and is working directly with the applicant to resolve. This referral will also come under separate cover.

Other. The Zoning Enforcement Official finds that the site plan and special permits appear to the meet the site plan and zoning district regulations. The Health Department has provided a referral related to specific administrative health activities for childcare facilities. It is attached to the Staff memorandum.

Due to the outstanding items and ongoing review by other Commissions, Staff recommends a continuation of the public hearing.

[1] Town Planner letter to applicant, February 10, 2022

TOWN OF VERNON

Office of the Town Planner
14 Park Place • Vernon, CT 06066
Tel: 860-870-3640 • www.Vernon-ct.gov
gmcgregor@vernon-ct.gov

George McGregor, AICP
Town Planner

February 10, 2022

VIA Email

Tim Coon
Project Engineer
J.R. Russo & Associates, LLC
PO Box 938
East Windsor, CT 06088

Re: PZ 2022-05, 501 Talcottville Rd. Town Planner Comments

Dear Mr. Coon:

With regard to the above referenced application, I offer the following comments and questions.

General Site

1. The Wetlands Re-designation Plan is included as Sheet 2. The final version set does not need to include this sheet.
2. Please provide both a fence detail and a dumpster surround detail in the plan set.
3. Please provide (via email) color elevations; they will be helpful during the Design Review Commission meeting.
4. The commercial entrance is shown at 30' wide, allowing for one lane in and one lane out. This may cause internal queuing issues. Dependent upon the outcome of our traffic discussions (in detail below), please consider potentially separate right out and left out scenarios.

Traffic

5. A most significant challenging facing the development of this site is providing safe and efficient vehicular access to the property. The biggest concern is the clear potential for conflicts when cars drop off or pick up for day care: they must cross two lanes of traffic on Dart Hill Rd. Often during peak hours that traffic may queue (at least anecdotally) in front of the property causing delay and introducing unsafe turning movements. Bottom line: can facility customers enter and exit the site safely during peak a.m. and p.m.? How does the applicant plan to mitigate this potential conflict?
6. The traffic study does attempt to address the intersection of 83 and Dart Hill Rd. which will continue to operate at a level of Service F, unless some unspecified "optimization" takes place in an out year beyond 2025. Please explain how "optimization" will work, the timing therein, who will be responsible and who will pay for the optimization? The traffic study suggests that even with optimization, certain directional queues will get longer.

7. Perhaps, there are mitigation measures or options for alternative access than can be considered.

    a. A second point of access to Route 83
    b. Right in-Right out limitations on Dart Hill and/or Route 83
    c. Commitment to expedite, finance, and complete optimization measures.

8. Staff plans to observe site conditions (especially the dart Hill Rd. queuing scenario) during the a.m. and p.m. peaks and will report these observations to the Planning & Zoning Commission at the time of the public hearing.

With Regards,

George K. McGregor, AICP

North Central District Health Department

Enfield—31 North Main Street, Enfield, CT 06082 * (860) 745-0383 Fax (860) 745-3188
Vernon—375 Hartford Turnpike, Room 120, Vernon, CT 06066 * (860) 872-1501 Fax (860) 872 1531
Windham—Town Hall, 979 Main Street, Willimantic, CT 06226 * (860) 465-3033 Fax (860) 465-3034
Stafford—Town Hall, 1 Main Street, Stafford Springs, CT 06076 * (860) 684-5609 Fax (860) 684-1768

Patrice A. Sulik, MPH, R.S.
Director of Health

February 22, 2022

Mr. George McGregor
Vernon Town Planner
55 West Main Street
Vernon, Connecticut 06066

Re: Special Permit – The Learning Experience
501 Talcottville Road
Vernon, Connecticut

Dear Mr. George McGregor:

I am writing regarding the Special Permit Application review for the Learning Experience at the above referenced address.

North Central District Health Department (NCDHD) has the following comments regarding the proposed Daycare:

- A Daycare Plan Review is required with this department:
    - The Learning Experience shall submit a scalable floor plan of the facility along with an exterior site plan showing the outside playground(s) area(s);
        - The floor plan must show the location of each piece of equipment, floor and counter, clearly labeled with its common name.
    - A menu of snacks and/or meals that will be served to the children shall be submitted;
    - Application for Day Care Center with the application fee
- If the Learning Experience is proposing to serve meals to the children at this daycare facility, a complete plan review for a licensed food service facility based on the NCDHD sanitary code Section 4 and the Public Health Food code CT-PHC19-13-B42 will be required. Should a plan review be required, the following shall be submitted for review:
    - Scalable floor plan of the kitchen/Pantry layout. The plan must show the location of each piece of equipment, floor and counter, clearly labeled with its common name;
    - Equipment specification sheets for proposed equipment. All equipment shall be National Sanitation Foundation (NSF) certified or equivalent;
    - A complete menu of meals that will be offered for review

- The NCDHD has the following comments on the submitted floor plan;
    - For any of the rooms that will have a diaper changing table, a dedicated hand wash sink that supplies running hot water within a range of 60°F to 115°F will be required.
    - An enclosed mop sink will be required for proper cleaning of the pantry floors and general cleaning of the establishment. The mop sink shall have a mop hanger to properly dry mops;
    - A utility wash sink to clean/wash equipment such as paint bowls, brushes etc. will be required;
    - A designated area is required for the storage of toxic chemicals and cleaners. In addition, these items and other potentially hazardous substances are required to be stored in a separate locked area.
    - Dumpsters will be required to reside on a concrete pad or equivalent.
    - The building will be required to connect to public water and public sewer.

Should anyone have any additional questions regarding this matter, I am reachable via email at bbielawiec@ncdhd.org. You can also call me at the NCDHD office at 860-745-0383, extension 114.

Sincerely,



Brian Bielawiec
Registered Sanitarian

From:	Mark Vertucci
To:	McGregor, George
Cc:	Perry, Craig; Smith, David; rema8@aol.com; Jay Ussery; Eric Spungin; Tim Coon; Tai Le; Mark Vertucci
Subject:	[EXTERNAL] RE: 501 Talcottville Road - Traffic Comments Response
Date:	Wednesday, February 16, 2022 12:08:59 AM
Attachments:	image001.png

CAUTION: This Email is from an EXTERNAL source. Ensure you trust this sender before clicking on any links or attachments.

Hi George,

Following up on Tim's email, please see our responses below to traffic related comments 4 through 8 in your February 10, 2022 letter regarding the above referenced project:

4. ***The commercial entrance is shown as 30' wide, allowing for one lane in and one lane out. This may cause internal queuing issues.***
   Dependent on the outcome of our traffic discussions (in detail below), please consider potentially separate right out and left out scenarios.

   As noted in the traffic analysis, the site driveway exit is projected to operate efficiently at LOS B during both peak hours with 95th percentile queues averaging one vehicle length or less. The existing single exit lane is adequate to support the volume of exiting traffic expected from this development. Dual exit lanes on an unsignalized intersection approaches should be avoided per CTDOT guidance as vehicles in this scenario jockey for sight line as they attempt to exit.

5. ***A most significant challenging facing the development of this site is providing safe and efficient vehicular access to the property. The biggest concern is the clear potential for conflicts when cars drop off or pick up for day care: they must cross two lanes of traffic on Dart Hill Road. Often during peak hours that traffic may queue (at least anecdotally) in front of the property causing delay and introducing unsafe turning movements. Bottom line: can facility customers enter and exit the site safely during peak a.m. and p.m.? How does the applicant plan to mitigate this potential conflict?***

   The traffic study analysis revealed that 95th percentile queues on the Dart Hill Road eastbound approach to Route 83 (Talcottville Road) reach up to 270 feet during the morning peak hour in the combined (build) conditions and up to 245 feet during the afternoon peak hour. The storage length from the proposed site driveway to the Dart Hill Road stop bar at Route 83 is approximately 400 feet, therefore the proposed site driveway is not obstructed by the typical maximum eastbound queues experienced at the intersection during peak hours. Field observations during the peak hours also revealed that these queues were not extending past the proposed site driveway location. It should be noted that the Dart Hill Road eastbound approach is in the process of opening up for a second turn lane in the vicinity of the proposed site driveway therefore westbound vehicles that would be turning left into the site from Dart Hill Road or vehicles exiting the site driveway are essentially yielding to only one lane of oncoming traffic approaching from the west. Results from the traffic analysis indicate that left turns from Dart Hill Road into the proposed driveway will operate very efficiently as LOS A and turns out of the proposed site driveway will also operate efficiently at LOS B with little delay. The proposed site driveway has been located as far west as possible to minimize the chance of queues from the traffic signal extending past the driveway while at the same time aligning the site driveway with the Walgreens driveway across the street. Aligning the two site driveways at a normalized intersection consolidates all vehicle

turning movements at a single point and reduces the number of potential vehicle conflict points. Moving the site driveway any further west would create an offset intersection and reduce safety.

With regard to the safety of vehicles exiting the proposed site, intersection sight distances in both directions were measured to exceed CTDOT criteria for safe egress. In addition, a review of crash data at the existing Walgreens driveway revealed that no crashes have occurred involving a vehicle turning into or out of the site driveway at this location. Based on the results of the traffic study, it is our professional opinion that traffic will be able to safely and efficiently enter and exit the daycare site from Dart Hill Road during both peak hours.

6. ***The traffic study does attempt to address the intersection of 83 and Dart Hill Rd. Which will continue to operate at a level of Service F, unless some unspecified "optimization" takes place in an out year beyond 2025. Please explain how "Optimization" will work, the timing therein, who will be responsible and who will pay for the optimization? The traffic study suggests that even with optimization, certain directional queues will get longer.***

   The proposed optimization of signal timings at the intersection of Route 83 at Dart Hill Road and Regan Road will increase the overall efficiency (and reduce overall delay) of the intersection by reallocating the amount of green time provided for each leg of the intersection. The traffic study analysis revealed that this intersection was operating acceptably during the morning peak hour of traffic at LOS C and this LOS will remain unchanged with the additional development traffic. During the afternoon peak hour, timing optimization can improve the intersection operation to LOS E which is a better operation than what is occurring in the existing condition. The optimization will also significantly decrease queueing on the Route 83 through lanes however the tradeoff is some minor increase in queueing in the Route 83 left turn lanes and the Dart Hill Road/Regan Road side street approaches. As this intersection is State owned and maintained, any timing optimizations would need to be coordinated with CTDOT. Revising the timings in the signal controller, if agreed to by CTDOT, would be handled with a service order to DOT maintenance staff. There is no cost involved to modify the signal timing settings in the controller. As noted in the traffic study, the traffic signal at this intersection is slated for complete replacement by CTDOT within the next three years under State project 171-0471. Upon completion of this signal upgrade, the safety and efficiency of traffic operations at this intersection will be improved.

7. ***Perhaps, there are mitigation measures or options for alternative access that can be considered such as a second point of access to Route 83, right in/right out limitation on Dart Hill and/or Route 83, or commitment to expedite, finance and complete optimization measures.***

   A second point of access on Route 83 for the daycare center is not recommended as the volume of opposing traffic on Route 83 is substantially higher than the volume of traffic on Dart Hill Road. As a point of comparison, 2,671 vehicles pass the site frontage on Route 83 during the PM peak hour while only 612 vehicles pass the site frontage on Dart Hill Road. In addition, Route 83 is five lanes wide at the site frontage and northbound queues from the traffic signal extend 490 feet past the site frontage during the afternoon peak hour. The combination of heavy traffic volumes, queueing from the signal and the need to cross multiple lanes of traffic would make left turns into or out of a site driveway on Route 83 very difficult. In addition, a right in/right out limitation on Dart Hill Road would offer no option for vehicles exiting the site who intend to head west on Dart Hill Rd. As noted in the response above, left turns into the site driveway on Dart Hill Rd are projected to operate at the most efficient LOS A during both peak hours,

therefore there would be no justification for restricting this movement. Also as noted above, interim timing optimizations at the signal can be reviewed/coordinated with CTDOT and completed at no cost prior to the full signal replacement that is anticipated to be completed by 2025.

8. ***Staff plans to observe site conditions (especially the Dart Hill Rd queueing scenario)during the AM and PM peaks and will report these observations to the PZC at the time of the public hearing.***

   Noted.

Please let me know if you have any questions or would like to discuss further.

Thanks,
Mark
Mark Vertucci, PE, PTOE
Vice President
Fuss & O'Neill, Inc. | 146 Hartford Road | Manchester, CT 06040
860.646.2469 x5381 | mvertucci@fando.com | cell: 860.729.0186
www.fando.com | twitter | facebook | linkedin

From: Tim Coon <tcoon@jrrusso.com>
Sent: Tuesday, February 15, 2022 3:36 PM
To: McGregor, George <GMcGregor@vernon-ct.gov>
Cc: Perry, Craig <cperry@vernon-ct.gov>; Smith, David <dsmith@vernon-ct.gov>; rema8@aol.com; Jay Ussery <jussery@jrrusso.com>; Eric Spungin <espungin@hotmail.com>; Mark Vertucci <MVertucci@fando.com>
Subject: [External] 501 Talcottville Road

George,

I am providing this email and its attachments (revised plans and drainage report) in response to the plan review comments received from Craig Parry dated 2-7-22. A response to Craig's comments is provided below:

Craigs Re-designation Comments:

The soil scientist, George Logan from REMA Ecological Services, will be preparing and submitting an Impact Assessment/Function & Values Assessment under separate cover. It is anticipated that Mr. Logan will address Craigs comments 1 and 3 regarding the delineation and re-designation in that report. With regard to comment 2, I would like to point out that Note #1 on the Redesignation Plan identifies REMA Ecological Services as the entity which delineated the wetlands shown on the plans.

Craig's comment Regarding the Wetland Permit:

1. Despite the significant amount of fill required at the site, the runoff across the site will be very limited based on the existing sandy soils and limited distance across the site. It is believed that a single silt fence, if maintained properly, is sufficient to protect the downgradient wetland from sedimentation and erosion. However, based on Mr. Perry's concerns, the plans have been revised to include the placement of a wood chip berm to back

up the silt fence installed at the edge of the downgradient wetland.

2. The plans have been revised to extend the sediment barrier (silt fence backed by a wood chip berm) along the utility corridor out to Talcottville Road.
3. As discussed above, a Wetland Impact Assessment/Functions & Values Assessment is being prepared by George Logan of REMA and will be submitted separately. However, in the preparation of his report, George has made a couple of recommendations for wetland enhancement and creation which have been added to these revised plans. In particular, the plans identify a particular area of wetlands to the south of the development area where we are proposing a series of plantings to enhance the existing wetland. In addition, the plans identify an upland area between wetland flags #14 and #24 where we are proposing to create some wetlands by excavating a small pool and seeding with a wetland seed mix. I believe George's report will provide additional discussion regarding these measures.

In addition to the plan revisions noted above, revisions were also made to address the off-site runoff from the adjacent Panda Palace parking lot that is currently directed to the development site through an existing break in the curb line at the western edge of their parking lot. This includes untreated runoff from approximately 0.6 acres of impervious area at the Panda Palace which currently runs across the proposed development area at the site into the on-site wetland. The plan revisions include the installation of a riprap channel, yard drain and piping to intercept this runoff at the property line and convey it to the new on-site stormwater management basin where it will be treated and some of it recharged prior to discharge into the wetland. The attached plans and Drainage Report have been revised to reflect the interception and treatment of this off-site runoff. As a result, the proposed project will eliminate this discharge of untreated runoff to the wetland from the Panda Palace.

Finally, because I have also received your Town Planner comments dated 2-10-22, I have also separated the Wetland Re-designation Plan from the plan set and added both a fence and a dumpster surround detail, which address your first two comments. The architect will be providing color elevations to address your comment #3. Because your remaining comments (#4-#8) are all traffic related, a separate response is being prepared by the traffic engineer, Mark Vertucci at Fuss & O'Neill.

Also, as I have expressed to many of you on this email, I will be out of town until February 28th. In my absence, Jay Ussery from my office (copied above) will be handling this project and the wetland meeting next Tuesday. Please be sure that any correspondence meant for J.R. Russo & Associates is addressed to Jay during this time frame. Thank you.

Timothy A. Coon, P.E.
Principal Engineer

RUSSO
SURVEYORS · ENGINEERS

J.R. RUSSO & ASSOCIATES, LLC

P.O. Box 938, 1 Shoham Road
East Windsor, CT 06088
CT 860.623.0569 **MA** 413.785.1158
tcoon@jrrusso.com | www.jrrusso.com

From:	Tim Coon
To:	McGregor, George
Cc:	Perry, Craig; Smith, David; rema8@aol.com; Jay Ussery; Eric Spungin; Mark Vertucci
Subject:	[EXTERNAL] 501 Talcottville Road
Date:	Tuesday, February 15, 2022 3:38:35 PM
Attachments:	image001.png TLE Vernon Site Plans 2-14-22.pdf Sscan22021418220.pdf

CAUTION: This Email is from an EXTERNAL source. Ensure you trust this sender before clicking on any links or attachments.

George,

I am providing this email and its attachments (revised plans and drainage report) in response to the plan review comments received from Craig Parry dated 2-7-22. A response to Craig's comments is provided below:

Craigs Re-designation Comments:

The soil scientist, George Logan from REMA Ecological Services, will be preparing and submitting an Impact Assessment/Function & Values Assessment under separate cover. It is anticipated that Mr. Logan will address Craigs comments 1 and 3 regarding the delineation and re-designation in that report. With regard to comment 2, I would like to point out that Note #1 on the Redesignation Plan identifies REMA Ecological Services as the entity which delineated the wetlands shown on the plans.

Craig's comment Regarding the Wetland Permit:

1. Despite the significant amount of fill required at the site, the runoff across the site will be very limited based on the existing sandy soils and limited distance across the site. It is believed that a single silt fence, if maintained properly, is sufficient to protect the downgradient wetland from sedimentation and erosion. However, based on Mr. Perry's concerns, the plans have been revised to include the placement of a wood chip berm to back up the silt fence installed at the edge of the downgradient wetland.
2. The plans have been revised to extend the sediment barrier (silt fence backed by a wood chip berm) along the utility corridor out to Talcottville Road.
3. As discussed above, a Wetland Impact Assessment/Functions & Values Assessment is being prepared by George Logan of REMA and will be submitted separately. However, in the preparation of his report, George has made a couple of recommendations for wetland enhancement and creation which have been added to these revised plans. In particular, the plans identify a particular area of wetlands to the south of the development area where we are proposing a series of plantings to enhance the existing wetland. In addition, the plans identify an upland area between wetland flags #14 and #24 where we are proposing to create some wetlands by excavating a small pool and seeding with a wetland seed mix. I believe George's report will provide additional discussion regarding these measures.

In addition to the plan revisions noted above, revisions were also made to address the off-site runoff from the adjacent Panda Palace parking lot that is currently directed to the development site through an existing break in the curb line at the western edge of their parking lot. This includes

untreated runoff from approximately 0.6 acres of impervious area at the Panda Palace which currently runs across the proposed development area at the site into the on-site wetland. The plan revisions include the installation of a riprap channel, yard drain and piping to intercept this runoff at the property line and convey it to the new on-site stormwater management basin where it will be treated and some of it recharged prior to discharge into the wetland. The attached plans and Drainage Report have been revised to reflect the interception and treatment of this off-site runoff. As a result, the proposed project will eliminate this discharge of untreated runoff to the wetland from the Panda Palace.

Finally, because I have also received your Town Planner comments dated 2-10-22, I have also separated the Wetland Re-designation Plan from the plan set and added both a fence and a dumpster surround detail, which address your first two comments. The architect will be providing color elevations to address your comment #3. Because your remaining comments (#4-#8) are all traffic related, a separate response is being prepared by the traffic engineer, Mark Vertucci at Fuss & O'Neill.

Also, as I have expressed to many of you on this email, I will be out of town until February 28th. In my absence, Jay Ussery from my office (copied above) will be handling this project and the wetland meeting next Tuesday. Please be sure that any correspondence meant for J.R. Russo & Associates is addressed to Jay during this time frame. Thank you.

Timothy A. Coon, P.E.
Principal Engineer

RUSSO
SURVEYORS · ENGINEERS

J.R. RUSSO & ASSOCIATES, LLC
P.O. Box 938, 1 Shoham Road
East Windsor, CT 06088
CT 860.623.0569 **MA** 413.785.1158
tcoon@jrrusso.com | www.jrrusso.com

APPLICATION

2

TOWN OF VERNON PLANNING & ZONING COMMISSION (PZC)

APPLICATION

This form is to be used to apply to the Vernon Planning & Zoning Commission (PZC) for a change of zoning district, amendment of the Zoning Regulations, Site Plan of Development (POD), Special Permit(s), amendment of the Subdivision Regulations, and/or approval of a (re) subdivision, or DMV location approval. **Provide all the information requested.**

The applicant must be the property owner, the property owner's agent, the Town of Vernon, or someone with a direct financial interest in the subject property; said interest shall be explained and written permission for this application must be obtained from the property owner and submitted with this application if the applicant is not the property owner (ZR Section 2.3).

The list of approvals and the references to sections of the Regulations are for informational purposes only to assist with preparation of the PZC application and are not a definitive statement of the sole requirements that may apply to a specific project.

The applicant understands that the application is complete only when all information and documents required by the PZC have been submitted and, further, that any approval by the PZC relies upon complete and accurate information being provided by the applicant. **Incorrect information provided by the applicant may make the approval invalid.** The PZC may require additional information to be provided by the applicant in the course of reviewing the application and during the monitoring of the project.

Provide all the information requested:

I. APPLICANT:

Name: James J Basile

Title: Manager

Company: 501 Talcottville Road, LLC

Address: 43 Ridgecrest Lane
Bristol, CT 06010

Telephone: 860-202-9540 Fax: _____

E-mail _____

II. PROPERTY OWNER (S):

Name: James J. Basile

Title: Manager

Company: 501 Talcottville Road, LLC

Address: 43 Ridgecrest Lane
Bristol, CT 06010

Telephone: 860-202-9540 Fax _____

E-mail: _____

III. PROPERTY

Address: _____

Assessor's ID Code: Map # 09 Block # 0007 Lot/Parcel # 0001D

Land Record Reference to Deed Description: Volume: 2026 Page 51

Does this site contain a watercourse and/or wetlands? (See the Inland Wetlands Map and IWR Section 2.14, 2.15, 2.23, 2.24, 3.11; 4)

__ No X Yes

X No work will be done in regulated area
___ Work will be done in the regulated area

__ IWC application has been submitted
__ IWC application has not been submitted

Zoning District _____

Is this property located within five hundred (500) feet of a municipal boundary?

X No
___ Yes:

___ Bolton
___ Coventry
___ Ellington
___ Manchester
___ South Windsor
___ Tolland

Check if Historic Status Applies:

___ Located in historic district:

___ Rockville
___ Talcottville

___ Individual historic property

IV. PROJECT

Project Name: Subdivision of 501 Talcottville Road

Project Contact Person:

Name: Ryan Scrittorale, P.E.

Title: Project Manager

Company: Alfred Benesch & Company

Address: 170 Hebron Avenue, Second Floor
Glastonbury, CT 06033

Telephone: 860 550 2673 Fax:

E-mail: RScrittorale@benesch.com

V. PZC APPLICATION
PROJECT SUMMARY

Describe the project briefly in regard to the purpose of the project and the activities that will occur. Attach to this application a complete and detailed description with maps and documentation as required by the **"Town of Vernon Zoning Regulations"** and **"Town of Vernon Subdivision Regulations"**.

Purpose: Divide Existing lot into two Seperate Parcels

General Activities: _____

_____

_____

VI. APPROVAL (S) REQUESTED

X **Subdivision or Resubdivision**

___ Subdivision (Sub. Sec. 4, 5, 6)
X Resubdivision (Sub. Sec. 4, 5, 6)
___ Minor modification f subdivision or resubdivision (Sub. Sec. 4.6)
___ Town acceptance of a road (Sub. Sec. 6.5-6. 8 & 9)
___ Amendment of Subdivision Regulations (Sub. Sec. II)

See Subdivision Regulations Sec. 4 for application fee schedules.

___ **Soil Erosion and Sediment Control Plan (ESCP)** (ZR Sec. 2.117; 18) (Sub. 6.14)

___ **Site Plan of Development (POD)** (ZR Sec. 14)

___ POD approval (ZR Sec. 14.1.1.1; 14.1.2)
___ Modification of an approved POD (ZR Sec. 14.1.1.1)
___ Minor modification of a site POD (ZR Sec. 14.1.1.2)

___ **Special Permit(s)** (ZR Section 17.3)

___ Special Permit in an aquifer area (ZR Sec. 2.4; 2.5; 2.119; 20)
___ Special Permit for excavation (ZR Sec. 2.52; 2.79; 15)
___ Special Permit for use in a district (ZR Sec. 1.2 & 4)

___ Special Permit for lot coverage (ZR Sec. 1.2; 2.61; 2.68; 4)
___ Special Permit for signs (ZR Sec. 1.2; 2.106-115; 4; 16; 21.7)
___ Special Permit for parking (ZR Sec. 4; 12; 21.4

___ Special Permit for elderly housing (ZR Sec. 2.60; 17.4)
___ Special Permit for Bed & Breakfast (B & B) (ZR Sec. 2.9; 17.3.4)
___ Special Permit for serving alcohol (ZR Sec. 2.103, 17.1)

___ Special Permit for massage (ZR Sec. 2.76-78; 4)
___ Special Permit for telecommunications (ZR Sec. 2.21; 3.23 & 23)
___ Special Permit for dumps and/or incinerators (ZR Section 8)

____Other Special Permit(s). Cite ZR Section and describe activity:

_____

_____

____ Special Permit modifications (ZR Sec. 17.3.2.2). Cite ZR Section and describe activity.

_____

_____

_____

_____

____ **Zoning:**

____ Site specific change of zoning district and map (ZR Sec. 1.2; 1.3; 4)
____ Amendment of Zoning Regulations (Sec. 1.2; 1.3; 4)

____Site specific change to the Aquifer Protection Overlay Zone Map (ZR Sec. 20.3.2)

See Zoning Regulations Section 22 for application fee schedules.

____ Dealer or Repairer License (location approval for DMV)

Per Connecticut General Statutes (CGS) Section 8-26: If an application submitted to the Planning & Zoning Commission (PZC) involves any activity or area regulated under the wetlands statutes, an application for this activity must be filed with the Inland Wetlands Commission (IWC) on or before the day the Planning & Zoning Commission (PZC) application is filed by the applicant. (IWR Sec. 3.11)

Per CGS Sec. 8-31: If the proposed activity is to take place within a watershed of a Water company, the applicant is required to file a copy of the application with the Water Company via certified mail within seven (7) days of the date of the application. (IWR Sec. 4.3.6).

The applicant, undersigned, has reviewed the "Town of Vernon Planning and Zoning Regulations and Inland Wetlands and Watercourses Regulations" and has prepared this application with complete and accurate information:

Property Owner, Applicant, or Applicant's Agent:

James J Basile

501 Talcottville Road LLC

Signature — Date: 1/21/22

Signature — Date

TO BE FILLED IN BY THE PLANNING DEPARTMENT

Date Application Submitted _____

Date Application Received by Commission _____

PZC File: _____

USE THIS FORM ONLY IF THE REQUIREMENTS OF
8.3(a)/22-a-42a(b) OF THE C.G.S. MUST BE MET

RECEIPT FOR DOCUMENTS SUBMITTED FOR PUBLIC INSPECTION

TO: VERNON TOWN CLERK

FROM:

REFERENCE:

DATE"

The attached documents, consisting of:

Are being submitted for public inspection under CGS 8-3(a)/22a-42a (b).

Received: _____

Vernon Town Clerk _____
Signature

Date: _____

PLANNING AND ZONING COMMISSION APPLICATION FOR:

PROPOSED SUBDIVISION

501 TALCOTTVILLE ROAD
VERNON, CONNECTICUT

DATE: JANUARY 21, 2022 REV. 0

ZONE	MAP / BLOCK / LOT
C	09 / 0007 / 0001D

OWNER/APPLICANT:

501 TALCOTTVILLE ROAD, LLC
43 RIDGECREST LANE
BRISTOL, CT 06010

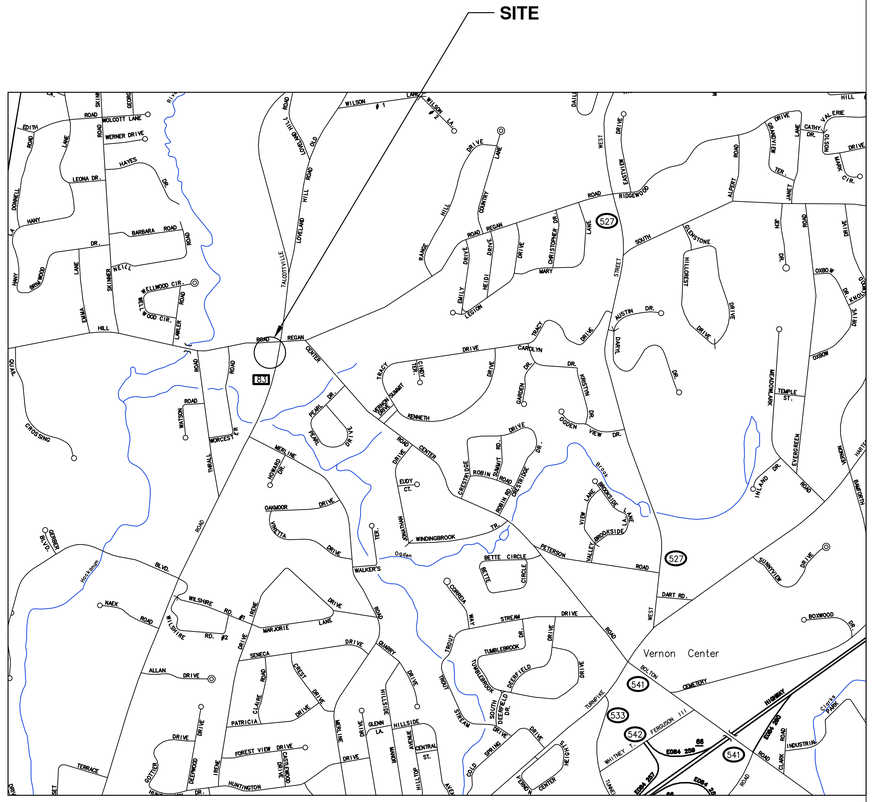
CONSULTANTS

benesch

Alfred Benesch & Company
120 Hebron Avenue - Second Floor
Glastonbury, CT 06033
(860) 633-8341

LIST OF DRAWINGS

CS	COVER SHEET
SV.01	BOUNDARY SURVEY
SV.02	BOUNDARY SURVEY
SV.01	SUBDIVISION PLAN
SV.02	SUBDIVISION PLAN



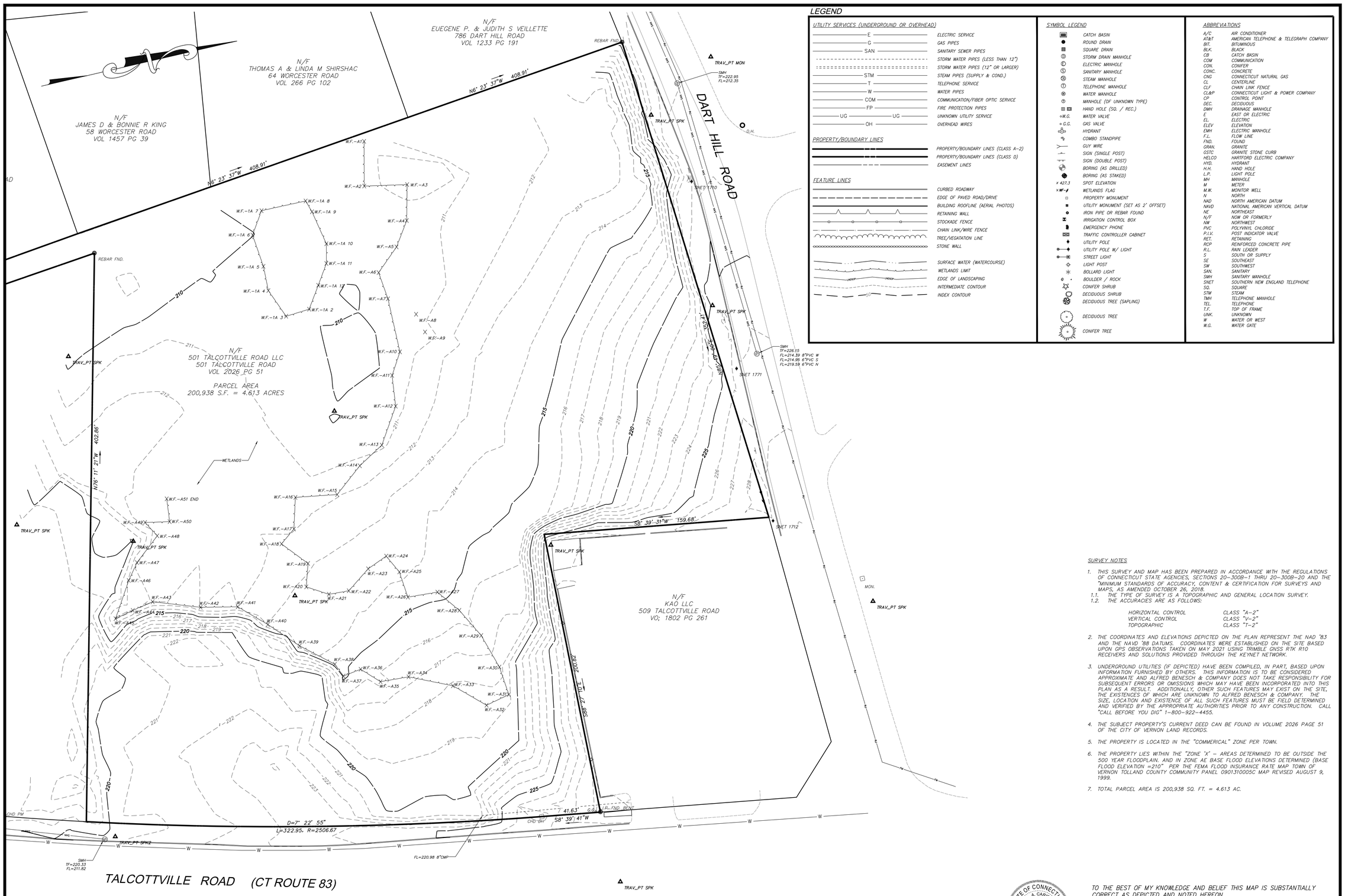
VICINITY MAP

SCALE: 1"=1000'

JOB NO: 70557.00



SITE
83
BARBARA ROAD
BEECH ROAD
BEECH ROAD
BEECH



LEGEND

UTILITY SERVICES (UNDERGROUND OR OVERHEAD)

E	ELECTRIC SERVICE
G	GAS PIPES
SAN	SANITARY SEWER PIPES
	STORM WATER PIPES (LESS THAN 12")
	STORM WATER PIPES (12" OR LARGER)
STM	STEAM PIPES (SUPPLY & COND.)
T	TELEPHONE SERVICE
W	WATER PIPES
COM	COMMUNICATION/FIBER OPTIC SERVICE
FP	FIRE PROTECTION PIPES
UG UG	UNKNOWN UTILITY SERVICE
OH	OVERHEAD WIRES

PROPERTY/BOUNDARY LINES

- PROPERTY/BOUNDARY LINES (CLASS A–2)
- PROPERTY/BOUNDARY LINES (CLASS D)
- EASEMENT LINES

FEATURE LINES

- CURBED ROADWAY
- EDGE OF PAVED ROAD/DRIVE
- BUILDING ROOFLINE (AERIAL PHOTOS)
- RETAINING WALL
- STOCKADE FENCE
- CHAIN LINK/WIRE FENCE
- TREE/VEGATATION LINE
- STONE WALL
- SURFACE WATER (WATERCOURSE)
- WETLANDS LIMIT
- EDGE OF LANDSCAPING
- INTERMEDIATE CONTOUR
- INDEX CONTOUR

SYMBOL LEGEND

- CATCH BASIN
- ROUND DRAIN
- SQUARE DRAIN
- STORM DRAIN MANHOLE
- ELECTRIC MANHOLE
- SANITARY MANHOLE
- STEAM MANHOLE
- TELEPHONE MANHOLE
- WATER MANHOLE
- MANHOLE (OF UNKNOWN TYPE)
- HAND HOLE (SQ. / REC.)
- W.G. WATER VALVE
- G.G. GAS VALVE
- HYDRANT
- COMBO STANDPIPE
- GUY WIRE
- SIGN (SINGLE POST)
- SIGN (DOUBLE POST)
- BORING (AS DRILLED)
- BORING (AS STAKED)
- x 427.3 SPOT ELEVATION
- WETLANDS FLAG
- PROPERTY MONUMENT
- UTILITY MONUMENT (SET AS 2' OFFSET)
- IRON PIPE OR REBAR FOUND
- IRRIGATION CONTROL BOX
- EMERGENCY PHONE
- TRAFFIC CONTROLLER CABINET
- UTILITY POLE
- UTILITY POLE W/ LIGHT
- STREET LIGHT
- LIGHT POST
- BOLLARD LIGHT
- BOULDER / ROCK
- CONIFER SHRUB
- DECIDUOUS SHRUB
- DECIDUOUS TREE (SAPLING)
- DECIDUOUS TREE
- CONIFER TREE

ABBREVIATIONS

A/C	AIR CONDITIONER
AT&T	AMERICAN TELEPHONE & TELEGRAPH COMPANY
BIT.	BITUMINOUS
BLK.	BLACK
CB	CATCH BASIN
COM.	COMMUNICATION
CON.	CONIFER
CONC.	CONCRETE
CNG	CONNECTICUT NATURAL GAS
CL	CENTERLINE
CLF.	CHAIN LINK FENCE
CL&P	CONNECTICUT LIGHT & POWER COMPANY
CP	CONTROL POINT
DEC.	DECIDUOUS
DMH	DRAINAGE MANHOLE
E	EAST OR ELECTRIC
EL.	ELECTRIC
ELEV	ELEVATION
EMH	ELECTRIC MANHOLE
F.L.	FLOW LINE
FND.	FOUND
GRAN.	GRANITE
GSTC.	GRANITE STONE CURB
HELCO	HARTFORD ELECTRIC COMPANY
HYD.	HYDRANT
H.H.	HAND HOLE
L.P.	LIGHT POLE
MH	MANHOLE
M	METER
M.W.	MONITOR WELL
N	NORTH
NAD	NORTH AMERICAN DATUM
NAVD	NATIONAL AMERICAN VERTICAL DATUM
NE	NORTHEAST
N/F	NOW OR FORMERLY
NW	NORTHWEST
PVC	POLYVINYL CHLORIDE
P.I.V.	POST INDICATOR VALVE
RET.	RETAINING
RCP	REINFORCED CONCRETE PIPE
R.L.	RAIN LEADER
S	SOUTH OR SUPPLY
SE	SOUTHEAST
SW	SOUTHWEST
SAN.	SANITARY
SMH	SANITARY MANHOLE
SNET	SOUTHERN NEW ENGLAND TELEPHONE
SQ.	SQUARE
STM	STEAM
TMH	TELEPHONE MANHOLE
TEL.	TELEPHONE
T.F.	TOP OF FRAME
UNK.	UNKNOWN
W	WATER OR WEST
W.G.	WATER GATE

SURVEY NOTES

1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20–300B–1 THRU 20–300B–20 AND THE "MINIMUM STANDARDS OF ACCURACY, CONTENT & CERTIFICATION FOR SURVEYS AND MAPS, AS AMENDED OCTOBER 26, 2018.
   1.1. THE TYPE OF SURVEY IS A TOPOGRAPHIC AND GENERAL LOCATION SURVEY.
   1.2. THE ACCURACIES ARE AS FOLLOWS:

HORIZONTAL CONTROL	CLASS "A–2"
VERTICAL CONTROL	CLASS "V–2"
TOPOGRAPHIC	CLASS "T–2"

2. THE COORDINATES AND ELEVATIONS DEPICTED ON THE PLAN REPRESENT THE NAD '83 AND THE NAVD '88 DATUMS. COORDINATES WERE ESTABLISHED ON THE SITE BASED UPON GPS OBSERVATIONS TAKEN ON MAY 2021 USING TRIMBLE GNSS RTK R10 RECEIVERS AND SOLUTIONS PROVIDED THROUGH THE KEYNET NETWORK.
3. UNDERGROUND UTILITIES (IF DEPICTED) HAVE BEEN COMPILED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. THIS INFORMATION IS TO BE CONSIDERED APPROXIMATE AND ALFRED BENESCH & COMPANY DOES NOT TAKE RESPONSIBILITY FOR SUBSEQUENT ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THIS PLAN AS A RESULT. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCES OF WHICH ARE UNKNOWN TO ALFRED BENESCH & COMPANY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION. CALL "CALL BEFORE YOU DIG" 1–800–922–4455.
4. THE SUBJECT PROPERTY'S CURRENT DEED CAN BE FOUND IN VOLUME 2026 PAGE 51 OF THE CITY OF VERNON LAND RECORDS.
5. THE PROPERTY IS LOCATED IN THE "COMMERICAL" ZONE PER TOWN.
6. THE PROPERTY LIES WITHIN THE "ZONE 'X' – AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN. AND IN ZONE AE BASE FLOOD ELEVATIONS DETERMINED (BASE FLOOD ELEVATION =210" PER THE FEMA FLOOD INSURANCE RATE MAP TOWN OF VERNON TOLLAND COUNTY COMMUNITY PANEL 09013I0005C MAP REVISED AUGUST 9, 1999.
7. TOTAL PARCEL AREA IS 200,938 SQ. FT. = 4.613 AC.

STATE OF CONNECTICUT · DAVID A. CARICCHIO · No. 70036 · LICENSED LAND SURVEYOR

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS DEPICTED AND NOTED HEREON.

1/21/22

DAVID A. CARICCHIO, P.L.S. No. 70036 — DATE
ALFRED BENESCH & COMPANY, GLASTONBURY, CONNECTICUT
(not valid without original signature and embossed seal)

REVISIONS		
No.	DATE	DESCRIPTION

SURVEY BOOK: 21-01
SURVEYOR: PC
DRAWN: DAC
CHECKED: RS
APPROVED: WW

SCALE: HORZ.: 1" = 30'
VERT.:
SURVEY DATUM: HORZ.: NAD 1983
VERT.: NAVD 1988

GRAPHIC SCALE 30 0 15 30

Prepared By:

benesch

Alfred Benesch & Company
120 Hebron Avenue – 2nd Floor
Glastonbury, Connecticut 06033
Phone (860) 633–8341, Fax: (860) 633–1068
www.benesch.com

TOPOGRAPHIC SURVEY
PREPARED FOR
501 TALCOTTVILLE ROAD LLC
501 TALCOTTVILLE ROAD (CT ROUTE 83)
& DART HILL ROAD
VERNON CONNECTICUT

PROJ. No.: 70557.00
DATE: MAY 2021

SV.02

PAPER SPACE LAYOUT NAME:
TWISTVIEW:
VIEW NAME:
LAYER MANAGER NAME:
PLOT TABLE: STB

File Location/Name - Y:\Glastonbury\70500\70557.00_Basile_Vernon\Survey\ACAD\70557 BASE.dwg
Date of Plot: January 21, 2022 - 2:55 PM



MAP REFERENCES

1. "PROPERTY AND TOPOGRAPHIC SURVEY FOR VICTOR J. BASILE 501 TALCOTTVILLE ROAD VERNON CONNECTICUT SATE JAN 2006 SCALE 1"=40' REVISED 1/24/07 BY A-N CONSULTING ENGINEERS"
2. P"PROPOSED SITE PLAN PREPARED FOR VICTOR BASILE #501 TALCOTTVILLE ROAD & DART HILL ROAD VERNON, CONNECTICUT DATED MARCH 1993 SCALE 1"=40' BY A.R. LOMBARDI ASSOCIATES"
3. "SUBDIVISION MAP PREPARED FOR JOHN J. MAHR SR. BOUNDARY MAP TALCOTTVILLE RD. AND DART HILL ROAD VERNON, CONN DATED MARCH 7, 1985 SCALE 1"=40' BY A.R. LOMBARDI"
4. "PRELIMINAREY RIGHT OF WAY STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP TOWN OF VERNON TALCOTTVILLE ROAD FORM PITKIN ROAD NORTHWESTERLY TO WINDSORVILLE ROAD SCALE 1"=40' DATED JANUARY 19, 1999 SHEET 6 OF 12 AND SHEET 7 OF 12"
5. "MAP SHOWING PROPOSED DRAINAGE EASEMENT OVER LAND OF JOHN J. LUITERMOZA AND THEODORE J ZIMMERMAN AND LAND OF JOHN F. MAHR AND JPHN J MAHE SR. SCALE 1"=40" DATED JULY 2 , 1975 REVISED 9-30-75 BY EVERETT O. GARDNER"

SURVEY NOTES

1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300B-1 THRU 20-300B-20 AND THE "MINIMUM STANDARDS OF ACCURACY, CONTENT & CERTIFICATION FOR SURVEYS AND MAPS, AS AMENDED OCTOBER 26, 2018.
   1.1. THE TYPE OF SURVEY IS A BOUNDARY SURVEY.
   1.2. THE BOUNDARY DETERMINATION CATEGORY IS DEPENDENT RESURVEY.
   1.3. THE ACCURACIES ARE AS FOLLOWS:

HORIZONTAL CONTROL	CLASS "A-2"
VERTICAL CONTROL	CLASS "V-2"
BOUNDARY	CLASS "A-2"

2. THE COORDINATES AND ELEVATIONS DEPICTED ON THE PLAN REPRESENT THE NAD '83 AND THE NAVD '88 DATUMS. COORDINATES WERE ESTABLISHED ON THE SITE BASED UPON GPS OBSERVATIONS TAKEN ON MAY 2021 USING TRIMBLE GNSS RTK R10 RECEIVERS AND SOLUTIONS PROVIDED THROUGH THE KEYNET NETWORK.
3. UNDERGROUND UTILITIES (IF DEPICTED) HAVE BEEN COMPILED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. THIS INFORMATION IS TO BE CONSIDERED APPROXIMATE AND ALFRED BENESCH & COMPANY DOES NOT TAKE RESPONSIBILITY FOR SUBSEQUENT ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THIS PLAN AS A RESULT. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCES OF WHICH ARE UNKNOWN TO ALFRED BENESCH & COMPANY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION. CALL "CALL BEFORE YOU DIG" 1-800-922-4455.
4. THE SUBJECT PROPERTY'S CURRENT DEED CAN BE FOUND IN VOLUME 2026 PAGE 51 OF THE CITY OF VERNON LAND RECORDS.
5. THE PROPERTY IS LOCATED IN THE "COMMERICAL" ZONE PER TOWN.
6. THE PROPERTY LIES WITHIN THE "ZONE 'X' – AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN. AND IN ZONE AE BASE FLOOD ELEVATIONS DETERMINED (BASE FLOOD ELEVATION =210" PER THE FEMA FLOOD INSURANCE RATE MAP TOWN OF VERNON TOLLAND COUNTY COMMUNITY PANEL 0901310005C MAP REVISED AUGUST 9, 1999.
7. TOTAL PARCEL AREA IS 200,938 SQ. FT. = 4.613 AC.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS DEPICTED AND NOTED HEREON.

1/21/22

DAVID A. CARICCHIO, P.L.S. No. 70036 DATE
ALFRED BENESCH & COMPANY, GLASTONBURY, CONNECTICUT
(not valid without original signature and embossed seal)

STATE OF CONNECTICUT · DAVID A. CARICCHIO · No. 70036 · LICENSED LAND SURVEYOR

REVISIONS		
No.	DATE	DESCRIPTION

SURVEY BOOK: 21-01
SURVEYOR: PC
DRAWN: DAC
CHECKED: RS
APPROVED: WW

SCALE: HORZ.: 1" = 50'
VERT.:
SURVEY DATUM: HORZ.: NAD 1983
VERT.: NAVD 1988

GRAPHIC SCALE 50 0 25 50

Prepared By:

benesch
Alfred Benesch & Company
120 Hebron Avenue, 2nd Floor
Glastonbury, Connecticut 06033
Phone (860) 633-8341, Fax: (860) 633-1068
www.benesch.com

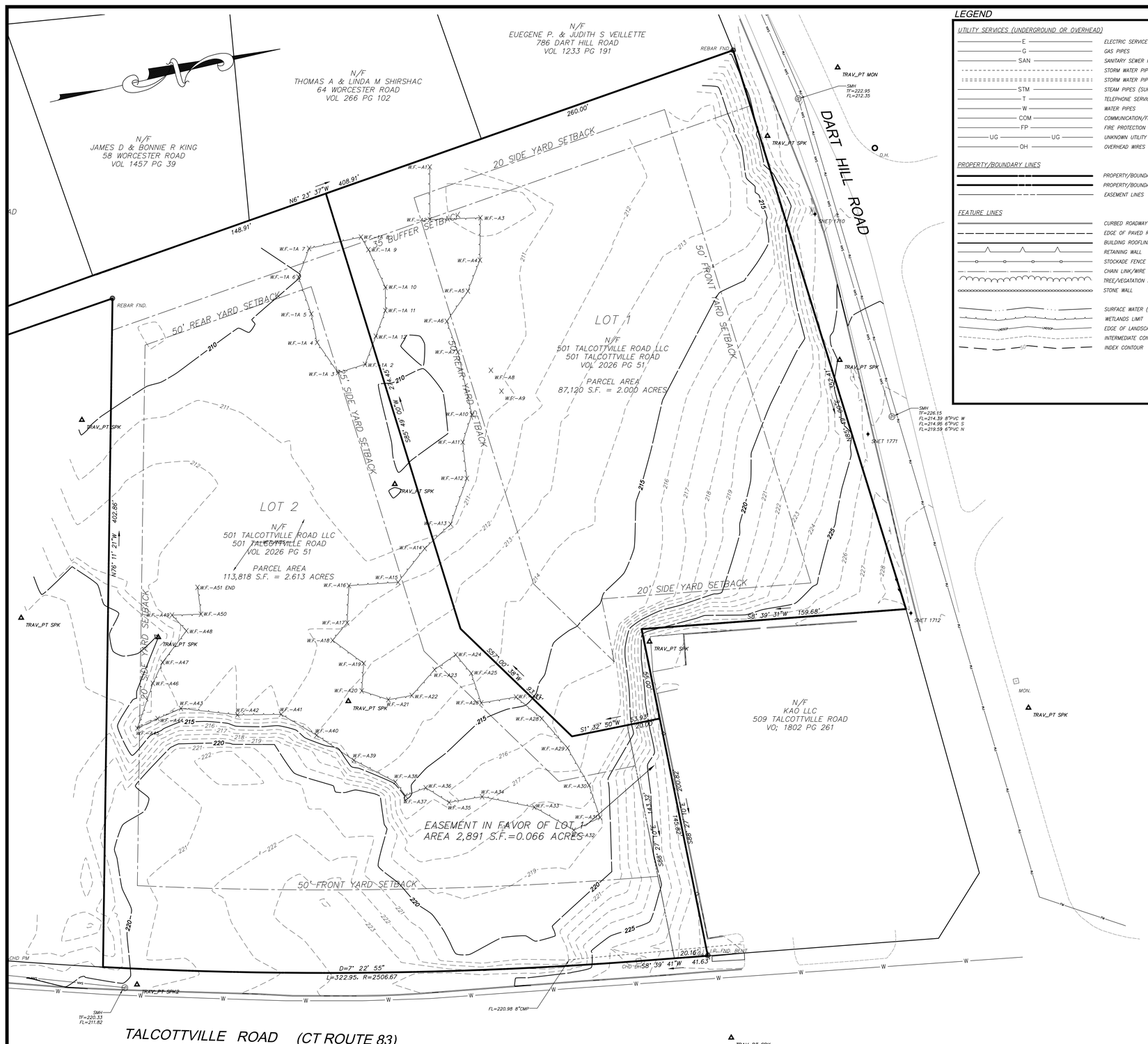
SUBDIVISION PLAN
PREPARED FOR
501 TALCOTTVILLE ROAD LLC
501 TALCOTTVILLE ROAD (CT ROUTE 83) & DART HILL ROAD
VERNON CONNECTICUT

PROJ. No.: 70557.00
DATE: JAN 2022

SV.01

PAPER SPACE LAYOUT NAME:
TWIST/VIEW:
VIEW NAME:
LAYER MANAGER NAME:
PLOT TABLE: STB

File Location/Name - Y:\Glastonbury\70500s\70557.00_Basile_Vernon\Survey\ACAD\70557 SUBDIVISION.dwg
Date of Plot: January 21, 2022 - 2:56 PM



LEGEND

UTILITY SERVICES (UNDERGROUND OR OVERHEAD)

E	ELECTRIC SERVICE
G	GAS PIPES
SAN	SANITARY SEWER PIPES
	STORM WATER PIPES (LESS THAN 12")
	STORM WATER PIPES (12" OR LARGER)
STM	STEAM PIPES (SUPPLY & COND.)
T	TELEPHONE SERVICE
W	WATER PIPES
COM	COMMUNICATION/FIBER OPTIC SERVICE
FP	FIRE PROTECTION PIPES
UG UG	UNKNOWN UTILITY SERVICE
OH	OVERHEAD WIRES

PROPERTY/BOUNDARY LINES

	PROPERTY/BOUNDARY LINES (CLASS A-2)
	PROPERTY/BOUNDARY LINES (CLASS D)
	EASEMENT LINES

FEATURE LINES

	CURBED ROADWAY
	EDGE OF PAVED ROAD/DRIVE
	BUILDING ROOFLINE (AERIAL PHOTOS)
	RETAINING WALL
	STOCKADE FENCE
	CHAIN LINK/WIRE FENCE
	TREE/VEGATATION LINE
	STONE WALL
	SURFACE WATER (WATERCOURSE)
	WETLANDS LIMIT
UDOP UDOP	EDGE OF LANDSCAPING
	INTERMEDIATE CONTOUR
50	INDEX CONTOUR

SYMBOL LEGEND

CATCH BASIN; ROUND DRAIN; SQUARE DRAIN; STORM DRAIN MANHOLE; ELECTRIC MANHOLE; SANITARY MANHOLE; STEAM MANHOLE; TELEPHONE MANHOLE; WATER MANHOLE; MANHOLE (OF UNKNOWN TYPE); HAND HOLE (SQ. / REC.); W.G. WATER VALVE; G.G. GAS VALVE; HYDRANT; COMBO STANDPIPE; GUY WIRE; SIGN (SINGLE POST); SIGN (DOUBLE POST); BORING (AS DRILLED); BORING (AS STAKED); x 427.3 SPOT ELEVATION; W.F.-# WETLANDS FLAG; PROPERTY MONUMENT; UTILITY MONUMENT (SET AS 2' OFFSET); IRON PIPE OR REBAR FOUND; IRRIGATION CONTROL BOX; EMERGENCY PHONE; TRAFFIC CONTROLLER CABINET; UTILITY POLE; UTILITY POLE W/ LIGHT; STREET LIGHT; LIGHT POST; BOLLARD LIGHT; BOULDER / ROCK; CONIFER SHRUB; DECIDUOUS SHRUB; DECIDUOUS TREE (SAPLING); DECIDUOUS TREE; CONIFER TREE

ABBREVIATIONS

A/C	AIR CONDITIONER
AT&T	AMERICAN TELEPHONE & TELEGRAPH COMPANY
BIT.	BITUMINOUS
BLK.	BLACK
CB	CATCH BASIN
COM	COMMUNICATION
CON.	CONIFER
CONC.	CONCRETE
CNG	CONNECTICUT NATURAL GAS
CL	CENTERLINE
CLF	CHAIN LINK FENCE
CL&P	CONNECTICUT LIGHT & POWER COMPANY
CP	CONTROL POINT
DEC.	DECIDUOUS
DMH	DRAINAGE MANHOLE
E	EAST OR ELECTRIC
EL.	ELECTRIC
ELEV	ELEVATION
EMH	ELECTRIC MANHOLE
F.L.	FLOW LINE
FND.	FOUND
GRAN.	GRANITE
GSTC.	GRANITE STONE CURB
HELCO	HARTFORD ELECTRIC COMPANY
HYD.	HYDRANT
H.H.	HAND HOLE
L.P.	LIGHT POLE
MH	MANHOLE
M	METER
M.W.	MONITOR WELL
N	NORTH
NAD	NORTH AMERICAN DATUM
NAVD	NATIONAL AMERICAN VERTICAL DATUM
NE	NORTHEAST
N/F	NOW OR FORMERLY
NW	NORTHWEST
PVC	POLYVINYL CHLORIDE
P.I.V.	POST INDICATOR VALVE
RET.	RETAINING
RCP	REINFORCED CONCRETE PIPE
R.L.	RAIN LEADER
S	SOUTH OR SUPPLY
SE	SOUTHEAST
SW	SOUTHWEST
SAN.	SANITARY
SMH	SANITARY MANHOLE
SNET	SOUTHERN NEW ENGLAND TELEPHONE
SQ.	SQUARE
STM	STEAM
TMH	TELEPHONE MANHOLE
TEL.	TELEPHONE
T.F.	TOP OF FRAME
UNK.	UNKNOWN
W	WATER OR WEST
W.G.	WATER GATE

SURVEY NOTES

1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300B-1 THRU 20-300B-20 AND THE "MINIMUM STANDARDS OF ACCURACY, CONTENT & CERTIFICATION FOR SURVEYS AND MAPS, AS AMENDED OCTOBER 26, 2018.
   1.1. THE TYPE OF SURVEY IS A TOPOGRAPHIC AND GENERAL LOCATION SURVEY.
   1.2. THE ACCURACIES ARE AS FOLLOWS:

HORIZONTAL CONTROL	CLASS "A-2"
VERTICAL CONTROL	CLASS "V-2"
TOPOGRAPHIC	CLASS "T-2"

2. THE COORDINATES AND ELEVATIONS DEPICTED ON THE PLAN REPRESENT THE NAD '83 AND THE NAVD '88 DATUMS. COORDINATES WERE ESTABLISHED ON THE SITE BASED UPON GPS OBSERVATIONS TAKEN ON MAY 2021 USING TRIMBLE GNSS RTK R10 RECEIVERS AND SOLUTIONS PROVIDED THROUGH THE KEYNET NETWORK.
3. UNDERGROUND UTILITIES (IF DEPICTED) HAVE BEEN COMPILED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. THIS INFORMATION IS TO BE CONSIDERED APPROXIMATE AND ALFRED BENESCH & COMPANY DOES NOT TAKE RESPONSIBILITY FOR SUBSEQUENT ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THIS PLAN AS A RESULT. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCES OF WHICH ARE UNKNOWN TO ALFRED BENESCH & COMPANY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION. CALL "CALL BEFORE YOU DIG" 1-800-922-4455.
4. THE SUBJECT PROPERTY'S CURRENT DEED CAN BE FOUND IN VOLUME 2026 PAGE 51 OF THE CITY OF VERNON LAND RECORDS.
5. THE PROPERTY IS LOCATED IN THE "COMMERICAL" ZONE PER TOWN.
6. THE PROPERTY LIES WITHIN THE "ZONE 'X' – AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN. AND IN ZONE AE BASE FLOOD ELEVATIONS DETERMINED (BASE FLOOD ELEVATION =210" PER THE FEMA FLOOD INSURANCE RATE MAP TOWN OF VERNON TOLLAND COUNTY COMMUNITY PANEL 0901310005C MAP REVISED AUGUST 9, 1999.
7. TOTAL PARCEL AREA IS 200,938 SQ. FT. = 4.613 AC.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS DEPICTED AND NOTED HEREON.

STATE OF CONNECTICUT · DAVID A. CARICCHIO · No. 70036 · LICENSED LAND SURVEYOR

1/21/22

DAVID A. CARICCHIO, P.L.S. No. 70036 — DATE
ALFRED BENESCH & COMPANY, GLASTONBURY, CONNECTICUT
(not valid without original signature and embossed seal)

REVISIONS		
No.	DATE	DESCRIPTION

SURVEY BOOK: 21-01
SURVEYOR: PC
DRAWN: DAC
CHECKED: RS
APPROVED: WW

SCALE: HORZ.: 1" = 30'
VERT.:
SURVEY DATUM: HORZ.: NAD 1983
VERT.: NAVD 1988

GRAPHIC SCALE 30 0 30 / 15

Prepared By:

benesch

Alfred Benesch & Company
100 Hebron Avenue - 2nd Floor
Glastonbury, Connecticut 06033
Phone (860) 633-8341, Fax: (860) 633-1068
www.benesch.com

TOPOGRAPHIC SURVEY

PREPARED FOR

501 TALCOTTVILLE ROAD LLC
501 TALCOTTVILLE ROAD (CT ROUTE 83)
& DART HILL ROAD

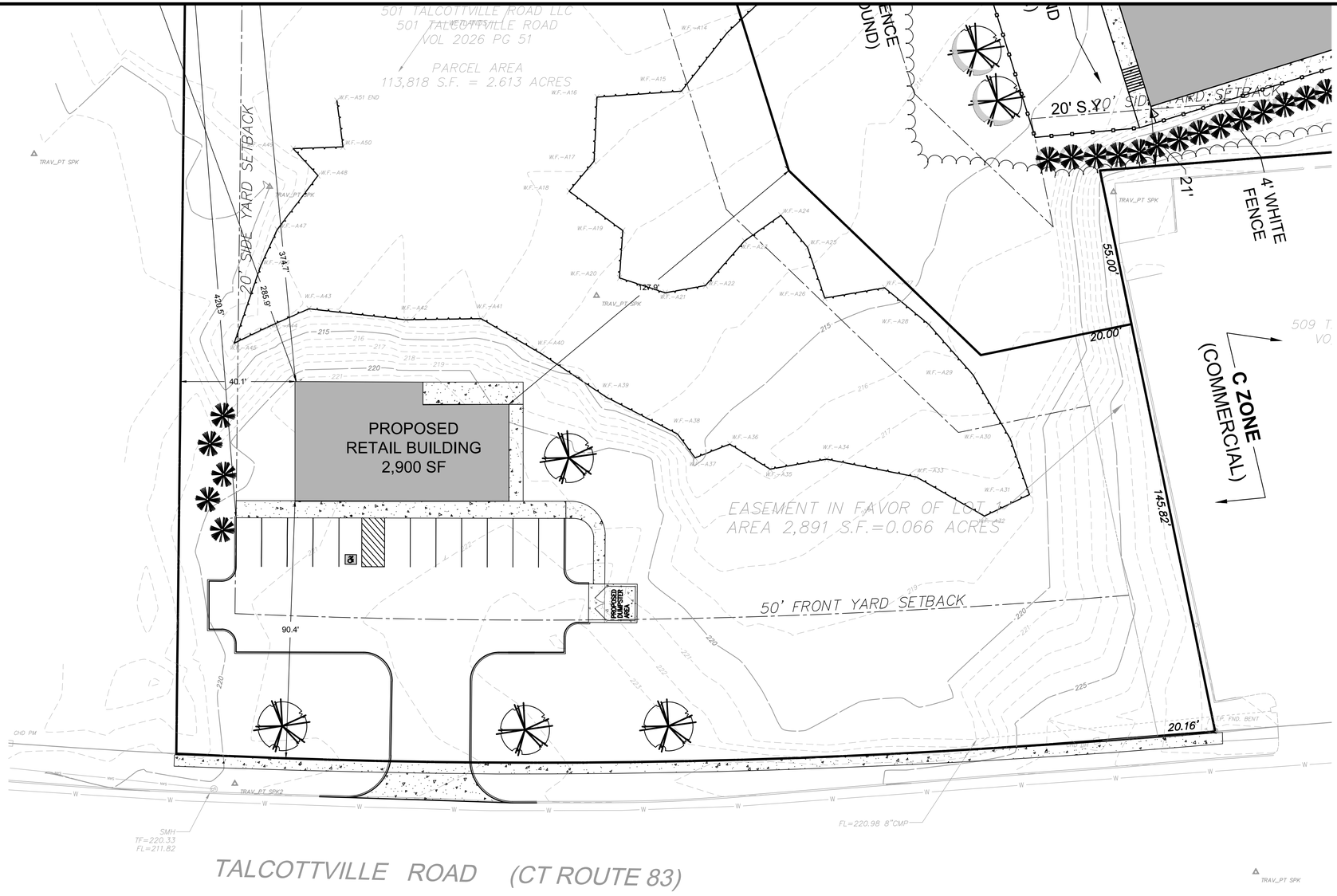
VERNON CONNECTICUT

PROJ. No.: 70557.00
DATE: MAY 2021

SV.02

PAPER SPACE LAYOUT NAME:
TWISTVIEW:
VIEW NAME:
LAYER MANAGER NAME:
PLOT TABLE: STB

File Location/Name - Y:\Glastonbury\70500S\70557.00_Basle_Vernon\Survey\ACAD\70557 SUBDIVISION.dwg
Date of Plot: January 21, 2022 - 2:58 PM



ZONING TABLE

501 TALCOTTVILLE ROAD M/B/L 09/0007/0001D ZONE: C (COMMERCIAL)			
PARCEL 2: RETAIL			
ITEM	REQUIREMENTS	EXISTING CONDITIONS LOT 2	PROPOSED CONDITIONS LOT 2
MIN. LOT AREA	22,000 SF	113,818 SF	113,818 SF
MIN. LOT FRONTAGE	100 FT	365 FT	365 FT
FRONT YARD SETBACK	50 FT	N/A	90 FT
SIDE YARD SETBACK	20 FT	N/A	40 FT
REAR YARD SETBACK	50 FT	N/A	286 FT
MIN. BUILDING SETBACK FROM RESIDENTIAL STRUCTURE	200 FT OR AS APPROVED BY SPECIAL PERMIT	N/A	375 FT
MIN. PARKING SETBACK FROM RESIDENTIAL STRUCTURE	100 FT OR AS APPROVED BY SPECIAL PERMIT	N/A	420 ft
MAX. IMPERVIOUS COVERAGE	60% OR AS APPROVED BY SPECIAL PERMIT	0%	10%
MAX. BUILDING HEIGHT	35 FT OR AS APPROVED BY SPECIAL PERMIT	N/A	< 35'
PARKING SPACES	RETAIL PARKING ONE SPACE PER 250 S.F. FLOOR AREA 2900 SF/250 = 12 SPACES	0	12

20 0 20 40

1" = 20'

PLAN REFERENCE

SITE INFORMATION FROM PLAN ENTITLED: "SUBDIVISION PLAN, PREPARED FOR 501 TALCOTTVILLE ROAD LLC, 501 TALCOTTVILLE ROAD (CT ROUTE 83) & DART HILL ROAD, VERNON, CONNECTICUT," SCALE 1" = 30', DATED JANUARY, 2022, BY ALFRED BENESCH & CO, 120 HEBRON AVENUE, GLASTONBURY, CT

Prepared by:
benesch
Alfred Benesch & Company
120 Hebron Ave 2nd Floor
Glastonbury, Connecticut 06033
860-633-8341

Prepared for:

BASILE SUBDIVISION LOT 2

501 TALCOTTVILLE ROAD VERNON, CT

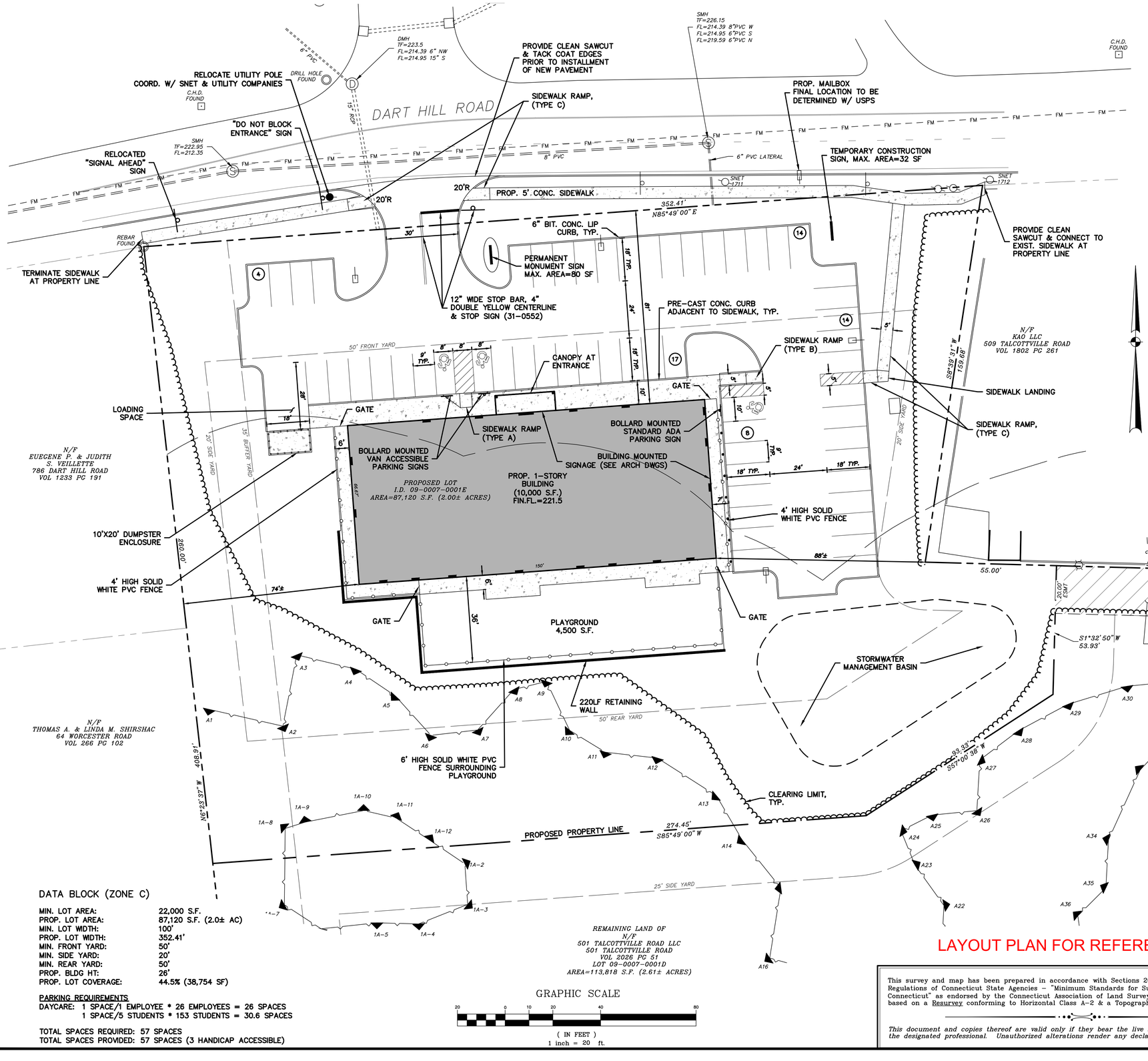
DATE:	REVISION:
2022.01.20	REVISION: 0

PROJECT NO.: 70557.51
SCALE: AS SHOWN
DATE: 01.20.2022
DRAWN BY: LAW
CHECKED BY: RGS

CONCEPT PLAN

FOR REFERENCE ONLY

DRAWING NO.:
CP-1



DATA BLOCK (ZONE C)

MIN. LOT AREA:	22,000 S.F.
PROP. LOT AREA:	87,120 S.F. (2.0± AC)
MIN. LOT WIDTH:	100'
PROP. LOT WIDTH:	352.41'
MIN. FRONT YARD:	50'
MIN. SIDE YARD:	20'
MIN. REAR YARD:	50'
PROP. BLDG HT:	26'
PROP. LOT COVERAGE:	44.5% (38,754 SF)

PARKING REQUIREMENTS
DAYCARE: 1 SPACE/1 EMPLOYEE * 26 EMPLOYEES = 26 SPACES
1 SPACE/5 STUDENTS * 153 STUDENTS = 30.6 SPACES

TOTAL SPACES REQUIRED: 57 SPACES
TOTAL SPACES PROVIDED: 57 SPACES (3 HANDICAP ACCESSIBLE)

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

LAYOUT PLAN FOR REFERENCE ONLY

This survey and map has been prepared in accordance with Sections 20-300b-1 thru 20-300b-20 of the Regulations of Connecticut State Agencies – "Minimum Standards for Surveys and Maps in the State of Connecticut" as endorsed by the Connecticut Association of Land Surveyors, Inc. It is a Property Survey based on a Resurvey conforming to Horizontal Class A-2 & a Topographic Survey conforming to Class T-2.

This document and copies thereof are valid only if they bear the live signature and embossed seal of the designated professional. Unauthorized alterations render any declaration hereon null and void.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

Reference Maps:

1. "Boundary Survey Prepared for 501 Talcottville Road LLC, 501 Talcottville Road (CT Route 83) & Dart Hill Road, Vernon, Connecticut" Sheet SV.01, Scale: 1"=50' Date: May 2021 by Alfred Benesch & Company.
2. "Topographic Survey Prepared for 501 Talcottville Road LLC, 501 Talcottville Road (CT Route 83) & Dart Hill Road, Vernon, Connecticut" Sheet SV.02Scale: 1"=30' Date: May 2021 by Alfred Benesch & Company.

Notes:

1. Portion of the parcel is located in inland wetlands as delineated by Rema Ecological Services per reference map #2.
2. Proposed lot does not lie within a special flood hazard area per "FEMA flood insurence rate map, town of Vernon, Connecticut community panel number 0901310005C, revised August 9, 1999".
3. Horizontal and vertical datums are based upon map references prepared by Alfred Benesch & Company.
4. All underground utility locations on this plan are approximate and may not be complete. Anyone using this information without verifying the locations does so at their own risk. No construction will be done on this site prior to utility mark out. "Call Before You Dig 1-800-922-4455".
5. Boundary and existing conditions shown hereon are based on map references prepared by Alfred Benesch & Company.

LEGEND

-O-	EXISTING UTILITY POLE
UG	PROPOSED UNDERGROUND ELECTRIC
G	EXISTING GAS LINE
G	PROPOSED GAS LINE
W	EXISTING WATER LINE
W	PROPOSED WATER LINE
FP	PROPOSED FIRE PROTECTION LINE
	EXISTING CATCH BASIN
	PROPOSED CATCH BASIN
	EXISTING DRAINAGE MANHOLE
	PROPOSED DRAINAGE MANHOLE
	EXISTING STORM SEWER
	PROPOSED STORM SEWER
RL	PROPOSED ROOF LEADER
S	EXISTING SANITARY MANHOLE
	EXISTING SANITARY SEWER
FM	EXISTING SANITARY FORCE MAIN
S	PROPOSED SANITARY SEWER
	EXISTING SIGN
	PROPOSED SIGN
	EXISTING IRON PIN (FOUND)
	PROPOSED IRON PIN (TO BE SET)
	EXISTING MONUMENT (FOUND)
135x5	EXISTING SPOT GRADE
135.5	PROPOSED SPOT GRADE
136	EXISTING CONTOUR
136	PROPOSED CONTOUR
	LIMIT OF WETLANDS
	PROPERTY LINE
	EASEMENT LINE
	BUILDING LINE
	STAKED HAYBALES OR SILT FENCE

RUSSO SURVEYORS·ENGINEERS
SERVING CT & MA
J.R. Russo & Associates, LLC
1 Shoham Rd East Windsor, CT 06088 • CT 860.633.0569 • MA 413.785.1158
www.jrrusso.com • info@jrrusso.com

Applicant
Vernon Development LLC
56 East Main Street
Avon, Connecticut 06001

REVISIONS

BY: LF/TAC	CHK: JEU

The Learning Experience
Property Of
501 Talcottville Road, LLC
501 Talcottville Road
Vernon, Connecticut 06010
Parcel ID: 09-0007-0001D (Zone: C)

Layout Plan

DATE 1-11-22
SCALE 1"=20'
JOB NUMBER 2021-083
SHEET 4 of 12

S:\Acad\2021 Civil 3D\2021-083 Vernon Development - 501 Talcottville Rd\Russo Drawings\2021-083.dwg

STAFF COMMENTS

TOWN OF VERNON

55 West Main St., VERNON, CT 06066-3291
(860) 870-3640
gmcgregor@vernon-ct.gov

OFFICE OF THE
TOWN PLANNER

MEMORANDUM

TO: Planning & Zoning Commission

FROM: George K. McGregor, AICP, Town Planner

SUBJECT: PZ 2022-06, 501 Talcottville Rd. Re-Subdivision

DATE: March 3, 2022

Request

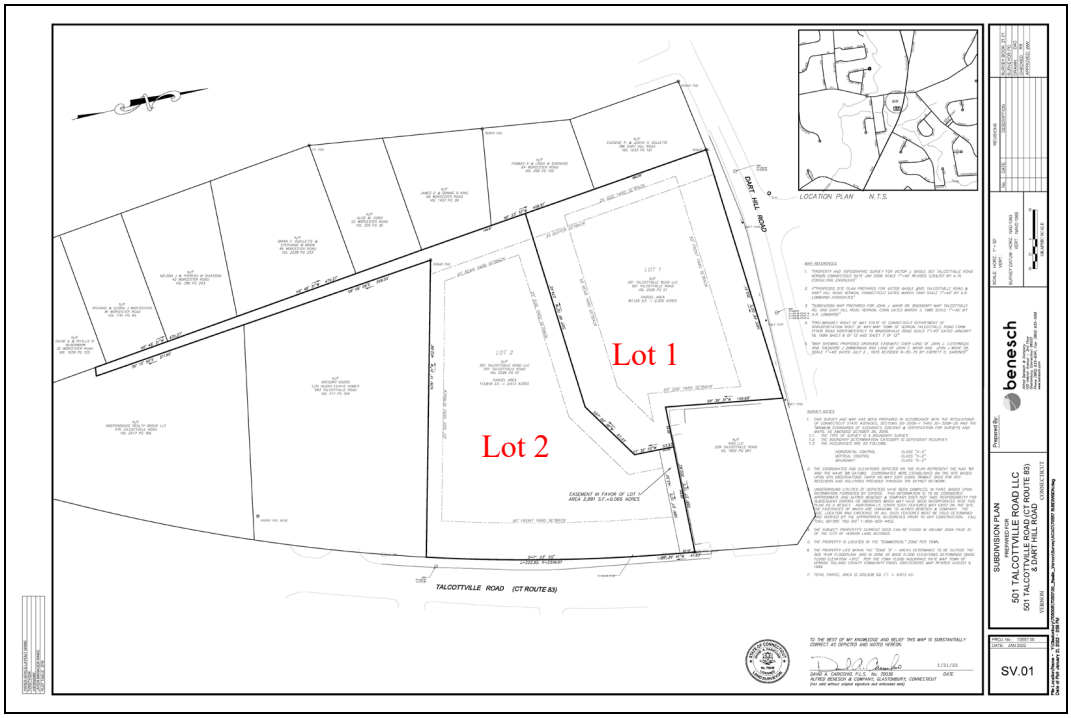
PZ-2022-06, 501 Talcottville Rd. An Application of 501 Talcottville Rd., LLC to permit the re-subdivision of land into one additional parcel, located at 501 Talcottville Rd. (Tax Map 09, Block 0007, Parcel 0001D). The property is zoned Commercial.



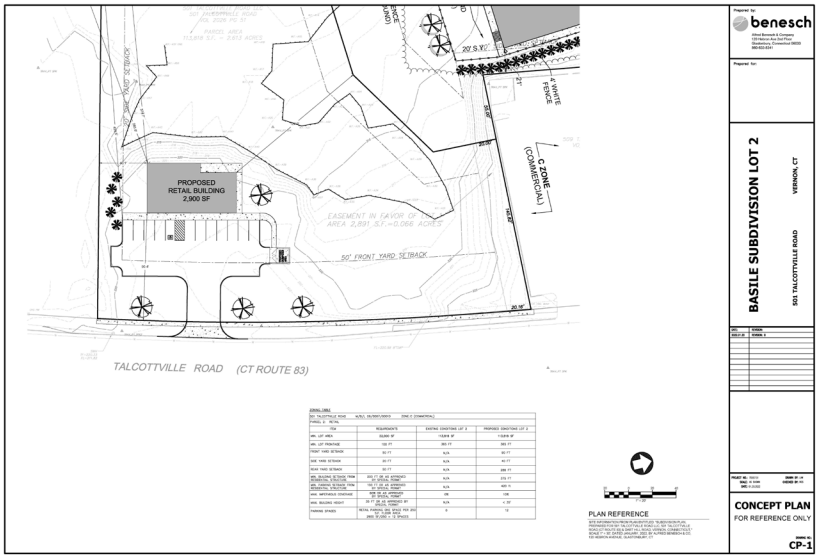
Site Location

Summary

The property owner requests approval to create one additional 2.6 parcel from a parent 4.6-acre tract addressed as 501 Talcottville Rd. A previous subdivision occurred on the parent parcel; therefore, no free cut is available and, under the town regulations, re-subdivision is permitted after a public hearing and decision by the Planning & Zoning Commission. This application is related to PZ 2022-05, the site plan and special permit application for a day care facility at 501 Talcottville Rd.



It appears that the front portion of the new parcel, fronting on Talcottville Rd., is available for development due to the preponderance of wetlands on the balance of the land. The Applicant has provided a conceptual commercial layout (*right*) to demonstrate such possibilities. Any site plan on the new parcel would require a site plan review, potentially special permits, and certainly a new wetland permitting process. ***Note: this report does not represent a review, approval, or endorsement of the conceptual plan.***



Staff Review

The Zoning Official has indicated that the new parcel appears to meet zoning regulations, as does the left-over parent tract.

Creating a new legal lot of record conveys certain future entitlements on the property. As evidenced from the ongoing Inland Wetland Commission **(IWC 2022-01)** review of the parent tract, there are potential significant impacts on the wetlands from the development of commercial projects in proximity. A re-subdivision of this property will introduce, in all likelihood, additional potential wetland impacts. Any revisions to the site plan review contained in PZ 2022-05 (as a result of the Inland Wetland review) could affect the proposed new subdivision parameters in a manner not known at the time of this report.

Note: The IWC continued its public hearing until March 22, 2022 so that the Town could engage a third-party wetland professional to review and opine on the applicant's submission.

State Statute 8.26 requires the Planning & Zoning Commission to await the recommendation and decision from the Inland Wetlands Commission for any application which "involves land regulated as an inland wetland." The Inland Wetland Commission has yet to make its finding on that application. For the reasons cited above, Staff recommends a continuation of this hearing until April 7, 2022 and extension from the applicant, as appropriate.

Draft motions may be delivered to the PZC under separate cover.