HARTFORD PLANNING COMMISSION
November 13, 2023
Meeting Notice and Agenda

The Hartford Planning Commission will meet on Monday, November 13, 2023, beginning at 6:00 p.m. to consider the following Administrative Matters and Applications.

This meeting will be conducted in person at Hartford Town Hall, 171 Bridge Street, White River Junction, Vermont. In addition, you may join the meeting remotely as follows:

Microsoft Teams meeting
Join on your computer, mobile app or room device
Click here to join the meeting
Meeting ID: 277 927 591 848
Passcode: s2V3vr
Download Teams | Join on the web
Or call in (audio only)
+1 802-377-3677,,98858526#
1 802 377 3677
Phone Conference ID: 988 585 26#

If you have problems accessing this meeting, please email Jo-Ann Ells at jells@hartford-vt.org

A. Administrative Matters beginning at **6:00 p.m.**

1. Public Comment. 2. Minutes. 3. Administrative Permits. 4. Act 250 Applications. 5. Town Plan Steering Committee Update. 6. Regional Planning Commission Update. 7. Climate Action Plan Update. 8. Availability for the next Public Hearing.

B. Public Hearing, beginning at **6:30 p.m.**

1. Application #23-17 by Kyle Moses and Crystal Pearson-Moses (owners/applicants) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for a third dwelling unit, lot 45-0028-000, 186 Hillcrest Terrace, White River Junction, in a R-2 zoning district.

2. Application #23-18 by Schaal Real Estate Revocable Trust (owners/applicants) for approval of a Subdivision involving boundary line adjustments between lots 22-0250-000 and 22-0251-000, 61 and 73 Depot Street, Wilder, in VRC and R-1 zoning districts.

3. Application #23-19 by 474 Hartford Ave. LP and Twin Pines Housing Trust (owners/applicants) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for an amendment to an approved multi-unit dwelling to allow temporary construction access on Goudreau Street, lot 43-0074-001, 747 Hartford Avenue, Wilder, in a Planned Development.

4. Application #23-20 by Northern Stage Company (owners/applicants) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for 18 dwelling units in three Multi-Unit Buildings, lots 45-0150-000, 45-0151-000, and 45-0152-000, 140, 146, 160 and 178 Gates Street, White River Junction, in CB and Design Review Districts.

5. Application #23-21 by Craftstudies Inc. (owner) and The Upper Valley Haven (applicant) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for an Emergency Shelter, lot 45-0003-000, 608 North Main Street, White River Junction, in the HCR Zoning District.

6. Application #23-22 by Black Rock Investment LLC (owner/applicant) for Preliminary Approval of a Subdivision involving boundary line adjustments between lots, 45-0243-000, 45-0162-000, and 45-0198-001, Sykes Mountain Avenue and Hickory Ridge, White River Junction, in R-1, R-2, and R1-M zoning districts.

7. Application #23-23 by Black Rock Investment LLC (owner/applicant) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for a 48 dwelling units in a Multi-Unit Building, proposed lot 45-0243-000, Sykes Mountain Avenue and Hickory Ridge, White River Junction, in a R1-M zoning district.

8. Application #23-24 by Black Rock Investment LLC (owner/applicant) for Preliminary Approval of a Planned Development under the Subdivision Regulations and section 260-47 of the Hartford Zoning Regulations for 192 dwelling units in four Multi-Unit Buildings, proposed lot 45-0162-000, Sykes Mountain Avenue and Hickory Ridge, White River Junction, in R-1, R-2, and R1-M zoning districts.

9. Application #23-25 by Black Rock Investment LLC (owner/applicant) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for 192 dwelling units in four Multi-Unit Buildings, proposed lot 45-0162-000, Sykes Mountain Avenue and Hickory Ridge, White River Junction, in a proposed Planned Development.

Please call the Department of Planning and Development (802) 295-3075 to request copies of the application materials. Persons wishing to be heard regarding these applications may do so by participating in the meeting, having another party participate in the meeting on their behalf, and/or by submitting written testimony.

An interested person who has **participated** in a municipal regulatory proceeding may appeal a decision rendered in that proceeding to the Vermont Environmental Court. Participation in a local regulatory proceeding shall consist of offering, through oral or written testimony, evidence or a statement of concern related to the subject of the proceeding.

John Reid, Chair

Planning Commission
Administrative Agenda
November 13, 2023

1. Public Comment

2. Minutes

   October 16, 2023

3. Administrative Permits

   - Casella – Woodstock Road, 2,800 sq. ft. canopy structure with a roof
   - Snow Village Condos.- Williams Lane- two decks

4. Act 250 Applications

   - Black Rock Investments, LLC, Jurisdictional Opinion
   - Clay- Route 14 Farm Structure

5. Town Plan Steering Committee Update (Bruce)

6. Regional Planning Commission Update (Bruce)

7. Climate Action Plan Update (John R.)

8. Availability for the next Public Hearing

DRAFT
Minutes
Hartford Planning Commission
October 16, 2023

THIS MEETING WAS CONDUCTED IN COMPLIANCE WITH THE VERMONT OPEN MEETING LAW IN PERSON WITH ELECTRONIC PARTICIPATION AVAILABLE

Present: John Reid, Chair, Toby Dayman, Dillon Bianchi, John Heath, Colin Butler, Dylan Kreis, and Jo-Ann Ells, Zoning Administrator

Absent: Bruce Riddle, Vice Chair, and Kim Souza, Selectboard Liaison

Administrative Matters

John Reid read the Hybrid Meeting Script and took a roll call.

It was noted that Application #23-16 for Site Development Plan Approval was withdrawn.

1. Public Comment

None.

2. Sketch Plan Review- Self-Storage Units

Rick Bove, property owner, and Karl Marchessault, Civil Engineer were present.

In January of 2022, Rick Bove and Karl Marchessault met with the Planning Commission informally to review development of a self-storage project on an undeveloped lot on Route 4 adjacent to the Quechee Gorge Village Planned Development located off Woodstock Road. The project consists of 500 storage units in a phased manner.

Jo-Ann Ells explained that Rick Bove and Karl Marchessault were seeking informal, non-binding feedback from the Planning Commission to amend the Master Plan for the Quechee Gorge Village Planned Development to allow Self-Storage Units.

Karl Marchessault noted they have spoken with Act 150 and VTrans, and feel the use is similar to a Parking Facility which is allowed in the QG zoning district as a Conditional Use. He noted that the project would add to the Town tax base, would be adequately screened, and they intend to gift the energy from proposed roof top solar.

Rick Bove spoke to the need for storge in the area, and commented that three of his tenants have expressed a need for storage, it is a good use of the land. He added that the project will generate low traffic, will be shielded from Route 4, will service Quechee Gorge Village tenants and the community.

John Reid commented that adequate landscaping would be very important.

Rick Bove noted that energy from proposed roof top solar will be gifted to Twin Pines Housing Trust, and the colors chosen for the units will camouflage their presence.

Jo-Ann Ells asked the Planning Commission to comment on the suitability to allow the use as a Planned Development as outlined in her October 4, 2023 memo.

Dylan Kreis asked if any uses more in line with the zoning district had been considered.

Karl Marchessault noted that they were seeking a use that did not require water/wastewater services. Dylan Kreis asked if housing was considered. Karl Marchessault noted that they would not be able to develop very many units given the requirement for on-site wastewater.

Colin Butler commented that the found it hard to conclude that the use would meet §260-47 5 and 6 of the Zoning Regulations.

Karl Marchessault outlined how he believed the proposed use would meet the objective of the QG zoning district.

John Reid commented that because the area is a diverse commercial area, he thought making the land productive, if properly screened and including solar arrays, could meet the criteria for a Planned Development.

Colin Butler stated that the development in the area is tourist and hospitality driven and he did not see how self-storage units would meet the criteria.

John Heath stated that he did not see a compelling argument that the criteria for a Planned Development could be met.

Toby Dayman commented that he thought it was awkward to allow the use, even if it was screened, but was on the fence.

Dillon Bianchi noted that he was not sure the use would meet the criteria for a Planned Development.

Dylan Kreis stated that it would be a bad precedent to allow the use, he appreciated the solar component, but felt the land could be used for something better such as housing.

Jo-Ann Ells noted that any application would need the vote of a majority of the Commission (4 members) to approve an application.

3. Minutes

Colin Butler moved to approve the minutes of July 31, 2023 with one correction. Dillon Bianchi seconded, and the motion passed unanimously.

4. 2024 Public Hearing Schedule

Dillon Bianchi moved to approve the 2024 Schedule. Colin Butler seconded, and the motion passed unanimously.

5. Administrative Permits

John Reid asked if there were any questions about the following administrative permits.

- Immersion Montessori School- Chicken Coop, Pine Street
- Bob's Service Center- Replace Propane Tank, Ballardvale Drive
- Norwich Terrace- Convert Daycare to Residence, Christian Street
- Race Metalsmiths- Machine Shop & Metal Finishing, Roundhouse Road
- Snow Village Condos- Deck, Williams Lane
- Grattan Line - Overhead Powerline Contractor, Route 14 (Formerly Hendersons Tree Service)
- Vale Condos- Relocate Garage, Granite Way

The location and use of the Grattan Line permit was clarified.

6. Act 250 Applications

John Reid asked if there were any questions about the following administrative permits.

- Hartford School District- Christian Street Project
- Grattan Line Overhead Powerline Contractor, Route 14 (Formerly Hendersons Tree Service)
- Vale Condos- Relocate Garage, Granite Way

Jo-Ann Ells noted that while the School District's application was withdrawn, she expected a new application for amendments to the Planning Commission/Zoning Board of Adjustment to be re-submitted.

7. Town Plan Steering Committee Update

Tabled

8. Regional Planning Commission Update

Tabled

9. Climate Action Plan Update

No update.

10. Availability for the next Public Hearing

All Commissioners anticipated being available for the Hearing on November 13, 2023

Adjournment

At 7:15 p.m., John Reid moved to adjourn. Dylan Kreis seconded, and the Hearing was adjourned.

Respectively Submitted,

_____

Toby Dayman, Clerk

Planning Commission

John Reid 01-11-24
John Heath 03-22-24
Toby Dayman 06-28-24
Colin Butler 07-12-24
Bruce Riddle 02-07-25
Dillon Bianchi 09-05-25
Dylan Kreis 6/26/2026

Application #23-17

Kyle Moses and Crystal Pearson-Moses

DRAFT
FINDINGS OF FACT
CONCLUSIONS OF LAW
AND
DECISION

HARTFORD PLANNING COMMISSION

Application #23-17 by Kyle Moses and Crystal Pearson-Moses
for Site Development Plan Approval
for a third dwelling unit
lot 45-0028-000, 186 Hillcrest Terrace
White River Junction, in a R-2 zoning district

This decision pertains to application #23-17 by Kyle Moses and Crystal Pearson-Moses (owners/applicants) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for a third dwelling unit, lot 45-0028-000, 186 Hillcrest Terrace, White River Junction, in a R-2 zoning district.

FINDINGS OF FACT

Based upon the information contained in the exhibits for this application (see attached list) and the evidence adduced at the Planning Commission meeting of November 13, 2023 the Hartford Planning Commission makes the following Findings of Fact:

General Information

1. The owners of record of lot 45-0028-000 are Kyle Moses and Crystal Pearson-Moses who acquired the lot on 12-23-26. The deed is recorded in volume 531, page 754 of the Hartford Land Records.

2. The lot is approximately 20,412 sq. ft.

3. The lot is located at 186 Hillcrest Terrace.

4. The lot is developed with a single-unit dwelling, detached garage, accessory dwelling unit, and unpermitted dwelling unit.

5. The lot is in an R-2 zoning district.

This Application

6. The single-unit dwelling was built before the Town adopted zoning.

7. Zoning Permit #2022-87 was issued in 2022 for a detached garage.

8. Zoning Permit #2023-142 was issued in 2023 for an Accessory Dwelling Unit (ADU) above the detached garage.

9. The applicants are seeking approval of the existing unpermitted dwelling unit above the detached garage. (See exhibit #3 and #11)

10. The proposed dwelling unit cannot be permitted as an ADU because the number of possible ADU's on a lot under Hartford's Zoning Regulations is one and one ADU has been permitted and constructed.

    In 2023, The State of Vermont made several changes involving permissible types of Zoning Regulations related to housing however, they did not increase the number of ADU's the Town must allow:

    > 24 VSA 4412 E: Except for flood hazard and fluvial erosion area bylaws adopted pursuant to section 4424 of this title, no bylaw shall have the effect of excluding as a permitted use one accessory dwelling unit that is located within or appurtenant to a single-family dwelling on an owner-occupied lot.

    (See exhibit #3)

11. 24 V.S.A. 4412 D requires that "In any district that is served by municipal sewer and water infrastructure that allows residential development, multiunit dwellings with four or fewer units shall be a permitted use, unless that district specifically requires multiunit structures to have more than four dwelling units."

    24 V.S.A. §4303 defines "multiunit or multifamily dwelling" as a building that contains three or more dwelling units in the same building."

    If the single-unit dwelling and detached garage were connected, the Planning Commission could consider the units to be in the same building and the application could be reviewed as a multiunit or multifamily dwelling. (See exhibits #3, #8 and #11)

12. Density in the R-2 zoning district for a class 1 lot is one unit/6,000.

    If the application met the definition of a multiunit or multifamily dwelling, 3 units would be possible. (20,412/6,000=3.4)

13. If the application met the definition of a multiunit or multifamily dwelling, 6 parking spaces would be required (2 per unit).

    (24 V.S.A. 4412 (4) becomes effective in December of 2024 and reduces the number of parking spaces the municipality may require to one per unit.)

14. The applicants have been provided information regarding their responsibility to identify, apply for, and obtain relevant local and state permits for this project.

CONCLUSIONS OF LAW

Based upon the foregoing Findings of Fact, the Hartford Planning Commission concludes that the proposed site plan provides, as required by **§260-45 C** of the Hartford Zoning Regulations:

(1) Maximum safety of **traffic circulation between the site and the street network** and integration with the overall traffic pattern, including provisions for auxiliary roadways connecting with adjacent properties where appropriate. Included in this evaluation shall be the location, number and width of access points, curve radii at access points, acceleration or deceleration lanes on adjacent public streets, sight distances, lighting, location of sidewalks and other walkways, and the overall relationship of the proposed development with existing traffic conditions in the area. All modes of transportation shall be taken into account, including pedestrian, bicycle, handicapped, delivery and emergency vehicles and public transportation.

(2) Adequacy of **on site circulation, parking, and loading facilities,** with particular attention to safety. Included in this evaluation shall be traffic movement patterns, drive and aisle widths, directional signs, location of loading docks and parking areas, number and size of parking spaces, and provision for lighting, drainage, snow removal and access for emergency vehicles and public transportation.

(3) Adequacy of **landscaping, screening, and setbacks** in achieving maximum compatibility with and protection of adjacent properties by screening from them any glare produced by interior or exterior lights and unsightly areas such as storage areas, and parking lots; assurance that landscape materials will not interfere with visibility or safety and that they are of a type that can survive and be maintained as proposed.

(4) Adequacy of **provision for safety and convenience of pedestrians, bicyclists, and handicapped persons**. Included in this evaluation shall be lighting of walks and entrances, design and placement of walks and crosswalks, pick-up points for public transportation and provision of bicycle racks.

(5) **Protection of renewable energy resources,** including a finding that the proposed development does not adversely affect the ability of adjacent properties to use this form of energy.

(6) **Compliance with other provisions of these regulations** including § 260-27, Landscaping, and § 260-31, Land use performance standards.

(7) **Other** factors that are directly related to the above aspects of site plan review.

DECISION

The Hartford Planning Commission, based upon the forgoing Findings of Fact and Conclusions of Law, hereby approves #23-17 by Kyle Moses and Crystal Pearson-Moses (owners/applicants) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for a third dwelling unit, lot 45-0028-000, 186 Hillcrest Terrace, White River Junction, in a R-2 zoning district **on the condition that before a Zoning Permit is issued to finalize this Decision, the applicants submit a plan for review and approval by the Chair of the Planning Commission outlining how the garage and single-unit dwelling will be connected as to be considered a single building and this work is completed before a Certificate of Occupancy is issued.**

This decision is also subject to the condition that no modification or expansion shall be made to the project as described and limited in the above Findings of Fact and Conclusions of Law without the written approval of the Hartford Zoning Board of Adjustment and/or the Hartford Planning Commission. This decision may be revoked, and a new application or permit required if conditions and findings are violated or modified without written approval.

The applicants are responsible for insuring compliance with all applicable State and Federal regulations pertaining to this application.

Those in favor:

Those in opposition:

Those not participating:

Dated at Hartford, Vermont this ____ day of November 2023.

HARTFORD PLANNING COMMISSION

By:_____
Chairperson/Vice-Chairperson

Appeal Rights: An interested person who has participated in the proceeding related to this decision has the right to appeal this decision to the Vermont Environmental Court, pursuant to 24 V.S.A. s. 4471 and V.R.E.C.P.5, in writing, within 30 days of the date of this decision. The fee is $250.00. If you fail to appeal this decision, your right to challenge this decision at some future time may be lost because you waited too long. You will be bound by this decision, pursuant to 24 V.S.A. s. 4472 (d) (exclusivity of remedy; finality).

EXHIBIT LIST

1. Application #23-17

2. Email from Crystal Pearson-Moses dated October 30, 3023

3. Memo from Jo-Ann Ells dated October 12, 2023
4. Site Plan received October 10, 2023
5. Elevations received October 10, 2023
6. Sketch of the interior layout of second floor of the garage received October 10, 2023
7. Design drawing from LaValley's received October 10, 2023
8. Interior and exterior photographs received October 10, 3023
9. Permit from Fire Safety received October 10, 2023
10. Vermont Residential Building Energy Standards Disclosure statement received October 10, 2023
11. Cover letter from Crystal Pearson-Moses and Kyles Moses received October 10, 2023
12. Water Wastewater Allocation received October 10, 2023

Town of Hartford

Planning Commission App # 2317
Zoning Board of Adjustment App # N/A

APPLICATION TO PLANNING COMMISSION &/OR ZONING BOARD OF ADJUSTMENT

PLEASE COMPLETE ALL ITEMS APPLICABLE AND PROVIDE THE CORRECT NUMBER OF COPIES OF THIS APPLICATION AND THE SITE PLAN OR SUBDIVISION PLAT. ABUTTING LANDOWNERS WILL BE NOTIFIED BY THE PLANNING/ZONING OFFICE.

1. **NAME & ADDRESS OF RECORD OWNER(S)** Kyle Moses + Crystal Pearsom-Moses
   186 Hillcrest Terrace White River Jct VT 05001
   Deed Recorded Book____ Page____ (Available at Town Clerk's Office)
   Telephone: Work 802.757.7916 Cell 603.381.7465 Email Address: Cpearsom@wrsb.cor
2. **NAME & ADDRESS OF APPLICANTS(S)** Kyle Moses & Crystal Pearsom-Moses
   186 Hillcrest Terrace White River Jct VT 05001
   Telephone: Work____ Cell 603.381.7465 Email Address: Cpearsom@wrsb.c
3. **NAME & ADDRESS OF APPLICANTS' CONSULTANT** N/A
   Telephone: Work____ Cell____ Email Address:____
4. **PROJECT LOCATION** 186 Hillcrest Terrace White River Jct VT 05001
5. **PRESENT USE OF PROPERTY** Primary residence with ADU + 2nd apt.
6. **BRIEFLY DESCRIBE PROJECT** (in addition, a detailed narrative must be submitted)
   In 2023 completed construction of new garage - added a 1 bedroom units for low income housing above Permits attached
7. **PROJECT SIZE IN SQ. FT OR ACREAGE** .144 acres
   Lot Width 108 ft +/- Lot Depth 189 ft +/-
8. **IS PROJECT ON TOWN WATER/SEWER?** Yes ✓ No____ If Yes, estimated
   Water Consumption/day 280 ? Amount of Sewer Flow Projected 700 ? attached from engineer
   Size of Closest Lines Above (water)____ (sewer)____
9. **DESCRIBE LANDSCAPING PLAN** green grass, scrubs in front of house, trees along side house / garage
10. **IF A BUSINESS** - Present # of Employees N/A
    Proposed Days & Hours of Operation N/A
    Will you use the landfill & recycling center? Yes N/A No____
    The main waste by-product of your business is: N/A

RECEIVED
OCT 10 2023
By____

11. **IF A RESTAURANT** - Present seating N/A Proposed _____

12. **PARKING SPACES** - Number to be provided up to 10+ spaces available including garage

13. **SIGNAGE** - Free Standing N/A Attached _____

14. **FENCING** – Location N/A Height _____

15. **NEAREST WATER SUPPLY FOR FIRE PROTECTION** 2 fire hydrants less than 1000 ft +/-

16. **ESTIMATED VALUE OF PROPOSED WORK** *260K

17. **IS THERE AN EXISTING DRIVEWAY?** yes

18. **IF A SUBDIVISION** - Number of New Lots to be Created N/A

    Do you request that the Town consider taking over maintenance of – Roads no

    Or Park/Open Space no

I HEREBY CERTIFY THAT THE INFORMATION PROVIDED ON THIS APPLICATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. (This certification must be signed by lot owners and applicants).

CJPM	10/5/2023	CJPM	10/5/2023
Applicant's Signature	Date	Lot Owner's Signature	Date
Co-Applicant's Signature	Date	Co-Owner's Signature	Date

The applicant retains the obligation to identify, apply for, and obtain any relevant local or state permits before any construction may commence. Please call 802-282-6488 to speak with the State Permit Specialist.

For Office Use Only		
Map/Lot #		
Fee Paid $:		Receipt #:
PC: Site Plan	Min. Sub.	Maj. Sub.
PD	PD Amend.	Other
ZBA: Conditional Use	Variance	Appeal
Other		
Zoning District (s)		Date Filed:
Official Submittal Date:		

Jo-Ann Ells

From: Crystal J. Pearson <cpearson@wrsb.com>
Sent: Monday, October 30, 2023 3:04 PM
To: Jo-Ann Ells
Cc: Crystal J. Pearson
Subject: RE: November Planning Commission Hearing Agenda

[**EXTERNAL EMAIL: DO NOT CLICK** on **links** or open **attachments** unless you are sure the content is safe.]

Good afternoon Jo-Ann,

I wanted to respond to the memo that you sent, and I received October 16th per our conversation- when I reviewed my notes many thoughts were not noted:

- Proposal of the deck or walkway. Currently an attached patio and walkway is attached to the entire back of the home. I was hoping this may be considered as I shared with you. The reason I hoped this would be considered was for several reasons: 1. Expense to excavate the current patio and pour footings, construction materials and labor 2. The environmental impact of tearing that our patio to dispose of 3. When I would be able to complete such a project in a timely manner with winter upon us and most (including my contractor) being booked well into the 2024 calendar year. 4. The fire marshal when I proposed this solution mentioned I would need additional permitting from him. As it stood now everything is up to state safety codes and approved 5. The housing crisis we are in that is recognized by the new 'Home law' that will be making changes to our by-laws.
- You had shared that I could ask about a conditional approval with a date to align with my contractor's schedule to build such a deck as I recall. You also spoke that the changes to the by-laws may take several months.
- In my application I have already completed all state permits and applications and had them signed off with certifications enclosed in my application to zoning.
- The permit provided has been posted since October 16th.

Please let me know if you need anything else from me or if you can think of anything else that may be helpful- reading through the bylaws I do have several questions.

Crystal Pearson-Moses

From: Jo-Ann Ells <jells@hartford-vt.org>
Sent: Tuesday, October 24, 2023 11:40 AM
To: Jo-Ann Ells <jells@hartford-vt.org>
Subject: [External] November Planning Commission Hearing Agenda

[redacted]

Hello everyone,

Attached is the agenda for the November Hearing of the Hartford Planning Commission.

Best,

Jo-Ann

Jo-Ann Ells
Zoning Administrator
Department of Planning & Development
Town of Hartford, Vermont
171 Bridge Street
White River Junction, VT 05001
Office: 802-295-3075 Direct: 802-478-1117
Visit us at www.hartford-vt.org

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Memorandum

To: Kyle Moses and Crystal Pearson Moses

From: Jo-Ann Ells, Hartford Zoning Administrator

Date: October 12, 2023

Re: Application for a Multi-Unit Dwelling/Lot 45-0028-000

I am in receipt of the application you submitted on October 10, 2023.

Your property is developed with a single-unit dwelling (built before the adoption of Zoning Regulations, a garage (authorized by permit #2022-87) and an Accessory Dwelling Unit above the garage (authorized by permit #2023-142).

You are seeking approval for a second (existing) dwelling unit above the garage.

Under Hartford's Zoning Regulations, this requires approval by the Hartford Planning Commission for a multi-unit dwelling.

A multi-unit dwelling is defined in Hartford's Zoning Regulations as "A building containing three or more individual dwelling units."

Vermont State Statute (24 VSA 4303 (41)) defines multiunit or multifamily dwelling as "a building that contains three or more dwelling units in the same building."

As discussed with Crystal, because the units are not in the same building, the application does not meet the definition of a multi-unit dwelling. Given this, I do not see a way that allows the Planning Commission to approve your application as proposed.

We discussed that you could propose attaching the garage to the main dwelling by a deck/walkway or the like so that the Planning Commission could *consider* the units in the same building (although there is no guarantee they would do so). You explained that you have talked to your contractor and determined that attaching the garage to the main dwelling is too expensive and you would like to have your application heard by the Planning Commission as submitted.

I will schedule your application to be heard by the Planning Commission on November 13, 2023. Prior to the Planning Commission's Hearing, you will receive an agenda, and draft Findings of Fact.

If you have any additional information you would like the Planning Commission to consider, please submit it to me no later than noon, Friday, October 20, 2023. You can drop it off or email it to me.

The enclosed "Permit Notice" regarding your application is required to be displayed for a minimum of 15 days prior to the Planning Commission's Hearing within view from the closest public right-of-way adjacent to your property. Failure to post the Permit Notice for the required time period will affect the ability of the Planning Commission to act on your application.

Please confirm that you have posted the Notice as required. An email is acceptable.

As I noted in my September 26, 2023 email, you retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

To determine what State Environmental Permits may be required for your project, The Vermont Agency of Natural Resources (ANR) recommends that you use ANR's Permit Navigator Tool by going to the VT Department of Environmental Conservation website Welcome to DEC | Department of Environmental Conservation (vermont.gov) and going to the "Permit Navigator Tool" Permit Navigator (force.com)

If further assistance is needed, please contact the Community Assistance Specialist for our area:

Rick Oberkirch, Community Assistance Specialist
Vermont Agency of Natural Resources/Department of Environmental Conservation
Environmental Compliance Division/Environmental Assistance Office
450 Asa Bloomer State Office Building, Rutland, VT 05701
802-282-6488
Rick.Oberkirch@vermont.gov

Cover Letter from Crystal Pearson-Moses and Kyle Moses

Across Vermont, there is a shortage of affordable rental homes and apartments. During the construction of our garage at 186 Hillcrest Terrace White River Jct my husband and I looked into how we could help with the housing crisis in our area. We opted to take advantage of the The Vermont Housing Improvement Program (VHIP) that offered a grant to create accessory dwelling units (ADU) or add new units to a building. Receiving that grant obligated us to maintain HUD Fair Market Rent prices. This grant is designed to assist critical issues in the state around suitable and affordable housing.

Below you will see we have the following permits and since construction is complete the appropriate certificates. Except we overlooked one important zoning permit 'multifamily' or 'two ADU' units. We have zoning permits for the new garage and one ADU currently. All inspections are complete with the State Plumbing Inspector, State Electrical Inspector and Fire Marshal.

- Application for Sewer and Water Allocations #2022-13 for the Town of Hartford signed for 3 permitted units Proposed 5 Bedrooms Site Plan completed by Waysville Engineering signed and accepted by the town 11/7/2022.
- Hartford Fire Department plans received May 8, 2023, Project #0028 Permit approved 5/11/2023.
- Knox Box per Fire Marshall ordered 6/20/2023 and installed by Fire Marshall
- Fire Inspection Report Final Inspection #9848 8/15/2023 Conditional Occupancy Granted
- Department of Planning & Development Services zoning permit #2022-087 dated 6/9/2022 Garage replacement/Enlarge/Carport
- Department of Planning & Development zoning permit #2023-142 Accessory Dwelling Unit permitted 9/16/20232.
- Division of Fire Safety Plumbing Inspection permit received 1/24/2023 WSF-00809 Inspection date completed 8/28/2023 Final.
- Division of Fire Safety Electrical Inspection permit DAB-02323 Inspection date completed 5/15/2023 Final.
- Vermont Owner Builder Disclosure Statement Filed on 9/15/2023+
- Vermont State Housing Authority Inspection completed 9/20/2023.

On June 5, 2023, Governor Phil Scott signed S.100 the 'HOME' law that will allow for duplexes in all residential neighborhoods in Vermont. I've read that there will also be Municipal Zoning Reforms that standardizes municipal zoning in residential areas served by water and sewer. Some of these reforms included lowering parking thresholds, increasing building and lot standards, and permitting multi-unit dwellings to be built.

Our ask is taking all things above into consideration that our second unit above the garage (plus our home, making 3 units total) be permitted by zoning so that we may have occupancy certificates for both units at our primary residence to do our part in offering housing in our community. Enclosed are the plans, sketches, photos, and certificates.

Respectfully,

Crystal Pearson-Moses & Kyle Moses

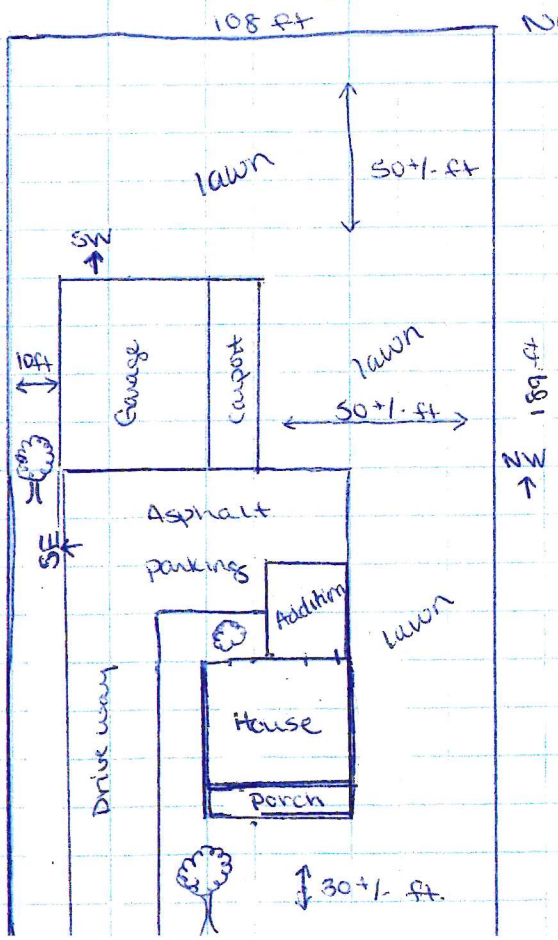


Name and Address of Property Owner: Crystal Pearsun- Moses and Kyle Moses
186 Hillcrest Terrace White River Jct

Name and Address of Neighbors:
Jessica + Joshua Weiner 208 Hillcrest Terrace White River Jct VT
Katherine Carney Wagner 164 Hillcrest Terrace White River Jct VT
Richard Wilson + Garrett Wilson 38 Marshall Ave White River Jct VT

Parcel Size: width 108 ft depth 189 ft .44 acres
Parcel map lot number: 45-28
Water / waste water: engineer plan provided
Exterior lighting: motion detector / front light sconces / man door lights / led lights in carport / covered area
Deed restrictions: Affordable housing 5 years
Snow Stockpiling: drive way remains the same / snow blow onto lawn

Date Drawn: 10/2/2023
Scale of the plan / compass arrows / setbacks / parking 6+ spaces / structures
No dumpsters but garbage cans provided + recycl



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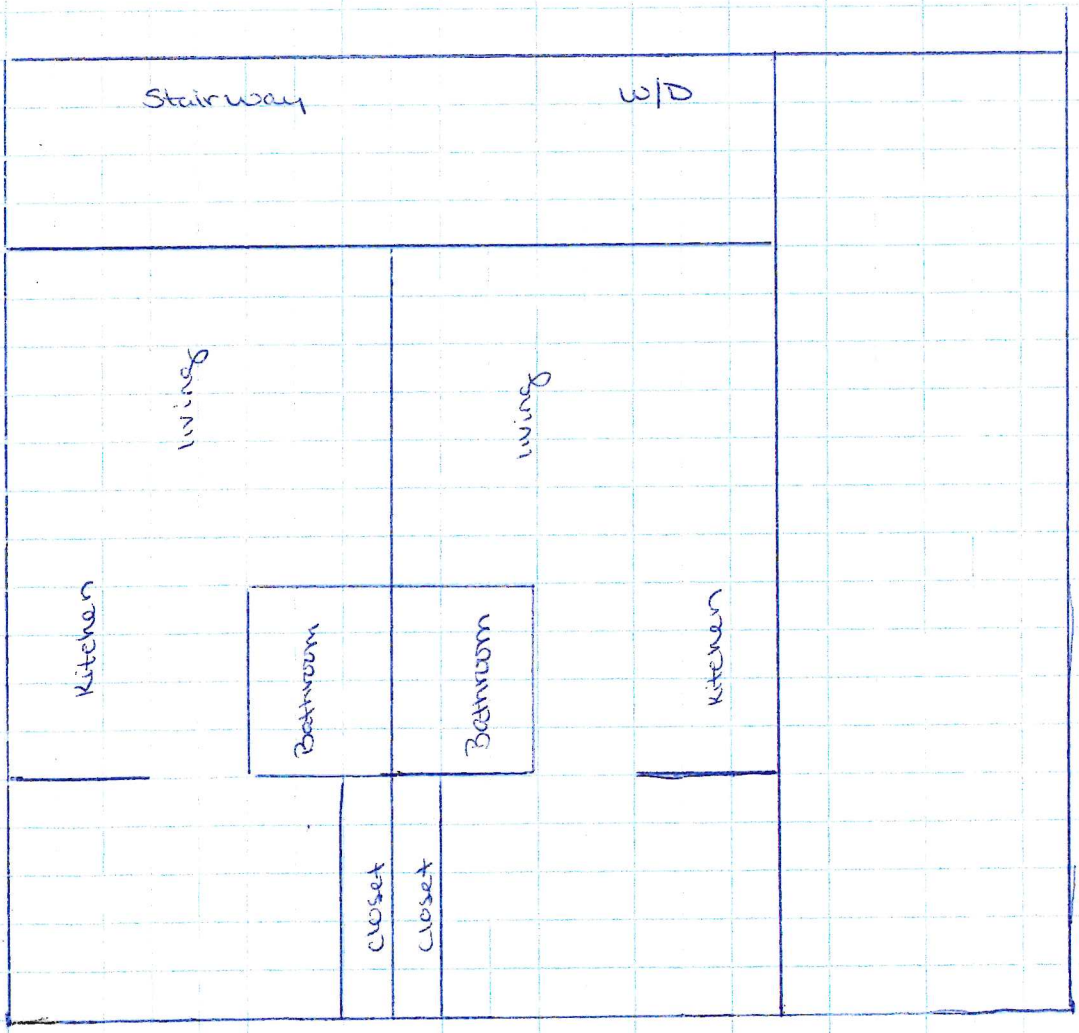

Each unit approx. 512 sqf

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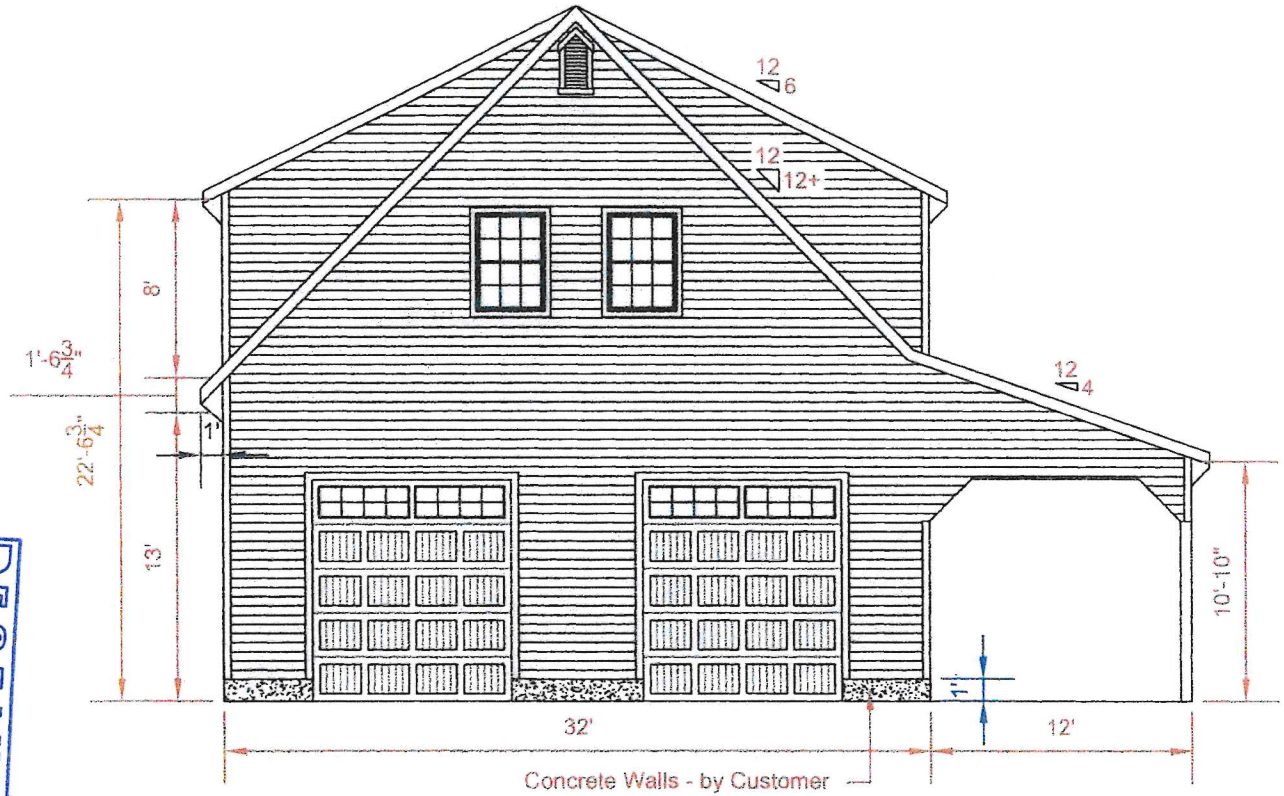

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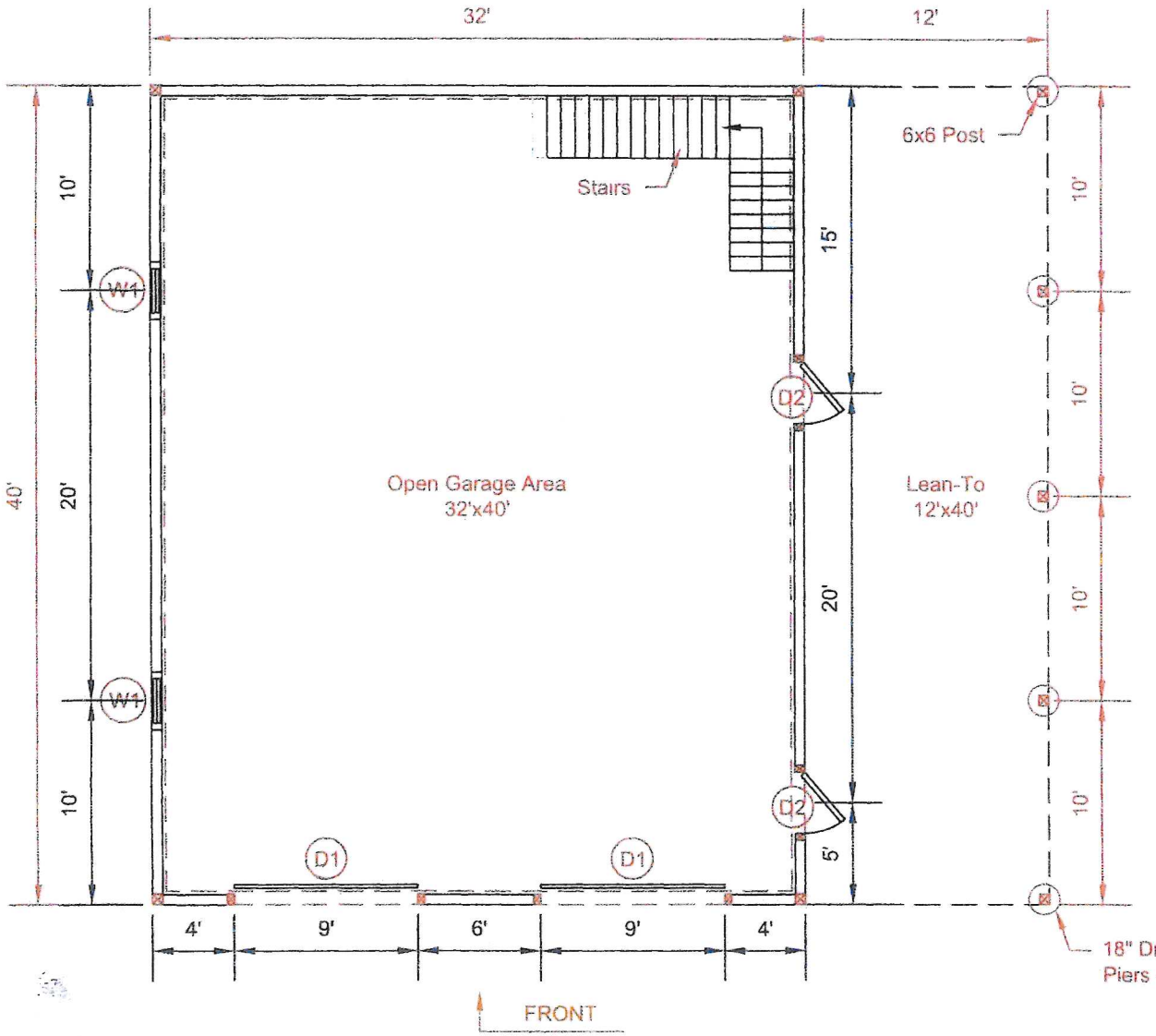
DESIGN	CONTRACTOR	CUSTOMER		
J&N structures LLC PAHIC # PA025372		Kyle & Crystal Moses 186 Hillcrest Terrace White River Junction, VT 05001	DRAWN BY David S DATE: March 7, 2022 PLAN-DESCRIPTION 32' x 40' x 13' Garage with 12' Lean-To	PLAN NO 22075 PAGE: 3 of: 7 REVISIONS: 0



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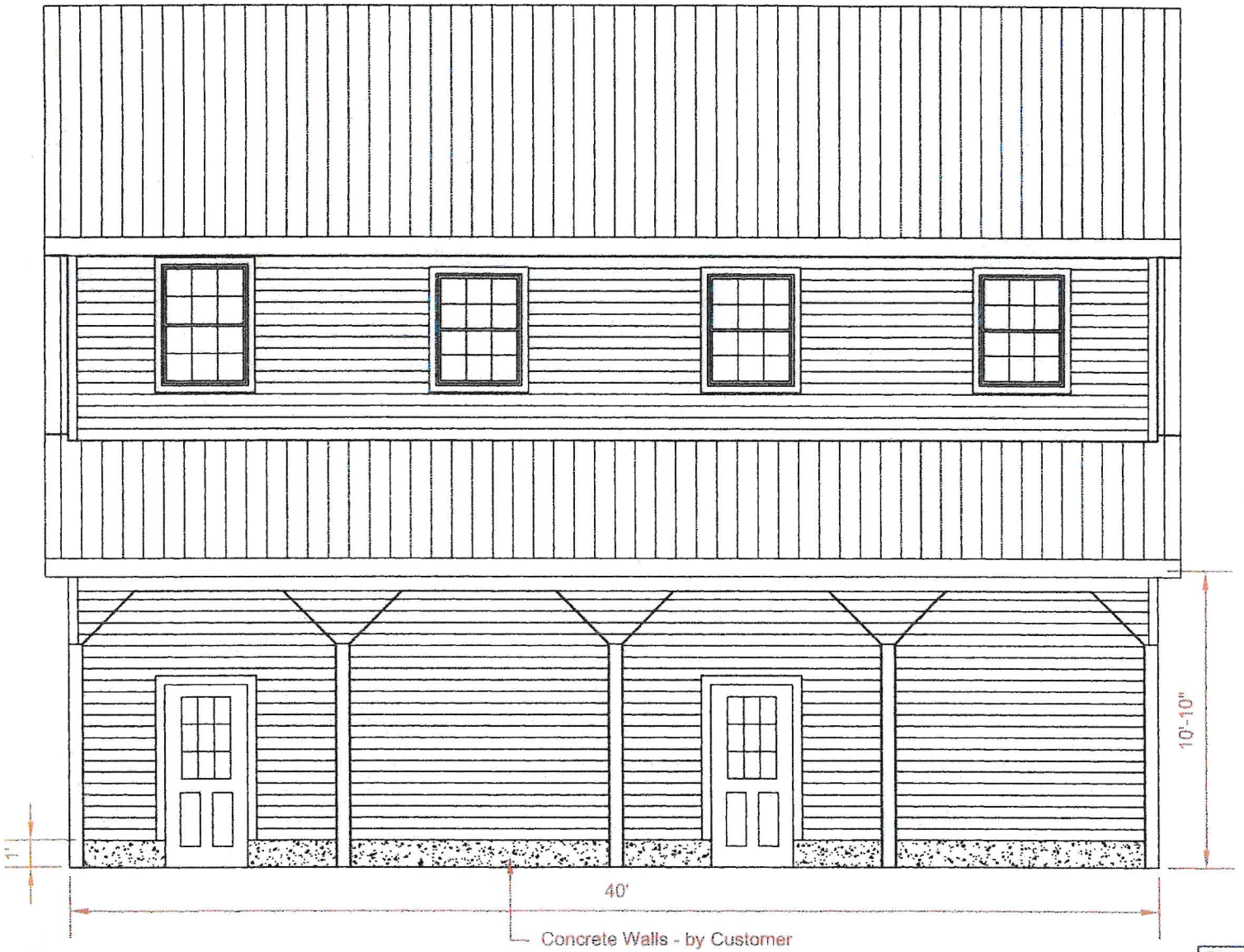
W1 = 33¾"x48¾" Double-Hung Window

D1 = 9'x10' Overhead Garage Door with Windows

D2 = 36"x80" Fiberglass Service Door with Window

DESIGN	CONTRACTOR	CUSTOMER	DRAWN BY David S	PLAN NO 22075
J&N structures LLC PAHIC # PA025372		Kyle & Crystal Moses 186 Hillcrest Terrace White River Junction, VT 05001	DATE March 7, 2022	PAGE 1 of 7 REVISIONS: 0
			PLAN-DESCRIPTION	



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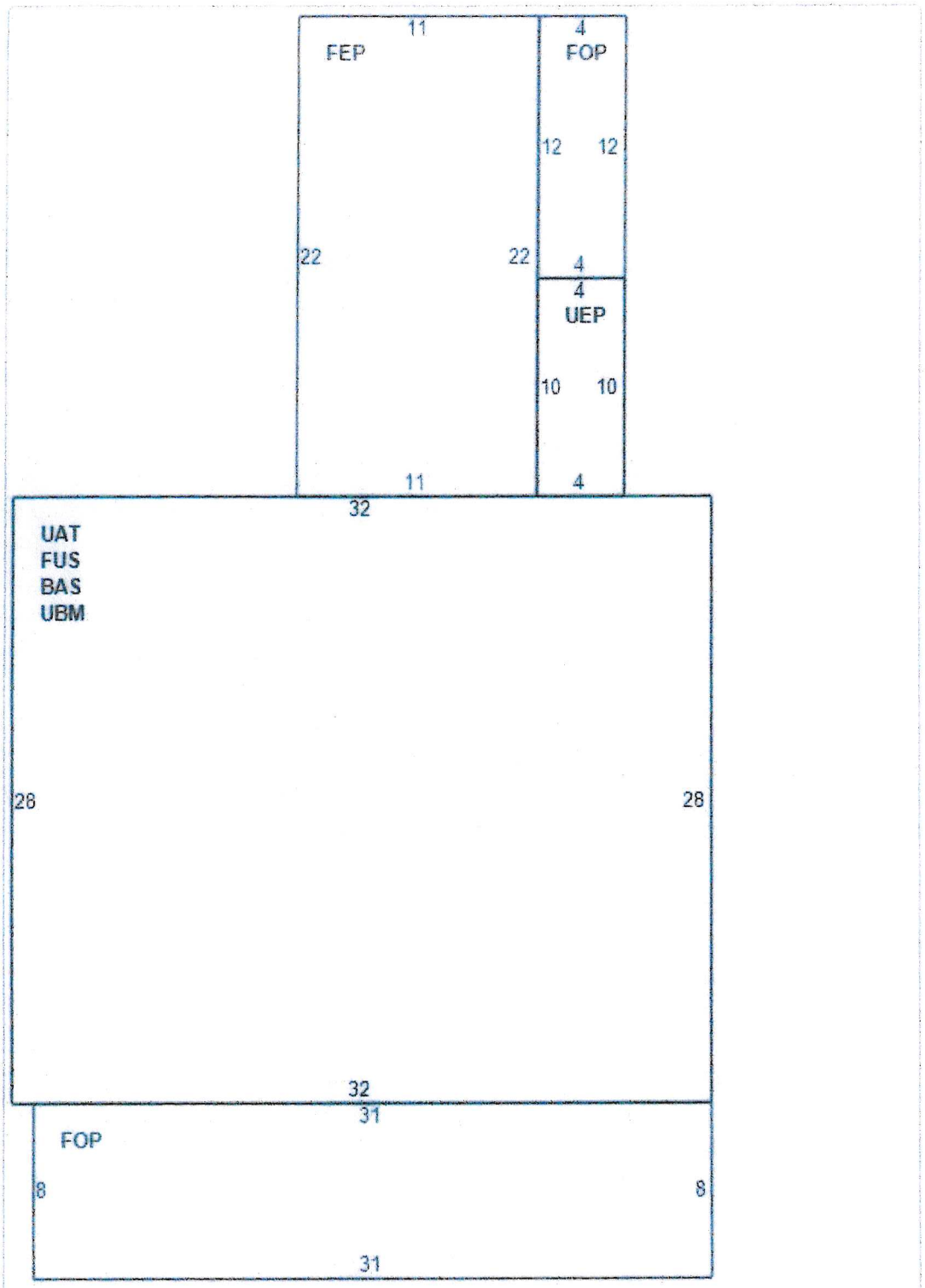
DESIGN	CONTRACTOR	CUSTOMER		
J&N structures LLC PAHIC # PA025372			DRAWN BY David S. DATE. March 7, 2022	PLAN NO 22075 PAGE 5 of: 7 REVISIONS: 0
			PLAN-DESCRIPTION	



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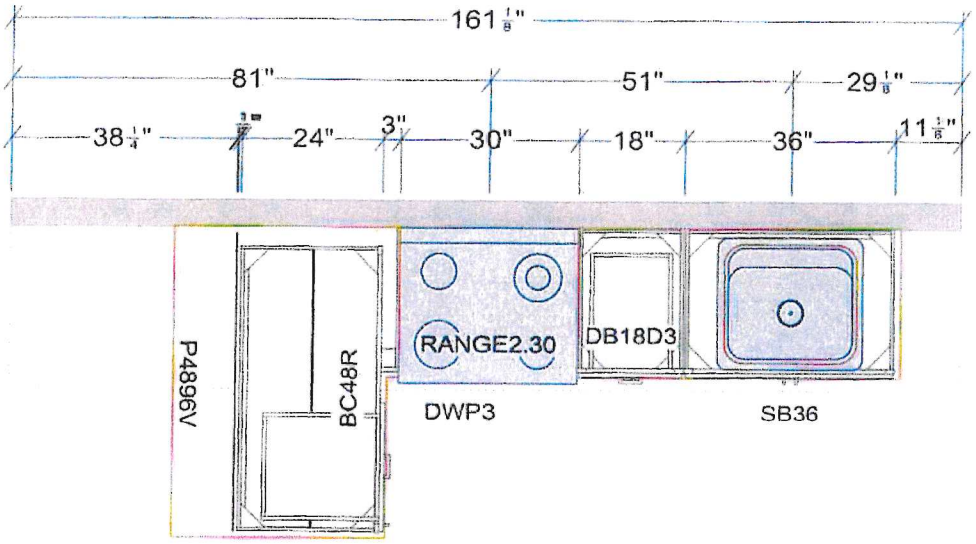

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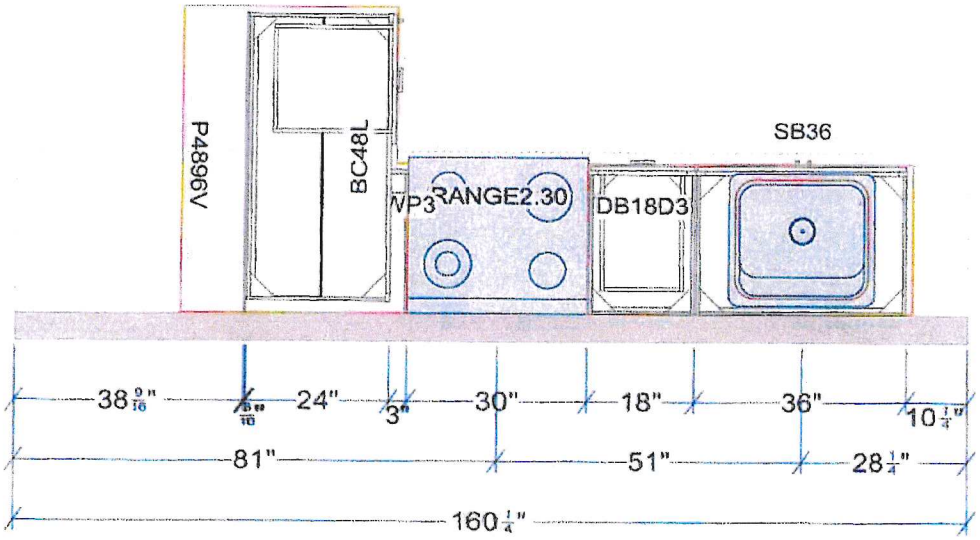
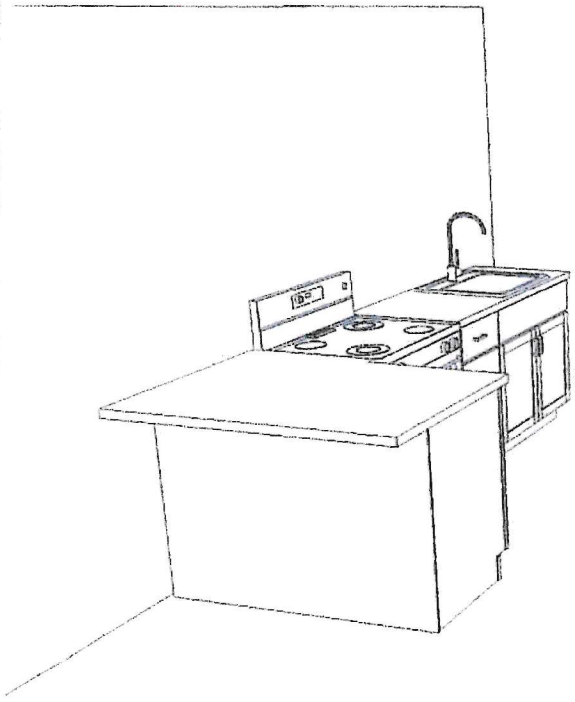
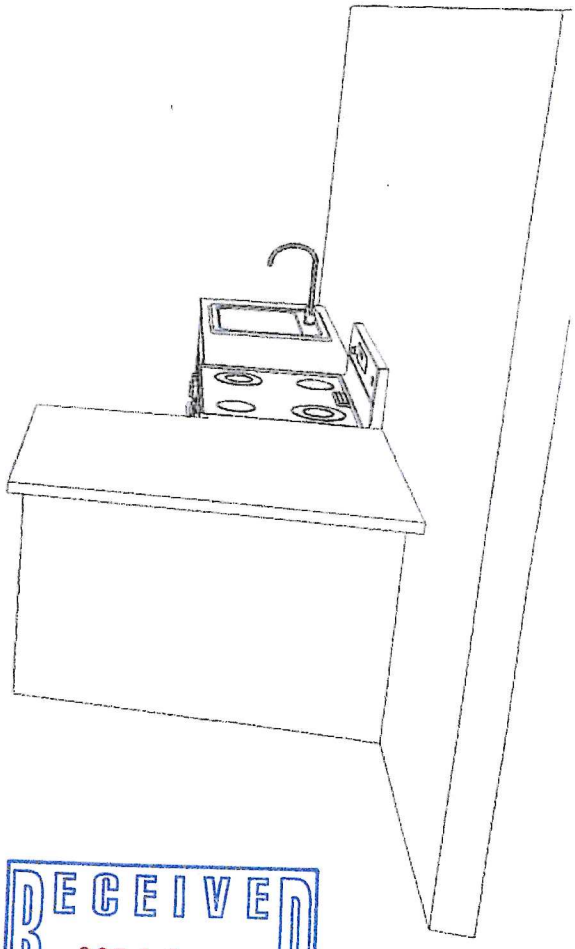


All dimensions ,size designations given are subject to verification on job site and adjustment to fit job conditions.	LaValley Bldg Supply Kelly O'Meara Kitchen_Bath Design 603-298-5641 x4347	This is an original design and must not be released or copied unless applicable fee has been paid or job order placed.	Designed: 2/17/2023 Printed: 2/17/2023
Moses, Crystal		All	Drawing #: 1 | Scale : 0 3/8" 1'





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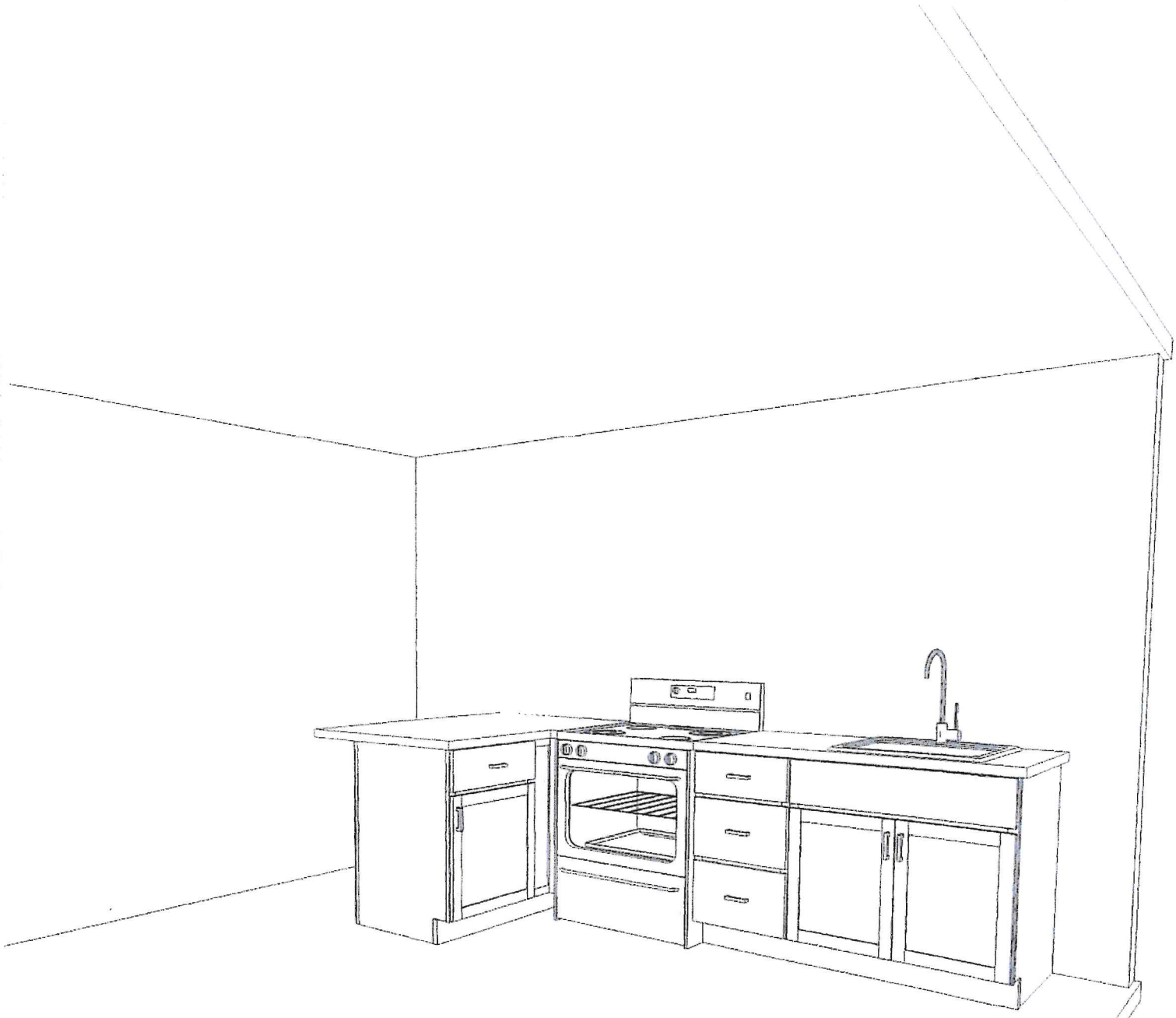
Note: This drawing is an artistic interpretation of the general appearance of the design. It is not meant to be an exact rendition.	LaValley Bldg Supply Kelly O'Meara Kitchen_Bath Design 603-298-5641 x4347	Designed: 2/17/2023 Printed: 2/17/2023
Moses, Crystal	All	Drawing #: 1



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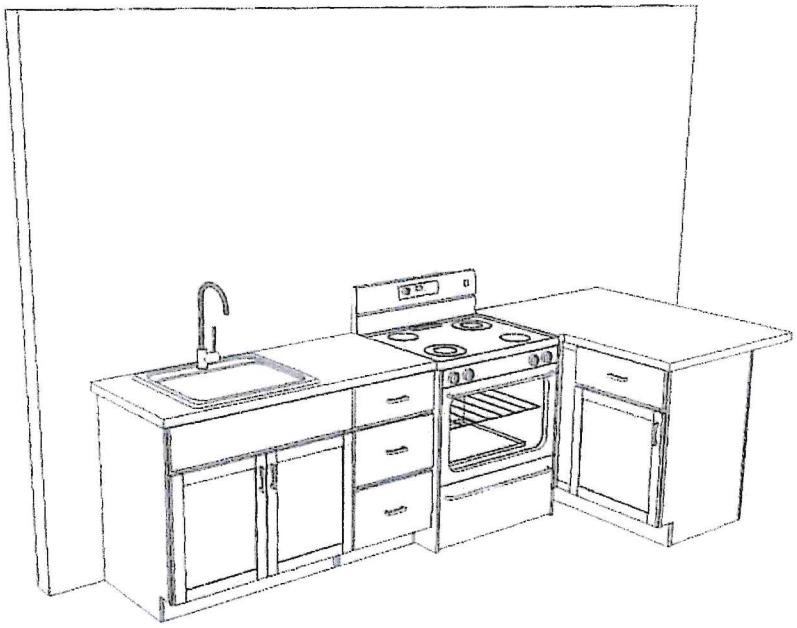

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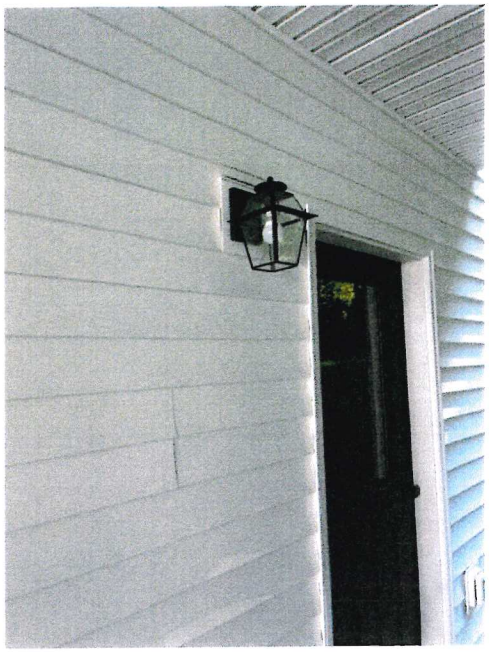
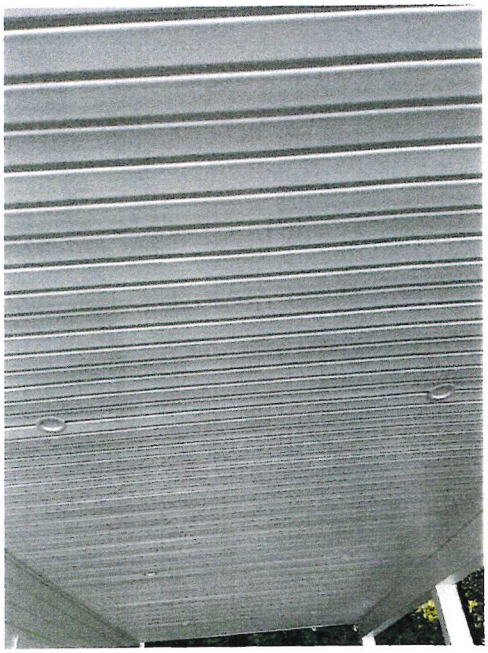
Moses, Crystal	All	Drawing #: 1

Exterior Lighting (man door)



Exterior LED Lighting under carport/covered area



911 Address assigned to the Garage by the Hartford Fire Department



One electrical meter is assigned to the residence for all 3 units.



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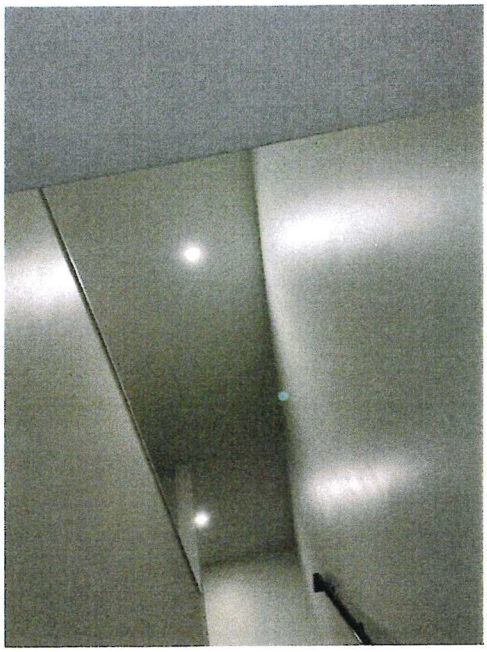
Interior LED Lighting



Interior of Apt A standing in the bedroom entry looking at the kitchen and living space, entrance door straight ahead- bathroom to the right- note mini split provides 2nd source of heat if needed and Airconditioning. We elected to not allow window units for safety of someone lifting them or them not being properly installed and falling out the window.



Apt A bedroom



Apt A full bathroom with tub



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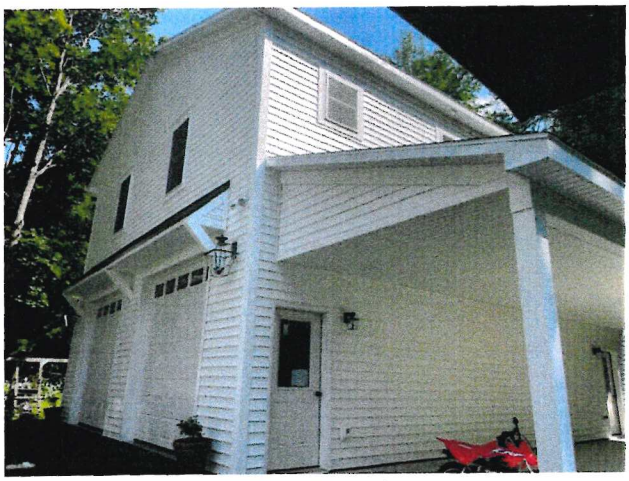
Apartment A standing in the entry way with living room, kitchen, and bedroom straight ahead.



Exterior front photo of the garage and carport, shows exterior lighting Apt A bedroom window on the left and Apt B bedroom window on the right.



Exterior photo of the carport and two-man doors- the door to the right in the back is the entry to the apartments.



Exterior rear of the Garage with carport



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Exterior view of the carport/covered area



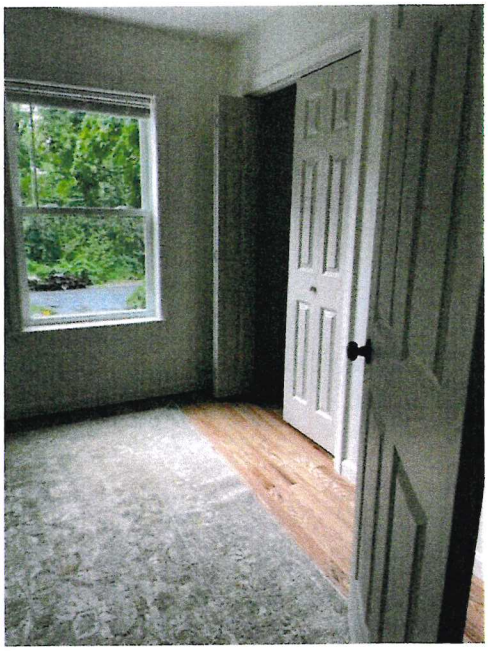
Bedroom closet area for Apt B



Interior of Apt B- kitchen, living, dining space- you can see out the entry door there is a washer and dryer for shared use. Again, a mini split is in the space for heating and air conditioning.



Apt A Bedroom closet area



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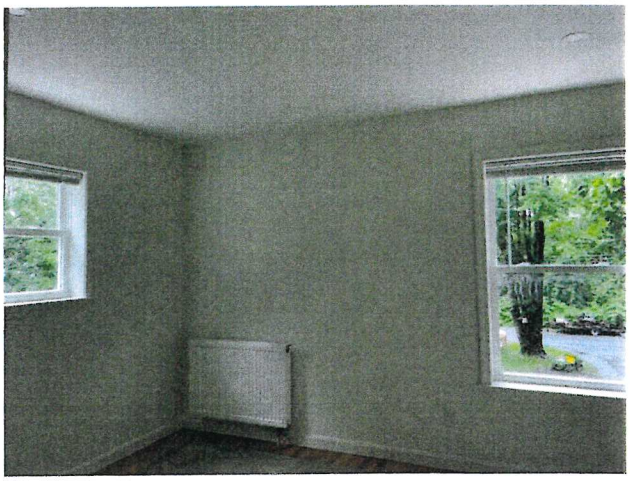
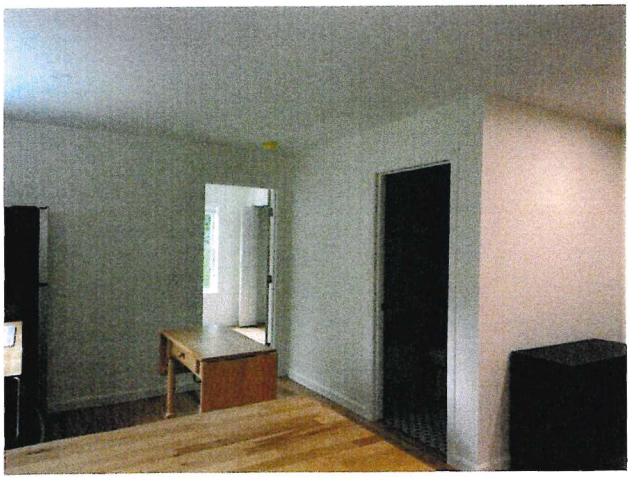
Apt B Bathroom with full tub



Apt B bedroom Heating system forced hot water is the main source of heat.



Apt B kitch area, entry to bedroom and bathroom



Apt B living space.



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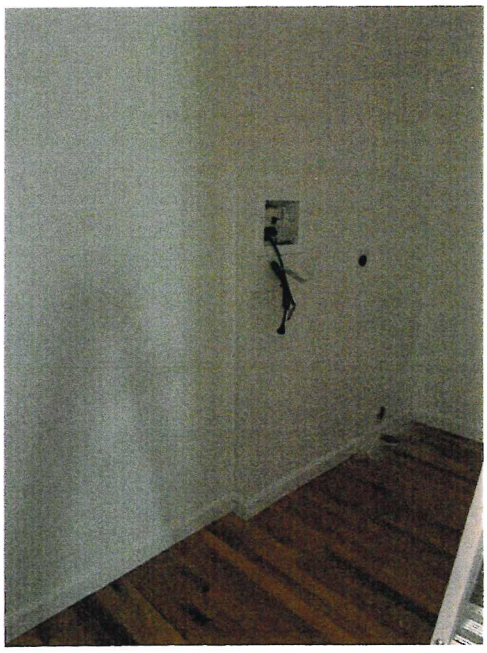
Apt B Kitchen- forced hot water system and mini split.



Apt B Kitchen



Washer and Dryer hook up with emergency shut off sensor for water.



Outside area space that connects the main house to the garage area/carport



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Permit # 20230028

Hartford Fire Department

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Permit Type CONST
Applicant Moses Residence
Contact Kyle Moses

This permit is subject to the condition(s) cited below:

- Reference the permit review letter for any conditions

THIS PERMIT POSTER SHALL BE POSTED AT THE BUILDING SITE IN A CONSPICUOUS LOCATION OPEN TO PUBLIC VIEW. IN ADDITION TO THIS POSTER, A COPY OF THE PERMIT REVIEW LETTER SHALL BE AVAILABLE ON SITE AT ALL TIMES.

Building Name or Site Name: MOSES RESIDENCE
Building Address: 186 HILLCREST TERRACE WHITE RIVER JUNCTION VT (05001)

Date Approved:	Date Expires:	
05/11/2023	05/11/2024	Assigned to: Fire Marshal

HARTFORD VERMONT

Vermont Department of Public Safety

DIVISION OF FIRE SAFETY

Office of the State Fire Marshal, State Fire Academy and State Haz-Mat Team

firesafety.vermont.gov

VERMONT

☐ Waterbury Regional Office
45 State Drive
Waterbury, VT 05671-8200
[phone] 802-479-4434
[fax] 802-479-4446

☐ Rutland Regional Office
56 Howe Street, Building A, Suite 200
Rutland, VT 05701-3449
[phone] 802-786-5867
[fax] 802-786-5872

☐ Williston Regional Office
380 Hurricane Lane, Suite 101
Williston, VT 05495-2080
[phone] 802-879-2300
[fax] 802-879-2312

☑ Springfield Regional Office
100 Mineral Street, Suite 307
Springfield, VT 05156-3168
[phone] 802-216-0500
[fax] 802-216-0511

Plumbing Inspection Results

Site Id: 106716

Structure Information

Name: 186 Hillcrest Terrace
Structure Id: 106716

Address: 186 Hillcrest Terrace
WHITE RIVER JCT, VT 05001

Owner Information

Plumbing Work

Name: Rough & finish
Permit: WSF-00809 Received: 01/24/2023 Workitem Id: 485132
Contractor: MARTINS MECHANICAL PLUMBING & HEATING Plumber: JAMES A. MARTIN (PM-01878)
Phone: 603-632-5862 Phone: 603-632-5862 License: PM-01878

Inspection Detail

Insp Date: 08/28/2023 Insp Type: Final & Other Violations:
Pub Water: Yes Pub Sewer: Yes
Inspector: W. Scott (FS) Fletcher (S 112386)
Contact: Jamie Martin PM-01878
With: Crystal Pierson

Findings, Orders, and Notes

Code Year: 2021

Final P.I. of conditions being met
----via pictures and in-person----

The entirety of the Final Plumbing Inspection via pictures in the garage of conditional items, and in-person viewing of the newly installed PVC piping coming into the main house (replaced the SDR-35), appears to be code compliant and complete. I am happy with the outcome. I am closing out this work notice as done.

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Vermont Department of Public Safety

DIVISION OF FIRE SAFETY

Office of the State Fire Marshal, State Fire Academy and State Haz-Mat Team

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100 Mineral Street, Suite 307
Springfield, VT 05156-3168
[phone] 802-216-0500
[fax] 802-216-0511

Electrical Inspection Results

Site Id: 106716

Structure Information

Name: 186 Hillcrest Terrace
Structure Id: 106716

Address: 186 Hillcrest Terrace
WHITE RIVER JCT, VT 05001

Owner Information

Electrical Work

Name: wiring garage
Permit: DAB-02323 Received: 01/10/2023
Workitem Id: 484631

Contractor: JB ELECTRIC LLC (N 108705)
Phone: 603-398-0053
eMail: jbelectricnh@gmail.com

Electrician: JASON N. BALL (EM-05078)
Phone: H: 603-398-0053 License: EM-05078
eMail: jbelectricnh@gmail.com

Inspection Detail

Insp Date: 05/15/2023 Insp Type: Final
Violations:
Photos: No

Inspector: Sal Ricitelli (S 118247)
With: Sal(DFS)

Findings, Orders, and Notes

Code Year: 2020

I.N.017 Inspected work complies with 2020 NEC.

Received pictures of violations that have been corrected. No Issues found.

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Fire Inspection Report

Hartford Fire Department

Inspection 9848



Inspection

Type	FINAL Inspection
Status	Pending
Inspector	Thomas Peltier
Unit Number	HFM3
Shift	FM

Scheduled	08/15/2023 16:00	Scheduled	Peltier
Inspected On	08/15/2023 16:00		
Finished At	08/15/2023 17:00	Inspection Length	1.00
Next Inspection			

Occupant

Occupant Name	Moses Rental Property
Building Name	Two-Family Dwelling
Contact Name	Kyle Moses
Address	184 HILLCREST TER
City, State and Zip	White River Junction, VT 05001-
Phone	802-291-6919

Owner

Owner / Company	MOSES KYLE R & PEARSON-MOSES CRYSTAL J
Contact Name	
Address	186 HILLCREST TERRACE
City, State and Zip	WHITE RIVER JUNCTION, VT 05001-
Phone	802-291-6919

Comments

Final Occupancy Inspection:
Initial Inspection: 05/11/2023
Final Inspection: 08/15/2023
Permit #: 20230028
Building Name: Moses Rental Property
Contact Name: Kyle Moses
Occupancy Type: Two-Family Dwelling
Occupancy Status: CONDITIONAL OCCUPANCY GRANTED

Final Inspection: Violations with status of HOLD shall be completed within the approved timeline established by the AHJ. A response with a plan of action is REQUIRED within 30 days of receipt of this fire inspection report - A final inspection shall be completed before a clear fire inspection report can be obtained. Please contact me by phone 802-299-7013 or by email at tpeltier@hartford-vt.org when violations are completed and or a plan of corrective action is ready for review.

NFPA 101 (2015):

4.6.6 Time Allowed for Compliance:
A limited but reasonable time, commensurate with the magnitude of expenditure, disruption of services, and degree of hazard, shall be allowed for compliance with any part of this Code for existing buildings.

4.6.9.1 Conditions for Occupancy:
No new construction or existing building shall be occupied in whole or in part in violation of the provisions of this Code, unless the following conditions exist:
(1) A plan of correction has been approved.
(2) The occupancy classification remains the same.
(3) No serious life safety hazard exists as judged by the authority having jurisdiction.

Violation Summary

Status	Violation	Location
Hold	1.12.4.1 - Conditions of Approval The AHJ shall have the authority to require evidence to show that other regulatory agencies having jurisdiction over the design, construction, alteration, repair, equipment, maintenance, process, and relocation of structures have issued appropriate approvals.	Building

Comments: Building construction project noted as having requirements through the Hartford Planning & Zoning Department. Completion of these requirements and associated approvals are currently pending.

Required Action: Requirements & approvals by the Hartford Planning & Zoning Department shall be complete before a Certificate of Occupancy shall be granted.

Tickler History

Date	Type	Inspector	Narrative



2020 Vermont Owner/Builder Disclosure Statement

This disclosure statement is for projects started on or after September 1, 2020. This home does not meet the technical requirements of the Vermont Residential Building Energy Standards (RBES) and is not required to do so.

For additions, alterations, renovations or repairs, only fill out applicable portions of certificate.

186 Hillcrest Terrace White River Jct VT 05001
Property Address (Street, City, ZIP Code)

10/15/2022 Construction START Date | 7/1/2023 Construction FINISH Date | Act 250 (Y/N) | Act 250 Permit #

2 # Units | 2 # Stories | 950 +/- # Conditioned Sq. Ft. | 2 # Bedrooms

Foundation: ☐ Basement ☑ Slab On Grade ☐ Crawl Space ☑ Other: garage

Applicable Code: ☐ Base ☐ Stretch

Project Description
☐ Single family ☐ Renovation / alteration *
☐ Multi-family ☐ Addition *
☐ Log home ☐ Repair *

* Existing Home Project Description: Built New Garage with 2 apartments ontop

Compliance Method MUST select Option 1, Option 2, or Option 3

☑ ***Option 1: Package-Plus-Points*** *Ref. RBES for full requirements of each point option*
BASE / STRETCH (circle one) Points required: _____ (Base requires 4-10pts / Stretch 6-12pts,
Package # _____ Points achieved: _____ see Handbook Tables 5-2 and 5-5)

☐ Envelope: Slab, R-10 under all (1pt)
☐ Envelope: Walls-Upgraded, R20+12 (2pts)
☐ Envelope: Walls-High-R, R-40 (3pts)
☐ Envelope: Ceiling, R-80 flat / 60 sloped (1pt)
☐ Envelope: Windows 0.27 (1pt, Base only)
☐ Envelope: Windows 0.22 (2pts)
☐ Pre-drywall blower door (1pt), result _____
☑ ENERGY STAR heating and cooling (1pt)
☐ Advanced heating and cooling (3pts)

☐ ACH50 ≤ 2.0 and qualifying HRV/ERV (3pts for Base OR 1pt for Stretch)
☐ ACH50 ≤ 1.0 and qualifying HRV/ERV (4pts)
☑ ENERGY STAR DHW (1pt)
☐ ENERGY STAR electric DHW (2pts)
☑ Low flow fixtures (1pt)
☐ Drain water heat recovery (1pt)
☐ User-demand hot water recirculation (1pt)
☐ Water certification (2pts)
List cert. type _____

☐ Solar ready (1pt, Base only†)
☐ On-site generation (1-4pts)
_____ kW _____ pts
☐ Solar hot water (2pts)
☐ Building energy monitoring (1pt)
☐ Level 2 EV-ready (1pt)
☐ 6 kWh battery backup (1pt)
†See RBES for MF exception

☐ ***Option 2: REScheck software***
(cannot be used for Stretch Code)
_____ UA result

☐ ***Option 3: HERS/ERI***
_____ HERS Result (Overall)
_____ HERS without Renewables
_____ REM/Rate Version #
☐ IAF incorporated into model
Approved Rater Name: _____
(Maximum HERS: 61 Base, 54 Stretch)

Thermal Envelope

Basement:	R-_____	Basement / Crawl Space Walls	_____	Basement Insulation Depth (ft)	U-_____	Basement Windows	☐ NFRC ☐ Default
Slab:	R-_____	Unheated Slab (Under)	R-_____	Heated Slab (Under)	R-_____	Perimeter Slab Edge	
Wall/Ceiling:	R-19	Above-Grade Walls	R-19	Flat Ceilings _____ Area (sq ft)	R-60	Sloped Ceilings _____ Area (sq ft)	
Other:	R-_____	Floors over Unheated Spaces	R-30	Attic Access Hatch / Door ☐ NA			
Fenestration	U-.38	Windows ☐ NFRC ☐ Default	U-.25	Doors ☐ NFRC ☐ Default	U-_____	Skylights ☐ NFRC ☐ Default	

Air Sealing / Blower Door Test (must report *either* ACH50 or CFM50/sq ft for Base Code)
_____ ACH50
_____ CFM50/sq ft of building shell (6 sides)
Both measurements are required for Stretch Code
Date of test _____
Air Leakage Tester Name: _____

Ventilation System (must select one)
☐ Balanced, SRE _____% Flow verification: ☐ Rated, OR ☐ Measured → _____ Exhaust air flow (total cfm) _____ Supply air flow (total cfm)
☐ Exhaust-Only Flow verification: ☐ Rated, OR ☐ Measured → _____ Exhaust air flow (total cfm)

Combustion Safety (verify all)
☐ Exterior (outdoor) air supply is provided for solid fuel-burning appliances and fireplaces, OR ☐ NA (no solid fuel burning appliance or fireplace in home)
☐ Solid fuel burning appliances and fireplaces have gasketed doors with compression closure, OR ☐ NA (no solid fuel burning appliance or fireplace in home)
☐ Spillage testing conducted on combustion equipment not directly-vented, OR ☐ NA (no equipment, or all equipment directly-vented)

Mechanical System (must complete all)
Design Load Calculation Method: ☐ ACCA Manual J, OR ☐ Other Approved Method (List) _____
Calculation details: (Ref. RBES R302 for design temperature exceptions)

_____ Winter design temp, outdoor dry-bulb (VT range: -11 to 1°F)	_____ Summer design temp, outdoor dry-bulb (typ. max. 84°F), OR ☐ No cooling
_____ Winter design temp, indoor (max 72°F)	_____ Summer design temp, indoor (min. 75°F), OR ☐ No cooling
_____ Heating design load, Btu/hr	_____ Cooling design load, Btu/hr, OR ☐ No cooling
_____ Primary heating system size, Btu/hr	_____ Primary cooling system size, Btu/hr, OR ☐ No cooling
_____ HSPF or COP or AFUE (circle which)	_____ SEER or COP (circle which), OR ☐ No cooling

☐ Programmable thermostat, OR ☐ Exempt; list reason _____

Ducts
☐ Ducts located completely within conditioned space, OR ☑ NA (no ducts)
_____ Duct airtightness test result (CFM @ 25 Pa)
Test performed at ☐ Rough-in (max 3 CFM per 100 sq ft of cond. floor area), OR ☐ Post-construction (max 4 CFM per 100 sq ft of cond. floor area)

Other Requirements
Mandatory (Base and Stretch): ☐ Mechanical system piping, min. R-3 ☐ Multi-family: EV charging requirement is met: _____ # spaces
☐ 90% of lamps high efficacy ☐ Automatic or gravity dampers for vent. system intake and exhaust
Mandatory (Stretch Code Only): ☐ Single-family: Solar ready ☐ Single-family: One Level 1 EV-charging space
Where applicable: ☐ Circulating service hot water piping, R-3 ☐ Pools: All requirements per R403.10 are met ☐ Automatic controls for snow-melt systems

I certify that the above information is correct and that the premises listed **HAVE NOT been constructed in accordance** with the Vermont Residential Building Standards (RBES) created under 30 V.S.A. § 51.

Signature: _____ Date: 9/15/2023

Printed Name: Crystal Pearson-Moses Phone: 603.381.7465

For Owner/Builder Projects, 30 V.S.A. § 51 requires sellers to provide this statement to prospective buyers, prior to entering a binding purchase and sale agreement. This statement itemizes how the home DOES NOT comply with Vermont RBES. Seller must send copies within 30 days following the sale of the property to 1) the Dept. of Public Service, 112 State St., Montpelier, VT 05602, and 2) the town clerk of the town where the property is located. This label does not specify all 2020 RBES requirements.

QUESTIONS? CALL the Energy Code Assistance Center at 855-887-0673 or the VT PUBLIC SERVICE DEPARTMENT at 802-828-2811.

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Allocation #2022-13

Documents

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Allocation #2022-13

Application



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Application for Sewer and/or Water Allocations

Town of Hartford, Vermont

Department of Public Works
173 Airport Road
White River Junction, VT 05001
Phone: (802) 295-3622

Parcel 45-0028-000 **Allocation** 2022-013

Allocation Request (Check Applicable)	[X] Sewer	[X] Allocation (New Connection)	[X] Residential	
		[X] Allocation (Existing Connection)	[ ] Commercial	
	[X] Water	[X] Allocation (New Connection)	[X] Residential	
		[X] Allocation (Existing Connection)	[ ] Commercial	

Property Owner Information

Property Owner(s):	Kyle R. Moses and Chrystal J. Pearson-Moses
Mailing Address:	186 Hillcrest Terrace, WRJ, VT 05001
Email Address:	kyle_rmoses@yahoo.com
Telephone Number:	

Applicant Information (If Not Owner)

Applicants(s):	
Mailing Address:	
Email Address:	
Telephone Number:	

Parcel Information	
Physical Address:	186 Hillcrest Terrace

Consultant Information	
Consulting Firm:	Waysville Engineering
Consultant:	Jason Waysville, P.E.
Mailing Address:	222 Barlow Road, Springfield, VT 05156
Email Address:	
Telephone Number:	

(1) Allocations are only issued for projects prepared by a qualified consultant requesting a State of Vermont Wastewater System and Potable Water Supply Permit or filing an Exemption of the Environmental Protection Rules, Chapter 1 Wastewater System and Potable Water Supply Rules, effective April 12, 2019 through Designer Certification as allowed by § 1-304 Permit Exemptions (13) and (14).

(2) Consultant shall determine the existing base flows per § 1-806 (Determining Baseline Design Flow for Increases in Design Flow Projects) of the State Rules. (No allocation shall be granted if the proposed flows are ≤ the baseline design flows as determined by the consultant (or owner when allowed) and accepted by the Town of Hartford Department of Public Works.)

Project Description

(Please describe the project and request within this section)

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Wastewater Allocation Information

(1) Existing and proposed flow rates shall be calculated using the Design Flows contained in Subchapter 8 -- General Technical Standards for Wastewater Systems and Potable Water Supplies of the Environmental Protection Rules Chapter 1 Wastewater System and Potable Water Supply Rules, effective April 12, 2019.

(2) Existing base flows shall be determined by the consultant in accordance with § 1-806 (Determining Baseline Design Flow for Increases in Design Flow Projects) of the State Rules.

(3) Allocation allowances may be granted be for unexpired allocations previously granted and paid for on the project parcel when appropriate.

(4) For projects requiring a Construction Permit under Environmental Protection Rules, Chapter 21, Water Supply Rule an additional allocation information sheet shall be completed for the water system using Table A2-1 – Unitized Average Day Flows, Engineering Design Criteria, Unitized Average Day Flow Quantities of said rules.

Permitted (# Units)	Proposed (# Units)	Use/Unit Description	Design Flow GPD/Unit	Permitted Daily Flow	Proposed Daily Flow
3	5	Bedrooms	140	420	700
			Total Daily Wastewater Flows	420	700
			New or Change in Daily Wastewater Flows	+280	
			(Cannot be expired.) Existing Valid Wastewater Allocation	0	
			(New or increased flow less any unused valid allocation.) Wastewater Allocation Request	280 GPD	

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Water Supply Allocation Information

(1) Existing and proposed flow rates shall be calculated using the Design Flows contained in Subchapter 8 – General Technical Standards for Wastewater Systems and Potable Water Supplies of the Environmental Protection Rules Chapter 1 Wastewater System and Potable Water Supply Rules, effective April 12, 2019.

(2) Existing base flows shall be determined by the consultant in accordance with § 1-806 (Determining Baseline Design Flow for Increases in Design Flow Projects) of the State Rules.

(3) Allocation allowances may be granted be for unexpired allocations previously granted and paid for on the project parcel when appropriate.

(4) For projects requiring a Construction Permit under Environmental Protection Rules, Chapter 21, Water Supply Rule an additional allocation information sheet shall be completed for the water system using Table A2-1 – Unitized Average Day Flows, Engineering Design Criteria, Unitized Average Day Flow Quantities of said rules.

Existing (# Units)	Proposed (# Units)	Use/Unit Description	Design Flow GPD/Unit	Existing Daily Flow	Proposed Daily Flow
3	5	Bedrooms	140	420	700
			Total Daily Water Supply Flows	420	700
			New or Change in Daily Water Supply Flows	+280	
			(Cannot be expired.) **Existing Valid Water Supply Allocation**	0	
			(New or increased flow less any unused valid allocation.) **Water Supply Allocation Request**	280 GPD	

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Additional Information Required

Sewer Total Daily Flow (GPD):	700
Peak Sewer Flow Rate (GPM):	2.43
Sewer Strength:	Low (Residential)
Pretreatment Required:	NO
Water Total Daily Flow (GPD):	700
Peak Water Flow Rate (GPM):	5
Previous Wastewater System and Potable Water Supply Permit #:	None

Site Plan(s) & Detail Sheet(s)

(Projects receiving a designer's exemption certification only a building/utilities sketch.)

Title	Sheet #	Date	Last Revised
Wastewater Sewer Connection Project	S1	10/17/22	

Any and all required plans, details, sketches, design basis, calculations and exemption certifications must be approved by the Hartford Department of Public Works prior to issuing any allocations for sewer and water.

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General Provisions

(1) If construction of the project fails to commence within 18 months or the project does not have a valid zoning permit, then the applicant shall be deemed to have abandoned the project for that portion of the allocation for construction which has not commenced. Flow allocations for projects that have been abandoned will revert back to the Town of Hartford and the applicant will have to reapply for them or submit a voluntary request for a permit revocation.

(2) Once operational, if actual usage by the project exceeds the granted allocation, then the applicant or their assigns must make a new application for additional allocation. Any expansion of an existing use also requires an additional allocation.

(3) All state and local permits will be required prior to construction. Including approval of any required Town of Hartford sewer and water connections, and excavation permits. Please note that all work within the Town's right of ways and easements requires bonding.

Certification of Property Owner and Applicant

Property Owner(s): The undersigned property owner(s) hereby certify that the information on this application and all supplemental materials are true and accurate and I/we have read and understand the general provisions. Lastly I authorize the applicant, if any is named on this application to represent me me/us in any proceedings related to this application and allocation request.

Signature of Property Owner(s) — Date: 11/7/2022

Applicant(s) (If not property owner): The undersigned applicant hereby certifies that ALL the information submitted for this application and all supplemental materials are true and accurate.

Signature of Applicant(s) — Date

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Allocation #2022-09

Site Plan

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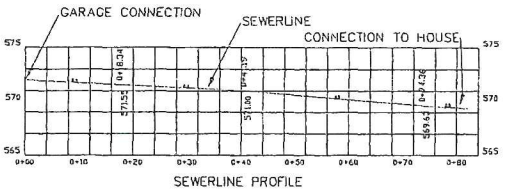
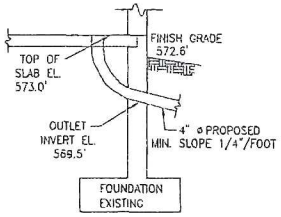
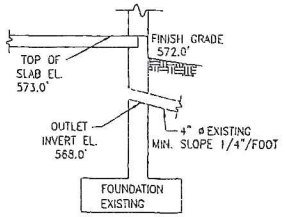
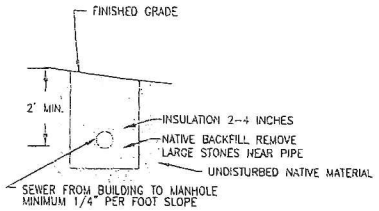


SEWERLINE PROFILE

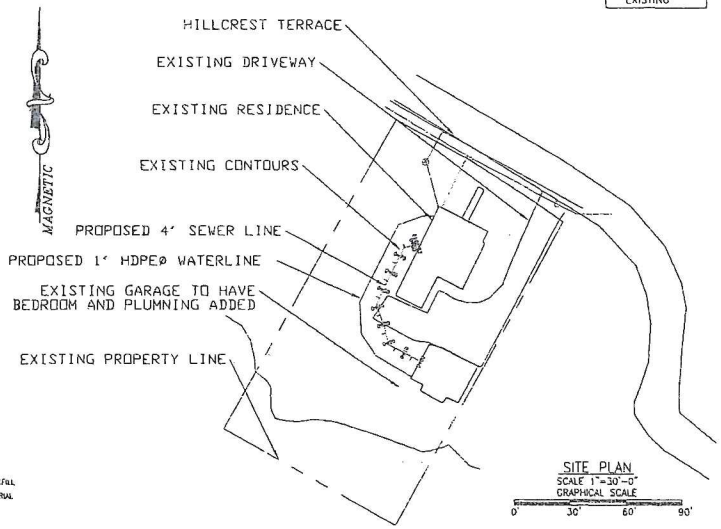




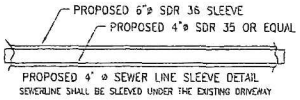


SEWER LINE TO MANHOLE DETAIL
NOT TO SCALE

NOTE: SPECIAL CARE SHOULD BE TAKEN,
TO REMOVE ANY LARGE STONES WHEN BACKFILLING
THIS IS TO ENSURE EXISTING PIPING REMAINS INTACT

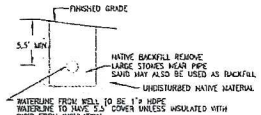


SITE PLAN
SCALE 1"=30'-0"
GRAPHICAL SCALE
0 30' 60' 90'



PROPOSED 4" ø SEWER LINE SLEEVE DETAIL
SEWERLINE SHALL BE SLEEVED UNDER THE EXISTING DRIVEWAY

SEWER PROJECT NOTES:
1)INSTALLATION SHALL BE COORDINATED DONE IN ACCORDANCE WITH THE VERMONT STATE PLUMING CODE
2)ALL PENETRATIONS SHALL BE SEALED WITH NON-SHRINK GROUT
3)SEWERLINE SHALL BE SLEEVED UNDER THE EXISTING DRIVEWAY INSULAITON IS OPTIONAL HOWEVER RECOMENDED IF COVER IS LESS THEN 4 FEET.
4)SEWERLINE BACKFILL SHALL BE DONE WITH SAND AND COMPACTED.
5)COMPACTION SHALL BE 95% OF MATERIAL DENSITY.
6) WATERLINE AND SEWERLINE SHALL HAVE MINIMUM 10 FOOT LATERAL SEPARATION
7) OWNER SHALL IS RESPONSIBLE TO ACQUIRE ALLOCATION LETTERS FROM THE TOWN STATING THAT THEY ARE CAPABLE OF SUPPLYING THE INCREASED FLOW AS WELL AS HANDLING THE INCREASE TO THE WASTEWATER FLOW



WATERLINE WELL TO RESIDENCE
NOT TO SCALE

NOTE: SPECIAL CARE SHOULD BE TAKEN,
TO REMOVE ANY LARGE STONES WHEN BACKFILLING
THIS IS TO ENSURE EXISTING PIPING REMAINS INTACT

GENERAL PROJECT NOTES:
1)TEMPORARY BENCH MARK ELEVATIONS ARE BASED UPON VGIS DATUM.
2) REFERENCE TAX MAP FOR LOT INFORMATION AND SITE LOCUS.
3)CONTOURS SHOWN FROM VGIS SURVEY.
4)THE PROPERTY LINES, EASEMENTS, AND OTHER REAL PROPERTY DESCRIPTIONS PROVIDED IN THIS PERMIT APPLICATION ARE FOR THE USE OF THE ANR (AGENCY OF NATURAL RESOURCES) ONLY. THEY DO NOT DEFINE LEGAL RIGHTS OR MEET LEGAL REQUIREMENTS FOR A LAND SURVEY AS DESCRIBED IN 26 V.S.A. SECTION 2502(4), AND SHALL NOT BE USED IN LIEU OF A SURVEY AS THE BASIS OF ANY LAND TRANSFER OR ESTABLISHMENT OF ANY PROPERTY RIGHT.
5)DIG SAFE SHALL BE CONTACTED BEFORE EXCAVATING IN ANY PUBLICLY OWNED LANDS.
6) CONTACT ENGINEER IF FIELD CONDITIONS VARY FROM SHOWN OR IT WILL BE ASSUMED TO BE AS DESIGNED.
7) OWNER RESPONSIBLE FOR LOCAL ZONING RULES
8) CONTACT TOWN OF HARTFORD WATER AND SEWER DEPT IF EXCAVATION REQUIRED IN PUBLIC RIGHT OF WAY

DESIGN CRITERIA:

SYSTEM DESIGN FLOW:
THE RESIDENCE HAS 3 BEDROOMS
70GPPD 2P/BEDROOM X 3 BEDROOM = 420GPD
GARAGE TO HAVE ADDITIONAL 2 BEDROOMS
70 GPPD 2P/BEDROOM X 2 = 280

TOTAL FLOW = 700 GPD

THE MINIMAL WORKING PRESSURE IN WATER SERVICE LINE SHALL BE:
1. 35 PSI AT THE MAIN CONNECTION LINE
2. 20 PSI AT THE GROUND LEVEL AT THE FOUNDATION WALL
3. 8 PSI AT THE HIGHEST ELEVATION FIXTURE

WATER SERVICE LINES SHALL BE LEAK TESTED IN ACCORDANCE WITH:
1. VERMONT PLUMBING RULES
2. THE AWWA
3. PRESSURIZE THE LINE WITH NO DROP FOR 16 MINUTES

DISINFECTION OF THE POTABLE WATER SOURCE SHALL BE COMPLETED IN ACCORDANCE WITH THE VERMONT DEPARTMENT OF HEALTH:
1. FLUSH THE SYSTEM TILL THE WATER RUNS CLEAR.
2. PROVIDE AN INITIAL DOSEAGE OF AT LEAST 100 MG/L OF CHLORINE IN THE SOURCE
3. CIRCULATE THE WATER IN THE SOURCE
4. ALLOW THE WATER TO REST FOR A MIN OF 12 TO 24 HOURS BEFORE DISPOSING OF THE CHLORINATED WATER

DISINFECTION OF WATER SERVICE LINES SHALL BE COMPLETED TO THE REQUIREMENTS OF VERMONT PLUMBING RULES:
1 FILL SERVICE LINE WITH WATER CHLORINE SOLUTION OF 100 MG/L
2. ALLOW SOLUTION TO REST IN LINE FOR MIN OF 24 HOURS BEFORE DISPOSAL

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DESIGN CERTIFICATION:
I HEREBY CERTIFY THAT THE DESIGN-RELATED INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT, AND THAT, IN THE EXERCISE OF MY REASONABLE PROFESSIONAL JUDGEMENT, THE DESIGN INCLUDED IN THIS APPLICATION FOR A PERMIT COMPLIES WITH THE VERMONT WASTEWATER SYSTEM AND POTABLE WATER SUPPLY RULES AND THE VERMONT WATER SUPPLY RULES.

PROJECT: JN#042-22
WASTEWATER SEWER CONNECTION PROJECT
PREPARED FOR KYLE MOSES
188 HILLCREST TERRACE
HARTFORD VERMONT

WAYSVILLE ENGINEERING
222 BARLOW RD SPRINGFIELD, VT 05156

DATE: 10-17-22
SCALE: AS NOTED
DR. BY: JEW
CHECKED BY: LPS
REVISIONS:
DWG.NO S1
REV. 0

Allocation #2022-13

Allocation Letter

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TOWN OF HARTFORD
PUBLIC WORKS DEPARTMENT
173 Airport Road
White River Jct., VT 05001

Telephone: 802-295-3622

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By

October 31, 2022

Kyle R. Moses and Chrystal J. Pearson-Moses
186 Hillcrest Terrace
White River Junction, VT 05001

RE: Proposed Bedrooms, Lot 45-0028-000, 186 Hillcrest Terrace, White River Junction (Allocation #2022-13)

Dear Kyle & Chrystal:

This letter is to inform you and the State of Vermont Drinking Water and Groundwater Protection Division, that the Town of Hartford's wastewater collection system, wastewater treatment system, and water distribution system have sufficient unreserved capacity serve the proposed separate bedrooms at 186 Hillcrest Terrace in White River Junction.

Wastewater flows will be treated at the Town's wastewater treatment facility in White River Junction. Water will be provided by the Hartford water distribution network.

It is our understanding that the additional allocation amount requested and to be filed with the State to serve the above referenced project is as follows:

Lot 45-0028-000 Wastewater Disposal Allocation

Use Description	Quantity	GPD Each	Total Daily Flow
Bedroom	2	140 GPD Each	**280 GPD**

Lot 45-0028-000 Potable Water Supply Allocation

Use Description	Quantity	GPD Each	Total Daily Flow
Bedroom	2	140 GPD Each	**280 G.P.D.**

If construction of the project fails to commence within 18 months or the project does not have a valid zoning permit, then the applicant shall be deemed to have abandoned the project for that portion of the allocation for construction which has not commenced. Flow allocations for projects that have been abandoned will revert to the Town of Hartford and the applicant will have to reapply for them or submit a voluntary request for a permit revocation.

The project not requiring any utilities construction is approved based upon the below listed plan prepared by Jason Waysville, P.E.;

Title	Sheet Number	Date	Revision Date
Wastewater Sewer Connection Project	S1	10/17/2022	N/A

This letter of allocation is not valid until you have signed it below. It will be forwarded to the party listed below once signed. Please feel free contact this office if you have any questions.

Sincerely,

Jeremy Delisle,
Interim Director of Public Works

I understand that the project must commence within 18 months and be complete within 2 years or the project must have a valid Town of Hartford zoning permit to retain the allocation set forth. I also agree to submit a voluntary permit revocation for those portions of the project flow allocation that have not been completed or have expired as set forth above.

Owner of property

11/7/2022
Date

Cc: Jo-Ann Ells, Planning & Zoning

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Schaal

Application #23-18

1. 23-18

DRAFT
FINDINGS OF FACT
CONCLUSIONS OF LAW
AND
DECISION

HARTFORD PLANNING COMMISSION

Application #23-18 by Schaal Real Estate Revocable Trust
for approval of a Subdivision involving boundary line adjustments
lots 22-0250-000 and 22-0251-000, 61 and 73 Depot Street
Wilder, in VRC and R-1 zoning districts

This decision pertains to application #23-18 by Schaal Real Estate Revocable Trust (owners/applicants) for approval of a Subdivision involving boundary line adjustments between lots 22-0250-000 and 22-0251-000, 61 and 73 Depot Street, Wilder, in VRC and R-1 zoning districts.

FINDINGS OF FACT

Based upon the information contained in the exhibits for this application (see attached list) and the evidence adduced at the Planning Commission meeting of November 13, 2023, the Hartford Planning Commission makes the following Findings of Fact:

1. The owner of record of lot 22-0250-000 is Schaal Real Estate Revocable Trust who acquired the lot on 01-07-15. The deed is recorded in volume 507, page 592 of the Hartford Land Records.

   The owner of record of lot 22-0251-000 is Schaal Real Estate Revocable Trust who acquired the lot on 12-19-22. The deed is recorded in volume 608, page 211 of the Hartford Land Records.

2. Lot 22-0250-000 is located at 61 Depot Street and is developed with a 4,700 sq. ft. office building.

   Lot 22-0251-000 is located at 73 Depot Street is developed with a multi-use building including three one-bedroom apartments and 1,200 square feet of commercial/office space on the 1st floor.

3. Lot 22-0250-000 is approximately 0.220 acres/9,608 sq. ft.

   Lot 22-0251-000 is approximately 0.450 acres/19,619 square feet

4. The lots are class one (1), municipal water and sewer.

5. The lots are in VRC and R-1 zoning districts.

This Application

6. The applicants propose to annex 0.129 acres/5,661 sq. ft. from lot 22-0251-000 to lot 212-0250-000.

7. After the annexation, lot 22-0250-000 will be 0.350 acres/15,270 sq. ft and lot 22-0251-000 will be 0.320 acres/13,958 square feet.

8. Minimum Area and Dimensional Standards

VRC

Area (in square feet)			Lot Dimensions (in feet)		Setbacks (in feet)		
	Per Dwelling	Per					
Class	Unit	Lot	Width	Depth	Front	Side	Rear
1	3,500	6,000	50	50	10/20*	10	20

R-1

Area (in square feet)			Lot Dimensions (in feet)		Setbacks (in feet)		
	Per Dwelling	Per					
Class	Unit	Lot	Width	Depth	Front	Side	Rear
1	4,000	8,000	60	80	10/20*	10	20

*10' for principal structure and 20' for attached or detached garages and other structures

9. After the annexation, the lots will meet the Minimum Area and Dimensional Standards.

10. The lot line adjustment will result in the removal of one parking space on lot 22-0250-000. The remaining 17 parking spaces on lot 22-0250-000 will meet the parking demand of the 4,700 sq. ft. office (4,700/300= 15.6). (See exhibit #3)

11. The application is a "One-step" application under section 203-C 2 of the Subdivision Regulations.

12. The applicants understand that they retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

13. The applicants understand that a Mylar must be properly endorsed and recorded within 180 days of this decision and that a zoning permit must be obtained, or the decision will be void.

CONCLUSIONS OF LAW

Based upon the foregoing Findings of Fact, the Hartford Planning Commission concludes that the proposed subdivision meets the requirements of the Town of Hartford Subdivision Regulations including:

Section 200-2 Hartford Subdivision Regulations:

A. To guide future development in accordance with the Hartford Master Plan (the Plan), Zoning Regulations, Flood Hazard Area Regulations, Capital Budget and Program, and all other Town adopted bylaws, ordinances, regulations, plans, policies, and procedures.

B. To promote a desirable relationship to the landform, its topography and geology, natural drainage and surface water runoff, surface water, and groundwater.

C. To conserve natural resources and fragile features such as prime agricultural soils, wetlands, streams, ponds, steep slopes, ridgelines, important wildlife habitat and connectivity, and scenic views.

D. To minimize the fragmentation of productive resource lands, including farm and forest land, and to promote their continued use and availability for agriculture, forestry, and wildlife.

E. To maintain Hartford's historic settlement pattern, defined by compact villages surrounded by rural countryside.

F. To encourage variety, innovation, flexibility, and greater efficiency in residential development including clustering of lots, in accordance with the provisions of 24 V.S.A. §4417 (Planned Unit Development).

G. To establish standards of subdivision design including, but not limited, to provisions for pedestrian and vehicular traffic, surface water runoff, surface water, and suitable building sites for the land use contemplated.

H. To ensure development does not exceed the ability of the Town to provide public services and facilities, and that these facilities and services are available and will have sufficient capacity to serve any proposed subdivision. Such facilities and services include, but are not limited to: parks, recreation areas, schools, police and fire protection, libraries, water and wastewater facilities, roads, and public parking.

I. To provide adequate utilities such as water, wastewater, electricity, telephone, and broadband.

J. To provide the most efficient relationship between land use and the circulation of traffic

throughout the Town, encourage access management, and avoid undue traffic congestion and overburdening of roads, highways, and intersections.

K. To promote the conservation of energy and use of renewable energy resources.

L. To encourage variety in the type, size, and cost of housing to meet the needs of Hartford's diverse population.

DECISION

The Hartford Planning Commission, based upon the forgoing Findings of Fact and Conclusions of Law hereby approves application #23-18 by Schaal Real Estate Revocable Trust (owners/applicants) for approval of a Subdivision involving boundary line adjustments between lots 22-0250-000 and 22-0251-000, 61 and 73 Depot Street, Wilder, in VRC and R-1 zoning districts **on the condition that before a zoning permit is issued to finalize this Decision the applicant submits a letter from their surveyor certifying that the monuments have been set according to the locations identified on the approved survey plat.**

This decision is also subject to the condition that no modification or expansion shall be made to the project as described and limited in the above Findings of Fact and Conclusions of Law without the written approval of the Hartford Zoning Board of Adjustment and/or the Hartford Planning Commission. This decision may be revoked, and a new application or permit required if conditions and findings are violated or modified without written approval.

The applicant is responsible for insuring compliance with all applicable State and Federal regulations pertaining to this application.

Those in favor:

Those in opposition:

Those not participating:

Dated at Hartford, Vermont this ____ day of November 2023.

HARTFORD PLANNING COMMISSION

By _____
Chairperson/Vice-Chairperson

Appeal Rights: An interested person who has participated in the proceeding related to this decision has the right to appeal this decision to the Vermont Environmental Court, pursuant to 24 V.S.A. s. 4471 and V.R.E.C.P.5, in writing, within 30 days of the date of this decision. If you fail to appeal this decision, your right to challenge this decision at some future time may be lost

because you waited too long. You will be bound by this decision, pursuant to 24 V.S.A. s. 4472 (d) (exclusivity of remedy; finality).

EXHIBIT LIST

1. Application #23-18

2. Survey entitled "Lot Line Adjustment Plan for Schaal Assoc. Inc., & Schaal Real Estate Rev. Trust" prepared by Pathways Consulting, received October 20, 2023

3. Site Plan entitled "Schaal Associates. Inc., & Schaal Real Estate Rev. Trust, 61 & 73 Dept Street, Boundary Line Adjustment Site Plan" prepared by Schaal Engineering, dated received October 20, 2023

4. Aerial View received October 20, 2023

5. Project Narrative from Timothy Schaal dated October 23, 2023

6. Memo from Jo-Ann Ells dated October 17, 2023

Town of Hartford

Planning Commission App # _____
Zoning Board of Adjustment App # _____

APPLICATION TO
PLANNING COMMISSION &/OR ZONING BOARD OF ADJUSTMENT

PLEASE COMPLETE ALL ITEMS APPLICABLE AND PROVIDE THE CORRECT NUMBER OF COPIES OF THIS APPLICATION AND THE SITE PLAN OR SUBDIVISION PLAT. ABUTTING LANDOWNERS WILL BE NOTIFIED BY THE PLANNING/ZONING OFFICE.

1. **NAME & ADDRESS OF RECORD OWNER(S)** Schaal Real Estate Rev. Trust
   13 Miller Road, White River Jct., VT 05001
   Deed Recorded Book 507 Page 592 &594 (Available at Town Clerk's Office)
   Telephone: Work 802-295-3988 Cell 802-291-0454 Email Address: paschaal@icloud.net
2. **NAME & ADDRESS OF APPLICANTS(S)** Same as above
   Telephone: Work _____ Cell _____ Email Address: _____
3. **NAME & ADDRESS OF APPLICANTS' CONSULTANT** Schaal Engineering, P.C.
   P.O Box 152, Wilder, VT 05088-0152
   Telephone: Work 802-295-2002 Cell 802-384-8002 Email Address: timothy@schaalengineering.com
4. **PROJECT LOCATION** 61 & 73 Depot Street
5. **PRESENT USE OF PROPERTY** Commercial and Residential
6. **BRIEFLY DESCRIBE PROJECT** (in addition, a detailed narrative must be submitted)
   Boundary Line Adjustment
7. **PROJECT SIZE IN SQ. FT OR ACREAGE** 29,227 sf (+/-) for both lots
   Lot Width 61 Depot = 91', 73 Depot = 49.2' Lot Depth 61 Depot = 134', 73 Depot =175'
8. **IS PROJECT ON TOWN WATER/SEWER?** Yes Yes No _____ If Yes, estimated
   Water Consumption/day 4,965 gpd Amount of Sewer Flow Projected 780 gpd
   Size of Closest Lines Above (water) 12" (sewer) 16"
9. **DESCRIBE LANDSCAPING PLAN** No changes to existing landscape; see plan
10. **IF A BUSINESS** - Present # of Employees 20
    Proposed Days & Hours of Operation 7:00AM- 6:00PM
    Will you use the landfill & recycling center? Yes Y No _____
    The main waste by-product of your business is: paper

11. **IF A RESTAURANT** - Present seating _____ Proposed _____

12. **PARKING SPACES** - Number to be provided 27

13. **SIGNAGE** - Free Standing Existing Attached _____

14. **FENCING** – Location _____ Height _____

15. **NEAREST WATER SUPPLY FOR FIRE PROTECTION** 50'

16. **ESTIMATED VALUE OF PROPOSED WORK** n/a

17. **IS THERE AN EXISTING DRIVEWAY?** yes

18. **IF A SUBDIVISION** - Number of New Lots to be Created no

    Do you request that the Town consider taking over maintenance of – Roads no

    Or Park/Open Space no

I HEREBY CERTIFY THAT THE INFORMATION PROVIDED ON THIS APPLICATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. (This certification must be signed by lot owners and applicants).

Applicant's Signature 10/12/23 Date

Lot Owner's Signature 10/12/23 Date

Co-Applicant's Signature 10/12/23 Date

Co-Owner's Signature 10/12/23 Date

The applicant retains the obligation to identify, apply for, and obtain any relevant local or state permits before any construction may commence. Please call 802-282-6488 to speak with the State Permit Specialist.

For Office Use Only		
Map/Lot #		
Fee Paid $:		Receipt #:
PC: Site Plan	Min. Sub.	Maj. Sub.
PD	PD Amend.	Other
ZBA: Conditional Use	Variance	Appeal
Other		
Zoning District (s)		Date Filed:
Official Submittal Date:		

SCHAAL ENGINEERING, P.C.
P.O. Box 152 | 61 Depot Street
Wilder, VT 05088
(802) 295-2002
(802)295-2002 | timothy@schaalengineering.com

October 23, 2023

Jo-Ann Ells
Town of Hartford
Department of Planning & Development Services
171 Bridge Street
White River Jct., Vermont 05001

Subject: **Schaal Real Estate Revocable Trust**
Proposed Boundary Line Adjustment/ Subdivision of Lots 22-251 & 22-252
61 & 73 Depot Street, Wilder

Dear Jo-Ann,

This letter is provided as the UPDATED "project narrative" for the above referenced project and in support of the accompanying Town of Hartford APPLICATION TO PLANNING COMMINSION &/OR ZONING BOARD OF ADJUSTMENT. Also included in this letter are the responses to the October 17, 2023 Memorandum. This project involves a simply property boundary line adjustments (subdivision) of two existing developed parcels located at 61 and 73 Depot Street in Wilder. Both parcels, Lots 22-250 and 22-251 are owned by Peter and Gail Schaal through *Schaal Real Estate Revocable Trust*. Both of these lots straddle the Village-Residential-Commercial and Residential-1 zoning districts.

The purpose of this boundary line adjustment is to **provide additional land to Lot 22-250**, in the event that a future owner/applicant may wish to use this Lot (22-250 / 61 Depot) in a manner that requires more property. Please note that this application proposes NO CHANGE to the current use(s) or development of the two affected lots.

Below is a summary of the project and the implications for both of the affected lots.

Lot 22-251 (73 Depot)
This lot is currently permitted and developed with an existing multi-use building that has three one-bedroom apartments and 1,200 sf of commercial/office space on the 1st floor.

Current lot size: 19,619 sf (0.45 acres)
Proposed lot size: 13,958 sf (0.32 acres), a decrease of 5,661 sf
Min. Required lot size: 8,000 sf (0.18 acres)

Required parking: 10 spaces; 2 for each of the 3 residential units, plus 4 for the 1,200 sf of commercial/office space
Provided parking 10 spaces

Lot coverage = 53% (under proposed lot size)
Max. Allowed Lot Coverage = 65% for R-1 Zoning District

Lot 22-250 (61 Depot)
This lot is currently permitted and developed with an existing 4,700 sf office building.

Current lot size: 9,608 sf (0.22 acres)
Proposed lot size: 15,270 sf (0.35 acres), an increase of 5,661 sf
Min. Required lot size: 8,000 sf (0.18 acres)

Required parking: 16 spaces (one per 300 sf of office space)
Provided parking: 17 spaces

Lot coverage = 64%
Max. Allowed Lot Coverage = 65% for R-1 Zoning District

Minimum Area and Dimensional Standards

VRC

Area (in square feet) Per Dwelling			Lot Dimensions (in feet)		Setbacks (in feet) Per (From Property Lines)		
Class	Unit	Lot	Width	Depth	Front	Side	Rear
1	3,500	6,000	50	50	10/20*	10	20

R-1

Area (in square feet) Per Dwelling			Lot Dimensions (in feet)		Setbacks (in feet) Per (From Property Lines)		
Class	Unit	Lot	Width	Depth	Front	Side	Rear
1	4,000	8,000	60	80	10/20*	10	20

*10' for principal structure and 20' for attached or detached garages and other structures

With regards to other items in the "Subdivision Application Checklist", the following additional information is provided:

- No changes to the existing landscaping are proposed.
- No changes to existing Town water and sewer services are proposed.
- **Please note that there is now a 20 feet wide easement through Lot 22-251 (73 Depot) that is along the common access drive to provide access to Lot 22-250 (61 Depot).**

The accompanying Site Plan sheet C1 prepared by this office and the Lot Line Adjustment Plan prepared by Pathways Consulting, LLC should adequately address the remaining items in the aforementioned "checklist."

In response to the October 17, 2023 Memorandum:

- It is understood that we retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

- Your understanding is correct that changes to the approved site plans are limited to the removal of 1 parking space and the addition of a dumpster on proposed lot 22-0250-000.

- The surveyor understands that before the Mylar is endorsed or recorded, he will need to submit a letter certifying that the monuments have been set according to the locations identified on the approved survey.

We look forward to the hearing with the Planning Commission members to answer any questions they may have. In the meantime, if you have any questions or require any additional information, please do not hesitate to give me a call.

Respectfully Submitted,

Timothy L. Schaal (electronic signature)
Timothy L. Schaal, P.E.



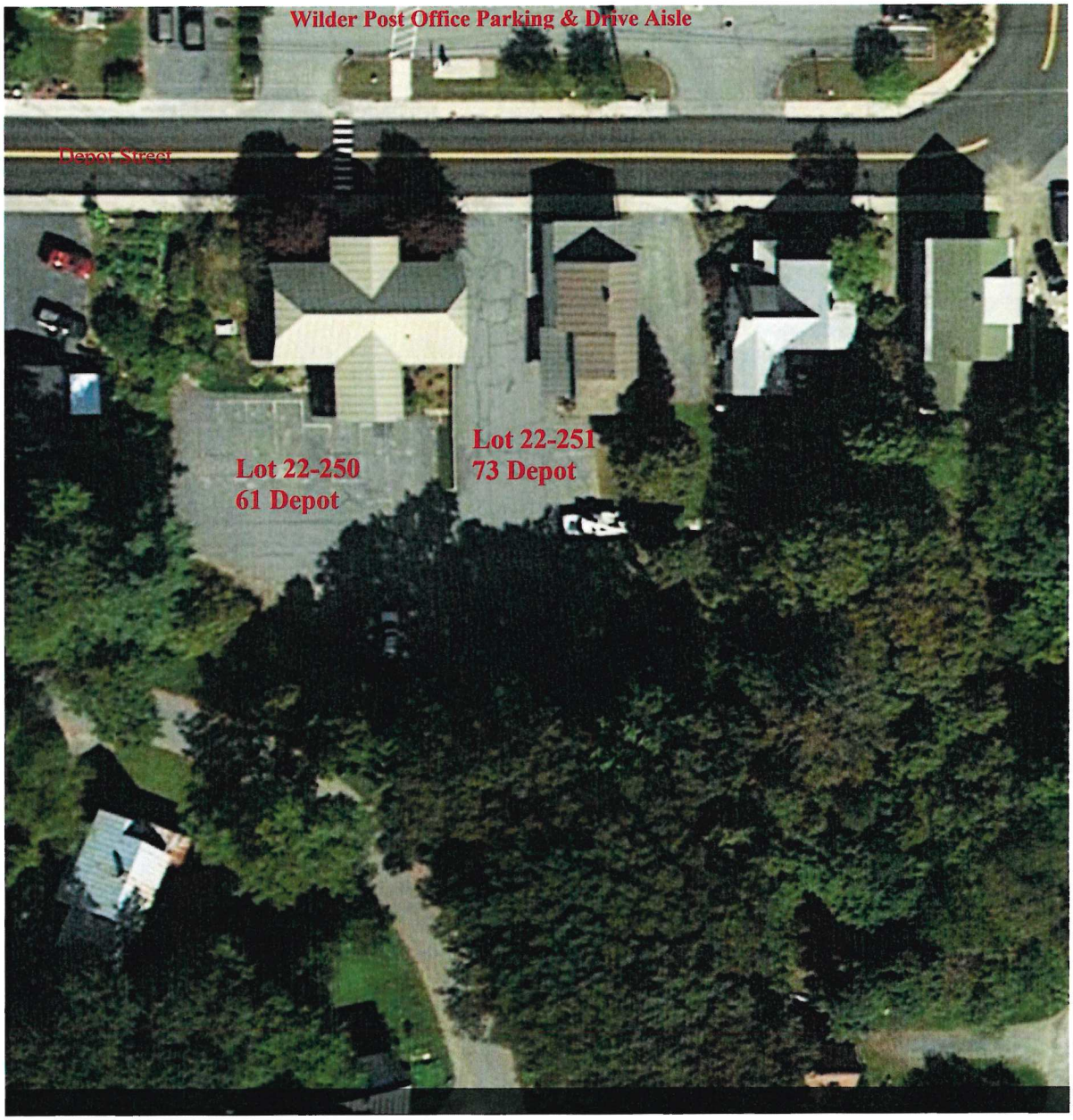
Encl.
(8)Copies each of the following:
-Town of Hartford Application to PC &/or ZBA
-Site Plan sheet C1
-Lot Line Adjustment Plan by Pathways Consulting, LLC
-Project Aerial View

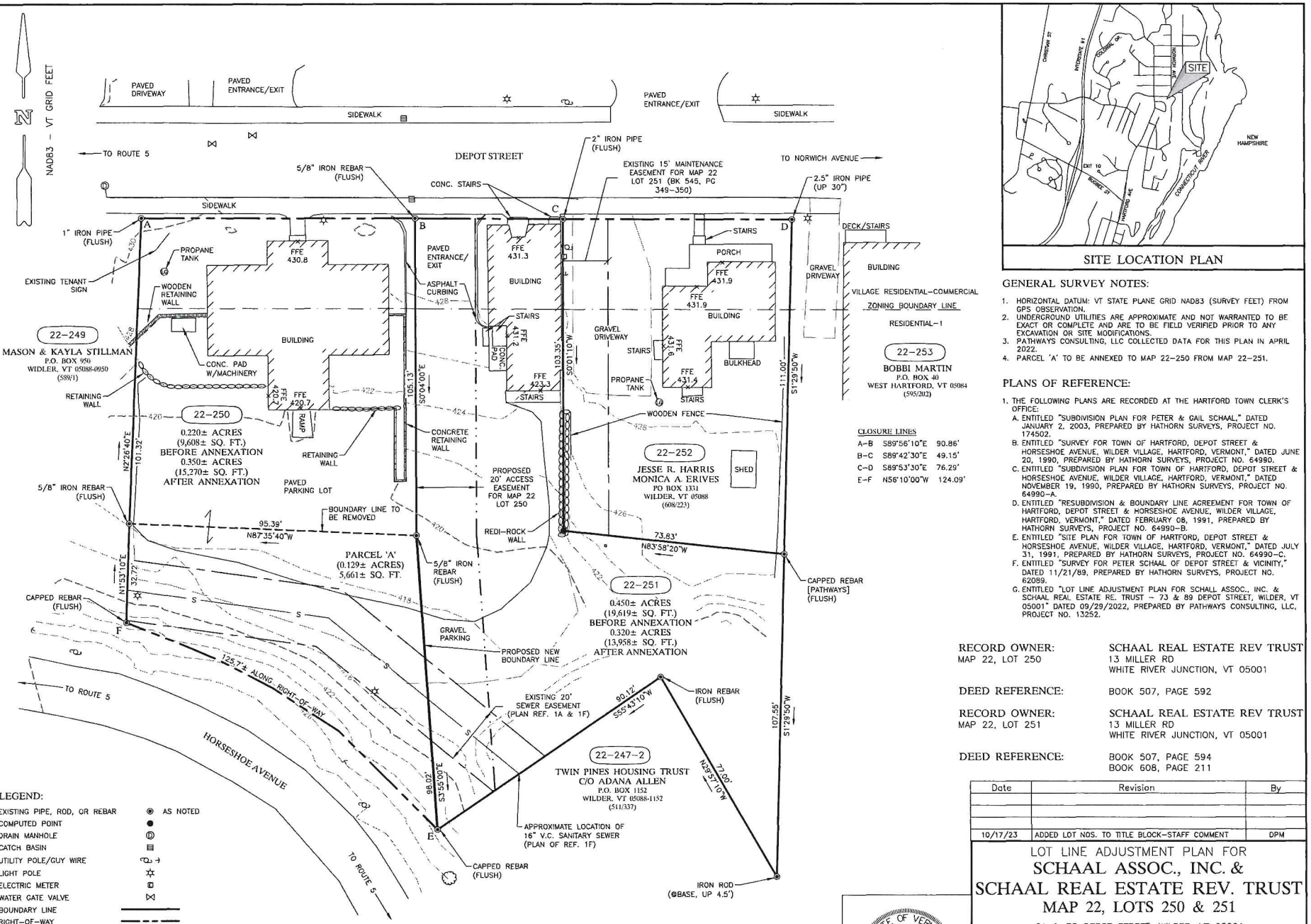
pc: Peter & Gail Schaal

SCHAAL ENGINEERING, P.C.
P.O. Box 152 | 61 Depot Street
Wilder, VT 05088
(802) 295-2002
(802)295-2002 | timothy@schaalengineering.com

Application for Boundary Line Adjustment of Lots 22-250 & 22-251

Property Aerial View





SITE LOCATION PLAN

GENERAL SURVEY NOTES:

1. HORIZONTAL DATUM: VT STATE PLANE GRID NAD83 (SURVEY FEET) FROM GPS OBSERVATION.
2. UNDERGROUND UTILITIES ARE APPROXIMATE AND NOT WARRANTED TO BE EXACT OR COMPLETE AND ARE TO BE FIELD VERIFIED PRIOR TO ANY EXCAVATION OR SITE MODIFICATIONS.
3. PATHWAYS CONSULTING, LLC COLLECTED DATA FOR THIS PLAN IN APRIL 2022.
4. PARCEL 'A' TO BE ANNEXED TO MAP 22-250 FROM MAP 22-251.

PLANS OF REFERENCE:

1. THE FOLLOWING PLANS ARE RECORDED AT THE HARTFORD TOWN CLERK'S OFFICE:
   - A. ENTITLED "SUBDIVISION PLAN FOR PETER & GAIL SCHAAL," DATED JANUARY 2, 2003, PREPARED BY HATHORN SURVEYS, PROJECT NO. 174502.
   - B. ENTITLED "SURVEY FOR TOWN OF HARTFORD, DEPOT STREET & HORSESHOE AVENUE, WILDER VILLAGE, HARTFORD, VERMONT," DATED JUNE 20, 1990, PREPARED BY HATHORN SURVEYS, PROJECT NO. 64990.
   - C. ENTITLED "SUBDIVISION PLAN FOR TOWN OF HARTFORD, DEPOT STREET & HORSESHOE AVENUE, WILDER VILLAGE, HARTFORD, VERMONT," DATED NOVEMBER 19, 1990, PREPARED BY HATHORN SURVEYS, PROJECT NO. 64990-A.
   - D. ENTITLED "RESUBDIVISION & BOUNDARY LINE AGREEMENT FOR TOWN OF HARTFORD, DEPOT STREET & HORSESHOE AVENUE, WILDER VILLAGE, HARTFORD, VERMONT," DATED FEBRUARY 08, 1991, PREPARED BY HATHORN SURVEYS, PROJECT NO. 64990-B.
   - E. ENTITLED "SITE PLAN FOR TOWN OF HARTFORD, DEPOT STREET & HORSESHOE AVENUE, WILDER VILLAGE, HARTFORD, VERMONT," DATED JULY 31, 1991, PREPARED BY HATHORN SURVEYS, PROJECT NO. 64990-C.
   - F. ENTITLED "SURVEY FOR PETER SCHAAL OF DEPOT STREET & VICINITY," DATED 11/21/89, PREPARED BY HATHORN SURVEYS, PROJECT NO. 62089.
   - G. ENTITLED "LOT LINE ADJUSTMENT PLAN FOR SCHALL ASSOC., INC. & SCHAAL REAL ESTATE RE. TRUST - 73 & 89 DEPOT STREET, WILDER, VT 05001" DATED 09/29/2022, PREPARED BY PATHWAYS CONSULTING, LLC, PROJECT NO. 13252.

CLOSURE LINES

A-B	S89°56'10"E	90.86'
B-C	S89°42'30"E	49.15'
C-D	S89°53'30"E	76.29'
E-F	N56°10'00"W	124.09'

RECORD OWNER: MAP 22, LOT 250 — SCHAAL REAL ESTATE REV TRUST, 13 MILLER RD, WHITE RIVER JUNCTION, VT 05001

DEED REFERENCE: BOOK 507, PAGE 592

RECORD OWNER: MAP 22, LOT 251 — SCHAAL REAL ESTATE REV TRUST, 13 MILLER RD, WHITE RIVER JUNCTION, VT 05001

DEED REFERENCE: BOOK 507, PAGE 594; BOOK 608, PAGE 211

Date	Revision	By
10/17/23	ADDED LOT NOS. TO TITLE BLOCK-STAFF COMMENT	DPM

LEGEND:

EXISTING PIPE, ROD, OR REBAR	AS NOTED
COMPUTED POINT	
DRAIN MANHOLE	
CATCH BASIN	
UTILITY POLE/GUY WIRE	
LIGHT POLE	
ELECTRIC METER	
WATER GATE VALVE	
BOUNDARY LINE	
RIGHT-OF-WAY	
EASEMENT	
EDGE GRAVEL	
WALL	
TAX MAP/LOT NUMBER	13-24-2
DEED BOOK/PAGE	(BOOK/PAGE)

THIS PLAT IS APPROVED SUBJECT TO THE FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION FOR THIS SUBDIVISION. A COPY OF WHICH IS ON FILE IN THE HARTFORD DEPARTMENT OF PLANNING AND DEVELOPMENT SERVICES.

APPROVAL NO._____HARTFORD PLANNING COMMISSION

DATE:_____BY:_____

CHAIRPERSON/VICE CHAIRPERSON

I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE AND ABILITY THAT A VERMONT RURAL CLASS SURVEY WAS PERFORMED ON THE PROPERTIES SHOWN HEREON. THIS SURVEY IS BASED ON THE FIELD NOTES OF SAID SURVEY AND THE BOUNDARY LINES ARE CONSISTENT WITH EXISTING MONUMENTATION AND THE REFERENCED DEEDS AND PLANS EXCEPT AS NOTED. I FURTHER CERTIFY THIS PLAT CONFORMS TO 27 VSA 1403 (a) AND (b).

10-17-23
DATE

J. E. Nalette
JOSEPH E. NALETTE, LLS 63501

STATE OF VERMONT — JOSEPH E. NALETTE NO. 63501 — LICENSED LAND SURVEYOR

JOSEPH E. NALETTE, LLS 63501

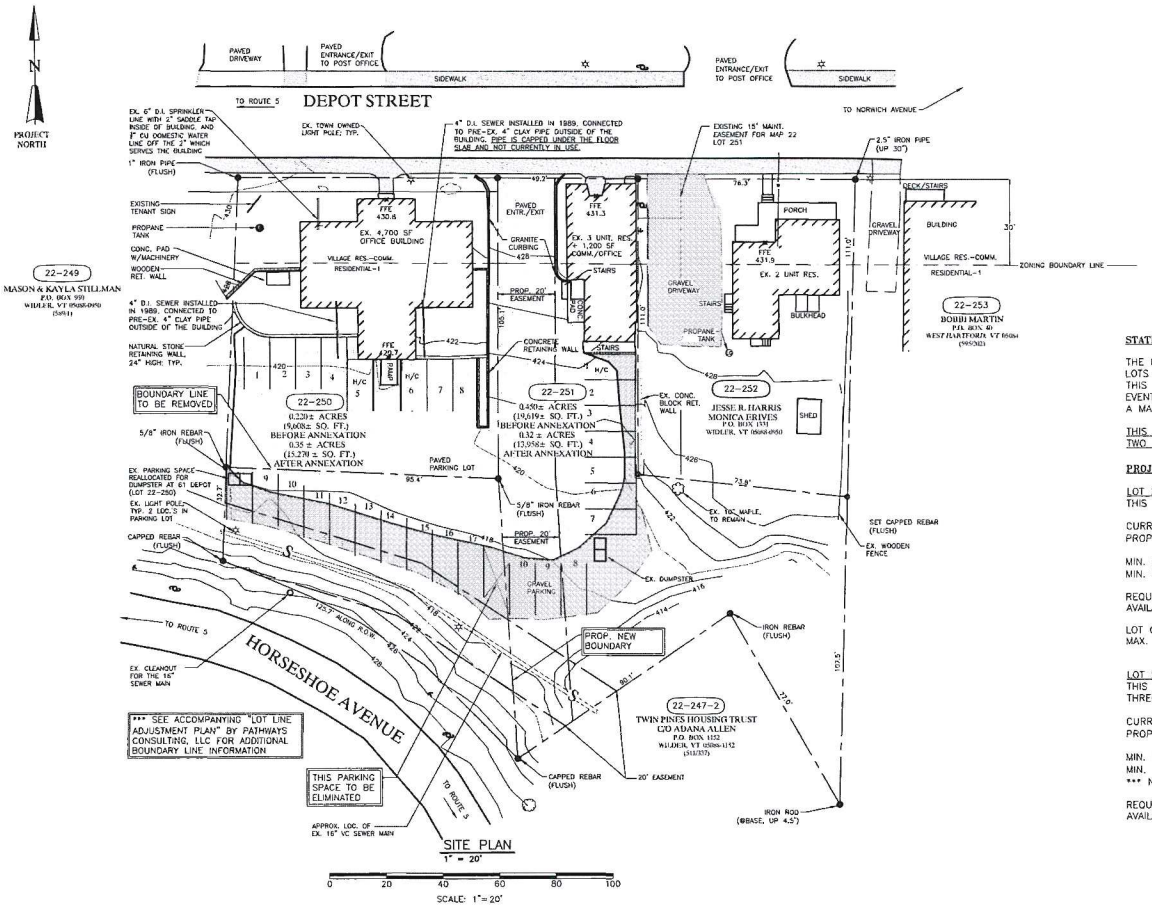
LOT LINE ADJUSTMENT PLAN FOR SCHAAL ASSOC., INC. & SCHAAL REAL ESTATE REV. TRUST MAP 22, LOTS 250 & 251

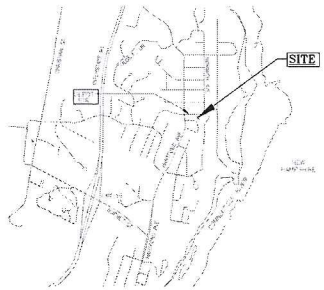
61 & 73 DEPOT STREET, WILDER, VT 05001

0 20 40 60 80 100

OCTOBER 13, 2023 — SCALE: 1"= 20" — PROJ. NO. 13252

PATHWAYS CONSULTING, LLC
240 MECHANIC STREET, SUITE 100
LEBANON, NEW HAMPSHIRE 03766





SITE LOCATION PLAN
NOT TO SCALE

STATEMENT OF PROJECT PURPOSE:

THE INTENT OF THIS PROJECT IS TO MAKE A SIMPLE BOUNDARY LINE ADJUSTMENT BETWEEN LOTS 22-251 (73 DEPOT STREET) AND LOT 22-250 (61 DEPOT STREET). THE PURPOSE OF THIS BOUNDARY LINE ADJUSTMENT IS TO PROVIDE ADDITIONAL LAND TO LOT 22-250, IN THE EVENT THAT A FUTURE OWNER/APPLICANT MAY WISH TO USE THIS LOT (22-250/61 DEPOT) IN A MANNER THAT REQUIRES MORE PROPERTY.

THIS APPLICATION PROPOSES NO CHANGE TO THE CURRENT USE(S) OR DEVELOPMENT OF THE TWO AFFECTED LOTS.

PROJECT SUMMARY

LOT 22-250 (61 DEPOT)
THIS LOT IS CURRENTLY PERMITTED AND DEVELOPED WITH AN 4,700 SF OFFICE BUILDING

CURRENT LOT SIZE: 9,608 SF (+/-) (0.22 ACRES)
PROPOSED LOT SIZE: 15,270 SF (+/-) (0.35 ACRES)

MIN. LOT DEPTH = 134' || MIN. REQUIRED LOT DEPTH = 50'
MIN. LOT WIDTH = 91' || MIN. REQUIRED LOT WIDTH = 50'

REQUIRED PARKING: 16 SPACES
AVAILABLE ON-SITE PARKING: 17.

LOT COVERAGE = 64%
MAX. ALLOWED LOT COVERAGE = 65% FOR R-1 ZONING DISTRICT

LOT 22-251 (73 DEPOT)
THIS LOT IS CURRENTLY PERMITTED AND DEVELOPED WITH AN EXISTING MULTI-USE BUILDING THAT HAS THREE ONE-BEDROOM APARTMENTS AND 1,200 SF OF COMMERCIAL/OFFICE SPACE ON THE 1ST FLOOR.

CURRENT LOT SIZE: 19,619 SF (0.45 ACRES)
PROPOSED LOT SIZE: 13,958 SF (0.32 ACRES)

MIN. LOT DEPTH = 175' || MIN. REQUIRED LOT DEPTH = 50'
MIN. LOT WIDTH = 49.2' || MIN. REQUIRED LOT WIDTH = 50
*** NO CHANGE TO EXISTING LOT WIDTH ***

REQUIRED PARKING: 10 SPACES
AVAILABLE ON-SITE PARKING: 10 SPACES

NO.	REVISION	DATE

SCHAAL ENGINEERING, P.C.
P.O. Box 152 | 61 Depot Street
Wilder, VT 05088-0152
(802) 295-2002
Timothy@schaalengineering.com

PROJECT
SCHAAL ASSOCIATES, INC. &
SCHAAL REAL ESTATE REV. TRUST
61 & 73 DEPOT STREET
BOUNDARY LINE ADJUSTMENT
SITE PLAN

DRAWING NUMBER
C1
SHEET 1 OF 1

SCALE:	SEE PLANS
CHECKED BY:	T.L.S.
DATE:	10/13/23
DRAWN BY:	TLS

Memorandum

To: Tim Schaal

Cc: Peter Schaal, Skip Nalette

From: Jo-Ann Ells

Date: October 17, 2023

Re: Proposed Lot Line Adjustment/ Lots 22-0250-000 & 22-0251-000/61 &73 Depot Street

---

Please submit a response to the following comments/questions on your application for a Boundary Line Adjustment to my office before **9:00 a.m., Tuesday, October 24, 2023.** If you are unable to meet this deadline, please contact me as soon as possible to discuss the deadline to have your application considered at the next round of Public Hearings.

Prior to the Planning Commission Hearing, you will receive an agenda, draft Findings of Fact, and additional staff comments if there are any. Please feel free to contact me at any time during this process.

1. Please confirm that you understand that you retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

   To determine what State Environmental Permits may be required for your project, The Vermont Agency of Natural Resources (ANR) recommends that you use ANR's Permit Navigator Tool by going to the VT Department of Environmental Conservation website Welcome to DEC | Department of Environmental Conservation (vermont.gov) and going to the "Permit Navigator Tool" Permit Navigator (force.com)

   If further assistance is needed, please contact the Community Assistance Specialist for our area:

   Rick Oberkirch, Community Assistance Specialist
   Vermont Agency of Natural Resources/Department of Environmental Conservation
   Environmental Compliance Division/Environmental Assistance Office
   450 Asa Bloomer State Office Building, Rutland, VT 05701

802-282-6488
Rick.Oberkirch@vermont.gov

2. Please update your project narrative to include the correct lot numbers and addresses in the subject line, and include a reference to the proposed access easement.

3. It is my understanding that changes to the approved site plans are limited to the removal of 1 parking space and the addition of a dumpster on proposed lot 22-0250-000. Please confirm or correct.

4. Before the Mylar is endorsed or recorded, your surveyor will need to submit a letter certifying that the monuments have been set according to the locations identified on the approved survey. Please confirm your understanding.

5. Please reference the lot numbers in the title block on the survey.

6. Please email me all of the application materials, amended as necessary, including your response to this memorandum in a single email.

7. Please submit eight copies of all application materials, amended as necessary, including your response to this memorandum.

Application #23-19

474 Hartford Ave. LP and Twin Pines Housing Trust

DRAFT
FINDINGS OF FACT
CONCLUSIONS OF LAW
AND DECISION

HARTFORD PLANNING COMMISSION

Application #23-19 by 474 Hartford Ave. LP and Twin Pines Housing Trust
for Site Development Plan Approval
to allow temporary construction access on Goudreau Street
lot 43-0074-001, 747 Hartford Avenue
Wilder, in a Planned Development

This decision pertains to application #23-19 by 474 Hartford Ave. LP and Twin Pines Housing Trust (owners/applicants) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for an amendment to an approved multi-unit dwelling to allow temporary construction access on Goudreau Street, lot 43-0074-001, 747 Hartford Avenue, Wilder, in a Planned Development

FINDINGS OF FACT

Based upon the information contained in the exhibits for this application (see attached list) and the evidence adduced at the Planning Commission meeting of November 13, 2023, the Planning Commission makes the following Findings of Fact:

General Information

1. The owner of record of lot 43-0074-001 is 747 Hartford Avenue LP who acquired the lot on 08-02-2023. The deed is recorded in volume 614, page 226 of the Hartford Land Records.

2. Lot 43-0074-001 is 1.13 acres.

3. The lot is class one (1), municipal water and wastewater.

This Application

6. In 2022, the Planning Commission granted approval of a Planned Development on the lot (Application #22-12). Zoning Permit #2022-222 was issued to finalize the approval.

7. In 2022, the Zoning Board of Adjustment granted Conditional Use Approval (Application #06-22) and the Planning Commission granted Site Development Plan Approval (Application #22-13) for the construction of an multi-unit dwelling on the lot. Zoning Permit #2022-222 was issued to finalize these approvals. The project is currently under construction.

8. The Applicant recently applied to the Department of Public Works (DPW) for a construction access permit on Goudreau Street.

   After consultation with the Zoning Administrator, the DPW denied the request because the approved site plans did not clearly designate the access to Goudreau Street as a construction access for any phase of the project. The DPW has stated that they can approve the request for a construction access permit on Goudreau Street after approval by the Zoning Board of Adjustment/Planning Commission.

9. Hartford Avenue is approved for access to the project during all three phases of construction. The applicant is seeking approval to use Goudreau Street for a second construction access during all three phases of construction. Once construction is complete, the access on Goudreau Street will be limited to a gated emergency access as originally approved.

10. According to the applicant, "upon reviewing logistical needs of construction vehicles accessing the project, Owner/Applicant requests that the Zoning Board of Adjustment and the Planning Commission approve the Goudreau Street access for temporary construction access for all three phases of the construction project based on safety and site considerations."

    In addition, the Applicant has stated that, "now that the project is underway the realities of the site demonstrate that the Goudreau access would ideally be available for construction access during all three phases. As discussed in the attached letter from Construction Manager, Jeff Ingram the use of the Goudreau access for construction access is based on safety and logistical reasons including congestion in the existing parking lot and avoiding having trucks with trailers back out onto Hartford Avenue."

    (See exhibits #2-#5)

11. The applicant will install a "No Right Turn" sign to direct vehicles leaving the site via Goudreau Street to Hartford Avenue.

12. No other changes are proposed to the existing approvals.

13. The applicants understand that they retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

14. The applicants understand that a zoning permit is required to finalize this Decision.

CONCLUSIONS OF LAW

Based upon the foregoing Findings of Fact, the Hartford Planning Commission concludes that the proposed site plan provides, as required by **§260-45 C** of the Hartford Zoning Regulations:

(1) Maximum safety of **traffic circulation between the site and the street network** and integration with the overall traffic pattern, including provisions for auxiliary roadways connecting with adjacent properties where appropriate. Included in this evaluation shall be the location, number and width of access points, curve radii at access points, acceleration or deceleration lanes on adjacent public streets, sight distances, lighting, location of sidewalks and other walkways, and the overall relationship of the proposed development with existing traffic conditions in the area. All modes of transportation shall be taken into account, including pedestrian, bicycle, handicapped, delivery and emergency vehicles and public transportation.

(2) Adequacy of **on site circulation, parking, and loading facilities,** with particular attention to safety. Included in this evaluation shall be traffic movement patterns, drive and aisle widths, directional signs, location of loading docks and parking areas, number and size of parking spaces, and provision for lighting, drainage, snow removal and access for emergency vehicles and public transportation.

(3) Adequacy of **landscaping, screening, and setbacks** in achieving maximum compatibility with and protection of adjacent properties by screening from them any glare produced by interior or exterior lights and unsightly areas such as storage areas, and parking lots; assurance that landscape materials will not interfere with visibility or safety and that they are of a type that can survive and be maintained as proposed.

(4) Adequacy of **provision for safety and convenience of pedestrians, bicyclists, and handicapped persons**. Included in this evaluation shall be lighting of walks and entrances, design and placement of walks and crosswalks, pick-up points for public transportation and provision of bicycle racks.

(5) **Protection of renewable energy resources,** including a finding that the proposed development does not adversely affect the ability of adjacent properties to use this form of energy.

(6) **Compliance with other provisions of these regulations** including § 260-27, Landscaping, and § 260-31, Land use performance standards.

(7) **Other** factors that are directly related to the above aspects of site plan review.

DECISION

The Hartford Planning Commission, based upon the forgoing Findings of Fact and Conclusions of Law, hereby approves #23-19 by 474 Hartford Ave. LP and Twin Pines Housing Trust (owners/applicants) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for an amendment to an approved multi-unit dwelling to allow temporary construction access on Goudreau Street, lot 43-0074-001, 747 Hartford Avenue, Wilder, in a Planned Development **on the condition that before a Zoning Permit is issued:**

- **Notes E6 and E7 on the Erosion Prevention and Sediment Control Plan, Sheet C1.2,**

are updated to indicate that Hartford Avenue and Goudreau Street will be used as construction accesses for all phases of construction.

- **The applicant verifies that changes to the plans approved by the Zoning Board of Adjustment are limited to those required by the Board.**

This decision is also subject to the condition that no modification or expansion shall be made to the project as described and limited in the above Findings of Fact and Conclusions of Law without the written approval of the Hartford Zoning Board of Adjustment and/or the Hartford Planning Commission. This decision may be revoked, and a new application or permit required if conditions and findings are violated or modified without written approval.

The applicant is responsible for insuring compliance with all applicable State and Federal regulations pertaining to this application.

Those in favor:

Those in opposition:

Those not participating:

Dated at Hartford, Vermont this ____ day of November 2023.

HARTFORD PLANNING COMMISSION

By:_____
Chairperson/Vice-Chairperson

Appeal Rights: An interested person who has participated in the proceeding related to this decision has the right to appeal this decision to the Vermont Environmental Court, pursuant to 24 V.S.A. s. 4471 and V.R.E.C.P.5, in writing, within 30 days of the date of this decision. If you fail to appeal this decision, your right to challenge this decision at some future time may be lost because you waited too long. You will be bound by this decision, pursuant to 24 V.S.A. s. 4472 (d) (exclusivity of remedy; finality).

EXHIBIT LIST

1. Application #23-19
2. Letter from Nathan Stearns dated October 31, 2023
3. Letter from Jeff Ingram dated October 16, 2023
4. Construction Phasing Plan Sheet C1.4 (and blow up of detail)

5. Erosion Prevention and Sediment Control Plan, Sheet C1.2 indicating a stabilized construction entrance on Hartford Avenue and Goudreau Street

Sheehey
FURLONG & BEHM P.C.
Attorneys at Law

Nathan H. Stearns
nstearns@sheeheyvt.com

October 31, 2023

Jo-Ann Ells, Zoning Administrator
Hartford Planning & Zoning
Hartford Municipal Building
2nd Floor Room 201 171 Bridge Street
White River Junction, VT 05001

Re: Application to use Goudreau Street access as temporary construction access
Landowner/Applicant: 747 Hartford Avenue LP
Property: 747 Hartford Avenue, Parcel 043-0074-001

Dear Jo-Ann:

Twin Pines Housing Trust, Inc. has submitted an application seeking approval to use the access onto Goudreau Street for temporary construction access in all three phases of the construction project for the 18 unit multifamily project at 747 Hartford Avenue.

The project received conditional use approval in ZBA Decision #06-22, dated May 25, 2022, and site plan approval in PC Decision #22-13, dated June 23, 2022. A zoning permit was duly issued, and the project is currently under construction.

The Owner/Applicant recently applied to the Department of Public Works for an access permit onto Goudreau Street and was denied. The reason given for denial was the approved site plans did not designate the access to Goudreau Street as a construction access. Owner/Applicant believes that the approved site plans properly designate the access to Goudreau Street as a construction access, and that the plans and testimony given during site plan review contemplated use of the access to Goudreau Street for construction access during phase 1 of the construction as the project was previously approved in Decision #06-22 and Decision #22-13.

Upon reviewing logistical needs of construction vehicles accessing the project, Owner/Applicant requests that the Zoning Board of Adjustment and the Planning Commission approve the Goudreau Street access for temporary construction access for all three phases of the construction project based on safety and site considerations.

Site Plan sheet C1.4, Construction Staging Plan (See Exhibit 1), shows the construction phasing for the project. Where construction Phase 1 borders Goudreau Street, there is a plainly marked caption "Construction Access/Temporary Phase 2 Parking Access." While the Erosion Prevention and Sediment Control plan (Sheet C1.2) shows a stabilized construction entrance off of Hartford Ave, that was for Phases 2 and 3.

The transcript of the June 13, 2020 Planning Commission hearing contains a specific acknowledgment that the phase 1 construction access would be off of Goudreau:

T. Dayman: When you say Phase 1 will be opened up during Phase 2, oh I see, so the access will be off of Goudreau for Phase 1 during that time.

N. Stearns: I'm going to need some help from Adam to answer this.

A. Morse: It's actually on that plan too under the construction staging notes, so. The idea was to have access off, temporary access off Goudreau for just during construction.

(Planning Commission Meeting Recording 6/13/2022, 2:07:07 to 2:07:43).

We also note that while the minutes of the Planning Commission's June 20, 2023 hearing contain a notation that the project architect, Doug Sonsalla, "explained that a construction manager would be hired, and part of their responsibilities would be to make sure no traffic is on Goudreau Street during construction," the full transcript of that hearing clarifies that his statements were made for illustrative purposes. Mr. Sonsalla's remarks were made in the context of explaining how the construction manager would manage access, and were not intended to override the site plans or the previous specific statement that phase 1 construction access would be off of Goudreau.

Although the Applicant originally anticipated using Goudreau as Phase 1 construction access, now that the project is underway the realities of the site demonstrate that the Goudreau access would ideally be available for construction access during all three phases. As discussed in the attached letter from Construction Manager, Jeff Ingram (Exhibit 2), the use of the Goudreau access for construction access is based on safety and logistical reasons including congestion in the existing parking lot and avoiding having trucks with trailers back out onto Hartford Avenue.

Please let me know if you need any additional information. Thank you for your assistance.

Sincerely,

SHEEHEY FURLONG & BEHM P.C.

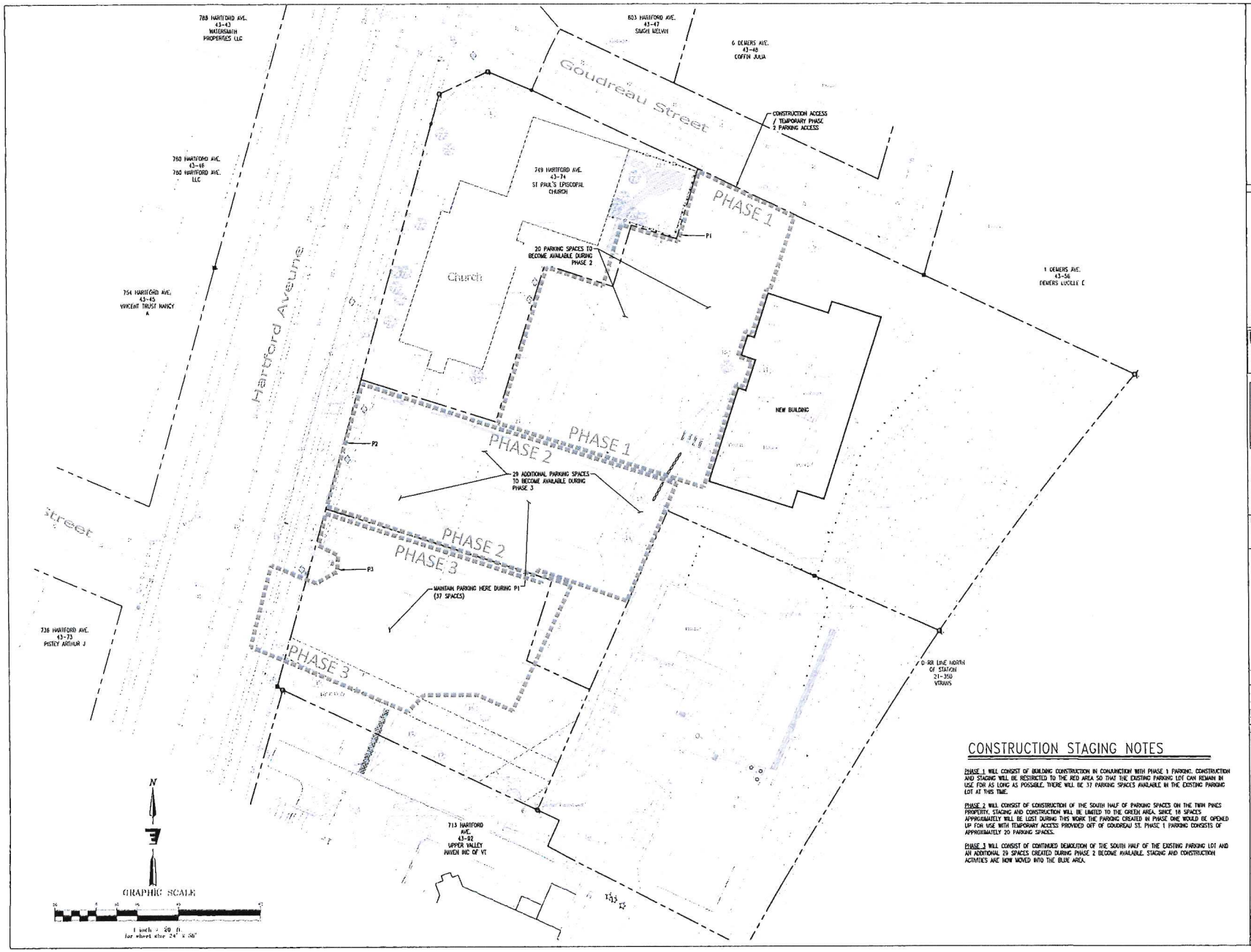
/s/ Nathan H. Stearns

Nathan H. Stearns

Enclosures
cc: Andrew Winter
David Ormiston
Adam Morse
Doug Sonsalla

Jeff Ingram

EXHIBIT 1



CONSTRUCTION STAGING NOTES

PHASE 1 WILL CONSIST OF BUILDING CONSTRUCTION IN CONJUNCTION WITH PHASE 1 PARKING. CONSTRUCTION AND STAGING WILL BE RESTRICTED TO THE RED AREA SO THAT THE EXISTING PARKING LOT CAN REMAIN IN USE FOR AS LONG AS POSSIBLE. THERE WILL BE 37 PARKING SPACES AVAILABLE IN THE EXISTING PARKING LOT AT THIS TIME.

PHASE 2 WILL CONSIST OF CONSTRUCTION OF THE SOUTH HALF OF PARKING SPACES ON THE TWIN PINES PROPERTY. STAGING AND CONSTRUCTION WILL BE LIMITED TO THE GREEN AREA. SINCE 19 SPACES APPROXIMATELY WILL BE LOST DURING THIS WORK THE PARKING CREATED IN PHASE ONE WOULD BE OPENED UP FOR USE WITH TEMPORARY ACCESS PROVIDED OFF OF GOUDREAU ST. PHASE 1 PARKING CONSISTS OF APPROXIMATELY 20 PARKING SPACES.

PHASE 3 WILL CONSIST OF CONTINUED DEMOLITION OF THE SOUTH HALF OF THE EXISTING PARKING LOT AND AN ADDITIONAL 29 SPACES CREATED DURING PHASE 2 BECOME AVAILABLE. STAGING AND CONSTRUCTION ACTIVITIES ARE NOW MOVED INTO THE BLUE AREA.

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White River Junction, Vermont

Upper Valley Haven

TWIN PINES HOUSING

Issued For:
CONDITIONAL USE AND SITE PLAN REVIEW

PRELIMINARY NOT FOR CONSTRUCTION

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Issue Date: April 6, 2022

Revisions

No.	Description	Date

CONSTRUCTION STAGING PLAN

Project No.: 21654

C1.4

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BLOW UP OF SHEET C1.4

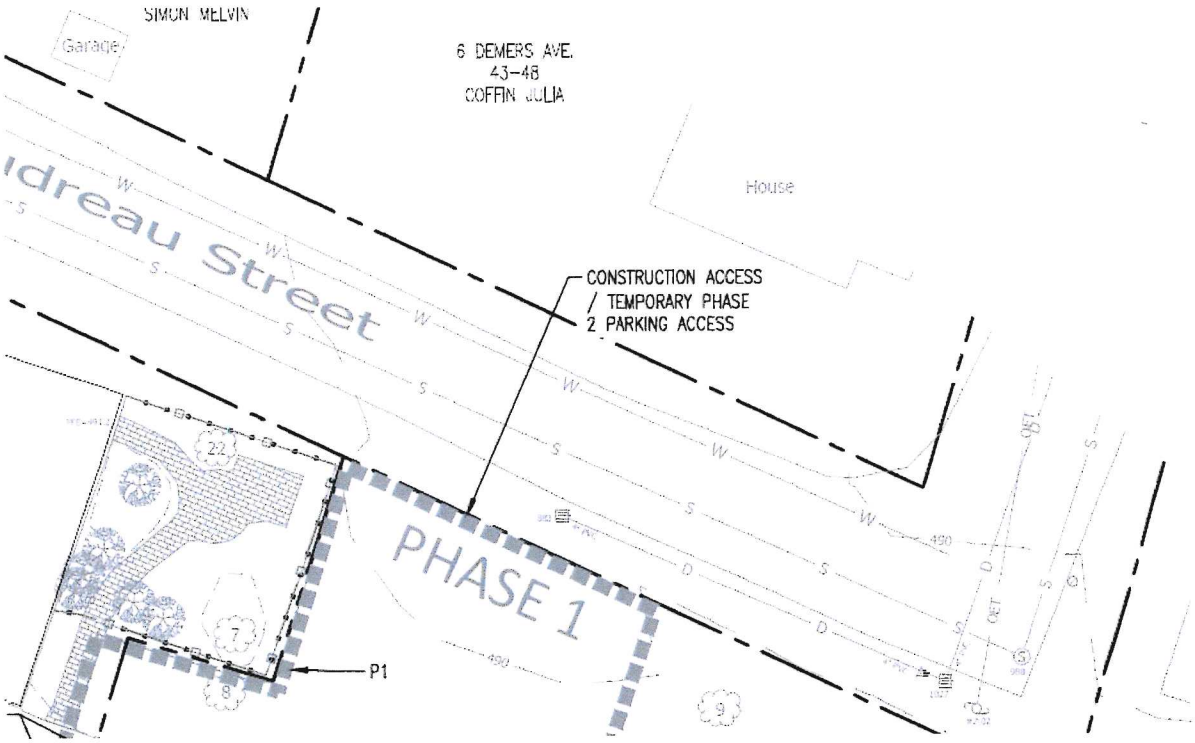


EXHIBIT 2

INGRAM
CONSTRUCTION CORPORATION

917 ROUTE 12
WESTMORELAND, NH 03467

TELEPHONE: 603-357-0759
FAX: 603-357-9426

October 16, 2023

Nathan H. Stearns
Sheehey Furlong & Behm P.C.
205 Billings Farm Road. Unit 4B
White River Junction, VT 05001

Re: 747 Harford Housing Construction Access

Dear Mr. Stearns,

The phased construction approach to this project to enable the continued use of the only parking lot available for St. Paul's Episcopal Church and The Haven is made possible by the continued use of Goudreau Street as the primary construction access point during building construction.

This construction access is critical for the following reasons:

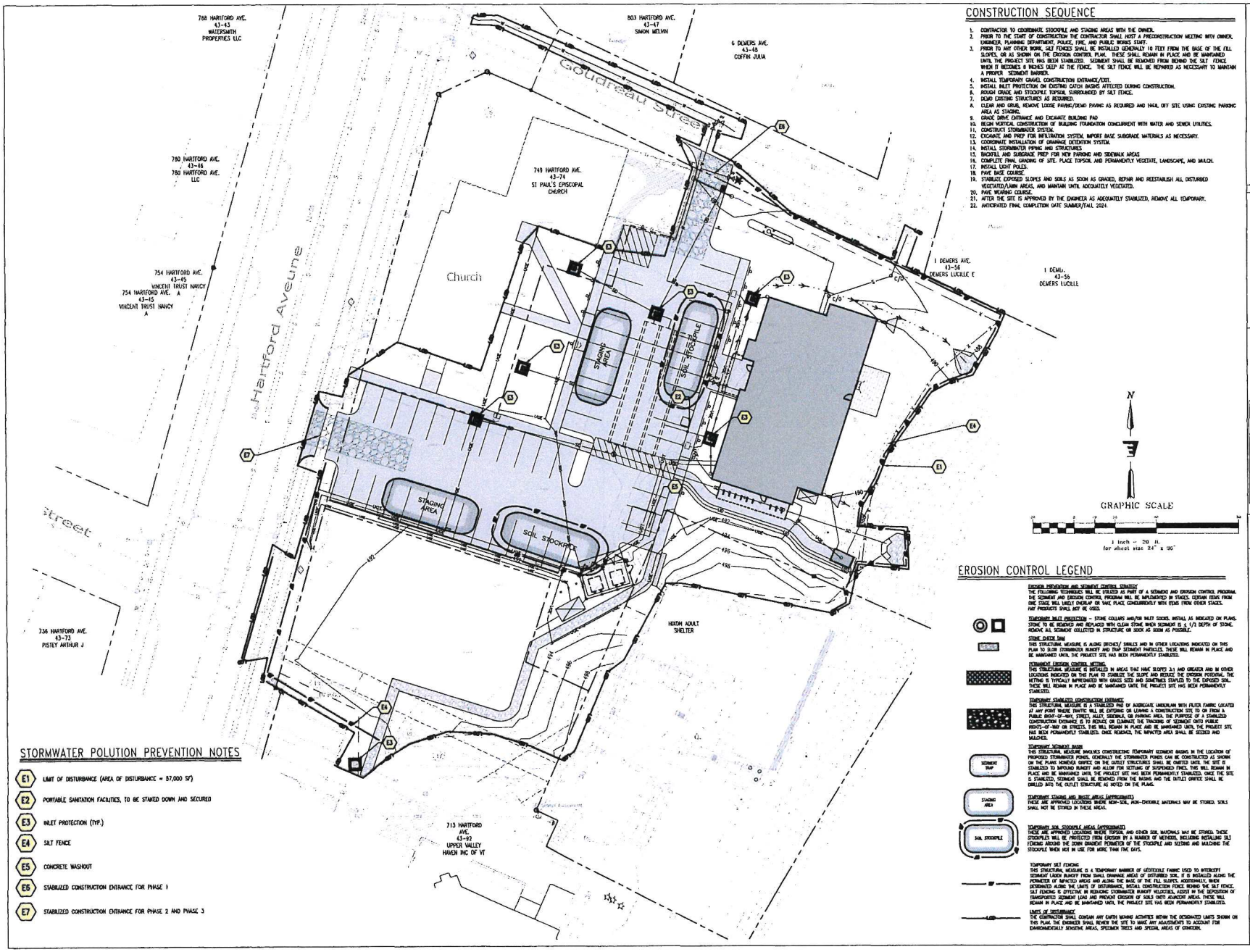
- The parking lot is at or near capacity during most business hours. If this parking lot were to be the only access, two thirds of the lot would need to be closed to provide turning radius for delivery trucks to enter the site. Straight trucks would then need to turn around after the delivery and exit via the parking lot due to the constraints of the available staging area in the designated phase 1 area.
- We had planned on tractor trailer deliveries accessing through the parking lot when coordinated with the Haven so they could get to the site, and then exiting via a left turn on to Goudreau. If this access is closed, the trucks would need to be backed out of the site through the parking lot and out onto Hartford Avenue. There is always a significant amount of pedestrian traffic in the parking lot, not to mention vehicle traffic on Hartford Avenue. This approach eliminates potential hazards to both pedestrian and vehicular traffic.

We will be providing signage on and around the site to control the flow of construction traffic entering and exiting the site. Among those signs will be a "No ~~Left~~ Right Turn" sign from the site onto Goudreau Street, so vehicles can safely exit the site and access Hartford Avenue.

We hope the use of Goudreau Street as the main access to the site can continue, as it provides the safest option for pedestrians and traffic.

Sincerely,

Jeffrey D. Ingram
President



CONSTRUCTION SEQUENCE

1. CONTRACTOR TO COORDINATE STOCKPILE AND STAGING AREAS WITH THE OWNER.
2. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL HOST A PRECONSTRUCTION MEETING WITH OWNER, ENGINEER, PLANNING DEPARTMENT, POLICE, FIRE, AND PUBLIC WORKS STAFF.
3. PRIOR TO ANY OTHER WORK, SILT FENCES SHALL BE INSTALLED GENERALLY 10 FEET FROM THE BASE OF THE FILL SLOPES, OR AS SHOWN ON THE EROSION CONTROL PLAN. THESE SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES 6 INCHES DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
4. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT.
5. INSTALL INLET PROTECTION ON EXISTING CATCH BASINS AFFECTED DURING CONSTRUCTION.
6. ROUGH GRADE AND STOCKPILE TOPSOIL SURROUNDED BY SILT FENCE.
7. DEMO EXISTING STRUCTURES AS REQUIRED.
8. CLEAR AND GRUB, REMOVE LOOSE PAVING/DEMO PAVING AS REQUIRED AND HAUL OFF SITE USING EXISTING PARKING AREA AS STAGING.
9. GRADE DRIVE ENTRANCE AND EXCAVATE BUILDING PAD
10. BEGIN VERTICAL CONSTRUCTION OF BUILDING FOUNDATION CONCURRENT WITH WATER AND SEWER UTILITIES.
11. CONSTRUCT STORMWATER SYSTEM.
12. EXCAVATE AND PREP FOR INFILTRATION SYSTEM. IMPORT BASE SUBGRADE MATERIALS AS NECESSARY.
13. COORDINATE INSTALLATION OF DRAINAGE DETENTION SYSTEM.
14. INSTALL STORMWATER PIPING AND STRUCTURES
15. BACKFILL AND SUBGRADE PREP FOR NEW PARKING AND SIDEWALK AREAS
16. COMPLETE FINAL GRADING OF SITE. PLACE TOPSOIL AND PERMANENTLY VEGETATE, LANDSCAPE, AND MULCH.
17. INSTALL LIGHT POLES.
18. PAVE BASE COURSE.
19. STABILIZE EXPOSED SLOPES AND SOILS AS SOON AS GRADED, REPAIR AND REESTABLISH ALL DISTURBED VEGETATED/LAWN AREAS, AND MAINTAIN UNTIL ADEQUATELY VEGETATED.
20. PAVE WEARING COURSE.
21. AFTER THE SITE IS APPROVED BY THE ENGINEER AS ADEQUATELY STABILIZED, REMOVE ALL TEMPORARY.
22. ANTICIPATED FINAL COMPLETION DATE SUMMER/FALL 2024.

EROSION CONTROL LEGEND

EROSION PREVENTION AND SEDIMENT CONTROL STRATEGY
THE FOLLOWING TECHNIQUES WILL BE UTILIZED AS PART OF A SEDIMENT AND EROSION CONTROL PROGRAM. THE SEDIMENT AND EROSION CONTROL PROGRAM WILL BE IMPLEMENTED IN STAGES. CERTAIN ITEMS FROM ONE STAGE WILL LIKELY OVERLAP OR TAKE PLACE CONCURRENTLY WITH ITEMS FROM OTHER STAGES. HAY PRODUCTS SHALL NOT BE USED.

TEMPORARY INLET PROTECTION – STONE COLLARS AND/OR INLET SOCKS, INSTALL AS INDICATED ON PLANS. STONE TO BE REMOVED AND REPLACED WITH CLEAN STONE WHEN SEDIMENT IS ± 1/3 DEPTH OF STONE. REMOVE ALL SEDIMENT COLLECTED IN STRUCTURE OR SOCK AS SOON AS POSSIBLE.

STONE CHECK DAM
THIS STRUCTURAL MEASURE IS ALONG DITCHES/ SWALES AND IN OTHER LOCATIONS INDICATED ON THIS PLAN TO SLOW STORMWATER RUNOFF AND TRAP SEDIMENT PARTICLES. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

PERMANENT EROSION CONTROL MATTING
THIS STRUCTURAL MEASURE IS INSTALLED IN AREAS THAT HAVE SLOPES 3:1 AND GREATER AND IN OTHER LOCATIONS INDICATED ON THIS PLAN TO STABILIZE THE SLOPE AND REDUCE THE EROSION POTENTIAL. THE MATTING IS TYPICALLY IMPREGNATED WITH GRASS SEED AND SHREDDED STAPLED TO THE EXPOSED SOIL. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
THIS STRUCTURAL MEASURE IS A STABILIZED PAD OF AGGREGATE UNDERLAIN WITH FILTER FABRIC LOCATED AT ANY POINT WHERE TRAFFIC WILL BE EXITING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT-OF-WAY, STREET, ALLEY, SIDEWALK, OR PARKING AREA. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY OR STREETS. THIS WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED. ONCE REMOVED, THE IMPACTED AREA SHALL BE SEEDED AND MULCHED.

TEMPORARY SEDIMENT BASIN
THIS STRUCTURAL MEASURE INVOLVES CONSTRUCTING TEMPORARY SEDIMENT BASINS IN THE LOCATION OF PROPOSED STORMWATER PONDS. GENERALLY THE STORMWATER PONDS CAN BE CONSTRUCTED AS SHOWN ON THE PLANS, HOWEVER ORIFICE ON THE OUTLET STRUCTURES SHALL BE OMITTED UNTIL THE SITE IS STABILIZED TO IMPOUND RUNOFF AND ALLOW FOR SETTLING OF SUSPENDED FINES. THIS WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED. ONCE THE SITE IS STABILIZED, SEDIMENT SHALL BE REMOVED FROM THE BASINS AND THE OUTLET ORIFICE SHALL BE DRILLED INTO THE OUTLET STRUCTURE AS NOTED ON THE PLANS.

TEMPORARY STAGING AND WASTE AREAS (APPROXIMATE)
THESE ARE APPROVED LOCATIONS WHERE NON-SOIL, NON-ERODIBLE MATERIALS MAY BE STORED. SOILS SHALL NOT BE STORED IN THESE AREAS.

TEMPORARY SOIL STOCKPILE AREAS (APPROXIMATE)
THESE ARE APPROVED LOCATIONS WHERE TOPSOIL AND OTHER SOIL MATERIALS MAY BE STORED. THESE STOCKPILES WILL BE PROTECTED FROM EROSION BY A NUMBER OF METHODS, INCLUDING INSTALLING SILT FENCING AROUND THE DOWN GRADIENT PERIMETER OF THE STOCKPILE AND SEEDING AND MULCHING THE STOCKPILE WHEN NOT IN USE FOR MORE THAN FIVE DAYS.

TEMPORARY SILT FENCING
THIS STRUCTURAL MEASURE IS A TEMPORARY BARRIER OF GEOTEXTILE FABRIC USED TO INTERCEPT SEDIMENT LADEN RUNOFF FROM SMALL DRAINAGE AREAS OF DISTURBED SOIL. IT IS INSTALLED ALONG THE PERIMETER OF IMPACTED AREAS AND ALONG THE BASE OF THE FILL SLOPES. ADDITIONALLY, WHERE DESIGNATED ALONG THE LIMITS OF DISTURBANCE, INSTALL CONSTRUCTION FENCE BEHIND THE SILT FENCE. SILT FENCING IS EFFECTIVE IN REDUCING STORMWATER RUNOFF VELOCITIES, ASSIST IN THE DEPOSITION OF TRANSPORTED SEDIMENT LOAD AND PREVENT EROSION OF SOILS ONTO ADJACENT AREAS. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

LIMITS OF DISTURBANCE
THE CONTRACTOR SHALL CONFINE ANY EARTH MOVING ACTIVITIES WITHIN THE DESIGNATED LIMITS SHOWN ON THIS PLAN. THE ENGINEER SHALL REVIEW THE SITE TO MAKE ANY ADJUSTMENTS TO ACCOUNT FOR ENVIRONMENTALLY SENSITIVE AREAS, SPECIMEN TREES AND SPECIAL AREAS OF CONCERN.

STORMWATER POLUTION PREVENTION NOTES

- E1 LIMIT OF DISTURBANCE (AREA OF DISTURBANCE = 87,000 SF)
- E2 PORTABLE SANITATION FACILITIES, TO BE STAKED DOWN AND SECURED
- E3 INLET PROTECTION (TYP.)
- E4 SILT FENCE
- E5 CONCRETE WASHOUT
- E6 STABILIZED CONSTRUCTION ENTRANCE FOR PHASE 1
- E7 STABILIZED CONSTRUCTION ENTRANCE FOR PHASE 2 AND PHASE 3

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TWIN PINES HOUSING

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Issue Date: August 18, 2023

Revisions

No.	Description	Date
1	ADDED GOUDREAU ST. STABILIZED ENTRANCE	10/30/2023

EROSION PREVENTION AND SEDIMENT CONTROL PLAN - TWIN PINES LOT 43-74-1

Project No.: 21654

C1.2

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Application #23-20

Northern Stage Company

1. 23-20

DRAFT
FINDINGS OF FACT
CONCLUSIONS OF LAW
AND DECISION

HARTFORD PLANNING COMMISSION

Application #23-20 by Northern Stage Company
for Site Development Plan Approval
for 18 dwelling units in three Multi-Unit Buildings
lots 45-0150-000, 45-0151-000, and 45-0152-000
140, 146, 160 and 178 Gates Street, White River Junction
in CB and Design Review Districts

This decision pertains to application #23-20 by Northern Stage Company (owners/applicants) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for 18 dwelling units in three Multi-Unit Buildings, lots 45-0150-000, 45-0151-000, and 45-0152-000, 140, 146, 160 and 178 Gates Street, White River Junction, in CB and Design Review Districts

FINDINGS OF FACT

Based upon the information contained in the exhibits for this application (see attached list) and the evidence adduced at the Planning Commission meeting of November 13, 2023 the Hartford Planning Commission makes the following Findings of Fact:

General Information

1. The owner of record of lot 45-0150-000, is Northern Stage Company who acquired the lot on 04-01-21. The deed is recorded in volume 584, page 734 of the Hartford Land Records.

   The owner of record of lot 45-0151-000, is Northern Stage Company who acquired the lot on 03-28-22. The deed is recorded in volume 599, page 180 of the Hartford Land Records.

   The owner of record of lot 45-0152-000, is Northern Stage Company who acquired the lot on 04-01-20. The deed is recorded in volume 569, page 324 of the Hartford Land Records.

2. The lots are class one (1), municipal water and wastewater.

3. Lot number, address, development, and lot size:

Lot#	Address	Development	Size
45-0150-000	178 Gates St.	4 one-bedroom apartments	0.04 acres/17,424 sq. ft.
45-0151-000	160 Gates St.	Undeveloped	0.37 acres/15,924 sq ft.
45-0152-000	140 Gates St. 146 Gates St.	2, two-bedroom apartments 4, one-bedroom apartments Garage	0.63 acres/27,577 sq. ft.

This Application

4. The applicant proposes to construct 18 dwelling units in three multi-unit dwellings with a mix of studio, one-bedroom, and two-bedroom apartments.

5. According to the applicant, "Northern Stage is a professional, regional, rural theater company that hires almost exclusively out-of-state artists and staff members due to the specialized nature of our work. Many of our employment contracts are short-term or seasonal coinciding with the various and ongoing professional theatrical productions we produce and educational programs we offer at the Barrette Center for the Arts located at 74 Gates Street in the heart of White River Junction, VT.

   Without housing to offer our potential hires, we aren't able to bring them to the Upper Valley for employment. Additionally, our employment contracts with members of the actors, stage managers, directors, designers, musicians, and choreographers unions require Northern Stage to provide housing at no cost to the union member. Additional union contract requirements are placed on Northern Stage if the housing we provide for union members is more than one mile away from downtown White River Junction.

   By acquiring three properties on Gates Street within one block of its performance venue - the Barrette Center for the Arts - Northern Stage is now in a position to develop an 18-unit housing facility as well as more off street parking within a one-minute walk of its existing performance, administrative, and production facilities.

   This project will allow Northern Stage to better serve the housing needs of our short-term, seasonal, and year-round staff and will reduce the number of parking spaces used by Northern Stage visiting artists and staff in the downtown municipal parking lot (located behind the Barrette Center for the Arts) due to the fact that more of them will be living downtown and walking to work." (See exhibit #6)

6. There are no setbacks in the CB zoning district.

7. Allowable residential density in the CB zoning district is 2.5 FAR. Given this, 83,370 sq. ft. of residential floor area could be created (17,424 + 15,924 x 2.5= 83,370).

   The applicant proposes 12,550 sq. ft. of residential floor area.

8. Outdoor amenities include a "Pocket Park" in the front of the lot and a fenced "backyard" area.

   According to the applicant, "materials used in the Pocket Park include concrete and stone seat walls and fire-pit, concrete sidewalks and stone-dust walkways, and precast pavers set in stone-dust. Stone-dust walkways are gently curving and intended to provide "short cuts" between building entrances and walking destination points. Seat walls, paved areas and a fire pit feature are located at the intersections of stone-dust walkways to encourage informal gatherings and interactions.

3. 23-20

Landscape features include sloping contours to enhance privacy or flat contours to encourage use of lawn areas. Plantings include street trees that are spaced along the public sidewalk at regular intervals and in what also appears to be a random location within the Pocket Park.

Lighting (meeting Town's design standard for pole and globe) is also located in the same manner as the street trees. Additional plantings include shrubs of various heights located to enhance privacy of ground floor apartments.

Toward the parking area is located a fenced "backyard" which can serve as play space for kids and pets. Concrete sidewalks and stone-dust walkway short-cuts link all building entrances to parking area, trash/recycling enclosure and public sidewalk."

(See exhibit #2, #6 and #8)

9. The applicant provided the following description of materials to be used on the exterior of the building.

Building Exteriors - The exterior materials anticipated for use on the housing project are similar in appearance and style to the exterior materials used on existing buildings of similar mass and form that are located in the Design Review District and surrounding community.

Materials on buildings A, B and C are proposed to be common to one another but will vary in color(s) used from building to building, in a complimentary and pleasing fashion.

Proposed detailing of the exterior materials is intended to convey an honest sense of modern Vermont vernacular, without suggesting historic replication, or creating a false stage-set impression of contemporary in-town housing.

- The primary exterior siding material is HardiePlank Lap Siding. The proposed "field" siding is traditional clapboards with 4 inch exposure. Siding "accents" at adjacent to entrances and porches is proposed to be a shiplap or board-and-batten profile. Use of fiber cement anticipates less long-term maintenance issues and a more consistent appearance over time versus use of vinyl or wood siding products.
- The color for the "field" siding of each building (A, B and C) is finished in one of three (3) off-white colors (colors compatible with the putty color of the existing vinyl siding at 142 and 146 Gates Street). The "accent" siding of each building (A, B and C) is finished in one of three (3) accent colors (light green, rusty red or earthy yellow historic colors compatible with each other).
- Trim at water table, corner boards, rakes and eaves are flat and contemporary in profile. Trim color at each building (A, B and C) is painted to match the field color of the clapboard siding.
- All exterior doors are proposed to be finished natural wood (stained with polyurethane topcoat) with door frames painted to match the trim color at each

building (A, B and C). Doors are proposed as half-glass insulated doors with two (2) raised panels. Door glazing is divided into nine (9) lites to be compatible with windows.

- Window sash and frames each building (A, B and C) are proposed to be white with flat window casings painted to match the trim color at each building (A, B and C). Windows are proposed to be double-hung windows with operable openings sufficient to accommodate emergency rescue size requirements. Upper window sash is proposed to be divided into six (6) lites with lower window sash of one (1) lite to provide contemporary aesthetic and to be compatible with similar windows located in the surrounding area.
- Roofs at each building (A, B and C) are proposed as charcoal grey asphalt shingles with a slight color blend added to somewhat lighten the appearance and be compatible with the siding colors.
- Roof vents are located in peaks of the gable ends of the roofs and are proposed to be painted to match the trim color at each building (A, B and C).

(See exhibit #6)

10. Development and Demolition in the Design Review District requires review by the Design Review Committee as outlined in section 260-46 of the Zoning Regulations.

On October 26, 2023, the Design Review Committee approved the application as proposed.

(See exhibit #5)

11. The Regulations require that in deciding on an application, the Design Review Committee and Planning Commission shall consider the following criteria:

A. The way in which the project preserves and/or enhances the integrity of the historic architecture of the downtown and the specific buildings.

The applicant provided the following in response to this requirement:

Hartford's architectural convention displays diversity and an approach demonstrating numerous architectural styles relevant to the era the buildings were constructed. There are certain architectural themes relevant to this discussion:

- Program requirement for a total 18 apartment units is broken down and subdivided into smaller masses and elements of three (3) distinct buildings, A, B and C. These buildings are further defined through expression of particular elements (e.g.: sloped roof forms, one (1) and two (2) story heights, organization about Pocket Park, etc.), material selection (e.g.: siding, doors, windows, trim, cornice, roofing, etc.), and colors.
- The residential and design review district buildings often demonstrate a highly functional and vernacular construction aesthetic which relates to a significant history of community development.
- Modern solutions to the need for affordable housing emphasize community

space and offer views that enhance vistas within the district.

The proposed project respect these architectural ideas by implementation of the above items in the massing, form, scale, material selection, and arrangement about the proposed Pocket Park towards the western end of Gates Street.

B. The way in which the project uses historically appropriate or compatible materials where possible in rehabilitation and new construction projects.

The applicant provided the following in response to this requirement:

Please see Appendix D: Sheets A2.1, A 2.2, A2.3, A2.4 for Plans of Buildings A, B and C; Sheets A4.1 and A4.2 for Elevations of Buildings A, B and C; and Sheet A2.1 3D Views for three dimensional illustrations of Buildings A, B and C.

- Clapboard siding in compatible colors at buildings A, B and C.
- Accent siding and colors at porches and entries of buildings A, B and C.
- Windows and doors of similar character to historic elements.
- Sloped roof forms with dark colored roofing.
- Segmented building masses with multistory heights.
- Adjacent Gates Street housing structures with various color and tone schemes of clapboard siding.

C. The way in which the project respects existing setbacks, scale and massing when developing a new building or addition.

The applicant provided the following in response to this requirement:

Please see Appendix D: Sheets L1.1, L1.2 and C2.0 for Site Plan; Sheets A2.1, A 2.2, A2.3, A2.4 for Plans of Buildings A, B and C; Sheets A4.1 and A4.2 for Elevations of Buildings A, B and C; and Sheet A2.1 3D Views for three dimensional illustrations of Buildings A, B and C.

- Front facades of proposed buildings B and C are similar to the current setbacks of 146, 128, and 110 Gates Street. Building A is setback further to create Pocket Park in keeping with creating outdoor space at termination of development on Gates Street.
- Building A, B and C orientation is similar to the orientation of the adjacent buildings on this section of Gates Street.
- The proposed building massing and scale respect and relate to the massing and scale of building throughout the community.

D. The way in which the project employs appropriate lighting patterns and levels that reflect use, safety, and security.

The applicant provided the following in response to this requirement:

Please see Appendix B: IESC Site Lighting Photometric Plans and Exterior Lighting

Cut Sheets.

- The attached lighting intensity plan and fixture cut sheets illustrate lighting for safe, secure and use lighting that respects the residential transition of the west end of Gates Street while offering full functionality to the occupants of the proposed project.
- Proposed lighting at the public sidewalk and Pocket Park is consistent with Town streetlight standard.
- Proposed lighting at buildings and off-street parking area are LED down-light/cut-off fixtures to minimize sky-glow and light trespass.

E. The way in which the project implements streetscape elements on a building by building basis.

The applicant provided the following in response to this requirement:

Please see Appendix D: Sheets L1.1, L1.2 and C2.0 for Site Plan; Sheets A2.1, A 2.2, A2.3, A2.4 for Plans of Buildings A, B and C; Sheets A4.1 and A4.2 for Elevations of Buildings A, B and C; and Sheet A2.1 3D Views for three dimensional illustrations of Buildings A, B and C.

- Sheet A2.1 3D Views indicate the diverse roof and elevation profiles of buildings A, B and C along Gates Street and arranged around the Pocket Park. The roof profiles ramble in a stepped manner which consistently follows a similar scale and of 8/12 and 3/12 slopes and roof pitches. The proposed project continues the rhythm of the roof typology and provides a relatable conclusion to the west end of Gates Street.
- The lower left hand image on Sheet A2.1 3D Views shows the streetscape fronts of each of the buildings. The proposed project relates to the residential streetscape of adjoining buildings on the south side of Gates Street.
- Sheet L1.2 and L1.3 illustrate Gates Street streetscape tree plantings. The proposed project introduces a consistent tree streetscape pattern that reconnects the west end of Gates Street to Church Street, where the tree streetscape connects to North Main Street
- The proposed project also introduces and allows for the sidewalk on the western end of Gates street to connect to Church Street.

F. The way in which the project preserves the landscape, including existing terrain, trees, and vegetation to the extent feasible.

The applicant provided the following in response to this requirement:

- As noted above in parts (c) and (e), the street front and setback of the proposed project on 160 -178 Gates Street improves the street landscape pattern and resolve issues with the current existing terrain which include lack of pedestrian accessibility and added tree plantings.
- During the conceptual design process we investigated numerous iterations of the housing project. The proposed iteration provides the least amount of hillside

disturbance on the southwestern edge of the lot. The proposed site plan provides minimal disruption to the existing trees and the proposed landscaping plan preserves the natural character of the hillside tree-scape.

- Prior to commencement of construction, Northern Stage anticipates review of the existing hillside vegetation with an arborist or forestry consultant. After this review, Northern Stage anticipates proceeding with forest management activities recommended by the consultant.

G. The way in which the project promotes accessibility and rear access from parking areas to commercial buildings.

The applicant provided the following in response to this requirement:

Please see Appendix D: Sheets L1.1, L1.2 and C2.0 for Site Plans; Sheets A2.1, A 2.2, A2.3, A2.4 for Plans of Buildings A, B and C; Sheets A4.1 and A4.2 for Elevations of Buildings A, B and C; and Sheet A2.1 3D Views for three dimensional illustrations of Buildings A, B and C.

- Efficient accessibility: Buildings share a common front sidewalks and walkways that allow easy access to all buildings via the Pocket Park.
- Handicapped accessibility: Handicap parking is located near the parking entrance. Handicap accessible sidewalks allow easy travel to all buildings.

H. The way in which the project provides efficient and effective vehicular and pedestrian circulation.

The applicant provided the following in response to this requirement:

Please see Appendix D: Sheets L1.1, L1.2 and C2.0 for Site Plans Buildings A, B and C.

- Vehicular circulation is provided for emergency and service vehicle access.
- 25 tenant parking spaces are provided for 140, 146, 160 and 178 Gates Street.
- Pedestrian circulation consists of exterior and interior circulation. Exterior circulation is provided to two (2) entrances at each building and individual exterior entrances to various ground level apartments. Interior circulation provides access to all apartment units, laundry room and mechanical room within each building A, B and C.

I. The way in which the details being proposed for the building including window, door, and trim are compatible with the existing and adjacent buildings' historic and design qualities

The applicant provided the following in response to this requirement:

Please see Appendix D; Sheets A2.5, A10.1 and A10.2 illustrating typical roof, trim, door, and window details compatible with existing historic design qualities throughout the design district.

(See exhibit #7)

12. The applicant proposes to demolish the existing multi-unit dwelling located at 178 Gates Street and the garage located at 140-146 Gates Street.

The garage structure at the back of 140-146 Gates Street is a contributing structure in the White River Junction Downtown Historic District and requires review under section 260-46 of the Zoning Regulations, Design Review District.

Section 260-46(A)(12)(b) of the Zoning Regulations provides:

The applicant shall provide evidence at the time of the demolition request that one of the following conditions has been met:

[1] Retention of the building is not feasible because it is structurally unsound as determined by a structural engineer licensed in the State of Vermont; or

[2] Rehabilitation of the building, or portion thereof, would cause undue financial hardship. The applicant must provide clear and convincing evidence that any reasonable return cannot be obtained from the building without approval of the request for demolition.

The applicant provided the following to support the approval of the demolition under section 260-46(A)(12)(b)[2] of the Zoning Regulations:

> The garage structure at the rear of 146 Gates Street is a contributing structure in the White River Junction Downtown Historic District. As shown in the project site plans, removal of this structure allows for enough ground level surface area to be reconfigured for the creation of the necessary off-street parking spaces for the project and will serve the parking needs of the housing units at 146 and 140 Gates Street as well. Any attempt to rehabilitate the garage structure will not only fall far short of the parking requirement goal, it would also create an undue financial hardship.
>
> Please see Appendix F: Report on Financial Hardship of Rehabilitation of the Garage Structure at 146 Gates Street which provides information supporting demolition of the garage structure due to undue financial hardship.

The Hartford Historic Preservation Commission photo documented the structure in 2022.

(See exhibit #7)

The dwelling located at 178 Gates Street is not a contributing structure in the White River Junction Downtown Historic District. Therefore, review under the Design Review District requirements in the Zoning Regulations is not required.

13. The building will be equipped with a sprinkler system meeting applicable fire codes.

14. Access to the project is proposed via a single curb cut on Gates Street.

15. Turning movement plans for a ladder truck and trash hauler were provided by the applicant. (See exhibit #2)

16. Sidewalks exist along Gates Street and interior walkways will provide pedestrian access to and from the site.

17. Required Parking

When completed, there will be a total of 24 housing units on the 140 - 160 Gates Street parcels: two apartments at 140 Gates Street, four at 146 Gates Street, and eighteen new apartments in the proposed development.

Forty-eight (48) parking spaces are required for the proposed dwelling units, (24 x 2= 48)

The applicant proposes to permanently reduce on-site parking spaces to 25 (including 2 accessible parking spaces) or approximately 1 per unit.

18. The project is located in the Downtown White River Junction Parking District. Development projects within this district may use off-site parking anywhere within the district regardless of distance, providing there is safe and well-lit access between the site and parking.

There is safe and well-lit access between the site and municipal parking lots and on-street parking spaces.

19. Section 260-24 9 (e) of the Zoning Regulations provides:

> **Modification of Parking Requirements**: If, in Site Plan Approval proceedings or at any time in the future after a duly warned hearing, the Planning Commission determines that unique usage or special conditions exist which warrant increasing or reducing the need for parking, it may require the provision of off-street parking spaces up to 50% more or less than the requirements. In the Central Business District, the parking may be reduced beyond 50%. When approving an increase or reduction in any zoning district, the Planning Commission shall consider the following.
>
> 1. Is the site located on or within 1,000 feet of a transit route?
> 2. Are there shared parking facilities with abutting businesses which are sufficient to meet parking demand?
> 3. For mixed use projects, do the proposed uses have staggered business hours with minimal overlap?

4. Does the type of business proposed generate substantial pedestrian traffic and are adequate pedestrian facilities present?
5. Does an employer-sponsored "transit pass" program, or vanpool, carpool or rideshare program exist, or can one be established (as a condition of the approval) to substantially reduce the need for on-site parking?
6. Is safe and adequate on-street parking available?
7. Is parking in municipal parking lots available?
8. Does the Institute of Traffic Engineers, American Planning Association or other professional source show parking demand requirements for the proposed use(s) that are different than the standards specified in these regulations?
9. Is there other information that justifies a change in the parking requirements?

The applicant provided the following information to justify a reduction in parking:

> We are requesting a reduction in the off-street parking requirements for the project. As per Chapter 260 Zoning, 260-24 C (9) (a) the proposed housing is considered a "Multifamily Dwelling" use which requires two (2) parking spaces per unit. When completed, there will be a total of 24 housing units on the 140 - 160 Gates Street parcels: two apartments in the house at 140 Gates Street, four in the house at 146 Gates Street, and eighteen new apartments in the proposed development. We are proposing to provide 25 parking spaces and asking for a reduction from two (2) off-street parking spaces per housing unit to one (1) off-street parking space per housing unit. This request is based on several factors: a.) Many of our employees who will be housed in the apartments do not have vehicles during their residency and employment; b.) For residents without vehicles, Northern Stage provides a shared vehicle for their use; c.) The 140 through 178 Gates Street properties are within 1,000 feet of a transit route; d.) The project is within the White River Junction Central Business District; e.) There are ten (10) safe, on-street, parallel parking spaces directly in front of the 140 through 178 Gates Street properties; f.) 140 through 178 Gates Street is within a 1 minute walk of Northern Stage's performance, administrative, and production facilities at 74 and 76 Gates Street; and, g.) Prior to planned occupancy of the housing in the spring of 2025, Act No. 74 47 will have changed the municipal parking requirement to no more than one parking space per unit."

(See exhibit #6)

20. The applicant has provided a landscape plan. The applicant will maintain all plantings. (See exhibit #2)

21. The applicant provided a photometric plan and lighting details. (See exhibit #2 and #8)

The applicant understands that lighting may not create excessive off-site or sky glow. If the Zoning Administrative Officer determines that lighting does not meet this condition, the applicant will be required to comply or will be found in violation of this approval.

22. Section 260-27 C of the Hartford Zoning Regulations states:

C. Grading and drainage. The following provisions shall apply to any changes which affect drainage of water to or from a property:

(1) Any changes in grading shall be made so that runoff is directed to established drainage courses and will not cause ponding or flooding of other properties, or exceed the capacity of downstream drainage facilities.

> According to the applicant, drainage has been designed to not cause ponding or flooding of other properties. Low points have been provided with catch basins for stormwater collection. Stormwater will be collected and infiltrated in the underground stormwater infiltration chambers located under the parking area and driveway.

(2) When possible, drainage systems shall be designed so that water runoff existing prior to site development shall not be increased after development. When possible, drainage systems shall be designed so that water runoff existing prior to site development shall not be increased after development.

> According to the applicant, the drainage system has been designed to attenuate the design storm. Drainage analysis for the proposed project has been provided in appendix e.

(3) All changes in grade shall be controlled so as not to cause a nuisance or damage to other properties or erosion of topsoil.

> According to the applicant, drainage has been designed to be managed by the site drainage system. An erosion prevention and sediment control plan has been provided and shall be followed during construction. The plan requires areas to be stabilized with grass seed and mulch following establishment of final grades, stockpiles of soil should also have perimeter controls and a vehicle tracking entrance shall be maintained to keep equipment form tracking dirt into the roadway.
>
> (See exhibits #4 and #10)

23. Snow will be stored on site and will be removed as needed. Snow will not be stored in such a manner as to create a hazard.

To manage melting snow the applicant is constriction a berm and offered the following:

> The proposed berm is shown as 1 ft. high as measured from the elevation of the east property line. As snow from the storage areas melts it will drain into the catch basin in the parking lot from the snow storage area located at the far end of the parking lot and snow storage located to the northeast of the parking areas will

drain into the catch basin located behind 140 Gates Street. The area behind 140 Gates Street is designed to be graded into a dry pond area that is designed to drain into a centrally located catch basin to catch snow runoff.

24. The applicant proposes to install a fenced and landscaped dumpster pad area in the parking area.

25. According to the applicant, they are considering installation of conduit for a future installation of an EV charging station at the northwestern corner of the parking area. (See exhibit #3)

26. The project will connect to municipal water and sewer in accordance with Hartford's Water and Wastewater Rules and Regulations.

27. The applicant will schedule a preconstruction meeting with utility and highway staff to review project schedule, design, and construction issues at least two weeks before actual site work commences. Further, the applicant understands that they must contact the Zoning Administrator to discuss any changes to the project resulting from this meeting.

28. The applicant understands that an excavation permit must be obtained before any work is done within the Town ROW.

29. During construction of the proposed project erosion and sediment control measures as specified in the most current edition of the *Low-Risk Site Handbook for Erosion Prevention and Sediment Control* published by the Vermont Department of Environmental Conservation will be followed.

30. The building will meet applicable energy code standards. An energy code certificate will be recorded in Hartford's Land Records before a Certificate of Occupancy will be issued.

31. Stockpiling of materials related to the construction of the project will be located twice the distance of the height of the stockpiled materials from any public or private right-of-way or property boundary.

32. Construction trailers may be used on the condition that they are placed a minimum of ten feet from any property line, are placed only when there is an effective zoning permit for the project, and are removed before a Certificate of Occupancy is requested. No construction trailer may be placed in such a way that it obstructs sight distance along the traveled way, at any intersection or driveway. Any construction trailer found to obstruct sight distance will be required to be relocated immediately.

33. The applicant understands that no structure, signage, parking spaces or plantings may be placed in such a way that obstructs sight distance along the traveled way, at any intersection or driveway. Any signs, parking spaces or plantings found to obstruct sight distance will be required to be relocated.

34. Construction of the project will comply with Section 260-31 B of the Hartford Zoning Regulations, which states:

> *Earth moving and hauling, rock drilling or crushing, jack hammer and similar excessively loud equipment shall not be operated on Sundays or between the hours of 5:30 p.m. and 7:00 a.m. except in emergency situations.*

35. The applicant understands that they retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

36. The applicant understands that a zoning permit is required before the commencement of construction of the project. The applicant further understands that the issuance of the zoning permit only authorizes the construction of the project in compliance with the Findings, Conclusions of Law, Approved Plans, Exhibits and Conditions as specified herein.

38. The applicant understands that all activities authorized by the issuance of the zoning permit shall be started within six (6) months and completed within two (2) years of its date of issue, or the zoning permit shall become null and void and reapplication to complete any activities shall be required. Any activities not completed within the above permit period shall be subject to any ordinance in effect at the time of reapplication. One six (6) month extension to both time periods may be granted by the Planning Commission.

39. The applicant understands that they must obtain a Certificate of Occupancy from the Zoning Administrative Officer upon completion of the project and before the building is occupied. The applicant understands that a Certificate of Occupancy will not be issued if the project is not in compliance with these Findings, Plans and any conditions placed on the decision.

CONCLUSIONS OF LAW

Based upon the foregoing Findings of Fact, the Hartford Planning Commission concludes that the proposed site plan provides, as required by **§260-45 C** of the Hartford Zoning Regulations:

> (1) Maximum safety of **traffic circulation between the site and the street network** and integration with the overall traffic pattern, including provisions for auxiliary roadways connecting with adjacent properties where appropriate. Included in this evaluation shall be the location, number and width of access points, curve radii at access points, acceleration or deceleration lanes on adjacent public streets, sight distances, lighting, location of sidewalks and other walkways, and the overall relationship of the proposed development with existing traffic conditions in the area. All modes of transportation shall be taken into account, including pedestrian, bicycle, handicapped, delivery and emergency vehicles and public transportation.

(2) Adequacy of **on site circulation, parking, and loading facilities,** with particular attention to safety. Included in this evaluation shall be traffic movement patterns, drive and aisle widths, directional signs, location of loading docks and parking areas, number and size of parking spaces, and provision for lighting, drainage, snow removal and access for emergency vehicles and public transportation.

(3) Adequacy of **landscaping, screening, and setbacks** in achieving maximum compatibility with and protection of adjacent properties by screening from them any glare produced by interior or exterior lights and unsightly areas such as storage areas, and parking lots; assurance that landscape materials will not interfere with visibility or safety and that they are of a type that can survive and be maintained as proposed.

(4) Adequacy of **provision for safety and convenience of pedestrians, bicyclists, and handicapped persons**. Included in this evaluation shall be lighting of walks and entrances, design and placement of walks and crosswalks, pick-up points for public transportation and provision of bicycle racks.

(5) **Protection of renewable energy resources,** including a finding that the proposed development does not adversely affect the ability of adjacent properties to use this form of energy.

(6) **Compliance with other provisions of these regulations** including § 260-27, Landscaping, and § 260-31, Land use performance standards.

(7) **Other** factors that are directly related to the above aspects of site plan review.

DECISION

The Hartford Planning Commission, based upon the forgoing Findings of Fact and Conclusions of Law, hereby approves #23-20 by Northern Stage Company (owners/applicants) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for 18 dwelling units in three Multi-Unit Buildings, lots 45-0150-000, 45-0151-000, and 45-0152-000, 140, 146, 160 and 178 Gates Street, White River Junction, in CB and Design Review Districts **on the condition that:**

1. **Before a zoning permit is issued:**

    - **The applicant submits a copy of their approved allocation for connection for the water and sewer service.**

    - **The applicant's Engineer/Architect/Landscape Architect verifies that changes to the final plans approved by the Planning Commission are limited to those required by the Commission.**

2. **Before a Certificate of Occupancy is issued the applicant submits:**

    - **Written verification from a Professional Engineer licensed by the State of Vermont certifying that the project was constructed in compliance with the approved plans and Findings of Fact**
    - **Written verification that the water and sewer have been inspected and approved by the Department of Public Works**
    - **Acceptable record drawings to the Department of Public Works**
    - **An electronic copy of the record drawings**
    - **A copy of their Energy Code Certificate as recorded in the Land Records**

This decision is also subject to the condition that no modification or expansion shall be made to the project as described and limited in the above Findings of Fact and Conclusions of Law without the written approval of the Hartford Zoning Board of Adjustment and/or the Hartford Planning Commission. This decision may be revoked, and a new application or permit required if conditions and findings are violated or modified without written approval.

The applicant is responsible for insuring compliance with all applicable State and Federal regulations pertaining to this application.

Those in favor:

Those in opposition:

Those not participating:

Dated at Hartford, Vermont this ____ day of November 2023.

HARTFORD PLANNING COMMISSION

By:_____
Chairperson/Vice-Chairperson

Appeal Rights: An interested person who has participated in the proceeding related to this decision has the right to appeal this decision to the Vermont Environmental Court, pursuant to 24 V.S.A. s. 4471 and V.R.E.C.P.5, in writing, within 30 days of the date of this decision. If you fail to appeal this decision, your right to challenge this decision at some future time may be lost because you waited too long. You will be bound by this decision, pursuant to 24 V.S.A. s. 4472 (d) (exclusivity of remedy; finality).

EXHIBIT LIST

1. Application #23-20

2. Plan set Appendix D, received October 26, 2023 including:

Architectural Drawings

L1.1 Site Plan
L1.2 Landscape Plan L1.3 Planting Schedule
A2.1 3D Views
A2.1 First Floor Plan Building A
A2.2 Second Floor Plan Building A
A2.3 Attic Floor Plan Building A
A2.4 Roof Plan Building A
A4.1 Exterior Elevations Building A (North/South)
A4.2 Exterior Elevations Building A (East/West)
A5.1 Building Sections Building A
A6.1 Exterior Wall Sections Building A
A6.2 Exterior Wall Sections Building A
A2.1 First Floor Plan Building B
A2.2 Second Floor Plan Building B
A2.3 Attic Floor Plan Building B
A2.4 Roof Plan Building B
A4.1 Exterior Elevations Building B (North/South)
A4.2 Exterior Elevations Building B (East/West)
A5.1 Building Sections Building B
A6.1 Exterior Wall Sections Building B
A6.2 Exterior Wall Sections Building B
A2.1 First Floor Plan Building C
A2.2 Second Floor Plan Building C
A2.3 Attic Floor Plan Building C
A2.4 Roof Plan Building C
A4.1 Exterior Elevations Building C (North/South)
A4.2 Exterior Elevations Building C (East/West)
A5.1 Building Sections Building C
A6.1 Exterior Wall Sections Building C
A6.2 Exterior Wall Sections Building C
A2.5 Roof Details (Buildings A, B and C)
A9.1 Interior Elevations (Buildings A, B and C)
A10.1 Door Schedule and Details (Buildings A, B and C)
A10.2 Window Schedule and Details (Buildings A, B and C)
A11.1 Exterior Color Scheme
A11.2 Exterior Color Schedule

Civil Drawings

C1.0 Demo Plan
C1.1 EPSC Plan
C2.0 Site Plan
C2.1 Hartford Ladder Truck Turning Plan
C2.2 Garbage Truck Turning Plan

C3.0 Site Details
C3.1 Site Details
C3.2 Water Details
C3.3 Water Details
C3.4 Sewer Details
C3.5 Stormwater Details
C3.6 EPSC Details
C3.7 EPSC Details

3. Document entitled "Future EV Charing Station Conduit," received October 26, 2023

4. Applicant's October 25, 2023 response to Jo-Ann Ells October 19 memo

5. Draft minutes of the Design Review Committee meeting of October 26, 2023

6. Letter from Northern Stage dated October 16, 2023

7. Appendix A, Hartford code 260-24, received October 26, 2023

8. Appendix B, Exterior Photometric Plan and Light Fixture cut sheets, received October 26, 2023

9. Appendix C, Schedule, received October 26, 2023

10. Appendix E, Drainage Analysis, received October 26, 2023

11. Appendix F, Financial Hardship Report, received October 26, 2023

12. Appendix G, Site Context Photographs, received October 26, 2023

Northern Stage Multiplex Housing Project
140 - 178 Gates Street
Northern Stage Company
White River Junction, VT

Re: Application to Planning Commission

Date: October 16, 2023
Revised: October 25, 2023

Workforce housing is a critical issue for our Upper Valley region. Many area employers are experiencing similar challenges to Northern Stage's employee housing shortage and hope to do something about it. Northern Stage has activated this hope into the planning, permitting, and development phase.

Context:

Northern Stage is a professional, regional, rural theater company that hires almost exclusively out-of-state artists and staff members due to the specialized nature of our work. Many of our employment contracts are short-term or seasonal coinciding with the various and ongoing professional theatrical productions we produce and educational programs we offer at the Barrette Center for the Arts located at 74 Gates Street in the heart of White River Junction, VT.

Without housing to offer our potential hires, we aren't able to bring them to the Upper Valley for employment. Additionally, our employment contracts with members of the actors, stage managers, directors, designers, musicians, and choreographers unions **require** Northern Stage to provide housing at **no cost** to the union member. Additional union contract requirements are placed on Northern Stage if the housing we provide for union members is more than one mile away from downtown White River Junction. Among these, a transportation requirement which most often means providing vehicles and fuel stipends to union members who are housed outside of the one mile radius.

Perhaps needless to say, Northern Stage currently spends significant resources each year on housing (rent, utilities, property taxes, insurance, maintenance, etc.) for staff and artists, and countless company management hours and additional financial resources shuffling and reshuffling artists, cars, and collaborators from one site to another. Many of the properties we lease in the area take rental opportunities off the market for other individuals seeking to live in the Upper Valley. It is becoming more and more difficult and expensive to even find any housing to lease. By acquiring three properties on Gates Street within one block of its performance venue - the Barrette Center for the Arts - Northern Stage is now in a position to develop an 18 unit housing facility as well as more off street parking within a one-minute walk of its existing performance, administrative, and production facilities.

This project will allow Northern Stage to better serve the housing needs of our short-term, seasonal, and year-round staff and will reduce the number of parking spaces used by Northern Stage visiting artists and staff in the downtown municipal parking lot (located behind the Barrette Center for the Arts) due to the fact that more of them will be living downtown and walking to work.

The Site:

Northern Stage's performance facility - the Barrette Center for the Arts - is located at 74 Gates Street in the heart of downtown White River Junction, VT. Northern Stage's administrative offices and production shops are located at 76 Gates Street - adjacent to the BCA. If you are unfamiliar with the location of these two facilities imagine driving into downtown White River Junction on North Main Street. As you enter the center of town you will find the Tuckerbox Restaurant on your right. As you continue driving on North Main Street, the Hotel Coolidge is also on your right. Shortly after the main entrance to the Hotel Coolidge you arrive at the intersection of North Main Street and Gates Street. Turn right onto Gates Street and you are now on a one block, one-way, section of Gates Street. Look to your left and you will see the Barrette Center for the Arts at 74 Gates Street with Northern Stage's administrative and production building next to it at 76 Gates Street. You are now at the intersection of Currier Street and Gates Street.

Continue forward on Gates Street and it becomes a two-way street. On your left you will see the Village at White River Junction Assisted Living facility followed by the Methodist Church. On your right you will encounter a rather large brick building which is now owned by Consolidated Communications. A look back to your left and you will see a home set back from the street quite a distance. This is 140 Gates Street. 146 Gates Street is next on your left and this home is set back from the street a more customary distance. Northern Stage owns both of these homes. 140 Gates Street has 2, two-bedroom apartments and 146 Gates Street has 4, one-bedroom apartments. These 6 apartments are occupied by Northern Stage employees. Just beyond 146 Gates Street is an entrance drive to the properties. As you look down the length of this access drive to the back of the property you will notice a long narrow building with multiple garage doors. This garage building is part of the 146 Gates Street property.

The next property to your left is 160 Gates Street, an empty lot owned by Northern Stage. The last property on your left on this block is 178 Gates Street - also owned by Northern Stage. 178 Gates Street has a building on it that houses 3 one-bedroom apartments and 1 two-bedroom apartment that are all occupied by Northern Stage employees. Northern Stage's proposed development has an off-street surface parking component that would occupy a portion of 140 and 146 Gates Street parcels, a housing component planned for 160 Gates Street and 178 Gates Street parcels.

Components:

As stated above, there are several key components to Northern Stage's proposed development: three (3) housing structures, each of two (2) stories in height, adjoining outdoor common spaces, and off-street parking. As depicted and detailed in the accompanying renderings, site plans, floor plans, elevations and video; the housing project provides a total of 18 units that includes a mix of studio, one-bedroom, and 2 bedroom apartments.

Walkways and outdoor common spaces connect the three (3) housing buildings. There are additional common laundries for residents of the housing facility located indoors on the ground floor of the each building. Off-street surface parking to accommodate residents of the 140, 146 Gates Street apartments and the residents of the new housing facility to be developed on the 160 and 178 Gates Street lots and will require the removal of the existing garage structure at the back of the 146 Gates Street parcel.

Considerations:

In addition to the look and feel of the project and how it fits into the fabric of downtown White River Junction, there are several considerations to be addressed for this project to be completed as depicted in the accompanying project materials. These considerations include: 1.) Demolition of the existing 178 Gates Street building; 2.) Demolition of the 146 Gates Street garage building; and, 3.) Reduction in off street parking requirements.

1.) During our due diligence in these matters we have found 178 Gates Street is not a contributing structure in the White River Junction Downtown Historic District. Therefore we will seek the demolition permit for this structure through the Town of Hartford Fire Marshal's office and follow all of the applicable regulations, requirements, and filings. In addition, we will notify the Town of Hartford's Historic Preservation Commission about the demolition of this structure so they may photo journal it for their archives.

2.) We discovered the garage structure at the back of 146 Gates Street to be a contributing structure to the White River Junction Downtown Historic District. Accordingly we prepared an evaluation of the garage which is attached to this narrative and request approval of removal of the garage as part of this permitting process.

3.) We are requesting a reduction in the off-street parking requirements for the project. As per Chapter 260 Zoning, 260-24 C (9) (a) the proposed housing is considered a "Multifamily Dwelling" use which requires two (2) parking spaces per unit. When completed, there will be a total of 24 housing units on the 140 - 160 Gates Street parcels: two apartments in the house at 140 Gates Street, four in the house at 146 Gates Street, and eighteen new apartments in the proposed development. We are proposing to provide 25 parking spaces and asking for a reduction from two (2) off-street parking spaces per housing unit to one (1) off-street parking space per housing unit. This request is based on several factors: a.) Many of our employees who will be housed in the apartments do not have vehicles during their residency and employment; b.) For residents without vehicles, Northern Stage provides a shared vehicle for their use; c.) The 140 through 178 Gates Street properties are within 1,000 feet of a transit route; d.) The project is within the White River Junction Central Business District; e.) There are ten (10) safe, on-street, parallel parking spaces directly in front of the 140 through 178 Gates Street properties; f.) 140 through 178 Gates Street is within a 1 minute walk of Northern Stage's performance, administrative, and production facilities at 74 and 76 Gates Street; and, g.) Prior to planned occupancy of the housing in the spring of 2025, Act No. ~~74~~ 47 will have changed the municipal parking requirement to no more than one parking space per unit.

Conclusion

Northern Stage Company intends this project narrative - together with the accompanying renderings, site plans, floor plans, elevations and video - to provide the reader a clear vision of what Northern Stage proposes to build, where it proposes to build it, and why it is important for Northern Stage to endeavor a project of this magnitude and significance. If there is additional information or clarification needed, please let us know.

Regards,

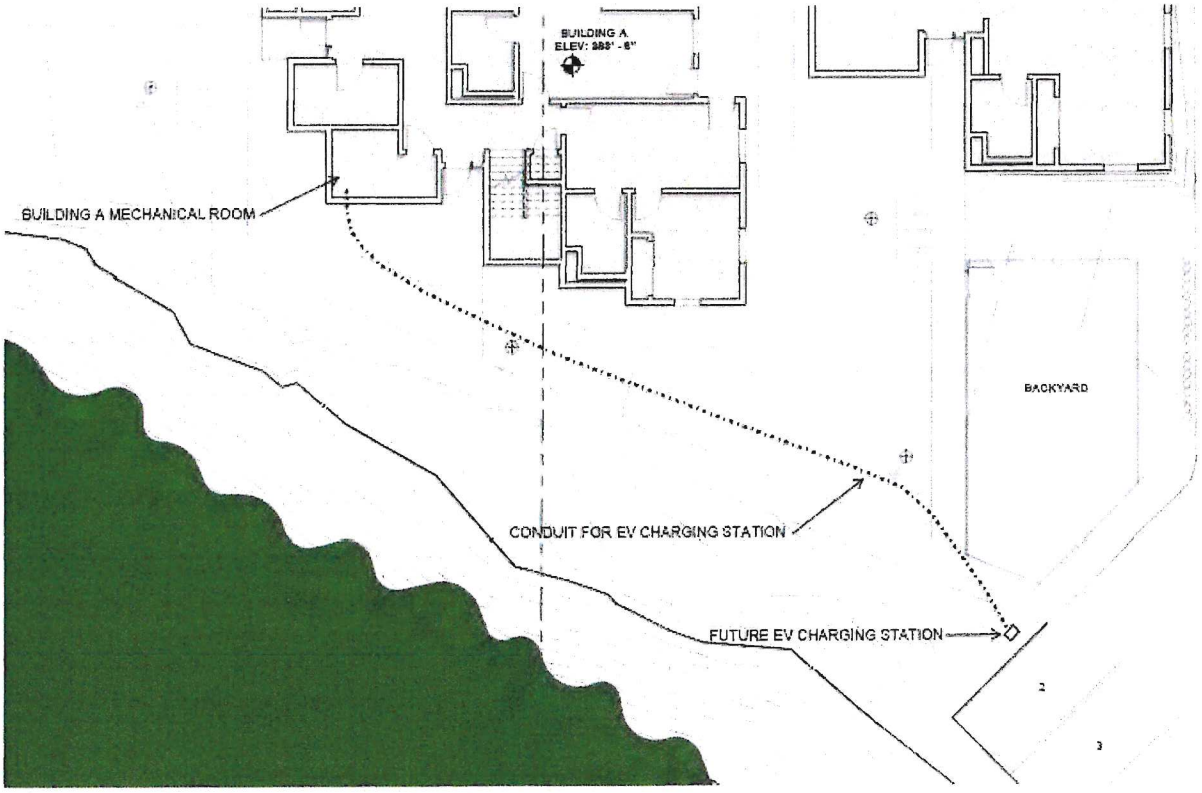
Northern Stage Company

Future EV Charging Station Conduit

NORTHERN STAGE MULTIPLEX HOUSING PROJECT

This sketch was prepared for attachment to the 10-25-2023 response to the Memorandum Re Proposed Multi-Unit Dwellings/Gates Street and provides supplemental information related to item #20 – Installation of conduit for future electric vehicle charging station.

Illustrated below (on a blown up portion of the Architectural Site Plan) is the proposed location of conduit for future EV Charging Station.



Memorandum

[RESPONSES TO THIS MEMORANDUM, BY NORTHERN STAGE AND BY NORTHERN STAGE'S CONSULTANTS, ARE DATED 10-25-2023 AS INDICATED BELOW.]

To: Northern Stage Co., Jason Smoller:

Cc: Jim Pulver, Breadloaf Corp., Adam Morse, and Chris Holzwarth, Public Works Project Manager

From: Jo-Ann Ells

Date: October 19, 2023

Re: Proposed Multi-Unit Dwellings/Gates Street

Following are comments/questions on your application for Multi-Unit Dwellings.

Prior to the Planning Commission Hearing, you will receive an agenda, draft Findings of Fact, and additional staff comments if there are any. Please feel free to contact me at any time during this process.

1. Please confirm that you understand that you retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

   [10-25-2023 - NORTHERN STAGE UNDERSTANDS THAT RELEVANT LOCAL AND STATE PERMITS FOR THIS PROJECT SHALL BE APPLIED FOR AND OBTAINED.]

   To determine what State Environmental Permits may be required for your project, The Vermont Agency of Natural Resources (ANR) recommends that you use ANR's Permit Navigator Tool by going to the VT Department of Environmental Conservation website Welcome to DEC | Department of Environmental Conservation (vermont.gov) and going to the "Permit Navigator Tool" Permit Navigator (force.com)

   If further assistance is needed, please contact the Community Assistance Specialist for our area:

   Rick Oberkirch, Community Assistance Specialist
   802-282-6488
   Rick.Oberkirch@vermont.gov

2. Please change "Act No. 74" to "Act No 47" in the project narrative.

   [10-25-2023 – NARRATIVE HAS BEEN CHANGED AS INDICATED ABOVE. SEE REVISED NARRATIVE AS ATTACHED.]

3. Please contact Tom Peltier, Fire Marshal, to discuss obtaining a Public Building permit. tpeltier@hartford-vt.org (295-3232).

   [10-25-2023 – NORTHERN STAGE'S ARCHITECT (JIM PULVER, BREADLOAF CORPORATION) SHALL CONTACT TOM PELTIER, FIRE MARSHALL, TO DISCUSS OBTAINING BUILDING PERMIT.]

4. Please acknowledge that you understand that you need to obtain an allocation and application for connection for the water and sewer service before a Zoning Permit will be issued.

   [10-25-2023 - NORTHERN STAGE UNDERSTANDS THAT AN ALLOCATION AND APPLICATION FOR WATER AND SEWER SERVICE MUST BE SUBMITTED AND APPROVED.]

5. Your prior approval required a question regarding the location of the shared boundary line to the east be addressed with the abutting landowner. Has this been resolved?

   [10-25-2023 - ON AUGUST 16, 2023, JASON SMOLLER AND JAMES LYNCH (FROM NORTHERN STAGE) MET WITH BRIAN MARSICOVETERE (ABUTTING LANDOWNER) TO REVIEW THE SITE PLAN AND DISCUSS THE BOUNDARY LINE. THE PROPOSED PROJECT FALLS FULLY TO THE WEST OF THE MUTUALLY AGREED-UPON BOUNDARY LINE. NORTHERN STAGE ALSO PRESENTED THE SNOW STORAGE AND DRAINAGE PLAN, AND MR. MARSICOVETERE INDICATED THAT HE DID NOT SEE ANY ISSUES WITH THE PLANS PRESENTED TO HIM.]

6. If you have not done so already, I encourage you to talk to Hartford's Environmental Sustainability Coordinator, Dana Clawson, about energy efficiency options for your project. (dclawson@hartord-vt.org)

   [10-25-2023 - JASON SMOLLER (FROM NORTHERN STAGE) EMAILED DANA CLAWSON ON OCTOBER 20, 2023 TO SET UP AN INITIAL MEETING TO DISCUSS PROPOSED PROJECT.]

7. The Zoning Regulations require that stockpiling of materials related to the construction of the project must be located twice the distance of the height of the stockpiled materials from any public or private right-of-way or property boundary. Please confirm the proposed staging area complies or amend sheet C 1.1 as necessary.

   [10-25-2023 - ALL STOCKPILED MATERIAL AND EQUIPMENT WILL BE LOCATED TWICE THE DISTANCE OF THE HEIGHT OF THE STOCKPILED MATERIALS FROM ANY PUBLIC OR PRIVATE RIGHT-OF-WAY OR PROPERTY BOUNDARY. SHEET C1.1 HAS BEEN REVISED ACCORDINGLY WITH THE PROPOSED STAGING AREA RELOCATED. ALL EQUIPMENT STAGING AND STOCKPILING IS SHOWN A MINIMUM OF 20' FROM THE EASTERN PROPERTY BOUNDARY.]

8. Please acknowledge that during construction of the proposed project erosion and sediment control measures as specified in the most current edition of the *Low-Risk Site Handbook for Erosion Prevention and Sediment Control* published by the Vermont Department of Environmental Conservation will be followed.

   [10-25-2023 - NORTHERN STAGE ACKNOWLEDGES THAT DURING CONSTRUCTION OF THE PROPOSED PROJECT THE DESIGN/BUILDER (BREAD LOAF CORPORATION AND SUB-CONTRACTORS) SHALL FOLLOW THE EROSION AND SEDIMENT CONTROL MEASURES INDICATED ABOVE.]

9. Please acknowledge that you understand the following:

   Before you commence construction, you need to schedule a preconstruction meeting with the Department of Public Works (DPW). You need to contact the DPW at least two weeks before you want to hold this meeting.

   [10-25-2023 - NORTHERN STAGE ACKNOWLEDGES THAT PRIOR TO CONSTRUCTION OF THE PROPOSED PROJECT THE DESIGN/BUILDER (BREAD LOAF CORPORATION AND NECESSARY CONSULTANTS) SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH DPW AS INDICATED ABOVE.]

   If this meeting results in any revisions to the approved plans, you must contact me to discuss amending your permit.

   [10-25-2023 - NORTHERN STAGE ACKNOWLEDGES THAT IF THE DPW PRE-CONSTRUCTION MEETING RESULTS IN ANY REVISIONS TO THE APPROVED PLANS, JO-ANN ELLS (ZONING ADMINISTRATOR, TOWN OF HARTFORD) SHALL BE CONTACTED AS INDICATED ABOVE.]

10. Please acknowledge that you understand that once the project is complete and before I can issue a Certificate of Occupancy you need to:

    - Submit written verification from a Professional Engineer licensed by the State of Vermont certifying that the project was constructed in compliance with the approved plans and Findings of Fact
    - Submit verification that the water and sewer have been inspected and approved by the Department of Public Works
    - Submit acceptable records drawing to the Department of Public Works
    - Submit a PDF of the record drawing to the Zoning Administrator
    - Record an Energy Code Certificate in the Land Records if required by the State of Vermont

    Please acknowledge that you understand these requirements.

    [10-25-2023 - NORTHERN STAGE ACKNOWLEDGES THE REQUIREMENTS INDICATED ABOVE.]

11. Please update the drawings to reflect the as-built conditions of the municipal sidewalk project including the driveway tip downs and flush sidewalk through the driveway of 178 Gates Street, and the buried utilities on the lot and the telephone manhole at the northwest corner of the lot. This sidewalk crossing the

driveway should be restored to a full height sidewalk at the completion of a new structure at 178 Gates Street and the removal of the parking area.

[10-25-2023 - EFFECTED DRAWINGS ILLUSTRATING THE PROPOSED PROJECT HAVE BEEN UPDATED WITH THE REQUESTED INFORMATION. THE TELEPHONE MANHOLE, TIP DOWNS AND KNOWN UNDERGROUND UTILITIES, BASED ON GATES STREET DESIGN DRAWINGS AND AS-BUILT NOTES RECEIVED FROM CHRIS HOLZWARTH ON 7/20/2022, HAVE BEEN ADDED TO THE EXISTING CONDITIONS PLAN. SEE REVISED DRAWINGS ATTACHED.]

12. There appears to be trees called out for removal that may have already been removed, please clarify, and amend the plans if necessary.

    [10-25-2023 - TREES THAT HAVE BEEN CUT DOWN HAVE BEEN REMOVED FROM THE DRAWINGS. SEE REVISED DRAWINGS ATTACHED.]

13. It is my understanding that you do not intend to merge the lots. If this is correct, please remove note C14 from plan sheet C2.0.

    [10-25-2023 - AT THIS TIME NORTHERN STAGE DOES NOT PLAN TO MERGE THE LOTS. NOTE C14 HAS BEEN REMOVED FROM SHEET C2.0. SEE REVISED DRAWINGS ATTACHED.]

14. Note C 8 on sheet C2.0 refers to a "concrete patio", however, I do not see one on the plan. Please clarify.

    [10-25-2023 - NOTE C8 HAS BEEN REMOVED FROM SHEET C2.0. SEE REVISED DRAWINGS ATTACHED.]

15. Please amend the landscape plan (sheet L1.2) to include the entire property.

    [10-25-2023 - SHEET L1.2 HAS BEEN AMENDED TO INCLUDE ENTIRE PROPERTY. SEE REVISED DRAWINGS ATTACHED.]

16. Please provide a description of how snow melting from the proposed snow storage areas will be managed. Please include the height of the proposed berm.

    [10-25-2023 - PLEASE REFER TO THE GRADES SHOWN ON THE SITE PLAN. THE PROPOSED BERM IS SHOWN AS 1 FT. HIGH AS MEASURED FROM THE ELEVATION OF THE EAST PROPERTY LINE. AS SNOW FROM THE STORAGE AREAS MELTS IT WILL DRAIN INTO THE CATCH BASIN IN THE PARKING LOT FROM THE SNOW STORAGE AREA LOCATED AT THE FAR END OF THE PARKING LOT; AND, SNOW STORAGE LOCATED TO THE NORTHEAST OF THE PARKING AREAS WILL DRAIN INTO THE CATCH BASIN LOCATED BEHIND 140 GATES STREET. THE AREA BEHIND 140 GATES ST. IS DESIGNED TO BE GRADED INTO A DRY POND AREA THAT IS DESIGNED TO DRAIN INTO A CENTRALLY LOCATED CATCH BASIN TO CATCH SNOW RUNOFF.]

17. During staff review of the project on August 15th, that while you intend to build the project in one phase, you may elect to build it in phases and if phasing were proposed, a detailed phasing plan (narrative and site plan) would be needed. Please clarify your intent and provide a phasing plan if proposing phased construction.

[10-25-2023 - AT THIS TIME NORTHERN STAGE PLANS TO BUILD THE PROJECT (BUILDINGS A, B, C AND ASSOCIATED SITE IMPROVEMENTS) IN ONE PHASE. WE ANTICIPATE THAT OUR FUNDRAISING WILL ALLOW CONSTRUCTION OF THE ENTIRE PROJECT TO TAKE PLACE AT ONCE, WITHOUT REQUIRING PHASING.]

18. Please outline how the application conforms with section 260-27 C of the Hartford Zoning Regulations which states:

    C. **Grading and drainage.** The following provisions shall apply to any changes which affect drainage of water to or from a property:

    (1) Any changes in grading shall be made so that runoff is directed to established drainage courses and will not cause ponding or flooding of other properties, or exceed the capacity of downstream drainage facilities.

    [10-25-2023 - DRAINAGE HAS BEEN DESIGNED TO NOT CAUSE PONDING OR FLOODING OF OTHER PROPERTIES. LOW POINTS HAVE BEEN PROVIDED WITH CATCH BASINS FOR STORMWATER COLLECTION. STORMWATER WILL BE COLLECTED AND INFILTRATED IN THE UNDERGROUND STORMWATER INFILTRATION CHAMBERS LOCATED UNDER THE PARKING AREA AND DRIVEWAY.]

    (2) When possible, drainage systems shall be designed so that water runoff existing prior to site development shall not be increased after development.

    [10-25-2023 - THE DRAINAGE SYSTEM HAS BEEN DESIGNED TO ATTENUATE THE DESIGN STORM. DRAINAGE ANALYSIS FOR THE PROPOSED PROJECT HAS BEEN PROVIDED IN APPENDIX E.]

    (3) All changes in grade shall be controlled so as not to cause a nuisance or damage to other properties or erosion of topsoil.

    [10-25-2023 - DRAINAGE HAS BEEN DESIGNED TO BE MANAGED BY THE SITE DRAINAGE SYSTEM. AN EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLAN HAS BEEN PROVIDED AND SHALL BE FOLLOWED BY THE DESIGN/BUILDER (BREADLOAF CORPORATION AND SUB-CONTRACTORS) DURING CONSTRUCTION. THE EPSC PLAN REQUIRES AREAS TO BE STABILIZED WITH GRASS SEED AND MULCH FOLLOWING ESTABLISHMENT OF FINAL GRADES, STOCKPILES OF SOIL SHOULD ALSO HAVE PERIMETER CONTROLS AND A VEHICLE TRACKING ENTRANCE SHALL BE MAINTAINED TO KEEP EQUIPMENT FORM TRACKING DIRT INTO THE ROADWAY.]

19. It is my understanding that at least one trash/recycling service has increased their requirement for two dumpsters from 18' wide to 24' wide. Please confirm that the dumpster enclosure will be acceptable to your hauler as proposed, or amend the plans as necessary.

    [10-25-2023 – PROPOSED DUMPSTER ENCLOSURE HAS BEEN EXPANDED TO 24' WIDE PER CURRENT CASELLA REQUIREMENTS. SEE REVISED DRAWINGS ATTACHED.]

20. Please consider providing an electric vehicle charging station(s) or installing the conduit for future installation.

[10-25-2023 - NORTHERN STAGE SHALL CONSIDER INSTALLATION OF CONDUIT FOR A FUTURE INSTALLATION AT THE NORTHWESTERN CORNER OF THE PARKING AREA. SEE ATTACHED SKETCH INDICATING LOCATION OF INSTALLATION.]

21. Please email me the link to the updated video when it is available.

    [10-25-2023 – UPDATED EMAIL LINK SHALL BE PROVIDED AS SOON AS THE RENDERED VIDEO BECOMES AVAILABLE.]

22. Please email me a copy of all of the application materials (revised as necessary), including your response to this memo, by 9AM, Wednesday, October 25, 2023.

    [10-25-2023 – EMAIL SHALL BE PROVIDED AS INDICATED ABOVE.]

    In addition, please bring 14 copies of all of the application materials (revised as necessary), including your response to this memo, to the Design Review Committee meeting on Thursday, October 26, 2023.

    [10-25-2023 – 14 COPIES OF ALL APPLICATION MATERIALS SHALL BE PROVIDED AS INDICATED ABOVE.]

    Your submittal included 8 ½ x 11 civil and architectural plans. Please provide 11 x 17 plans at a minimum (larger if necessary, such that all items are legible). Please include the photometric plan in the plan set. Please fold the plans.

    [10-25-2023 – 11 X 17 PLANS (OR LARGER) SHALL BE PROVIDED AS INDICATED ABOVE.]

    If you are unable to meet these deadlines, please contact me as soon as possible to discuss the deadline to have your application considered at the next round of Public Hearings.

APPENDIX A

NORTHERN STAGE MULTIPLEX HOUSING PROJECT

HARTFORD CODE: 260-46

(9) Application Requirements. In addition to the submittal requirements of 260-45, any application for construction, reconstruction, alteration, or demolition of any building in the Downtown White River Junction Design Review District shall include the following:

(a) Narrative describing the project.

Description of 160-178 Northern Stage Multiplex Housing:

Site Planning – Proposed buildings A, B and C are organized about a proposed "Pocket Park" which serves as the primary outdoor gathering space for the project. To foster a sense of community within the development access to the buildings is generally from the Pocket Park as opposed to the public sidewalk. This form of access allows orientation of the interior living spaces of the apartments to day lighted outdoor spaces as opposed to the wooded hillside.

From a larger scale design perspective, the Pocket Park also serves to provide the western terminus for development located along the southern side of Gates Street, provides a semi-public/semi-private zone between the building fronts/apartments and the public streetscape, and provides outdoor meeting/interaction space for the residents and enhances a sense of community within the development and neighborhood.

Materials used in the Pocket Park include concrete and stone seat walls and fire-pit, concrete sidewalks and stone-dust walkways, precast pavers set in stone-dust. Stone-dust walkways are gently curving and intended to provide "short cuts" between building entrances and walking destination points. Seat walls, paved areas and a fire pit feature are located at the intersections of stone-dust walkways to encourage informal gatherings and interactions.

Landscape features include sloping contours to enhance privacy or flat contours to encourage use of lawn areas. Plantings include street trees that are spaced along the public sidewalk at regular intervals and in what also appears to be a random location within the Pocket Park. Lighting (meeting Town's design standard for pole and globe) is also located in the same manner as the street trees. Additional plantings include shrubs of various heights located to enhance privacy of ground floor apartments.

Toward the parking area is located a fenced "backyard" which can serve as play space for kids and pets. Concrete sidewalks and stone-dust walkway short-cuts link all building entrances to parking area, trash/recycling enclosure and public sidewalk.

HARTFORD CODE: 260-46 (Continued)

(b) Description of materials to be used on the exterior of the building.

Building Exteriors - The exterior materials anticipated for use on the housing project are similar in appearance and style to the exterior materials used on existing buildings of similar mass and form that are located in the Design Review District and surrounding community.

Materials on buildings A, B and C are proposed to be common to one another but will vary in color(s) used from building to building, in a complimentary and pleasing fashion.

Proposed detailing of the exterior materials is intended to convey an honest sense of modern Vermont vernacular, without suggesting historic replication, or creating a false stage-set impression of contemporary in-town housing.

- The primary exterior siding material is HardiePlank Lap Siding. The proposed "field" siding is traditional clapboards with 4 inch exposure. Siding "accents" at adjacent to entrances and porches is proposed to be a shiplap or board-and-batten profile. Use of fiber cement anticipates less long-term maintenance issues and a more consistent appearance over time versus use of vinyl or wood siding products.
- The color for the "field" siding of each building (A, B and C) is finished in one of three (3) off-white colors (colors compatible with the putty color of the existing vinyl siding at 142 and 146 Gates Street). The "accent" siding of each building (A, B and C) is finished in one of three (3) accent colors (light green, rusty red or earthy yellow historic colors compatible with each other).
- Trim at watertable, corner boards, rakes and eaves are flat and contemporary in profile. Trim color at each building (A, B and C) is painted to match the field color of the clapboard siding.
- All exterior doors are proposed to be finished natural wood (stained with polyurethane topcoat) with door frames painted to match the trim color at each building (A, B and C). Doors are proposed as half-glass insulated doors with two (2) raised panels. Door glazing is divided into nine (9) lites to be compatible with windows.
- Window sash and frames each building (A, B and C) are proposed to be white with flat window casings painted to match the trim color at each building (A, B and C). Windows are proposed to be double-hung windows with operable openings sufficient to accommodate emergency rescue size requirements. Upper window sash is proposed to be divided into six (6) lites with lower window sash of one (1) lite to provide contemporary aesthetic and to be compatible with similar windows located in the surrounding area.
- Roofs at each building (A, B and C) are proposed as charcoal grey asphalt shingles with a slight color blend added to somewhat lighten the appearance and be compatible with the siding colors.
- Roof vents are located in peaks of the gable ends of the roofs and are proposed to be painted to match the trim color at each building (A, B and C).

HARTFORD CODE: 260-46 (Continued)

(c) Proposed architectural elevations (prepared by an architect registered in the state of Vermont) showing door and window types, shutters and other exterior details;

Please see Appendix D: Sheets A4.1 and A4.2 for Exterior Elevations of Buildings A, B and C.

(d) Not Applicable

(e) Color photographs of existing buildings on adjacent or nearby properties to illustrate the existing streetscape;

Please see Appendix G: Photographs Illustrating Site Context.

(f) Site plan;

Please see Appendix D: Sheets L1.1, L1.2 and C2.0 for Site Plans.

(g) Any additional information which may be requested by the DRC or the Planning Commission as necessary for a clear understanding of the proposal, including scale models or other three-dimensional analyses.

Please the following video url to view a video walkthrough demonstrating many of the above requests in an additional format. This is a preliminary video illustrating the massing, scale and forms of Buildings A, B and C rendered in grey tones for initial review and comment. An updated video, illustrating the Pocket Park and building colors proposed herein, shall be prepared for future use and consideration.

https://youtu.be/SbKNbPKbduo?si=M43IE9e2iF6E97Ri

(10) ***Diversity of Design.*** *These regulations recognize the value of diversity in design solutions based on a wide variety of architectural styles and design philosophies, without imposing a particular aesthetic value or prohibiting the introduction of new forms intro the built environment, provided these are consistent with the intent of this district.*

HARTFORD CODE: 260-46 (Continued)

(11) ***Design criteria.*** *In making a determination on an application, the Design Review Committee and Planning Commission shall give consideration to the White River Junction Design Plan and White River Junction Design Guidelines and the following criteria:*

(a) The way in which the project preserves and/or enhances the integrity of the historic architecture of the downtown and the specific buildings.

Hartford's architectural convention displays diversity and an approach demonstrating numerous architectural styles relevant to the era the buildings were constructed. There are certain architectural themes relevant to this discussion:

- Program requirement for a total 18 apartment units is broken down and subdivided into smaller masses and elements of three (3) distinct buildings, A, B and C. These buildings are further defined through expression of particular elements (e.g.: sloped roof forms, one (1) and two (2) story heights, organization about Pocket Park, etc.), material selection (e.g.: siding, doors, windows, trim, cornice, roofing, etc.), and colors.
- The residential and design review district buildings often demonstrate a highly functional and vernacular construction aesthetic which relates to a significant history of community development.
- Modern solutions to the need for affordable housing emphasize community space and offer views that enhance vistas within the district.

The proposed project respect these architectural ideas by implementation of the above items in the massing, form, scale, material selection, and arrangement about the proposed Pocket Park towards the western end of Gates Street.

(b) The way in which the project uses historically appropriate or compatible materials where possible in rehabilitation and new construction projects

Please see Appendix D: Sheets A2.1, A 2.2, A2.3, A2.4 for Plans of Buildings A, B and C; Sheets A4.1 and A4.2 for Elevations of Buildings A, B and C; and Sheet A2.1 3D Views for three dimensional illustrations of Buildings A, B and C.

- Clapboard siding in compatible colors at buildings A, B and C.
- Accent siding and colors at porches and entries of buildings A, B and C.
- Windows and doors of similar character to historic elements.
- Sloped roof forms with dark colored roofing.
- Segmented building masses with multistory heights.
- Adjacent Gates Street housing structures with various color and tone schemes of clapboard siding.

HARTFORD CODE: 260-46 (Continued)

(c) The way in which the project respects existing setbacks, scale and massing when developing a new building or addition.

Please see Appendix D: Sheets L1.1, L1.2 and C2.0 for Site Plan; Sheets A2.1, A 2.2, A2.3, A2.4 for Plans of Buildings A, B and C; Sheets A4.1 and A4.2 for Elevations of Buildings A, B and C; and Sheet A2.1 3D Views for three dimensional illustrations of Buildings A, B and C.

- Front facades of proposed buildings B and C are similar to the current setbacks of 146, 128, and 110 Gates Street. Building A is setback further to create Pocket Park in keeping with creating outdoor space at termination of development on Gates Street.
- Building A, B and C orientation is similar to the orientation of the adjacent buildings on this section of Gates Street.
- The proposed building massing and scale respect and relate to the massing and scale of building throughout the community.

(d) The way in which the project employs appropriate lighting patterns and levels that reflect use, safety and security.

Please see Appendix B: IESC Site Lighting Photometric Plans and Exterior Lighting Cut Sheets.

- The attached lighting intensity plan and fixture cut sheets illustrate lighting for safe, secure and use lighting that respects the residential transition of the west end of Gates Street while offering full functionality to the occupants of the proposed project.
- Proposed lighting at the public sidewalk and Pocket Park is consistent with Town streetlight standard.
- Proposed lighting at buildings and off-street parking area are LED down-light/cut-off fixtures to minimize sky-glow and light trespass.

(e) The way in which the project implements streetscape elements on a building-by-building basis.

Please see Appendix D: Sheets L1.1, L1.2 and C2.0 for Site Plan; Sheets A2.1, A 2.2, A2.3, A2.4 for Plans of Buildings A, B and C; Sheets A4.1 and A4.2 for Elevations of Buildings A, B and C; and Sheet A2.1 3D Views for three dimensional illustrations of Buildings A, B and C.

- Sheet A2.1 3D Views indicate the diverse roof and elevation profiles of buildings A, B and C along Gates Street and arranged around the Pocket Park. The roof profiles ramble in a stepped manner which consistently follows a similar scale and of 8/12 and 3/12 slopes and roof pitches. The proposed project continues the rhythm of the roof typology and provides a relatable conclusion to the west end of Gates Street.
- The lower left hand image on Sheet A2.1 3D Views shows the streetscape fronts of each of the buildings. The proposed project relates to the residential streetscape of adjoining buildings on the south side of Gates Street.
- Sheet L1.2 and L1.3 illustrates Gates Street streetscape tree plantings. The proposed project introduces a consistent tree streetscape pattern that reconnects the west end of Gates Street to Church Street, where the tree streetscape connects to North Main Street.

HARTFORD CODE: 260-46 (Continued)

- The proposed project also introduces and allows for the sidewalk on the western end of Gates street to connect to Church Street.

(f) The way in which the project preserves the landscape, including existing terrain, trees and vegetation to the extent feasible.

- As noted above in parts (c) and (e), the street front and setback of the proposed project on 160 -178 Gates Street improves the street landscape pattern and resolve issues with the current existing terrain which include lack of pedestrian accessibility and added tree plantings.
- During the conceptual design process we investigated numerous iterations of the housing project. The proposed iteration provides the least amount of hillside disturbance on the southwestern edge of the lot. The proposed site plan provides minimal disruption to the existing trees and the proposed landscaping plan preserves the natural character of the hillside tree-scape.
- Prior to commencement of construction, Northern Stage anticipates review of the existing hillside vegetation with an arborist or forestry consultant. After this review, Northern Stage anticipates proceeding with forest management activities recommended by the consultant.

(g) The way in which the project promotes accessibility and rear access from parking areas to commercial buildings.

Please see Appendix D: Sheets L1.1, L1.2 and C2.0 for Site Plans; Sheets A2.1, A 2.2, A2.3, A2.4 for Plans of Buildings A, B and C; Sheets A4.1 and A4.2 for Elevations of Buildings A, B and C; and Sheet A2.1 3D Views for three dimensional illustrations of Buildings A, B and C.

- Efficient accessibility: Buildings share a common front sidewalks and walkways that allow easy access to all buildings via the Pocket Park.
- Handicapped accessibility: Handicap parking is located near the parking entrance. Handicap accessible sidewalks allow easy travel to all buildings.

(h) The way in which the project provides efficient and effective vehicular and pedestrian circulation.

Please see Appendix D: Sheets L1.1, L1.2 and C2.0 for Site Plans Buildings A, B and C.

- Vehicular circulation is provided for emergency and service vehicle access.
- 25 tenant parking spaces are provided for 140, 146, 160 and 178 Gates Street.
- Pedestrian circulation consists of exterior and interior circulation. Exterior circulation is provided to two (2) entrances at each building and individual exterior entrances to various ground level apartments. Interior circulation provides access to all apartment units, laundry room and mechanical room within each building A, B and C.

HARTFORD CODE: 260-46 (Continued)

(i) The way in which the details being proposed for the building, including window, door, and trim, are compatible with the existing and adjacent buildings' historic and design qualities.

Please see Appendix D; Sheets A2.5, A10.1 and A10.2 illustrating typical roof, trim, door and window details compatible with existing historic design qualities throughout the design district.

(12) Demolition of historic buildings within the design review district.

(b) The applicant shall provide evidence at the time of the demolition request that one of the following conditions has been met:

[1] Retention of the building is not feasible because it is structurally unsound as determined by a structural engineer licensed in the State of Vermont; or

[2] Rehabilitation of the building, or portion thereof, would cause undue financial hardship. The applicant must provide clear and convincing evidence that any reasonable return cannot be obtained from the building without approval of the request for demolition.

As mentioned in the "Considerations" portion of the Project Narrative, the garage structure at the rear of 146 Gates Street is a contributing structure in the White River Junction Downtown Historic District. As shown in the project site plans, removal of this structure allows for enough ground level surface area to be reconfigured for the creation of the necessary off-street parking spaces for the project and will serve the parking needs of the housing units at 146 and 140 Gates Street as well. Any attempt to rehabilitate the garage structure will not only fall far short of the parking requirement goal, it would also create an undue financial hardship.

Please see Appendix F: Report on Financial Hardship of Rehabilitation of the Garage Structure at 146 Gates Street which provides information supporting demolition of the garage structure due to undue financial hardship.

Timeframe for project - Please see Appendix C: Timeline for proposed project schedule illustrating completion of design, permitting and construction of the project.

Drainage study for project - Please see Appendix E: Drainage Analysis for the analysis of drainage for the project.

END

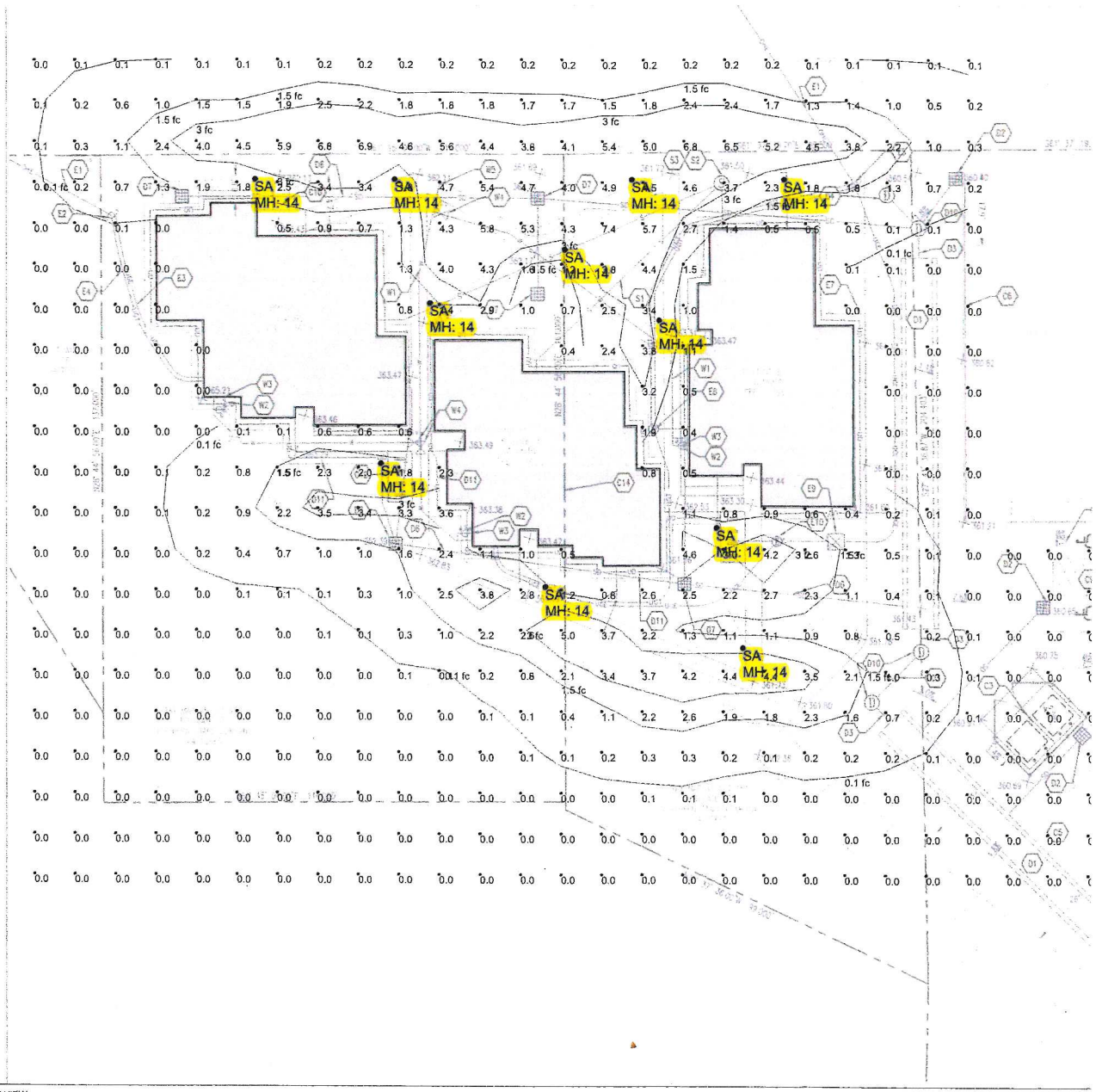
APPENDIX B

NORTHERN STAGE MULTIPLEX HOUSING PROJECT

HARTFORD CODE: 260-46

(d) Exterior Lighting Photometric Plans and Light Fixture Cut Sheets

See the following pages:



PLAN VIEW

1) DATA AND INFORMATION TO BE DETERMINED AT SUBSEQUENT DATE(S).
2) CALCULATIONS MAY or MAY NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
7) DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.

Calculation Summary

Label	Avg	Max	Min	Avg/Min	Max/Min
SITE	0.95	7.4	0.0	N.A.	N.A.

Luminaire Schedule (note fixture catalog numbers are not complete)

Type	Qty	Lum. Lumens	LLF	Lum. Watts	Description	Mounting Height
SA	11	5219	0.900	60.2	PROV2-36L-525-4K7-2-CL	14

FORMATTED FOR: CUSTOMER NAME
SCALE: NOT TO SCALE

TITLE: NORTHERN STAGE HOUSING
WHITE RIVER JCT, VT
SITE LIGHTING LAYOUT

Date: 10/9/2023

GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com

site lgt 10-9-23.AGI

Page 1 of 1

SWANEY LIGHTING ASSOCIATES, INC

NOTICE: THE DRAWINGS IN THIS PACKAGE ARE THE EXCLUSIVE PROPERTY OF SWANEY LIGHTING ASSOCIATES. THEY WERE PREPARED FOR USE ON THE SPECIFIC PROJECT AND SITE NOTED AND ARE NOT TO BE USED ON ANY OTHER PROJECT OR SITE WITHOUT THE EXPRESS WRITTEN PERMISSION OF SWANEY LIGHTING ASSOCIATES. THESE DRAWINGS ARE CONFIDENTIAL, THE DRAWINGS IS TO BE USED FOR NO PURPOSE OTHER THAN AS DETAILED IN THE CONTRACT BETWEEN SWANEY LIGHTING ASSOCIATES AND THE OWNER OF THE PROJECT. THEY ARE TO BE RETURNED UPON REQUEST AND IS NOT TO BE DOWNLOADED, DISCLOSED OR COPIED EXCEPT AS PERMITTED BY THE CONTRACT BETWEEN THE PARTIES.
NOTICE: THE INTENT OF THIS LIGHTING LAYOUT IS TO SUGGEST THE DESIGN SOLUTION AND ILLUMINATION LEVELS ONLY. ALL LIGHTING EQUIPMENT SHOWN ON THIS LAYOUT IS TO BE FURNISHED BY THE MANUFACTURER. ANY VARIATION IN FIXTURE PERFORMANCE FROM THAT SHOWN ON THIS LAYOUT IS THE RESPONSIBILITY OF THE MANUFACTURER. THIS LAYOUT IS FOR THE USE OF THE ORIGINAL PURCHASER ONLY. IT'S USE FOR ANY OTHER PURPOSE IS NOT AUTHORIZED BY SWANEY LIGHTING ASSOCIATES.

architectural arealighting

PROV2

ARCHITECTURAL AREA/SITE

DATE: | LOCATION:

TYPE: SA | PROJECT:

CATALOG #:

FEATURES

- Reliable, uniform, glare free illumination
- Types 1, 2, 3, 4W, 5Q, and 5W distributions
- Amber, 3000K, 4000K, 5000K CCT
- 0-10V dimming ready
- Integral Surge protection: 10k in parallel, 20k in series
- Upgrade Kits

PROVIDENCE®



Providence Medium

3000K and warmer CCTs only

See Certification Specifications

SPECIFICATIONS

CONSTRUCTION

- All housing components aluminum 360 alloy, sealed with continuous silicone rubber gaskets
- Standard configurations do not require a flat lens, optional lenses are tempered glass
- All internal and external hardware is stainless steel
- Finish: fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat
- Optical bezel finish to match the luminaire housing

LED/OPTICS

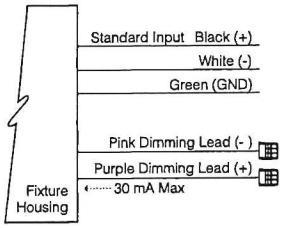
- Optical cartridge system consisting of a die cast heat sink, LED engine, TIR optics, gasket and bezel plate
- Optics are held in place without the use of adhesives
- Molded silicone gasket ensures a weather-proof seal around each individual LED.
- Features individual LED optical control based on high performance TIR optical designs
- House Side Shield is available on Standard and Clear Lens options except any Type 5 distribution. House Side Shield is not available for any distribution using a Diffused Lens

INSTALLATION

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury

ELECTRICAL

- Luminaires have UL recognized integral surge protection, and have a surge current rating of 10,000 Amps using the industry standard 8/20uSec.wave and surge rating of 372J
- Drivers are UL recognized with an inrush current maximum of <20.0 Amps maximum at 230VAC
- 100%-1% dimming range. Fixture will be wired for low voltage 0-10V dimming control



- Driver and surge suppressor are mounted to a prewired tray with quick disconnects that may be removed from the gear compartment
- Surge protection: 10,000k in parallel, 20,000k in series

CONTROLS

- Egress adapter(s) will slip over a 4"/100mm DIA. pole with the luminaire or arm slipping over the adapter to add a total of 4.5"/114mm to the overall height. Adapter(s) are prewired, independently rotatable 359°, and have a cast access cover with an integral lens and lanyard

CONTROLS (CONTINUED)

- Egress adapter will require an auxiliary 120 volt supply for operation of an integral MR16 lamp in the event of emergency. The lamp may be aimed and locked into position with an adjustment range of 15°-45°. Adapter will have a socket that accepts miniature bi-pin MR16 lamps up to 50 watts, lamp by others
- Photocell adapter includes a 7-Pin internal twist lock receptacle. Photocell by others

CERTIFICATIONS

- ETL listed under UL 1598 and CSA C22.2 No. 250.0-08 for wet locations
- This product qualifies as a "designated country construction material" per FAR 52.225-11 Buy American-Construction Materials under Trade Agreements effective 5/29/2020

WARRANTY

- 5 year warranty

KEY DATA	
LUMEN RANGE	1,81–9,336
WATTAGE RANGE	31.52–71.6
EFFICACY RANGE (LPW)	44.9–118.9
INPUT CURRENT RANGE (mA)	295–615 mA
WEIGHT	29 lbs / 13.15 kg
EPA	1.33

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architectural arealighting

PROV2

ARCHITECTURAL AREA/SITE

DATE: | LOCATION:

TYPE: SA | PROJECT:

CATALOG #:

ORDERING GUIDE

Example: PROV2-36L-325-3K7-4W-BL-SLA1-DF-HS-AD5-UNV

CATALOG #

HOUSING

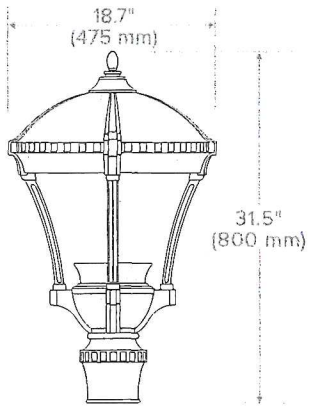
PROV2

Housing		LED Quantity		Lumen output		CCT/CRI		Distribution		Finish	
PROV2	Providence Medium 2.0	36L	36 LED	295	450mA Microcore Equivalent	AMB	Amber-595nm Peak [1]	1	Type I	BLS	Black Gloss Smooth
				325	325mA, 4500 Lumens	3K7	3000K, 70 CRI	2	Type II	BLT	Black Matte Textured
				510	510mA, 6500 Lumens	4K7	4000K, 70 CRI	3	Type III	DBS	Dark Bronze Gloss Smooth
				525	700mA Microcore Equivalent	5K7	5000K, 70 CRI	4W	Type IV Wide	DBT	Dark Bronze Matte Textured
				615	615mA, 7500 Lumens	Contact factory for options listed below		5Q	Type V Square	GTT	Graphite Matte Textured
						27K8	2700K, 80 CRI	5W	Type V Wide	LGS	Light Grey Gloss Smooth
						80 or 90 CRI for standard color temperatures				LGT	Light Grey Matte Textured
										PSS	Platinum Silver Gloss Smooth
										VGT	Verde Green Matte Textured
										WHS	White Gloss Smooth
										WHT	White Matte Textured

Color Option	
CC [2]	Custom Color

Mounting		Optional Lens		Options		Mounting Options		Voltage	
Pole Mount		CL	Clear Lens	HS	House Side Shield [3,5]	AD5	Adaptor-5" OD Pole	UNV	120-277V
STND_MNT [6]	Standard Mount	DL	Diffused Lens [2]	PFN	Brass Colored Finish	PCA-C	Photocontrol Adapter Contemporary		
PT23	2 3/8" tenon			SPK	Cast Spikes	PCA-T	Rotatable photocell housing. The housing slips over a 4"/100mm o.d. pole.a fixture slips over the 4"/100mm O.D. tenon. Includes an internal twist lock receptacle, and an access cover with integral lens and stainless steel tether. Adds 5"/125mm to the overall height of the pole/fixtureassembly. Prewire don the load side and line side for easy installation. Photocell by others		
PT3	3" tenon			BPS	Brass Colored Struts				
PT4	4" tenon			SF	Single Fuse (120, 277)				
Arm Mount				DF	Double Fuse (208, 240)				
SLA1	4" pole or tenon					EPA-C	Egress Adapter Contemporary		
TRA5U-4	4" pole or tenon								
TRA6U-4	4" pole or tenon								
TRA8U-4	4" pole or tenon								
TRA55-4	4" pole or tenon								
TRA5U-5	5" pole or tenon								
TRA6U-5	5" pole or tenon								
TRA8U-5	5" pole or tenon								
TRA55-5	5" pole or tenon								
TRA56-5	5" pole or tenon								
Wall Mount									
WMA55	Wall Mount								
WMA56	Wall Mount								
Pier Mount									
PM1	Pier Mount 1								
PM2	Pier Mount 2								
PM3	Pier Mount 3								

DIMENSIONS



Notes:

1. Turtle Friendly
2. Diffused Lens is available only with T3 and T5W distribution
3. House side Shield is available only with T1, T2, T3 and T4W distributions
4. Consult factory for custom color, marine and corrosive finish options
5. Contact Factory for additional glare shield options
6. Slide over 4" OD Pole

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DELIVERED LUMENS

The table below shows the delivered lumens for the various lumen outputs and beam distributions. Use this chart in connection with the lumen factor (LF) capability to deliver any output required.

LED #	Drive Current	Lumen Package	Lens	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	Bug Rating			Efficancy (Lm/W)	Lumen	Bug Rating			Efficancy (Lm/W)	Lumen	Bug Rating			Efficancy (Lm/W)
36	295	450mA Microcore Equivalent	None	1	3807	1	0	1	111.6	3960	1	0	1	116.1	4128	1	0	1	121.0
				2	3596	1	0	1	105.4	3740	1	0	1	109.7	3899	1	0	1	114.3
				3	3471	1	0	1	101.8	3611	1	0	1	105.9	3764	1	0	1	110.4
				4W	3501	1	0	1	102.7	3642	1	0	1	106.8	3796	1	0	1	111.3
				1-HS	2355	0	0	1	69.1	2450	0	0	1	71.8	2554	0	0	1	74.9
				2-HS	2049	0	0	1	60.1	2132	0	0	1	62.5	2222	0	0	1	65.2
				3-HS	1981	0	0	1	58.1	2061	0	0	1	60.4	2148	0	0	1	63.0
				4W-HS	2044	0	0	1	59.9	2126	0	0	1	62.3	2216	0	0	1	65.0
				5Q	3818	2	0	1	112.0	3971	2	0	1	116.5	4140	2	0	1	121.4
				5W	3529	2	0	1	103.5	3670	2	0	1	107.6	3826	2	0	1	112.2
			Clear	1-CL	3242	1	0	1	95.0	3373	1	0	1	98.8	3516	1	0	1	103.0
				2-CL	3062	1	0	1	89.7	3186	1	0	1	93.3	3321	1	0	1	97.3
				3-CL	2957	1	0	1	86.6	3075	1	0	1	90.1	3206	1	0	1	93.9
				4W-CL	2982	1	0	1	87.4	3102	1	0	1	90.9	3233	1	0	1	94.7
				1-CL-HS	2006	0	0	1	58.8	2087	0	0	1	61.1	2175	0	0	1	63.7
				2-CL-HS	1746	0	0	1	51.1	1816	0	0	1	53.2	1893	0	0	1	55.5
				3-CL-HS	1688	0	0	1	49.4	1755	0	0	1	51.4	1830	0	0	1	53.6
				4W-CL-HS	1740	0	0	1	51.0	1810	0	0	1	53.0	1887	0	0	1	55.3
				5Q-CL	3252	2	0	1	95.3	3382	2	0	1	99.1	3526	2	0	1	103.3
				5W-CL	3005	2	0	1	88.1	3126	2	0	1	91.6	3259	2	0	1	95.5
			Diffused	3-DL	2243	1	0	1	65.8	2334	1	0	1	68.4	2433	1	0	1	71.3
				5W-DL	2280	1	0	1	66.9	2372	1	0	1	69.6	2473	1	0	1	72.5
	325	4500	None	1	4147	1	0	1	110	4313	1	0	1	114	4496	1	0	1	118.9
				2	3917	1	0	1	104	4074	1	0	1	108	4247	1	0	1	112.3
				3	3781	1	0	1	100	3933	1	0	1	104	4100	1	0	1	108.4
				4W	3813	1	0	1	101	3967	1	0	2	105	4135	1	0	2	109.3
				1-HS	2566	0	0	1	68	2669	0	0	1	71	2782	0	0	1	73.6
				2-HS	2232	0	0	1	59	2322	0	0	1	61	2421	0	0	1	64.0
				3-HS	2158	0	0	1	57	2245	0	0	1	59	2340	0	0	1	61.9
				4W-HS	2226	0	0	1	59	2315	0	0	1	61	2414	0	0	1	63.8
				5Q	4158	2	0	1	110	4326	2	0	1	114	4509	2	0	1	119.2
				5W	3844	2	0	1	102	3998	2	0	1	106	4168	3	0	1	110.2
			Clear	1-CL	3532	1	0	1	93.4	3674	1	0	1	97.1	3829	1	0	1	101.3
				2-CL	3336	1	0	1	88.2	3470	1	0	1	91.7	3617	1	0	1	95.6
				3-CL	3220	1	0	1	85.2	3350	1	0	1	88.6	3492	1	0	1	92.3
				4W-CL	3248	1	0	1	85.9	3379	1	0	1	89.3	3522	1	0	1	93.1
				1-CL-HS	2185	0	0	1	57.8	2273	0	0	1	60.1	2369	0	0	1	62.6
				2-CL-HS	1901	0	0	1	50.3	1978	0	0	1	52.3	2062	0	0	1	54.5
				3-CL-HS	1838	0	0	1	48.6	1912	0	0	1	50.6	1993	0	0	1	52.7
				4W-CL-HS	1896	0	0	1	50.1	1972	0	0	1	52.1	2056	0	0	1	54.4
				5Q-CL	3542	2	0	1	93.6	3684	2	0	1	97.4	3840	2	0	1	101.5
				5W-CL	3274	2	0	1	86.6	3405	2	0	1	90.0	3550	2	0	1	93.9
			Diffused	3-DL	2459	1	0	1	65.0	2558	1	0	1	67.7	2666	1	0	1	70.7
				5W-DL	2469	1	0	1	65.3	2568	1	0	1	67.9	2677	1	0	1	70.9

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DELIVERED LUMENS (CONTINUED)

The table below shows the delivered lumens for the various lumen outputs and beam distributions. Use this chart in connection with the lumen factor (LF) capability to deliver any output required.

LED #	Drive Current	Lumen Package	Lens	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	Bug Rating			Efficancy (Lm/W)	Lumen	Bug Rating			Efficancy (Lm/W)	Lumen	Bug Rating			Efficancy (Lm/W)
36	510	6500	None	1	6081	1	0	1	104.1	6326	1	0	1	108	6594	1	0	1	113
				2	5744	1	0	1	98.3	5975	1	0	1	102	6228	1	0	1	107
				3	5545	1	0	2	94.9	5768	1	0	2	99	6013	1	0	2	103
				4W	5593	1	0	2	95.7	5818	1	0	2	100	6064	1	0	2	104
				1-HS	3763	0	0	1	64.4	3914	0	0	1	67	4080	0	0	1	70
				2-HS	3274	0	0	1	56.1	3406	0	0	1	58	3550	0	0	1	61
				3-HS	3165	0	0	1	54.2	3292	0	0	1	56	3432	0	0	1	59
				4W-HS	3265	0	0	1	55.9	3396	0	0	1	58	3540	0	0	1	61
				5Q	6099	2	0	1	104.4	6344	2	0	1	109	6613	3	0	1	113
				5W	5637	3	0	1	96.5	5864	3	0	1	100	6112	3	0	1	105
			Clear	1-CL	5180	1	0	1	88.7	5388	1	0	1	92.2	5616	1	0	1	96.2
				2-CL	4892	1	0	1	83.8	5089	1	0	1	87.1	5305	1	0	1	90.8
				3-CL	4723	1	0	1	80.9	4913	1	0	1	84.1	5121	1	0	1	87.7
				4W-CL	4763	1	0	2	81.6	4955	1	0	2	84.8	5165	1	0	2	88.4
				1-CL-HS	3205	0	0	1	54.9	3334	0	0	1	57.1	3475	0	0	1	59.5
				2-CL-HS	2788	0	0	1	47.7	2901	0	0	1	49.7	3024	0	0	1	51.8
				3-CL-HS	2696	0	0	1	46.2	2804	0	0	1	48.0	2923	0	0	1	50.0
				4W-CL-HS	2780	0	0	1	47.6	2892	0	0	1	49.5	3015	0	0	1	51.6
				5Q-CL	5194	2	0	1	88.9	5403	2	0	1	92.5	5632	2	0	1	96.4
				5W-CL	4801	3	0	1	82.2	4994	3	0	1	85.5	5206	3	0	1	89.1
			Diffused	3-DL	3584	1	0	1	61.4	3728	1	0	1	63.8	3886	1	0	1	66.5
				5W-DL	3615	2	0	1	61.9	3760	2	0	1	64.4	3919	2	0	1	67.1
	525	700mA Microcore Equivalent	None	1	6235	1	0	1	103.6	6486	1	0	1	107.7	6761	1	0	1	112.3
				2	5889	1	0	1	97.8	6126	1	0	1	101.8	6386	1	0	1	106.1
				3	5686	1	0	2	94.4	5914	1	0	2	98.2	6165	1	0	2	102.4
				4W	5734	1	0	2	95.3	5965	1	0	2	99.1	6218	1	0	2	103.3
				1-HS	3858	0	0	1	64.1	4013	0	0	1	66.7	4183	0	0	1	69.5
				2-HS	3357	0	0	1	55.8	3492	0	0	1	58.0	3640	0	0	1	60.5
				3-HS	3245	0	0	1	53.9	3376	0	0	1	56.1	3519	0	0	1	58.5
				4W-HS	3347	0	0	1	55.6	3482	0	0	1	57.8	3629	1	0	1	60.3
				5Q	6253	2	0	1	103.9	6504	2	0	1	108.0	6780	3	0	1	112.6
				5W	5779	3	0	1	96.0	6012	3	0	1	99.9	6267	3	0	1	104.1
			Clear	1-CL	5311	1	0	1	88.2	5524	1	0	1	91.8	5758	1	0	1	95.7
				2-CL	5016	1	0	1	83.3	5218	1	0	1	86.7	5439	1	0	1	90.3
				3-CL	4842	1	0	1	80.4	5037	1	0	2	83.7	5251	1	0	2	87.2
				4W-CL	4884	1	0	2	81.1	5080	1	0	2	84.4	5296	1	0	2	88.0
				1-CL-HS	3286	0	0	1	54.6	3418	0	0	1	56.8	3563	0	0	1	59.2
				2-CL-HS	2859	0	0	1	47.5	2974	0	0	1	49.4	3100	0	0	1	51.5
				3-CL-HS	2764	0	0	1	45.9	2875	0	0	1	47.8	2997	0	0	1	49.8
				4W-CL-HS	2851	0	0	1	47.4	2965	0	0	1	49.3	3091	0	0	1	51.3
				5Q-CL	5326	2	0	1	88.5	5540	2	0	1	92.0	5775	2	0	1	95.9
				5W-CL	4922	3	0	1	81.8	5120	3	0	1	85.1	5337	3	0	1	88.7
			Diffused	3-DL	3675	1	0	1	61.0	3822	1	0	1	63.5	3984	1	0	1	66.2
				5W-DL	3735	2	0	1	62.0	3885	2	0	1	64.5	4050	2	0	1	67.3

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DELIVERED LUMENS (CONTINUED)

The table below shows the delivered lumens for the various lumen outputs and beam distributions. Use this chart in connection with the lumen factor (LF) capability to deliver any output required.

LED #	Drive Current	Lumen Package	Lens	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	Bug Rating			Efficancy (Lm/W)	Lumen	Bug Rating			Efficancy (Lm/W)	Lumen	Bug Rating			Efficancy (Lm/W)
36	615	7500	None	1	7118	1	0	1	101.3	7404	1	0	1	105.4	7718	1	0	1	109.9
				2	6723	1	0	1	95.7	6994	1	0	2	99.6	7290	1	0	2	103.8
				3	6491	1	0	2	92.4	6752	1	0	2	96.1	7038	1	0	2	100.2
				4W	6546	1	0	2	93.2	6809	1	0	2	96.9	7098	1	0	2	101.0
				1-HS	4404	0	0	1	62.7	4581	0	0	1	65.2	4775	0	0	1	68.0
				2-HS	3832	0	0	1	54.5	3986	0	0	1	56.7	4155	0	0	1	59.1
				3-HS	3705	0	0	1	52.7	3854	0	0	1	54.9	4017	0	0	1	57.2
				4W-HS	3821	1	0	1	54.4	3975	1	0	1	56.6	4143	1	0	1	59.0
				5Q	7138	3	0	1	101.6	7425	3	0	1	105.7	7740	3	0	1	110.2
				5W	6598	3	0	1	93.9	6863	3	0	1	97.7	7154	3	0	1	101.8
			Clear	1-CL	6063	1	0	1	86.3	6306	1	0	1	89.8	6574	1	0	1	93.6
				2-CL	5726	1	0	1	81.5	5956	1	0	1	84.8	6209	1	0	1	88.4
				3-CL	5528	1	0	1	78.7	5750	1	0	1	81.9	5994	1	0	2	85.3
				4W-CL	5575	1	0	2	79.4	5800	1	0	2	82.6	6045	1	0	2	86.1
				1-CL-HS	3751	0	0	1	53.4	3902	0	0	1	55.5	4067	0	0	1	57.9
				2-CL-HS	3264	0	0	1	46.5	3395	0	0	1	48.3	3539	0	0	1	50.4
				3-CL-HS	3155	0	0	1	44.9	3282	0	0	1	46.7	3421	0	0	1	48.7
				4W-CL-HS	3254	0	0	1	46.3	3385	0	0	1	48.2	3529	0	0	1	50.2
				5Q-CL	6080	2	0	1	86.5	6324	2	0	1	90.0	6592	2	0	1	93.8
				5W-CL	5619	3	0	1	80.0	5845	3	0	1	83.2	6093	3	0	1	86.7
			Diffused	3-DL	4195	1	0	1	59.7	4364	1	0	1	62.1	4549	1	0	1	64.7
				5W-DL	4264	2	0	1	60.7	4436	2	0	1	63.1	4624	2	0	1	65.8

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PROV2

ARCHITECTURAL AREA/SITE

DATE: | LOCATION:

TYPE: SA | PROJECT:

CATALOG #:

PHOTOMETRY

PROV2-36L-615-4K7-1

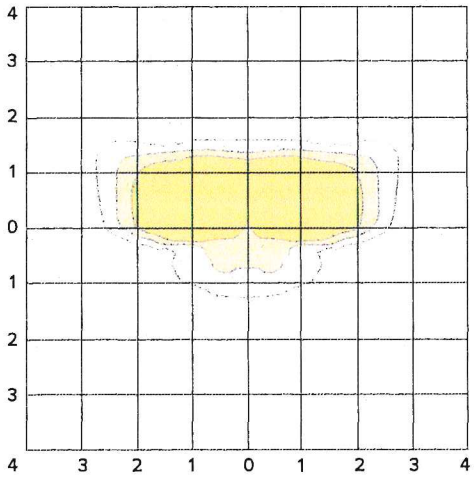
LUMINAIRE DATA

Description	**4000 Kelvin, 70CRI**
Delivered Lumens	**7405**
Watts	**70.25**
Efficacy	**105.4**
IES Type	**II**
BUG Rating	**B1-U0-G1**
Mounting Height	**15 ft**
Grid Scale	**15 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	6403	86%
Downward House Side	1002	14%
Downward Total	7405	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	7405	100%

ISOFOOT CANDLE PLOT



PROV2-36L-615-4K7-2

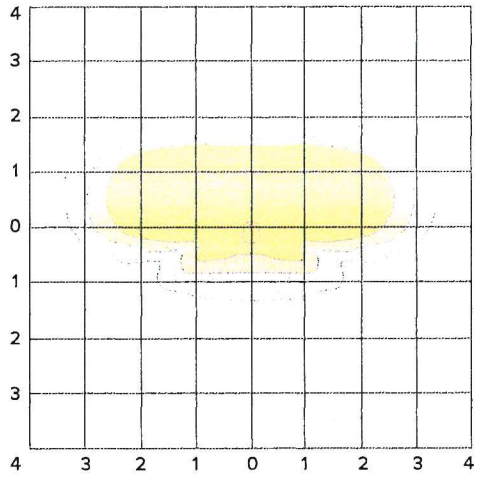
LUMINAIRE DATA

Description	**4000 Kelvin, 70CRI**
Delivered Lumens	**6994**
Watts	**70.25**
Efficacy	**99.6**
IES Type	**II**
BUG Rating	**B1-U0-G2**
Mounting Height	**15 ft**
Grid Scale	**15 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	5665	81%
Downward House Side	1329	19%
Downward Total	6994	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	6994	100%

ISOFOOT CANDLE PLOT



PROV2-36L-615-4K7-3

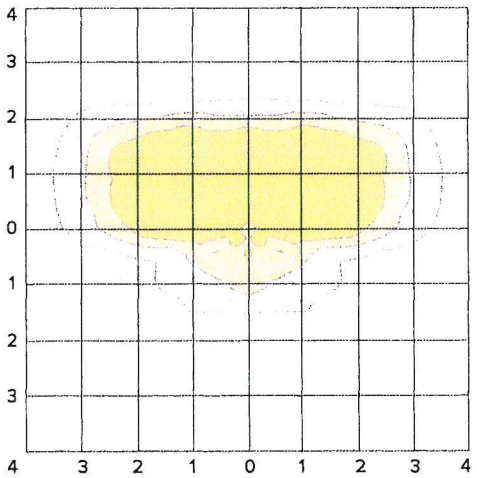
LUMINAIRE DATA

Description	**4000 Kelvin, 70CRI**
Delivered Lumens	**6752**
Watts	**70.25**
Efficacy	**96.1**
IES Type	**III**
BUG Rating	**B1-U0-G2**
Mounting Height	**15 ft**
Grid Scale	**15 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	5552	82%
Downward House Side	1200	18%
Downward Total	6752	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	6752	100%

ISOFOOT CANDLE PLOT



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DATE: | LOCATION:

TYPE: SA | PROJECT:

CATALOG #:

PHOTOMETRY

PROV2-36L-615-4K7-4W

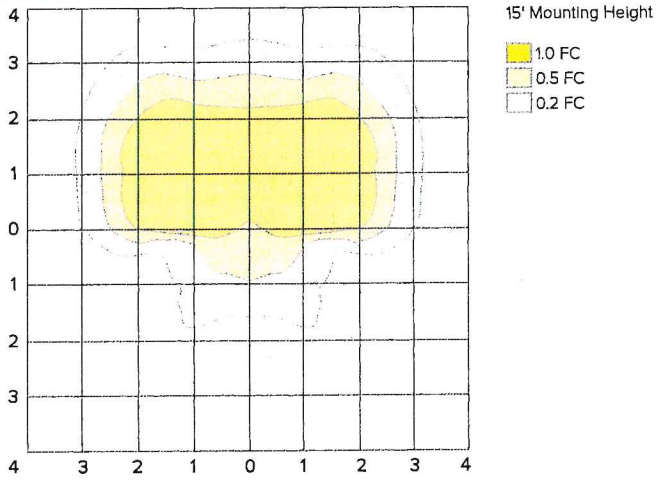
LUMINAIRE DATA

Description	**4000 Kelvin, 70CRI**
Delivered Lumens	**6809**
Watts	**70.25**
Efficacy	**96.9**
IES Type	**IV Wide**
BUG Rating	**B1-U0-G2**
Mounting Height	**15 ft**
Grid Scale	**15 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	5802	85%
Downward House Side	1007	15%
Downward Total	6809	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	6809	100%

ISOFOOT CANDLE PLOT



PROV2-36L-615-4K7-5Q

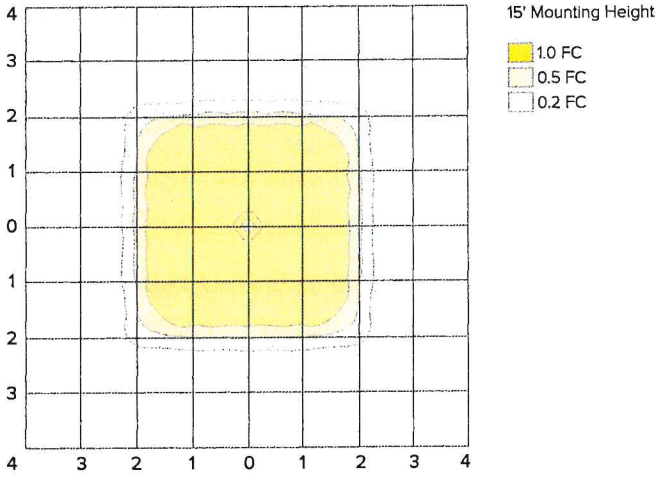
LUMINAIRE DATA

Description	**4000 Kelvin, 70CRI**
Delivered Lumens	**7425**
Watts	**70.25**
Efficacy	**105.7**
IES Type	**VS**
BUG Rating	**B3-U0-G1**
Mounting Height	**15 ft**
Grid Scale	**15 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	3713	50%
Downward House Side	3713	50%
Downward Total	7425	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	7425	100%

ISOFOOT CANDLE PLOT



PROV2-36L-615-4K7-5W

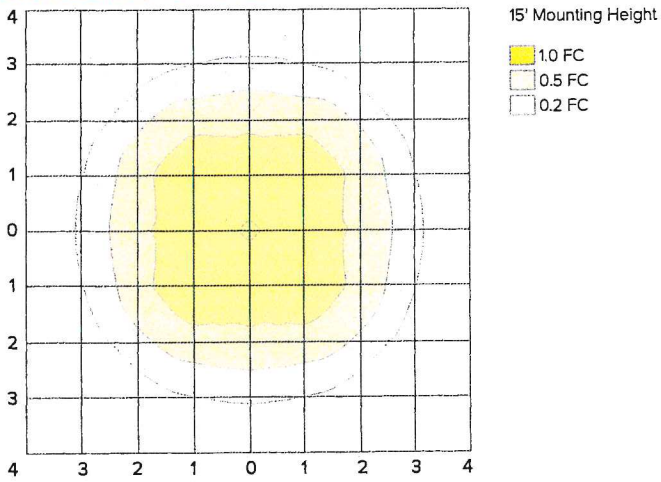
LUMINAIRE DATA

Description	**4000 Kelvin, 70CRI**
Delivered Lumens	**6863**
Watts	**70.25**
Efficacy	**97.7**
IES Type	**VS**
BUG Rating	**B3-U0-G1**
Mounting Height	**15 ft**
Grid Scale	**15 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	3432	50%
Downward House Side	3432	50%
Downward Total	6863	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	6863	100%

ISOFOOT CANDLE PLOT



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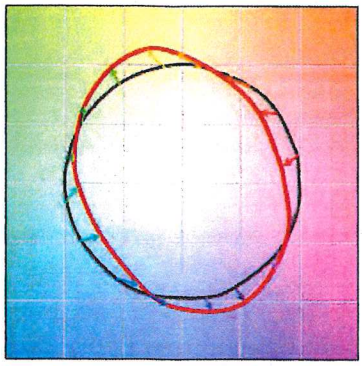
TYPE: SA	PROJECT:
CATALOG #:	

TM-30 DATA

COLOR VECTOR GRAPHIC

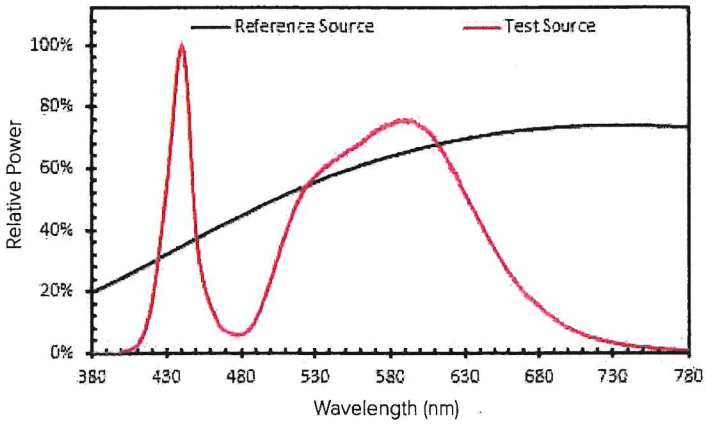


Reference Illuminant — Test Source

TEST SOURCE

MBM TEST RESULTS	
CCT (K)	3947
CIE Ra	72
Duv	0.0004
x	0.3831
y	0.3793
Rf	68
Rg	99

SPECTRAL POWER DISTRIBUTION COMPARISON



ELECTRICAL DATA

Electrical											Dimming				
Light Engine	System Current	System Watts	Line Voltage		Amps AC				Min. Power Factor	Max THD (%)	Dimming Range	Source current out of 0-10V		Absolute voltage range on 0-10V (+)	
			VAC	HZ	120	208	240	277				Min	Max	Min	Max
36	295 mA	34.1	120-277	50/60	0.28	0.16	0.14	0.12	>0.9	20	10% to 100%	0mA	1mA	0V	10V
	325 mA	37.8			0.32	0.18	0.16	0.14							
	510 mA	58.4			0.49	0.28	0.24	0.21							
	525 mA	60.2			0.50	0.29	0.25	0.22							
	615 mA	70.3			0.59	0.34	0.29	0.25							

TM-21 LIFETIME CALCULATION - PROJECTED LUMEN MAINTENANCE (25°C / 77°F)						
HOURS	0	25,000	36,000	50,000	100,000	REPORTED L70
Projected Lumen Maintenance	100%	98.0%	96.9%	95.4%	90.5%	> 60,000

AMBER MULTIPLIER	
CCT	MULTIPLIER
5000K	1
AM	0.1727

2700K MULTIPLIER	
CCT	MULTIPLIER
5000K	1
2700K	0.897

LENS OPTION MULTIPLIER	
CLEAR LENS	DIFFUSED LENS
0.8517	0.6462

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PARKING LOT

Illuminance (Fc)
Average = 1.88
Maximum = 3.8
Minimum = 0.5
Avg/Min Ratio = 3.76
Max/Min Ratio = 7.60

Luminaire Schedule					
Symbol	Qty	Label	Arrangement	Description	[MANUFAC]
	7	S1	Single	DSE93120SRDWH (3000K)	NICOR Inc.
	7	S2	Single	EOF1MV3KBZ / WALL MTD 9' AFG	NICOR, Inc.
	1	S3	Single	MRS-LED-06L-SIL-4-UNV-DIM-30-70CRI-BRZ / 4SQ B3 S11G15 S GA 4BC BRZ (15' AFG)	LSI INDUSTRIES, INC.
	4	S5	Single	MRS-LED-06L-SIL-FT-UNV-DIM-30-70CRI-IL-BRZ / 4SQ B3 S11G15 S GA 4BC BRZ (15' AFG)	LSI INDUSTRIES, INC.

L01

NORTHERN STAGE HOUSING
WHITE RIVER JUNCTION VT

Drawn By:
Checked By:
Date:10/6/2023
Scale: 1" = 20'

Revisions

#	Date	Comments

Exposure Lighting
6 Scott Rd Unit A
Hampton, NH 03842
(603)921-9080

EXPOSURE
LIGHTING — CONTROLS — ELECTRICAL

DSE

Edge Lit Surface Mount LED Downlight

Project

Catalog

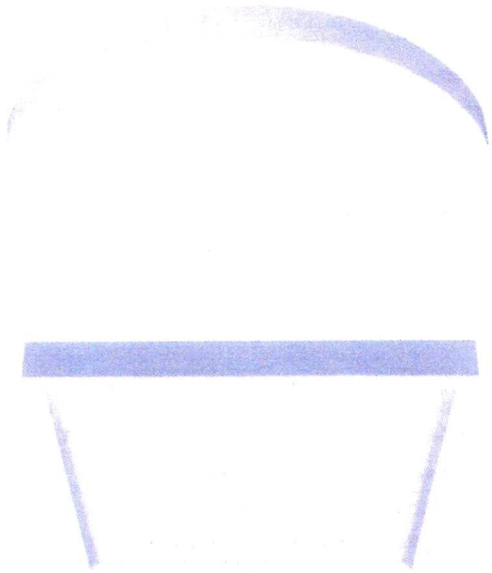
Type S1

Type

Date

Product Description

The DSEv3 Selectable Surface Mount Downlight offers a slim profile in both round and square apertures with CCT selectability. The edge-lit technology uses a reflective light guide panel that disperses light through a diffused lens, making it a practical and economical solution with high performance. Available in a variety of diameters, the DSEv3 brings flexible option with a clean aesthetic and excellent performance to any area of the home.



Construction
- Aluminum backplate with integral mounting tabs
- Injection molded polymer trim
- CCT Selection switch on back of fixture
- Available in round or square configurations

Optical System
- Precision engineered optical stack creates uniform light distribution that maximizes lumen output
- Dual emitter array enables CCT selection of 2700, 3000, 3500, 4000, or 5000K
- Utilizes high performing LEDs with a greater than 90 CRI and an R9 greater than 50

Electrical
- Input voltage of 120VAC, 50/60Hz
- Dimmable to less than 5% with compatible TRIAC or ELV dimmers
- Operating temperature of -4°F to 104°F (-20°C to 40°C)

Finish
- Matte White
- Accessory color trims available in Black, Nickel and Oil-Rubbed Bronze

Mounting and Installation
- Driverless design minimizes installation height
- Surface mounts with to most 4" junction boxes using included mounting plate
- Mounting plate includes features to allow fixture alignment

Listings
- LM-79, LM-80 testing performed in accordance with IESNA standards
- cETLus 1598 Listed for wet locations
- ENERGYSTAR listed
- CA Title 24 (JA8) Compliant
- Compliant with NFPA® 70, NEC® Section 410.16 (A)(3) and 410.16 (C)(5) for closet use
- RoHS Compliant
- Meets FCC Part 15, Subpart B, Class B standards for conducted and radiated emissions per ANSI C63.4:2014
- LED lumen maintenance: L70(9k)>54,000 hrs

Warranty
- 5-year limited system warranty standard
- Warranty does not cover product failure due to an overvoltage event (power surge)
- For installations where power surge may be possible, NICOR recommends installing additional surge protection at the electrical distribution panel

Intertek ENERGY STAR T24 *Excludes 5000K* WET LOCATION RATED 5 YEAR WARRANTY

NICOR®

Ordering

Round Trim

Example: DSE83120SRDWH

Series	Size	Version	Voltage	CCT's	Trim Shape	Trim Color
DSE	◯ 5 (5 inch)	3	120	S (2700/3000/3500/4000/5000K)	RD (Round)	WH (White)
	◯ 8 (8 inch)					
	☐ 9 (9 inch)					

Square Trim

Example: DSE63120SSQWH

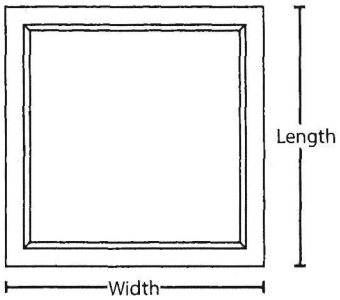
Series	Size	Version	Voltage	CCT's	Trim Shape	Trim Color
DSE	◯ 4 (4 inch)	3	120	S (2700/3000/3500/4000/5000K)	SQ (Square)	WH (White)
	◯ 6 (6 inch)					
	◯ 9 (9 inch)					

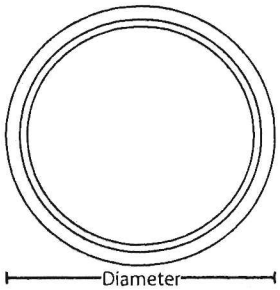
Specifications and dimensions subject to change without notice

Accessories

Round Fixtures		Square Fixtures	
5" Round Black Trim	DSE5-1-TR-RD-BK	4" Square Black Trim	DSE4-1-TR-SQ-BK
5" Round Oil Rubbed Bronze Trim	DSE5-1-TR-RD-OB	4" Square Oil Rubbed Bronze Trim	DSE4-1-TR-SQ-OB
5" Round Nickel Trim	DSE5-1-TR-RD-NK	4" Square Nickel Trim	DSE4-1-TR-SQ-NK
8" Round Black Trim	DSE8-1-TR-RD-BK	6" Square Black Trim	DSE6-1-TR-SQ-BK
8" Round Oil Rubbed Bronze Trim	DSE8-1-TR-RD-OB	6" Square Oil Rubbed Bronze Trim	DSE6-1-TR-SQ-OB
8" Round Nickel Trim	DSE8-1-TR-RD-NK	6" Square Nickel Trim	DSE6-1-TR-SQ-NK
9" Round Black Trim	DSE9-1-TR-RD-BK	9" Square Black Trim	DSE9-1-TR-SQ-BK
9" Round Oil Rubbed Bronze Trim	DSE9-1-TR-RD-OB	9" Square Oil Rubbed Bronze Trim	DSE9-1-TR-SQ-OB
9" Round Nickel Trim	DSE9-1-TR-RD-NK	9" Square Nickel Trim	DSE9-1-TR-SQ-NK

Dimensions



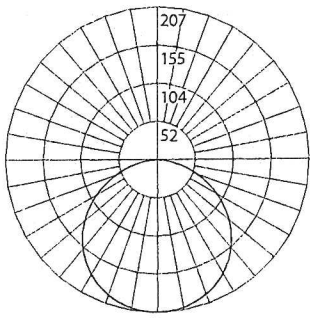


DImensions				
Square	Diameter	Width/Length	Height	Height (w/ switch)
DSE4-SQ	-	4.35in (110mm)		
DSE6-SQ	-	6.25in (159mm)	0.67in (17mm)	1.00in (25mm)
DSE9-SQ	-	9.00in (229mm)		
Round				
DSE5-RD	5.35in (136mm)	-		
DSE8-RD	7.50in (191mm)	-	0.67in (17mm)	1.00in (25mm)
DSE9-RD	9.00in (229mm)	-		

Photometric Data

DSE5-RD (2700K Setting)

Input Voltage (VAC)	120V
System Level Power (W)	10.4
Delivered Lumens (Lm)	615
System Efficacy (Lm/W)	59.1
Correlated Color Temp (K)	2697
Color Rendering Index (CRI)	94 R9=63
Beam Angle	116
Spacing Criteria	1.30



Intensity Summary (Candle Power)

Angle	Mean CP
0	207
5	206
15	201
25	189
35	170
45	145
55	113
65	78
75	41
85	9
90	0

Cone of Light Tabulation

Mounted height (Feet)	Footcandles Beam Center	Diameter (Feet)
4	12.9	12.7
6	5.8	19.0
8	3.2	25.4
10	2.1	31.7

Zonal Lumen Summary

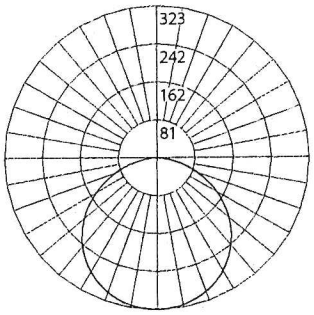
Zone	Lumens	% of Luminaire
0-30	163	26.5%
0-40	269	43.8%
0-60	481	78.3%
0-90	615	100%
90-180	0	0%
0-180	615	100%

CCT Data Multiplier

3000K	1.019
3500K	1.030
4000K	1.051
5000K	1.043

DSE8-RD (2700K Setting)

Input Voltage (VAC)	120
System Level Power (W)	15.6
Delivered Lumens (Lm)	948
System Efficacy (Lm/W)	60.8
Correlated Color Temp (K)	2781
Color Rendering Index (CRI)	92 R9=53
Beam Angle	115
Spacing Criteria	1.29



Intensity Summary (Candle Power)

Angle	Mean CP
0	323
5	322
15	312
25	292
35	261
45	221
55	173
65	118
75	62
85	14
90	0

Cone of Light Tabulation

Mounted height (Feet)	Footcandles Beam Center	Diameter (Feet)
4	20.2	12.4
6	9.0	18.7
8	5.0	24.9
10	3.2	31.1

Zonal Lumen Summary

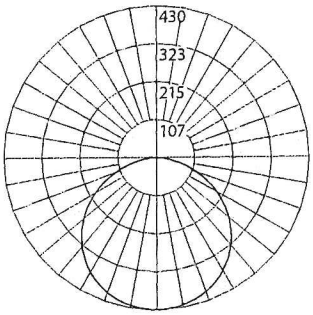
Zone	Lumens	% of Luminaire
0-30	254	26.7%
0-40	418	44.1%
0-60	744	78.5%
0-90	948	100%
90-180	0	0%
0-180	948	100%

CCT Data Multiplier

3000K	1.019
3500K	1.030
4000K	1.051
5000K	1.043

DSE9-RD (2700K Setting)

Input Voltage (VAC)	120
System Level Power (W)	18.1
Delivered Lumens (Lm)	1261
System Efficacy (Lm/W)	69.7
Correlated Color Temp (K)	2784
Color Rendering Index (CRI)	92 R9=54
Beam Angle	114
Spacing Criteria	1.28



Intensity Summary (Candle Power)

Angle	Mean CP
0	430
5	428
15	415
25	388
35	347
45	293
55	228
65	155
75	81
85	19
90	0

Cone of Light Tabulation

Mounted height (Feet)	Footcandles Beam Center	Diameter (Feet)
4	26.9	12.4
6	12.0	18.6
8	6.7	24.8
10	4.3	31.0

Zonal Lumen Summary

Zone	Lumens	% of Luminaire
0-30	338	26.8%
0-40	556	44.1%
0-60	990	78.5%
0-90	1261	100%
90-180	0	0%
0-180	1261	100%

CCT Data Multiplier

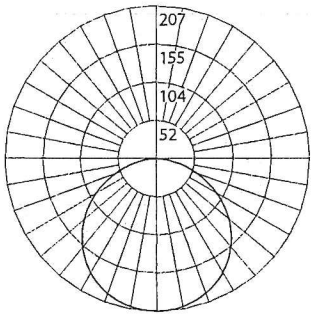
3000K	1.019
3500K	1.030
4000K	1.051
5000K	1.043

Fixture tested per LM-79-08. Photometric data is of the performance of a representative fixture. Results may vary in the field.

Photometric Data

DSE5-RD (2700K Setting)

Input Voltage (VAC)	120V
System Level Power (W)	10.4
Delivered Lumens (Lm)	615
System Efficacy (Lm/W)	59.1
Correlated Color Temp (K)	2697
Color Rendering Index (CRI)	94 R9=63
Beam Angle	116
Spacing Criteria	1.30



Intensity Summary (Candle Power)

Angle	Mean CP
0	207
5	206
15	201
25	189
35	170
45	145
55	113
65	78
75	41
85	9
90	0

Cone of Light Tabulation

Mounted height (Feet)	Footcandles Beam Center	Diameter (Feet)
4	12.9	12.7
6	5.8	19.0
8	3.2	25.4
10	2.1	31.7

Zonal Lumen Summary

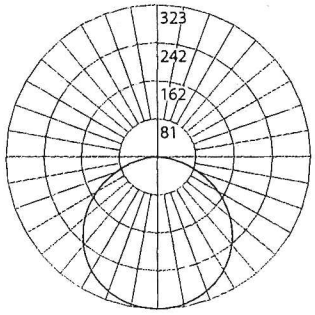
Zone	Lumens	% of Luminaire
0-30	163	26.5%
0-40	269	43.8%
0-60	481	78.3%
0-90	615	100%
90-180	0	0%
0-180	615	100%

CCT Data Multiplier

3000K	1.019
3500K	1.030
4000K	1.051
5000K	1.043

DSE8-RD (2700K Setting)

Input Voltage (VAC)	120
System Level Power (W)	15.6
Delivered Lumens (Lm)	948
System Efficacy (Lm/W)	60.8
Correlated Color Temp (K)	2781
Color Rendering Index (CRI)	92 R9=53
Beam Angle	115
Spacing Criteria	1.29



Intensity Summary (Candle Power)

Angle	Mean CP
0	323
5	322
15	312
25	292
35	261
45	221
55	173
65	118
75	62
85	14
90	0

Cone of Light Tabulation

Mounted height (Feet)	Footcandles Beam Center	Diameter (Feet)
4	20.2	12.4
6	9.0	18.7
8	5.0	24.9
10	3.2	31.1

Zonal Lumen Summary

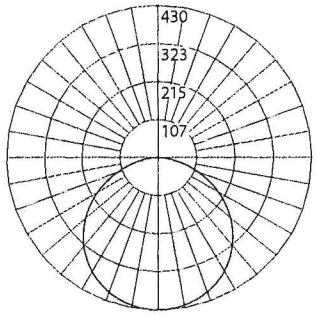
Zone	Lumens	% of Luminaire
0-30	254	26.7%
0-40	418	44.1%
0-60	744	78.5%
0-90	948	100%
90-180	0	0%
0-180	948	100%

CCT Data Multiplier

3000K	1.019
3500K	1.030
4000K	1.051
5000K	1.043

DSE9-RD (2700K Setting)

Input Voltage (VAC)	120
System Level Power (W)	18.1
Delivered Lumens (Lm)	1261
System Efficacy (Lm/W)	69.7
Correlated Color Temp (K)	2784
Color Rendering Index (CRI)	92 R9=54
Beam Angle	114
Spacing Criteria	1.28



Intensity Summary (Candle Power)

Angle	Mean CP
0	430
5	428
15	415
25	388
35	347
45	293
55	228
65	155
75	81
85	19
90	0

Cone of Light Tabulation

Mounted height (Feet)	Footcandles Beam Center	Diameter (Feet)
4	26.9	12.4
6	12.0	18.6
8	6.7	24.8
10	4.3	31.0

Zonal Lumen Summary

Zone	Lumens	% of Luminaire
0-30	338	26.8%
0-40	556	44.1%
0-60	990	78.5%
0-90	1261	100%
90-180	0	0%
0-180	1261	100%

CCT Data Multiplier

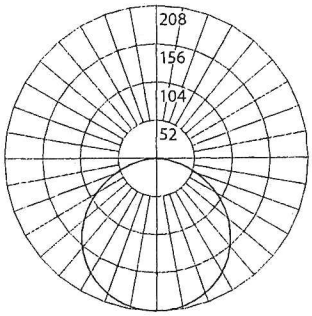
3000K	1.019
3500K	1.030
4000K	1.051
5000K	1.043

Fixture tested per LM-79-08. Photometric data is of the performance of a representative fixture. Results may vary in the field.

Photometric Data

DSE4-SQ (2700K Setting)

Input Voltage (VAC)	120
System Level Power (W)	10.7
Delivered Lumens (Lm)	617
System Efficacy (Lm/W)	57.7
Correlated Color Temp (K)	2787
Color Rendering Index (CRI)	92 R9=57
Beam Angle	116
Spacing Criteria	1.29



Intensity Summary (Candle Power)

Angle	Mean CP
0	208
5	207
15	201
25	188
35	169
45	143
55	112
65	77
75	40
85	9
90	0

Cone of Light Tabulation

Mounted height (Feet)	Footcandles Beam Center	Diameter (Feet)
4	13.0	12.8
6	5.8	19.2
8	3.3	25.6
10	2.1	32.0

Zonal Lumen Summary

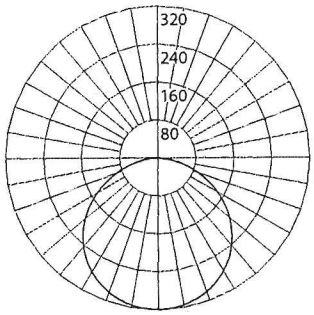
Zone	Lumens	% of Luminaire
0-30	164	26.6%
0-40	270	43.8%
0-60	483	78.4%
0-90	617	100%
90-180	0	0%
0-180	617	100%

CCT Data Multiplier

3000K	1.019
3500K	1.030
4000K	1.051
5000K	1.043

DSE6-SQ (2700K Setting)

Input Voltage (VAC)	120
System Level Power (W)	15.6
Delivered Lumens (Lm)	944
System Efficacy (Lm/W)	60.5
Correlated Color Temp (K)	2784
Color Rendering Index (CRI)	90 R9=57
Beam Angle	115
Spacing Criteria	1.30



Intensity Summary (Candle Power)

Angle	Mean CP
0	319
5	318
15	309
25	290
35	260
45	221
55	173
65	118
75	62
85	14
90	0

Cone of Light Tabulation

Mounted height (Feet)	Footcandles Beam Center	Diameter (Feet)
4	20.0	12.6
6	8.9	18.9
8	5.0	25.2
10	3.2	31.5

Zonal Lumen Summary

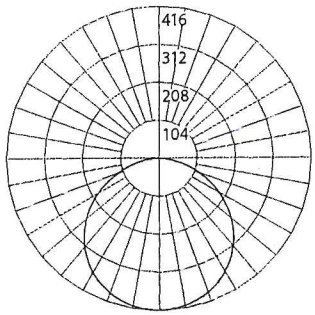
Zone	Lumens	% of Luminaire
0-30	251	26.6%
0-40	414	43.9%
0-60	741	78.4%
0-90	944	100%
90-180	0	0%
0-180	944	100%

CCT Data Multiplier

3000K	1.019
3500K	1.030
4000K	1.051
5000K	1.043

DSE9-SQ (2700K Setting)

Input Voltage (VAC)	120
System Level Power (W)	18.6
Delivered Lumens (Lm)	1219
System Efficacy (Lm/W)	65.5
Correlated Color Temp (K)	2768
Color Rendering Index (CRI)	92 R9=56
Beam Angle	114
Spacing Criteria	1.28



Intensity Summary (Candle Power)

Angle	Mean CP
0	415
5	413
15	401
25	375
35	336
45	284
55	221
65	150
75	78
85	18
90	0

Cone of Light Tabulation

Mounted height (Feet)	Footcandles Beam Center	Diameter (Feet)
4	26.0	12.4
6	11.5	18.7
8	6.5	24.9
10	4.1	31.1

Zonal Lumen Summary

Zone	Lumens	% of Luminaire
0-30	326	26.8%
0-40	537	44.1%
0-60	957	78.5%
0-90	1218	100%
90-180	0	0%
0-180	1219	100%

CCT Data Multiplier

3000K	1.019
3500K	1.030
4000K	1.051
5000K	1.043

Fixture tested per LM-79-08. Photometric data is of the performance of a representative fixture. Results may vary in the field.

Type S1

Performance Data - Round			
Model Number	Lumens	Watts	Lumens/Watt
DSE53 (2700K)	615		59.1
DSE53 (3000K)	627		60.3
DSE53 (3500K)	633	10.4	60.9
DSE53 (4000K)	646		62.1
DSE53 (5000K)	641		61.6
DSE83 (2700K)	948		60.8
DSE83 (3000K)	966		61.9
DSE83 (3500K)	976	15.6	62.6
DSE83 (4000K)	996		63.8
DSE83 (5000K)	989		63.4
DSE93 (2700K)	1261		69.7
DSE93 (3000K)	1285		71.0
DSE93 (3500K)	1298	18.1	71.7
DSE93 (4000K)	1325		73.2
DSE93 (5000K)	1315		72.7

Performance Data - Square			
Model Number	Lumens	Watts	Lumens/Watt
DSE43 (2700K)	617		57.7
DSE43 (3000K)	629		58.8
DSE43 (3500K)	635	10.7	59.3
DSE43 (4000K)	648		60.6
DSE43 (5000K)	643		60.1
DSE63 (2700K)	944		60.5
DSE63 (3000K)	962		61.7
DSE63 (3500K)	972	15.6	62.3
DSE63 (4000K)	992		63.6
DSE63 (5000K)	984		63.1
DSE93 (2700K)	1219		65.5
DSE93 (3000K)	1243		66.8
DSE93 (3500K)	1255	18.6	67.5
DSE93 (4000K)	1281		68.9
DSE93 (5000K)	1271		68.3

Recommended Dimmers*
Lutron Skylark SCL-153P
Lutron Diva DVCL-153P
Lutron DIVA DVELV-300P
Lutron Skylark SELV-300P
Lutron Maestro MAELV-600
**Not a complete list.*
Check compatibility before installation.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

EOF

LED Emergency Outdoor Full Cutoff

Project

Catalog

Type S2

Type

Date

Product Description

The LED Emergency Outdoor Full Cutoff combines 90-minute emergency lighting with a low-profile, architectural design. The EOF is designed for outdoor use, with an optional cold-weather kit for added reliability in northern climates. The EOF comes standard with a photocell, with an optional motion sensor adding even more energy efficiency. An internal selector switch allows bypassing the photocell to control the unit from a wall swtich. A non-emergency unit is available for locations not requiring battery-backup, providing a uniform look for all fixtures.

Construction
- IP65 Rated enclosure
- Durable die-cast Aluminum body
- Separable backplate for easy installation and maintenance

Optical System
- Polycarbonate lens
- Utilizes advanced LED technology with CCT of 3000K and 5000K
- CRI 70+

Electrical
- Input voltage of 120/277VAC
- Maintenance-free NiCad battery provides 90-minute emergency operation
- LED indicator light & test button with self-testing, self-diagnostic option
- Photocell standard with wall switch control
- Motion sensor option for additional energy saving
- Operating Temperature:
  - EM: 32°F to 122°F (0°C to +50°C)
  - Non-EM and EM Cold Weather: -13°F to +122°F (-25°C to +50°C)

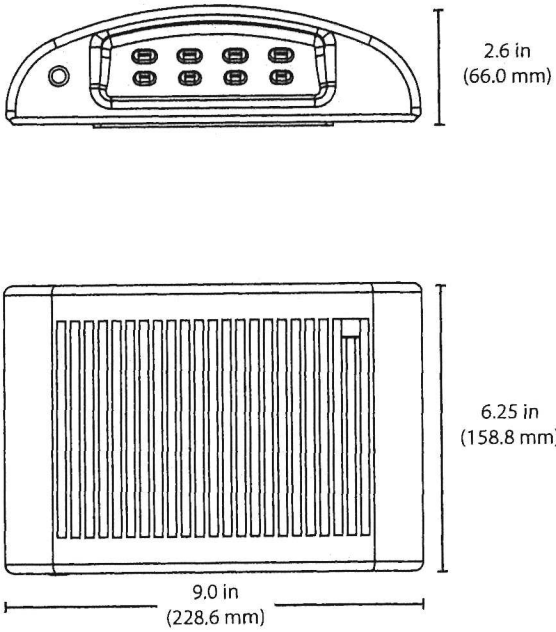
Mounting and installation
- Fixture mounts directly to J-Boxes and walls with screws
- Wiring possible through backplate or 1/2" conduit knockout
- For installations where power surge may be possible, NICOR recommends installing additional surge protection at the electrical distribution panel

Finish
- Fine-textured, UV-stabilized powder coat bronze finish

Listings
- LM-79, LM-80 testing performed in accordance with IESNA standards.
- UL & cUL 924 Listed
- Meets or exceeds requirements of NFPA 70 & NFPA 101
- Meets FCC Part 15, Subpart B, Class B standards for conducted and radiated emissions
- TM-21 Projected L70(9k) life >72,000 hours

Warranty
- 1-year limited system warranty standard
- Warranty does not cover product failure due to an overvoltage event (power surge.)





NICOR, Inc. 2200 Midtown Place NE, Albuquerque, NM 87107 P: 800.821.6283 F: 800.892.8393
www.nicorlighting.com April 2, 2021 9:17 AM

Type S2

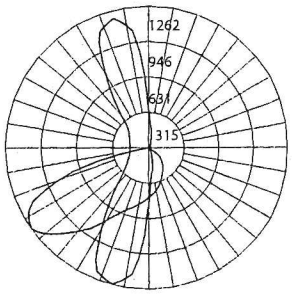
Photometric Data

EOF1MV3K

Input Voltage (VAC)	120/277
System Level Power (W)	16.9
Delivered Lumens - Standard Operation (Lm)	1554
System Efficacy (Lm/W)	91.4
Correlated Color Temp (K)	3145
Color Rendering Index (CRI)	72
Delivered Lumens - Emergency Operation (Lm)	560
Emergency Operation	90 min

Intensity Summary (Candle Power)

Angle	Mean CP
0	445
5	353
15	269
25	210
35	152
45	124
55	96
65	74
75	51
85	31
90	27



Zonal Lumen Summary

Zone	Lumens	% of Luminaire
0-30	415	26.7%
0-40	698	44.9%
0-60	1264	81.3%
0-90	1555	100%
90-180	0	0.00%
0-180	1555	100%

CCT Data Multiplier

EOF1MV5K	1.052

Performance Data

Model Number	Lumens	Watts	Lumens/Watt
EOF1MV3K	1554	16.9	92.0
EOF1MV5K	1635	16.9	96.7

Ordering Information

Example: EOF1MV3KBZPMS

Series	Version	Voltage	CCT	Housing Color	Photocell	Motion Sensor	Testing	Cold Weather	Emergency
EOF	**1**	**MV** (120-277V)	☐ **3K** (3000K)	☐ **BZ** (Bronze)	**P** (Photocell)	☐ _ (No Sensor)	☐ _ (Manual)	☐ _ (Standard)	☐ __ (Emergency)
			◯ **5K** (5000K)	◯ **WH** (White)		◯ **M** (Motion Sensor)	◯ **S** (Self-Diagnostic, EM only)	◯ **C** (Cold Weather)	◯ **AC** (Non-EM)
				◯ **BK** (Black)					
				◯ **SV** (Silver)					

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Types S3 and S5

Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

Mirada Small Area (MRS)

Outdoor LED Area Light

IP66 IK08



OVERVIEW	
Lumen Package	6,000 - 24,000
Wattage Range	41 - 196
Efficacy Range (LPW)	112 - 156
Fixture Weight lbs (kg)	20 (9.1)

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 27 lbs in carton.

Optical System

- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, 5W, and FT.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377
- Minimum CRI of 70.
- Integral louver (IL) and integral half louver (IH) options available for enhanced backlight control.

Electrical

- High-performance driver features over-voltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L70 Calculated Life: >60k Hours
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F).
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls

- Optional integral passive infrared Bluetooth™ motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.

Installation

- Designed to mount to square or round poles.
- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional B3 drill pattern.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications are qualified.
- IK08 rated luminiare per IEC 66262 mechanical impact code
- DesignLights Consortium® Listings in progress.

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Mirada Small Area Light (MRS)

Type: Types S3 and S5

Have questions? Call us at (800) 436-7800

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: MRS LED 18L SIL FT UNV DIM 40 70CRI ALBCS1 BLK IH

Prefix	Light Source	Lumen Package	Lens	Distribution	Orientation[2]	Voltage	Driver
MRS - Mirada Small Area Light	**LED**	**6L** - 6,000 lms **9L** - 9,000 lms **12L** - 12,000 lms **15L** - 15,000 lms **18L** - 18,000 lms **21L** - 21,000 lms **24L** - 24,000 lms Custom Lumen Packages[1]	**SIL** - Silicone	**2** - Type 2 **3** - Type 3 **5W** - Type 5 Wide **FT** - Forward Throw	**(blank)** - standard **L** - Optics rotated left 90° **R** - Optics rotated right 90°	**UNV** - Universal Voltage (120-277V) **HV** - High Voltage (347-480V)	**DIM** - 0-10V Dimming (0-10%)

Color Temp	Color Rendering	Controls (Choose One)	Finish	Options
50 - 5,000 CCT **40** - 4,000 CCT **30** - 3,000 CCT	**70CRI** - 70 CRI	**(Blank)** - None **Wireless Controls System** **ALSC** - AirLink Synapse Control System **ALSCS2** - AirLink Synapse Control System with 12-20' MH Motion Sensor **ALSCS4** - AirLink Synapse Control System with 20-40' MH Motion Sensor **ALBCS1** - AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' MH) **ALBCS2** - AirLink Blue Wireless Motion & Photo Sensor Controller (25-40' MH) **Stand-Alone Controls** **EXT** - 0-10v Dimming leads extended to housing exterior **CR7P** - 7 Pin Control Receptacle ANSI C136.41[3] **IMSBT1** - Integral Bluetooth™ Motion and Photocell Sensor (8-24' MH)[4] **IMSBT2** - Integral Bluetooth™ Motion and Photocell Sensor (25-40' MH)[4]	**BLK** - Black **BRZ** - Dark Bronze **GMG** - Gun Metal Gray **GPT** - Graphite **MSV** - Metallic Silver **PLP** - Platinum Plus **SVG** - Satin Verde Green **WHT** - White	**(Blank)** - None **IH** - Integral Half Louver (Moderate Spill Light Cutoff)[2] **IL** - Integral Louver (Sharp Spill Light Cutoff)[2]

Need more information?
Click here for our glossary

Have additional questions?
Call us at (800) 436-7800

Accessory Ordering Information[5]

CONTROLS ACCESSORIES

Description	Order Number
Twist Lock Photocell (120V) for use with CR7P	122514
Twist Lock Photocell (208-277) for use with CR7P	122515
Twist Lock Photocell (347V) for use with CR7P	122516
Twist Lock Photocell (480V) for use with CR7P	1225180
AirLink 5 Pin Twist Lock Controller	661409
AirLink 7 Pin Twist Lock Controller	661410
Pole-Mounted Occupancy Sensor (24V)	663284CLR[6]
Shorting Cap for use with CR7P	149328

MOUNTING ACCESSORIES

Description	Order Number[6]
Universal Mounting Bracket	684616CLR
Adjustable Slip Fitter (2" - 2 3/8" Tenon)	688138CLR
Horizontal Slip Fitter (2" - 2 3/8" Tenon)	652761CLR
Quick Mount Pole Bracket (Square Pole)	687073CLR
Quick Mount Pole Bracket (4-5" Round Pole)	689903CLR
15 Tilt Quick Mount Pole Bracket (Square Pole)	688003CLR
15 Tilt Quick Mount Pole Bracket (4-5" Round Pole)	689905CLR
Wall Mount Bracket	382132CLR

FUSING OPTIONS[7]

Description	Order Number
Single Fusing (120V)	See Fusing Accessory Guide
Single Fusing (277V)	
Double Fusing (208V, 240V)	
Double Fusing (480V)	
Double Fusing (347V)	

SHIELDING OPTIONS

Mirada Small	See Shielding Guide
Mirada Medium	
Mirada Large	
Zone Medium	
Zone Large	
Slice Medium	

SHIELDING & MISCELLANEOUS ACCESSORIES

Description	Order Number
Field Install Integral Louver (Sharp Spill Light Cutoff)	690981
Field Install Integral Half Louver (Moderate Spill Light Cutoff)	743415
10' Linear Bird Spike Kit (2' Recommended per Luminaire)	751632

FOOTNOTES:
1. Custom lumen and wattage packages available, consult factory. Values are within industry standard tolerances but not DLC listed.
2. Not available on "Type 5W" distribution.
3. Control device or shorting cap must be ordered separately. See Accessory Ordering Information.
4. IMSBT is field configurable via the LSI app that can be downloaded from your smartphone's native app store.
5. Accessories are shipped separately and field installed.
6. "CLR" denotes finish. See Finish options.
7. Fusing must be located in hand hole of pole. See Fusing Accessory Guide for compatability.

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ACCESSORIES

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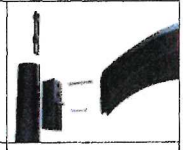
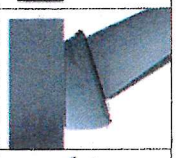
MOUNTING ACCESSORIES

Side Arm	**Universal Mounting Bracket** Mounts to ≥ 3" square or round (tapered/straight) poles with (2) mounting hole spaces between 3.5" to 5" **Part Number: BKA UMB CLR**	
	Quick Mount Plate True one person installation to existing/new contruction poles with hole spaces beteen 2.4 to 4.6" **Part Number: BKS PQM B3B5 XX CLR**	
	15° Tilt Quick Mount Plate True one person installation to existing/new contruction poles with hole spaces beteen 2.4 to 4.6" **Part Number: BKS PQ15 B3B5 XX CLR**	
Tenon / Slipfitter	**Adjustable Slipfitter** Mounts onto a 2" (51mm) IP, 2.375" (60mm) O.D. tenon and provides 180° of tilt (max 45° above horizontal) **Part Number: BKA ASF CLR**	
	Square Tenon Top Mounts onto a 2" (51mm) IP, 2.375" (60mm) O.D. tenon and allows for mounting up to 4 luminaires **Part Number: BKA XNM ***	
	Square Internal Slipfitter Mounts inside 4" or 5" square pole and allows for mounting up to 4 lumianires **Part Number: BKA X_ISF * CLR**	
Wall Mount/ Wood Pole	**Wall Mount Bracket** Mounts onto vertical wall surface (hardware/anchors not included) **Part Number: BKS XBO WM CLR**	
	Wood Pole Bracket Mounts onto wooden poles (6" minimum OD, hardware/anchors not inlcuded) **Part Number: BKS XBO WP CLR**	

SHIELDING, POLES & MISC. ACCESSORIES

Shielding	**Integral Louver** Field Install Integral Louver provides maximum backlight control by shiedling each individual row of LEDS **Part Number: 686485**	
	Integral Half Louver Field Install Integral Half Louver provides great backlight control without impacting front side distribution. **Part Number: 743416**	
	External Shield External shield blocks view of light source from anyside of luminaire, additional shielding configurations available **Part Number: 785970BLK (3") / 785962BLK (6")**	
Poles	**Square Poles** 14 - 39' steel and aluminum poles in 4", 5" and 6" sizes for retrofit and new construction **Part Number: 4SQ/5SQ/6SQ**	
	Round Poles 10 - 30' steel and aluminum poles in 4" and 5" sizes for retrofit and new construction **Part Number: 4RP/5RP**	
	Tapered Poles 20' - 39' steel and aluminum poles for retrofit and new construction **Part Number: RTP**	
Misc.	**Bird Spikes** 10' Linear Bird Spike Kit, 4' recommended per luminaire, includes silcone adhesive and application tool **Part Number: 751632**	

Replace CLR with paint finish description

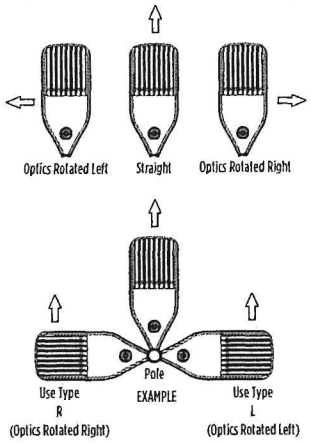
Repleace XX with SQ for square pole or RD for round pole (≥3" OD)

Replace * with S (Single), D180 (Double @180°), D90 (Double @90°), T90 (Triple), Q90 (Quad)

Replace _ with 4 (4" square pole) or 5 (5" square pole)

OPTICS ROTATION

Top View



ACCESSORIES/OPTIONS

Integral Louver (IL) and House-Side Shield (IH)

Accessory louver and shield available for improved backlight control without sacrificing street side performance. LSI's Integral Louver (L) and Integral House-Side Shield (IH) options deliver backlight control that significantly reduces spill light behind the poles for applications with pole locations close to adjacent properties. The design maximizes forward reflected light while reducing glare, maintaining the optical distribution selected, and most importantly eliminating light trespass. Both options rotate with the optical distribution.

Luminaire Shown with Integral Louver (IL)



Luminaire Shown with IMSBT Option



7 Pin Photoelectric Control

7-pin ANSI C136.41-2013 control receptacle option available for twist lock photocontrols or wireless control modules. Control accessories sold separately. Dimming leads from the receptacle will be connected to the driver dimming leads (Consult factory for alternate wiring).

Luminaire Shown with CR7P



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Mirada Small Area Light (MRS)

Type: Types S3 and S5

Have questions? Call us at (800) 436-7800

PERFORMANCE

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DELIVERED LUMENS*

Lumen Package	Distribution	CRI	3000K CCT			4000K CCT			5000K CCT			Wattage
			Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	
6L	2	70	6045	148	B2-U0-G1	6268	154	B2-U0-G1	6253	153	B2-U0-G1	41
	3		6145	151	B1-U0-G2	6372	156	B1-U0-G2	6357	156	B1-U0-G2	
	5W		5812	142	B3-U0-G1	6,026	148	B3-U0-G1	6012	147	B3-U0-G1	
	FT		5947	146	B1-U0-G1	6166	151	B1-U0-G1	6152	151	B1-U0-G1	
9L	2	70	9091	145	B2-U0-G2	9484	152	B2-U0-G2	9462	151	B2-U0-G2	63
	3		9241	148	B2-U0-G2	9641	154	B2-U0-G2	9619	154	B2-U0-G2	
	5W		8740	140	B3-U0-G2	9,118	146	B3-U0-G2	9097	144	B3-U0-G2	
	FT		8943	143	B2-U0-G2	9330	149	B2-U0-G2	9308	149	B2-U0-G2	
12L	2	70	12132	141	B3-U0-G2	12685	148	B3-U0-G2	12514	146	B3-U0-G2	86
	3		12333	143	B2-U0-G2	12894	150	B2-U0-G2	12721	148	B2-U0-G2	
	5W		11664	136	B4-U0-G2	12195	142	B4-U0-G2	12031	140	B4-U0-G2	
	FT		11935	139	B2-U0-G2	12479	145	B2-U0-G2	12311	143	B2-U0-G2	
15L	2	70	14220	128	B3-U0-G2	15167	137	B3-U0-G2	14488	131	B3-U0-G2	111
	3		14938	135	B2-U0-G2	15933	144	B2-U0-G2	15219	137	B2-U0-G2	
	5W		14304	129	B4-U0-G2	15257	137	B4-U0-G2	14574	131	B4-U0-G2	
	FT		14342	129	B2-U0-G2	15297	138	B2-U0-G2	14612	132	B2-U0-G2	
18L	2	70	16438	122	B3-U0-G3	17532	130	B3-U0-G3	16747	124	B3-U0-G3	135
	3		17267	128	B3-U0-G3	18417	137	B3-U0-G3	17592	131	B3-U0-G3	
	5W		16535	123	B4-U0-G2	17636	133	B5-U0-G3	16846	125	B4-U0-G2	
	FT		16578	123	B3-U0-G3	17682	131	B3-U0-G3	16890	125	B3-U0-G3	
21L	2	70	19488	118	B3-U0-G3	20786	126	B3-U0-G3	19885	120	B3-U0-G3	165
	3		20472	124	B3-U0-G3	21835	132	B3-U0-G3	20857	126	B3-U0-G3	
	5W		19604	119	B5-U0-G3	20,909	126	B5-U0-G3	19973	121	B5-U0-G3	
	FT		19655	119	B3-U0-G3	20964	127	B3-U0-G3	20025	121	B3-U0-G3	
24L	2	70	21976	112	B3-U0-G3	23439	120	B3-U0-G3	22390	114	B3-U0-G3	196
	3		23085	118	B3-U0-G3	24622	126	B3-U0-G3	23519	120	B3-U0-G3	
	5W		22105	113	B5-U0-G3	23578	120	B5-U0-G3	22522	115	B5-U0-G3	
	FT		22164	113	B3-U0-G3	23640	121	B3-U0-G3	22581	115	B3-U0-G3	

*LEDs are frequently updated therefore values are nominal.

ELECTRICAL DATA (AMPS)*

Lumens	120V	208V	240V	277V	347V	480V
6L	0.34	0.20	0.17	0.15	0.12	0.09
9L	0.52	0.30	0.26	0.23	0.18	0.13
12L	0.72	0.41	0.36	0.31	0.25	0.18
15L	0.93	0.53	0.46	0.40	0.32	0.23
18L	1.12	0.65	0.56	0.49	0.39	0.28
21L	1.38	0.80	0.69	0.60	0.48	0.34
24L	1.63	0.94	0.82	0.71	0.56	0.41

*Electrical data at 25°C (77°F). Actual wattage may differ by +/-10%

RECOMMENDED LUMEN MAINTENANCE[1]

Ambient Temp	Lumen Multiplier				
C	0 hrs.[2]	25K hrs.[2]	50K hrs.[2]	75K hrs.[3]	100K hrs.[3]
0 C - 25 C	100%	95%	89%	84%	79%
40 C	100%	94%	87%	80%	74%

FOOTNOTES:

1. Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing.
2. In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X)the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).
3. In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times NA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).

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Mirada Small Area Light (MRS)

Type: Types S3 and S5

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PHOTOMETRICS

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Luminaire photometry has been conducted by an accredited laboratory in accordance with IESNA LM-79. As specified by IESNA LM-79 the entire luminaire is tested as the source resulting in a luminaire efficiency of 100%.

MRS-LED-18L-SIL-2-40-70CRI

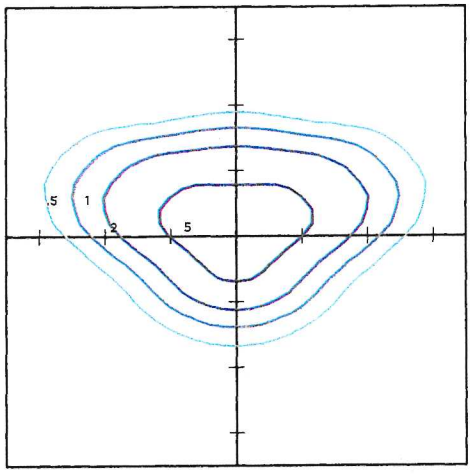
LUMINAIRE DATA

Type 2 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,532
Watts	135
Efficacy	130
IES Type	Type II - Short
BUG Rating	B3-U0-G3

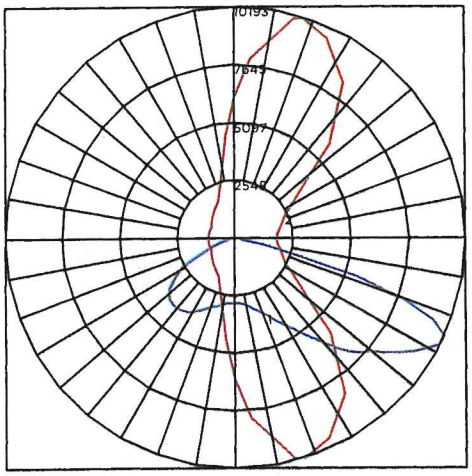
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	2831	16%
Medium (30-60)°	10310	59%
High (60-80)°	4208	24%
Very High (80-90)°	184	1%
Uplight (90-180)°	0	0%
Total Flux	17532	100%

ISO FOOTCANDLE



POLAR CURVE



20' Mounting Height/20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

MRS-LED-18L-SIL-3-40-70CRI

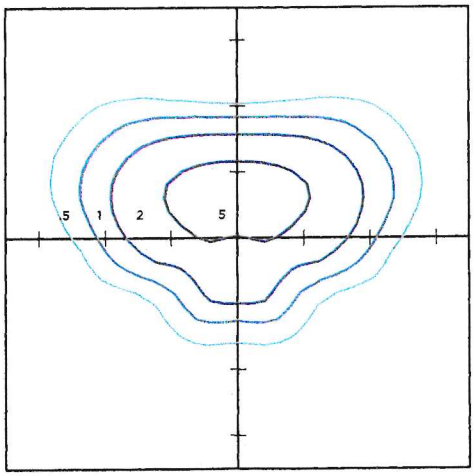
LUMINAIRE DATA

Type 3 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	18,417
Watts	135
Efficacy	137
IES Type	Type III - Short
BUG Rating	B3-U0-G3

Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	2329	13%
Medium (30-60)°	10634	61%
High (60-80)°	5246	30%
Very High (80-90)°	208	1%
Uplight (90-180)°	0	0%
Total Flux	18417	100%

ISO FOOTCANDLE



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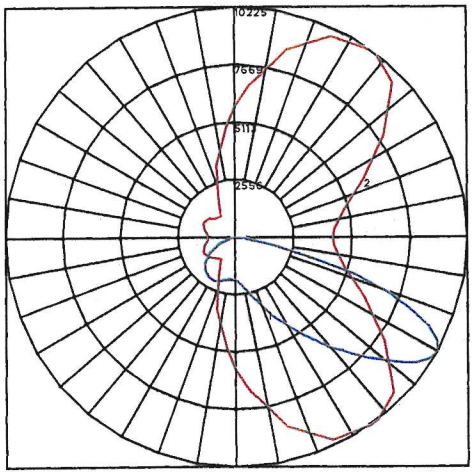

20' Mounting Height/20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

PHOTOMETRICS (CONT)

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MRS-LED-18L-SIL-FT-40-70CRI

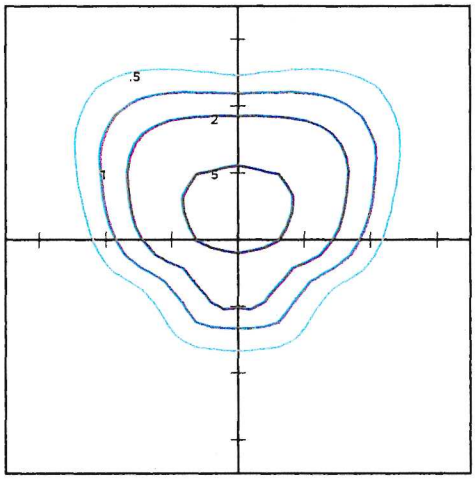
LUMINAIRE DATA

Type FT Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,682
Watts	135
Efficacy	131
IES Type	Type III - Short
BUG Rating	B3-U0-G2

Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	2255	13%
Medium (30-60)°	9463	54%
High (60-80)°	5696	32%
Very High (80-90)°	268	2%
Uplight (90-180)°	0	0%
Total Flux	17682	100%

ISO FOOTCANDLE



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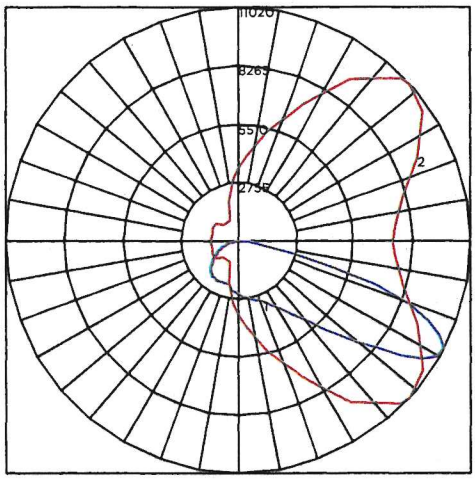


20' Mounting Height/20' Grid Spacing

5 FC **2 FC** **1 FC** **0.5 FC**

MRM-LED-30L-SIL-5W-40-70CRI

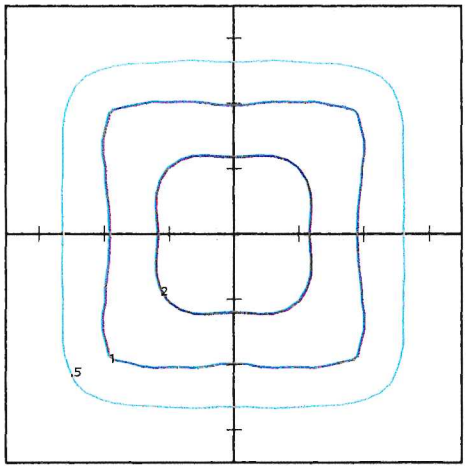
LUMINAIRE DATA

Type 5W Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,636
Watts	135
Efficacy	131
IES Type	Type VS - Short
BUG Rating	B4-U0-G2

Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	1646	9%
Medium (30-60)°	7453	43%
High (60-80)°	8405	48%
Very High (80-90)°	132	1%
Uplight (90-180)°	0	0%
Total Flux	17636	100%

ISO FOOTCANDLE



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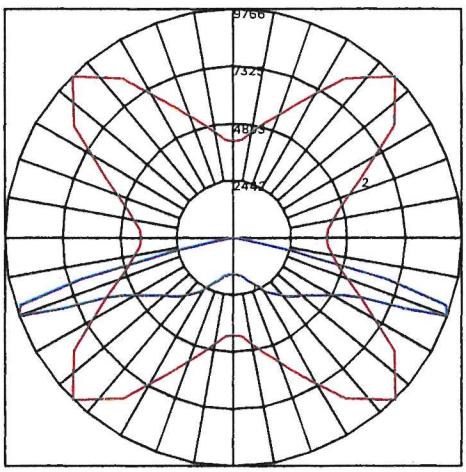

20' Mounting Height/20' Grid Spacing

5 FC **2 FC** **1 FC** **0.5 FC**

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Mirada Small Area Light (MRS)

Type: Types S3 and S5

Have questions? Call us at (800) 436-7800

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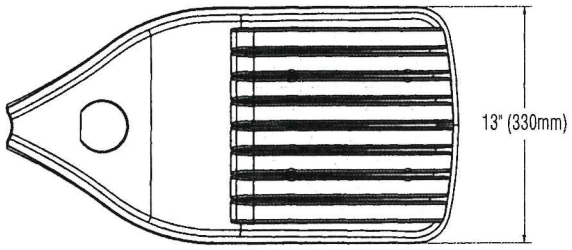
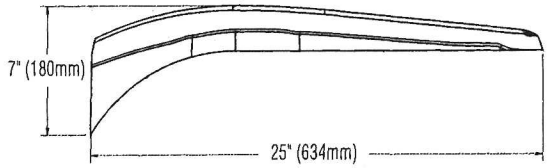
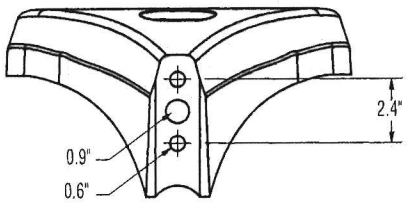
PRODUCT DIMENSIONS





LUMINAIRE EPA CHART - MRS

Tilt Degree		0°	30°	45°	Tilt Degree		0°	30°	45°
	Single	0.5	1.3	1.8		T90°	1.4	2.3	2.6
	D180°	0.9	1.3	1.8		TN120°	1.4	1.9	2.3
	D90°	0.9	1.8	2.2		Q90°	1.4	2.3	2.6



B3 Drill Pattern

CONTROLS

AirLink Wireless Lighting Controller

The AirLink integrated controller is a California Title 24 compliant lighting controller that provides real-time light monitoring and control with utility-grade power monitoring. It includes a 24V sensor input and power supply to connect a sensor into the outdoor AirLink wireless lighting system. The wireless integrated controller is compatible with this fixture.

Click here to learn more about AirLink.

Integral Bluetooth™ Motion and Photocell Sensor (IMSBT)

Slim low profile sensor provides multi-level control based on motion and/or daylight. Sensor controls 0-10 VDC LED drivers and is rated for cold and wet locations (-30° C to 70° C). Two unique PIR lenses are available and used based on fixture mounting height. All control parameters are adjustable via an iOS or Android App capable of storing and transmitting sensor profiles.

Click here to learn more about IMSBT.

AirLink Blue

Wireless Bluetooth Mesh Outdoor Lighting Control System that provides energy savings, code compliance and enhanced safety/security for parking lots and parking garages. Three key components; Bluetooth wireless radio/sensor controller, Time Keeper and an iOS App. Capable of grouping multiple fixtures and sensors as well as scheduling time-based events by zone. Radio/Sensor Controller is factory integrated into Area/Site, Wall Mounted, Parking Garage and Canopy luminaires.

Click here to learn more about AirLink Blue.

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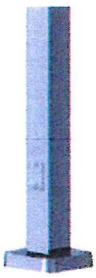
Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

Steel Poles

Square Straight



QUICK LINKS

Ordering Guide | Configurations | Dimensions | EPA

FEATURES & SPECIFICATIONS

Pole Shaft

- Straight poles are 4", 5", or 6" square.
- Pole shaft is electro-welded ASTM-A500 Grade C steel tubing with a minimum yield strength of 50,000 psi.
- On Tenon Mount steel poles, tenon is 2-3/8" O.D. high-strength pipe. Tenon is 4-3/4" in length.

Hand-Hole

- Standard hand-hole location is 12" above pole base.
- Poles 22' and above have a 3" x 6" reinforced hand-hole. Shorter poles have a 2" x 4" non-reinforced hand-hole.

Base

- Pole base is ASTM-A36 hot-rolled steel plate with a minimum yield strength of 36,000 psi.
- Two-piece square base cover is optional.

Anchor Bolts

- Poles are furnished with anchor bolts featuring zinc-plated double nuts and washers. Galvanized anchor bolts are optional.
- Anchor Bolts conform to ASTM F 1554-07a Grade 55 with a minimum yield strength of 55,000 PSI.

Ground Lug

- Ground lug is standard.

Duplex Receptacle

- Weatherproof duplex receptacle is optional.

Ground Fault Circuit Interrupter

- Self-testing Ground fault circuit interrupter is optional.

Finishes

- Every pole is provided with the DuraGrip Protection System and a 5-year limited warranty:
- When the top-of-the line DuraGrip Plus Protection System is selected, in addition to the DuraGrip Protection System, a non-porous, automotive-grade corrosion coating is applied to the lower portion of the pole interior sealing and further protecting it from corrosion. This option extends the limited warranty to 7 years.

Determining The Luminaire/Pole Combination For Your Application:

- Select luminaire from luminaire ordering information.
- Select bracket configuration if required
- Determine EPA value from luminaire/ bracket EPA chart
- Select Pole Height
- Select MPH to match wind speed in the application area (See windspeed maps).
- Confirm pole EPA equal to or exceeding value of luminaire/bracket EPA
- Consult factory for special wind load requirements and banner brackets.

Pole Vibration Damper

- A pole vibration damper is recommended in open terrain areas of the country where low steady state winds are common.
- Non-tapered poles and lightly loaded poles are more susceptible to destructive vibration if a damper is not installed.

Listings

- UL Listed
- BAA/TAA Compliant

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Steel Poles - Square Straight

Type: Types S3 and S5

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ORDERING GUIDE

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TYPICAL ORDER EXAMPLE: 4SQ B3 S11G 24 S PLP DGP

Pole Series	Mounting Method	Material	Height [2]	Mounting Configuration	Pole Finish	Options
4SQ - 4" x 4" Square Straight Pole (New Build) **5SQ** - 5" x 5" Square Straight Pole (New Build) **6SQ** - 6" x 6" Square Straight Pole (New Build) **4SQU** - 4" x 4" Square Straight Pole (Retrofit) **5SQU** - 5" x 5" Square Straight Pole (Retrofit) **6SQU** - 6" x 6" Square Straight Pole (Retrofit)	**Bolt-On Mount**[1] - See pole selection guide for patterns and fixture matches **B5** - 5" Traditional Drilling Pattern **B3** - 3" Reduced Drilling Pattern **B2** - 2" Reduced Drilling Pattern	**S11G** – 11 Ga. Steel (4SQ/4SQU and 5SQ/5SQU Only) **S07G** – 07 Ga. Steel	8' 10' 12' 13' 14' **15'** 16' 17' 17'6" 18' 20' 22' 22'6" 23' 24' 25' 26' 27' 28' 30' 32' 35' 39'	**S** – Single/Parallel **D180** – Double **D90** – Double **DN90** – Double **T90** – Triple **TN120** – Triple **Q90** – Quad **QN90** – Quad	**BRZ** – Bronze **BLK** – Black **PLP** – Platinum Plus **WHT** – White **SVG** – Satin Verde Green **GPT** – Graphite **MSV** – Metallic Silver **BZA** – Alternate Bronze	**GA** – Galvanized Anchor Bolts **SF** – Single Flood[3] **DF** – Double Flood[3] **DGP** – DuraGrip® Plus **LAB** – Less Anchor Bolts **CRXX** - Conduit Raceway[4]
	T - Tenon Mount - See pole selection guide for tenon and fixture/bracket matches			**N** – Tenon Mount (Standard Tenon size is 2-3/8" O.D.)[8]		
	I - No Mounting Holes[1] - Use with: BKA-IFM4 - Flush Mount Adapter[7] Greenlee Lifestyle CH Mounting Style Enterprise, Lexington, Constitution PT Single Mounting[7]					

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Accessory Ordering Information

DESCRIPTION	PART NUMBER
4BC – 4" Square Base Cover	122559CLR
5BC – 5" Square Base Cover	122561CLR
6BC – 6" Square Base Cover	122563CLR
5BC - 5' Square Universal Base Cover	132488CLR
6BC - 6' Square Universal Base Cover	131252CLR
ER2 – Weatherproof Duplex Receptacle	122566CLR
GFI – Ground Fault Circuit Interrupter	122567CLR
MH5 - mounting Hole Plugs for use with 5" traditional drill pattern (3 set of 3 plugs)	132336
MH3 - mounting Hole Plugs for use with 3" reduced drill pattern (3 set of 3 plugs)	681126
MH2 - Mounting Hole Plugs for use with 2" reduced drill pattern (3 sets of 3 plugs)	725841
Vibration Damper - 4" Square Pole (bolt-on mount only)	172539
Vibration Damper - 5" Square Pole (bolt-on mount only)	172538
Vibration Damper - 6" Square Pole (bolt-on mount only)	178361

FOOTNOTES:
1 - See Area Light Brackets - 3" Reduced Drill Pattern and Area Light Brackets - 5" Traditional Drill Pattern Spec Sheets.
2 - Pole heights will have +/- 1/2" tolerance.
3 - See Flood Lighting Brackets section for choice of FBO brackets.
4 - CR selection must indicate required height and side of pole mounting location. Mounting template required at time of order.

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Steel Poles - Square Straight

Type: Types S3 and S5

DRILLING LOCATIONS

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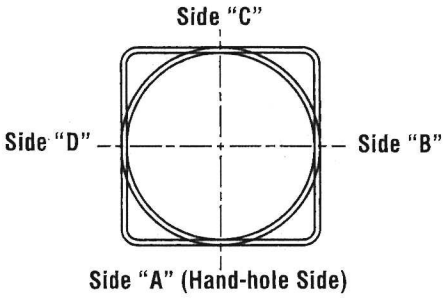
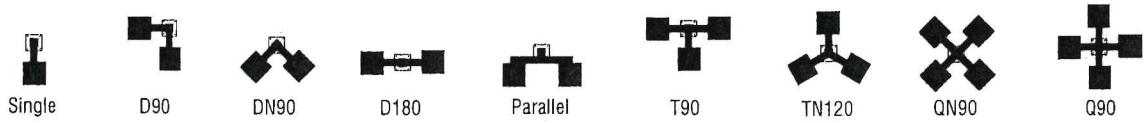
Sides	A	B	C	D
Hand-hole	X			
Single	X			
D180		X		X
D90	X			X
DN90[1]				
T90	X	X		X
TN120[2]				
Q90	X	X	X	X
QN90[3]				
Single FBO	X			
Double FBO		X		X



NOTES:
1 - Two locations will be 45° to the left and right of Side A.
2 - Other two locations will be 120° to the left and right of Side A.
3 - Two locations will be 45° to the left and right of Side A and two locations will be 135° to the left and right of Side A.

Consult factory for custom variations. Standard SF and DF pole preparations are located 3/4 of the height of the pole from the base, except on 20' poles. Maximum height for SF and DF pole preparations on 20' poles is 13' from the base.

FIXTURE CONFIGURATIONS

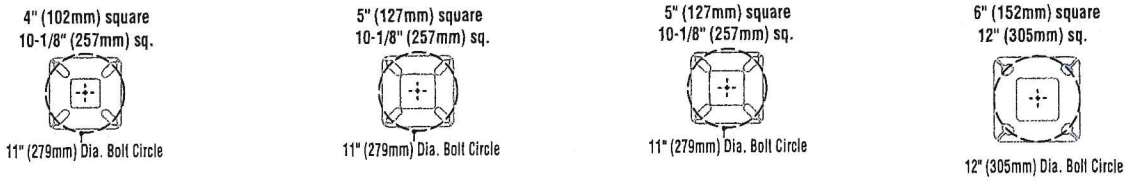


Steel Poles - Square Straight

Type: Types S3 and S5

BOLT CIRCLE

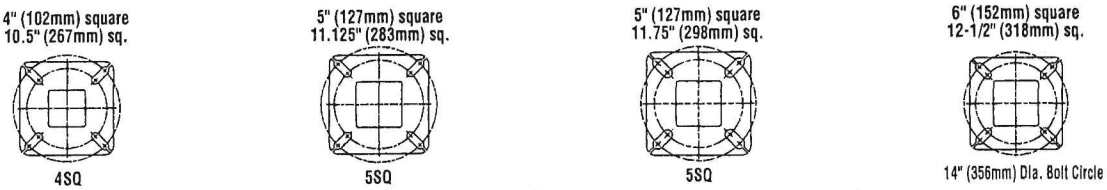
STANDARD BASEPLATE



Bolt Circle Designator	B	C	D	J
Bolt Circle	Slotted 8"-11" (203mm-279mm)	Slotted 9"-11" (229mm-279mm)	Slotted 9"-11" (229mm-279mm)	Slotted 12" (305mm)
Anchor Bolt Size	3/4" x 30" (19mm x 762mm)	3/4" x 30" (19mm x 762mm)	1" x 36" (25mm x 914mm)	1" x 36" (25mm x 914mm)
Anchor Bolt Projection	3-1/4" (83mm)	3-1/4" (83mm)	4" (102mm)	4" (102mm)
Base Plate Opening for Wireway Entry	3-5/8" (92mm)	4-3/4" (121mm)	4-5/8" (117mm)	5-5/8" (143mm)
Base Plate Dimensions	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 1" thk. (257mm x 25mm)	12" sq. x 1-1/8" thk. (305mm x 29mm)
Pole Gauge	11	11	7	7

Note: Base plate illustrations may change without notice. Do not use for setting anchor bolts. Consult factory for the appropriate anchor bolt template.

UNIVERSAL BASEPLATE



Bolt Circle Designator	E	F	G	H
Bolt Circle	Slotted 9"-12"	Slotted 10-13"	Slotted 10-13"	Slotted 11"-14" (279mm-356mm)
Anchor Bolt Size	3/4" x 30" (19mm x 762 mm)	3/4x 30" (25mm x 914 mm)	1x 36" (25mm x 914 mm)	1" x 36" (25mm x 914mm)
Anchor Bolt Projection	3-1/4" (83 mm)	3-1/4" (83 mm)	4" (102 mm)	4" (102mm)
Base Plate Opening for Wireway Entry	3-5/8" (92mm)	4-3/4" (121mm)	5-1/8" (130 mm)	5-5/8" (143mm)
Base Plate Dimensions	10-1/2" sq. x 3/4" thk. (267 mm x 19 mm)	11-1/8 sq. x 3/4" thk. (283 mm x 19 mm)	11-3/4" sq. x 1" thk. (298 mm x 25 mm)	12 1/2" sq. x 1 1/8" thk. (318mm x 29mm)
Pole Gauge	11	11	7	7

Note: Base plate illustrations may change without notice. Do not use for setting anchor bolts. Consult factory for the appropriate anchor bolt template.

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Steel Poles - Square Straight

Type: Types S3 and S5

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PRODUCT DIMENSIONS

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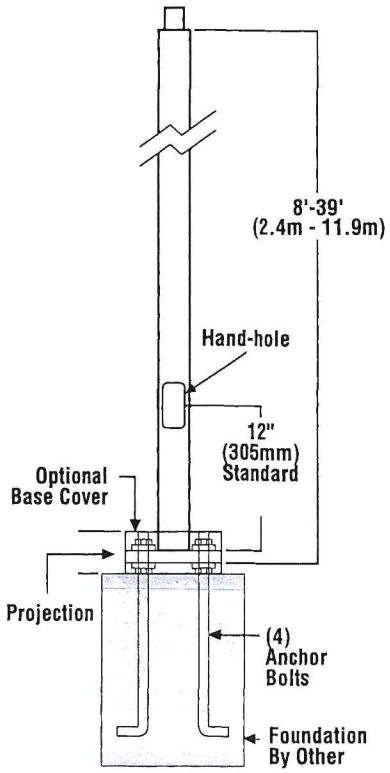
SQT –
N= 2-3/8" (60mm) O.D. x 4-3/4" (121mm) Tenon

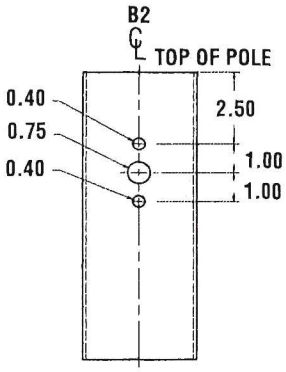


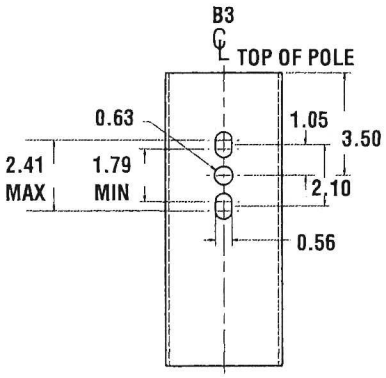
SF –
Single Flood
Pole Preparation

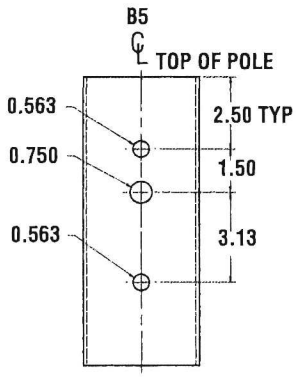


SHIPPING WEIGHTS	
4"(102mm) sq. 11 Ga. is approximately	7.50 lbs./ft.
4"(102mm) sq. 07 Ga. is approximately	10.00 lbs./ft.
5"(127mm) sq. 11 Ga. is approximately	9.00 lbs./ft.
5"(127mm) sq. 07 Ga. is approximately	12.50 lbs./ft.
6"(152mm) sq. 07 Ga. is approximately	15.40 lbs./ft.
Anchor Bolts (3/4" x 30")(19mm x 762mm)	15 lbs. (7kg)/set
Anchor Bolts (1" x 36")(25mm x 914mm)	30 lbs. (14kg)/set

Bolt-On Mount 2-Bolt Pattern







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Steel Poles - Square Straight

Type: Types S3 and S5

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WIND SPEED

EPA Information
All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.
CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

NOTE: Pole calculations include a 1.3 gust factor over steady wind velocity. Example: poles designed to withstand 80 MPH steady wind will withstand gusts to 104 MPH. EPAs are for locations 100 miles away from hurricane ocean lines. Consult LSI for other areas. Note: Hurricane ocean lines are the Atlantic and Gulf of Mexico coastal areas. For applications in Florida or Canada, consult factory.

Use ONLY with "Wind Speed Map for ASCE 7-10

POLE[1]	Mtg. Height Length (ft)	Wall Thick (ga)	BOLT CIRCLE			EPA								
			Designator	Dia. (in)	Anchor bolt Dia (in)	110 MPH	115 MPH	120 MPH	130 MPH	140 MPH	150 MPH	160 MPH	170 MPH	180 MPH
4" x 11-ga x 12'	12	11	B	8" - 11"	0.75	13.9	12.5	11.3	9.2	7.6	6.3	5.2	4.3	3.6
4" x 11-ga x 14'	14	11	B	8" - 11"	0.75	10.7	9.5	8.5	6.8	5.4	4.4	3.5	2.7	2.1
4" x 11-ga x 16'	16	11	B	8" - 11"	0.75	8.2	7.2	6.4	4.9	3.8	2.9	2.1	1.5	1.0
4" x 11-ga x 18'	18	11	B	8" - 11"	0.75	6.3	5.4	4.7	3.4	2.4	1.6	1.0	0.4	n/a
4" x 11-ga x 20'	20	11	B	8" - 11"	0.75	4.6	3.9	3.2	2.1	1.2	0.6	n/a	n/a	n/a
4" x 11-ga x 22'	22	11	B	8" - 11"	0.75	7.6	6.6	5.7	4.2	3.0	2.0	1.2	0.5	n/a
4" x 11-ga x 24'	24	11	B	8" - 11"	0.75	6.0	5.1	4.3	2.9	1.8	0.9	n/a	n/a	n/a
4" x 11-ga x 26'	26	11	B	8" - 11"	0.75	4.6	3.7	3.0	1.7	0.7	n/a	n/a	n/a	n/a
4" x 7-ga x 14'	14	7	B	8" - 11"	0.75	18.3	16.4	14.9	12.2	10.2	8.5	7.1	5.9	5.0
4" x 7-ga x 16'	16	7	B	8" - 11"	0.75	14.7	13.2	11.8	9.6	7.8	6.3	5.2	4.2	3.4
4" x 7-ga x 18'	18	7	B	8" - 11"	0.75	11.9	10.5	9.3	7.4	5.9	4.6	3.6	2.8	2.1
4" x 7-ga x 20'	20	7	B	8" - 11"	0.75	9.6	8.4	7.4	5.7	4.3	3.2	2.3	1.6	0.9
4" x 7-ga x 22'	22	7	B	8" - 11"	0.75	7.7	6.6	5.7	4.2	3.0	2.0	1.2	0.5	n/a
4" x 7-ga x 24'	24	7	B	8" - 11"	0.75	6.0	5.1	4.3	2.9	1.8	0.9	n/a	n/a	n/a
4" x 7-ga x 26'	26	7	B	8" - 11"	0.75	4.6	3.7	3.0	1.7	0.7	n/a	n/a	n/a	n/a
4" x 7-ga x 28'[2]	28	7	B	8" - 11"	0.75	3.3	2.5	1.8	0.7	n/a	n/a	n/a	n/a	n/a
4" x 7-ga x 30'[2]	30	7	B	8" - 11"	0.75	2.2	1.4	0.8	n/a	n/a	n/a	n/a	n/a	n/a
5" x 11-ga x 14'	14	11	C	9" - 11"	0.75	17.4	15.7	14.1	11.5	9.3	7.7	6.3	5.2	4.2
5" x 11-ga x 16'	16	11	C	9" - 11"	0.75	13.8	12.3	10.9	8.7	6.9	5.5	4.3	3.3	2.5
5" x 11-ga x 18'	18	11	C	9" - 11"	0.75	10.8	9.6	8.4	6.5	4.9	3.7	2.6	1.8	1.1
5" x 11-ga x 20'	20	11	C	9" - 11"	0.75	8.5	7.3	6.3	4.6	3.2	2.1	1.2	0.5	n/a
5" x 11-ga x 22'	22	11	C	9" - 11"	0.75	10.9	9.5	8.3	6.2	4.5	3.2	2.1	1.2	0.5
5" x 11-ga x 24'	24	11	C	9" - 11"	0.75	8.8	7.5	6.4	4.5	3.0	1.8	0.8	n/a	n/a
5" x 11-ga x 26'	26	11	C	9" - 11"	0.75	6.8	5.7	4.6	3.0	1.6	0.6	n/a	n/a	n/a
5" x 11-ga x 28'	28	11	C	9" - 11"	0.75	5.2	4.1	3.2	1.6	0.4	n/a	n/a	n/a	n/a
5" x 11-ga x 30'	30	11	C	9" - 11"	0.75	3.6	2.7	1.8	0.4	n/a	n/a	n/a	n/a	n/a
5" x 7-ga x 20'	20	7	D	9" - 11"	1.00	21.6	19.3	17.3	14.0	11.3	9.2	7.4	6.0	4.8
5" x 7-ga x 22'	22	7	D	9" - 11"	1.00	20.7	18.6	16.6	13.3	10.7	8.5	6.8	5.4	4.2
5" x 7-ga x 24'	24	7	D	9" - 11"	1.00	17.7	15.6	13.8	10.8	8.5	6.6	5.0	3.7	2.6
5" x 7-ga x 26'	26	7	D	9" - 11"	1.00	14.9	13.1	11.4	8.8	6.6	4.9	3.5	2.3	1.3
5" x 7-ga x 28'	28	7	D	9" - 11"	1.00	12.5	10.9	9.4	6.9	4.9	3.4	2.1	1.0	n/a
5" x 7-ga x 30'	30	7	D	9" - 11"	1.00	10.3	8.9	7.5	5.2	3.4	2.0	0.8	n/a	n/a
5" x 7-ga x 35'	35	7	D	9" - 11"	1.00	6.0	4.8	3.6	1.8	n/a	n/a	n/a	n/a	n/a
6" x 7-ga x 24'	24	7	J	12"	1.00	18.6	16.4	14.3	11.2	8.6	6.5	4.8	3.4	2.2
6" x 7-ga x 26'	26	7	J	12"	1.00	15.6	13.4	11.7	8.8	6.5	4.6	3.0	1.8	0.7
6" x 7-ga x 28'	28	7	J	12"	1.00	12.9	10.9	9.3	6.7	4.6	2.8	1.5	n/a	n/a
6" x 7-ga x 30'	30	7	J	12"	1.00	10.4	8.8	7.3	4.8	2.9	1.3	n/a	n/a	n/a
6" x 7-ga x 32'	32	7	J	12"	1.00	8.3	6.8	5.5	3.1	1.3	n/a	n/a	n/a	n/a
6" x 7-ga x 34'	34	7	J	12"	1.00	6.5	5.0	3.7	1.6	n/a	n/a	n/a	n/a	n/a
6" x 7-ga x 35'	35	7	J	12"	1.00	5.5	4.2	2.9	0.9	n/a	n/a	n/a	n/a	n/a
6" x 7-ga x 39'	39	7	J	12"	1.00	2.3	1.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a

All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.
CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

Note:
1- Poles shorter than these listed here in for each gauge have EPA rating equal to or greater than what is provided in this table. To Confirm EPA ratings on shorter poles, contact LSI Industries.
2- LSI Industries recommends a vibration damper be ordered with this length.

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Steel Poles - Square Straight

Type: Types S3 and S5

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WIND SPEED

POLE[1]	Mtg. Height Length (ft)	Wall Thick (ga)	BOLT CIRCLE			EPA								
			Designator	Dia. (in)	Anchor bolt Dia (in)	110 MPH	115 MPH	120 MPH	130 MPH	140 MPH	150 MPH	160 MPH	170 MPH	180 MPH
5"x11-ga x 14'	14	11	F	11"	0.75	17.6	15.8	14.2	11.5	9.4	7.7	6.3	5.2	4.3
5"x11-ga x 14'	14	11	F	13"	0.75	17.6	15.8	14.2	11.5	9.4	7.7	6.3	5.2	4.3
5"x11-ga x 16'	16	11	F	11"	0.75	13.9	12.2	11.0	8.8	7.0	5.5	4.3	3.4	2.5
5"x11-ga x 16'	16	11	F	13"	0.75	13.9	12.2	11.0	8.8	7.0	5.5	4.3	3.4	2.5
5"x11-ga x 18'	18	11	F	11"	0.75	11.0	9.6	8.4	6.5	5.0	3.7	2.7	1.8	1.1
5"x11-ga x 18'	18	11	F	13"	0.75	11.0	9.6	8.4	6.5	5.0	3.7	2.7	1.8	1.1
5"x11-ga x 20'	20	11	F	11"	0.75	8.6	7.4	6.4	4.6	3.3	2.2	1.3	0.5	-
5"x11-ga x 20'	20	11	F	13"	0.75	8.6	7.4	6.4	4.6	3.3	2.2	1.3	0.5	-
5"x11-ga x 22'	22	11	F	11"	0.75	12.7	11.1	9.6	7.4	5.6	4.1	3.0	2.0	1.1
5"x11-ga x 22'	22	11	F	12"	0.75	10.3	8.9	7.7	5.7	4.1	2.8	1.8	0.9	-
5"x11-ga x 22'	22	11	F	13"	0.75	8.6	7.4	6.4	4.6	3.1	2.0	1.1	-	-
5"x11-ga x 24'	24	11	F	11"	0.75	10.2	8.9	7.6	5.6	4.0	2.6	1.6	0.7	-
5"x11-ga x 24'	24	11	F	12"	0.75	8.0	6.9	5.8	4.0	2.6	1.5	0.5	-	-
5"x11-ga x 24'	24	11	F	13"	0.75	6.7	5.5	4.6	3.0	1.7	0.7	-	-	-
5"x11-ga x 26'	26	11	F	11"	0.75	8.1	6.9	5.8	4.0	2.5	1.3	-	-	-
5"x11-ga x 26'	26	11	F	12"	0.75	6.2	5.1	4.1	2.6	1.3	-	-	-	-
5"x11-ga x 26'	26	11	F	13"	0.75	5.0	4.0	3.1	1.6	0.5	-	-	-	-
5"x11-ga x 28'	28	11	F	11"	0.75	6.3	5.2	4.3	2.5	1.1	-	-	-	-
5"x11-ga x 28'	28	11	F	12"	0.75	4.6	3.6	2.7	1.2	-	-	-	-	-
5"x11-ga x 28'	28	11	F	13"	0.75	3.4	2.5	1.7	-	-	-	-	-	-
5"x11-ga x 30'	30	11	F	11"	0.75	4.7	3.7	2.8	1.2	-	-	-	-	-
5"x11-ga x 30'	30	11	F	12"	0.75	3.1	2.2	1.4	-	-	-	-	-	-
5"x11-ga x 30'	30	11	F	13"	0.75	2.0	1.2	0.5	-	-	-	-	-	-
5"x7-ga x 20'	20	7	G	11"	0.75	19.0	17.0	15.0	12.2	9.7	7.8	6.2	5.0	3.8
5"x7-ga x 20'	20	7	G	12"	0.75	21.4	19.3	17.1	13.8	11.2	9.1	7.3	5.9	4.7
5"x7-ga x 20'	20	7	G	13"	0.75	21.4	19.2	17.2	13.9	11.3	9.2	7.4	6.0	4.8
5"x7-ga x 20'	20	7	G	11"	1	21.7	19.4	17.4	14.0	11.4	9.3	7.5	6.0	4.8
5"x7-ga x 20'	20	7	G	13"	1	21.7	19.4	17.4	14.0	11.4	9.3	7.5	6.0	4.8
5"x7-ga x 22'	22	7	G	11"	0.75	16.0	14.1	12.5	9.8	7.6	5.9	4.4	3.3	2.3
5"x7-ga x 22'	22	7	G	12"	0.75	17.7	15.9	14.2	11.2	8.7	7.0	5.4	4.1	3.0
5"x7-ga x 22'	22	7	G	13"	0.75	19.9	17.3	15.6	12.6	10.0	8.0	6.3	5.0	3.8
5"x7-ga x 22'	22	7	G	11"	1	21.0	18.7	16.7	13.4	10.6	8.5	6.8	5.4	4.2
5"x7-ga x 22'	22	7	G	12"	1	23.4	20.6	18.4	15.0	12.2	9.9	8.0	6.4	5.1
5"x7-ga x 22'	22	7	G	13"	1	21.3	18.8	17.0	13.7	11.0	8.8	7.0	5.6	4.3
5"x7-ga x 24'	24	7	G	11"	0.75	13.3	11.6	10.0	7.7	5.7	4.2	2.9	1.9	1.0
5"x7-ga x 24'	24	7	G	12"	0.75	15.0	13.0	11.6	8.9	6.8	5.1	3.8	2.6	1.7
5"x7-ga x 24'	24	7	G	13"	0.75	16.6	14.6	12.9	10.2	8.0	6.1	4.6	3.3	2.3
5"x7-ga x 24'	24	7	G	11"	1	17.5	15.7	13.9	10.9	8.6	6.7	5.0	3.7	2.7
5"x7-ga x 24'	24	7	G	12"	1	20.0	17.4	15.4	12.3	9.9	7.8	6.0	4.7	3.5
5"x7-ga x 24'	24	7	G	13"	1	18.1	16.0	14.2	11.0	8.7	6.7	5.3	3.9	2.8
5"x7-ga x 26'	26	7	G	11"	0.75	10.9	9.3	8.0	5.9	4.1	2.7	1.6	0.6	-
5"x7-ga x 26'	26	7	G	12"	0.75	12.4	10.9	9.5	7.0	5.1	3.6	2.3	1.3	-
5"x7-ga x 26'	26	7	G	13"	0.75	14.0	12.3	10.7	8.1	6.0	4.4	3.1	2.0	1.0
5"x7-ga x 26'	26	7	G	11"	1	15.0	13.2	11.5	8.8	6.7	4.9	3.5	2.3	1.3

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Steel Poles - Square Straight

Type: Types S3 and S5

Have questions? Call us at (800) 436-7800

WIND SPEED

POLE[1]	Mtg. Height Length (ft)	Wall Thick (ga)	BOLT CIRCLE			EPA								
			Designator	Dia. (in)	Anchor bolt Dia (in)	110 MPH	115 MPH	120 MPH	130 MPH	140 MPH	150 MPH	160 MPH	170 MPH	180 MPH
5" x 7-ga x 26'	26	7	G	12"	1	17.0	14.8	13.0	10.2	7.9	6.0	4.4	3.1	2.1
5" x 7-ga x 26'	26	7	G	13"	1	15.3	13.5	11.8	9.0	6.8	5.0	3.6	2.5	1.4
5" x 7-ga x 28'	28	7	G	11"	0.75	8.9	7.4	6.3	4.3	2.7	1.4	-	-	-
5" x 7-ga x 28'	28	7	G	12"	0.75	10.2	8.8	7.5	5.3	3.5	2.1	1.0	-	-
5" x 7-ga x 28'	28	7	G	13"	0.75	11.8	10.2	8.8	6.4	4.5	3.0	1.7	0.7	-
5" x 7-ga x 28'	28	7	G	11"	1	12.5	10.9	9.5	7.0	5.0	3.3	2.1	1.0	-
5" x 7-ga x 28'	28	7	G	12"	1	14.2	12.4	11.0	8.2	6.0	4.3	3.0	1.7	0.8
5" x 7-ga x 28'	28	7	G	13"	1	12.9	11.0	9.7	7.2	5.2	3.6	2.2	1.1	-
5" x 7-ga x 30'	30	7	G	11"	0.75	7.0	5.8	4.7	2.8	1.3	-	-	-	-
5" x 7-ga x 30'	30	7	G	12"	0.75	8.4	7.0	5.8	3.8	2.2	0.9	-	-	-
5" x 7-ga x 30'	30	7	G	13"	0.75	9.7	8.2	7.0	4.8	3.0	1.6	0.5	-	-
5" x 7-ga x 30'	30	7	G	11"	1	10.4	8.8	7.6	5.3	3.4	2.0	0.8	-	-
5" x 7-ga x 30'	30	7	G	12"	1	12.0	10.3	9.0	6.4	4.4	2.9	1.6	0.5	-
5" x 7-ga x 30'	30	7	G	13"	1	10.6	9.1	7.7	5.5	3.6	2.1	1.0	-	-
5" x 7-ga x 35'	35	7	G	11"	0.75	3.2	2.2	1.2	-	-	-	-	-	-
5" x 7-ga x 35'	35	7	G	12"	0.75	4.4	3.2	2.2	0.5	-	-	-	-	-
5" x 7-ga x 35'	35	7	G	13"	0.75	5.5	4.2	3.1	1.3	-	-	-	-	-
5" x 7-ga x 35'	35	7	G	11"	1	6.0	4.8	3.6	1.8	-	-	-	-	-
5" x 7-ga x 35'	35	7	G	12"	1	7.3	6.0	4.8	2.7	1.1	-	-	-	-
5" x 7-ga x 35'	35	7	G	13"	1	6.3	5.0	3.8	1.9	-	-	-	-	-
6" x 7-ga x 24'	24	7	H	11"	1	16.5	14.4	12.6	9.6	7.2	5.3	3.8	2.5	1.4
6" x 7-ga x 24'	24	7	H	12-1/2"	1	19.8	17.5	15.4	12.0	9.2	7.0	5.3	3.8	2.7
6" x 7-ga x 24'	24	7	H	14"	1	23.0	20.5	18.0	14.3	11.2	8.9	6.9	5.3	3.8
6" x 7-ga x 26'	26	7	H	11"	1	13.7	11.8	10.2	7.5	5.3	3.6	2.1	1.0	-
6" x 7-ga x 26'	26	7	H	12-1/2"	1	16.5	14.6	12.6	9.6	7.0	5.2	3.6	2.2	1.1
6" x 7-ga x 26'	26	7	H	14"	1	19.6	17.3	15.2	11.7	8.9	6.7	5.0	3.5	2.2
6" x 7-ga x 28'	28	7	H	11"	1	11.0	9.3	7.8	5.5	3.5	1.9	0.6	-	-
6" x 7-ga x 28'	28	7	H	12-1/2"	1	13.8	12.0	10.2	7.5	5.2	3.4	1.9	0.7	-
6" x 7-ga x 28'	28	7	H	14"	1	16.4	14.5	12.5	9.4	6.9	4.7	3.2	1.8	0.7
6" x 7-ga x 30'	30	7	H	11"	1	9.0	7.3	6.0	3.6	1.9	0.5	-	-	-
6" x 7-ga x 30'	30	7	H	12-1/2"	1	11.4	9.6	8.0	5.5	3.4	1.7	-	-	-
6" x 7-ga x 30'	30	7	H	14"	1	14.0	12.0	10.0	7.2	5.0	3.2	1.6	-	-
6" x 7-ga x 32'	32	7	H	11"	1	7.0	5.5	4.2	2.0	-	-	-	-	-
6" x 7-ga x 32'	32	7	H	12-1/2"	1	9.2	7.6	6.0	3.8	1.8	-	-	-	-
6" x 7-ga x 32'	32	7	H	14"	1	11.4	9.7	8.0	5.4	3.2	1.6	-	-	-
6" x 7-ga x 34'	34	7	H	11"	1	5.1	3.7	2.5	0.6	-	-	-	-	-
6" x 7-ga x 34'	34	7	H	12-1/2"	1	7.2	5.6	4.4	2.2	-	-	-	-	-
6" x 7-ga x 34'	34	7	H	14"	1	9.3	7.6	6.2	3.6	1.7	-	-	-	-
6" x 7-ga x 35'	35	7	H	11"	1	4.2	3.0	1.8	-	-	-	-	-	-
6" x 7-ga x 35'	35	7	H	12-1/2"	1	6.2	4.8	3.6	1.4	-	-	-	-	-
6" x 7-ga x 35'	35	7	H	14"	1	8.2	6.6	5.2	2.9	1.0	-	-	-	-
6" x 7-ga x 39'	39	7	H	11"	1	1.0	-	-	-	-	-	-	-	-
6" x 7-ga x 39'	39	7	H	12-1/2"	1	3.0	1.6	0.5	-	-	-	-	-	-
6" x 7-ga x 39'	39	7	H	14"	1	4.6	3.3	2.0	-	-	-	-	-	-

All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.

CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

Note:

1- Poles shorter than these listed here in for each gauge have EPA rating equal to or greater than what is provided in this table. To Confirm EPA ratings on shorter poles, contact LSI Industries.

2- LSI Industries recommends a vibration damper be ordered with this length.

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APPENDIX C

NORTHERN STAGE MULTIPLEX HOUSING PROJECT

See the following page for Schedule:

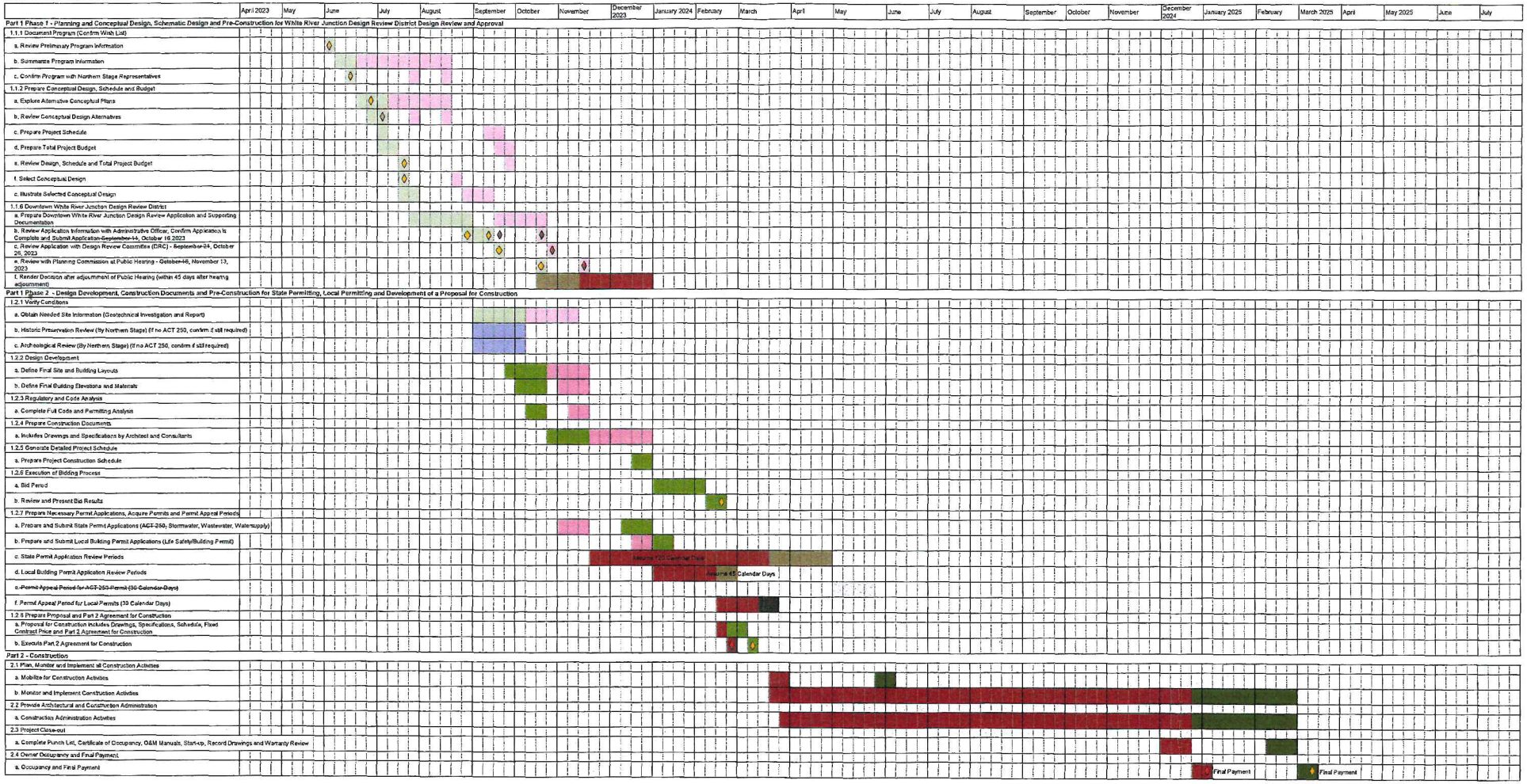
Northern Stage Multiplex Housing

IPM[SM] SCHEDULE v2.1

April 5, 2023 - Revised September 20, 2023

◆ = Revised Timeline or Presentation Milestone

◆ = Meeting or Presentation Milestone



APPENDIX D

NORTHERN STAGE MULTIPLEX HOUSING PROJECT

HARTFORD CODE: 260-46

See the following pages applicable to various sections of the code: DRAWING LIST

Architectural Drawings

L1.1 Site Plan
L1.2 Landscape Plan
L1.3 Planting Schedule
A2.1 3D Views
A2.1 First Floor Plan Building A
A2.2 Second Floor Plan Building A
A2.3 Attic Floor Plan Building A
A2.4 Roof Plan Building A
A4.1 Exterior Elevations Building A (North/South)
A4.2 Exterior Elevations Building A (East/West)
A5.1 Building Sections Building A
A6.1 Exterior Wall Sections Building A
A6.2 Exterior Wall Sections Building A
A2.1 First Floor Plan Building B
A2.2 Second Floor Plan Building B
A2.3 Attic Floor Plan Building B
A2.4 Roof Plan Building B
A4.1 Exterior Elevations Building B (North/South)
A4.2 Exterior Elevations Building B (East/West)
A5.1 Building Sections Building B
A6.1 Exterior Wall Sections Building B
A6.2 Exterior Wall Sections Building B
A2.1 First Floor Plan Building C
A2.2 Second Floor Plan Building C
A2.3 Attic Floor Plan Building C
A2.4 Roof Plan Building C
A4.1 Exterior Elevations Building C (North/South)
A4.2 Exterior Elevations Building C (East/West)
A5.1 Building Sections Building C
A6.1 Exterior Wall Sections Building C
A6.2 Exterior Wall Sections Building C
A2.5 Roof Details (Buildings A, B and C)
A9.1 Interior Elevations (Buildings A, B and C)

A10.1 Door Schedule and Details (Buildings A, B and C)
A10.2 Window Schedule and Details (Buildings A, B and C)
A11.1 Exterior Color Scheme
A11.2 Exterior Color Schedule

Civil Drawings
C1.0 Demo Plan
C1.1 EPSC Plan
C2.0 Site Plan
C2.1 Hartford Ladder Truck Turning Plan
C2.2 Garbage Truck Turning Plan
C3.0 Site Details
C3.1 Site Details
C3.2 Water Details
C3.3 Water Details
C3.4 Sewer Details
C3.5 Stormwater Details
C3.6 EPSC Details
C3.7 EPSC Details



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CONCEPT DESIGN

Sheet Issue Date: 10/13/2023

Issue / Revision History

No.	Date	Description

Northern Stage Housing

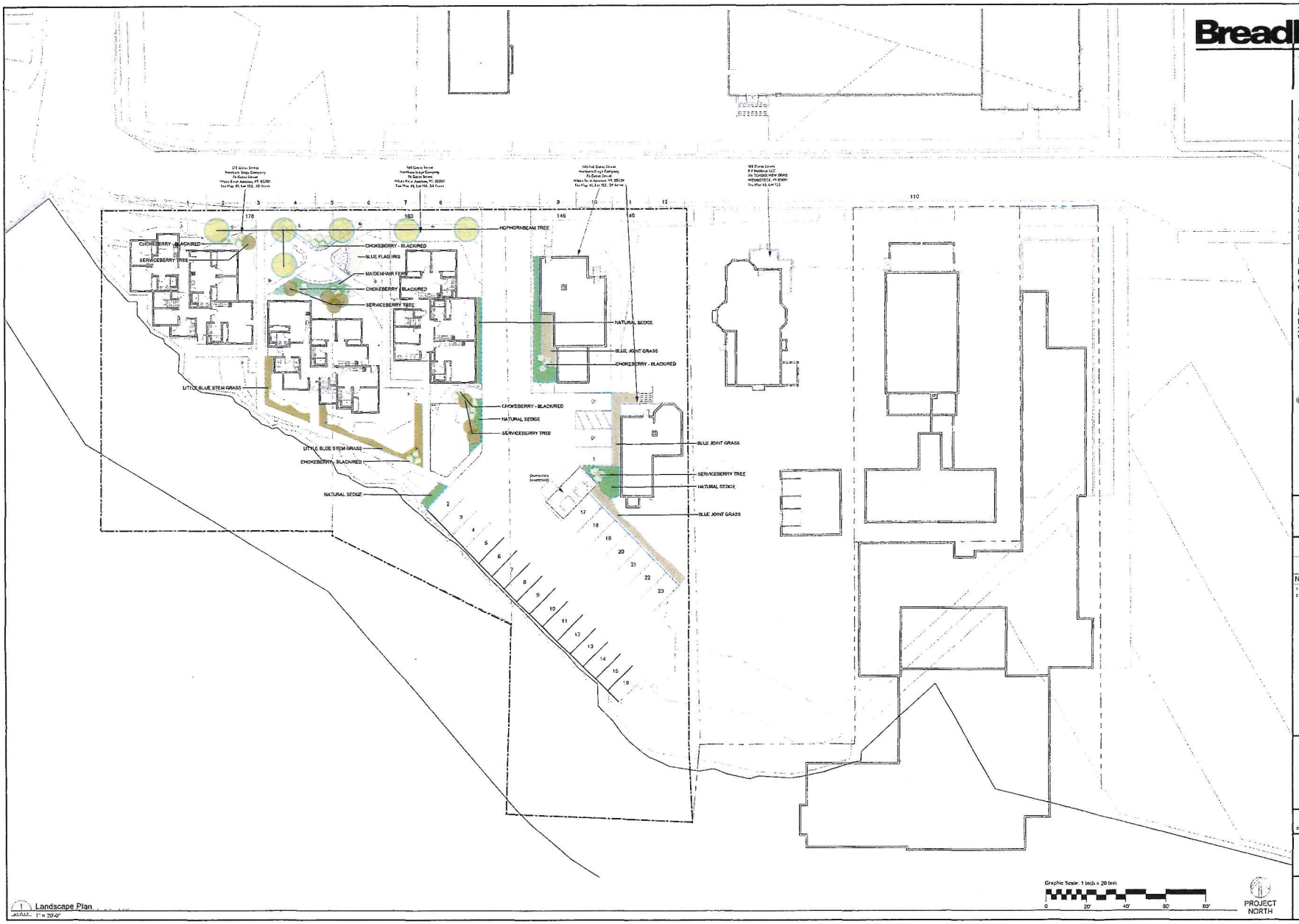
168-170 Gates Street
White River Jct, VT

PROJECT NO.: 19403

DRAWN BY: IDV CHECKED BY: BLC

SITE PLAN

L1.1



1 Landscape Plan
SCALE: 1" = 20'-0"

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Issue / Revision History

No.	Date	Description
1	10-10-22	REVISED PER PC COMMENTS
2	2-13-23	REVISED PER NCS

Northern Stage Housing

168-170 Gates Street
White River Jct, VT

PROJECT NO.: 19403

LANDSCAPE PLAN

L 1.2

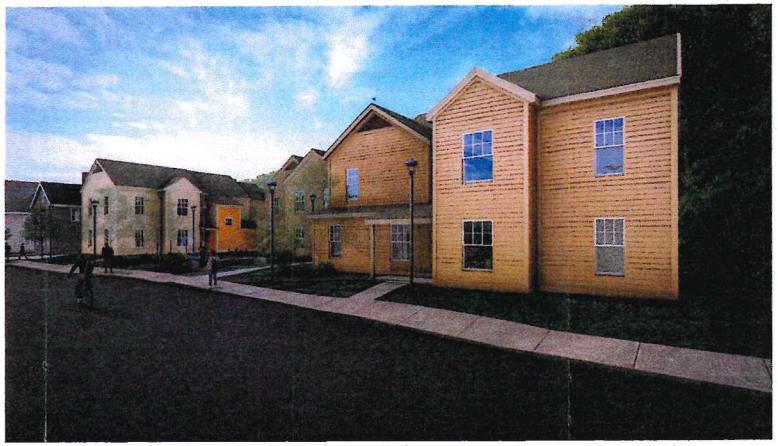
PLANTING SCHEDULE L1.3

NORTHERN STAGE MULTIPLEX HOUSING PROJECT

COMMON NAME	SPECIES	DESCRIPTION	SPACING
Blue Flag Iris	Iris versicolor	2" x 4" plug	18" OC
Blue Joint Grass	Calamagrostis canadensis	2" x 4" plug	2' OC
Chokeberry – Black	Aronia melanocarpa	2" x 4" plug	5' – 6' OC
Chokeberry – Red	Aronia arbutifolia	2" x 4" plug	5' – 6' OC
Hophornbeam Tree	Ostrya virginiana	2 1/2" caliper	NA
Little Blue Stem Grass	Schizachyrium scoparium	2" x 4" plug	18" OC
Maidenhair Fern	Adianturn	Bare root plug	2' OC
Natural Sedge	Carex radiata	2" x 4" plug	1' OC
Serviceberry Tree	Amelanchier canadensis	2" caliper	NA



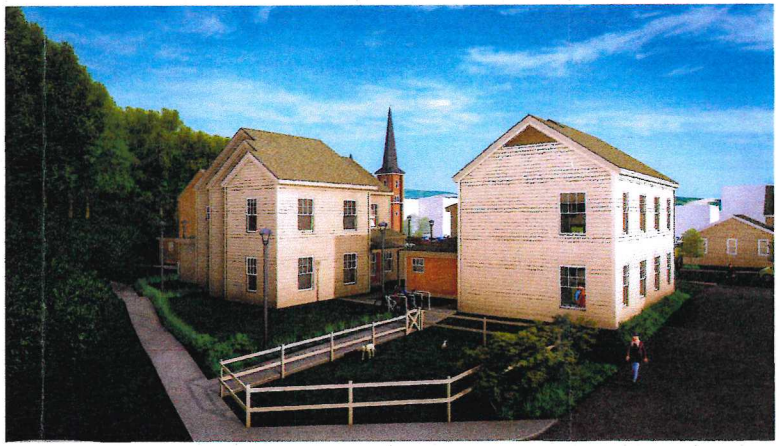
1 STREETSCAPE VIEW LOOKING SOUTHWEST



2 STREETSCAPE VIEW LOOKING SOUTHEAST



3 BIRD'S EYE VIEW LOOKING SOUTH



4 VIEW LOOKING NORTH WEST FROM PARKING

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CONCEPT DESIGN

Sheet Issue Date: 10/25/2023

Issue / Revision History

No.	Date	Description

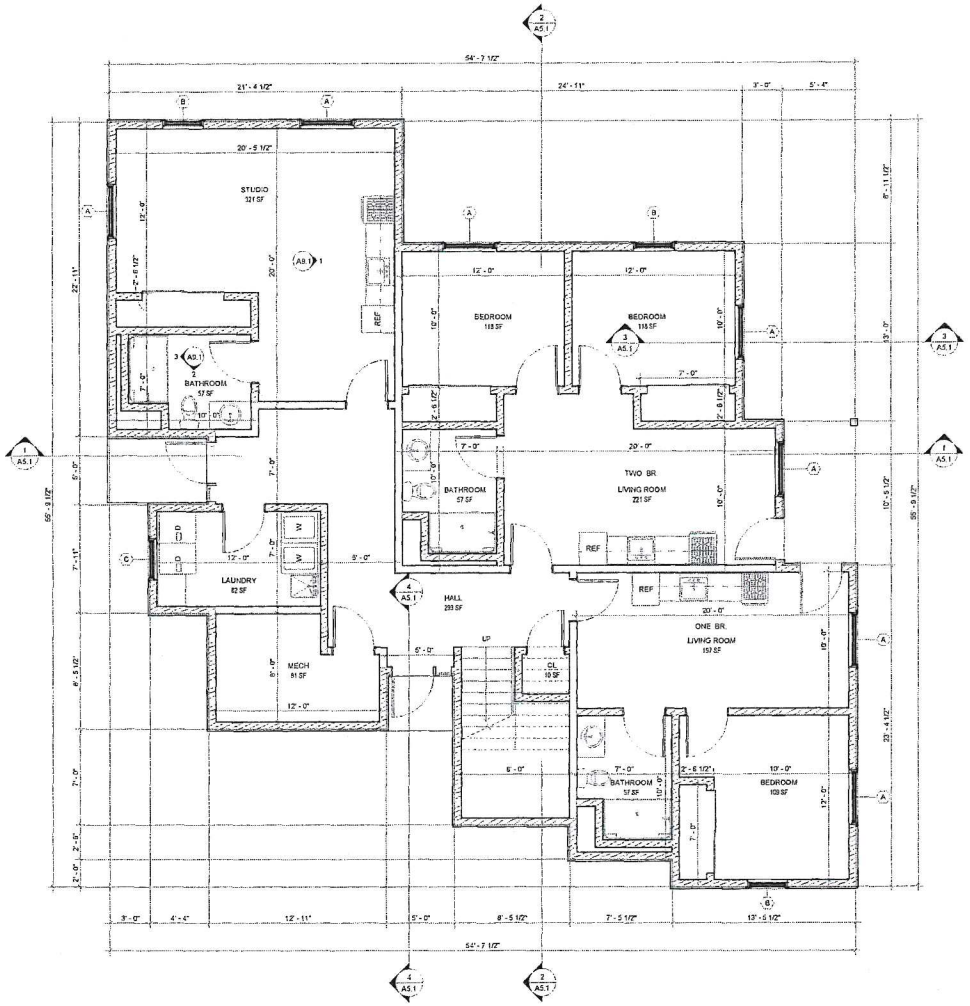
Northern Stage Housing

168-170 Gates Street
White River Jct, VT

PROJECT NO.: 19403

3D Views

A2.1



1 FIRST FLOOR
A2.1 1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet
0 4' 8' 12' 16'

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Sheet Issue Date: 10/06/2023

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No.	Date	Description

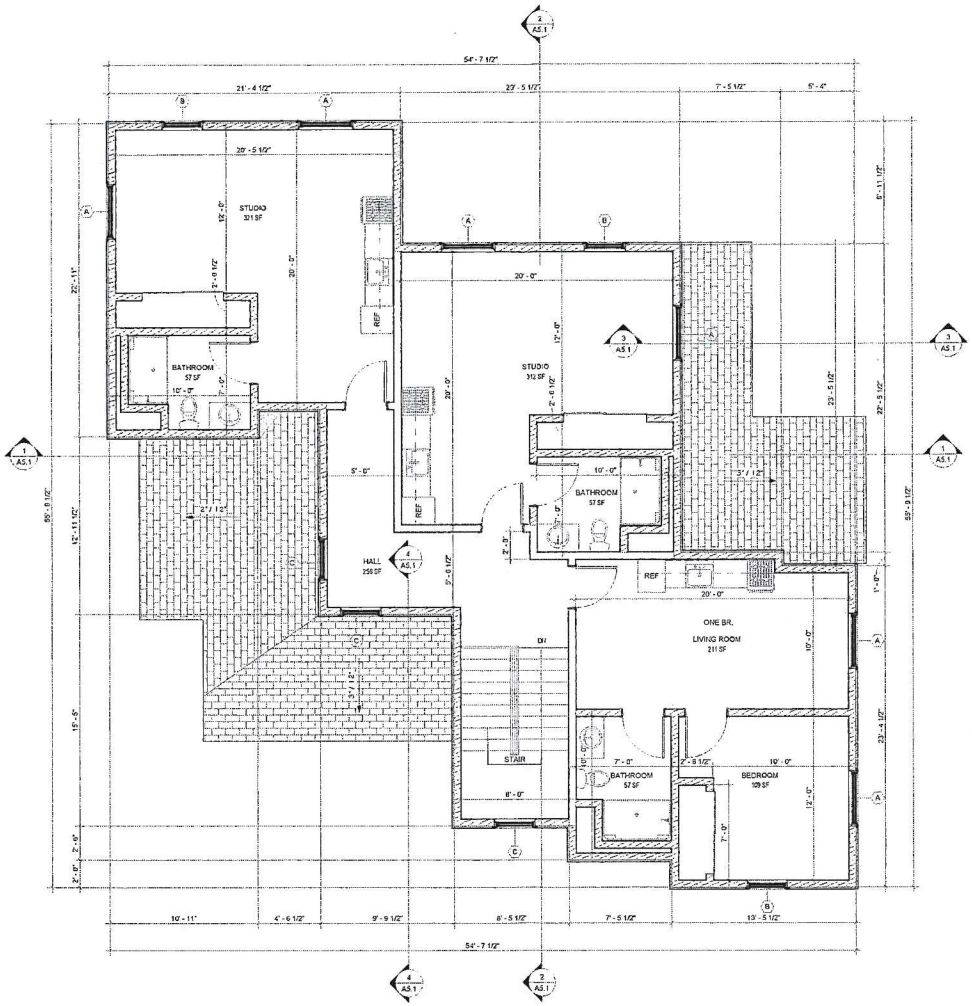
NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

PROJECT NO.: 23405

DRAWN BY: KH CHECKED BY: EC

FIRST FLOOR PLAN (BUILDING A)

A2.1



1 SECOND FLOOR
1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet

0 4' 8' 12' 16'

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No.	Date	Description

NORTHERN STAGE HOUSING
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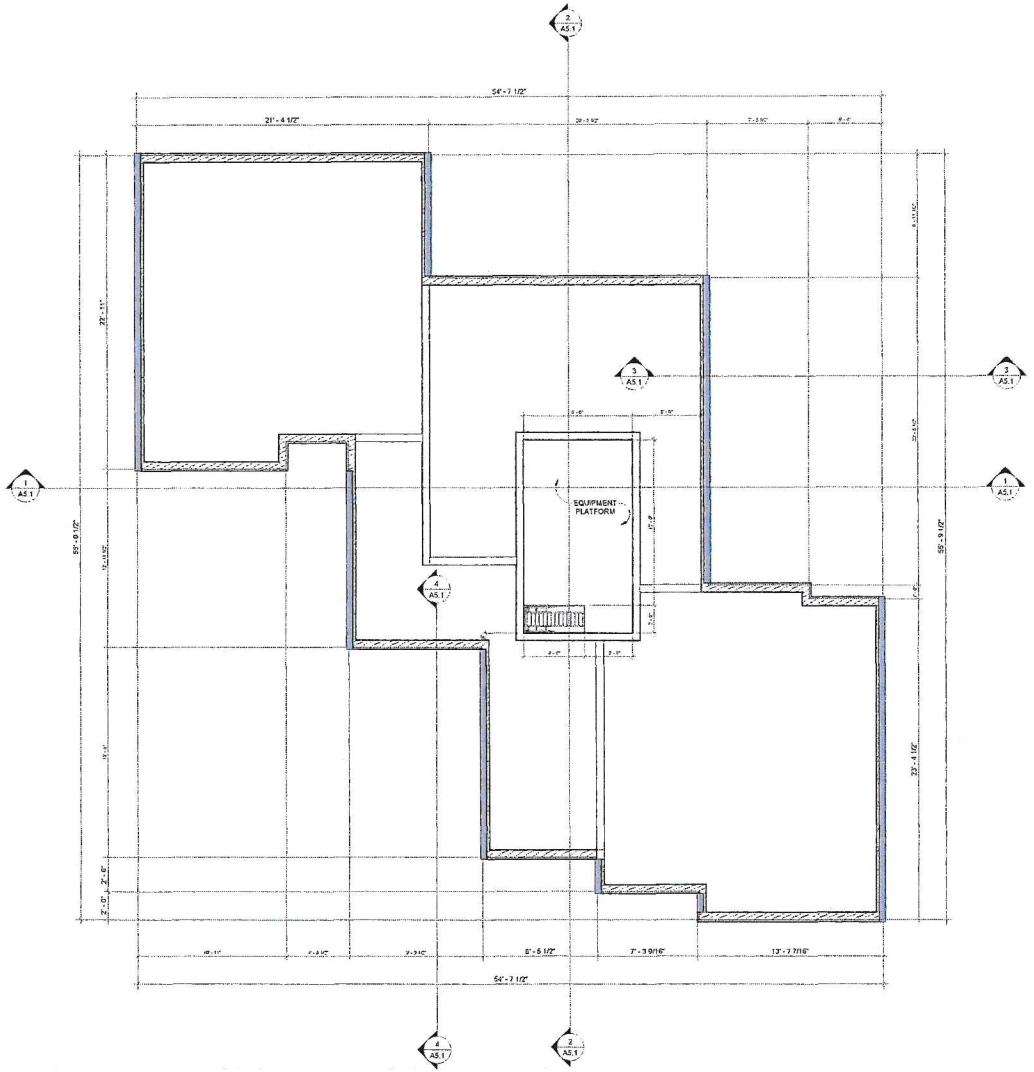
White River Jct, VT

PROJECT NO.: 23405

DRAWN BY: IOV CHECKED BY: BVC

SECOND FLOOR PLAN (BUILDING A)

A2.2



1 ATTIC FLOOR
1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet

0 4' 8' 12' 16'

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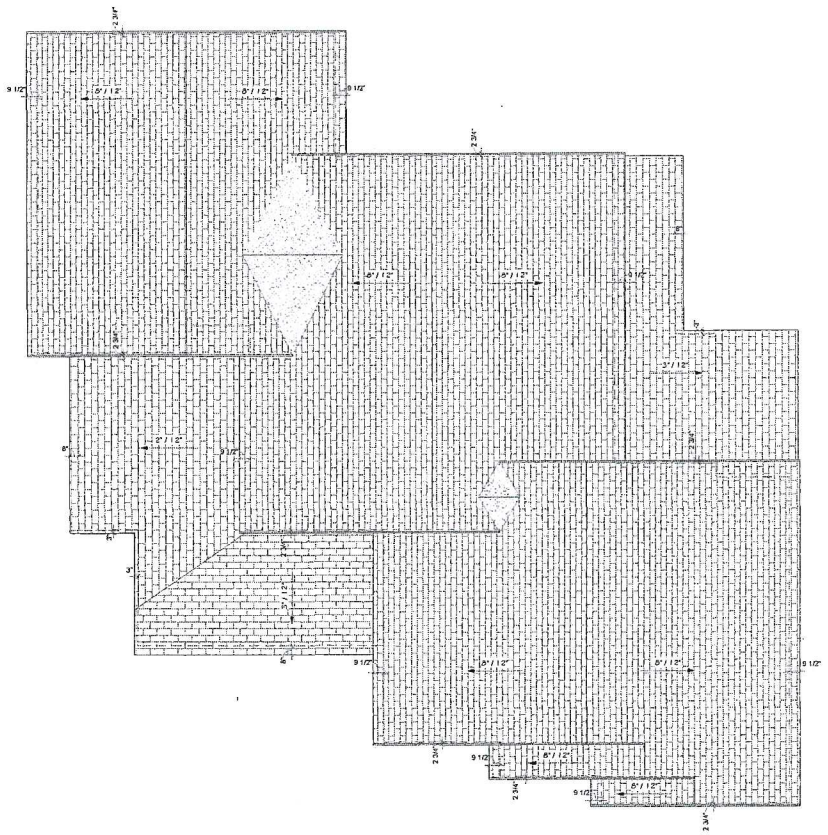
ATTIC FLOOR PLAN (BUILDING A)

A2.3



1 ROOF
A2.4 1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet
0 4' 8' 12' 16'

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CONCEPT DESIGN

Sheet Issue Date: 10/06/2023

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No.	Date	Description

NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

PROJECT NO.: 23405

DRAWN BY: CHECKED BY:

ROOF PLAN (BUILDING A)

A2.4



1 NORTH
1/4" = 1'-0"



2 SOUTH
1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet

0 4' 8' 12' 16'

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NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

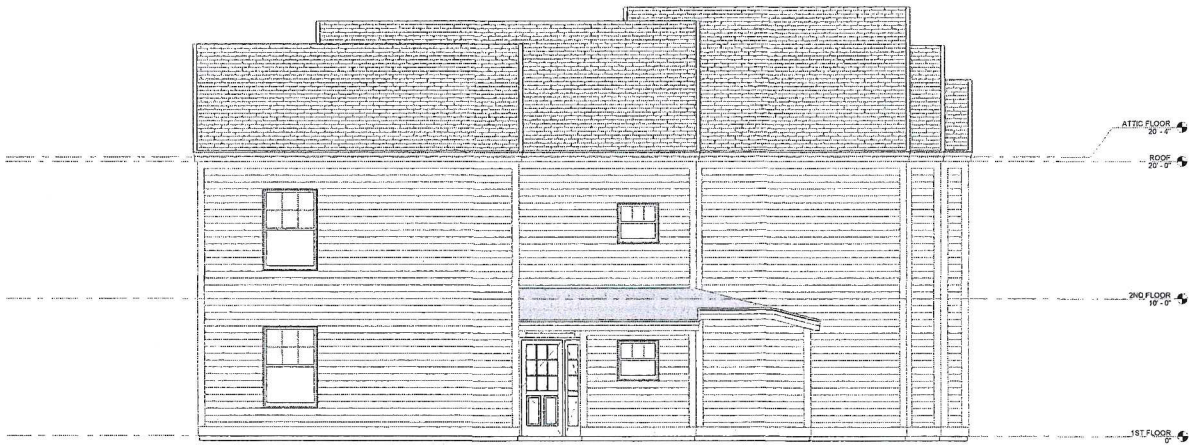
PROJECT NO.: 23405

EXTERIOR ELEVATIONS (BUILDING A)

A4.1



1 EAST
1/4" = 1'-0"



2 WEST
1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet

0 4' 8' 12' 16'

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No.	Date	Description

NORTHERN STAGE HOUSING
160-174 Gates Street
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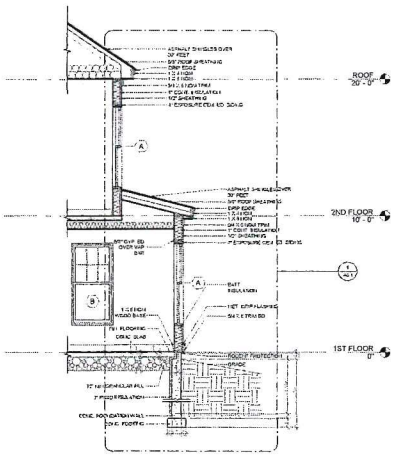
PROJECT NO.: 23405

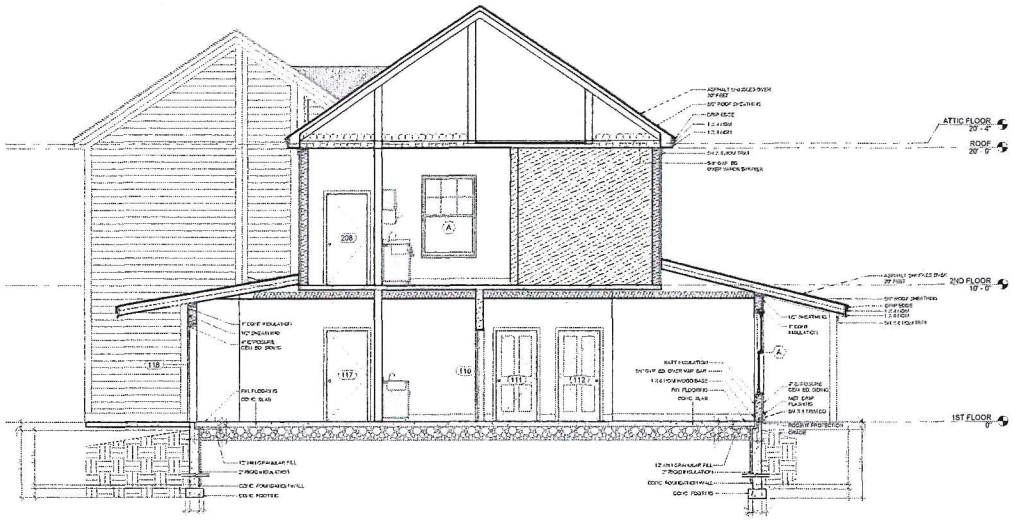
DRAWN BY: KH CHECKED BY: ELC

EXTERIOR ELEVATIONS (BUILDING A)

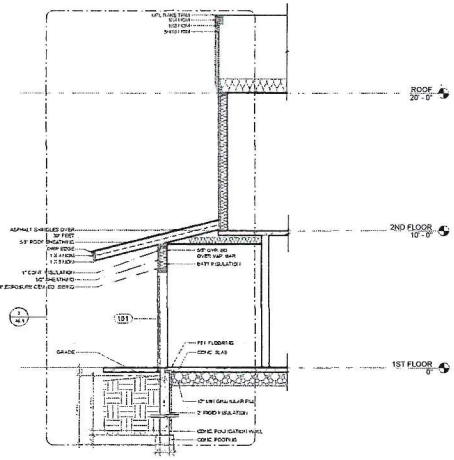
A4.2



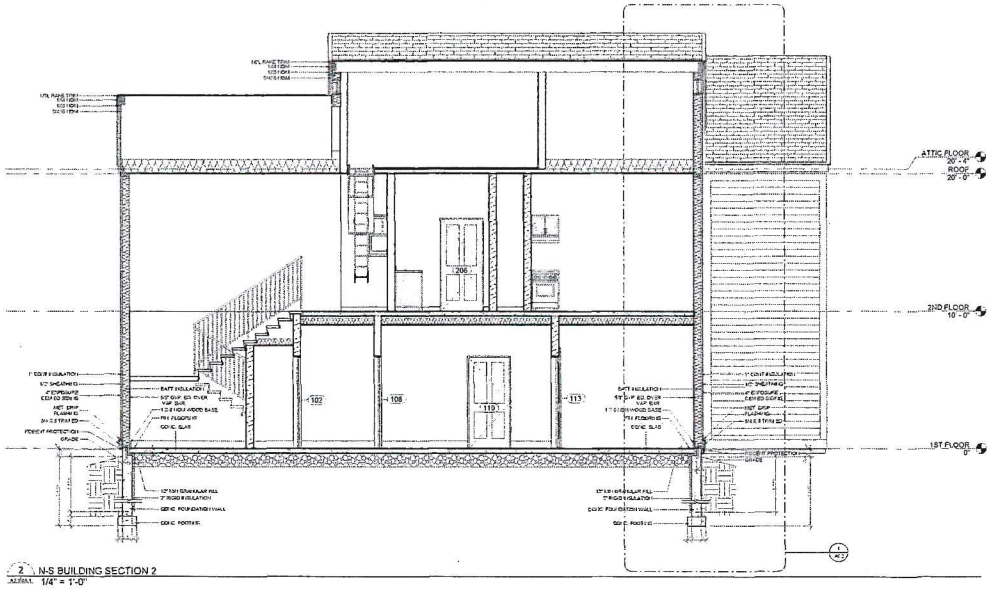
3 E-W PARTIAL SECTION
1/4" = 1'-0"



1 E-W BUILDING SECTION 1
1/4" = 1'-0"



4 N-S PARTIAL SECTION
1/4" = 1'-0"



2 N-S BUILDING SECTION 2
1/4" = 1'-0"

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No.	Date	Description

NORTHERN STAGE HOUSING
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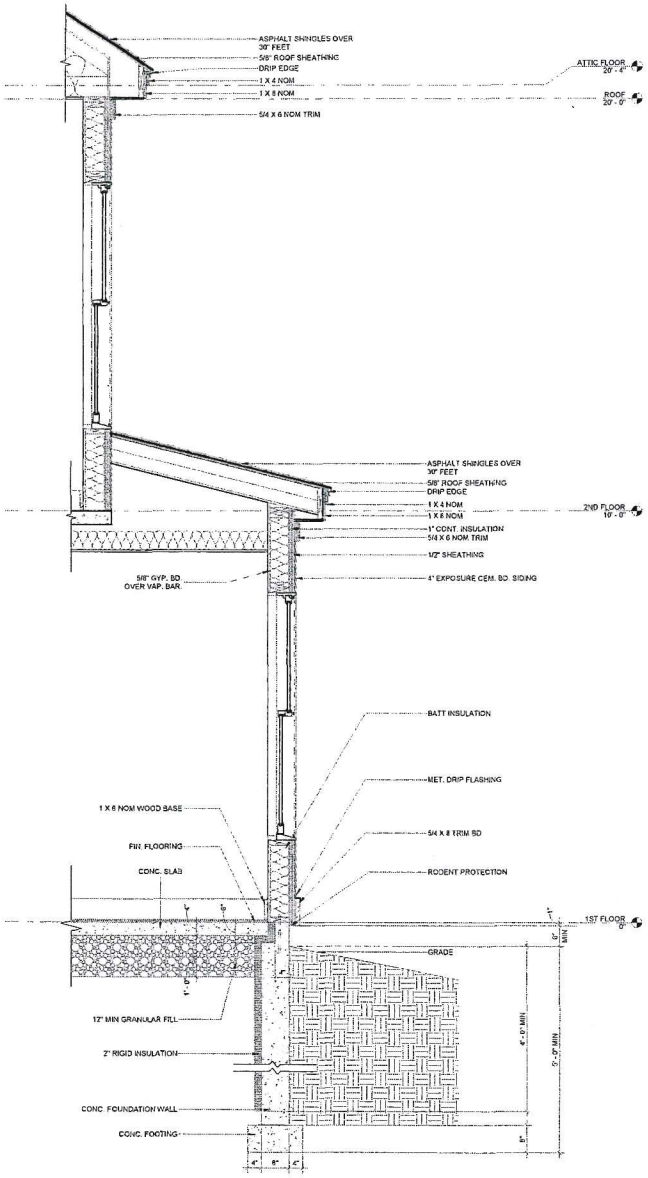
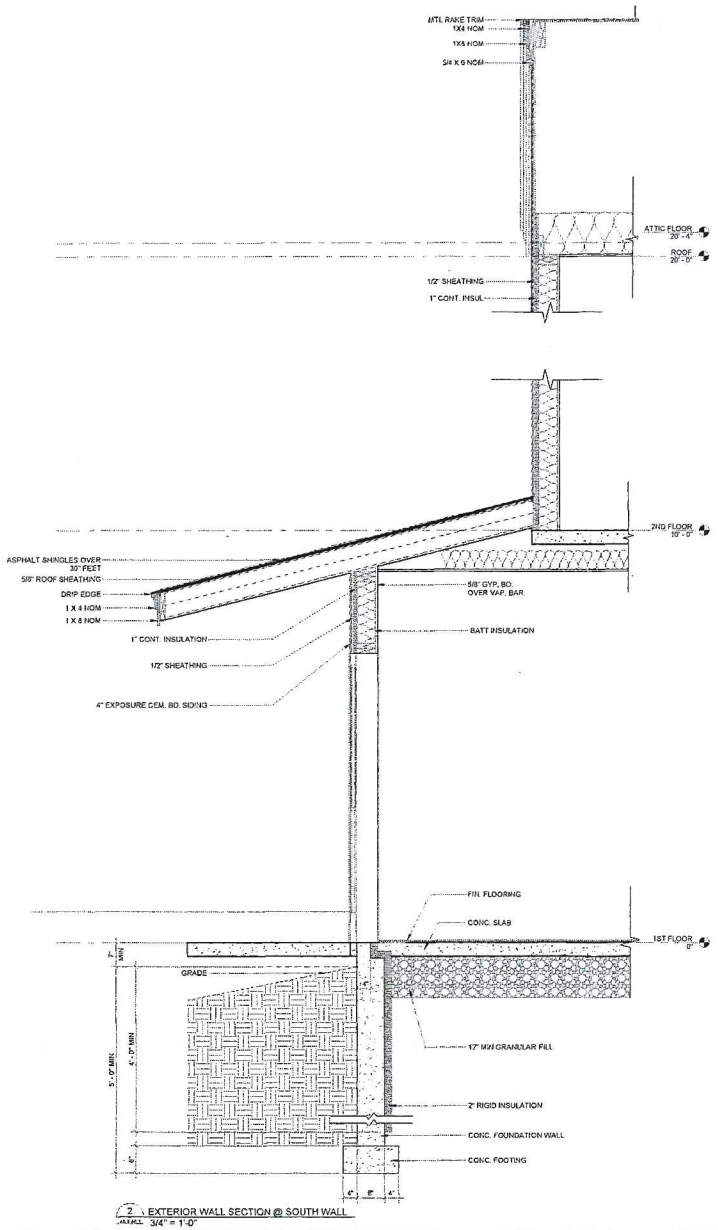
PROJECT NO.: 23405

BUILDING SECTIONS (BUILDING A)

A5.1



1 EXTERIOR WALL SECTION @ EAST WALL
SCALE: 3/4" = 1'-0"



2 EXTERIOR WALL SECTION @ SOUTH WALL
SCALE: 3/4" = 1'-0"

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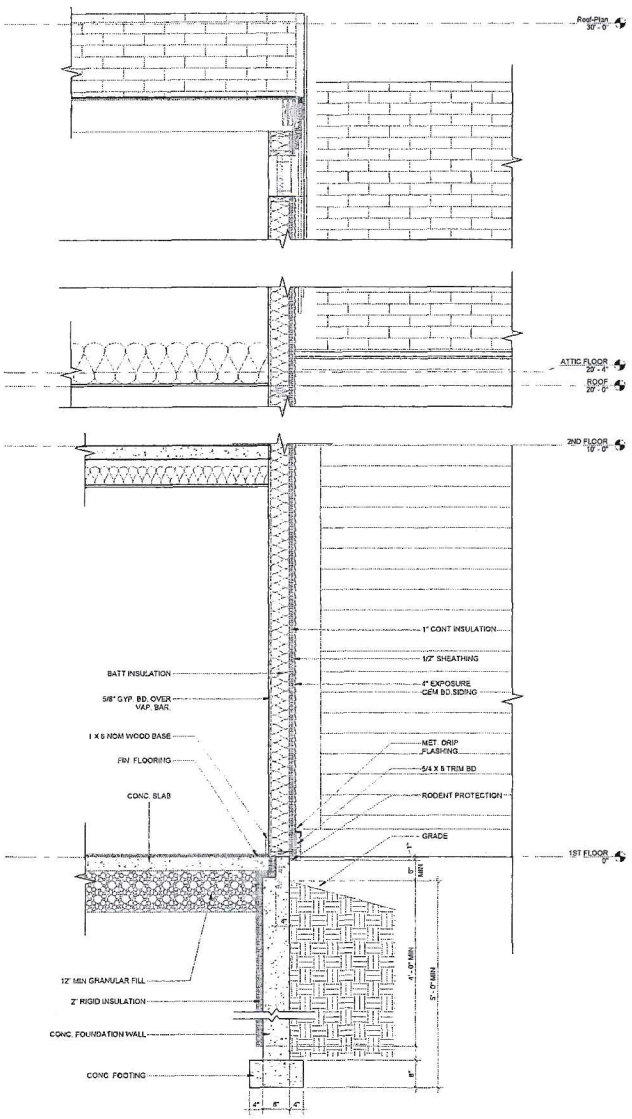
NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

PROJECT NO.: 23405
DRAWN BY: GV CHECKED BY: EC

EXTERIOR WALL SECTIONS (BUILDING A)

A6.1



1 EXTERIOR WALL SECTION @ NORTH WALL
3/4" = 1'-0"

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NORTHERN STAGE HOUSING
160-174 Gates Street
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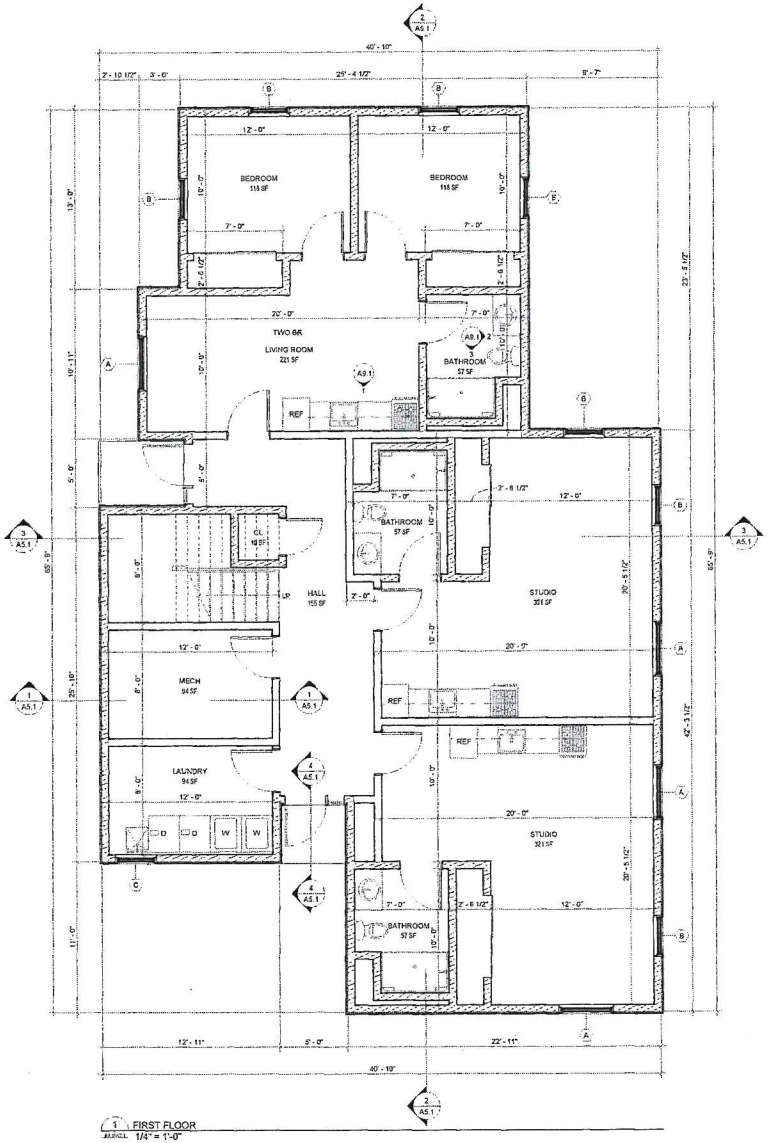
PROJECT NO.: 23405

DRAWN BY: DV CHECKED BY: JKC

EXTERIOR WALL SECTIONS (BUILDING A)

A6.2



1 FIRST FLOOR
1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet
0 4' 8' 12' 16'

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NORTHERN STAGE HOUSING
160-174 Gates Street
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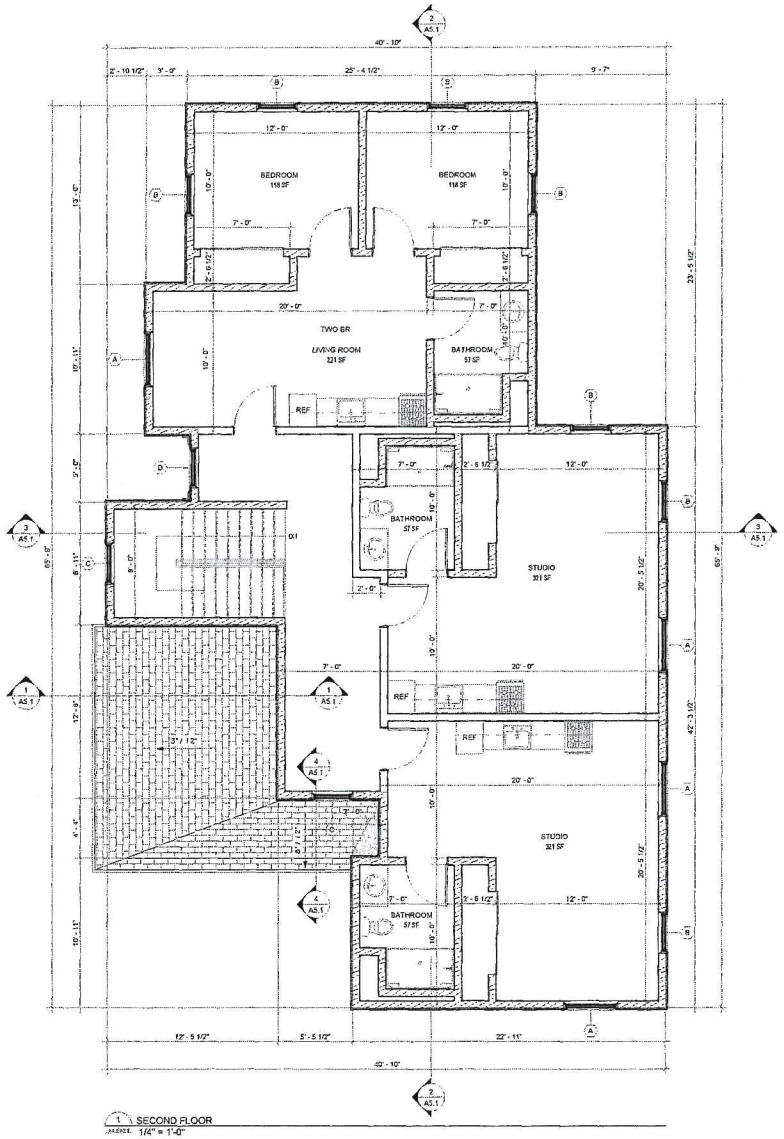
PROJECT NO.: 23405

DRAWN BY: KH CHECKED BY: BL

FIRST FLOOR PLAN (BUILDING B)

A2.1



1 SECOND FLOOR
SCALE: 1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet

0 4' 8' 12' 16'

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NORTHERN STAGE HOUSING
160-174 Gates Street
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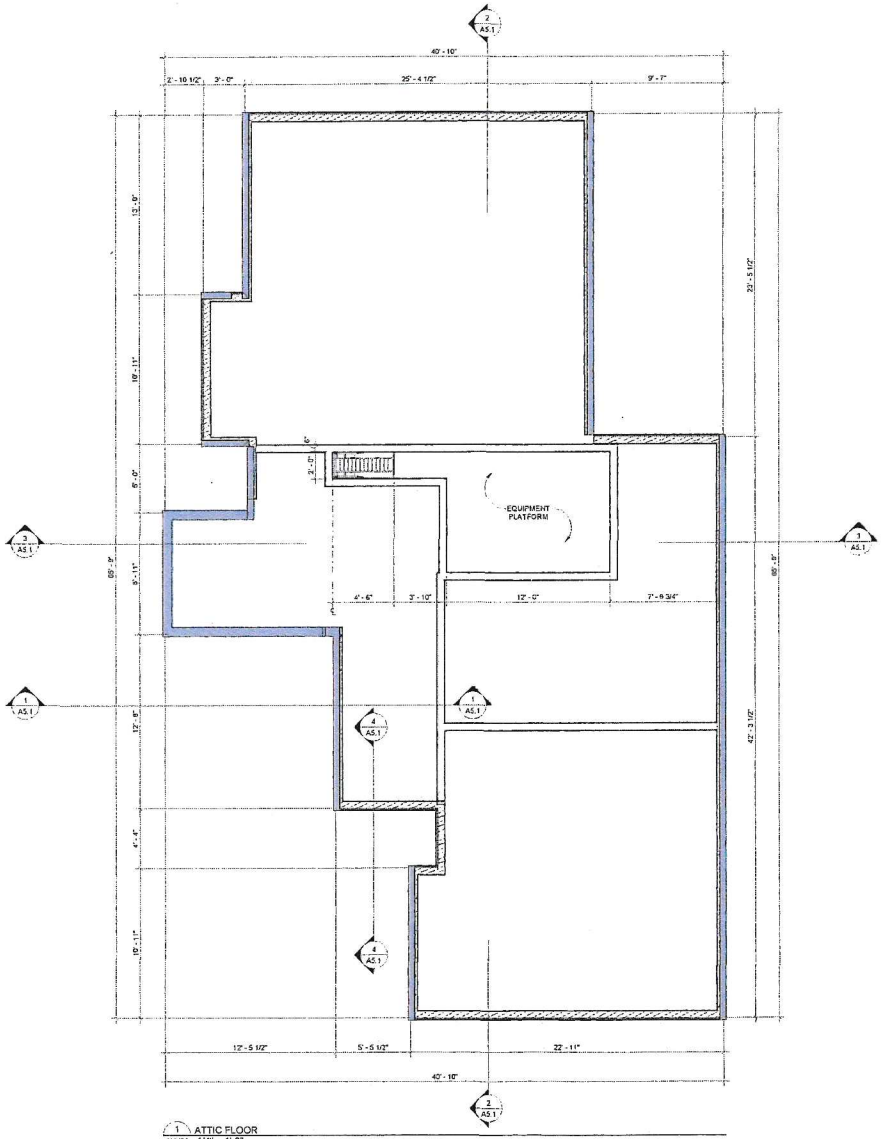
PROJECT NO.: 23405

DRAWN BY: KW CHECKED BY: KC

SECOND FLOOR PLAN (BUILDING B)

A2.2



1 ATTIC FLOOR
SCALE: 1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet
0 4' 8' 12' 16

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No.	Date	Description

NORTHERN STAGE HOUSING
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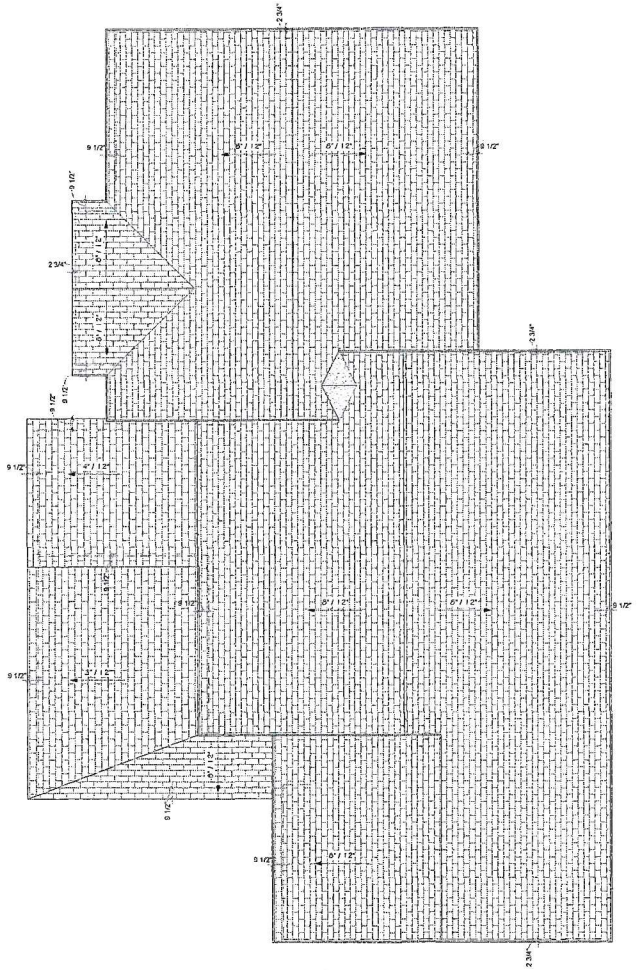
PROJECT NO.: 23405

DRAWN BY: GV CHECKED BY: BLC

ATTIC FLOOR PLAN (BUILDING B)

A2.3



1 ROOF PLAN
1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet
0 4' 8' 12' 16'

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NORTHERN STAGE HOUSING
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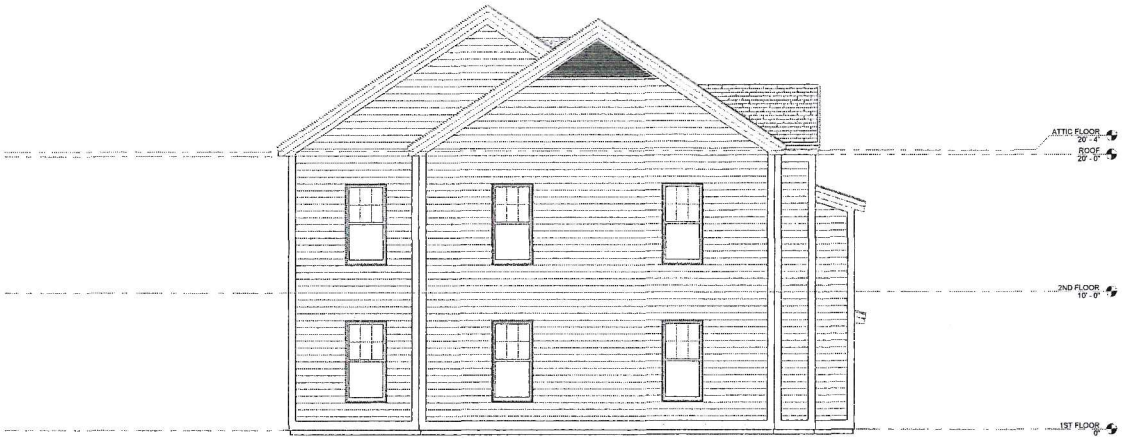
PROJECT NO.: 23405

DRAWN BY: IDV CHECKED BY: BJC

ROOF PLAN (BUILDING B)

A2.4.



1 NORTH
1/4" = 1'-0"



2 SOUTH
1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet

0 4' 8' 12' 16'

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NORTHERN STAGE HOUSING
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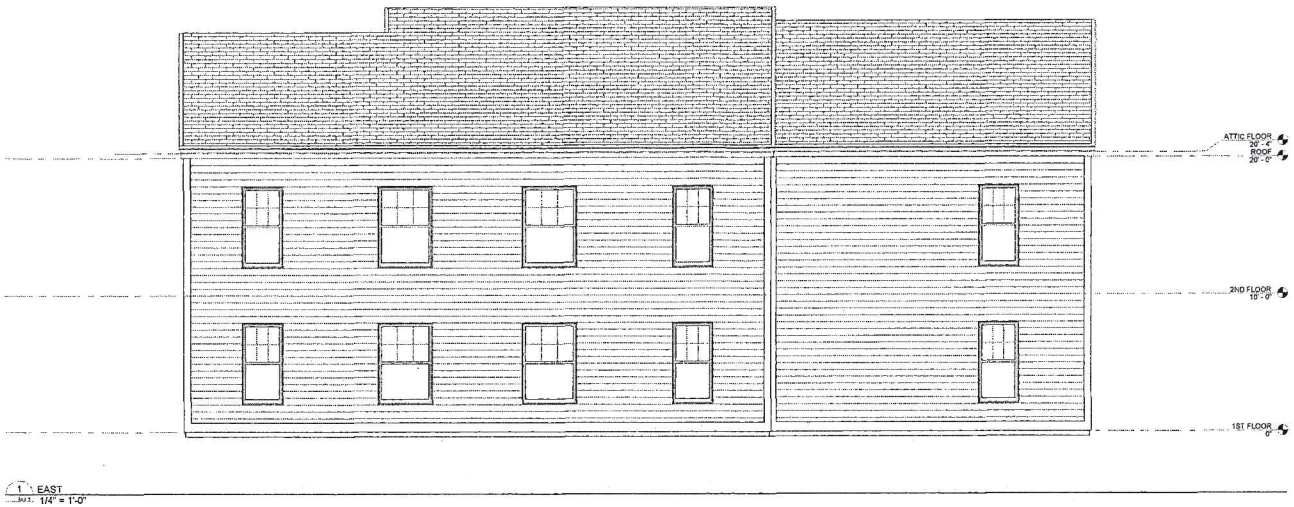
PROJECT NO.: 23405

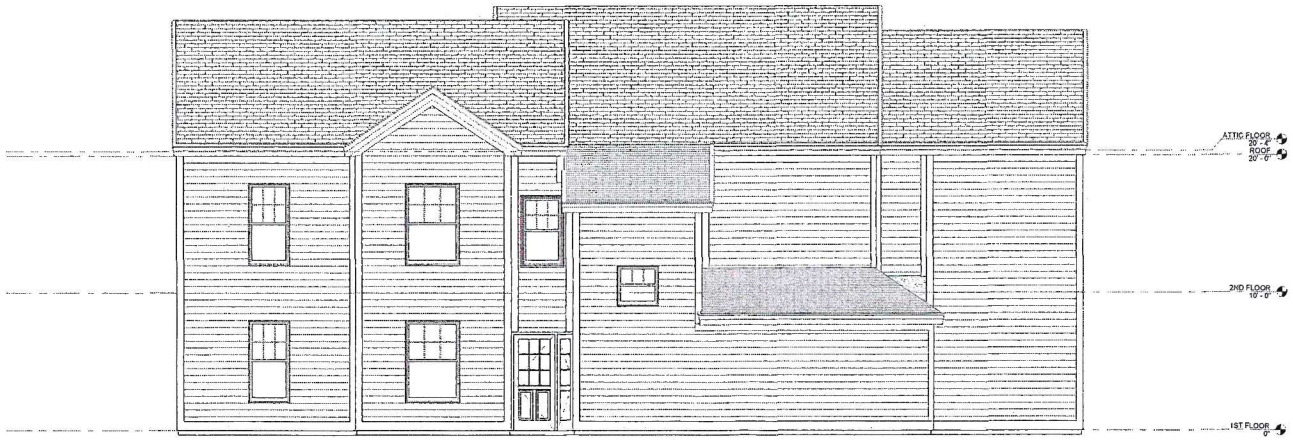
DRAWN BY: BV CHECKED BY: ELC

EXTERIOR ELEVATIONS (BUILDING B)

A4.1



1 EAST
1/4" = 1'-0"



2 WEST
1/4" = 1'-0"

Graphic Scale, 1 inch = 4 feet
0 4' 8' 12' 16'

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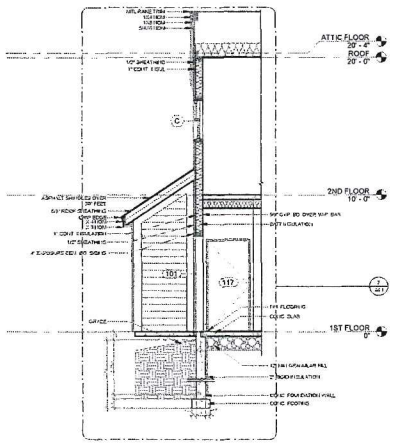
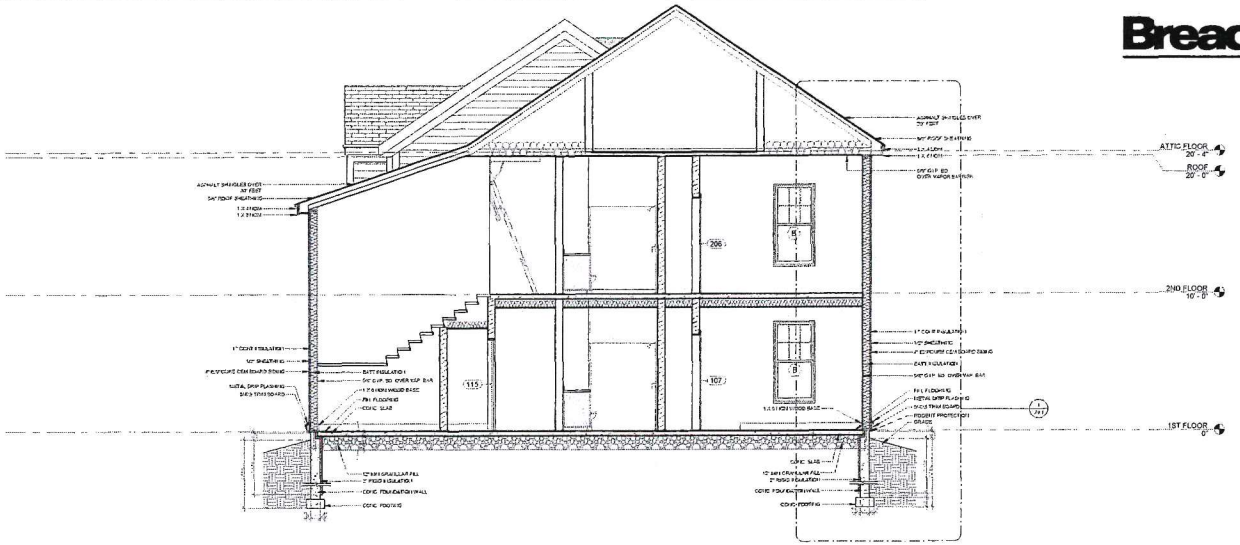
PROJECT NO.: 23405

EXTERIOR ELEVATIONS (BUILDING B)

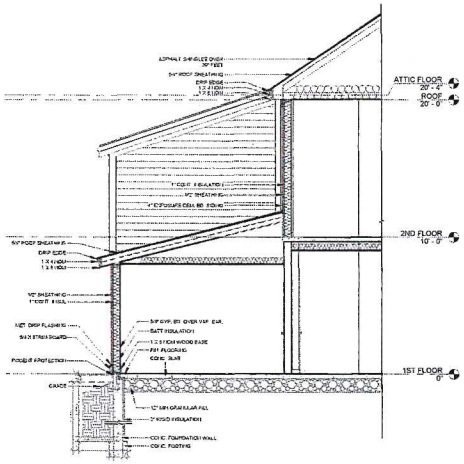
A4.2



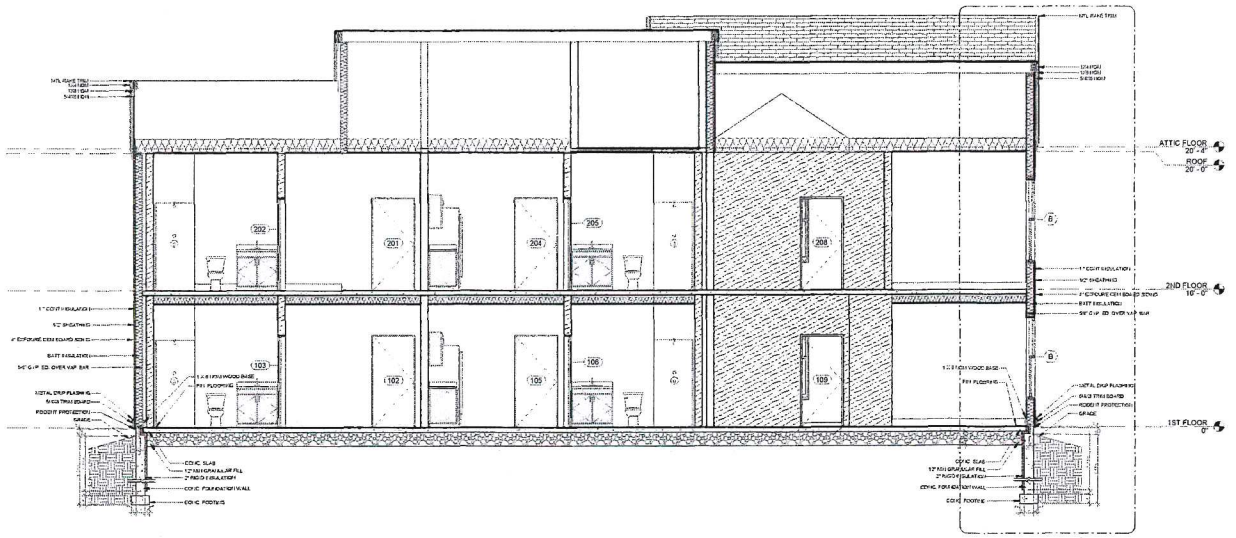
4 E-W PARTIAL SECTION
1/4" = 1'-0"



3 E-W BUILDING SECTION 1
1/4" = 1'-0"



1 N-S PARTIAL SECTION
1/4" = 1'-0"



2 N-S BUILDING SECTION 2
1/4" = 1'-0"

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No.	Date	Description

NORTHERN STAGE HOUSING
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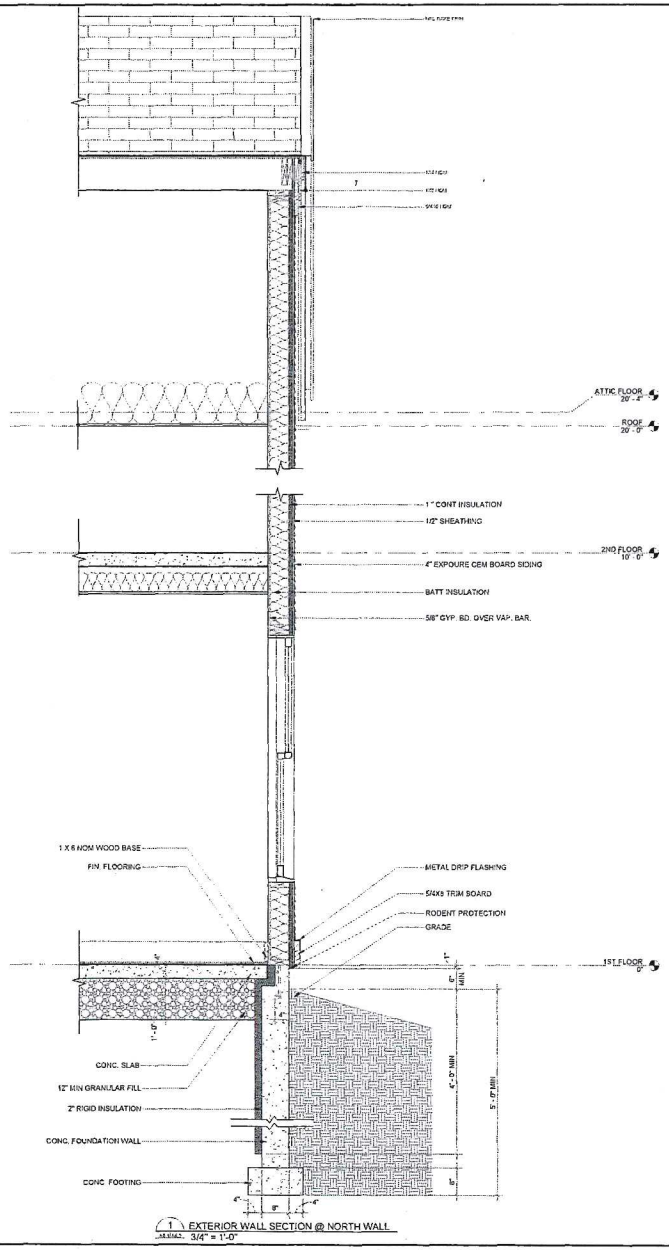
PROJECT NO.: 23405

DRAWN BY: CHECKED BY: D.C.

BUILDING SECTIONS (BUILDING B)

A5.1



1 EXTERIOR WALL SECTION @ NORTH WALL
SCALE: 3/4" = 1'-0"

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No.	Date	Description

NORTHERN STAGE HOUSING
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PROJECT NO.: 23405

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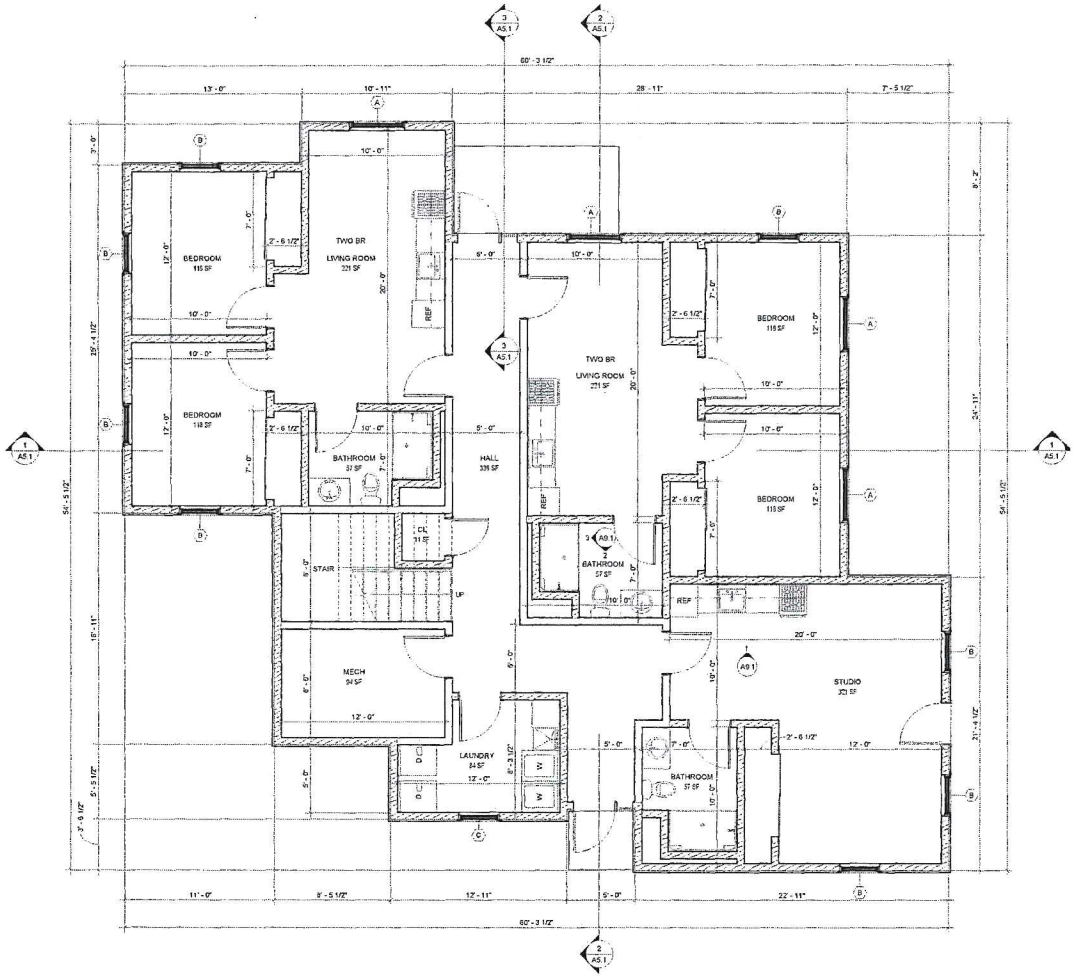
EXTERIOR WALL SECTIONS (BUILDING B)

A6.2



1 FIRST FLOOR
SCALE: 1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet

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NORTHERN STAGE HOUSING
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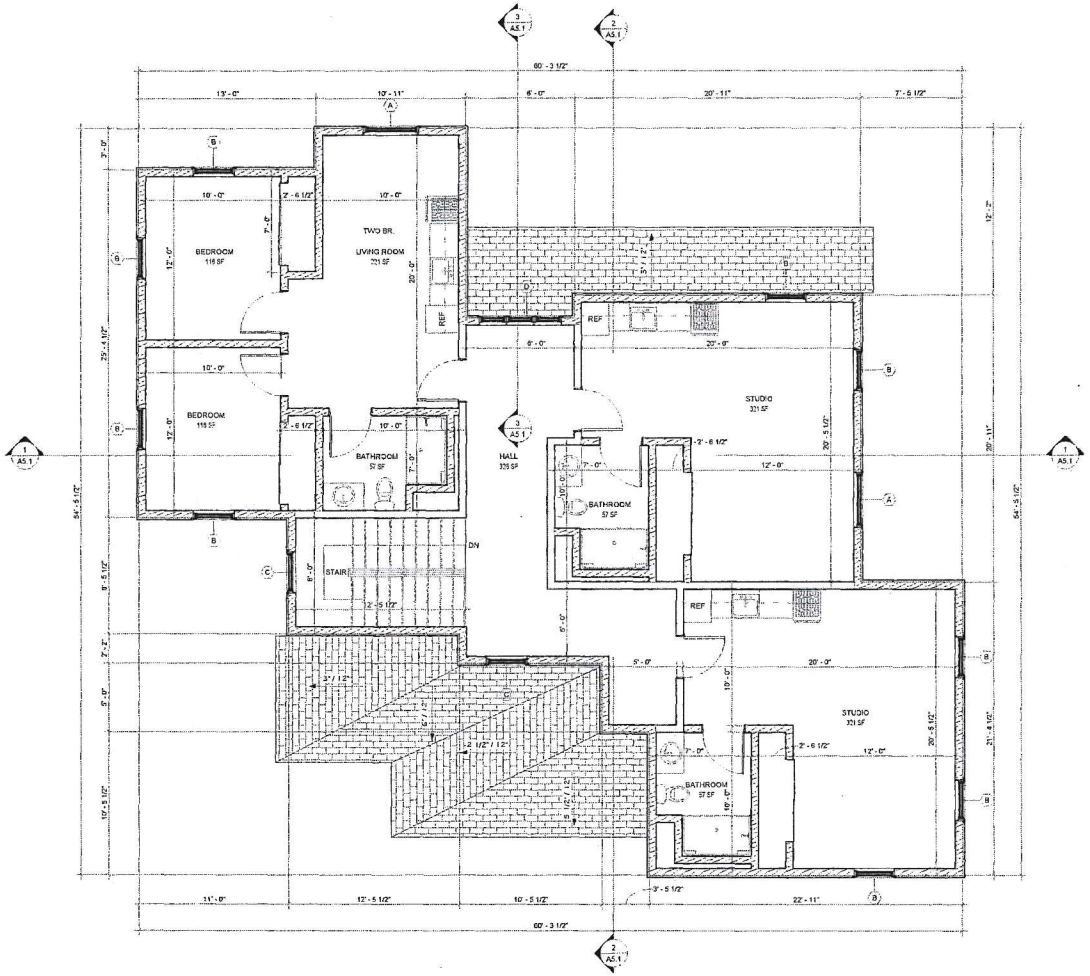
PROJECT NO.: 23405

FIRST FLOOR PLAN (BUILDING C)

A2.1



1 SECOND FLOOR
SCALE: 1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet

0 4' 8' 12' 16'

NORTH

PROJECT NORTH

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No.	Date	Description

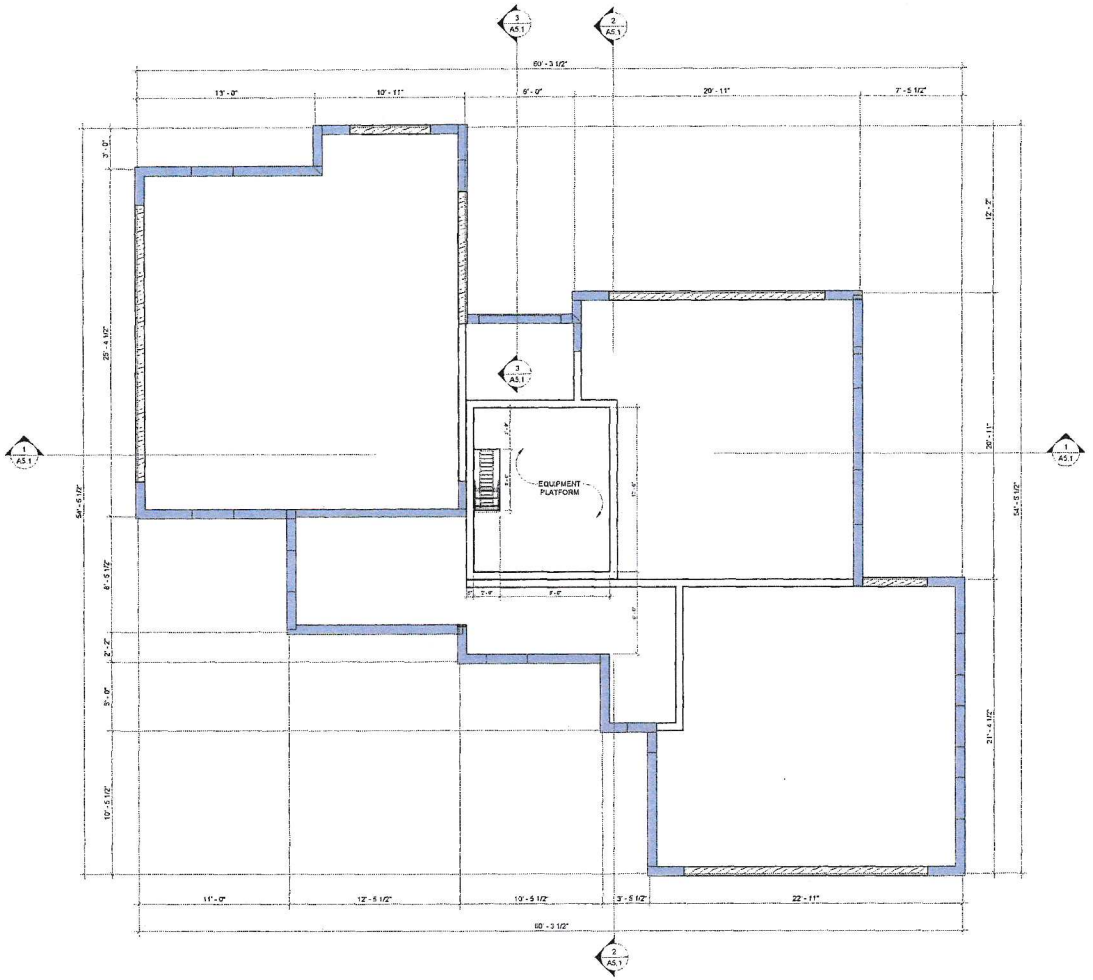
NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

PROJECT NO.: 23405

DRAWN BY: KH CHECKED BY: BJ

SECOND FLOOR PLAN (BUILDING C)

A2.2



1 ATTIC FLOOR
A2.1,A2.2, A2.3 1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet
0 4' 8' 12' 16'

NORTH

PROJECT NORTH

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CONCEPT DESIGN

Sheet Issue Date: 10/06/2023

Issue / Revision History

No.	Date	Description

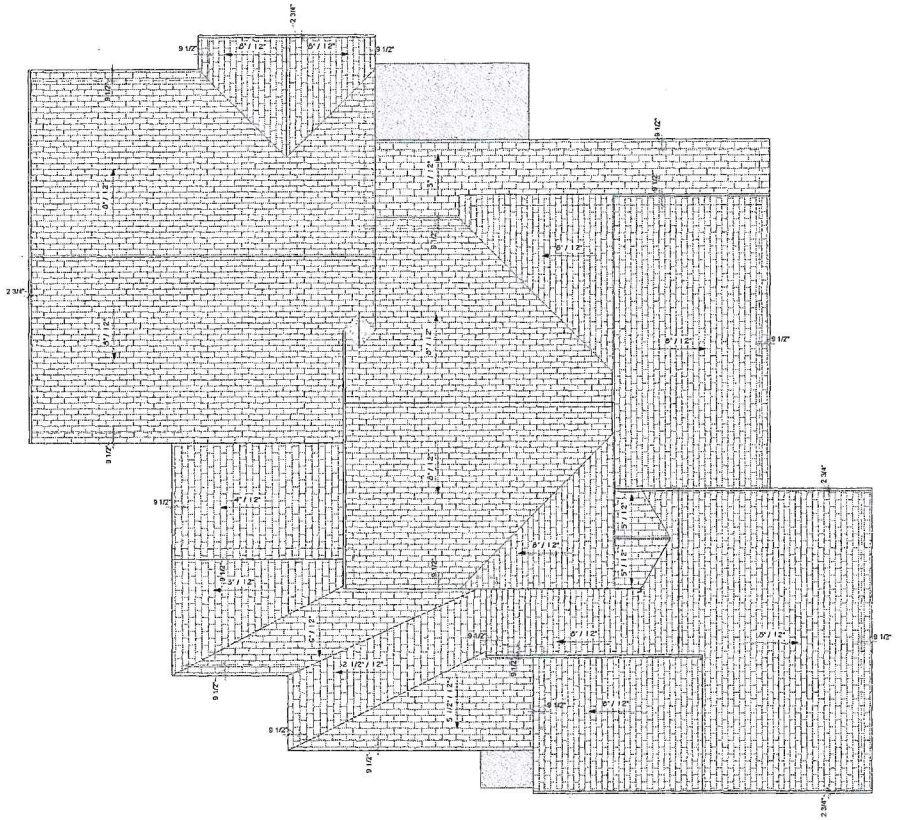
NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

PROJECT NO.: 23405

DRAWN BY: IGV CHECKED BY: BG

ATTIC FLOOR PLAN (BUILDING C)

A2.3



1 ROOF
1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet
0 4' 8' 12' 16'

NORTH

PROJECT NORTH

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No.	Date	Description

NORTHERN STAGE HOUSING
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White River Jct, VT

PROJECT NO.: 23405

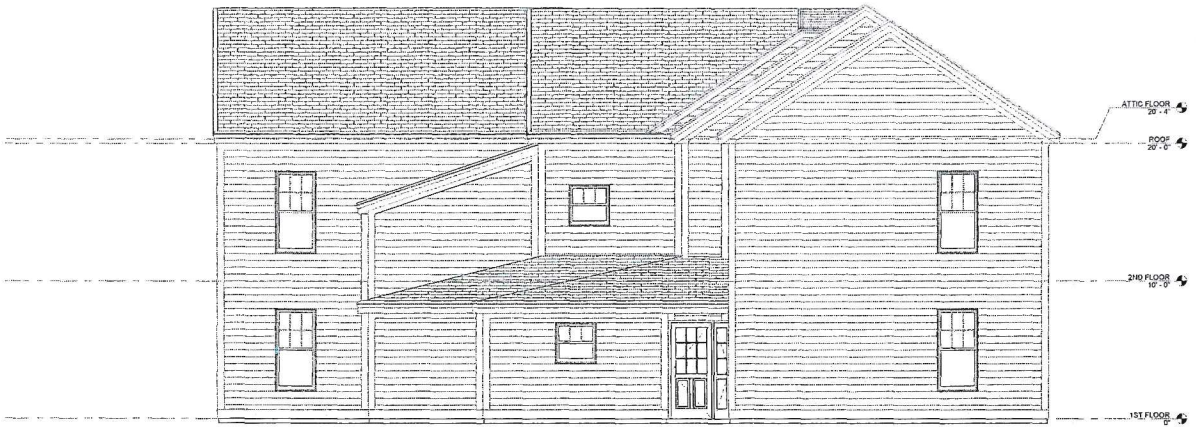
DRAWN BY: KW CHECKED BY: ELT

ROOF PLAN (BUILDING C)

A2.4



1 NORTH
1/4" = 1'-0"



2 SOUTH
1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet

0 4' 8' 12' 16'

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No.	Date	Description

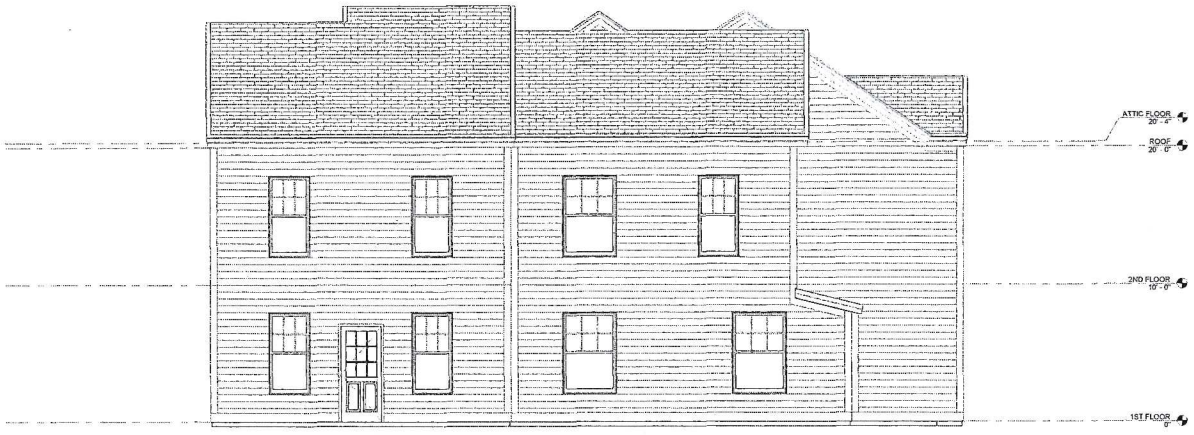
NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

PROJECT NO.: 23405

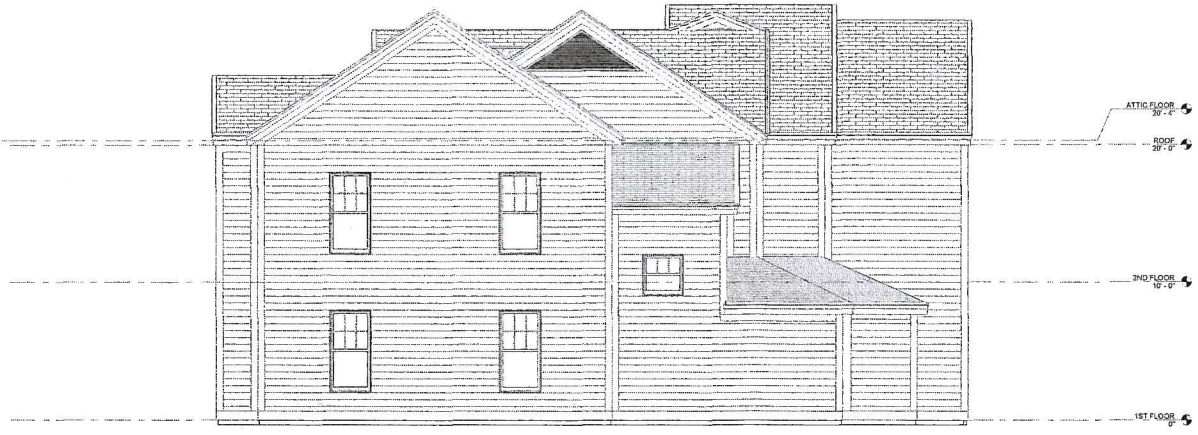
DRAWN BY: SV CHECKED BY: BLE

EXTERIOR ELEVATIONS (BUILDING C)

A4.1



1 EAST
1/4" = 1'-0"



2 WEST
1/4" = 1'-0"

Graphic Scale: 1 inch = 4 feet

0 4' 8' 12' 16'

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No.	Date	Description

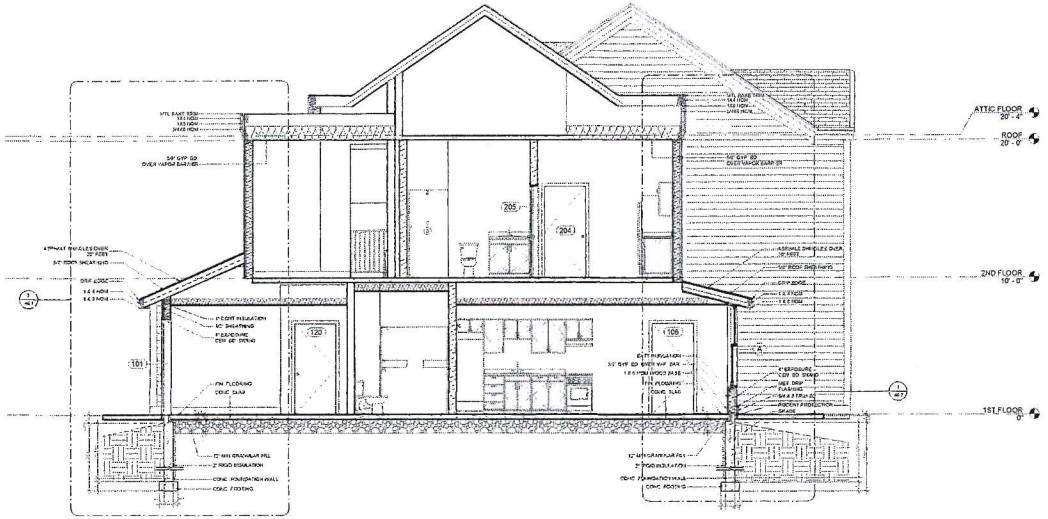
NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

PROJECT NO.: 2340S

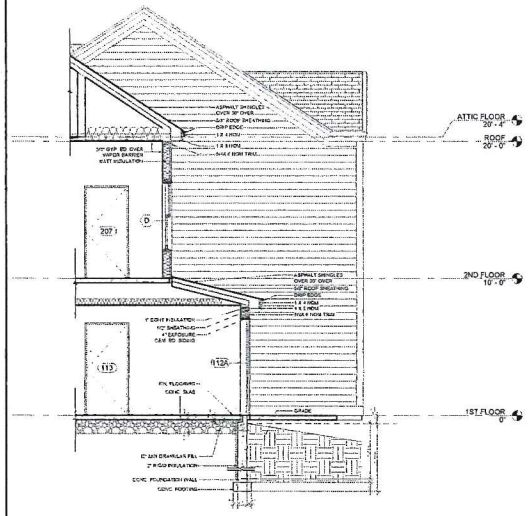
DRAWN BY: DRC

EXTERIOR ELEVATIONS (BUILDING C)

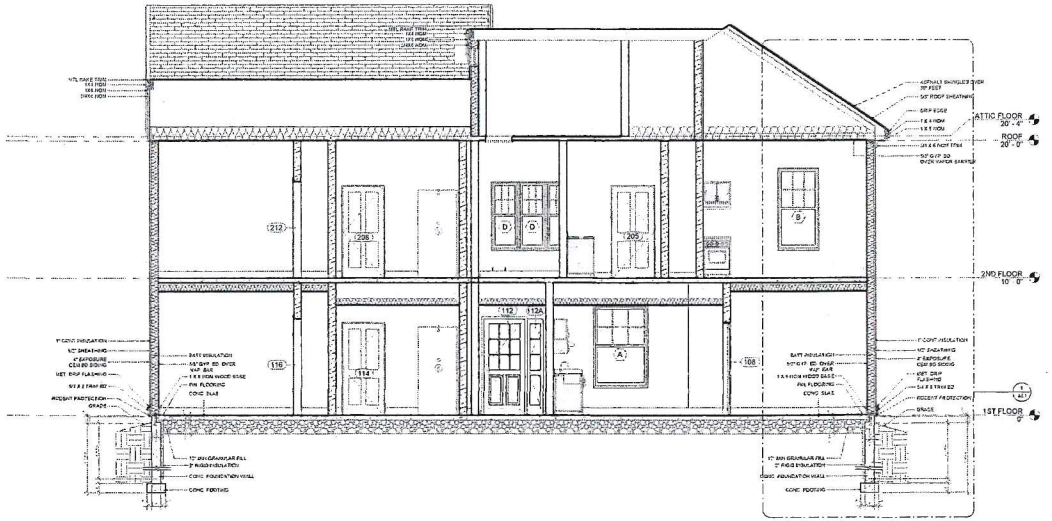
A4.2



2 N-S BUILDING SECTION 2
A3.1/A3.2 1/4" = 1'-0"



3 N-S PARTIAL SECTION
A3.1/A3.2 1/4" = 1'-0"



1 E-W BUILDING SECTION 1
A2.1/A3.1 1/4" = 1'-0"

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No.	Date	Description

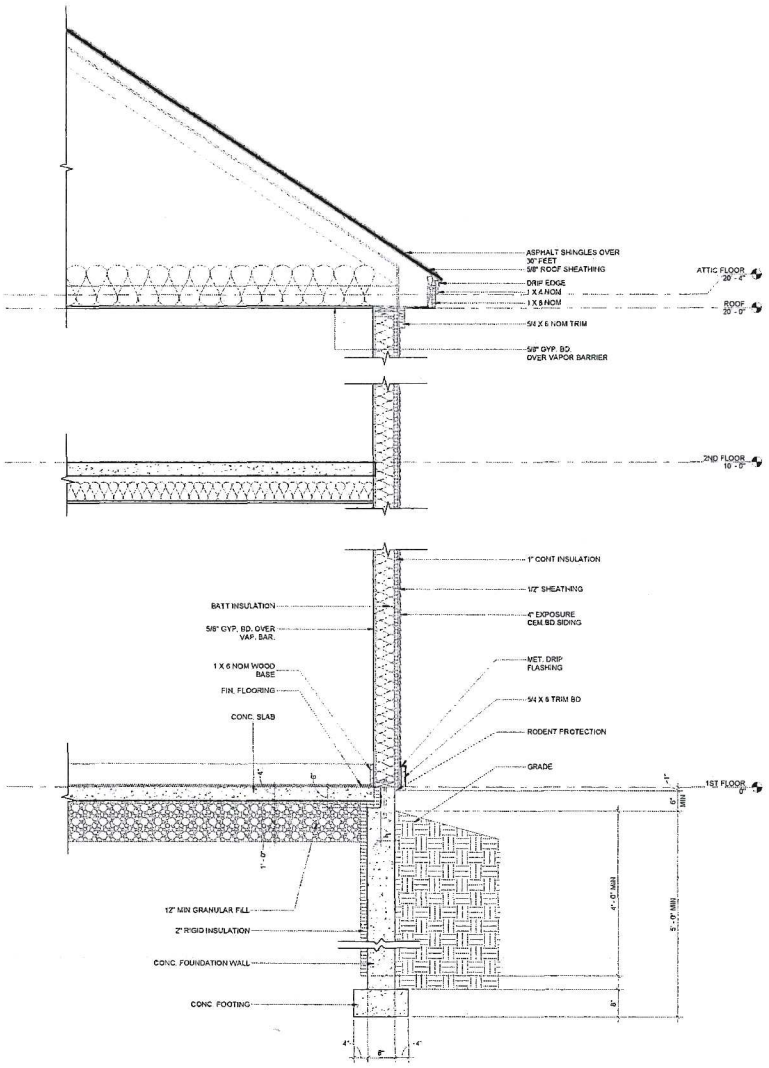
NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

PROJECT NO.: 23405

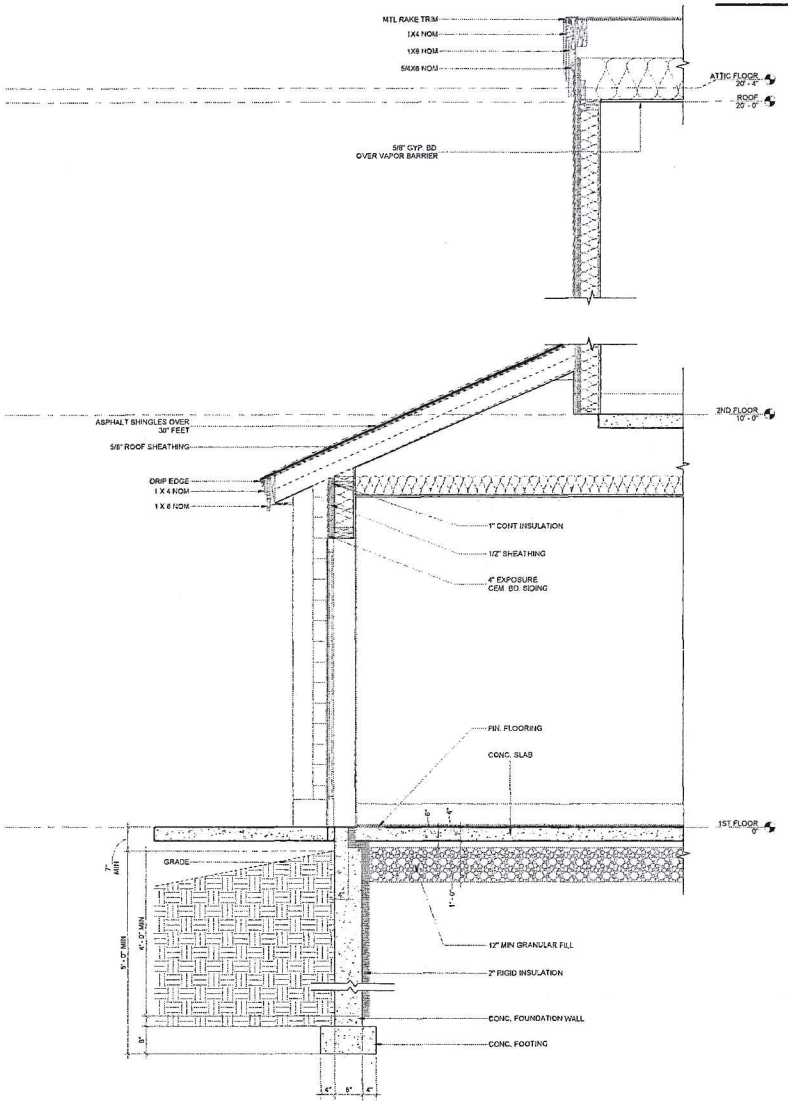
DRAWN BY: BW CHECKED BY: BLC

BUILDING SECTIONS (BUILDING C)

A5.1



1 EXTERIOR WALL SECTION @ EAST WALL
AS SHOWN 3/4" = 1'-0"



2 EXTERIOR WALL SECTION @ SOUTH WALL
AS SHOWN 3/4" = 1'-0"

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No.	Date	Description

NORTHERN STAGE HOUSING
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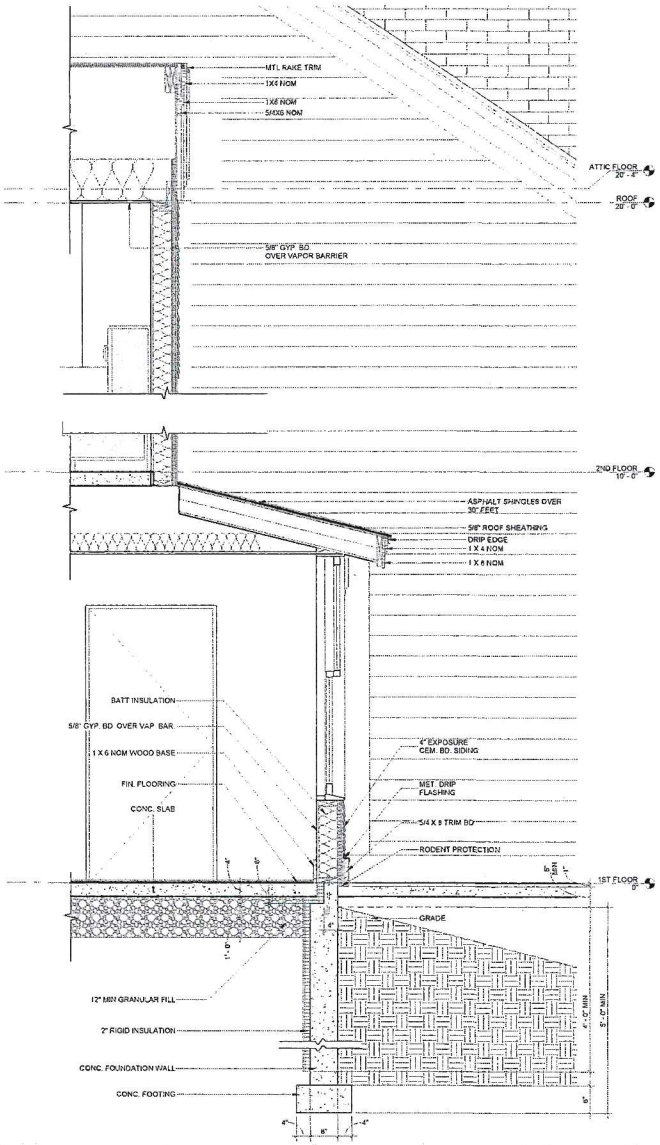
White River Jct, VT

PROJECT NO.: 23405

DRAWN BY: CHECKED BY:

EXTERIOR WALL SECTIONS (BUILDING C)

A6.1



1 EXTERIOR WALL SECTION @ SOUTH WALL
3/4" = 1'-0"

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Issue / Revision History

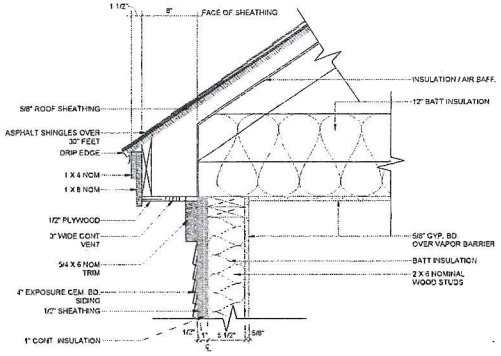
No.	Date	Description

NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

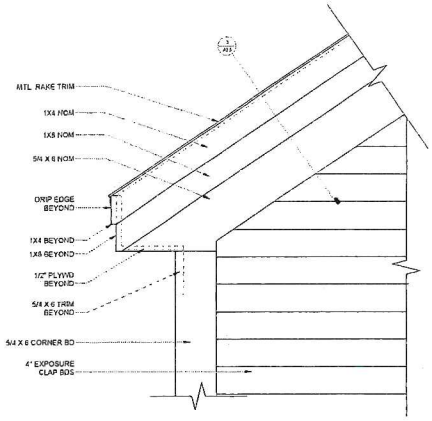
PROJECT NO.: 23405

EXTERIOR WALL SECTIONS (BUILDING C)

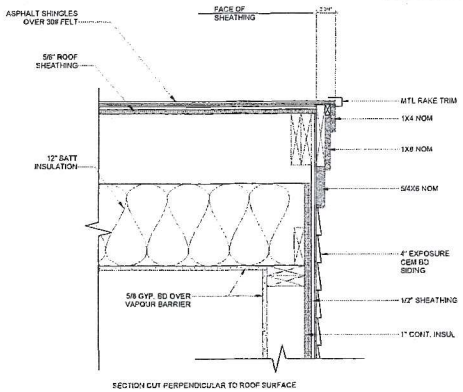
A6.2



1 TYPICAL ROOF EAVE DETAILS
1 1/2" = 1'-0"

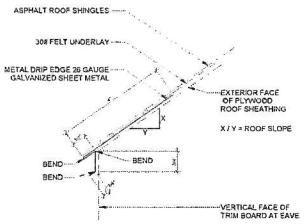


2 TYPICAL ELEVATION AT GABLE END TRIM
1 1/2" = 1'-0"



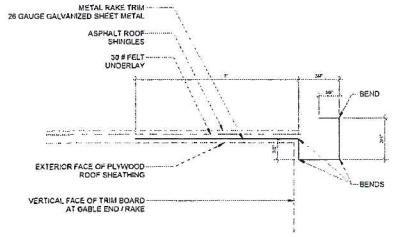
SECTION CUT PERPENDICULAR TO ROOF SURFACE

3 TYPICAL SECTION DETAIL AT RAKE
1 1/2" = 1'-0"



FABRICATE DRIP EDGE BY BENDING FROM SHEET OF FLAT METAL STOCK

4 TYPICAL METAL DRIP EDGE
6" = 1'-0"



FABRICATE RAKE TRIM BY BENDING FROM SHEET OF FLAT METAL STOCK

5 TYPICAL METAL RAKE TRIM
12" = 1'-0"

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Issue / Revision History

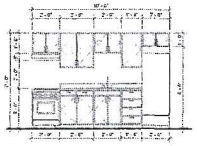
No.	Date	Description

NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

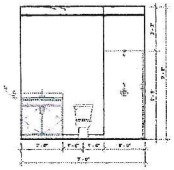
PROJECT NO.: 23405
DRAWN BY: CHECKED BY:

ROOF DETAILS

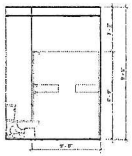
A2.5



1 INTERIOR ELEVATION - TYPICAL KITCHEN
1/4" = 1'-0"



2 INTERIOR ELEVATION - 01 TYPICAL BATHROOM
1/4" = 1'-0"



3 INTERIOR ELEVATION - 02 TYPICAL BATHROOM
1/4" = 1'-0"

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Sheet Issue Date: 10/06/2023

Issue / Revision History

No.	Date	Description

NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

PROJECT NO.: 23405

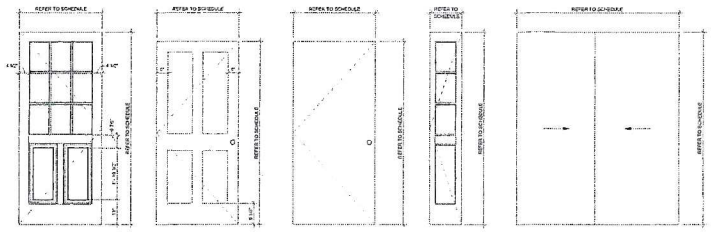
DRAWN BY: KH CHECKED BY: EC

INTERIOR ELEVATIONS

A9.1

DOOR SCHEDULE

NO	DOOR						FRAME			DOOR HARDWARE NUMBER (IN SPECIFICATIONS)	COMMENTS
	WIDTH	HEIGHT	THICKNESS	TYPE	MAT	GLAZING	MAT	TYPE	DEPTH		
101	3' - 0"	7' - 0"	1 3/4"	GP	WD	IG -S					
101A	1' - 2"	7' - 0"	1 3/4"	SL	WD	IG -S					
102	2' - 8"	6' - 8"	1 3/4"	FL	WD						
103	3' - 0"	6' - 8"	1 3/8"	PD	WD						
104	3' - 0"	6' - 8"	1 3/8"	PD	WD						
105	6' - 0"	7' - 0"	3/4"	BD	WD						
106	3' - 0"	6' - 8"	1 3/4"	FL	WD						
107	3' - 0"	7' - 0"	1 3/4"	GP	WD	IG -S					
108	3' - 0"	6' - 8"	1 3/4"	FL	WD						
109	3' - 0"	7' - 0"	1 3/4"	GP	WD	IG -S					
110	3' - 0"	6' - 8"	1 3/8"	PD	WD						
111	3' - 0"	6' - 8"	1 3/8"	PD	WD						
112	3' - 0"	6' - 8"	1 3/8"	PD	WD						
113	6' - 0"	7' - 0"	3/4"	BD	WD						
114	6' - 0"	7' - 0"	3/4"	BD	WD						
115	6' - 0"	7' - 0"	3/4"	BD	WD						
116	3' - 0"	6' - 8"	1 3/8"	PD	WD						
117	3' - 0"	6' - 8"	1 3/4"	FL	WD						
118	3' - 0"	7' - 0"	1 3/4"	GP	WD	IG -S					
118A	1' - 2"	7' - 0"	1 3/4"	SL	WD	IG -S					
119	3' - 0"	6' - 8"	1 3/4"	FL	WD						
120	3' - 0"	6' - 8"	1 3/4"	FL	WD						
201	3' - 0"	6' - 8"	1 3/4"	FL	WD						
202	3' - 0"	6' - 8"	1 3/8"	PD	WD						
203	3' - 0"	6' - 8"	1 3/8"	PD	WD						
204	6' - 0"	7' - 0"	3/4"	BD	WD						
205	2' - 0"	6' - 8"	1 3/4"	FL	WD						
206	3' - 0"	6' - 8"	1 3/8"	PD	WD						
207	6' - 0"	7' - 0"	3/4"	BD	WD						
208	3' - 0"	6' - 8"	1 3/4"	FL	WD						
209	6' - 0"	7' - 0"	3/4"	BD	WD						
210	3' - 0"	6' - 8"	1 3/8"	PD	WD						

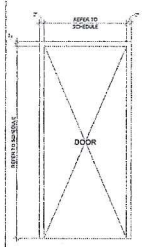


DOOR NOTES:

1) ALL GLAZING SHALL BE TEMPERED SAFETY GLASS UNLESS OTHERWISE NOTED. PROVIDE INSULATED GLASS ON ALL EXTERIOR DOORS AND SIDELIGHTS

2) CENTER LEVERS & PANIC DEVICES ON CENTER MULLION WHERE APPLICABLE. MATCH LOCATION OF PANIC DEVICES AND LEVER ON ALL OTHER DOORS.

DOOR TYPES



FRAME NOTES:

1) ALL EXTERIOR METAL DOORS & DOOR FRAMES ARE TO BE GALVANIZED.

2) ALL EXTERIOR METAL FRAMES TO BE PROVIDED WITH AN INTEGRAL THERMAL BREAK.

DOOR FRAME TYPES

GLAZING LEGENDS

TYPE	LABEL - SEE SPECS FOR DETAILS
IG - S	INSULATED GLASS - SAFETY (TEMPERED)

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CONCEPT DESIGN

Sheet Issue Date: 10/06/2023

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No.	Date	Description

NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

PROJECT NO.: 23405

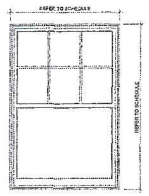
DRAWN BY: BH CHECKED BY: RLC

DOOR SCHEDULE AND DETAILS

A-10.1

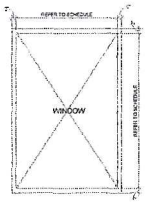
WINDOW SCHEDULE

NO	WINDOW					FRAME			WINDOW HARDWARE NUMBER (IN SPECIFICATIONS)	COMMENTS
	WIDTH	HEIGHT	TYPE	MAT	GLAZING	MAT	TYPE	DEPTH		
A1	4' - 0"	6' - 0"	DH							
A2	4' - 0"	6' - 0"	DH							
A3	4' - 0"	6' - 0"	DH							
A4	4' - 0"	6' - 0"	DH							
A5	4' - 0"	6' - 0"	DH							
A6	4' - 0"	6' - 0"	DH							
A7	4' - 0"	6' - 0"	DH							
A8	4' - 0"	6' - 0"	DH							
A9	4' - 0"	6' - 0"	DH							
A10	4' - 0"	6' - 0"	DH							
A11	4' - 0"	6' - 0"	DH							
A12	4' - 0"	6' - 0"	DH							
A13	4' - 0"	6' - 0"	DH							
B1	3' - 0"	6' - 0"	DH							
B2	3' - 0"	6' - 0"	DH							
B3	3' - 0"	6' - 0"	DH							
B4	3' - 0"	6' - 0"	DH							
B5	3' - 0"	6' - 0"	DH							
B6	3' - 0"	6' - 0"	DH							
C1	3' - 0"	3' - 0"	DH							
C2	3' - 0"	3' - 0"	DH							
C3	3' - 0"	3' - 0"	DH							
C4	3' - 0"	3' - 0"	DH							



TYPE "DH"
DOUBLE HUNG WINDOW

WINDOW TYPES



WINDOW FRAME TYPES

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CONCEPT DESIGN

Sheet Issue Date: 10/06/2023

Issue / Revision History

No.	Date	Description

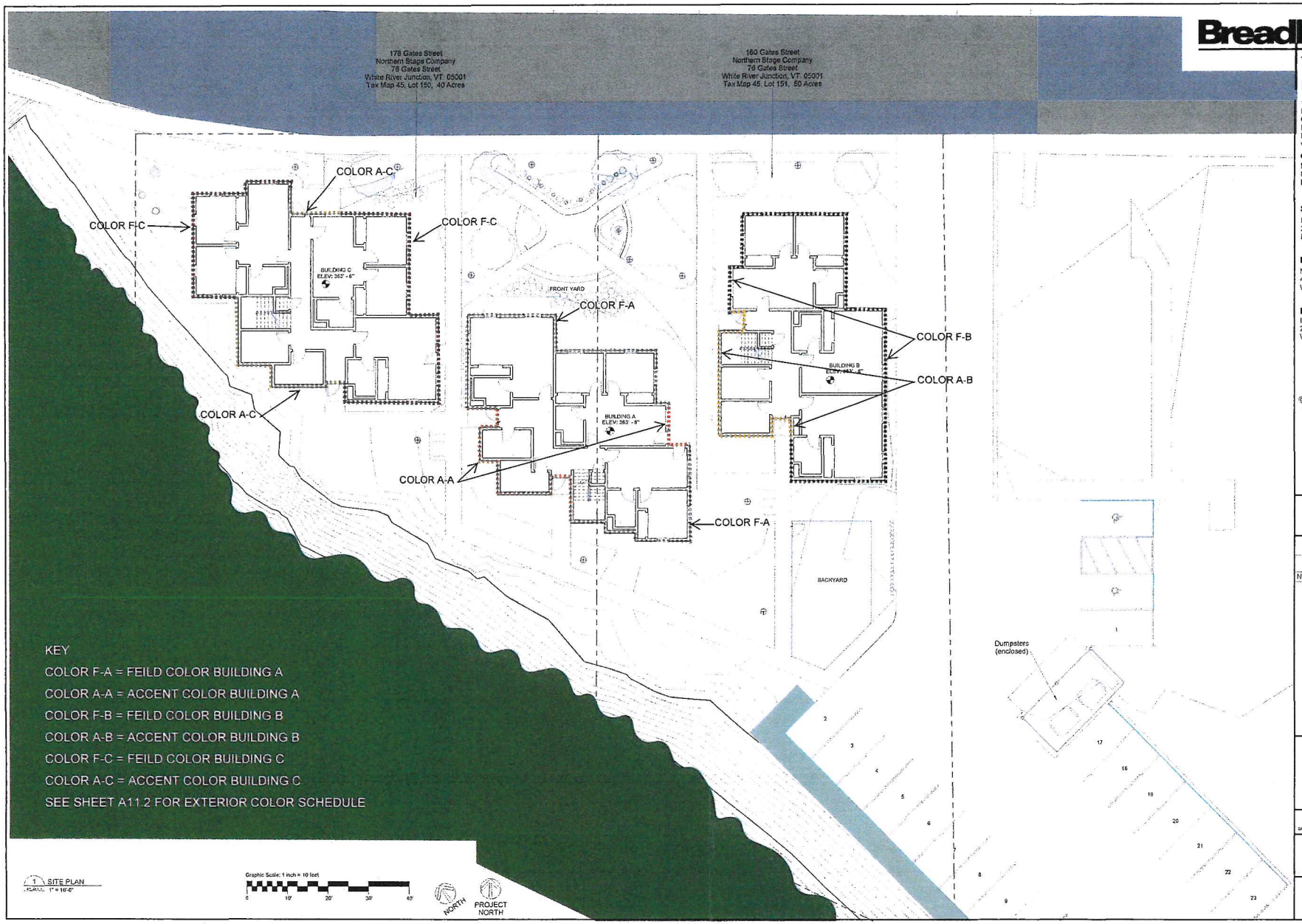
NORTHERN STAGE HOUSING
160-174 Gates Street
White River Jct, VT

PROJECT NO.: 23405

DRAWN BY: IDV CHECKED BY: BLC

WINDOW SCHEDULE AND DETAILS

A-10.2



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Sheet Issue Date: 10/13/2023

Issue / Revision History

No.	Date	Description

Northern Stage Housing

168-170 Gates Street
White River Jct, VT

PROJECT NO.: 19403

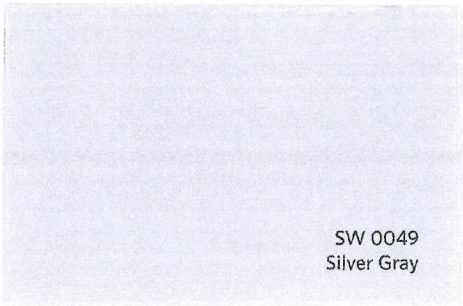
DRAWN BY: CHECKED BY:

EXTERIOR COLOR SCHEME

A11.1

EXTERIOR COLOR SCHEDULE A11.2

NORTHERN STAGE MULTIPLEX HOUSING PROJECT



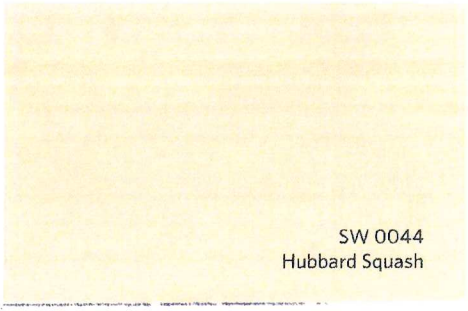
Field Color F-A
SW 0049 SILVER GRAY
Building A



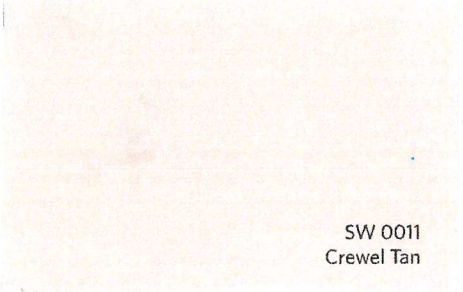
Accent Color A-A
SW 0040 ROYCROFT ADOBE



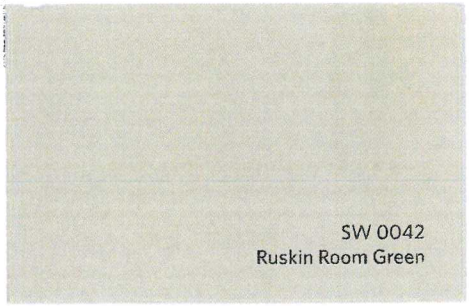
Field Color F-B
SW 2829 CLASSICAL WHITE
Building B



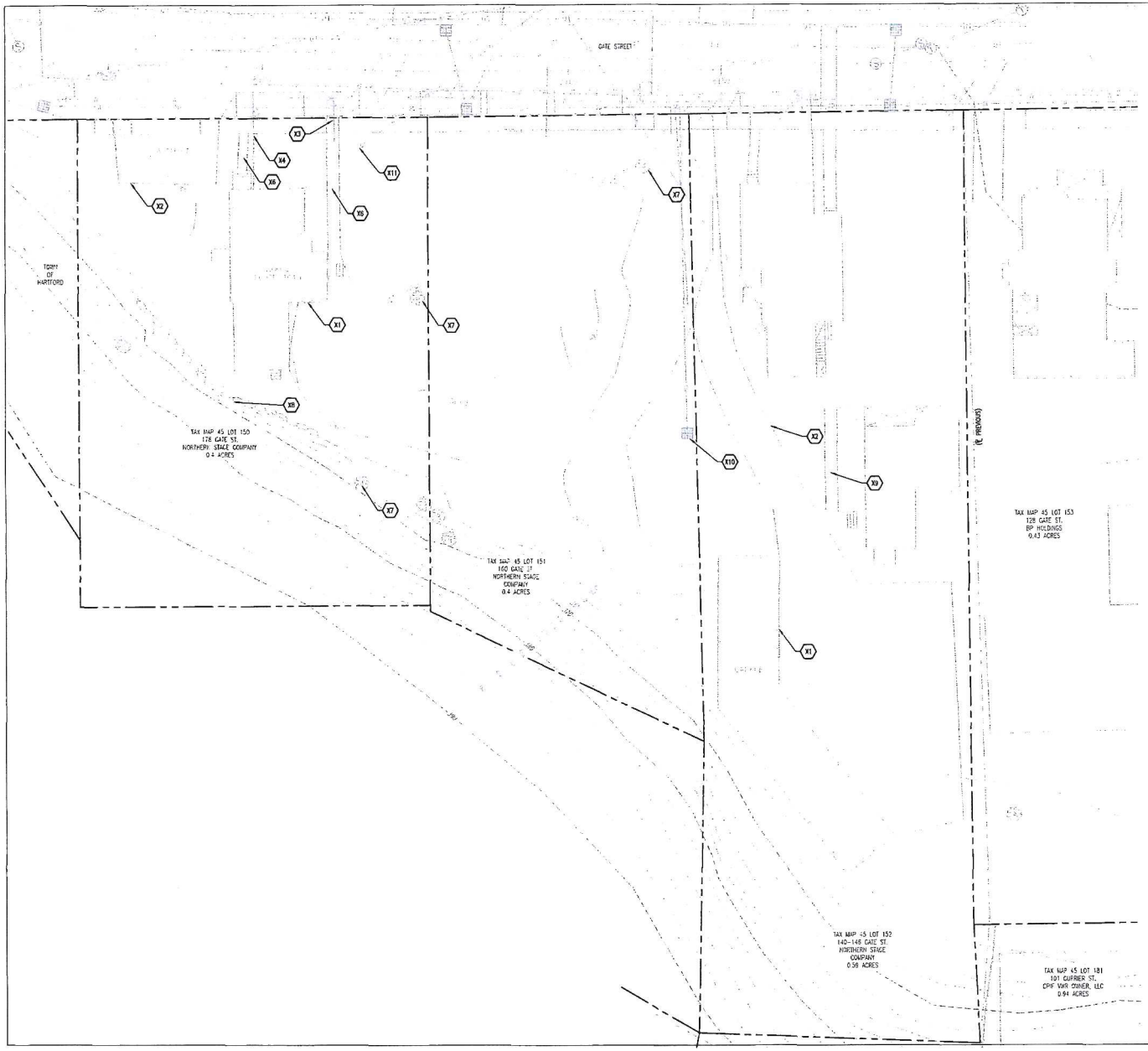
Accent Color A-B
SW 0044 HUBBARD SQUASH



Field Color F-C
SW 0011 CREWEL TAN
Building C



Accent Color A-C
SW 0042 RUSKIN ROOM GREEN



DEMO NOTES

- X1 DEMO STRUCTURE
- X2 DEMO ASPHALT
- X3 DEMO SANITARY SEWER SERVICE, CAP AT BACK OF SIDEWALK OR AS REQUIRED BY HARTFORD DPW.
- X4 DEMO WATER SERVICES, CAP AT MAIN OR AS REQUIRED BY HARTFORD DPW.
- X5 DEMO SIDEWALK, SAWCUT AT FUTURE TIE IN POINT
- X6 DEMO WALKWAY
- X7 CUT TREE
- X8 REMOVE WALL
- X9 REMOVE RAMP
- X10 REMOVE CATCH BASIN AND PIPE
- X11 DEMO OVERHEAD POWER, COORDINATE WITH GMP

N

GRAPHIC SCALE

-5 0 7.5 15 30 60

1 inch = 15 ft.
for sheet size 24" x 36"

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CONCEPT DESIGN

Sheet Issue Date: 10/25/23

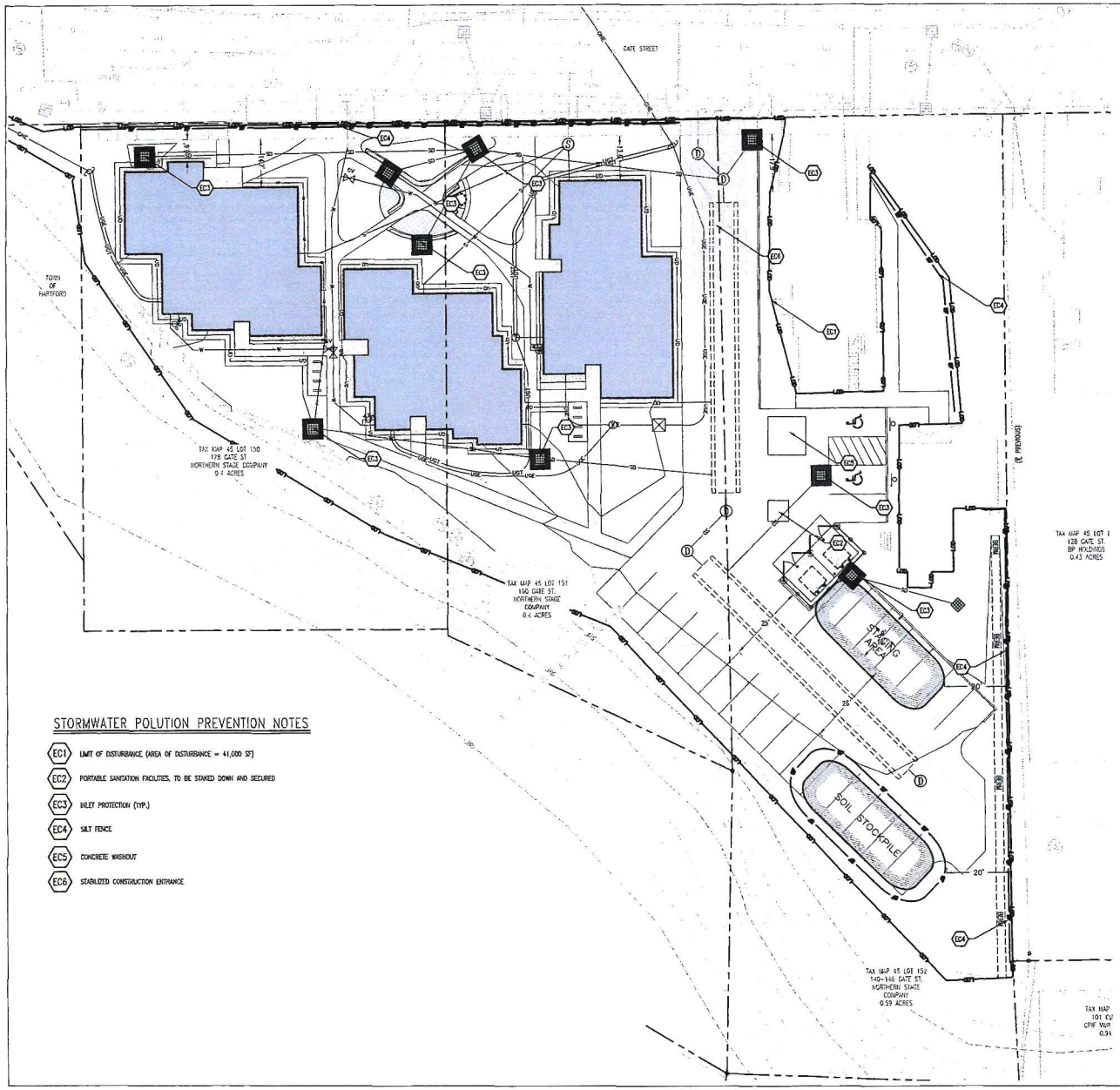
NORTHERN STAGE HOUSING
WRJ, VT

PROJECT NO.: 22025

DRAWN BY: AM CHECKED BY: RM

DEMO PLAN

C1.0



STORMWATER POLUTION PREVENTION NOTES

- EC1 LIMIT OF DISTURBANCE (AREA OF DISTURBANCE = 41,000 SF)
- EC2 PORTABLE SANITATION FACILITIES, TO BE STAKED DOWN AND SECURED
- EC3 INLET PROTECTION (TYP.)
- EC4 SILT FENCE
- EC5 CONCRETE WASHOUT
- EC6 STABILIZED CONSTRUCTION ENTRANCE

CONSTRUCTION SEQUENCE

1. CONTRACTOR TO COORDINATE STOCKPILE AND STAGING AREAS WITH THE OWNER.
2. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL HOST A PRECONSTRUCTION MEETING WITH OWNER, ENGINEER, PLANNING DEPARTMENT, POLICE, FIRE, AND PUBLIC WORKS STAFF.
3. PRIOR TO ANY OTHER WORK, SILT FENCES SHALL BE INSTALLED GENERALLY 10 FEET FROM THE BASE OF THE FILL SLOPES, OR AS SHOWN ON THE EROSION CONTROL PLAN. THESE SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES 6 INCHES DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
4. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT.
5. INSTALL INLET PROTECTION ON EXISTING CATCH BASINS AFFECTED DURING CONSTRUCTION.
6. ROUGH GRADE AND STOCKPILE TOPSOIL SURROUNDED BY SILT FENCE.
7. DEMO EXISTING STRUCTURES AS REQUIRED.
8. CLEAR AND GRUB, REMOVE LOOSE PAVING/DEMO PAVING AS REQUIRED AND HAUL OFF SITE USING EXISTING PARKING AREA AS STAGING.
9. GRADE DRIVE ENTRANCE AND EXCAVATE BUILDING PAD
10. BEGIN VERTICAL CONSTRUCTION OF BUILDING FOUNDATION CONCURRENT WITH WATER AND SEWER UTILITIES.
11. CONSTRUCT STORMWATER SYSTEM.
12. EXCAVATE AND PREP FOR INFILTRATION SYSTEM, IMPORT BASE SUBGRADE MATERIALS AS NECESSARY.
13. COORDINATE INSTALLATION OF DRAINAGE DETENTION SYSTEM.
14. INSTALL STORMWATER PIPING AND STRUCTURES
15. BACKFILL AND SUBGRADE PREP FOR NEW PARKING AND SIDEWALK AREAS
16. COMPLETE FINAL GRADING OF SITE, PLACE TOPSOIL AND PERMANENTLY VEGETATE, LANDSCAPE, AND MULCH.
17. INSTALL LIGHT POLES.
18. PAVE BASE COURSE.
19. STABILIZE EXPOSED SLOPES AND SOILS AS SOON AS GRADED, REPAIR AND REESTABLISH ALL DISTURBED VEGETATED/LAWN AREAS, AND MAINTAIN UNTIL ADEQUATELY VEGETATED.
20. PAVE WEARING COURSE.
21. AFTER THE SITE IS APPROVED BY THE ENGINEER AS ADEQUATELY STABILIZED, REMOVE ALL TEMPORARY.
22. ANTICIPATED FINAL COMPLETION DATE WINTER/SPRING 2025.

N

GRAPHIC SCALE

0 7.5 15 30 60

1 inch = 15 ft.
for sheet size 24" x 36"

EROSION CONTROL LEGEND

EROSION PREVENTION AND SEDIMENT CONTROL STRATEGY
THE FOLLOWING TECHNIQUES WILL BE UTILIZED AS PART OF A SEDIMENT AND EROSION CONTROL PROGRAM. THE SEDIMENT AND EROSION CONTROL PROGRAM WILL BE IMPLEMENTED IN STAGES. CERTAIN ITEMS FROM ONE STAGE WILL LIKELY OVERLAP OR TAKE PLACE CONCURRENTLY WITH ITEMS FROM OTHER STAGES. HAY PRODUCTS SHALL NOT BE USED.

TEMPORARY INLET PROTECTION – STONE COLLARS AND/OR INLET SOCKS. INSTALL AS INDICATED ON PLANS. STONE TO BE REMOVED AND REPLACED WITH CLEAN STONE WHEN SEDIMENT IS ≥ 1/2 DEPTH OF STONE. REMOVE ALL SEDIMENT COLLECTED IN STRUCTURE OR SOCK AS SOON AS POSSIBLE.

STONE CHECK DAM
THIS STRUCTURAL MEASURE IS ALONG DITCHES / SWALES AND IN OTHER LOCATIONS INDICATED ON THE PLAN TO SLOW STORMWATER RUNOFF AND TRAP SEDIMENT PARTICLES. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

PERMANENT EROSION CONTROL MATTING
THIS STRUCTURAL MEASURE IS INSTALLED IN AREAS THAT HAVE SLOPES 3:1 AND GREATER AND IN OTHER LOCATIONS INDICATED ON THIS PLAN TO STABILIZE THE SLOPE AND REDUCE THE EROSION POTENTIAL. THE MATTING IS TYPICALLY IMPREGNATED WITH GRASS SEED AND SOMETIMES SOWED TO THE EXPOSED SOIL. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
THIS STRUCTURAL MEASURE IS A STABILIZED PAD OF AGGREGATE UNDERLAIN WITH FILTER FABRIC LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT-OF-WAY, STREET, ALLEY, SIDEWALK, OR PARKING AREA. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY OR STREETS. THIS WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED. ONCE REMOVED, THE IMPACTED AREA SHALL BE SEEDED AND MULCHED.

TEMPORARY SEDIMENT BASIN
THIS STRUCTURAL MEASURE INVOLVES CONSTRUCTING TEMPORARY SEDIMENT BASINS IN THE LOCATION OF PROPOSED STORMWATER PONDS. GENERALLY THE STORMWATER PONDS CAN BE CONSTRUCTED AS SHOWN ON THE PLANS HOWEVER ORIFICE ON THE OUTLET STRUCTURES SHALL BE LIMITED UNTIL THE SITE IS STABILIZED TO IMPOUND RUNOFF AND ALLOW FOR SETTLING OF SUSPENDED SOILS. THIS WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED. ONCE THE SITE IS STABILIZED, SEDIMENT SHALL BE REMOVED FROM THE BASINS AND THE OUTLET ORIFICE SHALL BE DRILLED INTO THE OUTLET STRUCTURE AS NOTED ON THE PLANS.

TEMPORARY STAGING AND WASTE AREAS (APPROXIMATE)
THESE ARE APPROVED LOCATIONS WHERE NON-SOIL, NON-ERODIBLE MATERIALS MAY BE STORED. SOILS SHALL NOT BE STORED IN THESE AREAS.

TEMPORARY SOIL STOCKPILE AREAS (APPROXIMATE)
THESE ARE APPROVED LOCATIONS WHERE TOPSOIL AND OTHER SOIL MATERIALS MAY BE STORED. THESE STOCKPILES WILL BE PROTECTED FROM EROSION BY A NUMBER OF METHODS, INCLUDING INSTALLING SILT FENCING AROUND THE DOWN GRADIENT PERIMETER OF THE STOCKPILE AND SEEDING AND MULCHING THE STOCKPILE WHEN NOT IN USE FOR MORE THAN FIVE DAYS.

TEMPORARY SILT FENCING
THIS STRUCTURAL MEASURE IS A TEMPORARY BARRIER OF GEOTEXTILE FABRIC USED TO INTERCEPT SEDIMENT LADEN RUNOFF FROM SMALL DRAINAGE AREAS OF DISTURBED SOIL. IT IS INSTALLED ALONG THE PERIMETER OF IMPACTED AREAS AND ALONG THE BASE OF THE FILL SLOPES. ADDITIONALLY, WHEN DESIGNATED ALONG THE LIMITS OF DISTURBANCE, INSTALL CONSTRUCTION FENCE BEHIND THE SILT FENCE. SILT FENCING IS EFFECTIVE IN REDUCING STORMWATER RUNOFF VELOCITIES, ASSIST IN THE DEPOSITION OF TRANSPORTED SEDIMENT LOAD AND PREVENT EROSION OF SOILS UNDER ADJACENT AREAS. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

LIMITS OF DISTURBANCE
THE CONTRACTOR SHALL CONFINE ANY EARTH MOVING ACTIVITIES WITHIN THE DESIGNATED LIMITS SHOWN ON THIS PLAN. THE ENGINEER SHALL REVIEW ON SITE TO MAKE ANY ADJUSTMENTS TO ACCOUNT FOR ENVIRONMENTALLY SENSITIVE AREAS, SPECIMEN TREES AND SPECIAL AREAS OF CONCERN.

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CONCEPT DESIGN

Sheet Issue Date: 10/25/23

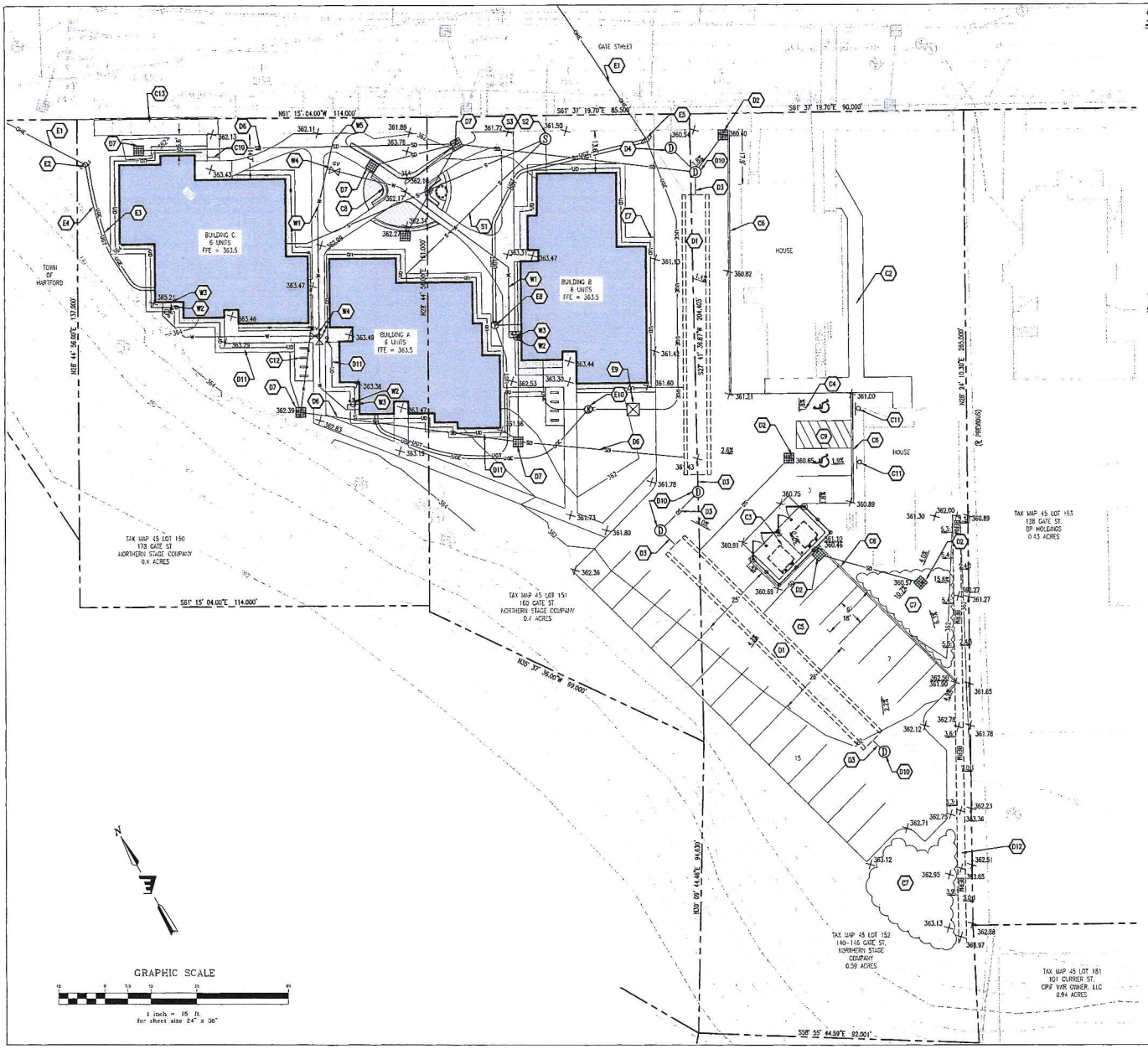
NORTHERN STAGE HOUSING
WRJ, VT

PROJECT NO.: 22025

DRAWN BY: AM CHECKED BY: KH

EPSC PLAN

C1.1



SITE NOTES

- C1 5' WIDE CONCRETE SIDEWALK
- C2 5' WIDE ASPHALT SIDEWALK
- C3 12' BY 24' CONCRETE PAD AND DUMPSTER ENCLOSURE WITH (4) BOLLARDS
- C4 ADA VAN ACCESSIBLE PARKING (TYP.)
- C5 ASPHALT DRIVE ACCESS AND PARKING SURFACES
- C6 GRANITE CURB
- C7 SNOW STORAGE
- C8 SEE LANDSCAPE PLANS FOR SEAT WALLS AND COURTYARD
- C9 ADA PAINTED ACCESS ISLE HATCHING
- C10 STEPS
- C11 ADA SIGN (TYP.)
- C12 BIKE RACK (TYP.)
- C13 REMOVE FLUSH SIDEWALK AND INSTALL NEW CONCRETE SIDEWALK AND GRANITE CURBING.

WATER NOTES

- W1 4" COMBINED DOMESTIC WATER AND FIRE SPRINKLER LINE
- W2 1.5" CURB STOP
- W3 1.5" DOMESTIC SERVICE LINE
- W4 4" GATE VALVE
- W5 CONNECT TO EXISTING 8" WATER STUB WITH 4" BY 8" REDUCER

DRAINAGE NOTES

- D1 CULTEC R902-HD RECHARGER CHAMBERS
- D2 CATCH BASIN
- D3 24" HDPE
- D4 DRAINAGE OUTLET STRUCTURE
- D5 ROOF LEADER (TYP.)
- D6 12" HDPE (TYP.)
- D7 YARD INLET (TYP.)
- D10 DRAIN MANHOLE
- D11 STONE DRIP EDGE (TYP.)
- D12 SNOW DIVERSION BERM

SEWER NOTES

- S1 4" SANITARY SEWER SERVICE LINE (TYP.)
- S2 4' I.D. SANITARY SEWER MANHOLE
- S3 CONNECT TO EX. 6" SEWER STUB

ELECTRICAL NOTES

- E1 OVERHEAD PRIMARY POWER
- E2 UTILITY POLE WITH POLE MOUNTED TRANSFORMER AND SECONDARY DROP. (COORDINATE WITH GMP AND MEP ENGINEER FOR ADDITIONAL DETAILS)
- E3 UNDERGROUND ELECTRICAL CONDUIT SECONDARY POWER
- E4 UNDERGROUND COMM. CONDUIT (TYP.)
- E5 UTILITY POLE AND PRIMARY DROP.
- E6 UNDERGROUND COMM. CONDUIT
- E7 UNDERGROUND ELECTRICAL CONDUIT PRIMARY POWER
- E8 TELECOM MANHOLE
- E9 PAD MOUNTED TRANSFORMER WITH SECONDARY METERS. (COORDINATE WITH GMP AND MEP ENGINEER FOR ADDITIONAL DETAILS)
- E10 ELECTRIC METER PEDESTAL

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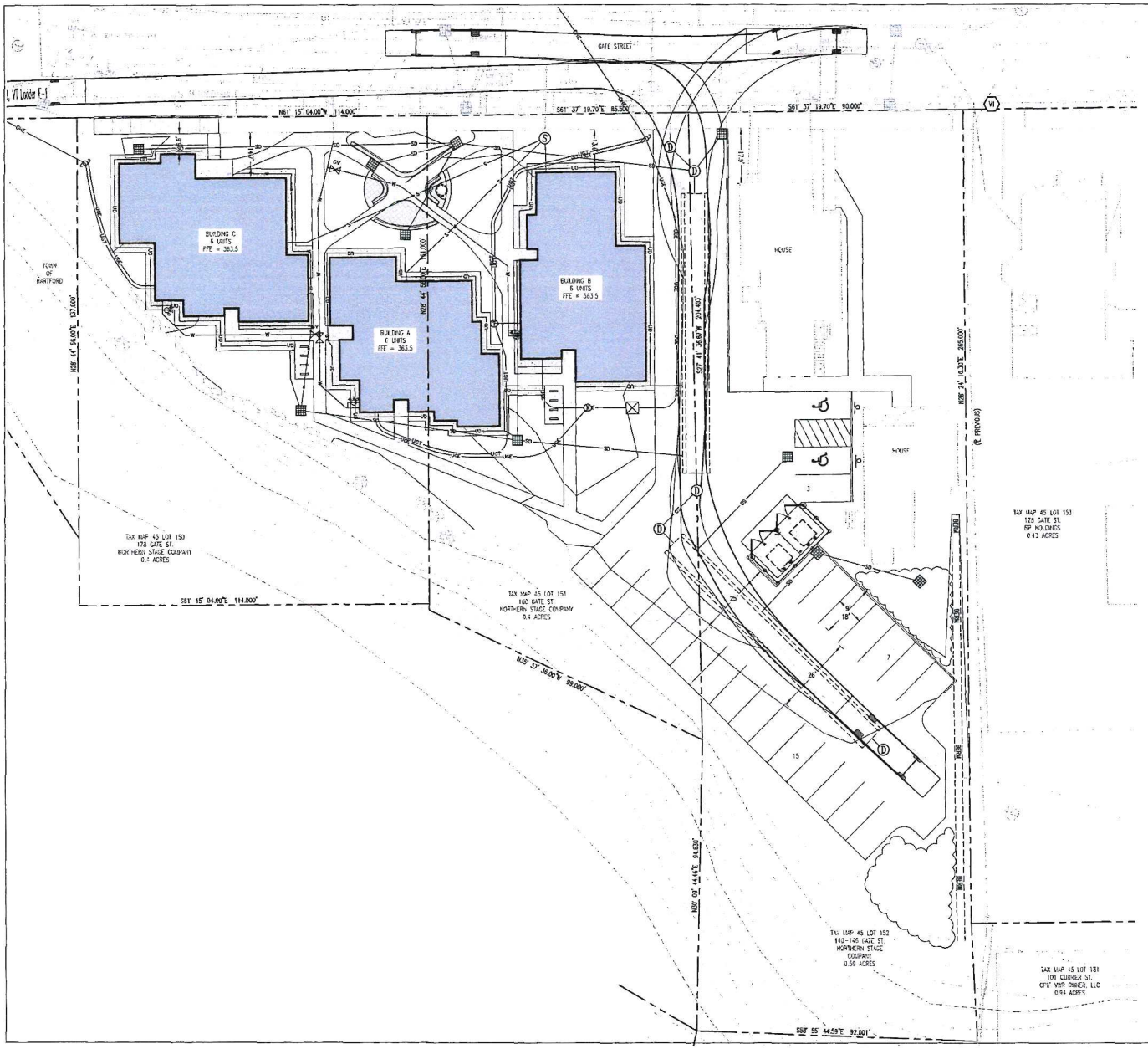
NORTHERN STAGE HOUSING
WRJ, VT

PROJECT NO.: 22025

DRAWN BY: AM CHECKED BY: KM

SITE GRADING, DRAINAGE AND UTILITY PLAN

C2.0



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GRAPHIC SCALE

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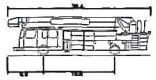
VEHICLE TURNING NOTES

V1 LADDER TRUCK



Hartford, VT Ladder E-1	
Overall Length	39.400ft
Overall Width	8.300ft
Overall Body Height	10.464ft
Min Body Ground Clearance	0.915ft
Track Width	8.300ft
Lock-to-Lock Time	4.00s
Curb to Curb Turning Radius	35.100ft

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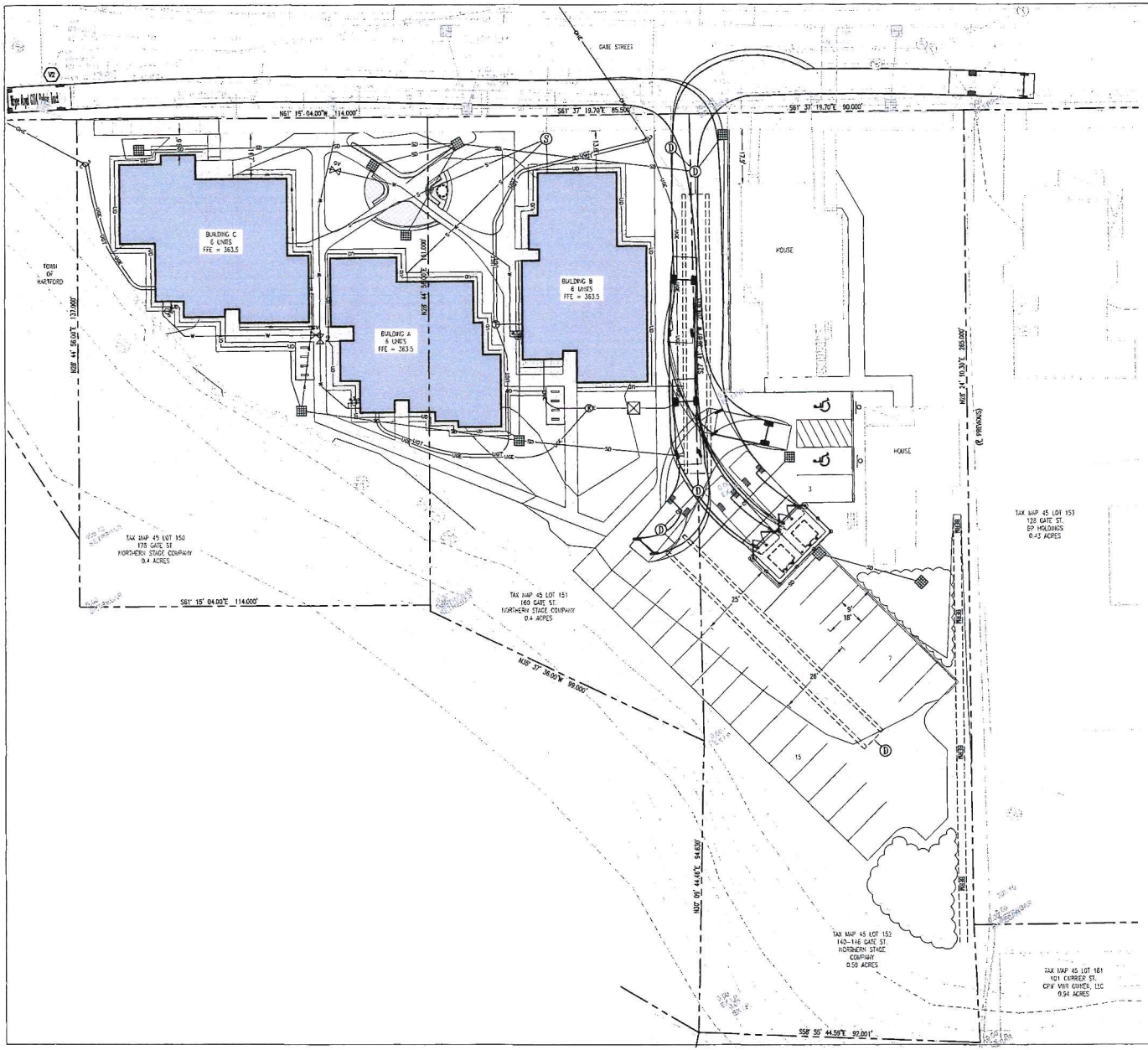
NORTHERN STAGE HOUSING
WRJ, VT

PROJECT NO.: 22025

HARTFORD LADDER TRUCK TURNING PLAN

C2.1



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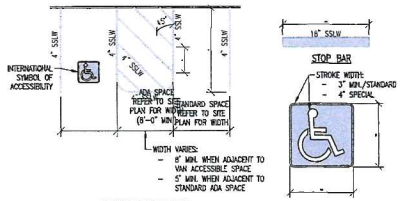
NORTHERN STAGE HOUSING
WRJ, VT

PROJECT NO.: 22025

DRAWN BY: AM CHECKED BY: EW

GARBAGE TRUCK TURNING PLAN

C2.2

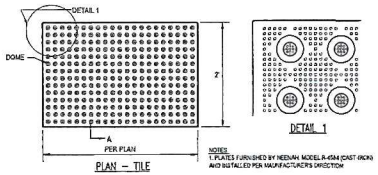


PARKING LOT STRIPING

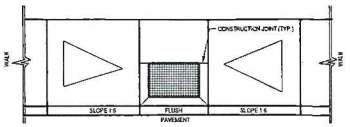
INTERNATIONAL SYMBOL OF ACCESSIBILITY

ADA PAVEMENT MARKINGS 1

NOT TO SCALE



PLAN – TILE



DETECTABABLE WARNING PAD 2

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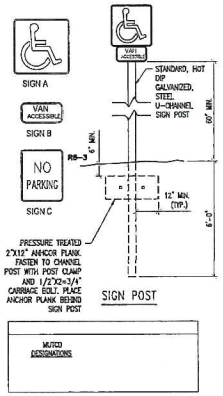

ADA SIGNS AND POST 3

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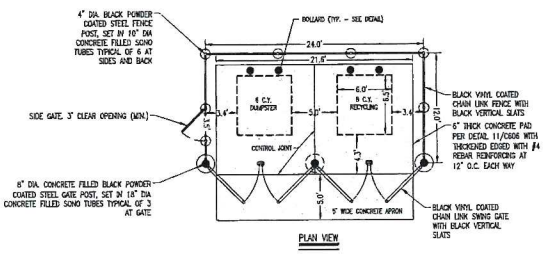
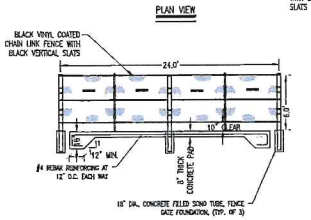


PLAN VIEW

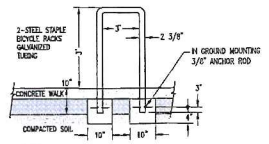


SECTION VIEW

NOTES:
1. CONCRETE TO BE 4000psi WITH 5-7% AIR ENTRAINMENT.
2. BROOM FINISH WITH SMOOTH TROWELED EDGES. TREAT WITH SLANE-SILOXANE OR EQUIVALENT.
3. CONTROL JOINT SHALL BE A 1/8" WIDE JOINT AT LEAST 1/3 OF THE DEPTH OF THE PAD.

DUMPSTER ENCLOSURE 6

NOT TO SCALE



NOTES:
1. ONE RACK HAS THE CAPACITY TO HOLD 2 BIKES.
2. MAINTAIN 3' MINIMUM SPACING BETWEEN RACKS AND 4' TO EXTERIOR WALL.
3. U-STYLE RACKS NOT ACCEPTABLE.

STAPLE BIKE RACK 5

NOT TO SCALE

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CONCEPT DESIGN

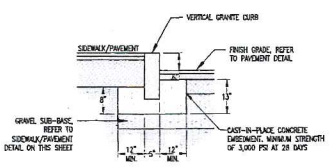
Sheet Issue Date: 10/25/23

NORTHERN STAGE HOUSING
WRJ, VT

PROJECT NO.: 22025

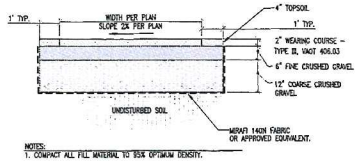
SITE DETAILS

C3.0



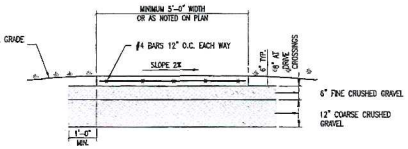
VERTICAL GRANITE CURB NOTES:
1. GRANITE CURBS SHALL BE INSTALLED IN ACCORDANCE WITH PROJECT AND STATE SPECIFICATIONS
2. WHERE CURB IS ADJACENT TO ENTRY/EXIT DOOR PADS WITH FROST WALL FOUNDATIONS, CURB SHALL BE DOWELED TO PAD WITH 24" LONG #4 DOWELS (CENTERED) AT 1'-6" O.C. (PORTION OF DOWEL IN CURB TO BE GREASED).
3. WHERE CURB IS ADJACENT TO SIDEWALK, BOLLARD, LIGHT BASE OR OTHER HARD FEATURES, 1/2" EXPANSION MATERIAL (FULL DEPTH OF CURB), SHALL BE INSTALLED BETWEEN FEATURE & CURB.

VERTICAL GRANITE CURB
NOT TO SCALE (1)

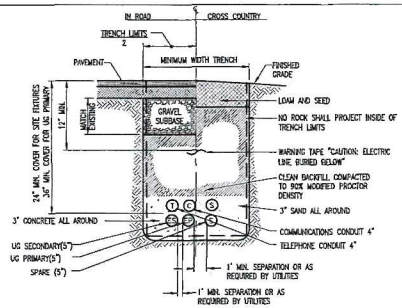


NOTES:
1. COMPACT ALL FILL MATERIAL TO 95% OPTIMUM DENSITY.

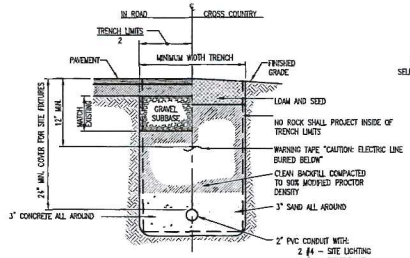
ASPHALT SIDEWALK DETAIL
NOT TO SCALE (2)



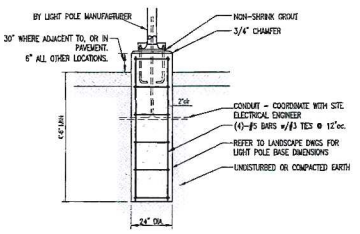
CONCRETE SIDEWALK DETAIL
NOT TO SCALE (3)



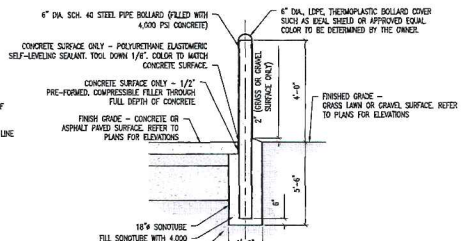
UNDERGROUND CONDUIT TRENCH
NOT TO SCALE (4)



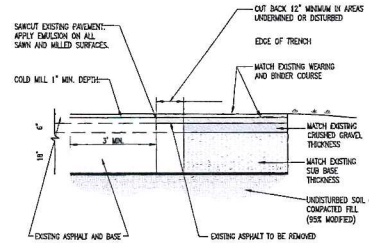
UNDERGROUND LIGHTING TRENCH
NOT TO SCALE (5)



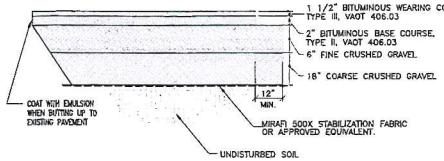
LIGHT POLE BASE DETAIL
NOT TO SCALE (8)



TYPICAL BOLLARD DETAIL
NOT TO SCALE (9)



ASPHALT PAVEMENT TRENCH PATCH
NOT TO SCALE (10)



PAVEMENT PATCHING NOTES:
1. IN ALL PAVEMENT AREAS TO BE PATCHED, SAW CUT AND REMOVE EXISTING PAVEMENT.
2. EXCAVATE BASE MATERIAL AND SUB-BASE MATERIAL IF INADEQUATE.
3. COMPACT ALL FILL MATERIAL TO 95% MODIFIED PROCTOR

PAVEMENT SECTION
NOT TO SCALE (11)

EARTHWORK NOTES

1. PRIOR TO THE START OF WORK, A PRE-CONSTRUCTION MEETING WILL BE HELD WITH THE CONTRACTOR, AND PROJECT ENGINEER TO REVIEW PROCEDURES, IDENTIFY RESPONSIBILITIES. UNLESS STATED OTHERWISE, ALL MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF TOWN OF HARTFORD SPECIFICATIONS.
2. CLEARING AND GRUBBING– SITE TO BE RESTORED TO PRE-CONSTRUCTION CONDITIONS, INCLUDING DRIVEWAYS, STONE WALLS, AND GRASS AREAS. THE DRIVEWAY SUB-GRADE MATERIAL SHALL EXTEND ONE FOOT BEYOND THE EDGE OF PAVING.
3. COMPACTION OF ALL MATERIALS SHALL BE PERFORMED USING VIBRATORY ROLLERS AND WATER IN LIFTS OF NO GREATER THAN TWELVE INCHES. COMPACTION SHALL BE PERFORMED UNTIL THE REQUIRED DENSITY IS ACHIEVED. DENSITY SHALL BE DETERMINED BY ASTM D2922 AND SHALL NOT BE LESS THAN THE REQUIRED AMOUNT AS DETERMINED IN ACCORDANCE WITH ASTM D1557.
4. COMPACTION TESTING SHALL BE PERFORMED FOR EVERY LAYER OF MATERIAL PLACED AND FOR EVERY 1000 SQUARE FEET OF AREA.
5. PAVEMENT SHALL MEET THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS PUBLISHED BY VTRANS.
6. PAVEMENT SHALL NOT BE INSTALLED WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT, NOR WHEN THE ROAD BASE TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT. PAVEMENT SHALL NOT FALL BELOW 185 DEGREES FAHRENHEIT PRIOR TO THE COMPLETION OF ROLLING. PAVEMENT SHALL NOT BE INSTALLED WHEN THE SUBGRADE IS FROZEN OR THE GRADES ARE INCORRECT.
7. ALL REMAINING DISTURBED AREAS SHALL BE FERTILIZED AND SEEDED IN ACCORDANCE WITH APPLICABLE STATE SPECIFICATIONS FOR EROSION CONTROL.
8. THE SEEDING OF 10% OR GREATER SLOPES SHALL REQUIRE THE USE OF EROSION CONTROL MATTING.
9. ALL EARTHWORK MATERIALS SHALL BE OBTAINED FROM APPROVED SOURCES. THEY SHALL CONSIST OF SATISFACTORILY GRADED, FREE DRAINING MATERIAL, REASONABLY FREE FROM LOAM, SILT, CLAY AND ORGANIC MATERIAL. EARTHWORK MATERIALS SHALL MEET THE REQUIREMENTS OF THE FOLLOWING TABLES:

A. SAND BLANKET/BEDDING: MESH SIZES

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE
2 INCHES	100
1-1/2 INCHES	90 – 100
1/2 INCH	70 – 100
NO. 4	60 – 100
NO. 100	0 – 20
NO. 200	0 – 8

B. 3/4" CRUSHED STONE: MESH SIZES ASTM C33–03, STONE SIZE #67

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE
1 INCH	100
3/4 INCHES	90 – 100
3/8 INCH	20 – 55
NO. 4	0 – 10
NO. 8	0 – 5

C. 1-1/2" CRUSHED STONE: MESH SIZES

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE
2 INCH	100
1-1/2 INCH	95 – 100
3/4 INCH	35 – 70
3/8 INCH	10 – 30
NO. 4	0 – 5

D. COARSE CRUSHED GRAVEL: MESH SIZES

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE
4 INCHES	95 – 100
NO. 4	25 – 50
NO. 100	0 – 12
NO. 200	0 – 6

E. FINE CRUSHED GRAVEL: MESH SIZES

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE
2 INCHES	100
1-1/2 INCHES	90 – 100
NO. 4	30 – 60
NO. 100	0 – 12
NO. 200	0 – 6

F. GRANULAR BACKFILL: MESH SIZES

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE
3 INCHES	100
NO. 4	45 – 75
NO. 100	0 – 12
NO. 200	0 – 6

G. TYPE I STONE FOR STONE FILL THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM 1 INCH TO 12 INCHES, AND AT LEAST 50 PERCENT OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF FOUR INCHES.

H. TYPE II STONE FOR STONE FILL THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM TWO INCHES TO 36 INCHES, AND AT LEAST 50 PERCENT OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF 12 INCHES.

I. TOPSOIL SHALL MEET THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE SPECIFICALLY STATED IN THE CONTRACT DOCUMENTS:
1. THE pH OF THE MATERIAL SHALL BE BETWEEN 5.5 AND 7.6.
2. THE ORGANIC CONTENT SHALL BE NOT LESS THAN 2% NOR MORE THAN 20%.
3. GRADATION:

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
2 INCHES	100
1 INCH	85 – 100
1/4 INCH	65 – 100
NO. 200	20 – 80

THE CONTRACTOR MAY AMEND NATURAL TOPSOIL WITH APPROVED MATERIALS AND BY APPROVED METHOD TO MEET THE ABOVE SPECIFICATIONS.

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Sheet Issue Date: 10/25/23

NORTHERN STAGE HOUSING
WRJ, VT

PROJECT NO.: 22025

DRAWN BY: AM CHECKED BY: KM

SITE DETAILS

C3.1

WATER NOTES

WATER MAINS
1. PERFORM A HYDROSTATIC AND LEAKAGE TEST ACCORDING TO AWWA C600(LATEST REVISION) ON EACH PIPE LINE.
2. THE ENGINEER SHALL BE GIVEN AT LEAST 48 HOURS NOTICE BEFORE THE TEST IS CONDUCTED. TEST MUST BE WITNESSED BY THE ENGINEER.
3. SPECIFIED TEST PRESSURE IS A MINIMUM OF 200 PSI OR 1.5X THE WORKING PRESSURE, WHICHEVER IS GREATER, AND PRESSURE DURING TEST SHALL NOT VARY BY MORE THAN 5 PSI. SEE THE CURRENT EDITION OF AWWA C600 FOR ALLOWABLE LEAKAGE.

EXISTING UTILITIES
1. LOCATION OF UTILITY INSTALLATIONS AND UNDERGROUND STRUCTURES ARE SHOWN AS APPROXIMATE ON THE CONTRACT DOCUMENTS SOME UTILITIES MAY NOT BE SHOWN.
2. ALL UTILITIES SHALL BE LOCATED BY THE CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION.
3. EXISTING UTILITIES SHALL BE PROTECTED AND SUPPORTED DURING CONSTRUCTION.
4. ALL WATER, GAS, CABLE, TELEPHONE, ELECTRIC, SEWER, AND OTHER UTILITIES FOUND TO INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE RELOCATED IN A MANNER ACCEPTABLE TO THE ENGINEER, PRIOR TO COMMENCING DEMOLITION.

PIPE BEDDING
1. SAND BLANKET/BEDDING SHALL MEET REQUIREMENTS OF EARTHWORK SPECIFICATIONS
2. TRENCH FINAL BACKFILL MATERIAL – MATERIAL WILL EXCLUDE PIECES OF PAVEMENT, ORGANIC MATTER, TOPSOIL, ALL WET OR SOFT MUCK, PEAT, CLAY, LARGE ROCKS(GREATER THAN 12" DIMENSION), OR ANY MATERIAL DETERMINED BY THE ENGINEER THAT WILL NOT BE SUITABLE.

PIPE TRENCH BACKFILL
1. MEET EARTHWORK SPECIFICATIONS FOR PLACEMENT AND COMPACTION.

DUCTILE IRON PIPE (WATER)
1. D.I. PIPE CONFORM TO AWWA/ANSI C151.
2. LININGS AND LINING REPAIR TO AWWA/ANSI C104.
3. JOINTS CONFORM TO AWWA/ASCE C 111 AND C153.
4. FITTINGS CONFORM TO AWWA/ANSI C110, C153, C105.
5. KEEP INSIDE OF PIPE CLEAN AND FREE OF DEBRIS.
6. REJECT ANY PIPE WHICH IS DROPPED DURING HANDLING.
7. MECHANICAL JOINT GLANDS SHALL BE "MEGA-LUG" RETAINER GLANDS.
8. DUCTILE IRON FITTINGS: ANSI A21.10, 350 PSI PRESSURE RATING.
9. JOINTS: MECHANICAL, PUSH-ON, AND FLANGED:
   A. RUBBER GASKET JOINT, ANSI A21.11
10. GASKETS:
   A: MECHANICAL AND PUSH-ON JOINTS: ANSI A21.11
   B. FLANGED JOINT: 1/8" THICK RING OR FULL FACED RUBBER, ANSI A21.15.
11. BOLTS/NUTS
   A. MECHANICAL JOINT: ANSI A21.11
   B. FLANGED JOINT: ANSI A21.15
12. LININGS:
   A. INTERIOR– CEMENT LINED, DOUBLE THICKNESS BITUMINOUS SEAL
   B. EXTERIOR–BITUMINOUS COATING APPROX. 1 MIL THICK, ANSI A21.51, ANSI A21.15, AND ANSI A21.10.
   C. FLANGE MACHINED FACE COATING: ANSI A21.15.
13. LAYING PIPE
   A. PIPE SHALL BE LAID WITH BELL ENDS FACING IN THE DIRECTION OF LAYING.
   B. WHERE PIPE IS LAID ON A SLOPE OF 5% OR MORE, THE LAYING SHALL START AT THE LOW END AND PROCEED UPHILL WITH THE BELL ENDS UPGRADE.
   C. A WATERTIGHT PLUG SHALL BE PLACED IN THE OPEN ENDS OF INSTALLED PIPE WHEN PIPE LAYING IS NOT IN PROGRESS.
   D. MAX. PERMISSIBLE DEFLECTION IS 75% OF AWWA SPEC. C600.

CHLORINATION OF DOMESTIC WATER LINES
1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS IN ADVANCE OF BEGINNING ANY DISINFECTION OF WATER MAINS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR BACTERIOLOGICAL TESTING AS REQUIRED BY THIS SPECIFICATION AND REFERENCE STANDARDS MENTIONED.
3. DISINFECT ALL NEW PIPELINE SYSTEMS IN ACCORDANCE WITH AWWA C651, INCLUDING:
   A. METHOD OF CHLORINE APPLICATION. USE CONTINUOUS FEED METHOD OR SLUG METHOD (TABLET METHOD IS NOT ACCEPTABLE).
   B. FORM OF CHLORINE UTILIZED.
   C. FINAL FLUSHING.
   D. BACTERIOLOGICAL TESTING
   E. REPETITION OF PROCEDURE

GATE VALVES
1. RESILIENT SEAT GATE VALVES BY KENNEDY "KEN-SEAL" OR EQUAL.
2. IRON BODY GATE VALVES TO MEET AWWA C-509-87.
3. STEM CONSTRUCTION: NON-RISING.
4. STEM SEALS: DOUBLE O-RING.
5. GATE: CAST IRON RESILIENT WEDGE WITH SYNTHETIC ELASTOMER COATING, AND SHALL BE EPOXY COATED (FUSION BONDED) INSIDE AND OUT.
6. BONNET HARDWARE SHALL MEET ASTM A307, CADMIUM PLATED.
7. OUTLET CONNECTION: STANDARD MECHANICAL JOINT
8. OPERATION: OPEN COUNTERCLOCKWISE.

TAPPING SLEEVES AND VALVES

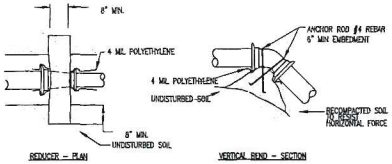
TAPPING VALVES
1. TAPPING VALVES TO MEET ANSI/AWWA C509-87, STANDARD FOR RESILIENT SEATED GATE VALVES.
2. VALVES SHALL HAVE A MINIMUM WORKING PRESSURE OF 150 PSI.
3. VALVES SHALL OPEN COUNTERCLOCKWISE.
4. INLET FLANGES SHALL BE CLASS 125, ANSI B16.1, OR ANSI/AWWA C110/A21.10.
5. OUTLET CONNECTION: STANDARDIZED MECHANICAL JOINT.
6. STEM SEALS: O RING.
7. STEM CONSTRUCTION: NON-RISING.
8. SEATING: PARALLEL SEAT
9. END CONNECTIONS: MECHANICAL ON RUN, FLANGED ON BRANCH.
10. BURIED TAPPING VALVES SHALL BE PROVIDED WITH A 2 INCH SQUARE WRENCH NUT AND CAST IRON VALVE BOX. IF DEPTH FROM GRADE TO TOP OF VALVE OPERATING NUT IS GREATER THAN 5'-0", A VALVE STEM RISER MADE OF HIGH STRENGTH STEEL SHALL BE PROVIDED. DEPTH FROM VALVE STEM RISER NUT TO GRADE WILL BE 4 TO 5 FEET.

TAPPING SLEEVES
1. AWWA C509, LATEST REVISION.
2. AWWA C207, CLASS D, MAX. WORKING PRESSURE OF 150 PSI.
3. SLEEVES: SPLIT SLEEVES OF CAST IRON OR DUCTILE IRON.
4. MECHANICAL JOINT ENDS WITH END AND GASKET SEALS.
5. BOLTS AND NUTS, MECHANICAL JOINTS: HIGH STRENGTH CAST IRON OR HIGH STRENGTH LOW ALLOY STEEL, ANSI/AWWA C111/A21.11-90.
6. BOLTS AND NUTS, FLANGED JOINTS: HIGH STRENGTH, LOW CARBON STEEL CONFORMING TO ANSI/AWWA C110/A21.10-87, APPENDIX
7. COAT ALL NUTS AND BOLTS WITH A RUST RESISTANT LUBRICANT.
8. ALL BOLTS AND NUTS USED WITH PIPE SLEEVES SHALL BE BRUSH COATED HEAVILY AFTER FINAL TIGHTENING WITH BITUMASTIC COLD-APPLIED MATERIAL TO THOROUGHLY COVER ALL EXPOSED SURFACES OF BOLTS AND NUTS.

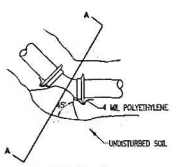
VALVE BOXES
1. ACCEPTABLE MANUFACTURER'S: MUELLER, CLOW, OR EQUAL.
2. CLOW F-2452 SLIDING TYPE, TWO PIECE, OR EQUAL.
3. 5 1/4 INCH SHAFT.
4. SIZE 684-A (40-80 INCH OVERALL LENGTH).
5. CAST IRON.
6. CLOW F-7490 LIDS OR EQUAL.
7. THE WORD "WATER" TO BE CAST INTO TOP OF COVERS, AND ARROW SHOWING DIRECTION OF OPENING.

CONCRETE
1. CONCRETE SHALL HAVE:
   A. MIN. COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS
   B. AIR ENTRAINMENT OF 4% TO 6% BY VOLUME.
   C. WATER CEMENT RATIO OF 0.49 LBS. WATER/CEMENT.
   D. SLUMP OF 2 TO 4 INCHES.
1. CONCRETE SHALL NOT BE PLACED WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT OR MORE THAN 90 DEGREES FAHRENHEIT.
2. CONCRETE SHALL NOT BE DROPPED MORE THAN SIX FEET INSIDE A FORM.
3. MAINTAIN TEMPERATURE OF CONCRETE SURFACE AT MINIMUM 50 DEGREES FAHRENHEIT FOR 72 HOURS AFTER PLACING CONCRETE. PREHEAT ALL ENCLOSURES FOR A MINIMUM OF 2 HOURS TO PROVIDE A MIN. SURFACE TEMPERATURE OF 45 DEGREES FAHRENHEIT.
4. ALLOW TO SET AND CURE ALL THRUST BLOCKS, CONCRETE SUPPORTS, AND ANCHORS A MINIMUM OF 24 HOURS BEFORE BACKFILLING.
5. COMPLETELY CURE AND SET CONCRETE BEFORE ANY HYDROSTATIC OR LEAKAGE TESTING OF PIPELINE SYSTEMS.
6. NONSHRINK GROUT SHALL BE HALCO TRADEMARK, AS MANUFACTURED BY LEHN & FINK INDUSTRIAL PRODUCTS.
7. DO NOT PLACE ANY MORTAR OR GROUT WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT.
8. MORTAR FOR MANHOLES SHALL CONSIST OF THE FOLLOWING:
   A. CEMENT–TYPE II, ASTM C150.
   B. HYDRATED LIME–TYPE N, ASTM C207.
   C. SAND– ASTM C 33, FINE AGGREGATES FOR CONCRETE.
   D. WATER–CLEAN, SUITABLE FOR DRINKING.
10. MIX(BY VOLUME): 1 PART CEMENT, 1/4 PART LIME, 4 1/2 PARTS SAND.

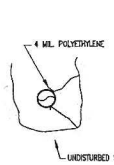
GENERAL
1. CONTRACTOR SHALL NOTIFY HARTFORD DEPARTMENT OF PUBLIC WORKS AT LEAST 48 HOURS BEFORE BEGINNING WATER LINE WORK.
2. "AS BUILT" DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR AT THE TIME OF COMPLETION OF THE SYSTEM.



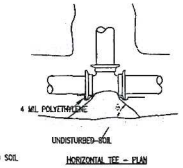
REDUCER – PLAN VERTICAL BEND – SECTION



HORIZONTAL BEND – PLAN



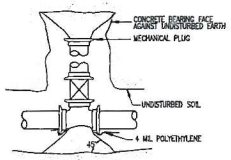
SECTION A–A



HORIZONTAL TEE – PLAN

MINIMUM BEARING SURFACE (SF) 150 PSI WORKING PRESSURE								
	PIPE DIA.	TEE	WYE	90° BEND	45° BEND	22.5° BEND	11.25° BEND	END CAP
1,000 PSF SOIL BEARING CAPACITY	10"	16	–	16	6	3	2	16
	8"	10	–	10	4	2	1	10
	6"	7	7	7	2	1	0.5	7
	4"	3	–	3	1	0.5	0.5	3
	2"	1	–	1	0.5	0.5	0.5	1
3,000 PSF SOIL BEARING CAPACITY	12"	6	–	6	2	1	2	6
	8"	4	–	4	1.25	1	1	4
	6"	2	2	2	1	1	1	2
	4"	1	–	1	1	1	1	1
	2"	1	–	1	1	1	1	1
5,000 PSF SOIL BEARING CAPACITY	12"	4	–	4	1.25	1	1	4
	8"	2	–	2	1	1	1	2
	6"	1.25	1.25	1.25	1	1	1	1.25
	4"	1	–	1	1	1	1	1
	2"	1	–	1	1	1	1	1

THRUST BLOCK NOTES:
1. THRUST BLOCKS SHALL BE PROVIDED AT ALL WATER LINE TEES, HYDRANTS, BENDS, REDUCERS, AND END CAPS.
2. HYDROSTATIC AND LEAKAGE TEST PRESSURE PER SPECIFICATIONS.
3. PLACE 4 MIL POLYETHYLENE BETWEEN FITTINGS AND THRUST BLOCKS.
4. CONCRETE SHALL HAVE 4000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AND AIR ENTRAINMENT OF 4 TO 6% BY VOLUME.
5. UTILIZE MEGALUG MECHANICAL JOINT RESTRAINTS ON ALL FITTINGS IN ADDITION TO CONCRETE THRUST BLOCKS.



CAPPED STUB WITH VALVE – PLAN

TYPICAL BEARING THRUST BLOCK

SCALE: NONE

8

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CONCEPT DESIGN

Sheet Issue Date: 10/25/23

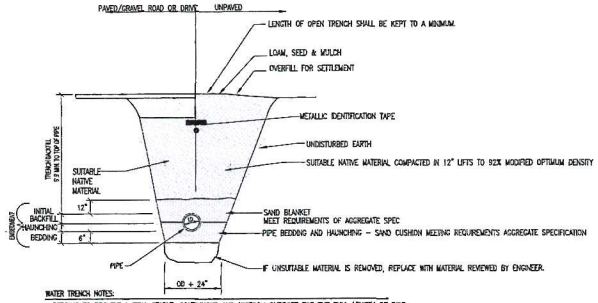
NORTHERN STAGE HOUSING
WRJ, VT

PROJECT NO.: 22025

DRAWN BY: AM CHECKED BY: KW

WATER DETAILS

C3.2

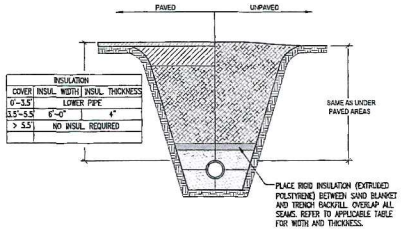


WATER TRENCH NOTES:

1. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR THE FULL LENGTH OF PIPE.
2. PROVIDE 6' MINIMUM COVER OVER WATER PIPE.
3. INSTALL WATER PIPE IN ACCORDANCE WITH AWWA STANDARD C600.
4. COMPACT SOILS IN ACCORDANCE WITH SPECIFICATION
5. BACKFILL SHALL BE OF A SUITABLE NATIVE MATERIAL REMOVED FROM EXCAVATION EXCEPT WHERE OTHER MATERIAL IS SPECIFIED. DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER OR OTHER UNSTABLE MATERIAL SHALL NOT BE USED FOR BACKFILL.

TYPICAL WATER TRENCH DETAIL

SCALE: NONE (1)

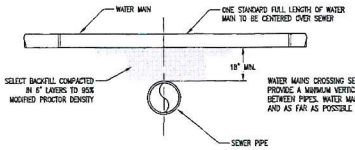


TRENCH NOTES:

1. REFER TO APPLICABLE TRENCH DETAIL FOR SPECIFIC BACKFILL INFORMATION.

INSULATION OVER SHALLOW WATER LINE DETAIL

SCALE: NONE (2)



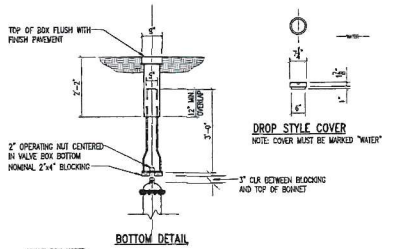
WATER MAIN ABOVE SEWER

SEPARATION NOTES:

1. WATER MAIN RELATIONS TO SEWER SHALL BE IN ACCORDANCE WITH THE "RECOMMENDED STANDARDS FOR WATER WORKS" SO-CALLED TEN STATE STANDARDS.
2. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SEWERS. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IF THIS DISTANCE CANNOT BE OBTAINED, THEN THE PIPES SHALL BE INSTALLED IN A SEPARATE TRENCH AT AN ELEVATION SO THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.
3. WHEN IT IS IMPOSSIBLE TO MAINTAIN 18" VERTICAL SEPARATION OR WHERE THE SEWER MUST BE LAID ABOVE THE WATER MAIN, 1) THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AS POSSIBLE FROM WATER JOINTS; 2) THE SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 10 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF THREE PIPE LENGTHS, WHICH EVER IS GREATER; 3) THE SECTION CONSTRUCTED TO WATER MAIN STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 50 psi FOR 15 MINUTES WITHOUT LEAKAGE PRIOR TO BACKFILLING BEYOND ONE FOOT ABOVE THE PIPE TO ASSURE WATER TIGHTNESS.

SANITARY SEWER/WATER LINE CROSSING

SCALE: NONE (5)



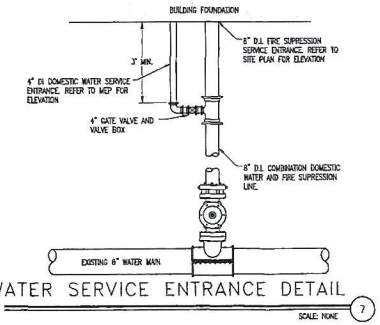
BOTTOM DETAIL

VALVE BOX NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TECHNICAL SPECIFICATIONS.
2. ALL PIPES SHOULD HAVE A MINIMUM DEPTH OF 5.5' FROM TOP OF PIPE TO FINISH GRADE.
3. ALL GATE VALVES SHALL BE OPEN RIGHT.

TYPICAL VALVE BOX DETAIL

SCALE: NONE (6)



WATER SERVICE ENTRANCE DETAIL

SCALE: NONE (7)

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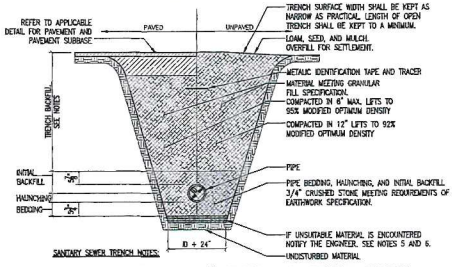
NORTHERN STAGE HOUSING
WRJ, VT

PROJECT NO.: 22025

DRAWN BY: AM CHECKED BY: MH

WATER DETAILS

C3.3

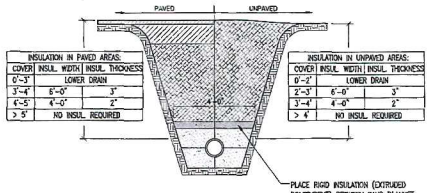


SANITARY SEWER TRENCH NOTES:

1. UNLESS OTHERWISE NOTED, ASSUME CLASS "C" SOILS. PERFORM ALL EXCAVATIONS TO OSHA REQUIREMENTS.
2. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR FULL LENGTH OF PIPE.
3. FOR BUILDING SEWERS THE MINIMUM DEPTH TO THE TOP OF THE PIPE SHALL BE 4'-0". WHERE BUILDING SEWERS ARE TO BE INSTALLED AT A DEPTH LESS THAN 3'-0" UNDER DRIVEWAYS, EXTRA HEAVY CAST IRON OR OTHER HIGH STRENGTH PIPE SHALL BE USED. OTHERWISE, REFER TO INSULATION OVER SHALLOW SEWER LINE DETAIL.
4. FOR SEWER COLLECTION SYSTEMS THE MINIMUM DEPTH TO THE TOP OF THE PIPE SHALL BE 5'-0". THIS DEPTH SHALL BE INCREASED TO 6'-0" IN AREAS TO BE PLOWED DURING THE WINTER MONTHS. OTHERWISE, REFER TO INSULATION OVER SHALLOW SEWER LINE DETAIL.
5. BACKFILL SHALL BE OF A SUITABLE NATIVE MATERIAL REMOVED FROM EXCAVATION EXCEPT WHERE OTHER MATERIAL IS SPECIFIED. DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER OR OTHER UNSTABLE MATERIAL SHALL NOT BE USED FOR BACKFILL.
6. LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF FOUR INCHES BELOW AND ON EACH SIDE OF ALL PIPES.
7. SEWERS ON 20 PERCENT SLOPES OR GREATER SHALL BE ANCHORED SECURELY WITH CONCRETE ANCHORS OR EQUIVALENT, SPACED AS FOLLOWS:
   A. NOT OVER 36 FEET CENTER TO CENTER ON GRADES 20 PERCENT AND UP TO 35 PERCENT
   B. NOT OVER 24 FEET CENTER TO CENTER ON GRADES 35 PERCENT AND UP TO 50 PERCENT
   C. NOT OVER 16 FEET CENTER TO CENTER ON GRADES 50 PERCENT AND OVER

SANITARY SEWER TRENCH (1)

NOT TO SCALE



INSULATION IN PAVED AREAS:		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-3"	LOWER DRAIN	
3'-4"	6'-0"	3"
4'-5"	4'-0"	2"
> 5'	NO INSUL. REQUIRED	

INSULATION IN UNPAVED AREAS:		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-2"	LOWER DRAIN	
2'-3"	6'-0"	3"
3'-4"	4'-0"	2"
> 4'	NO INSUL. REQUIRED	

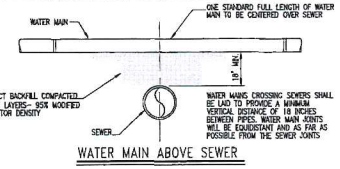
TRENCH NOTES:

1. REFER TO APPLICABLE TRENCH DETAIL FOR SPECIFIC BACKFILL INFORMATION.

2. RIGID EXTRUDED POLYSTYRENE INSULATION SHALL CONFORM WITH ASTM C578 – STANDARD SPECIFICATION FOR RIGID CELLULAR POLYSTYRENE THERMAL INSULATION AND SHALL BE DOW STYROFOAM HIGH LOAD 40 OR EQUIVALENT.

INSULATION OVER SHALLOW SANITARY SEWER (2)

NOT TO SCALE



WATER MAIN ABOVE SEWER

SEPARATION NOTES:

1. WATER MAIN RELATIONS TO SEWER SHALL BE IN ACCORDANCE WITH THE "ENVIRONMENTAL PROTECTION RULES, CHAPTER 21, WATER SUPPLY RULE (WSR), SECTIONS 8.5 AND 8.6"

2. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SEWERS. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IF THIS DISTANCE CANNOT BE OBTAINED, THEN THE PIPES SHALL BE INSTALLED IN A SEPARATE TRENCH AT AN ELEVATION SO THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

3. WHEN IT IS IMPOSSIBLE TO MAINTAIN 18" VERTICAL SEPARATION OR WHERE THE SEWER MUST BE LAID ABOVE THE WATER MAIN; 1) THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AS POSSIBLE FROM WATER JOINTS.

SANITARY SEWER WATER SEPARATION (6)

NOT TO SCALE

SEWER NOTES

CONTRACTOR SHALL CONFORM TO GUIDELINES DETAILED IN THE VERMONT STATE SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR READING AND FOLLOWING THE FULL COMPLETE EDITION PROVIDED BY THE STATE.

A. THE BUILDING SEWER SHALL BE CONSTRUCTED IN A MANNER WHICH WILL PREVENT LEAKING, BREAKING OR CLOGGING.

B. SIZING AND SLOPE: MINIMUM BUILDING SEWER SIZE IS 4 INCHES (UNLESS SHOWN ON THE PLAN) AND A MINIMUM SLOPE IS 1/8" PER FOOT.

C. CLEANOUTS: CLEANOUTS SHALL BE PROVIDED AT EACH HORIZONTAL CHANGE IN DIRECTION OF THE BUILDING SEWER GREATER THAN 45 DEGREES AND WHERE INDICATED ON THE DESIGN DRAWINGS. BUILDING SEWER CHANGES IN DIRECTION WHICH EXCEED 45 DEGREES SHOULD BE MADE WITH TWO 45 DEGREE ELLS OR LONG SWEEP FITTINGS. MANHOLES ARE ACCEPTABLE IN LIEU OF CLEANOUTS. WHERE BUILDING SEWERS ARE TO BE INSTALLED AT A DEPTH OF LESS THAN 3 FEET UNDER DRIVEWAYS ARE ANTICIPATED, EXTRA HEAVY CAST IRON PIPE SHALL BE USED.

D. LEAKAGE: BUILDING SEWERS SHALL MEET THE LEAKAGE STANDARDS PRESCRIBED IN THE STATE OF VERMONT SPECIFICATIONS (EPR– CHAPTER 1). SEE BELOW FOR MORE DETAIL.

E. SLOPE, VELOCITY: ALL GRAVITY SEWER LINES SHALL BE INSTALLED WITH NOT LESS THAN THE SLOPES SHOWN BELOW:

PIPE SIZE (INCHES)	SLOPE (FEET/100 FEET)
4"	2%
6"	1%
8"	0.4%

F. CHANGES IN PIPE SIZE: WHEN A SMALLER SEWER JOINS A LARGE ONE, THE INVERT OF THE LARGER SEWER SHALL BE LOWERED SUFFICIENTLY TO MAINTAIN THE SAME ENERGY GRADIENT.

G. MATERIAL: PVC SDR 35, ASTM D3034, WITH PUSH-ON GASKETED JOINTS. GASKETS SHALL CONFORM TO ASTM D3212. SEWER JOINTS SHALL BE CONSTRUCTED TO MINIMIZE INFILTRATION AND TO PREVENT THE ENTRANCE OF ROOTS INTO THE SYSTEM.

H. TRENCHING: LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF FOUR INCHES BELOW AND ON EACH SIDE OF ALL PIPES.

I. BEDDING: SEE TRENCH DETAIL DRAWING FOR MATERIALS. TRENCH BACKFILL SHALL BE OF A SUITABLE NATIVE MATERIAL FREE FROM DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER, OR OTHER UNSTABLE MATERIALS.

J. LEAKAGE TESTS: UPON COMPLETION OF SEWER LINE CONSTRUCTION, THE SEWER LINE SHALL BE TESTED IN ACCORDANCE WITH THE STATE OF VERMONT SPECIFICATIONS (EPR – CHAPTER 1, APPENDIX "A").

LEAKAGE TESTS FOR GRAVITY SEWERS

PERFORM A PRESSURIZED AIR TEST ON THE GRAVITY LINE IN ACCORDANCE WITH THE VERMONT ENVIRONMENTAL PROTECTION RULES ON EACH SECTION OF THE GRAVITY SEWER. THE ENGINEER SHALL BE GIVEN 72 HOURS NOTICE BEFORE THE TEST IS CONDUCTED. TEST MUST BE WITNESSED BY THE ENGINEER.

PLUG ALL OPENINGS IN THE TEST SECTION. ADD AIR UNTIL THE INTERNAL PRESSURE OF THE LINE IS RAISED TO

APPROXIMATELY 4.0 POUNDS/SQUARE INCH (PSI) GREATER THAN THE AVERAGE PRESSURE OF ANY GROUND WATER. AFTER THIS PRESSURE IS REACHED, ALLOW THE PRESSURE TO STABILIZE. THE PRESSURE WILL NORMALLY DROP AS THE AIR TEMPERATURE STABILIZES. THIS USUALLY TAKES 2 TO 5 MINUTES DEPENDING ON THE PIPE SIZE. THE PRESSURE MAY BE REDUCED TO 3.5 PSI BEFORE STARTING THE TEST.

WHEN THE PRESSURE HAS STABILIZED AND IS AT OR ABOVE THE STARTING TEST PRESSURE OF 3.5 PSI ABOVE THE PIPE, START THE TEST. IF THE PRESSURE DROPS MORE THAN 1.0 PSI DURING THE TEST TIME, THE LINE IS PRESUMED TO HAVE FAILED THE TEST. IF A 1.0 PSI DROP DOES NOT OCCUR WITHIN THE TEST TIME, THE LINE HAS PASSED THE TEST. THE TEST TIME SHALL BE DERIVED FROM THE FOLLOWING TABLE. IF THE SECTION OF LINE TO BE TESTED INCLUDES MORE THAN ONE PIPE SIZE, CALCULATE THE TEST TIME FOR EACH SIZE AND ADD THE TEST TIMES TO ARRIVE AT THE TOTAL TEST TIME FOR THE SECTION.

PIPE SIZE (IN)	T (TIME) (MIN./100FT)
3	0.2
4	0.3
6	0.7
8	1.2

K. INSTALLATION: PIPE SHALL BE LAID WITH BELL ENDS FACING UPGRADE AND LAYING SHALL START AT THE DOWNGRADE END.

L. WATER LINE SEPARATION

a. HORIZONTAL SEPARATION: SEWERS SHALL BE LAID FLAT AT LEAST TEN FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE.

WHERE IMPOSSIBLE OR IMPRACTICABLE TO MAINTAIN THE TEN FOOT SEWER/WATER PIPE HORIZONTAL SEPARATION, (DUE TO LEDGE, BOULDERS OR OTHER UNUSUAL CONDITIONS) THE WATER LINE MAY BE IN A SEPARATE TRENCH OR ON AN EARTH SHELF IN THE SEWER TRENCH PROVIDED THAT THE BOTTOM OF THE WATER LINE IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER. WHEREVER IMPOSSIBLE OR IMPRACTICAL TO MAINTAIN THE 18 INCH VERTICAL SEPARATION, THE SEWER LINE SHALL BE CONSTRUCTED USING PRESSURE PIPE TO NORMAL WATER LINE STANDARDS AND PRESSURE TESTED TO 50 PSI FOR 15 MINUTE PRIOR TO BACKFILLING.

b. CROSSINGS: SEWERS CROSSING WATER MAINS SHALL BE LAID BENEATH THE WATER MAIN WITH AT LEAST 18 INCHES VERTICAL CLEARANCE BETWEEN THE OUTSIDE OF THE SEWER AND THE OUTSIDE OF THE WATER MAIN. WHEN IT IS IMPOSSIBLE TO MAINTAIN THE 18 INCH VERTICAL SEPARATION;

1.) THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AWAY AS POSSIBLE FROM WATER JOINTS;
2.) THE SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 20 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF THREE PIPE LENGTHS, WHICHEVER IS GREATER;
3.) THE SECTION CONSTRUCTED TO WATER MAIN STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 50 PSI FOR 15 MINUTES WITHOUT LEAKAGE PRIOR TO BACKFILLING BEYOND ONE FOOT ABOVE THE PIPE TO ASSURE WATER TIGHTNESS;
4.) WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN.

M. MANHOLES

a. DIAMETER: THE MINIMUM DIAMETER OF MANHOLES SHALL BE 48 INCHES; LARGE DIAMETERS ARE PREFERRED FOR CONNECTION TO LARGE DIAMETER SEWERS. A MINIMUM ACCESS DIAMETER OF 24 INCHES SHALL BE PROVIDED.
b. FLOW CHANNEL: FLOW CHANNELS SHALL BE PROVIDED IN THE BASE OF ALL MANHOLES AND THE FLOW CHANNEL THROUGH MANHOLES SHOULD BE MADE TO CONFORM IN SHAPE AND SLOPE TO THAT OF THE SEWERS.
c. MANHOLES SHALL BE OF THE PRE-CAST CONCRETE OR POUR-IN PLACE CONCRETE TYPE. MANHOLES SHALL BE WATERPROOFED ON THE EXTERIOR.
d. INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A RUBBER-GASKETED FLEXIBLE WATERTIGHT CONNECTION THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL TO TAKE PLACE.
e. ALL MANHOLES SHALL BE TESTED FOR LEAKAGE. LEAKAGE TESTING OF GRAVITY SEWERS UTILIZING THE WATER TESTING PROCEDURES TAKES INTO ACCOUNT THE LEAKAGE FROM ONE MANHOLE IN THE TEST SECTION. OTHERWISE, MANHOLES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

AFTER THE MANHOLE HAS BEEN ASSEMBLED IN PLACE, ALL LIFTING HOLES AND EXTERIOR JOINTS SHALL BE FILLED WITH AND POINTED WITH AN APPROVED NON-SHRINKING MORTAR. ALL PIPES AND OTHER OPENINGS INTO THE MANHOLE SHALL BE SUITABLY PLUGGED AND THE PLUGS PLACED TO PREVENT BLOWOUT.

EACH MANHOLE SHALL BE CHECKED FOR INFILTRATION BY FILLING WITH WATER TO THE TOP OF THE CONE SECTION A STABILIZATION PERIOD OF ONE HOUR SHALL BE PROVIDED TO ALLOW FOR ABSORPTION. AT THE END OF THIS PERIOD, THE MANHOLE SHALL BE REFILLED TO THE TOP OF THE CONE. IF NECESSARY, AND THE MEASURING TIME OF AT LEAST SIX HOURS BEGUN. AT THE END OF THE TEST PERIOD, THE MANHOLE SHALL BE REFILLED TO THE TOP OF THE CONE MEASURING THE VOLUME OF WATER ADDED. THIS AMOUNT SHALL BE CONVERTED TO A 24 HOUR RATE AND THE LEAKAGE DETERMINED ON THE BASIS OF DEPTH. THE LEAKAGE FOR EACH MANHOLE SHALL NOT EXCEED ONE GALLON PER VERTICAL FOOT FOR A 24 HOUR PERIOD FOR EXFILTRATION AND THERE SHALL BE NO VISIBLE INFILTRATION. IF AN AIR TEST IF PERFORMED ON THE MANHOLE, INSTEAD OF THE WATER TEST, THE MANHOLE SHALL REMAIN UN-BACKFILLED DOWN TO THE SEWER LINE INVERTS DURING THE AIR TEST.

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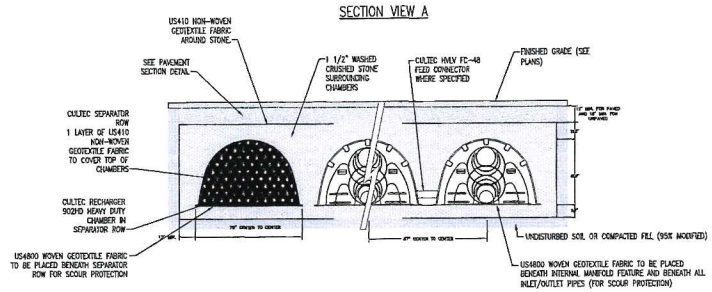
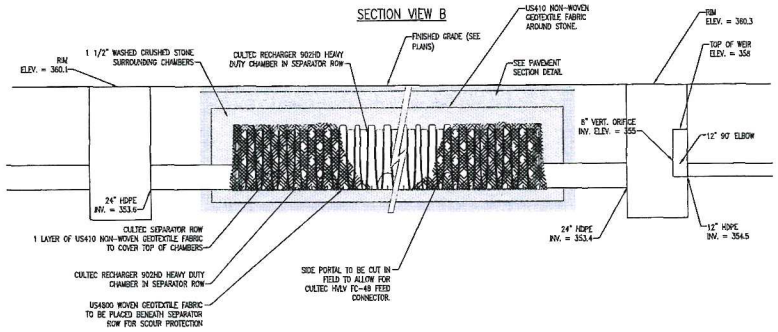
NORTHERN STAGE HOUSING
WRJ, VT

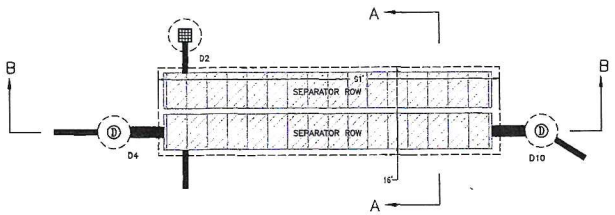
PROJECT NO.: 22025

SEWER DETAILS

C3.4

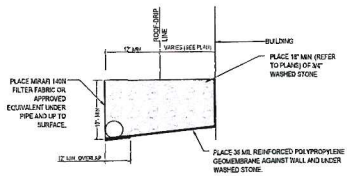






STONE BED: 91' LONG x 16' WIDE x 5.3' DEEP
CHAMBERS: 2 ROWS X 24 CHAMBERS/ROW = 48 CHAMBERS TOTAL

CULTEC RECHARGER SYSTEM (1)
NOT TO SCALE



TYPICAL DRIP EDGE (2)
NOT TO SCALE

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WRJ, VT

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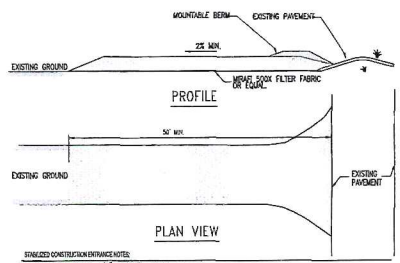
STORMWATER DETAILS

C3.5

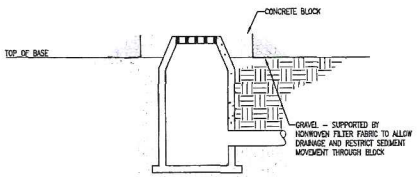


STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. STONE SIZE: USE 1-1/2" CRUSHED STONE.
2. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED ACROSS THE ENTRANCE.
3. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. REPAIR AND/OR CLEANOUT ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
4. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.
5. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

CONSTRUCTION ENTRANCE DETAIL

SCALE: NONE (1)

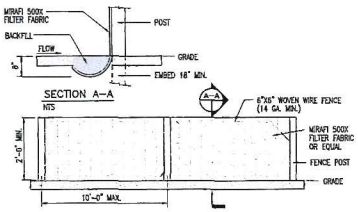


CONSTRUCTION SPECIFICATIONS

1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER FLOW.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, REMOVE GRAVEL AND BLOCK AND STABILIZE SURROUNDING AREA PER PLAN.
4. GRAVEL BAGS, GRATE GUARDS, FILTREXX OR SEDIGUARD INLET PROTECTION DEVICES MAY BE USED. SUBMIT PRODUCT INFORMATION TO ENGINEER FOR REVIEW PRIOR TO USE. INSTALL PRODUCTS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE LATEST EDITION OF THE VT EPSC STANDARDS AND SPECIFICATIONS.

STONE AND BLOCK CATCH BASIN PROTECTION DETAIL

SCALE: NONE (2)

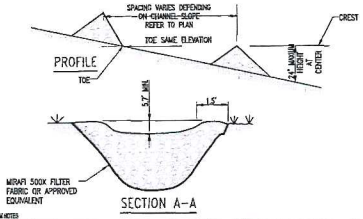


SILT FENCE NOTES:

1. SILT FENCE SHALL BE PRE-FABRICATED EROSION CONTROL FENCE BY MIRAFI OR EQUAL OR CONSTRUCTED IN PLACE AS SPECIFIED HEREIN.
2. CONSTRUCTED IN PLACE SILT FENCE:
   A. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
   B. FILTER FABRIC TO BE FASTENED SECURELY TO WOVEN WIRE FENCE TIES SPACED EVERY 24" AT TOP OF MID SECTION.
   C. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6", FOLDED AND STAPLED.
3. INSPECTION SHALL BE FREQUENT (MINIMUM ONCE A WEEK AND AFTER EVERY RAINFALL). MAINTENANCE SHALL BE PERFORMED AS NEEDED, AND SEDIMENT REMOVED WHEN "BULGES" DEVELOP IN SILT FENCE.

SILT FENCE DETAIL

SCALE: NONE (3)

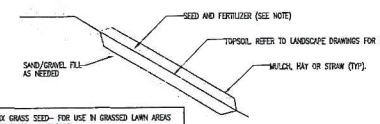


CHECK DAM NOTES

1. TYPE I STONE FILL WILL BE PLACED ON A FILTER FABRIC FOUNDATION AT THE GRADES AND LOCATIONS AS DESCRIBED HEREIN, AND TO MEET THE ABOVE DETAIL IN AREAS SHOWN ON PLANS
2. SET SPACING OF CHECK DAMS SUCH THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM FOR A MINIMUM OF 100' DOWNSTREAM OF DISTURBED EARTH.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED WEEKLY (EVERY 7 DAYS) AND WITHIN 24 HOURS AFTER EACH RAIN.
6. REMOVE SEDIMENT COLLECTED BEHIND EACH DAM WHEN DEPTH OF SEDIMENT IS ONE HALF THE HEIGHT OF THE DAM.

STONE CHECK DAM DETAIL

SCALE: NONE (4)



URBAN MIX GRASS SEED- FOR USE IN GRASSED LAWN AREAS AROUND BUILDING AND PARKING		
% BY WEIGHT	LBS. LIVE SEED BY ACRE	TYPE OF SEED
44.44	20.0	CREEPING RED FESCUE
44.44	20.0	KENTUCKY BLUEGRASS
11.11	5.0	RYEGRASS
100	45.0 # LIVE SEED/ ACRE	

CONSERVATION MIX GRASS SEED- FOR USE IN ALL OTHER AREAS		
% BY WEIGHT	LBS. LIVE SEED PER ACRE	TYPE OF SEED
50	15.0	SMOOTH BROMEGRASS
16.67	5.0	RYEGRASS
33.33	10.0	BIRDSFOOT TREFOIL
100	30.0 # LIVE SEED/ACRE	

FERTILIZER- 40 LBS. PER 1000S.F.
USE STANDARD 10-20-20 WHEN NO SOIL TEST DATA IS AVAILABLE
SPRING SEEDING
FALL SEEDING

LIME- 100 LBS. PER 1000S.F.
DOLOMITIC GROUND LIMESTONE
NOT LESS THAN 85% OF THE TOTAL CARBONATE

TOP SOIL
6" MINIMUM TOPSOIL

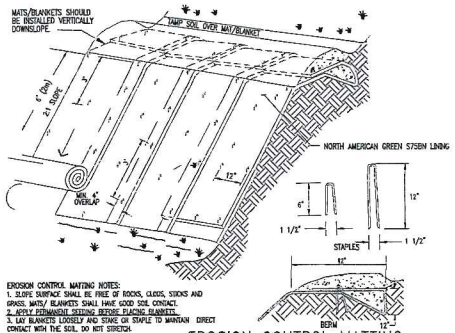
HAY OR STRAW MULCH- 90-100LBS PER 1000S.F. APPLY BINDER OR NETTING AS NEEDED

NOTES FOR SEEDED AND MULCHED AREAS

1. ALL DISTURBED SURFACES SHALL BE TEMPORARILY OR PERMANENTLY SEEDED AND MULCHED WITHIN 7 DAYS OF DISTURBANCE.
2. SEEDING AND MULCHING OF DISTURBED AREAS SHALL TAKE PLACE WITHIN 48 HOURS OF FINAL GRADING.
3. MULCH: TYPICALLY HAY OR STRAW MAY BE UTILIZED AND SHALL BE APPLIED AT A RATE OF 90-100 LBS/1,000 SF. MULCH SHALL NOT BE PLACED ON SLOPES OF GREATER THAN 3:1. SEED IMPREGNATED EROSION CONTROL NETTING SHALL BE USED IN ITS PLACE.
4. SEED: SEEDING SHALL OCCUR AFTER APRIL 15 AND PRIOR TO SEPTEMBER 15TH IN ORDER TO ESTABLISH A STAND OF GRASS PRIOR TO GROUND FREEZING. SEED SHALL BE IN ACCORDANCE WITH SEED SPECIFICATION ON THIS SHEET.
5. COVER SEED WITH ¼ INCH SOIL UNLESS A HYDROSEEDER IS USED.
6. MULCH ANCHORING: SHALL BE ACCOMPLISHED BY BIODEGRADABLE MULCH NETTING. USE WHEN SLOPES ARE GREATER THAN 10%.
7. TOPSOIL AND MULCHING NOT TO BE APPLIED IN AREAS OF TRAVEL WAYS.

SEEDED AND MULCHED AREAS DETAIL

SCALE: NONE (5)

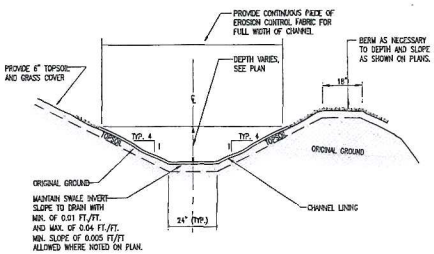


EROSION CONTROL MATTING NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/ BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. MATTING SHALL BE NATURAL FIBER.

EROSION CONTROL MATTING

SCALE: NONE (6)

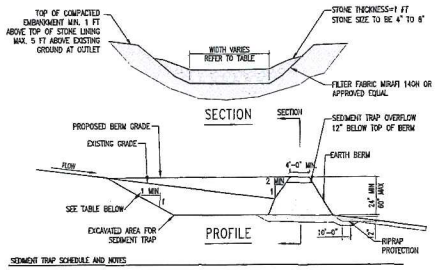


GRASSED SWALE NOTES:

1. PROVIDE CHANNEL LINING AS REQUIRED TO STABILIZE NEW VEGETATED SWALES. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
2. LAP UPSTREAM BLANKET OVER DOWNSTREAM BLANKET MIN. OF 12"

GRASSED DRAINAGE SWALE DETAIL

SCALE: NONE (7)



SEDIMENT TRAP SCHEDULE AND NOTES

TRAP	DRAINAGE AREA IN ACRES	REQUIRED VOLUME OF SEDIMENT TRAP*	VOLUME PROVIDED	OVERFLOW WEIR ELEVATION	WEIR WIDTH	BOTTOM OF TRAP	TOP OF TRAP	SIDE SLOPE
TST-1	0.5	1800 CF	TBD	TBD	4'	TBD	TBD	2:1

* SEE NOTE 5 BELOW

1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.

2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVERSIZED STONE, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF EMBANKMENT SHALL BE FIVE (5) FEET, MEASURED AT CENTERLINE OF EMBANKMENT.

3. ANY EXCAVATED PORTION OF SEDIMENT TRAP SHALL HAVE 2:1 SLOPES OR FLATTER.

4. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF EMBANKMENT.

5. THE VOLUME OF SEDIMENT STORAGE SHALL BE 3,600 CF PER ACRE OF CONTRIBUTORY DRAINAGE. MINIMUM VOLUMES AND OUTLET SIZES FOR EACH TRAP ARE LISTED IN THE SEDIMENT TRAP SCHEDULE SHOWN ABOVE.

6. FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTIONS OF FABRIC MUST OVERLAP AT LEAST ONE (1) FOOT WITH SECTION NEAREST THE ENTRANCE PLACE ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OUTLET CHANNEL.

7. STONE USED IN THE OUTLET CHANNEL SHALL BE FOUR (4) TO EIGHT (8) INCH RIP-RAP. TO PROVIDE A FILTERING EFFECT, A LAYER OF FILTER CLOTH SHALL BE EMBEDDED ONE (1) FOOT WITH SECTION NEAREST THE ENTRANCE PLACE ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OUTLET CHANNEL.

8. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF OF THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND STABILIZED.

9. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRED AS NEEDED.

10. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND SEDIMENT ARE CONTROLLED.

11. THE STRUCTURE SHALL BE REMOVED AND AREA BROUGHT TO FINAL GRADE AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

12. DRAINAGE AREA FOR THIS PRACTICE IS LIMITED TO 15 ACRES OR LESS.

13. SEDIMENT TRAPS SHALL MEET THE VERMONT HANDBOOK FOR SOIL EROSION AND SEDIMENT CONTROL ON CONSTRUCTION SITES.

TEMPORARY SEDIMENT TRAP

NOT TO SCALE (8)

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Planners
Builders

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Bloomfield, CT. 06002

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43 Krupp Dr.
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Electrical Engineer
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Seal:

CONCEPT DESIGN

Sheet Issue Date: 10/25/23

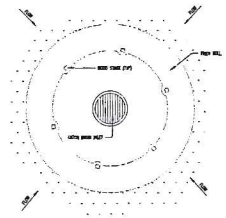
NORTHERN STAGE HOUSING
WRJ, VT

PROJECT NO.: 22025

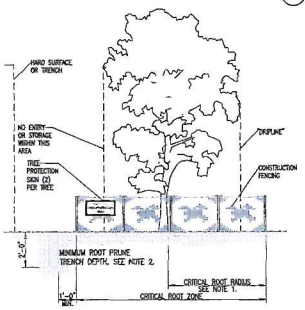
DRAWN BY: AM CHECKED BY: RW

EPSC DETAILS

C3.6

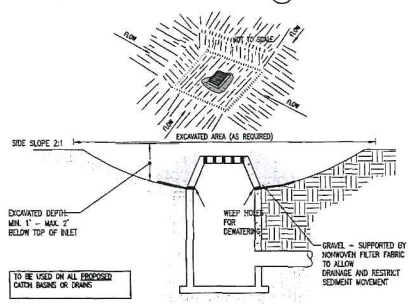


FIBER ROLL INLET PROTECTION DETAIL 1



TREE PROTECTION NOTES:
1. TO CALCULATE THE CRITICAL ROOT RADIUS, ESTIMATE THE TREE'S HEIGHT AND MULTIPLY BY 40 PERCENT (0.40). THE RESULT IS THE APPROXIMATE DISTANCE FROM THE TREE TRUNK TO THE EDGE OF THE CONSTRUCTION FENCING.
2. FENCE SPECIMEN TREES AND GROUPS OF TREES. WHERE ROOF LOSS WILL OCCUR, ROOT PRUNE ONE FOOT BEYOND THE CONSTRUCTION FENCE USING A VIBRATING KNIFE OR NARROW TRENCHER – ALWAYS WITH SHARP BLADES TO MAKE CLEAN CUTS. BACKFILL IMMEDIATELY AND COVER WITH 3 INCHES OF MULCH.
3. INSTALL SILT FENCE ON THE INTERIOR OF THE CONSTRUCTION FENCING TO KEEP SOIL FROM DISTURBED AREAS OUT OF THE ROOT ZONES OF TREES TO BE SAVED.
4. FERTILIZE, WATER, AERATE AND OTHERWISE AID TREE HEALTH.
5. COORDINATE THE FINAL LOCATION OF THE CONSTRUCTION FENCING AND ROOT PRUNING WITH THE OWNER.

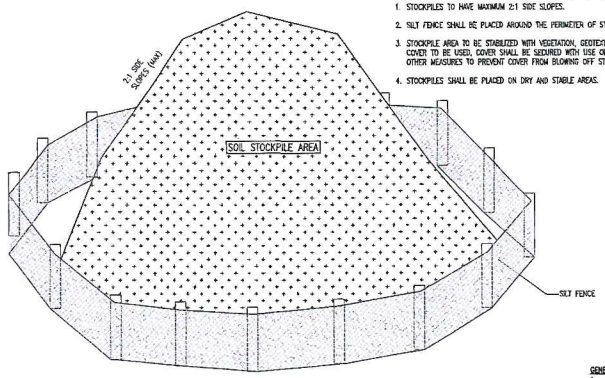
TREE PROTECTION DETAIL 3



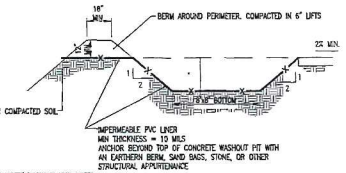
CONSTRUCTION SPECIFICATIONS
1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.
5. GRAVEL BAGS, CURBTE GUARDS, FILTERIX OR SEDIGUARD INLET PROTECTION DEVICES MAY BE USED. SUBMIT PRODUCT INFORMATION TO ENGINEER FOR REVIEW PRIOR TO USE. INSTALL PRODUCTS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE LATEST EDITION OF THE VT EPSC STANDARDS AND SPECIFICATIONS.

EXCAVATED STORM DRAIN INLET PROTECTION DETAIL 7
NOT TO SCALE

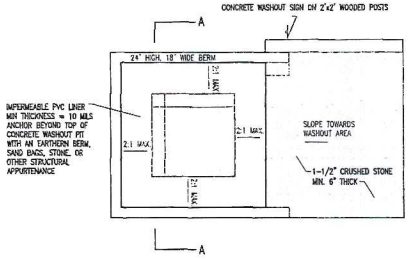
STOCKPILE NOTES
1. STOCKPILES TO HAVE MAXIMUM 2:1 SIDE SLOPES.
2. SILT FENCE SHALL BE PLACED AROUND THE PERIMETER OF STOCKPILE AREA.
3. STOCKPILE AREA TO BE STABILIZED WITH VEGETATION, GEOTEXTILE, OR COVER. IF COVER TO BE USED, COVER SHALL BE SECURED WITH USE OF SAND BAGS OR OTHER MEASURES TO PREVENT COVER FROM BLOWING OFF STOCKPILE.
4. STOCKPILES SHALL BE PLACED ON DRY AND STABLE AREAS.



TEMPORARY SOIL STOCKPILE AREA DETAIL 2
SCALE: NONE



CONCRETE WASHOUT AREA NOTES
1. ALL CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED DAILY. DAMAGED OR LEAKING FACILITIES SHALL BE DEACTIVATED AND REPAIRED/REPLACED IMMEDIATELY. EXCESS RAINWATER THAT HAS ACCUMULATED OVER HARDENED CONCRETE SHOULD BE PUMPED TO A STABILIZED AREA, SUCH AS A GRASS FILTER STRIP.
2. ACCUMULATED HARDENED MATERIAL SHALL BE REMOVED WHEN 75% OF THE STORAGE CAPACITY OF THE STRUCTURE IS FILLED. ANY EXCESS WASH WATER SHALL BE PUMPED INTO A CONTAINMENT VESSEL, AND PROPERLY DISPOSED OF OFF-SITE.
3. DISPOSE OF THE HARDENED MATERIAL OFF-SITE IN AN APPROPRIATE FACILITY. ON-SITE DISPOSAL MAY BE ALLOWED IF THIS HAS BEEN APPROVED AND ACCEPTED AS PART OF THE PROJECTS SWPPP. IN THAT CASE, THE MATERIAL SHALL BE RECYCLED AS SPECIFIED, OR BURIED AND COVERED WITH A MINIMUM OF 2 FEET OF CLEAN COMPACTED EARTHFILL THAT IS PERMANENTLY STABILIZED TO PREVENT EROSION.
4. THE PLASTIC LINER SHALL BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.
5. INSPECT THE PROJECT SITE FREQUENTLY TO ENSURE THAT NO CONCRETE DISCHARGES ARE TAKING PLACE IN NON-DESIGNATED AREAS.
6. IN LIEU OF CONCRETE WASHOUT AREA, A PRE-FABRICATED WASHOUT MAY BE USED. CONTRACTOR SHALL SUBMIT SHOP DRAWING OF SUCH PRE-FABRICATED WASHOUT AREA TO DESIGN ENGINEER FOR REVIEW AND APPROVAL.



CONCRETE TRUCK WASHOUT AREA 1
SCALE: NONE

WINTER EROSION CONTROL NOTES

WINTER CONSTRUCTION PROCEDURES
1. DURING WINTER CONSTRUCTION, INSPECTIONS BY THE ON-SITE PLAN COORDINATOR SHALL OCCUR DAILY WHEN AREAS ARE UN-STABLE, AND WEEKLY PRIOR TO ANY FORECASTED RAIN, THAW OR SPRING MELT WHEN TEMPORARY STABILIZATION IS IN PLACE.
2. IN AREAS TO BE STABILIZED BY VEGETATION, ALL SEEDING MUST BE COMPLETED BY SEPTEMBER 15 TO ALLOW GROWTH TO OCCUR PRIOR TO THE GROUND FREEZING. STABILIZATION OF ALL OTHER DISTURBED AREAS SHALL BE COMPLETED BY OCTOBER 15.
3. ENLARGED ACCESS POINTS, STABILIZED TO PROVIDE FOR SNOW STOCKPILING SHALL BE INSTALLED.
4. LIMITS OF DISTURBANCE SHALL BE MOVED OR REPLACED TO REFLECT BOUNDARY OF WINTER WORK.
5. SNOW WILL NOT BE PILED WITHIN 25 FEET OF PERIMETER CONTROLS (SUCH AS SILT FENCE) TO ALLOW FOR CLEARING AND MAINTENANCE. SNOW IS TO BE REMOVED FROM ALL STRUCTURAL EROSION PREVENTION AND SEDIMENTATION CONTROL MEASURES FOLLOWING EACH SIGNIFICANT SNOWFALL. NO SNOW STORAGE UP-GRADIENT OF DISTURBANCE. NO SNOW DISPOSAL IN SEDIMENT PONDS/BASINS. IF NECESSARY, SNOW/ICE MUST BE REMOVED PRIOR TO STABILIZATION OF DISTURBED AREAS. ACCESS POINTS SHALL BE ENLARGED AND STABILIZED TO ALLOW FOR SNOW STOCKPILING.
6. IN AREAS OF DISTURBANCE WITHIN 100 FT OF A RECEIVING WATER, SILT FENCE SHALL BE REINFORCED OR ELSE REPLACED WITH PERIMETER DIKES, SWALES OR OTHER PRACTICES RESISTANT TO THE FORCES OF SNOW LOADS.
7. DRAINAGE STRUCTURES SHALL BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS.
8. ALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE TO BE IN PLACE BY OCTOBER 15, OR IF NOT POSSIBLE, THEN PRIOR TO GROUND FREEZE.
9. MULCH IS TO BE APPLIED AT THE END OF EACH WORKDAY TO ALL EXPOSED AREAS THAT HAVE NOT YET REACHED FINAL GRADE AT TWICE THE RATE INDICATED IN THE SEEDING AND MULCHING DETAIL FOR THE REGULAR CONSTRUCTION SEASON. MULCH SHALL BE TRACKED IN OR STABILIZED WITH NETTING.
10. TO ENSURE COVER OF DISTURBED SOIL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOIL MUST BE STABILIZED AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:
    A) IF NO PRECIPITATION WITHIN 24 HOURS IS FORECAST AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
    B) DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS HOUSE FOUNDATIONS OR OPEN UTILITY TRENCHES.
11. SNOW AND ICE SHALL BE REMOVED TO LESS THAN 1" THICKNESS PRIOR TO STABILIZATION.
12. STONE STABILIZATION, 10 TO 20 FT WIDE IN AREAS SUCH AS THE PERIMETER OF BUILDINGS UNDER CONSTRUCTION WHERE CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED SHALL BE INSTALLED.

GENERAL EROSION CONTROL NOTES
1. THE "ON-SITE EROSION CONTROL PLAN COORDINATOR" SHALL BE THE GENERAL CONTRACTOR, THIS INDIVIDUAL SHALL BE PRESENT ON-SITE FROM DAY-TO-DAY, AND SHALL BE RESPONSIBLE FOR ENSURING THAT THE EROSION CONTROL MEASURES REQUIRED BY THE EROSION CONTROL PLAN, DETAILS AND NOTES, ARE PROPERLY INSTALLED AND MAINTAINED. THE ONSITE EROSION CONTROL PLAN COORDINATOR SHALL KEEP A WRITTEN RECORD OF INSPECTIONS AND MAINTENANCE OF EROSION CONTROL FEATURES. A COPY OF THESE PLANS AND INSPECTION/MAINTENANCE RECORDS SHALL BE KEPT ONSITE AT ALL TIMES.
2. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE DISTURBED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS DISTURBED, THE DISTURBANCE SHALL BE KEPT TO THE SHORTEST PRACTICAL DURATION AS APPROVED BY THE OWNER'S REP.
3. DUST SHALL BE CONTROLLED WITH WATER DISTRIBUTED BY A TRUCK MOUNTED SPRAY BAR. CALCIUM CHLORIDE(AASHTO M 144) OR SODIUM CHLORIDE (AASHTO M 143) SHALL BE USED AS DIRECTED BY THE OWNER'S REP.
4. ALL EROSION AND STORMWATER CONTROL SYSTEMS SHALL BE INSPECTED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF THE OCCURRENCE OF A STORM EVENT OF 0.5" OR GREATER. NEEDED REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE REMOVED AS THEY ACCUMULATE AND PLACED IN AREAS WHERE FURTHER EROSION IS UNLIKELY.
5. A REPORT, STAMPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, SHALL BE WRITTEN WITHIN 24 HOURS OF EACH INSPECTION THAT;
    A) DESCRIBES THE PROGRESS OF THE PROJECT, INCLUDING WHETHER ALL CONDITIONS OF THE PERMIT ARE BEING MET AND, IF NOT, WHICH REQUIREMENTS ARE NOT BEING MET;
    B) IF ANY REQUIREMENTS ARE NOT BEING MET, AN EXPLANATION OF THE CORRECTIVE ACTION(S) THAT WILL BE OR ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE WITH APPLICABLE REQUIREMENTS AND THE DEADLINE BY WHICH SUCH ACTIONS WILL BE COMPLETED; AND
    C) INCLUDES PHOTOGRAPHS OF THE SITE THAT ARE REPRESENTATIVE OF THE PROJECT; AND
6. RETAIN A COPY OF THE REPORT PREPARED PURSUANT TO (5), ABOVE, ON-SITE FOR REVIEW DURING SITE INSPECTIONS BY FEDERAL, STATE, AND LOCAL OFFICIALS
7. ALL PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
8. DETENTION BASINS AND SWALES SHALL BE INSTALLED PRIOR TO ROUGH GRADING THE SITE.
9. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
10. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
11. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    – BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
    – A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
    – A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
    – EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
13. LOT DISTURBANCE OTHER THAN THAT SHOWN ON THE APPROVED PLANS SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.
14. THE APPLICANT SHALL NOTIFY IN WRITING DES WETLANDS BUREAU AND THE LEBANON CONSERVATION COMMISSION OF THEIR INTENTION TO COMMENCE CONSTRUCTION NO LESS THAN FIVE (5) BUSINESS DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
15. APPROPRIATE SILTATION/EROSION/TURBIDITY CONTROLS SHALL BE IN PLACE PRIOR TO CONSTRUCTION, SHALL BE MAINTAINED DURING CONSTRUCTION, AND REMAIN IN PLACE UNTIL THE AREA IS STABILIZED. SILT FENCE(S) MUST BE REMOVED ONCE THE AREA IS STABILIZED.
16. DISCHARGE FROM DEWATERING OF WORK AREAS SHALL BE TO SEDIMENT BASINS THAT ARE:
    A) LOCATED IN UPLANDS,
    B) LINED WITH HAY BALES OR OTHER ACCEPTABLE SEDIMENT TRAPPING LINERS;
    C) SET BACK AS FAR AS POSSIBLE FROM WETLANDS AND SURFACE WATERS, IN ALL CASES WITH A MINIMUM OF 20 FEET OF UNDISTURBED VEGETATED BUFFER.
17. WITHIN THREE DAYS OF FINAL GRADING, ALL EXPOSED SOIL AREAS SHALL BE STABILIZED BY SEEDING AND MULCHING DURING THE GROWING SEASON, OR IF NOT WITHIN THE GROWING SEASON, BY MULCHING WITH TACK OR NETTING AND PINNING ON SLOPES STEEPER THAN 3:1.
18. WHERE CONSTRUCTION ACTIVITIES HAVE BEEN TEMPORARILY SUSPENDED WITHIN THE GROWING SEASON, ALL EXPOSED SOIL AREAS SHALL BE STABILIZED WITHIN 14 DAYS BY SEEDING AND MULCHING.
19. WHERE CONSTRUCTION ACTIVITIES HAVE BEEN TEMPORARILY SUSPENDED OUTSIDE THE GROWING SEASON, ALL EXPOSED AREAS SHALL BE STABILIZED WITHIN 14 DAYS BY MULCHING AND TACK. SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED BY MATTING AND PINNING.
20. PROPER HEADWALLS SHALL BE CONSTRUCTED WITHIN SEVEN DAYS OF CULVERT INSTALLATION.

EROSION CONTROL CONSTRUCTION SEQUENCE:
1. THE "ON-SITE EROSION CONTROL PLAN COORDINATOR" SHALL BE THE GENERAL CONTRACTOR, THIS INDIVIDUAL SHALL BE PRESENT ON SITE FROM DAY TO DAY, AND SHALL BE RESPONSIBLE FOR ENSURING THAT THE EROSION CONTROL MEASURES REQUIRED BY THE EROSION CONTROL PLAN, DETAILS AND NOTES, ARE PROPERLY INSTALLED AND MAINTAINED. THE ONSITE EROSION CONTROL PLAN COORDINATOR SHALL KEEP A WRITTEN RECORD OF INSPECTIONS AND MAINTENANCE OF EROSION CONTROL FEATURES. A COPY OF THESE PLANS AND INSPECTION/MAINTENANCE RECORDS SHALL BE KEPT ONSITE AT ALL TIMES.
2. HOLD PRE-CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION, WITH THE CONTRACTOR, OWNER, AND ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL EROSION CONTROL MEASURES DELINEATED ON THE PLANS AND ANY ADDITIONAL MEASURES THAT ARE NECESSARY TO MINIMIZE EROSION. THE CONTRACTOR SHALL HAVE EROSION CONTROL MATERIALS AND INSTALLATION EQUIPMENT ON SITE AT ALL TIMES.
3. IF POSSIBLE, ALL TEMPORARY EROSION CONTROL MEASURES REQUIRED FOR WORK PROPOSED DURING THE WINTER (BETWEEN OCTOBER 15 AND MAY 1), SHALL BE INSTALLED PRIOR TO OCTOBER 1.
4. PRIOR TO ANY OTHER WORK, SILT FENCES SHALL BE INSTALLED GENERALLY 10 FEET FROM THE BASE OF THE FILL SLOPES, OR AS SHOWN ON THE EROSION CONTROL PLAN. THESE SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES 6 INCHES DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
5. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT.
6. INSTALL INLET PROTECTION ON EXISTING AND NEW CATCH BASINS.
7. ROUGH GRADE AND STOCKPILE TOPSOIL SURROUNDED BY SILT FENCE.
8. STABILIZE EXPOSED SLOPES AND SOILS AS SOON AS GRADED, AND MAINTAIN UNTIL ADEQUATELY VEGETATED.
9. COMPLETE FINAL GRADING OF SITE. PLACE TOPSOIL AND PERMANENTLY VEGETATE, LANDSCAPE, AND MULCH.
10. AFTER THE SITE IS APPROVED BY THE ENGINEER AS ADEQUATELY STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.

TEMPORARY/CONSTRUCTION EROSION CONTROL MEASURES:
1. SILT FENCES SHALL BE INSTALLED GENERALLY 10 FEET FROM THE BASE OF THE FILL SLOPES, OR AS SHOWN ON THE PLANS. THESE SHALL REMAIN IN PLACE UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES 6 INCHES DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
2. INSTALL STONE CHECK DAMS IN GRASS-LINED SWALES 50 FEET ON CENTER TO PREVENT SILT FROM WASHING INTO THE DRAINAGE SYSTEM DURING CONSTRUCTION. SEDIMENT SHALL BE REMOVED FROM BEHIND THE DAMS WHEN IT BECOMES 6 INCHES DEEP. STONE CHECK DAMS SHALL BE REMOVED WHEN VEGETATION IS ESTABLISHED.
3. DROP INLET PROTECTION SHALL BE PROVIDED AROUND ALL EXISTING AND PROPOSED CATCH BASINS. PROTECTION SHALL REMAIN UNTIL ALL DISTURBED AREAS ARE STABILIZED. SEDIMENT SHALL BE REMOVED FROM DROP INLET PROTECTION WHEN THE STORAGE CAPACITY HAS BEEN APPROXIMATELY 50% FILLED. GRAVEL WILL BE CLEANED OR REPLACED WHEN IT NO LONGER DRAINS PROPERLY.
4. EXCAVATED MATERIAL FROM EARTH EXCAVATION AND DITCH DIGGING SHALL BE DISPOSED OF OFFSITE OR USED FOR PROJECT FILL MATERIAL IF DETERMINED SUITABLE BY THE OWNER'S REPRESENTATIVE.
5. STOCKPILED MATERIAL (TOPSOIL, BORROW, ETC.) SHALL HAVE SILT FENCE CONSTRUCTED AROUND THE PERIMETER. THE STOCKPILED MATERIAL SHALL BE SEEDED AND MULCHED AS SOON AS POSSIBLE TO PREVENT SOIL EROSION AND SEDIMENTATION OFF SITE. LOCATE STOCKPILES ON THE UPHILL SIDE OF DISTURBED AREAS, IF POSSIBLE. DURING WINDY CONDITIONS, STOCKPILED MATERIAL SHALL BE COVERED OR WATERED APPROPRIATELY TO PREVENT WIND EROSION.

PERMANENT EROSION CONTROL MEASURES:
1. GRASS LINED SWALES SHALL BE TOP SOILED, SODDED AND FERTILIZED AREAS WHICH EXHIBIT SIGNS OF EROSION SHALL BE RE-SODDED IMMEDIATELY AND MAINTAINED UNTIL SOD HAS PERMANENT HOLD AND IS HEALTHY.
2. WHEN CONSTRUCTION IS COMPLETED IN AN AREA, IT SHALL BE IMMEDIATELY TOP SOILED, SEEDED, FERTILIZED AND MULCHED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUED MAINTENANCE OF ALL DISTURBED AREAS, INCLUDING WATERING, UNTIL THE AREA IS INSPECTED AND ACCEPTED BY THE OWNER OR ENGINEER.
4. AFTER THE SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.
5. RE-SEEDING SHALL BE DONE UNTIL ALL AREAS ARE COMPLETELY COVERED WITH A MATURE STRAND OF GRASS. AN AREA SHALL BE CONSIDERED COVERED WHEN THE ENTIRE SURFACE CONTAINS A VERDUROUS STAND OF GRASS. AREAS THAT, IN THE OPINION OF THE ENGINEER, ARE PREDOMINATELY WEEDS SHALL BE PLOWED UP, FINE GRADED, FERTILIZED AND RE-SEEDED IN THE MANNER SPECIFIED PREVIOUSLY. EXERCISING CAUTION NOT TO CAUSE DAMAGE TO NEW OR EXISTING PLANT MATERIAL.

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Seal:

CONCEPT DESIGN

Sheet Issue Date: 10/25/23

NORTHERN STAGE HOUSING
WRJ, VT

PROJECT NO.: 22025

Drawn BY: AM Checked BY: KM

EPSC DETAILS

C3.7

APPENDIX E

NORTHERN STAGE MULTIPLEX HOUSING PROJECT

See the following pages for Drainage Analysis:

NORTHERN STAGE HOUSING

WINDSOR COUNTY, TOWN OF HARTFORD, VT

DRAINAGE ANALYSIS

OCTOBER 16, 2023

Prepared For:

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EV Project #22025

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Northern Stage Housing
Town of Hartford, VT

Drainage Report

EV Project # 22025
October 16, 2023

I Introduction

Northern Stage is seeking Site Plan Approval from the Hartford Planning Commission for the construction three approximately six unit residential buildings. The project will also require several site improvements as shown on the attached development plans.

Construction is scheduled to commence in late summer 2024.

This drainage analysis was prepared in accordance with Town of Hartford Site Plan Regulations. The improvements were designed to attenuate up to the 100-year storm event to control discharge to the Town's drainage network in Gate St. The following are the features and capabilities of the proposed drainage system:

1. The Cultec system consists of R-902HD stormwater chambers. Stormwater treatment will be achieved through infiltration of the water quality volume.
2. Post development peak runoff rates will be attenuated for the 2, 10, 25, 50 and 100-year 24-hour storm events.

II Existing Conditions

The subject properties, Lots 45-150, 45-151 and 45-152, encompasses 1.49 acres. Lots 150 and 151 both contain structures which are to be demolished with this project. Lot 152 contains a garage and parking area that is also to be removed with this project. However, two existing structures on Lot 152 are to remain.

II Proposed Work

The project will include the construction of three residential buildings, along with installing new water and sewer service connections, private utilities, stormwater piping/structures and a subsurface stormwater treatment facility.

The water quality volume calculation is as follows:

- WQv Equations:
  - WQv = (P)(Rv)(A) /12
  - P = 1" of rainfall (VT standard)

  - Rv = Runoff Coefficient = 0.05 + (0.9 * I)
  - I= % impervious draining to practice
  - A = Area draining to practice
  - A_I = Impervious area draining to practice
- WQv Calculations for area draining to PS1 (new impervious):
  - P = 1"
  - A = 1.49 acres
  - A_I = 0.52 acres
  - I = 0.52/1.49 = 0.35
  - Rv = 0.05 + (0.9 * 0.35) = 0.36 unitless
  - WQv = (1")(0.36)(1.49)/12 = 0.045 ac-ft

The outlet elevation of the infiltration basin has been set to retain and infiltrate the volume of water below the low orifice in the outlet structure.

Stormwater analysis was conducted using HydroCAD Version 10.0 to compare the pre- and post-construction conditions for the 2-, 10-, 25-, 50- and 100-year 24-hour storms. This program uses the TR-20 stormwater calculation method.

The following table shows the results of the HydroCAD analysis.

Table 1 – HydroCAD Results

	1-yr Storm	1-yr Storm	10-yr Storm	10-yr Storm	50-yr Storm	50-yr Storm	100-yr Storm	100-yr Storm
	cfs	cf	cfs	cf	cfs	cf	cfs	cf
Pre-Development (POI-1)	1.32	2,818	2.23	4,920	3.22	7,593	3.89	9,337
Post-Development (POI-1)	0.18	350	1.32	2,116	2.04	4,430	2.40	6,005
Δ(POI-1)	-1.14	-2,468	-0.91	-2,804	-1.18	-3,163	-1.49	-3,332

Additional information is provided at the end of this report and includes the following:

- NRCS Web Soil Survey – Custom Soil Report
- Extreme Precipitation Data Table for Hartford, VT
- Existing HydroCAD Model Report
- Proposed HydroCAD Model Report

Soil Erosion and Sedimentation Control

Standard erosion and sedimentation control measures will need to be implemented during construction of the project. Inlet protections will be required around existing culvert and catch basin inlets. Silt fencing is proposed, where indicated. A stone construction entrance will be implemented to prevent vehicles from transporting dirt and soil off the site. Once final grades are established, landscaping features will be installed for the project area. The project will

disrupt more than one acre of land and therefore will require a Stormwater Pollution Prevention Plan and Notice of Intent to be filed with the State of Vermont.

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	Vermont
Location	
Longitude	72.321 degrees West
Latitude	43.648 degrees North
Elevation	0 feet
Date/Time	Tue, 21 Jun 2022 11:59:18 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.01	**1yr**	0.70	0.93	1.16	1.43	1.75	2.14	2.41	**1yr**	1.90	2.32	2.68	3.28	3.77	**1yr**
2yr	0.31	0.47	0.59	0.77	0.97	1.21	**2yr**	0.84	1.10	1.39	1.70	2.06	2.49	2.79	**2yr**	2.20	2.69	3.13	3.74	4.28	**2yr**
5yr	0.36	0.56	0.71	0.95	1.21	1.52	**5yr**	1.05	1.39	1.74	2.12	2.55	3.05	3.45	**5yr**	2.70	3.32	3.84	4.51	5.13	**5yr**
10yr	0.41	0.64	0.81	1.10	1.44	1.81	**10yr**	1.24	1.65	2.08	2.52	3.01	3.56	4.05	**10yr**	3.15	3.89	4.49	5.20	5.89	**10yr**
25yr	0.48	0.77	0.98	1.35	1.80	2.27	**25yr**	1.55	2.08	2.61	3.15	3.74	4.37	5.00	**25yr**	3.87	4.81	5.51	6.27	7.08	**25yr**
50yr	0.55	0.89	1.13	1.58	2.13	2.71	**50yr**	1.84	2.48	3.11	3.74	4.40	5.11	5.88	**50yr**	4.52	5.65	6.44	7.23	8.13	**50yr**
100yr	0.62	1.01	1.30	1.85	2.53	3.23	**100yr**	2.18	2.96	3.70	4.43	5.19	5.97	6.90	**100yr**	5.28	6.64	7.53	8.34	9.34	**100yr**
200yr	0.72	1.17	1.52	2.18	3.00	3.84	**200yr**	2.59	3.53	4.40	5.25	6.11	6.98	8.11	**200yr**	6.18	7.80	8.81	9.63	10.74	**200yr**
500yr	0.86	1.42	1.85	2.69	3.77	4.83	**500yr**	3.25	4.46	5.53	6.57	7.58	8.59	10.05	**500yr**	7.60	9.66	10.85	11.65	12.92	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.46	0.61	0.75	0.83	1yr	0.65	0.81	0.96	1.24	1.53	1.86	2.07	1yr	1.65	1.99	2.40	3.00	3.57	1yr
2yr	0.30	0.46	0.56	0.76	0.94	1.10	2yr	0.81	1.07	1.24	1.61	2.05	2.43	2.69	2yr	2.15	2.59	3.05	3.65	4.19	2yr
5yr	0.34	0.52	0.65	0.89	1.13	1.31	5yr	0.97	1.28	1.49	1.88	2.39	2.85	3.23	5yr	2.52	3.10	3.55	4.22	4.82	5yr
10yr	0.38	0.58	0.72	1.00	1.29	1.49	10yr	1.12	1.46	1.69	2.12	2.67	3.20	3.68	10yr	2.83	3.54	3.99	4.71	5.34	10yr
25yr	0.43	0.66	0.82	1.17	1.54	1.77	25yr	1.33	1.73	2.01	2.47	3.07	3.74	4.35	25yr	3.31	4.18	4.63	5.39	6.15	25yr
50yr	0.48	0.73	0.91	1.31	1.76	2.02	50yr	1.52	1.98	2.29	2.78	3.41	4.22	5.00	50yr	3.73	4.80	5.17	5.99	6.84	50yr
100yr	0.54	0.82	1.02	1.48	2.03	2.29	100yr	1.75	2.24	2.61	3.12	3.80	4.76	5.62	100yr	4.21	5.40	5.76	6.68	7.62	100yr
200yr	0.61	0.91	1.15	1.67	2.33	2.61	200yr	2.01	2.55	2.97	3.50	4.26	5.38	6.52	200yr	4.76	6.27	6.43	7.45	8.50	200yr
500yr	0.71	1.06	1.36	1.97	2.81	3.08	500yr	2.42	3.01	3.54	4.07	4.93	6.32	7.81	500yr	5.60	7.51	7.46	8.62	9.85	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.53	0.72	0.88	1.02	1yr	0.76	1.00	1.17	1.52	1.89	2.32	2.63	1yr	2.05	2.53	2.87	3.48	3.96	1yr
2yr	0.32	0.49	0.60	0.81	1.00	1.18	2yr	0.87	1.16	1.34	1.71	2.17	2.58	2.90	2yr	2.29	2.79	3.28	3.89	4.44	2yr
5yr	0.39	0.61	0.75	1.04	1.32	1.54	5yr	1.14	1.50	1.72	2.16	2.71	3.26	3.69	5yr	2.88	3.55	4.13	4.79	5.48	5yr
10yr	0.47	0.73	0.90	1.26	1.62	1.89	10yr	1.40	1.85	2.10	2.61	3.22	3.90	4.49	10yr	3.45	4.31	4.94	5.67	6.44	10yr
25yr	0.60	0.91	1.13	1.62	2.13	2.50	25yr	1.84	2.45	2.77	3.34	4.04	4.94	5.82	25yr	4.37	5.60	6.30	7.09	7.98	25yr
50yr	0.72	1.09	1.36	1.95	2.63	3.10	50yr	2.27	3.03	3.40	4.03	4.80	5.92	7.09	50yr	5.24	6.82	7.57	8.39	9.40	50yr
100yr	0.86	1.30	1.63	2.36	3.24	3.82	100yr	2.79	3.74	4.20	4.86	5.73	7.10	8.60	100yr	6.28	8.27	9.10	9.94	11.07	100yr
200yr	1.04	1.56	1.98	2.86	3.99	4.73	200yr	3.44	4.63	5.18	5.88	6.82	8.50	10.52	200yr	7.52	10.12	10.96	11.78	13.03	200yr
500yr	1.33	1.98	2.55	3.70	5.27	6.28	500yr	4.55	6.14	6.83	7.55	8.59	10.80	13.60	500yr	9.56	13.08	14.02	14.77	16.16	500yr

Powered by ACIS
Northeast Regional Climate Center

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 Windsor County, Vermont

Northern Stage



June 16, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

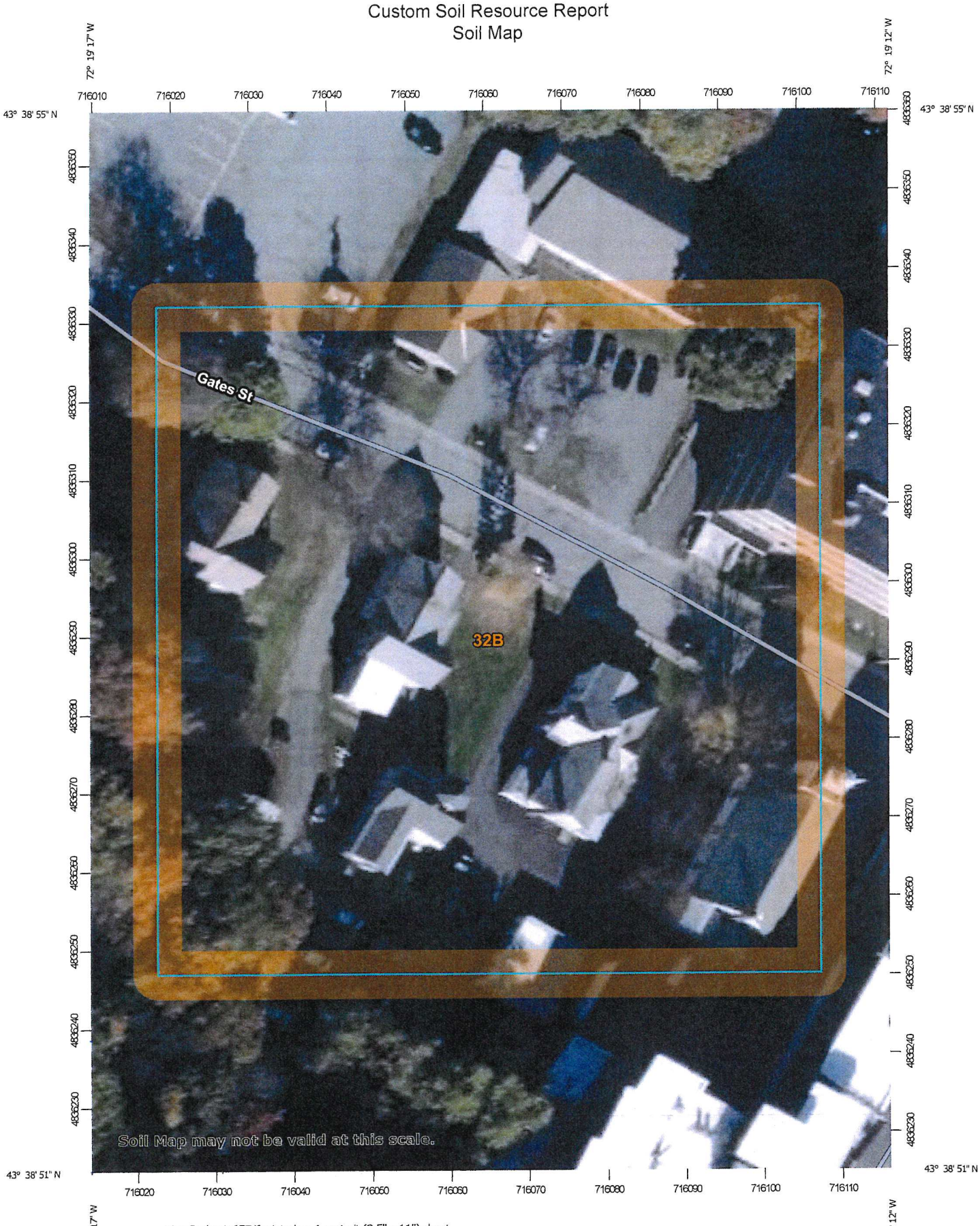
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:657 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 30 60 120 180

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Windsor County, Vermont
Survey Area Data: Version 25, Sep 7, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
32B	Urban land-Windsor-Agawam complex, 0 to 8 percent slopes	1.8	100.0%
Totals for Area of Interest		1.8	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,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Windsor County, Vermont

32B—Urban land-Windsor-Agawam complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w2ww
Elevation: 290 to 1,100 feet
Mean annual precipitation: 36 to 53 inches
Mean annual air temperature: 41 to 54 degrees F
Frost-free period: 140 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 45 percent
Windsor and similar soils: 20 percent
Agawam and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Typical profile

M - 0 to 10 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

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

Description of Windsor

Setting

Landform: Outwash plains, outwash deltas, moraines, kames, eskers, outwash terraces, kame terraces
Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

A - 0 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand

C - 25 to 65 inches: sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Description of Agawam

Setting

Landform: Kames, moraines, outwash terraces, outwash plains, kame terraces
Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from gneiss, granite, schist, and/or phyllite

Typical profile

Ap - 0 to 11 inches: fine sandy loam
Bw1 - 11 to 16 inches: fine sandy loam
Bw2 - 16 to 26 inches: fine sandy loam
2C1 - 26 to 45 inches: loamy fine sand
2C2 - 45 to 55 inches: loamy fine sand
2C3 - 55 to 65 inches: loamy sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 15 to 35 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
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: B
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Minor Components

Eldridge

Percent of map unit: 4 percent
Landform: Lake plains, lake terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Ninigret

Percent of map unit: 4 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Hitchcock

Percent of map unit: 4 percent
Landform: Outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Hinckley

Percent of map unit: 3 percent
Landform: Outwash deltas, moraines, kames, eskers, outwash plains, kame terraces, outwash terraces
Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

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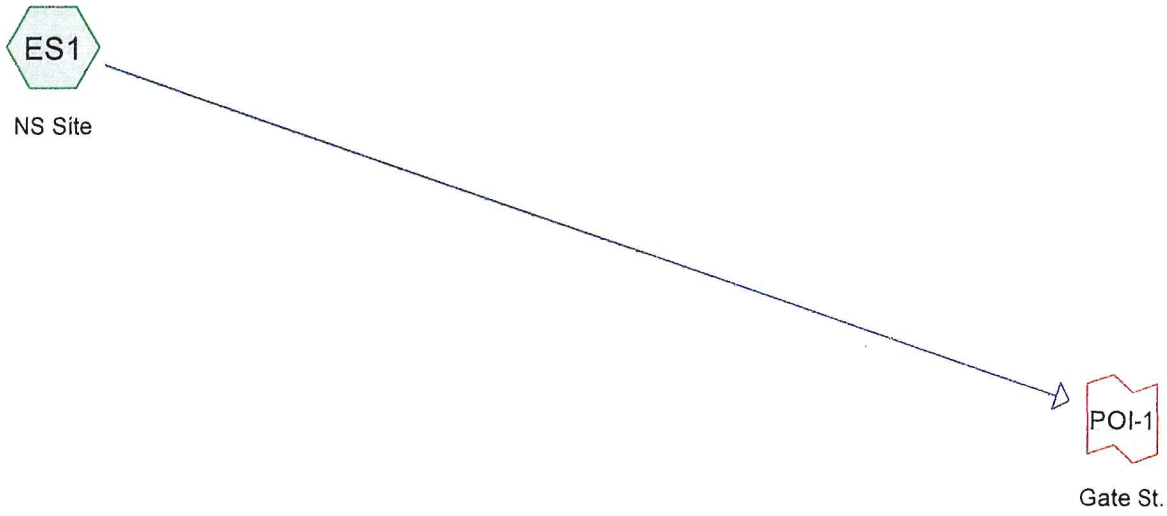


Subcat Reach Pond Link

Routing Diagram for 22025 NS Pre
Prepared by Engineering Ventures, Inc, Printed 10/13/2023
HydroCAD® 10.20-2g s/n 02106 © 2022 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
27,157	39	>75% Grass cover, Good, HSG A (ES1)
18,690	98	Paved parking, HSG A (ES1)
15,859	30	Woods, Good, HSG A (ES1)
61,706	**55**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
61,706	HSG A	ES1
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
61,706		**TOTAL AREA**

Time span=0.00-20.00 hrs, dt=0.01 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentES1: NS Site Runoff Area=61,706 sf 30.29% Impervious Runoff Depth>0.55"
Tc=5.0 min CN=WQ Runoff=1.32 cfs 2,818 cf

Link POI-1: Gate St. Inflow=1.32 cfs 2,818 cf
Primary=1.32 cfs 2,818 cf

Total Runoff Area = 61,706 sf Runoff Volume = 2,818 cf Average Runoff Depth = 0.55"
69.71% Pervious = 43,016 sf 30.29% Impervious = 18,690 sf

Time span=0.00-20.00 hrs, dt=0.01 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentES1: NS Site Runoff Area=61,706 sf 30.29% Impervious Runoff Depth>0.96"
Tc=5.0 min CN=WQ Runoff=2.23 cfs 4,920 cf

Link POI-1: Gate St. Inflow=2.23 cfs 4,920 cf
Primary=2.23 cfs 4,920 cf

Total Runoff Area = 61,706 sf Runoff Volume = 4,920 cf Average Runoff Depth = 0.96"
69.71% Pervious = 43,016 sf 30.29% Impervious = 18,690 sf

Time span=0.00-20.00 hrs, dt=0.01 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentES1: NS Site Runoff Area=61,706 sf 30.29% Impervious Runoff Depth>1.48"
Tc=5.0 min CN=WQ Runoff=3.22 cfs 7,593 cf

Link POI-1: Gate St. Inflow=3.22 cfs 7,593 cf
Primary=3.22 cfs 7,593 cf

Total Runoff Area = 61,706 sf Runoff Volume = 7,593 cf Average Runoff Depth = 1.48"
69.71% Pervious = 43,016 sf 30.29% Impervious = 18,690 sf

Time span=0.00-20.00 hrs, dt=0.01 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentES1: NS Site Runoff Area=61,706 sf 30.29% Impervious Runoff Depth>1.82"
Tc=5.0 min CN=WQ Runoff=3.89 cfs 9,337 cf

Link POI-1: Gate St. Inflow=3.89 cfs 9,337 cf
Primary=3.89 cfs 9,337 cf

Total Runoff Area = 61,706 sf Runoff Volume = 9,337 cf Average Runoff Depth = 1.82"
69.71% Pervious = 43,016 sf 30.29% Impervious = 18,690 sf

Time span=0.00-20.00 hrs, dt=0.01 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentES1: NS Site Runoff Area=61,706 sf 30.29% Impervious Runoff Depth>0.23"
Tc=5.0 min CN=WQ Runoff=0.58 cfs 1,158 cf

Link POI-1: Gate St. Inflow=0.58 cfs 1,158 cf
Primary=0.58 cfs 1,158 cf

Total Runoff Area = 61,706 sf Runoff Volume = 1,158 cf Average Runoff Depth = 0.23"
69.71% Pervious = 43,016 sf 30.29% Impervious = 18,690 sf

Summary for Subcatchment ES1: NS Site

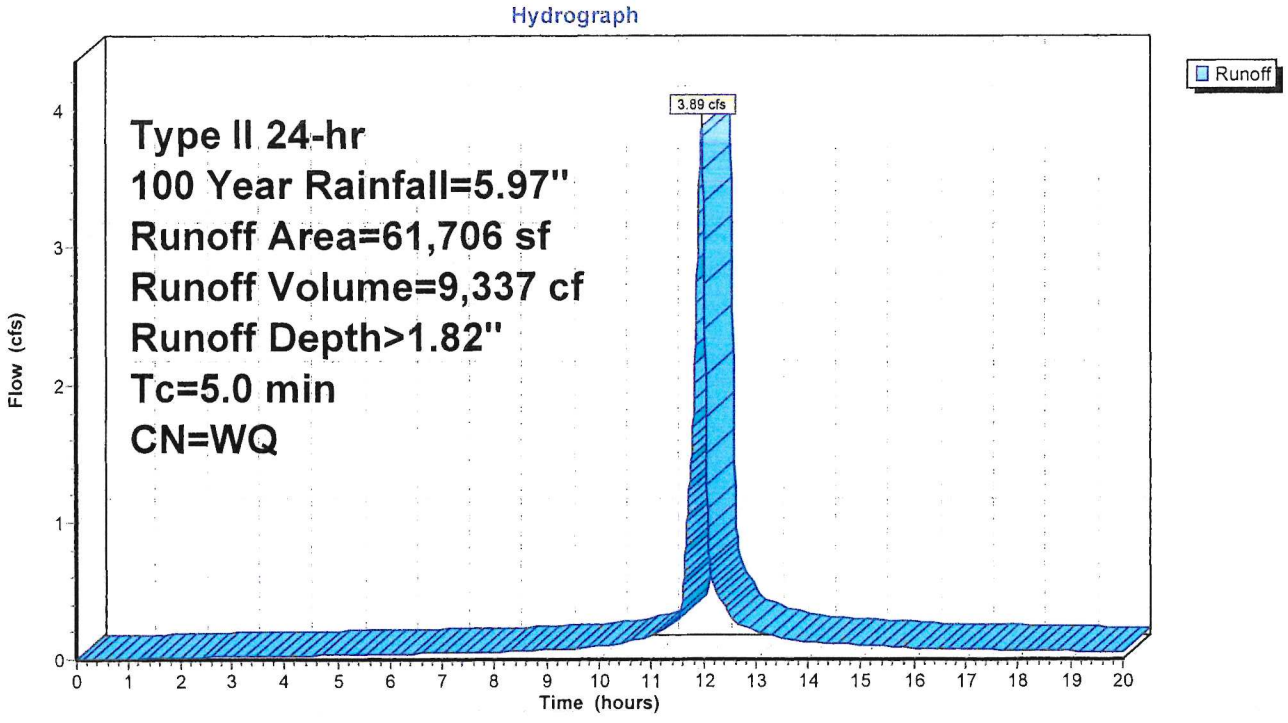
Runoff = 3.89 cfs @ 11.96 hrs, Volume= 9,337 cf, Depth> 1.82"
Routed to Link POI-1 : Gate St.

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type II 24-hr 100 Year Rainfall=5.97"

Area (sf)	CN	Description
18,690	98	Paved parking, HSG A
27,157	39	>75% Grass cover, Good, HSG A
15,859	30	Woods, Good, HSG A
61,706		Weighted Average
43,016		69.71% Pervious Area
18,690		30.29% Impervious Area

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

Subcatchment ES1: NS Site

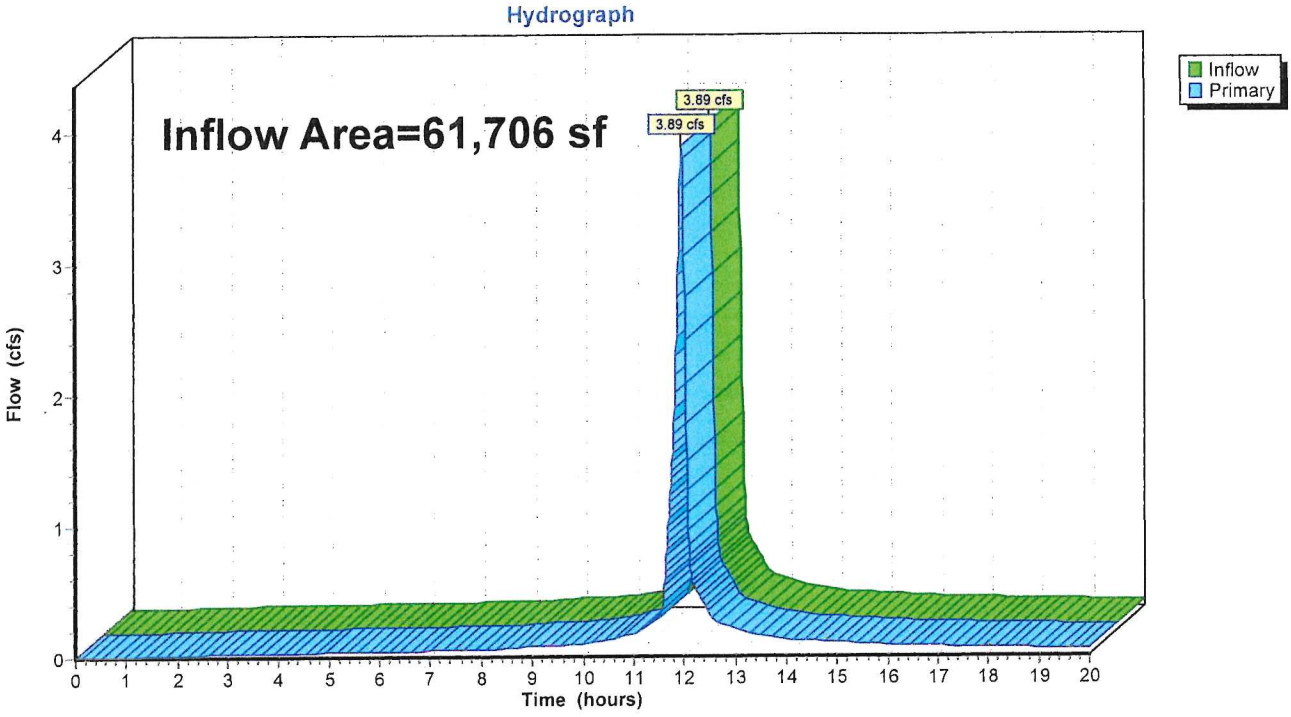


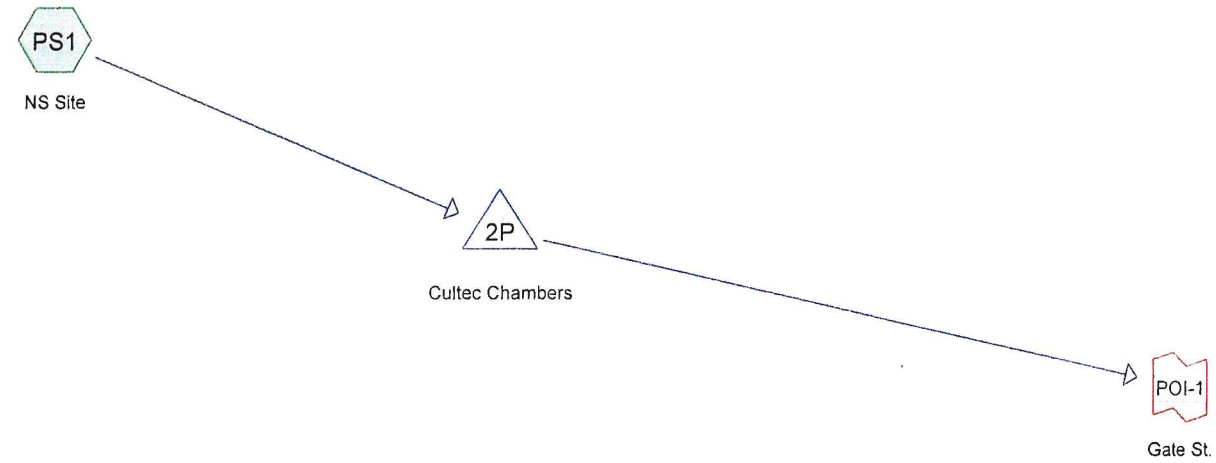
Summary for Link POI-1: Gate St.

Inflow Area = 61,706 sf, 30.29% Impervious, Inflow Depth > 1.82" for 100 Year event
Inflow = 3.89 cfs @ 11.96 hrs, Volume= 9,337 cf
Primary = 3.89 cfs @ 11.96 hrs, Volume= 9,337 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

Link POI-1: Gate St.





Subcat Reach Pond Link

Routing Diagram for 22025 NS Post
Prepared by Engineering Ventures, Inc, Printed 10/13/2023
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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
19,184	39	>75% Grass cover, Good, HSG A (PS1)
26,663	98	Paved parking, HSG A (PS1)
15,859	30	Woods, Good, HSG A (PS1)
61,706	**62**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
61,706	HSG A	PS1
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
61,706		**TOTAL AREA**

Time span=0.00-20.00 hrs, dt=0.01 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPS1: NS Site Runoff Area=61,706 sf 43.21% Impervious Runoff Depth>0.78"
Tc=5.0 min CN=WQ Runoff=1.89 cfs 4,020 cf

Pond 2P: Cultec Chambers Peak Elev=355.23' Storage=1,583 cf Inflow=1.89 cfs 4,020 cf
Discarded=0.11 cfs 3,665 cf Primary=0.18 cfs 350 cf Outflow=0.29 cfs 4,014 cf

Link POI-1: Gate St. Inflow=0.18 cfs 350 cf
Primary=0.18 cfs 350 cf

Total Runoff Area = 61,706 sf Runoff Volume = 4,020 cf Average Runoff Depth = 0.78"
56.79% Pervious = 35,043 sf 43.21% Impervious = 26,663 sf

Time span=0.00-20.00 hrs, dt=0.01 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPS1: NS Site Runoff Area=61,706 sf 43.21% Impervious Runoff Depth>1.36"
Tc=5.0 min CN=WQ Runoff=3.19 cfs 7,011 cf

Pond 2P: Cultec Chambers Peak Elev=355.95' Storage=2,394 cf Inflow=3.19 cfs 7,011 cf
Discarded=0.12 cfs 4,794 cf Primary=1.32 cfs 2,116 cf Outflow=1.43 cfs 6,910 cf

Link POI-1: Gate St. Inflow=1.32 cfs 2,116 cf
Primary=1.32 cfs 2,116 cf

Total Runoff Area = 61,706 sf Runoff Volume = 7,011 cf Average Runoff Depth = 1.36"
56.79% Pervious = 35,043 sf 43.21% Impervious = 26,663 sf

Time span=0.00-20.00 hrs, dt=0.01 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPS1: NS Site Runoff Area=61,706 sf 43.21% Impervious Runoff Depth>2.05"
Tc=5.0 min CN=WQ Runoff=4.60 cfs 10,551 cf

Pond 2P: Cultec Chambers Peak Elev=356.80' Storage=3,324 cf Inflow=4.60 cfs 10,551 cf
Discarded=0.12 cfs 5,459 cf Primary=2.04 cfs 4,430 cf Outflow=2.16 cfs 9,889 cf

Link POI-1: Gate St. Inflow=2.04 cfs 4,430 cf
Primary=2.04 cfs 4,430 cf

Total Runoff Area = 61,706 sf Runoff Volume = 10,551 cf Average Runoff Depth = 2.05"
56.79% Pervious = 35,043 sf 43.21% Impervious = 26,663 sf

Time span=0.00-20.00 hrs, dt=0.01 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPS1: NS Site Runoff Area=61,706 sf 43.21% Impervious Runoff Depth>2.47"
Tc=5.0 min CN=WQ Runoff=5.46 cfs 12,714 cf

Pond 2P: Cultec Chambers Peak Elev=357.37' Storage=3,895 cf Inflow=5.46 cfs 12,714 cf
Discarded=0.13 cfs 5,765 cf Primary=2.40 cfs 6,005 cf Outflow=2.53 cfs 11,771 cf

Link POI-1: Gate St. Inflow=2.40 cfs 6,005 cf
Primary=2.40 cfs 6,005 cf

Total Runoff Area = 61,706 sf Runoff Volume = 12,714 cf Average Runoff Depth = 2.47"
56.79% Pervious = 35,043 sf 43.21% Impervious = 26,663 sf

Time span=0.00-20.00 hrs, dt=0.01 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPS1: NS Site Runoff Area=61,706 sf 43.21% Impervious Runoff Depth>0.32"
Tc=5.0 min CN=WQ Runoff=0.83 cfs 1,652 cf

Pond 2P: Cultec Chambers Peak Elev=354.39' Storage=592 cf Inflow=0.83 cfs 1,652 cf
Discarded=0.11 cfs 1,649 cf Primary=0.00 cfs 0 cf Outflow=0.11 cfs 1,649 cf

Link POI-1: Gate St. Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 61,706 sf Runoff Volume = 1,652 cf Average Runoff Depth = 0.32"
56.79% Pervious = 35,043 sf 43.21% Impervious = 26,663 sf

Summary for Subcatchment PS1: NS Site

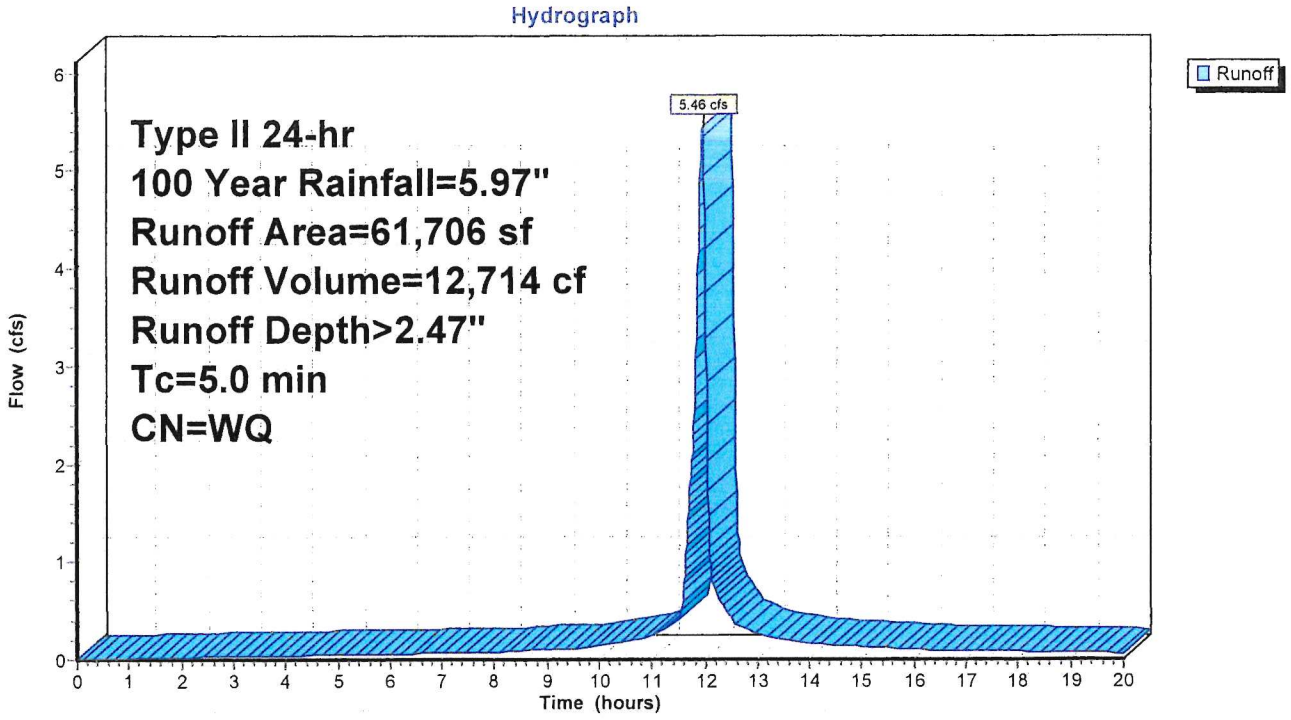
Runoff = 5.46 cfs @ 11.96 hrs, Volume= 12,714 cf, Depth> 2.47"
Routed to Pond 2P : Cultec Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type II 24-hr 100 Year Rainfall=5.97"

Area (sf)	CN	Description
26,663	98	Paved parking, HSG A
19,184	39	>75% Grass cover, Good, HSG A
15,859	30	Woods, Good, HSG A
61,706		Weighted Average
35,043		56.79% Pervious Area
26,663		43.21% Impervious Area

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

Subcatchment PS1: NS Site



Summary for Pond 2P: Cultec Chambers

Inflow Area = 61,706 sf, 43.21% Impervious, Inflow Depth > 2.47" for 100 Year event
Inflow = 5.46 cfs @ 11.96 hrs, Volume= 12,714 cf
Outflow = 2.53 cfs @ 12.05 hrs, Volume= 11,771 cf, Atten= 54%, Lag= 5.3 min
Discarded = 0.13 cfs @ 12.05 hrs, Volume= 5,765 cf
Primary = 2.40 cfs @ 12.05 hrs, Volume= 6,005 cf
Routed to Link POI-1 : Gate St.

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 357.37' @ 12.05 hrs Surf.Area= 1,434 sf Storage= 3,895 cf

Plug-Flow detention time= 58.5 min calculated for 11,765 cf (93% of inflow)
Center-of-Mass det. time= 28.6 min (746.7 - 718.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	353.50'	2,050 cf	**15.75'W x 91.03'L x 5.75'H Field A** 8,244 cf Overall - 3,118 cf Embedded = 5,126 cf x 40.0% Voids
#2A	354.25'	3,118 cf	**Cultec R-902HD** x 48 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 48 Chambers in 2 Rows Cap Storage= 2.8 cf x 2 x 2 rows = 11.0 cf
		5,169 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	353.50'	**3.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 340.00'
#2	Primary	355.00'	**12.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 355.00' / 354.00' S= 0.2000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	358.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	355.00'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.13 cfs @ 12.05 hrs HW=357.37' (Free Discharge)
└**1=Exfiltration** (Controls 0.13 cfs)

Primary OutFlow Max=2.40 cfs @ 12.05 hrs HW=357.37' (Free Discharge)
└**2=Culvert** (Passes 2.40 cfs of 5.17 cfs potential flow)
  └**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Orifice Controls 2.40 cfs @ 6.87 fps)

Pond 2P: Cultec Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-902HD (Cultec Recharger® 902HD)
Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf
Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap
Cap Storage= 2.8 cf x 2 x 2 rows = 11.0 cf

78.0" Wide + 9.0" Spacing = 87.0" C-C Row Spacing

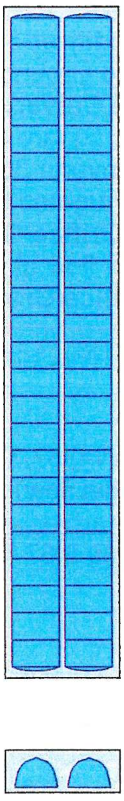
24 Chambers/Row x 3.67' Long +0.52' Cap Length x 2 = 89.03' Row Length +12.0" End Stone x 2 = 91.03' Base Length
2 Rows x 78.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 15.75' Base Width
9.0" Stone Base + 48.0" Chamber Height + 12.0" Stone Cover = 5.75' Field Height

48 Chambers x 64.7 cf + 2.8 cf Cap Volume x 2 x 2 Rows = 3,118.3 cf Chamber Storage

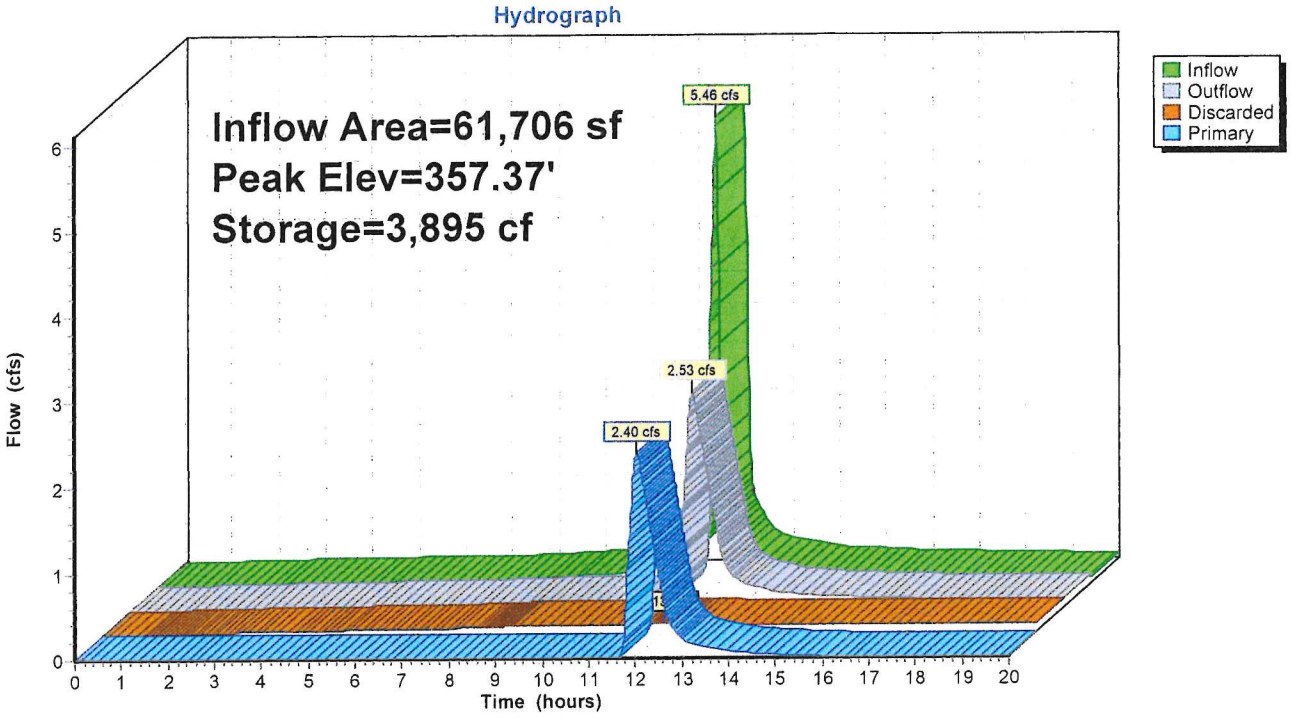
8,244.2 cf Field - 3,118.3 cf Chambers = 5,125.9 cf Stone x 40.0% Voids = 2,050.4 cf Stone Storage

Chamber Storage + Stone Storage = 5,168.7 cf = 0.119 af
Overall Storage Efficiency = 62.7%
Overall System Size = 91.03' x 15.75' x 5.75'

48 Chambers
305.3 cy Field
189.8 cy Stone



Pond 2P: Cultec Chambers

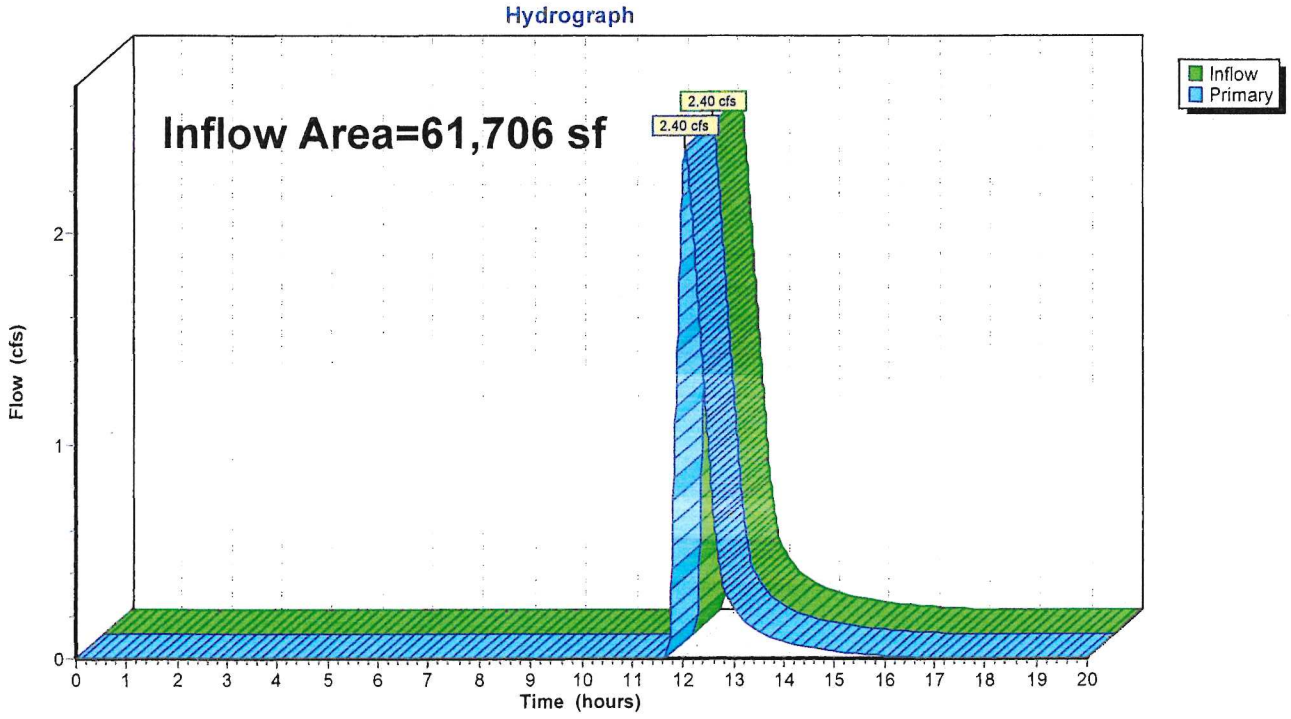


Summary for Link POI-1: Gate St.

Inflow Area = 61,706 sf, 43.21% Impervious, Inflow Depth = 1.17" for 100 Year event
Inflow = 2.40 cfs @ 12.05 hrs, Volume= 6,005 cf
Primary = 2.40 cfs @ 12.05 hrs, Volume= 6,005 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

Link POI-1: Gate St.



APPENDIX F

NORTHERN STAGE MULTIPLEX HOUSING PROJECT

See the following pages for Report on Financial Hardship of Rehabilitation of the Garage at 146 Gates Street:

July 19, 2022

Jo-Ann Ells
Zoning Administrator
Department of Planning & Development
Town of Hartford, Vermont
171 Bridge Street
White River Junction, VT 05001

RE: Northern Stage Company report on Financial Hardship of Rehabilitation of the Garage Structure at 146 Gates Street White River Junction, VT

Dear Jo-Ann,

This covering letter and the attached documents are intended to provide clear and convincing evidence that rehabilitation of the garage structure at the rear of the 146 Gates Street lot in downtown White River Junction owned by Northern Stage Company would cause the company undue financial hardship in its efforts to produce the Housing and Performing Arts Studio project that has here-to-fore been presented to the Town of Hartford's Design Review Committee on several occasions over the course of the past several months. Northern Stage Company seeks approval for the demolition of the garage building at 146 Gates Street (in order to create new surface parking as detailed in the proposed Housing and Performing Arts Studio project's site plan) under section **4-2.1.12 Demolition of Historic Buildings within the Design Review District** found in the Town of Hartford's Zoning Regulations last amended October 14, 2008, which reads in part:

> ***"The applicant shall provide evidence at the time of the demolition request that one of the following conditions has been met:***
> ***[2] Rehabilitation of the building, or portion thereof, would cause undue financial hardship. The applicant must provide clear and convincing evidence that any reasonable return cannot be obtained from the building without approval of the request for demolition."***

The attachment titled **Sheet A-101** details the garage rehabilitation project with notes pertaining to the extensive work which would need to be performed. This work has been estimated in summary in the attachment titled **Garage ROM Draft Summary**. The third attachment titled **146 Gates Street Context Document** offers some context in the form of a photo review of the garage building – past and present – as well as highlighted sections from two other documents pertaining to White River Junction's revitalization planning and design guidelines.

While it may be obvious that a $457,000+ price tag for rehabilitation of the garage is clear and convincing evidence of undue financial hardship, what may not be clear is that the rehabilitated garage would be open fronted. It would not have garage doors because the structure is not deep enough to allow many modern sized vehicles to park fully within the structure. Another factor that is not clear from the attachments is that rehabilitation of the garage reduces by seven the number of surface parking spaces shown on the current site plan for Northern Stage Company's proposed Housing and Performing Arts Studio project. Replacing these seven lost surface parking spaces is a deepening of the undue financial hardship to Northern Stage Company which has not yet been calculated. However, it is further evidence that no reasonable return can be obtained from the garage building by investing in its rehabilitation. Based on the evidence provided herewith, it is our hope that the Town of Hartford Design Review Committee as well as other committees or commissions who are or will be involved in reviewing Northern Stage Company's development proposal will approve our request for demolition of the garage building located on the 146 Gates Street property in downtown White River Junction.

Please let me know if more information is required.

Thank you for your time and consideration.

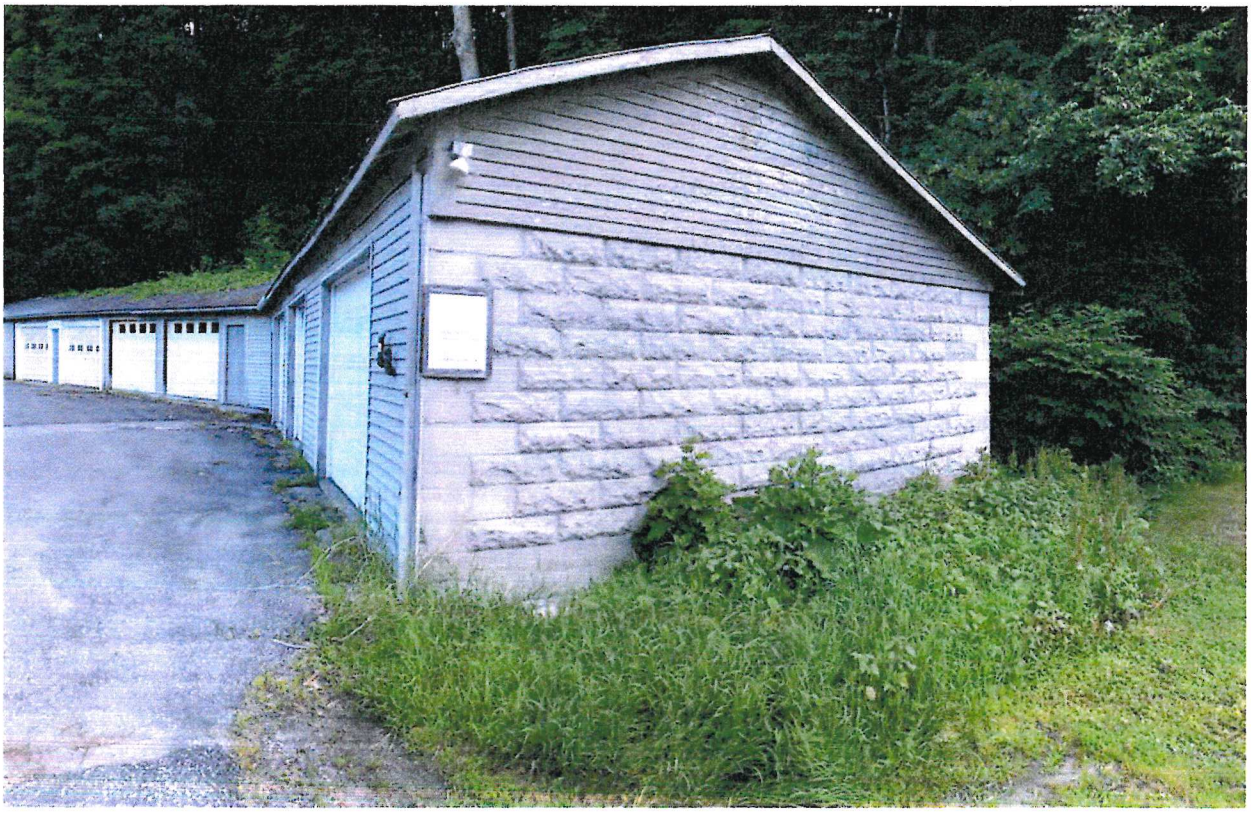
Sincerely,

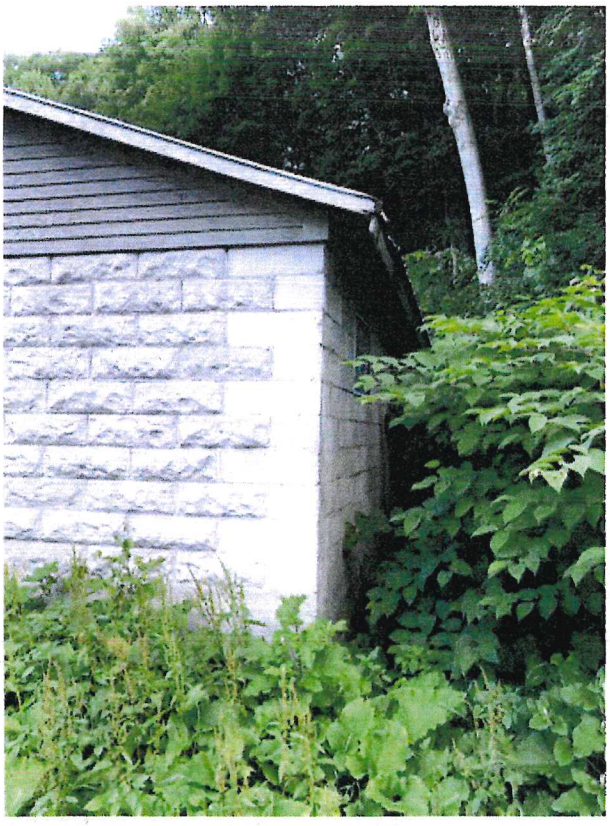
Eric Bunge – Director of Housing Project and Financial Officer
Northern Stage Company
76 Gates Street
White River Junction, VT 05001
Cell phone: 507-272-1684
Email: ebunge@northernstage.org

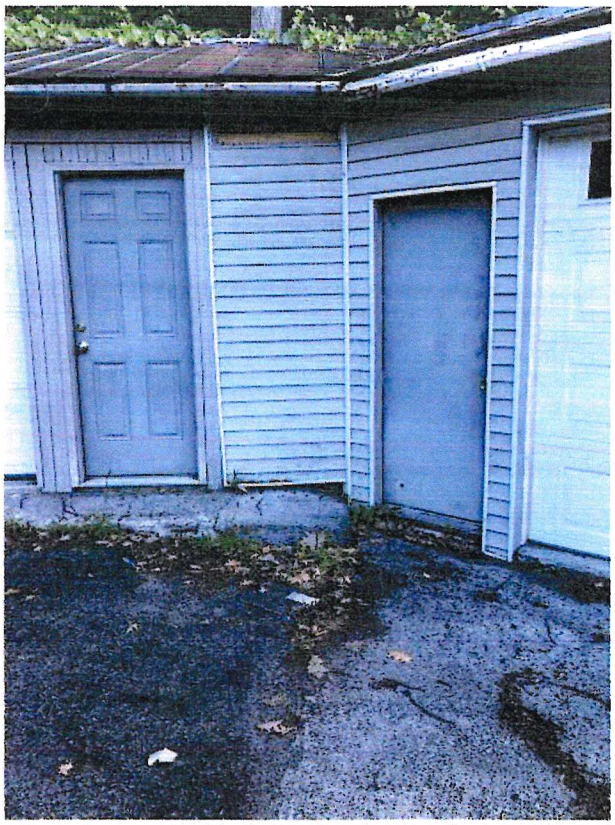
A. Automobile Garage, c. 1930, contributing

This long rock-faced concrete block garage is located behind the house. It has two sections that meet to form an obtuse angle and has thirteen continuous garage bays and a side-gable open-eave overhanging corrugated metal roof. The rolling garage doors overlap each other slightly and are mostly vertical-board doors; there is one door with diagonal bracing. A wood pedestrian door is at the juncture of the two sections. The side gables are infilled with clapboard siding. The rear elevation has regularly-spaced four-pane horizontal windows. The building is in good condition and is a good example of an early automobile garage. It was constructed sometime between the printings of the 1925 and 1941 Sanborn Insurance maps, probably closer to the former. It was constructed in the location of a late nineteenth-century wood frame hen house that had been converted to a garage around 1910.

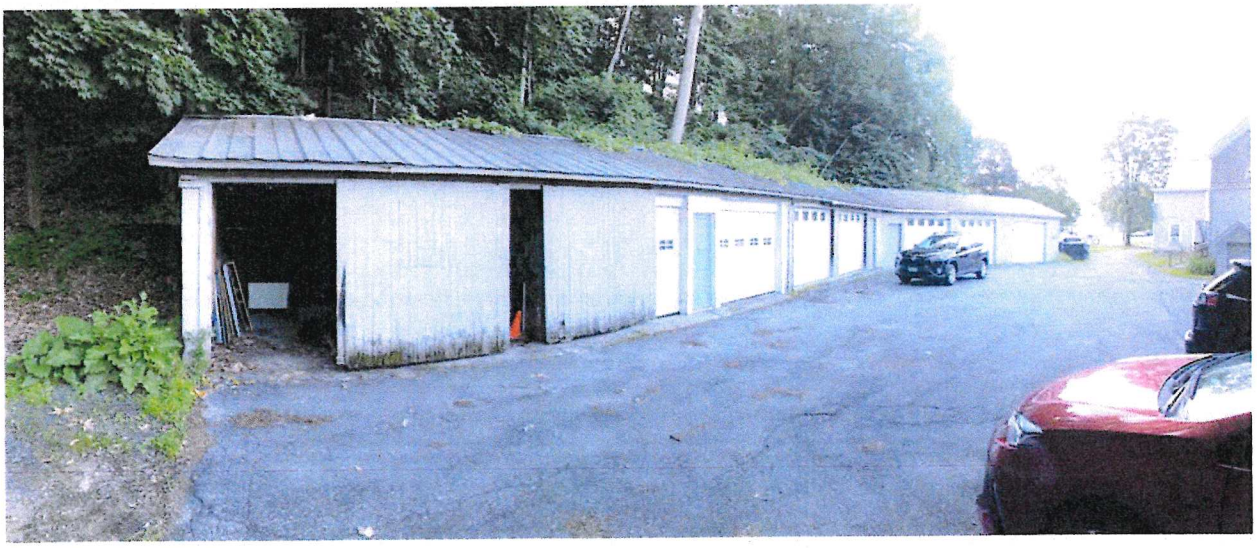












White River Junction Village
REVITALIZATION PLAN

Final Report



LANDWORKS • RESOURCE SYSTEMS GROUP • PATHWAYS, LLC

Conceptual Opportunities Plan

The Conceptual Opportunities Plan represents an exploration of potential infill and green /public spaces and corridors.

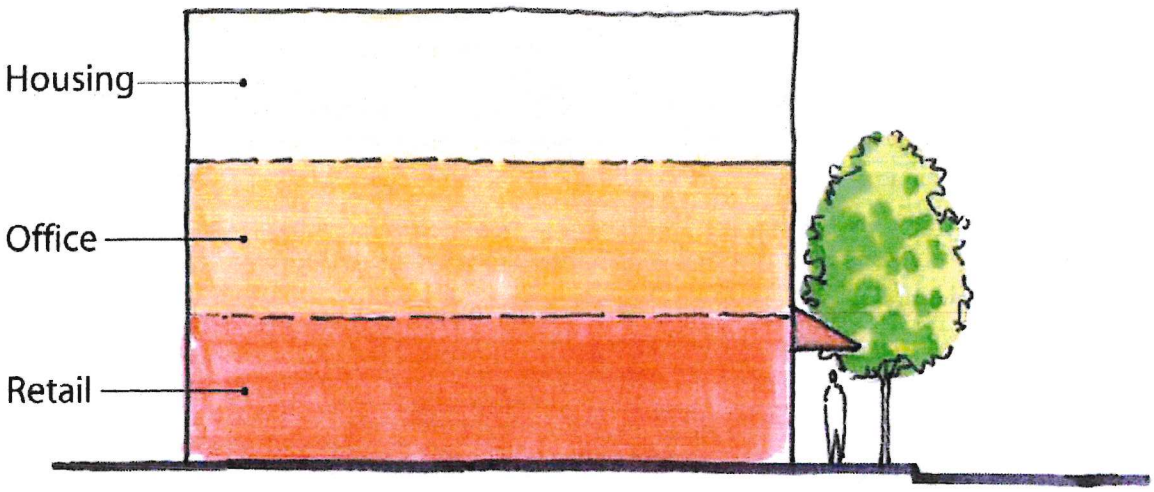
Infill. Channeling development into the core downtown makes the most sense not only from a functional and economic perspective, but also from an environmental perspective. A thriving and dynamic urban center depends on a certain critical mass of downtown housing (at a range of affordability), retail, restaurant, and entertainment opportunities (for visitors and residents alike), infrastructure to support businesses and residences (e.g. adequate parking), and a strong network of pedestrian-oriented public / civic spaces. Ideally there is also a range of employment options in the downtown or nearby to reduce reliance on automobiles and create an economic core that is not wholly dependent on tourism. LandWorks went about exploring conceptual infill opportunities both by interviewing local developers with prospective development plans and by studying the urban fabric to determine locations that could benefit from higher-density new construction.

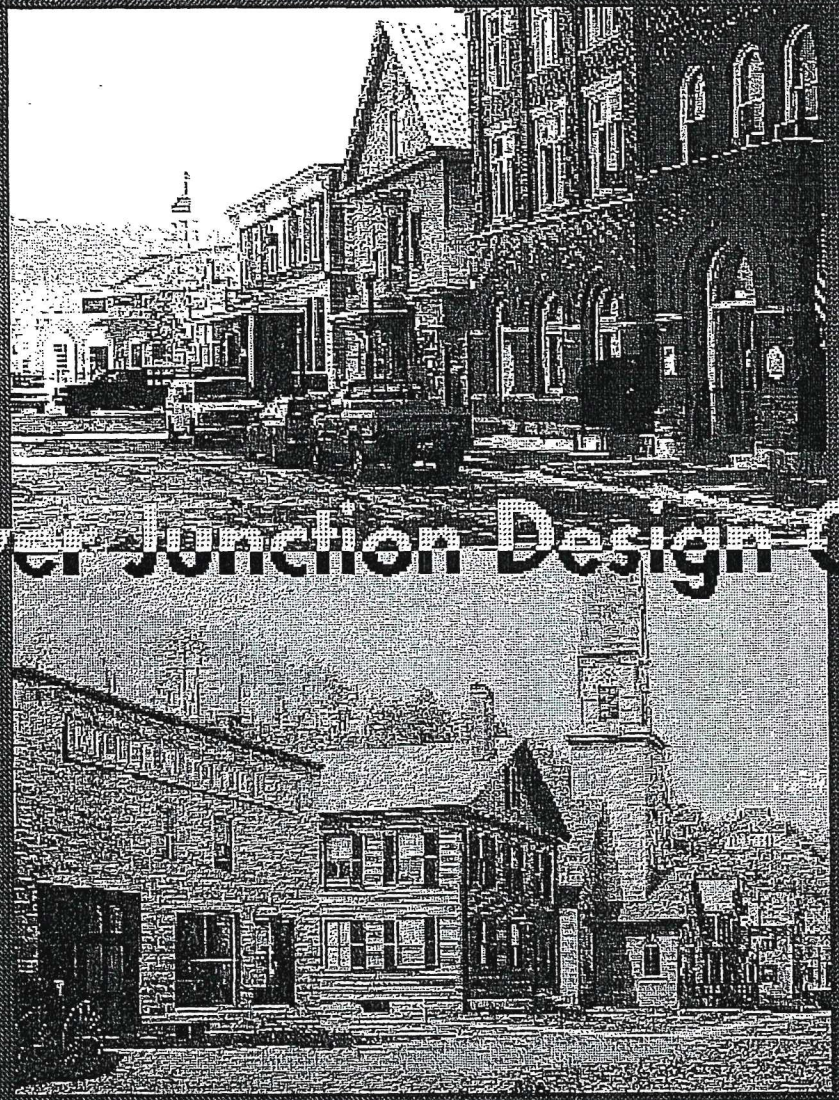
Green/Public Spaces. Like many of the potential infill areas shown on the plan, the areas of potential green /public space are intended to be conceptual in nature. One of White River Junction's most glaring aesthetic weaknesses is its excess of asphalt paving, the extent of which can be seen in the Existing Conditions: Buildings and Paving Plan, as well as in the aerial photographs. Large expanses of asphalt paving predominate certain areas, while in many cases only a portion of the paving is actually needed to support vehicular circulation and parking. The Parking Analysis performed for this assessment also tells us that there is more than adequate parking to support current use. From an environmental perspective, the excessive amount of paving also results in high volumes of stormwater runoff, which contributes to degraded water quality in the adjacent rivers. A number of the green areas shown on the Conceptual Opportunities Plan represent potential places to replace asphalt paving with permeable landscaping (e.g. parking lot buffers). Some of the green areas, however, could represent potential pedestrian corridors and plazas with attractive paving, street furniture, and street trees. The idea of creating pedestrian-oriented public spaces in the downtown is more than aesthetic. Successful urban outdoor spaces can significantly contribute to a town or city's cultural and economic vitality in a number of ways, including supporting outdoor events such as music performances, farmers and artist markets, and special seasonal events. Something as simple as sitting on a comfortable bench while sipping coffee and people-watching is another type of opportunity that attracts many people to downtown areas.

Design Principles & Elements

PLAN FOR INFILL

As stated in the Opportunities Plan narrative, concentrating future development into the downtown will enhance the economic and cultural vitality of the downtown and strengthen the existing urban fabric. There are currently a number of properties in the downtown that are empty or underutilized, do not represent the best use for the location, or could support increased densities. The general model for such infill development is a 3-story mixed-use building, with retail space on the first floor, office space on the second floor, and housing on the third floor. Actual uses for proposed infill sites will likely vary from this model due to specific programmatic requirements, but the mixed-use model serves as a good starting point. Buildings must be scaled and detailed appropriately for this downtown context, which is composed predominately of 2-3 story buildings, many of which have brick facades. Although there are a number of attractive and beautifully detailed historic buildings in the downtown, recent construction at locations such as the Tip Top and Railroad Row indicates that well-designed contemporary detailing can be integrated effectively into the historic downtown while expressing the forward-looking creative energy of local businesspeople and residents.





White River Junction Design Guidelines

PREMISE & PURPOSE

"White River Junction, has always exhibited a mix of land uses, a diversity which is extraordinary for such a small, compact downtown. The designated downtown area, which includes the historic district, comprises about 30 acres. Land uses include retail and commercial, warehousing, governmental, office space, residential, cultural and industrial. White River Junction in the 21st century is also developing as a cultural heritage tourism destination; the new visitor center is evidence of that, along with the guided walking tour and historic markers which interpret the architectural and land use history of this town, considered to be a "Gateway" to the Green Mountain State."

White River Junction Design Plan

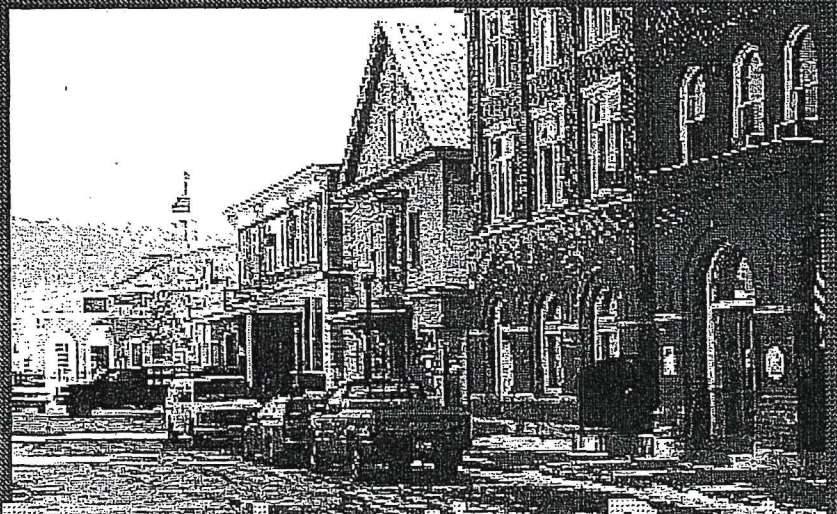
As White River Junction continues to evolve into the 21st century, it becomes increasingly important to preserve the Village's heritage and to ensure that future development respects the established design patterns. These Design Guidelines aim to provide greater understanding and guidance to citizens, property owners and reviewing Boards about community goals and principles for architectural design, historic preservation, site and streetscape design and sign placement and design. They are intended for use in conjunction with the *White River Junction Design Plan*, which provides specifics with regards to special characteristics, architectural styles, landmarks and settlement patterns within the District.

These Guidelines are intended to help involved parties recognize the treasured and defining features of White River Junction so that their design decisions may enhance the Village character. The Guidelines do not act as requirements, but recommendations that serve to clarify the numerous choices present in any design project.

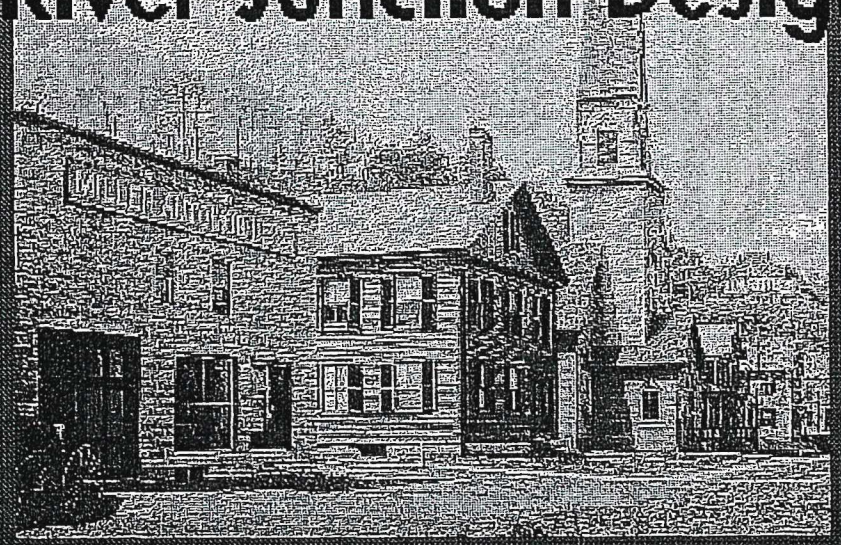
These Guidelines are not intended to force property owners to only rehabilitate or replicate. Although reuse of existing buildings is encouraged wherever possible, new construction is appropriate when designed with sensitivity to the historic character and features addressed in these Guidelines.

For purposes of clarity, each design element is described individually throughout the guidelines. However, it is important to recognize that no element exists in isolation and that the interaction of elements is equally important to the integrity of the design.

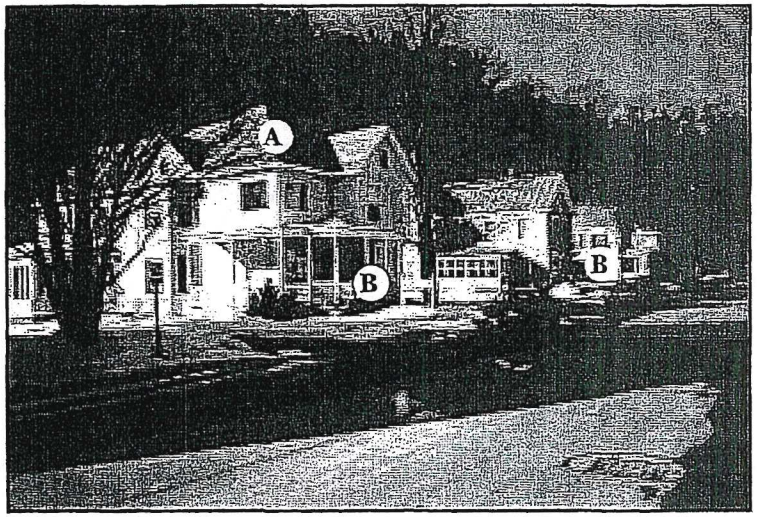
Above all, the main goal of these Guidelines is to assist the Village in making educated design decisions; the basic principles of good design are timeless and their implementation addresses the quality of life and function of the district which inevitably will enhance the character of White River Junction.



White River Junction Design Plan



CHARACTER & STREETSCAPE : GATES STREET



Residential end of Gates Street, looking northwest

Contributes to sense of place & history

A) Scale and materials reflect the building's prominence.

B) Residential character is emphasized by clapboard siding, bay windows, front porches, and landscaped yards.

Northern Stage Housing : Garage

Restoration ROM 7/21/11

Estimate

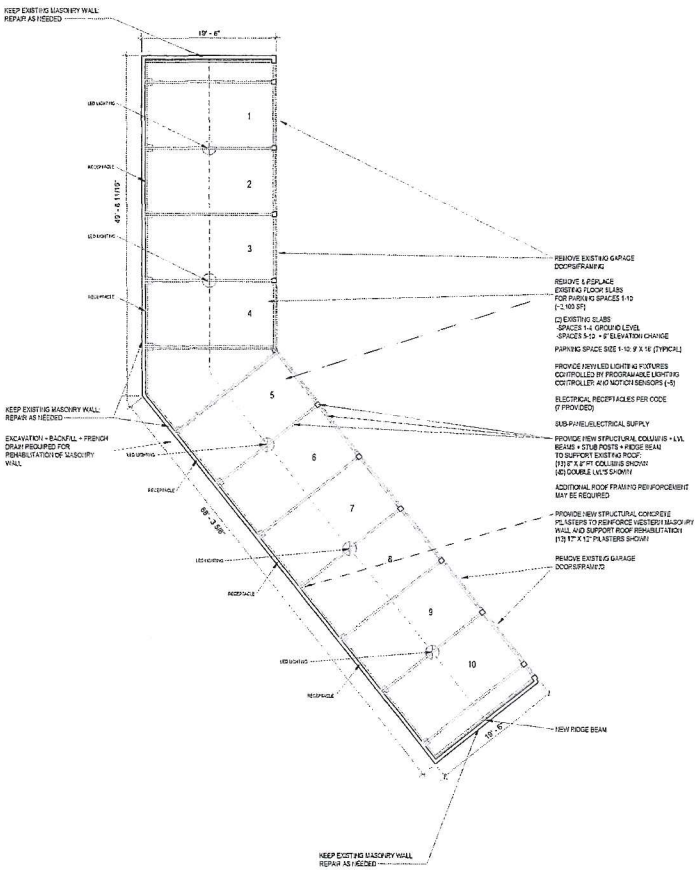
DRAFT

BreadLoaf Architects Planners Builders

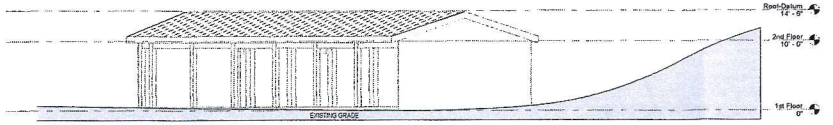
Division	Description	Quantity	UM	Unit Cost	Division Total
01	General requirements				$0
01199.999	Summary				
02	Sitework				$112,830
02299.999	Site preparation				$52,227
02399.999	Earthwork				$56,174
02799.999	Bases, ballasts and pavement				$4,429
03	Concrete				$29,403
03399.999	Cast in place concrete				$29,403
06	Wood and plastics				$175,118
06199.999	Rough carpentry				$98,551
06299.999	Exterior Siding & Trim				$76,567
07	Thermal and moisture protection				$60,669
07499.999	Roof and siding panels				$60,669
09	Finishes				$29,928
09999.999	Paints and coatings				$29,928
16	Electrical				$9,093
16049.999	Electrical				$9,093
17	Architectural & Engineering Fee's				$40,000
17999.999	A/E Fee's				$40,000

Estimate Summary	
Total Cost	$457,040

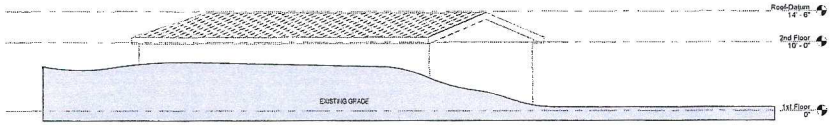
DRAFT



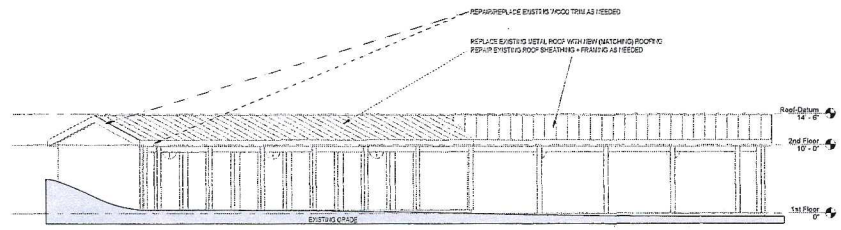
1 Ground Floor (1st Floor)
A-101/A-102 1/8" = 1'-0"



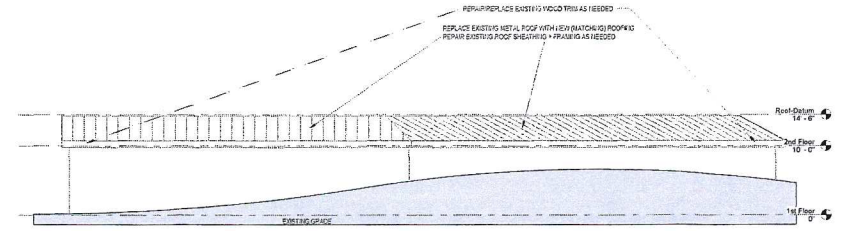
2 NORTH ELEVATION
A-101/A-102 1/8" = 1'-0"



3 SOUTH ELEVATION
A-101/A-102 1/8" = 1'-0"



4 EAST ELEVATION
A-101/A-102 1/8" = 1'-0"



5 WEST ELEVATION
A-101/A-102 1/8" = 1'-0"

Graphic Scale: 1 inch = 8 feet
0 8' 16' 24' 32

PROJECT NORTH

BreadLoaf
Architects
Planners
Builders

1293 Route 7 South
Middlebury, VT
05753
P 802 388 9871
F 802 388 3815
www.breadloaf.com

Civil Engineer
address
city, state, zip
phone

Structural Engineer
address
city, state, zip
phone

Mechanical Engineer
address
city, state, zip
phone

Electrical Engineer
address
city, state, zip
phone

© 2019, Bread Loaf Corporation
Seal:

CONCEPT DESIGN

Sheet Issue Date: 10/24/19

Issue / Revision History

No.	Date	Description

BLC - NCS Template Working File
City, State

PROJECT NO : XXXXX

1ST FLOOR PLAN

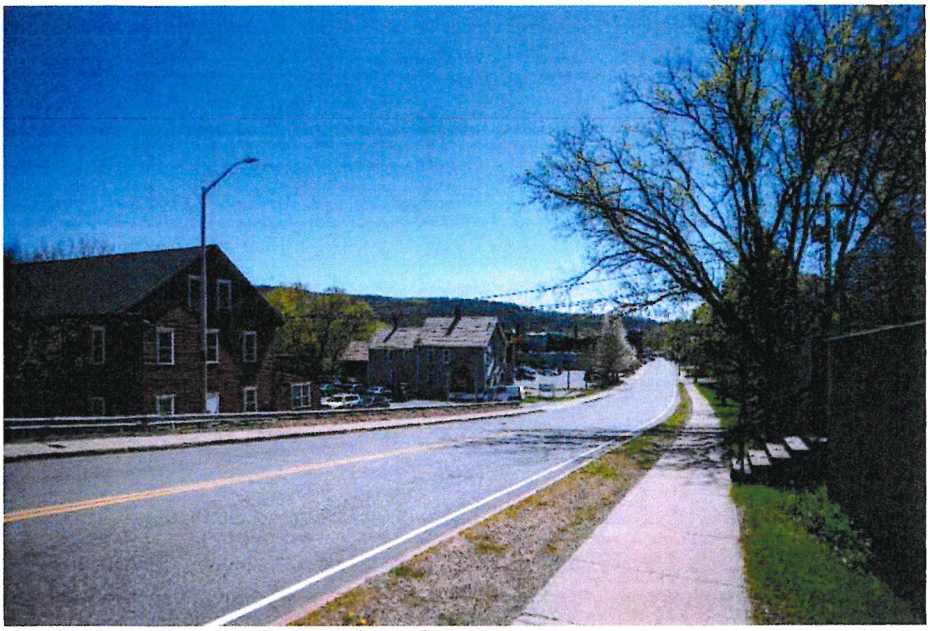
A-101

APPENDIX G

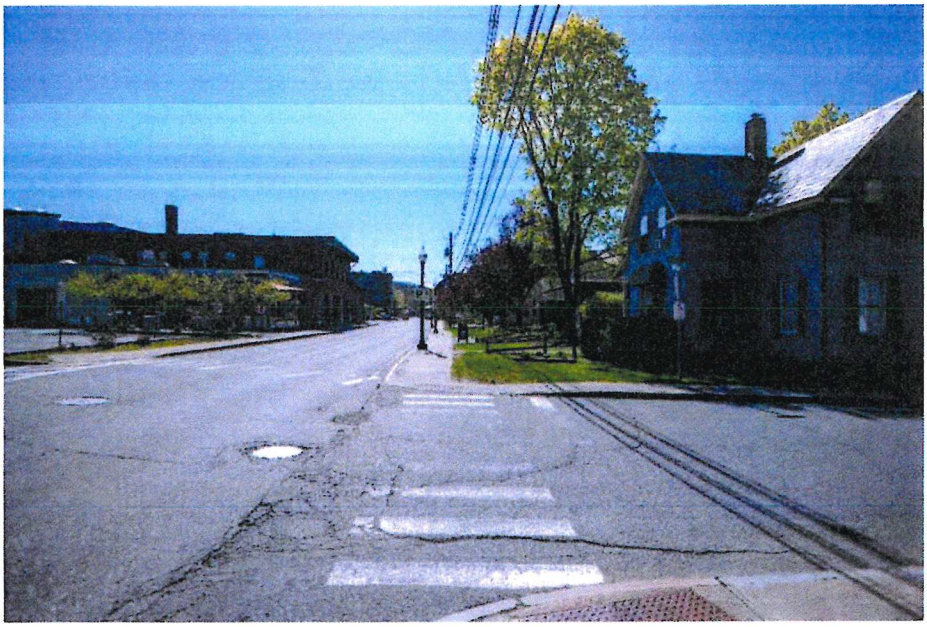
NORTHERN STAGE MULTIPLEX HOUSING PROJECT

See the following pages for Photographs illustrating Site Context:

Photos illustrating Multiplex Housing Project Site Context



North Main Street – Approach to downtown



North Main Street – Approach to downtown

The approach to downtown White River Junction is characterized by 2, 2 ½ and 3 story pitched roof buildings of varied mass and form. Colors and color schemes of the structures vary widely.



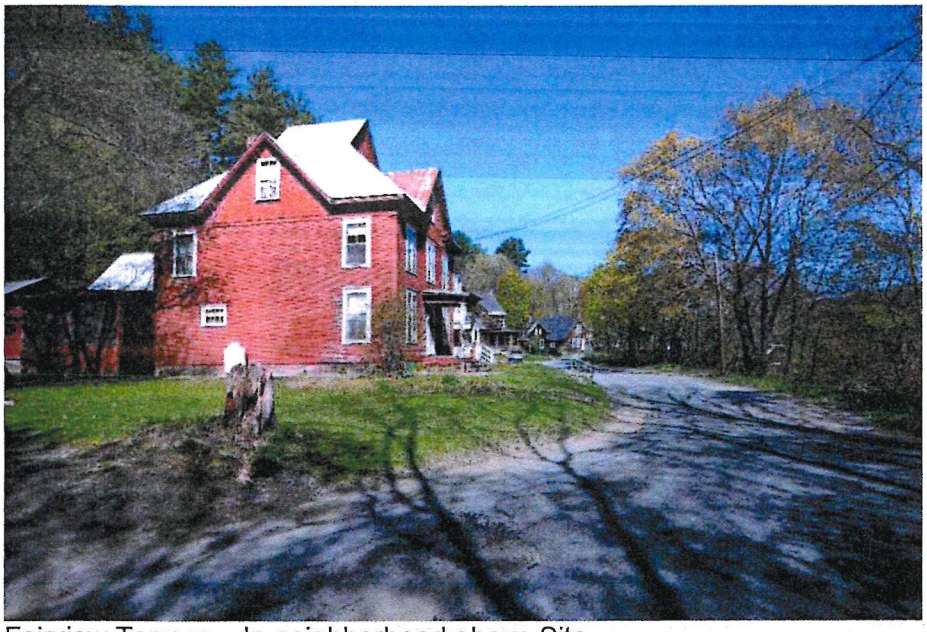
North Main Street – Approach to downtown



South Main Street – Approach to downtown

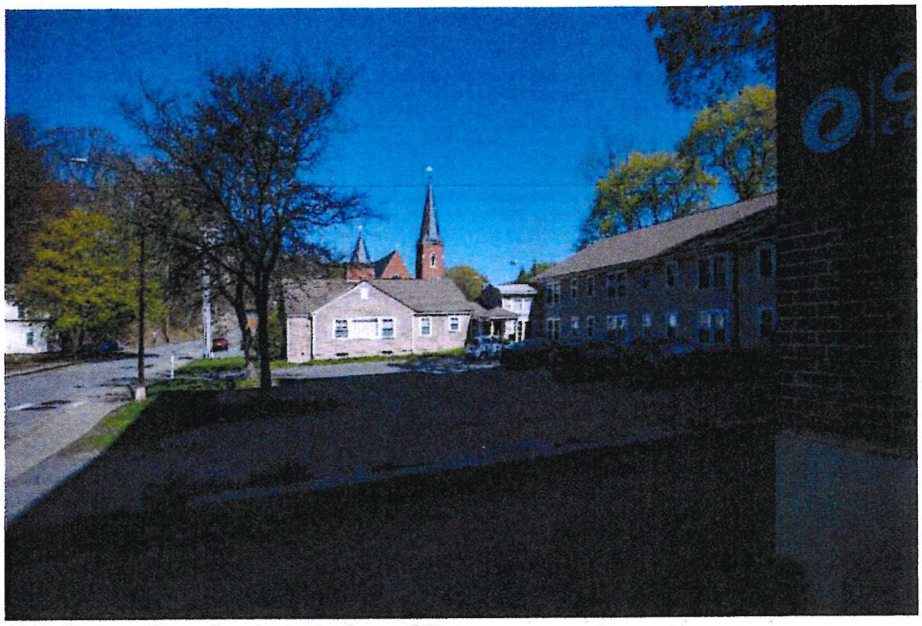


Fairview Terrace – In neighborhood above Site

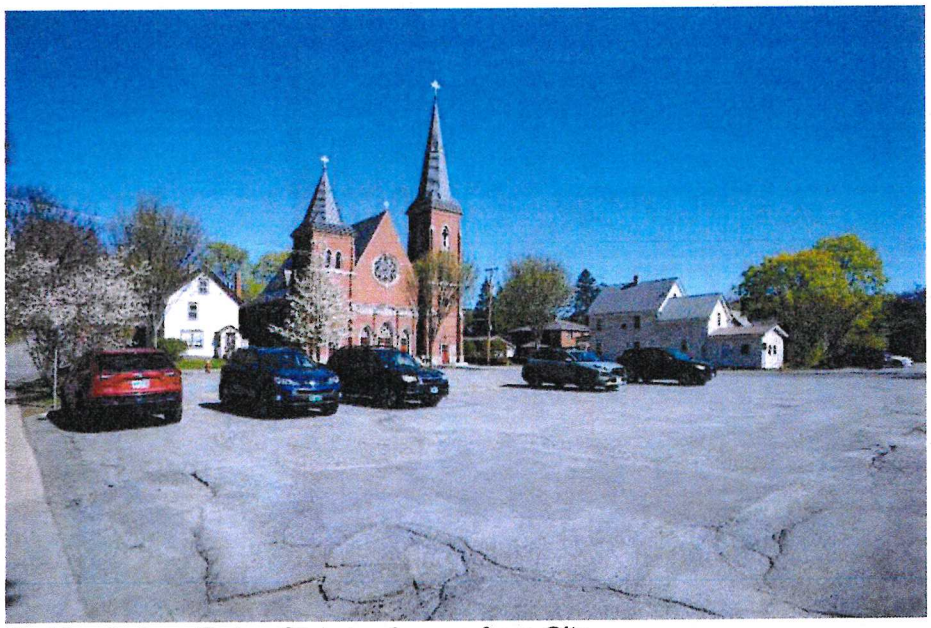


Fairview Terrace – In neighborhood above Site

Buildings have complex roof forms and varied color schemes.

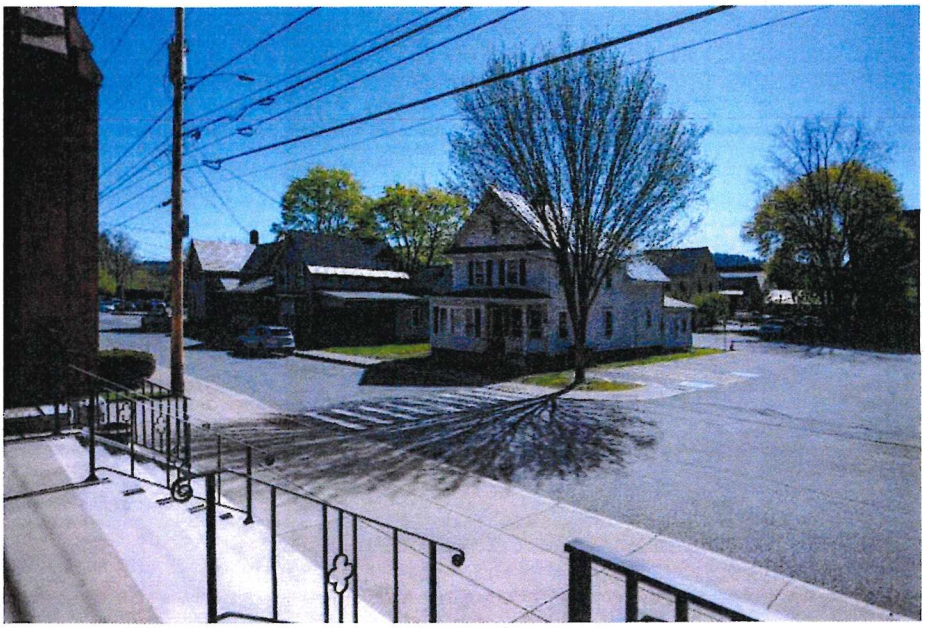


151 Gates Street – Across from Site



Parking Lot on Gates Street – Across from Site

Large open areas across Gates Street from Site are characterized by large open areas of parking that front the street. These areas have few amenities and little vegetation to make them comfortable for pedestrians.

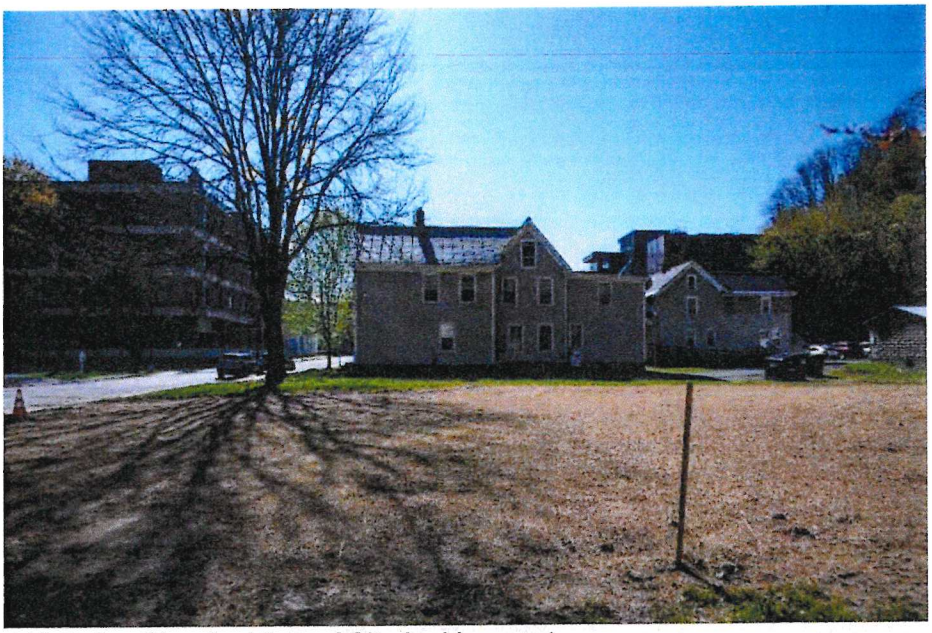


41 Church Street – Around corner from Site

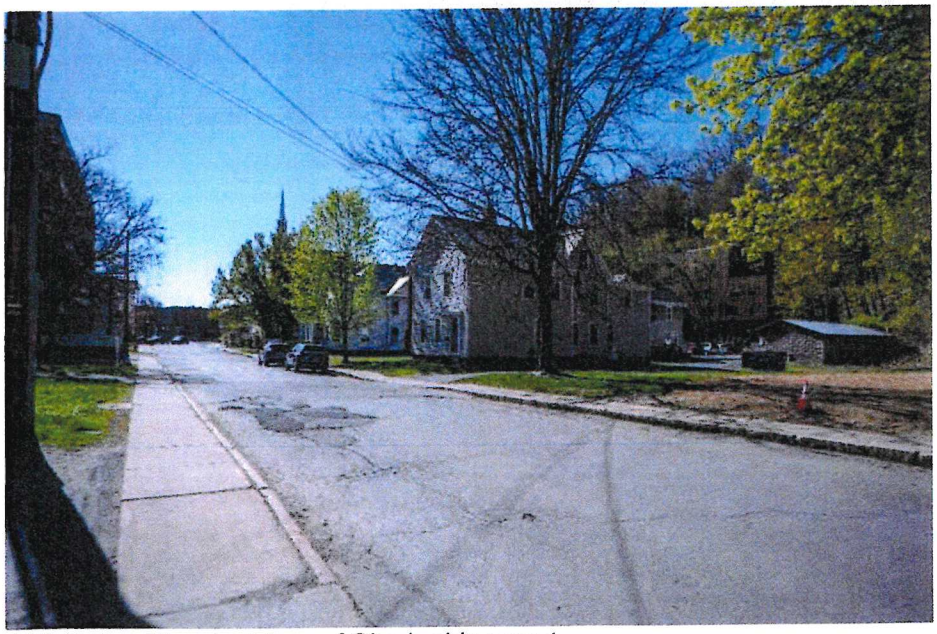


142, 146 and 178 Gates Street – View of Site

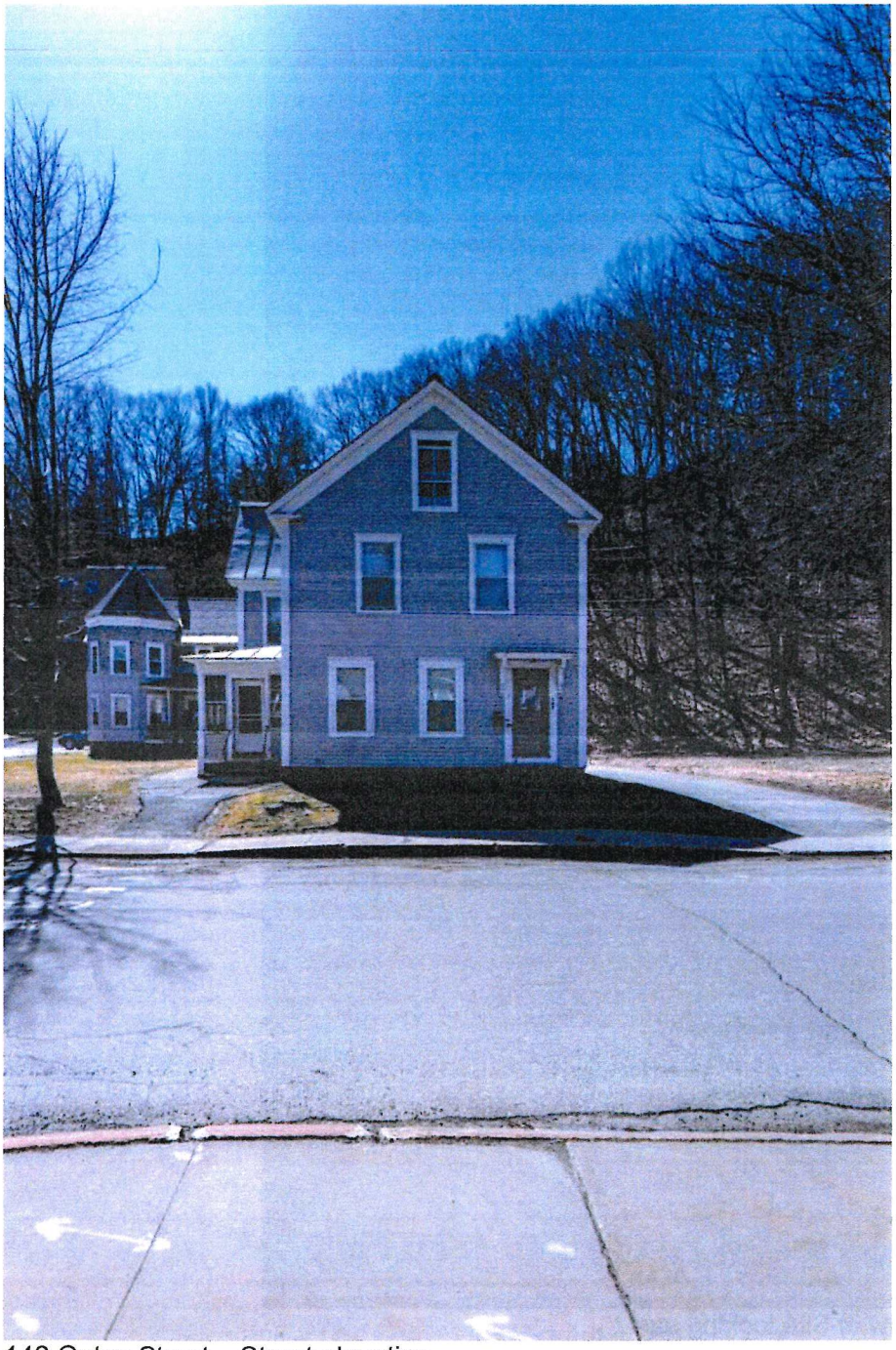
Buildings near the Site are generally 2 stories in height and are clad with a variety of materials in various colors. Windows are typically double-hung windows and building entrances are identified in various ways.



146 Gates Street – View of Site looking east.

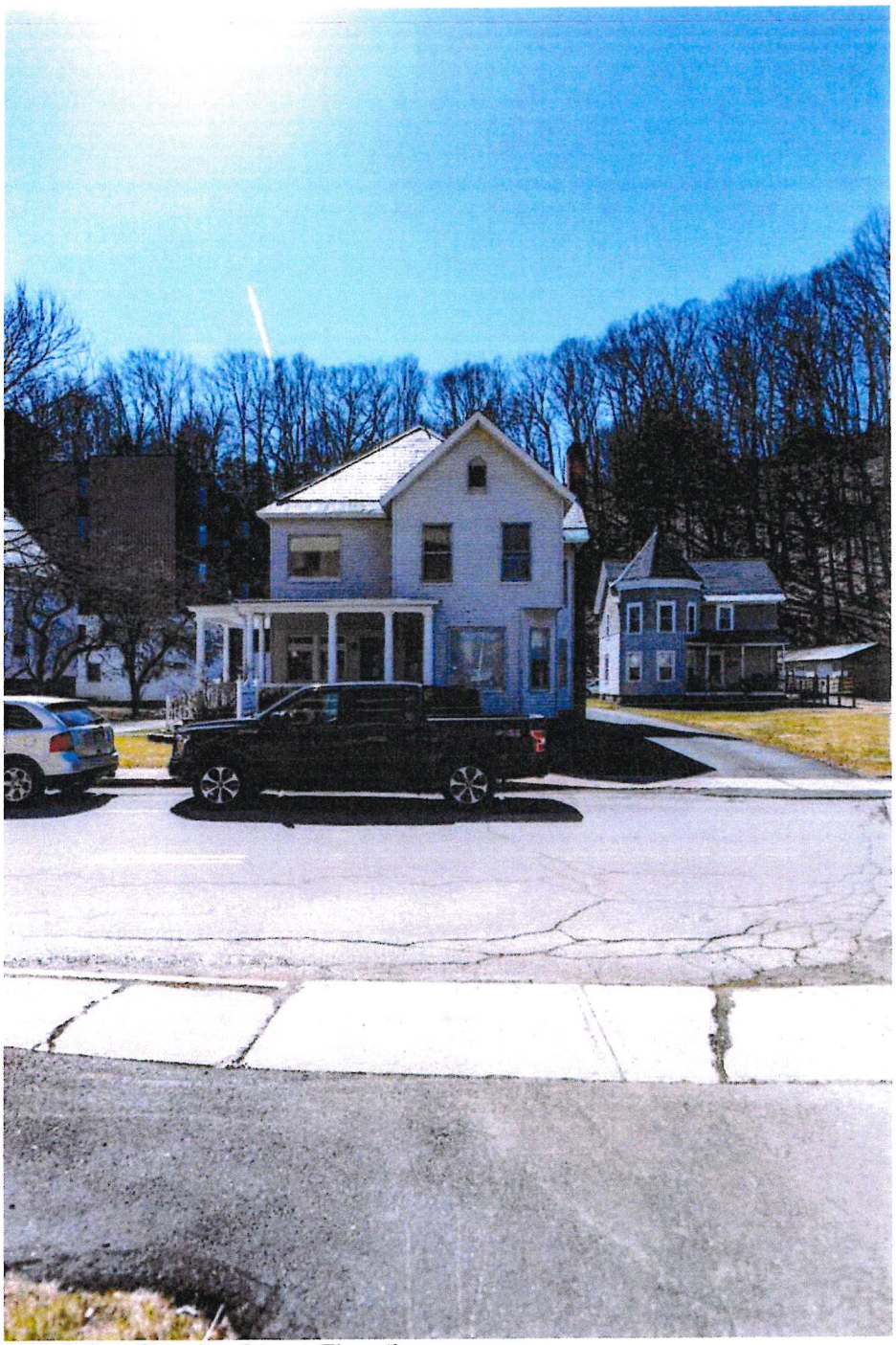


146 Gates Street – View of Site looking east



146 Gates Street – Street elevation

Lower level roofs are low-slope in contrast to upper level pitched roofs. Color schemes are both monochromatic and polychromatic.



128 Gates Street – Street Elevation

Upper Valley Haven

Application #23-21

DRAFT
FINDINGS OF FACT
CONCLUSIONS OF LAW
AND
DECISION

HARTFORD PLANNING COMMISSION

Application #23-21 by Craftstudies Inc.
and The Upper Valley Haven
for Site Development Plan for an Emergency Shelter
lot 45-0003-000, 608 North Main Street
White River Junction, in the HCR Zoning District

This decision pertains to application #23-21 by Craftstudies Inc. (owner) and The Upper Valley Haven (applicant) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for an Emergency Shelter, lot 45-0003-000, 608 North Main Street, White River Junction, in the HCR Zoning District.

FINDINGS OF FACT

Based upon the information contained in the exhibits for this application (see attached list) and the evidence adduced at the Planning Commission meeting of November 13, 2023 the Hartford Planning Commission makes the following Findings of Fact:

General Information

1. The owner of record of lot 45-0003-000 is Craftstudies Inc. who acquired the lot on 12-15-21. The deed is recorded in volume 596, page 100 of the Hartford Land Records.

2. The lot is approximately 4.54 acres.

3. The lot is located at 608 North Main Street.

4. The lot is developed will a 7,787 sq. ft. commercial building, currently vacant.

5. The lot is a class 1 lot, municipal water and sewer.

6. The lot is in the R-2 and HCR zoning district. The proposed project is in the HCR zoning district.

This Application

7. The applicant proposes to operate an Emergency Shelter on the lot.

8. According to the applicant, they propose to expand the existing building by adding a 1,651 sq. ft addition, resulting in a building containing 5,611 sq. ft. on the first floor and 3,827 sq. ft. in the basement, for a total building square footage of 9,438.

According to the applicant, "the building expansion will allow the first floor to accommodate 20 beds for overnight guests, locker/storage space, bathrooms and shower facilities, lounge and common areas, a kitchen, and offices. The building's basement will contain additional offices for staff and volunteers, storage, a pantry, and laundry facilities for guests. The attached *Plan SD-1* shows the proposed floor plans.

The Haven Project will serve as an emergency shelter designed to meet the daily needs of those experiencing homelessness regardless of age, race, ethnicity, sex, gender identity, medical needs, companion animals, personal belongings, financial resources, or level of sobriety, without requiring guests to navigate waiting lists, complete paperwork, or provide evidence of need.

The shelter will provide dinner and breakfast to overnight guests, as well as warming or cooling stations during the winter and summer. During the day, guests will have access to day services that help people secure permanent housing." (See exhibits #2 and #3)

9. Section 24 V.S.A. §4303 defines Emergency Shelter as:

"Emergency shelter" means any facility, the primary purpose of which is to provide a temporary shelter for the homeless in general or for specific populations of the homeless and that does not require occupants to sign leases or occupancy agreements."

10. 24 V.S.A. § 4413 limits municipal regulation of certain uses, including Emergency Shelters as follows:

LIMITATIONS ON MUNICIPAL BYLAWS

Section 4413 (a)(1) restricts regulation of Emergency Shelters only with respect to location, size, height, building bulk, yards, courts, setbacks, density of buildings, off-street parking, loading facilities, traffic, noise, lighting, landscaping, and screening requirements, and only to the extent that regulations do not have the effect of interfering with the intended functional use.

Section 4413(a)(3) states that "regulating the daily or seasonal hours of operation of an emergency shelter shall constitute interfering with the intended functional use" and is therefore impermissible." (See exhibit #3)

11. According to the applicant, the application meets the criteria of §4413 (a)(1) as follows:

Location (1)

A municipality is allowed to designate zoning districts within its borders for the uses

specified under Section 4413, and may not exclude any of the uses from being located within the town's boundaries. The Town of Hartford Zoning Regulations currently do not designate any district in which an emergency shelter is located.

In the absence of any designation of zoning districts for location of the uses set out in Section 4413, the Vermont Supreme Court has confirmed that the uses set forth under Section 4413 are allowed anywhere within the municipality. (See exhibit #3)

Size; Building Bulk (2 & 4)

As noted above, the Project will include the addition of approximately 1,651 square feet to the existing 7,787 square foot building on the existing 4.54-acre Property. See attached *Plans C1.0* (existing building) and *Plan SD-6* (as expanded). The new building size has a footprint of 5,611 square feet. This represents a lot coverage ratio of 2.9%, which is well under the maximum lot coverage ratio of 90% for the HCR district.

Height (3)

The existing height of the building will remain unchanged at 19 feet above ground level. The front roof will be renovated to add a pitched section in the middle of the existing roof, but the top of that roof line will be below the existing roofline. Please see *Plan SD-3* (Elevations and Window Schedule).

Photographs of the existing building and roof and renderings of the updated building and roof are shown on the attached *Plan SD-6*.

Yards; Courts; Landscaping; Screening (5, 6, 14, & 15)

The proposed landscaping and screening for the Project is shown on the attached *Plans L1-1 and L3-0.*

The existing Property condition is shown on *Plan C1.0* and in the photographs contained in the attached *Plan SD-6*.

A strong benefit of the Project is the extensive landscaping that the Haven plans, as more particularly shown on the attached *Plans L1-1*. The Project will result in the removal of the existing parking area, and the replacement of much of the existing asphalt area in the front of the building with beautifully landscaped areas as shown on *Plan L1-1*. Landscaping in the event of the State's implementation of the roundabout is shown on *Plan L2-0*.

The area behind the building will remain undeveloped and in a natural state.

Setbacks (7)

Although the existing building will be extended to the west by about 19 feet, the front of the building will still be approximately 12 feet from North Main Street, which is greater than the 10 foot front setback required for Class 1 lots in the HCR District. In addition, the building will be in conformance with the 10-foot side and 20-foot rear setback requirements with side setbacks of 55 feet on the East and 170 feet on the West, and a 32 foot setback in the rear

Density of buildings (8)

The renovated building will have a total of gross square footage of 5,611 square feet on the 4.54-acre lot, and well within the density requirements of the HCR district. (*Note: Density under Hartford Zoning Regulations is a calculation used for the development of dwelling units)*

Off-street parking (9)

The Property currently has 14 off-street parking spaces, including two ADA accessible parking spaces, all of which will be retained. The parking layout is show on the attached *Plan C2.0* (Site, Grading, Drainage and Utility Plan).

These spaces will provide sufficient parking for Haven staff and volunteers, visiting service providers, and shelter guests. Based on its experience operating the existing Haven facilities, and as confirmed in the Wall Consultant Group study attached as *Exhibit C*, at any given time, approximately 5 guests will have cars. As shown on the site and landscaping Plans, the parking area will be separated from North Main Street by trees and other landscaping.

Loading facilities (10)

The Property does not have any loading facilities, and deliveries will be received via the parking area for movement into the building.

Traffic (11)

The Property is currently accessed directly from North Main Street via two existing curb cuts to the paved parking area. The Haven plans to close the western curb cut to have a single point of access to the Property, as shown on attached *Plan C2.0.*

We are aware that the Vermont Agency of Transportation is considering a redesign of the North Main Street area, and current planning would involve the State's installation of a roundabout for the intersection of North Main Street (US Route 5) and US Route 4. If and when completed, the Property would be accessed directly off of the new roundabout, as shown on the attached *Plan C2.0a.*

For both configurations of North Main Street, sidewalks will be installed between the Building and North Main Street, and the Hartford Fire Marshal will not require a fire lane in front of the Building.

Plans C2.1 and C2.2 show turning plans for garbage truck and ambulance, respectively, reflecting safe entry and exit patterns from the roadway.

Traffic to and from the Property is anticipated to be less than the traffic generated from the Property when it was used for retail purposes. The Wall Consultant Group traffic study for the Project attached as Exhibit C confirms no negative impact on area traffic as a result of the Project.

In addition, the project is accessible from existing bus routes, and area sidewalks will provide access by pedestrians and bicyclists. As shown on plan L3.0, the Haven will install outdoor bike racks on the property.

Noise (12)

Any noise will not exceed 70 decibels at or beyond the property line, and will be customary to the surrounding area. Additionally, the Haven will implement Operating Procedures which will require quiet hour to be observed within the building within 9:30PM and 700:AM.

During construction, earth moving and hauling, rock drilling or crushing, jack hammer and similar excessively loud equipment will not be operated on Sundays or between the hours of 5:30 p.m. and 7:00 a.m. except in emergency situations.

After construction is complete, the project will not require any excessively loud equipment.

Lighting (13)

The parking area and walkways will be illuminated with down-shielded lights, and any lighting will not be visible beyond the boundaries of the property. (See photometric plan, exhibit #2, sheet L5-0)

The applicant understands that lighting must not create excessive off-site or sky glow. If the Zoning Administrative Officer determines that lighting does not meet this condition, the applicant will be required to comply.

(See exhibits #2, #3, and #5)

12. Outdoor amenities include seatings area and a fenced pet run area.

13. The applicant proposes to install 4' high picket fencing and 6' high chain link fencing

around the perimeter of the site.

14. The applicant proposes to locate a fenced dumpster on the lot.

15. The Applicant will submit drawings for the proposed redi-rock retaining wall to the Zoning Administrator prior to construction of the wall.

16. The project will connect to municipal water and sewer in accordance with Hartford's Water and Wastewater Rules and Regulations.

    The applicant will schedule a preconstruction meeting with the DPW to review project schedule, design, and construction issues at least two weeks before actual site work commences.

17. The applicant will install conduit for an electric vehicle charging station should they decide to install one in the future.

18. Snow will be stored on site and will be removed as needed. Snow will not be stored in such a manner as to create a hazard.

19. The applicant understands that any stockpiling of materials related to the construction of the project must be located twice the distance of the height of the stockpiled materials from any public or private right-of-way or property boundary.

20. During construction of the project, erosion and sediment control measures as specified in the most current edition of the *Low Risk Site Handbook for Erosion Prevention and Sediment Control* published by the Vermont Department of Environmental Conservation will be followed.

21. The applicant understands that no structure, including construction/office trailers, signage, parking spaces or plantings may be placed in such a way that obstructs sight distance along the traveled way, at any intersection or driveway. Any signs, parking spaces or plantings found to obstruct sight distance will be required to be relocated.

22. The applicant retains the obligation to identify, apply for, and obtain relevant local and state permits for this project.

23. The applicant understands that all activities authorized by the issuance of the zoning permit shall be started within six (6) months and completed within two (2) years of its date of issue, or the zoning permit shall become null and void and reapplication to complete any activities shall be required. Any activities not completed within the above permit period shall be subject to any ordinance in effect at the time of reapplication. One six (6) month extension to both time periods may be granted by the Planning Commission.

24. The applicant understands that they must obtain a Certificate of Occupancy from the

Zoning Administrative Officer upon completion of the project and before the site may be occupied. The applicant understands that a Certificate of Occupancy will not be issued if the project is not in compliance with these Findings, Plans and any conditions placed on the decision.

CONCLUSIONS OF LAW

Based upon the foregoing Findings of Fact, the Hartford Planning Commission concludes that the proposed site plan meets the following criteria: size, height, building bulk, yards, courts, setbacks, density of buildings, off- street parking, loading facilities, traffic, noise, lighting, landscaping, and screening.

DECISION

The Hartford Planning Commission, based upon the forgoing Findings of Fact and Conclusions of Law, hereby approves application #23-21 by Craftstudies Inc. (owner) and The Upper Valley Haven (applicant) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for an Emergency Shelter, lot 45-0003-000, 608 North Main Street, White River Junction, in the HCR Zoning District **on the condition that:**

1. **Before a Zoning Permit is issued:**

   - **The Applicant submits a copy of their Water and Sewer Allocation.**
   - **The applicant's Engineer/Architect/Landscape Architect verifies that changes to the plans approved by the Planning Commission are limited to those required by the Commission.**

2. **Before a Certificate of Occupancy is issued, the applicant submits to the Zoning Administrator:**

   - **Written verification from a Professional Engineer licensed by the State of Vermont certifying that the project was constructed in compliance with the approved plans and Findings of Fact.**
   - **Written verification from the DPW confirming that the water and sewer have been inspected and approved.**
   - **Written verification from the DPW confirming that they have received acceptable record drawings.**
   - **An electronic copy of the record drawings.**
   - **A copy of the Energy Code Certificate as recorded in Hartford's Land Records.**

This decision is also subject to the condition that no modification or expansion shall be made to the project as described and limited in the above Findings of Fact and Conclusions of Law without the written approval of the Hartford Zoning Board of Adjustment and/or the Hartford Planning Commission. This decision may be revoked, and a new application or permit required if conditions and findings are violated or modified without written approval.

The applicants are responsible for insuring compliance with all applicable State and Federal regulations pertaining to this application.

Those in favor:

Those in opposition:

Those not participating:

Dated at Hartford, Vermont this ____ day of November 2023.

HARTFORD PLANNING COMMISSION

By:_____
Chairperson/Vice-Chairperson

Appeal Rights: An interested person who has participated in the proceeding related to this decision has the right to appeal this decision to the Vermont Environmental Court, pursuant to 24 V.S.A. s. 4471 and V.R.E.C.P.5, in writing, within 30 days of the date of this decision. The fee is $250.00. If you fail to appeal this decision, your right to challenge this decision at some future time may be lost because you waited too long. You will be bound by this decision, pursuant to 24 V.S.A. s. 4472 (d) (exclusivity of remedy; finality).

EXHIBIT LIST

1. Application #23-21

2. Plan Set including

G-1	Cover Sheet
C1.0	Existing Conditions Plan
C2.0	Site Grading, Drainage, and Utility Plan
C2.0a	Site Plan without roundabout
C2.1	Garbage Truck Turning Plan
C2.2	Ambulance Turing Plan
C3.0	Site Details
C3.1	Site Details
C3.2	Water Details
C3.3	Water Details
C3.4	Sewer Details
C3.5	EPSC Details
C3.6	EPSC Details
L1-0	Landscape Plan
L1-1	Landscape Color Plan
L2-0	Landscape Plan w/ Roundabout

L3-0	Site Enlargement Plan
L4-0	Landscape Details
L5-0	Lighting Plan
L5-1	Lighting Details
SD-1	Floor Plans
SD-2	Roof Plan
SD-3	Elevations and Window Schedule
SD-4	Building Sections & Radon Details
SD-5	Annotated Building Section
SD-6	Existing Photos and Perspectives

3. Letter from Kimberly Butler dated October 26, 2023 (Cover Letter)

4. Letter from Kimberly Butler dated October 16, 2023 (Response to Staff comments)

5. Memo from Erica Wygonik dated October 5, 2023

6. Memo from Jo-Ann Ells dated October 19, 2023

7. Letter dated November 3, 2023 from Teri LaRock, Melissa Baughman, and Luke Archibald

Town of Hartford

Planning Commission App # _____
Zoning Board of Adjustment App # _____

APPLICATION TO
PLANNING COMMISSION &/OR ZONING BOARD OF ADJUSTMENT

PLEASE COMPLETE ALL ITEMS APPLICABLE AND PROVIDE THE CORRECT NUMBER OF COPIES OF THIS APPLICATION AND THE SITE PLAN OR SUBDIVISION PLAT. ABUTTING LANDOWNERS WILL BE NOTIFIED BY THE PLANNING/ZONING OFFICE.

1. **NAME & ADDRESS OF RECORD OWNER(S)** Craftstudies, Inc.
   PO Box 1309, White River Junction, VT 05001
   Deed Recorded Book 596 Page 100 (Available at Town Clerk's Office)
   Telephone: Work (802) 281-6804 Cell _____ Email Address: lisa@craftstudies.org
2. **NAME & ADDRESS OF APPLICANTS(S)** Upper Valley Haven, Inc.
   713 Hartford Avenue, White River Junction, VT 05001
   Telephone: Work (802) 478-1802 Cell _____ Email Address: mredmond@uppervalleyhaven.org
3. **NAME & ADDRESS OF APPLICANTS' CONSULTANT** Studio Nexus Architects + Planners, LLC
   46 S. Main Street, Suite 206 PO Box 275 White River Junction, VT 05001
   Telephone: Work 802-275-5110 Ext. 101 Cell _____ Email Address: jimw@studionexusarch.com
4. **PROJECT LOCATION** 608 North Main Street, White River Junction
5. **PRESENT USE OF PROPERTY** Former retail store
6. **BRIEFLY DESCRIBE PROJECT** (in addition, a detailed narrative must be submitted)
   Renovation and expansion of existing building and site for emergency shelter
7. **PROJECT SIZE IN SQ. FT OR ACREAGE** 9,438SF
   Lot Width 444' in project area approx. 1,250' property western boundary Lot Depth Varies from approx. 85' to 325'
8. **IS PROJECT ON TOWN WATER/SEWER?** Yes X No _____ If Yes, estimated
   Water Consumption/day 1,455 GPD Amount of Sewer Flow Projected 1,455 GPD
   Size of Closest Lines Above (water) 6" diameter from street to site 1" low and 2" domestic (sewer) 6" diameter from street to site
9. **DESCRIBE LANDSCAPING PLAN** Existing site will be renovated and landscaped particularly in the area between the existing building and the roadway, substantially increasing site green space, as shown in application.
10. **IF A BUSINESS** - Present # of Employees 6-8 on site
    Proposed Days & Hours of Operation See application
    Will you use the landfill & recycling center? Yes Yes No _____
    The main waste by-product of your business is: General office and residential shelter waste

11. **IF A RESTAURANT** - Present seating NA Proposed _____

12. **PARKING SPACES** - Number to be provided 14

13. **SIGNAGE** - Free Standing TBD Attached _____

14. **FENCING** – Location Fencing around shelter area as shown on application plans Height 4-6'

15. **NEAREST WATER SUPPLY FOR FIRE PROTECTION** At property boundary

16. **ESTIMATED VALUE OF PROPOSED WORK** $3,260,545

17. **IS THERE AN EXISTING DRIVEWAY?** Yes

18. **IF A SUBDIVISION** - Number of New Lots to be Created NA

Do you request that the Town consider taking over maintenance of – Roads No

Or Park/Open Space No

I HEREBY CERTIFY THAT THE INFORMATION PROVIDED ON THIS APPLICATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. (This certification must be signed by lot owners and applicants).

Michael Redmond 10/25/23

Applicant's Signature Date

10/25/23

Lot Owner's Signature Date

Co-Applicant's Signature Date

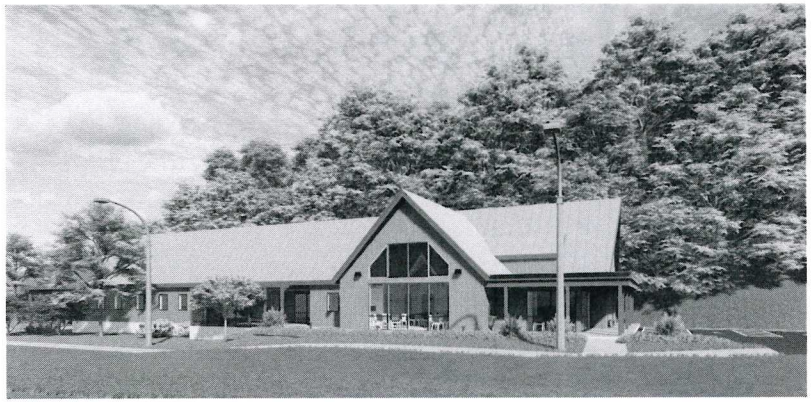
Co-Owner's Signature Date

The applicant retains the obligation to identify, apply for, and obtain any relevant local or state permits before any construction may commence. Please call 802-282-6488 to speak with the State Permit Specialist.

For Office Use Only		
Map/Lot #		
Fee Paid $:		Receipt #:
PC: Site Plan	Min. Sub.	Maj. Sub.
PD	PD Amend.	Other
ZBA: Conditional Use	Variance	Appeal
Other		
Zoning District (s)		Date Filed:
Official Submittal Date:		

Upper Valley Haven - Emergency Shelter

608 North Main Street, White River Junction VT, 05001



PROJECT TEAM

OWNER:

UPPER VALLEY HAVEN
713 HARTFORD AVE
WHITE RIVER JUNCTION, VT 05001

CONTACT: **MICHAEL REDMOND**
EXECUTIVE DIRECTOR
EMAIL: mredmond@uppervalleyhaven.org
PHONE: 802.478.1850

ARCHITECT:

STUDIO NEXUS
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DRAWING INDEX

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CIVIL:

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C2.0 SITE GRADING, DRAINAGE, AND UTILITY PLAN
C2.0a SITE PLAN WITH ROUNDABOUT
C2.1 GARBAGE TRUCK TURNING PLAN
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C3.0 SITE DETAILS
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C3.2 WATER DETAILS
C3.3 WATER DETAILS
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LANDSCAPE:

L1-0 LANDSCAPE PLAN
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L2-0 LANDSCAPE PLAN w/ ROUNDABOUT
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STRUCTURAL: To Be Determined

ARCHITECTURAL:

SD-1 Floor Plans
SD-2 Roof Plan
SD-3 Elevations & Window Schedule
SD-4 Building Sections & Radon Details
SD-5 Annotated Building Section
SD-6 Existing Photographs and Perspectives

GENERAL ARCHITECTURAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENTLY ADOPTED EDITION OF ALL APPLICABLE NATIONAL, STATE, AND LOCAL BUILDING AND ZONING CODES AND IN ACCORDANCE WITH THE CURRENTLY ADOPTED EDITION OF ALL APPLICABLE CONSTRUCTION STANDARDS IN THE JURISDICTION OF THE BUILDING.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN FOR OR TO EXISTING CONSTRUCTION PRIOR TO FABRICATION OR NEW CONSTRUCTION. DO NOT SCALE DRAWINGS. PLEASE NOTIFY STUDIO NEXUS, ARCHITECTS + PLANNERS OF ANY DIMENSIONAL DISCREPANCIES IMMEDIATELY. ALL EXISTING INTERIOR AND EXTERIOR DIMENSIONS ARE TO THE FACE OF FINISHES AND ALL NEW INTERIOR AND EXTERIOR DIMENSIONS ARE TO FACE OF FRAMING UNLESS OTHERWISE NOTED.
3. NOTES AND SYMBOLS ARE TO APPLY AT ALL AREAS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDANCY. NO LIMITATION OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION.
4. PROVIDE BLOCKING AND FIRE-STOPPING TO MEET ALL APPLICABLE CODES. PROVIDE SOLID BACKING AT WALLS AND CEILINGS TO RECEIVE MILLWORK, TRIM, LIGHT FIXTURES, ACCESSORIES, OR OTHER SURFACE MOUNTED ITEMS.
5. WHERE EXISTING CONSTRUCTION , WALLS, OR FINISHES ARE REMOVED, ALL DISTURBED SURFACES TO REMAIN EXPOSED ARE TO BE PATCHED TO MATCH ADJOINING SURFACES. DISTURBED SURFACES TO BE COVERED WITH NEW FINISHES SHALL BE PATCHED AND PREPARED TO RECEIVE NEW FINISHES.
6. REPAIR FINISHES AFFECTED BY INSTALLATION OF STRUCTURAL MECHANICAL, ELECTRICAL AND PLUMBING ELEMENTS. MATCH THE EXISTING ADJACENT SURFACES AND APPEARANCE, REPAIR/REPLACE ANY AND ALL DAMAGED ITEMS.
7. WHERE EXISTING MATERIALS OR SYSTEMS ARE TO BE REUSED IN NEW CONSTRUCTION OR ARE TO REMAIN IN PLACE, PROTECT SUCH MATERIALS AND SYSTEMS SO THAT THEY MAY BE CONTINUED IN OR RETURNED TO NORMAL SERVICE. RESTORE ANY EXISTING WORK DAMAGED BY THE OPERATIONS OF THE CONTRACTOR TO THE LEVEL OF SERVICEABILITY WHICH EXISTED BEFORE THE DAMAGE OCCURRED.
8. ALL MATERIALS, EQUIPMENT AND COMPONENTS SHALL BE NEW AND OF GOOD QUALITY.
9. THE FINAL SELECTION OR SUBSTITUTION OF MATERIALS CAN CREATE VARIATIONS IN DIMENSIONS AND DETAILS OF THE FINISHED PRODUCT AND MUST BE CAREFULLY COORDINATED. CHECK ALL DIMENSIONS AND DETAILS FOR OVERALL ACCURACY APPROPRIATE TO THE LOCAL CONDITIONS. FOR EXAMPLE, IF STANDARD LUMBER JOISTS ARE USED IN PLACE OF ENGINEERED FLOOR JOISTS, THE FLOOR-TO-FLOOR DIMENSION WOULD REQUIRE REVISED STAIR DIMENSION AND FRAMING. CHANGES DUE TO SUBSTITUTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
10. ENCLOSURE ASSEMBLIES AND COMPONENTS ARE BASED ON MEETING THE PERSPIRTIVE REQUIREMENTS OF THE GOVERNING ENERGY CODE, AND SHALL MEET OR EXCEED THE INSULATION AND FENESTRATION CRITERIA, UNLESS NOTED OTHERWISE.
11. ALL MANUFACTURED ITEMS, MATERIALS, AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, USED, CLEANED, ADJUSTED, OPERATED AND CONDITIONED AS DIRECTED BY THE MANUFACTURERS. ALL MANUFACTURERS' INSTRUCTIONS SHALL BE FOLLOWED TO SUSTAIN AND PRESERVE ALL EXPRESSED OR IMPLIED WARRANTIES AND GUARANTEES.
12. OWNER PROVIDED EQUIPMENT AND APPLIANCES ARE SHOWN FOR REFERENCE ONLY (DASHED OR GRAY). THE GENERAL CONTRACTOR AND DESIGN/BUILD CONTRACTORS SHALL COORDINATE ALL OWNER EQUIPMENT AND APPLIANCE SIZES AND SPECIFICATIONS, PRIOR TO PERFORMING WORK AT THESE AREAS, FOR PROPER INTEGRATION INTO THE WORK. PROVIDE SOLID WOOD BLOCKING IN THE WALLS TO ACCOMMODATE ANTICIPATED LOADS. NOTIFY ARCHITECT OF ANY DISCREPANCY WITH THE PLANS BEFORE PROCEEDING WITH THE WORK.
13. WINDOW TREATMENTS, DATA/PHONE ARE NOT PART OF THE ARCHITECTURAL SCOPE OF WORK. THE CONTRACTOR SHALL COORDINATE SCHEDULING WITH THE OWNER TO ENSURE TIMELY INSTALLATION BY THE OWNER OR OWNER'S VENDOR. INTEGRATE SYSTEMS TO BE CONCEALED AND COORDINATE ROUTING AND DESIGN OF SOFFITS AND SHAFTS WITH THE ARCHITECT, OWNER AND OTHER TRADES.

MATERIAL LEGEND

GRAPHIC SYMBOL	MATERIAL
	BRICK & TILE
	CONCRETE UNIT MASONRY
UNDISTURBED / BACKFILL	EARTH
	GRAVEL, COARSE GRANULAR FILL
	GROUT / MORTAR
	GYPSUM BOARD
	INSULATION, BATT
	INSULATION, RIGID FOAM BOARD
	MINERAL WOOL BOARD OR CELLULOSE INSULATION
	SAND, FINE GRANULAR FILL
	STEEL
	SPRAY FOAM
	WOOD: FRAMING, BLOCKING
	WOOD PANEL IN SECTION / ELEVATION
	WOOD SHEATHING / COMPOSITE WOOD / PLYWOOD
	PVC TRIM OR SHEATHING

DRAWING SYMBOLS:

ROOM NAME / ROOM #	ROOM LABEL
# VIEW NAME / SCALE	DRAWING LABEL
# ELEVATION NAME / ELEVATION	ELEVATION LEVEL INDICATOR
# / SHEET	BUILDING/WALL SECTION DETAIL
# / SHEET / #	ELEVATION INDICATOR
# / SHEET	DETAIL REFERENCE TO PLAN OR SECTION DETAIL ENLARGEMENT
COL	COLUMN CENTER LINE
#	DOOR TYPE INDICATOR
A	WINDOW TYPE INDICATOR
A	WALL TYPE INDICATOR
A	KEY NOTE TYPE INDICATOR
#	REVISION BUBBLE TYPE INDICATOR
	MATCH LINE INDICATOR
	1 HOUR RATED WALL LINE INDICATOR
	2 HOUR RATED WALL LINE INDICATOR

WALLS

	EXISTING WALL OR COMPONENT TO REMAIN, UNLESS NOTED OTHERWISE
	WALL OR COMPONENT TO BE REMOVED
	NEW WALL OR COMPONENT

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UPPER VALLEY HAVEN
EMERGENCY SHELTER

Issued For:
SITE PLAN REVIEW

PRELIMINARY NOT FOR CONSTRUCTION

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COVER SHEET, PROJECT TEAM & DRAWING INDEX

Project No.: 2309

G-1

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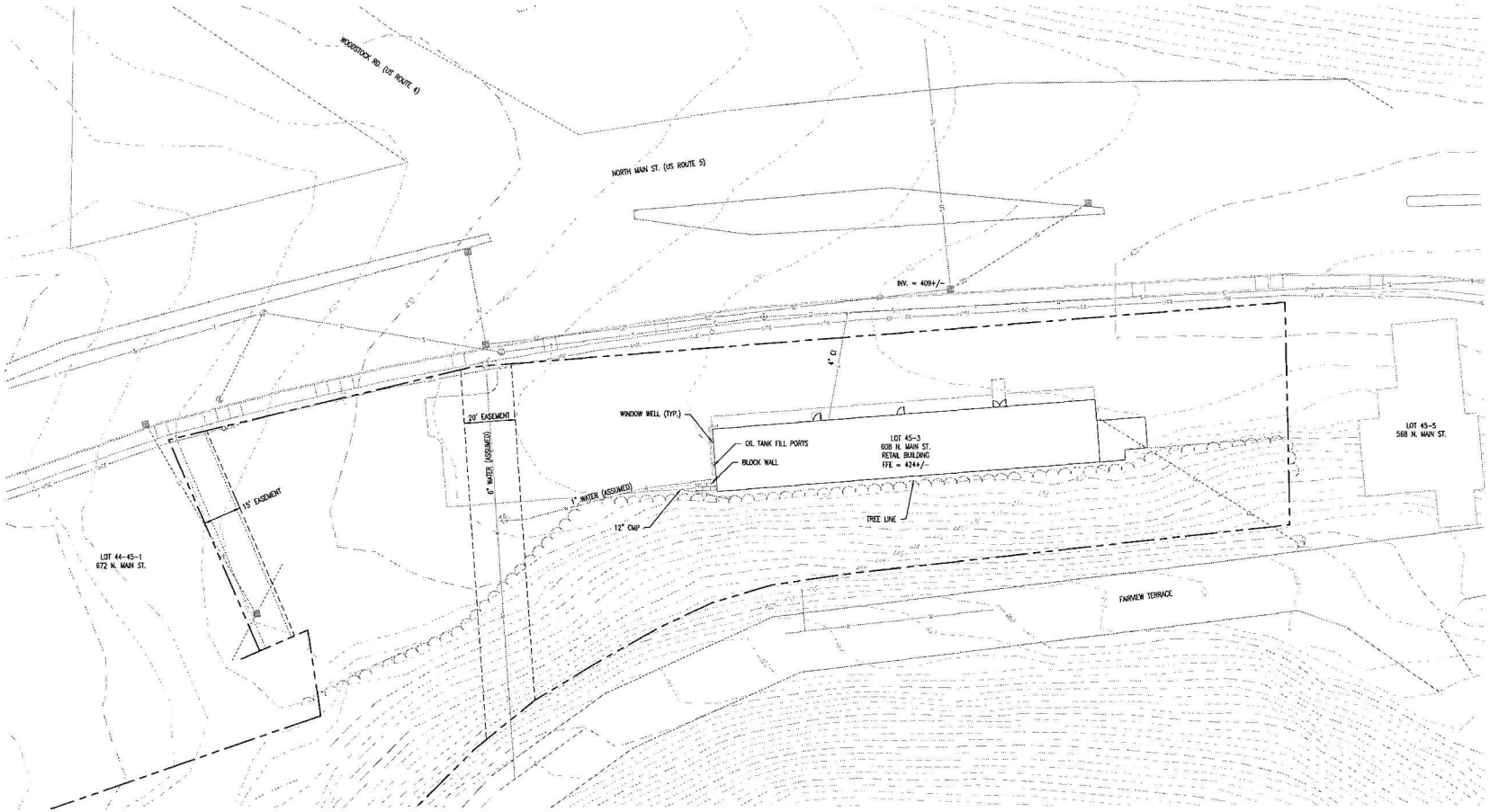

GRAPHIC SCALE

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Existing Conditions Plan

Project No.: 23167

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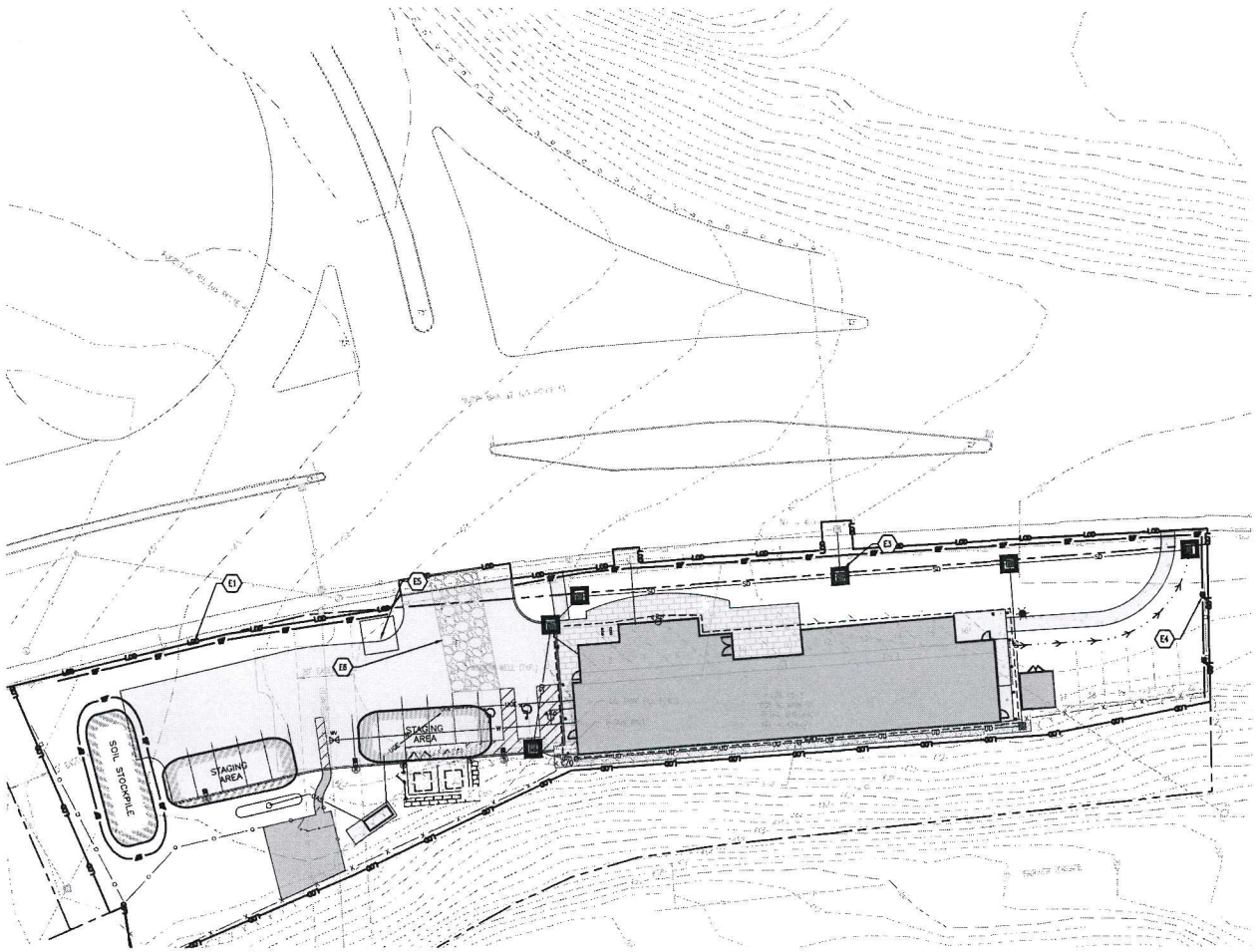

STORMWATER POLUTION PREVENTION NOTES

- E1 LIMIT OF DISTURBANCE
- E3 INLET PROTECTION (TYP.)
- E4 SILT FENCE
- E5 CONCRETE WASHOUT
- E6 STABILIZED CONSTRUCTION ENTRANCE

CONSTRUCTION SEQUENCE

1. CONTRACTOR TO COORDINATE STOCKPILE AND STAGING AREAS WITH THE OWNER.
2. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL HOST A PRECONSTRUCTION MEETING WITH OWNER, ENGINEER, PLANNING DEPARTMENT, POLICE, FIRE, AND PUBLIC WORKS STAFF.
3. PRIOR TO ANY OTHER WORK, SILT FENCES SHALL BE INSTALLED GENERALLY 10 FEET FROM THE BASE OF THE FILL SLOPES, OR AS SHOWN ON THE EROSION CONTROL PLAN. THESE SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES 6 INCHES DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
4. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT.
5. INSTALL INLET PROTECTION ON EXISTING CATCH BASINS AFFECTED DURING CONSTRUCTION.
6. ROUGH GRADE AND STOCKPILE TOPSOIL SURROUNDED BY SILT FENCE.
7. DEMO EXISTING STRUCTURES AS REQUIRED.
8. CLEAR AND GRUB, REMOVE LOOSE PAVING/DEMO PAVING AS REQUIRED AND HAUL OFF SITE USING EXISTING PARKING AREA AS STAGING.
9. GRADE DRIVE ENTRANCE AND EXCAVATE BUILDING PAD
10. BEGIN VERTICAL CONSTRUCTION OF BUILDING ADDITION CONCURRENT WITH WATER AND SEWER UTILITIES.
11. CONSTRUCT STORMWATER SYSTEM.
12. INSTALL STORMWATER PIPING AND STRUCTURES
13. BACKFILL AND SUBGRADE PREP FOR NEW PARKING AND SIDEWALK AREAS
14. COMPLETE FINAL GRADING OF SITE. PLACE TOPSOIL AND PERMANENTLY VEGETATE, LANDSCAPE, AND MULCH.
15. INSTALL LIGHT POLES.
16. PAVE BASE COURSE.
17. STABILIZE EXPOSED SLOPES AND SOILS AS SOON AS GRADED, REPAIR AND REESTABLISH ALL DISTURBED VEGETATED/LAWN AREAS, AND MAINTAIN UNTIL ADEQUATELY VEGETATED.
18. PAVE WEARING COURSE.
19. AFTER THE SITE IS APPROVED BY THE ENGINEER AS ADEQUATELY STABILIZED, REMOVE ALL TEMPORARY.
20. ANTICIPATED FINAL COMPLETION DATE, SUMMER/FALL 2024.

N

GRAPHIC SCALE

0' 5' 10' 20' 40' 80'

1 inch = 20 ft.
for sheet size 24" x 36"

EROSION CONTROL LEGEND

EROSION PREVENTION AND SEDIMENT CONTROL STRATEGY
THE FOLLOWING TECHNIQUES WILL BE UTILIZED AS PART OF A SEDIMENT AND EROSION CONTROL PROGRAM. THE SEDIMENT AND EROSION CONTROL PROGRAM WILL BE IMPLEMENTED IN STAGES. CERTAIN ITEMS FROM ONE STAGE WILL LIKELY OVERLAP OR TAKE PLACE CONCURRENTLY WITH ITEMS FROM OTHER STAGES. HAY PRODUCTS SHALL NOT BE USED.

TEMPORARY INLET PROTECTION – STONE COLLARS AND/OR INLET SOCKS. INSTALL AS INDICATED ON PLANS. STONE TO BE REMOVED AND REPLACED WITH CLEAN STONE WHEN SEDIMENT IS ≥ 1/2 DEPTH OF STONE. REMOVE ALL SEDIMENT COLLECTED IN STRUCTURE OR SOCK AS SOON AS POSSIBLE.

STONE CHECK DAM
THIS STRUCTURAL MEASURE IS ALONG DITCHES/ SWALES AND IN OTHER LOCATIONS INDICATED ON THIS PLAN TO SLOW STORMWATER RUNOFF AND TRAP SEDIMENT PARTICLES. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

PERMANENT EROSION CONTROL NETTING
THIS STRUCTURAL MEASURE IS INSTALLED IN AREAS THAT HAVE SLOPES 3:1 AND GREATER AND IN OTHER LOCATIONS INDICATED ON THIS PLAN TO STABILIZE THE SLOPE AND REDUCE THE EROSION POTENTIAL. THE NETTING IS TYPICALLY IMPREGNATED WITH GRASS SEED AND SOMETIMES STAPLED TO THE EXPOSED SOIL. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
THIS STRUCTURAL MEASURE IS A STABILIZED PAD OF AGGREGATE UNDERLAIN WITH FILTER FABRIC LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT-OF-WAY, STREET, ALLEY, SIDEWALK, OR PARKING AREA. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY OR STREETS. THIS WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED. ONCE REMOVED, THE IMPACTED AREA SHALL BE SEEDED AND MULCHED.

TEMPORARY SEDIMENT BASIN
THIS STRUCTURAL MEASURE INVOLVES CONSTRUCTING TEMPORARY SEDIMENT BASINS IN THE LOCATION OF PROPOSED STORMWATER PONDS. GENERALLY THE STORMWATER PONDS CAN BE CONSTRUCTED AS SHOWN ON THE PLANS HOWEVER ORIFICE ON THE OUTLET STRUCTURES SHALL BE OMITTED UNTIL THE SITE IS STABILIZED TO IMPOUND RUNOFF AND ALLOW FOR SETTLING OF SUSPENDED FINES. THIS WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED. ONCE THE SITE IS STABILIZED, SEDIMENT SHALL BE REMOVED FROM THE BASINS AND THE OUTLET ORIFICE SHALL BE DRILLED INTO THE OUTLET STRUCTURE AS NOTED ON THE PLANS.

TEMPORARY STAGING AND WASTE AREAS (APPROXIMATE)
THESE ARE APPROVED LOCATIONS WHERE NON-SOIL, NON-ERODIBLE MATERIALS MAY BE STORED. SOILS SHALL NOT BE STORED IN THESE AREAS.

TEMPORARY SOIL STOCKPILE AREAS (APPROXIMATE)
THESE ARE APPROVED LOCATIONS WHERE TOPSOIL AND OTHER SOIL MATERIALS MAY BE STORED. THESE STOCKPILES WILL BE PROTECTED FROM EROSION BY A NUMBER OF METHODS, INCLUDING INSTALLING SILT FENCING AROUND THE DOWN GRADIENT PERIMETER OF THE STOCKPILE AND SEEDING AND MULCHING THE STOCKPILE WHEN NOT IN USE FOR MORE THAN FIVE DAYS.

TEMPORARY SILT FENCING
THIS STRUCTURAL MEASURE IS A TEMPORARY BARRIER OF GEOTEXTILE FABRIC USED TO INTERCEPT SEDIMENT LADEN RUNOFF FROM SMALL DRAINAGE AREAS OF DISTURBED SOIL. IT IS INSTALLED ALONG THE PERIMETER OF IMPACTED AREAS AND ALONG THE BASE OF THE FILL SLOPES. ADDITIONALLY, WHEN DESIGNATED ALONG THE LIMITS OF DISTURBANCE, INSTALL CONSTRUCTION FENCE BEHIND THE SILT FENCE. SILT FENCING IS EFFECTIVE IN REDUCING STORMWATER RUNOFF VELOCITIES, ASSIST IN THE DEPOSITION OF TRANSPORTED SEDIMENT LOAD AND PREVENT EROSION OF SOILS ONTO ADJACENT AREAS. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

LIMITS OF DISTURBANCE
THE CONTRACTOR SHALL CONTAIN ANY EARTH MOVING ACTIVITIES WITHIN THE DESIGNATED LIMITS SHOWN ON THIS PLAN. THE ENGINEER SHALL REVIEW THE SITE TO MAKE ANY ADJUSTMENTS TO ACCOUNT FOR ENVIRONMENTALLY SENSITIVE AREAS, SPECIMEN TREES AND SPECIAL AREAS OF CONCERN.

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Issue Date: October 25, 2023

Revisions

No.	Description	Date

Erosion Prevention and Sediment Control Plan

Project No.: 23167

C1.1

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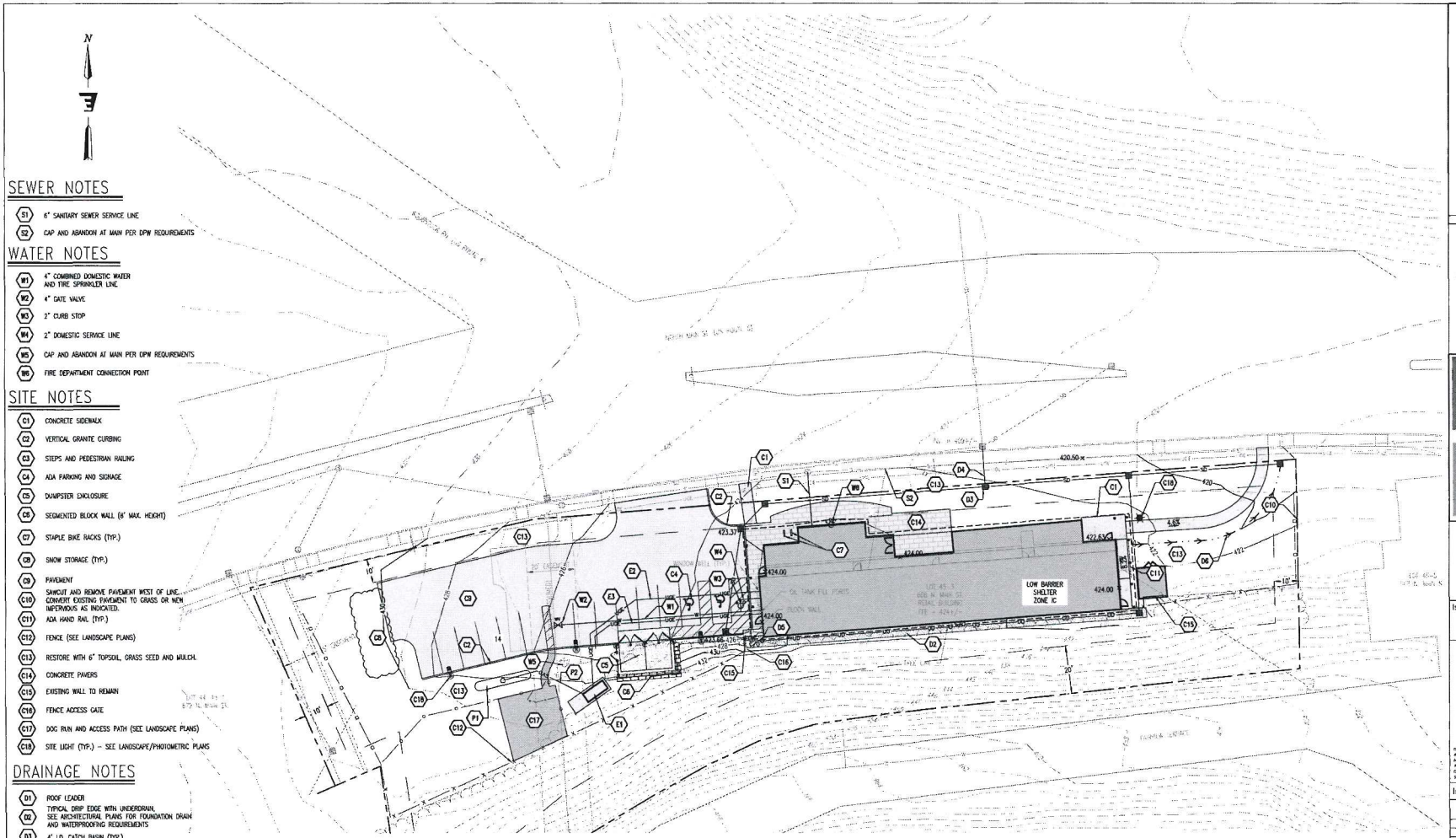

SEWER NOTES

- S1 — 6" SANITARY SEWER SERVICE LINE
- S2 — CAP AND ABANDON AT MAIN PER DPW REQUIREMENTS

WATER NOTES

- W1 — 4" COMBINED DOMESTIC WATER AND FIRE SPRINKLER LINE
- W2 — 4" GATE VALVE
- W3 — 2" CURB STOP
- W4 — 2" DOMESTIC SERVICE LINE
- W5 — CAP AND ABANDON AT MAIN PER DPW REQUIREMENTS
- W6 — FIRE DEPARTMENT CONNECTION POINT

SITE NOTES

- C1 — CONCRETE SIDEWALK
- C2 — VERTICAL GRANITE CURBING
- C3 — STEPS AND PEDESTRIAN RAILING
- C4 — ADA PARKING AND SIGNAGE
- C5 — DUMPSTER ENCLOSURE
- C6 — SEGMENTED BLOCK WALL (8' MAX. HEIGHT)
- C7 — STAPLE BIKE RACKS (TYP.)
- C8 — SNOW STORAGE (TYP.)
- C9 — PAVEMENT
- C10 — SAWCUT AND REMOVE PAVEMENT WEST OF LINE. CONVERT EXISTING PAVEMENT TO GRASS OR NEW IMPERVIOUS AS INDICATED.
- C11 — ADA HAND RAIL (TYP.)
- C12 — FENCE (SEE LANDSCAPE PLANS)
- C13 — RESTORE WITH 6" TOPSOIL, GRASS SEED AND MULCH.
- C14 — CONCRETE PAVERS
- C15 — EXISTING WALL TO REMAIN
- C16 — FENCE ACCESS GATE
- C17 — DOG RUN AND ACCESS PATH (SEE LANDSCAPE PLANS)
- C18 — SITE LIGHT (TYP.) – SEE LANDSCAPE/PHOTOMETRIC PLANS

DRAINAGE NOTES

- D1 — ROOF LEADER
- D2 — TYPICAL DRIP EDGE WITH UNDERDRAIN, SEE ARCHITECTURAL PLANS FOR FOUNDATION DRAIN AND WATERPROOFING REQUIREMENTS
- D3 — 4' I.D. CATCH BASIN (TYP.)
- D4 — 12" HDPE DRAIN LINE (TYP.)
- D5 — CLEANOUT (TYP.)
- D6 — GRASS SWALE

ELECTRICAL NOTES

- E1 — PROPANE GENERATOR
- E2 — UNDERGROUND ELECTRIC CONDUIT
- E3 — ELECTRIC CONDUIT FOR FUTURE ELECTRIC VEHICLE CHARGING STATION

PROPANE NOTES

- P1 — 1,990 GALLON PROPANE TANK
- P2 — PROPANE LINE

GRAPHIC SCALE

1 inch = 20 ft.
for sheet size 24" x 36"

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Issue Date: October 25, 2023

Revisions

No.	Description	Date

Site, Grading Drainage and Utility Plan

Project No.: 23167

C2.0

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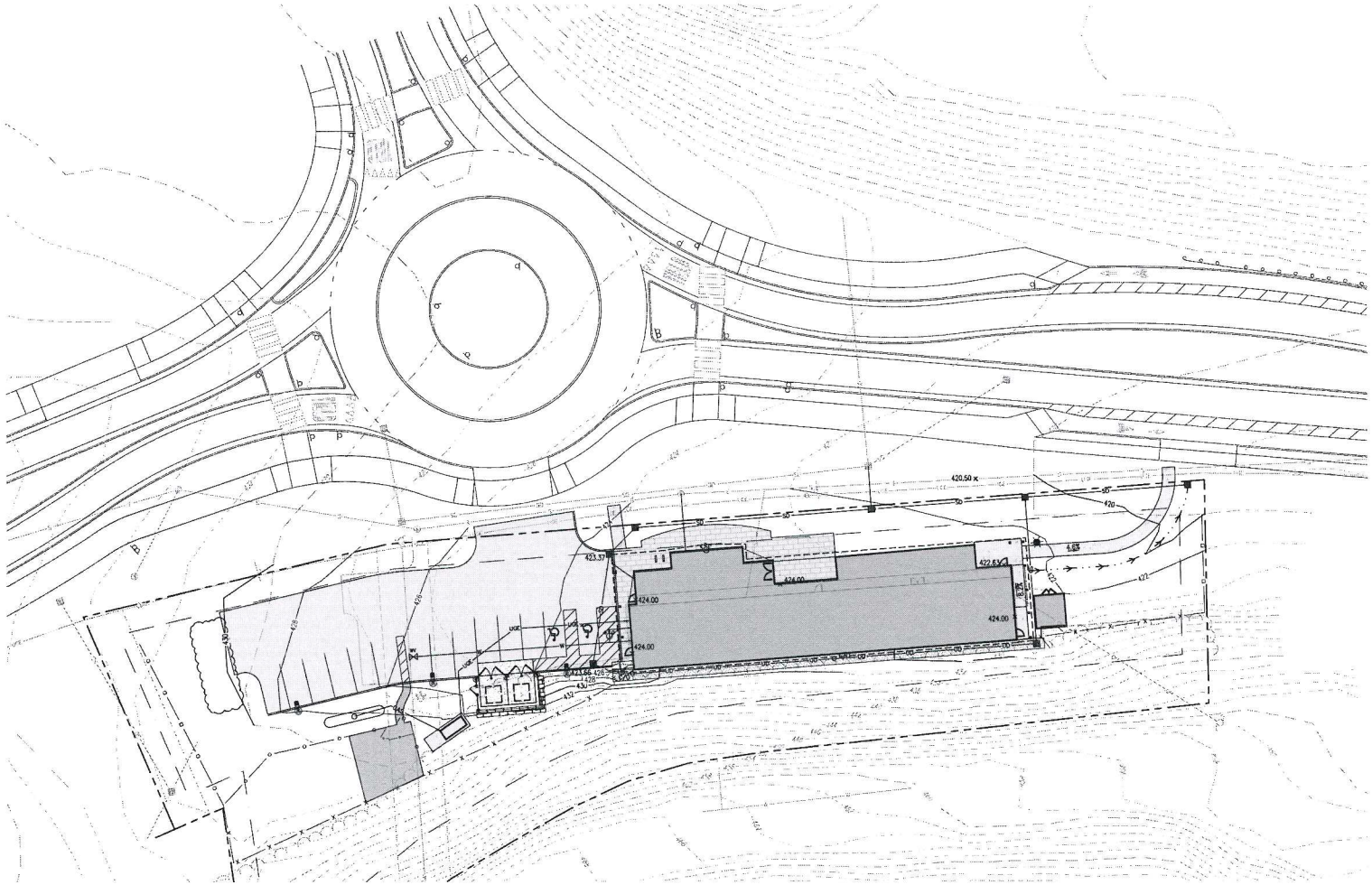

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Issue Date: October 16, 2023

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No.	Description	Date

Site Plan with Roundabout

Project No.: 23167

C2.0a

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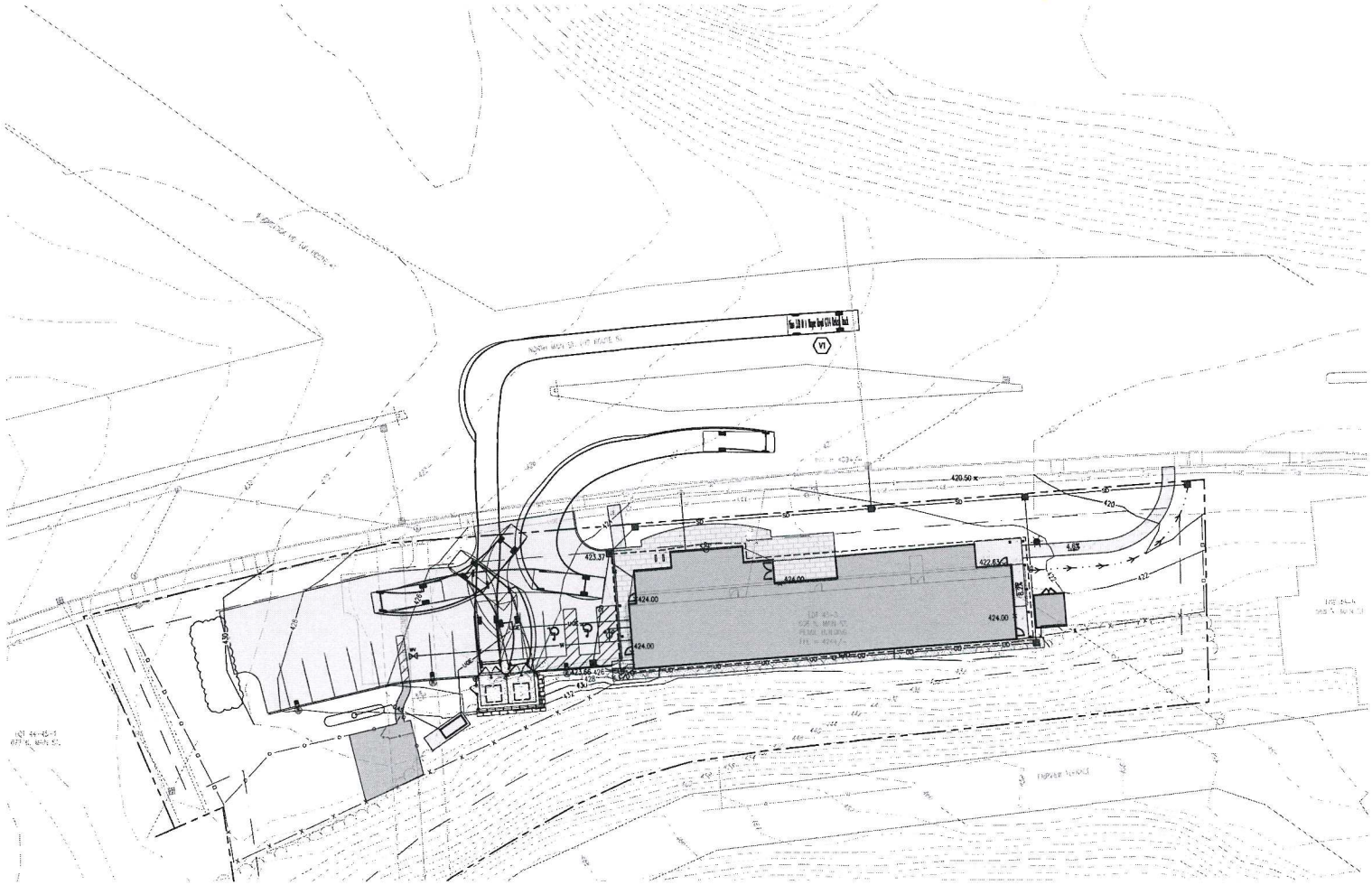
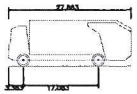


VEHICLE TURNING NOTES

V1 GARBAGE TRUCK



Hino 338 M + Wayne Royal GT14 Refuse Truck	
Overall Length	27.883ft
Overall Width	8.042ft
Overall Body Height	10.498ft
Min Body Ground Clearance	1.318ft
Track Width	8.042ft
Lock-to-lock time	6.0os
Curb to Curb Turning Radius	27.400ft

GRAPHIC SCALE

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for sheet size 24" x 36"

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UPPER VALLEY HAVEN
EMERGENCY SHELTER

Issued For:
Site Plan Review

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Issue Date: October 16, 2023

Revisions

No.	Description	Date

Garbage Truck Turning Plan

Project No.: 23167

C2.1

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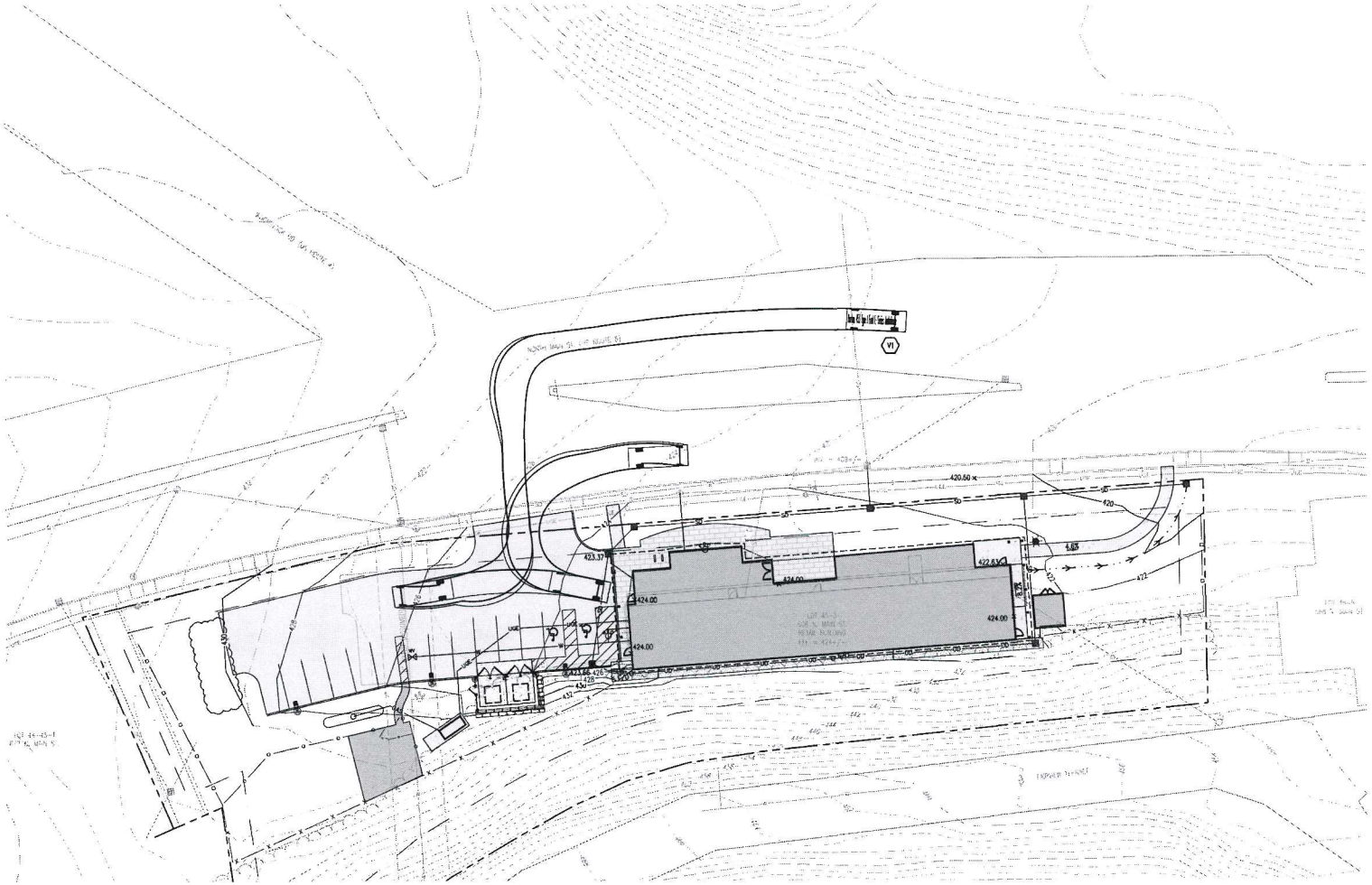
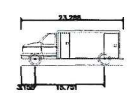


VEHICLE TURNING NOTES

VI AMBULANCE



Horton 453 Type I Ford E-Series Ambulance	
Overall Length	23.288ft
Overall Width	8.021ft
Overall Body Height	7.853ft
Min Body Ground Clearance	1.265ft
Track Width	8.021ft
Lock-to-lock time	5.00s
Curb to Curb Turning Radius	27.400ft

GRAPHIC SCALE

1 inch = 20 ft.
for sheet size 24" x 36"

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Revisions

No.	Description	Date

Ambulance Turning Plan

Project No.: 23167

C2.2

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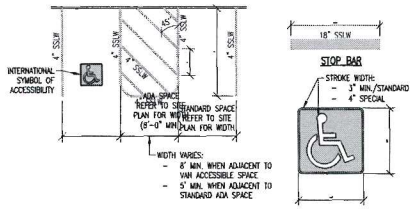
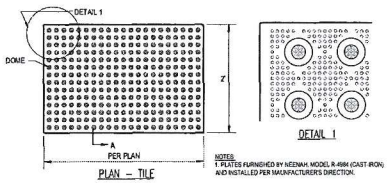


PARKING LOT STRIPING

INTERNATIONAL SYMBOL OF ACCESSIBILITY

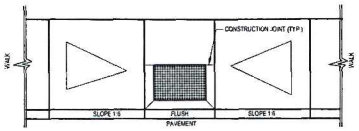
ADA PAVEMENT MARKINGS

NOT TO SCALE 1



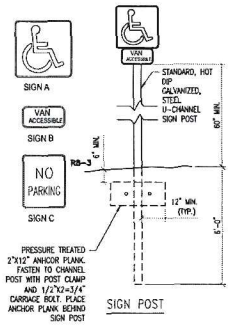
PLAN – TILE

NOTES:
1. PLATES FURNISHED BY NEENAH, MODEL R-4984 (CAST IRON) AND INSTALLED PER MANUFACTURER'S DIRECTION.



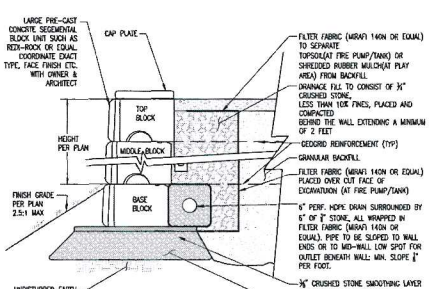
DETECTABABLE WARNING PAD

NOT TO SCALE 2



ADA SIGNS AND POST

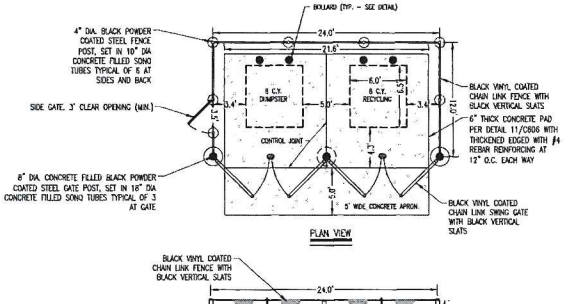
NOT TO SCALE 3



NOTES:
1. CONTRACTOR TO SUBMIT DRAWING STAMPED BY VT LICENSED PROFESSIONAL GEO-TECHNICAL ENGINEER FOR APPROVAL BY PROJECT ENGINEER AND TOWN OF HARTFORD
2. STRIP ALL VEGETATION, ORGANIC SOILS AND UNSUITABLE FILL SOILS FROM THE WALL ALIGNMENT AREA.
3. BENCH CUT ALL EXCAVATED SLOPES.
4. DO NOT OVER EXCAVATE UNLESS DIRECTED TO DO SO BY THE OWNER'S SITE REPRESENTATIVE IN ORDER TO REMOVE UNSUITABLE SOIL.
5. THE OWNER'S SITE REPRESENTATIVE SHALL VERIFY FOUNDATION SOILS AS BEING COMPETENT PER THE DESIGN STANDARDS AND PARAMETERS.
6. LEVELING PAD SHALL CONSIST OF COMPACTED, ¾" CRUSHED GRAVEL, 12" THICK AND EXTENDING AT LEAST 12" TO EITHER SIDE OF THE BASE BLOCK. A SMOOTHING SURFACE OF ¾" CRUSHED STONE MAY BE UTILIZED.
7. MINIMUM EMBEDMENT OF WALL BELOW FINISH GRADE SHALL BE AS INDICATED ON THE WALL FACE DRAWING.
8. FOLLOW APPLICABLE PROVISIONS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WRITTEN SPECIFICATIONS, ESPECIALLY WITH REGARDS TO LEVELING OF BLOCKS AND BASE.
9. DRAINAGE FILL SHALL CONSIST OF ¾" CRUSHED STONE, LESS THAN 10% FINES, PLACED AND COMPACTED BEHIND THE WALL EXTENDING A MINIMUM OF 2 FEET, OR THE LENGTH OF THE REQUIRED GEO-GRID TIE BACK, WHICHEVER IS GREATER, BEHIND THE WALL. A FILTER FABRIC SHALL BE PLACED OVER THE CUT OR FILL FACE BEHIND THE WALL AREA TO PREVENT SOIL MIGRATION INTO THE DRAINAGE MATERIAL.
10. WHERE PERFORATED HDPE DRAINS ARE USED, PROVIDE OUTLETS AT THE ENDS OF THE WALL OR AT A LOW COLLECTION POINT ALONG THE WALL. (ALTERNATIVE OUTLET METHODS MAY BE APPROVED BY THE DESIGN ENGINEER.)
11. BACKFILL AND COMPACT THE FILL MATERIAL BEHIND THE WALL AS THE WALL IS INSTALLED.
12. COMPACTION TESTS SHALL BE TAKEN AS THE WALL IS INSTALLED. THE MINIMUM NUMBER OF TESTS SHALL BE DETERMINED BY THE OWNER'S SITE REPRESENTATIVE.
13. PLACE FILTER FABRIC (MIRAFI 140N, OR EQUAL) OVER THE DRAINAGE MATERIAL TO MINIMIZE SOIL MIGRATION FROM THE SURFACE MATERIAL INTO THE DRAINAGE MATERIAL.
14. COMPACTION SHALL BE TO 92% (MODIFIED PROCTOR) OR 95% (STANDARD PROCTOR).
15. PROVIDE LATERAL DRAINAGE SWALES TO DIRECT FLOWS AROUND THE ENDS OF THE WALL AND AWAY FROM THE WALL DURING CONSTRUCTION. DO NOT CONSTRUCT A SWALE BEHIND THE WALL AS PART OF THE FINISHED WALL. GRADE ABOVE THE WALL SO THAT WATER FLOWS OVER THE FACE OR TO A POINT AT LEAST AS FAR BEHIND THE WALL AS THE WALL HEIGHT.
16. TURF, OR SOME ACCEPTABLE FORM OF SOIL EROSION PROTECTION, SHOULD BE ESTABLISHED AT THE TOP OF THE WALL (WHERE REQUIRED) BY THE LANDSCAPE CONTRACTOR AS SOON AS THE WALL IS COMPLETED.
17. FINAL WALL ALIGNMENT SHALL BE LOCATED IN THE FIELD.
18. RECOMMENDED COMPACTION EQUIPMENT WITHIN 15 FEET OF THE BACK OF THE WALL IS AS FOLLOWS:
    0-4 FEET HAND TAMP OR VIBRATE PLATE COMPACTOR
    4-15 FEET NOTHING LARGER THAT TWO-DRUM WALK BEHIND VIBRATORY ROLLER
    (LARGER ROLLERS CAN BE USED STATICALLY, PROVIDED LIFT SIZE DOES NOT COMPROMISE ACHIEVEMENT OF NECESSARY COMPACTION RATES.)

SEGMENTAL BLOCK WALL

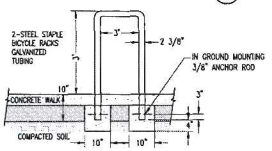
NOT TO SCALE 4



NOTES:
1. CONCRETE TO BE 4000psi WITH 5-7% AIR ENTRAINMENT.
2. BROOM FINISH WITH SMOOTH TROWELED EDGES. TREAT WITH SILANE-SILOXANE OR EQUIVALENT.
3. CONTROL JOINT SHALL BE A 1/8" WIDE JOINT AT LEAST 1/3 OF THE DEPTH OF THE PAD.

DUMPSTER ENCLOSURE

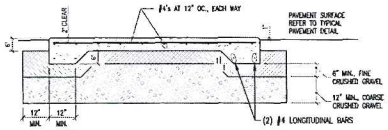
NOT TO SCALE 5



NOTES:
1. ONE RACK HAS THE CAPACITY TO HOLD 2 BIKES.
2. MAINTAIN 3' MINIMUM SPACING BETWEEN RACKS AND 4' TO EXTERIOR WALL.
3. U-STYLE RACKS NOT ACCEPTABLE.

STAPLE BIKE RACK

NOT TO SCALE 6



NOTES:
1. CONCRETE TO BE 4,500psi WITH 5-7% AIR ENTRAINMENT.
2. BROOM FINISH WITH SMOOTH TROWELED EDGES. TREAT WITH SILANE-SILOXANE OR EQUIVALENT.
3. REFER TO LAYOUT PLAN FOR SIZE AND LOCATION.

CONCRETE DUMPSTER PAD

NOT TO SCALE 7

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Issue Date: October 25, 2023

Revisions

No.	Description	Date

SITE DETAILS

Project No.: 23167

C3.0

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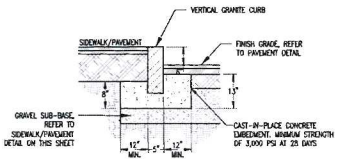
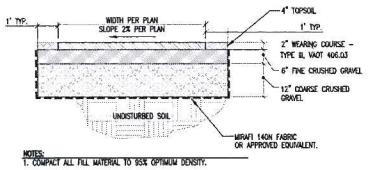


VERTICAL GRANITE CURB NOTES:

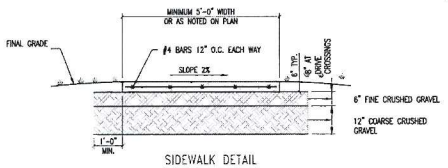
1. GRANITE CURBS SHALL BE INSTALLED IN ACCORDANCE WITH PROJECT AND STATE SPECIFICATIONS
2. WHERE CURB IS ADJACENT TO ENTRY/EXIT DOOR PADS WITH FROST WALL FOUNDATIONS, CURB SHALL BE DOWELED TO PAD WITH 24" LONG #4 DOWELS (CENTERED) AT 1'-6" O.C. (PORTION OF DOWEL IN CURB TO BE GREASED).
3. WHERE CURB IS ADJACENT TO SIDEWALK, BOLLARD, LIGHT BASE OR OTHER HARD FEATURES, 1/2" EXPANSION MATERIAL (FULL DEPTH OF CURB), SHALL BE INSTALLED BETWEEN FEATURE & CURB.

VERTICAL GRANITE CURB (1)
NOT TO SCALE

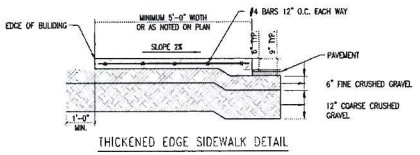


NOTES:
1. COMPACT ALL FILL MATERIAL TO 95% OPTIMUM DENSITY.

ASPHALT SIDEWALK DETAIL (2)
NOT TO SCALE



SIDEWALK DETAIL

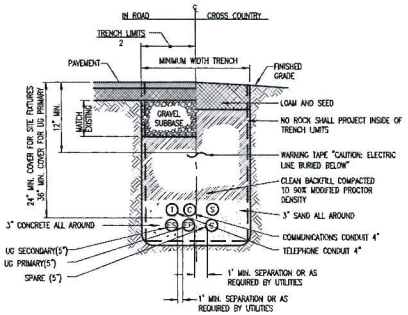


THICKENED EDGE SIDEWALK DETAIL

CONCRETE SIDEWALK NOTES:

1. PLACE A TOOLED JOINT 1/8" WIDE AND AT LEAST 1/3 OF THE DEPTH, TYPICALLY AT INTERVALS MATCHING THE SIDEWALK WIDTH, OR AS NOTED ON PLANS (NOT TO EXCEED 10'-0").
2. PLACE EXPANSION JOINT AS INDICATED ON PLANS, NOT TO EXCEED 20'-0" MAX. ALL EXPANSION JOINTS SHALL BE DOWELED WITH A 1" DIAMETER SMOOTH DOWEL AT 12" O.C. DOWEL SHALL BE 15" IN LENGTH AND SHALL HAVE AN EXPANSION CAP INSTALLED AT THE END. SEE DETAIL ON THIS SHEET.
3. BROOM FINISH WITH SMOOTH TROWELED EDGES. TREAT WITH SILANE-SILOXANE OR EQUAL.
4. CAST-IN-PLACE CONCRETE TO BE 4000 psi CONCRETE, 5%-7% AIR ENTRAINMENT WITH 6x6-W4.0xW4.0 REINFORCING CENTERED IN SIDEWALK.
5. WHERE SIDEWALK IS ADJACENT TO ENTRY/EXIT DOOR PADS WITH FROST WALL FOUNDATIONS, SIDEWALK SHALL BE DOWELED TO PAD WITH 24" LONG #4 DOWELS (CENTERED) AT 1'-6" oc (PORTION OF DOWEL IN SIDEWALK TO BE GREASED).
6. WHERE SIDEWALK IS ADJACENT TO CURB, BOLLARD OR OTHER HARD FEATURE, INSTALL 1/4" EXPANSION MATERIAL (FULL DEPTH OF SIDEWALK), BETWEEN FEATURE AND SIDEWALK.
7. COMPACT ALL FILL MATERIAL TO 95% MODIFIED PROCTOR.

CONCRETE SIDEWALK (3)
NOT TO SCALE



UNDERGROUND CONDUIT TRENCH (4)
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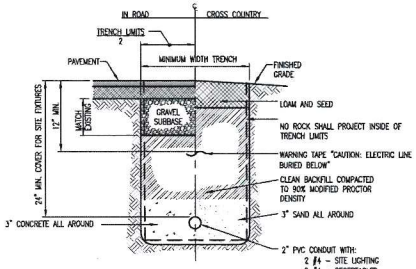

UNDERGROUND LIGHTING TRENCH (5)
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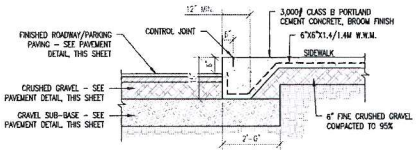

MONOLITHIC SIDEWALK (6)
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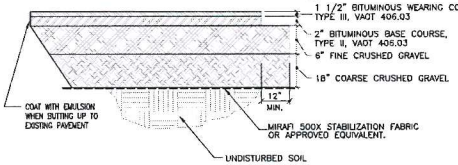
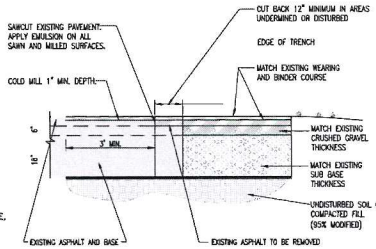


PAVEMENT PATCHING NOTES:

1. IN ALL PAVEMENT AREAS TO BE PATCHED, SAW CUT AND REMOVE EXISTING PAVEMENT.
2. EXCAVATE BASE MATERIAL AND SUB-BASE MATERIAL IF INADEQUATE.
3. COMPACT ALL FILL MATERIAL TO 95% MODIFIED PROCTOR

PAVEMENT SECTION (7)
NOT TO SCALE



ASPHALT PAVEMENT TRENCH PATCH (8)
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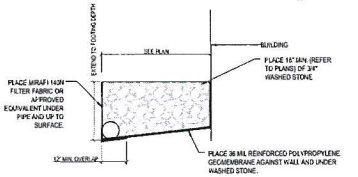

TYPICAL DRIP EDGE (9)
NOT TO SCALE

EARTHWORK NOTES

1. PRIOR TO THE START OF WORK, A PRE-CONSTRUCTION MEETING WILL BE HELD WITH THE CONTRACTOR, AND PROJECT ENGINEER TO REVIEW PROCEDURES, IDENTIFY RESPONSIBILITIES. UNLESS STATED OTHERWISE, ALL MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF TOWN OF HARTFORD SPECIFICATIONS.
2. CLEARING AND GRUBBING- SITE TO BE RESTORED TO PRE-CONSTRUCTION CONDITIONS, INCLUDING DRIVEWAYS, STONE WALLS, AND GRASS AREAS. THE DRIVEWAY SUB-GRADE MATERIAL SHALL EXTEND ONE FOOT BEYOND THE EDGE OF PAVING.
3. COMPACTION OF ALL MATERIALS SHALL BE PERFORMED USING VIBRATORY ROLLERS AND WATER IN LIFTS OF NO GREATER THAN TWELVE INCHES. COMPACTION SHALL BE PERFORMED UNTIL THE REQUIRED DENSITY IS ACHIEVED. DENSITY SHALL BE DETERMINED BY ASTM D2922 AND SHALL NOT BE LESS THAN THE REQUIRED AMOUNT AS DETERMINED IN ACCORDANCE WITH ASTM D1557.
4. COMPACTION TESTING SHALL BE PERFORMED FOR EVERY LAYER OF MATERIAL PLACED AND FOR EVERY 1000 SQUARE FEET OF AREA.
5. PAVEMENT SHALL MEET THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS PUBLISHED BY VTRANS.
6. PAVEMENT SHALL NOT BE INSTALLED WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT, NOR WHEN THE ROAD BASE TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT. PAVEMENT SHALL NOT FALL BELOW 185 DEGREES FAHRENHEIT PRIOR TO THE COMPLETION OF ROLLING. PAVEMENT SHALL NOT BE INSTALLED WHEN THE SUBGRADE IS FROZEN OR THE GRADES ARE INCORRECT.
7. ALL REMAINING DISTURBED AREAS SHALL BE FERTILIZED AND SEEDED IN ACCORDANCE WITH APPLICABLE STATE SPECIFICATIONS FOR EROSION CONTROL.
8. THE SEEDING OF 10% OR GREATER SLOPES SHALL REQUIRE THE USE OF EROSION CONTROL MATTING.
9. ALL EARTHWORK MATERIALS SHALL BE OBTAINED FROM APPROVED SOURCES. THEY SHALL CONSIST OF SATISFACTORILY GRADED, FREE DRAINING MATERIAL, REASONABLY FREE FROM LOAM, SILT, CLAY AND ORGANIC MATERIAL. EARTHWORK MATERIALS SHALL MEET THE REQUIREMENTS OF THE FOLLOWING TABLES:

A. SAND BLANKET/BEDDING:

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
2 INCHES	100
1-1/2 INCHES	90 – 100
1/2 INCH	70 – 100
NO. 4	60 – 100
NO. 100	0 – 20
NO. 200	0 – 8

B. 3/4" CRUSHED STONE: MESH SIZES ASTM C33-03, STONE SIZE #67

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
1 INCH	100
3/4 INCHES	90 – 100
3/8 INCH	20 – 55
NO. 4	0 – 10
NO. 8	0 – 5

C. 1-1/2" CRUSHED STONE: MESH SIEVES

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
2 INCH	100
1-1/2 INCH	95 – 100
3/4 INCH	35 – 70
3/8 INCH	10 – 30
NO. 4	0 – 5

D. COARSE CRUSHED GRAVEL: MESH SIEVES

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
4 INCHES	95 – 100
NO. 4	25 – 50
NO. 100	0 – 12
NO. 200	0 – 5

E. FINE CRUSHED GRAVEL: MESH SIEVES

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
2 INCHES	100
1-1/2 INCHES	90 – 100
NO. 4	30 – 60
NO. 100	0 – 12
NO. 200	0 – 6

F. GRANULAR BACKFILL: MESH SIEVES

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
3 INCHES	100
NO. 4	45 – 75
NO. 100	0 – 12
NO. 200	0 – 6

G. TYPE I STONE FOR STONE FILL THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM 1 INCH TO 12 INCHES, AND AT LEAST 50 PERCENT OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF FOUR INCHES.

H. TYPE II STONE FOR STONE FILL THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM TWO INCHES TO 36 INCHES, AND AT LEAST 50 PERCENT OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF 12 INCHES.

I. TOPSOIL SHALL MEET THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE SPECIFICALLY STATED IN THE CONTRACT DOCUMENTS:
1. THE pH OF THE MATERIAL SHALL BE BETWEEN 5.5 AND 7.6.
2. THE ORGANIC CONTENT SHALL BE NOT LESS THAN 2% NOR MORE THAN 20%.
3. GRADATION:

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
2 INCHES	100
1 INCH	85 – 100
1/4 INCH	65 – 100
NO. 200	20 – 80

THE CONTRACTOR MAY AMEND NATURAL TOPSOIL WITH APPROVED MATERIALS AND BY APPROVED METHOD TO MEET THE ABOVE SPECIFICATIONS.

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Issue Date: October 16, 2023

Revisions

No.	Description	Date

SITE DETAILS

Project No.: 23167

C3.1

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WATER NOTES

WATER MAINS
1. PERFORM A HYDROSTATIC AND LEAKAGE TEST ACCORDING TO AWWA C600(LATEST REVISION) ON EACH PIPE LINE.
2. THE ENGINEER SHALL BE GIVEN AT LEAST 48 HOURS NOTICE BEFORE THE TEST IS CONDUCTED. TEST MUST BE WITNESSED BY THE ENGINEER.
3. SPECIFIED TEST PRESSURE IS A MINIMUM OF 200 PSI OR 1.5X THE WORKING PRESSURE, WHICHEVER IS GREATER, AND PRESSURE DURING TEST SHALL NOT VARY BY MORE THAN 5 PSI. SEE THE CURRENT EDITION OF AWWA C600 FOR ALLOWABLE LEAKAGE.

EXISTING UTILITIES
1. LOCATION OF UTILITY INSTALLATIONS AND UNDERGROUND STRUCTURES ARE SHOWN AS APPROXIMATE ON THE CONTRACT DOCUMENTS SOME UTILITIES MAY NOT BE SHOWN.
2. ALL UTILITIES SHALL BE LOCATED BY THE CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION.
3. EXISTING UTILITIES SHALL BE PROTECTED AND SUPPORTED DURING CONSTRUCTION.
4. ALL WATER, GAS, CABLE, TELEPHONE, ELECTRIC, SEWER, AND OTHER UTILITIES FOUND TO INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE RELOCATED IN A MANNER ACCEPTABLE TO THE ENGINEER, PRIOR TO COMMENCING DEMOLITION.

PIPE BEDDING
1. SAND BLANKET/BEDDING SHALL MEET REQUIREMENTS OF EARTHWORK SPECIFICATIONS
2. TRENCH FINAL BACKFILL MATERIAL – MATERIAL WILL EXCLUDE PIECES OF PAVEMENT, ORGANIC MATTER, TOPSOIL, ALL WET OR SOFT MUCK, PEAT, CLAY, LARGE ROCKS(GREATER THAN 12" DIMENSION), OR ANY MATERIAL DETERMINED BY THE ENGINEER THAT WILL NOT BE SUITABLE.

PIPE TRENCH BACKFILL
1. MEET EARTHWORK SPECIFICATIONS FOR PLACEMENT AND COMPACTION.

DUCTILE IRON PIPE (WATER)
1. D.I. PIPE CONFORM TO AWWA/ANSI C151.
2. LININGS AND LINING REPAIR TO AWWA/ANSI C104.
3. JOINTS CONFORM TO AWWA/ANSI C 111 AND C115.
4. FITTINGS CONFORM TO AWWA/ANSI C110, C153, C105.
5. KEEP INSIDE OF PIPE CLEAN AND FREE OF DEBRIS.
6. REJECT ANY PIPE WHICH IS DROPPED DURING HANDLING.
7. MECHANICAL JOINT GLANDS SHALL BE "MEGA-LUG" RETAINER GLANDS.
8. DUCTILE IRON FITTINGS: ANSI A21.10, 350 PSI PRESSURE RATING.
9. JOINTS: MECHANICAL, PUSH-ON, AND FLANGED:
   A. RUBBER GASKET JOINT, ANSI A21.11
10. GASKETS:
    A: MECHANICAL AND PUSH-ON JOINTS: ANSI A21.11
    B. FLANGED JOINT: 1/8" THICK RING OR FULL FACED RUBBER, ANSI A21.15.
11. BOLTS/NUTS
    A. MECHANICAL JOINT: ANSI A21.11
    B. FLANGED JOINT: ANSI A21.15
12. LININGS:
    A. INTERIOR- CEMENT LINED, DOUBLE THICKNESS BITUMINOUS SEAL
    B. EXTERIOR-BITUMINOUS COATING APPROX. 1 MIL THICK, ANSI A21.51, ANSI A21.15, AND ANSI A21.10.
    C. FLANGE MACHINED FACE COATING: ANSI A21.15.
13. LAYING PIPE
    A. PIPE SHALL BE LAID WITH BELL ENDS FACING IN THE DIRECTION OF LAYING.
    B. WHERE PIPE IS LAID ON A SLOPE OF 5% OR MORE, THE LAYING SHALL START AT THE LOW END AND PROCEED UPHILL, WITH THE BELL ENDS UPGRADE.
    C. A WATERTIGHT PLUG SHALL BE PLACED IN THE OPEN ENDS OF INSTALLED PIPE WHEN PIPE LAYING IS NOT IN PROGRESS.
    D. MAX. PERMISSIBLE DEFLECTION IS 75% OF AWWA SPEC. C600.

CHLORINATION OF DOMESTIC WATER LINES
1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS IN ADVANCE OF BEGINNING ANY DISINFECTION OF WATER MAINS
2. CONTRACTOR SHALL BE RESPONSIBLE FOR BACTERIOLOGICAL TESTING AS REQUIRED BY THIS SPECIFICATION AND REFERENCE STANDARDS MENTIONED.
3. DISINFECT ALL NEW PIPELINE SYSTEMS IN ACCORDANCE WITH AWWA C651, INCLUDING:
   A. METHOD OF CHLORINE APPLICATION. USE CONTINUOUS FEED METHOD OR SLUG METHOD (TABLET METHOD IS NOT ACCEPTABLE).
   B. FORM OF CHLORINE UTILIZED.
   C. FINAL FLUSHING.
   D. BACTERIOLOGICAL TESTING.
   E. REPETITION OF PROCEDURE

GATE VALVES
1. RESILIENT SEAT GATE VALVES BY KENNEDY "KEN-SEAL" OR EQUAL.
2. IRON BODY GATE VALVES TO MEET AWWA C-509-87.
3. STEM CONSTRUCTION: NON-RISING.
4. STEM SEALS: DOUBLE O-RING.
5. GATE: CAST IRON RESILIENT WEDGE WITH SYNTHETIC ELASTOMER COATING, AND SHALL BE EPOXY COATED (FUSION BONDED) INSIDE AND OUT.
6. BONNET HARDWARE SHALL MEET ASTM A307, CADMIUM PLATED.
7. OUTLET CONNECTION: STANDARD MECHANICAL JOINT
8. OPERATION: OPEN COUNTERCLOCKWISE.

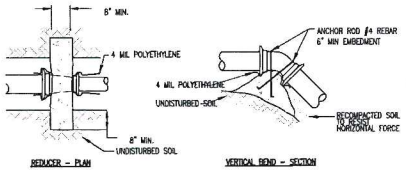
TAPPING SLEEVES AND VALVES
TAPPING VALVES
1. TAPPING VALVES TO MEET ANSI/AWWA C509-87, STANDARD FOR RESILIENT SEATED GATE VALVES.
2. VALVES SHALL HAVE A MINIMUM WORKING PRESSURE OF 150 PSI.
3. VALVES SHALL OPEN COUNTERCLOCKWISE.
4. INLET FLANGES SHALL BE CLASS 125, ANSI B16.1, OR ANSI/AWWA C110/A21.10.
5. OUTLET CONNECTION: STANDARDIZED MECHANICAL JOINT.
6. STEM SEALS: O RING.
7. STEM CONSTRUCTION: NON-RISING.
8. SEATING: PARALLEL SEAT
9. END CONNECTIONS: MECHANICAL ON RUN, FLANGED ON BRANCH.
10. BURIED TAPPING VALVES SHALL BE PROVIDED WITH A 2 INCH SQUARE WRENCH NUT AND CAST IRON VALVE BOX. IF DEPTH FROM GRADE TO TOP OF VALVE OPERATING NUT IS GREATER THAN 6'-0 , A VALVE STEM RISER MADE OF HIGH STRENGTH STEEL SHALL BE PROVIDED. DEPTH FROM VALVE STEM RISER NUT TO GRADE WILL BE 4 TO 6 FEET.

TAPPING SLEEVES
1. AWWA C509, LATEST REVISION.
2. AWWA C207, CLASS D, MAX. WORKING PRESSURE OF 150 PSI.
3. SLEEVES: SPLIT SLEEVES OF CAST IRON OR DUCTILE IRON.
4. MECHANICAL JOINT ENDS WITH END AND GASKET SEALS.
5. BOLTS AND NUTS, MECHANICAL JOINTS: HIGH STRENGTH CAST IRON OR HIGH STRENGTH LOW ALLOY STEEL, ANSI/AWWA C111/A21.11-90.
6. BOLTS AND NUTS, FLANGED JOINTS: HIGH STRENGTH, LOW CARBON STEEL CONFORMING TO ANSI/AWWA C110/A21.10-87, APPENDIX
7. COAT ALL NUTS AND BOLTS WITH A RUST RESISTANT LUBRICANT.
8. ALL BOLTS AND NUTS USED WITH PIPE SLEEVES SHALL BE BRUSH COATED HEAVILY AFTER FINAL TIGHTENING WITH BITUMASTIC COLD-APPLIED MATERIAL TO THOROUGHLY COVER ALL EXPOSED SURFACES OF BOLTS AND NUTS.

VALVE BOXES
1. ACCEPTABLE MANUFACTURER'S: MUELLER, CLOW, OR EQUAL.
2. CLOW F-2452 SLIDING TYPE, TWO PIECE, OR EQUAL.
3. 5 1/4 INCH SHAFT.
4. SIZE 684-A (40-60 INCH OVERALL LENGTH).
5. CAST IRON.
6. CLOW F-2490 LIDS OR EQUAL.
7. THE WORD "WATER" TO BE CAST INTO TOP OF COVERS, AND ARROW SHOWING DIRECTION OF OPENING.

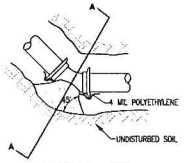
CONCRETE
1. CONCRETE SHALL HAVE:
   A. MIN. COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS
   B. AIR ENTRAINMENT OF 4% TO 6% BY VOLUME.
   C. WATER CEMENT RATIO OF 0.49 LBS. WATER/CEMENT.
   D. SLUMP OF 2 TO 4 INCHES.
1. CONCRETE SHALL NOT BE PLACED WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT OR MORE THAN 90 DEGREES FAHRENHEIT.
2. CONCRETE SHALL NOT BE DROPPED MORE THAN SIX FEET INSIDE A FORM.
3. MAINTAIN TEMPERATURE OF CONCRETE SURFACE AT MINIMUM 50 DEGREES FAHRENHEIT FOR 72 HOURS AFTER PLACING CONCRETE. PREHEAT ALL ENCLOSURES FOR A MINIMUM OF 2 HOURS TO PROVIDE A MIN. SURFACE TEMPERATURE OF 45 DEGREES FAHRENHEIT.
4. ALLOW TO SET AND CURE ALL THRUST BLOCKS, CONCRETE SUPPORTS, AND ANCHORS A MINIMUM OF 24 HOURS BEFORE BACKFILLING.
5. COMPLETELY CURE AND SET CONCRETE BEFORE ANY HYDROSTATIC OR LEAKAGE TESTING OF PIPELINE SYSTEMS.
6. NONSHRINK GROUT SHALL BE HALCO TRADEMARK, AS MANUFACTURED BY LEHIN & FINK INDUSTRIAL PRODUCTS.
7. DO NOT PLACE ANY MORTAR OR GROUT WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT.
8. MORTAR FOR MANHOLES SHALL CONSIST OF THE FOLLOWING:
   A. CEMENT-TYPE II, ASTM C150.
   B. HYDRATED LIME-TYPE N, ASTM C207.
   C. SAND- ASTM C 33, FINE AGGREGATES FOR CONCRETE.
   D. WATER-CLEAN, SUITABLE FOR DRINKING.
10. MIX(BY VOLUME): 1 PART CEMENT, 1/2 PART LIME, 4 1/2 PARTS SAND.

GENERAL
1. CONTRACTOR SHALL NOTIFY BURLINGTON DEPARTMENT OF PUBLIC WORKS AT LEAST 48 HOURS BEFORE BEGINNING WATER LINE WORK..
2. "AS BUILT" DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR AT THE TIME OF COMPLETION OF THE SYSTEM.

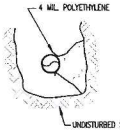


REDUCER – PLAN

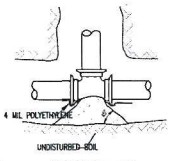
VERTICAL BEND – SECTION



HORIZONTAL BEND – PLAN



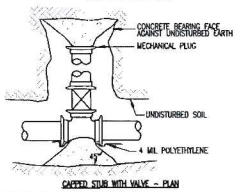
SECTION A-A



HORIZONTAL TEE – PLAN

MINIMUM BEARING SURFACE (SF) 150 PSI WORKING PRESSURE								
	PIPE DIA.	TEE	HYD.	90° BEND	45° BEND	22.5° BEND	11.25° BEND	END CAP
1,000 PSF SOIL BEARING CAPACITY	10"	15	--	15	6	3	2	15
	8"	10	--	10	4	2	1	10
	6"	7	7	7	2	1	0.5	7
	4"	3	--	3	1	0.5	0.5	3
	2"	1	--	1	0.5	0.5	0.5	1
3,000 PSF SOIL BEARING CAPACITY	10"	8	--	8	2	1	2	8
	8"	4	--	4	1.25	1	1	4
	6"	2	2	2	1	1	1	2
	4"	1	--	1	1	1	1	1
	2"	1	--	1	1	1	1	1
5,000 PSF SOIL BEARING CAPACITY	10"	4	--	4	1.25	1	1	4
	8"	2	--	2	1	1	1	2
	6"	1.25	1.25	1.25	1	1	1	1.25
	4"	1	--	1	1	1	1	1
	2"	1	--	1	1	1	1	1

THRUST BLOCK NOTES:
1. THRUST BLOCKS SHALL BE PROVIDED AT ALL WATER LINE TEES, HYDRANTS, BENDS, REDUCERS, AND END CAPS.
2. HYDROSTATIC AND LEAKAGE TEST PRESSURE PER SPECIFICATIONS.
3. PLACE 4 MIL POLYETHYLENE BETWEEN FITTINGS AND THRUST BLOCKS.
4. CONCRETE SHALL HAVE 4000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AND AIR ENTRAINMENT OF 4 TO 6% BY VOLUME.
5. UTILIZE MEGALUG MECHANICAL JOINT RESTRAINTS ON ALL FITTINGS IN ADDITION TO CONCRETE THRUST BLOCKS.



CAPPED STUB WITH VALVE – PLAN

TYPICAL BEARING THRUST BLOCK

SCALE: NONE 1

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Revisions

No.	Description	Date

WATER DETAILS

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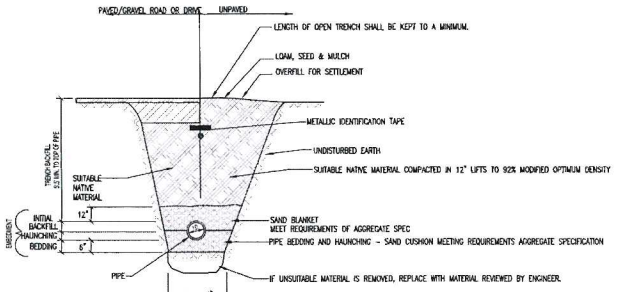
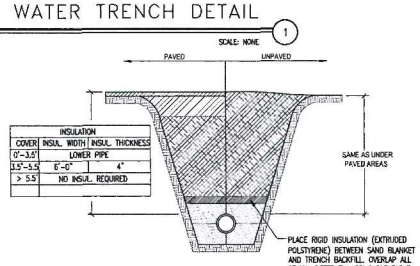


WATER TRENCH NOTES:

1. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR THE FULL LENGTH OF PIPE.
2. PROVIDE 6" MINIMUM COVER OVER WATER PIPE.
3. INSTALL WATER PIPE IN ACCORDANCE WITH AWWA STANDARD C600.
4. COMPACT SOILS IN ACCORDANCE WITH SPECIFICATION
5. BACKFILL SHALL BE OF A SUITABLE NATIVE MATERIAL REMOVED FROM EXCAVATION EXCEPT WHERE OTHER MATERIAL IS SPECIFIED. DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER OR OTHER UNSTABLE MATERIAL SHALL NOT BE USED FOR BACKFILL.

TYPICAL WATER TRENCH DETAIL 1

SCALE: NONE



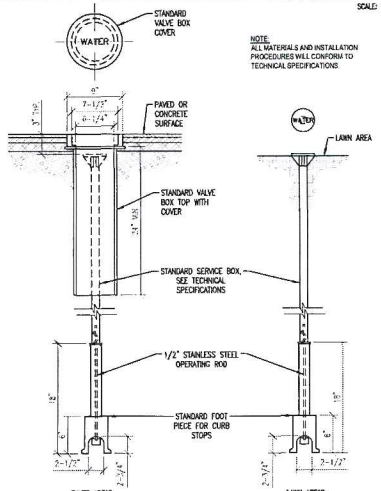
INSULATION		
COVER	INSUL. WIDTH	INSUL. THICKNESS
LOWER PIPE		
3.5'-5.5'	6'-0"	4"
> 5.5	NO INSUL. REQUIRED	

TRENCH NOTES:

1. REFER TO APPLICABLE TRENCH DETAIL FOR SPECIFIC BACKFILL INFORMATION.

INSULATION OVER SHALLOW WATER LINE DETAIL 2

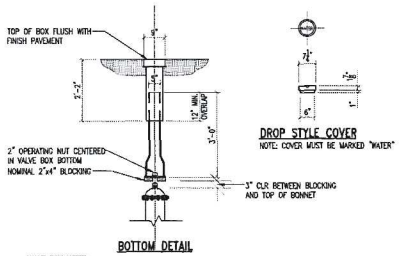
SCALE: NONE



NOTE:
ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TECHNICAL SPECIFICATIONS

TYPICAL SERVICE BOX 3

NOT TO SCALE



DROP STYLE COVER
NOTE: COVER MUST BE MARKED "WATER"

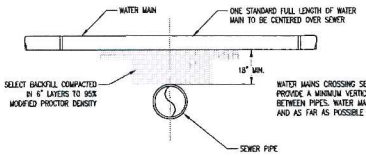
BOTTOM DETAIL

VALVE BOX NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TECHNICAL SPECIFICATIONS.
2. ALL PIPES SHOULD HAVE A MINIMUM DEPTH OF 5.5' FROM TOP OF PIPE TO FINISH GRADE.
3. ALL GATE VALVES SHALL BE OPEN RIGHT.

TYPICAL VALVE BOX DETAIL 4

SCALE: NONE



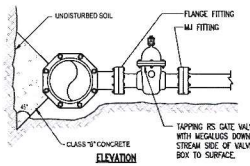
WATER MAIN ABOVE SEWER

SEPARATION NOTES:

1. WATER MAIN RELATIONS TO SEWER SHALL BE IN ACCORDANCE WITH THE "RECOMMENDED STANDARDS FOR WATER WORKS" SO-CALLED TEN STATE STANDARDS.
2. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SEWERS. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IF THIS DISTANCE CANNOT BE OBTAINED, THEN THE PIPES SHALL BE INSTALLED IN A SEPARATE TRENCH AT AN ELEVATION SO THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.
3. WHEN IT IS IMPOSSIBLE TO MAINTAIN 18" VERTICAL SEPARATION OR WHERE THE SEWER MUST BE LAID ABOVE THE WATER MAIN; 1) THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AS POSSIBLE FROM WATER JOINTS; 2) THE SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 20 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF THREE PIPE LENGTHS, WHICH EVER IS GREATER; 3) THE SECTION CONSTRUCTED TO WATER MAIN STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 50 psi FOR 15 MINUTES WITHOUT LEAKAGE PRIOR TO BACKFILLING BEYOND ONE FOOT ABOVE THE PIPE TO ASSURE WATER TIGHTNESS.

SANITARY SEWER/WATER LINE CROSSING 5

SCALE: NONE

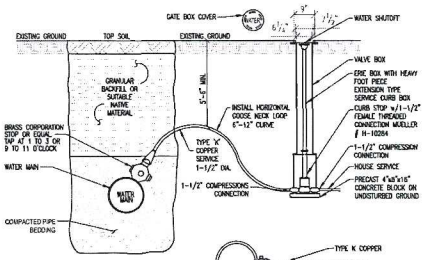


ELEVATION

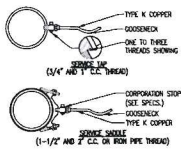
NOTE:
1. SEE GATE VALVE DETAIL FOR ADDITIONAL REQUIREMENTS
2. AREA OF BEARING AGAINST UNDISTURBED SOIL SHALL BE THE SAME AS FOR 1/4" BEND (90°) THRUST BLOCK

TAPPING SLEEVE AND VALVE 6

SCALE: NONE



NOTES:
1. TEFLON THREADED SEALANT TAPE WILL BE USED ON ALL CORPORATION STOPS PRIOR TO INSTALLATION.
   A. SPIRAL WRAP COMPLETELY COVERING THE THREAD AREA WITH TWO WRAPS.
   B. PIPE DOPE OR OTHER LIQUID THREAD SEALANTS ARE NOT ACCEPTABLE
2. LEAVE UP TO THREE THREADS SHOWING OUTSIDE OF PIPE. A TORQUE OF 35 POUNDS IS RECOMMENDED.



COPPER SERVICE CONNECTION DETAIL 7

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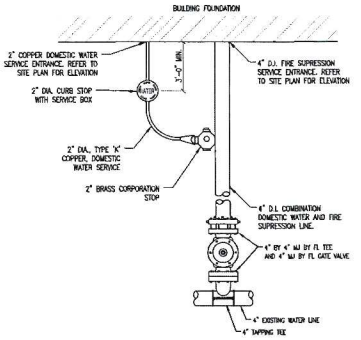

WATER SERVICE ENTRANCE DETAIL 8

SCALE: NONE

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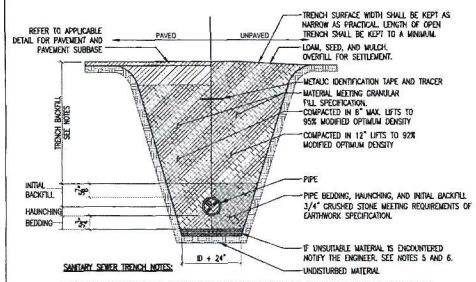
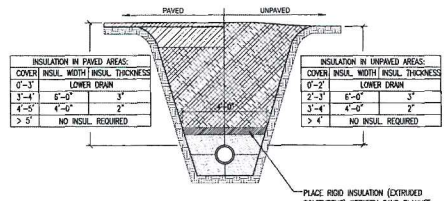


SANITARY SEWER TRENCH NOTES:

1. UNLESS OTHERWISE NOTED, ASSUME CLASS "C" SOILS. PERFORM ALL EXCAVATIONS TO OSHA REQUIREMENTS.
2. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR FULL LENGTH OF PIPE.
3. FOR BUILDING SEWERS THE MINIMUM DEPTH TO THE TOP OF THE PIPE SHALL BE 4'-0". WHERE BUILDING SEWERS ARE TO BE INSTALLED AT A DEPTH LESS THAN 3'-0" UNDER DRIVEWAYS, EXTRA HEAVY CAST IRON OR OTHER HIGH STRENGTH PIPE SHALL BE USED, OTHERWISE, REFER TO INSULATION OVER SHALLOW SEWER LINE DETAIL.
4. FOR SEWER COLLECTION SYSTEMS THE MINIMUM DEPTH TO THE TOP OF THE PIPE SHALL BE 5'-0". THIS DEPTH SHALL BE INCREASED TO 6'-0" IN AREAS TO BE PLOWED DURING THE WINTER MONTHS. OTHERWISE, REFER TO INSULATION OVER SHALLOW SEWER LINE DETAIL.
5. BACKFILL SHALL BE OF A SUITABLE NATIVE MATERIAL REMOVED FROM EXCAVATION EXCEPT WHERE OTHER MATERIAL IS SPECIFIED. DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER OR OTHER UNSTABLE MATERIAL SHALL NOT BE USED FOR BACKFILL.
6. LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF FOUR INCHES BELOW AND ON EACH SIDE OF ALL PIPES.
7. SEWERS ON 20 PERCENT SLOPES OR GREATER SHALL BE ANCHORED SECURELY WITH CONCRETE ANCHORS OR EQUIVALENT, SPACED AS FOLLOWS:
   A. NOT OVER 36 FEET CENTER TO CENTER ON GRADES 20 PERCENT AND UP TO 35 PERCENT
   B. NOT OVER 24 FEET CENTER TO CENTER ON GRADES 35 PERCENT AND UP TO 50 PERCENT
   C. NOT OVER 16 FEET CENTER TO CENTER ON GRADES 50 PERCENT AND OVER

SANITARY SEWER TRENCH

NOT TO SCALE (1)



INSULATION IN PAVED AREAS:		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-3'	LOWER DRAIN	
3'-4'	6'-0"	3"
4'-5'	4'-0"	2"
> 5'	NO INSUL. REQUIRED	

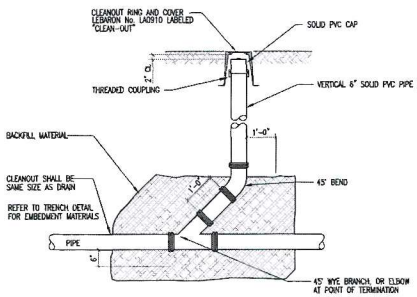
INSULATION IN UNPAVED AREAS:		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-2'	LOWER DRAIN	
2'-3'	6'-0"	3"
3'-4'	4'-0"	2"
> 4'	NO INSUL. REQUIRED	

TRENCH NOTES:

1. REFER TO APPLICABLE TRENCH DETAIL FOR SPECIFIC BACKFILL INFORMATION.
2. RIGID EXTRUDED POLYSTYRENE INSULATION SHALL CONFORM WITH ASTM C578 – STANDARD SPECIFICATION FOR RIGID CELLULAR POLYSTYRENE THERMAL INSULATION AND SHALL BE DOW STYROFOAM HIGH LOAD 40 OR EQUIVALENT.

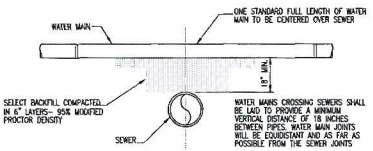
INSULATION OVER SHALLOW SANITARY SEWER

NOT TO SCALE (2)



SANITARY SEWER CLEANOUT

NOT TO SCALE (3)



WATER MAIN ABOVE SEWER

SEPARATION NOTES:

1. WATER MAIN RELATIONS TO SEWER SHALL BE IN ACCORDANCE WITH THE 'ENVIRONMENTAL PROTECTION RULES, CHAPTER 21, WATER SUPPLY RULE (VWSR), SECTIONS 8.5 AND 8.6'

2. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SEWERS. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IF THIS DISTANCE CANNOT BE OBTAINED, THEN THE PIPES SHALL BE INSTALLED IN A SEPARATE TRENCH AT AN ELEVATION SO THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

3. WHEN IT IS IMPOSSIBLE TO MAINTAIN 18" VERTICAL SEPARATION OR WHERE THE SEWER MUST BE LAID ABOVE THE WATER MAIN; 1) THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AS POSSIBLE FROM WATER JOINTS.

SANITARY SEWER WATER SEPARATION

NOT TO SCALE (4)

SEWER NOTES

CONTRACTOR SHALL CONFORM TO GUIDELINES DETAILED IN THE VERMONT STATE SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR READING AND FOLLOWING THE FULL COMPLETE EDITION PROVIDED BY THE STATE.

A. THE BUILDING SEWER SHALL BE CONSTRUCTED IN A MANNER WHICH WILL PREVENT LEAKING, BREAKING OR CLOGGING.

B. SIZING AND SLOPE: MINIMUM BUILDING SEWER SIZE IS 4 INCHES (UNLESS SHOWN ON THE PLAN) AND A MINIMUM SLOPE IS 1/8" PER FOOT.

C. CLEANOUTS: CLEANOUTS SHALL BE PROVIDED AT EACH HORIZONTAL CHANGE IN DIRECTION OF THE BUILDING SEWER GREATER THAN 45 DEGREES AND WHERE INDICATED ON THE DESIGN DRAWINGS. BUILDING SEWER CHANGES IN DIRECTION WHICH EXCEED 45 DEGREES SHOULD BE MADE WITH TWO 45 DEGREE ELLS OR LONG SWEEP FITTINGS. MANHOLES ARE ACCEPTABLE IN LIEU OF CLEANOUTS. WHERE BUILDING SEWERS ARE TO BE INSTALLED AT A DEPTH OF LESS THAN 3 FEET UNDER DRIVEWAYS ARE ANTICIPATED, EXTRA HEAVY CAST IRON PIPE SHALL BE USED.

D. LEAKAGE: BUILDING SEWERS SHALL MEET THE LEAKAGE STANDARDS PRESCRIBED IN THE STATE OF VERMONT SPECIFICATIONS (EPR– CHAPTER 1). SEE BELOW FOR MORE DETAIL.

E. SLOPE, VELOCITY: ALL GRAVITY SEWER LINES SHALL BE INSTALLED WITH NOT LESS THAN THE SLOPES SHOWN BELOW:

PIPE SIZE (INCHES)	SLOPE (FEET/100 FEET)
4"	2%
6"	1%
8"	0.4%

F. CHANGES IN PIPE SIZE: WHEN A SMALLER SEWER JOINS A LARGE ONE, THE INVERT OF THE LARGER SEWER SHALL BE LOWERED SUFFICIENTLY TO MAINTAIN THE SAME ENERGY GRADIENT.

G. MATERIAL: PVC SDR 35, ASTM D3034, WITH PUSH-ON GASKETED JOINTS. GASKETS SHALL CONFORM TO ASTM D3212. SEWER JOINTS SHALL BE CONSTRUCTED TO MINIMIZE INFILTRATION AND TO PREVENT THE ENTRANCE OF ROOTS INTO THE SYSTEM.

H. TRENCHING: LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF FOUR INCHES BELOW AND ON EACH SIDE OF ALL PIPES.

I. BEDDING: SEE TRENCH DETAIL DRAWING FOR MATERIALS. TRENCH BACKFILL SHALL BE OF A SUITABLE NATIVE MATERIAL FREE FROM DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER, OR OTHER UNSTABLE MATERIALS.

J. LEAKAGE TESTS: UPON COMPLETION OF SEWER LINE CONSTRUCTION, THE SEWER LINE SHALL BE TESTED IN ACCORDANCE WITH THE STATE OF VERMONT SPECIFICATIONS (EPR – CHAPTER 1, APPENDIX "A").

LEAKAGE TESTS FOR GRAVITY SEWERS

PERFORM A PRESSURIZED AIR TEST ON THE GRAVITY LINE IN ACCORDANCE WITH THE VERMONT ENVIRONMENTAL PROTECTION RULES ON EACH SECTION OF THE GRAVITY SEWER. THE ENGINEER SHALL BE GIVEN 72 HOURS NOTICE BEFORE THE TEST IS CONDUCTED. TEST MUST BE WITNESSED BY THE ENGINEER.

PLUG ALL OPENINGS IN THE TEST SECTION. ADD AIR UNTIL THE INTERNAL PRESSURE OF THE LINE IS RAISED TO APPROXIMATELY 4.0 POUNDS/SQUARE INCH (PSI) GREATER THAN THE AVERAGE PRESSURE OF ANY GROUND WATER. AFTER THIS PRESSURE IS REACHED, ALLOW THE PRESSURE TO STABILIZE. THE PRESSURE WILL NORMALLY DROP AS THE AIR TEMPERATURE STABILIZES. THIS USUALLY TAKES 2 TO 5 MINUTES DEPENDING ON THE PIPE SIZE. THE PRESSURE MAY BE REDUCED TO 3.5 PSI BEFORE STARTING THE TEST.

WHEN THE PRESSURE HAS STABILIZED AND IS AT OR ABOVE THE STARTING TEST PRESSURE OF 3.5 PSI ABOVE THE PIPE, START THE TEST. IF THE PRESSURE DROPS MORE THAN 1.0 PSI DURING THE TEST TIME, THE LINE IS PRESUMED TO HAVE FAILED THE TEST. IF A 1.0 PSI DROP DOES NOT OCCUR WITHIN THE TEST TIME, THE LINE HAS PASSED THE TEST. THE TEST TIME SHALL BE DERIVED FROM THE FOLLOWING TABLE. IF THE SECTION OF LINE TO BE TESTED INCLUDES MORE THAN ONE PIPE SIZE, CALCULATE THE TEST TIME FOR EACH SIZE AND ADD THE TEST TIMES TO ARRIVE AT THE TOTAL TEST TIME FOR THE SECTION.

PIPE SIZE (IN)	T (TIME) (MIN./100FT)
3	0.2
4	0.3
6	0.7
8	1.2

K. INSTALLATION: PIPE SHALL BE LAID WITH BELL ENDS FACING UPGRADE AND LAYING SHALL START AT THE DOWNGRADE END.

L. WATER LINE SEPARATION

a. HORIZONTAL SEPARATION: SEWERS SHALL BE LAID FLAT AT LEAST TEN FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE.

WHERE IMPOSSIBLE OR IMPRACTICABLE TO MAINTAIN THE TEN FOOT SEWER/WATER PIPE HORIZONTAL SEPARATION, (DUE TO LEDGE, BOULDERS OR OTHER UNUSUAL CONDITIONS) THE WATER LINE MAY BE IN A SEPARATE TRENCH OR ON AN EARTH SHELF IN THE SEWER TRENCH PROVIDED THAT THE BOTTOM OF THE WATER LINE IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER. WHEREVER IMPOSSIBLE OR IMPRACTICAL TO MAINTAIN THE 18 INCH VERTICAL SEPARATION, THE SEWER LINE SHALL BE CONSTRUCTED USING PRESSURE PIPE TO NORMAL WATER LINE STANDARDS AND PRESSURE TESTED TO 50 PSI FOR 15 MINUTE PRIOR TO BACKFILLING.

b. CROSSINGS: SEWERS CROSSING WATER MAINS SHALL BE LAID BENEATH THE WATER MAIN WITH AT LEAST 18 INCHES VERTICAL CLEARANCE BETWEEN THE OUTSIDE OF THE SEWER AND THE OUTSIDE OF THE WATER MAIN. WHEN IT IS IMPOSSIBLE TO MAINTAIN THE 18 INCH VERTICAL SEPARATION,

1.) THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AWAY AS POSSIBLE FROM WATER JOINTS;
2.) THE SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 20 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF THREE PIPE LENGTHS, WHICHEVER IS GREATER;
3.) THE SECTION CONSTRUCTED TO WATER MAIN STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 50 PSI FOR 15 MINUTES WITHOUT LEAKAGE PRIOR TO BACKFILLING BEYOND ONE FOOT ABOVE THE PIPE TO ASSURE WATER TIGHTNESS;
4.) WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN.

M. MANHOLES

a. DIAMETER: THE MINIMUM DIAMETER OF MANHOLES SHALL BE 48 INCHES; LARGE DIAMETERS ARE PREFERRED FOR CONNECTION TO LARGE DIAMETER SEWERS. A MINIMUM ACCESS DIAMETER OF 24 INCHES SHALL BE PROVIDED.
b. FLOW CHANNEL: FLOW CHANNELS SHALL BE PROVIDED IN THE BASE OF ALL MANHOLES AND THE FLOW CHANNEL THROUGH MANHOLES SHOULD BE MADE TO CONFORM IN SHAPE AND SLOPE TO THAT OF THE SEWERS.
c. MANHOLES SHALL BE OF THE PRE-CAST CONCRETE OR POUR-IN PLACE CONCRETE TYPE. MANHOLES SHALL BE WATERPROOFED ON THE EXTERIOR.
d. INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A RUBBER-GASKETED FLEXIBLE WATERTIGHT CONNECTION THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL TO TAKE PLACE.
e. ALL MANHOLES SHALL BE TESTED FOR LEAKAGE. LEAKAGE TESTING OF GRAVITY SEWERS UTILIZING THE WATER TESTING PROCEDURES TAKES INTO ACCOUNT THE LEAKAGE FROM ONE MANHOLE IN THE TEST SECTION. OTHERWISE, MANHOLES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

AFTER THE MANHOLE HAS BEEN ASSEMBLED IN PLACE, ALL LIFTING HOLES AND EXTERIOR JOINTS SHALL BE FILLED WITH AND POINTED WITH AN APPROVED NON-SHRINKING MORTAR. ALL PIPES AND OTHER OPENINGS INTO THE MANHOLE SHALL BE SUITABLY PLUGGED AND THE PLUGS PLACED TO PREVENT BLOWOUT.

EACH MANHOLE SHALL BE CHECKED FOR INFILTRATION BY FILLING WITH WATER TO THE TOP OF THE CONE SECTION. A STABILIZATION PERIOD OF ONE HOUR SHALL BE PROVIDED TO ALLOW FOR ABSORPTION. AT THE END OF THIS PERIOD, THE MANHOLE SHALL BE REFILLED TO THE TOP OF THE CONE, IF NECESSARY, AND THE MEASURING TIME OF AT LEAST SIX HOURS BEGUN. AT THE END OF THE TEST PERIOD, THE MANHOLE SHALL BE REFILLED TO THE TOP OF THE CONE MEASURING THE VOLUME OF WATER ADDED. THIS AMOUNT SHALL BE CONVERTED TO A 24 HOUR RATE AND THE LEAKAGE DETERMINED ON THE BASIS OF DEPTH. THE LEAKAGE FOR EACH MANHOLE SHALL NOT EXCEED ONE GALLON PER VERTICAL FOOT FOR A 24 HOUR PERIOD FOR EXFILTRATION AND THERE SHALL BE NO VISIBLE INFILTRATION. IF AN AIR TEST IF PERFORMED ON THE MANHOLE, INSTEAD OF THE WATER TEST, THE MANHOLE SHALL REMAIN UN-BACKFILLED DOWN TO THE SEWER LINE INVERTS DURING THE AIR TEST.

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Issue Date: October 16, 2023

Revisions

No.	Description	Date

SEWER DETAILS

Project No.: 23167

C3.4

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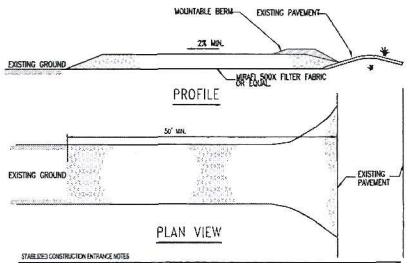


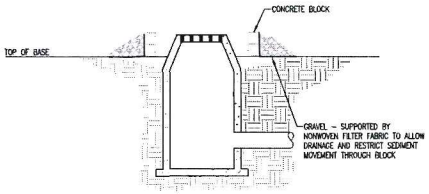
STABILIZED CONSTRUCTION ENTRANCE NOTES

1. STONE SIZE: USE 1-1/2" CRUSHED STONE.
2. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED ACROSS THE ENTRANCE.
3. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. REPAIR AND/OR CLEANOUT ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
4. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.
5. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

CONSTRUCTION ENTRANCE DETAIL

1

SCALE: NONE



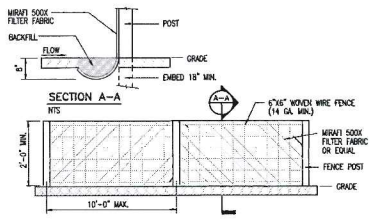
CONSTRUCTION SPECIFICATIONS

1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER FLOW.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, REMOVE GRAVEL AND BLOCK AND STABILIZE SURROUNDING AREA PER PLAN.
4. GRAVEL BAGS, CRATE GUARDS, FILTREDX OR SEDIGUARD INLET PROTECTION DEVICES MAY BE USED. SUBMIT PRODUCT INFORMATION TO ENGINEER FOR REVIEW PRIOR TO USE. INSTALL PRODUCTS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE LATEST EDITION OF THE VT EPSC STANDARDS AND SPECIFICATIONS.

STONE AND BLOCK CATCH BASIN PROTECTION DETAIL

2

SCALE: NONE



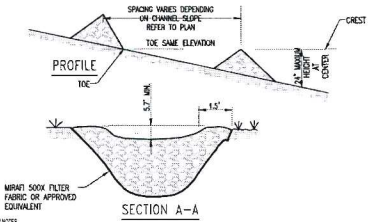
SILT FENCE NOTES

1. SILT FENCE SHALL BE PRE-FABRICATED EROSION CONTROL FENCE BY MIRAFI OR EQUAL, OR CONSTRUCTED IN PLACE AS SPECIFIED HEREIN.
2. CONSTRUCTED IN PLACE SILT FENCE:
   A. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
   B. FILTER FABRIC TO BE FASTENED SECURELY TO WOVEN WIRE FENCE TIES SPACED EVERY 24" AT TOP OF MID SECTION.
   C. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6", FOLDED AND STAPLED.
3. INSPECTION SHALL BE FREQUENT (MINIMUM ONCE A WEEK AND AFTER EVERY RAINFALL). MAINTENANCE SHALL BE PER-FORMED AS NEEDED, AND SEDIMENT REMOVED WHEN "BULGES" DEVELOP IN SILT FENCE.

SILT FENCE DETAIL

3

SCALE: NONE



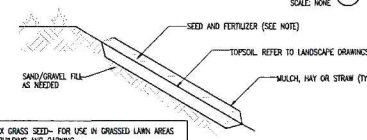
CHECK DAM NOTES

1. TYPE I STONE FILL WILL BE PLACED ON A FILTER FABRIC FOUNDATION AT THE GRADES AND LOCATIONS AS DESCRIBED HEREIN, AND TO MEET THE ABOVE DETAIL IN AREAS SHOWN ON PLANS.
2. SET SPACING OF CHECK DAMS SUCH THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM FOR A MINIMUM OF 100' DOWNSTREAM OF DISTURBED EARTH.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED WEEKLY (EVERY 7 DAYS) AND WITHIN 24 HOURS AFTER EACH RAIN.
6. REMOVE SEDIMENT COLLECTED BEHIND EACH DAM WHEN DEPTH OF SEDIMENT IS ONE HALF THE HEIGHT OF THE DAM.

STONE CHECK DAM DETAIL

4

SCALE: NONE



URBAN MIX GRASS SEED- FOR USE IN GRASSED LAWN AREAS AROUND BUILDING AND PARKING			
% BY WEIGHT	LBS. LIVE SEED BY	ACRE	TYPE OF SEED
44.44	20.0		CREEPING RED FESCUE
44.44	20.0		KENTUCKY BLUEGRASS
11.11	5.0		RYEGRASS
100	45.0 # LIVE SEED/ ACRE		

CONSERVATION MIX GRASS SEED- FOR USE IN ALL OTHER AREAS		
% BY WEIGHT	LBS. LIVE SEED PER ACRE	TYPE OF SEED
50	15.0	SMOOTH BROMEGRASS
16.67	5.0	RYEGRASS
33.33	10.0	BIRDSFOOT TREFOIL
100	30.0 # LIVE SEED/ACRE	

FERTILIZER- 40 LBS. PER 1000S.F.
USE STANDARD 10-20-20 WHEN NO SOIL TEST DATA IS AVAILABLE
SPRING SEEDING
FALL SEEDING

LIME- 100 LBS. PER 1000S.F.
DOLOMITIC GROUND LIMESTONE
NOT LESS THAN 85% OF THE TOTAL CARBONATE

TOP SOIL
6" MINIMUM TOPSOIL

HAY OR STRAW MULCH- 90-100LBS PER 1000S.F., APPLY BINDER OR NETTING AS NEEDED

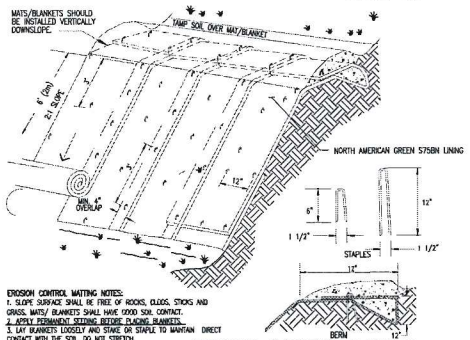
NOTES FOR SEEDED AND MULCHED AREAS

1. ALL DISTURBED SURFACES SHALL BE TEMPORARILY OR PERMANENTLY SEEDED AND MULCHED WITHIN 7 DAYS OF DISTURBANCE.
2. SEEDING AND MULCHING OF DISTURBED AREAS SHALL TAKE PLACE WITHIN 48 HOURS OF FINAL GRADING.
3. MULCH: TYPICALLY HAY OR STRAW MAY BE UTILIZED AND SHALL BE APPLIED AT A RATE OF 90-100 LBS/1,000 SF. MULCH SHALL NOT BE PLACED ON SLOPES OF GREATER THAN 3:1. SEED IMPREGNATED EROSION CONTROL NETTING SHALL BE USED IN ITS PLACE.
4. SEED: SEEDING SHALL OCCUR AFTER APRIL 15 AND PRIOR TO SEPTEMBER 15TH IN ORDER TO ESTABLISH A STAND OF GRASS PRIOR TO GROUND FREEZING. SEED SHALL BE IN ACCORDANCE WITH SEED SPECIFICATION ON THIS SHEET.
5. COVER SEED WITH 1 INCH SOIL UNLESS A HYDROSEEDER IS USED.
6. MULCH ANCHORING: SHALL BE ACCOMPLISHED BY DEGRADABLE MULCH NETTING. USE WHEN SLOPES ARE GREATER THAN 10%
7. TOPSOIL AND MULCHING NOT TO BE APPLIED IN AREAS OF TRAVEL WAYS.

SEEDED AND MULCHED AREAS DETAIL

5

SCALE: NONE



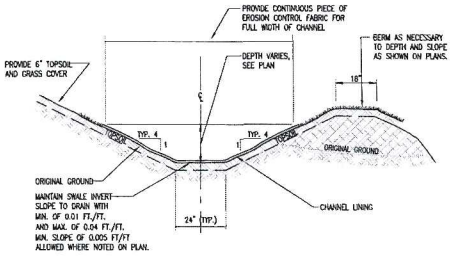
EROSION CONTROL MATTING NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/ BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. MATTING SHALL BE NATURAL FIBER.

EROSION CONTROL MATTING

6

SCALE: NONE



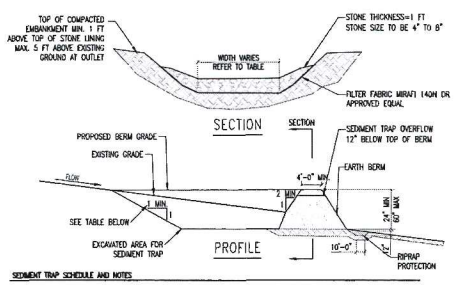
GRASSED SWALE NOTES:

1. PROVIDE CHANNEL LINING AS REQUIRED TO STABILIZE NEW VEGETATED SWALES. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
2. LAP UPSTREAM BLANKET OVER DOWNSTREAM BLANKET MIN. OF 12"

GRASSED DRAINAGE SWALE DETAIL

7

SCALE: NONE



SEDIMENT TRAP SCHEDULE AND NOTES

TRAP	DRAINAGE AREA IN ACRES	REQUIRED VOLUME OF SEDIMENT TRAP*	VOLUME PROVIDED	OVERFLOW WEIR ELEVATION	WEIR WIDTH	BOTTOM OF TRAP	TOP OF TRAP	SIDE SLOPE
TST-1	0.5	1800 CF	TBD	TBD	4'	TBD	TBD	2:1

* SEE NOTE 5 BELOW

1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.

2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVERSIZED STONE, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF EMBANKMENT SHALL BE FIVE (5) FEET, MEASURED AT CENTERLINE OF EMBANKMENT.

3. ANY EXCAVATED PORTION OF SEDIMENT TRAP SHALL HAVE 2:1 SLOPES OR FLATTER.

4. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF EMBANKMENT.

5. THE VOLUME OF SEDIMENT STORAGE SHALL BE 3,600 CF PER ACRE OF CONTRIBUTORY DRAINAGE. MINIMUM VOLUMES AND OUTLET SIZES FOR EACH TRAP ARE LISTED IN THE SEDIMENT TRAP SCHEDULE SHOWN ABOVE.

6. FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTIONS OF FABRIC MUST OVERLAP AT LEAST ONE (1) FOOT WITH SECTION NEAREST THE ENTRANCE PLACE ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OUTLET CHANNEL.

7. STONE USED IN THE OUTLET CHANNEL SHALL BE FOUR (4) TO EIGHT (8) INCH RIP-RAP. TO PROVIDE A FILTERING EFFECT, A LAYER OF FILTER CLOTH SHALL BE EMBEDDED ONE (1) FOOT WITH SECTION NEAREST THE ENTRANCE PLACE ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OUTLET CHANNEL.

8. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF OF THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND STABILIZED.

9. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRED AS NEEDED.

10. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND SEDIMENT ARE CONTROLLED.

11. THE STRUCTURE SHALL BE REMOVED AND AREA BROUGHT TO FINAL GRADE AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

12. DRAINAGE AREA FOR THIS PRACTICE IS LIMITED TO 15 ACRES OR LESS.

13. SEDIMENT TRAPS SHALL MEET THE VERMONT HANDBOOK FOR SOIL EROSION AND SEDIMENT CONTROL ON CONSTRUCTION SITES.

TEMPORARY SEDIMENT TRAP

8

NOT TO SCALE

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Issue Date: October 16, 2023

Revisions

No.	Description	Date

EPSC DETAILS

Project No.: 23167

C3.5

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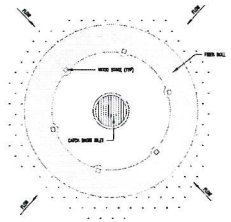
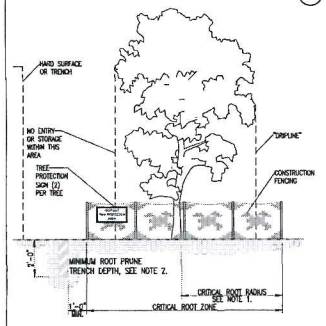


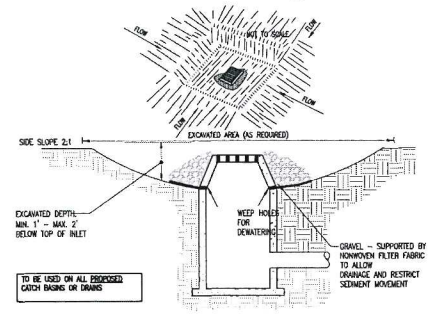
FIBER ROLL INLET PROTECTION DETAIL 1



TREE PROTECTION NOTES:

1. TO CALCULATE THE CRITICAL ROOT RADIUS, ESTIMATE THE TREE'S HEIGHT AND MULTIPLY BY 40 PERCENT (0.40). THE RESULT IS THE APPROXIMATE DISTANCE FROM THE TREE TRUNK TO THE EDGE OF THE CONSTRUCTION FENCING.
2. FENCE SPECIMEN TREES AND GROUPS OF TREES. WHERE ROOT LOSS WILL OCCUR, ROOT PRUNE ONE FOOT BEYOND THE CONSTRUCTION FENCE USING A VIBRATING KNIFE OR NARROW TRENCHER – ALWAYS WITH SHARP BLADES TO MAKE CLEAN CUTS. BACKFILL IMMEDIATELY AND COVER WITH 3 INCHES OF MULCH.
3. INSTALL SILT FENCE ON THE INTERIOR OF THE CONSTRUCTION FENCING TO KEEP SOIL FROM DISTURBED AREAS OUT OF THE ROOT ZONES OF TREES TO BE SAVED.
4. FERTILIZE, WATER, AERATE AND OTHERWISE AID TREE HEALTH.
5. COORDINATE THE FINAL LOCATION OF THE CONSTRUCTION FENCING AND ROOT PRUNING WITH THE OWNER.

TREE PROTECTION DETAIL 2



CONSTRUCTION SPECIFICATIONS

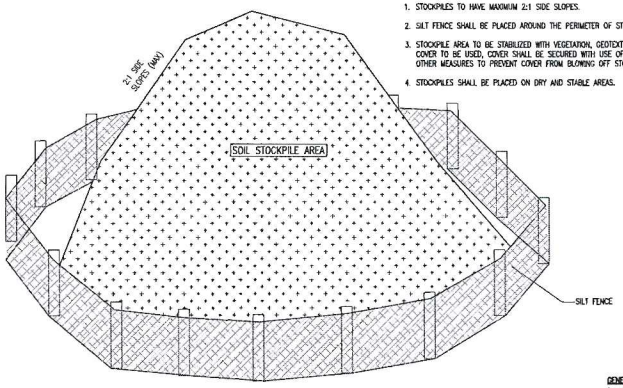
1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.
5. GRAVEL BAGS, GRATE GUARDS, FILTREXX OR SEDIGUARD INLET PROTECTION DEVICES MAY BE USED. SUBMIT PRODUCT INFORMATION TO ENGINEER FOR REVIEW PRIOR TO USE. INSTALL PRODUCTS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE LATEST EDITION OF THE VT EPSC STANDARDS AND SPECIFICATIONS.

EXCAVATED STORM DRAIN INLET PROTECTION DETAIL 3

NOT TO SCALE

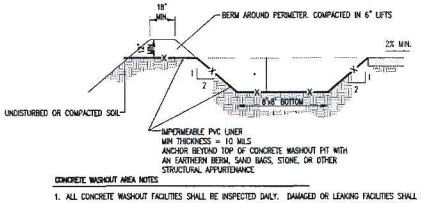
STOCKPILE NOTES

1. STOCKPILES TO HAVE MAXIMUM 2:1 SIDE SLOPES.
2. SILT FENCE SHALL BE PLACED AROUND THE PERIMETER OF STOCKPILE AREA.
3. STOCKPILE AREA TO BE STABILIZED WITH VEGETATION, GEOTEXTILE, OR COVER. IF COVER TO BE USED, COVER SHALL BE SECURED WITH USE OF SAND BAGS OR OTHER MEASURES TO PREVENT COVER FROM BLOWING OFF STOCKPILE.
4. STOCKPILES SHALL BE PLACED ON DRY AND STABLE AREAS.



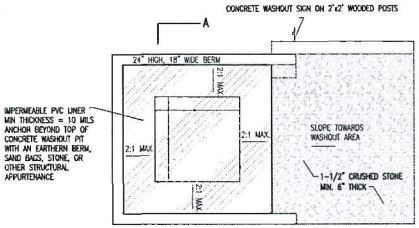
TEMPORARY SOIL STOCKPILE AREA DETAIL 4

SCALE: NONE



CONCRETE WASHOUT AREA NOTES

1. ALL CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED DAILY. DAMAGED OR LEAKING FACILITIES SHALL BE DEACTIVATED AND REPAIRED/REPLACED IMMEDIATELY. EXCESS RAINWATER THAT HAS ACCUMULATED OVER HARDENED CONCRETE SHOULD BE PUMPED TO A STABILIZED AREA, SUCH AS A GRASS FILTER STRIP.
2. ACCUMULATED HARDENED MATERIAL SHALL BE REMOVED WHEN 75% OF THE STORAGE CAPACITY OF THE STRUCTURE IS FILLED. ANY EXCESS WASH WATER SHALL BE PUMPED INTO A CONTAINMENT VESSEL AND PROPERLY DISPOSED OF OFF-SITE.
3. DISPOSE OF THE HARDENED MATERIAL OFF-SITE IN AN APPROPRIATE FACILITY. ON-SITE DISPOSAL MAY BE ALLOWED IF THIS HAS BEEN APPROVED AND ACCEPTED AS PART OF THE PROJECTS SWPPP. IN THAT CASE, THE MATERIAL SHALL BE RECYCLED AS SPECIFIED, OR BURIED AND COVERED WITH A MINIMUM OF 2 FEET OF CLEAN COMPACTED EARTHFILL THAT IS PERMANENTLY STABILIZED TO PREVENT EROSION.
4. THE PLASTIC LINER SHALL BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.
5. INSPECT THE PROJECT SITE FREQUENTLY TO ENSURE THAT NO CONCRETE DISCHARGES ARE TAKING PLACE IN NON-DESIGNATED AREAS.
6. IN LIEU OF CONCRETE WASHOUT AREA, A PRE-FABRICATED WASHOUT MAY BE USED. CONTRACTOR SHALL SUBMIT SHOP DRAWING OF SUCH PRE-FABRICATED WASHOUT AREA TO DESIGN ENGINEER FOR REVIEW AND APPROVAL.



CONCRETE TRUCK WASHOUT AREA 5

SCALE: NONE

WINTER EROSION CONTROL NOTES

WINTER CONSTRUCTION PROCEDURES

1. DURING WINTER CONSTRUCTION, INSPECTIONS BY THE ON-SITE PLAN COORDINATOR SHALL OCCUR DAILY WHEN AREAS ARE UN-STABLE, AND WEEKLY PRIOR TO ANY FORECASTED RAIN, THAW OR SPRING MELT WHEN TEMPORARY STABILIZATION IS IN PLACE.
2. IN AREAS TO BE STABILIZED BY VEGETATION, ALL SEEDING MUST BE COMPLETED BY SEPTEMBER 15 TO ALLOW GROWTH TO OCCUR PRIOR TO THE GROUND FREEZING. STABILIZATION OF ALL OTHER DISTURBED AREAS SHALL BE COMPLETED BY OCTOBER 15.
3. ENLARGED ACCESS POINTS, STABILIZED TO PROVIDE FOR SNOW STOCKPILING SHALL BE INSTALLED.
4. LIMITS OF DISTURBANCE SHALL BE MOVED OR REPLACED TO REFLECT BOUNDARY OF WINTER WORK.
5. SNOW WILL NOT BE PILED WITHIN 25 FEET OF PERIMETER CONTROLS (SUCH AS SILT FENCE) TO ALLOW FOR CLEARING AND MAINTENANCE. SNOW IS TO BE REMOVED FROM ALL STRUCTURAL EROSION PREVENTION AND SEDIMENTATION CONTROL MEASURES FOLLOWING EACH SIGNIFICANT SNOWFALL. NO SNOW STORAGE UP-GRADIENT OF DISTURBANCE. NO SNOW DISPOSAL IN SEDIMENT PONDS/BASINS. IF NECESSARY, SNOW/ICE MUST BE REMOVED PRIOR TO STABILIZATION OF DISTURBED AREAS. ACCESS POINTS SHALL BE ENLARGED AND STABILIZED TO ALLOW FOR SNOW STOCKPILING.
6. IN AREAS OF DISTURBANCE WITHIN 100 FT OF A RECEIVING WATER, SILT FENCE SHALL BE REINFORCED OR ELSE REPLACED WITH PERIMETER DIKES, SWALES OR OTHER PRACTICES RESISTANT TO THE FORCES OF SNOW LOADS.
7. DRAINAGE STRUCTURES SHALL BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS.
8. ALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE TO BE IN PLACE BY OCTOBER 15, OR IF NOT POSSIBLE, THEN PRIOR TO GROUND FREEZE.
9. MULCH IS TO BE APPLIED AT THE END OF EACH WORKDAY TO ALL EXPOSED AREAS THAT HAVE NOT YET REACHED FINAL GRADE AT TWICE THE RATE INDICATED IN THE SEEDING AND MULCHING DETAIL FOR THE REGULAR CONSTRUCTION SEASON. MULCH SHALL BE TRACKED IN OR STABILIZED WITH NETTING.
10. TO ENSURE COVER OF DISTURBED SOIL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOIL MUST BE STABILIZED AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:
    A) IF NO PRECIPITATION WITHIN 24 HOURS IS FORECAST AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
    B) DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS HOUSE FOUNDATIONS OR OPEN UTILITY TRENCHES.
11. SNOW AND ICE SHALL BE REMOVED TO LESS THAN 1" THICKNESS PRIOR TO STABILIZATION.
12. STONE STABILIZATION, 10 TO 20 FT WIDE IN AREAS SUCH AS THE PERIMETER OF BUILDINGS UNDER CONSTRUCTION WHERE CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED SHALL BE INSTALLED.

GENERAL EROSION CONTROL NOTES

1. THE "ON-SITE EROSION CONTROL PLAN COORDINATOR" SHALL BE THE GENERAL CONTRACTOR, THIS INDIVIDUAL SHALL BE PRESENT ON-SITE FROM DAY-TO-DAY, AND SHALL BE RESPONSIBLE FOR ENSURING THAT THE EROSION CONTROL MEASURES REQUIRED BY THE EROSION CONTROL PLAN, DETAILS AND NOTES, ARE PROPERLY INSTALLED AND MAINTAINED. THE ONSITE EROSION CONTROL PLAN COORDINATOR SHALL KEEP A WRITTEN RECORD OF INSPECTIONS AND MAINTENANCE OF EROSION CONTROL FEATURES. A COPY OF THESE PLANS AND INSPECTION/MAINTENANCE RECORDS SHALL BE KEPT ONSITE AT ALL TIMES.
2. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE DISTURBED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS DISTURBED, THE DISTURBANCE SHALL BE KEPT TO THE SHORTEST PRACTICAL DURATION AS APPROVED BY THE OWNER'S REP.
3. DUST SHALL BE CONTROLLED WITH WATER DISTRIBUTED BY A TRUCK MOUNTED SPRAY BAR. CALCIUM CHLORIDE (AASHTO M 144) OR SODIUM CHLORIDE (AASHTO M 143) SHALL BE USED AS DIRECTED BY THE OWNER'S REP.
4. ALL EROSION AND STORMWATER CONTROL SYSTEMS SHALL BE INSPECTED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF THE OCCURRENCE OF A STORM EVENT OF 0.5" OR GREATER. NEEDED REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE REMOVED AS THEY ACCUMULATE AND PLACED IN AREAS WHERE FURTHER EROSION IS UNLIKELY.
5. A REPORT, STAMPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, SHALL BE WRITTEN WITHIN 24 HOURS OF EACH INSPECTION THAT:
    A) DESCRIBES THE PROGRESS OF THE PROJECT, INCLUDING WHETHER ALL CONDITIONS OF THE PERMIT ARE BEING MET AND, IF NOT, WHICH REQUIREMENTS ARE NOT BEING MET;
    B) IF ANY REQUIREMENTS ARE NOT BEING MET, AN EXPLANATION OF THE CORRECTIVE ACTION(S) THAT WILL BE OR ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE WITH APPLICABLE REQUIREMENTS AND THE DEADLINE BY WHICH SUCH ACTIONS WILL BE COMPLETED; AND
    C) INCLUDES PHOTOGRAPHS OF THE SITE THAT ARE REPRESENTATIVE OF THE PROJECT; AND
6. RETAIN A COPY OF THE REPORT PREPARED PURSUANT TO (5), ABOVE, ON-SITE FOR REVIEW DURING SITE INSPECTIONS BY FEDERAL, STATE, AND LOCAL OFFICIALS
7. ALL PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
8. DETENTION BASINS AND SWALES SHALL BE INSTALLED PRIOR TO ROUGH GRADING THE SITE.
9. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
10. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
11. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
    - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
    - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
    - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
13. LOT DISTURBANCE OTHER THAN THAT SHOWN ON THE APPROVED PLANS SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.
14. THE APPLICANT SHALL NOTIFY IN WRITING DES WETLANDS BUREAU AND THE LEBANON CONSERVATION COMMISSION OF THEIR INTENTION TO COMMENCE CONSTRUCTION NO LESS THAN FIVE (5) BUSINESS DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
15. APPROPRIATE SILTATION/EROSION/TURBIDITY CONTROLS SHALL BE IN PLACE PRIOR TO CONSTRUCTION, SHALL BE MAINTAINED DURING CONSTRUCTION, AND REMAIN IN PLACE UNTIL THE AREA IS STABILIZED. SILT FENCE(S) MUST BE REMOVED ONCE THE AREA IS STABILIZED.
16. DISCHARGE FROM DEWATERING OF WORK AREAS SHALL BE TO SEDIMENT BASINS THAT ARE:
    A) LOCATED IN UPLANDS;
    B) LINED WITH HAY BALES OR OTHER ACCEPTABLE SEDIMENT TRAPPING LINERS;
    C) SET BACK AS FAR AS POSSIBLE FROM WETLANDS AND SURFACE WATERS, IN ALL CASES WITH A MINIMUM OF 20 FEET OF UNDISTURBED VEGETATED BUFFER.
17. WITHIN THREE DAYS OF FINAL GRADING, ALL EXPOSED SOIL AREAS SHALL BE STABILIZED BY SEEDING AND MULCHING DURING THE GROWING SEASON, OR IF NOT WITHIN THE GROWING SEASON, BY MULCHING WITH TACK OR NETTING AND PINNING ON SLOPES STEEPER THAN 3:1.
18. WHERE CONSTRUCTION ACTIVITIES HAVE BEEN TEMPORARILY SUSPENDED WITHIN THE GROWING SEASON, ALL EXPOSED SOIL AREAS SHALL BE STABILIZED WITHIN 14 DAYS BY SEEDING AND MULCHING.
19. WHERE CONSTRUCTION ACTIVITIES HAVE BEEN TEMPORARILY SUSPENDED OUTSIDE THE GROWING SEASON, ALL EXPOSED AREAS SHALL BE STABILIZED WITHIN 14 DAYS BY MULCHING AND TACK. SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED BY MATTING AND PINNING.
20. PROPER HEADWALLS SHALL BE CONSTRUCTED WITHIN SEVEN DAYS OF CULVERT INSTALLATION.

EROSION CONTROL CONSTRUCTION SEQUENCE:

1. THE "ON-SITE EROSION CONTROL PLAN COORDINATOR" SHALL BE THE GENERAL CONTRACTOR, THIS INDIVIDUAL SHALL BE PRESENT ON SITE FROM DAY TO DAY, AND SHALL BE RESPONSIBLE FOR ENSURING THAT THE EROSION CONTROL MEASURES REQUIRED BY THE EROSION CONTROL PLAN, DETAILS AND NOTES, ARE PROPERLY INSTALLED AND MAINTAINED. THE ONSITE EROSION CONTROL PLAN COORDINATOR SHALL KEEP A WRITTEN RECORD OF INSPECTIONS AND MAINTENANCE OF EROSION CONTROL FEATURES. A COPY OF THESE PLANS AND INSPECTION/MAINTENANCE RECORDS SHALL BE KEPT ONSITE AT ALL TIMES.
2. HOLD PRE-CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION, WITH THE CONTRACTOR, OWNER, AND ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL EROSION CONTROL MEASURES DELINEATED ON THE PLANS AND ANY ADDITIONAL MEASURES THAT ARE NECESSARY TO MINIMIZE EROSION. THE CONTRACTOR SHALL HAVE EROSION CONTROL MATERIALS AND INSTALLATION EQUIPMENT ON SITE AT ALL TIMES.
3. IF POSSIBLE, ALL TEMPORARY EROSION CONTROL MEASURES REQUIRED FOR WORK PROPOSED DURING THE WINTER (BETWEEN OCTOBER 15 AND MAY 1), SHALL BE INSTALLED PRIOR TO OCTOBER 1.
4. PRIOR TO ANY OTHER WORK, SILT FENCES SHALL BE INSTALLED GENERALLY 10 FEET FROM THE BASE OF THE FILL SLOPES, OR AS SHOWN ON THE EROSION CONTROL PLAN. THESE SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES 6 INCHES DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
5. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT.
6. INSTALL INLET PROTECTION ON EXISTING AND NEW CATCH BASINS.
7. ROUGH GRADE AND STOCKPILE TOPSOIL SURROUNDED BY SILT FENCE.
8. STABILIZE EXPOSED SLOPES AND SOILS AS SOON AS GRADED, AND MAINTAIN UNTIL ADEQUATELY VEGETATED.
9. COMPLETE FINAL GRADING OF SITE. PLACE TOPSOIL AND PERMANENTLY VEGETATE, LANDSCAPE, AND MULCH.
10. AFTER THE SITE IS APPROVED BY THE ENGINEER AS ADEQUATELY STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.

TEMPORARY/CONSTRUCTION EROSION CONTROL MEASURES:

1. SILT FENCES SHALL BE INSTALLED GENERALLY 10 FEET FROM THE BASE OF THE FILL SLOPES, OR AS SHOWN ON THE PLANS. THESE SHALL REMAIN IN PLACE UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES 6 INCHES DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
2. INSTALL STONE CHECK DAMS IN GRASS-LINED SWALES 50 FEET ON CENTER TO PREVENT SILT FROM WASHING INTO THE DRAINAGE SYSTEM DURING CONSTRUCTION. SEDIMENT SHALL BE REMOVED FROM BEHIND THE DAMS WHEN IT BECOMES 6 INCHES DEEP. STONE CHECK DAMS SHALL BE REMOVED WHEN VEGETATION IS ESTABLISHED.
3. DROP INLET PROTECTION SHALL BE PROVIDED AROUND ALL EXISTING AND PROPOSED CATCH BASINS. PROTECTION SHALL REMAIN UNTIL ALL DISTURBED AREAS ARE STABILIZED. SEDIMENT SHALL BE REMOVED FROM DROP INLET PROTECTION WHEN THE STORAGE CAPACITY HAS BEEN APPROXIMATELY 50% FILLED. GRAVEL WILL BE CLEANED OR REPLACED WHEN IT NO LONGER DRAINS PROPERLY.
4. EXCAVATED MATERIAL FROM EARTH EXCAVATIONS AND DITCH DIGGING SHALL BE DISPOSED OF OFFSITE OR USED FOR PROJECT FILL MATERIAL IF DETERMINED SUITABLE BY THE OWNER'S REPRESENTATIVE.
5. STOCKPILED MATERIAL (TOPSOIL, BORROW, ETC.) SHALL HAVE SILT FENCE CONSTRUCTED AROUND THE PERIMETER. THE STOCKPILED MATERIAL SHALL BE SEEDED AND MULCHED AS SOON AS POSSIBLE TO PREVENT SOIL EROSION AND SEDIMENTATION OFF SITE. LOCATE STOCKPILES ON THE UPHILL SIDE OF DISTURBED AREAS, IF POSSIBLE. DURING WINDY CONDITIONS, STOCKPILED MATERIAL SHALL BE COVERED OR WATERED APPROPRIATELY TO PREVENT WIND EROSION.

PERMANENT EROSION CONTROL MEASURES:

1. GRASS LINED SWALES SHALL BE TOP SOILED, SODDED AND FERTILIZED AREAS WHICH EXHIBIT SIGNS OF EROSION SHALL BE RE-SODDED IMMEDIATELY AND MAINTAINED UNTIL SOD HAS PERMANENT HOLD AND IS HEALTHY.
2. WHEN CONSTRUCTION IS COMPLETED IN AN AREA, IT SHALL BE IMMEDIATELY TOP SOILED, SEEDED, FERTILIZED AND MULCHED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUED MAINTENANCE OF ALL DISTURBED AREAS, INCLUDING WATERING, UNTIL THE AREA IS INSPECTED AND ACCEPTED BY THE OWNER OR ENGINEER.
4. AFTER THE SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.
5. RE-SEEDING SHALL BE DONE UNTIL ALL AREAS ARE COMPLETELY COVERED WITH A MATURE STRAND OF GRASS. AN AREA SHALL BE CONSIDERED COVERED WHEN THE ENTIRE SURFACE CONTAINS A VERDUROUS STAND OF GRASS, AREAS THAT, IN THE OPINION OF THE ENGINEER ARE PREDOMINATELY WEEDS SHALL BE PLOWED UP, FINE GRADED, FERTILIZED AND RE-SEEDED IN THE MANNER SPECIFIED PREVIOUSLY, EXERCISING CAUTION NOT TO CAUSE DAMAGE TO NEW OR EXISTING PLANT MATERIAL.

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Revisions

No.	Description	Date

EPSC DETAILS

Project No.: 23167

C3.6

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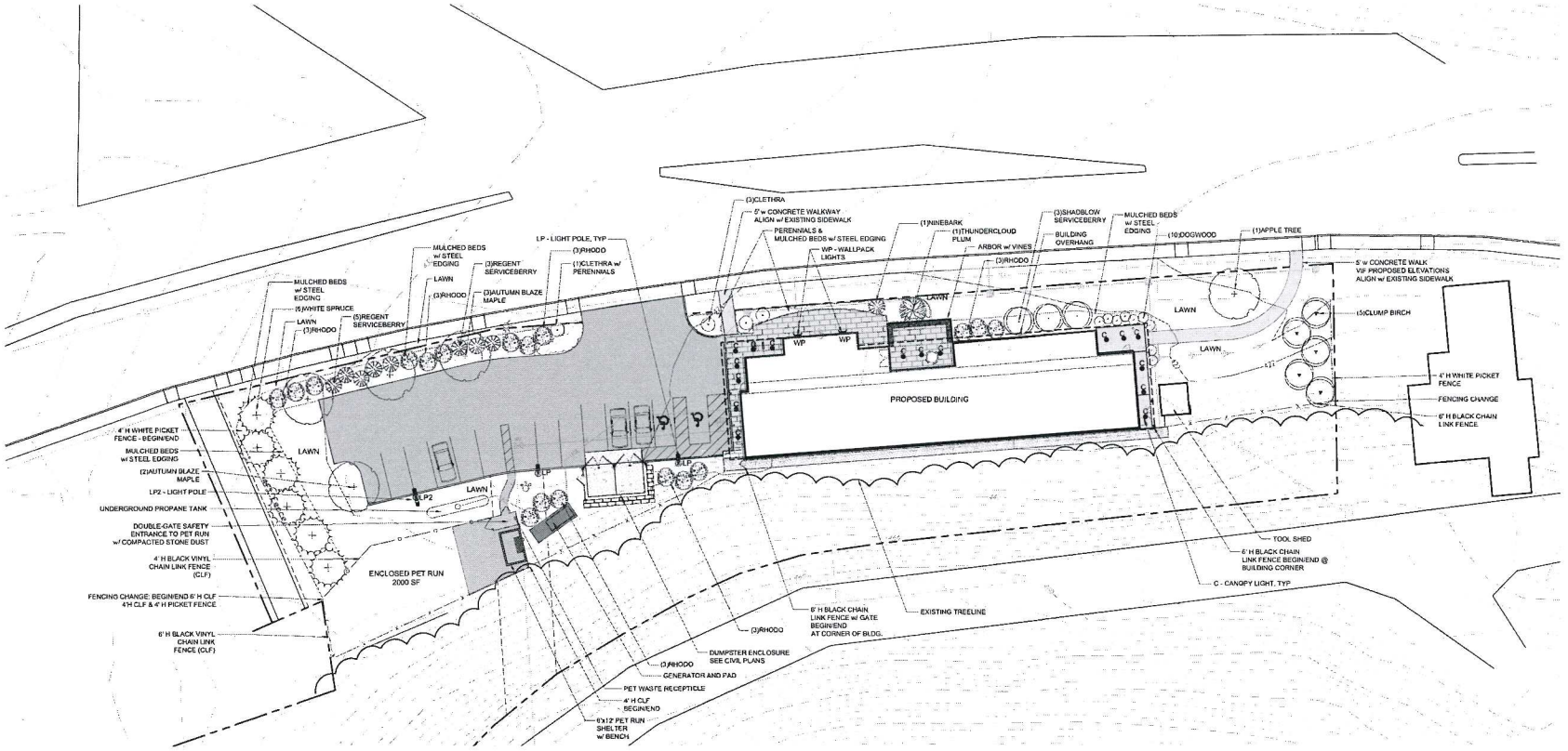


LANDSCAPE PLANT SCHEDULE

QTY	BOTANICAL NAME	COMMON NAME	SIZE	NATIVE NON-INVASIVE
DECIDUOUS TREES				
4	ACER RUBRUM 'OCTOBER GLORY'	*OCTOBER GLORY RED MAPLE*	2.5" - 3" CALIPER	NATIVE
3	AMELANCHIER CANADENSIS	*SHADBLOW SERVICEBERRY*	5'-6' HT. B&B	NATIVE
5	BETULA PAPYRIFERA	*CLUMP WHITE BIRCH*	CLUMP 8'-10' HT.	NATIVE
1	MALUS SP.	*APPLE TREE*	2.5" - 3" CALIPER	NON-INVASIVE
1	PRUNIS CERASIFERA 'THUNDERCLOUD'	*THUNDERCLOUD PLUM*	2.5" - 3" CALIPER	NON-INVASIVE
EVERGREEN TREES				
6	PICEA GLAUCA	*WHITE SPRUCE*	6'-10' HT. B&B	NATIVE
SHRUBS				
8	AMELANCHIER ALNIFOLIA 'REGENT'	*REGENT SERVICEBERRY*	30"-36" HT, 7 GAL	NATIVE
6	CLETHRA ALNIFOLIA HUMMINGBIRD	*HUMMINGBIRD SUMMERSWEET*	24"-30" HT, 5 GAL	NATIVE
10	CORNUS SERICEA 'BAILEYI'	*BAILEY RED TWIG DOGWOOD*	24"-30" HT, 5 GAL	NATIVE
1	PHYSIOCARPUS OPULIFOLIUS DIABLO	*DIABLO NINEBARK*	24"-30" HT, 5 GAL	NATIVE
15	RHODODENDRON 'P.J.M. ALBA'	*WHITE P.J.M. RHODODENDRON*	24"-30" HT, 5 GAL	NON-INVASIVE
VINES				
3	GRAPE	*VITIS SP.*	30"-36" HT, 7 GAL	NON-INVASIVE

NOTE:
THE PLANT SELECTIONS ARE NORTHERN HARDY, NON INVASIVE VARIETIES THAT DO NOT REQUIRE IRRIGATION BEYOND INITIAL ESTABLISHMENT.

DRAFT

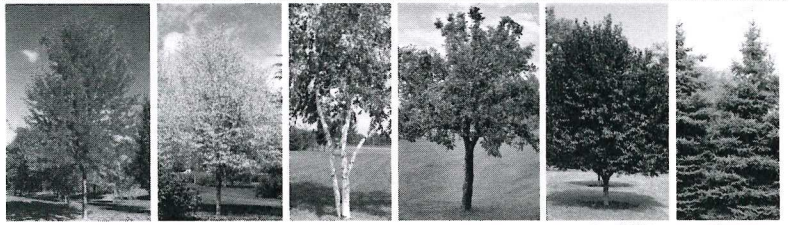
SCALE: 1" = 20FT

NORTH

LANDSCAPE NOTES

1. THE NUMBER OF EACH INDIVIDUAL PLANT TYPE AND SIZE IS PROVIDED IN THE PLANT LIST FOR CONTRACTORS CONVENIENCE ONLY. IF A DISCREPANCY EXISTS BETWEEN THE NUMBER OF PLANTS ON THE LIST AND THE NUMBER SHOWN ON THE DRAWING, THE GREATER NUMBER SHALL APPLY.
2. THE CONTRACTOR SHALL SUPPLY PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING AS SHOWN.
3. ALL PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE PRIOR TO ARRIVAL ON SITE.
4. ALL PLANT BEDS WILL BE TOP DRESSED WITH 3" SHREDDED BARK MULCH.
5. THE CONTRACTOR SHALL LOCATE AND MARK ALL UTILITIES PRIOR TO PLANTING. ANY CONFLICTS BETWEEN PLANTING AND UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE OWNER SO THAT ALTERNATIVE PLANTING LOCATIONS CAN BE DETERMINED.
7. NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OWNER OR LANDSCAPE ARCHITECT.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PLANTS AGAINST DAMAGE FROM ON-GOING CONSTRUCTION. PROTECTION SHALL BEGIN AT THE TIME THE PLANT IS INSTALLED AND CONTINUE UNTIL FORMAL ACCEPTANCE OF ALL PLANTINGS.
9. ALL OTHER DISTURBED AREAS NOT OTHERWISE INDICATED SHALL BE LOAMED AND SEEDED.
10. CONTRACTOR SHALL PRESERVE EXISTING TREES AND EXISTING PLANTINGS WHERE INDICATED.
11. CONTRACTOR SHALL PROVIDE A 2-YEAR GUARANTEE ON ALL INSTALLED PLANT MATERIAL.
12. ALL PROPOSED TREES SHALL BE PLACED A MINIMUM OF 10FT FROM EXISTING AND PROPOSED UTILITIES.
13. ALL TREES SPECIFIED WILL BE OF GOOD QUALITY AND IN COMPLIANCE WITH THE MOST RECENT EDITION OF ANSI Z60.1 AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY AMERICANHORT.
14. SPECIAL ATTENTION SHALL BE PAID TO THE SITE PREPARATION AND SOILS FOR ALL PLANTING AREAS TO ENSURE THE HEALTH AND VIGOROUS GROWTH OF PLANTINGS (ESPECIALLY TREES AND SHRUBS). CONTRACTOR SHALL PROVIDE ADEQUATE SOIL VOLUME AS DEPICTED IN THE TREE AND SHRUB PLANTING DETAILS HEREIN.

PROPOSED PLANTS



OCTOBER GLORY MAPLE | SHADBLOW SERVICEBERRY | WHITE BIRCH | APPLE TREE | THUNDERCLOUD PLUM | WHITE SPRUCE



REGENT SERVICEBERRY | HUMMINGBIRD SUMMERSWEET | RED TWIG DOGWOOD | DIABLO NINEBARK | PJM WHITE RHODODENDRON | GRAPES

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Issue Date: October 25, 2023

Revisions

No.	Description	Date

Landscape Plan

Project No.: PA2314

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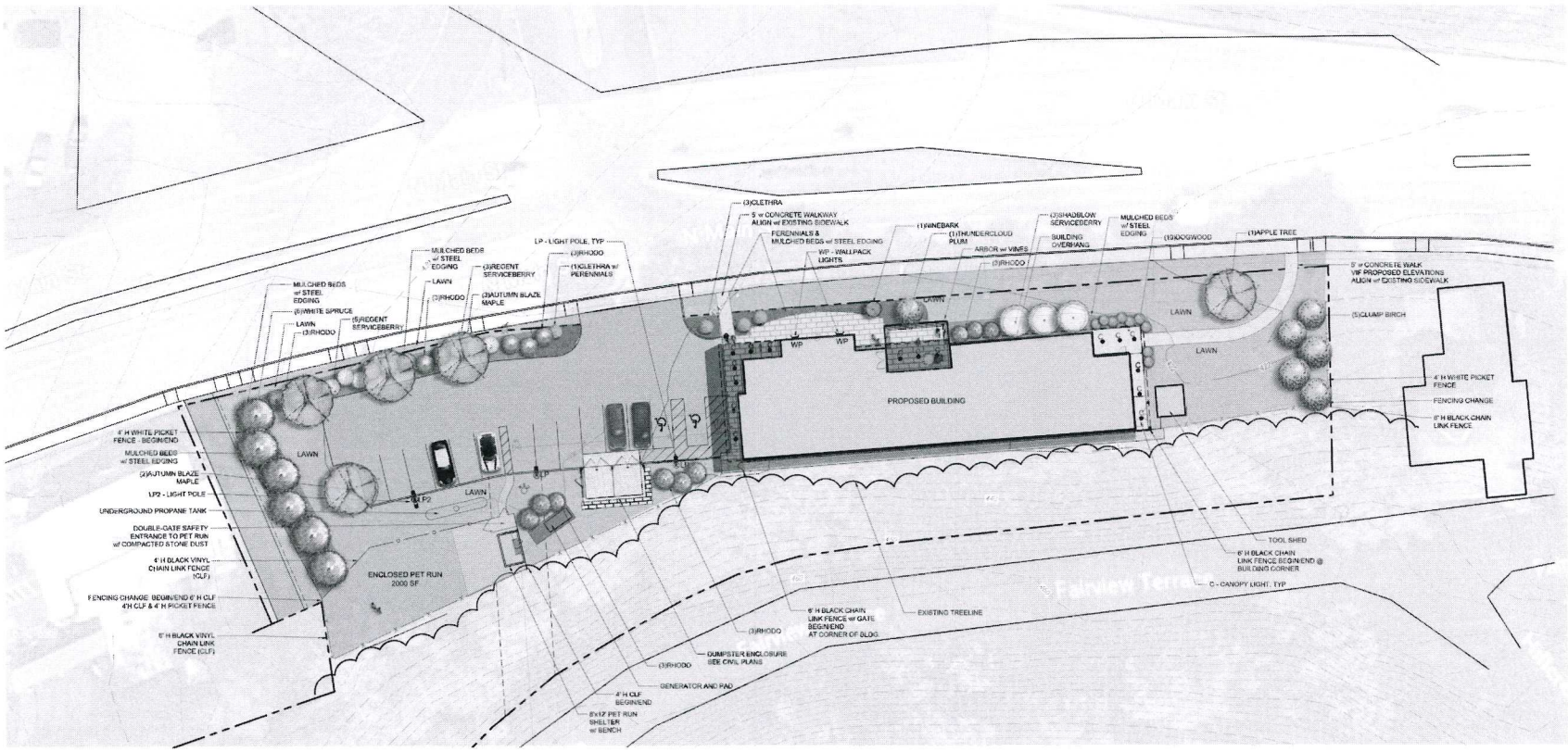

LANDSCAPE PLANT SCHEDULE

QTY	BOTANICAL NAME	COMMON NAME	SIZE
DECIDUOUS TREES			
4	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2.5" – 3" CALIPER
3	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	5'–6' HT. B&B
5	BETULA PAPYRIFERA	CLUMP WHITE BIRCH	CLUMP 8'–10' HT.
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EVERGREEN TREES			
6	PICEA GLAUCA	WHITE SPRUCE	8'–10' HT. B&B
SHRUBS			
8	AMELANCHIER ALNIFOLIA 'REGENT'	REGENT SERVICEBERRY	30"–36" HT. 7 GAL
6	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	HUMMINGBIRD SUMMERSWEET	24"–30" HT. 5 GAL
10	CORNUS SERICEA 'BAILEY'	BAILEY RED TWIG DOGWOOD	24"–30" HT. 5 GAL
1	PHYSIOCARPUS OPULIFOLIUS DIABLO	DIABLO NINEBARK	24"–30" HT. 5 GAL
15	RHODODENDRON 'PJM ALBA'	WHITE PJM RHODODENDRON	24"–30" HT. 5 GAL
VINES			
3	GRAPE	VITIS SP.	30"–36" HT. 7 GAL

DRAFT

20' 0' 20' 40'

SCALE: 1" = 20FT

NORTH

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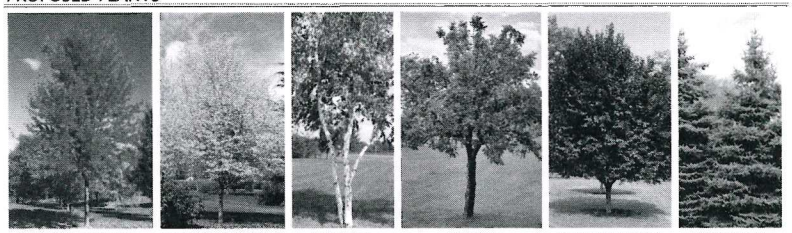
PROPOSED PLANTS



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Issue Date: October 16, 2023

Revisions

No.	Description	Date

Landscape Plan Color

Project No.: PA2314

L1-1

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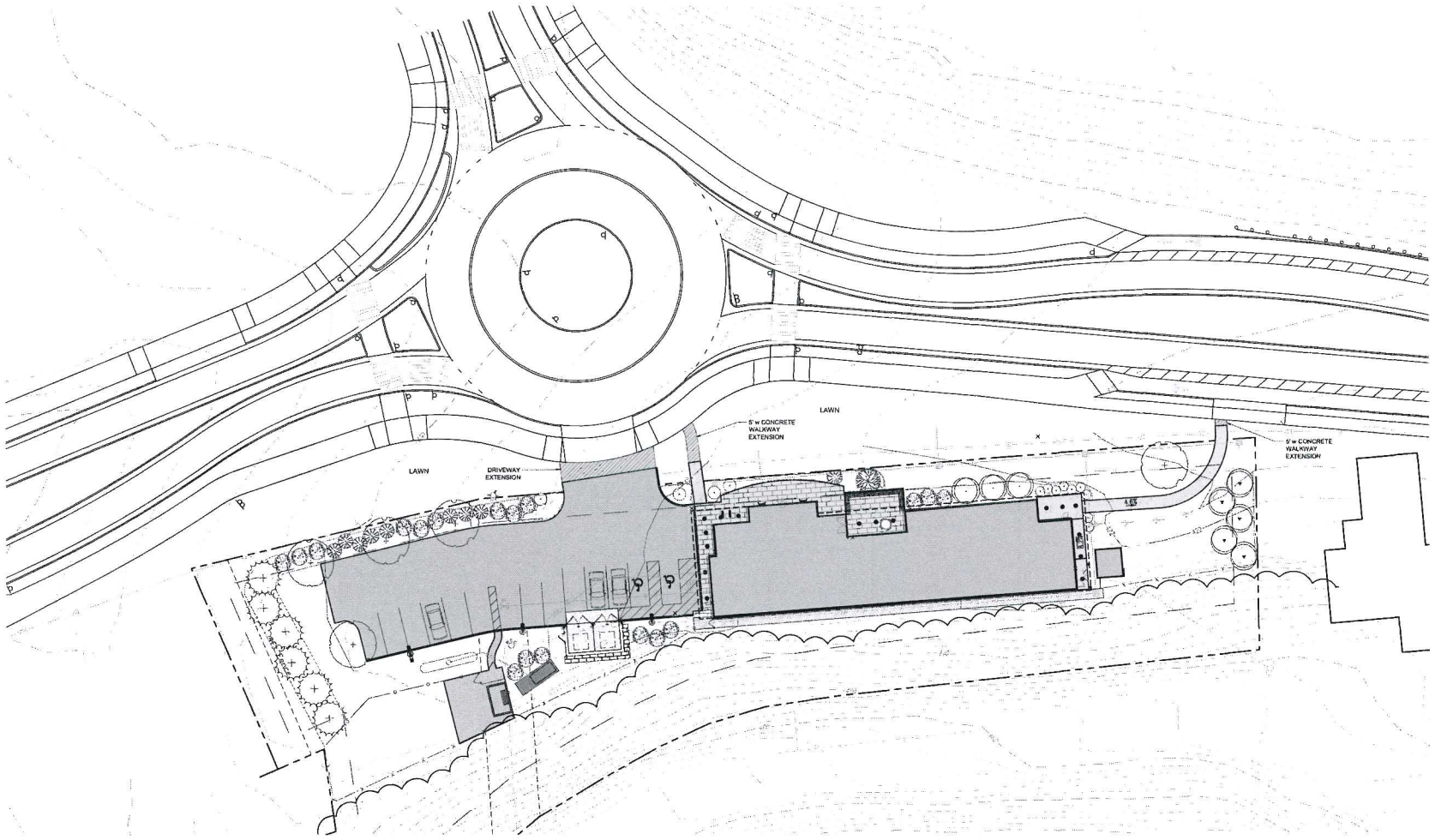
SITE PLAN: CONNECTIONS TO PROPOSED ROUNDABOUT



DRAFT

20' 0' 20' 40'

SCALE: 1" = 20FT

NORTH

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Issue Date: October 16, 2023

Revisions

No.	Description	Date

Landscape Plan w/ Roundabout

Project No.: PA2314

L2-0

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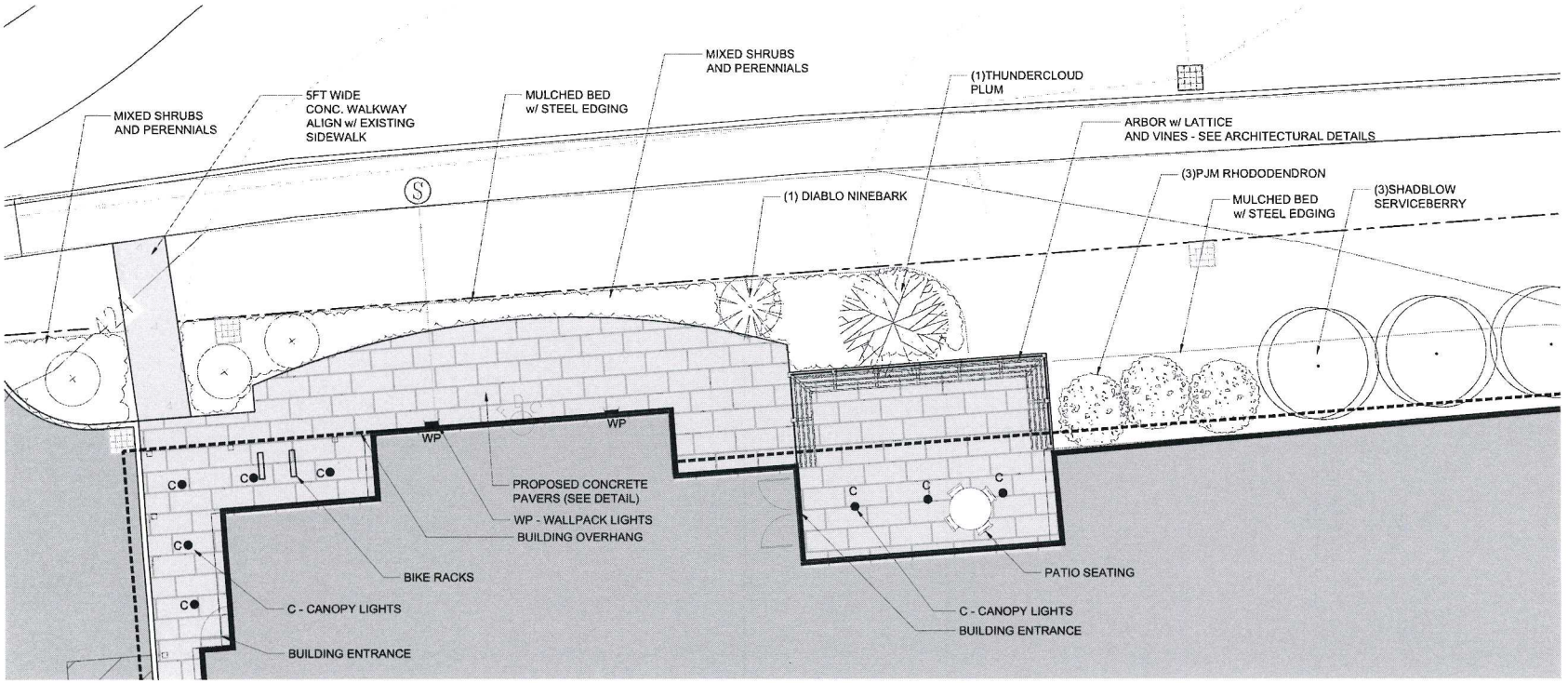
SITE ENLARGEMENT PLAN: AMENITY BUILDING PATIO AREA

SCALE: 1" = 5'-0"



ARBOR w/ VINE



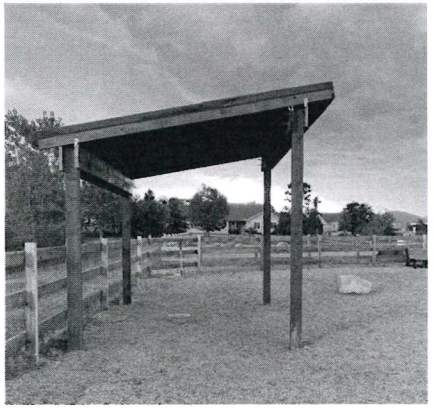
REFERENCE IMAGE ONLY.
SEE ARCHITECTURAL DETAILS

PATIO SEATING



REFERENCE IMAGE ONLY.

PET RUN SHELTER



REFERENCE IMAGE ONLY.

DRAFT

5' 0' 5' 10'

SCALE: 1" = 5FT
NORTH

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Issue Date: October 16, 2023

Revisions

No.	Description	Date

Site Enlargement Plan

Project No.: PA2314

L3-0

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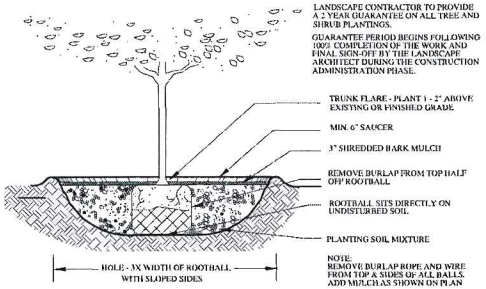
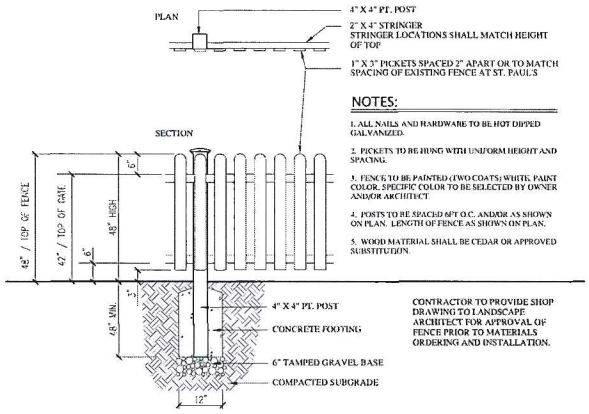
TREE PLANTING DETAIL

NOT TO SCALE



4FT HIGH WOOD PICKET FENCE DETAIL

NOT TO SCALE



NOTES:

1. ALL NAILS AND HARDWARE TO BE HOT DIPPED GALVANIZED.
2. PICKETS TO BE HUNG WITH UNIFORM HEIGHT AND SPACING.
3. FENCE TO BE PAINTED (TWO COATS) WHITE, PAINT COLOR, SPECIFIC COLOR TO BE SELECTED BY OWNER AND/OR ARCHITECT
4. POSTS TO BE SPACED 6FT O.C. AND/OR AS SHOWN ON PLAN. LENGTH OF FENCE AS SHOWN ON PLAN.
5. WOOD MATERIAL SHALL BE CEDAR OR APPROVED SUBSTITUTION.

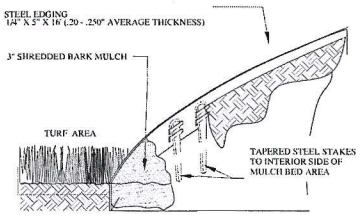
CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL OF FENCE PRIOR TO MATERIALS ORDERING AND INSTALLATION.

STEEL LANDSCAPE EDGING

NOT TO SCALE

STEEL LANDSCAPE EDGING AS MANUFACTURED BY:
SURE-LOC ALUMINUM EDGING CORPORATION - HOLLAND MI
TEL: 1-800-787-3562 OR APPROVED EQUAL

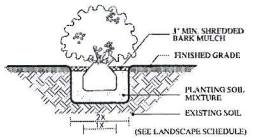
STEEL EDGING
1/4" X 5" X 16' (.20 - .250" AVERAGE THICKNESS)



NOTES:
INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
SEE LANDSCAPE PLAN FOR LOCATION OF LAWN VS. MULCHED BED AREAS AND PLACEMENT OF STEEL EDGING.
CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO MATERIALS ORDERING AND INSTALLATION.

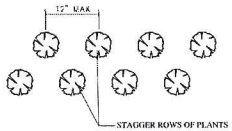
SHRUB PLANTING DETAIL

NOT TO SCALE



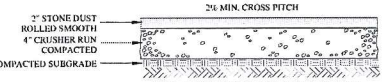
GROUNDCOVER SPACING

NOT TO SCALE



STONE DUST PAVEMENT DETAIL

NOT TO SCALE

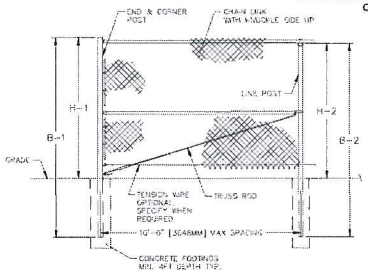


NOTE: SEE PLAN FOR LOCATION OF STONE DUST PATH, PET RUN ENTRANCE AND PET RUN STONE DUST PAVING AREA.

BLACK VINYL CLF INSTALLATION DETAIL

NOT TO SCALE

SEE LANDSCAPE AND CIVIL PLANS FOR LOCATIONS OF 4' CLF AND 6' CLF



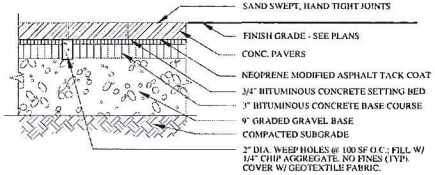
NOTES:

1. SEE PLAN FOR LOCATION AND LENGTH OF PROPOSED FENCING. (BEGIN / END CLF LABELS)
2. ALL CHAIN LINK FABRIC SHALL BE BLACK VINYL COATED.
3. ALL POSTS, BARS, RODS & HARDWARE SHALL BE BLACK POWDER COATED STEEL FENCE.
4. CONTRACTOR SHALL INCLUDE TOP AND BOTTOM RAILS ON ALL FENCING.
5. MANUFACTURER SHALL BE ANCHOR FENCE OR APPROVED EQUAL.
6. INSTALL FABRIC WITH KNUCKLE SIDE UP AND POINTED END DOWN.
7. CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING MATERIALS AND INSTALLATION.

FENCE HEIGHT	END & CORNER POSTS		LINE POSTS	
NOMINAL HEIGHT	B-1 BAR LENGTH	H-1 HEIGHT ABOVE GRADE	B-2 BAR LENGTH	H-2 HEIGHT ABOVE GRADE
4'-0" [1219MM]	6'-0" [1829MM]	4'-0 5/8" [1219MM]	8'-8" [2642MM]	3'-8 7/8" [1117MM]
6'-0" [1829MM]	9'-0" [2743MM]	6'-0 5/8" [1845MM]	8'-8" [2642MM]	5'-8 7/8" [1749MM]

CONCRETE PATIO PAVERS

SCALE: NTS

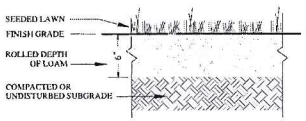


NOTES:

1. PROTECT PAVER SURFACE WITH URETHANE SCUFF PAD DURING COMPACTION. AND PROTECT PAVER SURFACE FROM ALL OTHER CONSTRUCTION ACTIVITIES.
2. SEE CIVIL PLANS FOR PROPOSED SURFACE GRADING CONDITIONS.
3. CONTRACTOR SHALL INSTALL UNILOCK PAVERS. COLOR, PAVER TYPE AND PATTERN TO BE DETERMINED BY OWNER OR ARCHITECT
4. CONTRACTOR TO PROVIDE SHOP DRAWING OF MATERIALS AND INSTALLATION TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO CONSTRUCTION.

TURF PLANTING DETAIL

NOT TO SCALE



NOTES:

SEED ALL IDENTIFIED AREAS FOR LAWN AND ALL DISTURBED AREAS WITHIN 48 HOURS OF FINAL GRADING.
SEED AFTER APRIL 15TH AND BEFORE SEPTEMBER 15TH IN ORDER TO ESTABLISH BEFORE FREEZING TEMPERATURES.

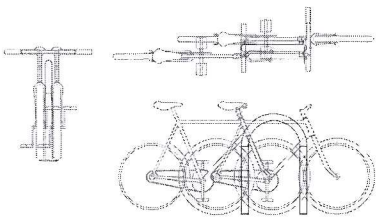
CONTRACTOR IS RESPONSIBLE TO WATER AND ESTABLISH SEEDED LAWN AREAS. WARRANTY SHALL BE 9 WEEKS FOLLOWING INSTALLATION PERIOD.

CONTRACTOR TO INCLUDE NECESSARY TOUCH-UP / RESEEDING FOR ANY AREAS WHERE GRASS SEED DOES NOT GERMINATE DURING THE WARRANTY PERIOD.

BIKE RACK DETAIL

NOT TO SCALE







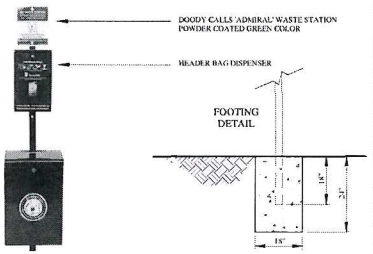
BIKE RACK NOTES:

1. BIKE RACK MFG.: DERO/HEAVY DUTY OR APPROVED EQUAL
2. FINISH: STAINLESS STEEL
3. MOUNTED: SURFACE MOUNTED TO CONC. PAD
4. CONTRACTOR TO SURFACE MOUNT PER MFG. SPECIFICATIONS

DRAFT

PET RUN WASTE STATION

NOT TO SCALE



NOTES:

1. ADMIRAL DOG WASTE STATION, OR APPROVED EQUAL.
2. COLOR: GREEN; DISPENSER TYPE: ROLL
3. TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
4. SEE PLAN FOR LOCATION OF PROPOSED WASTE STATIONS.

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UPPER VALLEY HAVEN
EMERGENCY SHELTER

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SITE PLAN REVIEW

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Issue Date: October 25, 2023

Revisions

No.	Description	Date

Landscape Details

Project No.: PA2314

L4-0

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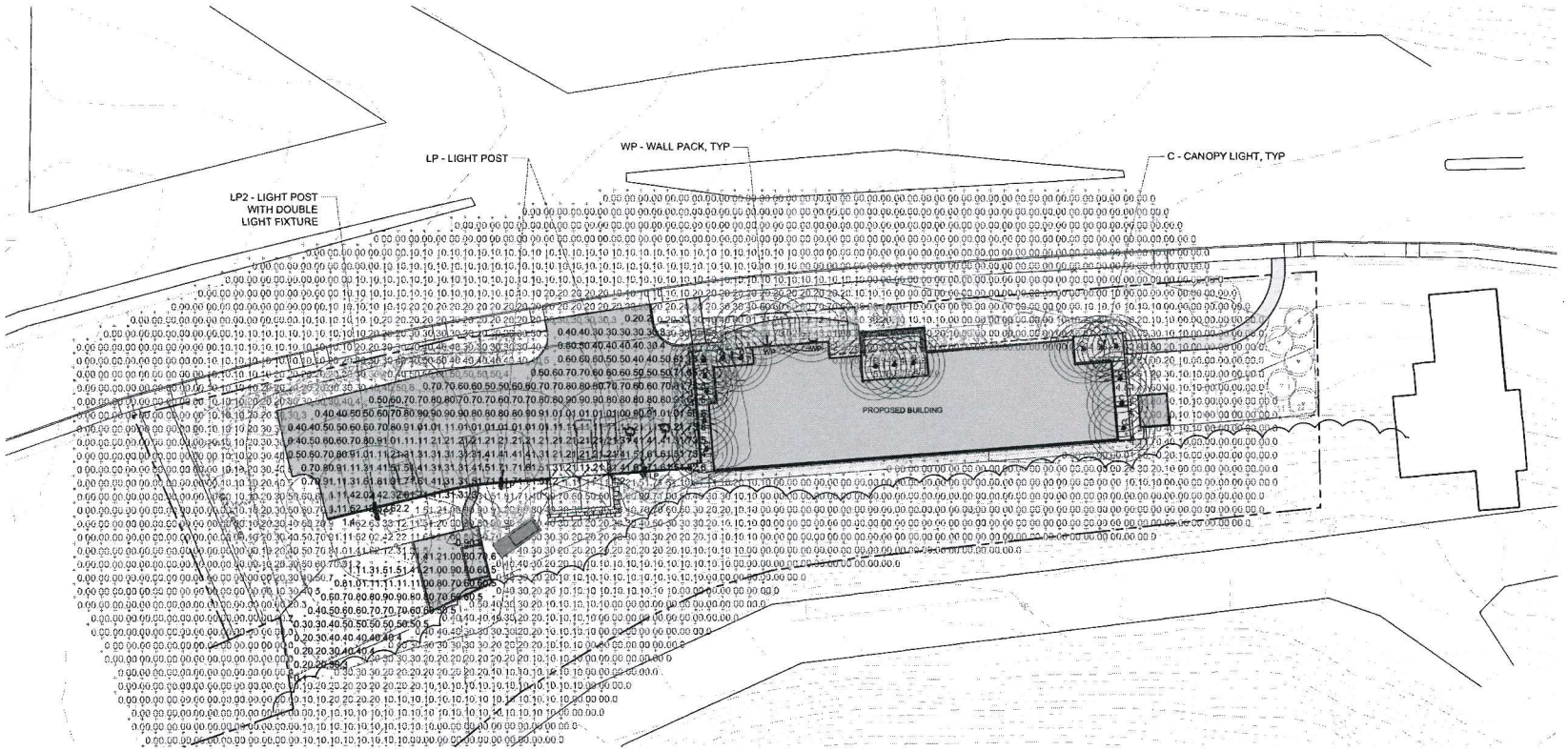

SITE LIGHTING KEY

Schedule

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Filename	Lumens per Lamp	LLF	Wattage	Distribution
	C	16	Juno Lighting	JPDZ4 OB 1000LM 3000K 90CRI BWH	Juno Podz 4in LED Downlight; mounted at 10ft	LED	JPDZ4_OB_1000LM_3000K_90CRI_BWH.ies	789	0.9	13.6	DIRECT, SC-0=1.12, SC-90=1.12
	LP	2	Lithonia Lighting	DSX0 LED P1 30K 80CRI TFTM MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Size 0 Area Fixture; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P1_30K_80CRI_TFTM.ies	4265	0.9	33.21	TYPE IV, SHORT, BUG RATING: B1 - U0 - G2
	LP2	1	Lithonia Lighting	2 - DSX0 LED P1 30K 80CRI TFTM MVOLT SPA DDBXD with SSS 14 4C DM28AS DDBXD	D-Series Size 0 Area Fixture; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P1_30K_80CRI_TFTM.ies	4265	0.9	66.42	TYPE IV, SHORT, BUG RATING: B1 - U0 - G2
	WP	2	Lithonia Lighting	WDGE1 LED P1 30K 80CRI VF SRM	WDGE1 LED Wallpack; mounted at 10ft	LED	WDGE1_LED_P1_30K_80CRI_VF.ies	1161	0.9	10.0002	TYPE II, VERY SHORT, BUG RATING: B0 - U0 - G0

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Dog Run	+	0.7 fc	1.7 fc	0.1 fc	17.0:1	7.0:1
Outside of Parking Lot	+	0.3 fc	10.0 fc	0.0 fc	N/A	N/A
Parking Lot	+	1.1 fc	5.5 fc	0.2 fc	27.5:1	5.5:1

DRAFT

20' 0' 20' 40'

SCALE: 1" = 10FT

NORTH

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Revisions

No.	Description	Date

Lighting Plan

Project No.: PA2314

L5-0

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LIGHT POLE FIXTURE SPECIFICATION Plan Label LP / LP2



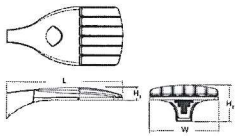
D-Series Size 0
LED Area Luminaire

d*series

Catalog Number
Notes
Type

Specifications

EPA:	0.95 ft²
Length:	26"
Width:	13"
Height$_1$:	3"
Height$_2$:	7"
Weight (max):	36 lbs



Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long life luminaire.

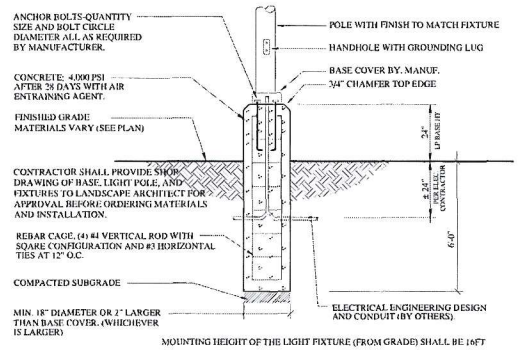
The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 400W metal halide with typical energy savings of 70% and expected service life of over 100,000 hours.

LIGHT FIXTURE NOTES:

THE D-SERIES SIZE 0 LIGHT POLE FIXTURE HAS ZERO UPLIGHT AND QUALIFIES AS A NIGHTTIME FRIENDLY PRODUCT, MEANING IT IS CONSISTENT WITH THE LEED AND GREEN GLOBES CRITERIA FOR ELIMINATING WASTEFUL UPLIGHT.

LIGHT POLE BASE INSTALLATION DETAIL

NOT TO SCALE



MOUNTING HEIGHT OF THE LIGHT FIXTURE (FROM GRADE) SHALL BE 16FT

RECESSED DOWNLIGHT SPECIFICATION Plan Label C

JPDZ4

JUNO

Podz™ LED Downlight Series
4" Canless Round and Square LED Downlight
New Construction or Remodel

Project:
Fixture Type:
Location:
Contact/Phone:

JPDZ4 Series



Complete remodel fixture shown



Complete new construction fixture shown

Product Features

Caniess low profile 4" LED recessed downlight with deeply regressed light source and technology-rich features offers performance up to 1200L and installation solutions for both new construction and remodel applications.

Patented color temperature and intensity configurable lighting fixture (US Patent No. 11,259,377 B2).

- Integrated light engine offers switchable LED color temperature and adjustable lumen output directly on module for easy switching
- Advanced color mixing technology provides consistent color rendering on the black body curve at all LED color temperatures while maintaining a high 90+ CRI
- Warmdim™ setting provides performance similar to incandescent light sources and warms the LED color temperature over the dimming range from 2850K to 1900K

Installation flexibility and ease:

- Low profile integrated LED downlight less than 2" in height fits virtually anywhere
- Installs directly into the plenum - eliminates need for typical recessed housing
- Installs into new construction or remodel applications

Applications

- Ideal for a breadth of residential and commercial applications
- Shallow plenum installations
- IC rated - for direct contact with insulation
- Wet location listed - for use in shower and outdoor covered ceiling applications

LIGHT POLE SPECIFICATION

LITHONIA LIGHTING

Catalog Number
Notes
Type

FEATURES & SPECIFICATIONS

INTENDED USE — These specifications are for USA standards only. Square Straight Steel is a versatile, general purpose steel pole for up to 30-foot mounting heights. This pole provides a robust yet cost effective option for luminaires, wall brackets and floodlights.

CONSTRUCTION —

Pole Shaft: Single-shaft, tapered aluminum construction and built from heat-treated aluminum alloy 6063 T6 extrusion. Shaft is reinforced with full length internal gusset. Shaft is welded with full penetration, longitudinal high frequency electric resistance weld, uniformly tapered, with consistent wall thickness, smooth cosmetic welds and excellent structural qualities. Available shaft widths are 4", 5" and 6".

Pole Top: Options include 1 tenon top with 3" tenon adapter (slip fitter), tenon with drilling (includes mounting hardware) and open top. Pole drilled and open top pole includes a removable cap cap.

Handhole: A reinforced handhole with grounding provision is provided at 16" from the base on side A. Processing the handhole cover may not be possible and requires engineering review. Consult Tech Support Customer Service for further information. Every handhole includes a cover and cover attachment hardware. The handhole has a nominal dimension of 3.5" x 5".

Base Cover: A durable ABS plastic two piece full base cover, finished to match the pole, is provided with each pole assembly. Additional base cover options are available upon request.

Anchor Base/Bolts: Anchor base is fabricated from steel that meets ASTM A36 standards and can be altered to match existing foundations. Anchor bolts are manufactured to ASTM F1554 Standards grade 55, 55 ksi minimum yield strength and tensile strength of 75-95 ksi. Top threaded portion (minimal 12") is hot-dipped galvanized per ASTM A 153.

HARDWARE — All stainless steel fasteners used are high-strength galvanized carbon steel. All nuts and washers are galvanized or zinc-plated carbon steel or stainless steel.

FINISH — Extra durable painted finish is coated with DURA-THANE® high-quality, long-lasting, Polyester powder coat that meets ASTM and TGIC specifications. ASTM D1654 - Powder coat finishes include Dark Bronze, White, Black, and Natural Aluminum colors. A laboratory Urban and Special Finishes are available to specify and include. Add one wall bracket to paint over non-dipped bolts and RAL Colors, Custom Colors and Extended Warranty Finishes.

BUY AMERICAN ACT — Product with the BAA options is assembled in the USA and meets the Buy American government procurement requirements under FAR, DFARS and DOT regulations.
Please refer to www.acuitybrands.com/buy-american for additional information.

INSTALLATION — Do not direct poles without having fixtures installed. Factory supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia lighting factory templates. Fixtures are never to be installed on poles prior to pole being set in concrete foundation. Lithonia Lighting is not responsible for field installation damage.

WARRANTY — 5-year limited warranty. For a full list of warranty periods and any other statements in this specification, please review our terms and conditions of sale at: www.acuitybrands.com/support/terms-and-conditions. Customer warranty terms can be found at: www.acuitybrands.com/support/warranty-terms-and-conditions

NOTE Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.

Anchor Base Poles

SSS

SQUARE STRAIGHT STEEL

BAA

LIGHT FIXTURE NOTES:

CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL FOR ALL LIGHTING MATERIALS, FIXTURES, POLES AND INSTALLATION METHODS TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION AND INSTALLATION. CONTRACTOR SHALL COORDINATE WITH LANDSCAPE ARCHITECT ON SITE TO VERIFY AND MARK LOCATION OF ALL PROPOSED FIXTURES INCLUDING LIGHT POLES, WALL PACKS AND CAN LIGHTS PRIOR TO INSTALLATION.

WALL PACK LIGHT SPECIFICATION Plan Label WP



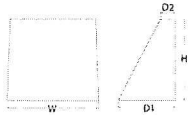
WDGE1 LED
Architectural Wall Sconce

Buy American

Catalog Number
Notes
Type

Specifications

Depth (D1):	5.5"
Depth (D2):	1.5"
Height:	8"
Width:	9"
Weight (without options):	9 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing true site-wide solution.

WDGE1 delivers up to 2,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. The compact size of WDGE1, with its integrated emergency battery backup option, makes it an ideal over-the-door wall-mounted lighting solution.

DRAFT

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Revisions

No.	Description	Date

Lighting Details

Project No.: PA2314

L5-1

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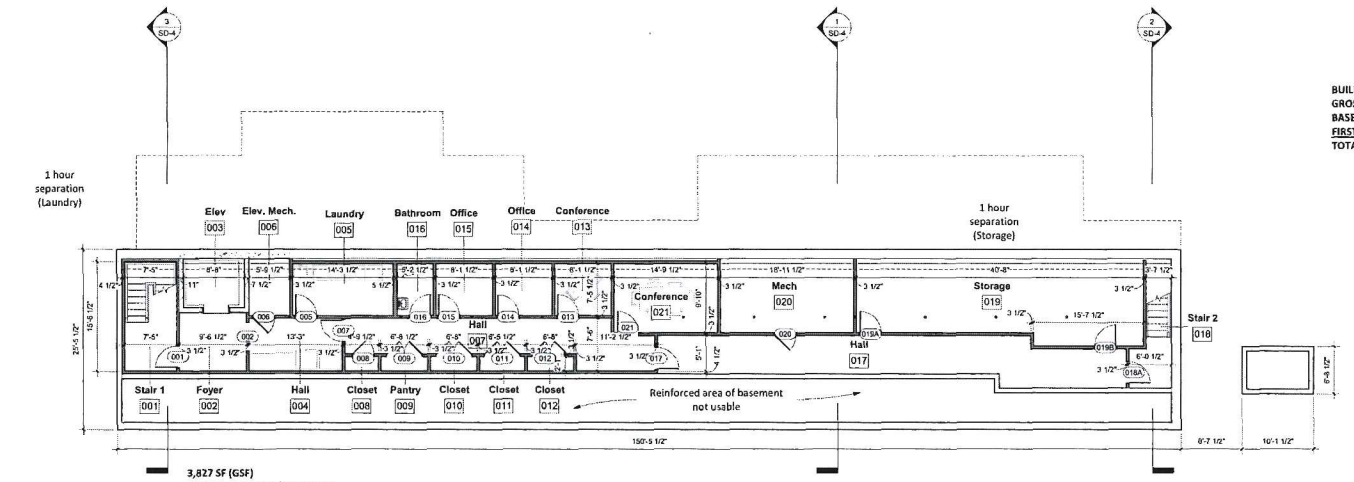
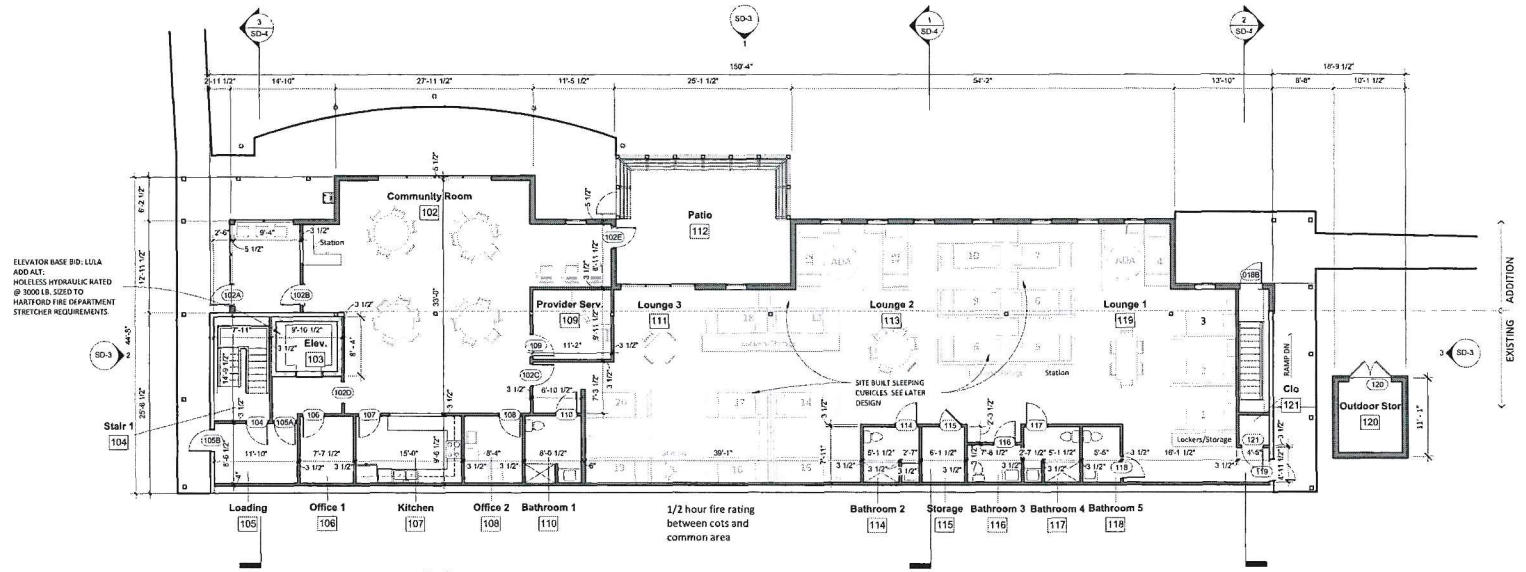


BUILDING TOTALS
GROSS SQUARE FEET
BASEMENT: 3,827
FIRST FLOOR: 5,611
TOTAL: 9,438

3,827 SF (GSF)
1,127 sf not usable (reinforced)
1,385 not finished
1,315 Conditioned/Finished

1 Basement Plan
1/8" = 1'-0"



ELEVATOR BASE BID: LULA
ADD ALT:
HOLELESS HYDRAULIC RATED
@ 3000 LB. SIZED TO
HARTFORD FIRE DEPARTMENT
STRETCHER REQUIREMENTS.

3,863 SF EXISTING BUILDING (GSF)
1,748 SF WEST ADDITION (GSF)
5,611 SF TOTAL (GSF)

2 First Floor Plan
1/8" = 1'-0"

PROJECT NORTH

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Revisions

No.	Description	Date

Floor Plans

Project No.: 2309

SD-1

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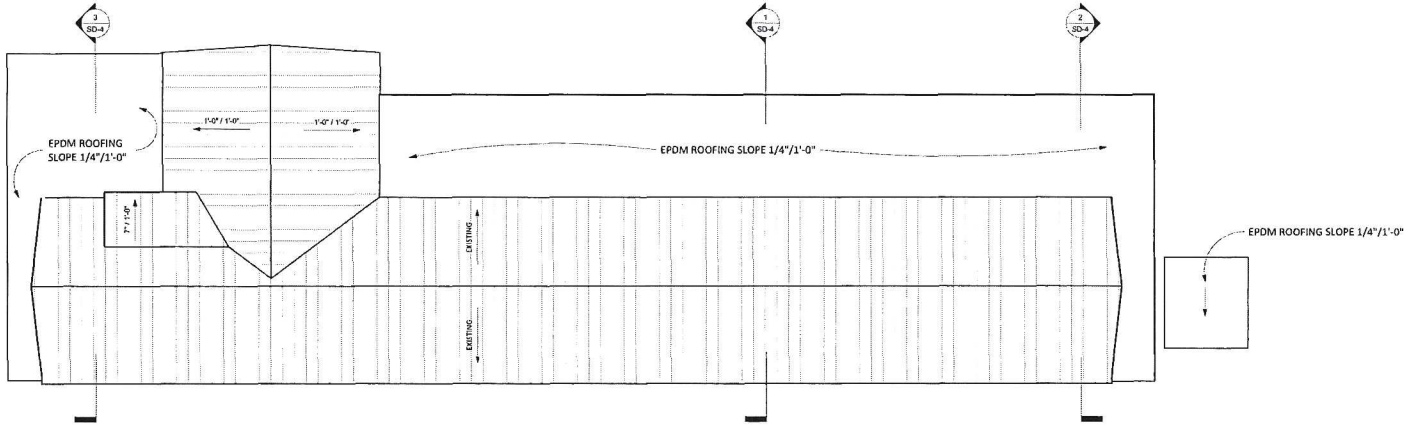

1 Roof plan
1/8" = 1'-0"

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Roof Plan

Project No.: 2309

SD-2

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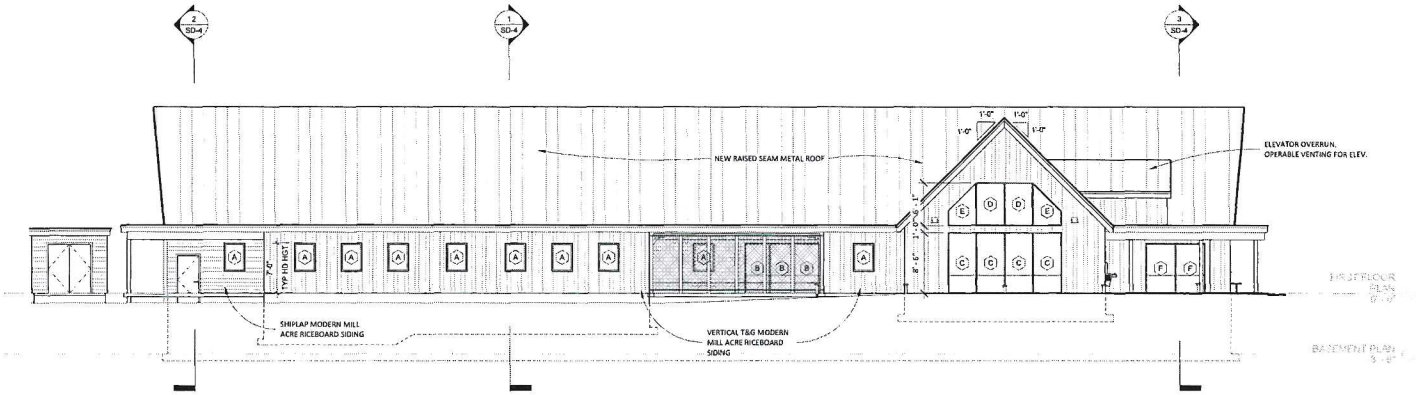
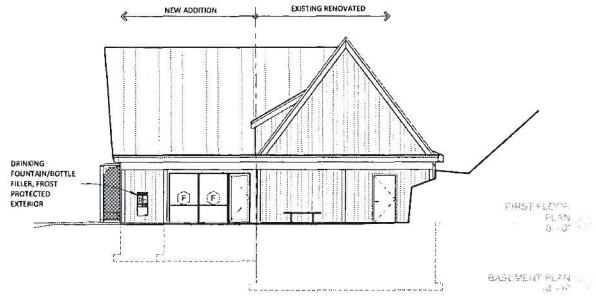
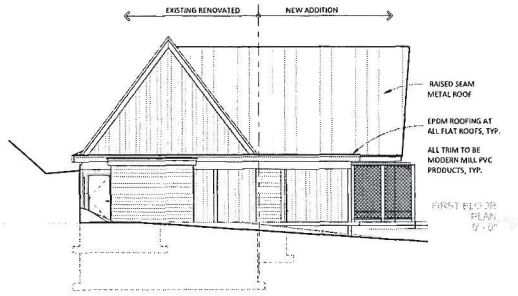


1 NORTH ELEVATION
1/8" = 1'-0"



2 WEST ELEVATION
1/8" = 1'-0"



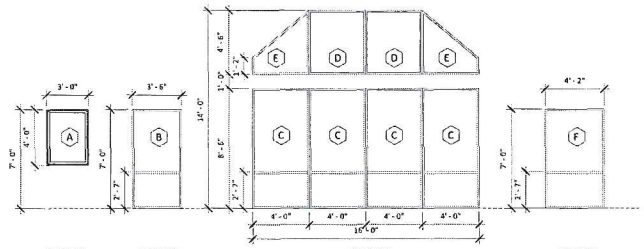
3 EAST ELEVATION
1/8" = 1'-0"

WINDOW SCHEDULE

Type	Manufacturer	Window Type	Model	Line	Width	Height	Comments
A	Marvin Windows and Doors	Essential Casement	ESCA3040	3648 CSMT	2' - 11 1/2"	3' - 11 1/2"	
B	Marvin Windows and Doors	Modern Direct Glaze Rectangle	MDGRECT	FIXED	3' - 6"	7' - 0"	
C	Marvin Windows and Doors	Modern Direct Glaze Rectangle	MDGRECT	FIXED	4' - 0"	8' - 6"	
D	Marvin Windows and Doors	Modern Direct Glaze Rectangle	MDGRECT	FIXED	4' - 0"	6' - 1"	
E	Marvin Windows and Doors	Modern Direct Glaze Trapezoid	MDGTRAP	FIXED	4' - 0"	6' - 1"	
F	Marvin Windows and Doors	Modern Direct Glaze Rectangle	MDGRECT	FIXED	4' - 2"	7' - 0"	

WINDOW NOTES:

1. CONSTRUCTION MANAGER SHALL VERIFY ALL QUANTITIES, AVAILABILITY, AND ROUGH OPENING SIZES WITH THE WINDOW MANUFACTURER PRIOR TO SHOP DRAWING SUBMITTALS. NOTIFY ARCHITECT/OWNER OF ANY LEAD TIME ISSUES OR DIMENSIONAL DISCREPANCIES.
2. WINDOW BASIS OF DESIGN: AS NOTED IN WDW LEGEND
3. ALL WINDOWS SHALL HAVE NON-RUST METAL SCREENS WITH FRAMES MATCHED TO THE EXTERIOR WINDOW COLOR OR ARE FIXED WITH NO SCREENS REQUIRED
4. TEMPER ALL GLAZING WITHIN 18" OF THE FINISH FLOOR, AND ALL WINDOWS WITHIN 24" OF DOORS. ALL GLAZING ADJACENT TO STAIRWAYS WITHIN 60 INCHES HORIZONTALLY OF THE BOTTOM TREAD OF A STAIRWAY IN ANY DIRECTION WHEN THE EXPOSED SURFACE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE THE NOSE OF THE TREAD
5. SEE PLANS AND EXTERIOR ELEVATIONS FOR WINDOW TYPES AND LOCATIONS
6. SEE DETAILS FOR TYPICAL WINDOW FLASHING INFORMATION
7. FOR WINDOW HEAD HEIGHTS, SEE THE TYPICAL WALL SECTION.
8. WINDOWS TO HAVE A MAXIMUM U-VALUE OF .27



4 Window Legend
1/4" = 1'-0"

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Issue Date: October 16, 2023

Revisions

No.	Description	Date

Elevations & Window Schedule

Project No.: 2309

SD-3

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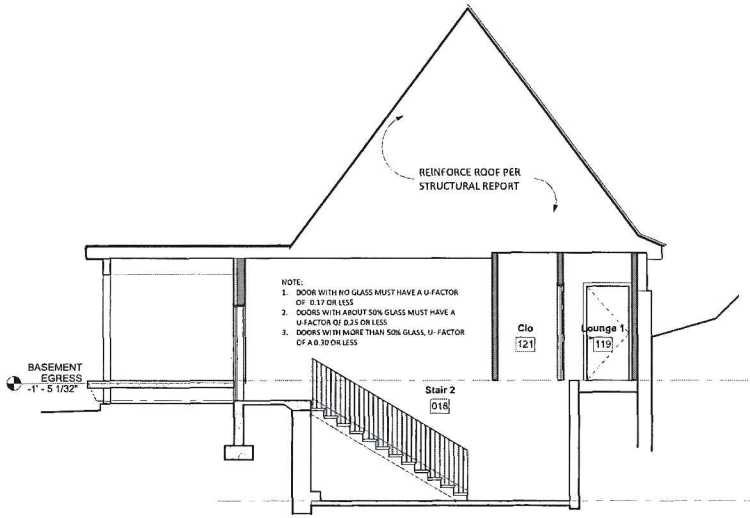
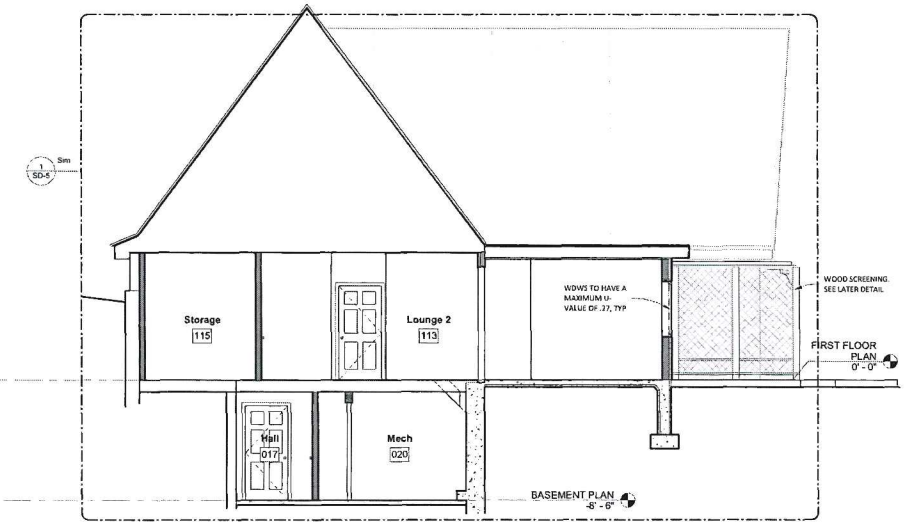
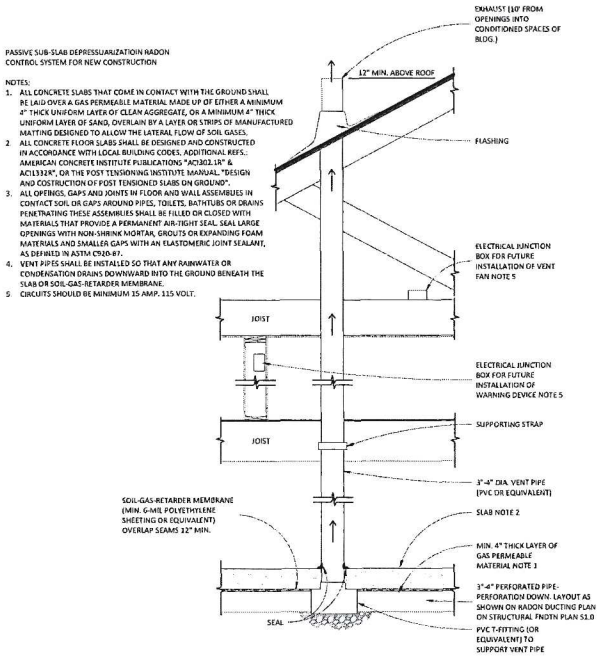


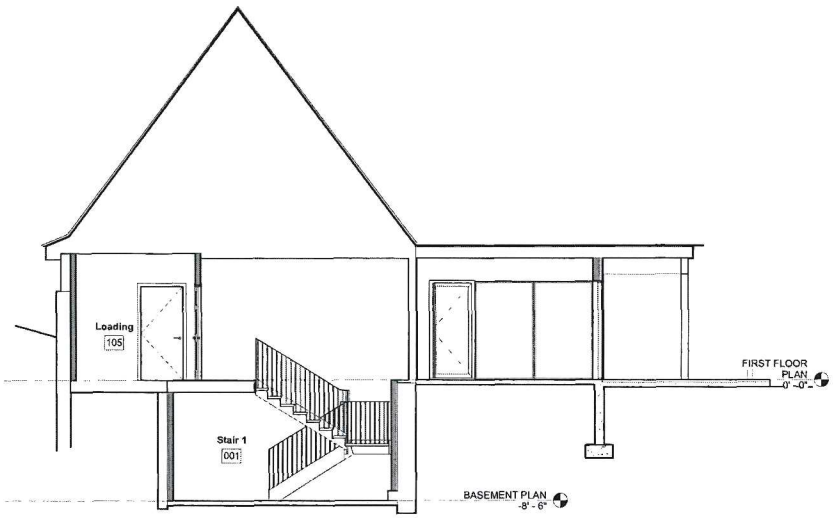
2 TYPICAL BUILDING SECTION AT STAIR 2 LOOKING EAST
1/4" = 1'-0"



1 TYPICAL BUILDING SECTION AT ADDITION LOOKING WEST
1/4" = 1'-0"



4 Radon Detail
1/2" = 1'-0"



3 BUILDING SECTION AT STAIR 1 LOOKING WEST
1/4" = 1'-0"

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Issue Date: October 16, 2023

Revisions

No.	Description	Date

Building Sections & Radon Details

Project No.: 2309

SD-4

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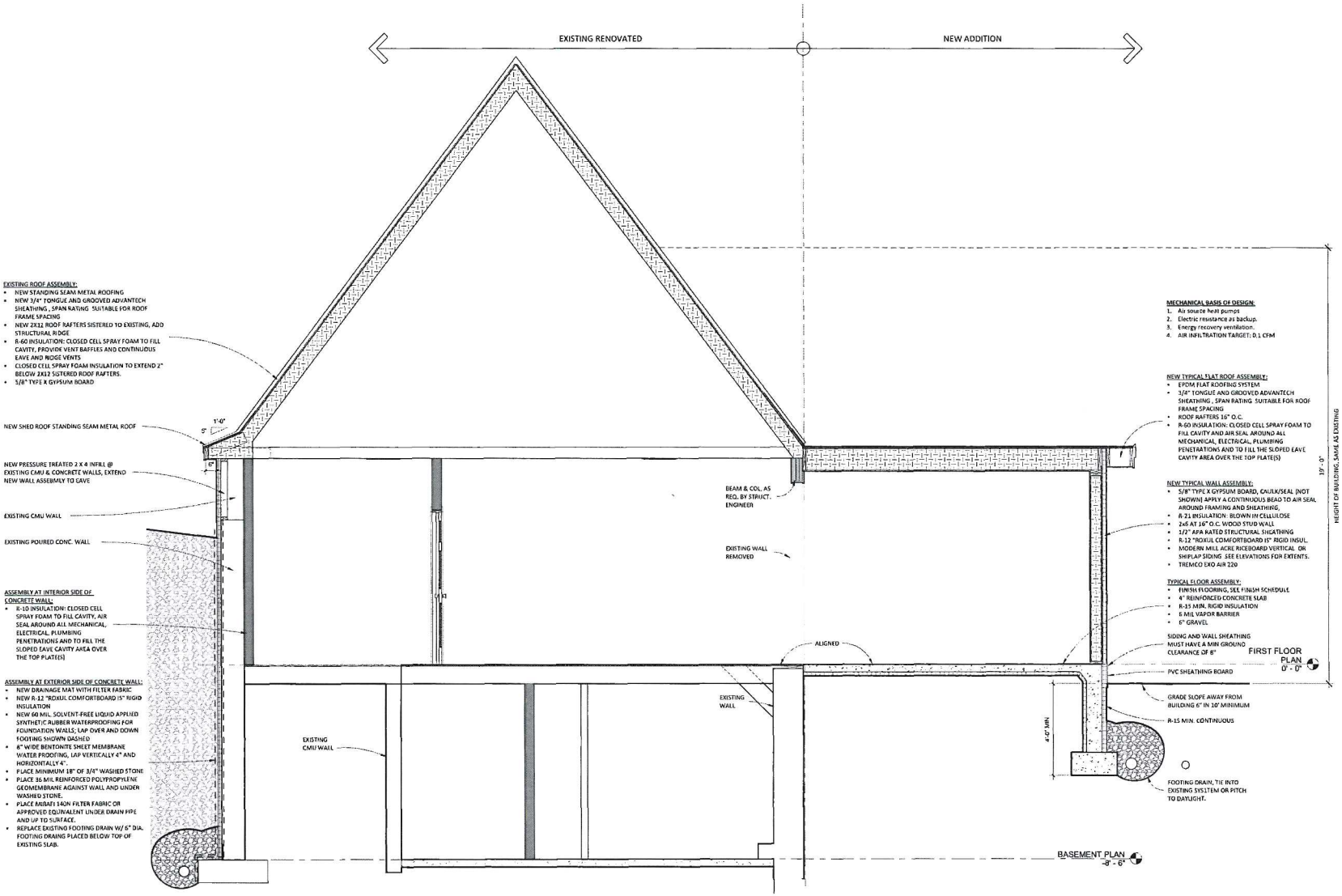

1 Typical Wall Section
1/2" = 1'-0"

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Revisions

No.	Description	Date

Annotated Building Section

Project No.: 2309

SD-5

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10/13/2023 11:41:09 AM



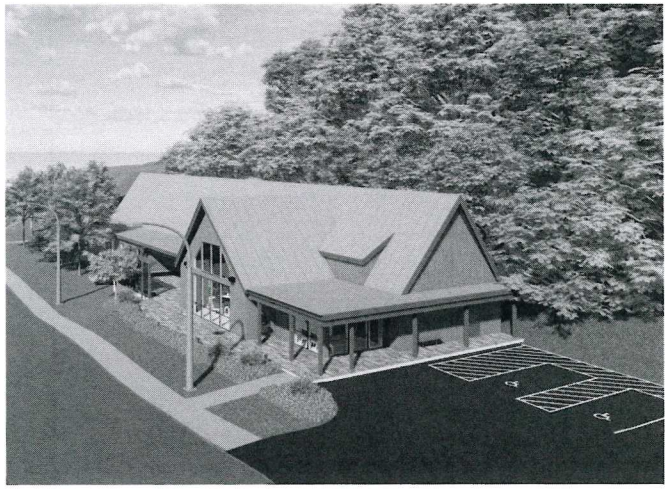
Existing View from Northwest



Existing View from Northeast



Perspective from Northwest



Perspective from Northeast

STUDIO NEXUS
ARCHITECTS + PLANNERS
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UPPER VALLEY HAVEN
EMERGENCY SHELTER

Issued For:
SITE PLAN REVIEW

PRELIMINARY NOT FOR CONSTRUCTION

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Issue Date: October 16, 2023

Revisions

No.	Description	Date

Existing Photographs and Perspectives

Project No.: 2309

SD-6

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10/13/2023 11:41:09 AM

DRM DOWNS RACHLIN MARTIN

October 16, 2023

Kimberly M. Butler
Tel: (802) 473-4274
kbutler@DRM.com

Via Hand Deliver

Jo-Ann Ells, Zoning Administrator
Hartford Planning & Development
Hartford Town Hall
171 Bridge Street
White River Junction, VT 05001

Re: **Upper Valley Haven, Inc.**
608 North Main Street Emergency Shelter Project

Dear Jo-Ann:

We represent the Upper Valley Haven, Inc. (the "Haven"). With this letter and its accompanying materials, the Haven respectfully submits its application for zoning permit and application to the Planning Commission for the Haven's proposed emergency shelter project at 608 North Main Street.

The Haven proposes to renovate the Property for use as an emergency shelter as further described below (the "Project"). To supplement our Application for Zoning Permit, we are providing the following Project details. The Application is attached as Exhibit A, and the project plans cited below are attached in Exhibit B.

Project Overview:

The subject property is a 4.54-acre parcel located at 608 North Main Street, SPAN No. 285-090-15787, and owned by CraftStudies Inc. (the "Property"). The Haven holds an option to purchase the Property from CraftStudies.

The Property is currently improved with a building containing a total of 7,787 square feet and parking area, as shown on the attached *Plans C1.0* (Existing Conditions Plan) and *SD-6* (Existing Photos and Perspectives). The building on the Property dates back to 1950, and the Property was for many years used for retail, including as home to the 25,000 Gifts shop.

The Haven proposes to expand the existing building by adding 1,651 square feet to the western side of the Property, resulting in a building containing 5,611 square feet on the first floor and 3,827 square feet in the basement for a total building square footage of 9,438 to house the shelter. The existing building and renderings of the renovated building are shown on the attached *Plan SD-6*.

The building expansion will allow the first floor to accommodate 20 beds for overnight guests, locker/storage space, bathrooms and shower facilities, lounge and common areas, a kitchen, and offices. The building's basement will contain additional offices for staff and volunteers, storage,

a pantry, and laundry facilities for guests. The attached *Plan SD-1* shows the proposed floor plans.

The Haven Project will serve as an emergency shelter designed to meet the daily needs of those experiencing homelessness regardless of age, race, ethnicity, sex, gender identity, medical needs, companion animals, personal belongings, financial resources, or level of sobriety, without requiring guests to navigate waiting lists, complete paperwork, or provide evidence of need.

The shelter will provide dinner and breakfast to overnight guests, as well as warming or cooling stations during the winter and summer. During the day, guests will have access to day services that help people secure permanent housing.

Zoning Analysis:

The portion of the Property that borders North Main Street is located in the Highway Commercial/Residential (HCR) Zoning District, and a portion of the remaining property is in the Residential Two (R-2) Zoning District. Because this Property has public water and sewer, it is a Class 1 lot. *See* Zoning Regulations § 260-19.

In its most recent session, the Vermont Legislature revised the Vermont Planning and Development Act (the "Act"), which is found in Chapter 117 of Title 24 of the Vermont Statutes Annotated (V.S.A.). These revisions included changes to 24 V.S.A. §4413, entitled "Limitations on Municipal Bylaw", which changes were effective as of September 1, 2023.

Section 4413 limits municipal regulation of a specific set of uses, including state- or community-owned and operated institutions or facilities; public and private schools; churches and other places of worship, convents and parish houses; public and private hospitals; regional solid waste management facilities; and certain hazardous waste management facilities. The Legislature, recognizing the ongoing pressing issues around homelessness in Vermont, added emergency shelters to the set of uses that are subject to review only under a set of standards designated in Section 4413, and under general municipal zoning regulations. *See* 24 V.S.A. §4413(a)(1)(G).

The definition of emergency shelter under the Act is provided under 24 V.S.A. §4403, which states as follows:

> "(40) "Emergency shelter" means any facility, the primary purpose of which is to provide a temporary shelter for the homeless in general or for specific populations of the homeless and that does not require occupants to sign leases or occupancy agreements."

Thus, as with such other uses as state-owned buildings, schools, or hospitals, emergency shelters may now be regulated only with respect to the following matters:

- Location;
- Size;
- Height;
- Building bulk;
- Yards;

- Courts;
- Setbacks;
- Density of buildings;
- Off-street parking;
- Loading facilities;
- Traffic;
- Noise;
- Lighting;
- Landscaping; and
- Screening requirements.

In addition to limiting the scope of regulatory review, Section 4413 also provides that any regulations of such uses "shall not have the effect of interfering with the intended functional use." *See* 24 V.S.A. §4413(a)(2).

Finally, in Section 4413(a)(3), the Legislature specifically provided that "regulating the daily or seasonal hours of operation of an emergency shelter shall constitute interfering with the intended functional use" and is therefore impermissible.

In light of these change in the Act, our Project zoning analysis is focused on the criteria set forth in Section 4413, rather than the Town's site plan review standards, although many of the criteria link with customary site plan considerations.

1. Location

A municipality is allowed to designate zoning districts within its borders for the uses specified under Section 4413, and may not exclude any of the uses from being located within the town's boundaries. The Town of Hartford zoning regulations currently do not designate any district in which an emergency shelter is located.

In the absence of any designation of zoning districts for location of the uses set out in Section 4413, the Vermont Supreme Court has confirmed that the uses set forth under Section 4413 are allowed anywhere within the municipality. See In re Appeal of Buildings and General Services, 176 VT 41 (2003). In that case, the Vermont Department of Building and General Services ("BGS") State Buildings applied for a zoning permit to replace the maintenance facility's existing one-bay garage with a three-bay garage for its maintenance facility located in Windsor. The Windsor Zoning Administrator ruled that the application required site plan review by the Planning Commission and conditional use review by the Zoning Board of Adjustment (ZBA). BGS argued that "a municipality can regulate only with respect to the list of elements in the statute plus location, but with respect to the latter only if the municipality makes reasonable provision for the location of the state institution or facility within the municipality." The Supreme Court agreed, holding that "if a municipality fails to make a 'reasonable provision . . . for the location of State . . . owned and operated institutions and facilities," a municipality can regulate those institutions and

facilities through zoning only "with respect to size, height, bulk, yards, courts, setbacks, density of buildings, offstreet parking and loading facilities and landscaping or screening requirements."[1] The Supreme Court also noted that if a municipality does not make provision for any of the uses specified in Section 4413, the municipality is still allowed to regulate those facilities with respect to the specific criteria set forth in Section 4413.

The current Hartford zoning regulations do not specifically provide for emergency shelters in any zoning district, and therefore under the changes to the Act, are allowed anywhere within the municipality.

2 & 4. Size; Building Bulk

As noted above, the Project will include the addition of approximately 1,651 square feet to the existing 7,787 square foot building on the existing 4.54-acre Property. See attached *Plans C1.0* (existing building) and *Plan SD-6* (as expanded). The new building size has a footprint of 5,611 square feet. This represents a lot coverage ratio of 2.9%, which is well under the maximum lot coverage ratio of 90% for the IC district.

3. Height

The existing height of the building will remain unchanged at 19 fee above ground level. The front roof will be renovated to add a pitched section in the middle of the existing roof, but the top of that roof line will be below the existing roofline. Please see *Plan SD-3* (Elevations and Window Schedule).

Photographs of the existing building and roof and renderings of the updated building and roof are shown on the attached *Plan SD-6*.

5, 6, 14 & 15. Yards; Courts; Landscaping; Screening

The proposed landscaping and screening for the Project is shown on the attached *Plans L1-1 and L3-0*.

The existing Property condition is shown on *Plan C1.0* and in the photographs contained in the attached *Plan SD-6*.

A strong benefit of the Project is the extensive landscaping that the Haven plans, as more particularly shown on the attached *Plans L1-1*. The Project will result in the removal of the existing parking area, and the replacement of much of the existing asphalt area in the front of the building with beautifully landscaped areas as shown on *Plan L1-1*. Landscaping in the event of the State's implementation of the roundabout is show on *Plan L2-0*.

The area behind the building will remain undeveloped and in a natural state.

7. Setbacks

---

[1] This decision was decided under prior version of Section 4413 in effect in 2003 (set forth then as 24 VSA Section 4409), which contained a more limited set of review criteria than the current statute.

Although the existing building will be extended to the west by about 19 feet, the front of the building will still be approximately 12 feet from North Main Road, which is greater than the 10 foot front setback required for Class 1 lots in the HCR District. In addition, the building will be in conformance with the 10-foot side and 20-foot rear setback requirements with side setbacks of 55 feet on the East and 170 feet on the West, and a 32 foot setback in the rear.

8. Density of buildings

The renovated building will have a total of gross square footage of 5,611 square feet on the 4.54-acre lot, and well within the density requirements of the IC district.

9. Off-street parking

The Property currently has 14 off-street parking spaces, including two ADA accessible parking spaces, all of which will be retained. The parking layout is show on the attached *Plan C2.0* (Site, Grading, Drainage and Utility Plan).

These spaces will provide sufficient parking for Haven staff and volunteers, visiting service providers, and shelter guests. Based on its experience operating the existing Haven facilities, and as confirmed in the Wall Consultant Group study attached as *Exhibit C*, at any given time, approximately 5 guests will have cars. As shown on the site and landscaping Plans [add plan numbers], the parking area will be separated from North Main Street by trees and other landscaping.

10. Loading facilities

The Property does not have any loading facilities, and deliveries will be received via the parking area for movement into the building.

11. Traffic

The Property is currently accessed directly from North Main Street via two existing curb cuts to the paved parking area. The Haven plans to close the western curb cut to have a single point of access to the Property, as shown on attached *Plan C2.0*.

We are aware that the Vermont Agency of Transportation is considering a redesign of the North Main Street area, and current planning would involve the State's installation of a roundabout for the intersection of North Main Street (US Route 5) and US Route 4. If and when completed, the Property would be accessed directly off of the new roundabout, as shown on the attached *Plan C2.0a*.

For both configurations of North Main Street, sidewalks will be installed between the Building and North Main Street, and the Department of Public Works will not require a fire lane in front of the Building.

Plans C2.1 and C2.2 show turning plans for garbage truck and ambulance, respectively, reflecting safe entry and exit patterns from the roadway.

Traffic to and from the Property is anticipated to be less than the traffic generated from the Property when it was used for retail purposes. The Wall Consultant Group traffic study for the Project attached as Exhibit C confirms no negative impact on area traffic as a result of the Project.

In addition, the Property is accessible from existing bus routes, and area sidewalks will provide access by pedestrians and bicyclists. As shown on *Plan L3.0*, the Haven will install outdoor bike racks on the Property.

12. Noise

Any noise from the Property will not exceed 70 decibels at or beyond the property line and will be customary to the surrounding area. Additionally, Haven will implement Operating Procedures for the low barrier shelter, which will require quiet hours to be observed within the Building between 9:30pm and 7:00am each day.

During the Property and building renovation, any loud equipment will not be operated on Sundays or between the hours of 5:30 p.m. and 7:00.a.m., except in emergency situations. Construction is anticipated to last 8-12 months. Once construction is complete, the Project will not require or use any excessively loud equipment.

13. Lighting

The parking area and walkways will be illuminated with down-shielded lights, and any lighting will not be visible beyond the boundaries of the Property. The proposed lighting is as shown on the attached *Plan L5.0.*

On behalf of the Haven, we appreciate your review of the attached Application for Zoning Permit and Application to Planning Commission &/or Zoning Board of Adjustment, and welcome any questions that you may have.

Best regards,

Kimberly M. Butler

KMB

Attachments

cc: Michael Redmond

Exhibits

Exhibit A Application for Zoning Permit and Application to Planning Commission &/or Zoning Board of Adjustment

Exhibit B Plans:

- C1.0 Existing Conditions Plan
- C2.0 Site, Grading, Drainage and Utility Plan
- C2.1 Garbage Truck Turning Plan
- C2.2 Ambulance Turning Plan

SD-1 Floor Plans

SD-3 Elevations and Window Schedule

L-1 Landscape Plan Color

L2-0 Landscape Plan w/Roundabout

L3-0 Site Enlargement Plan

L5-0 Lighting Plan

SD-6 Existing Photos and Perspectives

Exhibit C Traffic Study

DRM DOWNS RACHLIN MARTIN

October 26, 2023

Kimberly M. Butler
Tel: (802) 473-4274
kbutler@DRM.com

Via Hand Deliver

Jo-Ann Ells, Zoning Administrator
Hartford Planning & Development
Hartford Town Hall
171 Bridge Street
White River Junction, VT 05001

Re: Proposed Emergency Shelter, 608 N. Main Street, Lot 45-0003-000
Response to October 19, 2023 Review Comments/Questions

Dear Jo-Ann:

On behalf of the applicant Upper Valley Havey, Inc., we wanted to share with you are responses to the comments/questions received from you via October 19, 2023 memorandum.. For ease of review, we have included the comments/questions and our responses below.

1. Please confirm that you understand that you retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

   We confirm that we understand that we retain this obligation and will do so.

2. Please contact Tom Peltier, Fire Marshal, to discuss obtaining a Public Building permit. tpeltier@hartford-vt.org (295-3232).

   We have been in contact with Mr. Peltier regarding this permit.

3. Please acknowledge that you understand that you need to obtain an allocation and application for connection for the water and sewer service before a Zoning Permit will be issued.

   We acknowledge that we understand this requirement.

4. If you have not done so already, I encourage you to talk to Hartford's Environmental Sustainability Coordinator, Dana Clawson, about energy efficiency options for your project. (dclawson@hartord-vt.org)

   Acknowledged, and have also been in contact with Efficiency Vermont (EV) and per our funder's requirements the project will meet EV's High Performance energy efficiency standards.

5. Have you considered providing an electric vehicle charging station(s) or installing the conduit for a future installation?

We have added a conduit for future installation to our plans. Please see the updated Plan 2.0 where this is reflected.

6. Please Amend Kim Butler's letter of October 16, 2023 as follows:

    - Change the reference to the IC (Industrial Commercial) zoning district to HCR (Highway Commercial/Residential).

    - Include the statutory definition of Emergency Shelter and a description of how the application meets the definition.

    That amended letter is attached.

7. Have you considered a waste receptacle for the pet run area?

    We appreciate the suggestion and have added such a receptable. Please see revised detail sheet L4-0 which includes the pet waste bag and waste receptacle system and updated plan sheet L1-0 for location.

8. Please review the details of the photometric plan for accuracy (I talked to Doug about this).

    We understand the concern/question is in regard to the 17 value shown on the statistics table for the dog run area and the 27.5 value shown in the parking lot area. For clarification, these values shown in the Max/Min column are not FC/Footcandle values, rather they are a statistical ratio value only. The 17.0 value is the ratio of the maximum value to minimum value (1.7fc / 0.1fc) within the dog run. The 27.5 value is the ratio of the maximum to minimum value (5.5fc / 0.2fc).

    To further clarify this is just the highest calculated light level divided by the lowest calculated light level within the space. For the dog run area, the highest calculated light level is 1.7fc and the lowest calculated light level is 0.1fc. Therefore, the max/min ratio is 1.7fc/0.1fc=17.Maximum FC values are shown in a separate column. The maximum FC point in the Dog Run area is 1.7 FC and the Maximum in the Parking Lot is 5.5FC.

9. Please confirm that all proposed plantings are native/non-invasive.

    We confirm this will be the case. Please see Plan L1-0 on which we updated the plant list to include native and non-invasive status as well as adding a note to clarify our plant selections.

10. Please induce a detail for the proposed retaining wall in the civil plan set.

    Please see the detail provided on revised sheet C3.0 for the redi-rock segmented block wall. The contractor will provide redi-rock stamped drawings prior to construction.

11. Any you proposing any signage for the project?

A separate sign package meeting regulatory requirements will be submitted for permit after approval of the project for site plan review. We anticipate that our signage will be limited to an identification sign with street address.

12. Please acknowledge that during construction of the proposed project erosion and sediment control measures as specified in the most current edition of the Low Risk Site Handbook for Erosion Prevention and Sediment Control published by the Vermont Department of Environmental Conservation will be followed.

    We acknowledged this requirement. Please also note the attached EPSC plan that shows suggested best management practices for the contractor to follow during construction. EPSC details also have been provided.

13. Please acknowledge that you understand the following:

    Before you commence construction, you need to schedule a preconstruction meeting with the Department of Public Works (DPW). You need to contact the DPW at least two weeks before you want to hold this meeting.

    If this meeting results in any revisions to the approved plans, you must contact me to discuss amending your permit.

    We acknowledge that we understand this requirement.

14. Please acknowledge that you understand that once the project is complete and before I can issue a Certificate of Occupancy you need to:

    - Submit written verification from a Professional Engineer licensed by the State of Vermont certifying that the project was constructed in compliance with the approved plans and Findings of Fact
    - Submit verification that the water and sewer have been inspected and approved by the Department of Public Works
    - Submit acceptable records drawing to the Department of Public Works
    - Submit a PDF of the record drawing to the Zoning Administrator
    - Record an Energy Code Certificate in the Land Records if required by the State of Vermont

    Please acknowledge that you understand these requirements.

    We acknowledge that we understand these requirements.

15. Please email me a copy of all application materials, revised as necessary, including your response to this memo and the attached application form.

Included.

16. Please submit the application fee ($626.90) and eight copies of all application materials, revised as necessary, including your response to this memo and the attached application form. (Please fold the plan set.)

    Included.

Best,

Kimberly M. Butler

Cc: Michael Redmond
James Wasser
Doug Sonsalla

WALL CONSULTANT GROUP

Memo

Submitted To: Michael Redmond, Upper Valley Haven

Submitted By: Erica Wygonik, PhD, PE, Consulting Transportation Engineer

Project Name: Upper Valley Haven – Transportation Assessment

Date: 5 October 2023

WCG has completed an assessment of the expected transportation impacts resulting from the proposed emergency shelter located at 608 Main Street in White River Junction, Vermont. This memorandum summarizes our assessment.

Summary and Conclusion

- The project is located at 608 Main Street in White River Junction, Vermont.
- The existing site is the former home of the 25,000 Gifts retail shop, and more recently the Listen furniture store.
- The project proposes to convert the former retail space into an emergency shelter with 20 beds as well as some office space with staff, volunteers, or outside services.
- A future VTrans project to install a roundabout is planned for the intersection of US-5 & US-4. The driveway for the proposed project would be designed to serve as a 4th leg of the roundabout.
- The project is estimated to result in an increase of 1 trip in the AM peak hour and no change in the number of trips during the PM peak hour.
- There are three state designated high crash locations within 0.5 miles of the project site. Four additional HCLs are within 1 mile of the project location.
- Ten property-damage only and two injury crashes were reported in the most recent 5-year period data is available (2018-2022) within the stopping sight distance of the proposed driveway. Eight of the crashes appear to be intersection-related and will be mitigated by the planned roundabout at the US-5 & US-4 intersection.
- Sight distances along the roadway exceed requirements.
- The acceptable sight distances and crash experience indicate the roadway will continue to operate safely.
- The estimated number of vehicles on site is projected to be between no more than 11 to 14 vehicles. The planned 14 parking spaces is adequate to handle projected demands.

Based on the analysis conducted for this report, the proposed project is not expected to impact the condition or capacity of the affected roads and associated infrastructure. The proposed project will not cause or exacerbate any unreasonable congestion or unsafe conditions on the

local roadway network and will not unnecessarily or unreasonably endanger the public's investment in any local roads, highways, or related infrastructure.

Proposed Project

The project is located at 608 Main Street in White River Junction, Vermont in the Hartford Growth Center. The existing site is the former home of the 25,000 Gifts store and, more recently, the Listen Furniture store. The project proposes to convert the former retail space into a 20-bed emergency shelter. The site will be accessed from a narrowed curb cut on US-5 directly across from Woodstock Road (US-4).

The site plan dated 23 August 2023 in Figure 1 illustrates the proposed project including the renovated building along with the updated parking lot, sidewalks, and driveway. The site plan dated 23 August 2023 in Figure 2 illustrates how the access will be adapted when the VTrans roundabout project at the intersection of US-5 & US-4 is complete.

FIGURE 1: EXCERPT OF 8/23/2023 SITE PLAN (STUDIO NEXUS, ENGINEERING VENTURES, & PARK ARCHITECTURE)

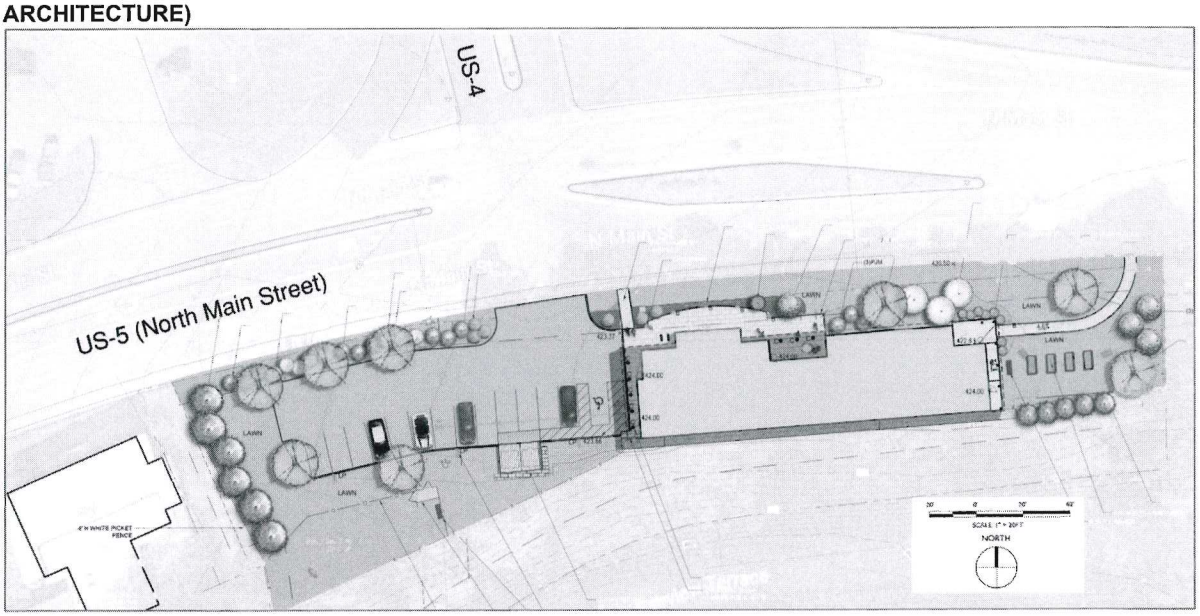
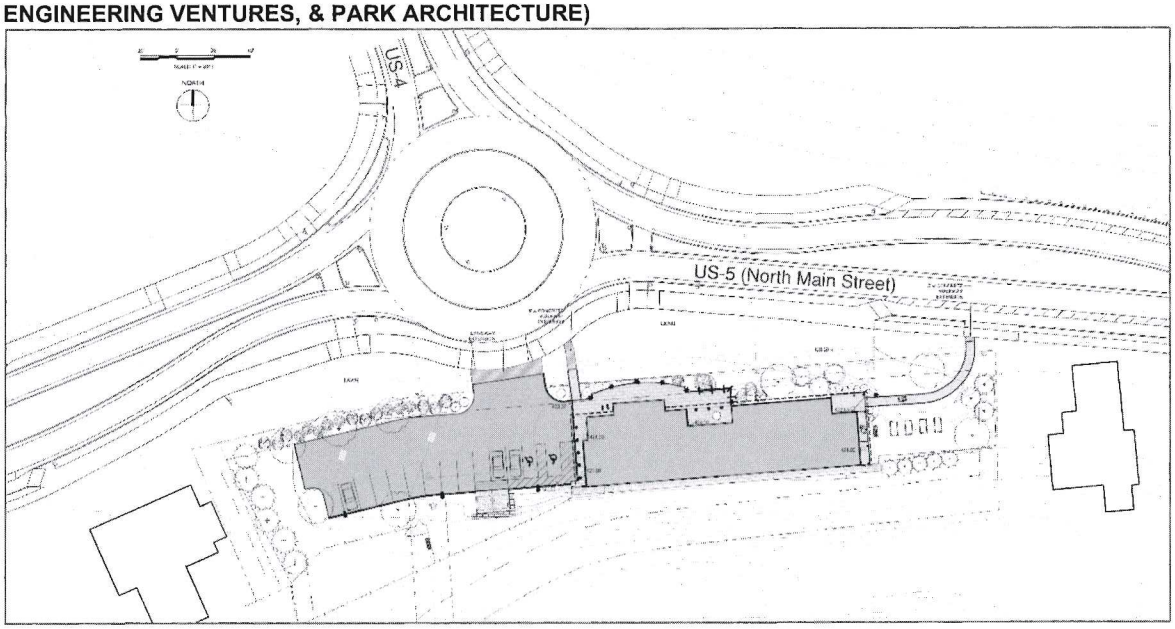


FIGURE 2: EXCERPT OF 8/23/2023 SITE PLAN SHOWING ROUNDABOUT CONNECTION (STUDIO NEXUS, ENGINEERING VENTURES, & PARK ARCHITECTURE)



Existing Transportation Network

The proposed project is located on US-5 directly across from the intersection with US-4 (Woodstock Road). US-5 is a state-controlled highway classified as a major collector. The roadway has two travel lanes in each direction, approximately 12' wide, with narrow shoulders. Northbound US-5 has a 12' wide left turn lane, and southbound US-5 has a right-turn slip lane. US-4 also has a right-turn slip lane as it approaches US-5. The speed limit along US-5 is posted at 40 mph proximate to the driveway. US-5 slopes downward from east to west, with a 7.7 percent downgrade, according to the route log.

An automated traffic recorder, station Y232 located approximately 900 feet east of the site on US-5, was last counted over 7 days in 2018. The 2022 AADT was reported as 8,139 vehicles per day (vpd), grown annually from the 2018 count. An automatic traffic recorder (Y223), approximately 2000 feet southwest of the driveway, observed traffic volumes over six consecutive days in May 2016. The online transportation data management system shows a projected 2022 AADT of 7,716 vpd grown annually from that count.

There is a sidewalk along the south/east side of US-5 proximate to the project driveway, extending from Sykes Avenue to Downtown White River Junction. A stop for the Advance Transit Orange Route, which runs at 30-minute headways, is approximately 2000' east of the project site, accessible via the sidewalk. A drop-off-only stop for the Advance Transit Yellow and Orange Routes, which run on 30-minute headways, is approximately 2000' southwest of the project site, accessible via the sidewalk. Long-distance transit service is accessible via the sidewalk approximately 3000' south of the project at the bus station on Sykes Avenue.

Trip Generation

Base Trip Generation

Trip generation refers to the number of vehicle trips originating at or destined for a particular land use development. The proposed project will generate trip ends from the land use being developed: an emergency shelter.

Data from the Institute of Transportation Engineers (ITE) can be applied to estimate trip generation associated with the existing and proposed land uses. WCG consulted the ITE Trip Generation Manual, 11th Edition to estimate base vehicle trips. Base vehicle trips are the total estimated vehicle trips prior to any reductions associated with internal capture, pass-by, or transportation demand management (TDM) features.

The most applicable land use relevant to the existing site is ITE Land Use Code (LUC) 890 Furniture Store, described as:

> *A furniture store is a full-service retail facility that specializes in the sale of furniture and often carpeting. A furniture store is generally large and may include storage areas. The site in the database include both traditional retail furniture stores and warehouse stores with showrooms. Although some home accessories may be sold, a furniture store primarily focuses on the sale of pre-assembled furniture.*

Table 1 documents the estimated base vehicle trip generation using the land use described above.

TABLE 1: ESTIMATED BASE VEHICLE TRIP GENERATION OF THE EXISTING SITE

Existing Trip Gen				AM Peak Hour			PM Peak Hour		
				Base			Base		
ITE LUC	Description	Size	Unit	Enter	Exit	Total	Enter	Exit	Total
890	Furniture Store	3.86	KSF	1	0	1	1	1	2

The most applicable land use relevant to the proposed site is ITE Land Use Code (LUC) 223 Affordable Housing, described as:

> *Affordable housing includes all multifamily housing that is rented at below market rate to households that include at least one employed member. Eligibility to live in affordable housing can be a function of limited household income and resident age.*

Table 2 documents the estimated ITE base vehicle trip generation for the proposed emergency shelter using the Affordable Housing land use.

TABLE 2: ESTIMATED BASE VEHICLE TRIP GENERATION OF THE PROPOSED SITE

Proposed Build				AM Peak Hour			PM Peak Hour		
ITE LUC	Description	Size	Unit	Enter	Exit	Total	Enter	Exit	Total
223	Affordable Housing	20	bedrooms	3	6	9	3	2	5

While LUC 223, Affordable Housing, is the most applicable land use in the ITE data set, it reflects permanent housing and is likely to overestimate the traffic generated by the site, as the

number of trips generated by a household correlates with income, with lower incomes correlated with lower trip generation rates.[1] As such, the estimated number of trips in Table 2 provides an upper estimate of the amount of traffic likely to be generated by the site. Using the ratios between Permanent Supportive Housing and Affordable Housing trip generation rates provided by LA DOT[2], the Haven emergency shelter is estimated to generate approximately 2 AM peak hour and 2 PM peak hour trips.

Discussions with the Haven indicate they anticipate 4-5 guests out of 20 would bring a vehicle. Few would arrive or depart during the peak hours. The Haven anticipates guest arrivals between 5:00 PM and 7:00 PM and departures before 7:30 AM. In addition, approximately 2-3 staff and up to 2 volunteers will be on site at any given time. Their shifts will run approximately 4:00 PM to 12:30 AM and 12:00 AM to 8:30 AM. This data indicates all guest vehicles will leave before the AM peak hour, and no more than half would arrive during the PM peak hour. Staff are projected to arrive before the PM peak hour and depart after the AM peak hour. As many as 3-4 additional vehicles may be on site due to outside service providers, which are typically onsite in the evening between 6:00 PM and 8:00 PM. Given these times, trips from service providers are also likely to occur outside peak hours. This site-specific analysis indicates 0 trips would occur during the AM peak hour and 2 trips would arrive during the PM peak hour.

Table 3 illustrates the results from the 3 methods of estimating trip generation for the site. The site-specific estimates align fairly closely with the LA DOT estimates, suggesting the future trip generation will be close to these. Since the LA DOT estimate is in the middle of the 3 methods, they are used throughout the rest of the report.

TABLE 3: TRIP GENERATION ESTIMATES FROM THREE SOURCES: ITE TRIP GENERATION, LA DOT, SITE-SPECIFIC ESTIMATES

Proposed Build				AM Peak Hour			PM Peak Hour		
ITE LUC	Description	Size	Unit	Enter	Exit	Total	Enter	Exit	Total
223	Affordable Housing	20	bedrooms	3	6	9	3	2	5
	LA DOT Permanent Supportive			**1**	**1**	**2**	**1**	**1**	**2**
	Site Specific Calculation			0	0	0	2	0	2

Net New Trip Generation

The resulting net base trip generation for the site is the net difference between that from the existing site and the primary trips from the proposed project. Table 4 documents the resulting net new trip generation.

[1] https://nhts.ornl.gov/assets/2017_nhts_summary_travel_trends.pdf

[2] LA Dot Transportation Assessment Guidelines 2020 for example show trip generation rates for 'Permanent Supportive' housing is approximately 15% in the AM peak hour and 34% of that for Affordable Family Housing (which is comparable to the ITE LU 223). https://ladot.lacity.org/sites/default/files/documents/2020-transportation-assessment-guidelines_final_2020.07.27.pdf

TABLE 4: ESTIMATED NET NEW VEHICLE TRIP GENERATION OF THE PROPOSED SITE

	AM Peak Hour			PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
Estimated Base Trip Generation, Existing Site	1	0	1	1	1	2
Estimated Base Trip Generation, Proposed Site	1	1	2	1	1	2
Net Change, Existing → Proposed	**0**	**1**	**1**	**0**	**0**	**0**

As shown in Table 4, the proposed project is anticipated to result in an increase of 1 trip in the AM peak hour and no change in the number of trips during the PM peak hour.

Given the site's proposed design with access to a sidewalk network and transit service, some access to the site by alternative modes is anticipated. Using VTrans TDM Measure Guidelines, and considering the project has access to 30-minute headway transit in a designated growth center, a number of adjustments to trip generation could be made to account for alternative modes. A 4% reduction in trip generation could be applied due to the design of the site supporting transit and walk access, a 0.5% reduction could be applied due to the presence of bike racks, and 1% due to the presence of showers on site. However, given that the peak hour trip generation is projected to be so low, and that trips should be rounded up to the nearest whole number, the resulting number of trips for the purpose of these calculations is not likely to change.

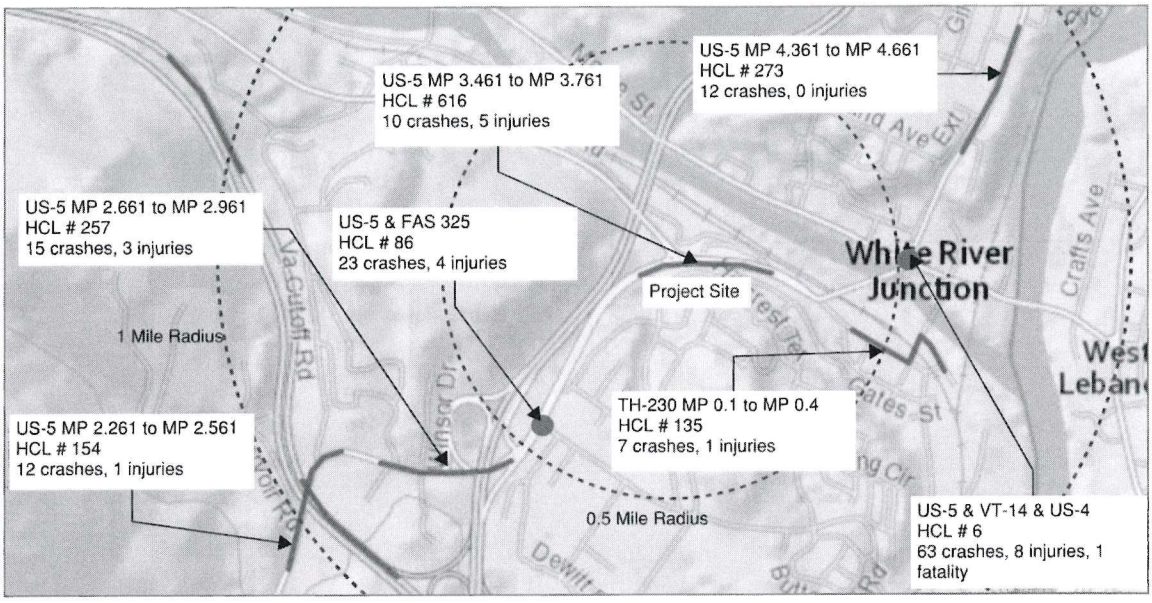
VTrans guidelines specify that a traffic study should be considered if the proposed development will generate 75 or more peak hour trips.[3] The estimated new external vehicle trip generation is negligible compared to the peak hour threshold meriting further evaluation.

Crash Review

WCG reviewed the most recent high crash location (HCL) report prepared by VTrans using 2012-2016 crash data. According to the HCL report, there are two HCL segments within 0.5 miles of the project site – along US-5 proximate to the site and along North Main Street in downtown White River Junction. There is also an HCL intersection at the US-5 & Sykes Avenue intersection. The HCL proximate to the site includes the roundabout planned for the US-5 & US-4 intersection, and the HCL at the US-5 & Sykes Avenue intersection has been addressed through the recent completion of a roundabout at that location. The HCL along North Main Street no longer would qualify as an HCL as only 3 crashes were reported in the most recent 5 years currently available (2018-2022). Four additional HCLs are located between 0.5 and 1 mile from the project site. (Figure 3).

[3] Vermont Agency of Transportation, Policy and Planning Division, Development Review and Permitting Services, *Traffic Impact Study Guidelines* (April 2019).

FIGURE 3: NEAREST HCL SEGMENTS AND INTERSECTIONS RELATIVE TO THE PROJECT SITE



WCG reviewed all reported crashes in the online database along US-5 within the stopping sight distance of the driveway in the most recent complete 5 years. Ten property-damage only and two injury crashes were reported in this period (2018-2022). Eight of the crashes appear to be intersection-related and will be mitigated by the planned roundabout at the US-5 & US-4 intersection.

Given the existing operations and crash experience, the proposed project is not expected to cause or worsen unsafe conditions.

Sight Distance

As defined in the 2018 publication *A Policy on Geometric Design of Highways and Streets*, from the American Association of State Highway and Transportation Officials (AASHTO), sight distance is the "the length of roadway ahead that is visible to the driver."[4] Sight distances of sufficient length are necessary at all points along a roadway to ensure vehicles can safely stop or avoid colliding with potential obstructions or other vehicles on the roadway.

Standard practice in assessing intersection safety and operations involves measuring two separate sight distances – **stopping sight distance** and **intersection sight distance**.

Stopping sight distance (SSD) is the visible distance along a roadway between an advancing motorist and a potential obstacle in the roadway. It is measured from a point representing the

[4] American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, Seventh Edition (Washington D.C.: American Association of State Highway and Transportation Officials, 2018). Page 3-2.

approaching driver's eye and a point representing an obstacle in the roadway.[5] Stopping sight distances of adequate length are needed along all roadways, both at and away from intersections, so that drivers travelling at design speeds can react to potential obstacles and safely brake to avoid collisions. Design minimum stopping sight distances are calculated based on factors such as design speed, response times, and grades as reported in the *2018 Policy on Geometric Design of Highways and Streets*.[6]

Intersection sight distance (ISD) is the distance available along the major road travelled way corresponding with the maximum visibility between an advancing motorist on the major road and an entering motorist on an intersecting minor road. It is measured between a point representing the advancing driver's eye above the major road and a point representing the entering driver's eye above the intersecting road.[7]

The *2018 Policy on Geometric Design of Highways and Streets* states that the available intersection sight distance should be at least equal to the required stopping sight distance along the major road.

> *"Sight distance is also provided at intersections to allow the drivers of stopped vehicles a sufficient view of the intersecting highway to decide when to enter the intersecting highway or to cross it. If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions."*

However, when possible, it is desirable to have intersection sight distances that exceed the design minimum stopping sight distances to offer improved operations, such that major road traffic need not decelerate to accommodate entering traffic.

> *"However, in some cases a major-road vehicle may need to stop or slow to accommodate the maneuver by a minor road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road."*

Based on the posted speed limit of 40 mph and the downgrade approaching the driveway from the southwest (~7.7%), the design minimum stopping sight distance is 355 feet approaching from the south. Given the upgrade of approximately 7.7% approaching from the northeast, the

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[5] As noted in the 2018 Policy on Geometric Design of Highways and Streets (page 3-15), the height of the driver's eye is assumed to be 3.5' above the road surface and the height of a potential obstacle is 2.0' above the road surface.

[6] American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, Seventh Edition (Washington D.C.: American Association of State Highway and Transportation Officials, 2018). Page 3-5 to 3-6.

[7] As noted in the 2018 Policy on Geometric Design of Highways and Streets (page 3-16), the height of the driver's eye of the approaching vehicle is assumed to be 3.5' above the road surface of the major road and the height of the driver's eye of the entering vehicle is assumed to 3.5' above the minor road surface. The decision point offset from the travel way varies with sight conditions (page 9-38); in this case we assume the decision point is 15-feet from the travel way.

stopping sight distance is 270 feet. The target minimum intersection sight distance for turning traffic at the proposed driveways is 385 feet to the left and 445 feet to the right.

ISD and SSD were measured at the proposed driveway. The resulting ISD and SSD observations are detailed in the following pictures and tables.

FIGURE 4: DRIVER'S PERSPECTIVE TO THE LEFT (SOUTH) AND RIGHT (NORTH) FROM THE PROPOSED SITE DRIVEWAY

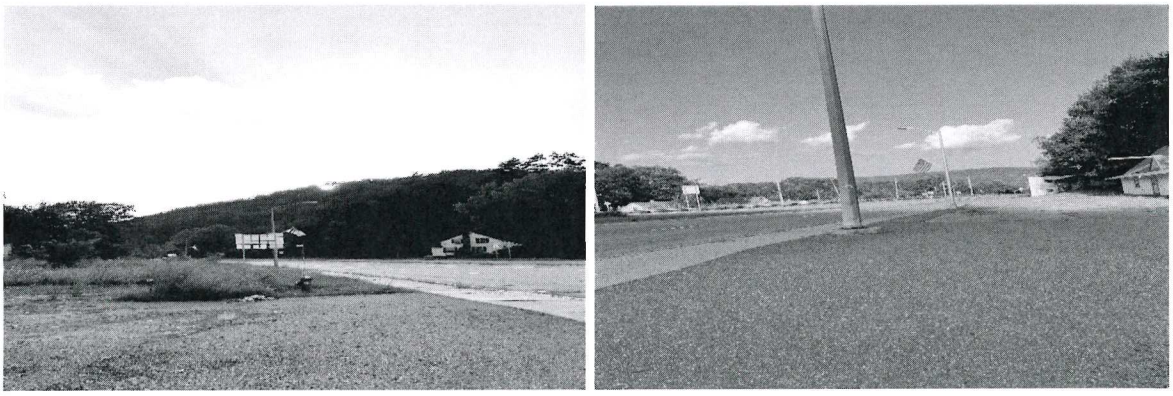


TABLE 5: REQUIRED AND MEASURED SIGHT DISTANCES AT THE EXISTING SITE DRIVEWAY

	Required Minimum	Design Target	Measured
Stopping Sight Distance	from north: 280' from south: 355'	n/a	>500' **(met)** 400' **(met)**
Intersection Sight Distance	right, to north: 280' left, to south: 355'	right, to north: 445' left, to south: 385'	right, to north: >500' **(met)** left, to south: 400' **(met)**

The observed intersection and stopping sight distances at the existing site driveway exceed required and preferred minimum distances.

Parking

As noted above, approximately Discussions with the Haven indicate they anticipate 4-5 guests out of 20 would bring a vehicle. In addition, approximately 2-3 staff and up to 2 volunteers will be on site at any given time. As many as 3-4 additional vehicles may be on site due to outside service providers. The resulting estimated number of vehicles on site is projected to be between no more than 11 to 14 vehicles. The planned 14 parking spaces on site is adequate to handle projected demands.

Memorandum

To: Michael Redmond, Upper Valley Haven

Cc: Craftstudies Inc., Kim Butler, Doug Sonsalla, Jim Wasser, Adam Morse, Paul Simon, and Chris Holzwarth

From: Jo-Ann Ells, Hartford Zoning Administrator

Date: October 19, 2023

Re: Proposed Emergency Shelter, 608 North Main Street, Lot 45-0003-000

Please submit a response to the following comments/questions on your application for an Emergency Shelter to my office before **9:00 a.m., Thursday, October 26, 2023.** If you are unable to meet this deadline, please contact me as soon as possible to discuss the deadline to have your application considered at the next round of Public Hearings.

Prior to the Planning Commission Hearing, you will receive an agenda, draft Findings of Fact, and additional staff comments if there are any. Please feel free to contact me at any time during this process.

1. Please confirm that you understand that you retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

   To determine what State Environmental Permits may be required for your project, The Vermont Agency of Natural Resources (ANR) recommends that you use ANR's Permit Navigator Tool by going to the VT Department of Environmental Conservation website Welcome to DEC | Department of Environmental Conservation (vermont.gov) and going to the "Permit Navigator Tool" Permit Navigator (force.com)

   If further assistance is needed, please contact the Community Assistance Specialist for our area:

   Rick Oberkirch, Community Assistance Specialist
   802-282-6488
   Rick.Oberkirch@vermont.gov

2. Please contact Tom Peltier, Fire Marshal, to discuss obtaining a Public Building permit. tpeltier@hartford-vt.org (295-3232)

3. Please acknowledge that you understand that you need to obtain an allocation and application for connection for the water and sewer service before a Zoning Permit will be issued.

4. If you have not done so already, I encourage you to talk to Hartford's Environmental Sustainability Coordinator, Dana Clawson, about energy efficiency options for your project. (dclawson@hartord-vt.org)

5. Have you considered providing an electric vehicle charging station(s) or installing the conduit for a future installation?

6. Please Amend Kim Butler's letter of October 16, 2023 as follows:

    - Change the reference to the IC (Industrial Commercial) zoning district to HCR (Highway Commercial/Residential).
    - Include the statutory definition of Emergency Shelter and a description of how the application meets the definition.

7. Have you considered a waste receptacle for the pet run area?

8. Please review the details of the photometric plan for accuracy (I talked to Doug about this).

9. Please confirm that all proposed plantings are native/non-invasive.

10. Please induce a detail for the proposed retaining wall in the civil plan set.

11. Any you proposing any signage for the project?

12. Please acknowledge that during construction of the proposed project erosion and sediment control measures as specified in the most current edition of the *Low Risk Site Handbook for Erosion Prevention and Sediment Control* published by the Vermont Department of Environmental Conservation will be followed.

13. Please acknowledge that you understand the following:

    Before you commence construction, you need to schedule a preconstruction meeting with the Department of Public Works (DPW). You need to contact the DPW at least two weeks before you want to hold this meeting.

If this meeting results in any revisions to the approved plans, you must contact me to discuss amending your permit.

14. Please acknowledge that you understand that once the project is complete and before I can issue a Certificate of Occupancy you need to:

    - Submit written verification from a Professional Engineer licensed by the State of Vermont certifying that the project was constructed in compliance with the approved plans and Findings of Fact
    - Submit verification that the water and sewer have been inspected and approved by the Department of Public Works
    - Submit acceptable records drawing to the Department of Public Works
    - Submit a PDF of the record drawing to the Zoning Administrator
    - Record an Energy Code Certificate in the Land Records if required by the State of Vermont

    Please acknowledge that you understand these requirements.

15. Please email me a copy of all application materials, revised as necessary, including your response to this memo and the attached application form.

16. Please submit the application fee ($626.90) and eight copies of all application materials, revised as necessary, including your response to this memo and the attached application form. (Please fold the plan set.)

Dartmouth Health

Dartmouth Health
Psychiatry
Addiction Treatment Program

November 3, 2023

John Reid, Chair
Hartford Planning Commission
Hartford Town Hall
171 Bridge St.
Hartford, VT 05001

Re: Haven Shelter Project

Dear Mr. Reid and the Hartford Planning Commission:

We write to express our unequivocal support of the Haven Shelter Project.

We are clinical leaders of the Dartmouth-Hitchcock Medical Center's Addiction Treatment Program (ATP), with services that include the Moms in Recovery Program, the Doorway at Dartmouth Hitchcock, and our Intensive Outpatient Program (IOP). We serve hundreds of unique individuals each month with a wide range of substance use disorders and financial resources.

In our experience, safe shelter is an essential component of the treatment of individuals suffering from substance use disorders. Without this, achieving anything close to remission is impossible. Without a safe place to sleep, people will continue cycles of substance use, with severe consequences that include high utilization of emergency services and the criminal justice system, and they will be at a high risk of death.

Each of us can cite numerous examples of homeless individuals who struggled substantially with addiction who were able to turn their lives around if they were fortunate enough to secure a stable living environment.

Our clinic has collaborated with the Haven for years and have the utmost respect for their organization. They have stocked our community food shelf, enabling us to provide nutritious meals to our patients with food insecurity. We refer our patients in need of shelter to the Haven. However, they do not have sufficient space to accommodate our referrals. We believe this proposed project is of the utmost necessity and will help us to better serve our patients and the community.

DHMC Addiction Treatment Program
85 Mechanic St; Ste B3-1
Lebanon, NH 03766

Tel (603) 653-1860 | Fax (603) 448-5335
Dartmouth-Health.org

Dartmouth Health

We humbly request that this commission approves the Haven Shelter Project proposal

Sincerely,

Teri LaRock, LICSW
Clinical Director, Moms in Recovery Program
Dartmouth-Hitchcock Medical Center
Teri.B.LaRock@hitchcock.org

Melissa Baughman, MA, MLADC, LCMHC
Clinical Director, Addiction Treatment Program
Dartmouth-Hitchcock Medical Center
Melissa.A.Baughman@hitchcock.org

Luke Archibald, MD
Director of Addiction Services, Department of Psychiatry
Dartmouth-Hitchcock Medical Center
Luke.J.Archibald@hitchcock.org

Black Rock Investments, LLC

Application #23-22

1. 23-22

DRAFT
FINDINGS OF FACT
CONCLUSIONS OF LAW
AND
DECISION

HARTFORD PLANNING COMMISSION

Application #23-22 by Black Rock Investment LLC
for Preliminary Approval of a Subdivision
involving a boundary line adjustment
between lots 45-0243-000 and 45-0162-000
Sykes Mountain Avenue and Hickory Ridge
White River Junction, in R-2 and R1-M zoning districts

This decision pertains to application #23-22 by Black Rock Investment LLC (owner/applicant) for Preliminary Approval of a Subdivision involving a boundary line adjustment between lots 45-0243-000 and 45-0162-000, Sykes Mountain Avenue and Hickory Ridge, White River Junction, in R-2 and R1-M zoning districts.

FINDINGS OF FACT

Based upon the information contained in the exhibits for this application (see attached list) and the evidence adduced at the Planning Commission meeting of November 13, 2023, the Hartford Planning Commission makes the following Findings of Fact:

1. The owner of record of lot 45-0162-000 and 45-0243-000 is Black Rock Investments, LLC who acquired the lot on 08-10-2017. The deed is recorded in volume 539, page 568 of the Hartford Land Records.

2. Lot 45-0162-000 is undeveloped.

   Lot 45-0243-000 is developed with a two-unit dwelling, garage, and accessory structure.

3. Lot 45-0162-000 is approximately 12.35 acres.

   Lot 45-0243-000 is approximately 11.08 acres.

4. The lots are located on the corner of Sykes Mountain Avenue and Hickory Ridge.

5. The lots are class one (1), municipal water and wastewater.

2. 23-22

This Application

6. The applicant proposes to annex land from lot 45-0243-000 to lot 45-0162-000.

   After the annexation, lot 45-0162-000 will be approximately 19.56 acres and lot 45-0243-000 will be approximately 3.89 acres.

7. Minimum Area and Dimensional Standards for a Class 1 lot in the R1-M zoning district are:

	Area (square feet)		Lot Dimensions (feet)		Setbacks		
Class	Per Dwelling Unit	Per Lot	Width	Depth	Front	Side	Rear
1	4,000	8,000	60	80	10/20*	10	20

Minimum Area and Dimensional Standards for a Class 1 lot in the R-2 zoning district are:

	Area (square feet)		Lot Dimensions (feet)		Setbacks		
Class	Per Dwelling Unit	Per Lot	Width	Depth	Front	Side	Rear
1	6,000	10,000	70	90	10/20*	10	20

* Ten feet for principal structure and 20 feet for attached or detached garages and other structures.

8. Lot 45-0162-000 will be accessed over lot 45-0243-000. The easement will be included in the deed should either lot 45-0162-000 or 45-0243-000 transfer ownership.

9. The applicant is proposing that lot 45-0243-000 include a right-of-way/easement to allow for a reconfiguration of Hickory Ridge related to future development of lots 45-0243-000 and 45-0162-000. (See item #3 of exhibit #6.)

10. The application has requested that the application be reviewed as a is a "Two-step" application under section 203-C 2 of the Subdivision Regulations.

11. The applicant understands they must submit a separate application for Final Approval.

12. The applicant understands that they retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

13. The applicant understands that the Subdivision Regulations state that approval of a preliminary plat shall remain in effect for a period of one (1) year from the date of approval. The Commission Chair or Vice Chair may grant a one-time one (1) year extension.

14. The applicant understands that a Mylar must be properly endorsed and recorded within 180 days of Final Approval and that a zoning permit must be obtained, or the Approval will be void.

CONCLUSIONS OF LAW

Based upon the foregoing Findings of Fact, the Hartford Planning Commission concludes that the proposed subdivision meets the requirements of the Town of Hartford Subdivision Regulations for **Preliminary Approval** including:

Section 200-2 Hartford Subdivision Regulations:

A. To guide future development in accordance with the Hartford Master Plan (the Plan), Zoning Regulations, Flood Hazard Area Regulations, Capital Budget and Program, and all other Town adopted bylaws, ordinances, regulations, plans, policies, and procedures.

B. To promote a desirable relationship to the landform, its topography and geology, natural drainage and surface water runoff, surface water, and groundwater.

C. To conserve natural resources and fragile features such as prime agricultural soils, wetlands, streams, ponds, steep slopes, ridgelines, important wildlife habitat and connectivity, and scenic views.

D. To minimize the fragmentation of productive resource lands, including farm and forest land, and to promote their continued use and availability for agriculture, forestry, and wildlife.

E. To maintain Hartford's historic settlement pattern, defined by compact villages surrounded by rural countryside.

F. To encourage variety, innovation, flexibility, and greater efficiency in residential development including clustering of lots, in accordance with the provisions of 24 V.S.A. §4417 (Planned Unit Development).

G. To establish standards of subdivision design including, but not limited to provisions for pedestrian and vehicular traffic, surface water runoff, surface water, and suitable building sites for the land use contemplated.

H. To ensure development does not exceed the ability of the Town to provide public services and facilities, and that these facilities and services are available and will have sufficient capacity to serve any proposed subdivision. Such facilities and services include, but are not limited to: parks, recreation areas, schools, police and fire protection, libraries, water and wastewater facilities, roads, and public parking.

I. To provide adequate utilities such as water, wastewater, electricity, telephone, and broadband.

J. To provide the most efficient relationship between land use and the circulation of traffic throughout the Town, encourage access management, and avoid undue traffic congestion and

overburdening of roads, highways, and intersections.

K. To promote the conservation of energy and use of renewable energy resources.

L. To encourage variety in the type, size, and cost of housing to meet the needs of Hartford's diverse population.

DECISION

The Hartford Planning Commission, based upon the forgoing Findings of Fact and Conclusions of Law hereby approves #23-22 by Black Rock Investment LLC (owner/applicant) for Preliminary Approval of a Subdivision involving a boundary line adjustment between lots 45-0243-000 and 45-0162-000, Sykes Mountain Avenue and Hickory Ridge, White River Junction, in R-2, and R1-M zoning districts **on the condition that:**

- **Before applying for Final Approval:**
  - **The applicant schedules a meeting with DPW and Planning Staff to discuss the proposed realignment of Hickory Ridge. (See item #3 of exhibit #6)**
  - **The applicant schedules a meeting with the Zoning Administrator to review application requirements.**

- **The application for Final Approval includes:**
  - **A Survey prepared by a Vermont licensed surveyor meeting Hartford's Subdivision Regulations.**
  - **The amount of land being annexed from lot 45-0243-000 to lot 45-0162-000.**
  - **Confirmation that the existing structures will meet the required setbacks after the lot line adjustment.**
  - **Confirmation that the proposed access easement and realignment of Hickory Ridge has been approved by the DPW and it is included on the survey.**
  - **Information regarding the timing and execution of the access easement and realignment of Hickory Ridge as approved by the DPW.**
  - **The location of the access easement over lot 45-0243-000 benefiting lot 45-0162-000 on the survey.**
  - **The location of all existing and proposed utility easement on the survey.**
  - **A detailed written description of all existing and proposed easements/rights-of-way.**

- **Before Zoning Permit to Finalize the application for Final Approval, the applicant submits a letter from their surveyor verifying that the monuments have been set according to the locations identified on the approved survey plat.**

This decision is also subject to the condition that no modification or expansion shall be made to the project as described and limited in the above Findings of Fact and Conclusions of Law without the written approval of the Hartford Zoning Board of Adjustment and/or the Hartford

Planning Commission. This decision may be revoked, and a new application or permit required if conditions and findings are violated or modified without written approval.

The applicant is responsible for insuring compliance with all applicable State and Federal regulations pertaining to this application.

Those in favor:

Those in opposition:

Those not participating:

Dated at Hartford, Vermont this ____ day of November 2023.

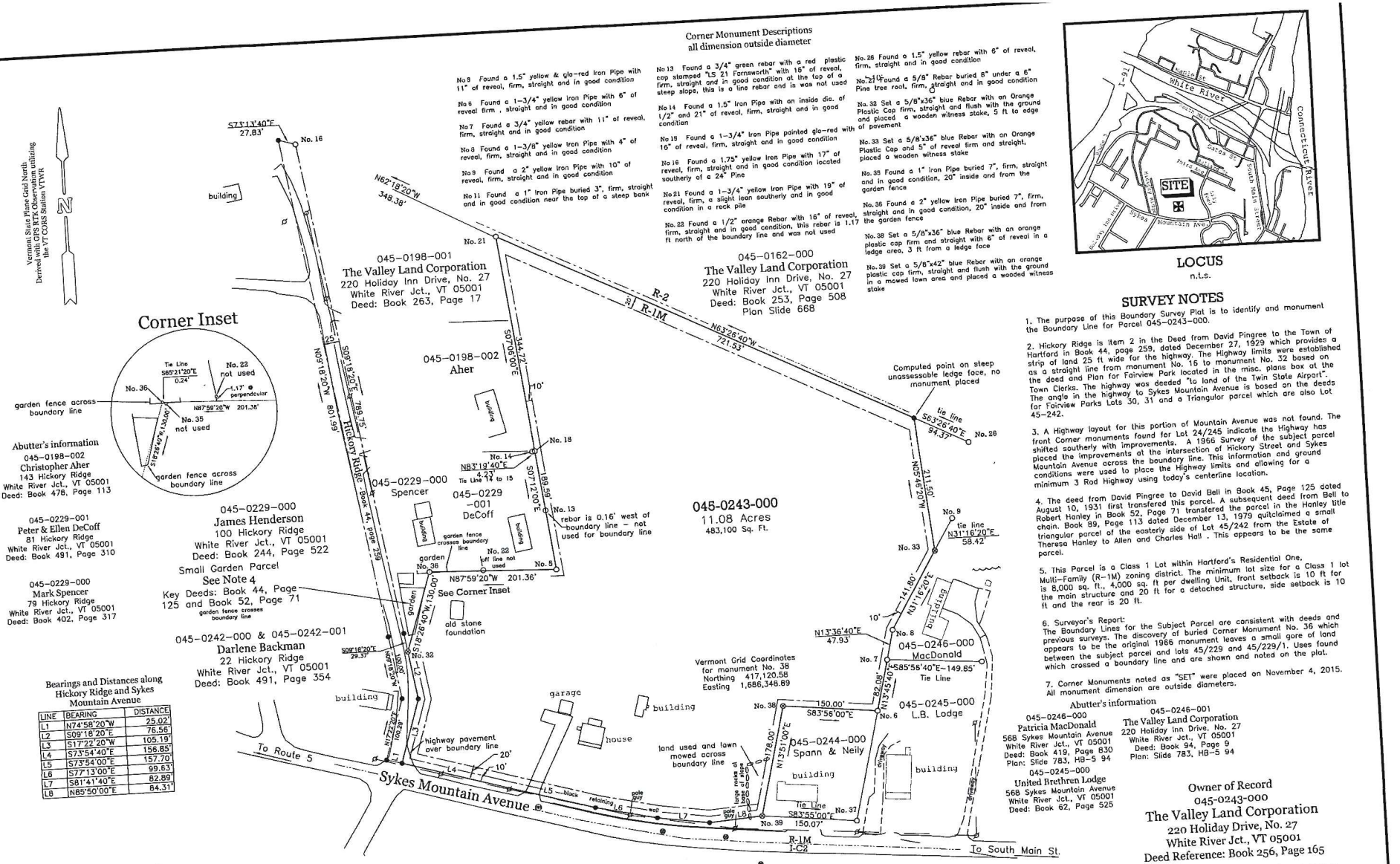
HARTFORD PLANNING COMMISSION

By _____
Chairperson/Vice-Chairperson

Appeal Rights: An interested person who has participated in the proceeding related to this decision has the right to appeal this decision to the Vermont Environmental Court, pursuant to 24 V.S.A. s. 4471 and V.R.E.C.P.5, in writing, within 30 days of the date of this decision. If you fail to appeal this decision, your right to challenge this decision at some future time may be lost because you waited too long. You will be bound by this decision, pursuant to 24 V.S.A. s. 4472 (d) (exclusivity of remedy; finality).

EXHIBIT LIST

1. Application #23-22
2. Preliminary Plat prepared by Engineering Ventures received October 30, 202
3. Boundary Survey Plan prepared by Rockwood Land Services in 2017
4. Project Narrative
5. Letter from Kevin Worden dated October 27, 2023
6. Memo from Kevin Worden dated October 27, 2023


Corner Monument Descriptions
all dimension outside diameter
No.5 Found a 1.5" yellow & glo-red iron Pipe with 11" of reveal, firm, straight and in good condition
No.6 Found a 1-3/4" yellow iron Pipe with 6" of reveal firm , straight and in good condition
No.7 Found a 3/4" yellow rebar with 11" of reveal, firm, straight and in good condition
No.8 Found a 1-3/8" yellow iron Pipe with 4" of reveal, firm, straight and in good condition
No.9 Found a 2" yellow iron Pipe with 10" of reveal, firm, straight and in good condition
No.11 Found a 1" iron Pipe buried 3", firm, straight and in good condition near the top of a steep bank
No.13 Found a 3/4" green rebar with a red plastic cap stamped "LS 21 Farnsworth" with 16" of reveal, firm, straight and in good condition at the top of a steep slope, this is a line rebar and is was not used
No.14 Found a 1.5" iron Pipe with an inside dia. of 1/2" and 21" of reveal, firm, straight and in good condition
No.15 Found a 1-3/4" iron Pipe painted glo-red with 16" of reveal, firm, straight and in good condition
No.16 Found a 1.75" yellow iron Pipe with 17" of reveal, firm, straight and in good condition located southerly of a 24" Pine
No.21 Found a 1-3/4" yellow iron Pipe with 19" of reveal, firm, a slight lean southerly and in good condition in a rock pile
No.22 Found a 1/2" orange Rebar with 16" of reveal, firm, straight and in good condition, this rebar is 1.17 ft north of the boundary line and was not used
No.26 Found a 1.5" yellow rebar with 6" of reveal, firm, straight and in good condition
No.27 Found a 5/8" Rebar buried 8" under a 6" Pine tree root, firm, straight and in good condition
No.32 Set a 5/8"x36" blue Rebar with an Orange Plastic Cap firm, straight and flush with the ground and placed a wooden witness stake, 5 ft to edge of pavement
No.33 Set a 5/8"x36" blue Rebar with an Orange Plastic Cap and 5" of reveal firm and straight, placed a wooden witness stake
No.35 Found a 1" iron Pipe buried 7", firm, straight and in good condition, 20" inside and from the garden fence
No.36 Found a 2" yellow iron Pipe buried 7", firm, straight and in good condition, 20" inside and from the garden fence
No.38 Set a 5/8"x36" blue Rebar with an orange plastic cap firm and straight with 6" of reveal in a ledge area, 3 ft from a ledge face
No.39 Set a 5/8"x42" blue Rebar with an orange plastic cap firm, straight and flush with the ground in a mowed lawn area and placed a wooded witness stake
Vermont State Plane Grid North
Derived using GPS RTK Observation utilizing the VT CORS Station VTWR
N
Corner Inset
Tie Line S65°21'20"E 0.24'
No. 22 not used
1.17' perpendicular
N87°59'20"W 201.36'
No. 36
No. 35 not used
S18°26'40"W 130.00'
garden fence across boundary line
garden fence across boundary line
S73°13'40"E 27.83'
No. 16
building
N62°18'20"W 348.38'
No. 21
045-0198-001
The Valley Land Corporation
220 Holiday Inn Drive, No. 27
White River Jct., VT 05001
Deed: Book 263, Page 17
045-0162-000
The Valley Land Corporation
220 Holiday Inn Drive, No. 27
White River Jct., VT 05001
Deed: Book 253, Page 508
Plan Slide 668
R-2
R-1M
N63°26'40"W 721.53'
S07°08'00"E 344.72'
045-0198-002
Aher
building
No. 18
No. 14
N83°19'40"E 4.23'
Tie Line 14 to 15
S07°12'00"E 189.59'
No. 13 rebar is 0.16' west of boundary line - not used for boundary line
045-0229-000
Spencer
045-0229-001
DeCoff
building
building
garden fence crosses boundary line
garden
No. 36
No. 22 not used
No. 5
N87°59'20"W 201.36'
See Corner Inset
old stone foundation
045-0243-000
11.08 Acres
483,100 Sq. Ft.
Computed point on steep unassessable ledge face, no monument placed
tie line
S63°26'40"E 94.37'
No. 26
N25°46'20"W 211.50'
No. 9
tie line
N31°16'20"E 58.42'
No. 33
N31°16'20"E 141.80'
building
10'
N13°36'40"E 47.93'
No. 8
045-0246-000
MacDonald
No. 7
S85°55'40"E 149.85'
Tie Line
N13°45'40"W 82.06'
150.00'
S83°55'00"E
No. 38
No. 6
045-0245-000
L.B. Lodge
N13°51'00"E 178.00'
045-0244-000
Spann & Neily
building
building
Tie Line
S83°55'00"E 150.07'
No. 37
No. 39
R-1M
I-C2
To South Main St.
045-0244-000
Trust of Kurt G. Spann &
Trust of Elizabeth E. Neily
33 River Street
Woodstock, VT 05091
Deed: Book 389, Page 803
045-0229-000
James Henderson
100 Hickory Ridge
White River Jct., VT 05001
Deed: Book 244, Page 522
Small Garden Parcel
See Note 4
Key Deeds: Book 44, Page 125 and Book 52, Page 71
045-0242-000 & 045-0242-001
Darlene Backman
22 Hickory Ridge
White River Jct., VT 05001
Deed: Book 491, Page 354
Hickory Ridge Book 44, page 259
N09°16'20"W 801.99'
S09°16'20"E 769.75'
25'
garden
S18°26'40"W 130.00'
S09°16'20"E 29.37'
No. 32
N17°22'20"E 100.00'
building
garden
house
land used and lawn mowed across boundary line
highway pavement over boundary line
20'
10'
To Route 5
Sykes Mountain Avenue
L1
L2
L3
L4
L5
L6
L7
L8
block retaining wall
gate
guy
Bearings and Distances along Hickory Ridge and Sykes Mountain Avenue
LINE | BEARING | DISTANCE
L1 | N74°58'20"W | 25.02'
L2 | S09°16'20"E | 76.56'
L3 | S17°22'20"W | 105.19'
L4 | S73°54'40"E | 156.85'
L5 | S73°54'00"E | 157.70'
L6 | S77°13'00"E | 99.63'
L7 | S81°41'40"E | 82.89'
L8 | N85°50'00"E | 84.31'
Abutter's information
045-0198-002
Christopher Aher
143 Hickory Ridge
White River Jct., VT 05001
Deed: Book 478, Page 113
045-0229-001
Peter & Ellen DeCoff
81 Hickory Ridge
White River Jct., VT 05001
Deed: Book 491, Page 310
045-0229-000
Mark Spencer
79 Hickory Ridge
White River Jct., VT 05001
Deed: Book 402, Page 317
Vermont Grid Coordinates for monument No. 38
Northing 417,120.58
Easting 1,686,348.89
Abutter's information
045-0246-000
Patricia MacDonald
568 Sykes Mountain Avenue
White River Jct., VT 05001
Deed: Book 419, Page 830
Plan: Slide 783, HB-5 94
045-0245-000
United Brethren Lodge
568 Sykes Mountain Avenue
White River Jct., VT 05001
Deed: Book 62, Page 525
045-0246-001
The Valley Land Corporation
220 Holiday Inn Drive, No. 27
White River Jct., VT 05001
Deed: Book 94, Page 9
Plan: Slide 783, HB-5 94
LEGEND
Found Stone Bound
Found Iron Pipe
Set Capped Rebar
Boundary Line
Wooden Fence
Edge of Pavement
Edge of Gravel
RES Zone Setback Minimum
Zoning Line - approximate
Utility Pole
Deed Reference
Orange Plastic Rebar Cap Label
Overhead Wires
as noted
as noted
as noted
Book, Page
TIM ROCKWOOD VT 537 NH 618
OHW
THIS PLAT IS APPROVED SUBJECT TO THE FINDINGS OF FACT, CONCLUSIONS OF LAW AND DECISION FOR THIS SUBDIVISION, A COPY OF WHICH IS ON FILE IN THE DEPARTMENT OF PLANNING AND DEVELOPMENT SERVICES.
APPROVAL NO._____HARTFORD PLANING COMMISSION
DATED:_____BY:_____
CHAIRPERSON/VICE CHAIRPERSON
I hereby certify that to the best of my belief and knowledge a Vermont Urban Class Survey was completed on Hartford Parcel 045-0243-000 in accordance with the requirements of 27 VSA 1403(b)-(8) and, except as noted, is consistent with the deeds, plans, and notes on this plat that are the basis for this surveyor's opinion of the boundary line locations.
Timothy W. Rockwood
LLS NO. 537
I-91
White River
Connecticut River
Gates St
Church St
Pleasant St
Gates St
South Main Street
Maple St
Pine St
Hickory Ridge
Sykes Mountain Ave
SITE
LOCUS
n.t.s.
SURVEY NOTES
1. The purpose of this Boundary Survey Plat is to identify and monument the Boundary Line for Parcel 045-0243-000.
2. Hickory Ridge is Item 2 in the Deed from David Pingree to the Town of Hartford in Book 44, page 259, dated December 27, 1929 which provides a strip of land 25 ft wide for the highway. The Highway limits were established as a straight line from monument No. 15 to monument No. 32 based on the deed and Plan for Fairview Park located in the misc. plans box at the Town Clerks. The highway was deeded "to land of the Twin State Airport". The angle in the highway to Sykes Mountain Avenue is based on the deeds for Fairview Parks Lots 30, 31 and a Triangular parcel which are also Lot 45-242.
3. A Highway layout for this portion of Mountain Avenue was not found. The front Corner monuments found for Lot 24/245 indicate the Highway has shifted southerly with improvements. A 1966 Survey of the subject parcel placed the improvements at the intersection of Hickory Street and Sykes Mountain Avenue across the boundary line. This information and ground conditions were used to place the Highway limits and allowing for a minimum 3 Rod Highway using today's centerline location.
4. The deed from David Pingree to David Bell in Book 45, Page 125 dated August 10, 1931 first transfered this parcel. A subsequent deed from Bell to Robert Hanley in Book 52, Page 71 transfered the parcel in the Hanley title chain. Book 89, Page 113 dated December 13, 1979 quitclaimed a small triangular parcel of the easterly side of Lot 45/242 from the Estate of Theresa Hanley to Allen and Charles Hall . This appears to be the same parcel.
5. This Parcel is a Class 1 Lot within Hartford's Residential One, Multi-Family (R-1M) zoning district. The minimum lot size for a Class 1 lot is 8,000 sq. ft., 4,000 sq. ft per dwelling Unit, front setback is 10 ft for the main structure and 20 ft for a detached structure, side setback is 10 ft and the rear is 20 ft.
6. Surveyor's Report:
The Boundary Lines for the Subject Parcel are consistent with deeds and previous surveys. The discovery of buried Corner Monument No. 36 which appears to be the original 1966 monument leaves a small gore of land between the subject parcel and lots 45/229 and 45/229/1. Uses found which crossed a boundary line and are shown and noted on the plat.
7. Corner Monuments noted as "SET" were placed on November 4, 2015.
All monument dimension are outside diameters.
Owner of Record
045-0243-000
The Valley Land Corporation
220 Holiday Inn Drive, No. 27
White River Jct., VT 05001
Deed Reference: Book 256, Page 165
Revised November 4, 2015 for SET Corner Monuments and note 7
Revised September 30, 2015 - Hickory Ridge Limits, note 2
Revised April 25, 2017 - for parcel Annexed to 045-0246-001
Boundary Survey Plat
Hartford Parcel 045-0243-000
Black Rock Investments, LLC
444 Sykes Mountain Avenue, Hartford, Vermont
0 100 200 300 400 500
Scale: 1" = 100'
Date: June 25, 2015
Project No. 1294
ROCKWOOD LAND SERVICES, LLC
P.O. Box 347
Hartland, VT 05048
(802)436-1039
rockls@vermontel.net

ENGINEERING VENTURES PC

208 Flynn Avenue, Suite 2A, Burlington, VT 05401 · Tel: 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 · Tel: 603-442-9333
414 Union Street, Schenectady, NY 12305 · Tel: 518-630-9614

October 27, 2023

Jo-Ann Ells, Zoning Administrator
Hartford Planning & Zoning
Hartford Municipal Building
2nd Floor Room 201 171 Bridge Street
White River Junction, Vt. 05001

Re: **Subdivision of 444 Sykes Mountain Avenue Lots 45-243 and 45-162**

Landowner: Black Rock Investments

Applicant: Black Rock Investments

Dear Jo-Ann,

I am writing on behalf of Black Rock Investments, applicant for the Subdivision of 444 Sykes Mountain Avenue Lots 45-243 and 45-162. The proposed subdivision will result in the following 2 lots:

Lot 45-243: 3.89 acres (located on Sykes Mountain Avenue)

Lot 45-162: 19.56 acres (accessed from Sykes Mountain Avenue via Hickory Ridge)

This subdivision is in preparation for additional Site Plan and Planned Development applications submitted separately.

8 copies of the following plans and documents are included with this submittal for your review:

- Signed Application Form
- Application Payment
- Responses to Staff Comments received on 10-22-2023.
- Project Narrative
- Existing Boundary Survey Plat
- Proposed S1 Preliminary Plat

Thank you for considering this application. Please give me a call if you have any questions or comments.

Sincerely,
Engineering Ventures P.C.



Kevin Worden PE, Vice President

Town of Hartford

Planning Commission App # _____
Zoning Board of Adjustment App # _____

APPLICATION TO
PLANNING COMMISSION &/OR ZONING BOARD OF ADJUSTMENT

PLEASE COMPLETE ALL ITEMS APPLICABLE AND PROVIDE THE CORRECT NUMBER OF COPIES OF THIS APPLICATION AND THE SITE PLAN OR SUBDIVISION PLAT. ABUTTING LANDOWNERS WILL BE NOTIFIED BY THE PLANNING/ZONING OFFICE.

1. **NAME & ADDRESS OF RECORD OWNER(S)** Black Rock Investments

   Deed Recorded Book 253 and 256 Page 508, 509 and 165-167 (Available at Town Clerk's Office)

   Telephone: Work 802-295-7961 Cell 631-408-8766 Email Address: irwinperret@pering.net

2. **NAME & ADDRESS OF APPLICANTS(S)** Same as above

   Telephone: Work same as above Cell same as above Email Address: same as above

3. **NAME & ADDRESS OF APPLICANTS' CONSULTANT** Engineering Ventures (Kevin Worden)

   85 Mechanic Street, Suite E2-3, Lebanon, NH 03766

   Telephone: Work 603-442-9333 Cell 802-343-5445 Email Address: kevinw@engineeringventures.com

4. **PROJECT LOCATION** 444 Sykes Mountain Avenue

5. **PRESENT USE OF PROPERTY** Multi-family dwelling

6. **BRIEFLY DESCRIBE PROJECT** (in addition, a detailed narrative must be submitted)
   Subdivision of Lots 45-162, 45-243

7. **PROJECT SIZE IN SQ. FT OR ACREAGE** 23.45ac+/-

   Lot Width 850' Approx Lot Depth 1750' Approx

8. **IS PROJECT ON TOWN WATER/SEWER?** Yes x No _____ If Yes, estimated

   Water Consumption/day N/A Amount of Sewer Flow Projected N/A

   Size of Closest Lines Above (water)_____ (sewer) _____

9. **DESCRIBE LANDSCAPING PLAN** See attached plan

10. **IF A BUSINESS** - Present # of Employees N/A

    Proposed Days & Hours of Operation N/A

    Will you use the landfill & recycling center? Yes _____ No _____

    The main waste by-product of your business is: _____

11. **IF A RESTAURANT** - Present seating N/A Proposed _____

12. **PARKING SPACES** - Number to be provided N/A

13. **SIGNAGE** - Free Standing _____ Attached _____

14. **FENCING** – Location N/A Height N/A

15. **NEAREST WATER SUPPLY FOR FIRE PROTECTION** Hydrant on Sykes Mountain Ave

16. **ESTIMATED VALUE OF PROPOSED WORK** _____

17. **IS THERE AN EXISTING DRIVEWAY?** yes

18. **IF A SUBDIVISION** - Number of New Lots to be Created 2

    Do you request that the Town consider taking over maintenance of – Roads No

    Or Park/Open Space No

I HEREBY CERTIFY THAT THE INFORMATION PROVIDED ON THIS APPLICATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. (This certification must be signed by lot owners and applicants).

Irwin Perret	10-16-2023	Irwin Perret	10-16-2023
Applicant's Signature	Date	Lot Owner's Signature	Date
	10-16-2023		10-16-2023
Co-Applicant's Signature	Date	Co-Owner's Signature	Date

The applicant retains the obligation to identify, apply for, and obtain any relevant local or state permits before any construction may commence. Please call 802-282-6488 to speak with the State Permit Specialist.

For Office Use Only		
Map/Lot #		
Fee Paid $:		Receipt #:
PC: Site Plan	Min. Sub.	Maj. Sub.
PD	PD Amend.	Other
ZBA: Conditional Use	Variance	Appeal
Other		
Zoning District (s)		Date Filed:
Official Submittal Date:		

PROJECT NARRATIVE.
LOT SUBDIVISION FOR LOT 45-243 and LOT 45-162
Sykes Mountain Avenue – Hickory Ridge Drive
Hartford, Vermont

The Applicant is requesting to pursue Hartford's two-step application process to subdivide Lots 45-243(±11.08 Acres) and LOT 45-162 (±12.35 Acres). The subdivision will result in two new lots: a 3.89-Acre Lot 45-243 and a 19.56-Acre Lot 45-162. The parcel demarcation for the proposed resulting lots are included in the attached drawings.

The Applicant is also proposing that Lot 45-243 includes a right-of-way/easement as shown in the drawings to allow for a reconfiguration of Hickory Ridge, as per DPW's suggestion given that the Selectboard approves the modification. The proposed Hickory Ridge reconfiguration will be maintainable, safe, reduces the opportunities for through traffic on the existing Hickory Ridge and provides protection to the residence at 22 Hickory Ridge.

The Applicant acknowledges and understands that any approval will require that a surveyor submit a letter certifying that the monuments have been set according to the locations identified on the approved survey plat before the Mylar can be recorded.

BLACK ROCK INVESTMENTS, LLC

Memorandum

To: Jo-Ann Ells

Cc: Kevin Worden, Paul Simon, Earl Simpson, Dennis Marquise, and Chris Holzwarth

From: Black Rock Investments, LLC

Date: October 27, 2023

Re: Answers to Memo on Proposed Subdivision

In relation to Memorandum received on October 22nd, please find our comments below:

1. Please provide a detailed project narrative and include your request for a two-step application under Hartford's Subdivision Regulations, and the lot numbers and sizes before and after the subdivision/lot line adjustments. Done, see attached narrative.

   Once Preliminary Approval is obtained, you will need to apply for Final Approval. A complete survey must be submitted with this application. Understood

   (The Subdivision Regulations state that approval of a preliminary plat shall remain in effect for a period of one (1) year from the date of approval. The Commission Chair or Vice Chair may grant a one-time one (1) year extension.) Understood

2. Please confirm that you understand that any approval will require that a surveyor submit a letter certifying that the monuments have been set according to the locations identified on the approved survey plat before the Mylar can be recorded. Understood and included in narrative.

3. The proposed 6,776 sq. ft. lot does not meet dimensional standards and cannot be created. Understood, this lot has been removed.

   I understand this area is proposed to be used for access to the residential projects.

   Possible options/solutions that need to be discussed with the DPW include:

   - Keeping the land with one of the proposed lots and creating right-of-way over it This land is now included in Lot 45-243 and includes an access and utility easement over it.
   - Merging the land with the Hickory Ridge ROW (this requires a separate application with the Town as an applicant)

DPW has stated that they are not opposed the modification of the Hickory Ridge alignment so long as is done in a manner that is maintainable, safe, reduces the opportunities for through traffic on the existing Hickory Ridge and provides protections to the residence at 22 Hickory Ridge. The applicable rules for seeking to modify the layout, including the need to have the Selectboard approve it and accept it, were previously provided. Understood

DPW commented that the concept as presented appears to have room for improvement including pedestrian connectivity to Hickory Ridge, a proper hammerhead at the end of the section directed towards the upper development, and ensuring the usability of the driveway to 22 Hickory Ridge that may include revising the right of way to Hickory Ridge. The plan has been reviewed with DPW and proposed modifications have been made.

The intersection with Sykes Mountain Avenue needs to be fully evaluated for improvements including pedestrian to the municipal sidewalk network with the plans incorporating the recent sidewalk improvements and construction of a bus shelter. The plan has been reviewed with DPW and the pedestrian and sidewalk improvements have been added. Further coordination with Advance Transit is required related to the bus shelter.

I suggest a meeting with DPW staff and myself to discuss this item. I can coordinate a meeting if you'd like. An initial review meeting with DPW to review comments has occurred. Additional meetings are appropriate.

4. When you had the property surveyed by Rockwood Land Services LLC in 2017 there was a small "garden lot" identified that does not appear on the Preliminary Plat. This will need to be clarified. This garden lot has been shown on the plans. No revision of this lot is proposed.

5. Please remove references to lot 1, 2, and 3 (use the town's lot number format), "phases," and open space, from the Preliminary Plat, and add the zoning district boundary lines. References to lot 1, 2 and 3 have been removed from the plans and the town's lot numbers have been used instead.

6. Please email me the application form, project narrative, revised Preliminary Plat, and your response to this memo. Understood.

7. Please submit the application fee ($155) and eight copies of:

   - Application form (please add the mailing address for the owner)
   - Project narrative
   - Revised Preliminary Plat
   - Response to this memo

Black Rock Investments. LLC

Application #23-23

DRAFT
FINDINGS OF FACT
CONCLUSIONS OF LAW
AND DECISION

HARTFORD PLANNING COMMISSION

Application #23-23 by Black Rock Investment LLC
for Site Development Plan Approval
for a 48 dwelling units in a Multi-Unit Building
proposed lot 45-0243-000, Sykes Mountain Avenue and Hickory Ridge
White River Junction, in a R1-M zoning district

This decision pertains to application #23-23 by Black Rock Investment LLC (owner/applicant) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for a 48 dwelling units in a Multi-Unit Building, proposed lot 45-0243-000, Sykes Mountain Avenue and Hickory Ridge, White River Junction, in a R1-M zoning district.

FINDINGS OF FACT

Based upon the information contained in the exhibits for this application (see attached list) and the evidence adduced at the Planning Commission meeting of DATE the Planning Commission makes the following Findings of Fact:

General Information

1. The owner of record of lot 45-0243-000 is Black Rock Investments LLC who acquired the lot on 08-10-2017. The deed is recorded in volume 539, page 568 of the Hartford Land Records.

2. The lot is developed with a two-unit dwelling, garage, and accessory structure.

3. The lot is in an R1-M zoning district.

4. Lot Size

5. The lot is located on the corner of Sykes Mountain Avenue and Hickory Ridge.

6. The lot is class one (1), municipal water and wastewater.

This Application

7. The applicant proposes to construct an Affordable Housing multi-unit dwelling with 48 rental dwelling units. A multi-unit dwelling is a permitted use in the R-1M zoning district.

8. The applicant has an application pending before the Planning Commission for a Subdivision involving a Lot Line Adjustment with adjacent lot 45-0162-000 (application #23-22):

   This application (#23-23) is conditioned on the approval of the subdivision.

9. The project includes:

   - 9 proposed Studio apartments.
   - 7 proposed Junior One-Bedroom apartments.
   - 20 proposed One-Bedroom apartments.
   - 6 proposed One-Bedroom apartments with Den.
   - 6 proposed Two-Bedroom apartments.

10. The applicant proposes to remove the existing structures from the lot.

    The applicant has agreed to allow the Hartford Historic Preservation Commission to photo document the structures before they are removed.

11. Density and Height for Affordable Housing Projects

    24 V.SA. 4412 (13) states:

    > In any area served by municipal sewer and water infrastructure that allows residential development, bylaws shall permit any Affordable Housing Development, as defined in subdivision 4303(2) of this title, including mixed-use development, to exceed density limitations for residential developments by an additional 40 percent, which shall include exceeding maximum height limitations by one floor, provided that the structure complies with the Vermont Fire and Building Safety Code.

    24 V.S.A. § 4303 (2) defines Affordable Housing Development as a housing development of which at least 20 percent of the units or a minimum of five units, whichever is greater, are affordable housing units. Affordable units shall be subject to covenants or restrictions that preserve their affordability for a minimum of 15 years or longer as provided in municipal bylaws.

    24 V.S.A. 4303 (B) defines Affordable Housing Units as:

    Rental housing for which the total annual cost of renting, including rent, utilities, and condominium association fees, does not exceed 30 percent of the gross annual income of a household at 80 percent of the highest of the following:
    (i) the county median income, as defined by the U.S. Department of Housing and Urban Development;
    (ii) the standard metropolitan statistical area median income if the municipality is located in such an area, as defined by the U.S. Department of Housing and Urban Development; or
    (iii) the statewide median income, as defined by the U.S. Department of Housing and Urban Development.

While the survey has not been submitted for the Lot Line Adjustment with lot 43-0162-000, it is anticipated that lot 45-0243-000 will be 3.89 acres after the adjustment.

Given this, 42 dwelling would be allowed based on the density calculation in the R1-M zoning district:

3.89 x 43,560 = 169,448.4
169,448/4,000= 42.34

According to the applicant, they "are actively looking to assign a number of units for Affordable Housing (*rental units)*), although the decision is not final. The preliminary proposal looks to build at least 20% of the dwelling units as affordable housing units, subject to covenants or restrictions that preserve their affordability for a minimum of 15 years or longer. "

With the density bonus for an affordable Housing Development, 59 units would be allowed (42 x 1.4 =58.8).

The Zoning Regulations limit the height of buildings with a flat roof in the R1-M zoning district to 40' measured from the proposed finished grade at the front of the building to the highest point of the roof.

The applicant is seeking an increase in height of the buildings to a maximum of 50'.

According to the applicant, "these heights are required for a four story building with appropriate ceiling heights, structure and mechanical equipment. The four story building support the unit density proposed with a smaller footprint than a three story building which would have a larger footprint on the site."

12. Access

The applicant is coordinating plans for the realignment of Sykes Mountain Avenue and Hickory Ridge with the DPW.

Access to the project will be from the realigned portion of Hickory Ridge.

13. The proposed access road will need to be named and a private street sign installed by the applicant in accordance with applicable standards.

14. The applicant submitted a turning movement plan for a ladder truck.

Plan for Trash Hauler pending

15. The applicant proposes indoor and outdoor amenities.

16. The Zoning Regulations require two parking spaces per unit which results in a requirement of 96 parking spaces (48 x 2 = 96).

17. The applicant is requesting that the Planning Commission approve a permanent reduction in the required parking spaces for the project from 96 to 70 including 4 accessible parking spaces. (See Parking Summary on sheet #C2.0 of exhibit #2)

Section 260-24(9)(e) allows for modifications in the number of required parking spaces as follows to be approved by the *Planning Commission* as follows:

If, in site plan approval proceedings or at any time in the future after a duly warned hearing, the Planning Commission determines that unique usage or special conditions exist which warrant increasing or reducing the need for parking, it may require the provision of off-street parking spaces up to 50% more or less than the requirements in Subsection C(9)(a) above. In the Central Business District, the parking may be reduced beyond 50%. When approving an increase or reduction in any zoning district, the Planning Commission shall consider the following:

[a] Is the site located on or within 1,000 feet of a transit route?
[b] Are there shared parking facilities with abutting businesses which are sufficient to meet parking demand?
[c] For mixed-use projects, do the proposed uses have staggered business hours with minimal overlap?
[d] Does the type of business proposed generate substantial pedestrian traffic and are adequate pedestrian facilities present?
[e] Does an employer-sponsored "transit pass" program, or vanpool, carpool or rideshare program exist, or can one be established (as a condition of the approval) to substantially reduce the need for on-site parking?
[f] Is safe and adequate on-street parking available?
[g] Is parking in municipal parking lots available?
[h] Does the Institute of Traffic Engineers, American Planning Association or other professional source show parking demand requirements for the proposed use(s) that are different than the standards specified in these regulations?
[i] Is there other information that justifies a change in the parking requirements?

According to the applicant, "The reduction request is based on the following:

- That the site is located within 1,000 ft of Advance Transit's Orange Line (a)
- The relative high density of the project and the unit mix of smaller apartments. (i)
- Requirements for parking spaces will be reduced under Act 47 (effective December 1, 2024) which states:

  "In any district that is served by municipal sewer and water infrastructure that allows residential uses, a municipality shall not require more than one parking space per dwelling unit." (i)

18. The applicant submitted information from Wall Consulting Group regarding Traffic Volume and Parking Demand. Add summary. (See exhibits #3 and #9).

19. The applicant proposes a bike rack in front of the building.

20. The applicant provided a landscape plan.

According to the applicant, "the site has been designed and landscaped to minimize negative visual impacts as it includes a robust landscaping plan including native and non-invasive plantings. In addition, attention to preserving the existing perimeter trees was included to minimize visual impact. The plans also include numerous pedestrian walkways and a multi-use path system to separate bicyclists, and pedestrian traffic from the vehicular traffic network to maximize safety. The choice and placement of plantings in the parking areas takes into account the special hazards of salt, vehicles, and maintenance equipment.

Plans submitted for review include and show the locations and types of plants as well as the species, sizes, quantities, and locations to be installed. Again, the choice and placement of plantings in the parking areas takes into account the special hazards of salt, vehicles, and maintenance equipment. Overall, the goal is to provide a welcoming and colorful pallet that is inviting, yet will be low-maintenance once the plantings establish. To that end, we have included a diversity of tree and shrub species that include Vermont native and northern New England varieties.

Attention to the placement of new plantings as well as maintaining a strong natural buffer of existing plantings has been included in the design concept. Maintaining a strong woodland perimeter and forest area helps us achieve maximum screening and a robust vegetative buffer to the adjacent properties. The project also capitalizes on this natural resource as to include a woodland trail system for residents."

Plantings in the stormwater basins

(See exhibit #2 and #3)

21. The applicant has provided a photometric plan.

(See exhibit #2 and #3)

22. The applicant provided three rendered visualizations of the Project.

23. Energy Performance Standards

According to the applicant, "The Project will look to incorporate features and technologies to minimize energy consumption and maximize efficiency. The project will meet or exceed Vermont's energy standards. The building will have a well-insulated building envelope with high-quality insulation materials, efficient windows, and airtight construction to minimize heat loss or gain. It will also include enhanced insulation techniques, such as spray foam insulation and insulated exterior walls, to minimize thermal bridging and maintain a consistent indoor temperature. Since the building is designed as slab-on-grade construction, we are planning for continuous rigid insulation under the slab. Proper sealing of gaps, ducts, and

windows will ensure that conditioned air stays inside, reducing energy waste.

The design parameters will optimize natural light, ventilation, and solar heat gain. Orientation and window placement will be carefully considered to maximize daylight and reduce the need for artificial lighting. The Applicant will look to include Energy Star- rated appliances, including refrigerators, dishwashers, and washing machines, which consume less energy compared to standard models. The buildings will be structurally designed to allow for future placement of solar panels on the roof and conduits will be put in place to connect to existing building infrastructure as well as infrastructure for future EV charging stations.

Waste, Recycling and Composting areas will be provided as mandated by the state of Vermont."

24. Stormwater system

(See exhibit X)

25. Section 260-27 C of the Hartford Zoning Regulations states:

C. Grading and drainage. The following provisions shall apply to any changes which affect drainage of water to or from a property:

(1) Any changes in grading shall be made so that runoff is directed to established drainage courses and will not cause ponding or flooding of other properties, or exceed the capacity of downstream drainage facilities.

According to the applicant, "Grading shall be made so that runoff is directed to established drainage courses and will not cause ponding or flooding of other properties, or exceed the capacity of downstream drainage facilities. The design includes stormwater considerations to mitigate this issue that meet and exceed the Vermont State Stormwater Manual. A Vermont State Stormwater Operational Permit will be required for this project."

(2) When possible, drainage systems shall be designed so that water runoff existing prior to site development shall not be increased after development. When possible, drainage systems shall be designed so that water runoff existing prior to site development shall not be increased after development.

According to the applicant, "The drainage systems shall be designed so that water runoff rate existing prior to site development shall not be increased after development."

(3) All changes in grade shall be controlled so as not to cause a nuisance or damage to other properties or erosion of topsoil.

According to the applicant, "All changes in grade shall be controlled so as not to cause a nuisance or damage to other properties or erosion of topsoil."

26. Water and Sewer

The project will connect to municipal water and sewer in accordance with Hartford's Water and Wastewater Rules and Regulations.

27. A Fire hydrant ??? will be installed in the project in coordination with the Fire Marshal and DPW. The residential building will be equipped with a sprinkler system meeting applicable fire codes.

28. After development, 24% of the lot will consist of impermeable coverage, below the allowed maximum coverage of 65% of the R1-M zoning district .

29. Snow will be stored on site and will be removed as needed. Snow will not be stored in such a manner as to create a hazard.

30. The applicant proposes to install a fenced and landscaped dumpster pad area.

31. The applicant will schedule a preconstruction meeting with the DPW to review project schedule, design, and construction issues at least two weeks before actual site work commences.

32. The applicant understands that a permit from the DPW must be obtained before any work is done within the Town ROW.

33. During construction of the proposed project erosion and sediment control measures as specified in the most current edition of the *Low-Risk Site Handbook for Erosion Prevention and Sediment Control* published by the Vermont Department of Environmental Conservation will be followed.

34. According to the applicant, the building will meet applicable Vermont Energy Code Standards. An Energy Code Certificate will be recorded in Hartford's Land Records before a Certificate of Occupancy will be issued.

35. Stockpiling of materials related to the construction of the project will be located twice the distance of the height of the stockpiled materials from any public or private right-of-way or property boundary.

36. Construction trailers may be used on the condition that they are placed a minimum of ten feet from any property line, are placed only when there is an effective zoning permit for the project, and are removed before a Certificate of Occupancy is requested. No construction trailer may be placed in such a way that it obstructs sight distance along the traveled way, at any intersection or driveway. Any construction trailer found to obstruct sight distance will be required to be relocated immediately.

37. The applicant understands that no structure, signage, parking spaces or plantings may be placed in such a way that obstructs sight distance along the traveled way, at any

intersection or driveway. Any signs, parking spaces or plantings found to obstruct sight distance will be required to be relocated.

38. Construction of the project will comply with Section 260-31 B of the Hartford Zoning Regulations, which states:

> *Earth moving and hauling, rock drilling or crushing, jack hammer and similar excessively loud equipment shall not be operated on Sundays or between the hours of 5:30 p.m. and 7:00 a.m. except in emergency situations.*

39. The applicant understands that they retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

40. The applicant understands that a zoning permit is required before the commencement of construction of the project. The applicant further understands that the issuance of the zoning permit only authorizes the construction of the project in compliance with the Findings, Conclusions of Law, Approved Plans, Exhibits and Conditions as specified herein.

41. The applicant understands that all activities authorized by the issuance of the zoning permit shall be started within six (6) months and completed within two (2) years of its date of issue, or the zoning permit shall become null and void and reapplication to complete any activities shall be required. Any activities not completed within the above permit period shall be subject to any ordinance in effect at the time of reapplication. One six (6) month extension to both time periods may be granted by the Planning Commission.

42. The applicant understands that they must obtain a Certificate of Occupancy from the Zoning Administrative Officer upon completion of the project and before each building is occupied. The applicant understands that a Certificate of Occupancy will not be issued if the project is not in compliance with these Findings, Plans, and any conditions placed on the decision.

CONCLUSIONS OF LAW

Based upon the foregoing Findings of Fact, the Hartford Planning Commission concludes that the proposed site plan provides, as required by **§260-45 C** of the Hartford Zoning Regulations:

> (1) Maximum safety of **traffic circulation between the site and the street network** and integration with the overall traffic pattern, including provisions for auxiliary roadways connecting with adjacent properties where appropriate. Included in this evaluation shall be the location, number and width of access points, curve radii at access points, acceleration or deceleration lanes on adjacent public streets, sight distances, lighting, location of sidewalks and other walkways, and the overall relationship of the proposed development with existing traffic conditions in the area. All modes of transportation shall

be taken into account, including pedestrian, bicycle, handicapped, delivery and emergency vehicles and public transportation.

(2) Adequacy of **on site circulation, parking, and loading facilities,** with particular attention to safety. Included in this evaluation shall be traffic movement patterns, drive and aisle widths, directional signs, location of loading docks and parking areas, number and size of parking spaces, and provision for lighting, drainage, snow removal and access for emergency vehicles and public transportation.

(3) Adequacy of **landscaping, screening, and setbacks** in achieving maximum compatibility with and protection of adjacent properties by screening from them any glare produced by interior or exterior lights and unsightly areas such as storage areas, and parking lots; assurance that landscape materials will not interfere with visibility or safety and that they are of a type that can survive and be maintained as proposed.

(4) Adequacy of **provision for safety and convenience of pedestrians, bicyclists, and handicapped persons**. Included in this evaluation shall be lighting of walks and entrances, design and placement of walks and crosswalks, pick-up points for public transportation and provision of bicycle racks.

(5) **Protection of renewable energy resources,** including a finding that the proposed development does not adversely affect the ability of adjacent properties to use this form of energy.

(6) **Compliance with other provisions of these regulations** including § 260-27, Landscaping, and § 260-31, Land use performance standards.

(7) **Other** factors that are directly related to the above aspects of site plan review.

DECISION

The Hartford Planning Commission, based upon the forgoing Findings of Fact and Conclusions of Law, hereby approves #23-23 by Black Rock Investment LLC (owner/applicant) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for a 48 dwelling units in a Multi-Unit Building, proposed lot 45-0243-000, Sykes Mountain Avenue and Hickory Ridge, White River Junction, in a R1-M zoning district **on the condition that:**

1. Before a zoning permit is issued:

- **Subdivision/Lot Line Adjustment Application #22-23 is approved by the Planning Commission and finalized.**

- **The applicant's Engineer/Architect/Landscape Architect verifies that changes to the plans approved by the Planning Commission are limited to those required by the Commission.**

2. **Before a Certificate of Occupancy is issued, the applicants submit to the Zoning Administrator:**

   - **Written verification from a Professional Engineer licensed by the State of Vermont certifying that the project was constructed in compliance with the approved plans and Findings of Fact.**
   - **Written verification from the DPW confirming that the water, sewer, and hydrants have been inspected and approved.**
   - **Written verification from the DPW confirming that they have received acceptable record drawings.**
   - **An electronic copy of the record drawings.**
   - **A copy of the Energy Code Certificate as recorded in Hartford's Land Records.**

This decision is also subject to the condition that no modification or expansion shall be made to the project as described and limited in the above Findings of Fact and Conclusions of Law without the written approval of the Hartford Zoning Board of Adjustment and/or the Hartford Planning Commission. This decision may be revoked, and a new application or permit required if conditions and findings are violated or modified without written approval.

The applicant is responsible for insuring compliance with all applicable State and Federal regulations pertaining to this application.

Those in favor:

Those in opposition:

Those not participating:

Dated at Hartford, Vermont this ____ day of MONTH 2024.

HARTFORD PLANNING COMMISSION

By:_____
Chairperson/Vice-Chairperson

Appeal Rights: An interested person who has participated in the proceeding related to this decision has the right to appeal this decision to the Vermont Environmental Court, pursuant to 24 V.S.A. s. 4471 and V.R.E.C.P.5, in writing, within 30 days of the date of this decision. If you fail to appeal this decision, your right to challenge this decision at some future time may be lost because you waited too long. You will be bound by this decision, pursuant to 24 V.S.A. s. 4472 (d) (exclusivity of remedy; finality).

EXHIBIT LIST

UPDATE

11. 13-23

1. Application #23-25
2. Plan Set including Civil Plans, Landscape Plans, Architectural Plans remove Lily Pond
3. Memo from Jo-Ann Ells dated November 5, 2023
4. Project Narrative dated received October 30, 2023
5. Memo from Black Rock Investments LLC dated October 27, 2023
6. Letter from Kevin Worden dated October 27, 2023
7. Document entitled "Street Viewpoint Study" dated received October 30, 2023
8. Traffic Impact Study prepared by Even Haugh and Joe Vanacore dated August 2, 2023, received October 30, 2023

Memorandum

To: Hartford Planning Commission

Cc: Black Rock Investments, LLC, Kevin Worden, Paul Simon, Earl Simpson, Dennis Marquise, and Chris Holzwarth

From: Jo-Ann Ells

Date: November 5, 2023

Re: Application for 48 Dwelling-Units, Application #23-23, Lot 45-0243-000

Application #23-23 has been submitted to you for Site Development Plan Approval for construction of 48 dwelling units in a single Multi-Unit Building on proposed lot 45-0243-000.

The application relies on Planning Commission approval of a Subdivision/Lot Line Adjustment (Application #23-22). Application for Preliminary approval has been submitted for this application.

Once Preliminary approval is granted, a separate application for Final Approval will need to be submitted. The earliest the application for Final Approval can be submitted is January 2, 2024 for a February 5, 2024 Hearing with the Planning Commission.

Given the outstanding items outlined below and the need for the applicant to submit for Final Approval of the Subdivision/Lot Line Adjustment, please consider opening the Public Hearing on this application for Site Development Plan Approval (Application #23-23), asking the applicant to review the application, hearing comments/questions from the Commission, taking public comment, and then continuing the application to your Hearing scheduled for February 5, 2024. (Please keep all application materials. Any new information will be sent to you for the February meeting.)

In order for the application to be considered for the February 5, 2024 Hearing, the applicant will need to submit revised application materials to me by noon, January 2, 2024. (This would align with the applicant's intent to submit for Final Approval of the Subdivision/Lot Line Adjustment and Planned Development. If the applicant needs additional time to submit, they can request a continuance to a future date.)

Note: I have highlighted some items in the Draft Findings of Fact as a reminder to myself insert new/pending information.

Outstanding Items/Items Needing Further Clarification

1. The applicant needs to verify that they are meeting the requirements of an Affordable Housing Development for the increased density and height.

2. Access Road/Water/Sewer/Stormwater

   The applicant needs to:

   - Request a meeting with the DPW and Planning Staff to discuss items related to access/road realignment, AT bus shelter, AT bus turn off lane, water and sewer, and stormwater. Plans/Narratives will need to be amended as necessary based on the meeting.

   - Determine with Planning Staff if a separate application for Subdivision/Lot Line Adjustment is needed for the road realignment.

   - Clarify that there will be "No Right Turn" for vehicles exiting the development.

   - Submit a request for a road name for review.

3. Turning Movement Plan

   The applicant needs to:

   - Ask the Fire Marshal to review/approve the Turning Movement Plan for the ladder truck.
   - Provide a Turning Movement plan for a trash hauler.

4. Amenities

   The applicant needs to provide a detailed/complete list of outdoor and indoor amenities. (Is it possible to expand the playground area to the north?)

5. Traffic

   The applicant needs to respond to Staff's comments on the report from Wall Consulting Group regarding Traffic Volume and Parking Demand.

6. Renderings

   Please let the applicant know if you would like the renderings update to depict the proposed building.

7. Misc Plan Amendments

    - Sheet C1.1- Remove reference to lot 45-0162-000 as a "Subject Lot"

    - Sheet C2.0

        - Discuss Zoning Chart with me and update sheet C2.0 as necessary

    - Proposed retaining wall- Provide details.

    - Proposed trail: Provide details for construction.

    - Sheet L3.4 - provide plan at a scale such that the footcandles are legible. Clarify max f.c. of 40.6 on sheet L3.7.

    - Amend the landscape plans to include plantings in the stormwater basins.

    - Amend the plans to indicate the location of conduit for future EV charging stations.

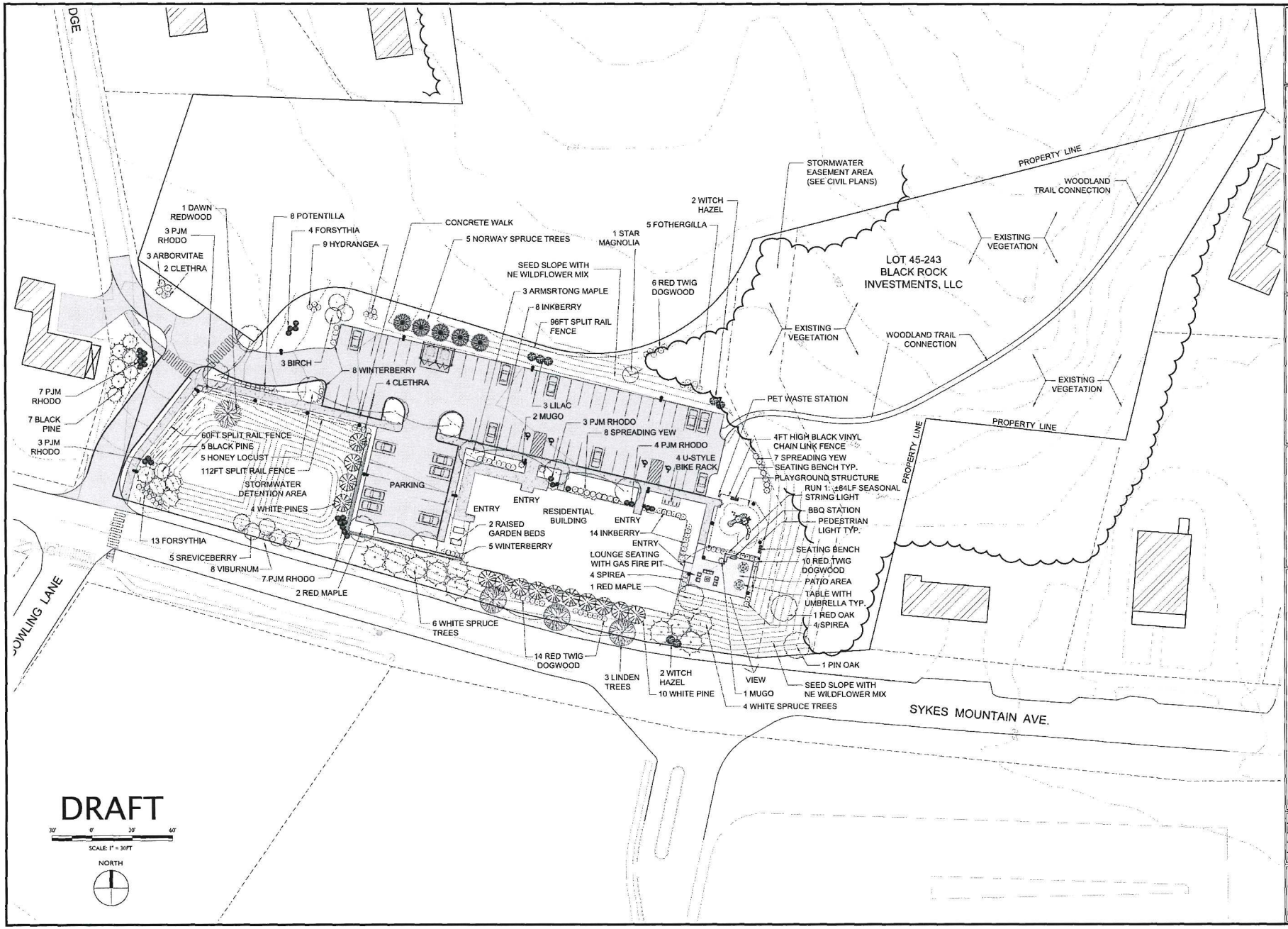
8. Misc Narrative Documents

    The applicant needs to:

    - Label the Project Narrative and remove the Planning Commission signature.

    - Provide a written description of the location and types of fencing.

    - Clarify if parking spaces will be assigned to units.


1 DAWN REDWOOD
3 PJM RHODO
3 ARBORVITAE
2 CLETHRA
8 POTENTILLA
4 FORSYTHIA
9 HYDRANGEA
CONCRETE WALK
5 NORWAY SPRUCE TREES
1 STAR MAGNOLIA
5 FOTHERGILLA
2 WITCH HAZEL
SEED SLOPE WITH NE WILDFLOWER MIX
3 ARMSRTONG MAPLE
8 INKBERRY
96FT SPLIT RAIL FENCE
6 RED TWIG DOGWOOD
STORMWATER EASEMENT AREA (SEE CIVIL PLANS)
PROPERTY LINE
WOODLAND TRAIL CONNECTION
EXISTING VEGETATION
LOT 45-243
BLACK ROCK
INVESTMENTS, LLC
3 BIRCH
8 WINTERBERRY
4 CLETHRA
7 PJM RHODO
7 BLACK PINE
3 PJM RHODO
60FT SPLIT RAIL FENCE
5 BLACK PINE
5 HONEY LOCUST
112FT SPLIT RAIL FENCE
STORMWATER DETENTION AREA
4 WHITE PINES
PARKING
3 LILAC
2 MUGO
3 PJM RHODO
8 SPREADING YEW
4 PJM RHODO
4 U-STYLE BIKE RACK
PET WASTE STATION
4FT HIGH BLACK VINYL CHAIN LINK FENCE
7 SPREADING YEW
SEATING BENCH TYP.
PLAYGROUND STRUCTURE
RUN 1: ±84LF SEASONAL STRING LIGHT
BBQ STATION
PEDESTRIAN LIGHT TYP.
SEATING BENCH
10 RED TWIG DOGWOOD
PATIO AREA
TABLE WITH UMBRELLA TYP.
1 RED OAK
4 SPIREA
1 PIN OAK
ENTRY
RESIDENTIAL BUILDING
2 RAISED GARDEN BEDS
5 WINTERBERRY
14 INKBERRY
LOUNGE SEATING WITH GAS FIRE PIT
4 SPIREA
1 RED MAPLE
13 FORSYTHIA
5 SREVICEBERRY
8 VIBURNUM
7 PJM RHODO
2 RED MAPLE
6 WHITE SPRUCE TREES
14 RED TWIG DOGWOOD
3 LINDEN TREES
2 WITCH HAZEL
10 WHITE PINE
VIEW
1 MUGO
4 WHITE SPRUCE TREES
SEED SLOPE WITH NE WILDFLOWER MIX
SYKES MOUNTAIN AVE.
OWLING LANE
DRAFT
30' 0' 30' 60'
SCALE: 1" = 30FT
NORTH
Stamp
Chkd.
Description
Rev. No.
ParkArchitecture.com
Client:
BLACK ROCK INVESTMENTS, LLC
2468 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001
Sheet Title:
Site Landscape Plan
Lot 45-243
Project Title:
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT
PA Project #
2316
Checked By:
PS
Drawn By:
PS
Scale:
1"=30'
Date:
10/30/2023
L1.1

LANDSCAPE PLANTING SCHEDULE

QTY	BOTANICAL NAME	COMMON NAME	SIZE
DECIDUOUS TREES			
5	GLEDITSIA TRIACANTHOS V. INERMIS	IMPERIAL HONEYLOCUST	2.5" – 3" CALIPER
1	METASEQUOIA GLYPTOSTROBOIDES	DAWN REDWOOD	2.5" – 3" CALIPER
1	QUERCUS RUBRA	RED OAK	2.5" – 3" CALIPER
1	QUERCUS PALUSTRIS	PIN OAK	2.5" – 3" CALIPER
6	ACER X FREEMANII	FREEMAN MAPLE 'ARMSTRONG'	2.5" – 3" CALIPER
3	BETULA PAPYRIFERA	CLUMP WHITE BIRCH	CLUMP 8'–10' HT.
1	MAGNOLIA STELLATA 'ROYAL STAR'	ROYAL STAR MAGNOLIA	2.5" – 3" CALIPER
3	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	2.5" – 3" CALIPER
5	AMELANCHIER CANADENSIS	SERVICEBERRY	5'–6' HT. B&B
EVERGREEN TREES			
10	PICEA GLAUCA	WHITE SPRUCE	8'–10' HT. B&B
14	PINUS STROBUS	EASTERN WHITE PINE	6'–8' HT. B&B
8	PINUS NIGRA	AUSTRIAN BLACK PINE	8'–10' HT. B&B
5	PICEA ABIES	NORWAY SPRUCE TREE	6'–8' HT. B&B
3	THUJA OCCIDENTALIS	AMERICAN ARBORVITAE	6'–8' HT. B&B
SHRUBS			
4	HAMAMELIS VIRGINIANA	AMERICAN WITCH HAZEL	30"–36" HT, 7 GAL
3	SYRINGA VULGARIS	COMMON PURPLE LILAC	30"–36" HT, 7 GAL
22	ILEX GLABRA 'COMPACTA'	COMPACT INKBERRY	24"–30" HT, 5 GAL
27	RHODODENDRON 'PJM ELITE'	PJM RHODODENDRON	24"–30" HT, 5 GAL
13	ILEX VERTICILLATA 'WINTER RED'	WINTER RED WINTERBERRY	24"–30" HT, 5 GAL
39	CORNUS SERICEA 'BAILEYI'	BAILEY RED TWIG DOGWOOD	24"–30" HT, 5 GAL
17	FORSYTHIA X INTERMEDIA	FORSYTHIA	24"–30" HT, 5 GAL
3	PINUS MUGO	MUGO PINE	18"–24" HT, 7 GAL
8	SPIREA JAP. LITTLE PRINCESS	LITTLE PRINCESS SPIREA	18"–24" HT, 7 GAL
9	HYDRANGEA INVINCEBELLE SPIRIT II	INVINCEBELLE SPIRIT II HYDRANGEA	18"–24" HT, 7 GAL
5	FOTHERGILLA GARDENII	DWARF FOTHERGILLA	18"–24" HT, 7 GAL
8	POTENTILLA FRUITICOSA MCKAY'S WHITE	MCKAY'S WHITE POTENTILLA	18"–24" HT, 7 GAL
2	VIBURNUM NUDUM BRANDYWINE	BRANDYWINE VIBURNUM	18"–24" HT, 7 GAL
9	CLETHRA ALNIFOLIA HUMMINGBIRD	HUMMINGBIRD SWEETSPIRE	18"–24" HT, 7 GAL
15	TAXUS MEDIA 'DENSIFORMIS'	DENSE SPREADING YEW	18"–24" HT, 7 GAL
PERENNIALS & ORNAMENTAL GRASSES			
TBD	NEPETA "SIX HILLS GIANT"	SIX HILLS GIANT CATMINT	2 GAL
TBD	RUDBECKIA FULGIDA GOLDSTURM	GOLDSTURM BLACK EYED SUSAN	2 GAL
TBD	HEMEROCALLIS STELLA D'ORO	STELLA D'ORO DAYLILLY	2 GAL
TBD	ANDROPOGON GERARDII 'BLACKHAWKS'	BLACKHAWKS BIG BLUESTEM	2 GAL
TBD	HELICTOTRICHON SEMPERVIRENS	BLUE OAT GRASS	2 GAL
TBD	PENNISETUM ALOPECUROIDES 'HAMELN'	DWARF FOUNTAIN GRASS	2 GAL
TBD	ECHINACEA PURPUREA	PURPLE CONEFLOWER	2 GAL

LANDSCAPE NOTES

1. THE NUMBER OF EACH INDIVIDUAL PLANT TYPE AND SIZE IS PROVIDED IN THE PLANT LIST FOR CONTRACTORS CONVENIENCE ONLY. IF A DISCREPANCY EXISTS BETWEEN THE NUMBER OF PLANTS ON THE LIST AND THE NUMBER SHOWN ON THE DRAWING, THE GREATER NUMBER SHALL APPLY.

2. THE CONTRACTOR SHALL SUPPLY PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING AS SHOWN.

3. ALL PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE PRIOR TO ARRIVAL ON SITE.

4. ALL PLANT BEDS WILL BE TOP-DRESSED WITH 3" SHREDDED BARK MULCH.

5. CONTRACTOR SHALL PROVIDE STEEL LANDSCAPE EDGING TO SURROUND ALL MULCH BEDS WHERE INDICATED.

6. THE CONTRACTOR SHALL LOCATE AND MARK ALL UTILITIES PRIOR TO PLANTING. ANY CONFLICTS BETWEEN PLANTING AND UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE OWNER SO THAT ALTERNATIVE PLANTING LOCATIONS CAN BE DETERMINED.

7. NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OWNER OR LANDSCAPE ARCHITECT.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PLANTS AGAINST DAMAGE FROM ON-GOING CONSTRUCTION. PROTECTION SHALL BEGIN AT THE TIME THE PLANT IS INSTALLED AND CONTINUE UNTIL FORMAL ACCEPTANCE OF ALL PLANTINGS.

9. ALL OTHER DISTURBED AREAS NOT OTHERWISE INDICATED SHALL BE LOAMED AND SEEDED.

10. CONTRACTOR SHALL PRESERVE EXISTING TREES WHERE INDICATED.

11. CONTRACTOR SHALL PROVIDE A 2-YEAR GUARANTEE ON ALL INSTALLED PLANT MATERIAL.

12. ALL PROPOSED TREES SHALL BE PLACED A MINIMUM OF 10FT FROM EXISTING AND PROPOSED UTILITIES.

13. ALL TREES SPECIFIED WILL BE OF GOOD QUALITY AND IN COMPLIANCE WITH THE MOST RECENT EDITION OF ANSI Z60.1 AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY AMERICANHORT.

NE WILDFLOWER SEED MIX SPECS

NORTHEAST NATIVE WILDFLOWER SEED MIXTURE PLANTED IN AREAS SHOWN ON LANDSCAPE PLAN.

NORTHEAST WILDFLOWER SEED MIXTURE TO CONTAIN A MAJORITY OF >67% PERENNIAL VARIETIES TO INSURE GROWTH OF WILDFLOWER VEGETATION IN SUCCESSIVE YEARS.

NEWP.COM/SEED-MIXES OR APPROVED EQUAL

SLOPE PLANTING TYPE	QTY	SIZE
Custom Blend of Northeast Native Wildflower Mixture	± TBD SF	SEED MIX



NE WILDFLOWER MIXTURE

PROPOSED DECIDUOUS TREES:



IMPERIAL HONEY LOCUST



FREEMAN MAPLE 'ARMSTRONG'



DAWN REDWOOD



RED OAK TREE



PIN OAK TREE



ROYAL STAR MAGNOLIA



GREENSPIRE LINDEN



SHADBLOW SERVICEBERRY



CLUMP WHITE BIRCH

PROPOSED EVERGREEN TREES:



AUSTRIAN BLACK PINE



WHITE SPRUCE



NORWAY SPRUCE

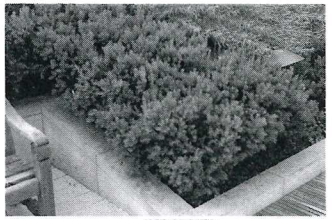


EASTERN WHITE PINE

EVERGREEN SCREEENING



AMERICAN ARBORVITAE



SPREADING YEW

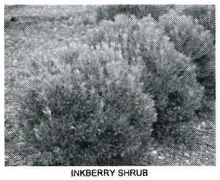
PROPOSED SHRUBS:



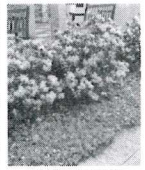
WITCH HAZEL



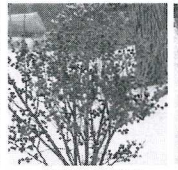
PURPLE LILAC



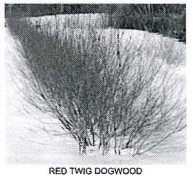
INKBERRY SHRUB



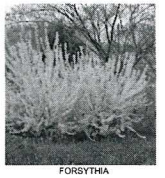
PJM RHODODENDRON



WINTERBERRY HOLLY



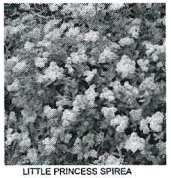
RED TWIG DOGWOOD



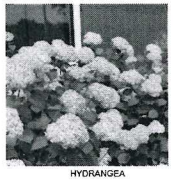
FORSYTHIA



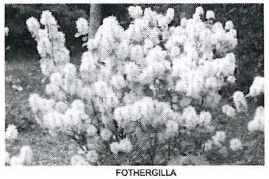
MUGO PINE SHRUB



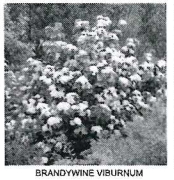
LITTLE PRINCESS SPIREA



HYDRANGEA



FOTHERGILLA



BRANDYWINE VIBURNUM



CLETHRA

PROPOSED PERENNIALS & GRASSES:



CATMINT



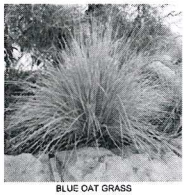
BLACK EYED SUSAN



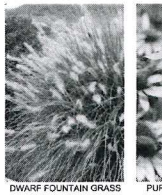
STELLA D'ORO DAYLILLY



BLACKHAWK BIG BLUESTEM



BLUE OAT GRASS



DWARF FOUNTAIN GRASS



PURPLE CONEFLOWER

Stamp

No.	Description	Chkd.

ParkArchitecture.com
3 Stiffler Home Lane, Suite #1 Etna NH 03750
tel. 603.643.3400 fax. 877.460.0687
Email: parkarchitecture@gmail.com

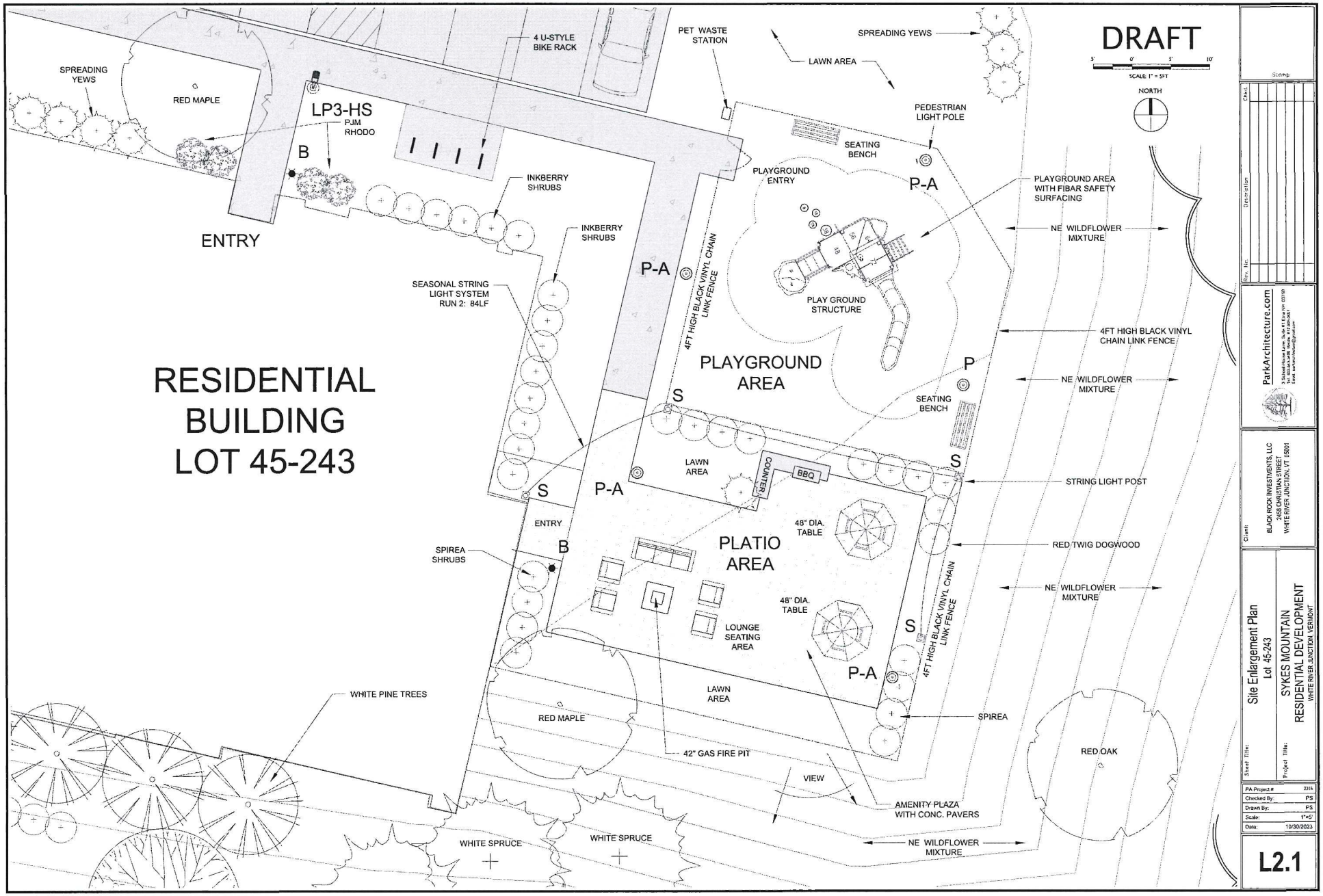
Client:
BLACK ROCK INVESTMENTS, LLC
2468 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Landscape Details
Lot 45-243

Project Title:
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2315
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

L1.2



Stamp

Rev. No.	Description	Chkd.

ParkArchitecture.com

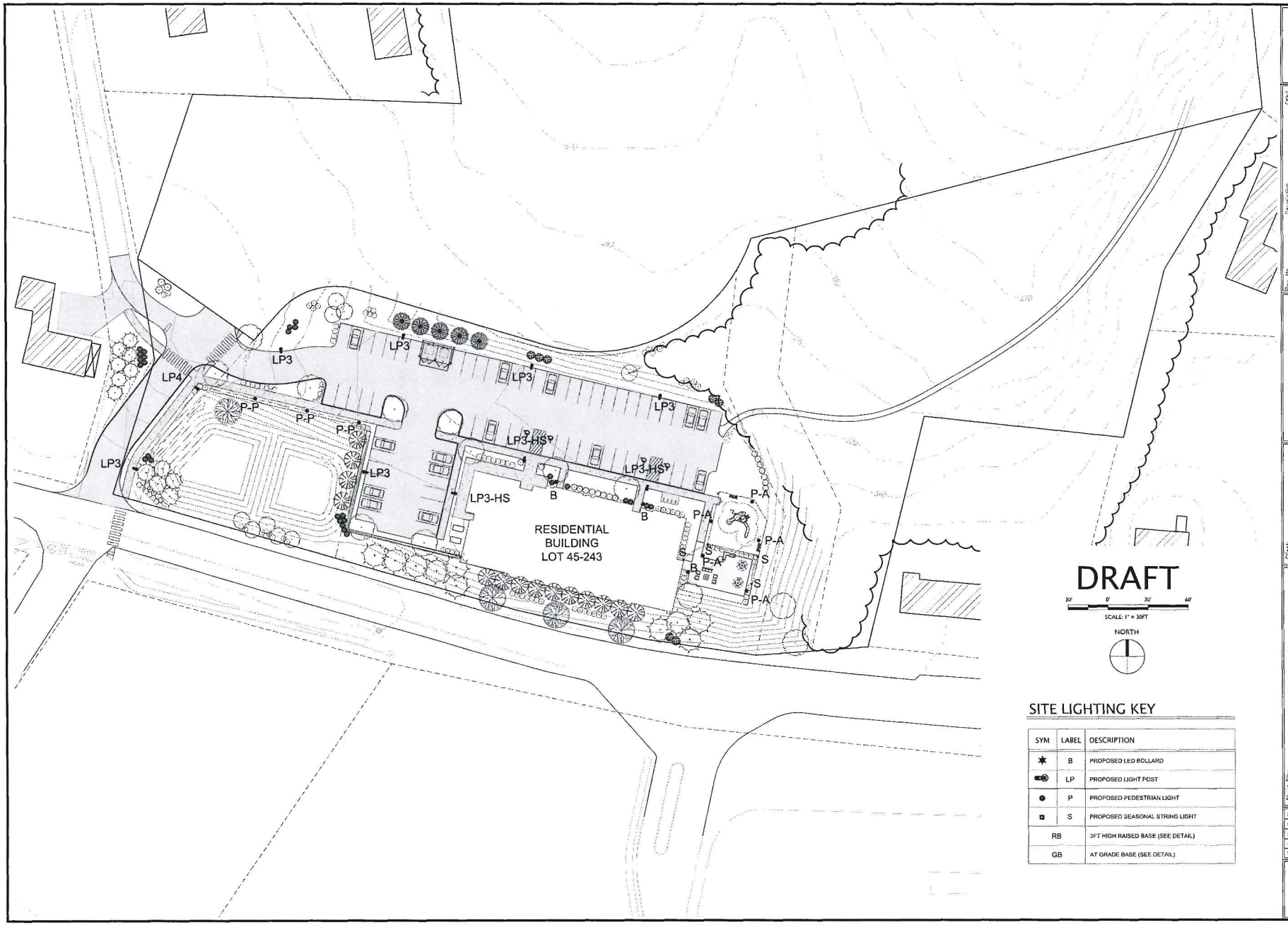
Client: BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Enlargement Plan
Lot 45-243

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=5'
Date:	10/30/2023

L2.1



SITE LIGHTING KEY

SYM	LABEL	DESCRIPTION
✱	B	PROPOSED LED BOLLARD
	LP	PROPOSED LIGHT POST
●	P	PROPOSED PEDESTRIAN LIGHT
◘	S	PROPOSED SEASONAL STRING LIGHT
RB		3FT HIGH RAISED BASE (SEE DETAIL)
GB		AT GRADE BASE (SEE DETAIL)

Stamp

Rev. No.	Description	Chkd.

ParkArchitecture.com
2 Sichard House Lane, Suite #1 Elmo NH 03740
tel. 603-643-3400, facsimile 617-695-6427
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

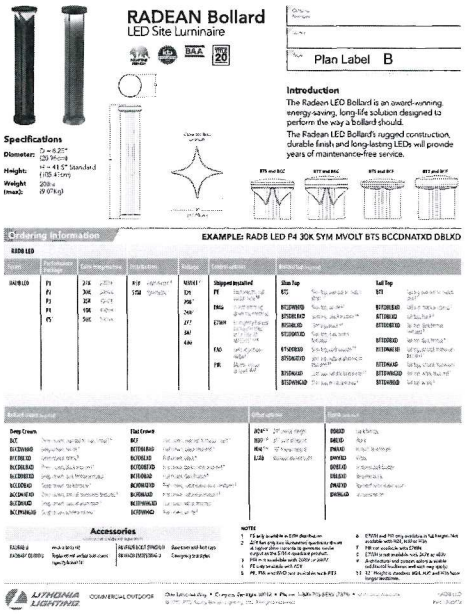
Sheet Title: Site Lighting Plan
Lot 45-243

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

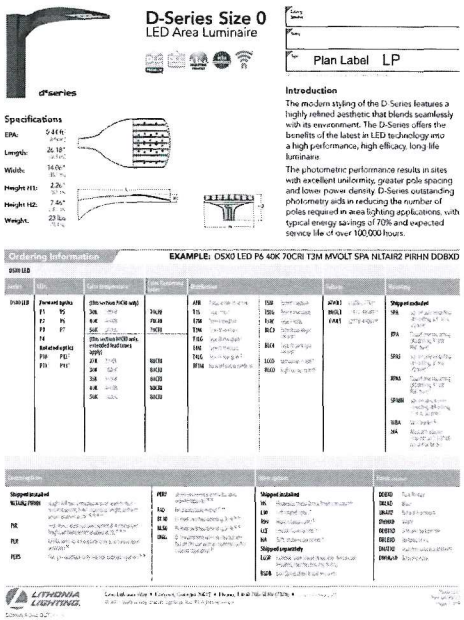
PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=40'
Date:	10/30/2023

L3.1

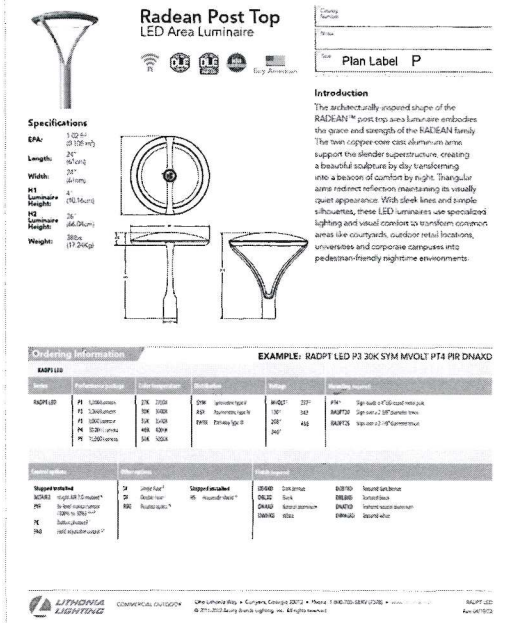
(B) BOLLARD LIGHTING SPECIFICATION



(LP & LP2) SERIES LIGHT POST SPECIFICATION

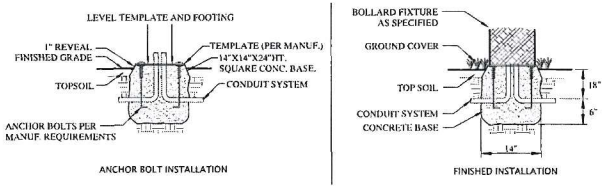


(P) SERIES PEDESTRIAN LIGHT POST SPECIFICATION



BOLLARD LIGHT BASE INSTALLATION DETAIL

NOT TO SCALE



NOTE: CONTRACTOR TO PROVIDE SHOP DRAWING OF BOLLARD, CONCRETE BASE, AND INSTALLATION METHODS TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION.

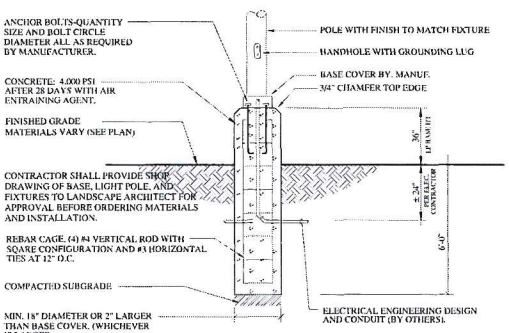
LIGHTING NOTES

LIGHT FIXTURE NOTES:

CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL FOR ALL LIGHTING MATERIALS, FIXTURES, POLES AND INSTALLATION METHODS TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION AND INSTALLATION. CONTRACTOR SHALL COORDINATE WITH LANDSCAPE ARCHITECT ON SITE TO VERIFY AND MARK LOCATION OF ALL PROPOSED FIXTURES INCLUDING LIGHT POLES, WALL PACKS AND BOLLARDS PRIOR TO INSTALLATION.

(RB) RAISED LIGHT POLE BASE INSTALLATION DETAIL

NOT TO SCALE

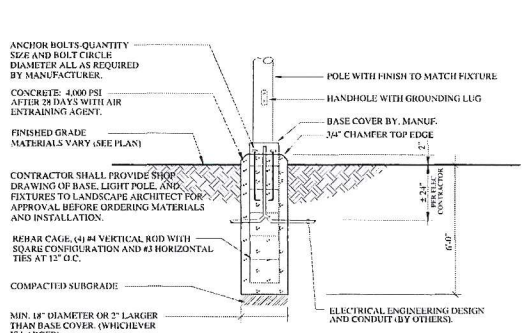


NOTES:

1. PARKING AREA LIGHT FIXTURE MOUNTING HEIGHT SHALL BE 15FT FROM GRADE (SEE PLAN)
2. PEDESTRIAN LIGHT FIXTURE MOUNTING HEIGHT SHALL BE 12FT FROM GRADE (SEE PLAN)
3. CONTRACTOR SHALL INSTALL RAISED BASES (RB) AT 36" HIGH WHERE INDICATED ON PLANS

(GB) AT-GRADE LIGHT POLE BASE INSTALLATION

NOT TO SCALE



NOTES:

1. PARKING AREA LIGHT FIXTURE MOUNTING HEIGHT SHALL BE 15FT FROM GRADE (SEE PLAN)
2. PEDESTRIAN LIGHT FIXTURE MOUNTING HEIGHT SHALL BE 12FT FROM GRADE (SEE PLAN)
3. CONTRACTOR SHALL INSTALL AT GRADE BASES (GB) AT 2" HIGH WHERE INDICATED ON PLANS

Stamp

Check

Rev. No. | Description

ParkArchitecture.com
3 School House Lane, Suite #1 Essex Jct. 05452
802.881.0737
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2468 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

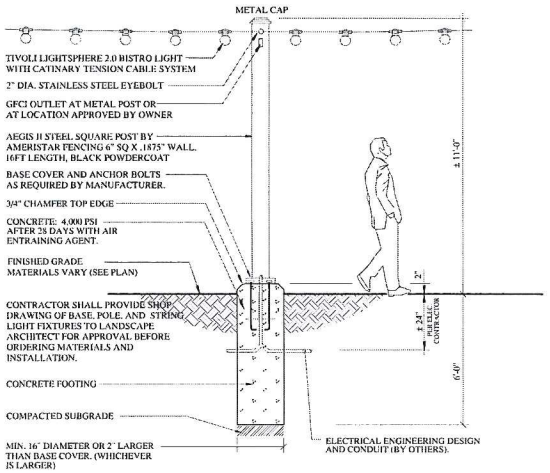
Sheet Title: Site Lighting Details
Lot 45-243

Project Title:
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2315
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

L3.2

(SLP) STRING LIGHT POLE (FOR SEASONAL USE ONLY)





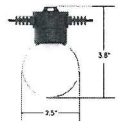
STRING LIGHTING / MAXIMUM RUN LENGTH STANDARDS

LED TYPE	6" ON CENTER	12" ON CENTER	18" ON CENTER	24" ON CENTER
STANDARD	130 FT	180 FT	230 FT	250 FT
HIGH OUTPUT	80 FT	110 FT	130 FT	150 FT
VERY HIGH OUTPUT	30 FT	55 FT	70 FT	80 FT

Product Features

- Tivoli's next evolution of Litesphere delivers a robust specification-grade strand with factory molded standard spacing for consistent quality from start to finish
- Litesphere 2.0 design provides optional suspended mounting or a twist-off cap for surface applications
- 12V DC Low voltage system for long runs
- IP67
- cULus
- 3 Year warranty

Dimensions

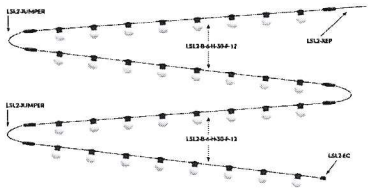


NOTES:

1. MAXIMUM RUN: 250FT
2. PROVIDE 1 RUN AS FOLLOWS.
   RUN 1: ± 84 FT (SEE PLAN)
3. LUMENS: 2,700
4. COLOR: BLACK
5. BULB SPCING: 24 INCHES
6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION INCLUDING STRING LIGHT POSTS AND LIGHTING FIXTURES.

12V | Litesphere™ 2.0 — tivoli

System Configuration Example



Strand Order Guide

Note: For maximum run length, a shorter cable is required for proper performance. Please contact Tivoli for recommendations on multiple run/mix applications.

Product	Wire	Spacing	LED Type	LED Color	Globe	Voltage
LSL3	8 -	24" OC -	H -	27 -	C -	12
Litesphere 2.0	B Black W White	06 6" OC 12 12" OC 18 18" OC 24 24" OC 36 36" OC 48 48" OC	V Very High Output H High Output S Standard Output	17 1900K 27 2700K 30 3000K 35 3500K 40 4000K 50 5000K* AM Amber* RB Royal Blue* RD Red* GN Green* YL Yellow* *Available in VHO LED only	C Clear F Frosted O Opal	12 12V DC

Schedule												
Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Filename	Lumens per Lamp	LLF	Wattage	Distribution	Polar Plot
✱	B	3	Lithonia Lighting	RADB LED P4 30K SYM DDBXD	RADB LED Bollard; mounted at 3ft	LED	RADB_LED_P4_30K_SYM_DDBXD.ies	1335	0.9	18.59	TYPE VS, BUG RATING: B1 - U1 - G0	
■◉	LP3	6	Lithonia Lighting	DSX0 LED P2 30K 80CRI T3M MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Size 0 Area Fixture Type 3; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P2_30K_80CRI_T3M.ies	5383	0.9	45.14	TYPE IV, MEDIUM, BUG RATING: B1 - U0 - G2	
■◉	LP3-HS	3	Lithonia Lighting	DSX0 LED P2 30K 80CRI T3M HS MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Size 0 Area Fixture Type 3 with Houseside Shield; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P2_30K_80CRI_T3M_HS.ies	4666	0.9	45.14	TYPE IV, MEDIUM, BUG RATING: B1 - U0 - G2	
■◉	LP4	1	Lithonia Lighting	DSX0 LED P2 30K 80CRI TFTM MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Area Fixture Type 4; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P2_30K_80CRI_TFTM.ies	5501	0.9	45.14	TYPE IV, SHORT, BUG RATING: B1 - U0 - G3	
◉	P-A	5	Lithonia Lighting	RADPT P2 30K ASY MVOLT PT4 DDBXD with RSS 10 PT DDBXD	RADEAN Post-Top with Asymmetric distribution; mounted at 10ft	LED	RADPT_P2_30K_ASY.ies	4671	0.9	38.0107	TYPE IV, VERY SHORT, BUG RATING: B2 - U2 - G2	
◉	P-P	3	Lithonia Lighting	RADPT P2 30K PATH MVOLT PT4 DDBXD with RSS 10 PT DDBXD	RADEAN Post-Top with Pathway distribution; mounted at 10ft	LED	RADPT_P2_30K_PATH.ies	3824	0.9	38.01	TYPE III, SHORT, BUG RATING: B4 - U2 - G4	

Stamp

Check

Description

Rev. No.

ParkArchitecture.com
3 School House Lane, Suite #1 Essex NH 05743
Tel: (802)343-2400 Mobile: 617-460-0681
Email: parkarchitecture@gmail.com

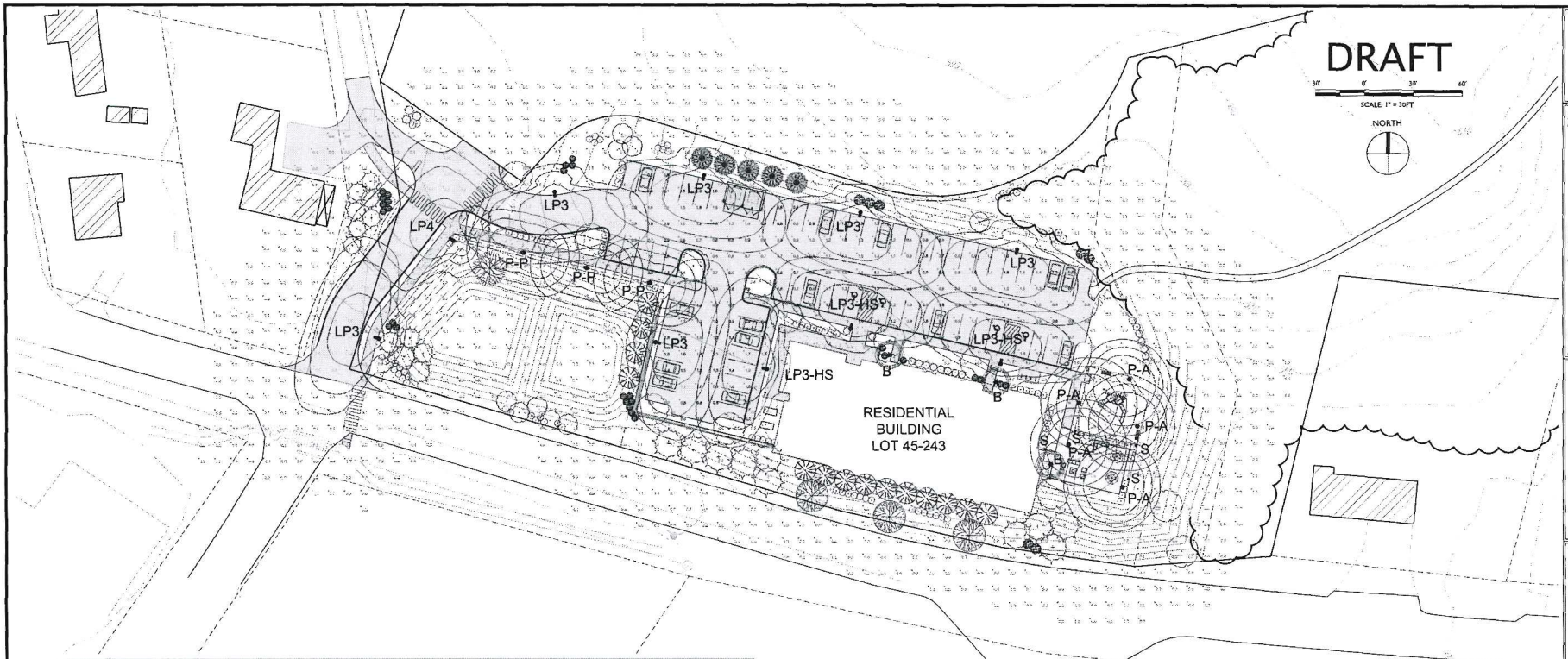
Client:
BLACK ROCK INVESTMENTS, LLC
2468 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Lighting Details Lot 45-243

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

L3.3



Schedule

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Filename	Lumens per Lamp	LLF	Wattage	Distribution	Polar Plot
✱	B	3	Lithonia Lighting	RADB LED P4 30K SYM DDBXD	RADB LED Bollard; mounted at 3ft	LED	RADB_LED_P4_30K_SYM_DDBXD.ies	1335	0.9	10.59	TYPE VS, BUG RATING: B1 - U1 - G0	
▬◉	LP3	6	Lithonia Lighting	DSX0 LED P2 30K 80CRI T3M MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Size 0 Area Fixture Type 3; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P2_30K_80CRI_T3M.ies	5383	0.9	45.14	TYPE IV, MEDIUM, BUG RATING: B1 - U0 - G2	
▬◉	LP3-HS	3	Lithonia Lighting	DSX0 LED P2 30K 80CRI T3M HS MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Size 0 Area Fixture Type 3 with Houseside Shield; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P2_30K_80CRI_T3M_HS.ies	4666	0.9	45.14	TYPE IV, MEDIUM, BUG RATING: B1 - U0 - G2	
▬◉	LP4	1	Lithonia Lighting	DSX0 LED P2 30K 80CRI TFTM MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Area Fixture Type 4; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P2_30K_80CRI_TFTM.ies	5501	0.9	45.14	TYPE IV, SHORT, BUG RATING: B1 - U0 - G3	
◉	P-A	5	Lithonia Lighting	RADPT P2 30K ASY MVOLT PT4 DDBXD with RSS 10 PT DDBXD	RADEAN Post-Top with Asymmetric distribution; mounted at 10ft	LED	RADPT_P2_30K_ASY.ies	4671	0.9	38.0107	TYPE IV, VERY SHORT, BUG RATING: B2 - U2 - G2	
◉	P-P	3	Lithonia Lighting	RADPT P2 30K PATH MVOLT PT4 DDBXD with RSS 10 PT DDBXD	RADEAN Post-Top with Pathway distribution; mounted at 10ft	LED	RADPT_P2_30K_PATH.ies	3824	0.9	38.01	TYPE III, SHORT, BUG RATING: B4 - U2 - G4	

NOTES:

LIGHTING SHALL BE BY

VISIBLE LIGHT, INC.

LIGHTING DESIGN BY:
HEIDI G. CONNORS
24 STICKNEY TERRACE
SUITE 6
HAMPTON, NH 03842

TEL: (603) 926-6019

CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO LANDSCAPE ARCHITECT PRIOR TO ORDERING AND INSTALLATION FOR ALL LIGHTING MATERIALS AND INSTALATION WORK.

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Driveway	+	1.1 fc	2.3 fc	0.3 fc	7.7:1	3.7:1
Outside of Parking Lot/Driveway	+	0.4 fc	6.8 fc	0.0 fc	N/A	N/A
Parking Lot	+	1.1 fc	2.0 fc	0.5 fc	4.0:1	2.2:1

Stamp

Rev. No	Description	Date

ParkArchitecture.com
3 Samuel Hazen Lane, Suite #1 Essex Jct. 05701
Tel. 802-343-0149 (Cell) 877-850-4447
Email: mark@parkarchitecture.com

Client: BLACK ROCK INVESTMENTS, LLC
2488 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Photometric Plan
Lot 45-243

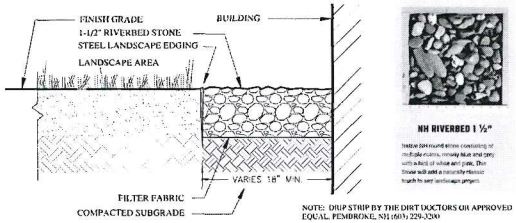
Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2315
Checked By:	PS
Drawn By:	PS
Scale:	1"=30'
Date	10/30/2023

L3.4

BUILDING DRIP STRIP

SCALE: NTS

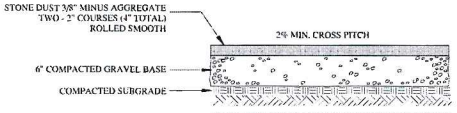


NOTE: DRIP STRIP BY THE DIRT DOCTORS OR APPROVED EQUAL, PEMBROKE, NH (603) 229-3200

STONE DUST PAVEMENT

NOT TO SCALE

NOTE: STONE DUST PAVEMENT AS SHOWN ON PLAN FOR WALKWAYS AND DOG RUN AREA

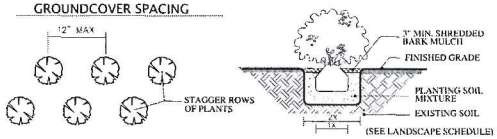


NOTE: SEE PLAN FOR LOCATION OF STONE DUST SURFACING

SHRUB PLANTING DETAIL

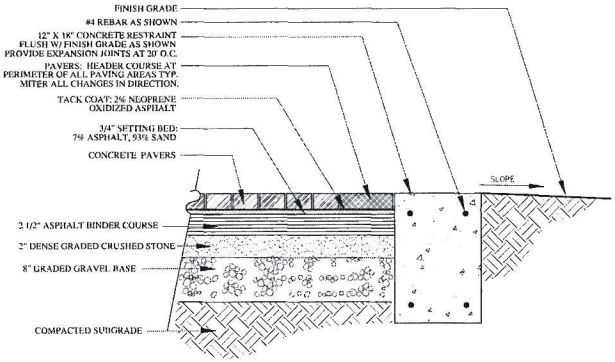
NOT TO SCALE

GROUNDCOVER SPACING



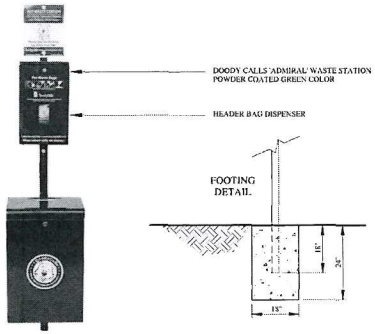
CONCRETE PATIO PAVERS

SCALE: NTS



DOG PARK WASTE STATION

NOT TO SCALE

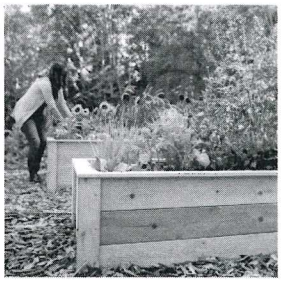


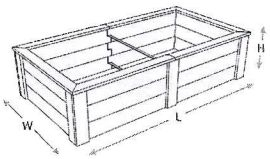
NOTES:

1. ADMIRAL DOG WASTE STATION, OR APPROVED EQUAL.
2. COLOR: GREEN. DISPENSER TYPE: ROLL
3. TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
4. SEE PLAN FOR LOCATION OF PROPOSED WASTE STATIONS.

CEDAR RAISED GARDEN BEDS

NOT TO SCALE





NOTES:

CONTRACTOR SHALL SUPPLY CEDAR RAISED GARDEN BEDS IN LOCATIONS SHOWN ON THE PLAN.

PRODUCT DIMENSIONS:

WIDTH: 4 FEET
LENGTH: 8 FEET
HEIGHT: 22 INCHES

CONTRACTOR SHALL INCLUDE EARTH EASY TRIM PACK.

PROVIDE SHOP DRAWING OF MATERIALS AND INSTALLATION FOR APPROVAL PRIOR TO MATERIALS ORDERING AND INSTALLATION. BEDS SHALL BE BY EARTH EASY OR APPROVED EQUAL.

VISIT WWW.EARTHEASY.COM

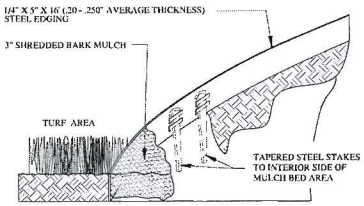
SEE PLAN FOR RAISED BED LOCATIONS

QUANTITY OF RAISED GARDEN BEDS: 2

STEEL LANDSCAPE EDGING DETAIL

NOT TO SCALE

STEEL LANDSCAPE EDGING AS MANUFACTURED BY:
SURE-LOC ALUMINUM EDGING CORPORATION - HOLLAND MI
TEL: 1-800-787-3562 OR APPROVED EQUAL



NOTES:

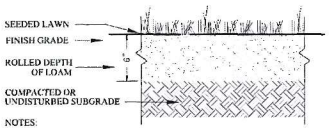
INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

SEE LANDSCAPE PLAN FOR LOCATION OF LAWN VS. MULCHED BED AREAS AND PLACEMENT OF STEEL EDGING.

CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO MATERIALS ORDERING AND INSTALLATION.

TURF PLANTING DETAIL

NOT TO SCALE



NOTES:

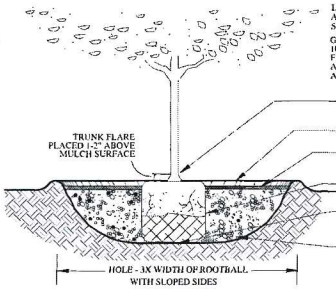
SEED ALL DISTURBED AREAS WITHIN 48 HOURS OF FINAL GRADING. SEED AFTER APRIL 15TH AND BEFORE SEPTEMBER 15TH IN ORDER TO ESTABLISH BEFORE FREEZING TEMPERATURES.

CONTRACTOR IS RESPONSIBLE TO WATER AND ESTABLISH SEEDED LAWN AREAS. WARRANTY SHALL BE 9 WEEKS FOLLOWING INSTALLATION PERIOD.

CONTRACTOR TO INCLUDE NECESSARY TOUCH-UP / RESEEDING FOR ANY AREAS WHERE GRASS SEED DOES NOT GERMINATE DURING THE WARRANTY PERIOD.

TREE PLANTING DETAIL

NOT TO SCALE



LANDSCAPE CONTRACTOR TO PROVIDE A 2 YEAR GUARANTEE ON ALL TREE AND SHRUB PLANTINGS.

GUARANTEE PERIOD BEGINS FOLLOWING 100% COMPLETION OF THE WORK AND FINAL SIGN-OFF BY THE LANDSCAPE ARCHITECT DURING THE CONSTRUCTION ADMINISTRATION PHASE.

TRUNK FLARE - PLANT 1 - 2" ABOVE BARK MULCH AND ABOVE EXISTING OR FINISHED GRADE

MIN. 6" SAUCER

3" SHREDDED BARK MULCH

REMOVE BURLAP FROM TOP HALF OFF ROOTBALL.

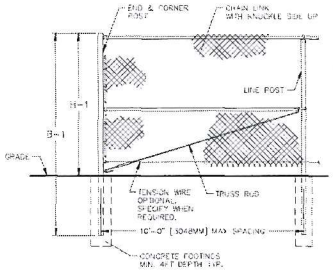
ROOTBALL SITS DIRECTLY ON UNDISTURBED SOIL

PLANTING SOIL MIXTURE

NOTE:
REMOVE BURLAP ROPE AND WIRE FROM TOP & SIDES OF ALL BALLS. ADD MULCH AS SHOWN ON PLAN

BLACK VINYL CLF INSTALLATION DETAIL

NOT TO SCALE



SEE LANDSCAPE AND CIVIL PLANS FOR LOCATIONS AND HEIGHT

NOTES:

1. SEE PLAN FOR LOCATION, HEIGHT, AND LENGTH OF PROPOSED FENCING. (BEGIN / END CLF LABELS)
2. ALL CHAIN LINK FABRIC SHALL BE BLACK VINYL COATED
3. ALL POSTS, BARS, RODS & HARDWARE SHALL BE BLACK POWDER COATED STEEL FENCE.
4. CONTRACTOR SHALL INCLUDE TOP AND BOTTOM RAILS ON ALL FENCING.
5. MANUFACTURER SHALL BE ANCHOR FENCE OR APPROVED EQUAL.
6. INSTALL FABRIC WITH KNUCKLE SIDE UP AND POINTED END DOWN.
7. CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING MATERIALS AND INSTALLATION.

FENCE HEIGHT	END & CORNER POSTS	
NOMINAL HEIGHT	H+1 BAR LENGTH	H+1 HEIGHT ABOVE GRADE
6'-0"	9'-0"	6'-0 5/8"
4'-0"	7'-0"	4'-0 5/8"

Stamp

Rev. No.	Description	Date

ParkArchitecture.com
3 Bristol House Lane, Suite 11 Essex, VT 05452
Tel: (802)425-3426 Mobile: (917)495-2961
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2468 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Details
Lot 45-243

Project Title:
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2318
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

L4.1

BBQ – GRILL COUNTER

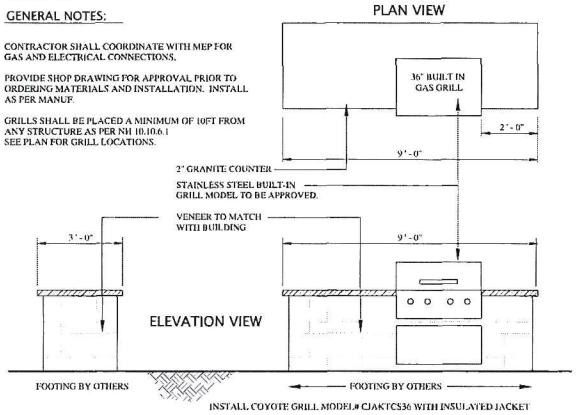
NOT TO SCALE

GENERAL NOTES:

CONTRACTOR SHALL COORDINATE WITH MEP FOR GAS AND ELECTRICAL CONNECTIONS.

PROVIDE SHOP DRAWING FOR APPROVAL PRIOR TO ORDERING MATERIALS AND INSTALLATION. INSTALL AS PER MANUF.

GRILLS SHALL BE PLACED A MINIMUM OF 10FT FROM ANY STRUCTURE AS PER NH 10.10.6.1
SEE PLAN FOR GRILL LOCATIONS.



INSTALL COYOTE GRILL MODEL# C1ACTCS36 WITH INSULATED JACKET



Coyote C Series 36" Built In Gas Grill - C2C36

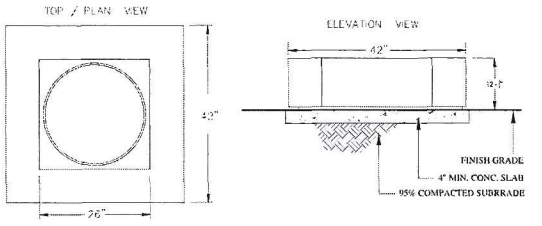
Overall Dimensions: 23" H x 35½" W x 25½" D
Cutout Dimensions: 20½" H x 32½" W x 20-3/8" D

Features:

- Premium 304 Stainless Steel Construction
- (4) high-performance Coyote Infinity Burners™
- 875 square inches of cooking area
- Up to 80,000 BTU of output
- LED interior lighting

42IN BENTO GAS FIRE PIT WITH ELECTRICAL IGNITION

NOT TO SCALE





DIMENSIONS & WEIGHT
BENTO 32: 32" X 32" X 12.75"H (813 X 813 X 324H). UP TO 340 LBS (155 KG)
BENTO 42: 42" X 42" X 12.75"H (1067 X 1067 X 324H). UP TO 500 LBS (225 KG)

BURNERS:
ELECTRONIC AND MATCH-LIT IGNITION
NATURAL GAS: 69,000 BTU/H | 25 KW, PROPANE 60,000 BTU/H | 25 KW

ACCESSORIES:
ALL-WEATHER COVER (INCLUDED), POWDER-COATED ALUMINUM TABLE TOP, TEMPERED GLASS SCREEN

NOTES:

COLOR AND FINISH TO BE SELECTED BY OWNER.

PROVIDE CONSTRUCTION DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION.

BURNING MEDIA SHALL BE LAVA ROCK AND TOP WITH GRAY RIVER ROCK.
FOR MORE INFORMATION VISIT PALOFORM.COM/FIRE-PITS/BENTO

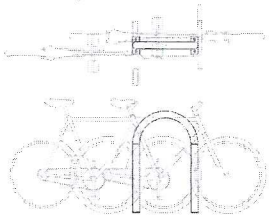
BIKE RACK INSTALLATION DETAIL

NOT TO SCALE





NOTE:
BIKE RACK SHALL BE STAINLESS STEEL BY DERO / HEAVY DUTY OR APPROVED EQUAL





GENERAL NOTES:

PRIOR TO ORDERING OF MATERIALS AND INSTALLATION, CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO LANDSCAPE ARCHITECT FOR APPROVAL OF ALL SITE FURNISHINGS, EXTERIOR TABLES, SEATING BENCHES AND BIKE RACKS. THIS SHALL INCLUDE FINISHES AND INSTALLATION METHODS.

SEE PLAN L1.1 FOR OUTDOOR BIKE STORAGE REQUIREMENTS.

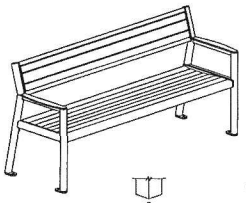
6FT LONG SEATING BENCH

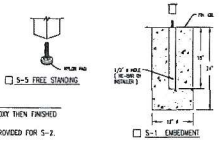
SCALE: NTS



NOTES:

1. INSTALL MODEL SGS-6SBS 6FT STEEL BENCH WITH STEEL SEAT. WITH BLACK POWDER COATED FINISH.
2. SEE PLAN FOR LOCATION OF BENCHES
3. MANUFACTURER SHALL BE DUMOR OR APPROVED EQUAL.
4. CONTRACTOR SHALL INSTALL / SECURE BENCH WITH EMBEDDED FOOTING AS PER MANUFACTURER SPECIFICATIONS.
5. CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING MATERIALS AND INSTALLATION.





NOTES:
1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
2.) 1/2" X 3 3/4" EXPANSION ANCHOR BOLTS PROVIDED FOR S-2.

Stamp

Rev. No.: Description: Date:

ParkArchitecture.com
3 School House Lane, Suite #1 Essex NH 03750
Tel: 802.343.3400 Mobile: 917.440.0687
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Details
Lot 45-243

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2318
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

L4.2

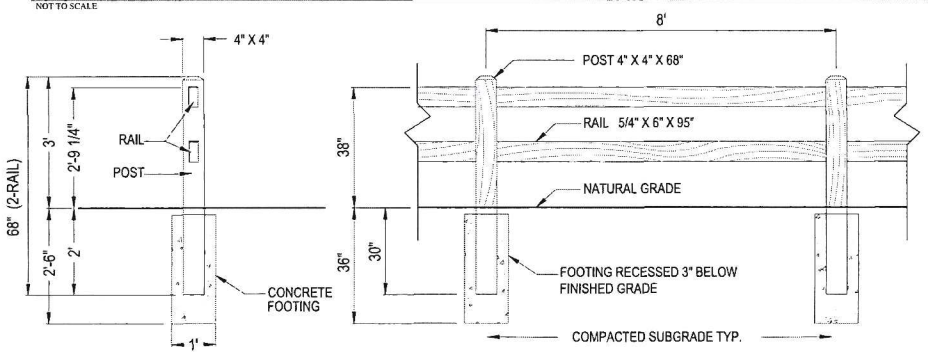
PLAY BOOSTER FOR 2-5 YEARS OLD

NOT TO SCALE



SPLIT RAIL FENCE DETAIL

NOT TO SCALE



2 RAIL FENCE SECTION

2 RAIL 8 FT. SPACING FENCE ELEVATION

NOTES:

FENCE SHALL BE SPLIT-RAIL (2-RAIL) BY TANGENT OR APPROVED EQUAL. VISIT: WWW.TANGENTMATERIALS.COM

INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

COLOR SHALL BE 'CHESTNUT' BY TANGENT.

INSTALL IN 8FT SEGMENTS.

POST SIZE: TRUE 4" X 4" X 68"

POST SPACING 96IN (8FT ON CENTER)

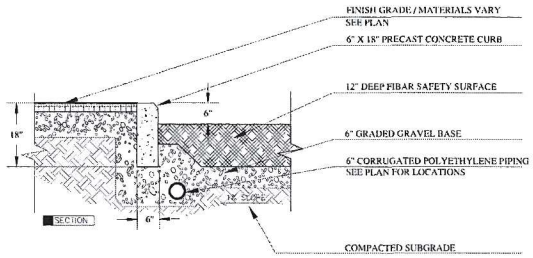
RAIL SIZE 5/4" X 6" X 95"

RAIL SCREWS: EACH RAIL WILL REQUIRE 2 OUTDOOR RATED 3"-3.5 #10 SCREWS. CONTRACTOR SHALL PREDRILL SCREW LOCATIONS AND USE STAINLESS STEEL TRIM HEAD #10 DECK SCREWS.

CONTRACTOR SHALL PROVIDE LANDSCAPE ARCHITECT WITH SHOP DRAWING FOR APPROVAL PRIOR TO ORDERING OF MATERIALS AND INSTALLATION.

FIBAR SAFETY SURFACING

NOT TO SCALE



Stamp

No.	Description	Chkd.

ParkArchitecture.com
3 Bethel Hooker Lane, Suite #1 Etna NH 03750
Tel: 603-643-3636 Mobile: 617-840-0467
Email: mark@parkarchitecture.com

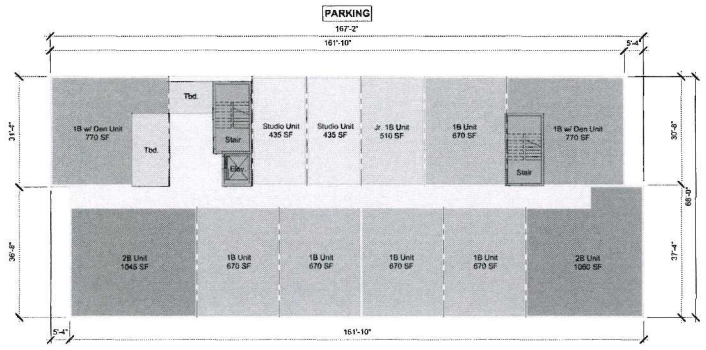
Owner:
BLACK ROCK INVESTMENTS, LLC
2468 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Details
Lot 45-243

Project Title:
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

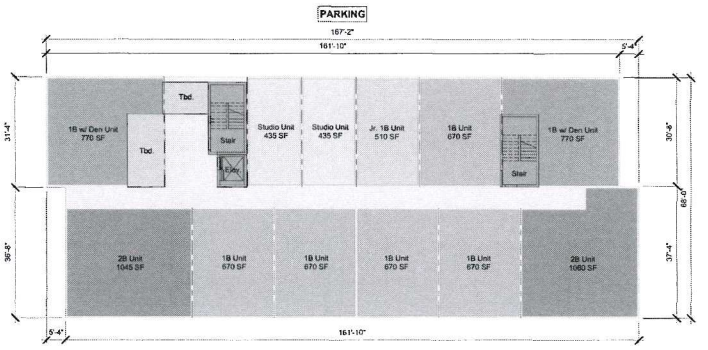
PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

L4.3



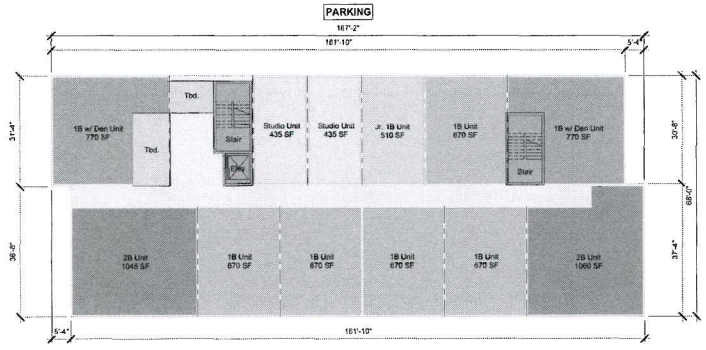
4 BLDG 5 - 4TH FIR

SCALE: 1/16" = 1'-0"



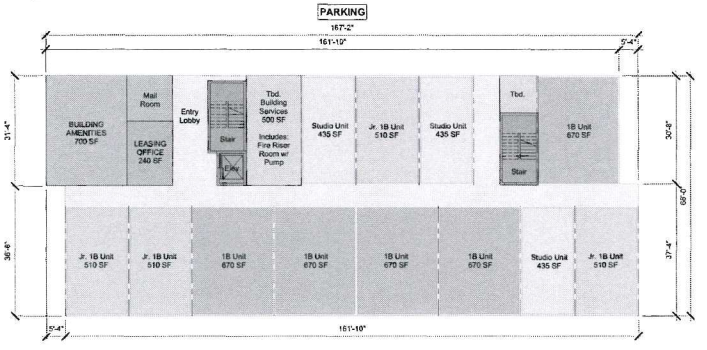
2 BLDG 5 - 2ND FLR

SCALE: 1/16" = 1'-0"



3 BLDG 5 - 3RD FLR

SCALE: 1/16" = 1'-0"



1 BLDG 5 - 1ST FLR

SCALE: 1/16" = 1'-0"

Unit Mix Schedule - Building 5

UNIT TYPE	UNIT AREA	L1	L2	L3	L4	UNITS PER BLDG
STUDIO	424 SF	3	2	2	2	9
1B (JR)	510 SF	4	1	1	1	7
1B	670 SF	5	5	5	5	20
1B/DEN	770 SF	0	2	2	2	6
2B	1050 SF	0	2	2	2	6
UNITS PER LEVEL		12	12	12	12	48

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDING 5: UNIT MIX PLANS

AP - 1.3

10/16/2023

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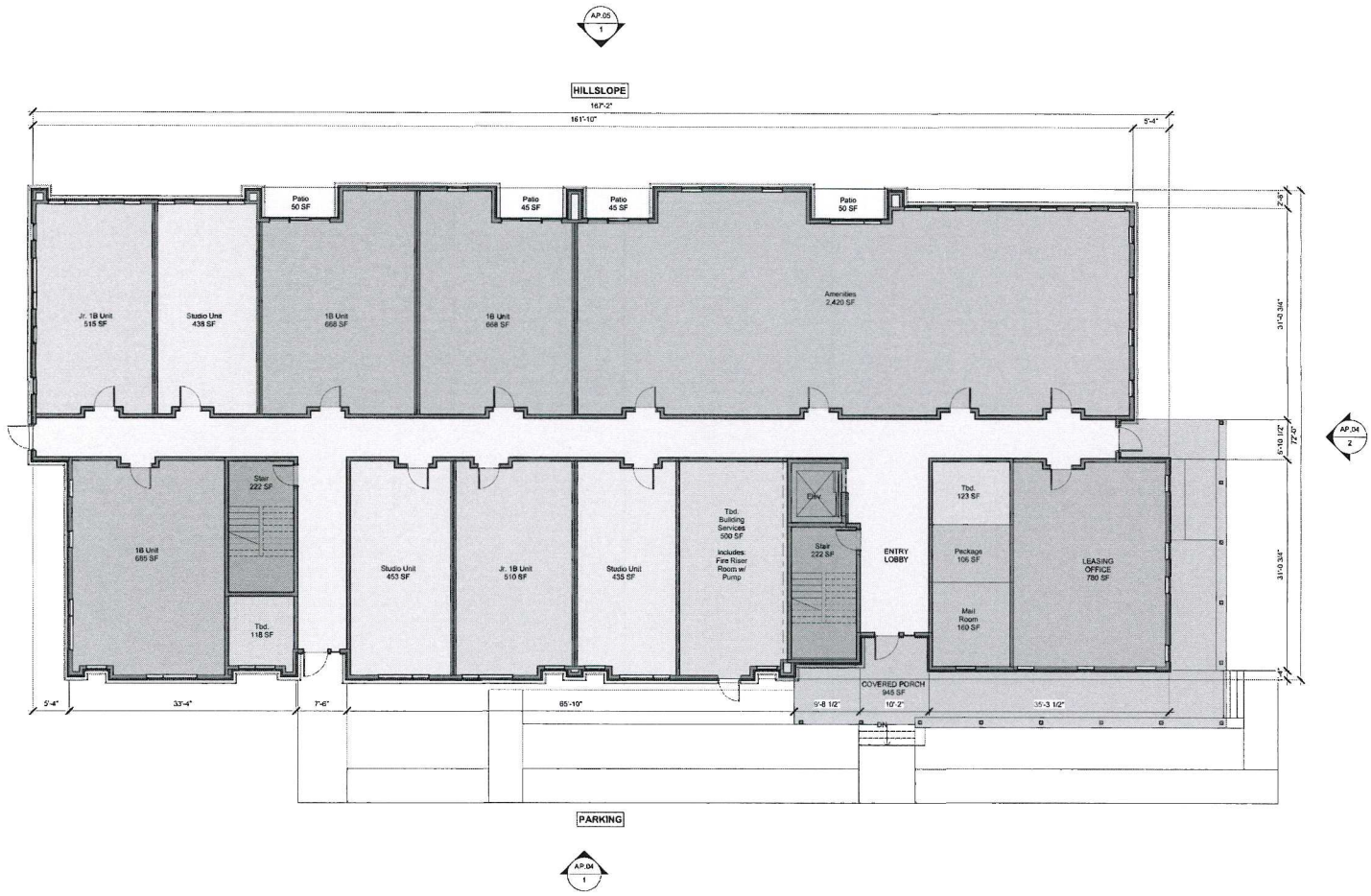

1 BLDG 2- FIRST FLOOR PLAN

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

BUILDING PLAN AREA KEY

UNIT NET AREA

Studio | Jr. 1B/1Ba | 1B/1Ba | 1B/1Ba w/Den | 2B/2Ba

LIMITED COMMON AREA

COMMON AREA

BUILDING SERVICES (COMMON AREA)

BUILDING AMENITIES (COMMON AREA)

LEASING (COMMON AREA)

MAJOR VERTICAL PENETRATIONS

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDING 2 & 5 (SIM): 1ST FLOOR PLAN , TYPICAL

AP - 1.6

10/16/2023

MARKET SQUARE ARCHITECTS

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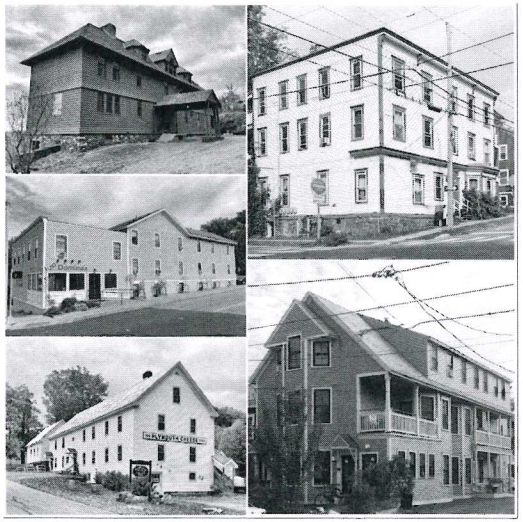
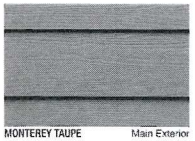
VT AGRARIAN STRUCTURES

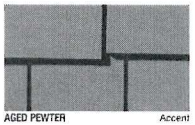


VT HOUSING VERNACULAR



MATERIAL FINISH AND COLOR PALETTE

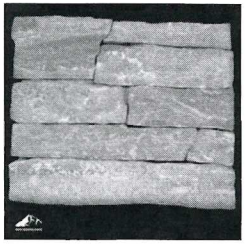




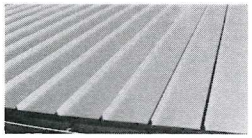






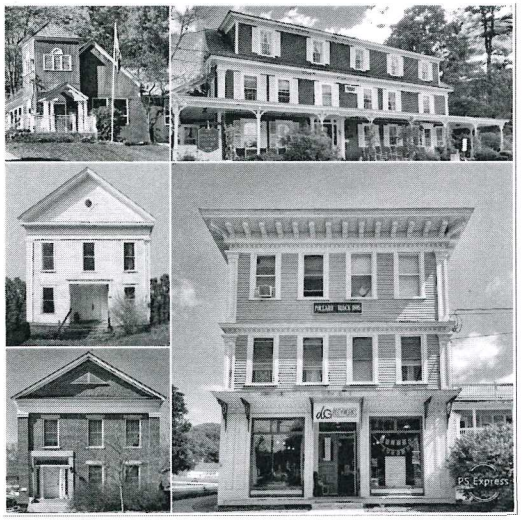


NATURAL STONE - AMERICAN GRANITE LEDGE

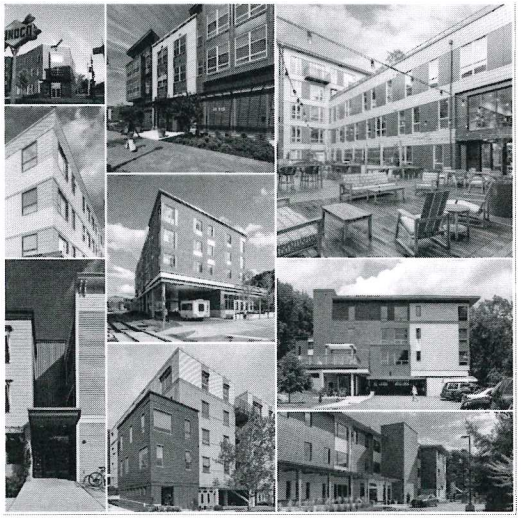


METAL ROOFING PANEL - GRAY GALVALUME

VT HISTORIC STRUCTURES



CONTEMPORARY MULTI-FAMILY HOUSING



IMPORTANT DESIGN ELEMENTS FROM PRECEDENTS

- STRONG OBJECT FORM OF PRIMARY FACADE
- FORMAL PORCH
- VARYING SCALES OF HORIZONTAL AND VERTICAL CLADDING
- STRONG ROOF PROFILES
- EMPHASIS OF LAYERED WALL CONSTRUCTION
- ENGAGED WALL PIERS AS FRAME
- TRIM USED AS A MEANS OF OUTLINING AND ACCENT
- MATERIALS AND COLOR SCHEMES THAT USE NATURAL TONES AND ACCENTS INSPIRED BY REGIONAL AND HISTORIC STRUCTURES

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

DESIGN BOARD: INSPIRATION & PRECEDENT

AP - 2.0

10/16/2023

MARKET SQUARE ARCHITECTS

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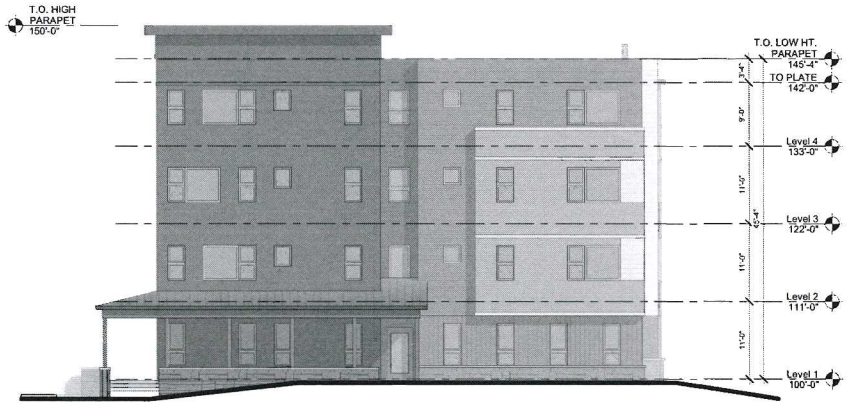
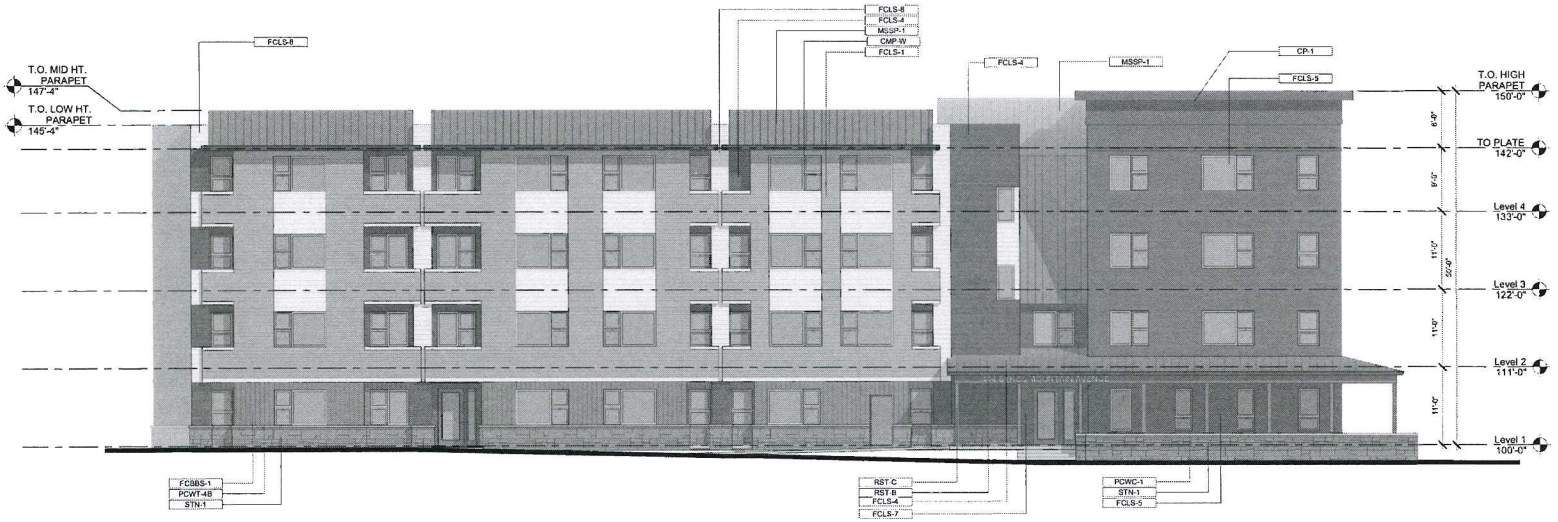


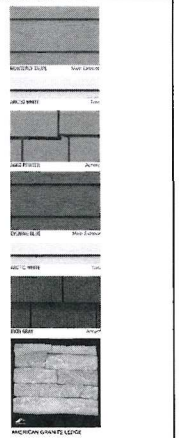
2 BUILDINGS 2 & 5 - RIGHT SIDE ELEVATION
SCALE: 1/8" = 1'-0"



1 BUILDINGS 2 & 5 - FRONT (PARKING SIDE) ELEVATION
SCALE: 1/8" = 1'-0"

ELEVATION MATERIAL KEY	
Key Value	Keynote Text
CMP-W	PREFINISHED EXT COMPOSITE FRAME WINDOW, COLOR: DOVE GRAY
CP-1	CORNICE PROFILE 1, 6FT TALL W/ FIBER CEMENT TRIM, COLOR: EVENING BLUE
CP-2	CORNICE PROFILE 2, 5FT-4IN TALL W/ MTL STANDING SEAM PANEL, COLOR: GALVALUME PLUS
FCBBS-1	FIBER CEMENT VERTICAL BOARD AND BATTEN SIDING 1, COLOR: AGED PEWTER
FCLS-1	FIBER CEMENT 6 INCH EXP. LAP SIDING 1, COLOR: MONTERAY TAUPE
FCLS-2	FIBER CEMENT 8 INCH EXP. LAP SIDING 2, COLOR: AGED PEWTER
FCLS-4	FIBER CEMENT 4 INCH EXP. LAP SIDING 4, COLOR: IRON GRAY
FCLS-5	FIBER CEMENT 9 INCH EXP. LAP SIDING 5, COLOR: EVENING BLUE
FCLS-7	FIBER CEMENT 4 INCH EXP. LAP SIDING 5, COLOR: COUNTRYLANE RED
FCLS-8	FIBER CEMENT 10.75 INCH EXP. LAP SIDING 5, COLOR: ARTIC WHITE
MSSP-1	2 INCH PROFILE METAL STANDING SEAM ROOF PANEL, 16 INCH WIDE, COLOR: GALVALUME PLUS
PCWC-1	PRECAST WALL CAP, 4 INCH PROFILE AND 18 INCH WIDE, COLOR: CONCRETE
PCWT-4B	PRECAST WATER TABLE/SILL, 4 INCH PROFILE, COLOR: CONCRETE
RST-B	6X6 DOUGLAS FIR ROUGH SAWN TIMBER BEAM, COLOR: RAW
RST-C	4X16 DOUGLAS FIR ROUGH SAWN TIMBER COLUMN, COLOR: RAW
STN-1	NATURAL THIN CUT STONE VENEER, COLOR: AMERICAN GRANITE LEDGE

DESIGN COLOR SCHEME



PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDINGS 1-5: CONCEPTUAL ELEVATIONS

AP - 2.1

10/16/2023

MARKET SQUARE ARCHITECTS

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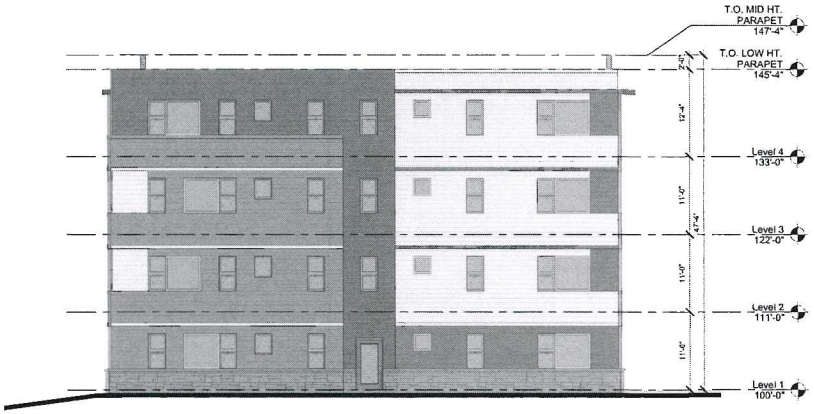

2 BUILDINGS 2 & 5 - LEFT SIDE ELEVATION

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



1 BUILDINGS 2 & 5 - REAR (HILLSLOPE) ELEVATION

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

ELEVATION MATERIAL KEY	
Key Value	Keynote Text
CMP-W	PREFINISHED EXT COMPOSITE FRAME WINDOW, COLOR: DOVE GRAY
CP-1	CORNICE PROFILE 1, 6FT TALL W/ FIBER CEMENT TRIM, COLOR: EVENING BLUE
CP-2	CORNICE PROFILE 2, 5FT-4IN TALL W/ MTL STANDING SEAM PANEL, COLOR: GALVALUME PLUS
FCBBS-1	FIBER CEMENT VERTICAL BOARD AND BATTEN SIDING 1, COLOR: AGED PEWTER
FCLS-1	FIBER CEMENT 6 INCH EXP. LAP SIDING 1, COLOR: MONTERAY TAUPE
FCLS-2	FIBER CEMENT 8 INCH EXP. LAP SIDING 2, COLOR: AGED PEWTER
FCLS-4	FIBER CEMENT 4 INCH EXP. LAP SIDING 4, COLOR: IRON GRAY
FCLS-5	FIBER CEMENT 8 INCH EXP. LAP SIDING 5, COLOR: EVENING BLUE
FCLS-7	FIBER CEMENT 4 INCH EXP. LAP SIDING 5, COLOR: COUNTRYLANE RED
FCLS-8	FIBER CEMENT 10.75 INCH EXP. LAP SIDING 5, COLOR: ARTIC WHITE
MSSP-1	2 INCH PROFILE METAL STANDING SEAM ROOF PANEL, 16 INCH WIDE, COLOR: GALVALUME PLUS
PCWC-1	PRECAST WALL CAP, 4 INCH PROFILE AND 18 INCH WIDE, COLOR: CONCRETE
PCWT-4B	PRECAST WATER TABLE/SILL, 4 INCH PROFILE, COLOR: CONCRETE
RST-B	6X6 DOUGLAS FIR ROUGH SAWN TIMBER BEAM, COLOR: RAW
RST-C	4X16 DOUGLAS FIR ROUGH SAWN TIMBER COLUMN, COLOR: RAW
STN-1	NATURAL THIN CUT STONE VENEER, COLOR: AMERICAN GRANITE LEDGE

DESIGN COLOR SCHEME



PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDINGS 1-5: CONCEPTUAL ELEVATIONS

AP - 2.2

10/16/2023

MARKET SQUARE ARCHITECTS

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ENGINEERING VENTURES PC

208 Flynn Avenue, Suite 2A, Burlington, VT 05401 · Tel: 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 · Tel: 603-442-9333
414 Union Street, Schenectady, NY 12305 · Tel: 518-630-9614

October 27, 2023

Jo-Ann Ells, Zoning Administrator
Hartford Planning & Zoning
Hartford Municipal Building
2nd Floor Room 201 171 Bridge Street
White River Junction, Vt. 05001

Re: **444 Sykes Mountain Avenue, Lot 45-243 Site Plan Review**

Landowner: Black Rock Investments

Applicant: Black Rock Investments

Dear Jo-Ann,

I am writing on behalf of Black Rock Investments, applicant for the 444 Sykes Mountain Avenue, Lot 45-243 Site Plan Review. The project is in the R-IM Zone and includes (1) Affordable Housing Multi-Unit Building with 48 units and 70 parking spaces and associated improvements as shown on the enclosed plans.

8 Copies of the following plans and documents are included with this submittal for your review:

- Signed Application Form
- Application Payment
- Responses to Staff Comments received on 10-22-2023
- Project Plans as noted on the Project Cover Sheet
- Project Narrative
- View Study
- Traffic Impact Study

Thank you for considering this application. Please give me a call if you have any questions or comments.

Sincerely,
Engineering Ventures P.C.



Kevin Worden PE, Vice President

Town of Hartford

Planning Commission App # _____
Zoning Board of Adjustment App # _____

APPLICATION TO
PLANNING COMMISSION &/OR ZONING BOARD OF ADJUSTMENT

PLEASE COMPLETE ALL ITEMS APPLICABLE AND PROVIDE THE CORRECT NUMBER OF COPIES OF THIS APPLICATION AND THE SITE PLAN OR SUBDIVISION PLAT. ABUTTING LANDOWNERS WILL BE NOTIFIED BY THE PLANNING/ZONING OFFICE.

1. **NAME & ADDRESS OF RECORD OWNER(S)** Black Rock Investments

   Deed Recorded Book 253 and 256 Page 508, 509 and 165-167 (Available at Town Clerk's Office)

   Telephone: Work 802-295-7961 Cell 631-408-8766 Email Address: irwinperret@pering.net

2. **NAME & ADDRESS OF APPLICANTS(S)** Same as above

   Telephone: Work same as above Cell same as above Email Address: same as above

3. **NAME & ADDRESS OF APPLICANTS' CONSULTANT** Engineering Ventures (Kevin Worden)

   85 Mechanic Street, Suite E2-3, Lebanon, NH 03766

   Telephone: Work 603-442-9333 Cell 802-343-5445 Email Address: kevinw@engineeringventures.com

4. **PROJECT LOCATION** 444 Sykes Mountain Avenue

5. **PRESENT USE OF PROPERTY** Multi-family dwelling

6. **BRIEFLY DESCRIBE PROJECT** (in addition, a detailed narrative must be submitted)
   Site Plan Review of Lot 1 with 1 Affordable Housing Multi-Unit Building with 48 units and 70 parking spaces.

7. **PROJECT SIZE IN SQ. FT OR ACREAGE** 3.28ac+/-

   Lot Width 300' Approx Lot Depth 750' Approx

8. **IS PROJECT ON TOWN WATER/SEWER?** Yes x No _____ If Yes, estimated

   Water Consumption/day 8,100gpd Amount of Sewer Flow Projected 6,359gpd

   Size of Closest Lines Above (water) _____ (sewer) _____

9. **DESCRIBE LANDSCAPING PLAN** See attached plan

10. **IF A BUSINESS** - Present # of Employees N/A

    Proposed Days & Hours of Operation N/A

    Will you use the landfill & recycling center? Yes x No _____

    The main waste by-product of your business is: construction debris then house hold refuse

11. **IF A RESTAURANT** - Present seating N/A Proposed _____

12. **PARKING SPACES** - Number to be provided 70 total

13. **SIGNAGE** - Free Standing _____ Attached _____

14. **FENCING** – Location See attached engineering plans Height 4'

15. **NEAREST WATER SUPPLY FOR FIRE PROTECTION** Hydrants as designed

16. **ESTIMATED VALUE OF PROPOSED WORK** _____

17. **IS THERE AN EXISTING DRIVEWAY?** yes

18. **IF A SUBDIVISION** - Number of New Lots to be Created _____

Do you request that the Town consider taking over maintenance of – Roads No

Or Park/Open Space No

I HEREBY CERTIFY THAT THE INFORMATION PROVIDED ON THIS APPLICATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. (This certification must be signed by lot owners and applicants).

Irwin Perret	10-16-2023	Irwin Perret	10-16-2023
Applicant's Signature	Date	Lot Owner's Signature	Date
	10-16-2023		10-16-2023
Co-Applicant's Signature	Date	Co-Owner's Signature	Date

The applicant retains the obligation to identify, apply for, and obtain any relevant local or state permits before any construction may commence. Please call 802-282-6488 to speak with the State Permit Specialist.

For Office Use Only		
Map/Lot #		
Fee Paid $:		Receipt #:
PC: Site Plan	Min. Sub.	Maj. Sub.
PD	PD Amend.	Other
ZBA: Conditional Use	Variance	Appeal
Other		
Zoning District (s)		Date Filed:
Official Submittal Date:		

PROJECT NARRATIVE.

LANDOWNERS: BLACK ROCK INVESTMENTS, LLC
APPLICANT: BLACK ROCK INVESTMENTS, LLC

Sykes Mountain Avenue – Hickory Ridge Drive
Hartford, Vermont
Lot 45-243

- Project and District Objectives:

The Project will include the construction of a high-density, multi-family residential building that will help to address the well-documented housing need in Hartford. It will include all basic services such as power, water, sewage, internet, telephone, etc. Due to its high density and location next to the Hickory Ridge Road Bus Stop, the Project will enhance access to Advanced Transit's Orange Line.

The Building will include the following unit mix:

- 9 proposed Studio apartments.
- 7 proposed Junior One-Bedroom apartments.
- 20 proposed One-Bedroom apartments.
- 6 proposed One-Bedroom apartments with Den.
- 6 proposed Two-Bedroom apartments.

The Applicant is actively looking to assign Building 5's units and its adjacent amenities for priority housing, although the decision is not final. The preliminary proposal looks to build at least 20% of the dwelling units as affordable housing units, subject to covenants or restrictions that preserve their affordability for a minimum of 15 years or longer. Affordable housing units refer to those in which the occupant is paying no more than 30% of the gross household income on housing costs, including utilities; or where the household income is at or below the median income as rated by a recognized housing affordability index.

- Coverage and Open Space:

24% of the lot will consist of impermeable coverage, which is well below the allowed maximum coverage of 65%. No Open Space is required for this lot.

- Parking Requirements

The Project shall include parking as approved by the Planning Commission. It will have a total of 70 parking spaces, which includes the required allocation for disabled-accessible parking.

- Building Height

The Application includes elevation views that show the building height varies from 45'-4" (low parapet) to 47'-4" (high parapet) to 50' (highest parapet above corner entry). These heights are required for a four story building with appropriate ceiling heights, structure and mechanical equipment. The four story building support the unit density proposed with a smaller footprint than a three story building which would have a larger footprint on the site.

- Landscaping:

As approved by the Hartford Planning Commission. The Applicant will strategically place native plants, shrubs, and bushes around so that its visual impact is mitigated and blends with the natural surroundings. The design of the landscaping plan will aim to protect adjacent properties from screening and light glare and unsightly areas while not interfering with safety. Additionally, the Landscaping Plan will include picnic areas, playgrounds, etc.

All plants selected will not be invasive to the State of Vermont.

Plant materials will include trees, shrubs, gardens, among others. Since the project's main amenities will be its scenic forests and landscapes, the Applicant will try to retain the natural cover of the site as much as possible. The Applicant will be responsible for maintaining all new plants in a healthy and growing condition.

All plant locations and types are included in the Application.

- Lighting:

As approved by the Hartford Planning Commission. The building's entryway will have exterior cut-off entry lighting, as would be typical of a residential unit. The parking area will be lit with cut-off fixtures on poles in accordance with plans submitted. The Applicant will look to maximize the use of LED lighting fixtures to maximize energy efficiency.

The building and parking envelopes and footprints were chosen to create a dense compact community surrounded by open space, to minimize its visibility to neighboring areas. The compact design will also favor a smaller network of utilities and streets. Lot dimensions and setbacks were chosen to abide by these criteria: keeping a compact design that encourages a sense of community and lessens impact on the natural surroundings.

- Site Plan Development Criteria:

The Project will help to tackle the area's housing shortage by adding 48 units to the market, helping to balance the gap between supply and demand. Because of its relatively high density and ideal location next to Hickory Ridge Road's bus stop, more residents will have access to public transit resulting in a more efficient use of the public transportation system.

The Project's amenities will be further detailed in our concept drawings. They include but are not limited to:

- Pet-friendly, lighted walkways
- Bike paths
- Sidewalks
- Picnic Areas
- Bike racks
- Trash, Compost and Recycling collection facilities
- Mail and storage facilities
- Leasing office
- Clubroom with kitchenette, table seating, fireplace and T.V. area Need.

The Project has been conceptualized to meet Hartford's Zoning Regulations main objectives:

- Become permanent asset for Hartford.
- Include an open space and outdoor recreation areas as shown in the Landscaping Plan
- Maximize the preservation trees and natural geological features, which are to be a key amenity for the project as shown in the Landscaping Plan
- Efficient Use of land by having a compact envelope as shown in the Engineering Plans.
- Integration into its natural surroundings

- Energy Performance Standards:

The Project will look to incorporate features and technologies to minimize energy consumption and maximize efficiency. The project will meet or exceed Vermont's energy standards. The building will have a well-insulated building envelope with high-quality insulation materials, efficient windows, and airtight construction to minimize heat loss or gain. It will also include enhanced insulation techniques, such as spray foam insulation and insulated exterior walls, to minimize thermal bridging and maintain a consistent indoor temperature. Since the building is designed as slab-on-grade construction, we are planning for continuous rigid insulation under the slab. Proper sealing of gaps, ducts, and windows will ensure that conditioned air stays inside, reducing energy waste.

The design parameters will optimize natural light, ventilation, and solar heat gain. Orientation and window placement will be carefully considered to maximize daylight and reduce the need for artificial lighting. The Applicant will look to include Energy Star-rated appliances, including refrigerators, dishwashers, and washing machines, which consume less energy compared to standard models. The buildings will be structurally designed to allow for future placement of solar panels on the roof and conduits will be put in place to connect to existing building infrastructure as well as infrastructure for future EV charging stations.

Waste, Recycling and Composting areas will be provided as mandated by the state of Vermont.

- Grading and Drainages:

    - Grading shall be made so that runoff is directed to established drainage courses and will not cause ponding or flooding of other properties, or exceed the capacity of downstream drainage facilities. The design includes stormwater considerations to mitigate this issue that meet and exceed the Vermont State Stormwater Manual. A Vermont State Stormwater Operational Permit will be required for this project.
    - The drainage systems shall be designed so that water runoff rate existing prior to site development shall not be increased after development.
    - All changes in grade shall be controlled so as not to cause a nuisance or damage to other properties or erosion of topsoil.

- Utilities:

    - Roads:

    The Applicant will build the access road shown in the attached drawings, as coordinated with Hartford DPW, to meet Town of Hartford requirements. Works include clearing and grading, subgrade preparation drainage systems, pavement layers, sidewalks and curbs, landscaping as described among others.

    - Water System:

    The project will tie into Hartford's water supply.

    - Sewer System:

    The sewer lines will tie directly into the Hartford sewer system.

The Project will also include all basic utilities, including but not limited to, electricity, phone services, and internet services.

The Project will contribute to the town's economic development by providing housing for employees that historically have had to move away from the region due to lack of housing. It will also result in an increase in revenues for Hartford in the form of property taxes and help to promote the use of energy-efficient features for Hartford residents when compared to older multifamily projects.

- Waivers:

The Applicant is requesting the following waivers:

- A waiver for height requirement for the building
- A waiver to the required amount of parking units as per Article 260-24 of Hartford's regulations considering:

        - That the site is located within 1,000 ft of Advance Transit's Orange Line
        - The relative high density of the project and the unit mix of smaller apartments. Please note that the new housing legislation (S100) allows for a formula of 1 space per dwelling unit effective next year.

- Miscellaneous

A rendered visualization of the Project from the intersection between Sykes Mountain Avenue and Hickory Ridge, overlooking the project towards the north, is included in this Application. This location was selected as it is a notable intersection with relatively high traffic which should be easy to identify for anyone reviewing the application. It is a street level view to showcase its visual impact for neighbors and bystanders. Colors of the visualizations will be updated but are easier to assess on the elevation views submitted on the application.

- Acknowledgements and Understandings:
    - The Applicant acknowledges that it is its obligation to identify, apply for, and obtain any relevant local and state permits for this project.
    - The Applicant will advertise the existing dwelling for relocation to the public for a period of 90 days. If we don't have any takers, we will need to remove it.
    - The Applicant will contact Fire Marshall to discuss requirements for obtaining Public Building permit.
    - All proposed plantings are native/non-invasive.
    - During construction, erosion and sediment control measures as specified in the most current edition of the *Low-Risk Site Handbook for Erosion Prevention and Sediment Control* published by the Vermont Department of Environmental Conservation will be followed.
    - Before starting construction, the Applicant will schedule a preconstruction meeting with the Department of Public Works (DPW), with two weeks in advance. Any revisions must be forwarded to the Zoning Administrator to amend the permit.
    - The Applicant acknowledges that any approval will include a requirement that no structure, including construction/office trailers, signage, parking spaces or plantings may be placed in such a way that obstructs sight distance along the traveled way, at any intersection or driveway. Any signs, parking spaces or plantings found to obstruct sight distance will be required to be relocated.
    - The Applicant acknowledges that before the Certificate of Occupancy can be issued, the following list must be completed:
        - Submit written verification from a Professional Engineer licensed by the State of Vermont certifying that the project was constructed in compliance with the approved plans and Findings of Fact
        - Submit verification that the water and sewer have been inspected and approved by the Department of Public Works

        - Submit acceptable record drawings to the Department of Public Works
        - Submit a PDF of the record drawings to the Zoning Administrator
        - Record an Energy Code Certificate in the Land Records if required by the State of Vermont
    - The Applicant acknowledges that Earth moving and hauling, rock drilling or crushing, jack hammer and similar excessively loud equipment shall not be operated on Sundays or between the hours of 5:30 p.m. and 7:00 a.m. except in emergency situations.
    - The Applicant acknowledges that any stockpiling of materials related to the construction of the project must be located twice the distance of the height of the stockpiled materials from any public or private right-of-way or property boundary.
    - The Applicant acknowledges that construction trailers may be used at construction sites for office and laboratory use on the condition that they are placed a minimum of ten feet from any property line, are used for a project with a valid zoning permit and are removed before a certificate of occupancy is requested. No construction trailer may be placed in such a way that obstructs sight distance along the traveled way, at any intersection or driveway. The Applicant also acknowledges that any construction trailer found to obstruct sight distance will be required to be relocated immediately

Approved by the Hartford Planning Commission

_____

Planning Commission Chair/Vice Chair Date

BLACK ROCK INVESTMENTS, LLC

Memorandum

To: Jo-Ann Ells

Cc: Kevin Worden, Paul Simon, Earl Simpson, Dennis Marquise, and Chris Holzwarth

From: Black Rock Investments, LLC

Date: October 27, 2023

Re: Answers to Memo on Lot 45-243 Proposed Multi-Unit Dwelling (48 Units)

In relation to Memorandum received on October 22nd, please find our comments below in red ink:

1. Please confirm that you understand that you retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

   To determine what State Environmental Permits may be required for your project, The Vermont Agency of Natural Resources (ANR) recommends that you use ANR's Permit Navigator Tool by going to the VT Department of Environmental Conservation website Welcome to DEC | Department of Environmental Conservation (vermont.gov) and going to the "Permit Navigator Tool" Permit Navigator (force.com)

   If further assistance is needed, please contact the Community Assistance Specialist for our area:

   Rick Oberkirch, Community Assistance Specialist
   802-282-6488
   Rick.Oberkirch@vermont.gov

   We understand and acknowledge it. It is included in Acknowledgement section of narrative

2. Thank you for agreeing to allow the Hartford Historic Preservation Commission to photo document the structures before they are removed. Understood

3. Have you given any consideration to relocating the existing dwelling? We will advertise the house to the public to be removed for a period of 90 days. If we don't have any takers, we will need to demolish it.

4. No action will be taken on the application until you apply for final approval for the two-step subdivision application you have submitted to create the lot and any approval will require that the subdivision be approved/finalized. Understood

   Given this, the Planning Commission will need to continue the Public Hearing to a date certain. What application deadline do you anticipate submitting for final approval? (If in the future you need more time to prepare the application for Final Approval, the Hearing can be continued.) Understood. Depending on comments on the preliminary submittals from the Staff and Board, application for Final Approval will be submitted in December or January.

5. Please contact Tom Peltier, Fire Marshal, to discuss requirements for obtaining a Public Building permit. tpeltier@hartford-vt.org (295-3232). Understood

6. If you have not done so already, I encourage you to talk to Hartford's Environmental Sustainability Coordinator, Dana Clawson, about energy efficiency options for your project. (dclawson@hartord-vt.org) Understood

7. Please amend the project narrative such that it is limited to this application. Understood, see attached narrative.

8. I understand that you are seeking a density bonus as allowed under Act 47 for an Affordable Housing Development. Please describe how the project meets the statutory definition of an Affordable Housing Development in the Project Narrative. Understood, see attached narrative.

9. Please include a detailed description of the design of the access road and any existing/proposed rights-of-way/easements in the Project Narrative. Understood, see attached narrative.

10. Please outline in the Project Narrative how the application conforms with §260-27 C of the Hartford Zoning Regulations which states:

    Grading and drainage. The following provisions shall apply to any changes which affect drainage of water to or from a property:
    (1) Any changes in grading shall be made so that runoff is directed to established drainage courses and will not cause ponding or flooding of other properties or exceed the capacity of downstream drainage facilities.
    (2) When possible, drainage systems shall be designed so that water runoff existing prior to site development shall not be increased after development.
    (3) All changes in grade shall be controlled so as not to cause a nuisance or damage to other properties or erosion of topsoil. Understood, see attached narrative.

11. A phasing plan is not needed for this application. (Please advise if you disagree.) Agreed.

12. Please provide the following information regarding the Street Viewpoint Study:

    - Explain how you chose the vantage points
    - Provide the address/location for the vantage points
    - Are the colors of the proposed buildings represented in the study?

A rendered visualization of the Project from the intersection between Sykes Mountain Avenue and Hickory Ridge, overlooking the project towards the north, is included in this Application. This location was selected as it is a notable intersection with relatively high traffic which should be easy to identify for anyone reviewing the application. It is a street level view to showcase its visual impact for neighbors and bystanders.

Explanation is included in the narrative as well.

Colors to the buildings will be updated.

13. Please amend the plans such that they are limited to this application. Understood.

14. The plans will need to be amended based on what is agreed upon with the DPW for the access/realignment of Hickory Ridge. (See comments on subdivision.) Understood.

15. The plans should incorporate vehicular and pedestrian protections for the stormwater treatment pond on the corner of Hickory Ridge and Sykes Mountain Avenue given the drop off from travelled lanes and sidewalks. In accordance with State rules, there should be a plan demonstrating accessibility to the pond and its infrastructure. Understood.

16. A detailed analysis for the proposed stormwater system has not been provided to date and therefore, comments cannot be provided at this time. The final application should address the adequacy of downstream infrastructure. It is likely that review by a third-party engineer at your expense will be recommended. Understood.

17. Water and Sewer:

    A detailed analysis with calculations, plans, and details has not been provided to date and therefore comments cannot be provided at this time. The application should address the adequacy of downstream sewer infrastructure. Understood, additional coordination and review with DPW staff will be required.

    This building should be serviceable from the existing mains as shown on the preliminary plans subject to an application for allocation with flow and pressure calculations and final plans and details. Understood.

    It is possible that review by a third-party engineer at your expense will be recommended. Understood.

18. A photometric plan is required. The landscape and lighting plans have been updated to include photometric data as required. Lighting includes cut-off / dark-sky-friendly fixtures as required.

19. A turning movement plan is required. Understood

20. Please indicate the size of the parking spaces, access aisles, and dumpster enclosure on the plans. Understood

21. What is the height of the proposed building measured as follows:

    Building height shall be measured from the proposed finished grade at the front of the building to the highest point of the roof for flat or mansard roofs, or to the midpoint between the eaves and ridgeline for other roofs. Rooftop apparatus such as air-conditioning units, antennas and solar collectors shall be included in the measurement.

    Please note that Act 47 allows Affordable Housing Developments on municipal water and sewer to exceed maximum height limitations by one floor, provided that the structure complies with the Vermont Fire and Building Safety Code.

    The building height varies from 45'-4" (low parapet) to 47'-4" (high parapet) to 50' (highest parapet above corner entry). These heights are required for a four story building with appropriate ceiling heights, structure and mechanical equipment. The four story building support the unit density proposed with a smaller footprint than a three story building which would have a larger footprint on the site.

22. Please indicate the location of the bike racks on the plans. Plans include location of bike racks on landscape plan sheets.

23. What is the percentage of lot coverage? (The maximum allowed for the R-1M zoning district is 65%.) 24%

24. Please consider providing an electric vehicle charging station(s) or installing the conduit for future installation. Understood

25. What will be provided in the 700 sq. ft. "Building Amenities" space? Amenities have been included in the narrative.

26. Please consider providing a trail to connect to the upper trail system. Plans have been revised to include an additional woodland trail connection to the upper trail network.

27. Is it possible to expand the playground area to the north? Understood.

28. Staff needs to discuss the proposed road name. Agreed

29. The Traffic Impact Study is being reviewed. Comments will be sent separately. Understood

30. Hartford's Tree Board suggests that you propose a different evergreen tree than Hemlocks which are threatened by the woolly adelgid. Understood; we replaced the Hemlock with Norway Spruce Trees (see planting plans).

31. Please confirm that all proposed plantings are native/non-invasive or amend the plans accordingly. Yes, we confirm all of the proposed plantings are either native or northern hardy non-invasive varieties

32. Please consider appropriate plantings in the stormwater basins. The stormwater basin plantings will be developed to include hardy northern plantings suitable to withstand saturated soil conditions as appropriate within a depressed stormwater basin area.

33. Please outline how the proposed landscaping meets the following sections of the Zoning Regulations:

Section 260-24 (8) (b)

The site shall be designed and landscaped to minimize negative visual impacts and maximize safety. Plantings may be required for this purpose, both within the lot and between it and any public road or adjacent property. Plants shall not be invasive to Vermont, shall be selected for their ability to survive under special conditions found in a parking lot, and shall be protected from damage by vehicles and maintenance equipment, including snow removal and storage. Yes, the site has been designed and landscaped to minimize negative visual impacts as it includes a robust landscaping plan including native and non-invasive plantings. In addition, attention to preserving the existing perimeter trees was included to minimize visual impact. The plans also include numerous pedestrian walkways and a multi-use path system to separate bicyclists, and pedestrian traffic from the vehicular traffic network to maximize safety. The choice and placement of plantings in the parking areas takes into account the special hazards of salt, vehicles, and maintenance equipment.

Section 260-27

B. Plantings. The following provisions shall apply to the planting element of all landscape plans submitted for site development plan approval:

(1) Plant materials included in landscape plans may be trees, shrubs, lawns, flower gardens, ground covers, cropland, pasture, meadows, wetlands, and forests.

(2) Natural cover shall be retained on a site to the extent possible and reasonable. Site clearing shall be kept to the minimum required for the construction of buildings and improvements.

(3) Plantings included in landscape plans receiving site development plan approval shall be maintained in a healthy, growing condition. Where forest, cropland and "natural" areas are included, provision shall be made for their ongoing maintenance.
(4) The choice and placement of plantings in parking areas shall take into account the special hazards of salt, vehicles, and maintenance equipment, and include provision for adequate and safe snow removal.
(5) Any landscape plan submitted for site development plan approval shall show the locations and types of plants to be removed as well as the species, sizes, quantities, and locations of all new plants to be installed. Additional information may be required by the Planning Commission under the provisions of § 260-45 below. Plans submitted for review include and show the locations and types of plants as well as the species, sizes, quantities, and locations to be installed. Again, the choice and placement of plantings in the parking areas takes into account the special hazards of salt, vehicles, and maintenance equipment. Overall, the goal is to provide a welcoming and colorful pallet that is inviting, yet will be low-maintenance once the plantings establish. To that end, we have included a diversity of tree and shrub species that include Vermont native and northern New England varieties.

Section 260-45 C (3)

Adequacy of landscaping, screening, and setbacks in achieving maximum compatibility with and protection of adjacent properties by screening from them any glare produced by interior or exterior lights and unsightly areas such as storage areas, and parking lots; assurance that landscape materials will not interfere with visibility or safety and that they are of a type that can survive and be maintained as proposed. Attention to the placement of new plantings as well as maintaining a strong natural buffer of existing plantings has been included in the design concept. Maintaining a strong woodland perimeter and forest area helps us achieve maximum screening and a robust vegetative buffer to the adjacent properties. The project also capitalizes on this natural resource as to include a woodland trail system for residents.

Please acknowledge that during construction erosion and sediment control measures as specified in the most current edition of the *Low-Risk Site Handbook for Erosion Prevention and Sediment Control* published by the Vermont Department of Environmental Conservation will be followed. We understand and acknowledge it. It is included in Acknowledgement section of narrative.

34. Please acknowledge that you understand the following:

Before you commence construction, you need to schedule a preconstruction meeting with the Department of Public Works (DPW). You need to contact the DPW at least two weeks before you want to hold this meeting. We understand and acknowledge it. It is included in Acknowledgement section of narrative.

If this meeting results in any revisions to the approved plans, you must contact me to discuss amending your permit. We understand and acknowledge it. It is included in Acknowledgement section of narrative.

Any approval will include a requirement that no structure, including construction/office trailers, signage, parking spaces or plantings may be placed in such a way that obstructs sight distance along the traveled way, at any intersection or driveway. Any signs, parking spaces or plantings found to obstruct sight distance will be required to be relocated. Please confirm that you understand this requirement and that all proposed structures and plantings meet this requirement or amend the plan accordingly. We understand and acknowledge it. It is included in Acknowledgement section of narrative.

35. Please acknowledge that you understand that once the project is complete and before I can issue a Certificate of Occupancy you need to:

    - Submit written verification from a Professional Engineer licensed by the State of Vermont certifying that the project was constructed in compliance with the approved plans and Findings of Fact
    - Submit verification that the water and sewer have been inspected and approved by the Department of Public Works
    - Submit acceptable record drawings to the Department of Public Works
    - Submit a PDF of the record drawings to the Zoning Administrator
    - Record an Energy Code Certificate in the Land Records if required by the State of Vermont

    Please acknowledge that you understand these requirements.

    We understand and acknowledge all items and have included in Acknowledgement section of narrative.

36. Please acknowledge that you understand that construction of the project must comply with Section 260-31 B of the Hartford Zoning Regulations, which states:

    > Earth moving and hauling, rock drilling or crushing, jack hammer and similar excessively loud equipment shall not be operated on Sundays or between the hours of 5:30 p.m. and 7:00 a.m. except in emergency situations.

    We understand and acknowledge it and have included in Acknowledgement section of narrative.

37. Please acknowledge that you understand that any stockpiling of materials related to the construction of the project must be located twice the distance of the height of the stockpiled materials from any public or private right-of-way or property boundary.

We understand and acknowledge it and have included in Acknowledgement section of narrative.

38. The Hartford Zoning Regulations provide that "Construction trailers may be used at construction sites for office and laboratory use on the condition that they are placed a minimum of ten feet from any property line, are used for a project with a valid zoning permit and are removed before a certificate of occupancy is requested. No construction trailer may be placed in such a way that obstructs sight distance along the traveled way, at any intersection or driveway. Any construction trailer found to obstruct sight distance will be required to be relocated immediately."

    Please acknowledge that you understand these requirements. We understand and acknowledge it and have included in Acknowledgement section of narrative.

39. Please email me the application form (please add the mailing address for the owner), revised project narrative, revised plan set, Traffic Impact Study, Street Viewpoint Study, and your response to this memo.

40. Please submit the application fee ($2,475) and eight copies of:

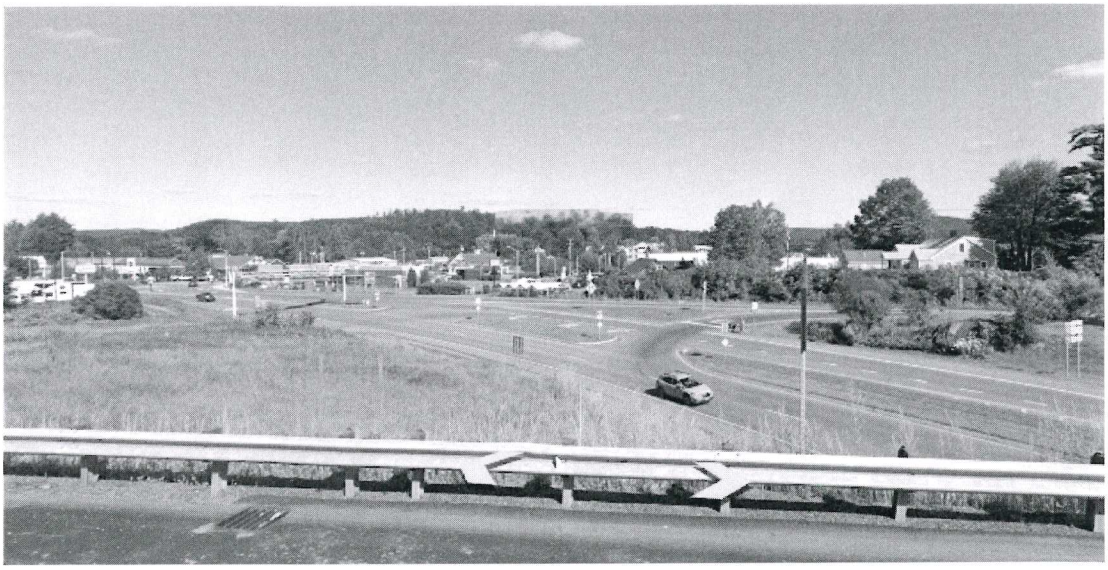
    - Application form
    - Revised project narrative
    - Revised plan set
    - Traffic Impact Study
    - Street Viewpoint Study
    - Response to this memo

STREET VIEWPOINT STUDY
Sykes Mountain Avenue – Hickory Ridge Drive
Hartford, Vermont

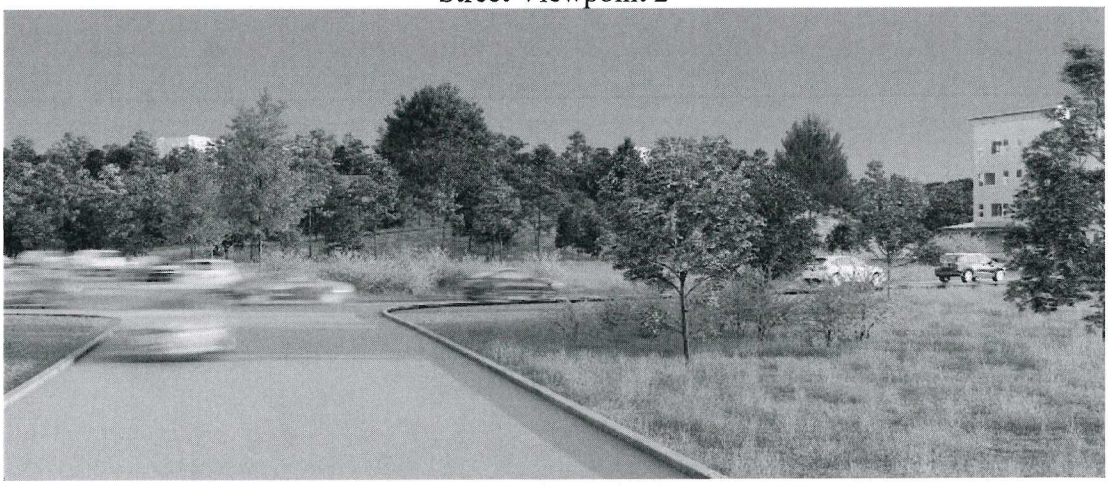


Street Viewpoint Location Map

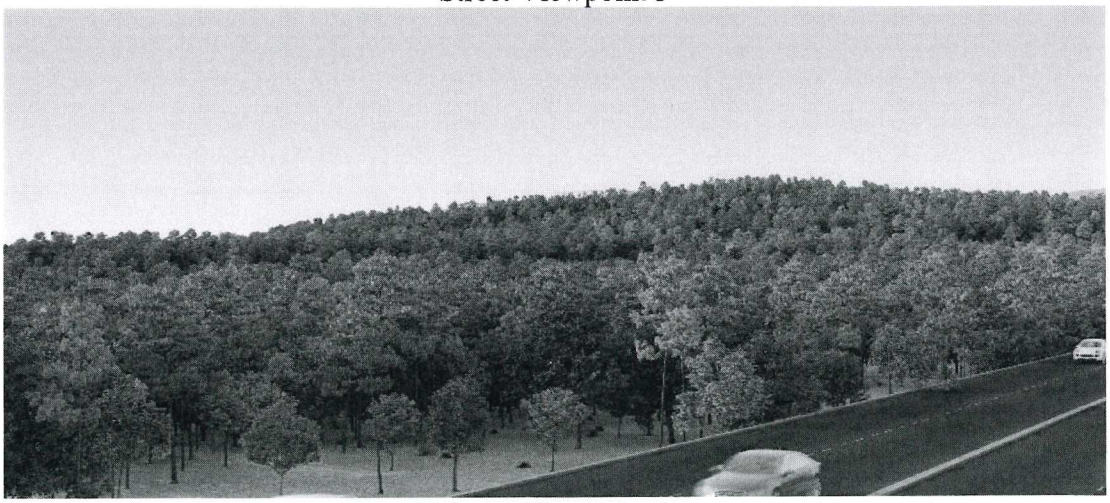

Street Viewpoint 1



Street Viewpoint 2



Street Viewpoint 3



Street Viewpoint 4

Memorandum

To: Irwin Perret-Gentil Acedo
GPA Management LLC
2458 Christian Street
White River Junction, VT 05001

Date: August 2, 2023

Project #: 58986.00

From: Evan Haugh, EIT
Joe Vanacore

Re: 444 Sykes Mountain Ave Traffic Impact Study

VHB completed a Traffic Impact Study for a proposed multifamily housing development at 444 Sykes Mountain Avenue in White River Junction, Vermont. This study includes a review of existing conditions, proposed development program, anticipated trip generation, and impacts to the adjacent roadway network.

Existing Conditions

The proposed development is located on a 24.6-acre parcel at 444 Sykes Mountain Avenue. A map of the project area is shown in **Figure 1**. The parcel is largely undeveloped, with one single-family home and driveway access to Sykes Mountain Avenue. Sykes Mountain Avenue is an east-west major collector across the southern portion of White River Junction. It has a two-lane cross section and the speed limit is 30 miles per hour. There are narrow (3 to 5 feet) paved shoulders and a sidewalk along the south side of the road.

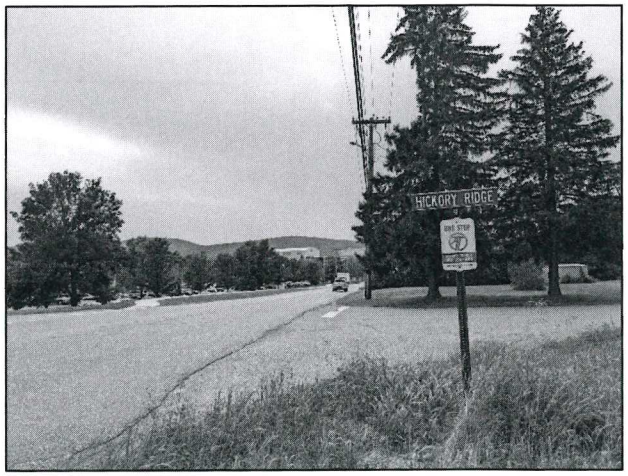
Figure 1 Area Map



There is also a bus stop at the corner with Hickory Ridge. During traffic counts, passengers were observed boarding and deboarding here throughout the day. The Hickory Ridge approach to this intersection is stop-controlled.



Hickory Ridge and Sykes Mountain Ave (facing south)

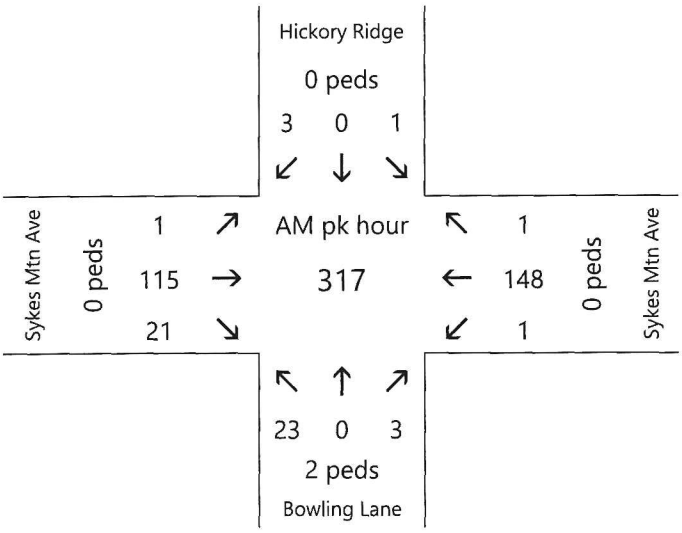


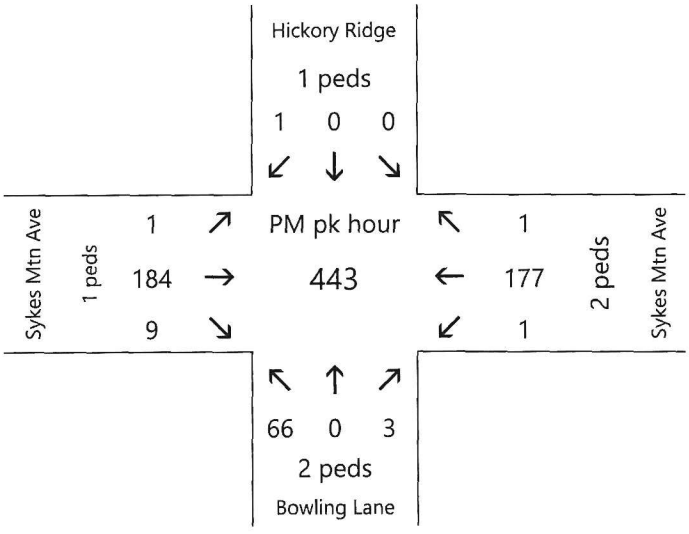
Bus Stop at Hickory Ridge

Traffic Volume & Speed

VHB counted traffic turning movements at the Sykes Mountain Avenue / Hickory Ridge intersection on Thursday, July 17th, 2023. The morning peak hour occurred from 7:00 – 8:00 AM, with 317 vehicles total entering the intersection. In the evening, the peak hour was 4:15 – 5:15 PM with 443 vehicles entering the intersection. Turning movement diagrams are shown in **Figure 3**.

Figure 2 Turning Movement Diagrams





Vehicle speeds were measured along Sykes Mountain Avenue 60 feet east of Hickory Ridge. The average speed was 32 mph in both directions. The 85th percentile speed was 39 mph for eastbound vehicles and 35 mph for westbound vehicles.

Sight Lines

Sight lines were measured to verify that there is adequate sight distance along Sykes Mountain Avenue to the proposed driveway location. Access to the site is proposed via a driveway connecting to Hickory Ridge.

Stopping sight distance is defined as the distance a vehicle would travel while reacting to and stopping for a hazard on the road ahead (such as another car turning). This distance increases with higher speeds and should be designed for the 85th percentile speed on the roadway (i.e., the speed 85% of drivers travel at or below). During traffic counting, the 85th percentile speed was measured at 37 mph. At 40 mph, the stopping sight distance is 305 feet.[1]

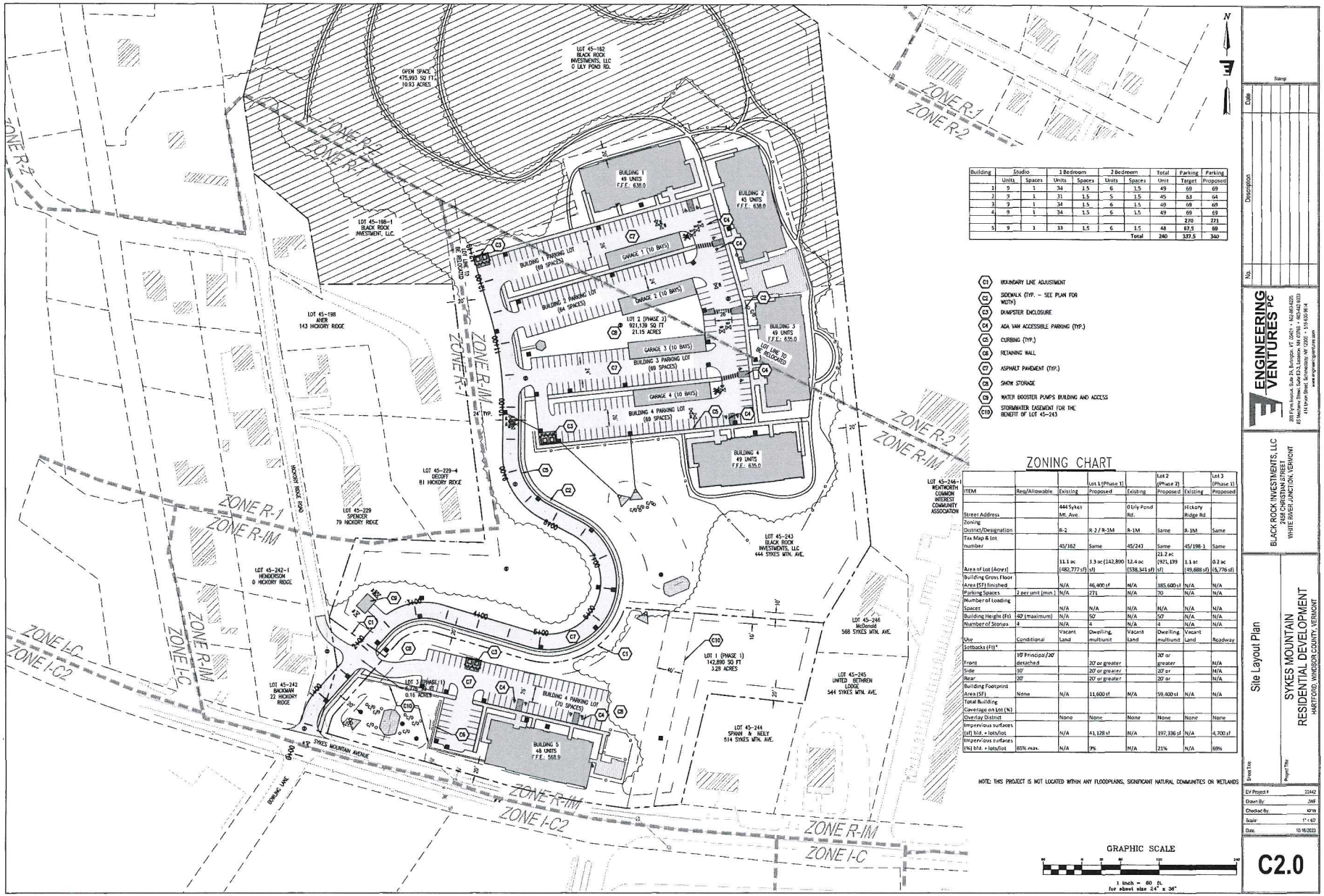
Sight distances along Sykes Mountain Avenue approaching Hickory Ridge from the east and west were measured as 545 feet and 395 feet, respectively. These exceed the stopping sight distance at 40 mph, so sight distances are adequate at this site.

Proposed Development

As shown on the site plan in **Figure 4**, the proposed development consists of five multifamily housing buildings, parking lots, garages, and landscaping. The total unit count is 240 apartments. The site will be accessed via a new driveway connecting to Hickory Ridge. The driveway will have a stop condition at Hickory Ridge. The driveway will be skewed to channel exiting traffic south on Hickory Ridge, discouraging right turn movements. The existing parcel driveway will be closed.

[1] Policy on Geometric Design of Highways and Streets, AASHTO, 2011

Figure 4 ***Proposed Site Plan***



Building	Studio		1 Bedroom		2 Bedroom		Total	Parking	Parking
	Units	Spaces	Units	Spaces	Units	Spaces	Unit	Target	Proposed
1	9	1	34	1.5	6	1.5	49	69	69
2	9	1	31	1.5	5	1.5	45	63	64
3	9	1	34	1.5	6	1.5	49	69	69
4	9	1	34	1.5	6	1.5	49	69	69
								270	271
5	9	1	33	1.5	6	1.5	48	67.5	69
						Total	240	337.5	340

C1 BOUNDARY LINE ADJUSTMENT
C2 SIDEWALK (TYP. – SEE PLAN FOR WIDTH)
C3 DUMPSTER ENCLOSURE
C4 ADA VAN ACCESSIBLE PARKING (TYP.)
C5 CURBING (TYP.)
C6 RETAINING WALL
C7 ASPHALT PAVEMENT (TYP.)
C8 SNOW STORAGE
C9 WATER BOOSTER PUMPS BUILDING AND ACCESS
C10 STORMWATER EASEMENT FOR THE BENEFIT OF LOT 45-243

ZONING CHART

ITEM	Req/Allowable	Existing	Lot 1 (Phase 1) Proposed	Existing	Lot 2 (Phase 2) Proposed	Existing	Lot 3 (Phase 1) Proposed
Street Address		444 Sykes Mt. Ave		0 Lily Pond Rd.		Hickory Ridge Rd.	
Zoning District/Designation		R-2	R-2 / R-1M	R-1M	Same	R-1M	Same
Tax Map & lot number		45/162	Same	45/243	Same	45/198-1	Same
Area of Lot (Acres)		11.1 ac (482,777 sf)	3.3 ac (142,890 sf)	12.4 ac (538,341 sf)	21.2 ac (921,139 sf)	1.1 ac (49,688 sf)	0.2 ac (6,776 sf)
Building Gross Floor Area (SF) finished		N/A	46,400 sf	N/A	185,600 sf	N/A	N/A
Parking Spaces	2 per unit (min.)	N/A	271	N/A	70	N/A	N/A
Number of Loading Spaces		N/A	N/A	N/A	N/A	N/A	N/A
Building Height (Ft)	40' (maximum)	N/A	50	N/A	50'	N/A	N/A
Number of Stories	4	N/A	4	N/A	4	N/A	N/A
Use	Conditional	Vacant Land	Dwelling, multiunit	Vacant land	Dwelling, multiunit	Vacant Land	Roadway
Setbacks (Ft)*							
Front	10' Principal/20' detached		20' or greater		20' or greater		N/A
Side	10'		20' or greater/		20' or		N/A
Rear	20'		20' or greater		20' or		N/A
Building Footprint Area (SF)	None	N/A	11,600 sf	N/A	59,400 sf	N/A	N/A
Total Building Coverage on Lot (%)							
Overlay District		None	None	None	None	None	None
Impervious surfaces (sf) bld. + lots/lot		N/A	41,128 sf	N/A	197,336 sf	N/A	4,700 sf
Impervious surfaces (%) bld. + lots/lot	65% max.	N/A	9%	N/A	21%	N/A	69%

NOTE: THIS PROJECT IS NOT LOCATED WITHIN ANY FLOODPLAINS, SIGNIFICANT NATURAL COMMUNITIES OR WETLANDS

GRAPHIC SCALE
1 inch = 60 ft.
for sheet size 24" x 36"

ENGINEERING VENTURES PC
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BLACK ROCK INVESTMENTS, LLC
210 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Site Layout Plan

SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	JMF
Checked By:	KFW
Scale:	1" = 60'
Date:	10/16/2023

C2.0

Trip Generation

Trip generation estimates for the proposed residential units were calculated based on rates published in the Trip Generation Manual (Institute of Transportation Engineers (ITE), 11th Edition) for the weekday AM and PM peak hours. Estimates used ITE land use code 221 (Multifamily Housing, Mid-Rise), as appropriate for a four-story residential building.

The proposed development is expected to generate 94 trips during the weekday AM peak hour and during the weekday PM peak hour. **Table 1** summarizes the trip generation estimate. Although significant use of the bus service was observed and can similarly be anticipated for new development in the area, the trip generation developed for this study was assumed to be conservative and did not account for this potential mode split.

Table 1 Trip Generation Summary

	Site Generated Trips
Peak Period	240 Units Multi-Family Housing
AM Peak Hour	
Enter	22
Exit	72
Total	94
PM Peak Hour	
Enter	57
Exit	37
Total	94

Background Development

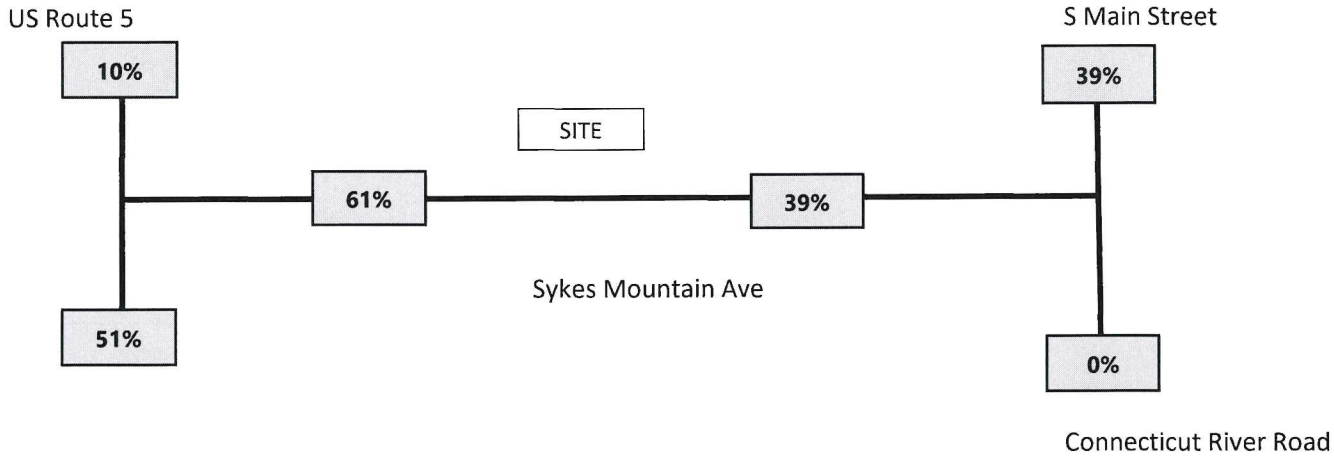
To improve estimates of future traffic volumes, background development was added. These included other permitted developments anticipated to open between now and the project's opening year. Trip generation for background development was added to the base traffic volumes counted for this study.

A list of other permits in the site area was requested from the Town of Hartford. One relevant project was identified – the reopening of the former Gateway Ford dealership at 190 Sykes Mountain Avenue as Key Chrysler/Dodge/Jeep/Ram. ITE land use code 840 (Automobile Sales, New) was used to estimate peak hour trips. The new dealership was anticipated to generate 60 AM peak hour trips (44 entering/16 exiting) and 79 PM peak hour trips (32 entering/47 exiting). These trips were distributed directionally using the methodology discussed in the next section. The dealership will add 23 AM peak hour trips and 31 PM peak hour trips to the intersection of Sykes Mountain Avenue and Hickory Ridge, which were accounted for in the base future traffic volumes.

Trip Distribution

Trips were distributed using US Census Journey to Work data for the Town of Hartford. This measures the location of Hartford residents' workplaces at the town level. Weekday AM and PM peak hour trips were assigned to towns within the region at rates given in the Journey to Work data. These trips were then routed to/from the site along the most practical path. This analysis found that 61% of trips will arrive from or depart to the west on Sykes Mountain Avenue and the remainder to/from the east. The VTrans Traffic Impact Study guidelines require the study area to include all intersections serving more than 75 peak hour trips. Only Sykes Mountain Avenue and Hickory Ridge meet this threshold. This intersection was analyzed with and without site-generated trips to evaluate impact on the adjacent network.

Figure 3 Trip Distribution



Traffic Capacity Analysis

An intersection capacity analysis was performed for Sykes Mountain Avenue and Hickory Ridge. Levels of service (LOS) were calculated based on the criteria published in the *Highway Capacity Manual 6th Edition*.[2] Levels of service range from A to F with LOS A representing generally free flowing operating conditions and LOS F representing generally congested conditions.

Traffic Adjustments

Base traffic volumes were collected on Thursday, July 13, 2023. Traffic analysis was based on the Design Hour Volume (DHV) for 2028. DHV is defined as the 30th-highest traffic hour of the year. To reach this number, two adjustments were applied – a seasonal adjustment and future year growth factor.

[2] Highway Capacity Manual, Federal Highway Administration, Transportation Research Board

Seasonal adjustments were based on VTrans' continuous traffic counter on Maple Street at the Connecticut River Bridge, 1.5 miles away from the site. Data from this counter for 2022 shows that the peak hour on the 27th, 28th, and 29th Thursdays of the year are on average 95% of the DHV value. Using this factor, traffic counts measured on Sykes Mountain Avenue were scaled up to 100% of DHV.

For this analysis, an opening year of 2028 was assumed. The VTrans Red Book lists a growth factor of 1.021 from 2023 to 2028. This factor was also applied to the base volumes used for the intersection analysis.

Sykes Mountain Avenue and Hickory Ridge

Table 2 summarizes traffic operations at the unsignalized intersection of Sykes Mountain Avenue and Hickory Ridge during the 2028 weekday AM and PM peak hours under No Build and Build conditions. Sykes Mountain Avenue consistently operates at a LOS A with no meaningful queuing. Turning vehicles readily find gaps, and do not create delay for other motorists. Under the Build conditions, Bowling Lane sees delay grow slightly (by less than three seconds) due to increased opposing traffic. In short, the intersection operates far below capacity today and will operate similarly with these new trips.

Table 2 Unsignalized Intersection Capacity Analysis

Approach	2028 AM No Build				2028 AM Build			
	v/c	Delay*	LOS**	Q95***	v/c	Delay*	LOS**	Q95***
Hickory Ridge at Sykes Mountain Ave								
Hickory Ridge, SB	0.01	9.9	A	0	0.12	10.8	B	10
Bowling Lane, NB	0.05	11.1	B	5	0.06	12.0	B	5
Sykes Mountain Ave, EB	0.01	0.1	A	0	0.01	0.7	A	0
Sykes Mountain Ave, WB	0.01	0.1	A	0	0.01	0.1	A	0
Overall Intersection		1.1	A			2.9	A	

Approach	2028 PM No Build				2028 PM Build			
	v/c	Delay*	LOS**	Q95***	v/c	Delay*	LOS**	Q95***
Hickory Ridge at Sykes Mountain Ave								
Hickory Ridge, SB	0.01	9.4	A	0	0.07	11.3	B	5
Bowling Lane, NB	0.16	13.4	B	15	0.20	15.7	C	18
Sykes Mountain Ave, EB	0.01	0.1	A	0	0.03	1.1	A	3
Sykes Mountain Ave, WB	0.01	0.1	A	0	0.01	0.1	A	0
Overall Intersection		2.1	A			3.2	A	

** Delay expressed in seconds per vehicle*
*** Level of Service*
**** 95th percentile queue length expressed in feet*

Hickory Ridge Impacts

A particular concern is managing traffic effects on Hickory Ridge. As shown earlier in the site plan, the driveway will have a sharp skew that channels exiting vehicles south, discouraging right turns and neighborhood cut-through traffic. Hickory Ridge will remain free flowing, not subject to a stop or yield condition at the driveway.

As discussed in the previous section, the intersection operates substantially under capacity and neighbors will experience minimal additional delay accessing or exiting Hickory Ridge due to the development. Queues are not expected to form along Hickory Ridge, indicating driveways will not be blocked.

Act 145

Act 145 (10 VSA Sections 6101-6111) enables VTrans to establish and assess transportation impact fees under specific circumstances. VTrans has created an online map[3] to identify the transportation projects in the state for which Act 145 transportation impact fees have been established to date. There are two Act 145 projects in Hartford that would absorb trips from this proposed development. These projects are STP 0113(59)S, which is a roundabout at US-5 and Sykes Ave, and NH 020-2(44), a roundabout at US-4 and US-5. The Sykes Mountain Residential project will be subject to Act 145 fees at these respective locations.

Per the distribution shown in **Figure 3**, it is anticipated that 61% of trips will travel through the US-5 and Sykes Avenue roundabout while 10% will travel through the US-4 and US-5 intersection. This corresponds to 58 and 10 PM peak hour trips, respectively, subject to Act 145 fees.

Conclusions

The proposed development consists of a 240-unit multifamily housing project at 444 Sykes Mountain Avenue. VHB reviewed the adjacent roadway network, finding adequate sight lines and pedestrian facilities. The bus stop at Hickory

[3] Act 145 Projects and Fees (arcgis.com)

Ridge was noted to be in regular use. Although passengers must wait in the traveled way (on Hickory Ridge) or on a narrow shoulder, volumes are so low on Hickory Ridge that this does not present a safety concern.

This development would generate 94 vehicle trips in the weekday AM and weekday PM peak hours, respectively. An evaluation of intersection operations at Sykes Mountain Avenue and Hickory Ridge found minimal change with the development added, with less than three seconds of additional delay and queues no longer than one vehicle forming. The overall intersection level of service remains an A.

In conclusion, based on the results of this Traffic Impact Study, the proposed residential development is not anticipated to generate unreasonable congestion or unsafe conditions on the adjacent roadway network.

Appendix

A: Intersection Capacity Analysis

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	130	23	2	177	2	25	0	4	2	0	4
Future Vol, veh/h	2	130	23	2	177	2	25	0	4	2	0	4
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	2	2	2	0	0	0	0	0	0
Mvmt Flow	2	141	25	2	192	2	27	0	4	2	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	194	0	0	166	0	0	357	356	154	357	367	193
Stage 1	-	-	-	-	-	-	158	158	-	197	197	-
Stage 2	-	-	-	-	-	-	199	198	-	160	170	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1355	-	-	1412	-	-	602	573	897	602	565	854
Stage 1	-	-	-	-	-	-	849	771	-	809	742	-
Stage 2	-	-	-	-	-	-	807	741	-	847	762	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1355	-	-	1412	-	-	597	571	897	597	563	854
Mov Cap-2 Maneuver	-	-	-	-	-	-	597	571	-	597	563	-
Stage 1	-	-	-	-	-	-	847	769	-	807	741	-
Stage 2	-	-	-	-	-	-	801	740	-	841	760	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	11.1	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	626	1355	-	-	1412	-	-	747
HCM Lane V/C Ratio	0.05	0.002	-	-	0.002	-	-	0.009
HCM Control Delay (s)	11.1	7.7	0	-	7.6	0	-	9.9
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	130	23	2	177	11	25	0	4	30	0	48
Future Vol, veh/h	15	130	23	2	177	11	25	0	4	30	0	48
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	2	2	2	0	0	0	0	0	0
Mvmt Flow	16	141	25	2	192	12	27	0	4	33	0	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	204	0	0	166	0	0	414	394	154	390	400	198
Stage 1	-	-	-	-	-	-	186	186	-	202	202	-
Stage 2	-	-	-	-	-	-	228	208	-	188	198	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1344	-	-	1412	-	-	552	546	897	573	541	848
Stage 1	-	-	-	-	-	-	820	750	-	805	738	-
Stage 2	-	-	-	-	-	-	779	734	-	818	741	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1344	-	-	1412	-	-	512	538	897	564	533	848
Mov Cap-2 Maneuver	-	-	-	-	-	-	512	538	-	564	533	-
Stage 1	-	-	-	-	-	-	809	740	-	795	737	-
Stage 2	-	-	-	-	-	-	730	733	-	803	731	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	12	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	544	1344	-	-	1412	-	-	710
HCM Lane V/C Ratio	0.058	0.012	-	-	0.002	-	-	0.119
HCM Control Delay (s)	12	7.7	0	-	7.6	0	-	10.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	216	10	2	204	2	71	0	4	0	0	2
Future Vol, veh/h	2	216	10	2	204	2	71	0	4	0	0	2
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	2	2	0	0	0	0	0	0
Mvmt Flow	2	235	11	2	222	2	77	0	4	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	224	0	0	246	0	0	473	473	241	474	477	223
Stage 1	-	-	-	-	-	-	245	245	-	227	227	-
Stage 2	-	-	-	-	-	-	228	228	-	247	250	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1357	-	-	1320	-	-	505	493	803	504	490	822
Stage 1	-	-	-	-	-	-	763	707	-	780	720	-
Stage 2	-	-	-	-	-	-	779	719	-	761	704	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1357	-	-	1320	-	-	502	491	803	500	488	822
Mov Cap-2 Maneuver	-	-	-	-	-	-	502	491	-	500	488	-
Stage 1	-	-	-	-	-	-	761	706	-	778	719	-
Stage 2	-	-	-	-	-	-	775	718	-	755	703	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	13.4	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	512	1357	-	-	1320	-	-	822
HCM Lane V/C Ratio	0.159	0.002	-	-	0.002	-	-	0.003
HCM Control Delay (s)	13.4	7.7	0	-	7.7	0	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0

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	37	216	10	2	204	24	71	0	4	14	0	25
Future Vol, veh/h	37	216	10	2	204	24	71	0	4	14	0	25
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	2	2	0	0	2	0	0	0
Mvmt Flow	40	235	11	2	222	26	77	0	4	15	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	248	0	0	246	0	0	574	573	241	562	565	235
Stage 1	-	-	-	-	-	-	321	321	-	239	239	-
Stage 2	-	-	-	-	-	-	253	252	-	323	326	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1330	-	-	1320	-	-	433	432	798	441	437	809
Stage 1	-	-	-	-	-	-	695	655	-	769	711	-
Stage 2	-	-	-	-	-	-	756	702	-	693	652	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1330	-	-	1320	-	-	407	416	798	426	421	809
Mov Cap-2 Maneuver	-	-	-	-	-	-	407	416	-	426	421	-
Stage 1	-	-	-	-	-	-	671	632	-	742	710	-
Stage 2	-	-	-	-	-	-	729	701	-	665	629	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.1	15.7	11.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	418	1330	-	-	1320	-	-	612
HCM Lane V/C Ratio	0.195	0.03	-	-	0.002	-	-	0.069
HCM Control Delay (s)	15.7	7.8	0	-	7.7	0	-	11.3
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	0.2

Black Rock Investments, LLC

Application #23-24

DRAFT
FINDINGS OF FACT
CONCLUSIONS OF LAW
AND DECISION

HARTFORD PLANNING COMMISSION

Application #23-24 by Black Rock Investment LLC
for Preliminary Approval of a Planned Development
for 192 dwelling units in four Multi-Unit Buildings
proposed lot 45-0162-000, Sykes Mountain Avenue and Hickory Ridge
White River Junction, in R-2 and R1-M zoning districts

This decision pertains to application #23-24 by Black Rock Investment LLC (owner/applicant) for Preliminary Approval of a Planned Development under the Subdivision Regulations and section 260-47 of the Hartford Zoning Regulations for 192 dwelling units in four Multi-Unit Buildings, proposed lot 45-0162-000, Sykes Mountain Avenue and Hickory Ridge, White River Junction, in R-2 and R1-M zoning districts.

FINDINGS OF FACT

Based upon the information contained in the exhibits for this application (see attached list) and the evidence adduced at the Planning Commission meeting of DATE the Hartford Planning Commission makes the following Findings of Fact:

General Information

1. The owner of record of lot 45-0162-000 is Black Rock Investments, LLC, who acquired the lot on 08-10-2017. The deed is recorded in volume 539, page 568 of the Hartford Land Records.

2. The lot is undeveloped.

3. The lot is located on the corner of Sykes Mountain Avenue and Hickory Ridge.

4. The lot s class one (1), municipal water and wastewater.

This Application

5. The applicant seeks approval of a Planned Development in order to construct 192 dwelling units in four multi-unit buildings.

   The applicant proposes to construct the project in two phases. (See exhibit #6)

6. A Planned Development requires Preliminary and Final approval by the Planning Commission.

   The applicant understands they must submit a separate application for Final Approval.

   The applicant understands that the Subdivision Regulations state that approval of a preliminary plat shall remain in effect for a period of one (1) year from the date of approval. The Commission Chair or Vice Chair may grant a one-time one (1) year extension.

7. The application relies on a Subdivision/Lot Line Adjustment with abutting lot 45-0243-000. Application #23-22 for Preliminary approval has been submitted to the Planning Commission.

8. Section 260-47 and 260-47 A (1) and (2) of the Zoning Regulations, requires a Survey, Site (Layout) Plan, and Master Plan to be submitted for a Planned Development.

   - The Survey is pending and will be submitted with the application for Final Approval.
   - Site Plan (See exhibit #2)
   - Master Plan (See exhibit #7)

   The applicant understands that once Final Approval is granted, these documents are the official documents for the Planned Development, and any changes to these documents require approval.

9. The objective of the R1-M zoning district as stated in the Zoning Regulations is "To provide an area of mixed residential-commercial uses in or near village centers where commercial facilities generate little traffic and are compatible with a village residential environment."

   The objective of the R-2 zoning district as stated in the Zoning Regulations is "To encourage moderately dense and predominantly residential development in established neighborhoods having good access to highways, public transit and public water and sewer services."

   According to the applicant, the objective of the Planned Development is "To provide a dense, amenity-driven residential multi-family project comprised of four buildings which will include one-hundred and ninety-two (192) units. The Project will be named Green Heights (subject to change) with its new access road to be named Green Heights Lane (subject to approval). It's planned to be built in separate phases and designed to foster a strong sense of community and encourage an active lifestyle."

10. Section 260-47 B of the Zoning Regulations states that the purpose (conditions) of a Planned Development shall be to encourage a development which will result in:

(1) A choice in the types of environment and living units (where applicable) available to the public, and quality in land uses so that development will be a permanent and long-term asset to the Town.

(2) Open space and recreation areas if dwelling units are a part of the development.

Section 260-59 of the Zoning Regulations defines Open Space as:

> Those areas within a lot or parcel of land that are not paved, roofed, or occupied by structures and are equally accessible to all users of the property or development. Examples of outdoor areas that will not be considered open space are private yards, streets and drives, parking lots, tennis courts, swimming pools, and paved pedestrian malls. Meadowlands, woodlands and other natural areas, playgrounds, courtyards, golf courses, and recreation fields will be considered open space.

(3) A pattern of development which preserves trees, outstanding natural topography and geologic features and prevents soil erosion.

(4) An efficient use of land resulting in small networks of utilities and streets.

(5) An environment in harmony with surrounding development.

(6) A more desirable environment than would be possible through the strict application of other sections of these regulations.

According to the applicant, the Purpose of the proposed Planned Development meets items 1-6 as follows:

Purpose of Planned Development

"Similar to Northern Stage Theater and Briggs Opera House, the Project will be one of Hartford's flagship developments. It will enhance White River Junction's push to modernize by adding much-needed new residential infrastructure with contemporary amenities. Its concept will attract an eclectic and diverse mix of tenants that will help to create stability and economic prosperity for the community.

The Project is designed to elevate the concept of neighborhood living in White River Junction. It is thoughtfully crafted to create a harmonious blend of nature and community, empowering its residents to embrace an enriched lifestyle. With a strong emphasis on outdoor amenities and fostering connections, the Project promises to be a transformative addition to the neighborhood, setting new standards for sustainable and vibrant living.

The Project will contribute to the town's economic development by providing housing for employees that historically have had to move away from the region due to lack of housing. It will also result in an increase in revenues for Hartford in the form of

property taxes and help to promote the use of energy-efficient features for Hartford residents when compared to older multifamily projects.

Even though the proposal is innovative, the Project's main appeal is its natural beauty which the Applicant will plan to help to preserve and enhance. The Project will attract nature lovers and outdoor enthusiasts by including a mix of man-made amenities and natural amenities integrated through a robust landscaping plan. The sloped terrain of the plot is ideal for hiking trails, park-like landscaping and pet- friendly outdoor spaces that will help to showcase and seize the Upper Valley's unmatched natural beauty."

11. Density

Section 260-47 C of the Zoning Regulations states:

> Density may vary within the development. The Planning Commission may permit an additional number of dwelling units in an area designated for residential use so long as the total number of such dwelling units shall not exceed one hundred twenty-five (125) percent of the permitted number of units based on a calculation in conformance with strict application of the zone district standards for area per family contained in the table of Article II for the district in which the land is situated. This density bonus shall never be automatic, but shall be based on a review by the Planning Commission that concludes that the developer's plan includes design, innovative features, or facilities that satisfy the purposes listed in subsection B above.

The applicant has requested that the Planning Commission approve a 14.3% density bonus.

Zone	Density Calc.	Land	Possible # of Units
R1-M	1 unit/4,000 sq. ft.	313,497 sq. ft.	78 (313,497/4,000= 78.37)
R-2	1 unit/6,000 sq. ft.	538,341 sq. ft.	90 (538,341/6,000=89.72)
	Total		168 Units

14.3% bonus
168 x .143 = 24
168+ 24 = 192

According to the applicant, they are "requesting a density bonus needed for the financial viability of the project, which will also benefit Hartford and the Upper Valley: increasing the number of housing units into the pipeline will result in new affordable options in the region, due to market dynamics. This density bonus is consonant with the purposes of the Zoning Regulations as described previously (Purpose of Planned Development)."

12. The Zoning Regulations limit the height of buildings with a flat roof in the R1-M and R-2 zoning districts to 40' measured from the proposed finished grade at the front of the building to the highest point of the roof.

The applicant is seeking approval to increase the height of the buildings in the Planned Development to a maximum of 50'.

According to the applicant, "these heights are required for a four story building with appropriate ceiling heights, structure and mechanical equipment. The four story building support the unit density proposed with a smaller footprint than a three story building which would have a larger footprint on the site."

13. Section 260-47 D of the Zoning Regulations states "The predominant use or impact of the land use shall not differ substantially from the uses permitted in the district in which the plan is located. In a Planned Development, dwelling units may be multifamily. In a Planned Development in a residential district, commercial educational and public facilities may be allowed which are designed to serve the development and the area around the development."

A multi-unit dwelling is a Permitted Use in the R1-M zoning district and a Conditional Use in the R-2 zoning district. A multi-unit dwelling is a Conditional Use in the applicant's proposed Master Plan.

14. Section 260-47 F (2) of the Zoning Regulations states:

> At least 50% of the (*planned*) development shall be in open space for public and/or common usage. The regulations for control and maintenance of this open space shall be approved by the Planning Commission. This may be waived by the Planning Commission for commercial and industrial planned developments, providing adequate screening and landscaping are provided.

According to the applicant:

> "50.3% of the development for each lot will remain as open space, as defined by Hartford Zoning Regulations for public and or common use."

15. Access to the project will be via a new access road over lot 45-0243-000.

16. This Decision does not authorize any construction.

The applicant has applied for Site Development Plan Approval from the Planning Commission (application #23-25) and Conditional Use Approval (application #13-23) from the Zoning Board of Adjustment for construction.

17. The project will be connected to municipal water and sewer. Details will be outlined in applications for development.

18. The applicant understands that a Mylar and the Master Plan must be properly endorsed and recorded within 180 days of *Final* approval, or the decision will be void. The applicant will submit a zoning permit (finalizing the decision) at the time the Mylar and

Master Plan are submitted. Issuance of the zoning permit is to finalize the approval of the Planned Development and will not authorize any construction.

CONCLUSIONS OF LAW

Based upon the foregoing Findings of Fact, the Hartford Planning Commission concludes that the proposed **Preliminary** Planned Development meets the requirements of the Town of Hartford Subdivision Regulations including:

Section 200-2 Hartford Subdivision Regulations:

A. To guide future development in accordance with the Hartford Master Plan (the Plan), Zoning Regulations, Flood Hazard Area Regulations, Capital Budget and Program, and all other Town adopted bylaws, ordinances, regulations, plans, policies, and procedures.

B. To promote a desirable relationship to the landform, its topography and geology, natural drainage and surface water runoff, surface water, and groundwater.

C. To conserve natural resources and fragile features such as prime agricultural soils, wetlands, streams, ponds, steep slopes, ridgelines, important wildlife habitat and connectivity, and scenic views.

D. To minimize the fragmentation of productive resource lands, including farm and forest land, and to promote their continued use and availability for agriculture, forestry, and wildlife.

E. To maintain Hartford's historic settlement pattern, defined by compact villages surrounded by rural countryside.

F. To encourage variety, innovation, flexibility, and greater efficiency in residential development including clustering of lots, in accordance with the provisions of 24 V.S.A. §4417 (Planned Unit Development).

G. To establish standards of subdivision design including, but not limited to provisions for pedestrian and vehicular traffic, surface water runoff, surface water, and suitable building sites for the land use contemplated.

H. To ensure development does not exceed the ability of the Town to provide public services and facilities, and that these facilities and services are available and will have sufficient capacity to serve any proposed subdivision. Such facilities and services include, but are not limited to: parks, recreation areas, schools, police and fire protection, libraries, water and wastewater facilities, roads, and public parking.

I. To provide adequate utilities such as water, wastewater, electricity, telephone, and broadband.

J. To provide the most efficient relationship between land use and the circulation of traffic throughout the Town, encourage access management, and avoid undue traffic congestion and overburdening of roads, highways, and intersections.

K. To promote the conservation of energy and use of renewable energy resources.

L. To encourage variety in the type, size, and cost of housing to meet the needs of Hartford's diverse population.

AND Complies with **section 260-47** of the Hartford Zoning Regulations.

DECISION

The Hartford Planning Commission, based upon the forgoing Findings of Fact and Conclusions of Law, hereby approves application #23-24 by Black Rock Investment LLC (owner/applicant) for Preliminary Approval of a Planned Development under the Subdivision Regulations and section 260-47 of the Hartford Zoning Regulations for 192 dwelling units in four Multi-Unit Buildings, proposed lot 45-0162-000, Sykes Mountain Avenue and Hickory Ridge, White River Junction, in R-2 and R1-M zoning districts **on the condition that**

1. **Before an application for Final Approval is submitted:**

    - **The applicant schedules a meeting with the Zoning Administrator to review application requirements.**
    - **The applicant addresses the conditions of Preliminary Approval of subdivision application #23-22.**
    - **The applicant works with the Zoning Administrator on the format of the proposed Master Plan.**
    - **The applicant works with the Zoning Administrator on the proposed Phasing Plan.**
    - **The applicant submits a request for a road name.**

2. **The application for Final Approval includes:**

    - **A Survey prepared by a Vermont licensed surveyor meeting Hartford's Subdivision Regulations.**
    - **The Cover Sheet on the plan set is amended to indicate the correct address (Lily Pond Rd. is removed) and purpose of the plans "Planned Development" is referenced.**
    - **Changes to the application materials necessary to address the conditions of application #23-22.**
    - **Elevation drawings.**
    - **A revised Master Plan.**
    - **A revised Phasing Plan.**
    - **A separate response to each item in section 260-47 B 1-6.**

3. **Before a Zoning Permit is issued to Finalize Final Approval:**

    - **The applicant submits a letter from their surveyor verifying that the monuments have been according to the locations identified on the approved survey plat.**
    - **A Zoning Permit is obtained for subdivision application #23-22.**
    - **The applicant makes arrangements with the Zoning Administrator to record the Master Plan in the Land Records.**

This decision is also subject to the condition that no modification or expansion shall be made to the project as described and limited in the above Findings of Fact and Conclusions of Law without the written approval of the Hartford Zoning Board of Adjustment and/or the Hartford Planning Commission. This decision may be revoked, and a new application or permit required if conditions and findings are violated or modified without written approval.

The applicant is responsible for insuring compliance with all applicable State and Federal regulations pertaining to this application.

Those in favor:

Those in opposition:

Those not participating:

Dated at Hartford, Vermont this ____ day of November 2023.

HARTFORD PLANNING COMMISSION

By:_____
Chairperson/Vice-Chairperson

Appeal Rights: An interested person who has participated in the proceeding related to this decision has the right to appeal this decision to the Vermont Environmental Court, pursuant to 24 V.S.A. s. 4471 and V.R.E.C.P.5, in writing, within 30 days of the date of this decision. If you fail to appeal this decision, your right to challenge this decision at some future time may be lost because you waited too long. You will be bound by this decision, pursuant to 24 V.S.A. s. 4472 (d) (exclusivity of remedy; finality).

EXHIBIT LIST

1. Application #23-24

2. Plan Set received October 30, 2023 including:

    - C0.0 Cover Sheet

- C1.2 Phasing Plan
- C2.0 Site Layout Plan
- C2.1 Grading, Drainage, and Utilities Plan
- L1.2 Site Landscape Plan
- L1.3 Site Landscape Plan

3. Letter from Kevin Worden dated October 27, 2023

4. Memo to Jo-Ann Ells from Black Rock Investments. LLC dated October 27, 2023

5. Document entitled "Planned Development Narrative" received October 30, 2023

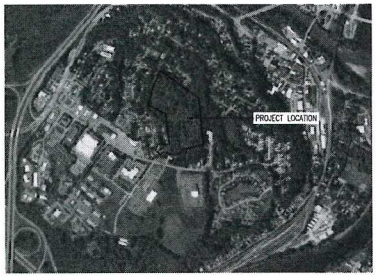
6. Document entitled "Planned Development Phasing Plan" received October 30, 2023

7. Document entitled "Planned Development Master Plan" received October 30, 2023

8. Document entitled "Exhibit A" (R1-M & R-2 zoning district Uses" received October 30, 2023

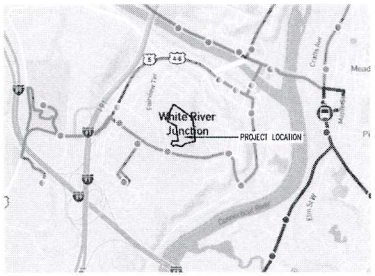
LOT 45-162 - 0 LILY POND RD. MULTIFAMILY HOUSING

TOWN OF HARTFORD, WINDSOR COUNTY, VERMONT



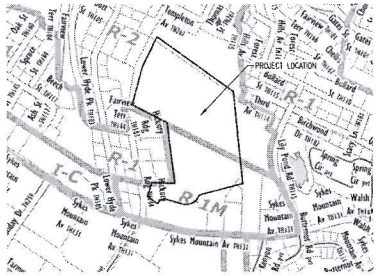
ORTHO MAP
1" = 1,000'

GRAPHIC SCALE
1 inch = 1,000 ft.
for sheet size 24" x 36"



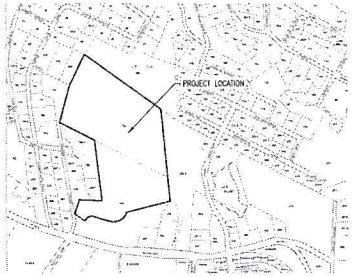
BUS MAP
1" = 2,000'

GRAPHIC SCALE
1 inch = 2,000 ft.
for sheet size 24" x 36"



ZONING MAP
1" = 500'

GRAPHIC SCALE
1 inch = 500 ft.
for sheet size 24" x 36"



TAX MAP
1" = 500'

GRAPHIC SCALE
1 inch = 500 ft.
for sheet size 24" x 36"

N

TABLE OF CONTENTS

SHEET	TITLE	CONSULTANT
C0.0	COVER SHEET	ENGINEERING VENTURES
C1.2	PHASING PLAN	ENGINEERING VENTURES
C2.0	SITE LAYOUT PLAN	ENGINEERING VENTURES
C2.1	GRADING, DRAINAGE AND UTILITY PLAN	ENGINEERING VENTURES
L1.2	SITE LANDSCAPE PLAN	PARK ARCHITECTURE
L1.3	SITE LANDSCAPE PLAN	PARK ARCHITECTURE

SUBJECT PROPERTY

LOT 45-162 0 LILY POND ROAD
WHITE RIVER JUNCTION, VT 05001

OWNER/APPLICANT

OWNER:
Black Rock Investments, LLC
earle@simpsoncompanies.com
2458 Christian St.
White River Junction, VT 05001

APPLICANT:
GPA Management, LLC
irwinperret@perret.net
505 Fairbanks Turn
Quechee, VT 05059

CONSULTANTS

CIVIL ENGINEER
ENGINEERING VENTURES, PC
85 MECHANIC STREET, STE. E2-3
LEBANON, NH 03766
(603) 442-9333

LANDSCAPE ARCHITECT
PARK ARCHITECTURE
3 SCHOOL LANE
HANOVER, NH 03755
603-643-3400

ARCHITECT
MARKET SQUARE ARCHITECTS
104 CONGRESS ST., STE. 205
PORTSMOUTH, NH 03801
603-501-0202

No.	Description	Date

Stamp

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A, Burlington, VT 05401 • 603-883-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 • 603-442-9333
414 Union Street, Schenectady, NY 12305 • 518-930-9614
www.engineeringventures.com

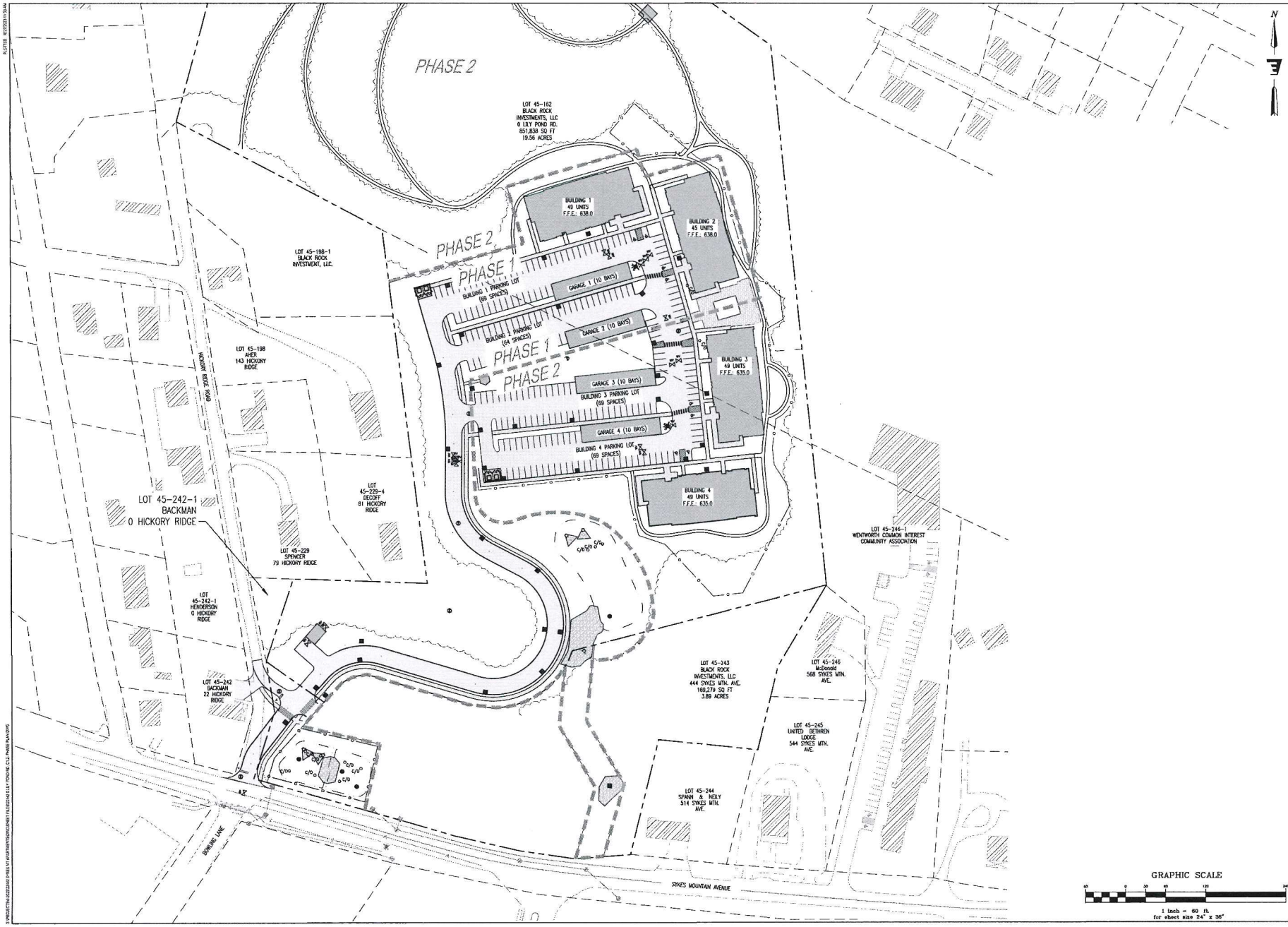
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Cover Sheet Lot 45-162

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KPW
Scale:	As Noted
Date:	10/30/2023

C0.0



No.	Description	Date

Stamp

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A, Burlington, VT 05401 • 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 • 603-442-8333
411 Union Street, Schenectady, NY 12305 • 518-630-9814
www.engineeringventures.com

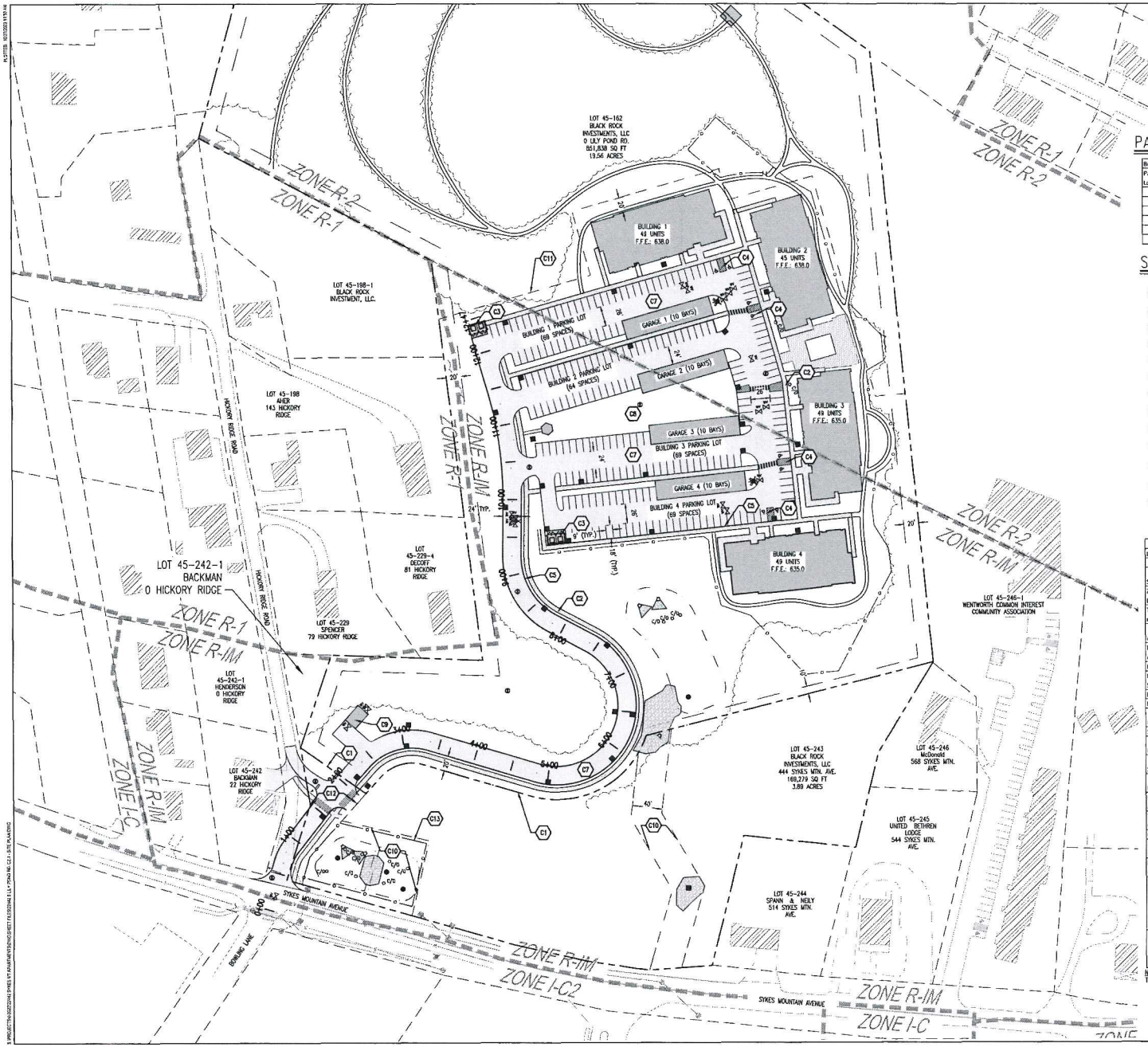
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Phasing Plan
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	Z244G
Drawn By:	JWF
Checked By:	KPW
Scale:	1" = 60'
Date:	10/30/2023

C1.2



PARKING SUMMARY

Building Parking Lot	Studio		1 Bedroom		2 Bedroom		Total	Parking	Parking
	Units	Spaces	Units	Spaces	Units	Spaces	Unit	Target	Proposed
1	9	1	34	1.5	6	1.5	49	69	69
2	9	1	31	1.5	5	1.5	45	63	64
3	9	1	34	1.5	6	1.5	49	69	69
4	9	1	34	1.5	6	1.5	49	69	69
								270	271
							Total	192	270	271

SITE NOTES

C1 BOUNDARY LINE ADJUSTMENT

C2 SIDEWALK (TYP. – SEE PLAN FOR WIDTH)

C3 24' BY 12' DUMPSTER ENCLOSURE

C4 ADA VAN ACCESSIBLE PARKING (TYP.)

C5 CURBING (TYP.)

C6 RETAINING WALL

C7 ASPHALT PAVEMENT (TYP.)

C8 SNOW STORAGE

C9 WATER BOOSTER PUMPS BUILDING AND ACCESS

C10 STORMWATER EASEMENT FOR THE BENEFIT OF LOT 45-162

C11 EXTENTS OF OPEN SPACE

C12 PUBLIC ACCESS AND UTILITY EASEMENT

C13 FENCE

ZONING CHART

ITEM	Req/Allowable	Lot 45-162 Existing	Lot 45-162 Proposed
Street Address		0 Lily Pond Rd.	
Zoning District/Designation		R-1M	R-2/R1-M
Tax Map & lot number		45-162	Same
Area of Lot (Acres)		12.4 ac (538,341 sf)	19.56 ac (851,838 sf)
Building Gross Floor Area (SF) Finished		N/A	185,600 sf
Parking Spaces	2 per unit (min.)	N/A	271
Number of Loading Spaces		N/A	N/A
Building Height (Ft)	40' (maximum)	N/A	50'
Number of Stories	4	N/A	4
Use	Allowed: R-1M Conditional: R-2	Vacant Land	Dwelling, multiunit
Setbacks (Ft)*			
Front	10' Principal/20' detached		20' or greater
Side	10'		20' or greater
Rear	20'		20' or greater
Building Footprint Area (SF)	None	N/A	59,400 sf
Total Building Coverage on Lot (%)			7%
Overlay District		None	None
Impervious surfaces (sf) bld. + lots/lot		N/A	197,336 sf
Impervious surfaces (%) bld. + lots/lot	65% max.	N/A	23%
Density	R-1M: 1 Unit / 4,000 sf R-2: 1 Unit/6,000 sf 538,341 sf/6,000 sf + 313,497 sf/4,000 sf = 90 +78 = 168 (allowed)	0 Units	192 Units 14.3% density bonus requested
Open Space	50% of the Lot	N/A	428,521 sf (9.84 Acres) 50.3%

NOTE:
THIS PROJECT IS NOT LOCATED WITHIN ANY FLOODPLAINS, SIGNIFICANT NATURAL COMMUNITIES OR WETLANDS

GRAPHIC SCALE

1 inch = 50 ft.
for sheet size 24" x 36"

Stamp

No.	Description	Date

ENGINEERING VENTURES PC
293 Flynn Avenue, Suite 2A, Burlington, VT 05401 • 802-865-4225
65 Main Street, Suite 210, Montpelier, VT 05602 • 802-552-7933
141 Main Street, Suite 6, Keene, NH 03431 • 603-499-2689
www.engineeringventures.com

BLACK ROCK INVESTMENTS, LLC
2456 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Site Layout Plan
Lot 45-162

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	JWF
Checked By:	KPW
Scale:	1" = 80'
Date:	11/30/2023

C2.0

Sheet Title
Grading, Drainage and Utilities Plan
Lot 45-162

Project Title
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	JMF
Checked By:	KPW
Scale:	1" = 60'
Date:	10/6/2023

C2.1

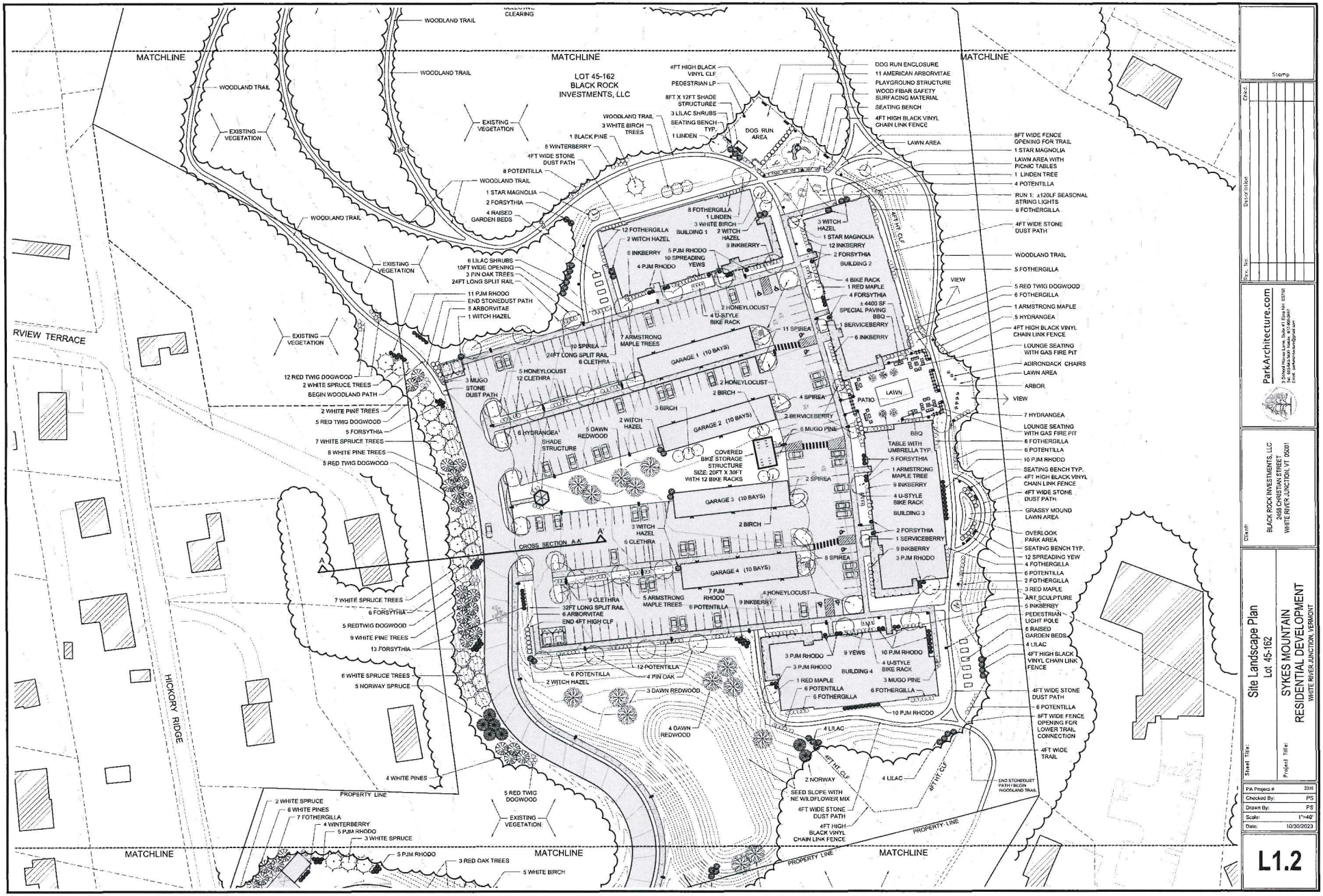
BLACK ROCK INVESTMENTS, LLC
2456 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 3A, Burlington, VT 05401 • 802-863-6255
65 Stedman Street, Suite 52-3, Lebanon, NH 03766 • 603-442-5333
6 Fir Haven Street, Shaftsbury, VT 12353 • 518-538-9614
www.engineeringventures.com

No.	Description	Date

Stamp

PLOTTED: 10/7/2023 11:12 AM
S:\PROJECTS\2022\442-SYKES MT APARTMENTS\CIVIL\LAYOUT\442-SHEET FILES\22442 SITE PLAN.DWG



Stamp

Chkd.

Description

Rev. No.

ParkArchitecture.com

3 School House Lane, Suite #1 Essex Jct. 05452
(802) 881-0993
(Email: parkarchitecture@gmail.com

Client

BLACK ROCK INVESTMENTS, LLC
2468 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title:

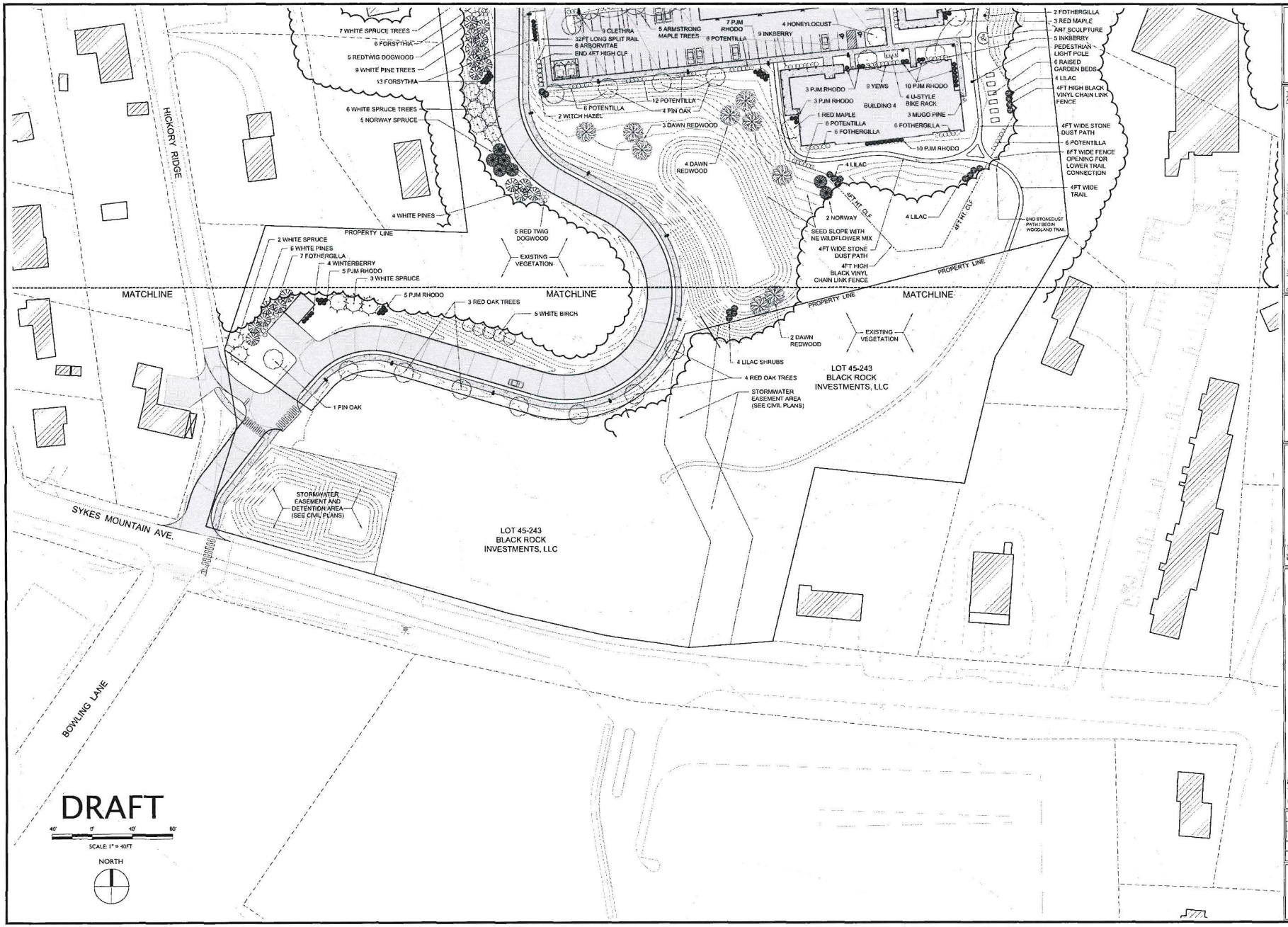
Site Landscape Plan
Lot 45-162

Project Title:

SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=40'
Date:	10/30/2023

L1.2



Stamp

Chkd.

Description

Rev. No.

ParkArchitecture.com

3 School House Lane, Suite #1 Essex Jct. 05750
tel. 802-343-3085 Mobile 617-480-5467
Email: parkarchitecture@gmail.com

Client:

BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title:

Site Landscape Plan
Lot 45-162

Project Title:

SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=40'
Date:	10/30/2023

L1.3

ENGINEERING VENTURES PC

208 Flynn Avenue, Suite 2A, Burlington, VT 05401 · Tel: 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 · Tel: 603-442-9333
414 Union Street, Schenectady, NY 12305 · Tel: 518-630-9614

October 27, 2023

Jo-Ann Ells, Zoning Administrator
Hartford Planning & Zoning
Hartford Municipal Building
2nd Floor Room 201 171 Bridge Street
White River Junction, Vt. 05001

Re: **444 Sykes Mountain Avenue, Lot 45-162 Planned Development**

Landowner: Black Rock Investments

Applicant: Black Rock Investments

Dear Jo-Ann,

I am writing on behalf of Black Rock Investments, applicant for the 444 Sykes Mountain Avenue, Lot 45-162 Planned Development. The project is in the R-IM and R-2 Zones and includes (4) Multi-Unit Housing Buildings with a total of 192 units and (4) Parking lots with 271 parking spaces, 50.3% Open Space and associated improvements as shown on the enclosed plans. The project requires Conditional Review by the ZBA for Multi-Unit housing in the R-2 Zone.

8 Copies of the following plans and documents are included with this submittal for your review:

- Signed Application Form
- Application Payment
- Responses to Staff Comments received on 10-22-2023
- Project Plans as noted on the Project Cover Sheet
- Master Plan Narrative
- Project Narrative
- Phasing Narrative

Thank you for considering this application. Please give me a call if you have any questions or comments.

Sincerely,
Engineering Ventures P.C.



Kevin Worden PE, Vice President

Town of Hartford

Planning Commission App # _____
Zoning Board of Adjustment App # _____

APPLICATION TO
PLANNING COMMISSION &/OR ZONING BOARD OF ADJUSTMENT

PLEASE COMPLETE ALL ITEMS APPLICABLE AND PROVIDE THE CORRECT NUMBER OF COPIES OF THIS APPLICATION AND THE SITE PLAN OR SUBDIVISION PLAT. ABUTTING LANDOWNERS WILL BE NOTIFIED BY THE PLANNING/ZONING OFFICE.

1. **NAME & ADDRESS OF RECORD OWNER(S)** Black Rock Investments

   Deed Recorded Book 253 and 256 Page 508, 509 and 165-167 (Available at Town Clerk's Office)

   Telephone: Work 802-295-7961 Cell 631-408-8766 Email Address: irwinperret@pering.net

2. **NAME & ADDRESS OF APPLICANTS(S)** Same as above

   Telephone: Work same as above Cell same as above Email Address: same as above

3. **NAME & ADDRESS OF APPLICANTS' CONSULTANT** Engineering Ventures (Kevin Worden)

   85 Mechanic Street, Suite E2-3, Lebanon, NH 03766

   Telephone: Work 603-442-9333 Cell 802-343-5445 Email Address: kevnw@engineeringventures.com

4. **PROJECT LOCATION** 444 Sykes Mountain Avenue

5. **PRESENT USE OF PROPERTY** Multi-family dwelling

6. **BRIEFLY DESCRIBE PROJECT** (in addition, a detailed narrative must be submitted)

   Planned Development of **Lot 45-162 in the R-1M and R-2 Zones and** includes (4) Multi-Unit Housing Buildings with a total of 192 units

7. **PROJECT SIZE IN SQ. FT OR ACREAGE** 19.56ac +/-

   Lot Width 850' Approx Lot Depth 1500' Approx

8. **IS PROJECT ON TOWN WATER/SEWER?** Yes x No _____ If Yes, estimated

   Water Consumption/day 32,250gpd Amount of Sewer Flow Projected 26,096gpd

   Size of Closest Lines Above (water) _____ (sewer) _____

9. **DESCRIBE LANDSCAPING PLAN** See attached plan

10. **IF A BUSINESS** - Present # of Employees N/A

    Proposed Days & Hours of Operation N/A

    Will you use the landfill & recycling center? Yes x No _____

    The main waste by-product of your business is: construction debris then house hold refuse

11. **IF A RESTAURANT** - Present seating N/A Proposed _____

12. **PARKING SPACES** - Number to be provided 270 total

13. **SIGNAGE** - Free Standing _____ Attached _____

14. **FENCING** – Location See attached engineering plans Height 4'

15. **NEAREST WATER SUPPLY FOR FIRE PROTECTION** Hydrants as designed

16. **ESTIMATED VALUE OF PROPOSED WORK** _____

17. **IS THERE AN EXISTING DRIVEWAY?** yes

18. **IF A SUBDIVISION** - Number of New Lots to be Created _____

    Do you request that the Town consider taking over maintenance of – Roads No

    Or Park/Open Space No

I HEREBY CERTIFY THAT THE INFORMATION PROVIDED ON THIS APPLICATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. (This certification must be signed by lot owners and applicants).

Irwin Perret	10-16-2023	Irwin Perret	10-16-2023
Applicant's Signature	Date	Lot Owner's Signature	Date
	10-16-2023		10-16-2023
Co-Applicant's Signature	Date	Co-Owner's Signature	Date

The applicant retains the obligation to identify, apply for, and obtain any relevant local or state permits before any construction may commence. Please call 802-282-6488 to speak with the State Permit Specialist.

For Office Use Only		
Map/Lot #		
Fee Paid $:		Receipt #:
PC: Site Plan	Min. Sub.	Maj. Sub.
PD	PD Amend.	Other
ZBA: Conditional Use	Variance	Appeal
Other		
Zoning District (s)		Date Filed:
Official Submittal Date:		

PLANNED DEVELOPMENT NARRATIVE

LANDOWNERS: BLACK ROCK INVESTMENTS, LLC
APPLICANT: BLACK ROCK INVESTMENTS, LLC

Sykes Mountain Avenue – Hickory Ridge Drive
Hartford, Vermont
Lot45-162

1. Objective:

   To provide a dense, amenity-driven residential multi-family project comprised of four buildings which will include one-hundred and ninety-two (192) units. The Project will be named Green Heights (subject to change) with its new access road to be named Green Heights Lane (subject to change). It's planned to be built in separate phases and designed to foster a strong sense of community and encourage an active lifestyle.

   This application is for a Preliminary Approval and subject to Final Approval on a new application. This Planned Development is also subject to the Approval of the Subdivision application.

2. Purpose of Planned Development

   Similar to Northern Stage Theater and Briggs Opera House, the Project will be one of Hartford's flagship developments. It will enhance White River Junction's push to modernize by adding much-needed new residential infrastructure with contemporary amenities. Its concept will attract an eclectic and diverse mix of tenants that will help to create stability and economic prosperity for the community.

   The Project is designed to elevate the concept of neighborhood living in White River Junction. It is thoughtfully crafted to create a harmonious blend of nature and community, empowering its residents to embrace an enriched lifestyle. With a strong emphasis on outdoor amenities and fostering connections, the Project promises to be a transformative addition to the neighborhood, setting new standards for sustainable and vibrant living.

   The Project will contribute to the town's economic development by providing housing for employees that historically have had to move away from the region due to lack of housing. It will also result in an increase in revenues for Hartford in the form of property taxes and help to promote the use of energy-efficient features for Hartford residents when compared to older multifamily projects.

   Even though the proposal is innovative, the Project's main appeal is its natural beauty which the Applicant will plan to help to preserve and enhance. The Project

will attract nature lovers and outdoor enthusiasts by including a mix of man-made amenities and natural amenities integrated through a robust landscaping plan. The sloped terrain of the plot is ideal for hiking trails, park-like landscaping and pet-friendly outdoor spaces that will help to showcase and seize the Upper Valley's unmatched natural beauty.

3. Coverage and Open Space:

   50.3% of the development for each lot will remain as open space, as defined by Hartford Zoning Regulations for public and or common use.

4. Project Modification:

   Amendments to the approved site plan may be made by the Zoning Administrative Officer, upon filing a request on the appropriate form, providing that the chair of the Planning Commission and Zoning Administrative Officer agree that the changes are minor, and conform with the Zoning Regulations and approved Master Plan

5. Phasing:

   Phasing Plan as approved by the Planning Commission and depending on financing considerations. See attached document.

6. Applicability:

   Except as modified herein, the Town of Hartford Zoning Regulations shall apply.

7. Density:

   The Applicant is requesting a density bonus needed for the financial viability of the project, which will also benefit Hartford and the Upper Valley: increasing the number of housing units into the pipeline will result in new affordable options in the region, due to market dynamics.

   The lot will require an 14.3% density bonus which is within the 25% increase allowed by the Planning Commission.

   This density bonus is consonant with the purposes of the Zoning Regulations as described previously (Purpose of Planned Development)

8. Open Space:

The Applicant will oversee maintenance of all open spaces within the Planned Development taking into consideration seasonality. Works will include periodic inspections, landscape maintenance, waste disposal, etc.

9. Road shift and parcel readjustment

In order to mitigate the outgoing traffic's headlight impact over an abutting neighbor at 22 Hickory Ridge, and concerns expressed by the Planning Commission, the Applicant is proposing to alter the layout of Hickory Ridge Road at the intersection of Sykes Avenue.

The reconfiguration will result in a 6,776 sq. ft. easement or right-of-way as shown in the drawings to allow for a reconfiguration of Hickory Ridge, as per DPW's suggestion given that the Selectboard approves the modification. The proposed Hickory Ridge reconfiguration will be maintainable, safe, reduces the opportunities for through traffic on the existing Hickory Ridge and provides protection to the Applicant's abutting neighbors.

10. Easements

Easement locations are included in the attached drawings. They include stormwater and drainage easements through Lot 45-243.

11. Natural Resources, Monuments, Historical and Cultural Resources Location

Rendered visualization of the Project from different viewpoints in the town are included with this document. They showcase the relatively minimal impact that the buildings will have from a visual standpoint.

The Development is also designed to minimize adverse impacts on large slopes greater than 15% and to avoid disturbance to slopes in excess of 25%.

To the best of the Applicant's knowledge, the site does not hold any other notable natural resources, monuments, cultural resources or historical landmarks. The Applicant is currently in the process of performing a Phase I ESA which should confirm the information above

12. Utilities:

The Project will include access to domestic water supply, sewer system, electricity, phone service and internet service.

In order to provide the requisite domestic and fire suppression water pressure and flow, the Applicant will install a water booster pumping system to provide adequate pressure for the Project's four buildings.

The State of Vermont is in favor of consecutive water systems with increased pumping capacities if the city takes it over.

The Applicant will propose a maintenance and replacement plan for the water booster system under the assumptions that Hartford will assume responsibilities to ensure the proper operation and maintenance of the system. Similar agreements are expected for the wastewater system.

13. Miscellaneous

The Applicant has already approached Hartford' School District introduce the Project. Their initial assessment is that the Project will have no significant impact over the School District

The Applicant is not aware of any restrictions on the subject property nor on abutting lots.

14. Acknowledgements and Understandings
    - The Applicant acknowledges that it is its obligation to identify, apply for, and obtain any relevant local and state permits for this project.
    - The Applicant acknowledges that the approval of a Planned Development does not authorize any construction. In this instance, the Applicant will need a Site Plan Approval from the Planning Commission and Conditional Use Approval from the Zoning Board of Adjustment.
    - The Applicant acknowledges that any approval will require that a surveyor submit a letter certifying that the monuments have been set according to the locations identified on the approved survey plat before the Mylar can be recorded.

Approved by the Hartford Planning Commission

_____

Planning Commission Chair/Vice Chair Date

PLANNED DEVELOPMENT PHASING PLAN
Sykes Mountain Avenue – Hickory Ridge Drive
Hartford, Vermont
Lot 45-162

Phasing Plan as approved by the Planning Commission and depending on financing considerations.

LOT 45-162 DEVELOPMENT

- PHASE I

  PHASE I will include the development of Building 1 and Building 2 and its surrounding infrastructure. The works will include the following:
  - Construction of two four-story structures will total 18 studio apartments, 15 one-bedroom jr. apartments, 39 one-bedroom apartments, 11 one-bedroom apartments with a den and 11 two-bedroom apartments. Building two will also include over 1,400 sq-ft. of indoor amenities.
  - Construction of Parking Lot 1 and Parking Lot 2
  - Construction of water booster station.
  - Installation of domestic water supply, electricity, internet service and phone service infrastructure for Building 1, Building 2, Parking Lot 1 and Parking Lot 2

- PHASE II:

  PHASE II will include the development of Building 3 and 4. The works will include the following:
  - Construction of two four-story structures that will total 18 studio apartments, 14 one-bedroom jr. apartments, 42 one-bedroom apartments, 12 one-bedroom apartments with a den and 12 two-bedroom apartments.
  - Construction of Parking Lot 3 and Parking Lot 4.
  - Construction of the upper main outdoor amenities which will include walking trails, patios, dog runs, grill areas, playgrounds, among others.
  - Installation of domestic water supply, electricity, internet service and phone service infrastructure for Building 3, Building 4, Parking Lot 3 and Parking Lot 4

  Before the issuance of the first Certificate of Occupancy the landscaping, including seeding, around the curtilage of the buildings will be installed allowing only for seasonal issues with planting. The sidewalks and site lighting will also be installed.

This is the Developer's initial plan, but the construction sequence of the various buildings is subject to change. This plan is dependent on the scope and specifics of the potential agreement with the aforementioned third-party affordable entity.

PLANNED DEVELOPMENT MASTER PLAN

LANDOWNERS: BLACK ROCK INVESTMENTS, LLC
APPLICANT: BLACK ROCK INVESTMENTS, LLC

Sykes Mountain Avenue – Hickory Ridge Drive
Hartford, Vermont
Lots 45-162

1. Objective:

   To provide a dense, amenity-driven residential multi-family project comprised of four buildings which will include one hundred and ninety-two (192) units. The Project will be named Green Heights (subject to change) with its new access road to be named Green Heights Lane. It's planned to be built in separate phases and designed to foster a strong sense of community and encourage an active lifestyle.

   Current zoning Districts for the lots:
   - R1-M (Multi Unit Dwelling Permitted)
   - R-2 (Multi Unit Dwelling Conditional)

   Uses for these zoning districts are further described in Exhibit A

2. Height Limitations:

   The Application includes elevation views that show the building height varies from 45'-4" (low parapet) to 47'-4" (high parapet) to 50' (highest parapet above corner entry). These heights are required for a four story building with appropriate ceiling heights, structure and mechanical equipment. The four story building support the unit density proposed with a smaller footprint than a three story building which would have a larger footprint on the site.

3. Coverage and Open Space:

   50.3% of the development will remain as open space, as defined by Hartford Zoning Regulations for public and or common use.

4. Project Modification:

   Amendments to the approved site plan may be made by the Zoning Administrative Officer, upon filing a request on the appropriate form, providing that the chair of the Planning Commission and Zoning Administrative Officer agree that the changes are minor, and conform with the Zoning Regulations and approved Master Plan

5. Phasing:

Phasing Plan as approved by the Planning Commission and depending on financing considerations. See attached document.

6. Applicability:

   Except as modified herein, the Town of Hartford Zoning Regulations shall apply.

7. Density:

   The Applicant is requesting a density bonus needed for the financial viability of the project, which will also benefit Hartford and the Upper Valley: increasing the number of housing units into the pipeline will result in new affordable options in the region, due to market dynamics.

   The lot will require an 14.3% density bonus which is within the 25% increase allowed by the Planning Commission.

8. Open Space:

   The Owner will oversee maintenance of all open spaces within the site taking into consideration seasonality. Works will include periodic inspections, landscape maintenance, waste disposal, etc.

9. Road shift and parcel readjustment

   In order to mitigate the outgoing traffic's headlight impact over an abutting neighbor, and concerns expressed by others, the Applicant is proposing to alter the layout of Hickory Ridge Road at the intersection of Sykes Avenue and a new parcel demarcation as highlighted in the attached drawings.

10. Easements

    Easement locations are included in the attached drawings. They include stormwater and drainage easements through Lot 45-243.

11. Natural Resources, Monuments, Historical and Cultural Resources Location

    Rendered visualization of the Project from different viewpoints in the town are included with this document. They showcase the relatively minimal impact that the buildings will have from a visual standpoint.

    The Development is also designed to minimize adverse impacts on large slopes greater than 15% and to avoid disturbance to slopes in excess of 25%.

To the best of the Applicant's knowledge, the site does not hold any other notable natural resources, monuments, cultural resources or historical landmarks. The Applicant is currently in the process of performing a Phase I ESA which should confirm the information above

12. Utilities:

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The State of Vermont is in favor of consecutive water systems with increased pumping capacities if the city takes it over.

The Applicant will propose a maintenance and replacement plan for the water booster system under the assumptions that Hartford will assume responsibilities to ensure the proper operation and maintenance of the system. Similar agreements are expected for the wastewater system.

13. Miscellaneous

The Applicant has already approached Hartford' School District introduce the Project. Their initial assessment is that the Project will have no significant impact over the School District

The Applicant is not aware of any restrictions on the subject property nor on abutting lots.

Approved by the Hartford Planning Commission

_____

Planning Commission Chair/Vice Chair Date

EXHIBIT A: R1-M AND R-2 ZONING DISTRICT USES

"R-1M"
RESIDENTIAL ONE, MULTI-FAMILY ZONING DISTRICT

Objective

To encourage predominantly multi-family residential development at relatively high densities in established neighborhoods close to the village centers which have public water and sewer services, and are located within easy access to public transit.

Permitted Uses*

Dwelling Unit, SingleDwelling Unit, Two Dwelling, Multi-Unit

Permitted Upon Issuance of a Conditional Use Permit*

Bed & BreakfastCemetery Daycare FacilityFarmstand
Funeral Home Home Business Lodging House
Nursing Care FacilityOffice < 2,500 Sq. Ft.Place of Worship
Public Assembly Facility (no size limit)Public Facility
Recreational FacilitySchool
Veterinary Clinic**Minimum Area and Dimensional Standards**

Area (in square feet)			Lot Dimensions (in feet)		Setbacks (in feet) (From Property Lines)		
Class	Per Dwelling Unit	Per Lot	Width	Depth	Front	Side	Rear
1	4,000	8,000	60	80	10/20**	10	20
2&3	1 acre	1 acre	125	100	25	15	20

* **See Sections 2-5 and 4-1 regarding required reviews and approvals**

** **10' for principal structure and 20' for attached or detached garages and other structures**

Maximum Lot Coverage: 65%

"R-2"
RESIDENTIAL TWO ZONING DISTRICT

Objective

To encourage moderately-dense, and predominantly residential development in established neighborhoods having good access to highways, public transit and public water and sewer services.

Permitted Uses

Dwelling Unit, Single
Dwelling Unit, Two

Permitted Upon Issuance of a Conditional Use Permit*

Bed & Breakfast
Cemetery
Daycare Facility
Dwelling, Multi-Unit
Farmstand
Home Business
Kennel
Nursing Care Facility
Place of Worship
Public Assembly Facility < 2,500 Sq. Ft.
Public Facility
Recreational Facility
School

Minimum Area and Dimensional Standards

Area (in square feet)			Lot Dimensions (in feet)		Setbacks (in feet) (From Property Lines)		
	Per Dwelling	Per					
Class	Unit	Lot	Width	Depth	Front	Side	Rear
1	6,000	10,000	70	90	10/20**	10	20
2&3	1 acre	1 acre	125	100	25	15	20

* **See Sections 2-5 and 4-1 regarding required reviews and approvals**

** **10' for principal structure and 20' for attached or detached garages and other structures**

Maximum Lot Coverage: 65%

BLACK ROCK INVESTMENTS, LLC

Memorandum

To: Jo-Ann Ells

Cc: Kevin Worden, Paul Simon, Earl Simpson, Dennis Marquise, and Chris Holzwarth

From: Black Rock Investments, LLC

Date: October 27, 2023

Re: Answers to Memo on Proposed Planned Development

In relation to Memorandum received on October 22nd, please find our comments below:

1. Please confirm that you understand that you retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

   To determine what State Environmental Permits may be required for your project, The Vermont Agency of Natural Resources (ANR) recommends that you use ANR's Permit Navigator Tool by going to the VT Department of Environmental Conservation website Welcome to DEC | Department of Environmental Conservation (vermont.gov) and going to the "Permit Navigator Tool" Permit Navigator (force.com)

   If further assistance is needed, please contact the Community Assistance Specialist for our area:

   Rick Oberkirch, Community Assistance Specialist
   802-282-6488 Rick.Oberkirch@vermont.gov

   We understand and acknowledge it. It is included in Acknowledgement section of narrative

2. Project Narrative:

   - Please amend the Project Narrative such that it is limited to this application. Understood.

   - Once Preliminary Approval is obtained, you will need to apply for Final Approval. Please acknowledge your understanding in the Project Narrative. Understood. Included in objective section.

(The Subdivision Regulations state that approval of a preliminary plat shall remain in effect for a period of one (1) year from the date of approval. The Commission Chair or Vice Chair may grant a one-time one (1) year extension.) Understood.

- The application for a Planned Development relies on the application for the subdivision you have submitted to create the lot which is the subject of the Planned Development. Please note this is in the Project Narrative. Understood. Included in Objective section.

- Approval of a Planned Development does not authorize any construction. In this instance, you will need Site Plan Approval from the Planning Commission and Conditional Use Approval from the Zoning Board of Adjustment. Please note this is in the Project Narrative. We understand and acknowledge it and have included in Acknowledgement section of narrative.

- Section 260-47 B of the Zoning Regulations requires that the purpose (conditions) of a Planned Development shall be to encourage a development which will result in:

  (1) "A choice in the types of environment and living units (where applicable) available to the public, and quality in land uses so that development will be a permanent and long-term asset to the Town.

  (2) Open space and recreation areas if dwelling units are a part of the development.

  (3) A pattern of development which preserves trees, outstanding natural topography and geologic features and prevents soil erosion.

  (4) An efficient use of land resulting in small networks of utilities and streets.

  (5) An environment in harmony with surrounding development.

  (6) A more desirable environment than would be possible through the strict application of other sections of these regulations.:

  Please outline how the project meets each of these items in the Project Narrative. Included in Purpose of planned development section.

- Please include a density calculation in the Project Narrative. Noted.
- The regulations provide that the Planning Commission may permit an additional number of dwelling units in an area designated for residential use so long as the total number of such dwelling units shall not exceed 125% of the permitted number of units based on a calculation in conformance with strict application of the zone district standards.

This density bonus shall never be automatic, but shall be based on a review by the Planning Commission that concludes that the developer's plan includes design, innovative features, or facilities that satisfy the purposes listed in 260-47 B listed above.

Please provide justification for the density bonus in the Project Narrative. Noted, included in density narrative and purpose of planned development.

3. Survey/Preliminary Plat

- For Preliminary Approval, the document you submitted is entitled "Preliminary Plat." Final Approval will require a full survey. Understood.

- Any approval will be conditioned on the pending subdivision application to create the lot being approved and finalized. The elements of the Survey/Preliminary Plat for the Planned Development should be prepared assuming that this has occurred. Please revise as necessary. Understood.

- When you had the property surveyed by Rockwood Land Services LLC in 2017 there was a small "garden lot" identified that does not appear on the Preliminary Plat. This will need to be clarified. Understood.

- Please remove references to lot 1, 2, and 3 (use the town's lot number format), and add the zoning district boundary lines. Understood.

The proposed 6,776 sq. ft. lot does not meet dimensional standards and cannot be created. Understood. The plan has been reviewed with DPW and proposed modifications have been made.

I understand this area is proposed to be used for access to the residential projects.

Possible options/solutions that need to be discussed with the DPW include:

- Keeping the land with one of the proposed lots and creating right-of-way over it. This is the option that we are considering.
- Merging the land with the Hickory Ridge ROW (this requires a separate application with the Town as an applicant)

DPW has stated that they are not opposed the modification of the Hickory Ridge alignment so long as is done in a manner that is maintainable, safe, reduces the opportunities for through traffic on the existing Hickory Ridge and provides protections to the residence at 22 Hickory Ridge. The applicable rules for seeking to modify the layout, including the need to have the Selectboard approve it and accept it, were previously provided. Understood and included in narrative (Road shift and parcel readjustment).

DPW commented that the concept as presented appears to have room for improvement including pedestrian connectivity to Hickory Ridge, a proper hammerhead at the end of the section directed towards the upper development, and ensuring the usability of the driveway to 22 Hickory Ridge that may include revising the right of way to Hickory Ridge. Understood.

The intersection with Sykes Mountain Avenue needs to be fully evaluated for improvements including pedestrian to the municipal sidewalk network with the plans incorporating the recent sidewalk improvements and evaluation of a bus shelter. Understood.

I suggest a meeting with DPW and myself to discuss this item. Agreed.

4. Site Plan

   - Section 260-47 A 1 of the Zoning Regulations requires:

     The required site plan shall show all buildings, parking areas, and landscaping at a scale sufficient to permit the study of all elements of the plan. All utilities shall also be shown and described. Typical elevations and floor plans of all buildings may also be required. In addition, the site plans shall show the adjacent building outlines and other outstanding features within 200 feet.

     Please amend the plan set as necessary to meet this requirement. Understood.

   - Please indicate the open space on the plan. Understood.

   - Please delete references to the proposed 48-unit development. Understood.

5. Narrative Master Plan

   - The Narrative Master Plan is required to include "the objective, uses (permitted and/or conditional as appropriate), area and dimension standards, phasing, and any other land use standards appropriate to the planned development and necessary to meet the objectives and intent of the Hartford Master Plan, Zoning Regulations, and the Planned Development." Understood and included as Exhibit to Master Plan.

   - Some of the items in the document you submitted are missing, some are for the affordable housing project on the adjacent lot, and some may be better suited for the Project Narrative. Please call me to review. Done.

6. Phasing Plan

- Please amend the Narrative Phasing Plan such that it is limited to this application. Understood.

- Please submit a Phasing Site Plan that depicts the improvements in each phase. Included in submittal.

7. Please confirm that you understand that any approval will require that a surveyor submit a letter certifying that the monuments have been set according to the locations identified on the approved survey plat before the Mylar can be recorded. We understand and acknowledge it and have included it in the Acknowledgement section of narrative.

8. Please email me a copy of the application form, Project Narrative, Survey/Preliminary Plat, Site Plan, Narrative Master Plan, Narrative Phasing Plan, Phasing Site Plan, and your response to this memo. Understood.

9. Please submit the application fee ($310) and eight copies of the application form, Project Narrative, Survey/Preliminary Plat, Site Plan, Narrative Master Plan, Narrative Phasing Plan, Phasing Site Plan, and your response to this memo. Understood.

Black Rock Investments, LLC

Application #23-25

Memorandum

To: Hartford Planning Commission

Cc: Black Rock Investments, LLC, Kevin Worden, Paul Simon, Earl Simpson, Dennis Marquise, and Chris Holzwarth

From: Jo-Ann Ells

Date: November 1, 2023

Re: Application for 192 Dwelling-Units, Application #23-25 Lot 45-0162-000

Application #23-25 has been submitted to you for Site Development Plan Approval for construction of 192 dwelling units in four Multi-Unit Buildings on proposed lot 45-0162-000.

The application relies on Planning Commission approval of a Subdivision/Lot Line Adjustment (Application #23-22) and a Planned Development (Application #23-24). Applications for Preliminary approval have been submitted for both of these applications.

Once preliminary approval is granted, separate applications for Final Approval will need to be submitted. The earliest applications for Final Approval can be submitted is January 2, 2024 for a February 5, 2024 Hearing with the Planning Commission.

Given the outstanding items outlined below and the need for the applicant to submit for Final Approval of the Subdivision/Lot Line Adjustment and Planned Development, please consider opening the Public Hearing on this application for Site Development Plan Approval (Application #23-25), asking the applicant to review the application, hearing comments/questions from the Commission, taking public comment, and then continuing the application to your Hearing scheduled for February 5, 2024. (Please keep all application materials. Any new information will be sent to you for the February meeting.)

In order for the application to be considered for the February 5, 2024 Hearing, the applicant will need to submit revised application materials to me by noon, January 2, 2024. (This would align with the applicant's intent to submit for Final Approval of the Subdivision/Lot Line Adjustment and Planned Development. If the applicant needs additional time to submit, they can request a continuance to a future date.)

Note: I have highlighted some items in the Draft Findings of Fact as a reminder to myself insert new/pending information.

Outstanding Items/Items Needing Further Clarification

1. Access Road/Water/Sewer/Stormwater

   The applicant needs to:

   - Request a meeting with the DPW and Planning Staff to discuss items related to access/road realignment, AT bus shelter, AT bus turn off lane, water and sewer, and stormwater. Plans/Narratives will need to be amended as necessary based on the meeting.

   - Determine with Planning Staff if a separate application for Subdivision/Lot Line Adjustment is needed for the road realignment.

   - Clarify that there will be "No Right Turn" for vehicles exiting the development.

   - Submit a request for a road name for review.

2. Turning Movement Plans

   The applicant needs to:

   - Ask the Fire Marshal to review/approve the Turning Movement Plan for the ladder truck.
   - Provide a Turning Movement plan for a trash hauler.

3. Phasing

   The applicant needs to review the phasing plan with me. We need to discuss:

   - What happens if phase #2 is not built?
   - The location of the phasing line that splits the patio area and parking spaces.
   - Phasing of amenities.
   - Waiver of Section 260-4 C of the Zoning Regulations which requires full build out within 2 to 2 ½ years. (To be included in the Master Plan for the Planned Development)

4. Amenities

   The applicant needs to provide a detailed/complete list of outdoor and indoor amenities.

5. Traffic

   Staff is reviewing the information from Wall Consulting Group regarding Traffic Volume and Parking Demand.

6. Misc Plan Amendments

   - Sheet C1.1- Remove reference to lot 45-0243-000 as a "Subject Lot"

   - Sheet C2.0

     - Discuss Zoning Chart with me and update sheet C2.0 as necessary
     - Remove note C1
     - Remove/clarify note C6

   - Civil Plans/Landscape Plans- need to depict the trails the same on the plans and need to clarify if the trails are existing/proposed.

   - Sheets L3.6 & L3.7- provide plan at a scale such that the footcandles are legible. Clarify max f.c. of 40.6 on sheet L3.7.

   - Are enough ADA parking spaces provided?

   - Amend the landscape plans to include plantings in the stormwater basins.

   - Amend the plans to indicate the location of conduit for future EV charging stations.

7. Misc Narrative Documents

   The applicant needs to:

   - Label the Project Narrative and remove the Planning Commission signature.

   - Provide a written description of the location and types of fencing.

   - Clarify the use of lot 45-0198-001.

   - Clarify if open space will be available to the general public.

   - Clarify if parking spaces will be assigned to units.

- Clarify their response to the following comment from staff.

  Comment: Please amend the plans such that they are limited to this application and coordinated with the proposed Affordable Housing Development on the Adjacent lot as applicable.
  Response: Understood

DRAFT
FINDINGS OF FACT
CONCLUSIONS OF LAW
AND DECISION

HARTFORD PLANNING COMMISSION

Application #23-25 by Black Rock Investment LLC
for Site Development Plan Approval
for 192 dwelling units in four Multi-Unit Buildings
proposed lot 45-0162-000, Sykes Mountain Avenue and Hickory Ridge
White River Junction, in a proposed Planned Development

This decision pertains to application #23-25 by Black Rock Investment LLC (owner/applicant) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for 192 dwelling units in four Multi-Unit Buildings, proposed lot 45-0162-000, Sykes Mountain Avenue and Hickory Ridge, White River Junction, in a proposed Planned Development

FINDINGS OF FACT

Based upon the information contained in the exhibits for this application (see attached list) and the evidence adduced at the Planning Commission meeting of November 13, 2023, and DATE the Planning Commission makes the following Findings of Fact:

General Information

1. The owner of record of lot 45-0162-000 is Black Rock Investments LLC who acquired the lot on 08-10-2017. The deed is recorded in volume 539, page 568 of the Hartford Land Records.

2. The lot is undeveloped.

3. The lot is located on the corner of Sykes Mountain Avenue and Hickory Ridge.

4. The lot is class one (1), municipal water and wastewater.

This Application

5. The applicant proposes 192 dwelling units in four multi-unit buildings. The project includes:

    - 36 studio units
    - 29 junior one-bedroom units
    - 81 one-bedroom units
    - 23 one-bedroom units with a den
    - 23 two-bedroom units

6. The applicant has two applications pending before the Planning Commission:

- Application #23-22 for Preliminary approval of a Subdivision involving boundary line adjustments between lots 45-0162-000 and 45-0243-000.

- Application #23-24 for Preliminary Approval of a Planned Development on lot 45-0162-000 which will contain 19.56 acres after approval of application #23-22.

This application (#13-23) is conditioned on the approval of these applications.

7. The application to the Planning Commission for a Planned Development includes:

- A request to exceed the maximum height of 40' as limited in the Zoning Regulations.

  According to the applicant, "the building height varies from 45'-4" (low parapet) to 47'-4" (high parapet), to 50' (highest parapet above corner entry). These heights are required for a four-story building with appropriate ceiling heights, structure, and mechanical equipment. The four-story building supports the unit density proposed with a smaller footprint than a three-story building which would have a larger footprint on the site. (See exhibit #2)

- Section 260-47 C of the Zoning Regulations allows the Planning Commission to permit a 25% density bonus. The applicant has requested that the Planning Commission approve a 14.3% density bonus.

Zone	Density Calc.	Land	Possible # of Units
R1-M	1 unit/4,000 sq. ft.	313,497 sq. ft.	78 (313,497/4,000= 78.37)
R-2	1 unit/6,000 sq. ft.	538,341 sq. ft.	90 (538,341/6,000=89.72)
	Total		168 Units

14.3% bonus
168 x .143 = 24
168+ 24 = 192

8. The applicant proposes to construct the project in two phases. (See exhibits #3 and #5)

9. Coverage and Open Space:

50.3% of the development will remain as open space, as defined by Hartford Zoning Regulations for public and or common use.

10. Access Road

The applicant is coordinating plans for the realignment of Sykes Mountain Avenue and Hickory Ridge with the DPW.

While the proposed access road to the development is designed to meet Town of Hartford requirements for a public road, the road will be privately owned and maintained; the applicant is not requesting that the Town take over ownership of the road.

11. The proposed access road will need to be named and a private street sign installed by the applicant in accordance with applicable standards.

12. The applicant submitted a turning movement plan for a ladder truck.

Plan for Trash Hauler pending

13. The applicant proposes indoor and outdoor amenities.

14. The Zoning Regulations require two parking spaces per unit which results in a requirement of 384 parking spaces (192 x 2 = 384).

15. The applicant is requesting that the *Planning Commission* approve a permanent reduction in the required parking spaces for the project from 384 to 271 (see Parking Summary on sheet #C2.0 of exhibit #2).

Section 260-24(9)(e) allows for modifications in the number of required parking spaces as follows to be approved by the *Planning Commission* as follows:

If, in site plan approval proceedings or at any time in the future after a duly warned hearing, the Planning Commission determines that unique usage or special conditions exist which warrant increasing or reducing the need for parking, it may require the provision of off-street parking spaces up to 50% more or less than the requirements in Subsection C(9)(a) above. In the Central Business District, the parking may be reduced beyond 50%. When approving an increase or reduction in any zoning district, the Planning Commission shall consider the following:

[a] Is the site located on or within 1,000 feet of a transit route?
[b] Are there shared parking facilities with abutting businesses which are sufficient to meet parking demand?
[c] For mixed-use projects, do the proposed uses have staggered business hours with minimal overlap?
[d] Does the type of business proposed generate substantial pedestrian traffic and are adequate pedestrian facilities present?
[e] Does an employer-sponsored "transit pass" program, or vanpool, carpool or rideshare program exist, or can one be established (as a condition of the approval) to substantially reduce the need for on-site parking?
[f] Is safe and adequate on-street parking available?
[g] Is parking in municipal parking lots available?
[h] Does the Institute of Traffic Engineers, American Planning Association or other professional source show parking demand requirements for the proposed use(s) that are different than the standards specified in these regulations?
[i] Is there other information that justifies a change in the parking requirements?

According to the applicant, "The reduction request is based on the following:

- That the site is located within 1,000 ft of Advance Transit's Orange Line (a)
- The relative high density of the project and the unit mix of smaller apartments. (i)
- Requirements for parking spaces will be reduced under Act 47 (effective December 1, 2024) which states:

  "In any district that is served by municipal sewer and water infrastructure that allows residential uses, a municipality shall not require more than one parking space per dwelling unit." (i)

16. The applicant proposes to provide 271 parking spaces, including 40 covered/garage spaces and 8 accessible spaces in four parking areas as follows: assigned?

    - Parking Lot 1 will include 69 parking spaces including 10 garage spaces and 2 accessible spaces . It will cover parking for Building 1.
    - Parking Lot 2 will include 64 parking spaces including 10 garage spaces and 2 accessible spaces. It will cover parking for Building 2.
    - Parking Lot 3 will include 69 parking spaces including 10 garage spaces and 2 accessible spaces. It will cover parking for Building 3.
    - Parking Lot 4 will include 69 parking spaces including 10 garage spaces and 2 accessible spaces. It will cover parking for Building 4.

17. The applicant submitted information from Wall Consulting Group regarding Traffic Volume and Parking Demand. Add summary. (See exhibits #3 and #9).

18. The applicant proposes a covered bike storge structure with 12 bike racks and bike racks in front of each building.

19. The applicant provided a landscape plan.

    According to the applicant, "plant materials include trees, shrubs, gardens, among others. Since the project's main amenities will be its scenic forests and landscapes, the Applicant will try to retain the natural cover of the site as much as possible. The Applicant will be responsible for maintaining all new plants in a healthy and growing condition.

    The site has been designed and landscaped to minimize negative visual impacts as it includes a robust landscaping plan including native and non-invasive plantings. In addition, attention to preserving the existing perimeter trees was included to minimize visual impact. The plans also include numerous pedestrian walkways and a multi-use path system to separate bicyclists, and pedestrian traffic from the vehicular traffic network to maximize safety. The choice and placement of plantings in the parking areas takes into account the special hazards of salt, vehicles, and maintenance equipment.

Plans submitted for review include and show the locations and types of plants as well as the species, sizes, quantities, and locations to be installed. Again, the choice and placement of plantings in the parking areas takes into account the special hazards of salt, vehicles, and maintenance equipment. Overall, the goal is to provide a welcoming and colorful pallet that is inviting, yet will be low-maintenance once the plantings establish. To that end, we have included a diversity of tree and shrub species that include Vermont native and northern New England varieties.

Attention to the placement of new plantings as well as maintaining a strong natural buffer of existing plantings has been included in the design concept. Maintaining a strong woodland perimeter and forest area helps us achieve maximum screening and a robust vegetative buffer to the adjacent properties. The project also capitalizes on this natural resource as to include a woodland trail system for residents."

Plantings in the stormwater basins

(See exhibit #2 and #3)

20. The applicant has provided a photometric plan.

(See exhibit #2 and #3)

21. The applicant provided three rendered visualizations of the Project:

According to the applicant:

- "Render 1: Rendered overlooking the Project on I91's crossing over the White River.
- Render 2: Rendered overlooking the Project on I91's overpass over Hartland Road/Main St.
- Render 3: Rendered overlooking the Project Hartford Avenue crossing over the White River.

During our preliminary meetings (*with the Planning Commission*), there were concerns with the visual impact that this development would have over its surroundings, especially due to its proximity to I91 and I89. This concern was exacerbated because our previous version of the project included just two buildings but that were twice as long as the current versions of them.

These locations were selected to demonstrate the low visual impact that the project will have on high traffic areas, thanks to the site's topography and our careful design to conceal the buildings as much as possible with its surrounding vegetation and topography. All renders are at street level view or a few feet above to portray the visualization as it would look for pedestrians and bystanders.

The colors of the visualizations will be updated but are easier to assess on the elevation views submitted on the application."

(See exhibit #8)

22. Energy Performance Standards

According to the applicant, "the Project will look to incorporate features and technologies to minimize energy consumption and maximize efficiency. The project will meet or exceed Vermont's energy standards. All structures will have a well-insulated building envelope with high-quality insulation materials, efficient windows, and airtight construction to minimize heat loss or gain. The Project will also include enhanced insulation techniques, such as spray foam insulation and insulated exterior walls, to minimize thermal bridging and maintain a consistent indoor temperature. Since the building is designed as slab-on-grade construction, we are planning for continuous rigid insulation under the slab. Proper sealing of gaps, ducts, and windows will ensure that conditioned air stays inside, reducing energy waste.

The design parameters will optimize natural light, ventilation, and solar heat gain. Orientation and window placement will be carefully considered to maximize daylight and reduce the need for artificial lighting. The Applicant will look to include Energy Star- rated appliances, including refrigerators, dishwashers, and washing machines, which consume less energy compared to standard models. The buildings will be structurally designed to allow for future placement of solar panels on the roof and conduits will be put in place to connect to existing building infrastructure as well as infrastructure for future EV charging stations. Outlets will be provided in the enclosed garage spaces for the same purpose.

The Project will also incorporate smart building automation systems and controls to optimize energy usage, including programmable thermostats, occupancy sensors, and timers for lighting and ventilation systems."

23. Stormwater system

(See exhibit X)

24. Section 260-27 C of the Hartford Zoning Regulations states:

C. Grading and drainage. The following provisions shall apply to any changes which affect drainage of water to or from a property:

(1) Any changes in grading shall be made so that runoff is directed to established drainage courses and will not cause ponding or flooding of other properties, or exceed the capacity of downstream drainage facilities.

According to the applicant, "Grading shall be made so that runoff is directed to established drainage courses and will not cause ponding or flooding of other properties, or exceed the capacity of downstream drainage facilities. The design includes stormwater considerations to mitigate this issue that meet and exceed the Vermont State Stormwater Manual. A Vermont State Stormwater Operational Permit will be required for this project."

(2) When possible, drainage systems shall be designed so that water runoff existing prior to site development shall not be increased after development. When possible, drainage systems shall be designed so that water runoff existing prior to site development shall not be increased after development.

According to the applicant, "When possible, drainage systems shall be designed so that water runoff rate existing prior to site development shall not be increased after development."

(3) All changes in grade shall be controlled so as not to cause a nuisance or damage to other properties or erosion of topsoil.

According to the applicant, "All changes in grade shall be controlled so as not to cause a nuisance or damage to other properties or erosion of topsoil."

25. Water and Sewer

The project will connect to municipal water and sewer in accordance with Hartford's Water and Wastewater Rules and Regulations.

According to the Applicant:

Water System:

The project will tie into Hartford's water supply. In order to meet water pressure requirements, a water booster system will be built to enhance the water pressure, ensuring efficient water supply and distribution for all tenants.

Sewer System:

The sewer lines will tie into the Hartford sewer system. Wastewater will be transported from collection points through gravity into the city's main lines for treatment. The sewage system will include cleanouts and sewer holes as required to properly maintain the system and avoid blockages.

26. Fire hydrants will be installed in the project in coordination with the Fire Marshal and DPW. The residential buildings will be equipped with a sprinkler system meeting applicable fire codes.

27. Snow will be stored on site and will be removed as needed. Snow will not be stored in such a manner as to create a hazard.

28. The applicant proposes to install two fenced and landscaped dumpster pad areas.

29. The applicant will schedule a preconstruction meeting with the DPW to review project schedule, design, and construction issues at least two weeks before actual site work commences.

30. The applicant understands that a permit from the DPW must be obtained before any work is done within the Town ROW.

31. During construction of the proposed project erosion and sediment control measures as specified in the most current edition of the *Low-Risk Site Handbook for Erosion Prevention and Sediment Control* published by the Vermont Department of Environmental Conservation will be followed.

32. According to the applicant, the building will meet applicable Vermont Energy Code Standards. An Energy Code Certificate will be recorded in Hartford's Land Records before a Certificate of Occupancy will be issued.

33. Stockpiling of materials related to the construction of the project will be located twice the distance of the height of the stockpiled materials from any public or private right-of-way or property boundary.

34. Construction trailers may be used on the condition that they are placed a minimum of ten feet from any property line, are placed only when there is an effective zoning permit for the project, and are removed before a Certificate of Occupancy is requested. No construction trailer may be placed in such a way that it obstructs sight distance along the traveled way, at any intersection or driveway. Any construction trailer found to obstruct sight distance will be required to be relocated immediately.

35. The applicants understand that no structure, signage, parking spaces or plantings may be placed in such a way that obstructs sight distance along the traveled way, at any intersection or driveway. Any signs, parking spaces or plantings found to obstruct sight distance will be required to be relocated.

36. Construction of the project will comply with Section 260-31 B of the Hartford Zoning Regulations, which states:

> *Earth moving and hauling, rock drilling or crushing, jack hammer and similar excessively loud equipment shall not be operated on Sundays or between the hours of 5:30 p.m. and 7:00 a.m. except in emergency situations.*

37. The applicants understand that they retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

38. The applicants understand that a zoning permit is required before the commencement of construction of the project. The applicant further understands that the issuance of the zoning permit only authorizes the construction of the project in compliance with the Findings, Conclusions of Law, Approved Plans, Exhibits and Conditions as specified herein.

39. The applicants understand that all activities authorized by the issuance of the zoning permit shall be started within six (6) months and completed within two (2) years of its date of issue, or the zoning permit shall become null and void and reapplication to complete any activities shall be required. Any activities not completed within the above permit period shall be subject to any ordinance in effect at the time of reapplication. One six (6) month extension to both time periods may be granted by the Planning Commission. Update Per Phasing Plan/Master Plan

40. The applicants understand that they must obtain a Certificate of Occupancy from the Zoning Administrative Officer upon completion of the project and before each building is occupied. The applicant understands that a Certificate of Occupancy will not be issued if the project is not in compliance with these Findings, Plans, and any conditions placed on the decision.

CONCLUSIONS OF LAW

Based upon the foregoing Findings of Fact, the Hartford Planning Commission concludes that the proposed site plan provides, as required by **§260-45 C** of the Hartford Zoning Regulations:

(1) Maximum safety of **traffic circulation between the site and the street network** and integration with the overall traffic pattern, including provisions for auxiliary roadways connecting with adjacent properties where appropriate. Included in this evaluation shall be the location, number and width of access points, curve radii at access points, acceleration or deceleration lanes on adjacent public streets, sight distances, lighting, location of sidewalks and other walkways, and the overall relationship of the proposed development with existing traffic conditions in the area. All modes of transportation shall be taken into account, including pedestrian, bicycle, handicapped, delivery and emergency vehicles and public transportation.

(2) Adequacy of **on site circulation, parking, and loading facilities,** with particular attention to safety. Included in this evaluation shall be traffic movement patterns, drive and aisle widths, directional signs, location of loading docks and parking areas, number and size of parking spaces, and provision for lighting, drainage, snow removal and access for emergency vehicles and public transportation.

(3) Adequacy of **landscaping, screening, and setbacks** in achieving maximum compatibility with and protection of adjacent properties by screening from them any glare produced by interior or exterior lights and unsightly areas such as storage areas, and parking lots; assurance that landscape materials will not interfere with visibility or safety and that they are of a type that can survive and be maintained as proposed.

(4) Adequacy of **provision for safety and convenience of pedestrians, bicyclists, and handicapped persons**. Included in this evaluation shall be lighting of walks and entrances, design and placement of walks and crosswalks, pick-up points for public transportation and provision of bicycle racks.

(5) **Protection of renewable energy resources,** including a finding that the proposed development does not adversely affect the ability of adjacent properties to use this form of energy.

(6) **Compliance with other provisions of these regulations** including § 260-27, Landscaping, and § 260-31, Land use performance standards.

(7) **Other** factors that are directly related to the above aspects of site plan review.

DECISION

The Hartford Planning Commission, based upon the forgoing Findings of Fact and Conclusions of Law, hereby approves application #23-25 by Black Rock Investment LLC (owner/applicant) for Site Development Plan Approval under section 260-45 of the Hartford Zoning Regulations for 192 dwelling units in four Multi-Unit Buildings, proposed lot 45-0162-000, Sykes Mountain Avenue and Hickory Ridge, White River Junction, in a proposed Planned Development **on the condition that:**

1. **Before a zoning permit is issued:**

    - **Subdivision/Lot Line Adjustment Application #22-23 and Planned Development Application #22-24 are approved by the Planning Commission and finalized.**

    - **The applicant's Engineer/Architect/Landscape Architect verifies that changes to the plans approved by the Planning Commission are limited to those required by the Commission.**

2. **Before a Certificate of Occupancy is issued, the applicants submit to the Zoning Administrator:**

    - **Written verification from a Professional Engineer licensed by the State of Vermont certifying that the project was constructed in compliance with the approved plans and Findings of Fact.**
    - **Written verification from the DPW confirming that the water, sewer, and hydrants have been inspected and approved.**

- **Written verification from the DPW confirming that they have received acceptable record drawings.**
- **An electronic copy of the record drawings.**
- **A copy of the Energy Code Certificate as recorded in Hartford's Land Records.**

This decision is also subject to the condition that no modification or expansion shall be made to the project as described and limited in the above Findings of Fact and Conclusions of Law without the written approval of the Hartford Zoning Board of Adjustment and/or the Hartford Planning Commission. This decision may be revoked, and a new application or permit required if conditions and findings are violated or modified without written approval.

The applicant is responsible for insuring compliance with all applicable State and Federal regulations pertaining to this application.

Those in favor:

Those in opposition:

Those not participating:

Dated at Hartford, Vermont this ____ day of MONTH 2024.

HARTFORD PLANNING COMMISSION

By:_____
Chairperson/Vice-Chairperson

Appeal Rights: An interested person who has participated in the proceeding related to this decision has the right to appeal this decision to the Vermont Environmental Court, pursuant to 24 V.S.A. s. 4471 and V.R.E.C.P.5, in writing, within 30 days of the date of this decision. If you fail to appeal this decision, your right to challenge this decision at some future time may be lost because you waited too long. You will be bound by this decision, pursuant to 24 V.S.A. s. 4472 (d) (exclusivity of remedy; finality).

EXHIBIT LIST

UPDATE

1. Application #23-25
2. Plan Set including Civil Plans, Landscape Plans, Architectural Plans
3. Memo from Jo-Ann Ells dated November 1, 2023
4. Project Narrative dated received October 30, 2023

5. Phasing Plan dated received October 30, 2023
6. Memo from Black Rock Investments LLC dated October 27, 2023
7. Letter from Kevin Worden dated October 27, 2023
8. Document entitled "Street Viewpoint Study" dated received October 30, 2023
9. Traffic Impact Study prepared by Even Haugh and Joe Vanacore dated August 2, 2023, received October 30, 2023

Town of Hartford

Planning Commission App # _____
Zoning Board of Adjustment App # _____

APPLICATION TO
PLANNING COMMISSION &/OR ZONING BOARD OF ADJUSTMENT

PLEASE COMPLETE ALL ITEMS APPLICABLE AND PROVIDE THE CORRECT NUMBER OF COPIES OF THIS APPLICATION AND THE SITE PLAN OR SUBDIVISION PLAT. ABUTTING LANDOWNERS WILL BE NOTIFIED BY THE PLANNING/ZONING OFFICE.

1. **NAME & ADDRESS OF RECORD OWNER(S)** Black Rock Investments

   Deed Recorded Book 253 and 256 Page 508, 509 and 166-167 (Available at Town Clerk's Office)

   Telephone: Work 802-295-7961 Cell 631-408-8766 Email Address: irwinperret@pering.net

2. **NAME & ADDRESS OF APPLICANTS(S)** Same as above

   Telephone: Work same as above Cell same as above Email Address: same as above

3. **NAME & ADDRESS OF APPLICANTS' CONSULTANT** Engineering Ventures (Kevin Worden)

   85 Mechanic Street, Suite E2-3, Lebanon, NH 03766

   Telephone: Work 603-442-9333 Cell 802-343-5445 Email Address: kevinw@engineeringventures.com

4. **PROJECT LOCATION** 444 Sykes Mountain Avenue

5. **PRESENT USE OF PROPERTY** Multi-family dwelling

6. **BRIEFLY DESCRIBE PROJECT** (in addition, a detailed narrative must be submitted)

   Site Plan Review of **Lot 45-162 in the R-1M and R-2 Zones and** includes (4) Multi-Unit Housing Buildings with a total of 192 units

7. **PROJECT SIZE IN SQ. FT OR ACREAGE** 19.56ac +/-

   Lot Width 850' Approx Lot Depth 1500' Approx

8. **IS PROJECT ON TOWN WATER/SEWER?** Yes X No _____ If Yes, estimated

   Water Consumption/day 32,250gpd Amount of Sewer Flow Projected 26,096gpd

   Size of Closest Lines Above (water) _____ (sewer) _____

9. **DESCRIBE LANDSCAPING PLAN** See attached plan

10. **IF A BUSINESS** - Present # of Employees N/A

    Proposed Days & Hours of Operation N/A

    Will you use the landfill & recycling center? Yes X No _____

    The main waste by-product of your business is: construction debris then house hold refuse

11. **IF A RESTAURANT** - Present seating N/A Proposed _____

12. **PARKING SPACES** - Number to be provided 270 total

13. **SIGNAGE** - Free Standing _____ Attached _____

14. **FENCING** – Location See attached engineering plans Height 4'

15. **NEAREST WATER SUPPLY FOR FIRE PROTECTION** Hydrants as designed

16. **ESTIMATED VALUE OF PROPOSED WORK** _____

17. **IS THERE AN EXISTING DRIVEWAY?** yes

18. **IF A SUBDIVISION** - Number of New Lots to be Created _____

    Do you request that the Town consider taking over maintenance of – Roads No

    Or Park/Open Space No

I HEREBY CERTIFY THAT THE INFORMATION PROVIDED ON THIS APPLICATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. (This certification must be signed by lot owners and applicants).

Irwin Perret	10-16-2023	Irwin Perret	10-16-2023
Applicant's Signature	Date	Lot Owner's Signature	Date
	10-16-2023		10-16-2023
Co-Applicant's Signature	Date	Co-Owner's Signature	Date

The applicant retains the obligation to identify, apply for, and obtain any relevant local or state permits before any construction may commence. Please call 802-282-6488 to speak with the State Permit Specialist.

For Office Use Only		
Map/Lot #		
Fee Paid $:		Receipt #:
PC: Site Plan	Min. Sub.	Maj. Sub.
PD	PD Amend.	Other
ZBA: Conditional Use	Variance	Appeal
Other		
Zoning District (s)		Date Filed:
Official Submittal Date:		

LANDOWNERS: BLACK ROCK INVESTMENTS, LLC
APPLICANT: BLACK ROCK INVESTMENTS, LLC

Sykes Mountain Avenue – Hickory Ridge Drive
Hartford, Vermont
Lots 45-162

- Project and District Objectives:

The Project will be a high-density, multi-family residential development that will help to address the well-documented housing need in Hartford. It will include all basic services such as power, water, sewage, internet, telephone, etc. Due to its high density and location next to the Hickory Ridge Road Bus Stop, the Project will enhance access to Advanced Transit's Orange Line.

The Project will include four buildings that will total the following unit mix:

- 36 proposed Studio apartments.
- 29 proposed Junior One-Bedroom apartments.
- 81 proposed One-Bedroom apartments.
- 23 proposed One-Bedroom apartments with Den.
- 23 proposed Two-Bedroom apartments.

The Project is being designed to create a park-like environment for residents by scenic forests and landscapes, where tenants and locals can enjoy outdoor activities surrounded by a beautiful natural environment.

- Coverage and Open Space:

50.3% of the development will remain as open space, as defined by Hartford Zoning Regulations for public and or common use. 23% of the lot will be covered with impervious surfaces which is well below the 65% maximum coverage allowed.

- Parking Requirements

The Project shall include parking as approved by the Planning Commission. It will have a total of 271 parking spaces, which includes the required allocation for disabled-accessible parking. There are five parking areas in the project:

- Parking Lot 1 will include 59 parking spaces and 10 garage spaces. It will cover parking for Building 1
- Parking Lot 2 will include 54 parking spaces and 10 garage spaces. It will cover parking for Building 2
- Parking Lot 3 will include 59 parking spaces and 10 garage spaces. It will cover parking for Building 3

- Parking Lot 4 will include 59 parking spaces and 10 garage spaces. It will cover parking for Building 4
- Parking Areas will also include sidewalks, bike paths and pedestrian walkways to ease pedestrian traffic.

- Building Height

The Application includes elevation views that show the buildings' heights which will be roughly 47'4" to its mid height parapet. Its highest plate will be 42' and this parapet will help to cover any mechanical equipment placed at this level. We assume that the building's height will not exceed 50' after placing air-conditioning units, antennas and solar collectors.

- Landscaping:

As approved by the Hartford Planning Commission. The site's main amenity is its natural surroundings, which the Project will incorporate through a robust landscaping plan. The Applicant will strategically place native plants, shrubs, and bushes around so that its visual impact is mitigated and blends with the natural surroundings. Additionally, the Landscaping Plan will include picnic areas, walkways, hiking trails, a playground, etc. to encourage an active lifestyle for residents. The design of the landscaping plan will aim to protect adjacent properties from screening and light glare and unsightly areas while not interfering with safety.

All plants selected will not be invasive to the State of Vermont.

Plant materials will include trees, shrubs, gardens, among others. Since the project's main amenities will be its scenic forests and landscapes, the Applicant will try to retain the natural cover of the site as much as possible. The Applicant will be responsible for maintaining all new plants in a healthy and growing condition.

All plant locations and types are included in the Application.

The access road will include plantings to block traffic headlights from flashing neighboring properties.

- Lighting:

As approved by the Hartford Planning Commission. The buildings' entryways will have exterior cut-off entry lighting, as would be typical of a residential unit. The parking areas will be lit with cut-off fixtures on poles in accordance with plans submitted. The Applicant will look to maximize the use of LED lighting fixtures to maximize energy efficiency.

The building and parking envelopes and footprints were chosen to create a dense compact community surrounded by open space, to minimize its visibility to neighboring areas. The compact design will also favor a smaller network of utilities and streets. Lot dimensions and setbacks were chosen to abide by these criteria: keeping a compact design that encourages a sense of community and lessens impact on the natural surroundings.

- Site Plan Development Criteria:

The Project will help to tackle the area's housing shortage by adding 192 units to the market, helping to balance the gap between supply and demand. Because of its relatively high density and ideal location next to Hickory Ridge Road's bus stop, more residents will have access to public transit resulting in a more efficient use of the public transportation system.

The Project's amenities will be further detailed in our concept drawings. They include but are not limited to:

- Pet-friendly, lighted walkways
- Bike paths
- Sidewalks
- Picnic Areas
- Bike racks
- Trash, Compost and Recycling collection facilities
- Mail and storage facilities
- Coworking space with open meeting rooms and personal offices
- Clubroom with kitchenette, boot seating, table seating, activity area, fireplace and T.V. area
- Health center and Yoga Studio
- Public restrooms
- Leasing area with open meeting rooms, offices, work rooms, activity area, fireplace and T.V. Area
- Firepits

The Project has been conceptualized to meet Hartford's Zoning Regulations main objectives:

- Become permanent asset for Hartford.
- Include an open space and outdoor recreation areas as shown in the Landscaping Plan
- Maximize the preservation trees and natural geological features, which are to be a key amenity for the project as shown in the Landscaping Plan
- Efficient Use of land by having a compact envelope as shown in the Engineering Plans.
- Integration into its natural surroundings

- Energy Performance Standards:

The Project will look to incorporate features and technologies to minimize energy consumption and maximize efficiency. The project will meet or exceed Vermont's energy standards. All structures will have a well-insulated building envelope with high-quality insulation materials, efficient windows, and airtight construction to minimize heat loss or gain. The Project will also include enhanced insulation techniques, such as spray foam insulation and insulated exterior walls, to minimize thermal bridging and maintain a consistent indoor temperature. Since the building is designed as slab-on-grade construction, we are planning for continuous rigid insulation under the slab. Proper sealing of gaps, ducts, and windows will ensure that conditioned air stays inside, reducing energy waste.

The design parameters will optimize natural light, ventilation, and solar heat gain. Orientation and window placement will be carefully considered to maximize daylight and reduce the need for artificial lighting. The Applicant will look to include Energy Star-rated appliances, including refrigerators, dishwashers, and washing machines, which consume less energy compared to standard models. The buildings will be structurally designed to allow for future placement of solar panels on the roof and conduits will be put in place to connect to existing building infrastructure as well as infrastructure for future EV charging stations. Outlets will be provided in the enclosed garage spaces for the same purpose.

The Project will also incorporate smart building automation systems and controls to optimize energy usage, including programmable thermostats, occupancy sensors, and timers for lighting and ventilation systems.

Waste, Recycling and Composting areas will be provided as mandated by the state of Vermont.

- Grading and Drainages:
    - Grading shall be made so that runoff is directed to established drainage courses and will not cause ponding or flooding of other properties, or exceed the capacity of downstream drainage facilities. The design includes stormwater considerations to mitigate this issue that meet and exceed the Vermont State Stormwater Manual. A Vermont State Stormwater Operational Permit will be required for this project.
    - When possible, drainage systems shall be designed so that water runoff rate existing prior to site development shall not be increased after development.
    - All changes in grade shall be controlled so as not to cause a nuisance or damage to other properties or erosion of topsoil.

- Utilities:
    - Roads:

The Applicant will build an access road to the buildings, as coordinated with Hartford DPW, to meet Town of Hartford requirements. Works include clearing and grading, subgrade preparation drainage systems, pavement layers, sidewalks and curbs, landscaping as described among others. The road will be privately owned and maintained.

If approved by the authorities, the Works include the reconfiguration of Hickory Ridge as shown in the attached drawings.

This modification is proposed to mitigate the outgoing traffic's headlight impact over an abutting neighbor located at 22 Hickory Ridge and concerns expressed by others. The Applicant is proposing to alter the layout of Hickory Ridge Road at the intersection of Sykes Avenue and a new parcel demarcation as highlighted in the attached drawings.

The reconfiguration will result in a 6,776 sq. ft. easement / right-of-way as shown in the drawings to allow for a reconfiguration of Hickory Ridge, as per DPW's suggestion given that the Selectboard approves the modification. The proposed Hickory Ridge reconfiguration will be maintainable, safe, reduces the opportunities for through traffic on the existing Hickory Ridge and provides protection to the Applicant's abutting neighbors.

- Water System:

The project will tie into Hartford's water supply. In order to meet water pressure requirements, a water booster system will be built to enhance the water pressure, ensuring efficient water supply and distribution for all tenants.

- Sewer System:

The sewer lines will tie into the Hartford sewer system. Wastewater will be transported from collection points through gravity into the city's main lines for treatment. The sewage system will include cleanouts and manholes as required to properly maintain the system and avoid blockages.

The Project will also include all basic utilities, including but not limited to, electricity, phone services, and internet services.

Similar to Northern Stage Theater and Briggs Opera House, the Project will be one of Hartford's flagship developments. It will enhance White River Junction's push to modernize by adding much-needed new residential infrastructure with contemporary amenities. Its concept will attract an eclectic and diverse mix of tenants that will help to create stability and economic prosperity for the community.

The Project is designed to elevate the concept of neighborhood living in White River Junction. It is thoughtfully crafted to create a harmonious blend of nature and community, empowering its residents to embrace an enriched lifestyle. With a strong emphasis on outdoor amenities and fostering connections, the Project promises to be a

transformative addition to the neighborhood, setting new standards for sustainable and vibrant living.

The Project will contribute to the town's economic development by providing housing for employees that historically have had to move away from the region due to lack of housing. It will also result in an increase in revenues for Hartford in the form of property taxes and help to promote the use of energy-efficient features for Hartford residents when compared to older multifamily projects.

Even though the proposal is innovative, the Project's main appeal is its natural beauty which the Applicant will plan to help to preserve and enhance. The Project will attract nature lovers and outdoor enthusiasts by including a mix of man-made amenities and natural amenities integrated through a robust landscaping plan. The sloped terrain of the plot is ideal for hiking trails, park-like landscaping and pet-friendly outdoor spaces that will help to showcase and seize the Upper Valley's unmatched natural beauty.

- Waivers:

The Applicant is requesting the following waivers:

- A waiver for height requirement for the structures
- A waiver to the required amount of parking units as per Article 260-24 of Hartford's regulations considering:
  - That the site is located within 1,000 ft of Advance Transit's Orange Line
  - The relative high density of the project and the unit mix of smaller apartments. Please note that the new housing legislation (S100) allows for a formula of 1 space per dwelling unit effective next year.

- Miscellaneous

Three rendered visualizations of the Project are included in this Application:

- Render 1: Rendered overlooking the Project on I91's crossing over the White River.
- Render 2: Rendered overlooking the Project on I91's overpass over Hartland Road/Main St.
- Render 3: Rendered overlooking the Project Hartford Avenue crossing over the White River.

During our preliminary meetings, there were concerns with the visual impact that this development would have over its surroundings, especially due to its proximity to I91 and I89. This concern was exacerbated because our previous version of the project included just two buildings but that were twice as long as the current versions of them.

These locations were selected to demonstrate the low visual impact that the project will have on high traffic areas, thanks to the site's topography and our careful design to conceal the buildings as much as possible with its surrounding vegetation and topography. All renders are at street level view or a few feet above to portray the visualization as it would look for pedestrians and bystanders.

The colors of the visualizations will be updated but are easier to assess on the elevation views submitted on the application.

- Acknowledgements and Understandings:
    - The Applicant acknowledges that it is its obligation to identify, apply for, and obtain any relevant local and state permits for this project.
    - The Applicant will contact Fire Marshall to discuss requirements for obtaining Public Building permit.
    - All proposed plantings are native/non-invasive.
    - During construction, erosion and sediment control measures as specified in the most current edition of the *Low-Risk Site Handbook for Erosion Prevention and Sediment Control* published by the Vermont Department of Environmental Conservation will be followed.
    - Before starting construction, the Applicant will schedule a preconstruction meeting with the Department of Public Works (DPW), with two weeks in advance. Any revisions must be forwarded to the Zoning Administrator to amend the permit.
    - The Applicant acknowledges that any approval will include a requirement that no structure, including construction/office trailers, signage, parking spaces or plantings may be placed in such a way that obstructs sight distance along the traveled way, at any intersection or driveway. Any signs, parking spaces or plantings found to obstruct sight distance will be required to be relocated.
    - The Applicant acknowledges that before the Certificate of Occupancy can be issued, the following list must be completed:
        - Submit written verification from a Professional Engineer licensed by the State of Vermont certifying that the project was constructed in compliance with the approved plans and Findings of Fact
        - Submit verification that the water and sewer have been inspected and approved by the Department of Public Works
        - Submit acceptable record drawings to the Department of Public Works
        - Submit a PDF of the record drawings to the Zoning Administrator
        - Record an Energy Code Certificate in the Land Records if required by the State of Vermont
    - The Applicant acknowledges that Earth moving and hauling, rock drilling or crushing, jack hammer and similar excessively loud equipment shall not be operated on Sundays or between the hours of 5:30 p.m. and 7:00 a.m. except in emergency situations.

- The Applicant acknowledges that any stockpiling of materials related to the construction of the project must be located twice the distance of the height of the stockpiled materials from any public or private right-of-way or property boundary.
- The Applicant acknowledges that construction trailers may be used at construction sites for office and laboratory use on the condition that they are placed a minimum of ten feet from any property line, are used for a project with a valid zoning permit and are removed before a certificate of occupancy is requested. No construction trailer may be placed in such a way that obstructs sight distance along the traveled way, at any intersection or driveway. The Applicant also acknowledges that any construction trailer found to obstruct sight distance will be required to be relocated immediately.

Approved by the Hartford Planning Commission

_____

Planning Commission Chair/Vice Chair Date

PLANNED DEVELOPMENT PHASING PLAN
Sykes Mountain Avenue – Hickory Ridge Drive
Hartford, Vermont
Lot 45-162

Phasing Plan as approved by the Planning Commission and depending on financing considerations.

LOT 45-162 DEVELOPMENT

- PHASE I

  PHASE I will include the development of Building 1 and Building 2 and its surrounding infrastructure. The works will include the following:
  - Construction of two four-story structures will total 18 studio apartments, 15 one-bedroom jr. apartments, 39 one-bedroom apartments, 11 one-bedroom apartments with a den and 11 two-bedroom apartments. Building two will also include over 1,400 sq-ft. of indoor amenities.
  - Construction of Parking Lot 1 and Parking Lot 2
  - Construction of water booster station.
  - Installation of domestic water supply, electricity, internet service and phone service infrastructure for Building 1, Building 2, Parking Lot 1 and Parking Lot 2

- PHASE II:

  PHASE II will include the development of Building 3 and 4. The works will include the following:
  - Construction of two four-story structures that will total 18 studio apartments, 14 one-bedroom jr. apartments, 42 one-bedroom apartments, 12 one-bedroom apartments with a den and 12 two-bedroom apartments.
  - Construction of Parking Lot 3 and Parking Lot 4.
  - Construction of the upper main outdoor amenities which will include walking trails, patios, dog runs, grill areas, playgrounds, among others.
  - Installation of domestic water supply, electricity, internet service and phone service infrastructure for Building 3, Building 4, Parking Lot 3 and Parking Lot 4

  Before the issuance of the first Certificate of Occupancy the landscaping, including seeding, around the curtilage of the buildings will be installed allowing only for seasonal issues with planting. The sidewalks and site lighting will also be installed.

This is the Developer's initial plan, but the construction sequence of the various buildings is subject to change. This plan is dependent on the scope and specifics of the potential agreement with the aforementioned third-party affordable entity.

BLACK ROCK INVESTMENTS, LLC

Memorandum

To: Jo-Ann Ells

Cc: Kevin Worden, Paul Simon, Earl Simpson, Dennis Marquise, and Chris Holzwarth

From: Black Rock Investments, LLC

Date: October 27, 2023

Re: Answers to Memo Proposed Multi-Unit Dwellings (192 Units)

In relation to Memorandum received on October 22nd, please find our comments below in red ink:

Please submit a response to the following comments/questions on your application for multi-unit dwellings on the corner of Sykes Mountain Avenue and Hickory Ridge before **9:00 a.m., Monday, October 30, 2023.** If you are unable to meet this deadline, please contact me as soon as possible to discuss the deadline to have your application considered at the next round of Public Hearings.

Prior to the Zoning Board of Adjustment and Planning Commission Hearings, you will receive an agenda, draft Findings of Fact, and additional staff comments if there are any. Please feel free to contact me at any time during this process.

1. Please confirm that you understand that you retain the obligation to identify, apply for, and obtain any relevant local and state permits for this project.

   To determine what State Environmental Permits may be required for your project, The Vermont Agency of Natural Resources (ANR) recommends that you use ANR's Permit Navigator Tool by going to the VT Department of Environmental Conservation website Welcome to DEC | Department of Environmental Conservation (vermont.gov) and going to the "Permit Navigator Tool" Permit Navigator (force.com)

   If further assistance is needed, please contact the Community Assistance Specialist for our area:

   Rick Oberkirch, Community Assistance Specialist
   802-282-6488
   Rick.Oberkirch@vermont.gov

   We understand and acknowledge it. It is included in Acknowledgement section of narrative

2. No action will be taken on the application until you apply for final approval for the two-step subdivision application you have submitted to create the lot and the Planned Development. Understood.

   Given this, the Zoning Board of Adjustment and Planning Commission will need to continue the Public Hearings to a date certain. What application deadline do you anticipate submitting for final approval? (If in the future you need more time to prepare the application for Final Approval, the Hearing can be continued.) Understood. Depending on comments on the preliminary submittals from the Staff and Board, application for Final Approval will be submitted in December or January.

3. Please contact Tom Peltier, Fire Marshal, to discuss requirements for obtaining a Public Building permit. tpeltier@hartford-vt.org (295-3232). Understood.

4. If you have not done so already, I encourage you to talk to Hartford's Environmental Sustainability Coordinator, Dana Clawson, about energy efficiency options for your project. (dclawson@hartord-vt.org) Understood.

5. Please amend the project narrative such that it is limited to this application. Understood, see attached narrative

6. Please include a detailed description of the design of the access road and any existing/proposed rights-of-ways/easements in the Project Narrative. Understood, see attached narrative.

7. Please include a detailed description of the percentage of open space and all proposed outside amenities in the Project Narrative including information pertaining to maintenance. Please include information regarding construction of the hiking trails/clarify if they exist or need to be constructed. Noted and included in narrative. Final percentage is 50.3%

8. Please outline in the Project Narrative how the application conforms with §260-27 C of the Hartford Zoning Regulations which states:

   Grading and drainage. The following provisions shall apply to any changes which affect drainage of water to or from a property:
   (1) Any changes in grading shall be made so that runoff is directed to established drainage courses and will not cause ponding or flooding of other properties, or exceed the capacity of downstream drainage facilities.
   (2) When possible, drainage systems shall be designed so that water runoff existing prior to site development shall not be increased after development.
   (3) All changes in grade shall be controlled so as not to cause a nuisance or damage to other properties or erosion of topsoil. Understood, see attached narrative.

9. Please see comments on the proposed phasing plan in the memo regarding the Planned Development. Understood

10. Please provide the following information regarding the Street Viewpoint Study:

    - Explain how you chose the vantage points
    - Provide the address/location for the vantage points
    - Are the colors of the proposed buildings represented in the study?

    Included in miscellaneous section of narrative

11. Please amend the plans such that they are limited to this application and coordinated with the proposed Affordable Housing Development on the Adjacent lot as applicable. Understood.

12. The plans will need to be amended based on what is agreed upon with the DPW for the access/realignment of Hickory Ridge. (See comments on the subdivision.) Understood

13. The plans should incorporate vehicular and pedestrian protections for the stormwater treatment pond on the corner of Hickory Ridge and Sykes Mountain Avenue given the drop off from travelled lanes and sidewalks. In accordance with State rules, there should be a plan demonstrating accessibility to the pond and its infrastructure. Understood

14. A detailed analysis for the proposed stormwater system has not been provided to date and therefore, comments cannot be provided at this time. The final application should address the adequacy of downstream infrastructure. It is likely that review by a third-party engineer at your expense will be recommended. Understood

15. Water and Sewer:

    A detailed analysis with calculations, plans, and details has not been provided to date and therefore comments cannot be provided at this time. The application should address the adequacy of downstream sewer infrastructure. Understood, additional coordination and review with DPW staff will be required.

    This building should be serviceable from the existing mains as shown on the preliminary plans subject to an application for allocation with flow and pressure calculations and final plans and details. Understood

    It is possible that review by a third-party engineer at your expense will be recommended. Understood

16. A photometric plan is required. The landscape and lighting plans have been updated to include photometric data as required. Lighting includes cut-off / dark-sky-friendly fixtures as required.

17. A turning movement plan is required. Understood

18. Please indicate the size of the parking spaces, access aisles, and dumpster enclosure on the plans. Understood

19. What is the height of the proposed building measured as follows:

    Building height shall be measured from the proposed finished grade at the front of the building to the highest point of the roof for flat or mansard roofs, or to the midpoint between the eaves and ridgeline for other roofs. Rooftop apparatus such as air-conditioning units, antennas and solar collectors shall be included in the measurement.
    The building height varies from 45'-4" (low parapet) to 47'-4" (high parapet) to 50' (highest parapet above corner entry). These heights are required for a four story building with appropriate ceiling heights, structure and mechanical equipment. The four story building support the unit density proposed with a smaller footprint than a three story building which would have a larger footprint on the site.

20. Please consider providing an electric vehicle charging station(s) or installing the conduit for future installation. Understood.

21. What will be provided in the proposed "Building Amenities" space Interior building amenities have been included in the narrative. The amenity plaza between buildings #2 and #3 includes a hardscape plaza area with multiple lounge seating areas, gas fire pits, outdoor dining tables with umbrellas, two barbeque stations with counters for grilling use, an open lawn space suitable for a variety of activities, lawn seating, passive and semi-active uses, vertical arbor features, and Adirondack chairs for relaxation. Plan L2.1 provides greater detail of the outdoor amenity area.

22. Staff needs to discuss the proposed road name. Understood

23. The Traffic Impact Study is being reviewed. Comments will be sent separately. Understood

24. Hartford's Tree Board suggests that you propose a different evergreen tree than Hemlocks which are threatened by the woolly adelgid. Understood; we replaced the Hemlock with Norway Spruce Trees (see planting plans).

25. Please confirm that all proposed plantings are native/non-invasive or amend the plans accordingly. Yes, we confirm all of the proposed plantings are either native or northern hardy non-invasive varieties.

26. Please consider appropriate plantings in the stormwater basins. Understood. The stormwater basin plantings will be developed to include hardy northern plantings suitable to withstand saturated soil conditions as appropriate within a depressed stormwater basin area

27. Please outline how the proposed landscaping meets the following sections of the Zoning Regulations:

Section 260-24 (8) (b)

The site shall be designed and landscaped to minimize negative visual impacts and maximize safety. Plantings may be required for this purpose, both within the lot and between it and any public road or adjacent property. Plants shall not be invasive to Vermont, shall be selected for their ability to survive under special conditions found in a parking lot, and shall be protected from damage by vehicles and maintenance equipment, including snow removal and storage. Yes, the site has been designed and landscaped to minimize negative visual impacts as it includes a robust landscaping plan including native and non-invasive plantings. In addition, attention to preserving the existing perimeter trees was included to minimize visual impact. The plans also include numerous pedestrian walkways and a multi-use path system to separate bicyclists, and pedestrian traffic from the vehicular traffic network to maximize safety. The choice and placement of plantings in the parking areas takes into account the special hazards of salt, vehicles, and maintenance equipment.

Section 260-27

B. Plantings. The following provisions shall apply to the planting element of all landscape plans submitted for site development plan approval:

(1) Plant materials included in landscape plans may be trees, shrubs, lawns, flower gardens, ground covers, cropland, pasture, meadows, wetlands, and forests.
(2) Natural cover shall be retained on a site to the extent possible and reasonable. Site clearing shall be kept to the minimum required for the construction of buildings and improvements.
(3) Plantings included in landscape plans receiving site development plan approval shall be maintained in a healthy, growing condition. Where forest, cropland and "natural" areas are included, provision shall be made for their ongoing maintenance.
(4) The choice and placement of plantings in parking areas shall take into account the special hazards of salt, vehicles, and maintenance equipment, and include provision for adequate and safe snow removal.
(5) Any landscape plan submitted for site development plan approval shall show the locations and types of plants to be removed as well as the species, sizes, quantities, and locations of all new plants to be installed. Additional information may be required by the Planning Commission under the

provisions of § 260-45 below. Understood. Plans submitted for review include and show the locations and types of plants as well as the species, sizes, quantities, and locations to be installed. Again, the choice and placement of plantings in the parking areas takes into account the special hazards of salt, vehicles, and maintenance equipment. Overall, the goal is to provide a welcoming and colorful pallet that is inviting, yet will be low-maintenance once the plantings establish. To that end, we have included a diversity of tree and shrub species that include Vermont native and northern New England varieties

Section 260-45 C (3)

Adequacy of landscaping, screening, and setbacks in achieving maximum compatibility with and protection of adjacent properties by screening from them any glare produced by interior or exterior lights and unsightly areas such as storage areas, and parking lots; assurance that landscape materials will not interfere with visibility or safety and that they are of a type that can survive and be maintained as proposed. Attention to the placement of new plantings as well as maintaining a strong natural buffer of existing plantings has been included in the design concept. Maintaining a strong woodland perimeter and forest area helps us achieve maximum screening and a robust vegetative buffer to the adjacent properties. The project also capitalizes on this natural resource as to include a woodland trail system for residents.

28. Please acknowledge that during construction erosion and sediment control measures as specified in the most current edition of the *Low-Risk Site Handbook for Erosion Prevention and Sediment Control* published by the Vermont Department of Environmental Conservation will be followed. We understand and acknowledge it and have included in Acknowledgement section of narrative

.

29. Please acknowledge that you understand the following:

    Before you commence construction, you need to schedule a preconstruction meeting with the Department of Public Works (DPW). You need to contact the DPW at least two weeks before you want to hold this meeting. We understand and acknowledge it and have included in Acknowledgement section of narrative

    If this meeting results in any revisions to the approved plans, you must contact me to discuss amending your permit. We understand and acknowledge it and have included in Acknowledgement section of narrative

35. Any approval will include a requirement that no structure, including construction/office trailers, signage, parking spaces or plantings may be placed in such a way that obstructs sight distance along the traveled way, at any intersection or driveway. Any signs, parking spaces or plantings found to obstruct sight distance will be required to be relocated. Please confirm that you understand this requirement and that all proposed structures and plantings meet this requirement or amend the plan accordingly. We

understand and acknowledge it and have included in Acknowledgement section of narrative

36. Please acknowledge that you understand that once the project is complete and before I can issue a Certificate of Occupancy you need to:

    - Submit written verification from a Professional Engineer licensed by the State of Vermont certifying that the project was constructed in compliance with the approved plans and Findings of Fact
    - Submit verification that the water and sewer have been inspected and approved by the Department of Public Works
    - Submit acceptable records drawing to the Department of Public Works
    - Submit a PDF of the record drawing to the Zoning Administrator
    - Record an Energy Code Certificate in the Land Records if required by the State of Vermont We understand and acknowledge all points and have included in Acknowledgement section of narrative

    Please acknowledge that you understand these requirements.

37. Please acknowledge that you understand that construction of the project must comply with Section 260-31 B of the Hartford Zoning Regulations, which states:

    Earth moving and hauling, rock drilling or crushing, jack hammer and similar excessively loud equipment shall not be operated on Sundays or between the hours of 5:30 p.m. and 7:00 a.m. except in emergency situations. We understand and acknowledge it and have included in Acknowledgement section of narrative

38. Please acknowledge that you understand that any stockpiling of materials related to the construction of the project must be located twice the distance of the height of the stockpiled materials from any public or private right-of-way or property boundary.

39. The Hartford Zoning Regulations provide that "Construction trailers may be used at construction sites for office and laboratory use on the condition that they are placed a minimum of ten feet from any property line, are used for a project with a valid zoning permit and are removed before a certificate of occupancy is requested. No construction trailer may be placed in such a way that obstructs sight distance along the traveled way, at any intersection or driveway. Any construction trailer found to obstruct sight distance will be required to be relocated immediately." We understand and acknowledge it and have included in Acknowledgement section of narrative

    Please acknowledge that you understand these requirements.

40. Please email me the application form (please add the mailing address for the owner), revised project narrative, revised plan set, Traffic Impact Study, Street Viewpoint Study, Phasing Narrative, Phasing Site Plan, and your response to this memo.

41. Please submit the application fee ($9,590) and eight copies of:

- Application form
- Revised project narrative
- Revised plan set
- Traffic Impact Study
- Street Viewpoint Study
- Phasing Narrative
- Phasing Site Plan
- Response to this memo

Memorandum

To: Irwin Perret-Gentil Acedo
GPA Management LLC
2458 Christian Street
White River Junction, VT 05001

Date: August 2, 2023

Project #: 58986.00

From: Evan Haugh, EIT
Joe Vanacore

Re: 444 Sykes Mountain Ave Traffic Impact Study

VHB completed a Traffic Impact Study for a proposed multifamily housing development at 444 Sykes Mountain Avenue in White River Junction, Vermont. This study includes a review of existing conditions, proposed development program, anticipated trip generation, and impacts to the adjacent roadway network.

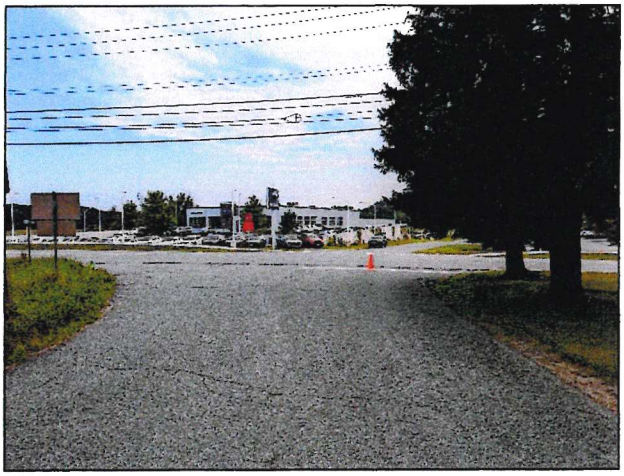
Existing Conditions

The proposed development is located on a 24.6-acre parcel at 444 Sykes Mountain Avenue. A map of the project area is shown in **Figure 1**. The parcel is largely undeveloped, with one single-family home and driveway access to Sykes Mountain Avenue. Sykes Mountain Avenue is an east-west major collector across the southern portion of White River Junction. It has a two-lane cross section and the speed limit is 30 miles per hour. There are narrow (3 to 5 feet) paved shoulders and a sidewalk along the south side of the road.

Figure 1 Area Map



There is also a bus stop at the corner with Hickory Ridge. During traffic counts, passengers were observed boarding and deboarding here throughout the day. The Hickory Ridge approach to this intersection is stop-controlled.



Hickory Ridge and Sykes Mountain Ave (facing south)

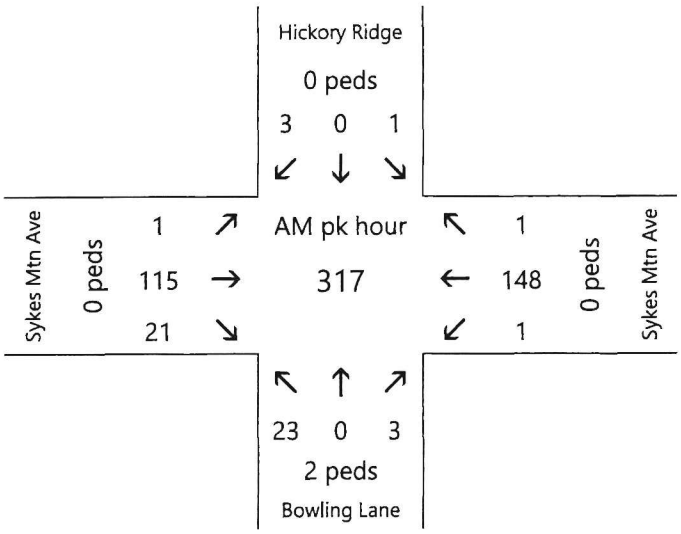


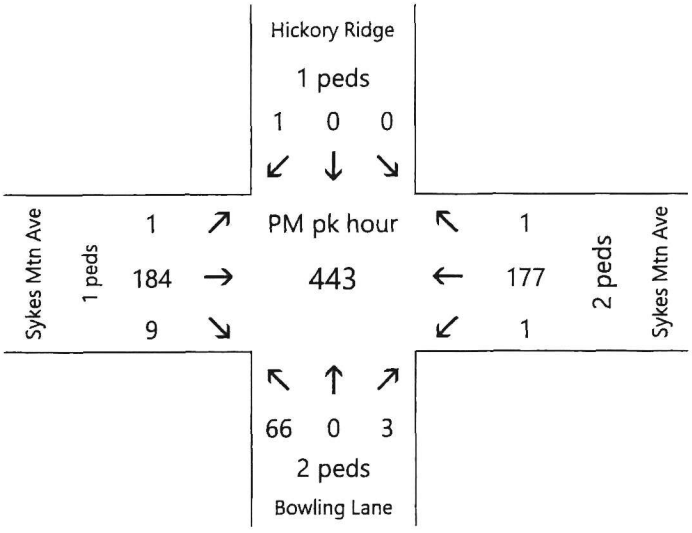
Bus Stop at Hickory Ridge

Traffic Volume & Speed

VHB counted traffic turning movements at the Sykes Mountain Avenue / Hickory Ridge intersection on Thursday, July 17th, 2023. The morning peak hour occurred from 7:00 – 8:00 AM, with 317 vehicles total entering the intersection. In the evening, the peak hour was 4:15 – 5:15 PM with 443 vehicles entering the intersection. Turning movement diagrams are shown in **Figure 3**.

Figure 2 Turning Movement Diagrams





Vehicle speeds were measured along Sykes Mountain Avenue 60 feet east of Hickory Ridge. The average speed was 32 mph in both directions. The 85th percentile speed was 39 mph for eastbound vehicles and 35 mph for westbound vehicles.

Sight Lines

Sight lines were measured to verify that there is adequate sight distance along Sykes Mountain Avenue to the proposed driveway location. Access to the site is proposed via a driveway connecting to Hickory Ridge.

Stopping sight distance is defined as the distance a vehicle would travel while reacting to and stopping for a hazard on the road ahead (such as another car turning). This distance increases with higher speeds and should be designed for the 85th percentile speed on the roadway (i.e., the speed 85% of drivers travel at or below). During traffic counting, the 85th percentile speed was measured at 37 mph. At 40 mph, the stopping sight distance is 305 feet.[1]

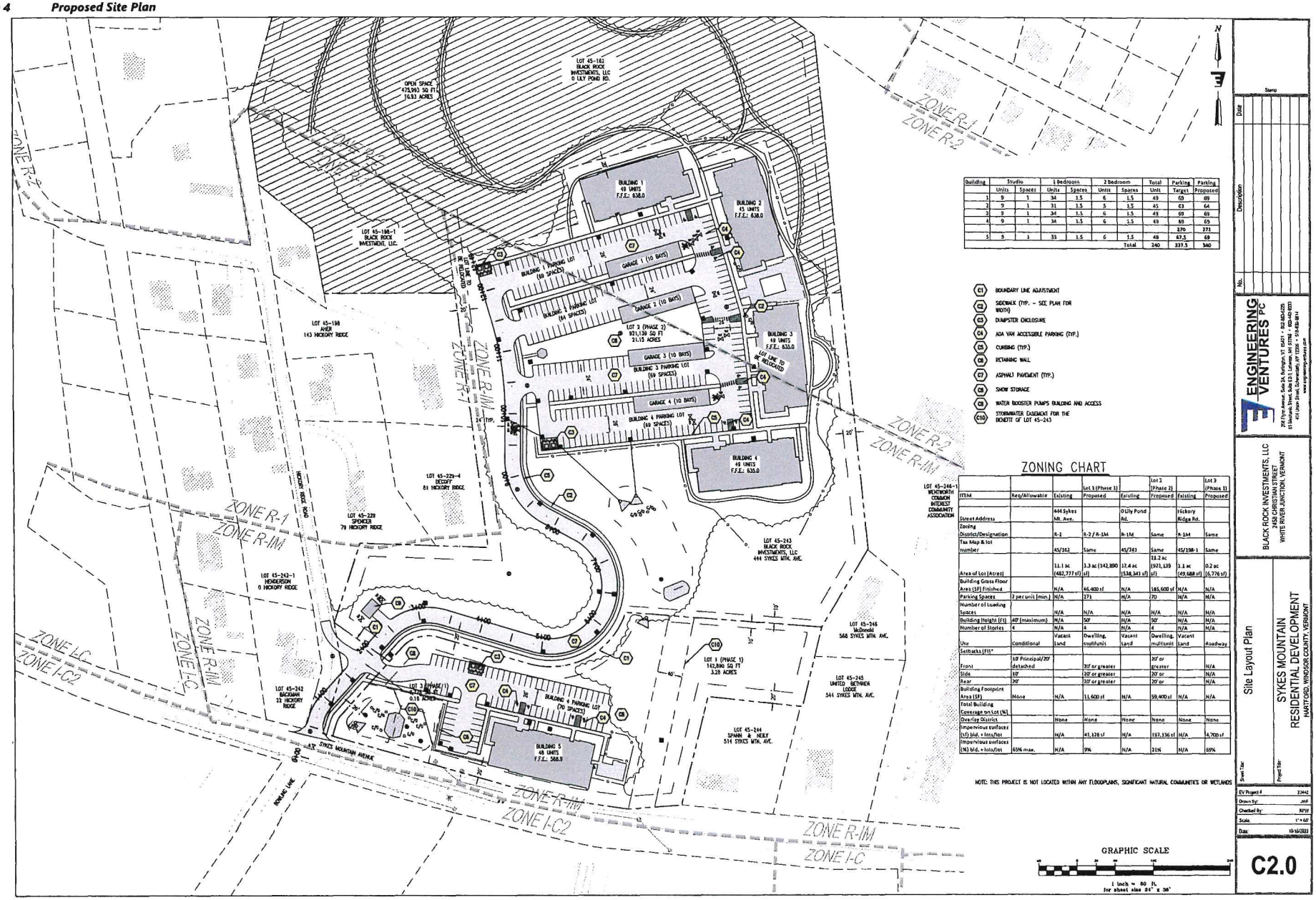
Sight distances along Sykes Mountain Avenue approaching Hickory Ridge from the east and west were measured as 545 feet and 395 feet, respectively. These exceed the stopping sight distance at 40 mph, so sight distances are adequate at this site.

Proposed Development

As shown on the site plan in **Figure 4**, the proposed development consists of five multifamily housing buildings, parking lots, garages, and landscaping. The total unit count is 240 apartments. The site will be accessed via a new driveway connecting to Hickory Ridge. The driveway will have a stop condition at Hickory Ridge. The driveway will be skewed to channel exiting traffic south on Hickory Ridge, discouraging right turn movements. The existing parcel driveway will be closed.

[1] Policy on Geometric Design of Highways and Streets, AASHTO, 2011

Figure 4 ***Proposed Site Plan***



Building	Studio		1 Bedroom		2 Bedroom		Total	Parking	Parking
	Units	Spaces	Units	Spaces	Units	Spaces	Unit	Target	Proposed
1	9	1	34	1.5	6	1.5	49	60	69
2	9	1	31	1.5	5	1.5	45	63	64
3	9	1	34	1.5	6	1.5	49	69	69
4	9	1	34	1.5	6	1.5	49	80	69
								270	271
5	9	1	33	1.5	6	1.5	48	67.5	69
						Total	240	337.5	340

- C1 BOUNDARY LINE ADJUSTMENT
- D2 SIDEWALK (TYP. – SEE PLAN FOR WIDTH)
- D1 DUMPSTER ENCLOSURE
- D4 ADA VAN ACCESSIBLE PARKING (TYP.)
- D5 CURBING (TYP.)
- D6 RETAINING WALL
- D7 ASPHALT PAVEMENT (TYP.)
- D8 SNOW STORAGE
- D9 WATER BOOSTER PUMPS BUILDING AND ACCESS
- C10 STORMWATER EASEMENT FOR THE BENEFIT OF LOT 45-243

ZONING CHART

ITEM	Req/Allowable	Existing	Lot 3 (Phase 1) Proposed	Existing	Lot 2 (Phase 2) Proposed	Existing	Lot 3 (Phase 1) Proposed
Street Address		444 Sykes Mt. Ave.		0 Lily Pond Rd.		Hickory Ridge Rd.	
Zoning District/Designation		R-2	R-2 / R-1M	R-1M	Same	R-1M	Same
Tax Map & lot number		45/243	Same	45/243	Same	45/198-1	Same
Area of Lot (Acres)		11.1 ac (482,777 sf)	3.3 ac (142,896 sf)	12.4 ac (534,343 sf)	21.2 ac (921,139 sf)	1.1 ac (49,688 sf)	0.2 ac (6,776 sf)
Building Gross Floor Area (SF) Finished		N/A	46,400 sf	N/A	185,600 sf	N/A	N/A
Parking Spaces	2 per unit (min.)	N/A	271	N/A	70	N/A	N/A
Number of Loading Spaces		N/A	N/A	N/A	N/A	N/A	N/A
Building Height (Ft)	40' (maximum)	N/A	50'	N/A	50'	N/A	N/A
Number of Stories	4	N/A	4	N/A	4	N/A	N/A
Use	Conditional	Vacant land	Dwelling, multifunit	Vacant land	Dwelling, multifunit	Vacant land	Roadway
Setbacks (Ft)*							
Front	10' Principal/20' detached		20' or greater		20' or greater		N/A
Side	10'		20' or greater		20' or		N/A
Rear	20'		20' or greater		20' or		N/A
Building Footprint Area (SF)	None	N/A	11,600 sf	N/A	59,400 sf	N/A	N/A
Total Building Coverage on Lot (%)							
Overlay District		None	None	None	None	None	None
Impervious surfaces (sf) bld. + lots/lot		N/A	41,328 sf	N/A	197,336 sf	N/A	4,700 sf
Impervious surfaces (%) bld. + lots/lot	65% max.	N/A	9%	N/A	21%	N/A	69%

NOTE: THIS PROJECT IS NOT LOCATED WITHIN ANY FLOODPLAINS, SIGNIFICANT NATURAL COMMUNITIES OR WETLANDS

GRAPHIC SCALE

1 inch = 60 ft.
for sheet size 24" x 36"

Stamp

No.	Description	Date

ENGINEERING VENTURES PC
284 Pine Avenue, Suite 2A, Burlington, VT 05401 • 802.865.4225
51 Mechanic Street, Suite E2-1, Lebanon, NH 03766 • 603.448.6523
411 Union Street, Schenectady, NY 12305 • 518.469.4814
www.engineeringventures.com

BLACK ROCK INVESTMENTS, LLC
444 SYKES MTN. AVE.
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Site Layout Plan

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22042
Drawn By:	JMF
Checked By:	RPW
Scale:	1" = 60'
Date:	10/16/2023

C2.0

Trip Generation

Trip generation estimates for the proposed residential units were calculated based on rates published in the Trip Generation Manual (Institute of Transportation Engineers (ITE), 11th Edition) for the weekday AM and PM peak hours. Estimates used ITE land use code 221 (Multifamily Housing, Mid-Rise), as appropriate for a four-story residential building.

The proposed development is expected to generate 94 trips during the weekday AM peak hour and during the weekday PM peak hour. **Table 1** summarizes the trip generation estimate. Although significant use of the bus service was observed and can similarly be anticipated for new development in the area, the trip generation developed for this study was assumed to be conservative and did not account for this potential mode split.

Table 1 Trip Generation Summary

	Site Generated Trips
Peak Period	240 Units Multi-Family Housing
AM Peak Hour	
Enter	22
Exit	72
Total	94
PM Peak Hour	
Enter	57
Exit	37
Total	94

Background Development

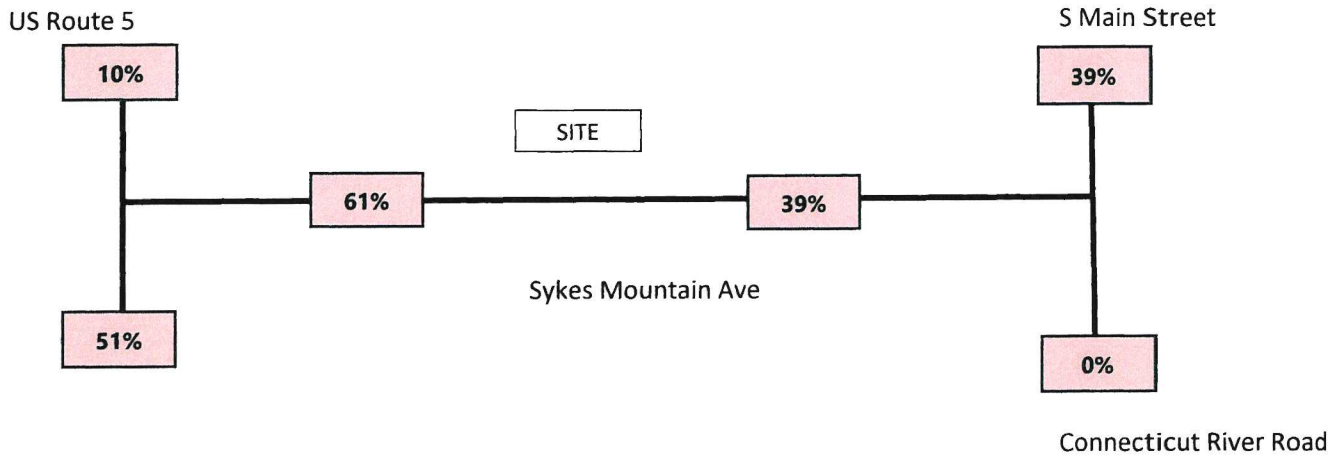
To improve estimates of future traffic volumes, background development was added. These included other permitted developments anticipated to open between now and the project's opening year. Trip generation for background development was added to the base traffic volumes counted for this study.

A list of other permits in the site area was requested from the Town of Hartford. One relevant project was identified – the reopening of the former Gateway Ford dealership at 190 Sykes Mountain Avenue as Key Chrysler/Dodge/Jeep/Ram. ITE land use code 840 (Automobile Sales, New) was used to estimate peak hour trips. The new dealership was anticipated to generate 60 AM peak hour trips (44 entering/16 exiting) and 79 PM peak hour trips (32 entering/47 exiting). These trips were distributed directionally using the methodology discussed in the next section. The dealership will add 23 AM peak hour trips and 31 PM peak hour trips to the intersection of Sykes Mountain Avenue and Hickory Ridge, which were accounted for in the base future traffic volumes.

Trip Distribution

Trips were distributed using US Census Journey to Work data for the Town of Hartford. This measures the location of Hartford residents' workplaces at the town level. Weekday AM and PM peak hour trips were assigned to towns within the region at rates given in the Journey to Work data. These trips were then routed to/from the site along the most practical path. This analysis found that 61% of trips will arrive from or depart to the west on Sykes Mountain Avenue and the remainder to/from the east. The VTrans Traffic Impact Study guidelines require the study area to include all intersections serving more than 75 peak hour trips. Only Sykes Mountain Avenue and Hickory Ridge meet this threshold. This intersection was analyzed with and without site-generated trips to evaluate impact on the adjacent network.

Figure 3 Trip Distribution



Traffic Capacity Analysis

An intersection capacity analysis was performed for Sykes Mountain Avenue and Hickory Ridge. Levels of service (LOS) were calculated based on the criteria published in the *Highway Capacity Manual 6th Edition*.[2] Levels of service range from A to F with LOS A representing generally free flowing operating conditions and LOS F representing generally congested conditions.

Traffic Adjustments

Base traffic volumes were collected on Thursday, July 13, 2023. Traffic analysis was based on the Design Hour Volume (DHV) for 2028. DHV is defined as the 30th-highest traffic hour of the year. To reach this number, two adjustments were applied – a seasonal adjustment and future year growth factor.

[2] Highway Capacity Manual, Federal Highway Administration, Transportation Research Board

Seasonal adjustments were based on VTrans' continuous traffic counter on Maple Street at the Connecticut River Bridge, 1.5 miles away from the site. Data from this counter for 2022 shows that the peak hour on the 27th, 28th, and 29th Thursdays of the year are on average 95% of the DHV value. Using this factor, traffic counts measured on Sykes Mountain Avenue were scaled up to 100% of DHV.

For this analysis, an opening year of 2028 was assumed. The VTrans Red Book lists a growth factor of 1.021 from 2023 to 2028. This factor was also applied to the base volumes used for the intersection analysis.

Sykes Mountain Avenue and Hickory Ridge

Table 2 summarizes traffic operations at the unsignalized intersection of Sykes Mountain Avenue and Hickory Ridge during the 2028 weekday AM and PM peak hours under No Build and Build conditions. Sykes Mountain Avenue consistently operates at a LOS A with no meaningful queuing. Turning vehicles readily find gaps, and do not create delay for other motorists. Under the Build conditions, Bowling Lane sees delay grow slightly (by less than three seconds) due to increased opposing traffic. In short, the intersection operates far below capacity today and will operate similarly with these new trips.

Table 2 Unsignalized Intersection Capacity Analysis

Approach	2028 AM No Build				2028 AM Build			
	v/c	Delay*	LOS**	Q95***	v/c	Delay*	LOS**	Q95***
Hickory Ridge at Sykes Mountain Ave								
Hickory Ridge, SB	0.01	9.9	A	0	0.12	10.8	B	10
Bowling Lane, NB	0.05	11.1	B	5	0.06	12.0	B	5
Sykes Mountain Ave, EB	0.01	0.1	A	0	0.01	0.7	A	0
Sykes Mountain Ave, WB	0.01	0.1	A	0	0.01	0.1	A	0
Overall Intersection		1.1	A			2.9	A	

Approach	2028 PM No Build				2028 PM Build			
	v/c	Delay*	LOS**	Q95***	v/c	Delay*	LOS**	Q95***
Hickory Ridge at Sykes Mountain Ave								
Hickory Ridge, SB	0.01	9.4	A	0	0.07	11.3	B	5
Bowling Lane, NB	0.16	13.4	B	15	0.20	15.7	C	18
Sykes Mountain Ave, EB	0.01	0.1	A	0	0.03	1.1	A	3
Sykes Mountain Ave, WB	0.01	0.1	A	0	0.01	0.1	A	0
Overall Intersection		2.1	A			3.2	A	

** Delay expressed in seconds per vehicle*
*** Level of Service*
**** 95th percentile queue length expressed in feet*

Hickory Ridge Impacts

A particular concern is managing traffic effects on Hickory Ridge. As shown earlier in the site plan, the driveway will have a sharp skew that channels exiting vehicles south, discouraging right turns and neighborhood cut-through traffic. Hickory Ridge will remain free flowing, not subject to a stop or yield condition at the driveway.

As discussed in the previous section, the intersection operates substantially under capacity and neighbors will experience minimal additional delay accessing or exiting Hickory Ridge due to the development. Queues are not expected to form along Hickory Ridge, indicating driveways will not be blocked.

Act 145

Act 145 (10 VSA Sections 6101-6111) enables VTrans to establish and assess transportation impact fees under specific circumstances. VTrans has created an online map[3] to identify the transportation projects in the state for which Act 145 transportation impact fees have been established to date. There are two Act 145 projects in Hartford that would absorb trips from this proposed development. These projects are STP 0113(59)S, which is a roundabout at US-5 and Sykes Ave, and NH 020-2(44), a roundabout at US-4 and US-5. The Sykes Mountain Residential project will be subject to Act 145 fees at these respective locations.

Per the distribution shown in **Figure 3**, it is anticipated that 61% of trips will travel through the US-5 and Sykes Avenue roundabout while 10% will travel through the US-4 and US-5 intersection. This corresponds to 58 and 10 PM peak hour trips, respectively, subject to Act 145 fees.

Conclusions

The proposed development consists of a 240-unit multifamily housing project at 444 Sykes Mountain Avenue. VHB reviewed the adjacent roadway network, finding adequate sight lines and pedestrian facilities. The bus stop at Hickory

[3] Act 145 Projects and Fees (arcgis.com)

Ridge was noted to be in regular use. Although passengers must wait in the traveled way (on Hickory Ridge) or on a narrow shoulder, volumes are so low on Hickory Ridge that this does not present a safety concern.

This development would generate 94 vehicle trips in the weekday AM and weekday PM peak hours, respectively. An evaluation of intersection operations at Sykes Mountain Avenue and Hickory Ridge found minimal change with the development added, with less than three seconds of additional delay and queues no longer than one vehicle forming. The overall intersection level of service remains an A.

In conclusion, based on the results of this Traffic Impact Study, the proposed residential development is not anticipated to generate unreasonable congestion or unsafe conditions on the adjacent roadway network.

Appendix

A: Intersection Capacity Analysis

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	130	23	2	177	2	25	0	4	2	0	4
Future Vol, veh/h	2	130	23	2	177	2	25	0	4	2	0	4
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	2	2	2	0	0	0	0	0	0
Mvmt Flow	2	141	25	2	192	2	27	0	4	2	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	194	0	0	166	0	0	357	356	154	357	367	193
Stage 1	-	-	-	-	-	-	158	158	-	197	197	-
Stage 2	-	-	-	-	-	-	199	198	-	160	170	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1355	-	-	1412	-	-	602	573	897	602	565	854
Stage 1	-	-	-	-	-	-	849	771	-	809	742	-
Stage 2	-	-	-	-	-	-	807	741	-	847	762	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1355	-	-	1412	-	-	597	571	897	597	563	854
Mov Cap-2 Maneuver	-	-	-	-	-	-	597	571	-	597	563	-
Stage 1	-	-	-	-	-	-	847	769	-	807	741	-
Stage 2	-	-	-	-	-	-	801	740	-	841	760	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	11.1	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	626	1355	-	-	1412	-	-	747
HCM Lane V/C Ratio	0.05	0.002	-	-	0.002	-	-	0.009
HCM Control Delay (s)	11.1	7.7	0	-	7.6	0	-	9.9
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	130	23	2	177	11	25	0	4	30	0	48
Future Vol, veh/h	15	130	23	2	177	11	25	0	4	30	0	48
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	2	2	2	0	0	0	0	0	0
Mvmt Flow	16	141	25	2	192	12	27	0	4	33	0	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	204	0	0	166	0	0	414	394	154	390	400	198
Stage 1	-	-	-	-	-	-	186	186	-	202	202	-
Stage 2	-	-	-	-	-	-	228	208	-	188	198	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1344	-	-	1412	-	-	552	546	897	573	541	848
Stage 1	-	-	-	-	-	-	820	750	-	805	738	-
Stage 2	-	-	-	-	-	-	779	734	-	818	741	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1344	-	-	1412	-	-	512	538	897	564	533	848
Mov Cap-2 Maneuver	-	-	-	-	-	-	512	538	-	564	533	-
Stage 1	-	-	-	-	-	-	809	740	-	795	737	-
Stage 2	-	-	-	-	-	-	730	733	-	803	731	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	12	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	544	1344	-	-	1412	-	-	710
HCM Lane V/C Ratio	0.058	0.012	-	-	0.002	-	-	0.119
HCM Control Delay (s)	12	7.7	0	-	7.6	0	-	10.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	216	10	2	204	2	71	0	4	0	0	2
Future Vol, veh/h	2	216	10	2	204	2	71	0	4	0	0	2
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	2	2	0	0	0	0	0	0
Mvmt Flow	2	235	11	2	222	2	77	0	4	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	224	0	0	246	0	0	473	473	241	474	477	223
Stage 1	-	-	-	-	-	-	245	245	-	227	227	-
Stage 2	-	-	-	-	-	-	228	228	-	247	250	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1357	-	-	1320	-	-	505	493	803	504	490	822
Stage 1	-	-	-	-	-	-	763	707	-	780	720	-
Stage 2	-	-	-	-	-	-	779	719	-	761	704	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1357	-	-	1320	-	-	502	491	803	500	488	822
Mov Cap-2 Maneuver	-	-	-	-	-	-	502	491	-	500	488	-
Stage 1	-	-	-	-	-	-	761	706	-	778	719	-
Stage 2	-	-	-	-	-	-	775	718	-	755	703	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	13.4	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	512	1357	-	-	1320	-	-	822
HCM Lane V/C Ratio	0.159	0.002	-	-	0.002	-	-	0.003
HCM Control Delay (s)	13.4	7.7	0	-	7.7	0	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	3.2

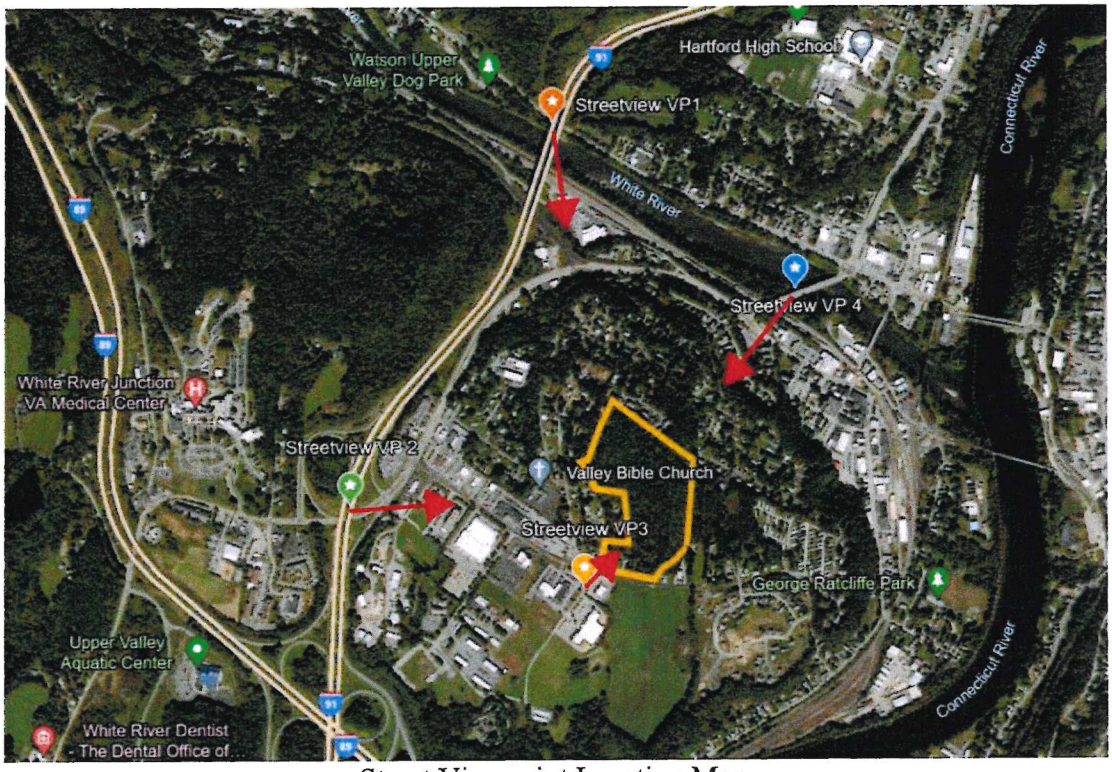
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	37	216	10	2	204	24	71	0	4	14	0	25
Future Vol, veh/h	37	216	10	2	204	24	71	0	4	14	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	2	2	0	0	2	0	0	0
Mvmt Flow	40	235	11	2	222	26	77	0	4	15	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	248	0	0	246	0	0	574	573	241	562	565	235
Stage 1	-	-	-	-	-	-	321	321	-	239	239	-
Stage 2	-	-	-	-	-	-	253	252	-	323	326	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1330	-	-	1320	-	-	433	432	798	441	437	809
Stage 1	-	-	-	-	-	-	695	655	-	769	711	-
Stage 2	-	-	-	-	-	-	756	702	-	693	652	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1330	-	-	1320	-	-	407	416	798	426	421	809
Mov Cap-2 Maneuver	-	-	-	-	-	-	407	416	-	426	421	-
Stage 1	-	-	-	-	-	-	671	632	-	742	710	-
Stage 2	-	-	-	-	-	-	729	701	-	665	629	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.1	15.7	11.3
HCM LOS			C	B

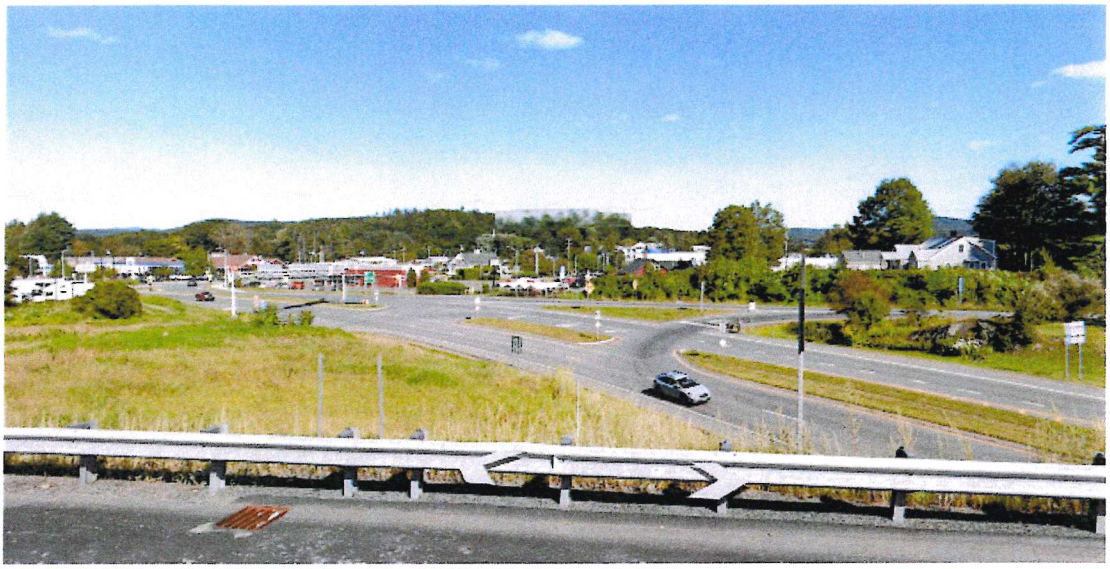
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	418	1330	-	-	1320	-	-	612
HCM Lane V/C Ratio	0.195	0.03	-	-	0.002	-	-	0.069
HCM Control Delay (s)	15.7	7.8	0	-	7.7	0	-	11.3
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	0.2

STREET VIEWPOINT STUDY
Sykes Mountain Avenue – Hickory Ridge Drive
Hartford, Vermont



Street Viewpoint Location Map


Street Viewpoint 1



Street Viewpoint 2



Street Viewpoint 3



Street Viewpoint 4

LOT 45-162 - 0 LILY POND RD. MULTIFAMILY HOUSING

TOWN OF HARTFORD, WINDSOR COUNTY, VERMONT



ORTHO MAP
1" = 1,000'

GRAPHIC SCALE

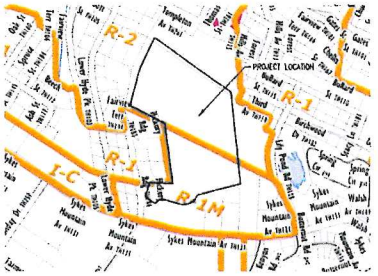
1 inch = 1,000 ft.
for sheet size 24" x 36"



BUS MAP
1" = 2,000'

GRAPHIC SCALE

1 inch = 2,000 ft.
for sheet size 24" x 36"



ZONING MAP
1" = 500'

GRAPHIC SCALE

1 inch = 500 ft.
for sheet size 24" x 36"



TAX MAP
1" = 500'

GRAPHIC SCALE

1 inch = 500 ft.
for sheet size 24" x 36"

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SUBJECT PROPERTY

LOT 45-162 0 LILY POND ROAD
WHITE RIVER JUNCTION, VT 05001

OWNER/APPLICANT

OWNER:
Black Rock Investments, LLC
earle@simpsoncompanies.com
2458 Christian St.
White River Junction, VT 05001

APPLICANT:
GPA Management, LLC
lrsimpsrat@sparrel.net
505 Fairbanks Turn
Quechee, VT 05059

CONSULTANTS

CIVIL ENGINEER
ENGINEERING VENTURES, PC
85 MECHANIC STREET, STE. E2-3
LEBANON, NH 03766
(603) 442-9333

LANDSCAPE ARCHITECT
PARK ARCHITECTURE
3 SCHOOL LANE
HANOVER, NH 03755
603-643-3400

ARCHITECT
MARKET SQUARE ARCHITECTS
101 CONGRESS ST., STE. 205
PORTSMOUTH, NH 03801
603-501-0202

No.	Description	Date

Stamp

ENGINEERING VENTURES PC
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85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 - 603.442.9333
41 Union Street, Bedford, NH 03110 - 603.622.8841
www.engineeringventures.com

BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Cover Sheet
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KPH
Scale:	As Noted
Date:	10/20/2023

C0.0

STANDARD ABBREVIATIONS

BENCHMARK	BM	END OF VERTICAL CURVE ELEVATION	EVCE	LIMITS OF CONSTRUCTION	LOC	REINFORCED CONCRETE PIPE	RCP
BEGINNING OF VERTICAL CURVE ELEVATION	BVCE	END OF VERTICAL CURVE STATION	EVCS	LIMITS OF DISTURBANCE	LOD	RIGHT-OF-WAY	ROW
BEGINNING OF VERTICAL CURVE STATION	BVCS	EXISTING	EX	MAXIMUM	MAX	SANITARY	SAN
CAST-IN-PLACE	CIP	EXISTING GRADE/GROUND	EG	MINIMUM	MIN	SANITARY MANHOLE	SMH
CAST IRON	CI	FINISHED FLOOR	FF	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES	MUTCD	SEPTIC TANK	ST
CATCH BASIN	CB	FINISHED GRADE/GROUND	FG	MONITORING WELL	MW	SILT FENCE	SF
CENTERLINE	℄	FIELD INLET	FI	MONUMENT	MON	SLOPE	S=
CLEAN OUT	C/O	FLARED END SECTION	FES	NOT IN CONTRACT	NIC	STATION	STA
CORRUGATED METAL PIPE	CMP	FDOT, FEET	FT	NOT TO SCALE	NTS	STORM MANHOLE	DMH
CUBIC FEET	CF	FOOTING	FTG	POINT OF CURVATURE	PC	TANGENT	TAN
CUBIC FEET PER SECOND	CFS	FOUNDATION	FND	POINT OF INTERSECTION	PI	TANGENT TO CURVE	TC
CUBIC YARD	CY	GALLONS PER MINUTE	GPM	POLYETHYLENE, PROFESSIONAL ENGINEER	PE	TAPPING SLEEVE AND VALVE	TSAV
DIAMETER	DIA	GATE VALVE	GV	PROPERTY LINE	PL	TEMPORARY BENCHMARK	TBM
DISTRIBUTION BOX	D-BOX	HEADWALL	HW	PERC TEST, POINT OF TANGENCY	PT	TEST PIT	TP
DUCTILE IRON	DI	HIGH DENSITY POLYETHYLENE	HDPE	POLYVINYL CHLORIDE	PVC	TOP OF BANK	TOB
EDGE OF CONCRETE	EOC	HYDRANT	HYD	POINT OF VERTICAL INTERSECTION	PVI	TOP OF CURB	TOC
EDGE OF GRAVEL	EOG	INTERSECTION	INT	POND	PND	TOP OF WALL	TOW
EDGE OF PAVEMENT	EOP	INVERT	INV	QUANTITY	QTY	TYPICAL	TYP
ELECTRIC	ELEC	IRON PIN	IP	QUALITY ASSURANCE	QA	VERIFY IN FIELD	VIF
ELECTRIC MANHOLE	EMH	IRON PIPE SIZE	IPS	QUALITY CONTROL	QC	WATER VALVE	WV
ELEVATION	ELEV	LENGTH	L=	RADIUS	R=		

GENERAL NOTES

1. EXACT OBJECT LOCATIONS MAY DIFFER FROM THAT AS SHOWN, AND ADDITIONAL SUB-SURFACE AND SURFACE UTILITIES AND STRUCTURES MAY EXIST. THE CONTRACTOR IS TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK AND TO CALL DIG SAFE 72 HOURS PRIOR TO ANY DIGGING, DRILLING OR BLASTING.
2. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL FROM THE ENGINEER.
3. THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB SITE DURING THE PERFORMANCE OF THIS CONTRACT.
4. THE CONTRACTOR SHALL RESTORE LAWNS, DRIVEWAYS, CULVERTS, SIGNS AND OTHER PUBLIC OR PRIVATE PROPERTY DAMAGED OR REMOVED TO EXISTING CONDITIONS OR BETTER AS DETERMINED BY THE ENGINEER. ANY DAMAGED TREES, SHRUBS AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, UNLESS NOTED OTHERWISE.
5. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.
6. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING, AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, AND CERTIFICATES.
7. THE CONTRACTOR WILL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A NEW HAMPSHIRE STATE LICENSED LAND SURVEYOR.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS, AND COORDINATE WORK WITH ALL CONTRACTS FOR THE SITE.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT EXPLORATORY TEST PITS AS MAY BE REQUIRED TO DETERMINE UNDERGROUND CONDITIONS.
10. ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS FOR CONSTRUCTION.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
12. MAINTAIN FLOW FOR ALL EXISTING UTILITIES, UNLESS NOTED OTHERWISE.
13. ALL SITE FILL SHALL MEET SELECTED FILL STANDARDS UNLESS NOTED OTHERWISE ON THE DRAWINGS.
14. CONTRACTOR TO GRADE ALL AREAS ON THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND IMPERVIOUS SURFACES.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE CONTRACTOR SHALL PROVIDE MARKED-UP AS-BUILT PLANS FOR ALL UTILITIES SHOWING CONNECTIONS, BENDS, VALVES, LENGTHS OF LINES AND INVERTS. AS-BUILT PLANS SHALL BE REVIEWED BY THE OWNER AND HIS REPRESENTATIVES BEFORE UTILITIES WILL BE ACCEPTED.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION, MONITORING, MAINTENANCE AND REMOVAL OF ALL TEMPORARY EROSION CONTROL MEASURES AND TAKING PRECAUTIONARY STEPS TO AVOID ANY SEDIMENT TRANSFER TO NEIGHBORING SITES OR WATERS OF THE STATE.
17. FOLLOWING ANY WARRANTY PERIOD, THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING, TO INCLUDE GRASS AND MULCH, IN GOOD, HEALTHY CONDITION SO AS TO PRESENT A NEAT AND ORDERLY APPEARANCE.
18. AFTER THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY, THE STORAGE, DISPLAY, OR PARKING OF MOTOR VEHICLES, BOATS, MOBILE HOMES, TRAILERS, OR CONSTRUCTION EQUIPMENT WITHIN LANDSCAPED AREAS, BUFFERS, OR SCREENS, SHOWN AS SUCH ON THE APPROVED LANDSCAPE PLAN, IS EXPRESSLY PROHIBITED AND A VIOLATION OF THE NOTICE OF ACTION.

SYMBOL LEGEND

PROPOSED FEATURES		EXISTING FEATURES
BOUND		BOUND
BENCHMARK		BENCHMARK
DRILL HOLE		DRILL HOLE
SURVEY POINT		SURVEY POINT
IRON PIN		IRON PIN
TEST PIT	TP1	TEST PIT
BORING	B1	BORING
PERC TEST	P1	PERC TEST
CATCH BASIN (SQUARE)		CATCH BASIN (SQUARE)
CATCH BASIN (ROUND)		CATCH BASIN (ROUND)
HEADWALL		HEADWALL
FLARED END SECTION		FLARED END SECTION
STONE APRON		STONE APRON
DRAIN MANHOLE (DMH)		DRAIN MANHOLE (DMH)
DRAINAGE CLEAN OUT	C/O	DRAINAGE CLEAN OUT
SANITARY SEWER MANHOLE (SMH)		SANITARY SEWER MANHOLE (SMH)
SANITARY CLEAN OUT	C/O	SANITARY CLEAN OUT
HYDRANT		HYDRANT
WATER SHUTOFF		WATER SHUTOFF
TAPPING SLEEVE & VALVE		TAPPING SLEEVE & VALVE
GATE VALVE		GATE VALVE
WELL		WELL
UTILITY POLE		UTILITY POLE
GUY POLE		GUY POLE
ELECTRICAL MANHOLE		ELECTRICAL MANHOLE
BUILDING MOUNTED LIGHT		FLOOD LIGHT
LIGHT POST		LIGHT POST
TELEPHONE MANHOLE		TELEPHONE MANHOLE
NATURAL GAS MANHOLE		NATURAL GAS MANHOLE
COMMUNICATION MANHOLE		COMMUNICATION MANHOLE
BOLLARD		BOLLARD
SINGLE POLE SIGN		SINGLE POLE SIGN
DOUBLE POLE SIGN		DOUBLE POLE SIGN
+100.5 SPOT ELEVATION		SPOT ELEVATION
ACCESSIBLE PARKING STALL		ACCESSIBLE PARKING STALL
DRAINAGE FLOW		DRAINAGE FLOW
DECIDUOUS TREE		DECIDUOUS TREE
CONIFEROUS TREE		CONIFEROUS TREE
ACCESSIBLE CURB RAMP		

LINETYPE LEGEND

PROPOSED FEATURES	EXISTING FEATURES
100 MAJOR CONTOUR	100 MAJOR CONTOUR
98 MINOR CONTOUR	98 MINOR CONTOUR
EDGE OF RIVER	EDGE OF RIVER
EDGE OF POND	EDGE OF POND
	FLOOD PLAIN BASED ON B.F.E.
	FEMA FLOOD PLAIN LIMITS
	50' SETBACK FROM ORDINARY HIGH WATER LINE
	150' SETBACK FROM ORDINARY HIGH WATER LINE
	250' SETBACK FROM ORDINARY HIGH WATER LINE
	RIPARIAN RIGHTS BOUNDARY LINE
PROPERTY LINE	PROPERTY LINE
RIGHT OF WAY	RIGHT OF WAY
SETBACK	SETBACK
EASEMENT	EASEMENT
LOC LIMIT OF CONSTRUCTION	LIMIT OF CONSTRUCTION
LOD LIMIT OF DISTURBANCE	LIMIT OF DISTURBANCE
SF SILT FENCE	SILT FENCE
DEMOLITION WORK	DEMOLITION WORK
CENTERLINE	CENTERLINE
EDGE OF PAVEMENT	EDGE OF PAVEMENT
EDGE OF GRAVEL	EDGE OF GRAVEL
EDGE OF CONCRETE	EDGE OF CONCRETE
CURB	CURB
X FENCE (BARBED WIRE)	FENCE (BARBED WIRE)
O FENCE (CHAIN LINK)	FENCE (CHAIN LINK)
O FENCE (WOODEN)	FENCE (WOODEN)
GUARD RAIL	GUARD RAIL
TREE LINE	TREE LINE
	EDGE OF WETLANDS - DELINEATED
	EDGE OF WETLANDS - APPROXIMATE
STONE WALL	STONE WALL
S SANITARY SEWER	SANITARY SEWER
	SANITARY SEWER APPROX.
FM SEWER FORCEMAIN	SEWER FORCEMAIN
SA SEWER SERVICE	SEWER SERVICE
DLA DISPOSAL AREA LATERAL	DISPOSAL AREA LATERAL
SD STORM LINE	STORM LINE
	STORM LINE APPROX.
UD UNDER DRAIN	UNDER DRAIN
FD FOUNDATION DRAIN	FOUNDATION DRAIN
RD ROOF DRAIN	ROOF DRAIN
DITCH/SWALE	DITCH/SWALE
T TELECOM	TELECOM
	TELECOM APPROX.
UGT UNDERGROUND TELECOM	UNDERGROUND TELECOM
OHT OVERHEAD TELECOM	OVERHEAD TELECOM
E ELECTRIC LINE	ELECTRIC LINE
	ELECTRIC APPROX.
UGE UNDERGROUND ELECTRIC	UNDERGROUND ELECTRIC
OHE OVERHEAD ELECTRIC	OVERHEAD ELECTRIC
SL ELECTRICAL SITE LIGHTING	ELECTRICAL SITE LIGHTING
W WATER LINE	WATER LINE
	WATER APPROX.
WS WATER SERVICE	WATER SERVICE
GAS GAS LINE	GAS LINE
	GAS APPROX.
CATV CABLE TV	CABLE TV
UGTV UNDERGROUND CABLE TV	UNDERGROUND CABLE TV
OHTV OVERHEAD CABLE TV	OVERHEAD CABLE TV
STM STEAM LINE	STEAM LINE
LPS LOW PRESSURE STEAM	LOW PRESSURE STEAM
HPS HIGH PRESSURE STEAM	HIGH PRESSURE STEAM
HW HOT WATER	HOT WATER
CW CHILLED WATER	CHILLED WATER

No.	Description	Date

Stamp

ENGINEERING VENTURES PC
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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Site Legend and Notes
Lot 45-162

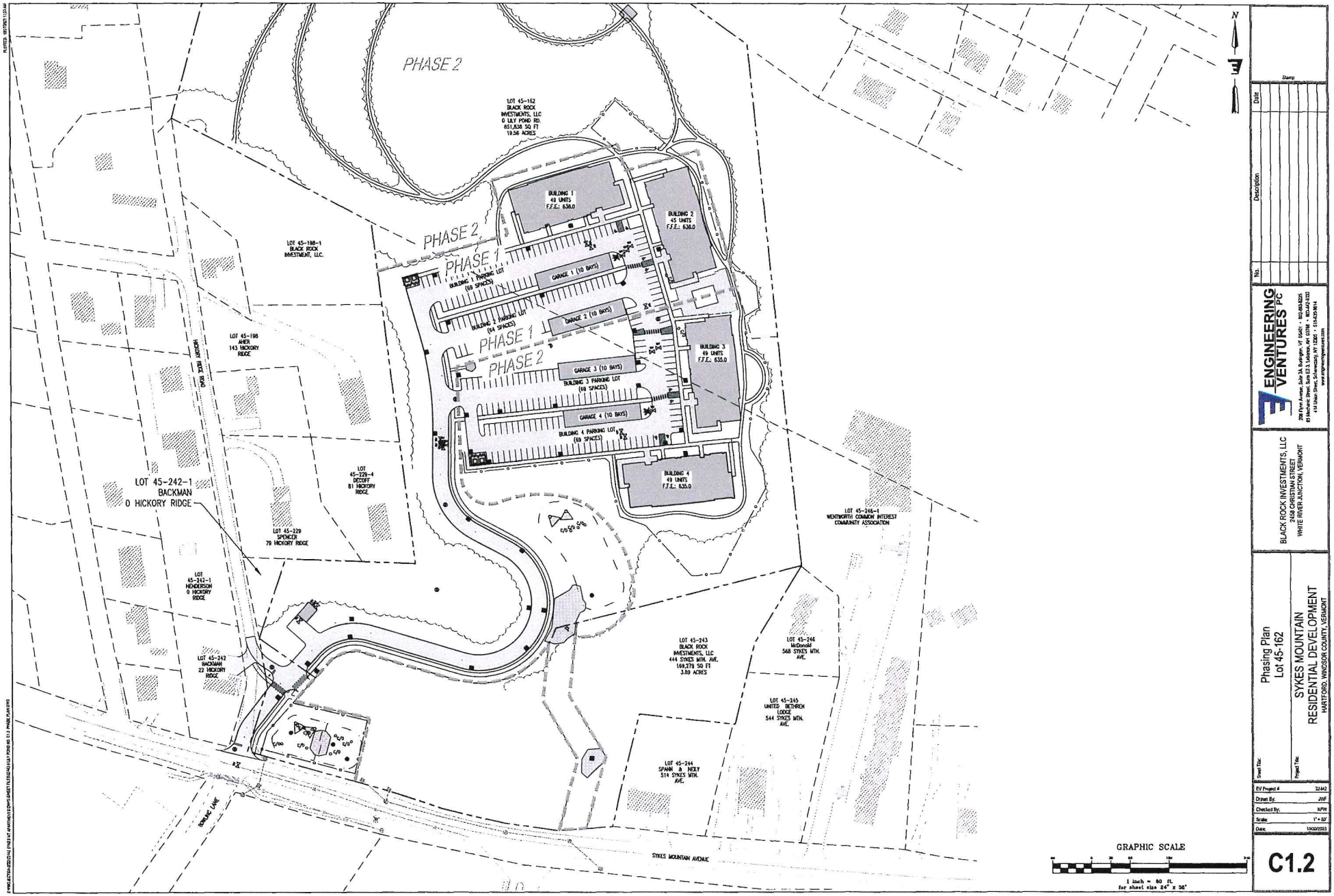
Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22042
Drawn By:	JWF
Checked By:	NJW
Scale:	NOT TO SCALE
Date:	07/21/2023

C0.1

PLOTTED: 7/27/2023 1:34 AM
P:\PROJECTS\2022\22042 SYKES MT SUBDIVISION\DWG\SHEETS\22042 SITE LEGEND AND NOTES.DWG

Existing Conditions Plan
Lot 45-162
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
MARTFORD, WINDSOR COUNTY, VERMONT
BLACK ROCK INVESTMENTS, LLC
2456 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT
ENGINEERING VENTURES PC
C1.1
GRAPHIC SCALE
LILY POND ROAD
SYKES MOUNTAIN AVE
HICKORY RIDGE
FAIRVIEW TERRACE
LOWER HYDE PARK
BOWLING LANE
SUBJECT LOTS
LOT 45-162
LOT 45-243
LOT 45-242-1
BACKMAN
0 HICKORY RIDGE
ZONE R-1
ZONE R-2
ZONE R-IM
ZONE I-C
ZONE I-C2



No.	Description	Date

Stamp

ENGINEERING VENTURES PC

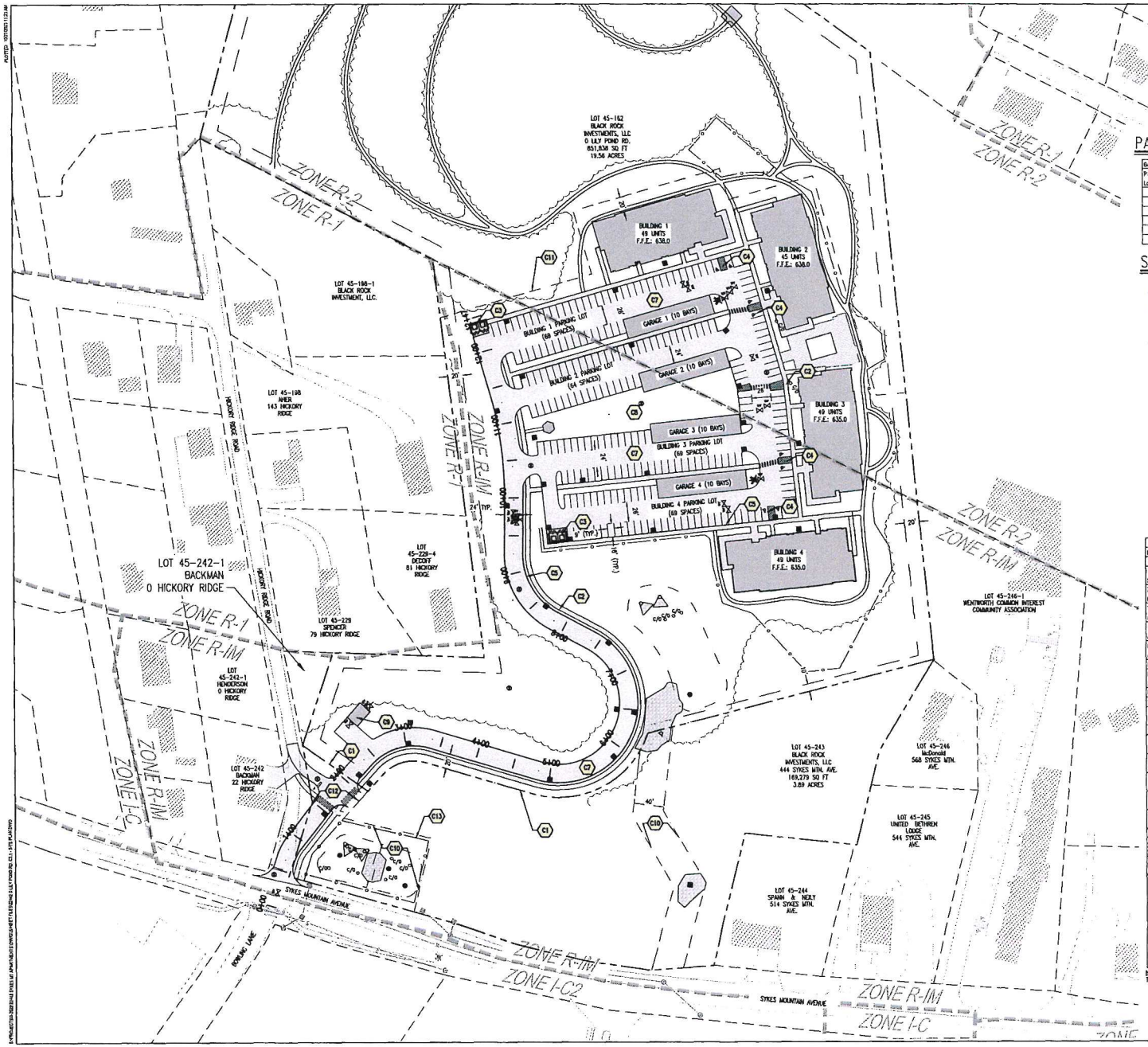
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Phasing Plan
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	JWF
Checked By:	KPW
Scale:	1" = 60'
Date:	10/02/2023

C1.2



PARKING SUMMARY

Building Parking Lot	Studio		1 Bedroom		2 Bedroom		Total	Parking	Parking
	Units	Spaces	Units	Spaces	Units	Spaces	Unit	Target	Proposed
1	9	1	34	1.5	6	1.5	49	69	69
2	9	1	31	1.5	5	1.5	45	63	64
3	9	1	34	1.5	6	1.5	49	69	69
4	9	1	34	1.5	6	1.5	49	69	69
								270	271
							Total	192	270	271

SITE NOTES

C1 BOUNDARY LINE ADJUSTMENT

C2 SIDEWALK (TYP. – SEE PLAN FOR WIDTH)

C3 24' BY 12' DUMPSTER ENCLOSURE

C4 ADA VAN ACCESSIBLE PARKING (TYP.)

C5 CURBING (TYP.)

C6 RETAINING WALL

C7 ASPHALT PAVEMENT (TYP.)

C8 SNOW STORAGE

C9 WATER BOOSTER PUMPS BUILDING AND ACCESS

C10 STORMWATER EASEMENT FOR THE BENEFIT OF LOT 45-162

C11 EXTENTS OF OPEN SPACE

C12 PUBLIC ACCESS AND UTILITY EASEMENT

C13 FENCE

ZONING CHART

ITEM	Req/Allowable	Lot 45-162 Existing	Lot 45-162 Proposed
Street Address		0 Lily Pond Rd.	
Zoning District/Designation		R-1M	R-2/R1-M
Tax Map & lot number		45-162	Same
Area of Lot (Acres)		12.4 ac (538,341 sf)	19.56 ac (851,838 sf)
Building Gross Floor Area (SF) finished		N/A	185,600 sf
Parking Spaces	2 per unit (min.)	N/A	271
Number of Loading Spaces		N/A	N/A
Building Height (Ft)	40' (maximum)	N/A	50'
Number of Stories	4	N/A	4
Use	Allowed: R-1M Conditional: R-2	Vacant Land	Dwelling, multiunit
Setbacks (Ft)*			
Front	10' Principal/20' detached		20' or greater
Side	10'		20' or greater
Rear	20'		30' or greater
Building Footprint Area (SF)	None	N/A	59,400 sf
Total Building Coverage on Lot (%)			7%
Overlay District		None	None
Impervious surfaces (sf) bld. + lots/lot		N/A	197,336 sf
Impervious surfaces (%) bld. + lots/lot	65% max.	N/A	33%
Density	R-1M: 1 Unit / 4,000 sf R-2: 1 Unit/6,000 sf 538,341 sf/6,000 sf + 313,497 sf/4,000 sf = 90 +78 = 168 (allowed)	0 Units	192 Units 14.3% density bonus requested
Open Space	50% of the Lot	N/A	428,521 sf (9.84 Acres) 50.3%

NOTE:
THIS PROJECT IS NOT LOCATED WITHIN ANY FLOODPLAINS, SIGNIFICANT NATURAL COMMUNITIES OR WETLANDS

GRAPHIC SCALE

1 inch = 60 FT.
for sheet size 24" x 36"

Stamp

No.	Description	Date

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A, Burlington, VT 05401 - 802.865.4225
61 Lyndon Street, Suite 2, Lebanon, NH 03766 - 603.442.6951
44 Union Street, Schenectady, NY 12305 - 518.630.9814
www.engineeringventures.com

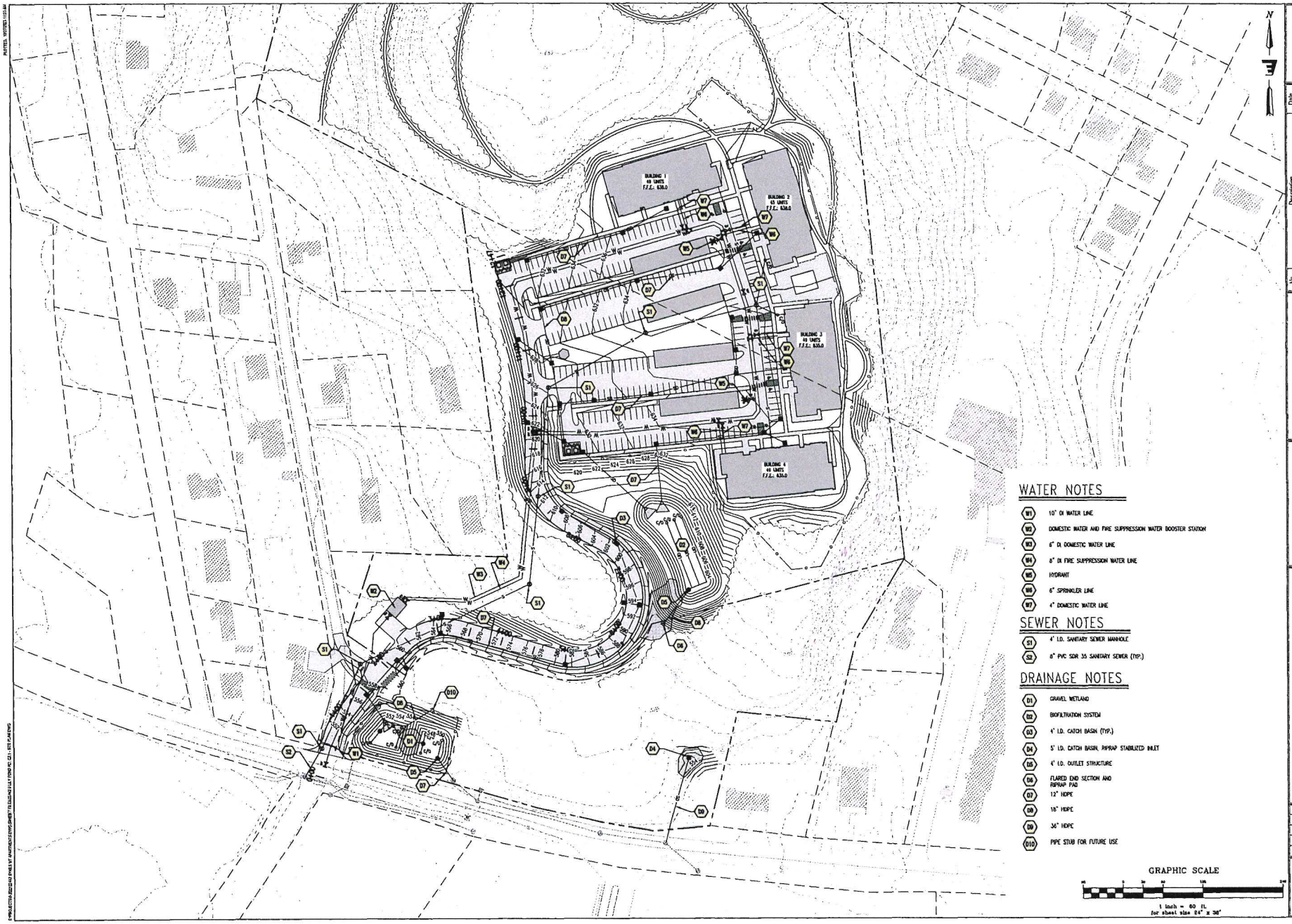
BLACK ROCK INVESTMENTS, LLC
248 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Site Layout Plan
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	JWF
Checked By:	KFW
Scale:	1" = 60'
Date:	10/20/2023

C2.0



WATER NOTES

- W1 — 10" DI WATER LINE
- W2 — DOMESTIC WATER AND FIRE SUPPRESSION WATER BOOSTER STATION
- W3 — 6" DI DOMESTIC WATER LINE
- W4 — 8" DI FIRE SUPPRESSION WATER LINE
- W5 — HYDRANT
- W6 — 6" SPRINKLER LINE
- W7 — 4" DOMESTIC WATER LINE

SEWER NOTES

- S1 — 4' I.D. SANITARY SEWER MANHOLE
- S2 — 8" PVC SDR 35 SANITARY SEWER (TYP.)

DRAINAGE NOTES

- D1 — GRAVEL WETLAND
- D2 — BIOFILTRATION SYSTEM
- D3 — 4' I.D. CATCH BASIN (TYP.)
- D4 — 5' I.D. CATCH BASIN, RIPRAP STABILIZED INLET
- D5 — 4' I.D. OUTLET STRUCTURE
- D6 — FLARED END SECTION AND RIPRAP PAD
- D7 — 12" HDPE
- D8 — 18" HDPE
- D9 — 36" HDPE
- D10 — PIPE STUB FOR FUTURE USE

GRAPHIC SCALE

1 inch = 60 ft.
for sheet size 24" x 36"

Stamp

No.	Description	Date

ENGINEERING VENTURES PC
253 Flynn Avenue, Suite 2A, Burlington, VT 05401 - 802.863.5225
85 Main Street, Suite 2, Keene, NH 03431 - 603.852.3335
141 Union Street, Schenectady, NY 12305 - 518.452.9814
www.engineeringventures.com

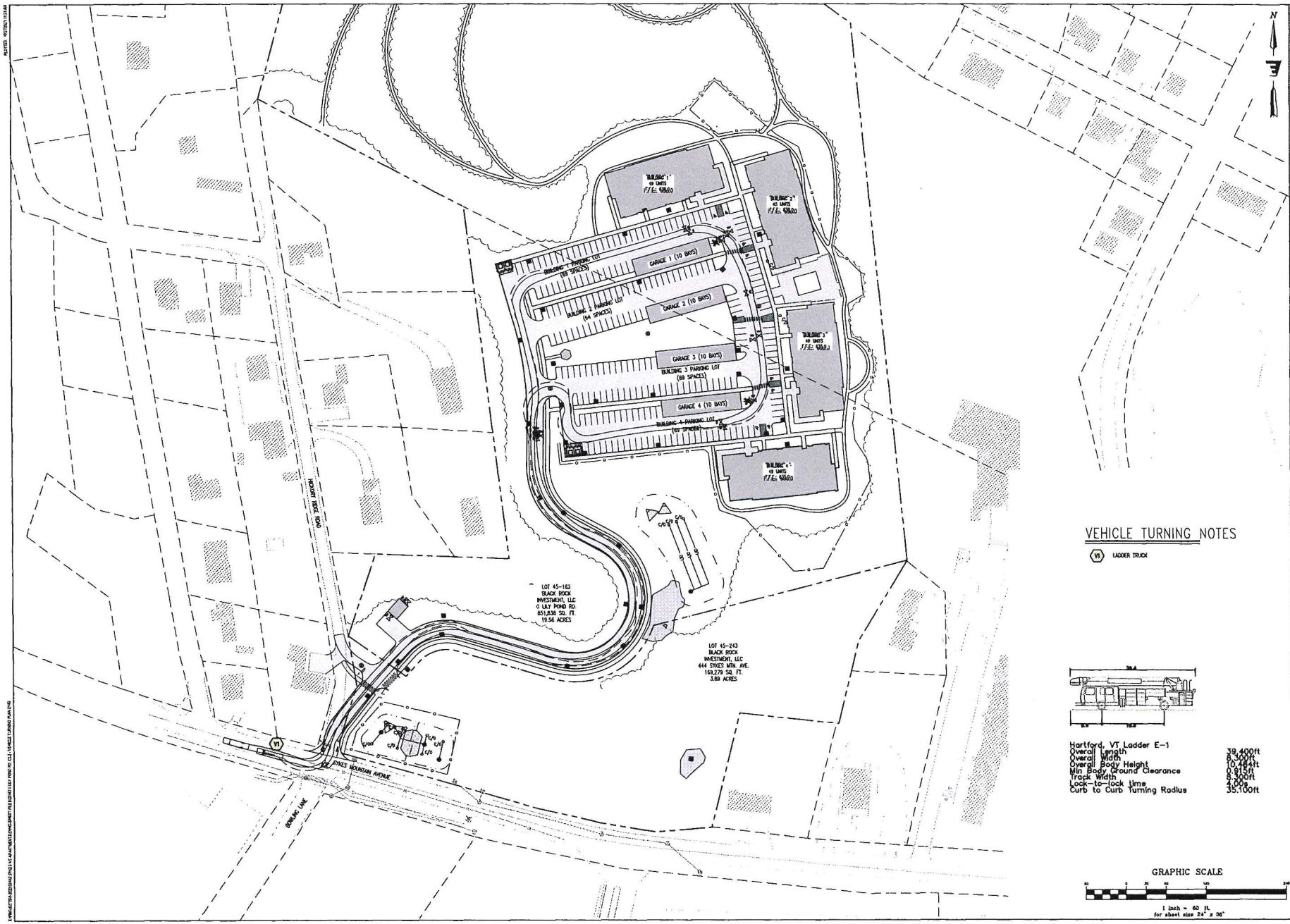
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Grading, Drainage and Utilities Plan
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	JMF
Checked By:	RJW
Scale:	1" = 60'
Date:	10/20/2023

C2.1



VEHICLE TURNING NOTES

(V1) LADDER TRUCK

Hartford, VT Ladder E-1	
Overall Length	39.400ft
Overall Width	8.300ft
Overall Body Height	10.484ft
Min Body Ground Clearance	0.915ft
Track Width	8.300ft
Lock-to-Lock time	4.00s
Curb to Curb Turning Radius	35.100ft

GRAPHIC SCALE

1 inch = 60 ft.
for sheet size 24" x 36"

Stamp

No.	Description	Date

ENGINEERING VENTURES PC
256 Farm Avenue, Suite 2A, Burlington, VT 05401 • 802.489.6225
65 Mechanic Street, Suite E2-3, Lebanon, NH 03766 • 603.442.5533
414 Union Street, Schenectady, NY 12305 • 518.630.9914
www.engineeringventures.com

BLACK ROCK INVESTMENTS, LLC
268 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Vehicle Turning Plan
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

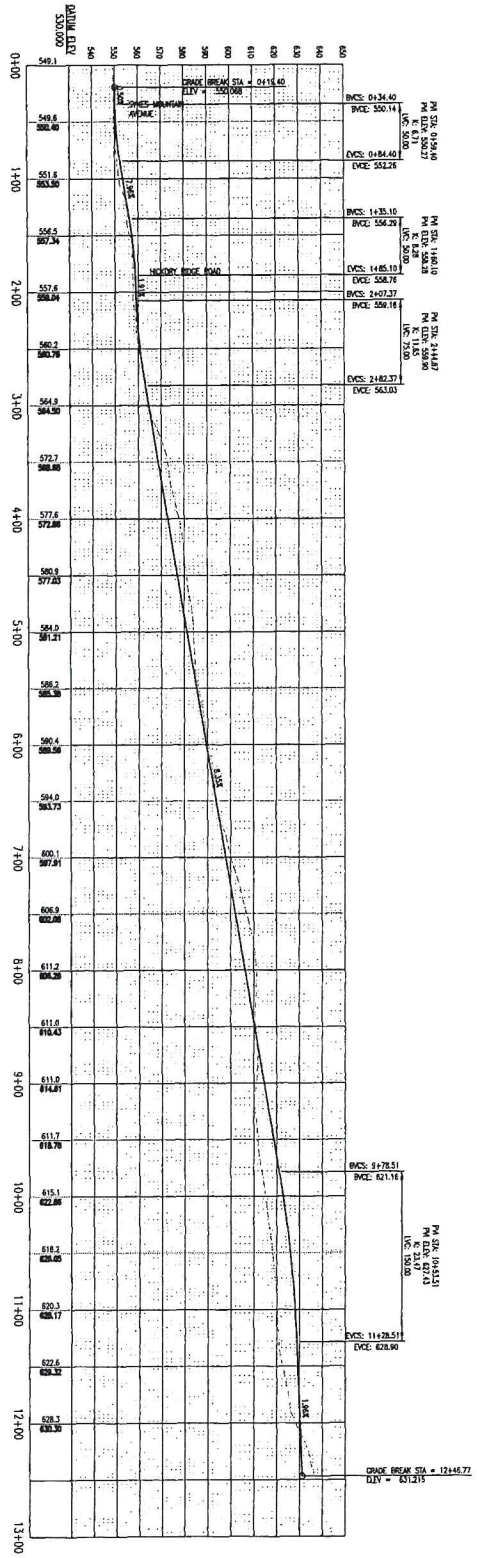
EV Project #	22442
Drawn By:	JWF
Checked By:	NPW
Scale:	1" = 60'
Date:	10/30/2023

C2.2

I:\PROJECTS\22\22342 SYKES MT APARTMENTS\ENGINEER\DWG\FILES\22342_ALL_ROAD.DWG
PLOTTED: 10/17/2023 11:34 AM

PROPOSED ROADWAY PROFILE, STA. 0+00 – 13+00

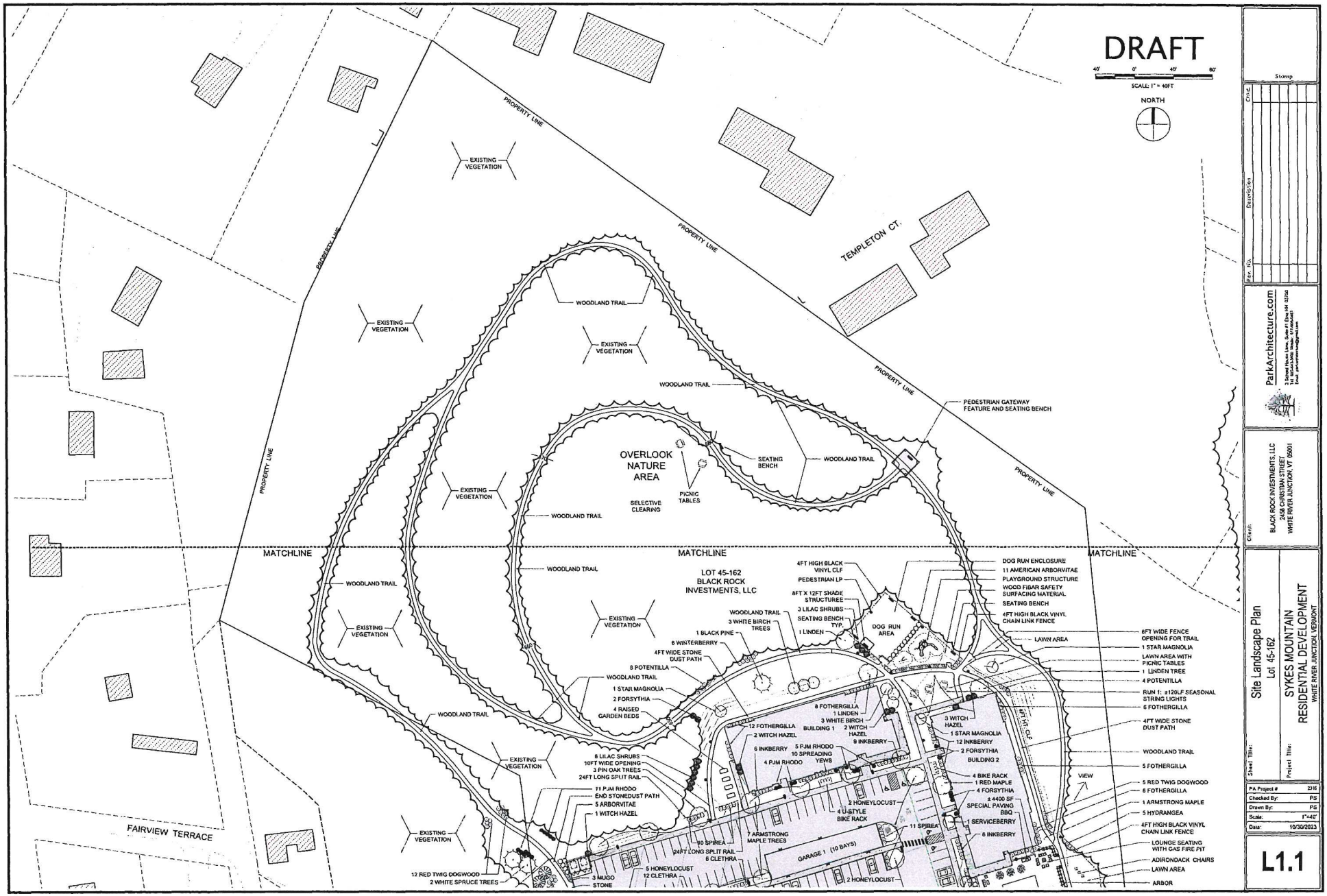
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



GRAPHIC SCALE:

1 inch = 50 ft.
for sheet size 24" x 36"

| | | |



Stamp

Rev. No.	Description	Date

ParkArchitecture.com
3 School House Lane, Suite #1 Etna NH 03750
Tel: 603.643.3300 Mobile: 603.359.6481
Email: parkarchitecture@gmail.com

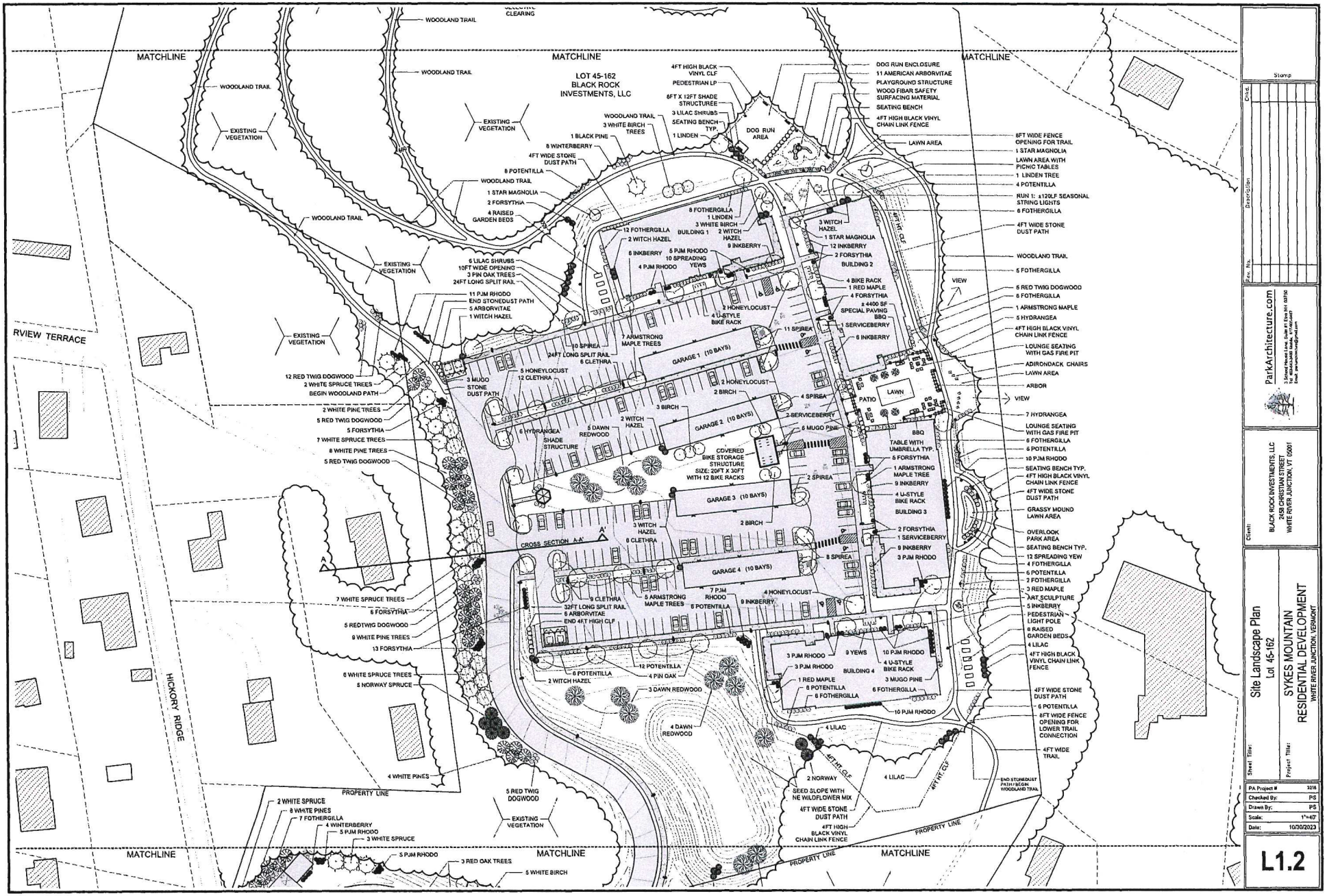
Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title:
Site Landscape Plan
Lot 45-162

Project Title:
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=40'
Date:	10/30/2023

L1.1



Stamp

Rev. No. | Description | Chkd.

ParkArchitecture.com

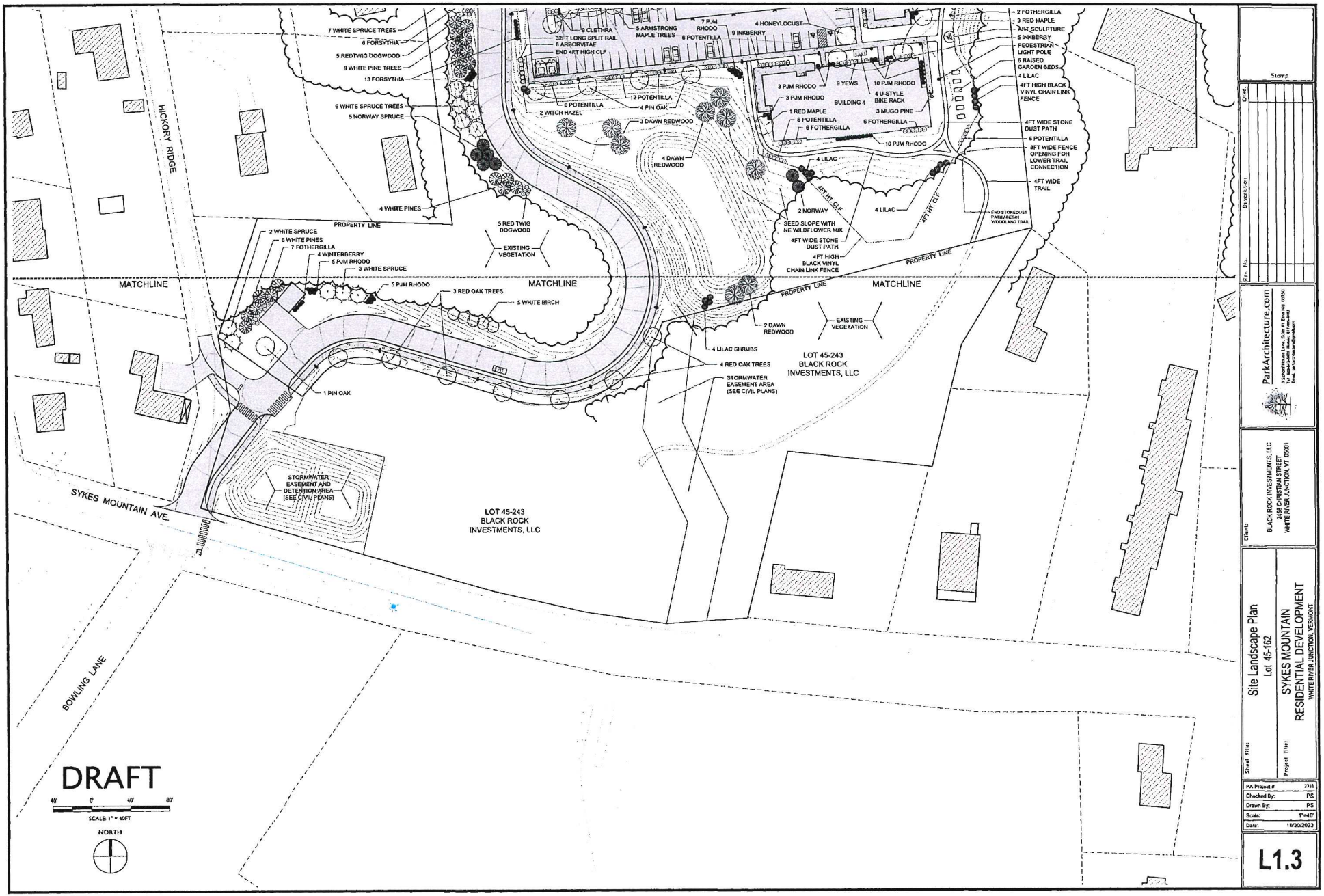
Client: BLACK ROCK INVESTMENTS, LLC
2453 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Landscape Plan
Lot 45-162

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2216
Checked By:	PS
Drawn By:	PS
Scale:	1"=40'
Date:	10/30/2023

L1.2



Stamp

Rev. No.	Description	Chkd.

ParkArchitecture.com

Client: BLACK ROCK INVESTMENTS, LLC
2456 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Landscape Plan
Lot 45-162

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=40'
Date:	10/30/2023

L1.3

LANDSCAPE PLANTING SCHEDULE

QTY	BOTANICAL NAME	COMMON NAME	SIZE
DECIDUOUS TREES			
13	GLEDITSIA TRIACANTHOS V. INERMIS	IMPERIAL HONEYLOCUST	2.5" - 3" CALIPER
14	METASEQUOIA GLYPTOSTROBOIDES	DAWN REDWOOD	2.5" - 3" CALIPER
7	QUERCUS RUBRA	RED OAK	2.5" - 3" CALIPER
8	QUERCUS PALUSTRIS	PIN OAK	2.5" - 3" CALIPER
17	ACER x FREEMANII	FREEMAN MAPLE 'ARMSTRONG'	2.5" - 3" CALIPER
18	BETULA PAPYRIFERA	CLUMP WHITE BIRCH	CLUMP 8'-10' HT.
3	MAGNOLIA STELLATA 'ROYAL STAR'	ROYAL STAR MAGNOLIA	2.5" - 3" CALIPER
3	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	2.5" - 3" CALIPER
4	AMELANCHIER CANADENSIS	SERVICEBERRY	5'-6' HT. B&B
EVERGREEN TREES			
27	PICEA GLAUCA	WHITE SPRUCE	8'-10' HT. B&B
29	PINUS STROBUS	EASTERN WHITE PINE	6'-8' HT. B&B
1	PINUS NIGRA	AUSTRIAN BLACK PINE	6'-8' HT. B&B
7	PICEA ABIES	NORWAY SPRUCE TREE	6'-8' HT. B&B
30	THUJA OCCIDENTALIS	AMERICAN ARBORVITAE	6'-8' HT. B&B
SHRUBS			
15	HAMAMELIS VIRGINIANA	AMERICAN WITCH HAZEL	30"-36" HT, 7 GAL
25	SYRINGA VULGARIS	COMMON PURPLE LILAC	30"-36" HT, 7 GAL
65	ILEX GLABRA 'COMPACTA'	COMPACT INKBERRY	24"-30" HT, 5 GAL
76	RHODODENDRON 'PJM ELITE'	PJM RHODODENDRON	24"-30" HT, 5 GAL
17	ILEX VERTICILLATA 'WINTER RED'	WINTER RED WINTERBERRY	24"-30" HT, 5 GAL
44	CORNUS SERICEA 'BAILEY'	BAILEY RED TWIG DOGWOOD	24"-30" HT, 5 GAL
39	FORSYTHIA X INTERMEDIA	FORSYTHIA	24"-30" HT, 5 GAL
12	PINUS MUGO	MUGO PINE	18"-24" HT, 7 GAL
37	SPIREA JAP. LITTLE PRINCESS	LITTLE PRINCESS SPIREA	18"-24" HT, 7 GAL
37	HYDRANGEA INVINCEBELLE SPIRIT II	INVINCEBELLE SPIRIT II HYDRANGEA	18"-24" HT, 7 GAL
66	FOTHERGILLA GARDENII	DWARF FOTHERGILLA	18"-24" HT, 7 GAL
60	POTENTILLA FRUTICOSA McKAY'S WHITE	McKAY'S WHITE POTENTILLA	18"-24" HT, 7 GAL
13	VIBURNUM NUDUM BRANDYWINE	BRANDYWINE VIBURNUM	18"-24" HT, 7 GAL
33	CLETHRA ALNIFOLIA HUMMINGBIRD	HUMMINGBIRD SWEETSPIRE	18"-24" HT, 7 GAL
31	TAXUS MEDIA 'DENSIFORMIS'	DENSE SPREADING YEW	18"-24" HT, 7 GAL
PERENNIALS & ORNAMENTAL GRASSES			
180	NEPETA 'SIX HILLS GIANT'	SIX HILLS GIANT CATMINT	2 GAL
110	RUDBECKIA FULGIDA GOLDSTURM	GOLDSTURM BLACK EYED SUSAN	2 GAL
100	HEMMEROCALLIS STELLA D'ORO	STELLA D'ORO DAYLILY	2 GAL
100	ANDROPOGON GERARDII 'BLACKHAWKS'	BLACKHAWKS BIG BLUESTEM	2 GAL
100	HELICTOTRICHON SEMPERVIRENS	BLUE OAT GRASS	2 GAL
100	PENNISETUM ALOPECUROIDES 'HAMELN'	DWARF FOUNTAIN GRASS	2 GAL
180	ECHINACEA PURPUREA	PURPLE CONEFLOWER	2 GAL

LANDSCAPE NOTES

1. THE NUMBER OF EACH INDIVIDUAL PLANT TYPE AND SIZE IS PROVIDED IN THE PLANT LIST FOR CONTRACTORS CONVENIENCE ONLY. IF A DISCREPANCY EXISTS BETWEEN THE NUMBER OF PLANTS ON THE LIST AND THE NUMBER SHOWN ON THE DRAWING, THE GREATER NUMBER SHALL APPLY.

2. THE CONTRACTOR SHALL SUPPLY PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THIS PLANTING AS SHOWN.

3. ALL PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE PRIOR TO ARRIVAL ON SITE.

4. ALL PLANT BEDS WILL BE TOP-DRESSED WITH 3" SHREDDED BARK MULCH.

5. CONTRACTOR SHALL PROVIDE STEEL LANDSCAPE EDGING TO SURROUND ALL MULCH BEDS WHERE INDICATED.

6. THE CONTRACTOR SHALL LOCATE AND MARK ALL UTILITIES PRIOR TO PLANTING. ANY CONFLICTS BETWEEN PLANTING AND UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE OWNER SO THAT ALTERNATIVE PLANTING LOCATIONS CAN BE DETERMINED.

7. NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OWNER OR LANDSCAPE ARCHITECT.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PLANTS AGAINST DAMAGE FROM ONGOING CONSTRUCTION. PROTECTION SHALL BEGIN AT THE TIME THE PLANT IS INSTALLED AND CONTINUE UNTIL FORMAL ACCEPTANCE OF ALL PLANTINGS.

9. ALL OTHER DISTURBED AREAS NOT OTHERWISE INDICATED SHALL BE LOAMED AND SEEDED.

10. CONTRACTOR SHALL PRESERVE EXISTING TREES WHERE INDICATED.

11. CONTRACTOR SHALL PROVIDE A 2-YEAR GUARANTEE ON ALL INSTALLED PLANT MATERIAL.

12. ALL PROPOSED TREES SHALL BE PLACED A MINIMUM OF 10FT FROM EXISTING AND PROPOSED UTILITIES.

13. ALL TREES SPECIFIED WILL BE OF GOOD QUALITY AND IN COMPLIANCE WITH THE MOST RECENT EDITION OF ANSI Z60.1 AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY AMERICANHORT.

NE WILDFLOWER SEED MIX SPECS

NORTHEAST NATIVE WILDFLOWER SEED MIXTURE PLANTED IN AREAS SHOWN ON LANDSCAPE PLAN.

NORTHEAST WILDFLOWER SEED MIXTURE TO CONTAIN A MAJORITY OF 5-6 PERENNIAL VARIETIES TO INSURE GROWTH OF WILDFLOWER VEGETATION IN SUCCESSIVE YEARS.

NEWE.COM SEED MIXES OR APPROVED EQUAL

SLOPE PLANTING TYPE	QTY	SIZE
Custom Blend of Northeast Native Wildflower Mixture	± 7180 SF	SEED MIX



NE WILDFLOWER MIXTURE

PROPOSED DECIDUOUS TREES:



IMPERIAL HONEY LOCUST



FREEMAN MAPLE 'ARMSTRONG'



DAWN REDWOOD



RED OAK TREE



PIN OAK TREE



ROYAL STAR MAGNOLIA



GREENSPIRE LINDEN



SHADBLOW SERVICEBERRY



CLUMP WHITE BIRCH

PROPOSED EVERGREEN TREES:



AUSTRIAN BLACK PINE



WHITE SPRUCE



NORWAY SPRUCE



EASTERN WHITE PINE

EVERGREEN SCREEENING



AMERICAN ARBORVITAE



SPREADING YEW

PROPOSED SHRUBS:



WITCH HAZEL



PURPLE LILAC



INKBERRY SHRUB



PJM RHODODENDRON



WINTERBERRY HOLLY



RED TWIG DOGWOOD



FORSYTHIA



MUGO PINE SHRUB



LITTLE PRINCESS SPIREA



HYDRANGEA



FOTHERGILLA



BRANDYWINE VIBURNUM



CLETHRA

PROPOSED PERENNIALS & GRASSES:



CATMINT



BLACK EYED SUSAN



STELLA D'ORO DAYLILY



BLACKHAWK BIG BLUESTEM



BLUE OAT GRASS



DWARF FOUNTAIN GRASS



PURPLE CONEFLOWER

Stamp

Rev. No.	Description	Date

ParkArchitecture.com
3 School House Lane, Suite #1 East Hill 03766
Tel: 802.649.5440
Email: parkarchitecture@gmail.com

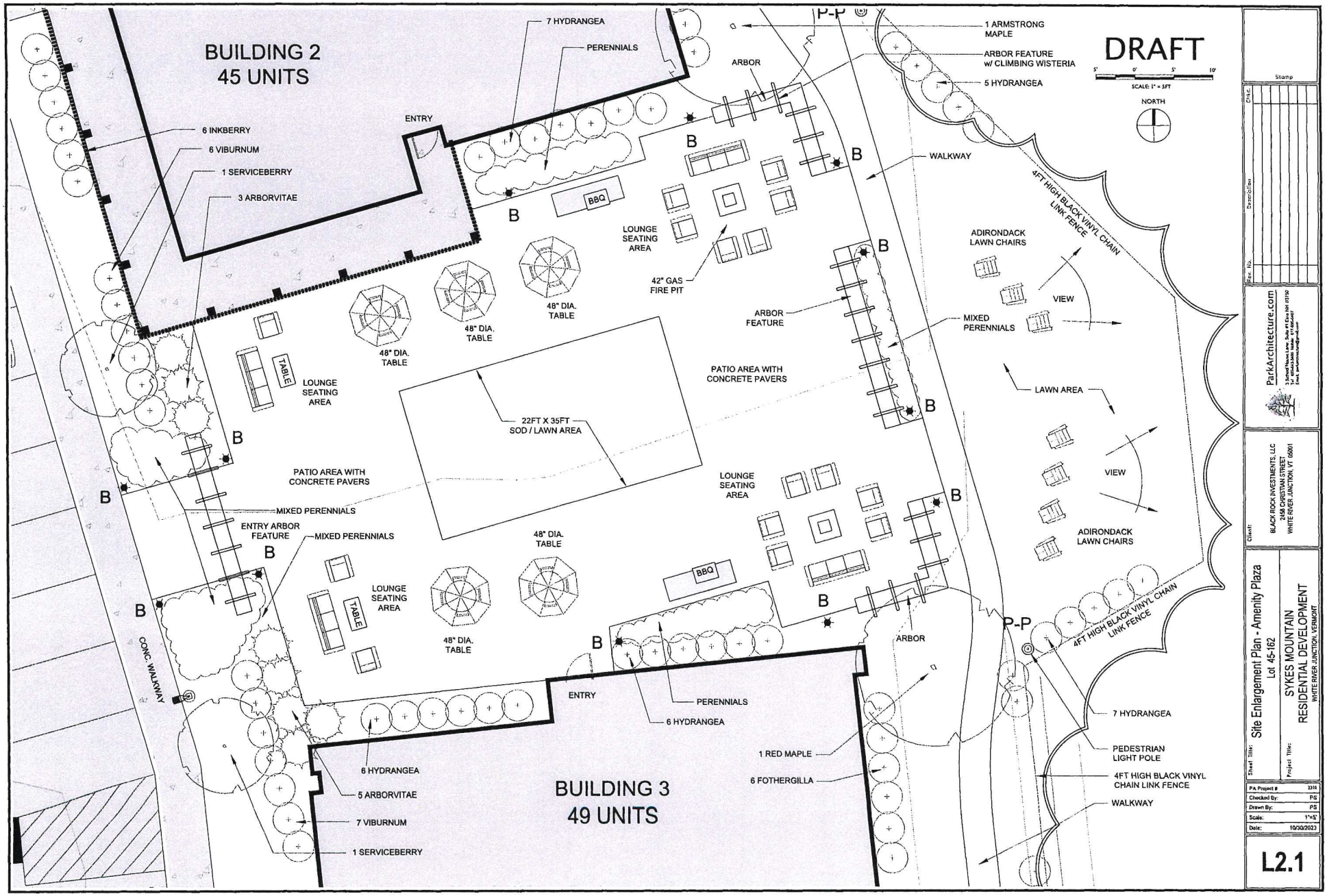
Client: BLACK BOOK INVESTMENTS, LLC
PO BOX 1000
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Landscape Details
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2318
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

L1.4



Stamp

Rev. No. | Description | Chkd.

ParkArchitecture.com

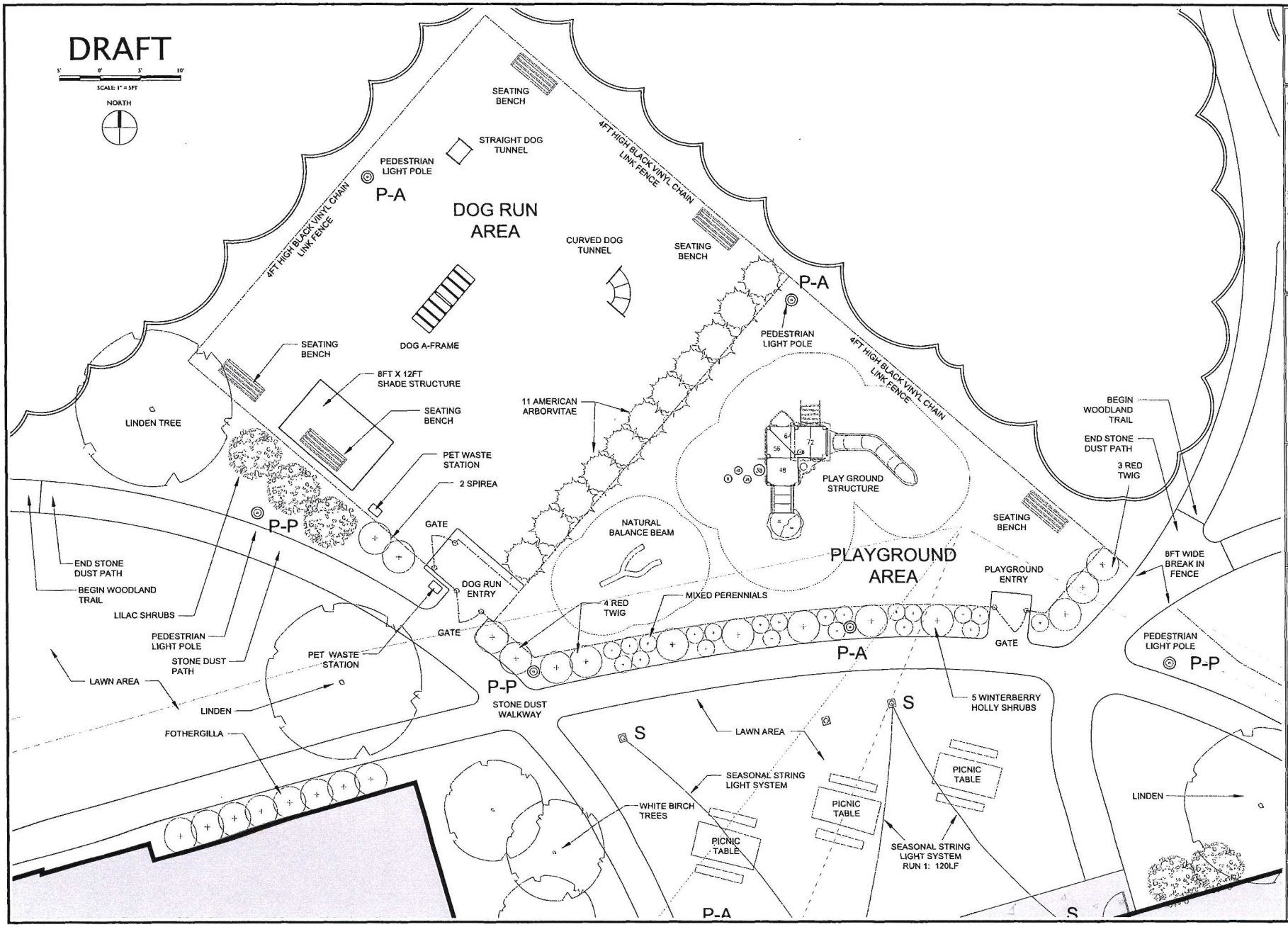
Client: BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Enlargement Plan - Amenity Plaza
Lot 45-162

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=5'
Date:	10/30/2023

L2.1



Stamp

No.	Description	Date

ParkArchitecture.com

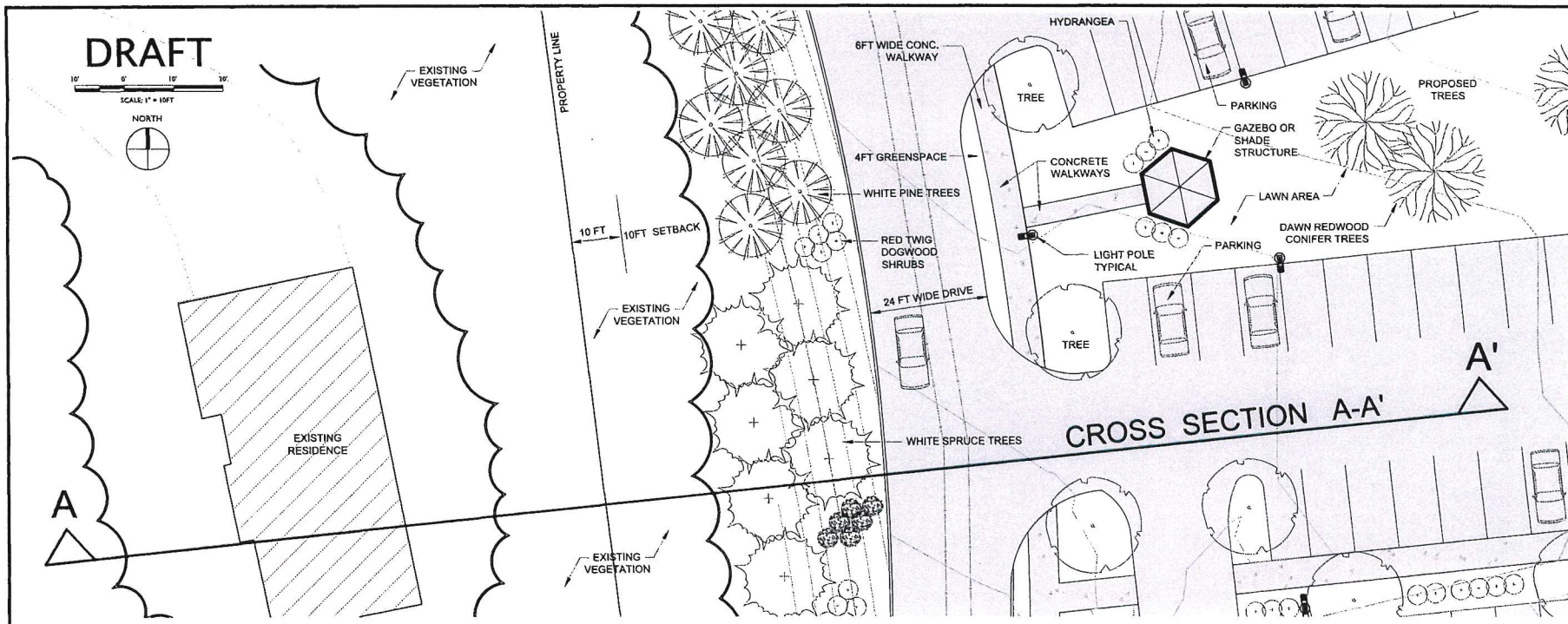
Client:
BLACK ROCK INVESTMENTS, LLC
2459 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

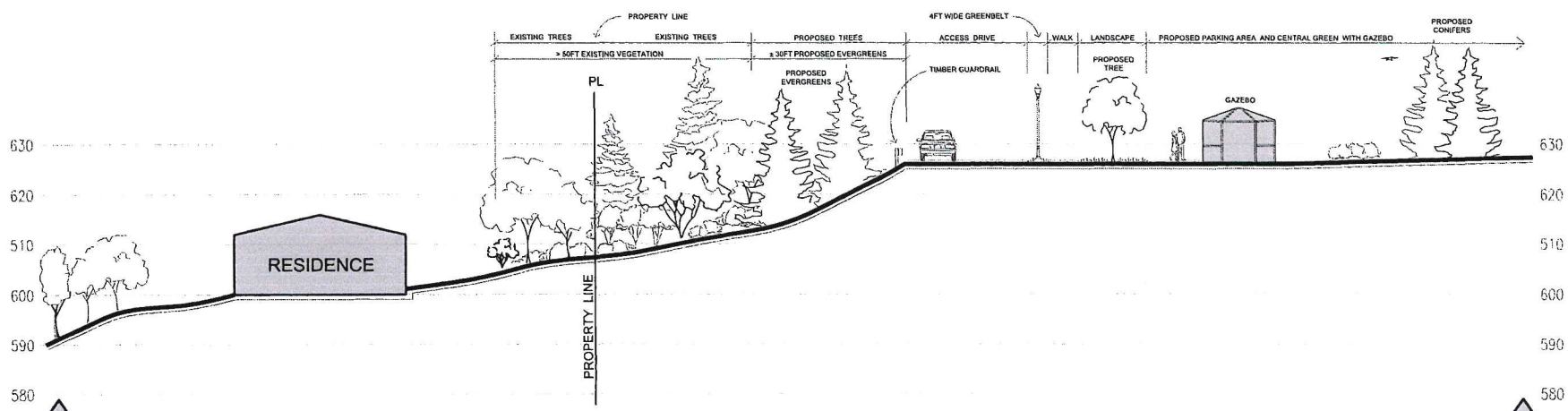
Site Enlargement Plan - Dog Run & Play Area
Lot 45-162

Project Title:
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2318
Checked By:	PS
Drawn By:	PS
Scale:	1"=5'
Date:	10/30/2023

L2.2





CROSS SECTION A-A'

SCALE: 1"=10'-0"

Stamp

Rev. No.	Description	Chkd.

ParkArchitecture.com

Client: BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Enlargement Plan - Entry Drive
Lot 45-162

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2318
Checked By:	PS
Drawn By:	PS
Scale:	1"=10'
Date:	10/30/2023

L2.3

DRAFT

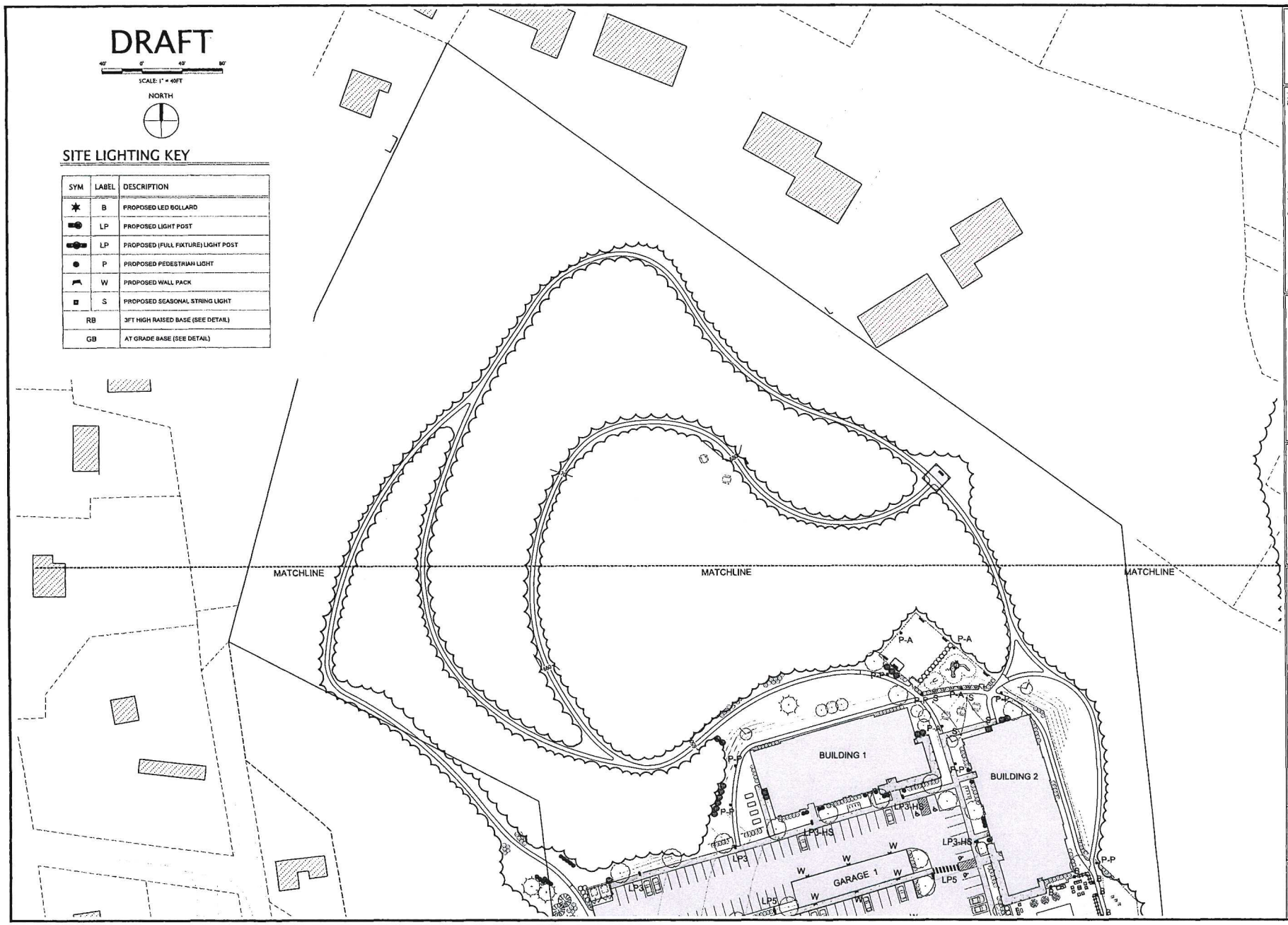
40' 0' 40' 80'

SCALE: 1" = 40FT

NORTH

SITE LIGHTING KEY

SYM	LABEL	DESCRIPTION
	B	PROPOSED LED BOLLARD
	LP	PROPOSED LIGHT POST
	LP	PROPOSED (FULL FIXTURE) LIGHT POST
	P	PROPOSED PEDESTRIAN LIGHT
	W	PROPOSED WALL PACK
	S	PROPOSED SEASONAL STRING LIGHT
RB		3FT HIGH RAISED BASE (SEE DETAIL)
GB		AT GRADE BASE (SEE DETAIL)



Stamp

Rev. No.	Description	Chkd.

ParkArchitecture.com

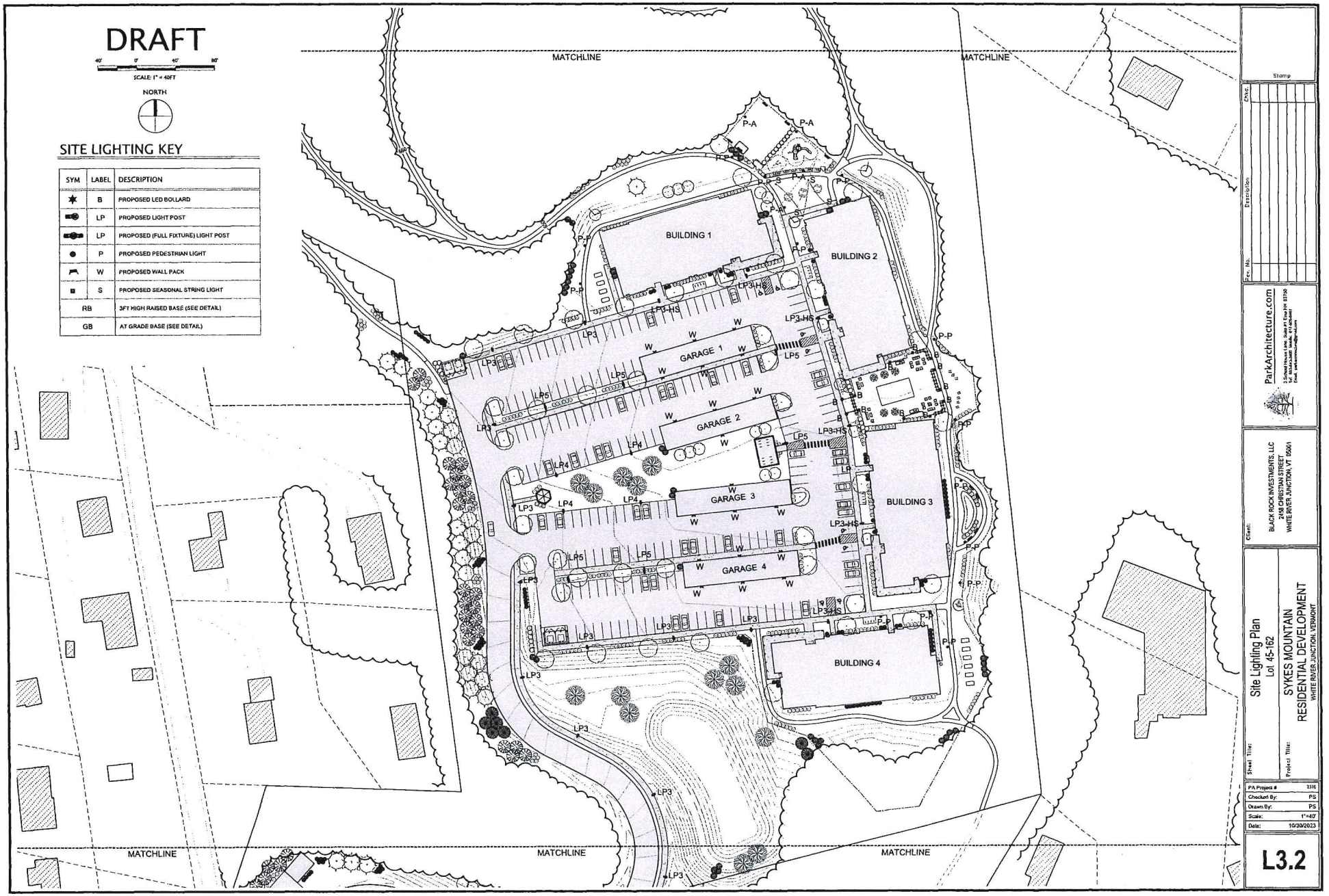
Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

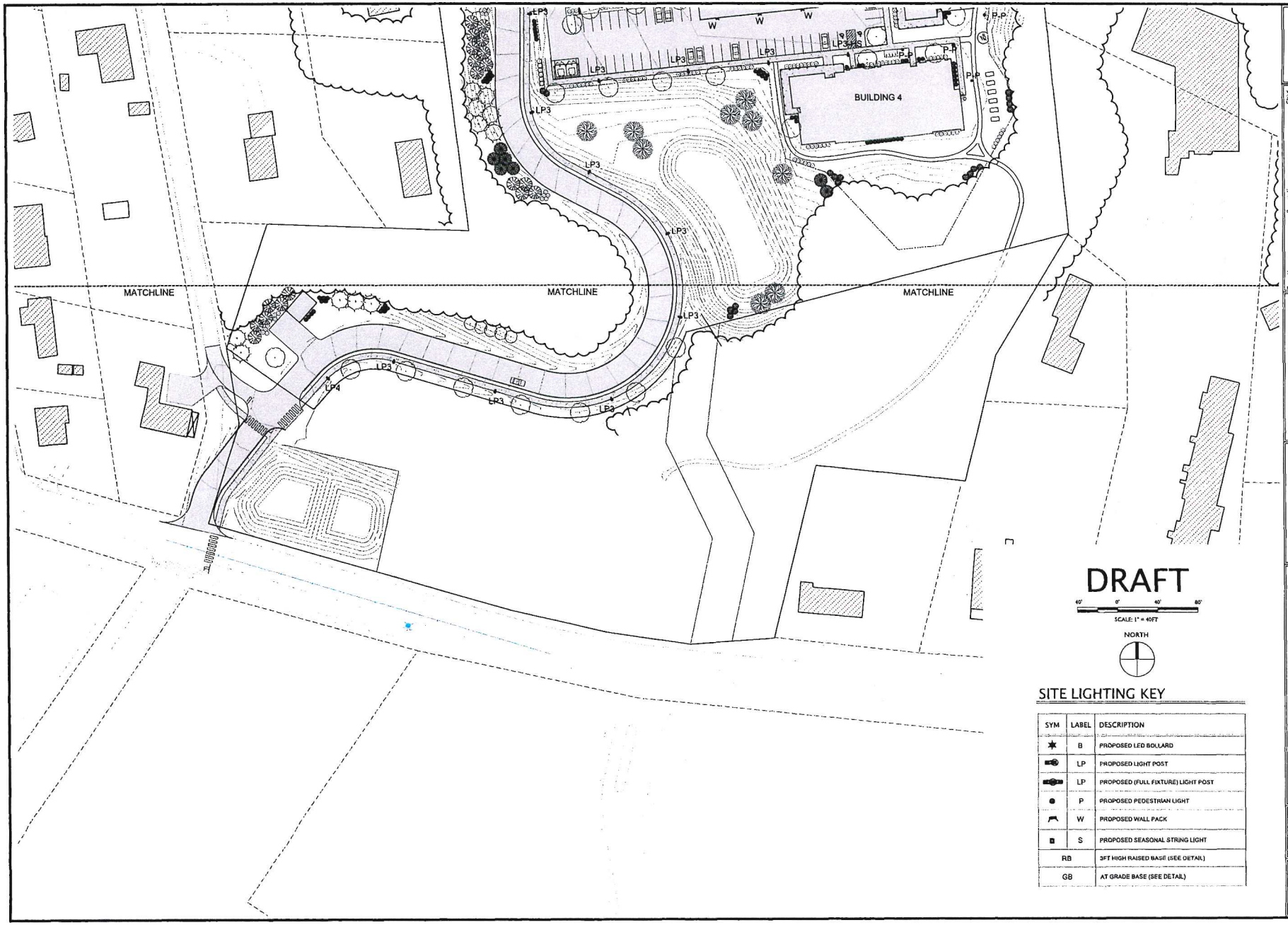
Sheet Title: Site Lighting Plan
Lot 45-162

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=40'
Date:	10/30/2023

L3.1


DRAFT
SCALE: 1" = 40FT
NORTH
SITE LIGHTING KEY
SYM | LABEL | DESCRIPTION
B | PROPOSED LED BOLLARD
LP | PROPOSED LIGHT POST
LP | PROPOSED (FULL FIXTURE) LIGHT POST
P | PROPOSED PEDESTRIAN LIGHT
W | PROPOSED WALL PACK
S | PROPOSED SEASONAL STRING LIGHT
RB | 3FT HIGH RAISED BASE (SEE DETAIL)
GB | AT GRADE BASE (SEE DETAIL)
MATCHLINE
BUILDING 1
BUILDING 2
BUILDING 3
BUILDING 4
GARAGE 1
GARAGE 2
GARAGE 3
GARAGE 4
P-A
P-P
LP3
LP3-HS
LP4
LP5
W
B
S
Stamp
Rev. No.
Description
Date
ParkArchitecture.com
Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001
Sheet Title:
Site Lighting Plan
Lot 45-162
Project Title:
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT
PA Project #
2316
Checked By:
PS
Drawn By:
PS
Scale:
1"=40'
Date:
10/30/2023
L3.2



SITE LIGHTING KEY

SYM	LABEL	DESCRIPTION
	B	PROPOSED LED BOLLARD
	LP	PROPOSED LIGHT POST
	LP	PROPOSED (FULL FIXTURE) LIGHT POST
	P	PROPOSED PEDESTRIAN LIGHT
	W	PROPOSED WALL PACK
	S	PROPOSED SEASONAL STRING LIGHT
RB		3FT HIGH RAISED BASE (SEE DETAIL)
GB		AT GRADE BASE (SEE DETAIL)

Stamp

Rev. No.	Description	Chkd.

ParkArchitecture.com
3 Sentinel House Lane, Suite #1 Essex Hill 05750
Tel: 802.662.3000 Mobile: 617.462.4403
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

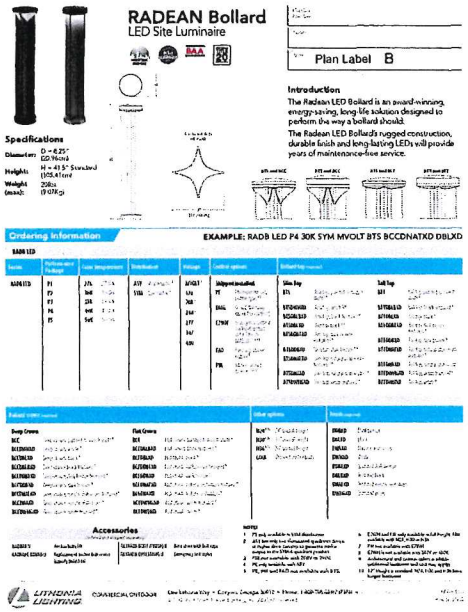
Sheet Title: Site Lighting Plan
Lot 45-162

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

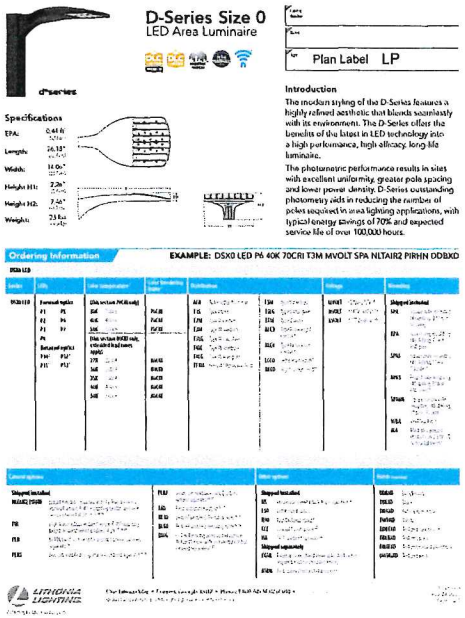
PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=40'
Date:	10/30/2023

L3.3

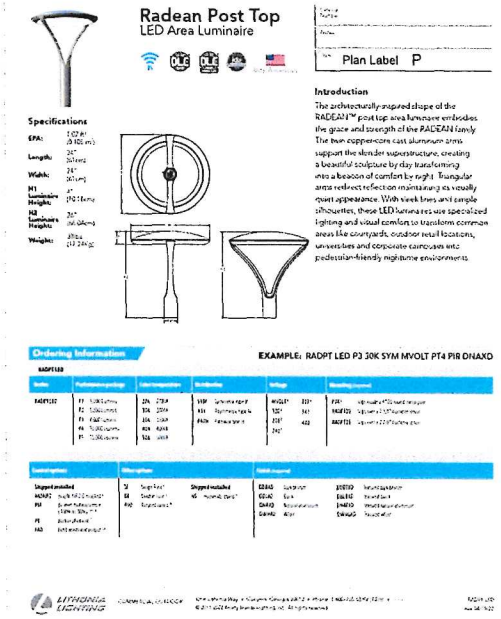
(B) BOLLARD LIGHTING SPECIFICATION



(LP & LP2) SERIES LIGHT POST SPECIFICATION

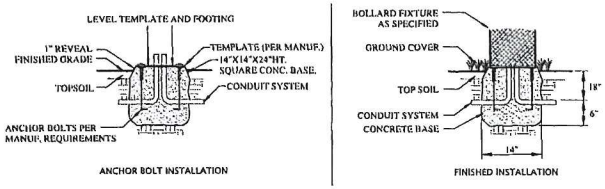


(P) SERIES PEDESTRIAN LIGHT POST SPECIFICATION



BOLLARD LIGHT BASE INSTALLATION DETAIL

NOT TO SCALE



NOTE: CONTRACTOR TO PROVIDE SHOP DRAWING OF BOLLARD, CONCRETE BASE, AND INSTALLATION METHODS TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION.

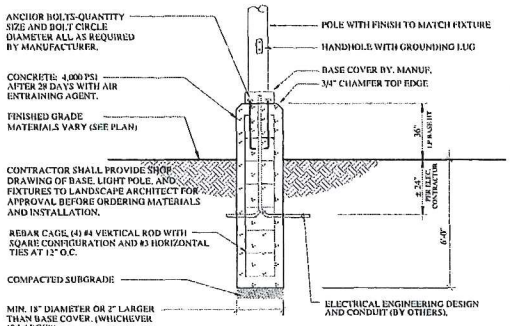
LIGHTING NOTES

LIGHT FIXTURE NOTES:

CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL FOR ALL LIGHTING MATERIALS, FIXTURES, POLES AND INSTALLATION METHODS TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION AND INSTALLATION. CONTRACTOR SHALL COORDINATE WITH LANDSCAPE ARCHITECT ON SITE TO VERIFY AND MARK LOCATION OF ALL PROPOSED FIXTURES INCLUDING LIGHT POLES, WALL PACKS AND BOLLARDS PRIOR TO INSTALLATION.

(RB) RAISED LIGHT POLE BASE INSTALLATION DETAIL

NOT TO SCALE

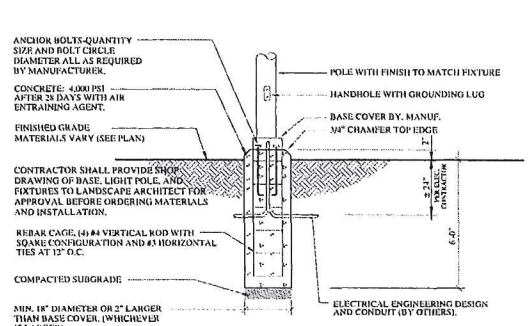


NOTES:

1. PARKING AREA LIGHT FIXTURE MOUNTING HEIGHT SHALL BE 15FT FROM GRADE (SEE PLAN)
2. PEDESTRIAN LIGHT FIXTURE MOUNTING HEIGHT SHALL BE 12FT FROM GRADE (SEE PLAN)
3. CONTRACTOR SHALL INSTALL RAISED BASES (RB) AT 36" HIGH WHERE INDICATED ON PLANS

(GB) AT-GRADE LIGHT POLE BASE INSTALLATION

NOT TO SCALE



NOTES:

1. PARKING AREA LIGHT FIXTURE MOUNTING HEIGHT SHALL BE 15FT FROM GRADE (SEE PLAN)
2. PEDESTRIAN LIGHT FIXTURE MOUNTING HEIGHT SHALL BE 12FT FROM GRADE (SEE PLAN)
3. CONTRACTOR SHALL INSTALL AT GRADE BASES (GB) AT 2" HIGH WHERE INDICATED ON PLANS

Stamp

Rev. No.	Description	Date

ParkArchitecture.com
3 Orchard Street Law, Suite #1 Burlington, VT 05401
(o) 802.652.3062 (cell) 413.446.6667
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2450 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title:
Site Lighting Details
Lot 45-162

Project Title:
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2318
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

L3.4

WALL PACK LIGHTING SPECIFICATION

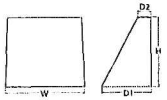


WDGE1 LED
Architectural Wall Sconce

Plan Label W

Specifications

Depth (D1):	5.5"
Depth (D2):	1.5"
Height:	8"
Width:	9"
Weight (without options):	9 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing true site-wide solution.

WDGE1 delivers up to 2,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. The compact size of WDGE1, with its integrated emergency battery backup option, makes it an ideal over-the-door wall-mounted lighting solution.

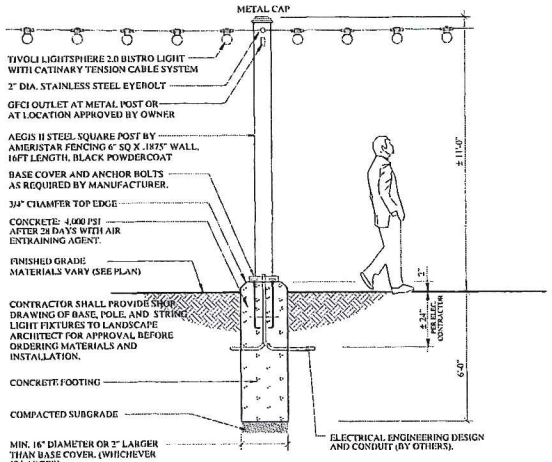
LIGHT FIXTURE NOTES:

CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL FOR ALL LIGHTING MATERIALS, FIXTURES, POLES AND INSTALLATION METHODS TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION AND INSTALLATION. CONTRACTOR SHALL COORDINATE WITH LANDSCAPE ARCHITECT ON SITE TO VERIFY AND MARK LOCATION OF ALL PROPOSED FIXTURES INCLUDING LIGHT POLES, WALL PACKS AND BOLLARDS PRIOR TO INSTALLATION.

Schedule

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Filename	Lumens per Lamp	LLF	Wattage	Distribution	Polar Plot
✱	B	12	Lithonia Lighting	RADB LED P4 30K SYM MVOLT DTS BTT BCC BCF HJ6 DDBXD	RADB LED Bollard; mounted at 3ft	LED	RADB_LED_P4_30K_SYM_DDBXD.ies	1335	0.9	18.59	TYPE VS, BUG RATING: B1 - U1 - G0	
	LP3	15	Lithonia Lighting	DSX0 LED P2 30K 80CRI T3M MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Size 0 Area Fixture Type 3; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P2_30K_80CRI_T3M.ies	5383	0.9	45.14	TYPE IV, MEDIUM, BUG RATING: B1 - U0 - G2	
	LP3-HS	6	Lithonia Lighting	DSX0 LED P2 30K 80CRI T3M HS MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Size 0 Area Fixture Type 3 with Houseside Shield; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P2_30K_80CRI_T3M_HS.ies	4666	0.9	45.14	TYPE IV, MEDIUM, BUG RATING: B1 - U0 - G2	
	LP4	5	Lithonia Lighting	DSX0 LED P2 30K 80CRI TFTM MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Area Fixture Type 4; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P2_30K_80CRI_TFTM.ies	5501	0.9	45.14	TYPE IV, SHORT, BUG RATING: B1 - U0 - G2	
	LP5	7	Lithonia Lighting	DSX0 LED P2 30K 80CRI T5M MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Size 0 Area Fixture Type 5; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P2_30K_80CRI_T5M.ies	5621	0.9	45.14	TYPE VS, BUG RATING: B3 - U0 - G1	
●	P-A	4	Lithonia Lighting	RADPT P2 30K ASY MVOLT PT4 DDBXD with RSS 10 PT DDBXD	RADEAN Post-Top Asymmetric; mounted at 10ft	LED	RADPT_P2_30K_ASY.ies	4671	0.9	38.0107	TYPE IV, VERY SHORT, BUG RATING: B2 - U2 - G2	
●	P-P	12	Lithonia Lighting	RADPT P2 30K PATH MVOLT PT4 DDBXD with RSS 10 PT DDBXD	RADEAN Post-Top Pathway; mounted at 10ft	LED	RADPT_P2_30K_PATH.ies	3824	0.9	38.01	TYPE III, SHORT, BUG RATING: B4 - U2 - G4	
	WP	20	Lithonia Lighting	WDGE1 LED P2 30K 80CRI VW SRM DDBXD	WDGE1 LED Wallpack; mounted at 10ft	LED	WDGE1_LED_P2_30K_80CRI_VW.ies	1876	0.9	15.0178	TYPE II, VERY SHORT, BUG RATING: B1 - U0 - G0	

(SLP) STRING LIGHT POLE (FOR SEASONAL USE ONLY)





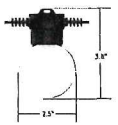
STRING LIGHTING / MAXIMUM RUN LENGTH STANDARDS

LED TYPE	6" ON CENTER	12" ON CENTER	18" ON CENTER	24" ON CENTER
STANDARD	130 FT	180 FT	230 FT	230 FT
HIGH OUTPUT	80 FT	110 FT	130 FT	130 FT
VERY HIGH OUTPUT	30 FT	55 FT	70 FT	80 FT

Product Features

- Tivoli's next evolution of Litesphere delivers a robust specification-grade strand with factory molded standard spacing for consistent quality from start to finish
- Litesphere 2.0 design provides optional suspended mounting or a twist-all cap for surface applications
- 12V DC Low voltage system for long runs
- IP67
- cULus
- 3 Year warranty

Dimensions

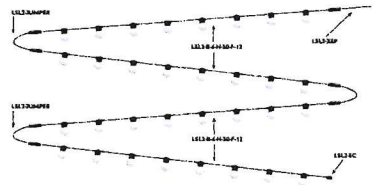


NOTES:

1. MAXIMUM RUN: 250FT
2. PROVIDE 3 RUNS AS FOLLOWS:
   RUN 1: ± 120 FT (SEE PLAN)
   RUN 2: ± 84 FT (SEE PLAN)
3. LUMENS: 2,700
4. COLOR: BLACK
5. BULB SPCING: 24 INCHES
6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION INCLUDING STRING LIGHT POSTS AND LIGHTING FIXTURES.

12V | Litesphere™ 2.0 — tivoli

System Configuration Example



Strand Order Guide

Note: For suspension applications, a catenary cable is required for proper installation. Please contact Tivoli for recommendations on unique mounting applications.

Product	Wire	Spacing	LED Type	LED Color	Qtd/m	Voltage
L12.5 Litesphere 2.0	B Black, W White	24" OC	H High Output, V Very High Output, S Standard Output	27 2700K, 30 3000K, 35 3500K, 40 4000K, AA Amber*, BB Royal Blue*, RB Red*, GN Green*, YL Yellow*	C Clear, O Opal	12 12V DC

*Available in V40 LED only

ParkArchitecture.com
2 School House Lane, Suite #1 Essex NY 12936
Tel: 802.343.5600 Mobile: 917.690.0827
Email: parkarchitecture@gmail.com

Client: BLACK ROCK INVESTMENTS, LLC
2456 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Lighting Details
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

L3.5

DRAFT

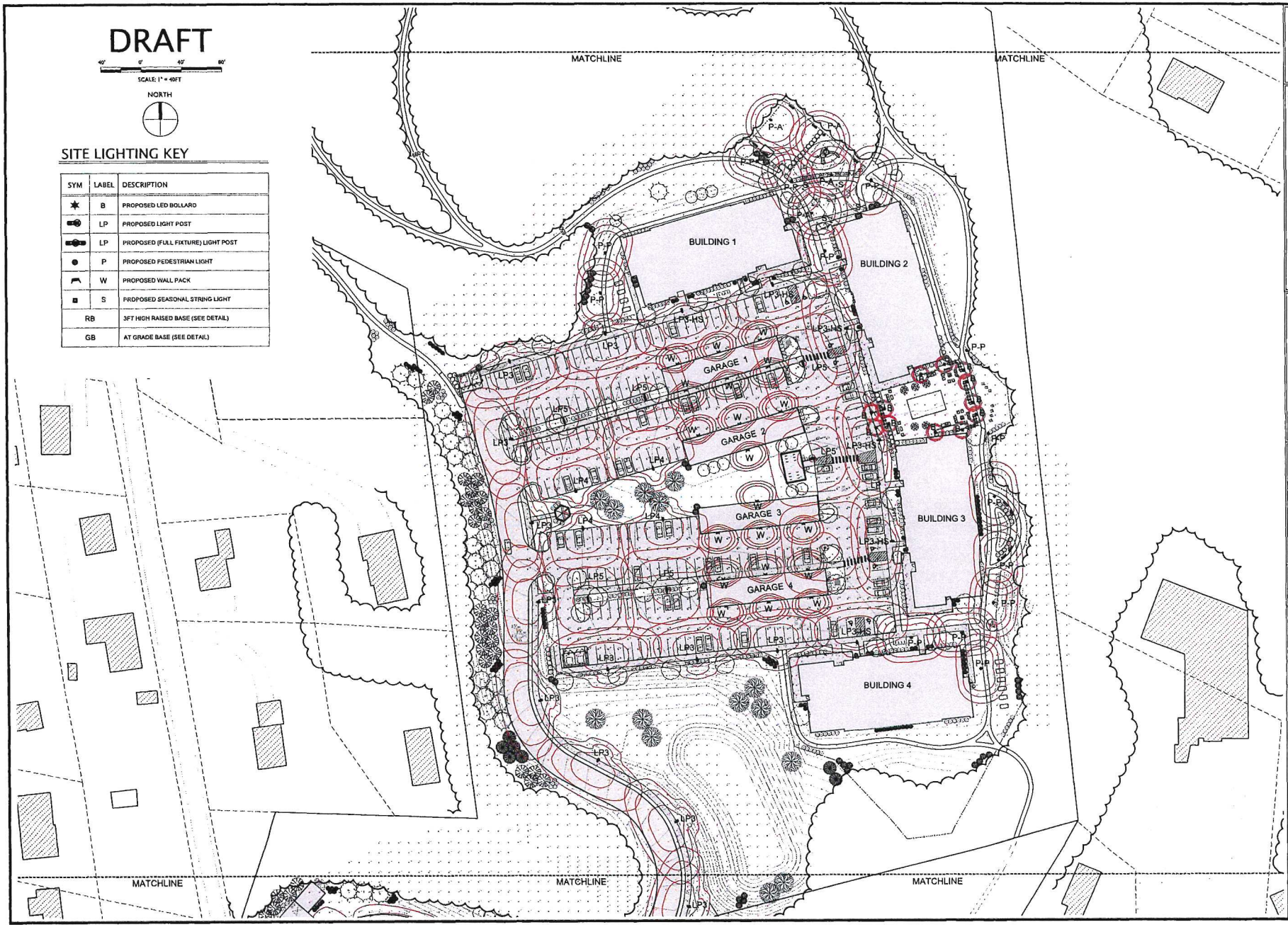
40' 0' 40' 80'

SCALE: 1" = 40FT

NORTH

SITE LIGHTING KEY

SYM	LABEL	DESCRIPTION
✱	B	PROPOSED LED BOLLARD
	LP	PROPOSED LIGHT POST
	LP	PROPOSED (FULL FIXTURE) LIGHT POST
●	P	PROPOSED PEDESTRIAN LIGHT
	W	PROPOSED WALL PACK
■	S	PROPOSED SEASONAL STRING LIGHT
RB		3FT HIGH RAISED BASE (SEE DETAIL)
GB		AT GRADE BASE (SEE DETAIL)



Stamp

Rev. No.	Description	Chkd.

ParkArchitecture.com
3 School House Lane, Suite #1 Essex NH 03750
Tel 603.443.3402 Mobile: 617.465.6407
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Photometric Plan
Lot 45-162

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
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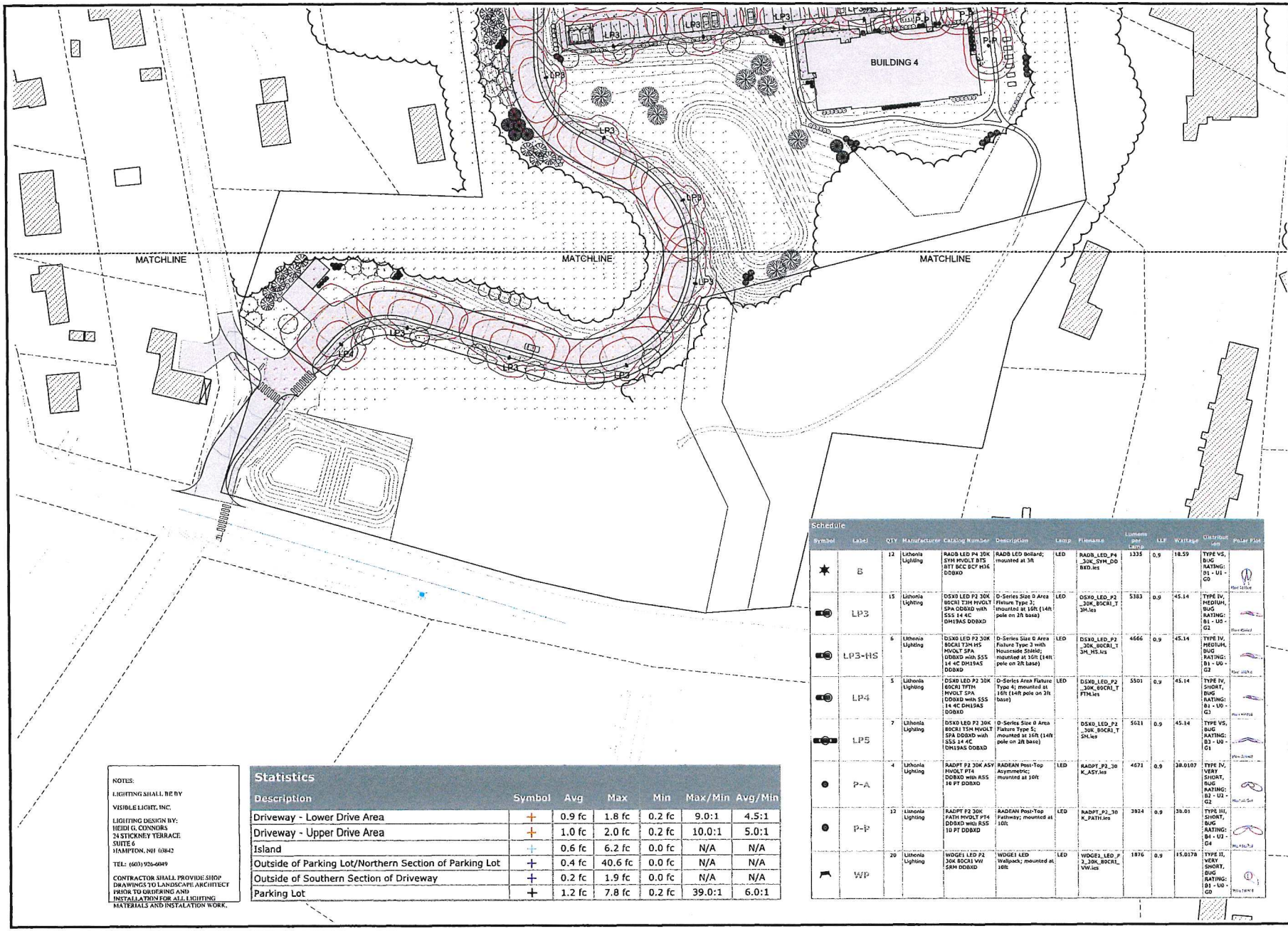
L3.6



NOTES:

LIGHTING SHALL BE BY

VISIBLE LIGHT, INC.

LIGHTING DESIGN BY:
HEIDI G. CONNORS
24 STICKNEY TERRACE
SUITE 6
HAMPTON, NH 03842

TEL: (603) 926-6049

CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO LANDSCAPE ARCHITECT PRIOR TO ORDERING AND INSTALLATION FOR ALL LIGHTING MATERIALS AND INSTALATION WORK.

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Driveway - Lower Drive Area	+	0.9 fc	1.8 fc	0.2 fc	9.0:1	4.5:1
Driveway - Upper Drive Area	+	1.0 fc	2.0 fc	0.2 fc	10.0:1	5.0:1
Island	+	0.6 fc	6.2 fc	0.0 fc	N/A	N/A
Outside of Parking Lot/Northern Section of Parking Lot	+	0.4 fc	40.6 fc	0.0 fc	N/A	N/A
Outside of Southern Section of Driveway	+	0.2 fc	1.9 fc	0.0 fc	N/A	N/A
Parking Lot	+	1.2 fc	7.8 fc	0.2 fc	39.0:1	6.0:1

Schedule

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Filename	Lumens per Lamp	LLF	Wattage	Distribution	Polar Plot
	B	12	Lithonia Lighting	RADB LED P4 30K SYM MVOLT BTS BTT BKC BCP H36 DDBXD	RADB LED Bollard; mounted at 3ft	LED	RADB_LED_P4_30K_SYM_DDBXD.ies	1335	0.9	18.59	TYPE VS, BUG RATING: B1 - U1 - G0	
	LP3	15	Lithonia Lighting	DSXO LED P2 30K 80CRI T3M MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	O-Series Size 0 Area Fixture Type 3; mounted at 16ft (14ft pole on 2ft base)	LED	OSXO_LED_P2_30K_80CRI_T3M.ies	5383	0.9	45.14	TYPE IV, MEDIUM, BUG RATING: B1 - U0 - G2	
	LP3-HS	6	Lithonia Lighting	DSXO LED P2 30K 80CRI T3M HS MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	O-Series Size 0 Area Fixture Type 3 with Houseside Shield; mounted at 16ft (14ft pole on 2ft base)	LED	DSXO_LED_P2_30K_80CRI_T3M_HS.ies	4666	0.9	45.14	TYPE IV, MEDIUM, BUG RATING: B1 - U0 - G2	
	LP4	5	Lithonia Lighting	DSXO LED P2 30K 80CRI TFTH MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	O-Series Area Fixture Type 4; mounted at 16ft (14ft pole on 2ft base)	LED	DSXO_LED_P2_30K_80CRI_TFTH.ies	5501	0.9	45.14	TYPE IV, SHORT, BUG RATING: B1 - U0 - G1	
	LP5	7	Lithonia Lighting	DSXO LED P2 30K 80CRI T5M MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	O-Series Size 0 Area Fixture Type 5; mounted at 16ft (14ft pole on 2ft base)	LED	DSXO_LED_P2_30K_80CRI_T5M.ies	5621	0.9	45.14	TYPE VS, BUG RATING: B3 - U0 - G1	
	P-A	4	Lithonia Lighting	RADPT P2 30K ASY MVOLT PT4 DDBXD with RSS 10 PT DDBXD	RADEAN Post-Top Asymmetric; mounted at 10ft	LED	RADPT_P2_30K_ASY.ies	4671	0.9	38.0107	TYPE IV, VERY SHORT, BUG RATING: B2 - U2 - G2	
	P-P	12	Lithonia Lighting	RADPT P2 30K PATH MVOLT PT4 DDBXD with RSS 10 PT DDBXD	RADEAN Post-Top Pathway; mounted at 10ft	LED	RADPT_P2_30K_PATH.ies	3924	0.9	38.01	TYPE III, SHORT, BUG RATING: B4 - U2 - G4	
	WP	20	Lithonia Lighting	WDGE1 LED P2 30K 80CRI VW SRM DDBXD	WDGE1 LED Wallpack; mounted at 10ft	LED	WDGE1_LED_P2_30K_80CRI_VW.ies	1876	0.9	15.0178	TYPE II, VERY SHORT, BUG RATING: B1 - U0 - G0	

Stamp

No.	Description	Date

ParkArchitecture.com
3 Church Street, Suite #1 Essex NY 12936
(o) 802.453.5062 (cell) 917.842.0427
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
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PA Project #	2218
Checked By:	PS
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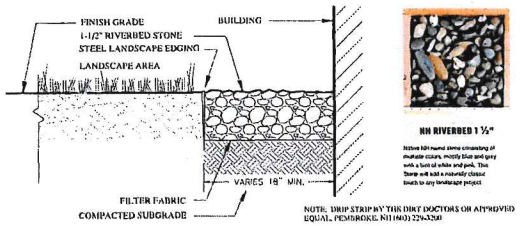
Date:	10/30/2023

L3.7

BUILDING DRIP STRIP

SCALE: NTS



NH RIVERBED 1 ½"

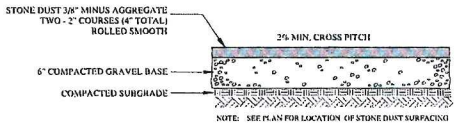
Native NH round stone consisting of multiple colors, mostly blue and gray with a hint of white and pink. This stone will add a naturally classic touch to any landscape project

NOTE: DRIP STRIP BY THE DIRT DOCTORS OR APPROVED EQUAL, PEMBROKE, NH (603) 229-3250

STONE DUST PAVEMENT

NOT TO SCALE

NOTE: STONE DUST PAVEMENT AS SHOWN ON PLAN FOR WALKWAYS AND DOG RUN AREA

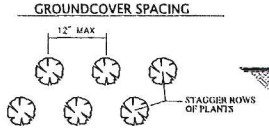


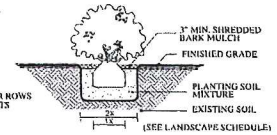
NOTE: SEE PLAN FOR LOCATION OF STONE DUST SURFACING

SHRUB PLANTING DETAIL

NOT TO SCALE

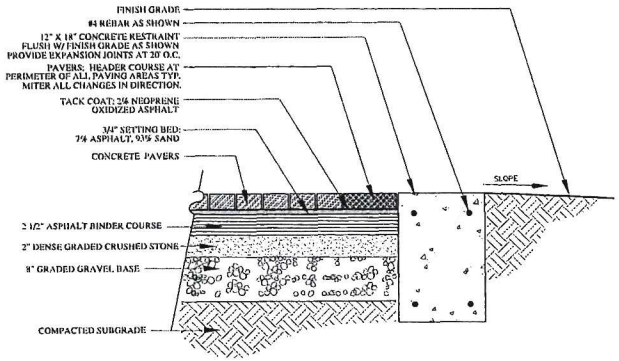
GROUNDCOVER SPACING





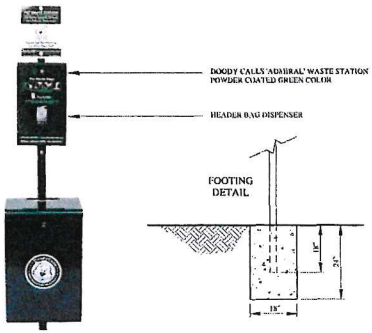
CONCRETE PATIO PAVERS

SCALE: NTS



DOG PARK WASTE STATION

NOT TO SCALE



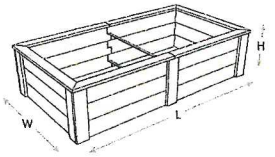
NOTES:

1. ADMIRAL DOG WASTE STATION, OR APPROVED EQUAL.
2. COLOR: GREEN; DISPENSER TYPE: ROLL
3. TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
4. SEE PLAN FOR LOCATION OF PROPOSED WASTE STATIONS

CEDAR RAISED GARDEN BEDS

NOT TO SCALE





NOTES:

CONTRACTOR SHALL SUPPLY CEDAR RAISED GARDEN BEDS IN LOCATIONS SHOWN ON THE PLAN.

PRODUCT DIMENSIONS:

WIDTH: 4 FEET
LENGTH: 8 FEET
HEIGHT: 22 INCHES

CONTRACTOR SHALL INCLUDE EARTH EASY TRIM PACK.

PROVIDE SHOP DRAWING OF MATERIALS AND INSTALLATION FOR APPROVAL PRIOR TO MATERIALS ORDERING AND INSTALLATION. BEDS SHALL BE BY EARTH EASY OR APPROVED EQUAL.

VISIT: WWW.EARTHEASY.COM

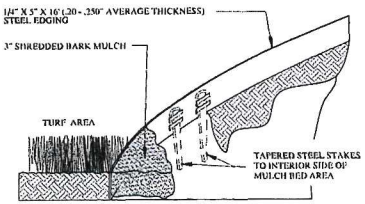
SEE PLAN FOR RAISED BED LOCATIONS

QUANTITY OF RAISED GARDEN BEDS: 10

STEEL LANDSCAPE EDGING DETAIL

NOT TO SCALE

STEEL LANDSCAPE EDGING AS MANUFACTURED BY:
SURE-LOC ALUMINUM EDGING CORPORATION - HOLLAND MI
TEL: 1-800-787-3562 OR APPROVED EQUAL



NOTES:

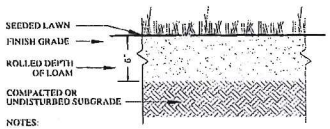
INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

SEE LANDSCAPE PLAN FOR LOCATION OF LAWN VS. MULCHED BED AREAS AND PLACEMENT OF STEEL EDGING.

CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO MATERIALS ORDERING AND INSTALLATION.

TURF PLANTING DETAIL

NOT TO SCALE



NOTES:

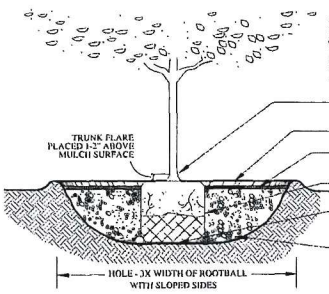
SEED ALL DISTURBED AREAS WITHIN 48 HOURS OF FINAL GRADING. SEED AFTER APRIL 15TH AND BEFORE SEPTEMBER 15TH IN ORDER TO ESTABLISH BEFORE FREEZING TEMPERATURES.

CONTRACTOR IS RESPONSIBLE TO WATER AND ESTABLISH SEEDED LAWN AREAS. WARRANTY SHALL BE 9 WEEKS FOLLOWING INSTALLATION PERIOD.

CONTRACTOR TO INCLUDE NECESSARY TOUCH-UP / RESEEDING FOR ANY AREAS WHERE GRASS SEED DOES NOT GERMINATE DURING THE WARRANTY PERIOD.

TREE PLANTING DETAIL

NOT TO SCALE



LANDSCAPE CONTRACTOR TO PROVIDE A 2-YEAR GUARANTEE ON ALL TREE AND SHRUB PLANTINGS.

GUARANTEE PERIOD BEGINS FOLLOWING 100% COMPLETION OF THE WORK AND FINAL SIGN-OFF BY THE LANDSCAPE ARCHITECT DURING THE CONSTRUCTION ADMINISTRATION PHASE.

TRUNK FLARE - PLANT 1 - 2" ABOVE BARK MULCH AND ABOVE EXISTING OR FINISHED GRADE

MIN. 6" SAUCER

3" SHREDDED BARK MULCH

REMOVE BURLAP FROM TOP HALF OFF ROOTBALL

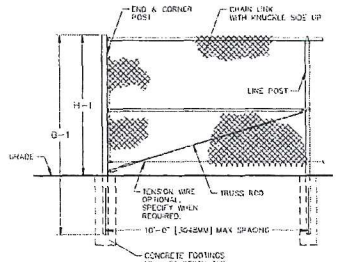
ROOTBALL SITS DIRECTLY ON UNDISTURBED SOIL

PLANTING SOIL MIXTURE

NOTE:
REMOVE BURLAP ROPE AND WIRE FROM TOP & SIDES OF ALL BALLS. ADD MULCH AS SHOWN ON PLAN

BLACK VINYL CLF INSTALLATION DETAIL

NOT TO SCALE



SEE LANDSCAPE AND CIVIL PLANS FOR LOCATIONS AND HEIGHT

NOTES:

1. SEE PLAN FOR LOCATION, HEIGHT, AND LENGTH OF PROPOSED FENCING. (BEGIN / END CLF LABELS)
2. ALL CHAIN LINK FABRIC SHALL BE BLACK VINYL COATED.
3. ALL POSTS, RAILS, RODS & HARDWARE SHALL BE BLACK POWDER COATED STEEL FENCE.
4. CONTRACTOR SHALL INCLUDE TOP AND BOTTOM RAILS ON ALL FENCING.
5. MANUFACTURER SHALL BE ANCHOR FENCE OR APPROVED EQUAL.
6. INSTALL FABRIC WITH KNUCKLE SIDE UP AND POINTED END DOWN.
7. CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING MATERIALS AND INSTALLATION.

FENCE HEIGHT	END & CORNER POSTS	
NOMINAL HEIGHT	B-1 BAR LENGTH	H-1 HEIGHT ABOVE GRADE
6'-0"	9'-0"	6'-0 5/8"
4'-0"	7'-0"	4'-0 5/8"

Stamp

Rev. No.	Description	Date

ParkArchitecture.com
3 Grand House Lane, Suite #1 Unit 107/10
Hanover, New Hampshire 03755
Tel: 603.643.3449

Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Details
Lot 45-162

Project Title:
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2314
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

L4.1

BBQ – GRILL COUNTER

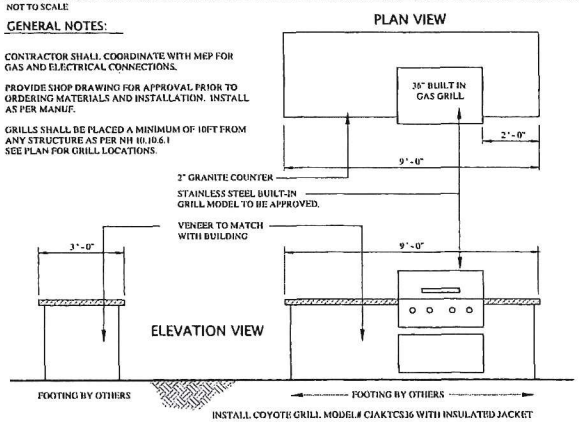
NOT TO SCALE

GENERAL NOTES:

CONTRACTOR SHALL COORDINATE WITH MEP FOR GAS AND ELECTRICAL CONNECTIONS.

PROVIDE SHOP DRAWING FOR APPROVAL PRIOR TO ORDERING MATERIALS AND INSTALLATION. INSTALL AS PER MANUF.

GRILLS SHALL BE PLACED A MINIMUM OF 10FT FROM ANY STRUCTURE AS PER NH 10.10.6.1
SEE PLAN FOR GRILL LOCATIONS.



INSTALL COYOTE GRILL MODEL# C1AKTCS36 WITH INSULATED JACKET



Coyote C Series 36" Built In Gas Grill - C2C36

Overall Dimensions: 23" H x 35½" W x 25½" D
Cutout Dimensions: 10½" H x 32½" W x 20½" D

Features:

- Premium 304 Stainless Steel Construction
- (4) high-performance Coyote Ninety Burners™
- 875 square inches of cooking area
- Up to 65,000 BTU of output
- LED interior lighting

BIKE RACK INSTALLATION DETAIL

NOT TO SCALE



NOTE:
BIKE RACK SHALL BE STAINLESS STEEL BY DERO / HEAVY DUTY OR APPROVED EQUAL

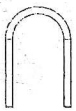


CONTRACTOR TO SURFACE MOUNT





COLOR: STAINLESS STEEL





GENERAL NOTES:

PRIOR TO ORDERING OF MATERIALS AND INSTALLATION, CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO LANDSCAPE ARCHITECT FOR APPROVAL OF ALL SITE FURNISHINGS, EXTERIOR TABLES, SEATING BENCHES AND BIKE RACKS. THIS SHALL INCLUDE FINISHES AND INSTALLATION METHODS.

SEE PLAN L1.1 FOR OUTDOOR BIKE STORAGE REQUIREMENTS.

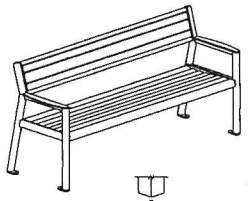
6FT LONG SEATING BENCH

SCALE: NTS



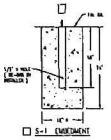
NOTES:

1. INSTALL MODEL SBW6HS 6FT STEEL BENCH WITH STEEL SEAT. WITH BLACK POWDER COATED FINISH.
2. SEE PLAN FOR LOCATION OF BENCHES
3. MANUFACTURER SHALL BE DUMOR OR APPROVED EQUAL.
4. CONTRACTOR SHALL INSTALL / SECURE BENCH WITH EMBEDDED FOOTING AS PER MANUFACTURER SPECIFICATIONS.
5. CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING MATERIALS AND INSTALLATION.





☐ S-3 FREE STANDING

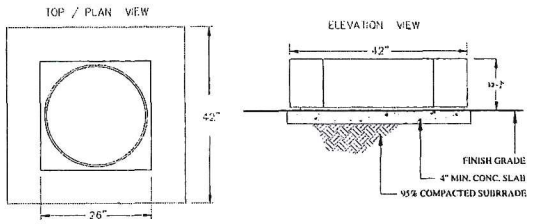


☐ S-1 EMBEDMENT

NOTES:
1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
2.) 1/2" X 3 3/4" EXPANSION ANCHOR BOLTS PROVIDED FOR S-2.

42IN BENTO GAS FIRE PIT WITH ELECTRICAL IGNITION

NOT TO SCALE





DIMENSIONS & WEIGHT
BENTO 32: 32" X 32" X 12.75"H (813 X 813 X 324H). UP TO 340 LBS (155 KG)
BENTO 42: 42" X 42" X 12.75"H (1067 X 1067 X 324H). UP TO 500 LBS (225 KG)

BURNERS:
ELECTRONIC AND MATCH-LIT IGNITION
NATURAL GAS: 69,000 BTU/H | 25 KW. PROPANE 60,000 BTU/H | 25 KW

ACCESSORIES:
ALL-WEATHER COVER (INCLUDED). POWDER-COATED ALUMINUM TABLE TOP. TEMPERED GLASS SCREEN

NOTES:

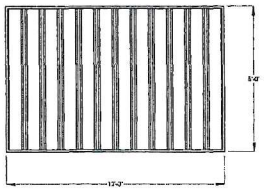
COLOR AND FINISH TO BE SELECTED BY OWNER.

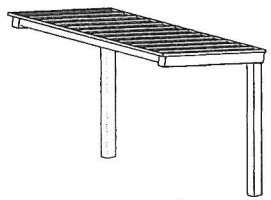
PROVIDE CONSTRUCTION DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION.

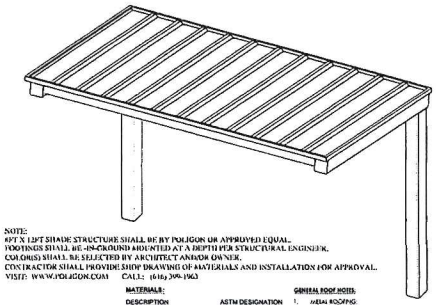
BURNING MEDIA SHALL BE LAVA ROCK AND TOP WITH GRAY RIVER ROCK.
FOR MORE INFORMATION VISIT PALOFORM.COM/FIRE-PITS/BENTO

8FT X 12FT SHADE STRUCTURE DETAIL

SCALE: NTS







NOTE:
8FT X 12FT SHADE STRUCTURE SHALL BE BY POLIGON OR APPROVED EQUAL.
FOOTINGS SHALL BE IN-GROUND MOUNTED AT A DEPTH PER STRUCTURAL ENGINEER.
COLORS SHALL BE SELECTED BY ARCHITECT AND/OR OWNER.
CONTRACTOR SHALL PROVIDE SHOP DRAWING OF MATERIALS AND INSTALLATION FOR APPROVAL.
VISIT: WWW.POLIGON.COM CALL: (616) 399-1963

MATERIALS:		GENERAL ROOF NOTES:	
DESCRIPTION	ASTM DESIGNATION	1.	MEDA ROOFING
TUBE STEEL	A500 (GRADE B)		- 24 GAUGE
SCHEDULE PIPE	A53 (GRADE B)		- GALVALUME COATED
PAINT PIPE	A36		- COLOR: KOI PAINTED
LIGHT GAGE COLD FORMED	A1003 (GRADE 50)	2.	10% COLOR MATCH ES ROOF
STRUCTURAL STEEL PLATE	A36	3.	SEE POLIGON.COM FOR
ROOF PANELS (STEEL)	A653		COLOR OPTIONS

GENERAL NOTES:

UNLESS NOTED OTHERWISE, THIS STRUCTURE WAS DESIGNED TO ONLY SUPPORT WHAT IS SHOWN ON THESE DRAWINGS. POLIGON MUST BE CONTACTED IF ANYTHING ELSE IS TO BE ATTACHED TO THIS STRUCTURE (WALLS, COLLAR WRAPS, RAILINGS, ETC.) SO THE DESIGN OF THIS STRUCTURE CAN BE REVIEWED AND POSSIBLY REVISED.

UNLESS NOTED OTHERWISE, THIS STRUCTURE WAS DESIGNED ASSUMING A 20' SEPARATION BETWEEN ANY ADJACENT STRUCTURE WITH AN EAVE HEIGHT EQUAL TO OR GREATER THAN THE EAVE HEIGHT OF THIS STRUCTURE. IF THAT SEPARATION DOES NOT EXIST, POLIGON MUST BE CONTACTED SO THE DESIGN OF THIS STRUCTURE CAN BE REVIEWED AND POSSIBLY REVISED.

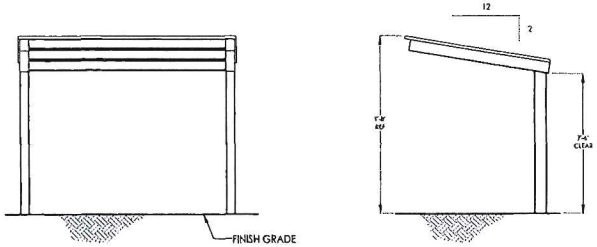
STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION MANUAL.

ALL WELDING IS PERFORMED BY AMERICAN WELDING SOCIETY CERTIFIED WELDERS AND CONFORMS TO THE LATEST EDITION OF AWS D1.1 OR D1.3 AS REQUIRED.

PARTS SHOWN MAY BE UPGRADED DUE TO STANDARDIZED FABRICATION. REFER TO THE SHIPPING BILL OF MATERIALS FOR POSSIBLE SUBSTITUTIONS.

FOR PROPER FIELD INSTALLATION OF THE BUILDING IT IS RECOMMENDED THAT THE PRIMARY FRAME INSTALLER AND THE ROOF INSTALLER HAVE A MINIMUM FIVE (5) YEARS DOCUMENTED EXPERIENCE INSTALLING THIS TYPE OF PRODUCT.

FOR PROPER FIELD INSTALLATION OF THE BUILDING IT IS RECOMMENDED THAT ELECTRIC WIRING, IF REQUIRED, BE RUN THROUGH THE STRUCTURAL MEMBERS BEFORE THE BUILDING IS ERECTED.



Stamp

Rev. No.	Description	Date

ParkArchitecture.com
3 Sunset Knoll Lane, Suite #1 East Hill 01750
Phone: 802-380-0403
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Details
Lot 45-162

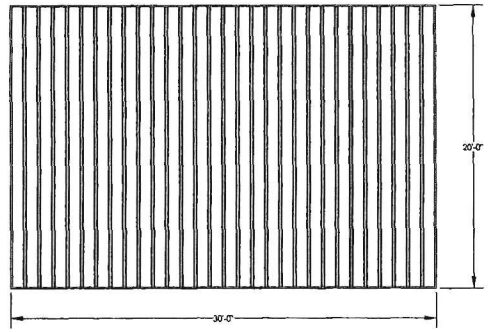
Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

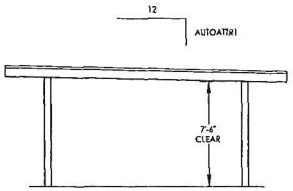
PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

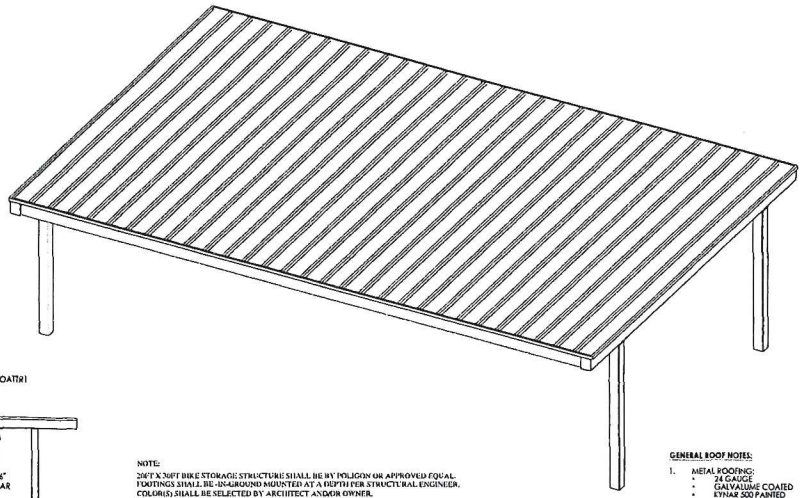
L4.2

COVERED BIKE STORAGE STRUCTURE 20FT X 30FT (POLIGON MODEL# MSX-20X30)

NOT TO SCALE





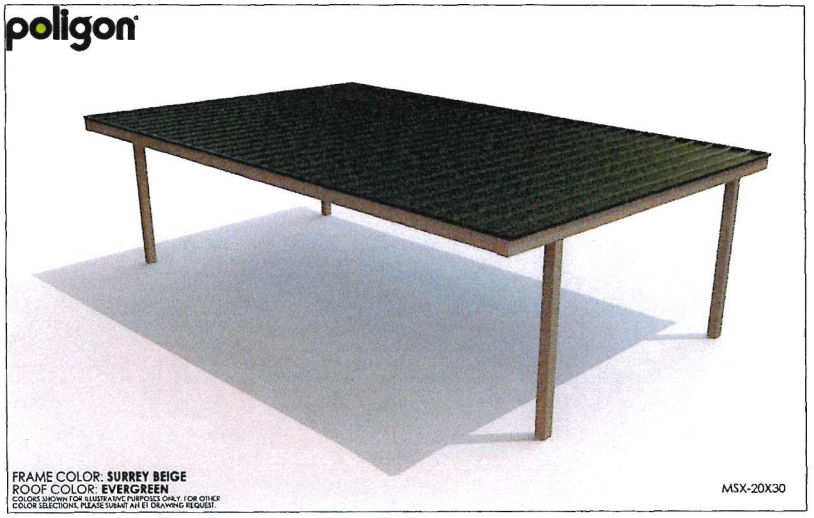


NOTE:
20FT X 30FT BIKE STORAGE STRUCTURE SHALL BE BY POLIGON OR APPROVED EQUAL.
FOOTINGS SHALL BE ABOVE GROUND MOUNTED AT A DEPTH PER STRUCTURAL ENGINEER.
COLOR(S) SHALL BE SELECTED BY ARCHITECT AND/OR OWNER.
CONTRACTOR SHALL PROVIDE SHOP DRAWING OF MATERIALS AND INSTALLATION FOR APPROVAL.
VISIT: WWW.POLIGON.COM CALL: (616) 399-1963

GENERAL ROOF NOTES:

1. METAL ROOFING:
   - 24 GAUGE
   - GALVALUME COATED
   - KYNAR 500 PAINTED
2. TRIM COLOR MATCHES ROOF
3. SEE POLIGON.COM FOR COLOR OPTIONS





Stamp

Rev. No.	Description	Chkd.

ParkArchitecture.com
3 School House Lane, East Fairlee 05045
(802) 439-6266 Cell: (603) 667-6266
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Details
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2318
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

L4.3

PLAY BOOSTER FOR 2-5 YEARS OLD

NOT TO SCALE



LOG BALANCE BEAM

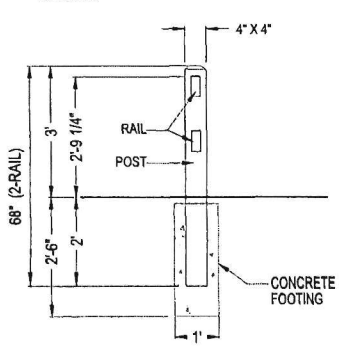
NOT TO SCALE



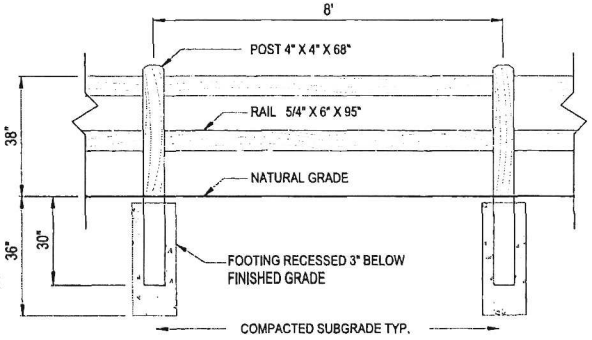


SPLIT RAIL FENCE DETAIL

NOT TO SCALE



2 RAIL FENCE SECTION



2 RAIL 8 FT. SPACING FENCE ELEVATION

NOTES:

FENCE SHALL BE SPLIT-RAIL (2-RAIL) BY TANGENT OR APPROVED EQUAL. VISIT: WWW.TANGENTMATERIALS.COM

INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

COLOR SHALL BE 'CHESTNUT' BY TANGENT.

INSTALL IN 8FT SEGMENTS.

POST SIZE: TRUE 4" X 4" X 68"

POST SPACING 96IN (8FT ON CENTER)

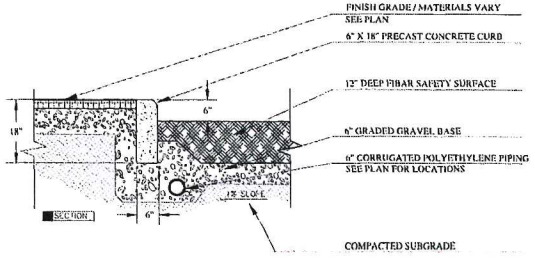
RAIL SIZE 5/4" X 6" X 95"

RAIL SCREWS: EACH RAIL WILL REQUIRE 2 OUTDOOR RATED 3"-3.5 #10 SCREWS. CONTRACTOR SHALL PREDRILL SCREW LOCATIONS AND USE STAINLESS STEEL TRIM HEAD #10 DECK SCREWS.

CONTRACTOR SHALL PROVIDE LANDSCAPE ARCHITECT WITH SHOP DRAWING FOR APPROVAL PRIOR TO ORDERING OF MATERIALS AND INSTALLATION.

FIBAR SAFETY SURFACING

NOT TO SCALE



Stamp

Rev. No.	Description	Date

ParkArchitecture.com

Client:
BLACK ROCK INVESTMENTS, LLC
2456 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Details
Lot 45-162

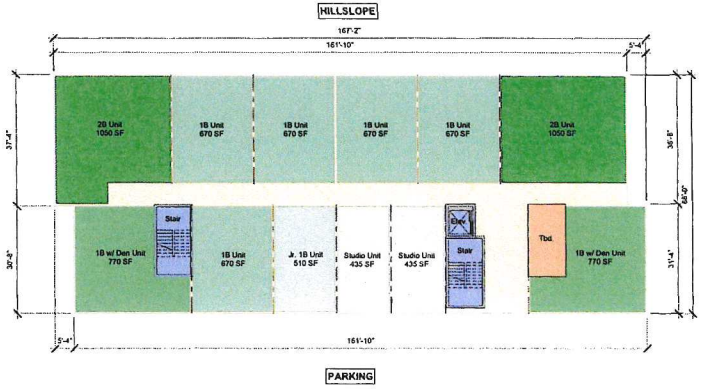
Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	10/30/2023

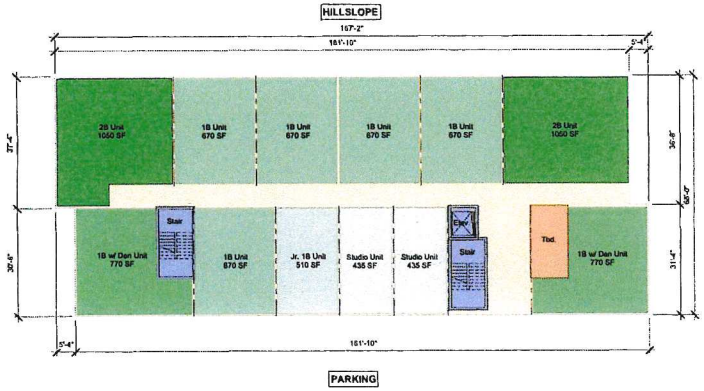
L4.4



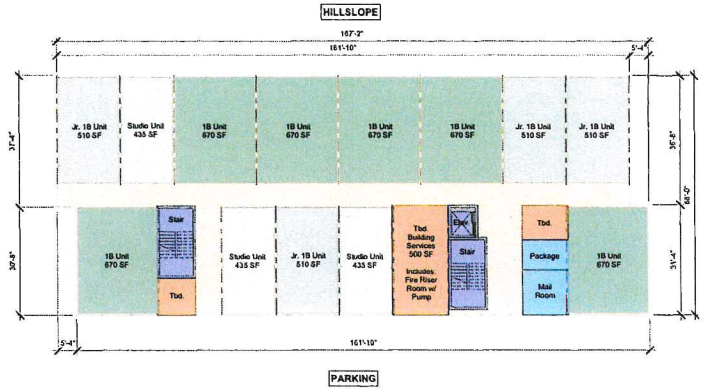
4 BLDGS 1, 3, & 4 - 4TH FLR
SCALE: 1/16" = 1'-0"



2 BLDGS 1, 3, & 4 - 2ND FLR
SCALE: 1/16" = 1'-0"



3 BLDGS 1, 3, & 4 - 3RD FLR
SCALE: 1/16" = 1'-0"



1 BLDGS 1, 3, & 4 - 1ST FLR
SCALE: 1/16" = 1'-0"

Unit Mix Schedule - Building 2

UNIT TYPE	UNIT AREA	L1	L2	L3	L4	UNITS PER BLDG
STUDIO	424 SF	2	3	2	2	9
1B (JR)	510 SF	2	4	1	1	8
1B	670 SF	3	5	5	5	18
1B/DEN	770 SF	0	1	2	2	5
2B	1050 SF	0	1	2	2	5
UNITS PER LEVEL		7	14	12	12	45

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDINGS 1, 3 & 4: UNIT MIX PLANS

AP - 1.1

10/16/2023

MARKET SQUARE ARCHITECTS

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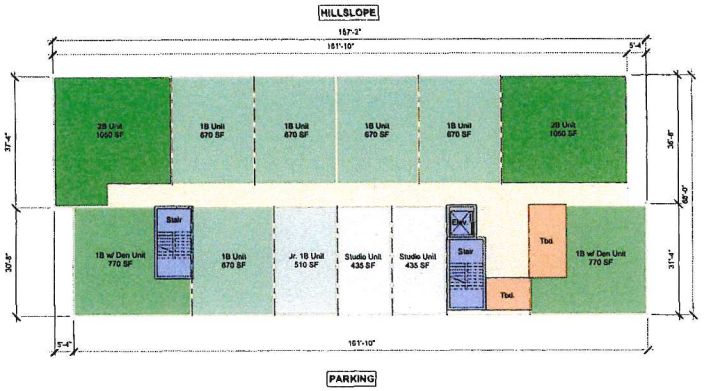
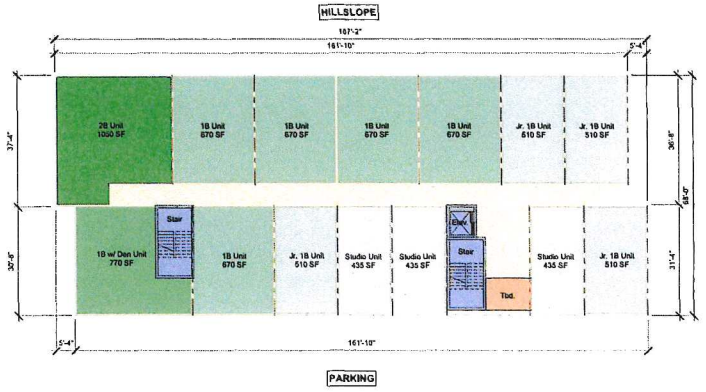
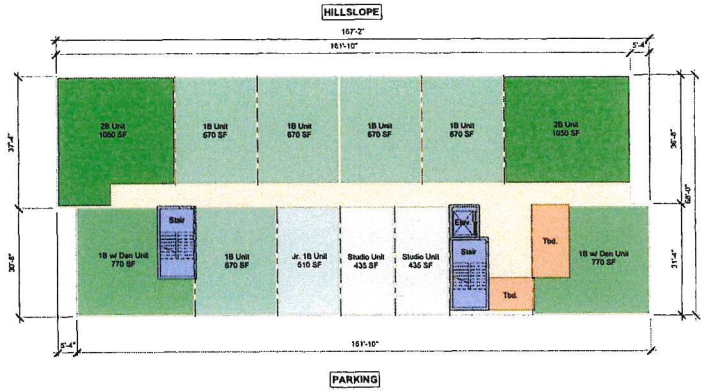
PH: 603.501.9202



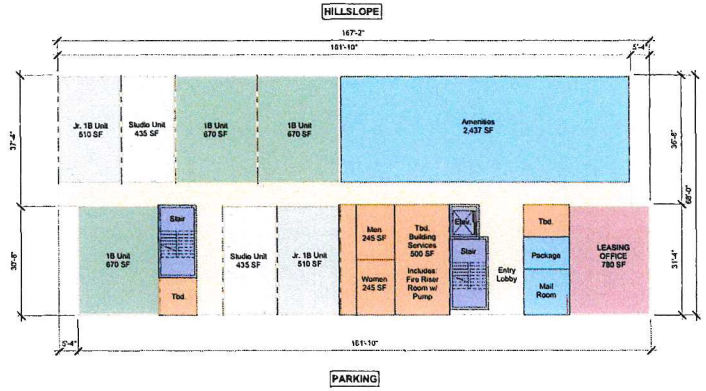
4 BLDG 2 - 4TH FIR
SCALE: 1/16" = 1'-0"



2 BLDG 2 - 2ND FLR
SCALE: 1/16" = 1'-0"



3 BLDG 2 - 3RD FLR
SCALE: 1/16" = 1'-0"



1 BLDG 2 - 1ST FLR
SCALE: 1/16" = 1'-0"

Unit Mix Schedule - Building 2

UNIT TYPE	UNIT AREA	L1	L2	L3	L4	UNITS PER BLDG
STUDIO	424 SF	2	3	2	2	9
1B (JR)	510 SF	2	4	1	1	8
1B	670 SF	3	5	5	5	18
1B/DEN	770 SF	0	1	2	2	5
2B	1050 SF	0	1	2	2	5
UNITS PER LEVEL		7	14	12	12	45

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDING 2: UNIT MIX PLANS

AP - 1.2

10/16/2023

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1 BLDG 1 - FIRST FLOOR PLAN

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

BUILDING PLAN AREA KEY

UNIT NET AREA

LIMITED COMMON AREA

COMMON AREA

BUILDING SERVICES (COMMON AREA)

BUILDING AMENITIES (COMMON AREA)

LEASING (COMMON AREA)

MAJOR VERTICAL PENETRATIONS

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDINGS 1, 3, & 4: 1ST FLOOR PLAN, TYPICAL

AP - 1.4

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1 BLDG 1 - SECOND FLOOR PLAN

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

BUILDING PLAN AREA KEY

UNIT NET AREA

LIMITED COMMON AREA

COMMON AREA

BUILDING SERVICES (COMMON AREA)

BUILDING AMENITIES (COMMON AREA)

LEASING (COMMON AREA)

MAJOR VERTICAL PENETRATIONS

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDINGS 1, 3, & 4: 2ND - 4TH FLOOR PLANS, TYPICAL

AP - 1.5

10/16/2023

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1 BLDG 2- FIRST FLOOR PLAN

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

BUILDING PLAN AREA KEY

UNIT NET AREA

Studio | Jr. 1br/1ba | 1br/1ba | 1br/1ba w/den | 2br/2ba

LIMITED COMMON AREA

COMMON AREA

BUILDING SERVICES (COMMON AREA)

BUILDING AMENITIES (COMMON AREA)

LEASING (COMMON AREA)

MAJOR VERTICAL PENETRATIONS

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDING 2 & 5 (SIM): 1ST FLOOR PLAN , TYPICAL

AP - 1.6

10/16/2023

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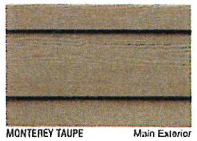
VT AGRARIAN STRUCTURES

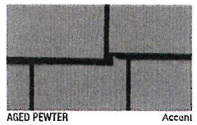


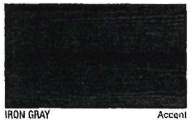
VT HOUSING VERNACULAR



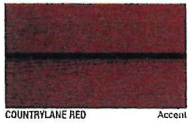
MATERIAL FINISH AND COLOR PALETTE





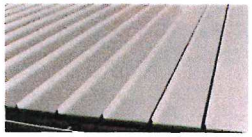






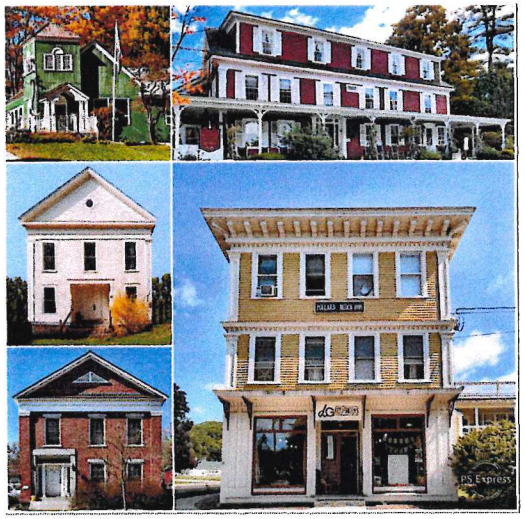


NATURAL STONE - AMERICAN GRANITE LEDGE



METAL ROOFING PANEL - GRAY GALVALUME

VT HISTORIC STRUCTURES



CONTEMPORARY MULTI-FAMILY HOUSING



IMPORTANT DESIGN ELEMENTS FROM PRECEDENTS

- STRONG OBJECT FORM OF PRIMARY FACADE
- FORMAL PORCH
- VARYING SCALES OF HORIZONTAL AND VERTICAL CLADDING
- STRONG ROOF PROFILES
- EMPHASIS OF LAYERED WALL CONSTRUCTION
- ENGAGED WALL PIERS AS FRAME
- TRIM USED AS A MEANS OF OUTLINING AND ACCENT
- MATERIALS AND COLOR SCHEMES THAT USE NATURAL TONES AND ACCENTS INSPIRED BY REGIONAL AND HISTORIC STRUCTURES

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

DESIGN BOARD: INSPIRATION & PRECEDENT

AP - 2.0

10/16/2023

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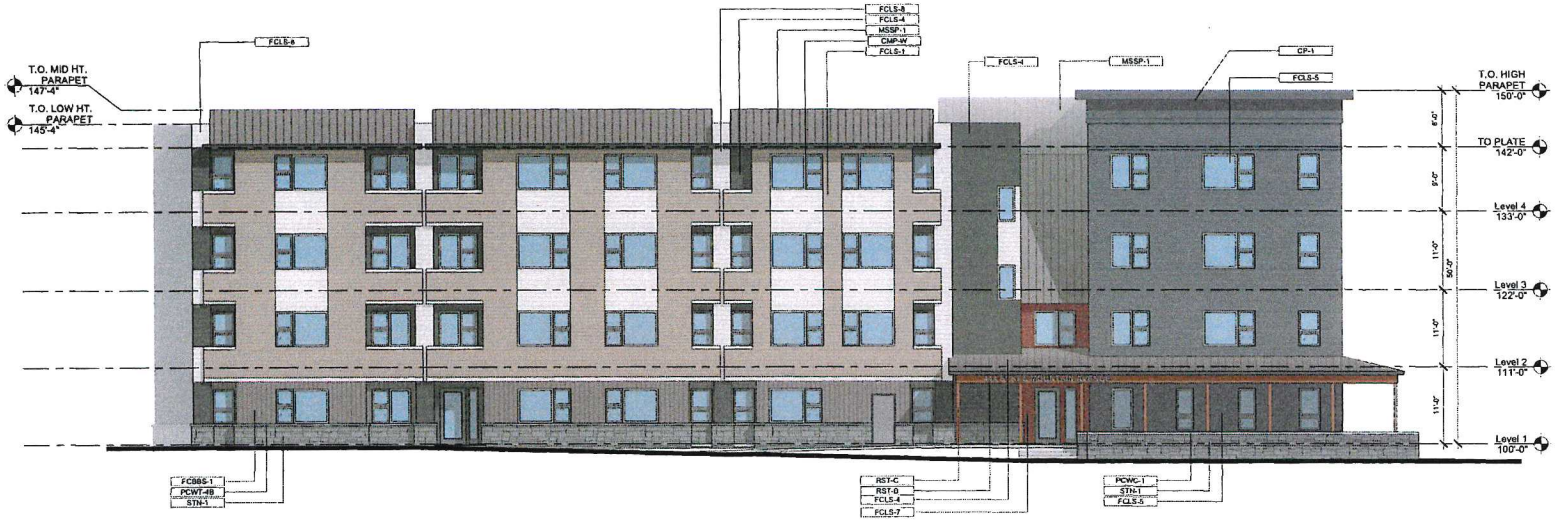
2 BUILDINGS 2 & 5 - RIGHT SIDE ELEVATION

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

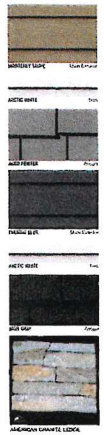


1 BUILDINGS 2 & 5 - FRONT (PARKING SIDE) ELEVATION

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

ELEVATION MATERIAL KEY	
Key Value	Keynote Text
CMP-W	PREFINISHED EXT COMPOSITE FRAME WINDOW, COLOR: DOVE GRAY
CP-1	CORNICE PROFILE 1, 6FT TALL W/ FIBER CEMENT TRIM, COLOR: EVENING BLUE
CP-2	CORNICE PROFILE 2, 5FT-4IN TALL W/ MTL STANDING SEAM PANEL, COLOR: GALVALUME PLUS
FCBBS-1	FIBER CEMENT VERTICAL BOARD AND BATTEN SIDING 1, COLOR: AGED PEWTER
FCLS-1	FIBER CEMENT 6 INCH EXP. LAP SIDING 1, COLOR: MONTERAY TAUPE
FCLS-2	FIBER CEMENT 8 INCH EXP. LAP SIDING 2, COLOR: AGED PEWTER
FCLS-4	FIBER CEMENT 4 INCH EXP. LAP SIDING 4, COLOR: IRON GRAY
FCLS-5	FIBER CEMENT 9 INCH EXP. LAP SIDING 5, COLOR: EVENING BLUE
FCLS-7	FIBER CEMENT 4 INCH EXP. LAP SIDING 5, COLOR: COUNTRYLANE RED
FCLS-8	FIBER CEMENT 10.75 INCH EXP. LAP SIDING 5, COLOR: ARTIC WHITE
MSSP-1	2 INCH PROFILE METAL STANDING SEAM ROOF PANEL, 16 INCH WIDE, COLOR: GALVALUME PLUS
PCWC-1	PRECAST WALL CAP, 4 INCH PROFILE AND 18 INCH WIDE, COLOR: CONCRETE
PCWT-4B	PRECAST WATER TABLE/SILL, 4 INCH PROFILE, COLOR: CONCRETE
RST-B	6X6 DOUGLAS FIR ROUGH SAWN TIMBER BEAM, COLOR: RAW
RST-C	4X16 DOUGLAS FIR ROUGH SAWN TIMBER COLUMN, COLOR: RAW
STN-1	NATURAL THIN CUT STONE VENEER, COLOR: AMERICAN GRANITE LEDGE

DESIGN COLOR SCHEME



PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDINGS 1-5: CONCEPTUAL ELEVATIONS

AP - 2.1

10/16/2023

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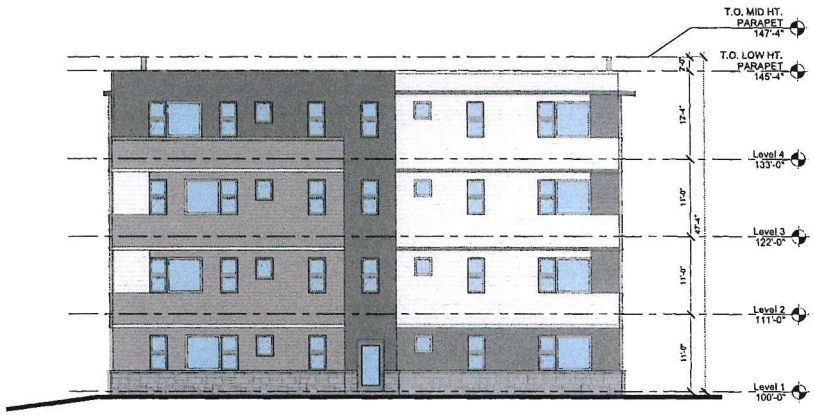

2 BUILDINGS 2 & 5 - LEFT SIDE ELEVATION
SCALE: 1/8" = 1'-0"



1 BUILDINGS 2 & 5 - REAR (HILLSLOPE) ELEVATION
SCALE: 1/8" = 1'-0"

ELEVATION MATERIAL KEY	
Key Value	Keynote Text
CMP-W	PREFINISHED EXT COMPOSITE FRAME WINDOW, COLOR: DOVE GRAY
CP-1	CORNICE PROFILE 1, 6FT TALL W/ FIBER CEMENT TRIM, COLOR: EVENING BLUE
CP-2	CORNICE PROFILE 2, 5FT-4IN TALL W/ MTL STANDING SEAM PANEL, COLOR: GALVALUME PLUS
FCBBS-1	FIBER CEMENT VERTICAL BOARD AND BATTEN SIDING 1, COLOR: AGED PEWTER
FCLS-1	FIBER CEMENT 6 INCH EXP. LAP SIDING 1, COLOR: MONTERAY TAUPE
FCLS-2	FIBER CEMENT 8 INCH EXP. LAP SIDING 2, COLOR: AGED PEWTER
FCLS-4	FIBER CEMENT 4 INCH EXP. LAP SIDING 4, COLOR: IRON GRAY
FCLS-5	FIBER CEMENT 9 INCH EXP. LAP SIDING 5, COLOR: EVENING BLUE
FCLS-7	FIBER CEMENT 4 INCH EXP. LAP SIDING 5, COLOR: COUNTRYLANE RED
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MSSP-1	2 INCH PROFILE METAL STANDING SEAM ROOF PANEL, 16 INCH WIDE, COLOR: GALVALUME PLUS
PCWC-1	PRECAST WALL CAP, 4 INCH PROFILE AND 18 INCH WIDE, COLOR: CONCRETE
PCWT-4B	PRECAST WATER TABLE/SILL, 4 INCH PROFILE, COLOR: CONCRETE
RST-B	6X6 DOUGLAS FIR ROUGH SAWN TIMBER BEAM, COLOR: RAW
RST-C	4X16 DOUGLAS FIR ROUGH SAWN TIMBER COLUMN, COLOR: RAW
STN-1	NATURAL THIN CUT STONE VENEER, COLOR: AMERICAN GRANITE LEDGE

DESIGN COLOR SCHEME



PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDINGS 1-5: CONCEPTUAL ELEVATIONS

AP - 2.2

10/16/2023

MARKET SQUARE ARCHITECTS

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ENGINEERING VENTURES PC

208 Flynn Avenue, Suite 2A, Burlington, VT 05401 · Tel: 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 · Tel: 603-442-9333
414 Union Street, Schenectady, NY 12305 · Tel: 518-630-9614

October 27, 2023

Jo-Ann Ells, Zoning Administrator
Hartford Planning & Zoning
Hartford Municipal Building
2nd Floor Room 201 171 Bridge Street
White River Junction, Vt. 05001

Re: **444 Sykes Mountain Avenue, Lot 45-162 Site Plan Review**

Landowner: Black Rock Investments

Applicant: Black Rock Investments

Dear Jo-Ann,

I am writing on behalf of Black Rock Investments, applicant for the 444 Sykes Mountain Avenue, Lot 45-162 Site Plan Review. The project includes (4) Multi-Unit Housing Buildings with a total of 192 units and (4) Parking lots with 271 parking spaces, 50% Open Space and associated improvements as shown on the enclosed plans.

8 Copies of the following plans and documents are included with this submittal for your review:

- Signed Application Form
- Application Payment
- Responses to Staff Comments received on 10-22-2023
- Project Plans as noted on the Project Cover Sheet
- Project Narrative
- Phasing Narrative
- View Study
- Traffic Impact Study

Thank you for considering this application. Please give me a call if you have any questions or comments.

Sincerely,
Engineering Ventures P.C.



Kevin Worden PE, Vice President