HARTFORD ZONING BOARD OF ADJUSTMENT
May 15, 2024
Meeting Notice and Agenda

The Hartford Zoning Board of Adjustment will meet on Wednesday, May 15, 2024, beginning at 6:30 p.m. to consider the following Applications and Administrative Matters.

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
Join the meeting now
Meeting ID: 254 778 487 65
Passcode: ygZpXs
Dial-in by phone
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Phone conference ID: 803 349 256#

If you cannot access this meeting notice electronically or if you are having difficulty connecting to the meeting, please email Jo-Ann Ells at jells@hartford-vt.org

A. Administrative Agenda Public Hearings

1. Request by Woody Rollins to occupy a travel trailer/recreational vehicle under §260-34 G 1 of the Zoning Regulations while restoring a historic dwelling located at 3398 Jericho Street.

B. Public Hearing

1. Application #13-23 by Black Rock Investment LLC (owner /applicant) for Conditional Use Approval under section 260-16 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. (Continued from January 31, 2024)

2. ~~Application #02-24 by Guernsey Ruth Hall Revocable Trust (owner) and Summit Distributing (applicant) for Conditional Use Approval under section 260-16 of the Hartford Zoning Regulations for approval of a car wash, lot 44-0041-000, Sykes Mountain Avenue, White River Junction, in an IC zoning district. (Continued from April 10, 2024)~~ Continued

C. Administrative matters continued: 1. Public Comment. 2. Minutes. 3. Administrative Permits. 4. Availability for the next Public Hearing.

Application materials are available at the Hartford Town Hall, Department of Planning and Development Services, 171 Bridge Street, White River Junction, Vermont (802) 295-3075. Persons wishing to appear and be heard may do so in person, or be represented by another party and/or submit 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.

Steve Lagasse, Chair

May 15, 2024
Zoning Board of Adjustment
Administrative Agenda

1. Request by Woody Rollins to occupy a travel trailer/recreational vehicle under §260-34 G 1 of the Zoning Regulations while restoring a historic dwelling located at 3398 Jericho Street.

2. Public Comment

3. Minutes

   April 10, 2024

4. Administrative Permits

   None

5. Availability for the next Hearing

   June 26, 2024

DRAFT
MINUTES
Zoning Board of Adjustment
April 10, 2024

Present: Chris Lowe, Vice Chair, Tom Franklin, Stephanie Gile, Alice Maleski, and Jo-Ann Ells, Zoning Administrator

Absent: Steve Lagasse, Chair, and Lannie Collins, Selectboard Liaison

Public Hearing

Chris Lowe read the hybrid meeting script, reviewed the Hearing process and interested party rule, administered the oath, and noted that a motion needed three concurring votes to pass.

1. Application #03-24 by Mercedes Albrecht (owner/applicant) for approval of a setback waiver under section 260-52 of the Hartford Zoning Regulations for a garage, lot 07-5190-000, 749 Willard Road, Quechee, in the Quechee Lakes Planned Development.

Mercedes Albrecht was present.

Jo-Ann Ells gave an overview of the application.

Tom Franklin asked if the lot to the north was vacant. Mercedes Albrecht confirmed that the lot to the north was vacant.

Chris Lowe asked why the garage was proposed to be attached to the dwelling. Mercedes Albrecht explained that there would be living space on the upper level.

Mercedes Albrecht confirmed that the roofline of the attached garage would match the existing dwelling.

Chris Lowe noted that the proposed location preserves open space.

There was no public comment.

Chris Lowe moved to close the Public Hearing. Alice Maleski seconded, and the Public Hearing was closed.

Alice Maleski moved to approve the application. Tom Franklin seconded, and the motion passed unanimously.

2. Application #02-24 by Guernsey Ruth Hall Revocable Trust (owner) and Summit Distributing (applicant) for Conditional Use Approval under section 260-16 of the Hartford Zoning Regulations for approval of a car wash, lot 44-0041-000, Sykes Mountain Avenue, White River Junction, in an IC zoning district.

Tom Frawley, Nicole Duquette, Aaron Farbo, and Robert Bollinger were present.

Nicole Duquette shared the overall site plan.

Nicole Duquette explained that there are no canisters at the vacuum stations. She clarified that the only equipment at the vacuum stations are vacuum nozzles and associated noise is limited to the enclosed turbines. She added that the vacuum stations in the rear of the lot are located as far away from the adjacent residential properties as possible and that an 8' wooden stockade fence would be added on the east side of the rear of the lot and along Beech Street.

Nicole Duquette reviewed elements of the site plan including:

- Access
- Pay stations
- Circulation
- Tree line/wooded area
- Changes to the adjacent commercial lot to the west
- Utilities
- Stormwater

Chris Lowe asked about the number of cars that the queue could accommodate, and noted that the design requires vehicles to merge lanes before entering the wash.

Nicole Duquette explained that ten cars could be queued in front of the pay station (five in each lane).

Chris Lowe expressed concern with congestion on a busy day and offered that it could be difficult for vehicles to exit the vacuum stations in the front of the lot if vehicles were queued up in the car wash lane.

Tom Franklin asked about the length of time it takes a vehicle to go through the wash. Tom Frawley explained that it takes three minutes regardless of the wash package.

Tom Franklin questioned the need for 14 vacuum stations.

Nicole Duquette noted that customers who have paid for a car wash can leave the wash line and use the rear vacuums before entering the wash.

Aaron Farbo gave a brief overview of how the noise study was prepared.

Stephanie Gile asked if background noise was included in the study or if the study was modeled from equipment specifications. Aaron Farbo stated that background noise was not considered, and the study was modeled from equipment specifications.

Stephanie Gile asked if Arron Farbo was aware of background noise Aaron Farbo stated that given the location, he assumed it was noise from the highway.

Nicole Duquette noted the location of the proposed fence as mentioned in the noise study.

Chris Lowe asked if the noise study assumed the fence was installed. Aaron Farbo confirmed that the study assumed the fence was installed.

Chris Lowe asked if the fence height mattered. Aaron Farbo stated that in theory it does and added that small increases do not make a substantial impact.

Jo-Ann Ells asked if the noise study included a review of compliance with the Zoning Regulations. Aaron Farbo stated that it shows compliance with 70 decibels.

Aaron Farbo noted that the noise from the project should blend in with existing traffic noise.

Tom Franklin asked if the vacuum turbine in the rear of the lot could be moved closer to the car wash. Nicole Duquette stated that this could be reviewed.

Chris Lowe asked what equipment would produce the most noise. Aaron Farbo stated that the blowers near the exit of the wash would produce the most noise.

Chris Lowe asked for public comment.

Pat Caruso, 50 Beech Street, expressed concern with noise from the project and noted that he purchased a noise meter and took readings at the existing car wash on Sykes Mountain Avenue. He explained that he can hear noise from the car wash at the Sunoco Station on Route 5, that he was concerned with the ability of a stockade fence to block noise, and noise from trash haulers.

Gordon Brown, 39 Cedar Street, noted that his house is close to the shared property line. He submitted an exhibit outlining existing areas on his lot and his neighbor's lot that get flooded, and areas of unhealthy trees. He expressed concern with added noise to an area that is already noisy. He added that he was concerned with runoff from snow melt, noise and fumes from customer vehicles, and suggested the applicant plant additional landscaping on their own property near his property.

Nicole Duquette noted that the proposed hours from the car wash were 7AM-8PM seven days and week and that the vacuums were proposed to be operational 24/7. She added that noise does not increase if multiple vacuum stations are being used at the same time, and noted that the applicant can require that the dumpsters be emptied during daytime hours.

Nicole Duquette explained that the areas where snow is proposed to be stored can be redesigned so that they function like a rain garden.

Stephanie Gile asked if there would be an idling policy. Tom Frawley explained that vehicles in the queue lanes would not trigger the State restrictions on idling.

Stephanie Gile asked if there was room to install planting on the neighbor's side of the fence.

Nicole Duquette stated the fence could be moved to provide adequate space for plantings.

Gordon Brown noted he was not opposed to the project but was opposed to the layout.

Mark Greenan, 29 Oak Street, expressed concern with existing noise from trash haulers, the proposed hours for the vacuum stations, and ability of an attendant to deal with all aspects of operating the site.

Nicole Duquette offered that the vacuums in the rear of the lot could be turned off when the car wash is not open and that there would be 2-3 employees on site.

Amanda Metivier, 27 Ash Street, expressed concern with added noise to the neighborhood, lighting, and the health of the existing trees in the wooded area.

Keith Thompson, 21 Cedar Street, expressed concern with noise, lighting, stormwater, and effect on his water pressure.

Amanda Metivier expressed concern with the proposed land lease, explained that she gets water in her basement in the spring, and questioned if "echoing" was reviewed in the noise study.

Tom Frawley noted that he will work with his trash hauler on hours, and can shut the rear vacuums off when the car wash is closed. He noted that the existing car wash is a different design with different equipment, the turbines for the vacuums will be enclosed and screened, and confirmed he is willing to move the fence and add landscaping. He explained that stormwater will be contained on site, improving existing conditions.

Nicole Duquette noted that the photometric plan is conservative as it does not consider the proposed landscaping/fencing.

Aaron Farbo confirmed that "echoing" was considered in the noise study.

There was a brief discussion about lighting. Nicole Duquette noted that the light fixtures are full cut off fixtures.

Patti Greenan, 29 Oak Street, expressed concern about noise, added traffic, and the need for a 3rd car wash in the area.

Chris Lowe moved to close the Public Hearing. Alice Maleski seconded, and the Public Hearing was closed.

Chris Lowe moved to enter a Deliberative Session. Alice Maleski seconded, and the motion passed unanimously.

When the Board reconvened, Chris Lowe moved to continue the application to the Board's May 15, 2024 Hearing. Alice Maleski seconded, and the motion passed unanimously.

Chris Lowe noted that the Board wanted a 3rd party review of the noise study at the applicant's expense. He suggested the applicant contact Jo-Ann Ells.

Chris Lowe added that the Board wanted the applicant to:

- Limit the hours of operation for all vacuums to those that the car wash is open
- Consider opening the car wash at 8AM
- Talk to the neighbors about moving the fence and providing additional screening
- Provide additional information regarding on-site traffic congestion and consider having an employee direct traffic on busy days
- Revise the snow storage areas to function as rain gardens
- Restrict the hours trash haulers come to the site to daytime hours
- Provide information regarding employee parking
- Submit information (to the Zoning Administrator) regarding compliance with section 260-31 of the Zoning Regulations prior to commencement of the 3rd party review

Administrative Matters

1. Public Comment

None

2. Minutes

Chris Lowe moved to approve the minutes of March 6, 2024. Tom Franklin seconded, and the motion passed unanimously.

3. Elect Officers

Stephanie Gile moved to keep the current Officers; Steve Lagasse, Chair, Chris Lowe, Vice Chair, and Alice Maleski Clerk. Alice Maleski seconded, and the motion passed unanimously.

4. Administrative Permits

Jo-Ann Ells noted that an administrative permit was issued for a batting cage and bullpen at the Maxfield Sports complex.

5. Availability for the next Hearing

All Board members anticipated being available for the May 15, 2024 Public Hearing

Adjournment

At 8:30 p.m., Alice Maleski moved to adjourn. Tom Franklin seconded, and the motion passed unanimously.

Respectively Submitted,

Alice Maleski, Clerk

Zoning Board of Adjustment Members/Terms:

Stephanie Gile	11-15-24
Alice Maleski	03-07-25
Steve Lagasse	03-07-25
Chris Lowe	03-21-25
Tom Franklin	04-04-25

DRAFT
FINDINGS OF FACT
CONCLUSIONS OF LAW
AND DECISION

HARTFORD ZONING BOARD OF ADJUSTMENT

Application #13-23 by Black Rock Investments LLC
for Conditional Use 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 #13-23 by Black Rock Investments LLC (owner/applicant) for Conditional Use Approval under section 260-16 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 Zoning Board of Adjustment meeting of November 8, 2023, January 31, 2024 and May 15, 2024 the Zoning Board of Adjustment 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 has the following pending applications before the Planning Commission:

- Boundary Line Adjustment between lots 45-0162-000 and 45-0243-000 (Application #23-22)
- Planned Development, Final Approval (Application #23-24)

This application (#13-23) is conditioned on the approval of these applications.

6. After the Boundary Line Adjustment, the lot will be 18.46 acres.

7. 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

8. The application to the Planning Commission for a Planned Development includes a request to exceed the maximum building height of 40' as limited in the Zoning Regulations. The applicant proposes that building height does not exceed 50'.

According to the applicant, "The additional height is 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."

The final mechanical system design is not complete and therefore the applicant has not selected the mechanical equipment. While the parapet heights may change marginally once the mechanical system is chosen, the overall height of the buildings will not exceed 50'. The building parapets will screen roof top mechanical equipment and including solar panels.

(See exhibit #2 and #3)

9. Section 260-47 C of the Zoning Regulations allows the Planning Commission to permit a 25% density bonus for a Residential Planned Development. The applicant has requested that the Planning Commission approve a 22.1% density bonus.

Zone	Density Calc.	Land	Possible # of Units	
R1-M	1 unit/4,000 sq. ft.	266,152sq. ft.	67	(266,152/4,000=66.54)
R-2	1 unit/6,000 sq. ft.	537,966 sq. ft.	90	(537,966/6,000=89.66)
Total			157	

(22.1% bonus 157 x .221 = 34.69 157+ 35 = 192)

10. According to the applicant, 53.3% of the development will remain as open space, as defined by Hartford Zoning Regulations for public and/or common use.

11. Access to the lot from Sykes Mountain Avenue is via a proposed right-of-way over lot 45-0243-000. Associated easements are shown on the survey. (See exhibit #2)

12. The applicant proposes to build the project's access road to Town Standards including sidewalks and associated improvements. The applicant will not request that the road be taken over by the Town.

    The access road includes the reconfiguration and incorporation of the Sykes Mountain Avenue/Hickory Ridge intersection and making Hickory Ridge a dead-end street.

    The dead-end of Hickory Ridge will include a gated access to the project's access road that will be restricted to emergency vehicles, Town maintenance vehicles, and the applicant. The dead-end will also include a bicycle and pedestrian path between Hickory Ridge and the access road with sidewalk.

    The applicant will coordinate the installation, alignment, and associated maintenance activities of the gate with the DPW and Fire Marshal. The applicant shall be responsible for maintaining, repairing, and improving the access road, sidewalks, bicycle and pedestrian paths, and gated access between Sykes Mountain Avenue and the proposed turn a round of Hickory Ridge.

    The reconfiguration will result in easements as shown on the survey. (See exhibit #2)

    The applicant will work with Town Staff to address the easements, construction details and approval process including approval by the Selectboard.

13. The applicant proposes to coordinate the installation of a bus shelter with Advance Transit adjacent to Sykes Mountain Avenue on lot 45-0243-000 which they own. Should lot 45-0162-000 or 45-0243-000 transfer ownership before the shelter is installed, an easement allowing placement of the shelter will be included in the deed.

14. The applicant proposes to install a crosswalk across Skyes Mountain Avenue in coordination with the DPW.

15. The access road will be named "Green Heights Drive."

    The applicant understands that they must install a private road sign meeting applicable standards before commencing any construction on the project.

16. The applicant submitted turning movement plans. (See exhibit #2)

17. The applicant proposes to provide wooded trails on the north side of the lot including picnic tables, a bench, and a covered bench.

    The wooded trail portions of the community will be open for public access dawn to dusk. Use of areas and facilities around the immediate curtilage of the buildings will be limited to building residents and their guests.

18. The applicant proposes to construct the project in two phases. (See exhibits #2 and #3)

    According to the applicant, "Essential infrastructure and utilities will be constructed for Phase 1 consisting of water mains, sewer connections, roadway, parking and stormwater improvements. Stormwater ponds will be constructed for the overall development to allow for future construction of Phase 2. Phase 1 will be constructed as a standalone development and a fully functional development with future utility, parking and driveway/parking lot connection points. Therefore, if Phase 2 is not constructed the development will continue to function as a residential development until which time as the Phase 2 gets constructed."

19. The applicant proposes the following amenities to be included in each phase of the project as follows:

    Phase 1
    - Dog Park (including all dog equipment, seating, and 8' x12' structure)
    - Playground area (including playground structure & balance beam)
    - Four raised garden beds adjacent /west of building 1
    - Four bike racks & pad in front of building 1
    - Four racks & pad in front of building 2
    - Three picnic tables north of building 2
    - Approximately ½ of the Amenity Plaza abutting building 2
    - Three tables with umbrellas
    - One lounge seating area with outdoor table
    - One lounge seating area with bento gas fire pit
    - One BBQ with counter outdoor grilling station
    - Stone dust pedestrian walks surrounding building 1 & 2 to Amenity Plaza
    - Three Adirondack style chairs at viewing area between buildings 2 & 3
    - Wooded trails and associated picnic tables, bench, and covered bench

    Phase 2
    - The remaining ½ of the Amenity Plaza between buildings 2 & 3
    - Two tables with umbrellas
    - One lounge seating area with outdoor table
    - One lounge seating area with bento gas fire pit
    - One BBQ with counter outdoor grilling station
    - Stone dust pedestrian walks surrounding buildings 3 & 4 to Amenity Plaza
    - Four Adirondack style chairs at viewing area between buildings 2 & 3

- Four park benches at viewing area East of building 3
- One outdoor art sculpture between buildings 3 and 4
- Six raised garden beds adjacent / East of Building 4
- 16ft Gazebo Structure located within the central green
- Covered bike structure
- Four bike racks & pad in front of building 3
- Four bike racks & pad in front of Building 4
- Completion of all woodland trails

20. The Zoning Regulations require two parking spaces per unit, which results in a requirement of 384 parking spaces. (192 x 2 = 384)

21. The applicant is requesting that the *Planning Commission* approve a permanent reduction in the required parking spaces for the project from 384 to 271.

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)

22. The applicant proposes to provide the 271 parking spaces, which includes the required allocation for disabled-accessible (ADA) parking, as follows:

    - 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

    Surface parking spaces will not be assigned to units. Garage parking spaces will be assigned to units.

23. The applicant proposes two delivery truck parking areas, one in each phase.

24. The applicant submitted a Traffic Impact Study. (See exhibit #5).

25. The applicant proposes bike racks in front of each building and a covered bike storge structure with 12 bike racks. The bike storage structure will include a charging station for electric bikes.

26. The applicant provided a landscape plan.

    According to the applicant, "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."

(See exhibit #2 and #3)

27. According to the applicant, proposed fencing includes:

- 4ft high black vinyl chain link fencing surrounding the dog park
- 4ft high black vinyl chain link fencing surrounding the playground area
- 4ft high black vinyl chain link fencing surrounding buildings 2, 3, and 4 from the East corner of the playground area all the way to the retaining wall located West of Building 4 adjacent to the dumpsters.
- 6ft high black vinyl chain link fencing along East side of property to address concerns of the owner of adjacent lot 45-0229-001 with people entering their lot
- 38" high split rail fence in select areas as including two 63ft sections within the open lawn area (in parking lot) and two 24' sections West of Building 1

(See exhibit #2)

28. The applicant has provided a photometric plan.

According to the applicant, "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."

(See exhibit #2 and #3)

29. The applicant provided three rendered visualizations of the Project:

- 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.

(See exhibit #6)

30. Stormwater Infrastructure

The parking lot and other impervious surfaces will be collected via stormwater collection network consisting of multiple catch basins and a 12-inch HDPE collection main to 3,500-gallon concrete sediment forebay tank and onto a Gravel Wetland treatment system where it will be treated prior to discharge to the Town stormwater collection main. This gravel wetland also treats portions stormwater runoff associated with the 192-unit complex site.

A Third Party review of the Stormwater infrastructure is in progress.

A stormwater maintenance manual will be provided and is required as part of the state stormwater permit submittal.

(See exhibit #2)

31. 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.”

32. The applicant proposes to 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 directly into the Hartford sewer system.

A Third Party review of the Water and Sewer infrastructure is in progress.

The applicant will coordinate details related to water and sewer including ownership, maintenance, and access with the DPW and Selectboard.

33. A survey outlining required public and private easements/rights-of way for the project is included on the survey. (See exhibit #2)

34. 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.

35. 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."

36. 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.

37. The applicant proposes installing two fenced and landscaped dumpster pad areas.

38. A 12' high retaining wall with a 4' high fall protection railing is proposed to the west of the phase #2 dumpster.

39. 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.

40. The applicant understands that a permit from the DPW must be obtained before any work is done within the Town ROW.

41. 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.

42. 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.

43. 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.

44. 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.

45. 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.

46. 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.*

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

48. The applicants understand that a zoning permit is required to finalize this Decision before construction of the project commences. 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.

    The applicant understands that they must obtain a Zoning Permit within 6 months of the Planning Commission's approval of the project. In addition, they understand that they must start construction within 6 months of the effective date of the Zoning Permit, and complete construction within five (5) years (or as approved by the Planning Commission), 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.

48. 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

The Hartford Zoning Board of Adjustment, based upon the forgoing Findings of Fact, concludes that the proposed project will not adversely affect:

260-16A (1) Community facilities.

(a) The capacity of planned or existing **community facilities**, including, but not limited to:

[1] Emergency services.
[2] Municipal water or sewer system.
[3] Recreational facilities.
[4] The school system.
[5] Solid waste disposal facilities.

260-16A (2) The **character** of the area, as defined by the objectives of the zoning district within which the project is located and specifically stated polices and standards of the municipal plan, including, but not limited to:

(a) Scenic or natural beauty, historic sites, or rare and irreplaceable natural areas.
(b) Compatibility with scale and design of structures existing in that area.

260-16A (3) The capacity of **roads and highways** in the vicinity to safely accommodate expected traffic flows. In making this determination, the Board may require submission of a traffic impact study made by a professional traffic engineer.

260-16A (4) Any Town of Hartford **bylaws** in effect.

260-16A (5) Utilization of **renewable energy resources**.

DECISION

The Hartford Zoning Board of Adjustment, based upon the forgoing Findings of Fact and Conclusions of Law, hereby approves application #13-23 by Black Rock Investments LLC (owner/applicant) for Conditional Use Approval under section 260-16 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 #23-22 and Planned Development Application #23-24 are approved by the Planning Commission and finalized by the issuance of a Zoning Permit.**

- **The applicant responds to comments resulting from the Third Party of the Stormwater, Water, and Sewer to the satisfaction of the DPW.**

- **The applicant reimburses the Town for the cost of the Third Party Review.**

- **The applicant submits documentation outlining the steps necessary, as agreed upon with the DPW, for the construction, ownership, maintenance, easements/rights-of-way (etc.) of the utilities, access, road realignment, and crosswalk including items requiring approval from the Selectboard.**

- **The plans are updated to reflect the density calculation in Findings of Fact #9.**

- **The approved road name "Green Heights Drive" is added to the plan set.**

- **The applicant coordinates a review of the final plans with the DPW and responds to any comments to the satisfaction of the DPW.**

- **The applicant submits written verification from the Fire Marshal confirming they have approved the Turning Movement Plans.**

- **The architectural plans are amended to reflect the mechanical systems/solar panels.**

- **A final set of plans is submitted to the Zoning Administrator accompanied by verification from the applicant's Engineer/Architect/Landscape Architect that changes to the plans approved were limited to those required by the Board and/or DPW.**

2. **Before a Certificate of Occupancy is issued, the applicant submits to the Zoning Administrator:**

    - **A management plan for the open space in accordance with the Vermont Urban & Community Forestry Program for review and approval by the Chairs of the Zoning Board of Adjustment and Planning Commission.**

    - **Written verification from the Fire Department that the applicant has coordinated access to the gate with the Department.**

    - **Written verification from a Professional Engineer licensed by the State of Vermont certifying that the project was constructed in compliance with the approved civil plans and Findings of Fact.**

    - **Written verification from their Landscape Architect certifying that the plantings and amenities were installed in compliance with the approved plans and Findings of Fact.**

    - **Written verification from their architect certifying that the building was constructed in compliance with the approved architectural plans and Findings of Fact.**

- **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.**

- **Written documentation that the water and sewer have been approved by the DPW including verification from the DPW that all requirements related to ownership, maintenance and access have been satisfied.**

- **Written documentation that the road realignment has been approved by the DPW including verification from the DPW that all requirements related to ownership, maintenance, and access have been satisfied.**

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 May 2024.

HARTFORD ZONING BOARD OF ADJUSTMENT

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).

15. 13-23

EXHIBIT LIST

1. Application #13-23

2. Plan Set including:

- Cover sheet C0.0
- Site Legend and Notes, C0.1
- Existing Conditions Plan C1.1
- Phasing Plan C1.2
- Phase 1 Vehicle Turning Plan C1.3
- Phase 1 Vehicle Turning Plan C1.4
- Phase 2 Vehicle Turning Plan C1.5
- Phase 2 Vehicle Turning Plan C1.6
- Snow Plow Turing Plan C1.7
- Erosion Prevention and Sediment Control Plan C1.8
- Site Layout Plan C2.0
- Grading and Utilities Plan C2.1
- Roadway Profile C2.3
- Drainage Plan and Profile C2.4
- Drainage Plan and Profile C2.5
- Drainage Plan and Profile C2.7
- Drainage Plan and Profile C2.8
- Drainage Plan and Profile C2.9
- Sanitary Sewer Plan and Profile C2.10
- Sanitary Sewer Plan and Profile C2.11
- Water Main Plan and Profile C2.12
- Water Main Plan and Profile C2.13
- Site Details C3.0
- Site Details C3.1
- Water Details C3.2
- Water Details C3.3
- Sewer Details C3.4
- Drainage Details C3.5
- Drainage Details C3.6
- EPSC Details C3.7
- EPSC Details C3.8
- Site Landscape Plan L1.1
- Site Landscape Plan L1.2
- Site Landscape Plan L1.3
- Landscape Details L1.4
- Site Enlargement Plan-Amenity Plaza L2.1
- Site Enlargement Plan- Dog Run & Play Area L2.2

- Site Enlargement Plan- Entry Drive L2.3
- Site Lighting Plan L3.1
- Site Lighting Plan L3.2
- Site Lighting Plan L3.3
- Site Lighting Details L3.4
- Site Lighting Details L3.5
- Site Photometric Plan L3.6
- Site Photometric Plan L3.7
- Site Details L4.1
- Site Details L4.2
- Site Details L4.3
- Site Details L4.4
- Site Details L4.5
- Site Details L4.6
- Schematic Design AP.07
- Schematic Design AP.08
- Schematic Design AP.20
- Schematic Design AP.21
- Schematic Design AP.22
- Schematic Design AP.23
- Schematic Design AP.24
- Schematic Design AP.27
- Schematic Design AP.28
- Schematic Design AP.29
- Schematic Design AP.30
- Schematic Design AP.31
- Schematic Design AP.32
- Schematic Design AP.40
- Pump House Elevation A2.00
- Overall Concept Plan L1.0
- Survey NA

3. Project Narrative dated received May 2, 2024

4. Document entitled “Comments and Responses” dated received May 2, 2024

5. Traffic Impact Study prepared by Even Haugh and Joe Vanacore dated November 28, 2023 revised March 13, 2024, dated received May 2, 2024

6. Document entitled “Street Viewpoint Study” dated received May 2, 2024

7. Memo from Jo-Ann Ells dated April 22, 2024

8. Cover Letter from Kevin Worden dated April 15, 2024

17. 13-23

9. Memo from Jo-Ann Ells dated November 1, 2023

10. Memo from Black Rock Investments LLC dated October 27, 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 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 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** 18.46ac
   Lot Width 550' +/- Lot Depth 1440' +/-

8. **IS PROJECT ON TOWN WATER/SEWER**? Yes x No _____ If Yes, estimated
   Water Consumption/day 28,490gpd Amount of Sewer Flow Projected 28,490gpd
   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 4-15-2024
Applicant's Signature Date

Irwin Perret 4-15-2024
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:		

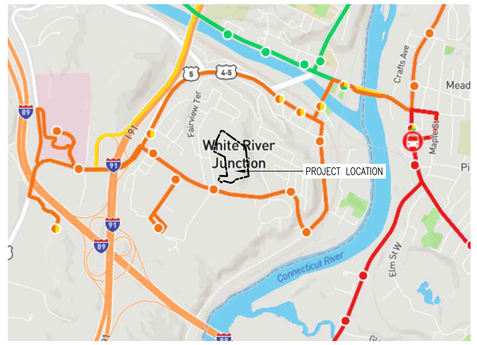
PLOTTED: 4/11/2024 10:40 AM

LOT 45-162 - SYKES MOUNTAIN AVENUE MULTIFAMILY HOUSING

TOWN OF HARTFORD, WINDSOR COUNTY, VERMONT

ORTHO MAP
1" = 1,000'

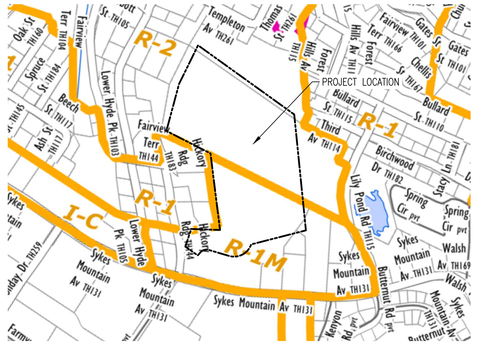
GRAPHIC SCALE
1,000 0 500 1,000 2,000 4,000
1 inch = 1,000 ft.
for sheet size 24" x 36"



BUS MAP
1" = 2,000'

GRAPHIC SCALE
2,000 0 1,000 2,000 4,000 8,000
1 inch = 2,000 ft.
for sheet size 24" x 36"

N


PROJECT LOCATION
R-2
R-1
R-1
R1M
I-C
Templeton Av TH241
Thomas St TH117
Hill Av TH118
Forest Ter TH119
Fairview Ter TH164
Gates St TH161
Chaffin St TH147
Bullard St TH118
Third Av TH114
Birchwood Dr TH182
Spring Cir prvt
Lily Pond Rd TH115
Sykes Mountain Av TH131
Walsh Av TH169
Buttermut Rd prvt
Fairview Ter TH144
Ridge Rd TH182
Hickory Ridge Rd TH182
Lower Hyde Pk TH183
Beech St TH117
Ash St TH117
Spruce St TH184
Oak St TH186
Sykes Mountain Av TH131
Sykes Mountain Av TH131
Sykes Mountain Av TH131
Sykes Mountain Av TH131
Sykes Mountain Av TH131
Mountain Av TH131
Sykes Mountain Av TH131
Sykes Mountain Av TH131
Sykes Mountain Av TH131
Sykes

PLOTTED: 3/19/2024 10:50 AM

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	FOOT, 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	TS&V
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*
TP1	TEST PIT	*TP1* *TEST PIT*
B1	BORING	*B1* *BORING*
P1	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*
(D)	DRAIN MANHOLE (DMH)	*(D) DRAIN MANHOLE (DMH)*
C/O	DRAINAGE CLEAN OUT	*C/O DRAINAGE CLEAN OUT*
(S)	SANITARY SEWER MANHOLE (SMH)	*(S) SANITARY SEWER MANHOLE (SMH)*
C/O	SANITARY CLEAN OUT	*C/O SANITARY CLEAN OUT*
	HYDRANT	*HYDRANT*
	WATER SHUTOFF	*WATER SHUTOFF*
	TAPPING SLEEVE & VALVE	*TAPPING SLEEVE & VALVE*
	GATE VALVE	*GATE VALVE*
W	WELL	*W WELL*
	UTILITY POLE	*UTILITY POLE*
	GUY POLE	*GUY POLE*
(E)	ELECTRICAL MANHOLE	*(E) ELECTRICAL MANHOLE*
	BUILDING MOUNTED LIGHT	*FLOOD LIGHT*
	LIGHT POST	*LIGHT POST*
(T)	TELEPHONE MANHOLE	*(T) TELEPHONE MANHOLE*
(G)	NATURAL GAS MANHOLE	*(G) NATURAL GAS MANHOLE*
(C)	COMMUNICATION MANHOLE	*(C) COMMUNICATION MANHOLE*
	BOLLARD	*BOLLARD*
	SINGLE POLE SIGN	*SINGLE POLE SIGN*
	DOUBLE POLE SIGN	*DOUBLE POLE SIGN*
+100.5	SPOT ELEVATION	*+ 100.00 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
		FW *FEMA FLOOD PLAIN LIMITS*
		50' *50' SETBACK FROM ORDINARY HIGH WATER LINE*
		150' *150' SETBACK FROM ORDINARY HIGH WATER LINE*
		250' *250' SETBACK FROM ORDINARY HIGH WATER LINE*
		RRB *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 X	FENCE (BARBED WIRE)	*X X FENCE (BARBED WIRE)*
	FENCE (CHAIN LINK)	*FENCE (CHAIN LINK)*
	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	*S SANITARY SEWER*
		(S) SANITARY SEWER APPROX.
FM	SEWER FORCEMAIN	*FM SEWER FORCEMAIN*
SS	SEWER SERVICE	*SS SEWER SERVICE*
SLA	DISPOSAL AREA LATERAL	*SLA DISPOSAL AREA LATERAL*
SD	STORM LINE	*SD STORM LINE*
		(ST) STORM LINE APPROX.
UD	UNDER DRAIN	*UD UNDER DRAIN*
FD	FOUNDATION DRAIN	*FD FOUNDATION DRAIN*
RD	ROOF DRAIN	*RD ROOF DRAIN*
	DITCH/SWALE	*DITCH/SWALE*
T	TELECOMM	*T TELECOMM*
		(T) TELECOMM APPROX.
UGT	UNDERGROUND TELECOMM	*UGT UNDERGROUND TELECOMM*
OHT	OVERHEAD TELECOMM	*OHT OVERHEAD TELECOMM*
E	ELECTRIC LINE	*E ELECTRIC LINE*
		(E) ELECTRIC APPROX.
UGE	UNDERGROUND ELECTRIC	*UGE UNDERGROUND ELECTRIC*
OHE	OVERHEAD ELECTRIC	*OHE OVERHEAD ELECTRIC*
SL	ELECTRICAL SITE LIGHTING	*SL ELECTRICAL SITE LIGHTING*
W	WATER LINE	*W WATER LINE*
		(W) WATER APPROX.
WS	WATER SERVICE	*WS WATER SERVICE*
GAS	GAS LINE	*GAS GAS LINE*
		(G) GAS APPROX.
CATV	CABLE TV	*CATV CABLE TV*
UGTV	UNDERGROUND CABLE TV	*OHTV UNDERGROUND CABLE TV*
UGTV	OVERHEAD CABLE TV	*OHTV OVERHEAD CABLE TV*
STM	STEAM LINE	*STM STEAM LINE*
LPS	LOW PRESSURE STEAM	*LPS LOW PRESSURE STEAM*
HPS	HIGH PRESSURE STEAM	*HPS HIGH PRESSURE STEAM*
HW	HOT WATER	*HW HOT WATER*
CW	CHILLED WATER	*CW CHILLED WATER*

Stamp

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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 #	22442
Drawn By:	JWF
Checked By:	KPW
Scale:	NOT TO SCALE
Date:	4/15/2024

C0.1

S:\PROJECTS\0-2022\22442 SYKES MT APARTMENTS\DWG\SHEET FILES\22442 C0.1 LILY POND RD - SITE LEGEND AND NOTES.DWG

PLOTTED: 4/11/2024 10:41 AM

LOT 45-162
12.4 ACRES +/-
BLACK ROCK INVESTMENTS, LLC

LOT 45-198-1
BLACK ROCK
INVESTMENT, LLC.

LOT 45-198
AHER
143 HICKORY
RIDGE

LOT 45-242-1
BACKMAN
0 HICKORY RIDGE

LOT
45-229-4
DECOFF
81 HICKORY
RIDGE

LOT 45-229
SPENCER
79 HICKORY RIDGE

LOT
45-242-1
HENDERSON
0 HICKORY
RIDGE

LOT 45-242
BACKMAN
22 HICKORY
RIDGE

LOT 45-243
444 SYKES MTN. AVE.
11.1 ACRES +/-
BLACK ROCK INVESTMENTS, LLC

LOT 45-244
SPANN & NEILY
514 SYKES MTN.
AVE.

LOT 45-245
UNITED BETHREN
LODGE
544 SYKES MTN.
AVE.

LOT 45-246
McDonald
568 SYKES MTN.
AVE.

LOT 45-246-1
WENTWORTH COMMON INTEREST
COMMUNITY ASSOCIATION

FAIRVIEW TERRACE

HICKORY RIDGE

LOWER HYDE PARK

BOWLING LANE

3RD AVE

LILY POND RD.

LILY POND ROAD

SYKES MOUNTAIN AVE.

ZONE R-2
ZONE R-1

ZONE R-2
ZONE R-IM

ZONE R-IM
ZONE R-1

ZONE R-1
ZONE R-2

ZONE R-2
ZONE R-1

ZONE I-C
ZONE I-C2

ZONE R-IM
ZONE I-C

ZONE R-IM
ZONE I-C2

ZONE R-IM
ZONE I-C

ZONE R-1
ZONE R-IM

8" VC

16" DI

ABANDONED

12" DI

12" PVC

36" HDPE

GRAPHIC SCALE

60 0 30 60 120 240

1 inch = 60 ft.
for sheet size 24" x 36"

N

Stamp

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Existing Conditions 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:	4/15/2024

C1.1

S:\PROJECTS\K-2022\22442 SYKES MT APT\DWG\SHEET FILES\22442-D SYKES C1.1 - EXISTING CONDITIONS PLAN.DWG

PLOTTED: 4/11/2024 11:41 AM

PHASE 1

LOT 45-162
BLACK ROCK
INVESTMENTS, LLC
804,802 SQ FT
18.48 ACRES

BUILDING 1
49 UNITS
F.F.E.: 638.0

BUILDING 2
45 UNITS
F.F.E.: 638.0

BUILDING 3
49 UNITS
F.F.E.: 635.0

BUILDING 4
49 UNITS
F.F.E.: 635.0

BUILDING 1 PARKING LOT
(69 SPACES)

BUILDING 2 PARKING LOT
(64 SPACES)

BUILDING 3 PARKING LOT
(69 SPACES)

BUILDING 4 PARKING LOT
(69 SPACES)

GARAGE 1 (10 BAYS)

GARAGE 2 (10 BAYS)

GARAGE 3 (10 BAYS)

GARAGE 4 (10 BAYS)

PHASE 1

PHASE 2

LOT 45-198-1
BLACK ROCK
INVESTMENT, LLC.

LOT 45-198
AHER
143 HICKORY
RIDGE

HICKORY RIDGE ROAD

LOT 45-242-1
BACKMAN
0 HICKORY RIDGE

LOT
45-229-4
DECOFF
81 HICKORY
RIDGE

LOT 45-229
SPENCER
79 HICKORY RIDGE

LOT
45-242-1
HENDERSON
0 HICKORY
RIDGE

LOT 45-242
BACKMAN
22 HICKORY
RIDGE

LOT 45-246-1
WENTWORTH COMMON INTEREST
COMMUNITY ASSOCIATION

LOT 45-246
McDonald
568 SYKES MTN.
AVE.

LOT 45-243
BLACK ROCK
INVESTMENTS, LLC
444 SYKES MTN. AVE.
216,315 SQ FT
4.97 ACRES

LOT 45-245
UNITED BETHREN
LODGE
544 SYKES MTN.
AVE.

LOT 45-244
SPANN & NEILY
514 SYKES MTN.
AVE.

BOWLING LANE

SYKES MOUNTAIN AVENUE

GRAPHIC SCALE

60 0 30 60 120 240

1 inch = 60 ft.
for sheet size 24" x 36"

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Stamp

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BLACK ROCK INVESTMENTS, LLC
2468 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:	4/15/2024

C1.2

S:\PROJECTS\0-2022\2442.3 SYKES MT APT\DWG\SHEET FILES\2442.3 SYKES C1.2 - PHASE PLAN.DWG

PLOTTED: 3/19/2024 10:48 AM

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

60 0 30 60 120 240

1 inch = 60 ft.
for sheet size 24" x 36"

Stamp

No.	Description	Date

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Phase 1 Vehicle Turning 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:	4/15/2024

C1.3

S:\PROJECTS\0-2022\22442 SYKES MT APARTMENTS\DWG\SHEET FILES\22442 0 LILLY POND RD C2.2 - VEHICLE TURNING PLAN.DWG

PLOTTED: 3/19/2024 10:48 AM

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	10.468ft
Min Body Ground Clearance	1.318ft
Track Width	8.042ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	27.400ft

GRAPHIC SCALE

60 0 30 60 120 240

1 inch = 60 ft.
for sheet size 24" x 36"

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Phase 1 Vehicle Turning Plan
Lot 45-162

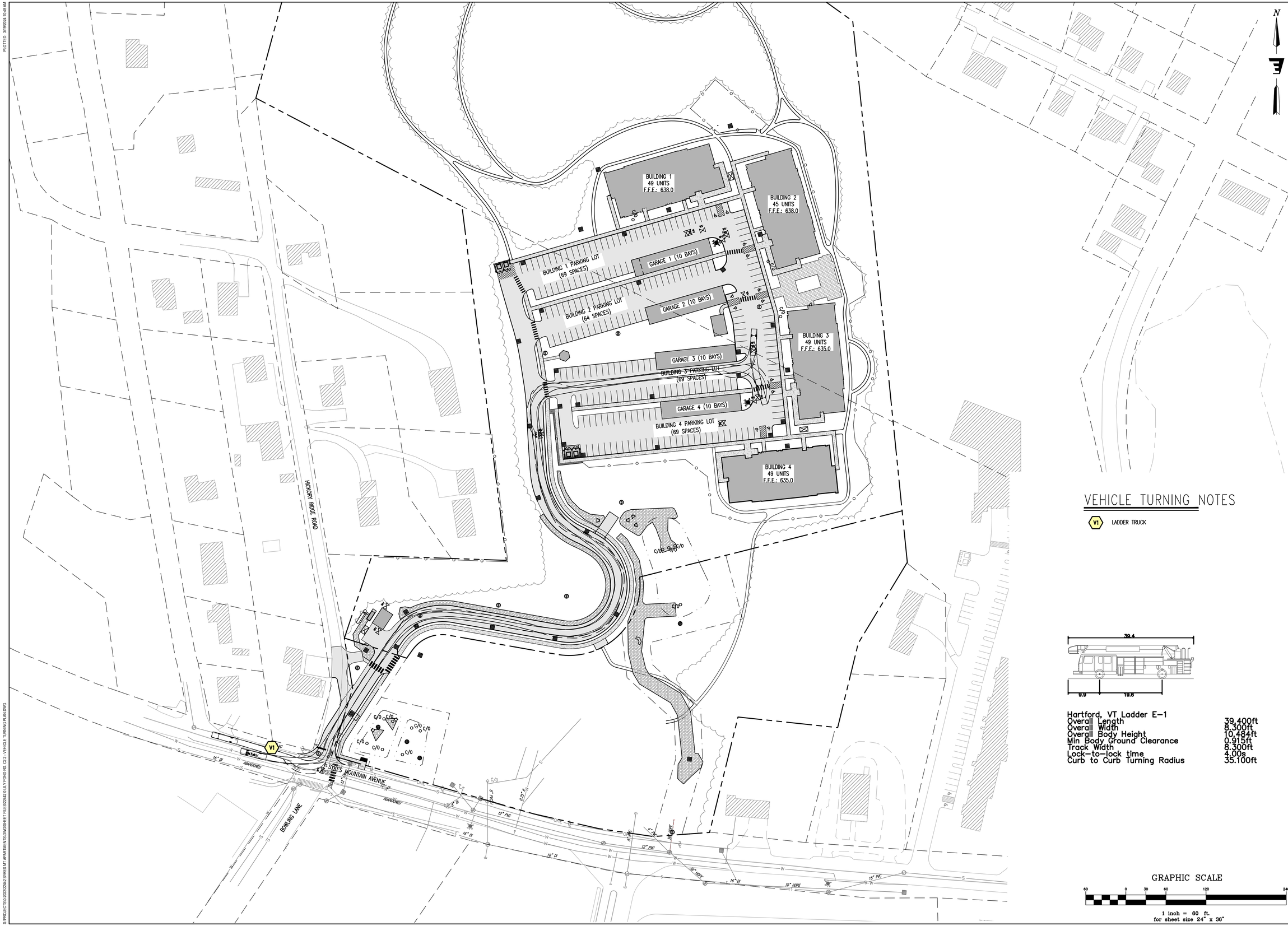
Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	JWF
Checked By:	KPW
Scale:	1" = 60'
Date:	4/15/2024

C1.4

S:\PROJECTS\0-2022\22442 SYKES MT APARTMENTS\DWG\SHEET FILES\22442 0 LILLY POND RD C2.2 - VEHICLE TURNING PLAN.DWG

PLOTTED: 3/19/2024 10:48 AM



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

60 0 30 60 120 240

1 inch = 60 ft.
for sheet size 24" x 36"

Stamp

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Phase 2 Vehicle Turning 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:	4/15/2024

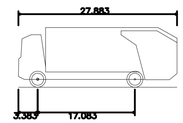
C1.5

S:\PROJECTS\0-2022\22442 SYKES MT APARTMENTS\DWG\SHEET FILES\22442 0 LILLY POND RD C2.2 - VEHICLE TURNING PLAN.DWG

PLOTTED: 3/19/2024 10:48 AM

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	10.488ft
Min Body Ground Clearance	1.316ft
Track Width	8.042ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	27.400ft

GRAPHIC SCALE

60 0 30 60 120 240

1 inch = 60 ft.
for sheet size 24" x 36"

No.	Description	Date

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Phase 2 Vehicle Turning 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:	4/15/2024

C1.6

S:\PROJECTS\X-2022\22442 SYKES MT APARTMENTS\DWG\SHEET FILES\22442 SYLLY POND RD C2.2 - VEHICLE TURNING PLAN.DWG

Sheet Title:
Snow Plow Turning 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:	4/15/2024

C1.7

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2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

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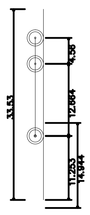
No.	Description	Date

Stamp

N

VEHICLE TURNING NOTES

V1 6 WHEEL PLOW TRUCK



Snow Plough	33.530ft
Overall Length	8.202ft
Overall Width	11.053ft
Overall Body Height	14.994ft
Min Body Ground Clearance	1.435ft
Track Width	8.202ft
Lock to Lock time	4.000ft
Curb to Curb Turning Radius	26.247ft

GRAPHIC SCALE

1 inch = 60 ft.
for sheet size 24" x 36"

BUILDING 1
49 UNITS
F.F.E.: 638.0

BUILDING 2
45 UNITS
F.F.E.: 638.0

BUILDING 3
49 UNITS
F.F.E.: 635.0

BUILDING 4
49 UNITS
F.F.E.: 635.0

GARAGE 1 (10 BAYS)

GARAGE 2 (10 BAYS)

GARAGE 3 (10 BAYS)

GARAGE 4 (10 BAYS)

BUILDING 1 PARKING LOT
(69 SPACES)

BUILDING 2 PARKING LOT
(64 SPACES)

BUILDING 3 PARKING LOT
(69 SPACES)

BUILDING 4 PARKING LOT
(69 SPACES)

HICKORY RIDGE ROAD

MOUNTAIN AVENUE

BOWLING LANE

V1

PLOTTED: 3/19/2024 10:49 AM

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 STORMWATER TREATMENT PONDS, 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 2027.

STORMWATER POLUTION PREVENTION NOTES

- E1 LIMIT OF DISTURBANCE
- E2 PORTABLE SANITATION FACILITIES, TO BE STAKED DOWN AND SECURED
- E3 INLET PROTECTION (TYP.)
- E4 SILT FENCE
- E5 CONCRETE WASHOUT
- E6 STABILIZED CONSTRUCTION ENTRANCE
- E7 CHECK DAM (TYP.)

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.

SEDIMENT TRAP · STAGING AREA · SOIL STOCKPILE · SF · LOD

GRAPHIC SCALE

60 0 30 60 120 240

1 inch = 60 ft.
for sheet size 24" x 36"

N

Stamp

No.	Description	Date

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Erosion Prevention and Sediment Control 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:	4/15/2024

C1.8

S:\PROJECTS\0-2022\22442 SYKES MT APARTMENTS\DWG\SHEET FILES\22442 0 LILLY POND RD EPSC PLAN.DWG

PLOTTED: 4/26/2024 9:24 AM

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

- C2 SIDEWALK (TYP. – SEE PLAN FOR WIDTH)
- C3 24' BY 12' DUMPSTER ENCLOSURE
- C4 ADA VAN ACCESSIBLE PARKING (TYP.)
- C5 CURBING (TYP.)
- C6 12 FT. (MAXIMUM) HEIGHT RETAINING WALL AND 4' (MINIMUM) HEIGHT FALL PROTECTION RAILING.
- 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, SIDEWALK ACCESS AND MAINTENANCE EASEMENT FOR THE BENEFIT OF LOT 45-162
- C13 DELIVERY TRUCK AREA
- C14 MAINTENANCE GARAGE
- C15 STEPS
- C16 ACCESS, MAINTENANCE AND UTILITY OPERATIONS EASEMENT FOR THE BENEFIT OF THE TOWN OF HARTFORD DEPARTMENT OF PUBLIC WORKS
- C17 BUS SHELTER
- C18 GATE WITH KNOX LOCK BOX SO HARTFORD FIRE AND PUBLIC WORKS DEPARTMENTS AND GREEN HEIGHTS STAFF CAN OPEN AND CLOSE GATE. GREEN HEIGHTS STAFF TO OPEN THE GATE PRIOR TO SNOW PLOWING AND CLOSE IT AFTER.
- C19 ACCESS AND UTILITY OPERATIONS EASEMENT FOR THE BENEFIT OF THE TOWN OF HARTFORD DEPARTMENT OF PUBLIC WORKS
- C20 PAVED AREA FOR STORMWATER POND ACCESS AND SNOW PLOWS

ZONING CHART

		Lot 45-162	
ITEM	Req/Allowable	Existing	Proposed
Street Address		Sykes Mt. Ave.	
Zoning District/Designation		R-1M	See Planned Development
Tax Map & lot number		45-162	Same
Area of Lot (Acres)		12.35 ac (537.966 sf)	18.46 ac (804,118 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	2
Building Height (Ft)	See Planned Development	N/A	50'
Number of Stories	See Planned Development	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	209,972 sf
Impervious surfaces (%) bld. + lots/lot	65% max.	N/A	26%
Density	See Planned Development	0 Units	192 Units 14.3% density bonus requested (R1-M : 313,497 sq. ft. /4,000 sq. ft. per unit = 78.37 + R-2: 538,341 sq. ft. /6,000 sq. ft. per unit = 89.72 = 168 units; 14.3% bonus 168 x .143 = 24 168+ 24 = 192)
Open Space	50% of the Lot	N/A	428,521 sf (9.84 Acres) 53.3%

NOTE:
THIS PROJECT IS NOT LOCATED WITHIN ANY FLOODPLAINS, SIGNIFICANT NATURAL COMMUNITIES OR WETLANDS

GRAPHIC SCALE

60 0 30 60 120 240

1 inch = 60 ft.
for sheet size 24" x 36"

N

Stamp

No.	Description	Date
1	REVISED PER PLANNING COMMENTS 4/23/2024	

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BLACK ROCK INVESTMENTS, LLC
2468 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" = 60'
Date:	4/15/2024

C2.0

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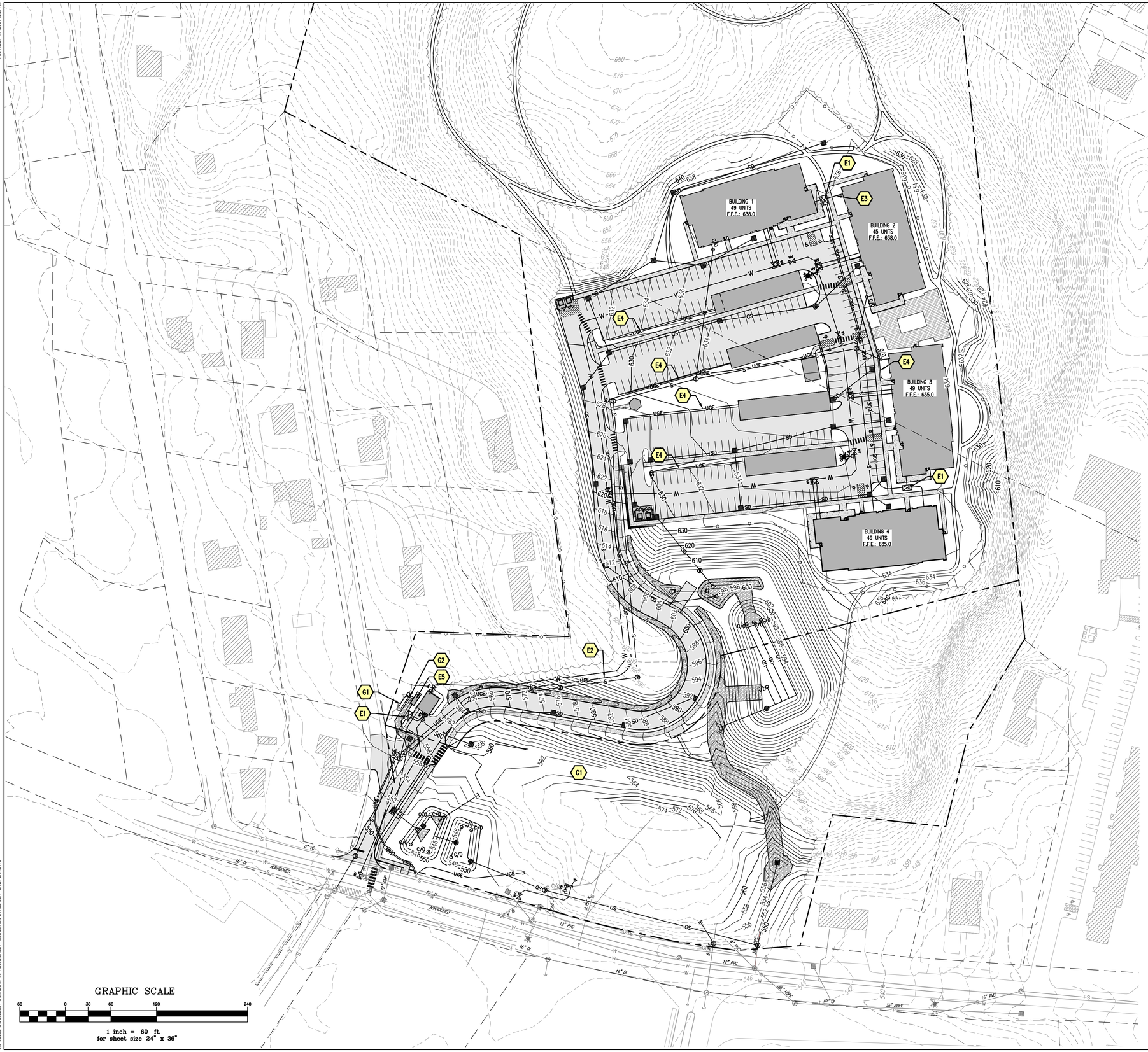
PLOTTED: 4/11/2024 10:57 AM



GRAPHIC SCALE

60 0 30 60 120 240

1 inch = 60 ft.
for sheet size 24" x 36"

N

WATER NOTES

SEE WATER PLAN AND PROFILE

SEWER NOTES

SEE SEWER PLAN AND PROFILE

DRAINAGE NOTES

SEE DRAINAGE PLAN AND PROFILE

ELECTRICAL NOTES

- E1 TRANSFORMER (TYP.) COORDINATE WITH GMP AND MEP ENGINEER
- E2 PRIMARY POWER (TYP.) COORDINATE WITH GMP AND MEP ENGINEER
- E3 SECONDARY POWER (TYP.) COORDINATE WITH GMP AND MEP ENGINEER
- E4 ELECTRIC VEHICLE CHARGING CONDUIT FOR FUTURE USE
- E5 BACKUP POWER GENERATOR

PROPANE NOTES

- G1 1,990 GALLON UNDERGROUND PROPANE TANK
- G2 PROPANE LINE

GRADING NOTE

- G1 GRADING REQUIRED ON LOT 45-243

Stamp

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BLACK ROCK INVESTMENTS, LLC
2468 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Grading and Utilities 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:	4/15/2024

C2.1

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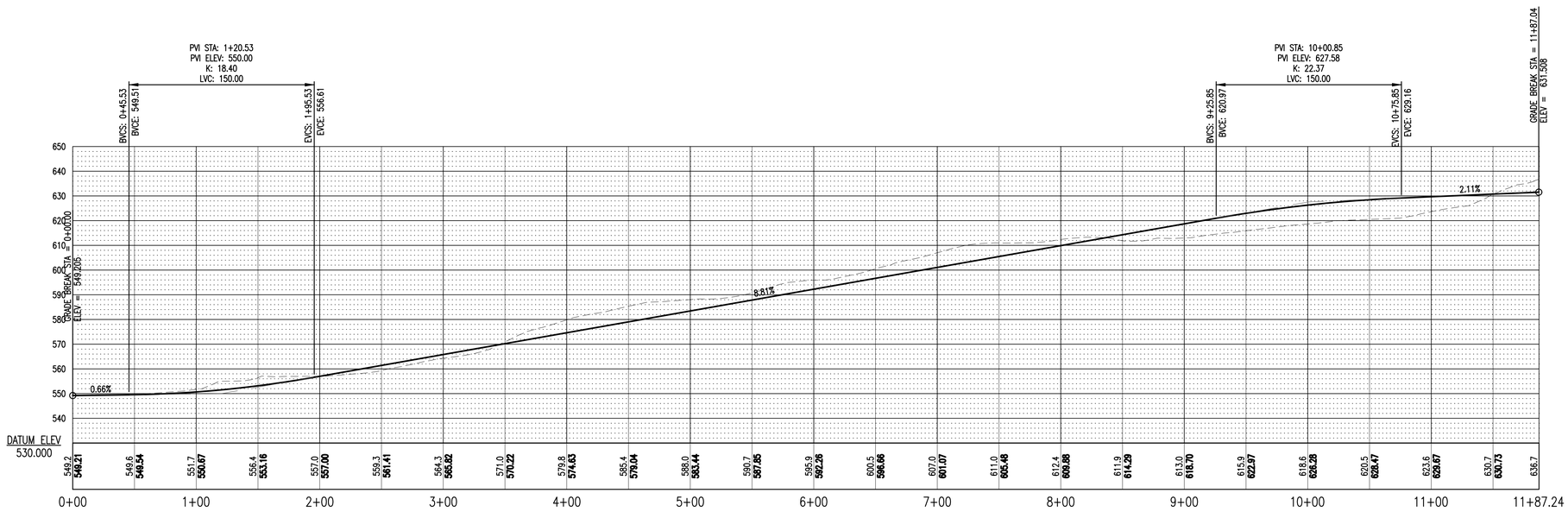

PROPOSED ROADWAY PROFILE, STA. 0+00 – 13+00

SCALE: HORIZ. 1" = 50'
VERT.: 1" = 25'

PLOTTED: 3/18/2024 10:51 AM

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Stamp

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

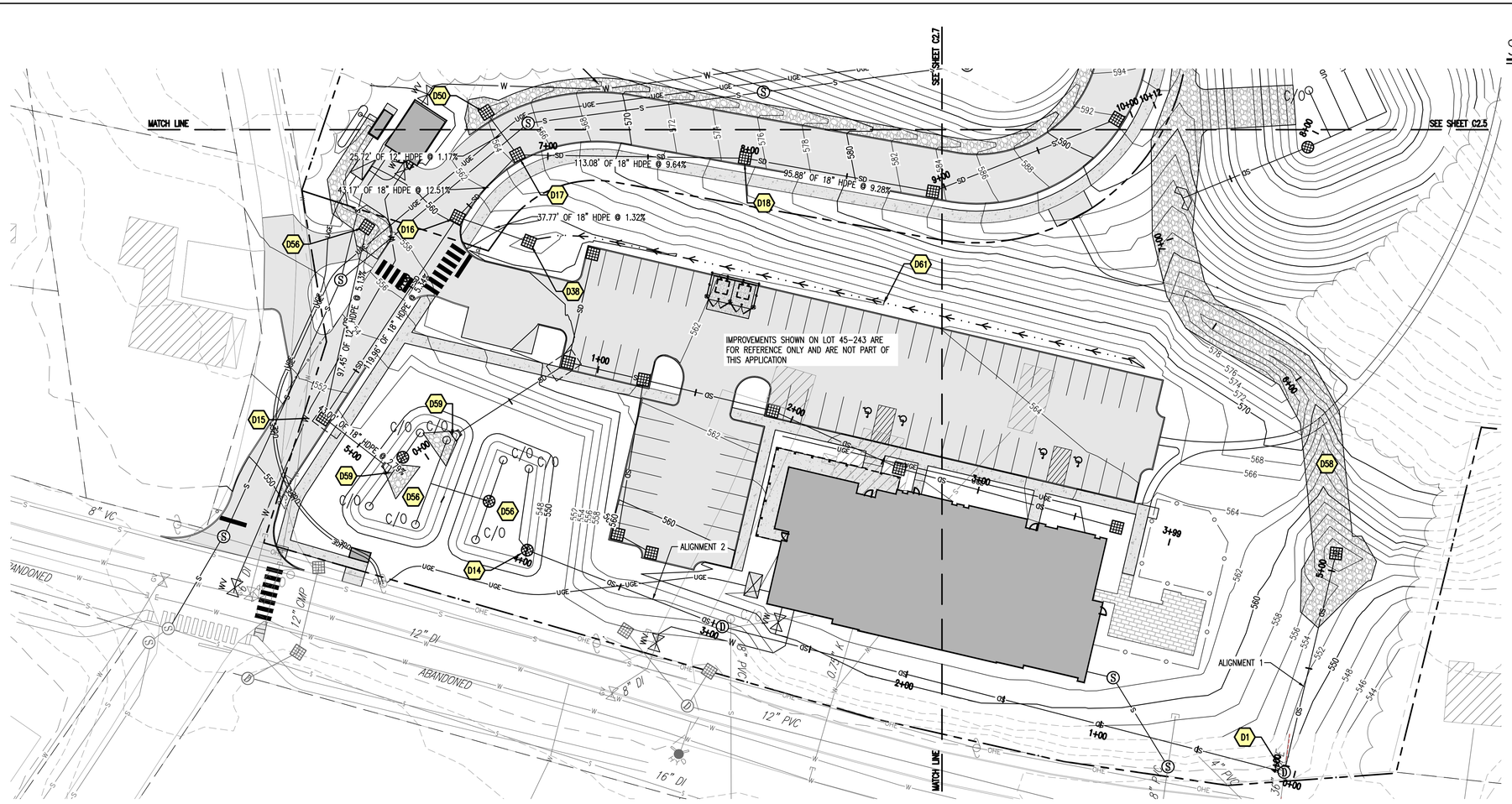
Sheet Title: Roadway Profile
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	ADM
Checked By:	KPW
Scale:	-
Date:	3/11/2024

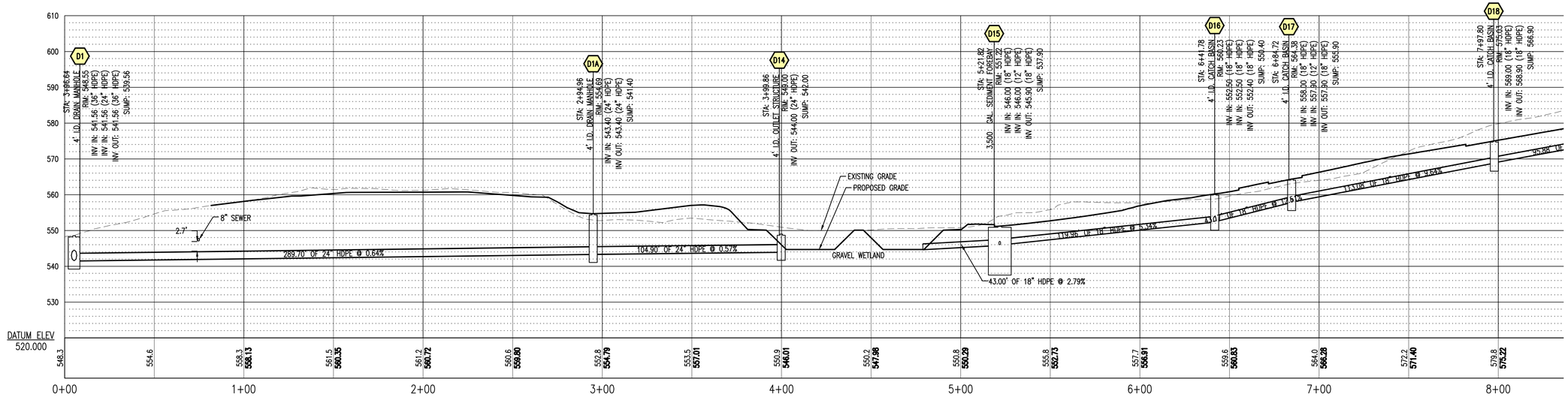
C2.3

PLOTTED: 4/11/2024 11:01 AM



STORMWATER SCHEDULE

- **D1** — 4' I.D. DRAIN MANHOLE
  RIM: 548.55
  INV. IN: 541.56 (36" HDPE)
  INV. IN: 541.56 (24" HDPE)
  INV. OUT: 541.56 (36" HDPE)
  SUMP: 539.56
- **D2** — 4' I.D. CATCH BASIN
  RIM: 549.56
  INV. OUT: 542.80 (36" HDPE)
  SUMP: 540.80
- **D14** — 4' I.D. OUTLET STRUCTURE
  RIM: 549.00
  INV. OUT: 544.00 (24" HDPE)
  SUMP: 542.00
- **D15** — 3,500 GAL. SEDIMENT FOREBAY
  RIM: 551.22
  INV. IN: 546.00 (18" HDPE)
  INV. IN: 546.00 (12" HDPE)
  INV. OUT: 545.90 (18" HDPE)
  SUMP: 537.90
- **D16** — 4' I.D. CATCH BASIN
  RIM: 560.23
  INV. IN: 552.50 (18" HDPE)
  INV. IN: 552.50 (18" HDPE)
  INV. OUT: 552.40 (18" HDPE)
  SUMP: 550.40
- **D17** — 4' I.D. CATCH BASIN
  RIM: 564.38
  INV. IN: 558.00 (18" HDPE)
  INV. IN: 557.90 (12" HDPE)
  INV. OUT: 557.90 (18" HDPE)
  SUMP: 555.90
- **D18** — 4' I.D. CATCH BASIN
  RIM: 575.03
  INV. IN: 569.00 (18" HDPE)
  INV. OUT: 568.90 (18" HDPE)
  SUMP: 566.90
- **D38** — 4' I.D. CATCH BASIN
  RIM: 557.29
  INV. OUT: 553.00 (18" HDPE)
  SUMP: 551.00
- **D50** — 4' I.D. CATCH BASIN
  RIM: 563.18
  INV. OUT: 558.20 (12" HDPE)
  SUMP: 556.20
- **D56** — GRAVEL WETLAND – P2
- **D57** — BIOFILTER – P1
- **D58** — RIPRAP LINED DRAINAGE DITCH (TYP.)
- **D59** — FLARED END SECTION WITH RIPRAP APRON (TYP.)
- **D60** — RIPRAP LINED OVERFLOW WEIR (TYP.)
- **D61** — GRASS LINED SWALE
- **D62** — SEDIMENT FOREBAY



STORMWATER PROFILE (ALIGNMENT 2) – STA 0+00 TO 8+00

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'

GRAPHIC SCALE

30 0 15 30 60 120

1 inch = 30 ft.
for sheet size 24" x 36"

Stamp

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Drainage Plan and Profile
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	1" = 30'
Date:	4/15/2024

C2.4

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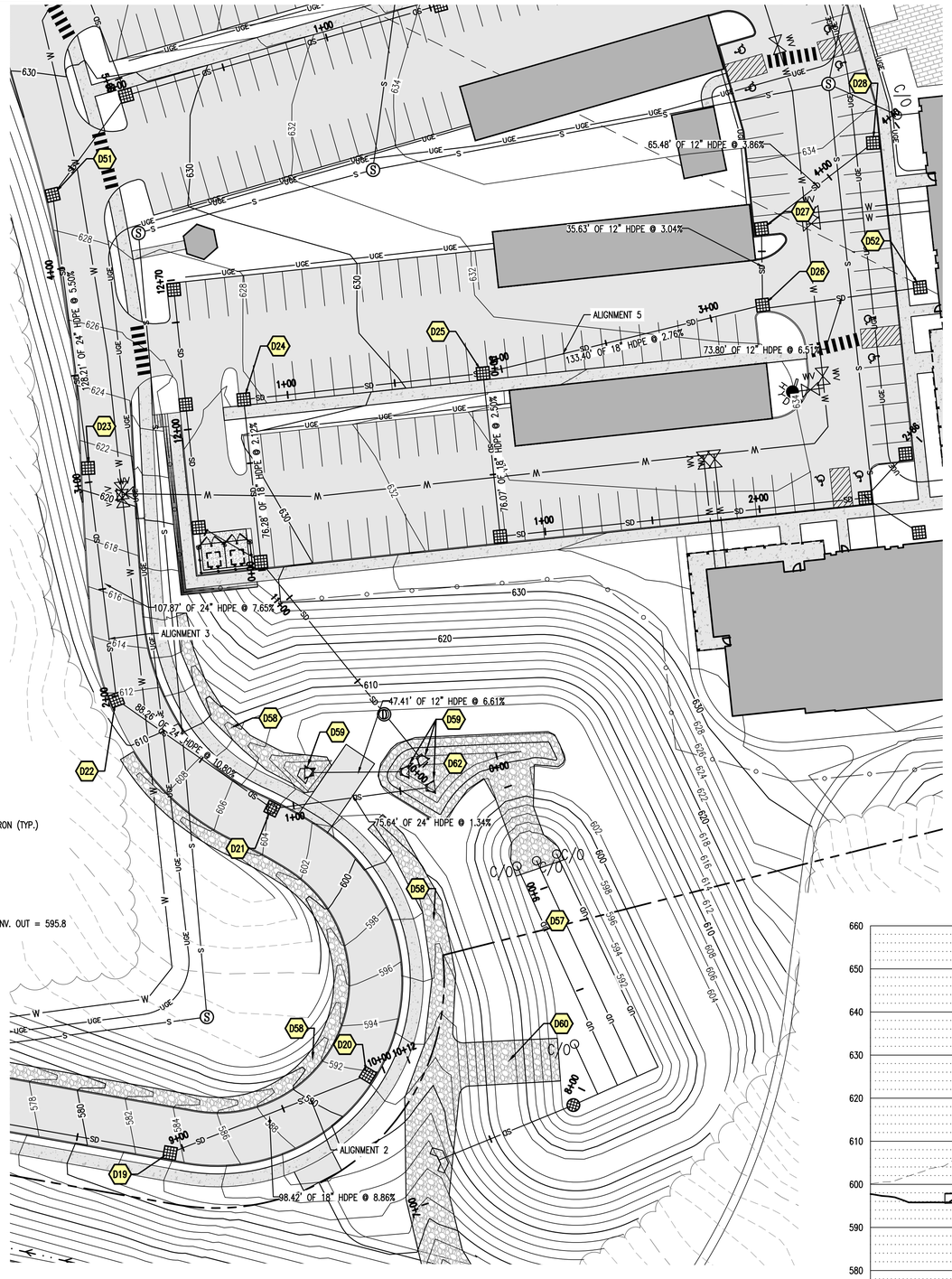
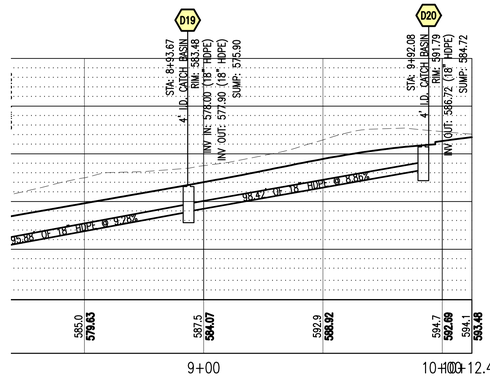
PLOTTED: 3/19/2024 10:44 AM

STORMWATER SCHEDULE

- **D19** 4' I.D. CATCH BASIN
  RIM: 583.48
  INV. IN: 578.00 (18" HDPE)
  INV. OUT: 577.90 (18" HDPE)
  SUMP: 575.90
- **D20** 4' I.D. CATCH BASIN
  RIM: 591.79
  INV. OUT: 586.72 (18" HDPE)
  SUMP: 584.72
- **D21** 4' I.D. CATCH BASIN
  RIM: 603.85
  INV. IN: 596.87 (24" HDPE)
  INV. OUT: 596.77 (24" HDPE)
  SUMP: 594.77
- **D22** 4' I.D. CATCH BASIN
  RIM: 611.73
  INV. IN: 606.50 (24" HDPE)
  INV. OUT: 606.40 (24" HDPE)
  SUMP: 604.40
- **D23** 4' I.D. CATCH BASIN
  RIM: 620.97
  INV. IN: 614.85 (24" HDPE)
  INV. OUT: 614.75 (24" HDPE)
  SUMP: 612.75
- **D24** 4' I.D. CATCH BASIN
  RIM: 627.72
  INV. IN: 620.22 (18" HDPE)
  INV. OUT: 620.12 (18" HDPE)
  SUMP: 618.12
- **D25** 4' I.D. CATCH BASIN
  RIM: 631.19
  INV. IN: 622.50 (18" HDPE)
  INV. IN: 622.50 (18" HDPE)
  INV. OUT: 622.40 (18" HDPE)
  SUMP: 620.40
- **D26** 4' I.D. CATCH BASIN
  RIM: 632.28
  INV. IN: 626.50 (12" HDPE)
  INV. IN: 626.29 (12" HDPE)
  INV. OUT: 626.19 (18" HDPE)
  SUMP: 624.19
- **D27** 4' I.D. CATCH BASIN
  RIM: 633.11
  INV. IN: 627.47 (12" HDPE)
  INV. OUT: 627.37 (12" HDPE)
  SUMP: 625.37
- **D28** 4' I.D. CATCH BASIN
  RIM: 633.82
  INV. OUT: 630.00 (12" HDPE)
  SUMP: 628.00
- **D52** 4' I.D. CATCH BASIN
  RIM: 634.58
  INV. OUT: 631.30 (12" HDPE)
  SUMP: 629.30

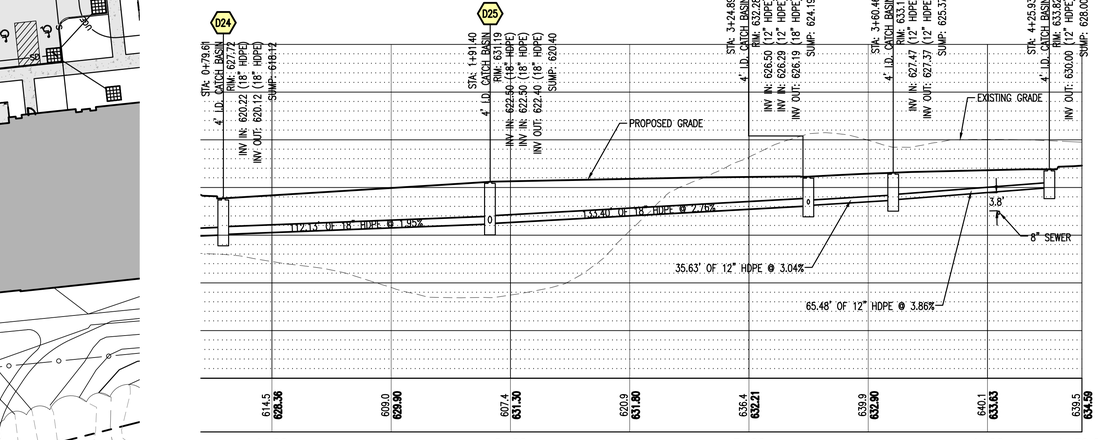
- **D56** GRAVEL WETLAND – P2
- **D57** BIOFILTER – P1
- **D58** RIPRAP LINED DRAINAGE DITCH (TYP.)
- **D59** FLARED END SECTION WITH RIPRAP APRON (TYP.)
- **D60** RIPRAP LINED OVERFLOW WEIR (TYP.)
- **D61** GRASS LINED SWALE
- **D62** SEDIMENT FOREBAY
- **D63** 12" HDPE CULVERT INV. IN = 596.4, INV. OUT = 595.8





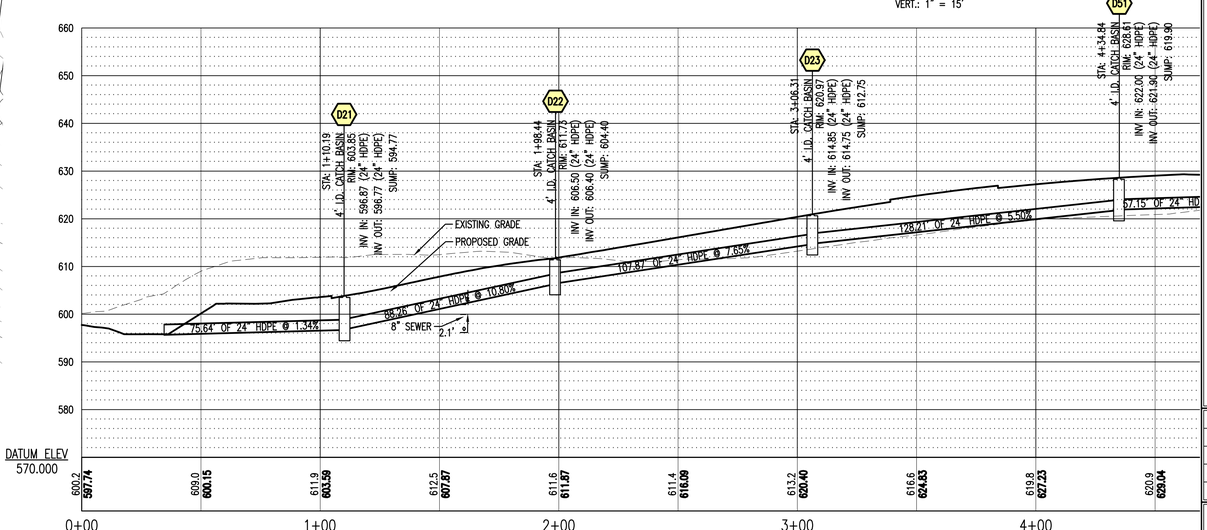
STORMWATER PROFILE (ALIGNMENT 2) – STA 8+00 TO 10+20

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'



STORMWATER PROFILE (ALIGNMENT 5) – STA 1+00 TO 4+39

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'



STORMWATER PROFILE (ALIGNMENT 3) – STA 0+00 TO 3+75

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'

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Sheet Title: Drainage Plan and Profile
Lot 45-162

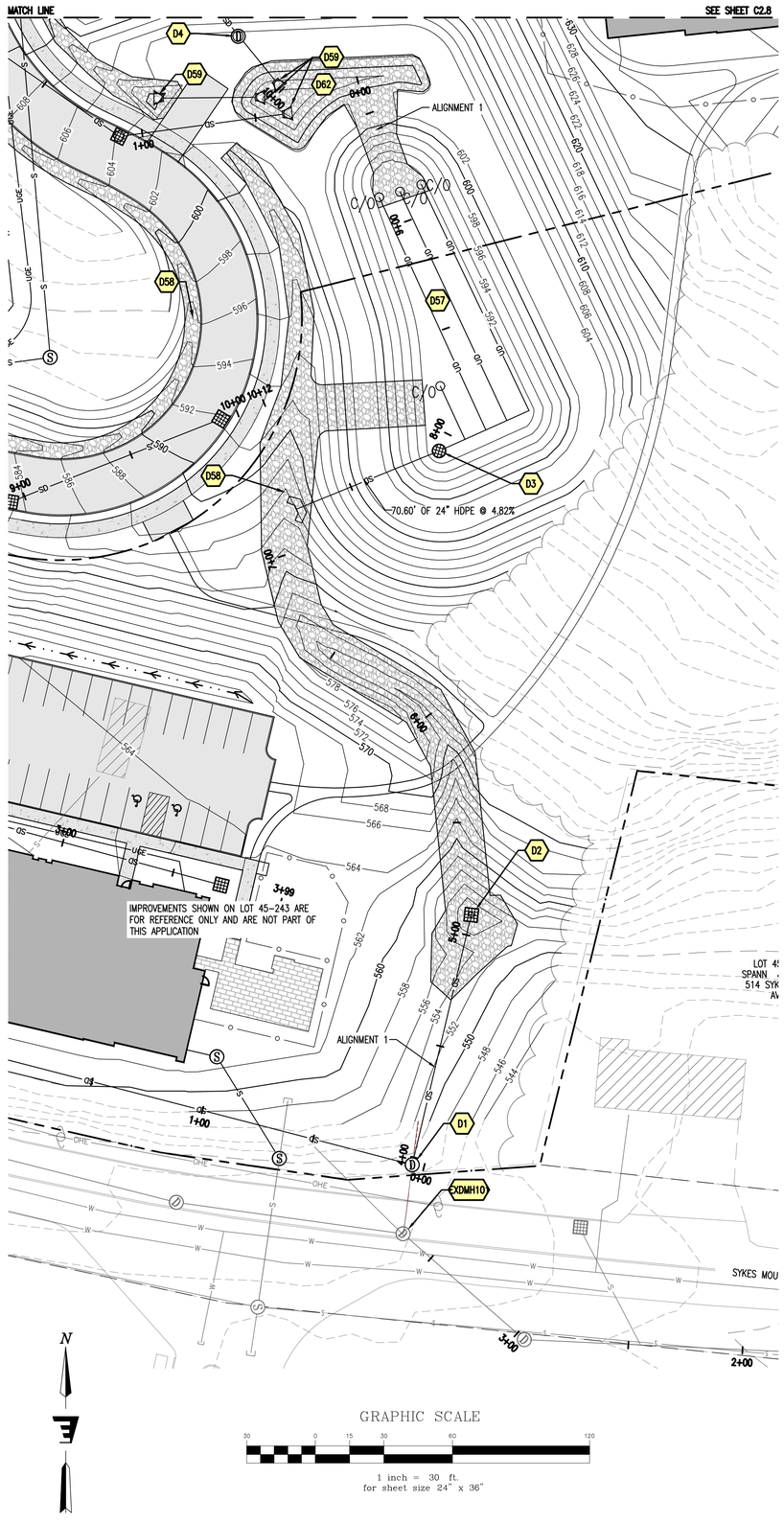
Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	1" = 30'
Date:	4/15/2024

C2.5

S:\PROJECTS\4-22\22442 SYKES MT APARTMENTS\DWG\SHEET FILES\22442 01 LLY C2.4 DRAINAGE.DWG

PLOTTED: 4/11/2024 11:08 AM



STORMWATER SCHEDULE

D1 4' I.D. DRAIN MANHOLE
RIM: 548.55
INV. IN: 541.56 (36" HDPE)
INV. IN: 541.56 (24" HDPE)
INV. OUT: 541.56 (36" HDPE)
SUMP: 539.56

D2 4' I.D. CATCH BASIN
RIM: 549.56
INV. OUT: 542.80 (36" HDPE)
SUMP: 540.80

D3 4. I.D. OUTLET STRUCTURE
RIM: 601.00
INV. OUT: 588.00 (24" HDPE)
SUMP: 588.00

D4 4' I.D. DRAIN MANHOLE
RIM: 603.04
INV. IN: 596.68 (24" HDPE)
INV. OUT: 596.58 (24" HDPE)
SUMP: 594.58

EXDMH10 4' I.D. DRAIN MANHOLE
RIM: 545.95
INV. IN: 541.50 (36" HDPE)
INV. IN: 541.50 (12" PVC)
INV. IN: 541.50 (4" PVC)
INV. OUT: 541.40 (36" HDPE)
SUMP: 539.40

D56 GRAVEL WETLAND – P2

D57 BIOFILTER – P1

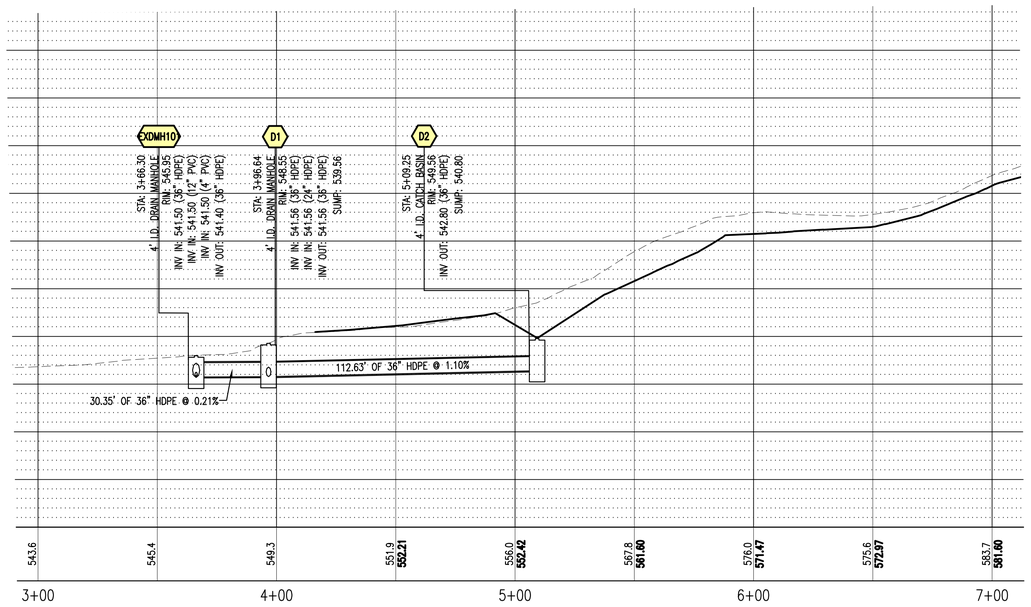
D58 RIPRAP LINED DRAINAGE DITCH (TYP.)

D59 FLARED END SECTION WITH RIPRAP APRON (TYP.)

D60 RIPRAP LINED OVERFLOW WEIR (TYP.)

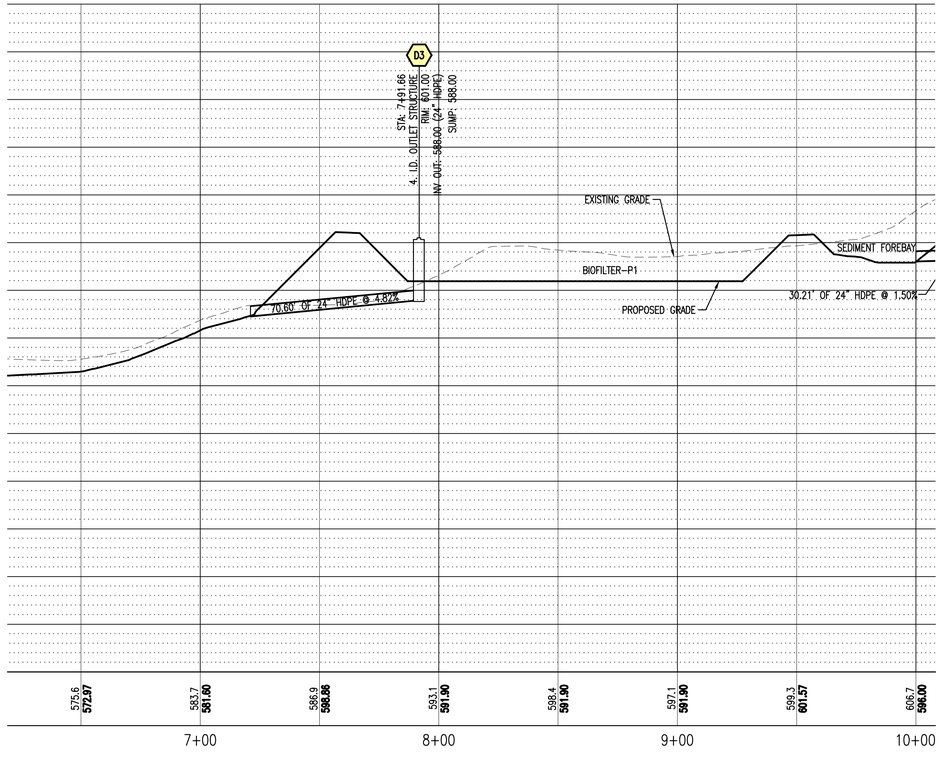
D61 GRASS LINED SWALE

D62 SEDIMENT FOREBAY



STORMWATER PROFILE (ALIGNMENT 1) – STA 3+00 TO 7+00

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'



STORMWATER PROFILE (ALIGNMENT 1) – STA 6+50 TO 10+50

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'

Stamp

No.	Description	Date

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Drainage Plan and Profile
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	1" = 30'
Date:	4/15/2024

C2.7

S:\PROJECTS\X-2022\2442.SYKES.MT.APTS\NV\SHEET FILES\22442.0 SYKES C2.4 - DRAINAGE.DWG

STORMWATER SCHEDULE

D5 4' I.D. CATCH BASIN
RIM: 629.16
INV. IN: 618.50 (24" HDPE)
INV. IN: 618.50 (18" HDPE)
INV. OUT: 609.32 (24" HDPE)
SUMP: 607.32

D6 4' I.D. CATCH BASIN
RIM: 628.39
INV. IN: 619.00 (24" HDPE)
INV. OUT: 618.90 (24" HDPE)
SUMP: 616.90

D7 4' I.D. CATCH BASIN
RIM: 627.28
INV. IN: 620.00 (24" HDPE)
INV. OUT: 619.90 (24" HDPE)
SUMP: 617.90

D8 4' I.D. CATCH BASIN
RIM: 626.74
INV. OUT: 620.90 (24" HDPE)
SUMP: 618.90

D9 4' I.D. CATCH BASIN
RIM: 628.51
INV. IN: 623.00 (24" HDPE)
INV. IN: 623.00 (18" HDPE)
INV. OUT: 622.90 (24" HDPE)
SUMP: 620.90

D10 4' I.D. CATCH BASIN
RIM: 630.75
INV. IN: 625.00 (18" HDPE)
INV. OUT: 624.90 (24" HDPE)
SUMP: 622.90

D11 4' I.D. CATCH BASIN
RIM: 634.24
INV. IN: 628.25 (18" HDPE)
INV. IN: 626.74 (12" HDPE)
INV. OUT: 626.64 (18" HDPE)
SUMP: 624.64

D12 4' I.D. CATCH BASIN
RIM: 636.73
INV. IN: 631.15 (12" HDPE)
INV. OUT: 631.05 (18" HDPE)
SUMP: 629.05

D13 4' I.D. CATCH BASIN
RIM: 637.78
INV. OUT: 632.64 (12" HDPE)
SUMP: 630.64

D54 4' I.D. CATCH BASIN
RIM: 633.98
INV. OUT: 629.88 (12" HDPE)
SUMP: 627.88

D55 4' I.D. CATCH BASIN
RIM: 636.06
INV. IN: 627.78 (12" HDPE)
INV. OUT: 627.68 (12" HDPE)
SUMP: 625.68

D56 GRAVEL WETLAND – P2

D57 BIOFILTER – P1

D58 RIPRAP LINED DRAINAGE DITCH (TYP.)

D59 FLARED END SECTION WITH RIPRAP APRON (TYP.)

D60 RIPRAP LINED OVERFLOW WEIR (TYP.)

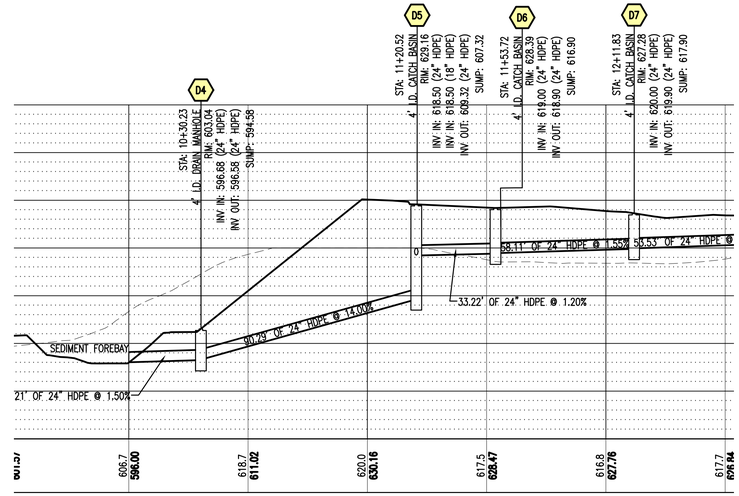
D61 GRASS LINED SWALE

N

GRAPHIC SCALE

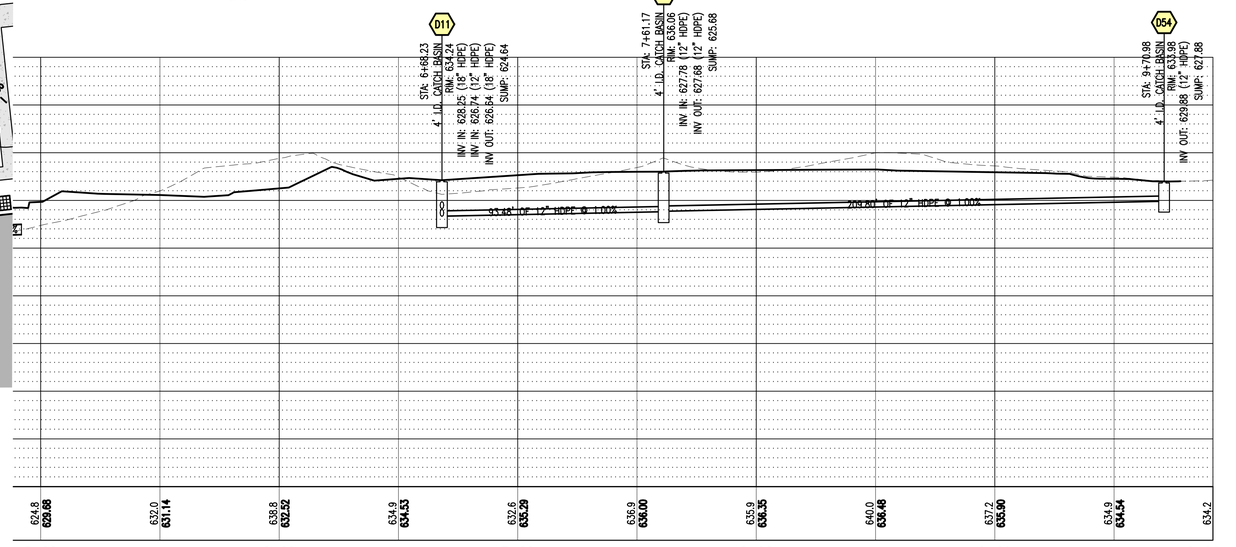
30 0 15 30 60 120

1 inch = 30 ft.
for sheet size 24" x 36"



STORMWATER PROFILE (ALIGNMENT 1) – STA 10+20 TO 12+36

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'



STORMWATER PROFILE (ALIGNMENT 3) – STA 5+00 TO 10+00

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'

Stamp

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BLACK ROCK INVESTMENTS, LLC
2468 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Drainage Plan and Profile
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	1" = 30'
Date:	4/15/2024

C2.8

PLOTTED: 3/19/2024 10:45 AM
S:\PROJECTS\22-2022\22442 SYKES MT APARTMENTS\DWG\SHEET FILES\22442 D1 LAY C2.4 DRAINAGE.DWG

PLOTTED: 3/19/2024 10:46 AM

STORMWATER SCHEDULE

D9
4' I.D. CATCH BASIN
RIM: 628.51
INV. IN: 623.00 (24" HDPE)
INV. IN: 623.00 (18" HDPE)
INV. OUT: 622.90 (24" HDPE)
SUMP: 620.90

D25
4' I.D. CATCH BASIN
RIM: 631.19
INV. IN: 622.50 (18" HDPE)
INV. IN: 622.50 (18" HDPE)
INV. OUT: 622.40 (18" HDPE)
SUMP: 620.40

D29
4' I.D. CATCH BASIN
RIM: 633.38
INV. IN: 624.50 (12" HDPE)
INV. OUT: 624.40 (18" HDPE)
SUMP: 622.40

D30
4' I.D. CATCH BASIN
RIM: 633.59
INV. IN: 628.03 (12" HDPE)
INV. IN: 627.93 (12" HDPE)
INV. OUT: 627.83 (12" HDPE)
SUMP: 625.83

D31
4' I.D. CATCH BASIN
RIM: 633.53
INV. OUT: 628.70 (12" HDPE)
SUMP: 626.70

D32
4' I.D. CATCH BASIN
RIM: 634.37
INV. IN: 629.47 (18" HDPE)
INV. OUT: 629.37 (18" HDPE)
SUMP: 627.37

D33
4' I.D. CATCH BASIN
RIM: 635.46
INV. IN: 631.12 (12" HDPE)
INV. OUT: 631.02 (18" HDPE)
SUMP: 629.02

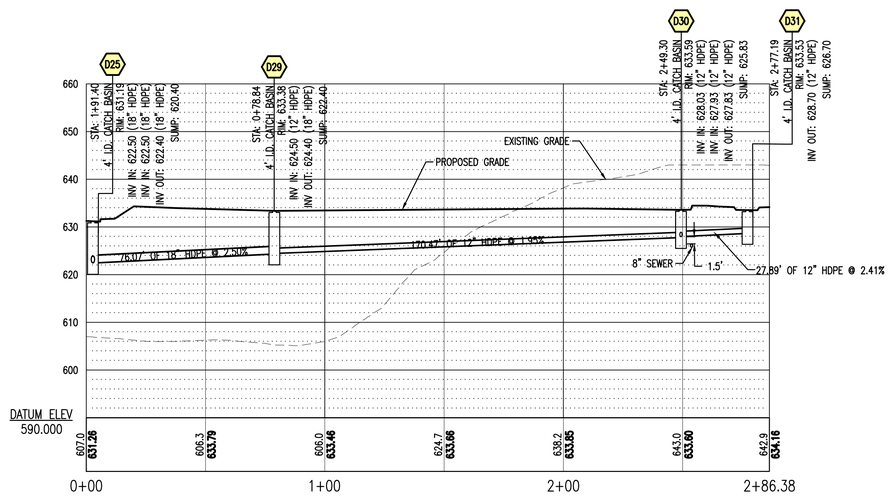
D34
4' I.D. CATCH BASIN
RIM: 637.64
INV. OUT: 631.98 (12" HDPE)
SUMP: 629.98

D53
4' I.D. CATCH BASIN
RIM: 634.89
INV. OUT: 628.20 (12" HDPE)
SUMP: 626.20

GRAPHIC SCALE

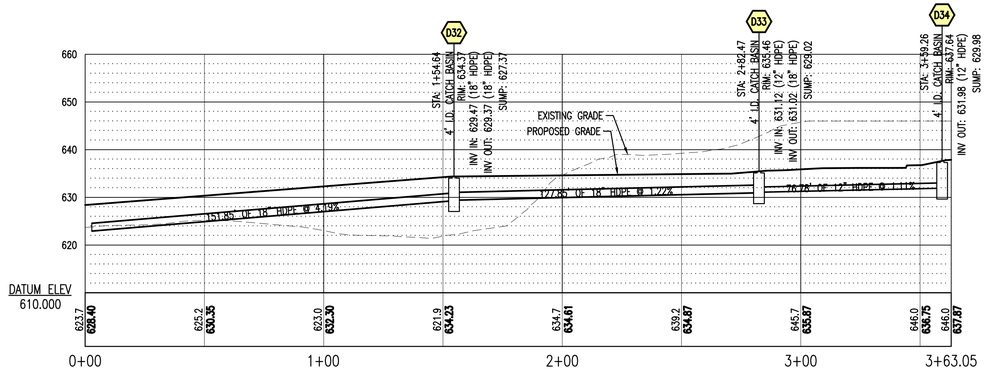
30 0 15 30 60 120

1 inch = 30 ft.
for sheet size 24" x 36"



STORMWATER PROFILE (ALIGNMENT 4) – STA 0+00 TO 2+59

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'



STORMWATER PROFILE (ALIGNMENT 6) – STA 0+00 TO 3+62

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'

Stamp

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Drainage Plan and Profile Lot 45-162

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	1" = 30'
Date:	4/15/2024

C2.9

S:\PROJECTS\3-2022\2442 SYKES MT APARTMENTS\DWG\SHEET FILES\2442 C2.9 LY C2.4 DRAINAGE.DWG

PLOTTED: 4/17/2024 11:14 AM

SEWER SCHEDULE

S1 4. I.D. SEWER MANHOLE
RIM: 549.26
INV. IN: 539.69 (8" PVC SDR35)
INV. OUT: 539.59 (8" PVC SDR35)

S2 4. I.D. SEWER MANHOLE
RIM: 554.67
INV. IN: 546.75 (8" PVC SDR35)
INV. OUT: 546.65 (8" PVC SDR35)
INV. OUT: 546.75 (6" PVC SDR35)

S3 4. I.D. SEWER MANHOLE
RIM: 565.62
INV. IN: 556.75 (8" PVC SDR35)
INV. OUT: 556.65 (8" PVC SDR35)

S4 4. I.D. SEWER MANHOLE
RIM: 578.72
INV. IN: 568.78 (8" PVC SDR35)
INV. OUT: 568.68 (8" PVC SDR35)

S5 4. I.D. SEWER MANHOLE
RIM: 596.80
INV. IN: 585.24 (8" PVC SDR35)
INV. OUT: 585.14 (8" PVC SDR35)

SMH107 EX. 5' I.D. SEWER MANHOLE
RIM: 548.20
INV. IN: 538.00 (8" PVC SDR35)
INV. IN: 531.90 (16" EX. DI)
INV. IN: 534.90 (8" EX. PVC)
INV. OUT: 531.80 (16" EX. DI)

S17 PATCH PAVEMENT, MATCH EXISTING GRAVEL SUBBASE AND PAVEMENT SECTIONS

IMPROVEMENTS SHOWN ON LOT 45-243 ARE FOR REFERENCE ONLY AND ARE NOT PART OF THIS APPLICATION

48 UNIT RESIDENTIAL BUILDING
F.F.E.: 564.0

ALIGNMENT 7

140.82' OF 8" PVC SDR35 @ 4.94%
53.77' OF 8" PVC SDR35 @ 2.96%
122.00' OF 8" PVC SDR35 @ 8.11%
118.32' OF 8" PVC SDR35 @ 10.09%
102.84' OF 8" PVC SDR35 @ 15.90%
365.42' OF 8" PVC SDR35 @ 9.02%

EX. 12" DI WATER FIELD DETERMINE LOCATION
FIELD MEASURE INVERT OF EX. PIPE
EXISTING GRADE
PROPOSED GRADE
12" HDPE STORM DRAIN
18" HDPE STORM DRAIN
10" DI WATER
8" DI WATER
1.5' MIN.

DATUM ELEV 520.000

SEWER PROFILE (ALIGNMENT 7) - STA 0+00 TO 8+00

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'

GRAPHIC SCALE
30 0 15 30 60 120
1 inch = 30 ft.
for sheet size 24" x 36"

Stamp

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Sanitary Sewer Plan and Pofile
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	1" = 30'
Date:	4/15/2024

C2.10

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PLOTTED: 3/19/2024 10:43 AM

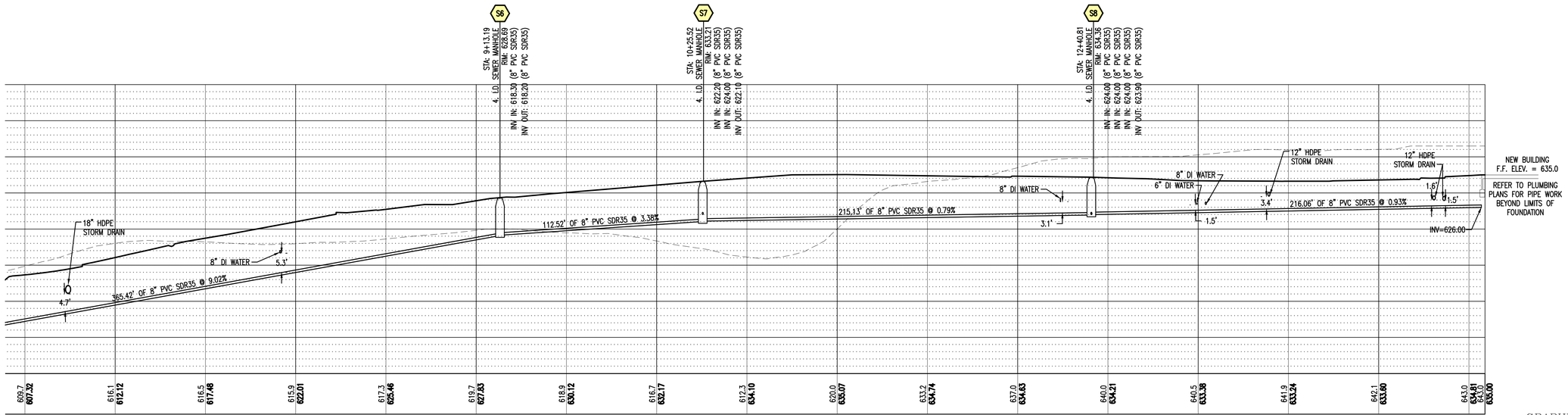
SEWER SCHEDULE

S6 — 4. I.D. SEWER MANHOLE
RIM: 628.69
INV. IN: 618.30 (8" PVC SDR35)
INV. OUT: 618.20 (8" PVC SDR35)

S7 — 4. I.D. SEWER MANHOLE
RIM: 633.21
INV. IN: 622.20 (8" PVC SDR35)
INV. IN: 624.00 (8" PVC SDR35)
INV. OUT: 622.10 (8" PVC SDR35)

S8 — 4. I.D. SEWER MANHOLE
RIM: 634.36
INV. IN: 624.00 (8" PVC SDR35)
INV. IN: 624.00 (8" PVC SDR35)
INV. IN: 624.00 (8" PVC SDR35)
INV. OUT: 623.90 (8" PVC SDR35)

S11 — 8" SANITARY SEWER INVERT = 631.0, BUILDING 1
S12 — 8" SANITARY SEWER INVERT = 631.0, BUILDING 2
S13 — 8" SANITARY SEWER INVERT = 628.0, BUILDING 3
S14 — 8" SANITARY SEWER INVERT = 628.0, BUILDING 4
S15 — SANITARY SEWER CLEANOUT



SEWER PROFILE (ALIGNMENT 7) – STA 8+00 TO 14+28

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'

GRAPHIC SCALE
30 0 15 30 60 120
1 inch = 30 ft.
for sheet size 24" x 36"

Stamp

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Sanitary Sewer Plan and Profile
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	1" = 30'
Date:	4/15/2024

C2.11

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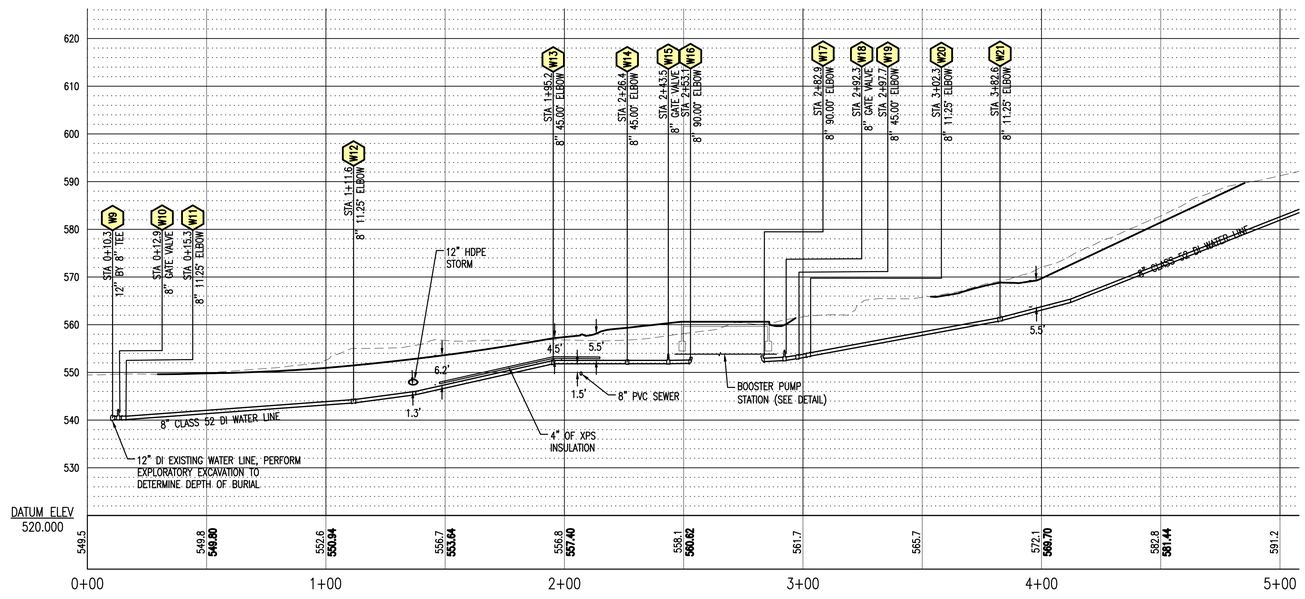
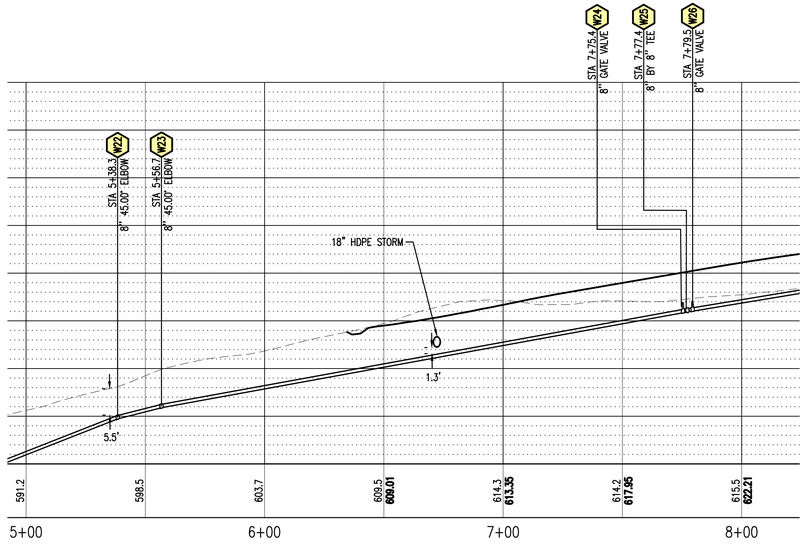


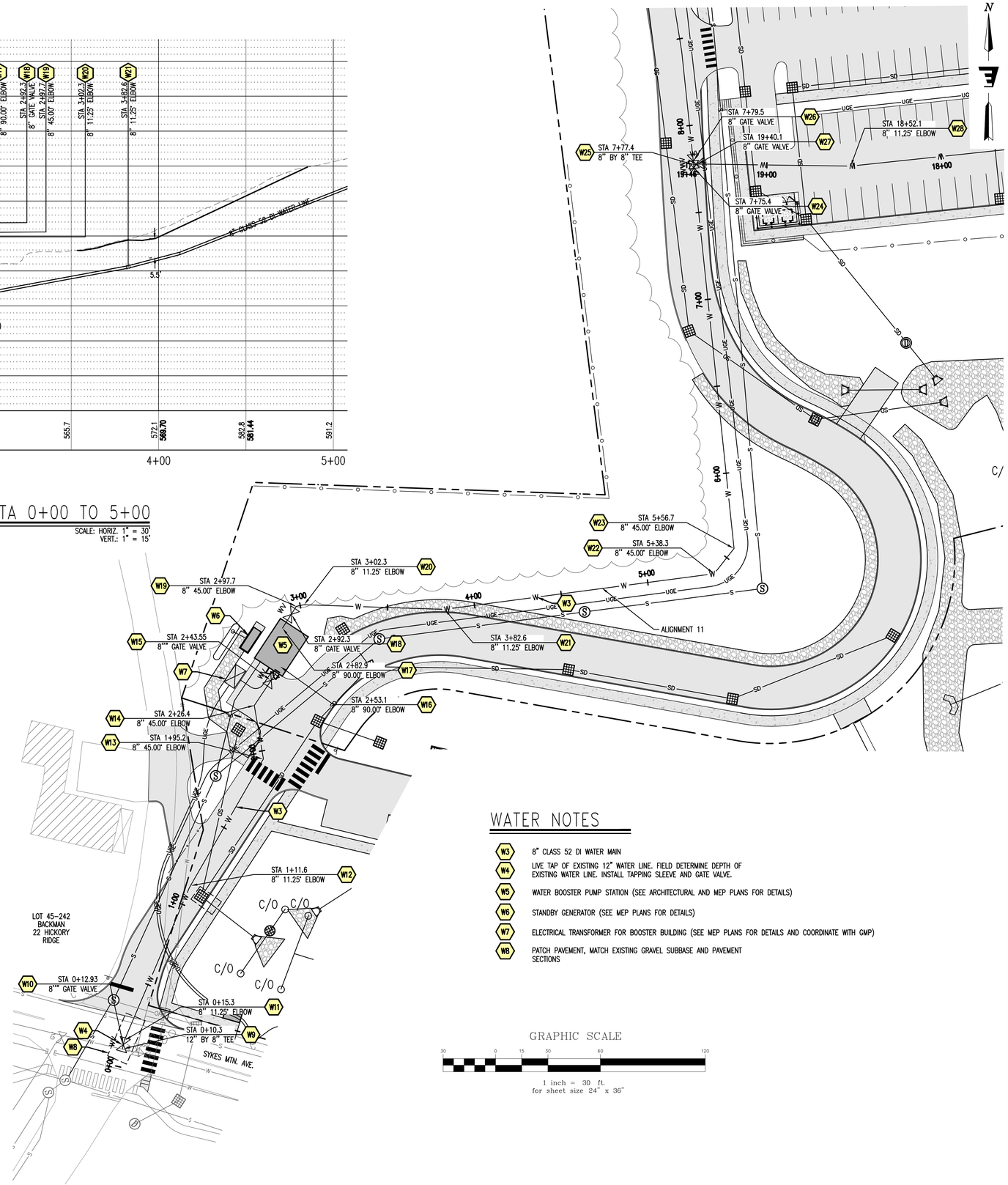
WATER PROFILE (ALIGNMENT 11) – STA 0+00 TO 5+00

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'



WATER PROFILE (ALIGNMENT 11) – STA 5+00 TO 8+00

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'



WATER NOTES

- W3 — 8" CLASS 52 DI WATER MAIN
- W4 — LIVE TAP OF EXISTING 12" WATER LINE. FIELD DETERMINE DEPTH OF EXISTING WATER LINE. INSTALL TAPPING SLEEVE AND GATE VALVE.
- W5 — WATER BOOSTER PUMP STATION (SEE ARCHITECTURAL AND MEP PLANS FOR DETAILS)
- W6 — STANDBY GENERATOR (SEE MEP PLANS FOR DETAILS)
- W7 — ELECTRICAL TRANSFORMER FOR BOOSTER BUILDING (SEE MEP PLANS FOR DETAILS AND COORDINATE WITH GMP)
- W8 — PATCH PAVEMENT, MATCH EXISTING GRAVEL SUBBASE AND PAVEMENT SECTIONS

GRAPHIC SCALE

30 0 15 30 60 120

1 inch = 30 ft.
for sheet size 24" x 36"

Stamp

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Water Main Plan and Profile Lot 45-162

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	JWF
Checked By:	KPW
Scale:	1" = 30'
Date:	4/15/2024

C2.12

PLOTTED: 4/5/2024 11:28 AM
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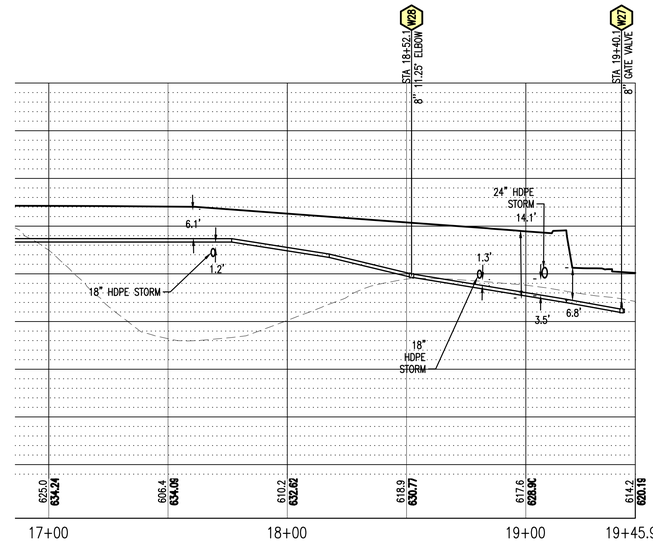
WATER NOTES

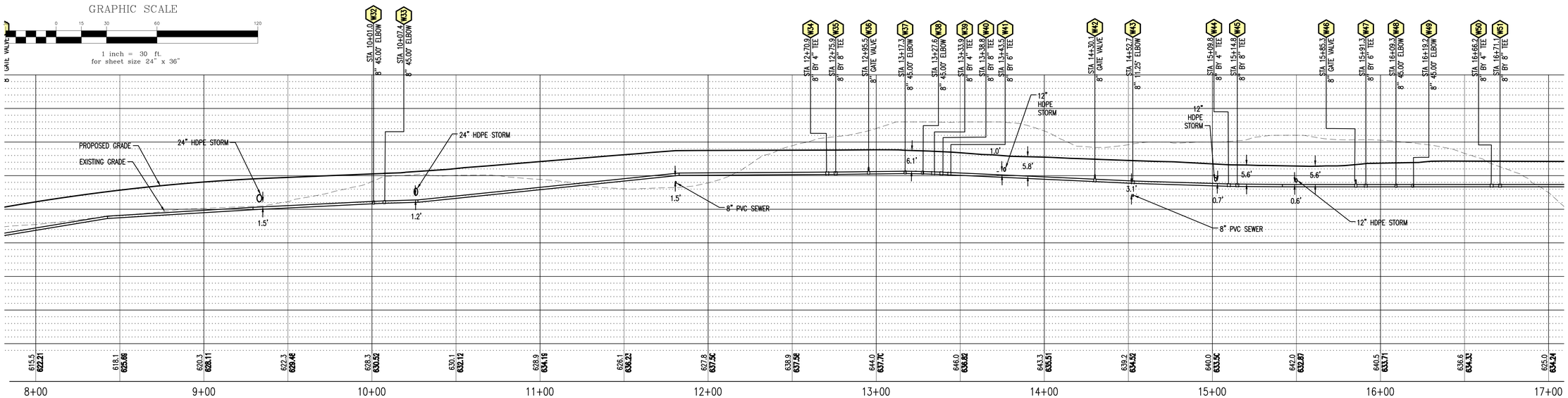
- W29 — 8" CLASS 52 DI SPRINKLER LINE
- W30 — 6" CLASS 52 DI HYDRANT LATERAL
- W31 — 4" CLASS 52 DI DOMESTIC WATER SERVICE LINE



WATER PROFILE (ALIGNMENT 11) – STA 17+00 TO 19+34

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'

GRAPHIC SCALE
0 15 30 60 120
1 inch = 30 ft.
for sheet size 24" x 36"



WATER PROFILE (ALIGNMENT 11) – STA 8+00 TO 17+00

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'

Stamp

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: Water Main Plan and Profile
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

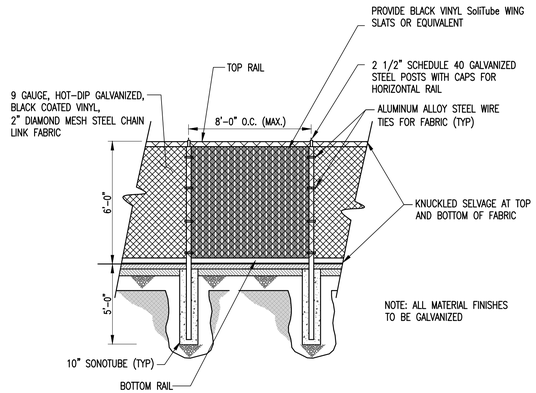
EV Project #	22442
Drawn By:	JWF
Checked By:	KPW
Scale:	1" = 30'
Date:	4/15/2024

C2.13

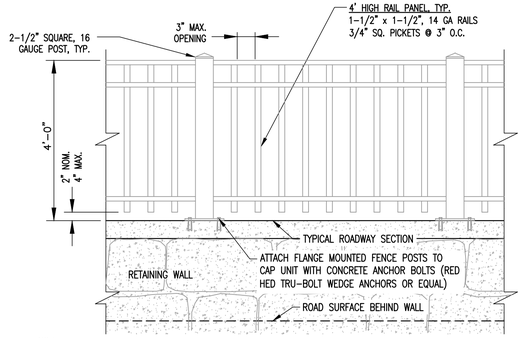
PLOTTED: 4/5/2024 11:29 AM

S:\PROJECTS\2022\2442 SYKES MT APARTMENTS\DWG\SHEET FILES\2442 444 SYKES AVE C2 12 - WATER.DWG

PLOTTED: 4/23/2024 2:54 PM

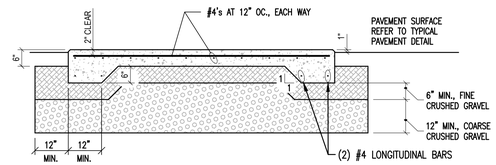


CHAIN LINK PERIMETER FENCE — NOT TO SCALE — 1



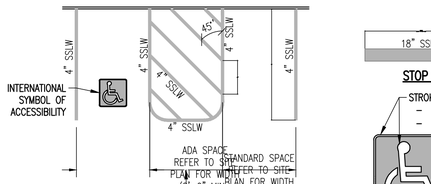
NOTE:
1. HANDRAIL SHALL BE "MONTAGE PLUS – MAJESTIC" AS MANUFACTURED BY AMERISTAR FENCE OR APPROVED EQUAL.
2. HANDRAILS SHALL COMPLY WITH THE REQUIREMENTS OF IBC 1003.2.12.
3. HANDRAILS REQUIRED FOR ALL DROPS GREATER THAN 30".
4. COORDINATE WITH OWNER AND ARCHITECT REGARDING EXACT RAIL MATERIALS, STYLES AND COLORS.

FALL PROTECTION RAIL — NOT TO SCALE — 4



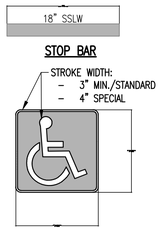
NOTES:
1. CONCRETE TO BE 4,500psi WITH 5–7% AIR ENTRAINMENT.
2. BROOM FINISH WITH SMOOTH TROWELED EDGES. TREAT WITH SILANE–SILOXANE OR EQUIVALENT.
3. REFER TO LAYOUT PLAN FOR SIZE AND LOCATION.

CONCRETE DUMPSTER PAD — NOT TO SCALE — 6



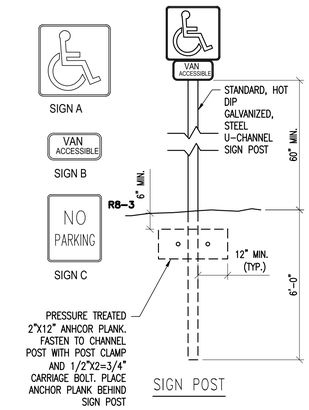
WIDTH VARIES:
- 8' MIN. WHEN ADJACENT TO VAN ACCESSIBLE SPACE
- 5' MIN. WHEN ADJACENT TO STANDARD ADA SPACE

PARKING LOT STRIPING



INTERNATIONAL SYMBOL OF ACCESSIBILITY

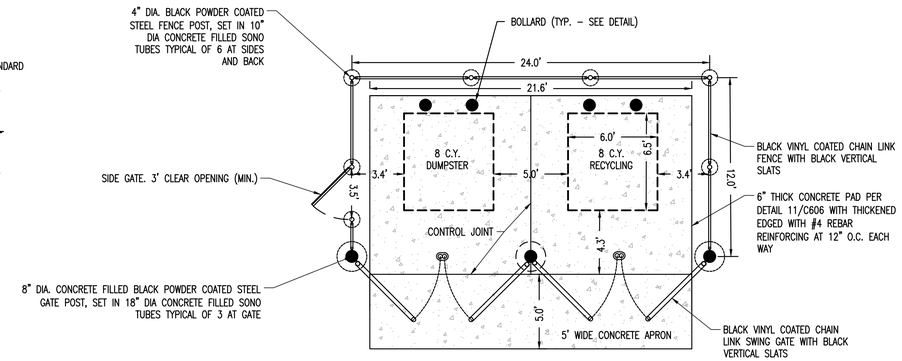
ADA PAVEMENT MARKINGS — NOT TO SCALE — 2



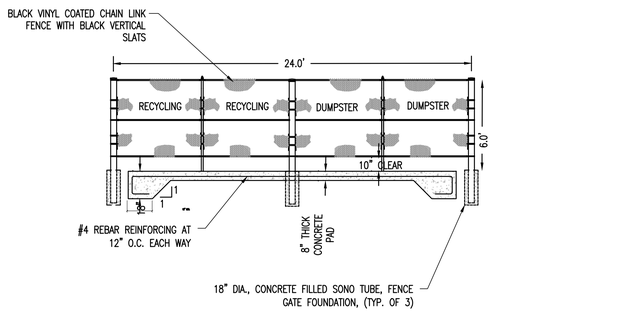
SIGN POST

SIGN KEY:			
SIGN	MUTCD DESIGNATIONS	COMMON NAME	SIZE
A	D9-6	HANDICAPPED	24" x 24"
B	D9-6P	VAN ACCESSIBLE (PLAQUE)	18" x 9"

ADA SIGNS AND POST — NOT TO SCALE — 3



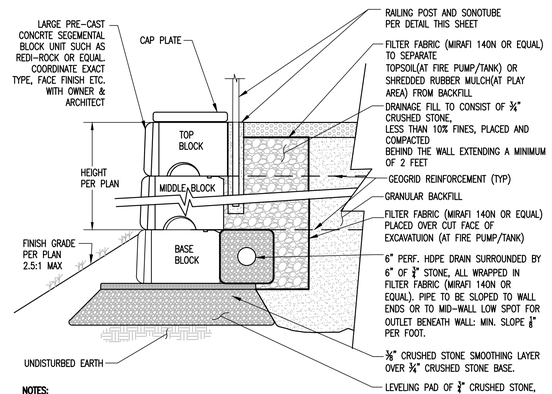
PLAN VIEW



SECTION VIEW

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 PAD WITH FENCE ENCLOSURE — NOT TO SCALE — 5



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 ⅜" 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 — 7

Stamp

No.	Description	Date
1	REVISED PER PLANNING COMMENTS 4/23/2024	

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2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

SITE DETAILS

SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	NTS
Date:	4/15/2024

C3.0

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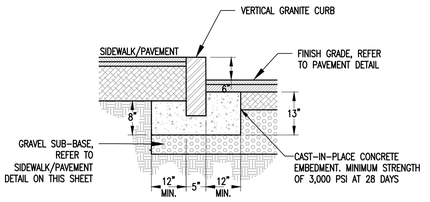
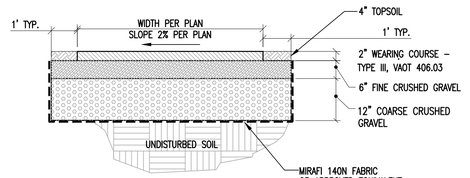


VERTICAL GRANITE CURB NOTES:

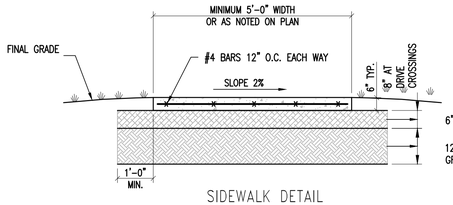
1. GRANITE CURBS SHALL BE INSTALLED IN ACCORDANCE WITH PROJECT AND STATE SPECIFICATIONS
2. WHERE CURB IS ADJACENT TO ENTRY/EXIT DOOR PADS WITH FROST WALL FOUNDATIONS, CURB SHALL BE DOWELED TO PAD WITH 24" LONG #4 DOWELS (CENTERED) AT 1'–6" O.C. (PORTION OF DOWEL IN CURB TO BE GREASED).
3. WHERE CURB 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
NOT TO SCALE 1

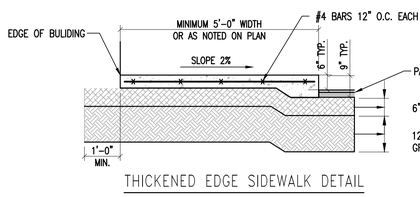


NOTES:
1. COMPACT ALL FILL MATERIAL TO 95% OPTIMUM DENSITY.

ASPHALT SIDEWALK DETAIL
NOT TO SCALE 2



SIDEWALK DETAIL

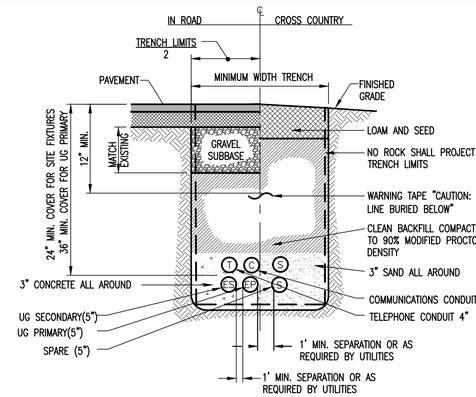


THICKENED EDGE SIDEWALK DETAIL

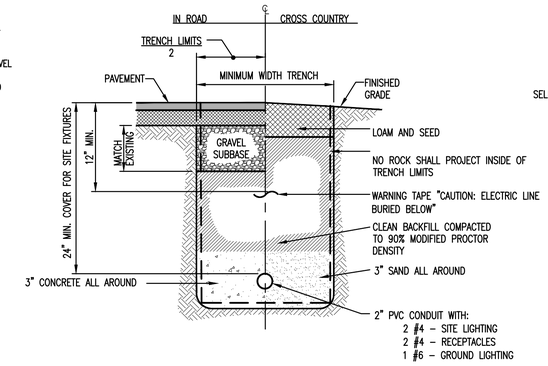
CONCRETE SIDEWALK NOTES:

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 ¾" 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.

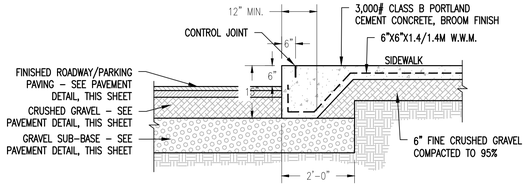
CONCRETE SIDEWALK
NOT TO SCALE 3



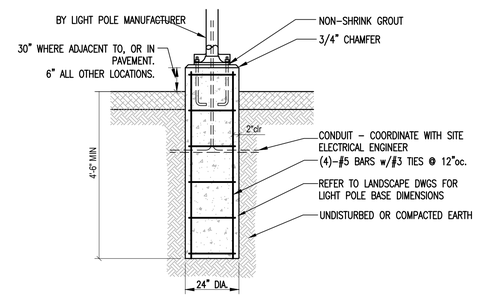
UNDERGROUND CONDUIT TRENCH
NOT TO SCALE 4



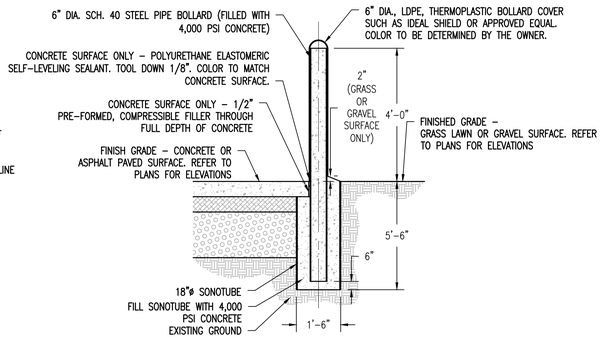
UNDERGROUND LIGHTING TRENCH
NOT TO SCALE 5



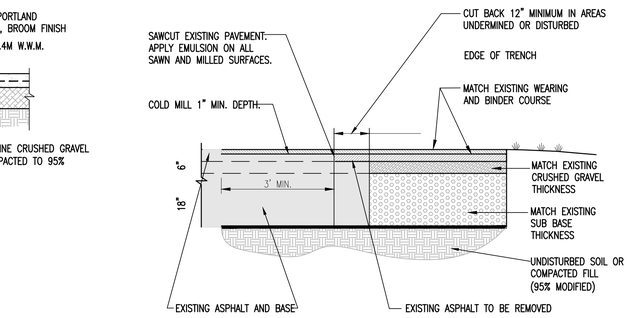
MONOLITHIC SIDEWALK
NOT TO SCALE 6



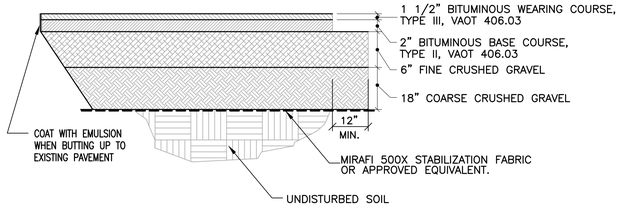
LIGHT POLE BASE DETAIL
NOT TO SCALE 8



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 SIEVES

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 SIEVES 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 SIEVES

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 SIEVES

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 SIEVES

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 SIEVES

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.

Stamp

No.	Description	Date

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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: SITE DETAILS

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	NTS
Date:	4/15/2024

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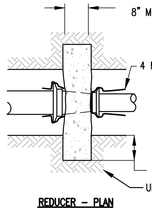
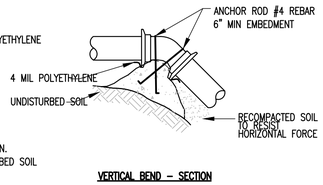
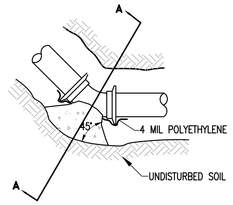


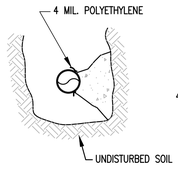
REDUCER – PLAN



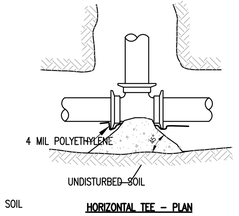
VERTICAL BEND – SECTION



HORIZONTAL BEND – PLAN



SECTION A–A

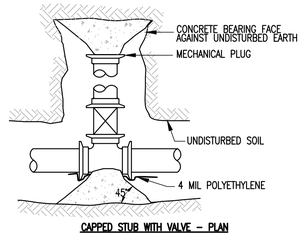


HORIZONTAL TEE – PLAN

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"	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	10"	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	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:

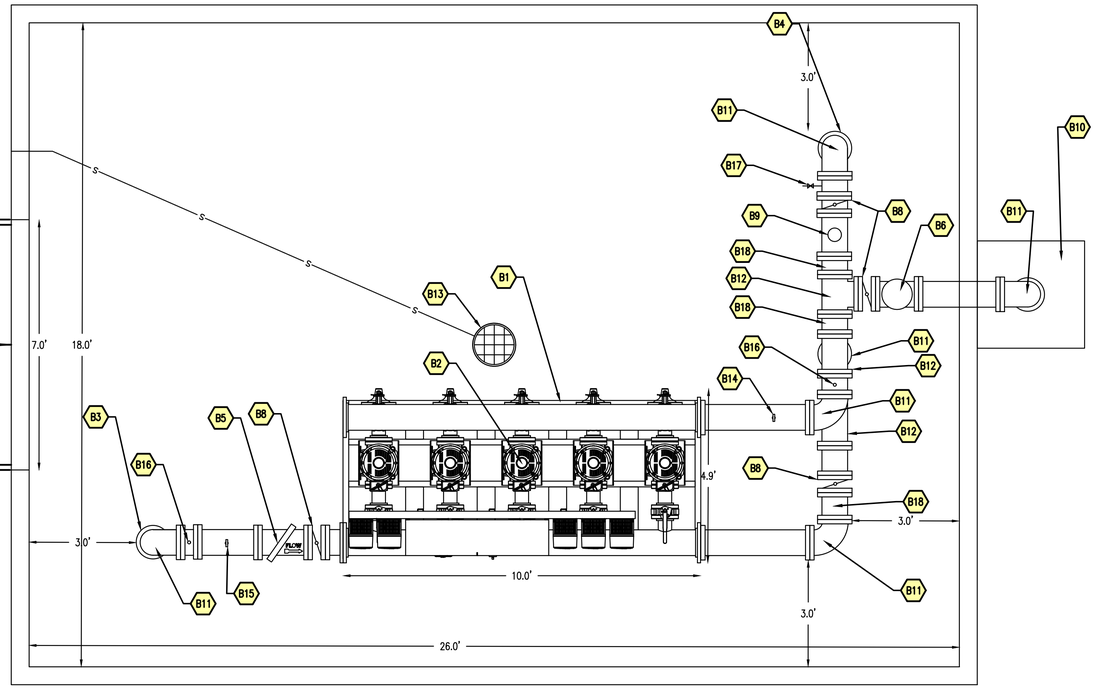
1. THRUST BLOCKS SHALL BE PROVIDED AT ALL WATER LINE TEES, HYDRANTS, BENDS, REDUCERS, AND END CAPS.
2. HYDROSTATIC AND LEAKAGE TEST PRESSURE PER SPECIFICATIONS.
3. PLACE 4 MIL POLYETHYLENE BETWEEN FITTINGS AND THRUST BLOCKS.
4. CONCRETE SHALL HAVE 4000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AND 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

NOT TO SCALE 1



WATER BOOSTER PUMP STATION NOTES:

B1 PACKAGED BOOSTER PUMP SYSTEM (SYSTEM CAPACITY = 1,325 GPM AT 133 PSI TOTAL DYNAMIC HEAD)
B2 GRUNDFOS MODEL NO. CR64–2 25HP VARIABLE FREQUENCY DRIVE (TYP. OF 5)
B3 8" INLET FROM MUNICIPAL WATER SUPPLY
B4 8" BOOSTER PUMP DISCHARGE
B5 WAFER STYLE SILENT CHECK VALVE
B6 PRESSURE RELIEF VALVE
B8 BUTTERFLY VALVE
B9 ELECTROMAGNETIC FLOW METER AND STRAINER
B10 3' BY 3' SPLASH PAD
B11 90° 8" ELBOW
B12 8" BY 8" TEE
B13 FLOOR DRAIN
B14 STANDARD PRESSURE GAUGE
B15 COMPOUND PRESSURE GAUGE
B16 AIR RELEASE VALVE
B17 SAMPLING PORT
B18 PIPE SUPPORT

WATER BOOSTER PUMP STATION

NOT TO SCALE 2

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: ⅛" 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 ¼ INCH SHAFT.
4. SIZE 664–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 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, ½ PART LIME, 4 ½ 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.

Stamp

No.	Description	Date

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A, Burlington, VT 05401 • 802-863-6225
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BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: WATER DETAILS

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	NTS
Date:	4/15/2024

C3.2

S:\PROJECTS\A-2022\2442 SYKES MT APT\DWGS\SHEET FILES\22442 S SYKES C3.0 - DETAILS.DWG

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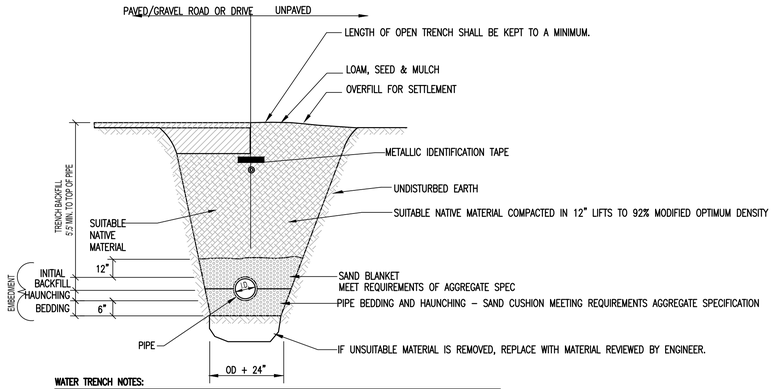
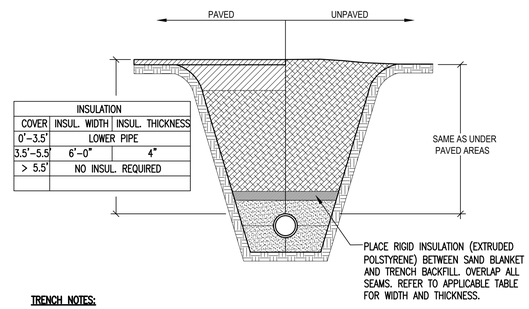


WATER TRENCH NOTES:

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
NOT TO SCALE

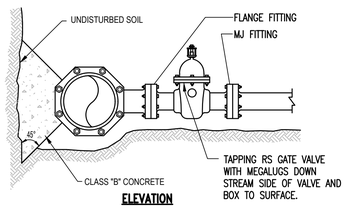


INSULATION		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-3.5'	LOWER PIPE	
3.5'-5.5'	6'-0"	4"
> 5.5'	NO INSUL. REQUIRED	

TRENCH NOTES:

1. REFER TO APPLICABLE TRENCH DETAIL FOR SPECIFIC BACKFILL INFORMATION.
2. THE USE OF INSULATION IN LIEU OF 6 FT MINIMUM COVER OVER WATER LINES SHALL BE LIMITED TO LOCATIONS SHOWN ON THE UTILITY PROFILES AND AS APPROVED BY THE DESIGN ENGINEER IN THE FIELD.

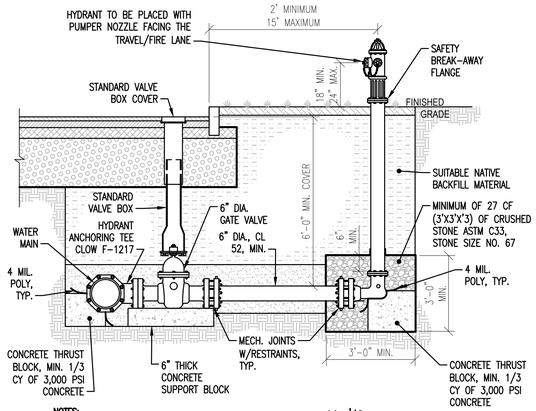
INSULATION OVER SHALLOW WATER LINE DETAIL 2
NOT TO SCALE



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 3
NOT TO SCALE



NOTES:

1. HYDRANT DRAIN SHALL BE PLUGGED WHERE THE NATURAL GROUND WATER TABLE IS ABOVE THE HYDRANT WASTE ORIFICE AND WHERE HYDRANTS ARE LOCATED WITHIN 10' OF SEWER LINES.
2. ACCEPTABLE HYDRANT MAKE AND MODEL: KENNEDY GUARDIAN MODEL K-81A
3. HYDRANT SHALL MEET OR EXCEED AWWA C502.
4. 5¼" VALVE OPENING.
5. ONE (1) 4½" NST PUMPER NOZZLE.
6. TWO (2) 2½" NST HOSE NOZZLE.
7. OPERATING NUT AND NOZZLE CAPS – NSTM PENTAGON
8. SIX (6) INCH MECHANICAL JOINT CONNECTION WITH ACCESSORIES FOR 6.90 O.D. DI PIPE.
9. OPERATION: OPEN CLOCKWISE (RIGHT).
10. DEPTH AS REQUIRED.
11. CONTRACTOR TO SUPPLY AND INSTALL HYDRANT
12. TOP OF BLOCKING TO BE 2 INCHES FROM HYDRANT WEEP HOLES.

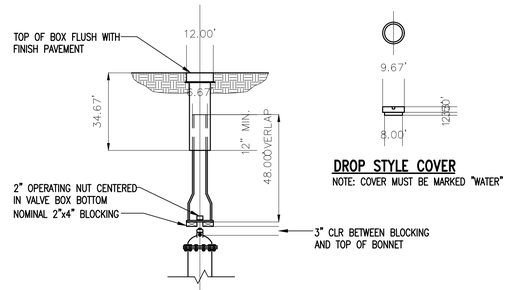
HYDRANT DETAIL 4
NOT TO SCALE

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
NOT TO SCALE



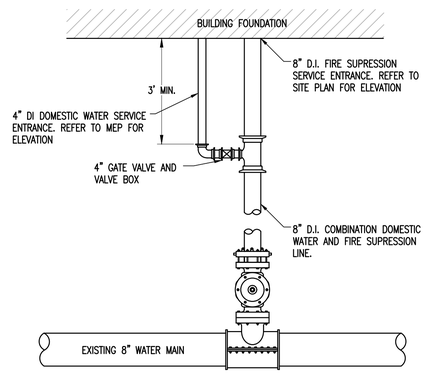
DROP STYLE COVER
NOTE: COVER MUST BE MARKED "WATER"

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 6
NOT TO SCALE



WATER SERVICE ENTRANCE DETAIL 7
NOT TO SCALE

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BLACK ROCK INVESTMENTS, LLC
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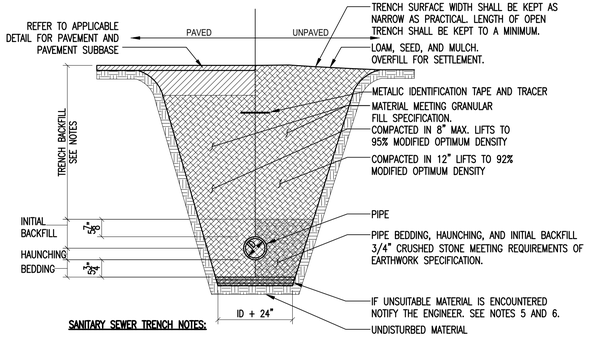
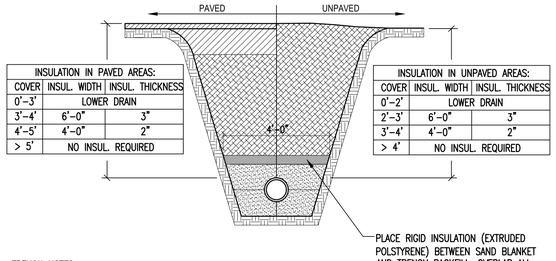


SANITARY SEWER TRENCH NOTES:

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	

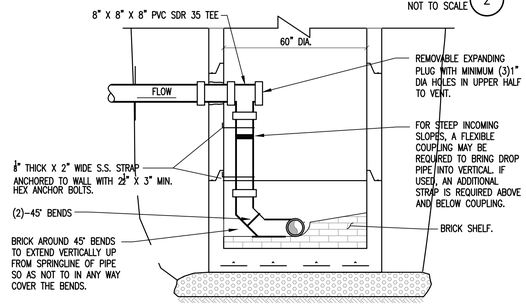
INSULATION IN UNPAVED AREAS:		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'–2'	LOWER DRAIN	
2'–3'	6'–0"	3"
3'–4'	4'–0"	2"
> 4'	NO INSUL. REQUIRED	

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

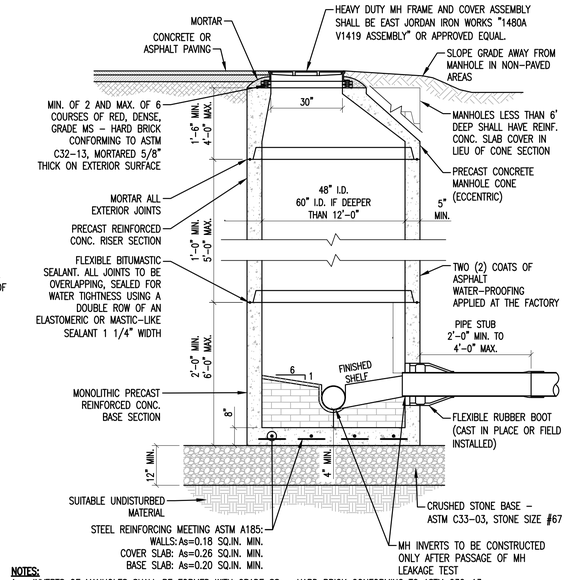


DROP MANHOLE NOTES:

1. DROP PIPE TO BE SAME DIAMETER AS SEWER DISCHARGING INTO MANHOLE.
2. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.
3. REFER TO SANITARY MANHOLE DETAIL ON THIS SHEET FOR INFORMATION ON MANHOLE DESIGN AND INSTALLATION.
4. COORDINATE DROP MANHOLE SPECIFICATIONS AND INSTALLATION REQUIREMENTS WITH THE TOWN OF MILTON WATER AND WASTEWATER SUPERINTENDENT.

SEWER MANHOLE – INTERIOR DROP

NOT TO SCALE 3

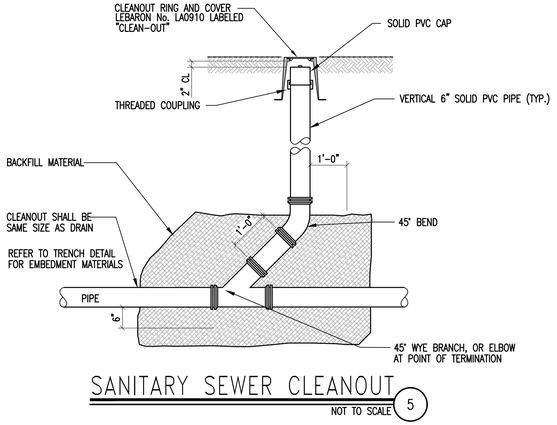


NOTES:

1. INVERTS OF MANHOLES SHALL BE FORMED WITH GRADE SS – HARD BRICK CONFORMING TO ASTM C32–13.
2. PROVIDE SMOOTH SWEEPING TRANSITIONS BETWEEN INVERTS OF INTERSECTING PIPE.
3. IF DEPTH OF MANHOLE IS 6 FT. OR LESS FROM RIM TO CENTERLINE INVERT, THEN A FLAT TOP MAY BE INSTALLED. IF DEPTH OF MANHOLE FROM RIM TO CENTERLINE INVERT IS MORE THAN 6 FT., THEN AN ECCENTRIC CONICAL TOP SHALL BE INSTALLED.
4. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF THE INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.
5. MANHOLE AND COVER SHALL BE DESIGNED FOR H20 LOADING.
6. MANHOLE SHALL CONFORM TO ASTM C478 SPECIFICATIONS FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS".
7. CONCRETE FC=4,000 PSI @ 28 DAYS MINIMUM
8. BASE SECTION SHALL BE A ONE POUR MONOLITHIC SECTION

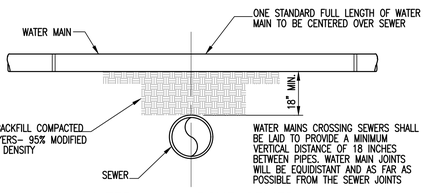
SEWER MANHOLE DETAIL

NOT TO SCALE 4



SANITARY SEWER CLEANOUT

NOT TO SCALE 5



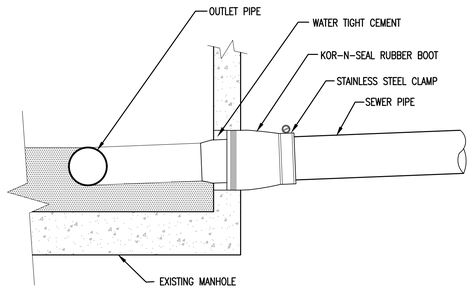
WATER MAIN ABOVE SEWER

SEPARATION NOTES:

1. WATER MAIN RELATIONS TO SEWER SHALL BE IN ACCORDANCE WITH THE 'ENVIRONMENTAL PROTECTION RULES, CHAPTER 21, WATER SUPPLY RULE (WWSR), 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 6

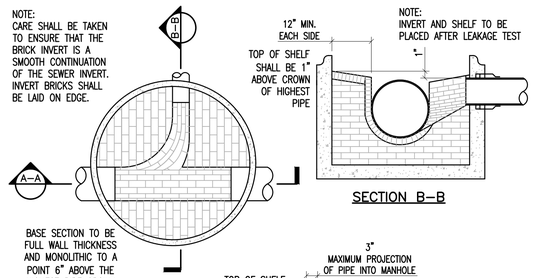


KOR –N– SEAL NOTES:

1. CORE HOLE SHALL BE SMOOTH, SYMMETRICAL, AND APPROPRIATELY SIZED FOR SEWER PIPE INSTALLATION.
2. RECONSTRUCT FLOW CHANNELS FOR NEW SEWER INLET PIPING.

SANITARY SEWER MANHOLE CONNECTION

NOT TO SCALE 7



NOTES:

1. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION.
2. INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES.
3. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL.
4. UNDERLAYMENT OF INVERT SHELF SHALL CONSIST OF BRICK MASONRY.

SEWER MANHOLE INVERT AND SHELF DETAIL

NOT TO SCALE 8

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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SEWER DETAILS

SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	NTS
Date:	4/15/2024

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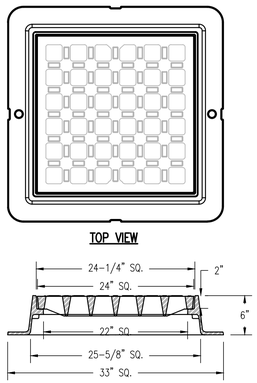

CATCH BASIN – SQUARE

NOTES:
1. ALL DIMENSIONS SHOWN HERE ARE NOMINAL.
2. COVER SHALL BE HEAVY DUTY (H-20) LOAD RATED.
3. CATCH BASIN (SQUARE) FRAME AND GRATE ASSEMBLY SHALL BE EAST JORDAN IRON WORKS FRAME 5546Z (PRODUCT NUMBER 00554611 (4 FLANGE) OR 00554613 (3 FLANGE)) AND GRATE 5520M5 (PRODUCT NUMBER 00552060) OR APPROVED EQUAL.

CATCH BASIN GRATE
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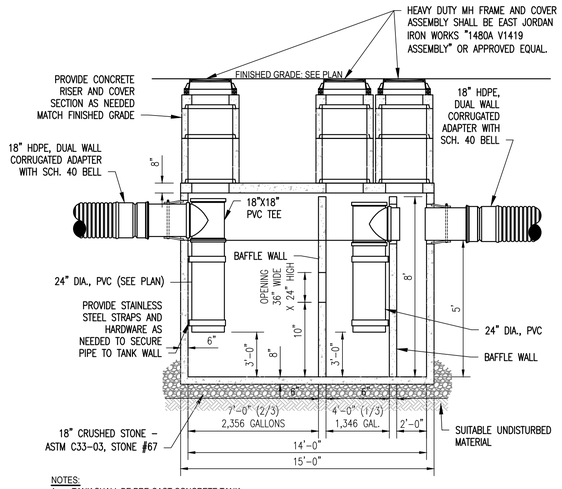
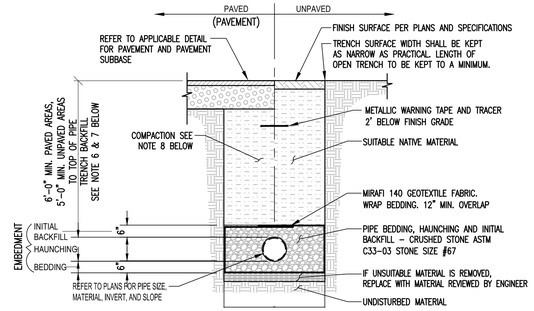


NOTES:
1. TANK SHALL BE PRE-CAST CONCRETE TANK.
2. TANK SHALL BE DESIGNED FOR H-20 LOADING.
3. THE EXTERIOR OF THE PRE-CAST CONCRETE STRUCTURE SHALL RECEIVE TWO COATS OF ASPHALT SEAL COATING AT THE FACTORY.
4. JOINTS BETWEEN THE CONCRETE SECTIONS SHALL BE SEALED BY BUTYL MASTIC (AASHTO M-198).
5. PIPE PENETRATIONS SHALL BE SEALED BY FLEXIBLE WATERTIGHT BOOTS WITH STAINLESS STEEL BANDS.
6. THE WATER QUALITY UNIT AND RISERS SHALL BE FILLED WITH WATER AND SUBJECTED TO A 24 HOUR HYDROSTATIC LEAKAGE TEST. NO LEAKAGE WILL BE ALLOWED DURING THE TEST PERIOD.
7. AN ALTERNATE VACUUM LEAKAGE TEST PRIOR TO BACKFILLING IS ALSO ACCEPTABLE. THE VACUUM TEST WILL REQUIRE THE INSTALLED VAULT AND RISERS TO HOLD A VACUUM PRESSURE OF NEGATIVE 5 INCHES MERCURY FOR 10 MINUTES WITH NO LOSS/GAIN.
8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A WATERTIGHT STRUCTURE.
9. SHOP DRAWINGS OF THE WATER QUALITY UNIT AND COMPONENTS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

3,500 GALLON SEDIMENT FOREBAY
NOT TO SCALE 2



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 THE FULL LENGTH OF PIPE.
3. PROVIDE 6' OF COVER OVER DRAIN PIPE IN PAVED AREAS AND 5' OF COVER OVER PIPE IN UNPAVED AREAS. OTHERWISE, REFER TO INSULATION OVER SHALLOW DRAIN LINE DETAIL.
4. WHEN APPLICABLE INSTALL PIPE WITH BELL ENDS DOWN SLOPE. PREVENT SEDIMENT FROM ENTERING NEW STORM DRAIN SYSTEM DURING CONSTRUCTION.
5. NO MECHANICAL TAMPERS SHALL BE USED DIRECTLY OVER PIPE TO INSURE PIPE IS NOT DAMAGED.
6. TRENCH BACKFILL MATERIAL, INCLUDING ROADWAY LOCATIONS, SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION AND FREE OF UNSUITABLE MATERIALS AS DEFINED BY NHDOT 203.2.7, WNV-WQ-704.09(i), AND THE EARTHWORK SPECIFICATIONS INCLUDED ON THESE PLANS.
7. LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF SIX INCHES BELOW AND ON EACH SIDE OF ALL PIPES.
8. BACKFILL MATERIALS SHALL BE COMPACTED, IN 12" LAYERS, TO 92% OF MODIFIED PROCTOR (ASTM 1557) TO WITHIN 3 FEET OF FINISHED GRADE. IN AREAS UNDER ROADWAYS, DRIVES, AND PARKING THE UPPER 3 FEET SHALL BE COMPACTED, IN 6" LAYERS, TO 95% MODIFIED PROCTOR (ASTM 1557) AND IN LAWN OR OTHER UNDEVELOPED SPACE THE UPPER 3 FEET SHALL BE COMPACTED TO 92% MODIFIED PROCTOR.

TYPICAL STORM DRAIN TRENCH
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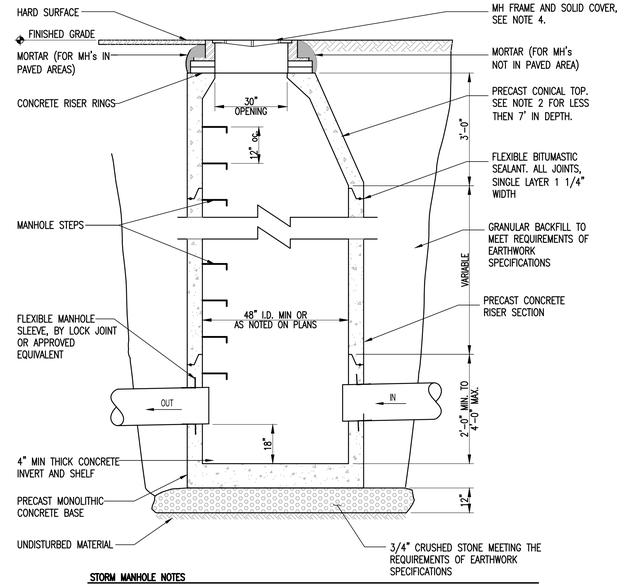

STORM MANHOLE NOTES
1. PROVIDE SMOOTH SWEEPING TRANSITIONS BETWEEN INVERTS OF INTERSECTING PIPE.
2. IF DEPTH OF MANHOLE IS 7 ft. OR LESS FROM RIM TO CENTERLINE INVERT, THEN A FLAT TOP WILL BE INSTALLED. IF DEPTH OF MANHOLE FROM RIM TO CENTERLINE INVERT IS MORE THAN 7 ft., THEN A CONICAL TOP WILL BE INSTALLED.
3. MANHOLE AND COVER SHALL BE DESIGNED FOR H20 LOADING.
4. PROVIDE A NEENAH FOUNDRY R-1564 OR APPROVED EQUIVALENT, CAST THE WORD "STORM" IN TOP COVER
5. MANHOLE SHALL BE PRECAST CONCRETE SUPPLIED BY AN APPROVED MANUFACTURER.

STORMWATER MANHOLE
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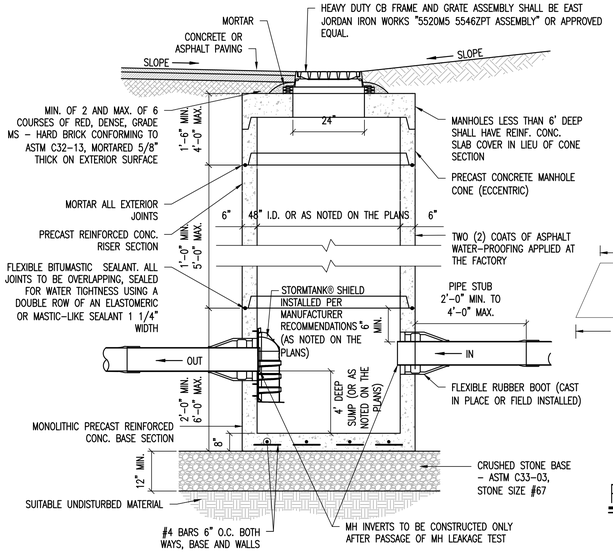


NOTES:
1. IF DEPTH OF MANHOLE IS 6 FT. OR LESS FROM RIM TO CENTERLINE INVERT, THEN A FLAT TOP WILL BE INSTALLED. IF DEPTH OF MANHOLE FROM RIM TO CENTERLINE INVERT IS MORE THAN 6 FT., THEN AN ECCENTRIC CONICAL TOP WILL BE INSTALLED.
2. CATCH BASIN AND GRATE SHALL BE DESIGNED FOR H20 LOADING.

CATCH BASIN
NOT TO SCALE 6

SOIL RESTORATION NOTES

FOLLOWING ROUGH SITE GRADING, INSTALLATION OF UTILITIES AND INFRASTRUCTURE; AND PRIOR TO PLANNING OF VEGETATIVE COVER, CONTRACTOR SHALL RESTORE SOIL QUALITY TO DISTURBED SOILS THAT WILL NOT BE COVERED BY IMPERVIOUS SURFACES, INCORPORATED INTO STRUCTURAL STORMWATER TREATMENT PRACTICES, ATHLETIC FIELDS, OR ENGINEERED STRUCTURAL FILL USING ONE OF THE FOLLOWING METHODS. CONTRACTOR SHALL PROVIDE NOTICE TO ENGINEER/OWNER PRIOR TO CONSTRUCTION OF SELECTED METHOD.

AREAS EXEMPT FROM THIS STANDARD INCLUDE UNDISTURBED AREAS, SLOPES GREATER THAN 33%, IMPERVIOUS AREAS AND PROPOSED STANDARD TREATMENT PRACTICES.

OPTION 1: AMEND EXISTING SITE TOPSOIL OR SUBSOIL IN PLACE
- SCARIFY OR TILL SUBSOILS TO 4–INCH DEPTH OR TO DEPTH NEEDED TO ACHIEVE A TOTAL DEPTH OF 8–INCHES OF UNCOMPACTED SOIL AFTER CALCULATED AMOUNT OF AMENDMENT IS ADDED. EXCEPT FOR WITHIN THE DRIP LINE OF EXISTING TREES, THE ENTIRE SURFACE SHALL BE DISTURBED BY SCARIFICATION.
- AMEND SOIL TO MEET ORGANIC CONTENT REQUIREMENT:
  - PRE APPROVED RATE: PLACE 1–INCH OF COMPOSTED MATERIAL WITH AN ORGANIC MATTER CONTENT BETWEEN 40 AND 60% AND ROTOTILL INTO 3–INCHES OR SOIL, OR
  - CALCULATED RATE: PLACE CALCULATED AMOUNT OF COMPOSTED MATERIAL OR APPROVED ORGANIC MATERIAL AND ROTOTILL INTO DEPTH OF SOIL NEEDED TO ACHIEVE 4–INCHES OF SETTLED SOIL AT 4% ORGANIC CONTENT.
- RAKE BEDS TO SMOOTH AND REMOVE SURFACE ROCKS LARGER THAN 2–INCHES IN DIAMETER
- WATER OR ROLL TO COMPACT SOIL IN TURF AREAS TO 85% OF MAXIMUM DRY DENSITY

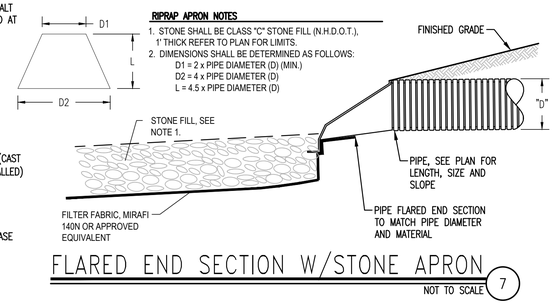
OPTION 2: REMOVE AND STOCKPILE EXISTING TOPSOIL DURING GRADING.
- STOCKPILE SOIL ON SITE IN A DESIGNATED CONTROLLED AREA, AT LEAST 50–FEET FROM SURFACE WATER, WETLANDS, FLOODPLAINS, OR OTHER CRITICAL RESOURCE AREAS.
- SCARIFY OR TILL SUBGRADE TO A DEPTH OF 4–INCHES. EXCEPT FOR WITHIN THE DROP LINE OF EXISTING TREES, THE ENTIRE SURFACE SHALL BE DISTURBED BY SCARIFICATION.
- STOCKPILED TOPSOIL SHALL ALSO BE AMENDED, IF NEEDED, TO MEET THE ORGANIC CONTENT REQUIREMENTS:
  - PRE APPROVED RATE: COMPOST SHALL BE INCORPORATED WITH AN ORGANIC MATTER CONTENT BETWEEN 40 AND 65% INTO THE TOPSOIL AT A RATIO 1:3, OR
  - CALCULATED RATE: INCORPORATE COMPOSTED MATERIAL OR APPROVED ORGANIC MATERIAL AT A CALCULATED RATE TO ACHIEVE 4–INCHES OF SETTLED SOIL AT 4% ORGANIC CONTENT
- REPLACE STOCKPILED TOPSOIL PRIOR TO PLANTING
- RAKE TO LEVEL, AND REMOVE SURFACE ROCKS LARGER THAN 2–INCHES IN DIAMETER.

OPTION 3: IMPORT TOPSOIL MIX, OR OTHER MATERIALS FOR MIXING, INCLUDING COMPOST, OF SUFFICIENT ORGANIC CONTENT AND DEPTH.
- SCARIFY OR TILL SUBGRADE TO A DEPTH OF 4–INCHES. EXCEPT FOR WITHIN THE DRIP LINE OF EXISTING TREES, THE ENTIRE SURFACE SHALL BE DISTURBED BY SCARIFICATION
- PLACE 4–INCHES OF IMPORTED TOPSOIL MIX ON SURFACE. THE IMPORTED TOPSOIL MIX SHALL CONTAIN 4% ORGANIC MATTER. SOILS USED IN THE MIX SHALL BE SAND OR SANDY LOAM AS DEFINED BY THE USDA SOILS CLASSIFICATION SYSTEM.
- RAKE BEDS TO SMOOTH AND REMOVE SURFACE ROCKS LARGER THAN 2–INCHES IN DIAMETER.
- WATER OR ROLL TO COMPACT SOIL IN TURF AREAS TO 85% OF MAXIMUM DRY DENSITY.

ONCE SOIL QUALITY HAS BEEN RESTORED IN ACCORDANCE WITH THE SOIL RESTORATION METHODS OUTLINED, AND PRIOR TO PLANTING THE CONTRACTOR SHALL PERFORM FIELD TESTING OF RESTORED SOIL QUALITY. TESTING SHALL BE IN LOCATIONS SHOWN ON THE PLANS OR AS APPROVED BY THE ENGINEER. A MINIMUM OF NINE TEST HOLES PER ACRE SHALL BE DUG TO A DEPTH OF 8–INCHES AND SHALL BE AT LEAST 50–FEET APART. TESTING SHALL BE PERFORMED USING SPADE SHOVEL DRIVEN USING SOLELY BY THE WEIGHT OF THE INSPECTOR. CONTRACTOR SHALL PREPARE REPORTING FORM THAT INCLUDES THE FOLLOWING INFORMATION:
- DATE/TIME OF TEST
- PERSONS PERFORMING AND WITNESSING TESTING
- LOCATION OF TEST
- OBSERVATIONS SHALL NOTE: EASE OF DRIVING SPADE (DIFFICULT, MODERATE, EASY), VERIFICATION OF SOIL AMENDMENTS, NOTE OF MATERIAL THICKNESS, TEXTURE AND OTHER NOTABLE SOIL FEATURES.

TESTS THAT INDICATE DIFFICULTY IN DRIVING A SPADE, LACK OF SOILS AMENDMENTS, AND TEXTURES NOT CONSISTENT WITH RESTORATION PRACTICE OPTIONS NOTED ABOVE SHALL HAVE AN ADDITIONAL TEST PERFORMED WITHIN 50–FEET OF THE TEST SHOWING 'POOR' RESULTS. IF THREE CONSECUTIVE TESTS SHOWING POOR RESULTS ARE OBTAINED THE AREA TESTED SHALL BE SUBJECT TO REWORK IN ACCORDANCE WITH RESTORATION PRACTICES NOTED AND SUBSEQUENTLY RETESTED.

UPON COMPLETION OF SUCCESSFUL TESTING, SURFACES SHALL BE PLANTED WITH SEED AND STABILIZED IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS.



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Sheet Title: DRAINAGE DETAILS

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
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Checked By:	KW
Scale:	NTS
Date:	4/15/2024

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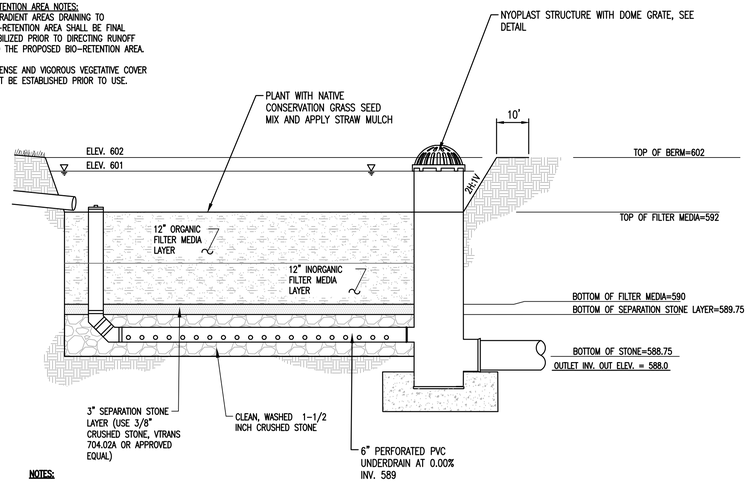
BIO-RETENTION AREA NOTES:
1. UPGRADIENT AREAS DRAINING TO BIO-RETENTION AREA SHALL BE FINAL STABILIZED PRIOR TO DIRECTING RUNOFF INTO THE PROPOSED BIO-RETENTION AREA.

2. A DENSE AND VIGOROUS VEGETATIVE COVER MUST BE ESTABLISHED PRIOR TO USE.



NOTES:

1. DO NOT PLACE THE BIORETENTION SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
2. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BIORETENTION AREA DURING ANY STAGE OF CONSTRUCTION.
3. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
4. SAMPLES MUST BE AIR DRIED AND SIEVED THROUGH A 2mm SIEVE PRIOR TO TESTING. THE SAMPLES SHALL BE EXTRACTED USING THE MEHLICH-3 SOLUTION (0.2 M CH_3COOH + 0.25 M NH_4NO_3 + 0.015 M NH_4F + 0.013 M HNO_3 + 0.001 M EDTA) BY SHAKING A SOIL-SOLUTION SUSPENSION FOR 5 MINUTES AT A 1:10 (SOIL MASS : SOLUTION) RATIO, FOLLOWED BY FILTERING TO REMOVE PARTICLES ABOVE 2 μm IN SIZE (0.45 μm PORE SIZE IS ALSO ACCEPTABLE). EXTRACTS SHALL BE ANALYZED BY INDUCTIVELY COUPLED PLASMA – OPTICAL EMISSION SPECTROMETRY (ICP-OES) TO DETERMINE PHOSPHOROUS (P), IRON (Fe) AND ALUMINUM (Al) CONTENT. THE PHOSPHORUS SATURATION RATIO (PSR) SHALL BE LESS THAN 0.1%. PSR SHALL BE CALCULATED USING THE FOLLOWING EQUATION:

$$PSR=(P_{M3}/31) \,/\, [(Fe_{M3}/56)+(Al_{M3}/27)]$$

P_{M3}= Mehlich-3 P in mg P per kg dry soil
Fe_{M3}= Mehlich-3 Fe in mg P per kg dry soil
Al_{M3} = Mehlich-3 Al in mg P per kg dry soil

THE RECORD OF THE PHOSPHORUS TEST SHALL BE MAINTAINED WITH DESIGN OR PERMIT RECORDS FOR SUBSEQUENT DESIGN CERTIFICATION REQUIREMENTS.

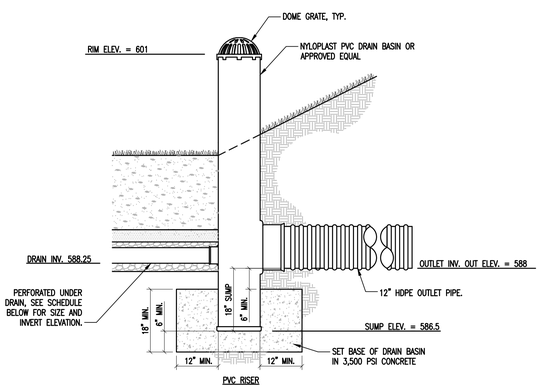
5. THE SOIL SHOULD BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHOULD BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE FILTER MEDIA SHOULD BE FREE OF NOXIOUS WEEDS.
6. ORGANIC FILTER MEDIA SOILS (UPPER LAYER OF FILTER MEDIA) SHALL CONSIST OF USDA SAND TO LOAMY SAND CLASSIFICATION AND MEET THE FOLLOWING GRADATION:

SAND	85-95% (NOTE: NO MORE THAN 25% OF THE SAND SHALL BE CLASSIFIED AS FINE OR VERY FINE SOILS)
SILT AND CLAY	NO MORE THAN 15%
ORGANIC MATTER (COMPOST)	NO MORE THAN 3%

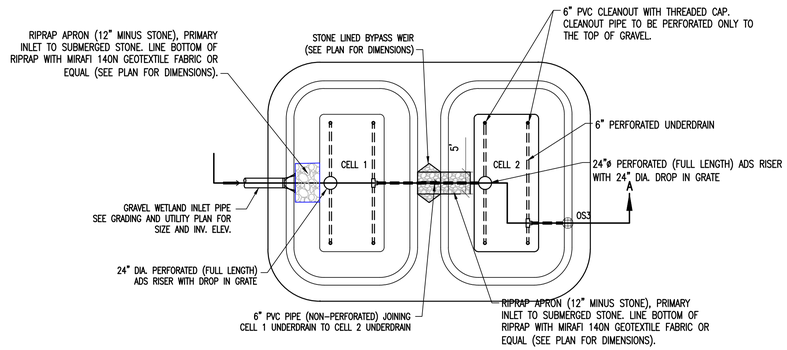
7. INORGANIC FILTER MEDIA SOILS (LOWER LAYER OF FILTER MEDIA) SHALL CONSIST OF USDA SAND TO LOAMY SAND CLASSIFICATION AND MEET THE FOLLOWING GRADATION:

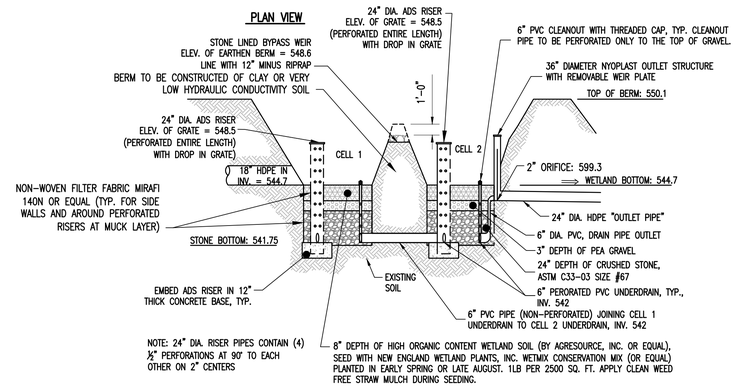
SAND	85-95% (NOTE: NO MORE THAN 25% OF THE SAND SHALL BE CLASSIFIED AS FINE OR VERY FINE SOILS)
SILT AND CLAY	NO MORE THAN 15%

BIORETENTION AREA
NOT TO SCALE 1



POND OUTLET STRUCTURE
NOT TO SCALE 2

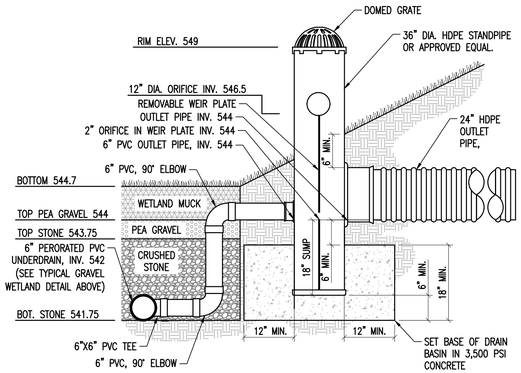




SECTION A-A (EXAGGERATED VIEW)

NOTE:
1. GRAVEL WETLAND CONSTRUCTION AND DESIGN SHALL BE IN ACCORDANCE WITH "UNHSC SUBSURFACE GRAVEL WETLAND DESIGN SPECIFICATIONS".

GRAVEL WETLAND
NOT TO SCALE 3



GRAVEL WETLAND OUTLET RISER
NOT TO SCALE 4

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WHITE RIVER JUNCTION, VERMONT

Sheet Title: DRAINAGE DETAILS

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	NTS
Date:	4/15/2024

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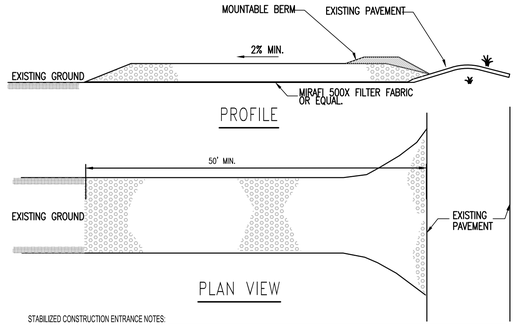
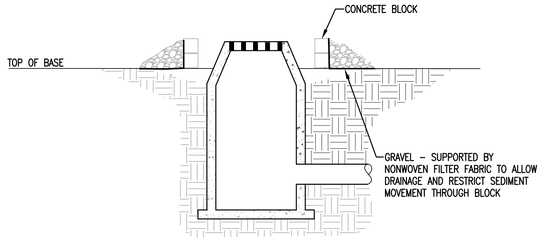


STABILIZED CONSTRUCTION ENTRANCE NOTES:

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

SCALE: NONE (1)

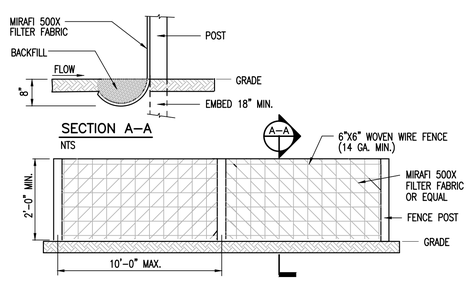


CONSTRUCTION SPECIFICATIONS

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)

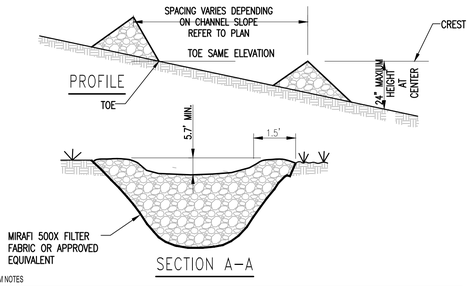


SILT FENCE NOTES:

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)

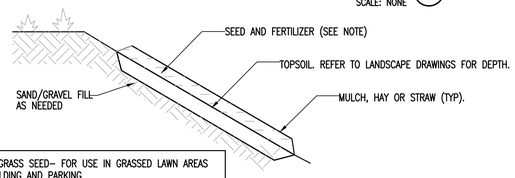


CHECK DAM NOTES

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 DISTRUBED 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

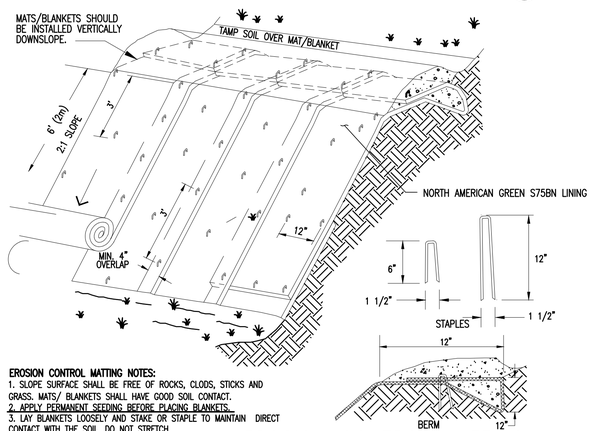
HAY OR STRAW MULCH- 90-100LBS PER 1000S.F. APPLY BINDER OR NETTING AS NEEDED

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 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

SCALE: NONE (5)

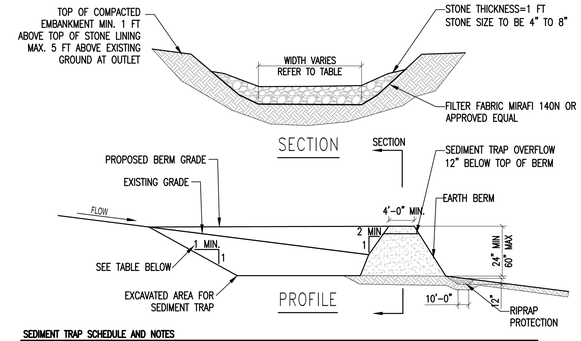


EROSION CONTROL MATTING NOTES:

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)



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 (7)

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Sheet Title: EPSC DETAILS

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
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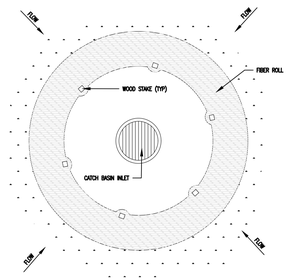
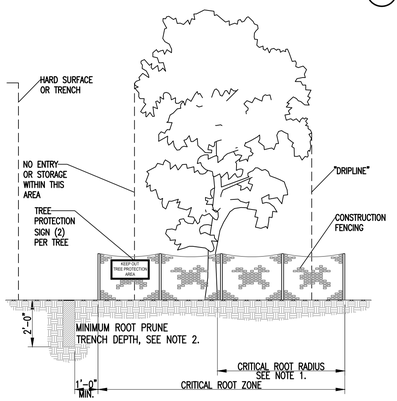


FIBER ROLL INLET PROTECTION DETAIL

1

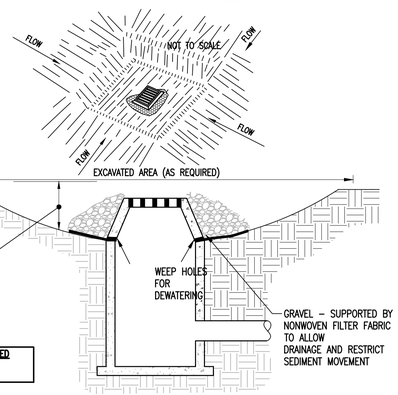


TREE PROTECTION NOTES:

1. TO CALCULATE THE CRITICAL ROOT RADIUS, ESTIMATE THE TREE'S HEIGHT AND MULTIPLE 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

2



TO BE USED ON ALL PROPOSED CATCH BASINS OR DRAINS

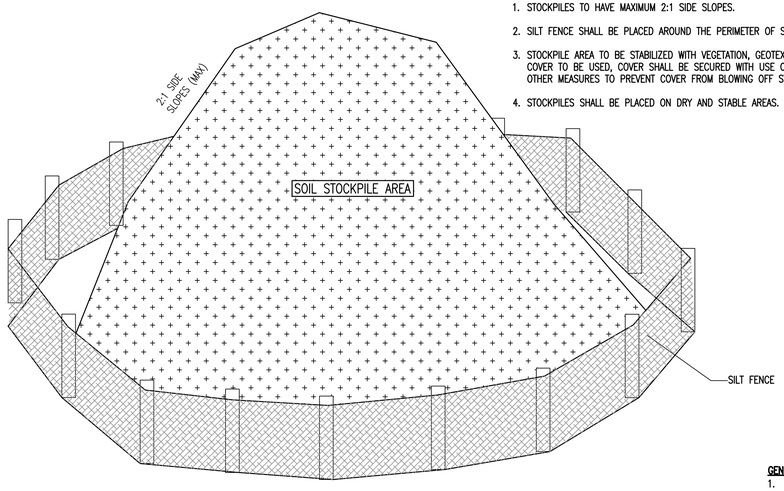
CONSTRUCTION SPECIFICATIONS

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

NOT TO SCALE

3



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.

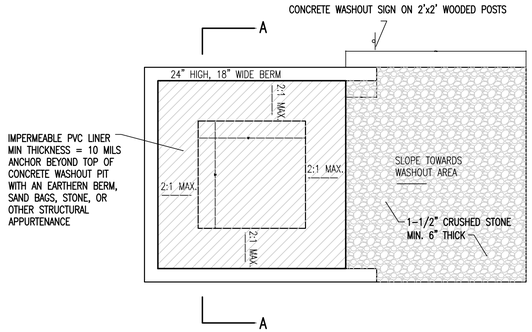
TEMPORARY SOIL STOCKPILE AREA DETAIL

SCALE: NONE

4

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 LEIU OF CONCRETE WASHOUT AREA, A PRE-FABRICATED WASHOUT MAY BE USED. CONTRACTOR SHALL SUBMIT SHOP DRAWING OF SUCH PRE-FABRICATERD WASHOUT AREA TO DESIGN ENGINEER FOR REVIEW AND APPROVAL.



CONCRETE TRUCK WASHOUT AREA

SCALE: NONE

5

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 ANY 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.

Stamp

No.	Description	Date

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A, Burlington, VT 05401 • 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 • 603-442-9333
414 Union Street, Schenectady, NY 12305 • 518-630-9614
www.engineeringventures.com

BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VERMONT

Sheet Title: EPSC DETAILS

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
HARTFORD, WINDSOR COUNTY, VERMONT

EV Project #	22442
Drawn By:	AM
Checked By:	KW
Scale:	NTS
Date:	3/11/2024

C3.8

S:\PROJECTS\0-2022\22442 SYKES MT APARTMENTS\DWG\SHEET FILES\22442 D ULLY C3.0 DETAILS.DWG

40' 0' 40' 80'

SCALE: 1" = 40FT

NORTH

PROPERTY LINE

TEMPLETON CT.

EXISTING VEGETATION

#2 TRAIL

WOODLAND TRAIL

#3 TRAIL

#1 TRAIL

OVERLOOK NATURE AREA

SELECTIVE CLEARING

PICNIC TABLES

SEATING BENCH

PEDESTRIAN GATEWAY FEATURE AND SEATING BENCH

MATCHLINE

LOT 45-162
BLACK ROCK INVESTMENTS, LLC

DOG RUN AREA

4FT HIGH BLACK VINYL CLF

PEDESTRIAN LP

8FT X 12FT SHADE STRUCTUREE

3 LILAC SHRUBS

SEATING BENCH TYP.

1 LINDEN

3 WHITE BIRCH TREES

1 BLACK PINE

8 WINTERBERRY

4FT WIDE STONE DUST PATH

8 POTENTILLA

6 INKBERRY

1 STAR MAGNOLIA

2 FORSYTHIA

4 RAISED GARDEN BEDS

DOG RUN ENCLOSURE

11 AMERICAN ARBORVITAE

PLAYGROUND STRUCTURE

WOOD FIBAR SAFETY SURFACING MATERIAL

SEATING BENCH

4FT HIGH BLACK VINYL CHAIN LINK FENCE

LAWN AREA

8FT WIDE FENCE OPENING FOR TRAIL

1 STAR MAGNOLIA

LAWN AREA WITH PICNIC TABLES

1 LINDEN TREE

4 POTENTILLA

RUN 1: ±120LF SEASONAL STRING LIGHTS

6 FOTHERGILLA

NE WILDFLOWER MIX ALONG SLOPED AREAS

4FT WIDE STONE DUST PATH

WOODLAND TRAIL #2 TRAIL

10 FOTHERGILLA

VIEW

5 RED TWIG DOGWOOD

6 FOTHERGILLA

1 ARMSTRONG MAPLE

5 HYDRANGEA

4FT HIGH BLACK VINYL CHAIN LINK FENCE

LOUNGE SEATING WITH GAS FIRE PIT

ADIRONDACK CHAIRS

LAWN AREA

ARBOR

8 FOTHERGILLA
1 LINDEN
3 WHITE BIRCH
2 WITCH HAZEL
9 INKBERRY
ENTRY
BUILDING 1

12 FOTHERGILLA
2 WITCH HAZEL

6 INKBERRY
5 PJM RHODO
10 SPREADING YEWS
4 PJM RHODO

3 WITCH HAZEL
1 STAR MAGNOLIA
12 INKBERRY
2 FORSYTHIA
BUILDING 2
PATIO TYP.
4 BIKE RACK
1 RED MAPLE
4 FORSYTHIA
± 4400 SF SPECIAL PAVING BBQ
1 SERVICEBERRY
6 INKBERRY
11 SPIREA

6 LILAC SHRUBS
10FT WIDE OPENING
3 PIN OAK TREES
24FT LONG SPLIT RAIL
11 PJM RHODO
5 ARBORVITAE
1 WITCH HAZEL
3 MUGO

2 HONEYLOCUST
4 U-STYLE BIKE RACK

7 ARMSTRONG MAPLE TREES
10 SPIREA
24FT LONG SPLIT RAIL
6 CLETHRA
5 HONEYLOCUST
12 CLETHRA

GARAGE 1 (9 BAYS)

2 HONEYLOCUST
2 BIRCH

WOODLAND TRAIL
END STONEDUST PATH
12 RED TWIG DOGWOOD

EXISTING VEGETATION

STONE DUST PATH

2 WHITE SPRUCE TREES

FAIRVIEW TERRACE

Stamp

Chkd.

Description

Rev. No.

ParkArchitecture.com

3 School House Lane, Suite #1 Etna NH 03750
Tel: 603-643-3400; Mobile: 617-905-0487
Email: parkarchitecture@gmail.com

Client:

BLACK ROCK INVESTMENTS, LLC
2488 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title:

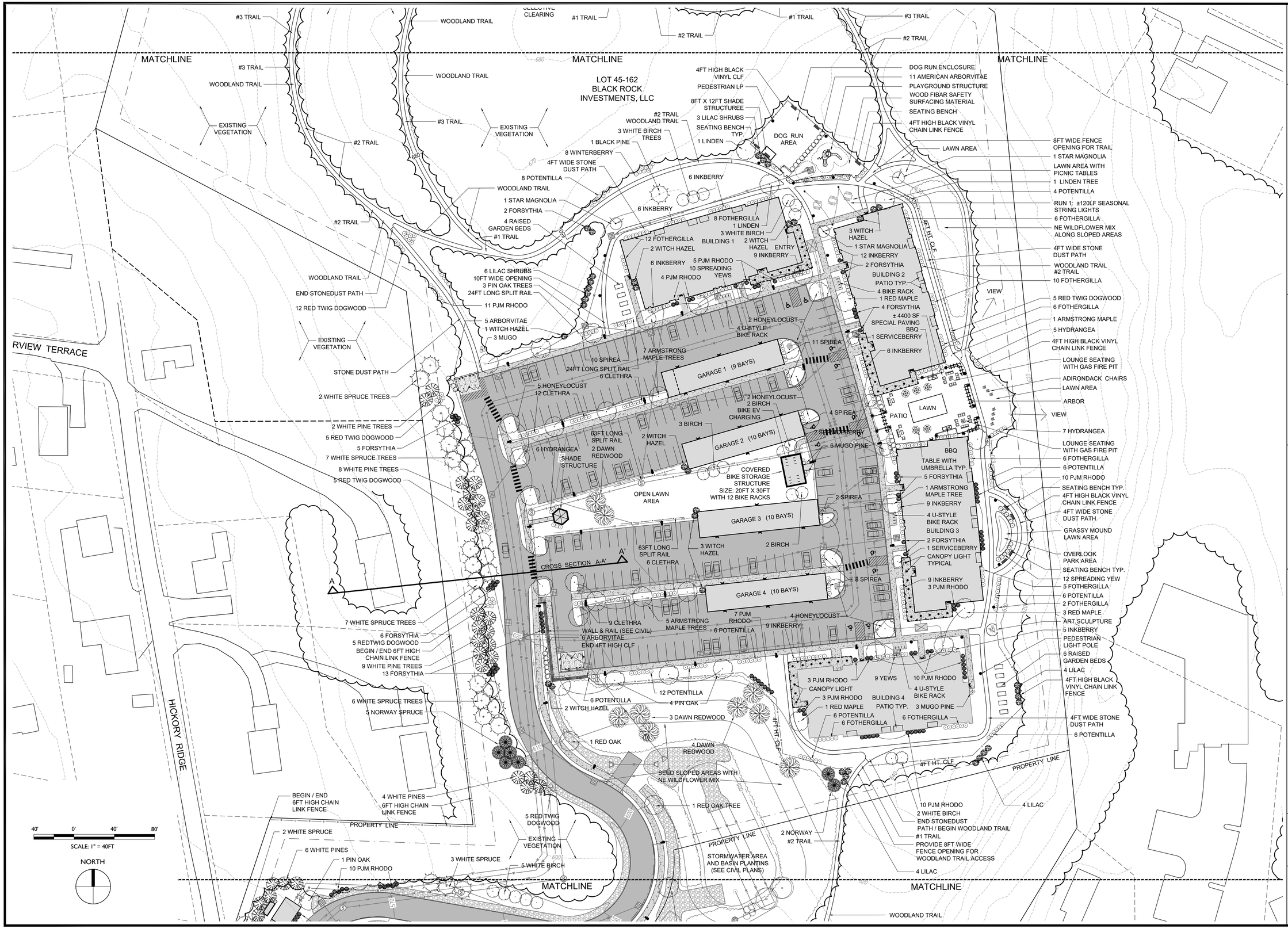
Site Landscape Plan
Lot 45-162

Project Title:

SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=40'
Date:	03/11/2024

L1.1



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2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

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RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

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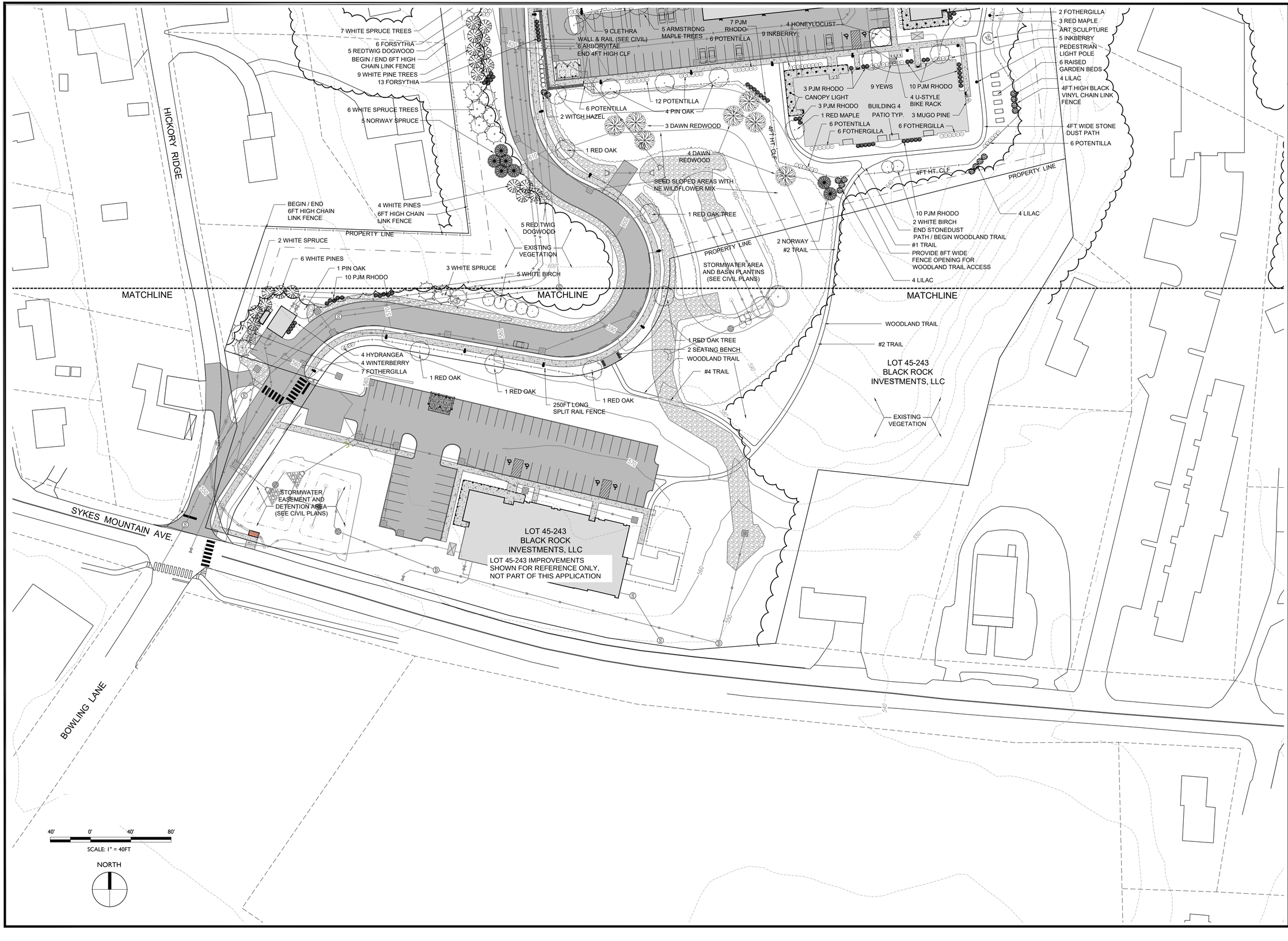
L1.2



Stamp

Chkd.

Description

Rev. No.

ParkArchitecture.com
3 School House Lane, Suite #1 Etna NH 03750
Tel: 603-643-3400, Mobile: 617-905-5487
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2488 CHRISTIAN STREET
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L1.3

LANDSCAPE PLANTING SCHEDULE

QTY	BOTANICAL NAME	COMMON NAME	SIZE
DECIDUOUS TREES			
13	GLEDITSIA TRIACANTHOS V. INERMIS	*IMPERIAL HONEYLOCUST*	2.5" – 3" CALIPER
9	METASEQUOIA GLYPTOSTROBOIDES	*DAWN REDWOOD*	2.5" – 3" CALIPER
6	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
20	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*	10'–12' HT. B&B
29	PINUS STROBUS	*EASTERN WHITE PINE*	8'–10' HT. B&B
1	PINUS NIGRA	*AUSTRIAN BLACK PINE*	8'–10' HT. B&B
7	PICEA ABIES	*NORWAY SPRUCE TREE*	8'–10' 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
21	SYRINGA VULGARIS	*COMMON PURPLE LILAC*	30"–36" HT, 7 GAL
77	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 'BAILEYI'	*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
41	HYDRANGEA INVINCEBELLE 'SPIRIT II'	*INVINCEBELLE SPIRIT II HYDRANGEA*	18"–24" HT, 7 GAL
72	FOTHERGILLA GARDENII	*DWARF FOTHERGILLA*	18"–24" HT, 7 GAL
60	POTENTILLA FRUITCOSA '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			
TBD	NEPETA 'SIX HILLS GIANT'	*SIX HILLS GRIANT CATMINT*	2 GAL
TBD	RUDBECKIA FULGIDA GOLDSTURM	*GOLDSTURM BLACK EYED SUSAN*	2 GAL
TBD	HEMMEROCALLIS 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 PURPURPEA	*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.

14. 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

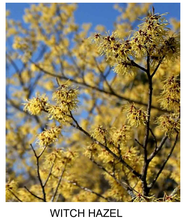
EASTERN WHITE PINE

EVERGREEN SCREEENING

AMERICAN ARBORVITAE

SPREADING YEW

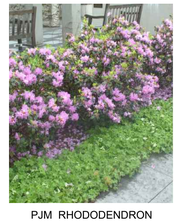
PROPOSED SHRUBS:



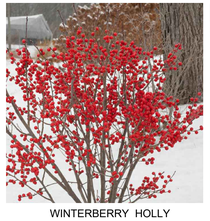
WITCH HAZEL

PURPLE LILAC

INKBERRY SHRUB



PJM RHODODENDRON



WINTERBERRY HOLLY

RED TWIG DOGWOOD

FORSYTHIA

MUGO PINE SHRUB

LITTLE PRINCESS SPIREA

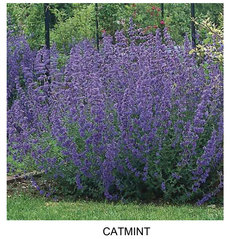
HYDRANGEA

FOTHERGILLA

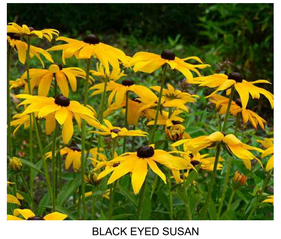
BRANDYWINE VIBURNUM

CLETHRA

PROPOSED PERENNIALS & GRASSES:



CATMINT



BLACK EYED SUSAN

STELLA D'ORO DAYLILLY

BLACKHAWK BIG BLUESTEM

BLUE OAT GRASS

DWARF FOUNTAIN GRASS

PURPLE CONEFLOWER

Stamp

Rev. No.	Description	Chkd.

ParkArchitecture.com
3 School House Lane, Suite #1 Elmo NH 03750
Tel: 603-543-3400; Mobile: 617-905-0487
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2488 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title:
Landscape 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:	03/11/2024

L1.4

BUILDING 2
45 UNITS

BUILDING 3
49 UNITS

CANOPY LIGHTS TYP.
(SEE LIGHTING PLAN)

6 INKBERRY

6 VIBURNUM

1 SERVICEBERRY

3 ARBORVITAE

7 HYDRANGEA

PERENNIALS

ENTRY

ARBOR

1 ARMSTRONG
MAPLE

ARBOR FEATURE
w/ CLIMBING WISTERIA

5 HYDRANGEA

WALKWAY

4FT HIGH BLACK VINYL CHAIN
LINK FENCE

BBQ

LOUNGE
SEATING
AREA

42" GAS
FIRE PIT

48" DIA.
TABLE

ARBOR
FEATURE

ADIRONDACK
LAWN CHAIRS

VIEW

MIXED
PERENNIALS

LAWN AREA

TABLE

PATIO AREA WITH
CONCRETE PAVERS

22FT X 35FT
SOD / LAWN AREA

ENTRY ARBOR
FEATURE

CONC. WALKWAY

P-P

ENTRY

PERENNIALS

6 HYDRANGEA

1 RED MAPLE

6 FOTHERGILLA

5 ARBORVITAE

7 VIBURNUM

1 SERVICEBERRY

PEDESTRIAN
LIGHT POLE

4FT HIGH BLACK VINYL
CHAIN LINK FENCE

WALKWAY

5' 0' 5' 10'
SCALE: 1" = 5FT

NORTH

Stamp

Chkd.

Description

Rev. No.

ParkArchitecture.com
3 School House Lane, Suite #1 Etna NH 03750
Tel: 603-643-3400; Mobile: 617-905-0487
Email: parkarchitecture@gmail.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:	03/11/2024

L2.1

5' 0' 5' 10'

SCALE: 1" = 5FT

NORTH

SEATING BENCH

STRAIGHT DOG TUNNEL

PEDESTRIAN LIGHT POLE

P-A

4FT HIGH BLACK VINYL CHAIN LINK FENCE

DOG RUN AREA

CURVED DOG TUNNEL

SEATING BENCH

DOG A-FRAME

SEATING BENCH

8FT X 12FT SHADE STRUCTURE

LINDEN TREE

SEATING BENCH

PET WASTE STATION

2 SPIREA

GATE

P-P

END STONE DUST PATH

BEGIN WOODLAND TRAIL

LILAC SHRUBS

PEDESTRIAN LIGHT POLE

STONE DUST PATH

PET WASTE STATION

LAWN AREA

LINDEN

FOTHERGILLA

11 AMERICAN ARBORVITAE

P-A

PEDESTRIAN LIGHT POLE

4FT HIGH BLACK VINYL CHAIN LINK FENCE

64 72 56 48 16 28 38 8 96 80

PLAY GROUND STRUCTURE

NATURAL BALANCE BEAM

PLAYGROUND AREA

DOG RUN ENTRY

GATE

4 RED TWIG

MIXED PERENNIALS

P-A

P-P

STONE DUST WALKWAY

S

LAWN AREA

SEASONAL STRING LIGHT SYSTEM

WHITE BIRCH TREES

PICNIC TABLE

PICNIC TABLE

S

5 WINTERBERRY HOLLY SHRUBS

SEASONAL STRING LIGHT SYSTEM RUN 1: 120LF

PICNIC TABLE

P-A

BEGIN WOODLAND TRAIL

END STONE DUST PATH

3 RED TWIG

SEATING BENCH

PLAYGROUND ENTRY

8FT WIDE BREAK IN FENCE

GATE

PEDESTRIAN LIGHT POLE

P-P

LINDEN

D

S

Stamp

Chkd.

Description

Rev. No.

ParkArchitecture.com

3 School House Lane, Suite #1 Etna NH 03750
Tel: 603-643-3409; Mobile: 617-905-0487
Email: parkarchitecture@gmail.com

Client:

BLACK ROCK INVESTMENTS, LLC
2468 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

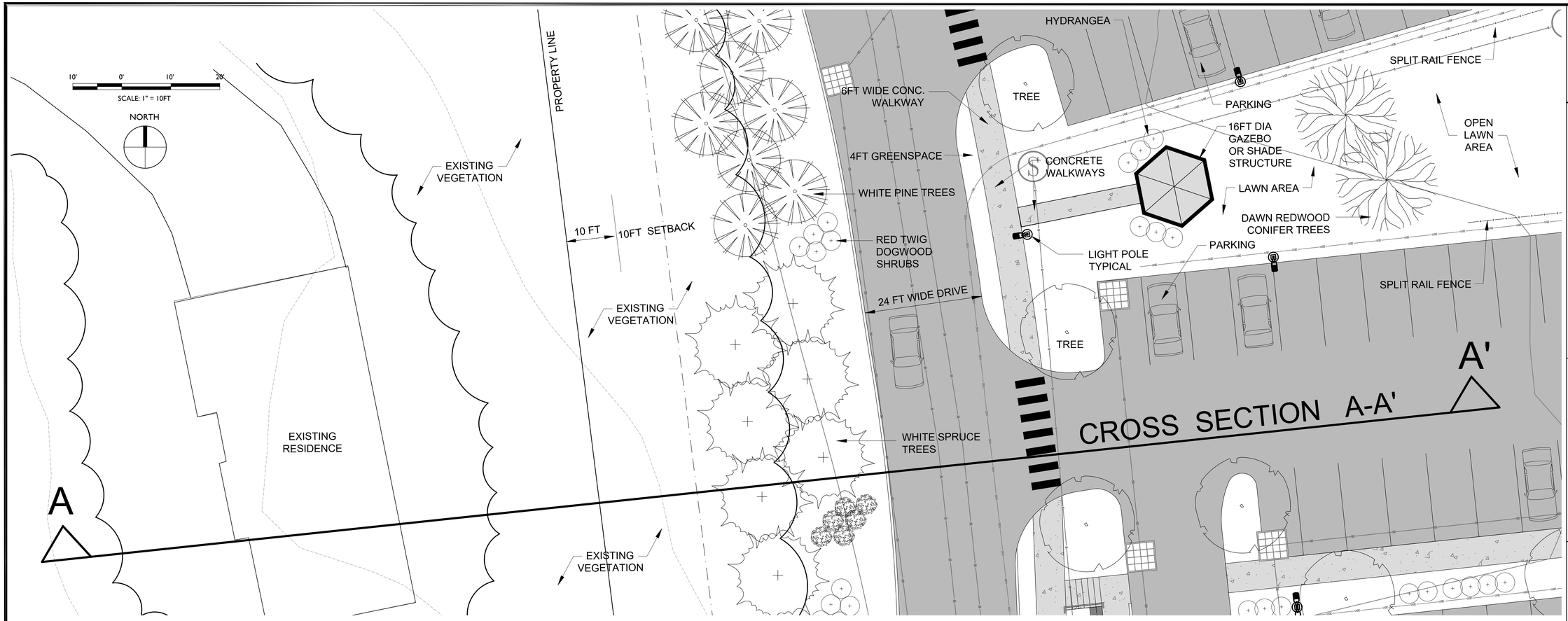
Site Enlargement Plan - Dog Run & Play Area
Lot 45-162

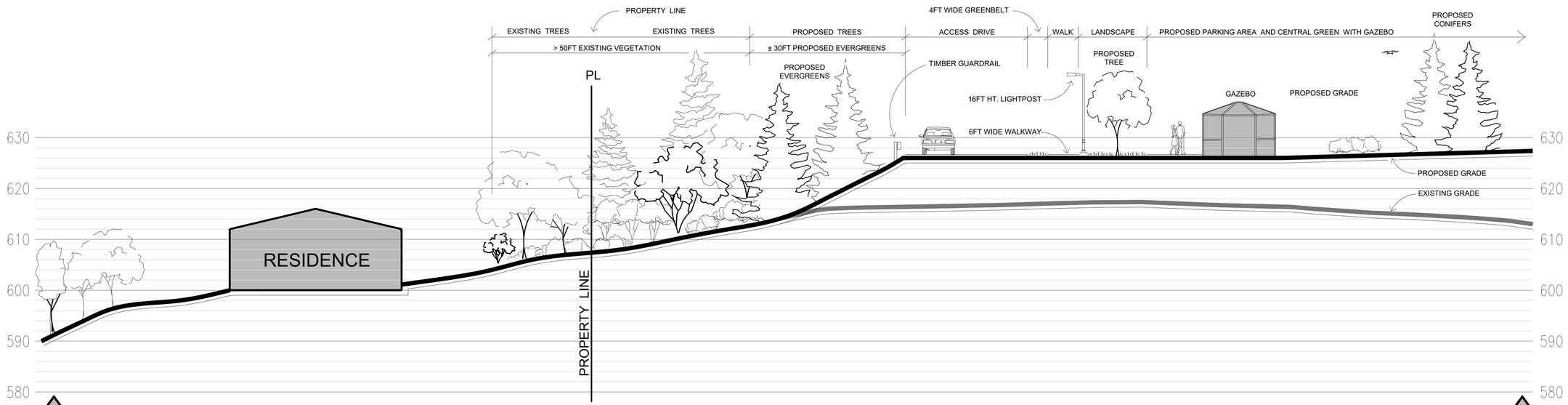
Project Title:

SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=5'
Date:	03/11/2024

L2.2





CROSS SECTION A-A'

SCALE: 1"=10'-0"

A

A'

Stamp

Rev. No.	Description	Chk'd.

ParkArchitecture.com
3 School House Lane, Suite #1 Elmo NH 03750
Tel: 603-543-3400, Mobile: 617-905-0487
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2488 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 #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=10'
Date:	03/11/2024

L2.3

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
	WP	PROPOSED WALL PACK
	D	PROPOSED ENTRY DOOR WALL PACK
	C	PROPOSED CANOPY LIGHT
	S	PROPOSED SEASONAL STRING LIGHT
RB		3FT HIGH RAISED BASE (SEE DETAIL)
GB		AT GRADE BASE (SEE DETAIL)

MATCHLINE

MATCHLINE

MATCHLINE

BUILDING 1

BUILDING 2

GARAGE 1

LP3

LP3-HS

LP5

WP

P-A

P-P

S

D

B

C

Stamp

Chkd.

Description

Rev. No.

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Email: parkarchitecture@gmail.com

Client:

BLACK ROCK INVESTMENTS, LLC
2488 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:	03/11/2024

L3.1

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
▬	WP	PROPOSED WALL PACK
▬	D	PROPOSED ENTRY DOOR WALL PACK
●	C	PROPOSED CANOPY LIGHT
⊠	S	PROPOSED SEASONAL STRING LIGHT
RB		3FT HIGH RAISED BASE (SEE DETAIL)
GB		AT GRADE BASE (SEE DETAIL)

MATCHLINE

MATCHLINE

MATCHLINE

MATCHLINE

BUILDING 1

BUILDING 2

BUILDING 3

BUILDING 4

GARAGE 1

GARAGE 2

GARAGE 3

GARAGE 4

P-A P-P P-A.S S

LP3 LP3-HS LP4 LP5 WP D B C

680 670 660 650 640 630 620 610 600

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Tel: 603-643-3400; Mobile: 617-905-0487
Email: parkarchitecture@gmail.com

Stamp

Chk'd.

Description

Rev. No.

Client:

BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title:

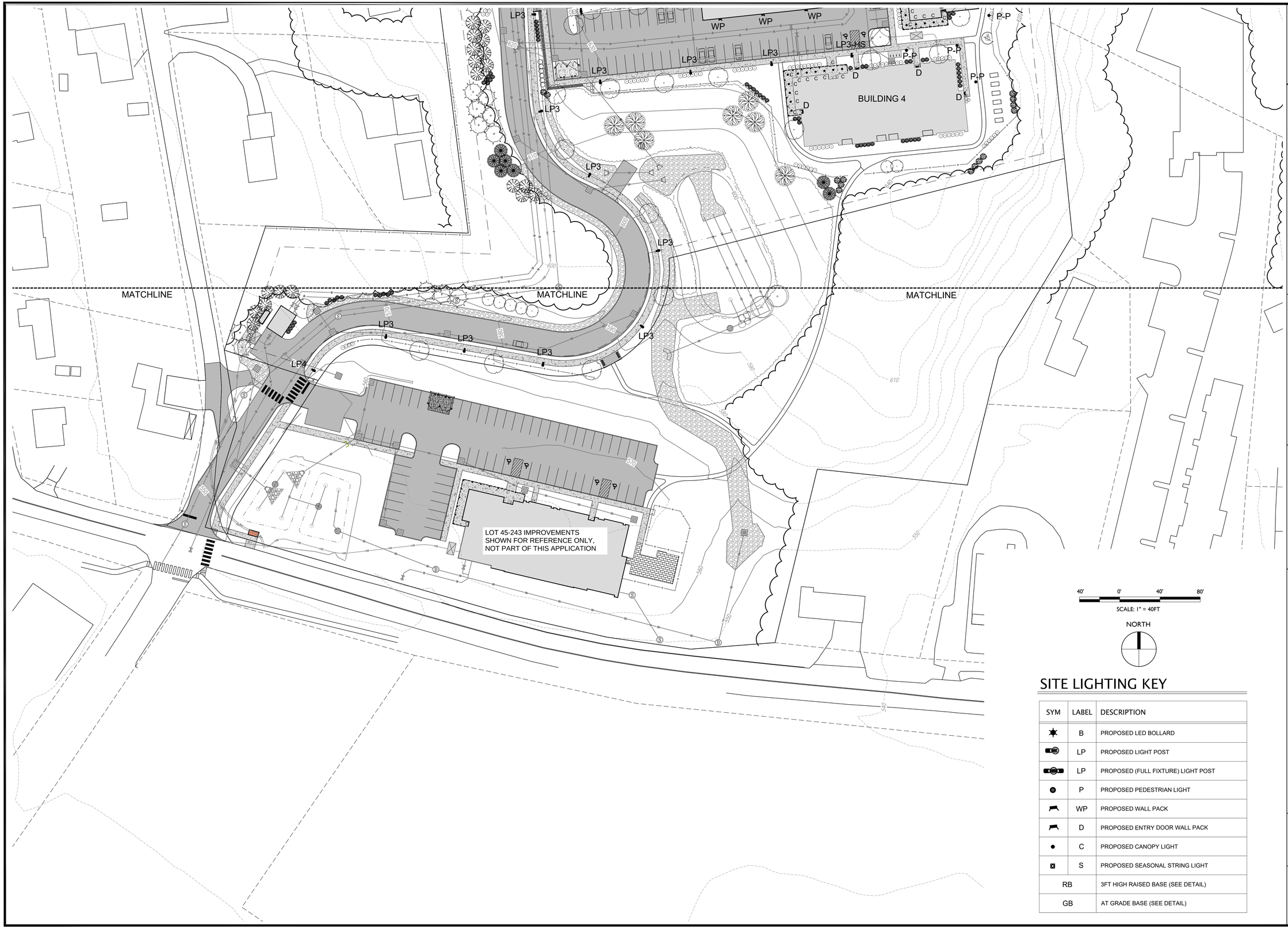
Site Lighting Plan
Lot 45-162

Project Title:

SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=40'
Date:	03/11/2024

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
	WP	PROPOSED WALL PACK
	D	PROPOSED ENTRY DOOR WALL PACK
	C	PROPOSED CANOPY LIGHT
	S	PROPOSED SEASONAL STRING LIGHT
RB		3FT HIGH RAISED BASE (SEE DETAIL)
GB		AT GRADE BASE (SEE DETAIL)

Stamp

Rev. No. | Description | Chk'd.

ParkArchitecture.com
3 School House Lane, Suite #1 Elmo NH 03750
Tel: 603-543-3400, Mobile: 617-905-0487
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2468 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:	03/11/2024

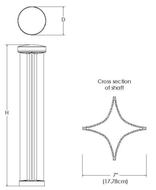
L3.3

(B) BOLLARD LIGHTING SPECIFICATION

RADEAN Bollard
LED Site Luminaire

Catalog Number
Notes
Type Plan Label B

Hit the Tab key or mouse over the page to see all interactive elements.



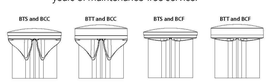
Specifications

Diameter: D = 8.25" (20.96cm)
Height: H = 41.5" Standard (105.41cm)
Weight (max): 20lbs (9.07Kg)

Introduction

The Radean LED Bollard is an award-winning, energy-saving, long-life solution designed to perform the way a bollard should.

The Radean LED Bollard's rugged construction, durable finish and long-lasting LEDs will provide years of maintenance-free service.



Ordering Information

EXAMPLE: RADB LED P4 30K SYM MVOLT BTS BCCDNATXD DBLXD

RADB LED

Series	Performance Package	Color temperature	Distribution	Voltage	Control options	Bollard top (required)
RADB LED	P1 2,000 lumens P2 3,000 lumens P3 4,000 lumens P4 5,000 lumens[1]	27K 2700 K 30K 3000 K 35K 3500 K 40K 4000 K 50K 5000 K	ASY Asymmetric[2] SYM Symmetric[2]	MVOLT[3] 120[3] 208[3] 240[3] 277 347 480	**Shipped installed** PE Photoelectric cell, button type[4,5] DMG 0-10V dimming driver (no controls) EYWH Emergency battery backup,Certified in CA Title 20 MAED&T) [4,7,8] FAO Field adjustable output[9] PIR Motion sensor Bi-level[10,11]	**Slim Top** BTS Slim top, painted to match shaft[12] BTSDWHXD Slim top, white[5,9] BTSDBLBXD Slim top, black texture[5,9] BTSDBLXD Slim top, black[5,9] BTSDDBTXD Slim top, dark bronze textured[5,9] BTSDDBXD Slim top, dark bronze[5,9] BTSDNATXD Slim top, natural aluminum textured[5,9] BTSDNAXD Slim top, natural aluminum[5,9] BTSDWHGXD Slim top, white textured[9] **Tall Top** BTT Tall top painted to match shaft[9] BTTDBLBXD Tall top, black textured[9] BTTDBLXD Tall top, black[9] BTTDDBTXD Tall top, dark bronze textured[9] BTTDDBXD Tall top, dark bronze[9] BTTDNATXD Tall top, natural aluminum textured[9] BTTDNAXD Tall top, natural aluminum[9] BTTDWHGXD Tall top, white textured[9] BTTDWHXD Tall top, white[9]

Bollard crown (required)				Other options	Finish (required)
Deep Crown		**Flat Crown**		H24[6,10] 24" overall height	DDBXD Dark bronze
BCC	Deep crown, painted to match shaft[9]	BCF	Flat crown, painted to match shaft[9]	H30[6,10] 30" overall height	DBLXD Black
BCCDWHXD	Deep crown, white[9]	BCFDBLBXD	Flat crown, black textured[9]	H36[6,10] 36" overall height	DNAXD Natural aluminum
BCCDBLXD	Deep crown, black[9]	BCFDBLXD	Flat crown, black[9]	L/AB Without anchor bolts	DWHXD White
BCCDBLBXD	Deep crown, black textured[9]	BCFDDBTXD	Flat crown, dark bronze textured[9]		DDBTXD Textured dark bronze
BCCDDBTXD	Deep crown, dark bronze textured[9]	BCFDDBXD	Flat crown, dark bronze[9]		DBLBXD Textured black
BCCDDBXD	Deep crown, dark bronze[9]	BCFDNATXD	Flat crown, natural aluminum textured[9]		DNATXD Textured natural aluminum
BCCDNATXD	Deep crown, natural aluminum textured[9]	BCFDNAXD	Flat crown, natural aluminum[9]		DWHGXD Textured white
BCCDNAXD	Deep crown, natural aluminum[9]	BCFDWHGXD	Flat crown, white textured[9]		
BCCDWHGXD	Deep crown, white textured[9]	BCFDWHXD	Flat crown, white[9]		

Accessories
Ordered and shipped separately.

RADRAB U	Anchor bolts (4)	RKTRADB BCKIT (FINISH) U	Base cover with bolt caps
RADRABC DDBXD U	Replacement anchor bolt covers (specify finish) (4)	RKTRADB EMTESTMAG U	Emergency test stylus

NOTES
1 P5 only available in SYM distribution.
2 ASY has only two illuminated quadrants driven at higher drive currents to generate similar output as the SYM 4-quadrant product.
3 PIR not available with 208V or 240V.
4 PE only available with ASY.
5 PE, PIR and FAO not available with BTS.
6 EYWH and PIR only available in full height. Not available with H24, H30 or H36.
7 PIR not available with EYWH.
8 EYWH is not available with 347V or 480V.
9 Architectural and custom colors available (additional leadtimes and cost may apply).
10 42" Height is standard. H24, H30 and H36 have longer leadtimes.

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(LP & LP2) SERIES LIGHT POST SPECIFICATION

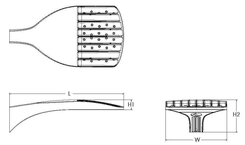
D-Series Size 0
LED Area Luminaire

Catalog Number
Notes
Type Plan Label LP

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA: 0.44 ft² (0.04 m²)
Length: 26.18" (66.5 cm)
Width: 14.06" (35.7 cm)
Height H1: 2.26" (5.7 cm)
Height H2: 7.46" (18.9 cm)
Weight: 23 lbs (10.4 kg)



Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED

Series	LEDs	Color temperature[1]	Color Rendering Index[1]	Distribution	Voltage	Mounting
DSX0 LED	**Forward optics** P1 P5 P2 P6 P3 P7 P4 **Rotated optics** P10[1] P12[1] P11[1] P13[1]	(this section 70CRI only) 30K 3000K 40K 4000K 50K 5000K (this section 80CRI only, extended lead times apply) 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI	AFR Automotive front row T1S Type I short T2M Type II medium T3M Type III medium T3LG Type III low glare[2] T4M Type IV medium T4LG Type IV low glare[2] TFTM Forward throw medium T5M Type V medium T5LG Type V low glare T5W Type V wide BLC3 Type III backlight control[2] BLC4 Type IV backlight control[2] LCCO Left corner cutoff[2] RCCO Right corner cutoff[2]	MVOLT (120V-277V)[4] HVOLT (347V-480V)[3,4] XVOLT (277V-480V)[3,4]	**Shipped included** SPA Square pole mounting (#5 drilling, 3.5" min. SQ pole) RPA Round pole mounting (#5 drilling, 3" min. RND pole) SPAS Square pole mounting (#5 drilling, 3" min. SQ pole)[5] RPAS Round pole mounting (#5 drilling, 3" min. RND pole)[5] SPABN Square narrow pole mounting (#8 drilling, 3" min. SQ pole) WBA Wall bracket[6] MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)

Control options	Other options	Finish (required)
Shipped installed NLTAIR2 PIRHN nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc.[7,8,9,10] PIR High/low, motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc.[7,8,10] PER NEMA twist-lock receptacle only (controls ordered separate)[10] PERS Five-pin receptacle only (controls ordered separate)[8,10]	PER7 Seven-pin receptacle only (controls ordered separate)[8,10] FAO Field adjustable output[10,11] BL30 Bi-level switched dimming, 30%[8,10] BL50 Bi-level switched dimming, 50%[8,10] DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)[10]	**Shipped installed** HS Houseside shield (black finish standard)[20] L90 Left rotated optics[1] R90 Right rotated optics[1] CCE Coastal Construction[21] WA 50°C ambient operation[22] **Shipped separately** EGSR External Glare Shield (reversible, field install required, matches housing finish) BSDB Bird Spikes (field install required)	DDBXD Dark Bronze DBLXD Black DNAXD Natural Aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

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(P) SERIES PEDESTRIAN LIGHT POST SPECIFICATION

Radean Post Top
LED Area Luminaire

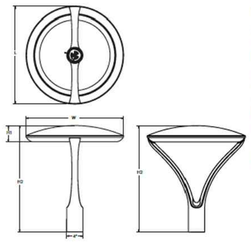
Buy American

Catalog Number
Notes
Type Plan Label P

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA: 1.02 ft² (0.105 m²)
Length: 24" (61cm)
Width: 24" (61cm)
H1 Luminaire Height: 4" (10.16cm)
H2 Luminaire Height: 26" (66.04cm)
Weight: 38lbs (17.24Kg)



Introduction

The architecturally-inspired shape of the RADEAN™ post top area luminaire embodies the grace and strength of the RADEAN family. The twin copper-core cast aluminum arms support the slender superstructure, creating a beautiful sculpture by day transforming into a beacon of comfort by night. Triangular arms redirect reflection maintaining its visually quiet appearance. With sleek lines and simple silhouettes, these LED luminaires use specialized lighting and visual comfort to transform common areas like courtyards, outdoor retail locations, universities and corporate campuses into pedestrian-friendly nighttime environments.

Ordering Information

EXAMPLE: RADPT LED P3 30K SYM MVOLT PT4 PIR DNAXD

RADPT LED

Series	Performance package	Color temperature	Distribution	Voltage	Mounting (required)
RADPT LED	P1 3,000 Lumens P2 5,000 Lumens P3 7,000 Lumens P4 10,000 Lumens P5 15,000 Lumens	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	SYM Symmetric type V ASY Asymmetric type IV PATH Pathway type III	MVOLT[1] 277[1] 120[1] 347 208[1] 480 240[1]	PT4[1] Slips inside a 4" OD round metal pole RADPT20 Slips over a 2 3/8" diameter tenon RADPT25 Slips over a 2 7/8" diameter tenon

Control options	Other options	Finish (required)	
Shipped installed NLTAIR2 nLight AIR 2.0 enabled[4] PIR Bi-level motion/sensor (100% to 30%)[3,4,5] PE Button photocell[5] FAO Field adjustable output[4,9]	SF Single fuse[7] DF Double fuse[7] R90 Rotated optics[10]	**Shipped installed** HS Houseside shield[11]	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

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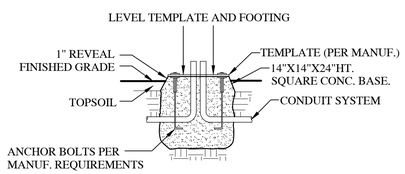
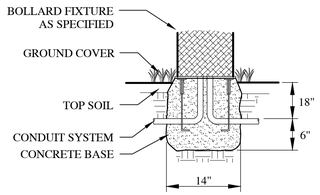
BOLLARD LIGHT BASE INSTALLATION DETAIL

NOT TO SCALE



ANCHOR BOLT INSTALLATION



FINISHED INSTALLATION

NOTE: CONTRACTOR TO PROVIDE SHOP DRAWING OF BOLLARD, CONCRETE BASE, AND INSTALLATION METHODS TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION.

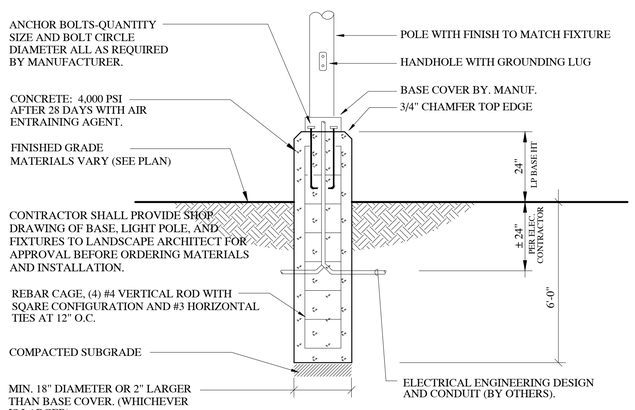
LIGHTING NOTES

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

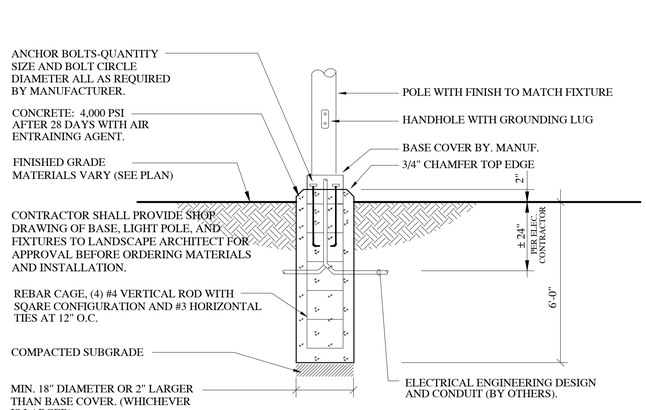


NOTES:

1. PARKING AREA LIGHT FIXTURE MOUNTING HEIGHT SHALL BE 16FT FROM GRADE (SEE PLAN)
2. PEDESTRIAN LIGHT FIXTURE MOUNTING HEIGHT SHALL BE 10FT FROM GRADE (SEE PLAN)
3. CONTRACTOR SHALL INSTALL RAISED BASES (RB) AT 24" 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 16FT FROM GRADE (SEE PLAN)
2. PEDESTRIAN LIGHT FIXTURE MOUNTING HEIGHT SHALL BE 10FT FROM GRADE (SEE PLAN)
3. CONTRACTOR SHALL INSTALL AT GRADE BASES (GB) AT 2" HIGH WHERE INDICATED ON PLANS

Stamp

Chk'd.

Description

Rev. No.

ParkArchitecture.com
3 School House Lane, Suite #1 Essex Jct. 05750
Tel: 802-343-3400 Mobile: 617-905-5487
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 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:	03/11/2024

L3.4

(C) RECESSED CANOPY DOWNLIGHT SPECIFICATION

NOT TO SCALE

LITHONIA LIGHTING

FEATURES & SPECIFICATIONS

INTENDED USE — Typical applications include corridors, lobbies, conference rooms and private offices.
CONSTRUCTION — Galvanized steel mounting/plaster frame; galvanized steel junction box with bottom-hinged access covers and spring latches. Reflectors are retained by torsion springs.
Vertically adjustable mounting brackets with commercial bar hangers provide 3-1/4" total adjustment.
Two combination 1/2"-3/4" and four 1/2" knockouts for straight-through conduit runs. Capacity: 8 (4 in, 4 out).
No. 12 AWG conductors, rated for 90°C.
Accommodates 12"-24" joist spacing.
Passive cooling thermal management for 25°C standard; high ambient (40°C) option available. Light engine and drivers are accessible from above or below ceiling.
Max ceiling thickness 1-1/2".
OPTICS — LEDs are binned to a 3-step SDCM; 80 CRI minimum. 90 CRI optional.
LED light source concealed with diffusing optical lens.
General illumination lighting with 1.0 S/MH and 55° cutoff to source and source image.
Self-flanged anodized reflectors in specular, semi-specular, or matte diffuse finishes. Also available in white and black painted reflectors.
ELECTRICAL — Multi-volt (120-277V, 50/60Hz) 0-10V dimming drivers mounted to junction box, 10% or 1% minimum dimming level available.
0-10V dimming fixture requires two (2) additional low-voltage wires to be pulled.
70% lumen maintenance at 60,000 hours.
LISTINGS — Certified to US and Canadian safety standards. Wet location standard (covered ceiling). IP55 rated. ENERGY STAR® certified product.
BUY AMERICAN — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT.
Please refer to www.acuitybrands.com/buy-american for additional information.
WARRANTY — 5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/support/warranty/terms-and-conditions

Catalog Number	
Notes	
Type	Plan Label C

LDN4

4" Open and WallWash LED Non-IC New Construction Downlight

Buy American

(WP) WALL PACK LIGHTING SPECIFICATION

NOT TO SCALE

WDGE1 LED
Architectural Wall Sconce

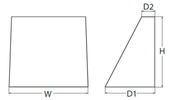
Buy American

Catalog Number	
Notes	
Type	Plan Label W

Hit the Tab key or mouse over the page to see all interactive elements.

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.

(D) ENTRY DOOR WALL PACK LIGHTING SPECIFICATION

Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

AWL
All-Weather Wallpack - Low Profile

IP65

OVERVIEW	
Lumen Range	1500
CCT	4000K
Wattage	15
Efficacy (LPW)	100
Weight lbs (kg)	3.7 lbs (EP model 4.5 lbs.)

FEATURES & SPECIFICATIONS

Construction
- Die-cast aluminum housing
- Available in Bronze, White, Black, and Silver

Optical
- UV-resistant, high-impact polycarbonate lens
- Minimum CRI of 70

Electrical
- Standard Universal Voltage - 120/277VAC dual primary at 60Hz
- Emergency Package (EP) option draws and additional 17W and includes self-test/self-diagnostic and a heater for cold weather operation to -25°C (-13°F).
- Standard photocontrol sensor for use in dusk to dawn applications that can be disabled to be used as and always on or switchable fixture.
- Optional PIR motion sensor (PIR) with up to 10' of detection and operational dusk to dawn. The light will activate when motion is detected in AC mode only and turn off after two minutes of inactivity.

Battery
- Maintenance-free NiCad Battery
- Operating temperatures: -25°C to 50°C (-13°F to 122°F)

Installation
- Universal pattern backplate provides 3" or 4" J-box mounting pattern with keyhole slots
- Can be surface mounted using the ½" conduit entry point at top of housing

Warranty
- 5 year warranty on all electronics and housing

Listings
- UL 924
- cULus Listed for Wet Locations
- IP65 rated
- State of California Title 24
- NFPA 101
- NFPA 70
- NEC
- UL Listed 90 minute emergency run time, 24 hour recharge time

ORDERING GUIDE

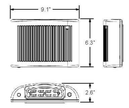
TYPICAL ORDER EXAMPLE: **AWL BR EP**

Prefix	Housing Color	Controls
AWL - All-Weather Wallpack Low Profile	**BR** - Bronze **WH** - White **BK** - Black **SL** - Silver	**EP**1 - Emergency Package **PIR**2 - PIR motion sensor

1 - EP option includes self-test/self-diagnostic and a heater for cold weather operation to -25°C (-13°F)
2 - PIR option adds a PIR motion sensor and removes photocontrol

PRODUCT DIMENSIONS

Plan Label D



LIGHTING SCHEDULE

Schedule

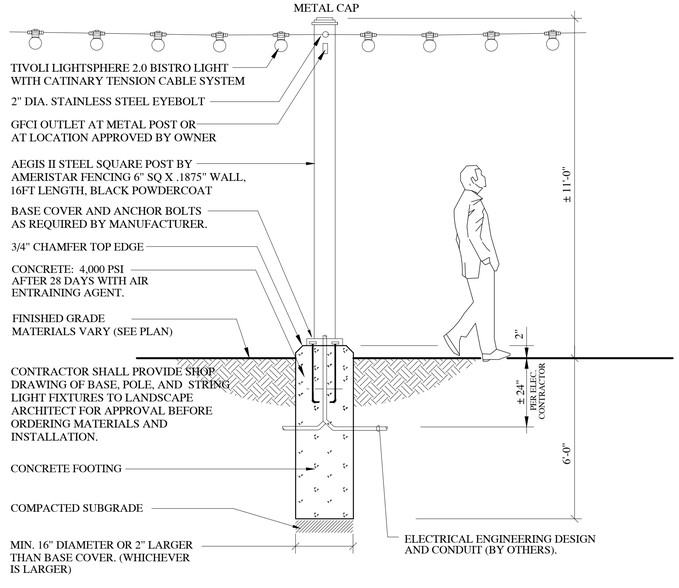
Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Filename	Lumens per Lamp	LLF	Wattage	Distribution
✸	B	12	Lithonia Lighting	RADB LED P4 30K SYM MVOLT BTS BTT BCC BCF H36 DDBXD	RADB LED Bollard; mounted at 3ft	LED	RADB_LED_P4_30K_SYM_DDBXD.ies	1335	0.9	18.59	TYPE VS, BUG RATING: B1 - U1 - G0
●	C	44	Lithonia Lighting	LDN4 30/05 LO4AR LD	4IN LDN Downlight; mounted at 10ft	LED	LDN4_30_05_LO4AR_LD.ies	462	0.9	5.74	DIRECT, SC-0=1.04, SC-90=1.06
▰	D	16	Lithonia Lighting	ARC1 LED P1 30K MVOLT DDBXD	ARC1 LED Wallpack; mounted at 10ft	LED	ARC1_LED_P1_30K.ies	1376	0.9	10.8751	TYPE III, VERY SHORT, BUG RATING: B0 - U0 - 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 - G3
▰	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

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.

(SLP) STRING LIGHT POLE (FOR SEASONAL USE ONLY)

NOT TO SCALE



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

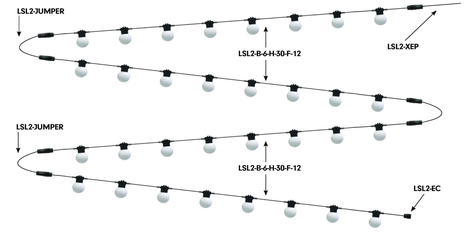
NOTES:

1. MAXIMUM RUN: 250FT
2. PROVIDE 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 application, a catenary cable is required for proper installation. Please contact Tivoli for recommendations on unique mounting applications.

Product	Wire	Spacing	LED Type	LED Color	Globe	Voltage
LSL2	B	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	**19** 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

Stamp

Chkd. | Description | Rev. No.

ParkArchitecture.com
3 School House Lane, Suite #1 Elmo NH 03750
Tel: 603-543-3400, Mobile: 617-905-5487
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 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:	03/11/2024

L3.5

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
▬	WP	PROPOSED WALL PACK
▬	D	PROPOSED ENTRY DOOR WALL PACK
•	C	PROPOSED CANOPY LIGHT
⊠	S	PROPOSED SEASONAL STRING LIGHT
RB		3FT HIGH RAISED BASE (SEE DETAIL)
GB		AT GRADE BASE (SEE DETAIL)

MATCHLINE

MATCHLINE

MATCHLINE

MATCHLINE

BUILDING 1

BUILDING 2

BUILDING 3

BUILDING 4

GARAGE 1

GARAGE 2

GARAGE 3

GARAGE 4

Stamp

Chkd.

Description

Rev. No.

ParkArchitecture.com

3 School House Lane, Suite #1 Etna NH 03750
Tel: 603-643-3400; Mobile: 617-905-5487
Email: parkarchitecture@gmail.com

Client:

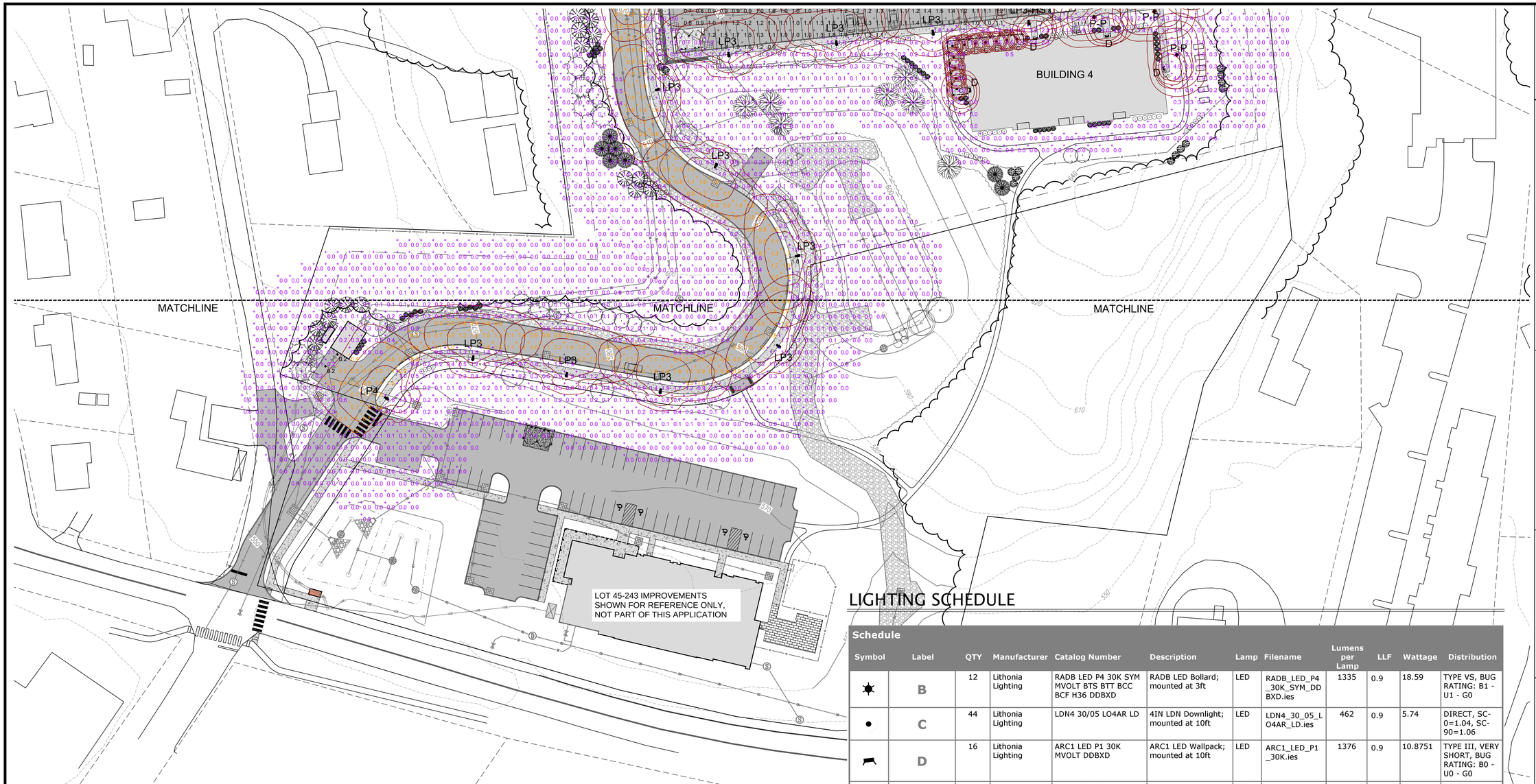
BLACK ROCK INVESTMENTS, LLC
2468 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: Site Photometric Plan
Lot 45-162

Project Title: SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=40'
Date:	03/11/2024

L3.6



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.

LIGHTING STATISTICS

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Driveway - Bldg 5	+	0.9 fc	1.9 fc	0.2 fc	9.5:1	4.5:1
Driveway - Bldgs 1-4	+	1.0 fc	2.0 fc	0.5 fc	4.0:1	2.0:1
Island	+	0.6 fc	6.4 fc	0.0 fc	N/A	N/A
Outside of Parking Lot/Northern Section of Parking Lot	+	0.5 fc	40.6 fc	0.0 fc	N/A	N/A
Outside of Parking/Southern Section	+	0.1 fc	1.9 fc	0.0 fc	N/A	N/A
Parking Lot	+	1.2 fc	7.6 fc	0.0 fc	N/A	N/A

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.

LIGHTING SCHEDULE

Schedule

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Filename	Lumens per Lamp	LLF	Wattage	Distribution
	B	12	Lithonia Lighting	RADB LED P4 30K SYM MVOLT BTS BTT BCC BCF 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
	C	44	Lithonia Lighting	LDN4 30/05 LO4AR LD	4IN LDN Downlight; mounted at 10ft	LED	LDN4_30_05_LO4AR_LD.ies	462	0.9	5.74	DIRECT, SC-0=1.04, SC-90=1.06
	D	16	Lithonia Lighting	ARC1 LED P1 30K MVOLT DDBXD	ARC1 LED Wallpack; mounted at 10ft	LED	ARC1_LED_P1_30K.ies	1376	0.9	10.8751	TYPE III, VERY SHORT, BUG RATING: B0 - U0 - 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 - G3
	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)		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

Stamp

Chkd.

Description

Rev. No.

ParkArchitecture.com
3 School House Lane, Suite #1 Etna NH 03750
Tel: 603-643-3400; Mobile: 617-905-5487
Email: parkarchitecture@gmail.com

Client: BLACK ROCK INVESTMENTS, LLC
2468 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
Checked By:	PS
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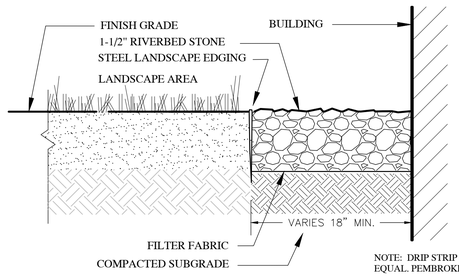
Scale:	1"=40'
Date:	03/11/2024

L3.7

BUILDING DRIP STRIP

SCALE: NTS



NH RIVERBED 1 ½"

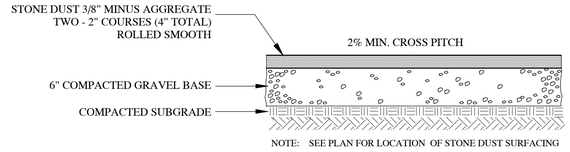
Native NH round stone consisting of multiple colors, mostly blue and grey with a hint of white and pink. This Stone will add a naturally classic touch to any landscape project.

NOTE: DRIP STRIP BY THE DIRT DOCTORS OR APPROVED EQUAL. PEMBROKE, NH (603) 229-3200

STONE DUST PAVEMENT

NOT TO SCALE

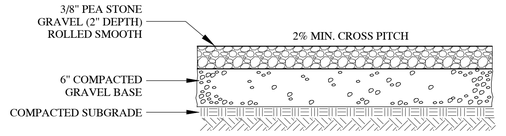
NOTE: SEE PLAN FOR LOCATION OF STONE DUST WALKS



NOTE: SEE PLAN FOR LOCATION OF STONE DUST SURFACING

PEA STONE GRAVEL (IN DOG RUN AREA)

NOT TO SCALE



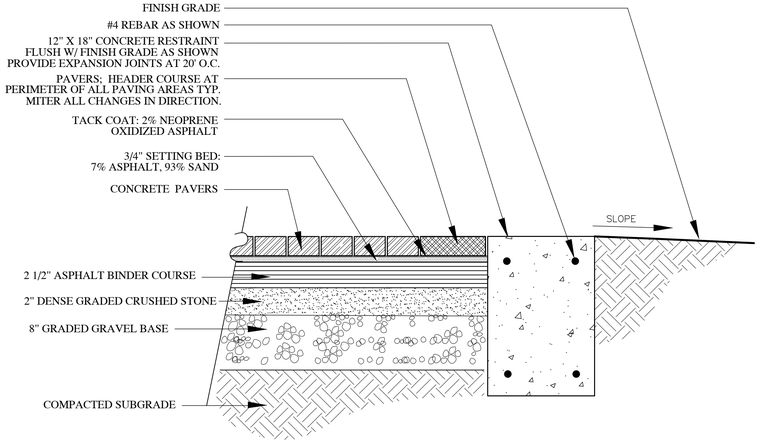
NOTE: SEE PLAN FOR LOCATION OF PEA STONE GRAVEL

PEA STONE 3/8"

Rich caramel color & naturally round. Great for kennels, paths, walkways or foundation borders. Foot Friendly!

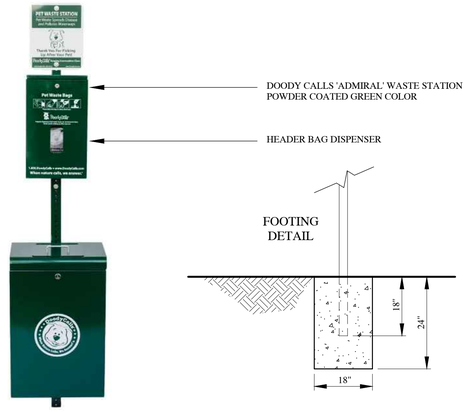
CONCRETE PATIO PAVERS

SCALE: NTS



DOG PARK WASTE STATION

NOT TO SCALE

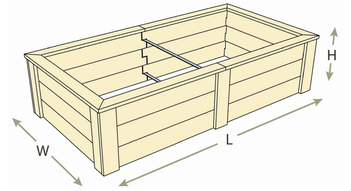


NOTES:

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

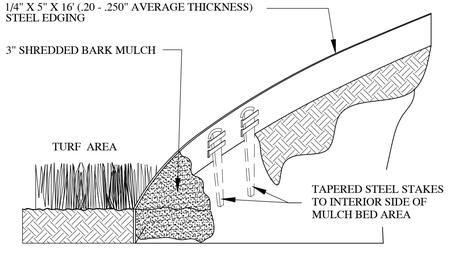
SEE PLAN FOR RAISED BED LOCATIONS

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:

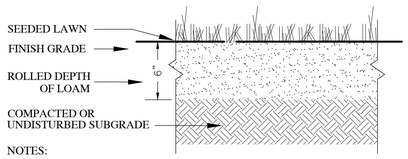
INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

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:

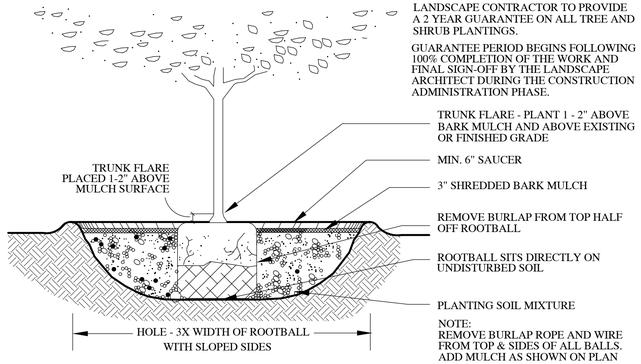
SEED ALL DISTURBED AREAS WITHIN 48 HOURS OF FINAL GRADING. SEED AFTER APRIL 15TH AND BEFORE SEPTEMBER 15TH IN ORDER TO ESTABLISH BEFORE FREEZING TEMPERATURES.

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

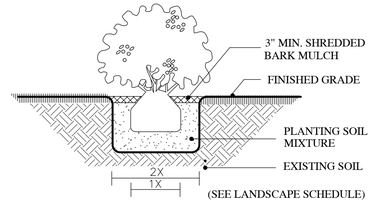
ROOTBALL SITS DIRECTLY ON UNDISTURBED SOIL

PLANTING SOIL MIXTURE

NOTE:
REMOVE BURLAP ROPE AND WIRE FROM TOP & SIDES OF ALL BALLS. ADD MULCH AS SHOWN ON PLAN

SHRUB PLANTING DETAIL

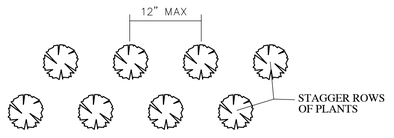
NOT TO SCALE



(SEE LANDSCAPE SCHEDULE)

GROUNDCOVER SPACING DETAIL

NOT TO SCALE



Stamp

Rev. No.	Description	Chkd.

ParkArchitecture.com
3 School House Lane, Suite #1 Etna NH 03750
Tel: 603-643-3400, Mobile: 617-905-0487
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title:
Site Details
Lot 45-162

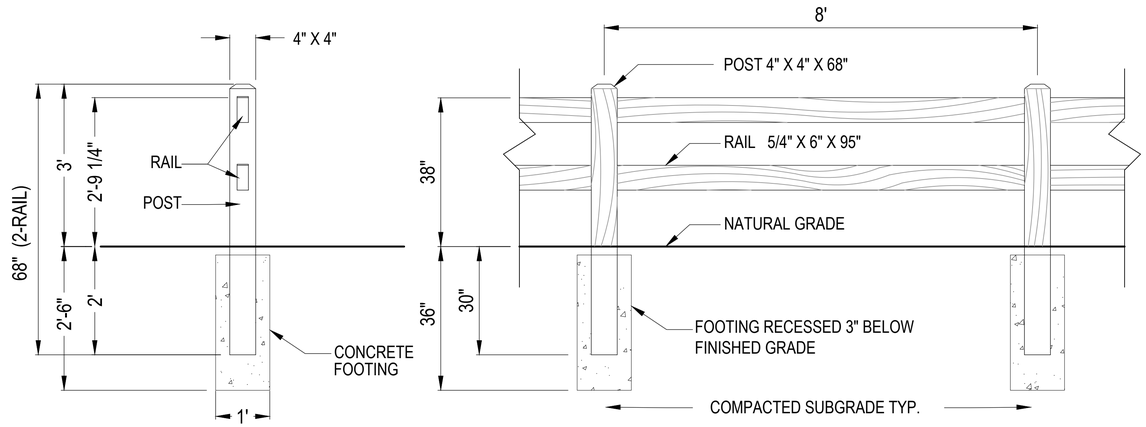
Project Title:
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	03/11/2024

L4.1

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)

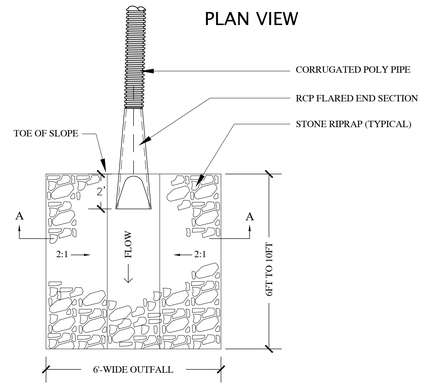
RAIL SIZE 5/4" X 6" X 95"

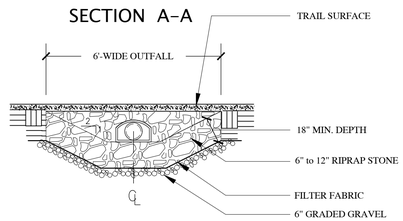
RAIL SCREWS: EACH RAIL WILL REQUIRE 2 OUTDOOR RATED 3"-3.5 #10 SCREWS. CONTRACTOR SHALL PREDRILL SCREW LOCATIONS AND USE STAINLESS STEEL TRIM HEAD #10 DECK SCREWS.

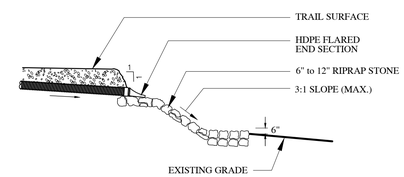
CONTRACTOR SHALL PROVIDE LANDSCAPE ARCHITECT WITH SHOP DRAWING FOR APPROVAL PRIOR TO ORDERING OF MATERIALS AND INSTALLATION.

DRAINAGE FOR TRAIL CONDITION #4

NOT TO SCALE







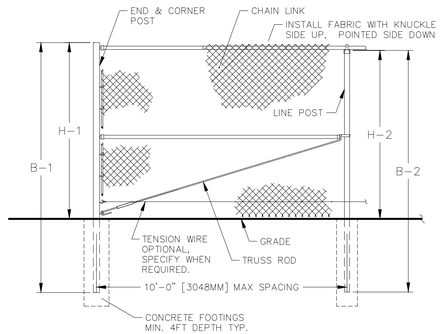
BLACK VINYL CLF INSTALLATION DETAIL

NOT TO SCALE

SEE LANDSCAPE AND CIVIL PLANS FOR LOCATIONS AND HEIGHT

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"	7'-0"	4'-0 5/8"	6'-8"	3'-8 7/8"
5'-0"	8'-0"	5'-0 5/8"	7'-8"	4'-8 7/8"
6'-0"	9'-0"	6'-0 5/8"	8'-8"	5'-8 7/8"
7'-0"	10'-0"	7'-0 5/8"	9'-8"	6'-8 7/8"
8'-0"	11'-0"	8'-0 5/8"	10'-8"	7'-8 7/8"
9'-0"	12'-0"	9'-0 5/8"	11'-8"	8'-8 7/8"
10'-0"	13'-0"	10'-0 5/8"	12'-8"	9'-8 7/8"
11'-0"	14'-0"	11'-0 5/8"	13'-8"	10'-8 7/8"
12'-0"	15'-0"	12'-0 5/8"	14'-8"	11'-8 7/8"

NOTE: FENCE HEIGHT VARIES, SEE PLAN FOR LOCATION, HEIGHT, AND LENGTH OF PROPOSED FENCING.



NOTES:

1. SEE PLAN FOR LOCATION, HEIGHT, AND LENGTH OF PROPOSED FENCING. (BEGIN / END CLF LABELS). FENCE HEIGHT VARIES.

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 FOR FENCING GREATER THAY 6FT IN HT, CONTRACTOR TO INCLUDE TOP, MIDDLE, AND BOTTOM RAILS.

5. MANUFACTURER SHALL BE ANCHOR FENCE OR APPROVED EQUAL.

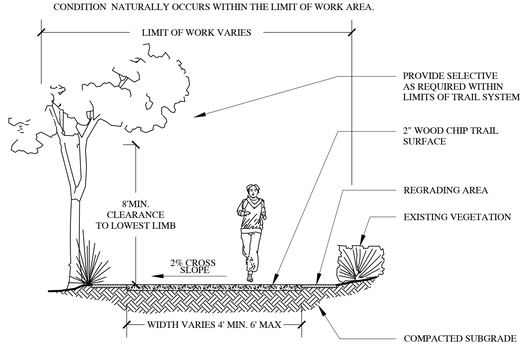
6. INSTALL FABRIC WITH KNUCKLE SIDE UP AND POINTED END DOWN.

7. CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING MATERIALS AND INSTALLATION.

TYPICAL TRAIL CONDITION #1

NOT TO SCALE

NOTE:
CONSTRUCT TRAIL CONDITION #1 WHERE AN EXISTING LEVEL CONDITION NATURALLY OCCURS WITHIN THE LIMIT OF WORK AREA.

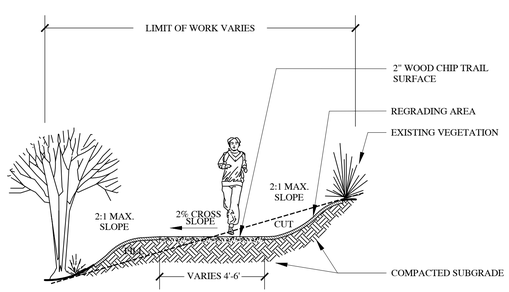


CROSS SECTION - (LEVEL AREA CONDITION)

TYPICAL TRAIL CONDITION #2

NOT TO SCALE

NOTE:
CONSTRUCT TRAIL CONDITION #2 WHERE A 2:1 SLOPE CAN TRANSITION TO EXISTING GRADE WITHIN THE LIMIT OF WORK ZONE.

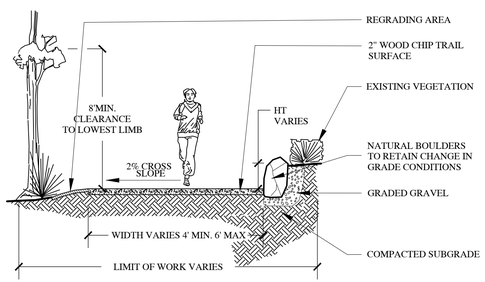


CROSS SECTION - (CUT & FILL CONDITION)

TYPICAL TRAIL CONDITION #3

NOT TO SCALE

NOTE:
CONSTRUCT TRAIL CONDITION #3 WHERE A 2:1 SLOPE CANNOT EASILY TRANSITION TO EXISTING GRADE AND WHERE A VERTICAL CHANGE IN GRADE IS PREFERRED TO MEET EXISTING GRADE CONDITIONS WITHIN THE LIMIT OF WORK AREA.

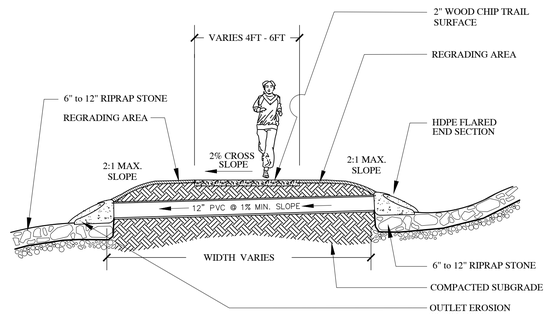


CROSS SECTION - (RETAINING CONDITION)

TYPICAL TRAIL CONDITION #4

NOT TO SCALE

NOTE:
CONSTRUCT TRAIL CONDITION #4 ONLY IN AREAS WHERE THE PROPOSED TRAIL NEEDS TO CROSS A NATURAL OR CONSTRUCTED DRAINAGE SWALE AREA. SIZE OF PIPE SHALL BE 12" OR AS DETERMINED BY CIVIL ENGINEER.



CROSS SECTION - (DRAINAGE CONDITION)

Stamp

Chkd.

Description

Rev. No.

ParkArchitecture.com
3 School House Lane, Suite #1 Etna NH 03750
Tel: 603-643-3400; Mobile: 617-905-0487
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Street 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:	03/11/2024

L4.2

BBQ – GRILL COUNTER

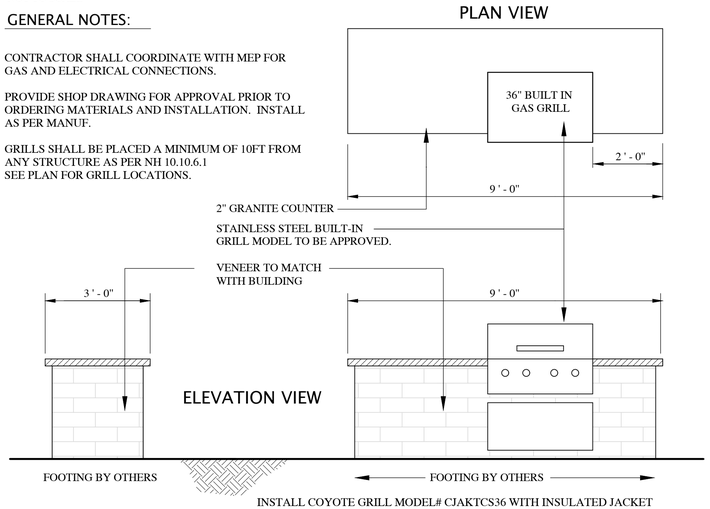
NOT TO SCALE

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# CJAKTCS36 WITH INSULATED JACKET

Coyote C Series 36" Built In Gas Grill - C2C36

Overall Dimensions: 23" H x 35 ½" W x 25 ½" D
Cutout Dimensions: 10 ¼" H x 32 ½" W x 20 ½" D

Features:

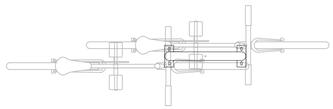
- Premium 304 Stainless Steel Construction
- (4) high-performance Coyote Infinity Burners™
- 875 square inches of cooking area
- Up to 80,000 BTU of output
- LED interior lighting

BIKE RACK INSTALLATION DETAIL

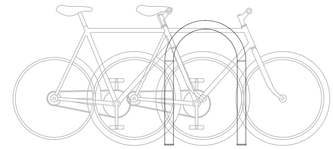
NOT TO SCALE

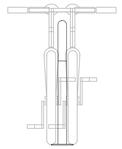
NOTE:
BIKE RACK SHALL BE STAINLESS STEEL BY DERO / HEAVY DUTY OR APPROVED EQUAL

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.

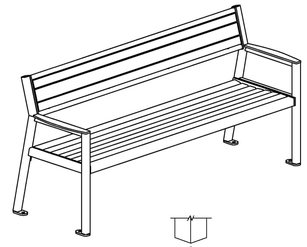
SEE PLAN L1.1 FOR OUTDOOR BIKE STORAGE REQUIREMENTS.

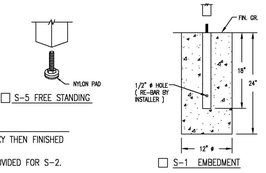
6FT LONG SEATING BENCH

SCALE: NTS

NOTES:

1. INSTALL MODEL 500-60HS 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 EMBEDED FOOTING AS PER MANUFACTURER SPECIFICATIONS.
5. CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING MATERIALS AND INSTALLATION.

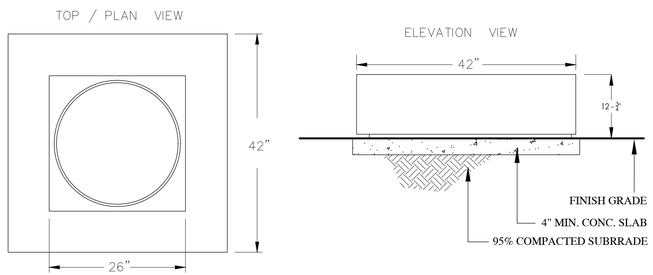




NOTES:
1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
2.) 1/2" X 3 3/4" EXPANSION ANCHOR BOLTS PROVIDED FOR S-2.

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:

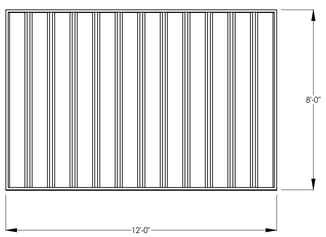
COLOR AND FINISH TO BE SELECTED BY OWNER.

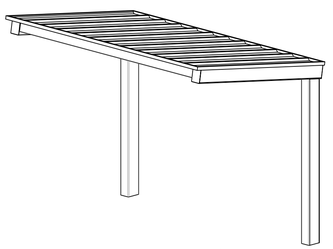
PROVIDE CONSTRUCTION DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION.

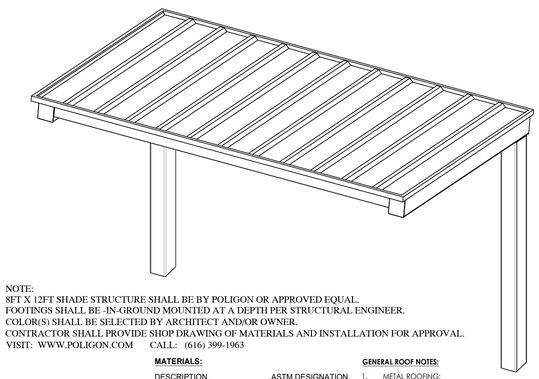
BURNING MEDIA SHALL BE LAVA ROCK AND TOP WITH GRAY RIVER ROCK,
FOR MORE INFORMATION VISIT PALOFORM.COM/FIRE-PITS/BENTO

8FT X 12FT SHADE STRUCTURE DETAIL

SCALE: NTS







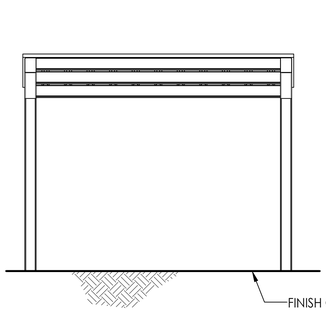
NOTE:
8FT X 12FT SHADE STRUCTURE SHALL BE BY POLIGON OR APPROVED EQUAL.
FOOTINGS SHALL BE -IN-GROUND MOUNTED AT A DEPTH PER STRUCTURAL ENGINEER.
COLOR(S) SHALL BE SELECTED BY ARCHITECT AND/OR OWNER.
CONTRACTOR SHALL PROVIDE SHOP DRAWING OF MATERIALS AND INSTALLATION FOR APPROVAL.
VISIT: WWW.POLIGON.COM CALL: (616) 399-1963

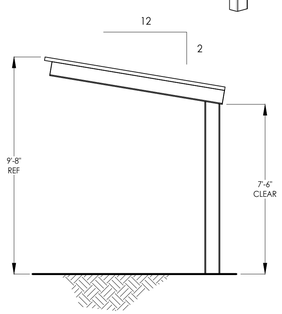
MATERIALS:

DESCRIPTION	ASTM DESIGNATION
TUBE STEEL	A500 (GRADE B)
SCHEDULE PIPE	A53 (GRADE B)
RMT PIPE	A519
LIGHT GAGE COLD FORMED	A1003 (GRADE 50)
STRUCTURAL STEEL PLATE	A36
ROOF PANELS (STEEL)	A653

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





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, COLUMN 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	Chk'd.

ParkArchitecture.com
3 School House Lane, Suite #1 Etna NH 03750
Tel: 603-643-3400, Mobile: 617-905-0487
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

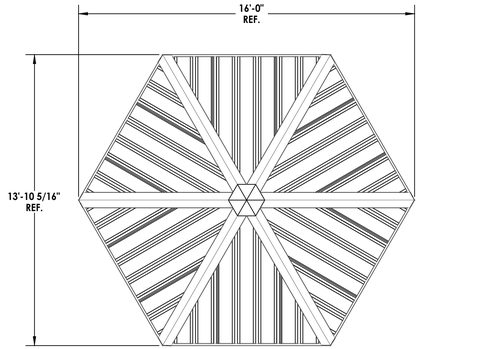
PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	03/11/2024

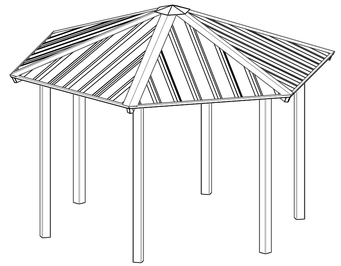
L4.3

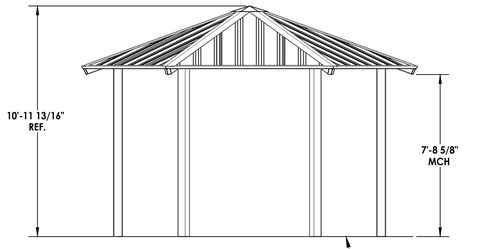
COVERED GAZEBO STRUCTURE ±16FT DIAMETER

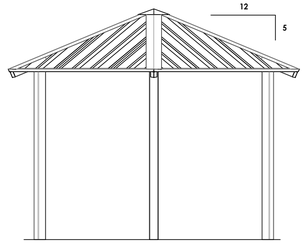
(POLIGON MODEL# HXE-16 WITH MULTI-RIB ROOF)

NOT TO SCALE



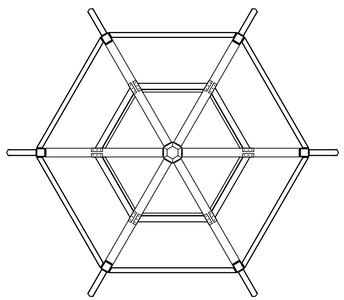


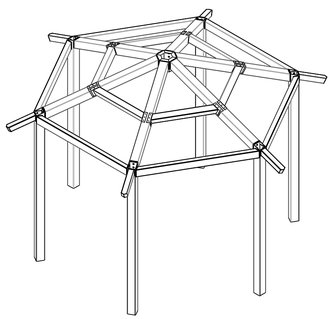


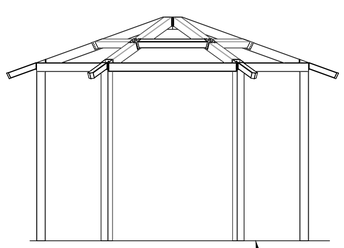


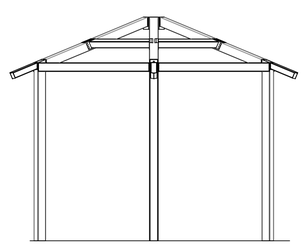
GENERAL ROOF NOTES:

1. METAL ROOFING:
   - 24 GAUGE
   - GALVALUME COATED
   - KYNAR 500 PAINTED
2. TRIM COLOR MATCHES ROOF
3. SEE POLIGON.COM FOR COLOR OPTIONS

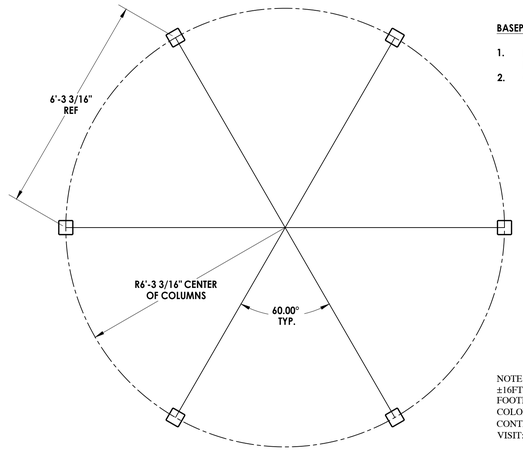








COLUMN LAYOUT PLAN



BASEPLATE NOTES:

1. POLIGON ENGINEERING WILL DETERMINE REQUIRED BASEPLATE DESIGN AFTER ENGINEERING PACKAGE IS ORDERED.
2. CUSTOMER MAY SUGGEST PREFERRED BASEPLATE DESIGN.

NOTE:
±16FT GAZEBO STRUCTURE SHALL BE BY POLIGON OR APPROVED EQUAL.
FOOTINGS SHALL BE -IN-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

MATERIALS:

DESCRIPTION	ASTM DESIGNATION
TUBE STEEL	A500 (GRADE B)
SCHEDULE PIPE	A53 (GRADE B)
RMT PIPE	A519
LIGHT GAGE COLD FORMED STRUCTURAL STEEL PLATE	A1003 (GRADE 50)
ROOF PANELS (STEEL)	A36
	A653

GENERAL NOTES:
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Stamp

Rev. No.	Description	Chkd.

ParkArchitecture.com
3 School House Lane, Suite #1 Etna NH 03750
Tel: 603-643-3400; Mobile: 617-905-0487
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Street Title:
Site Details
Lot 45-162

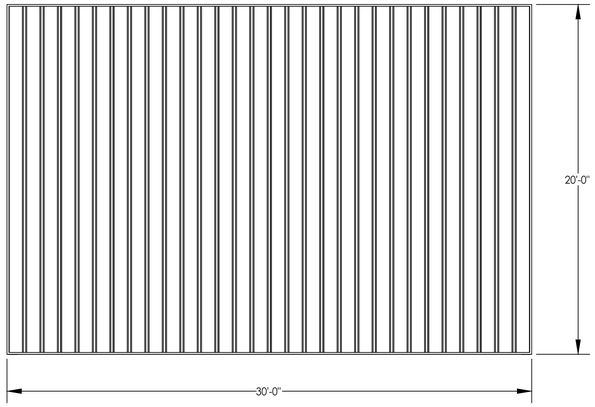
Project Title:
SYKES MOUNTAIN
RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

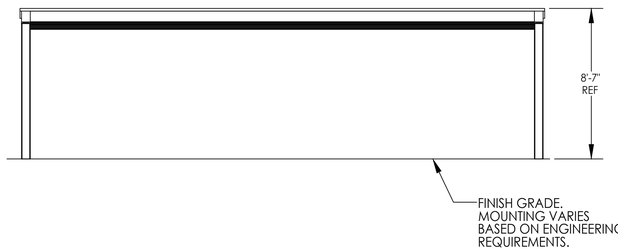
PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	NTS
Date:	03/11/2024

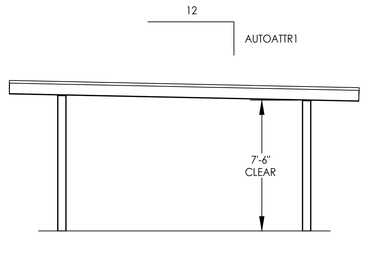
L4.4

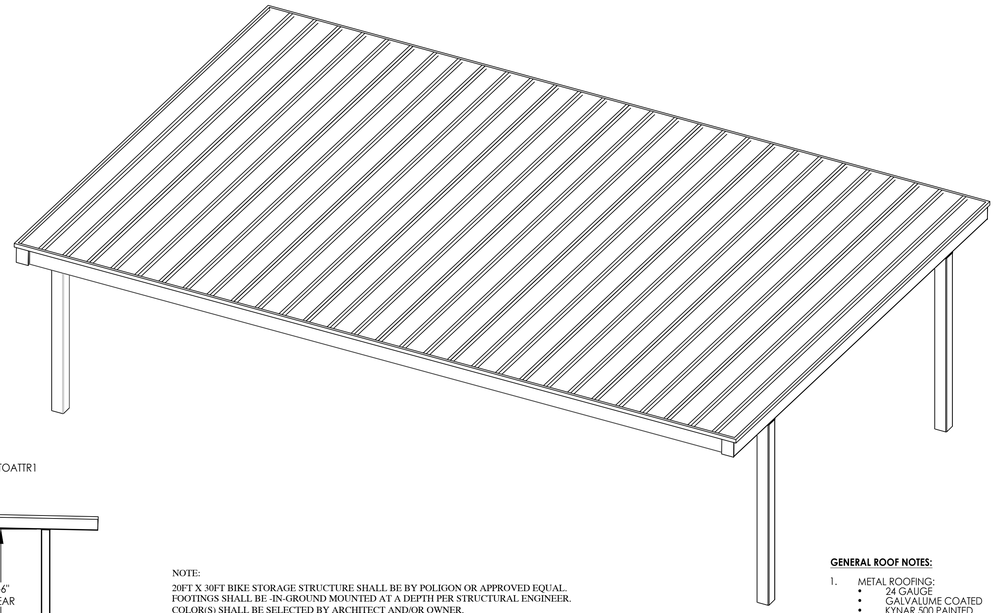
COVERED BIKE STORAGE STRUCTURE 20FT X 30FT (POLIGON MODEL# MSX-20X30)

NOT TO SCALE









NOTE:

20FT X 30FT BIKE STORAGE STRUCTURE SHALL BE BY POLIGON OR APPROVED EQUAL.
FOOTINGS SHALL BE -IN-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

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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:	03/11/2024

L4.5

PLAY BOOSTER FOR 2-5 YEARS OLD

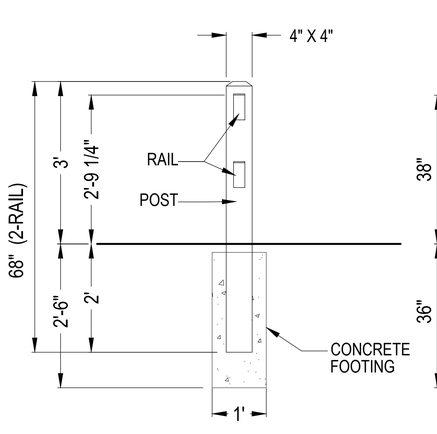
NOT TO SCALE

LOG BALANCE BEAM

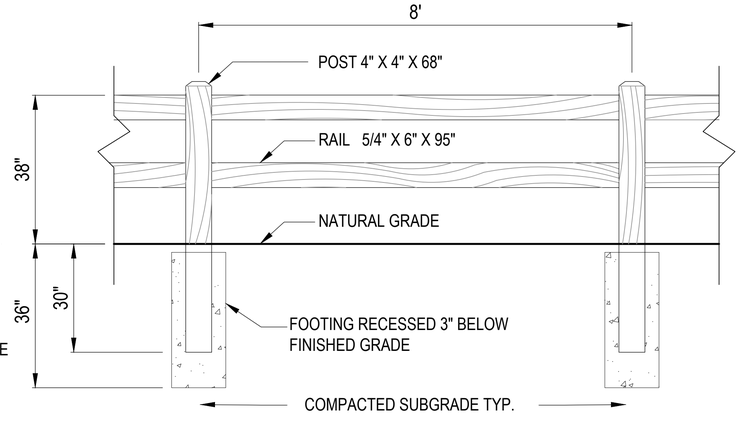
NOT TO SCALE

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)

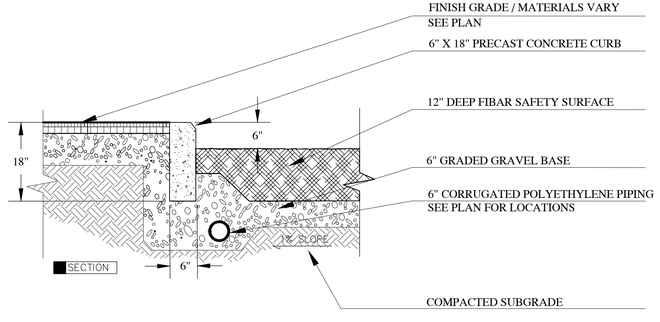
RAIL SIZE 5/4" X 6" X 95"

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

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ParkArchitecture.com
3 School House Lane, Suite #1 Elmo NH 03750
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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:	03/11/2024

L4.6

BlackRock: White River Junction Multi-Family Housing

444 Sykes Mountain Av.
Hartford, VT 05001

PERSPECTIVE VIEW

MARKET SQUARE
ARCHITECTS

Market Square Architects
104 Congress St., STE 203
Portsmouth, NH 03801
PH: 603.501.0202
www.MarketSquareArchitects.com

SCHEMATIC DESIGN

03/20/2024

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3/21/2024 11:38:56 AM

BUILDING UNIT MIX KEY

COMMON AREA

BUILDING SERVICES (COMMON AREA)

BUILDING AMENITIES (COMMON AREA)

LEASING (COMMON AREA)

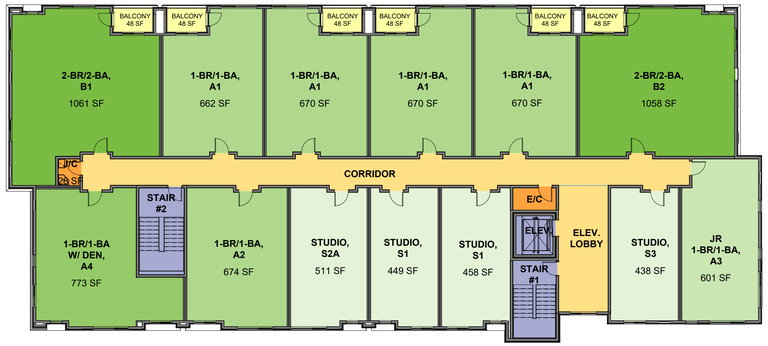
LIMITED COMMON AREA

MAJOR VERTICAL PENETRATIONS

UNIT NET AREA

Studio | Jr. 1b/1ba | 1b/1ba | 1b/1ba w/den | 2b/2ba

Unit Type Per Level						
Unit Type	Description & Type	Level 1	Level 2	Level 3	Level 4	Total
A1	1-BR/1-BA, A1	5	4	4	4	18
A2	1-BR/1-BA, A2	0	1	1	1	3
A3	JR 1-BR/1-BA, A3	0	1	1	1	3
A4	1-BR/1-BA W/ DEN, A4	0	1	1	1	3
B1	2-BR/2-BA, B1	1	1	1	1	4
B2	2-BR/2-BA, B2	1	1	1	1	4
S1	STUDIO, S1	1	2	2	2	7
S2A	STUDIO, S2A	1	1	1	1	4
S3	STUDIO, S3	0	1	1	1	3
Unit Total		9	13	13	13	49



4 4TH FLOOR - UNIT MIX

SCALE: 1/16" = 1'-0"

2 2ND FLOOR - UNIT MIX

SCALE: 1/16" = 1'-0"

3 3RD FLOOR - UNIT MIX

SCALE: 1/16" = 1'-0"

1 1ST FLOOR - UNIT MIX

SCALE: 1/16" = 1'-0"

Unit Type Schedule			
Room No.	Unit Description, Type	Unit Type	Area (Net)
Level 1			
114	1-BR/1-BA, A1	A1	670 SF
116	1-BR/1-BA, A1	A1	670 SF
118	1-BR/1-BA, A1	A1	670 SF
119	1-BR/1-BA, A1	A1	674 SF
120	1-BR/1-BA, A1	A1	670 SF
121	1-BR/1-BA, A1	A1	681 SF
122	2-BR/2-BA, B1	B1	1054 SF
112	2-BR/2-BA, B2	B2	1068 SF
115	STUDIO, S1	S1	451 SF
117	STUDIO, S2A	S2A	511 SF
Level 1: 10			7117 SF
Level 2			
212	1-BR/1-BA, A1	A1	670 SF
214	1-BR/1-BA, A1	A1	670 SF
216	1-BR/1-BA, A1	A1	670 SF
218	1-BR/1-BA, A1	A1	670 SF
219	1-BR/1-BA, A2	A2	674 SF
209	JR 1-BR/1-BA, A3	A3	601 SF
221	1-BR/1-BA W/ DEN, A4	A4	782 SF
220	2-BR/2-BA, B1	B1	1064 SF
210	2-BR/2-BA, B2	B2	1068 SF
213	STUDIO, S1	S1	454 SF
215	STUDIO, S1	S1	454 SF
217	STUDIO, S2A	S2A	511 SF
211	STUDIO, S3	S3	438 SF
Level 2: 13			8723 SF
Level 3			
312	1-BR/1-BA, A1	A1	670 SF
314	1-BR/1-BA, A1	A1	670 SF
316	1-BR/1-BA, A1	A1	670 SF
318	1-BR/1-BA, A1	A1	670 SF
319	1-BR/1-BA, A2	A2	674 SF
309	JR 1-BR/1-BA, A3	A3	603 SF
321	1-BR/1-BA W/ DEN, A4	A4	782 SF
320	2-BR/2-BA, B1	B1	1064 SF
310	2-BR/2-BA, B2	B2	1068 SF
313	STUDIO, S1	S1	454 SF
315	STUDIO, S1	S1	454 SF
317	STUDIO, S2A	S2A	511 SF
311	STUDIO, S3	S3	438 SF
Level 3: 13			8725 SF
Level 4			
412	1-BR/1-BA, A1	A1	670 SF
414	1-BR/1-BA, A1	A1	670 SF
416	1-BR/1-BA, A1	A1	670 SF
418	1-BR/1-BA, A1	A1	662 SF
419	1-BR/1-BA, A2	A2	674 SF
409	JR 1-BR/1-BA, A3	A3	601 SF
421	1-BR/1-BA W/ DEN, A4	A4	773 SF
420	2-BR/2-BA, B1	B1	1061 SF
410	2-BR/2-BA, B2	B2	1058 SF
413	STUDIO, S1	S1	458 SF
415	STUDIO, S1	S1	449 SF
417	STUDIO, S2A	S2A	511 SF
411	STUDIO, S3	S3	438 SF
Level 4: 13			8693 SF
Unit Totals: 49			33258 SF

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDINGS 1, 3, & 4 - UNIT MIX PLANS

AP.07

03/20/2024

MARKET SQUARE ARCHITECTS

© 2022 Market Square Architects
PH: 603.501.0202

BUILDING UNIT MIX KEY

COMMON AREA

BUILDING SERVICES (COMMON AREA)

BUILDING AMENITIES (COMMON AREA)

LEASING (COMMON AREA)

LIMITED COMMON AREA

MAJOR VERTICAL PENETRATIONS

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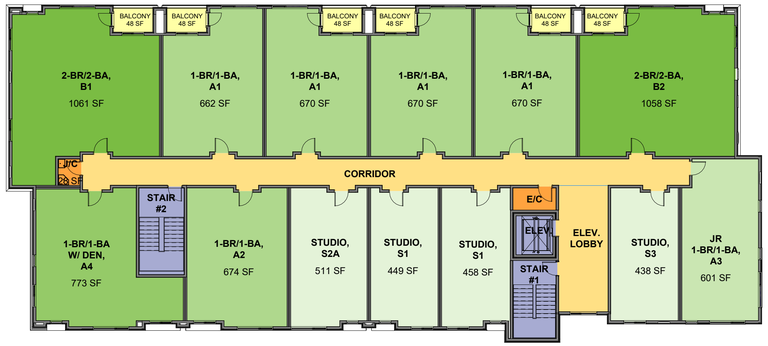
Unit Type Per Level

Unit Type	Description & Type	Level 1	Level 2	Level 3	Level 4	Total
A1	1-BR/1-BA, A1	3	4	4	4	16
A2	1-BR/1-BA, A2	0	1	1	1	3
A3	JR 1-BR/1-BA, A3	0	1	1	1	3
A4	1-BR/1-BA W/ DEN, A4	0	1	1	1	3
B1	2-BR/2-BA, B1	1	1	1	1	4
B2	2-BR/2-BA, B2	0	1	1	1	3
S1	STUDIO, S1	0	2	2	2	6
S2A	STUDIO, S2A	1	1	1	1	4
S3	STUDIO, S3	0	1	1	1	3
Unit Total		5	13	13	13	45



4 4TH FLOOR - UNIT MIX

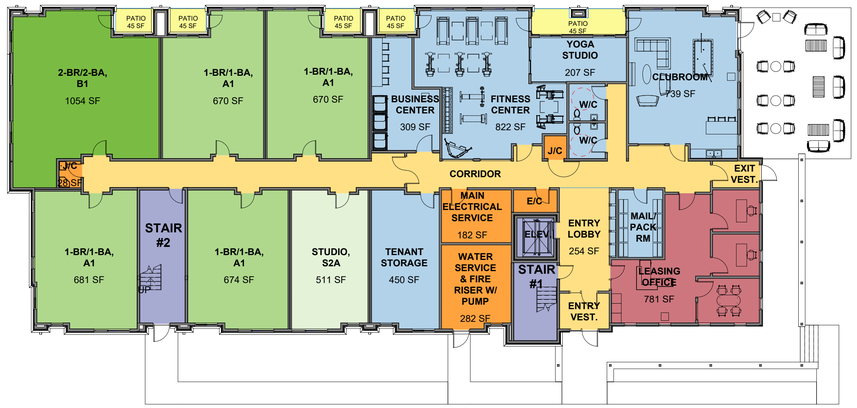
SCALE: 1/16" = 1'-0"

2 2ND FLOOR - UNIT MIX

SCALE: 1/16" = 1'-0"

3 3RD FLOOR - UNIT MIX

SCALE: 1/16" = 1'-0"



1 1ST FLOOR - UNIT MIX

SCALE: 1/16" = 1'-0"

Unit Type Schedule

Room No.	Unit Description, Type	Unit Type	Area (Net)
Level 1			
118	1-BR/1-BA, A1	A1	670 SF
119	1-BR/1-BA, A1	A1	674 SF
120	1-BR/1-BA, A1	A1	670 SF
121	1-BR/1-BA, A1	A1	681 SF
122	2-BR/2-BA, B1	B1	1054 SF
117	STUDIO, S2A	S2A	511 SF
Level 1: 6			4258 SF
Level 2			
212	1-BR/1-BA, A1	A1	670 SF
214	1-BR/1-BA, A1	A1	670 SF
216	1-BR/1-BA, A1	A1	670 SF
218	1-BR/1-BA, A1	A1	670 SF
219	1-BR/1-BA, A2	A2	674 SF
209	JR 1-BR/1-BA, A3	A3	601 SF
221	1-BR/1-BA W/ DEN, A4	A4	782 SF
220	2-BR/2-BA, B1	B1	1064 SF
210	2-BR/2-BA, B2	B2	1068 SF
213	STUDIO, S1	S1	454 SF
215	STUDIO, S1	S1	454 SF
217	STUDIO, S2A	S2A	511 SF
211	STUDIO, S3	S3	438 SF
Level 2: 13			8723 SF
Level 3			
312	1-BR/1-BA, A1	A1	670 SF
314	1-BR/1-BA, A1	A1	670 SF
316	1-BR/1-BA, A1	A1	670 SF
318	1-BR/1-BA, A1	A1	670 SF
319	1-BR/1-BA, A2	A2	674 SF
309	JR 1-BR/1-BA, A3	A3	603 SF
321	1-BR/1-BA W/ DEN, A4	A4	782 SF
320	2-BR/2-BA, B1	B1	1064 SF
310	2-BR/2-BA, B2	B2	1068 SF
313	STUDIO, S1	S1	458 SF
315	STUDIO, S1	S1	449 SF
317	STUDIO, S2A	S2A	511 SF
311	STUDIO, S3	S3	438 SF
Level 3: 13			8726 SF
Level 4			
412	1-BR/1-BA, A1	A1	670 SF
414	1-BR/1-BA, A1	A1	670 SF
416	1-BR/1-BA, A1	A1	670 SF
418	1-BR/1-BA, A1	A1	662 SF
419	1-BR/1-BA, A2	A2	674 SF
409	JR 1-BR/1-BA, A3	A3	601 SF
421	1-BR/1-BA W/ DEN, A4	A4	773 SF
420	2-BR/2-BA, B1	B1	1061 SF
410	2-BR/2-BA, B2	B2	1058 SF
413	STUDIO, S1	S1	458 SF
415	STUDIO, S1	S1	449 SF
417	STUDIO, S2A	S2A	511 SF
411	STUDIO, S3	S3	438 SF
Level 4: 13			8693 SF
Unit Totals: 45			30400 SF

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDING 2 - UNIT MIX PLANS

AP.08

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VT AGRARIAN STRUCTURES

VT HISTORIC STRUCTURES

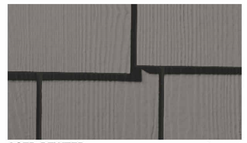
VT HOUSING VERNACULAR

CONTEMPORARY MULTI-FAMILY HOUSING

MATERIAL FINISH AND COLOR PALETTE

MONTEREY TAUPE — Main Exterior

ARCTIC WHITE — Trim



AGED PEWTER — Accent

IRON GRAY — Accent

EVENING BLUE — Accent

COUNTRYLANE RED — Accent

NATURAL STONE - AMERICAN GRANITE LEDGE

METAL ROOFING PANEL - GRAY GALVALUME

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, SUCH AS THE STONE WATER TABLE.

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

DESIGN BOARD

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2 BLDG 1 - RIGHT ELEVATION

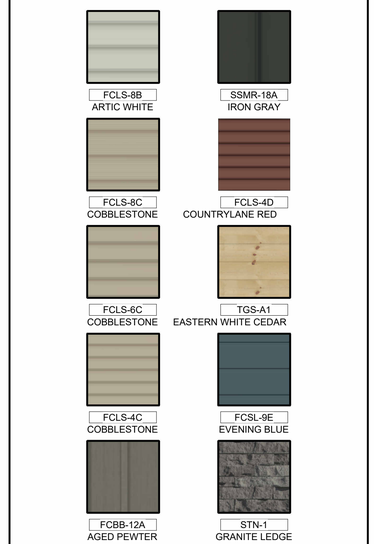
SCALE: 1/8" = 1'-0"

1 BUILDING 1 - FRONT (PARKING) ELEVATION

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

ELEVATION MATERIAL KEY	
Key Value	Keynote Text
CMP-W	EXTERIOR PREFINISHED COMPOSITE FRAME WINDOW, COLOR - DARK BRONZE
CP-64E	CORNICE PROFILE 1, 5 FT. - 4 IN. HEIGHT, WOOD FRAMED, FCT CLAD, EVENING BLUE
FCBB-12A	BOARD & BATTEN: 12 IN., AGED PEWTER, SMOOTH
FCLS-4C	LAP SIDING: 4 IN. EXP., COBBLESTONE, SMOOTH
FCLS-4D	LAP SIDING: 4 IN. EXP., COUNTRYLANE RED, SMOOTH
FCLS-6	
FCLS-6C	LAP SIDING: 6 IN. EXP., COBBLESTONE, SMOOTH
FCLS-8B	LAP SIDING: 8 IN. EXP., ARTIC WHITE, SMOOTH
FCLS-8C	LAP SIDING: 8 IN. EXP., COBBLESTONE, SMOOTH
FCSL-9E	SHIPLAP SIDING: 9 IN. EXP., EVENING BLUE, SMOOTH
FCT-1	
FCT-4A	EXT. TRIM: (5/4 IN. x 4 IN.), AGED PEWTER, SMOOTH
FCT-4B	EXT. TRIM: (5/4 IN. x 4 IN.), ARTIC WHITE, SMOOTH
FCT-4C	EXT. TRIM: (5/4 IN. x 4 IN.), COBBLESTONE, SMOOTH
FCT-4E	EXT. TRIM: (5/4 IN. x 4 IN.), EVENING BLUE, SMOOTH
FCT-6A	EXT. TRIM: (5/4 IN. x 6 IN.), AGED PEWTER, SMOOTH
FCT-8A	EXT. TRIM: (5/4 IN. x 8 IN.), AGED PEWTER, SMOOTH
FCT-8C	EXT. TRIM: (5/4 IN. x 8 IN.), COBBLESTONE, SMOOTH
FCTF-8F	FASCIA BOARD: (5/4 IN. x 8 IN.), IRON GRAY, SMOOTH
FCTF-12F	FASCIA BOARD: (5/4 IN. x 12 IN.), IRON GRAY, SMOOTH
GR-1	PREFABRICATED ALUMINUM GUARDRAIL, COLOR - IRON GRAY
ORL	OVERFLOW RAIN LEADER
PCWC-24A	PRECAST WALL CAP, 3 5/8 IN. TALL PROFILE, 18 IN. WIDTH, CONC. GRAY
PCWT-32A	PRECAST WATER TABLE/ TRANSITION, 3 5/8 IN. TALL PROFILE, CONRETE GRAY
RST-B	6X6 DOUBLAS FIR TIMBER BEAM, NATURAL
RST-C	4X16 DOUGLAS FIR TIMBER COLUMN, NATURAL
SMFT-4B	SHEET METAL FLASHING WALL CAP AND FASCIA TRIM ELEMENT, MATCH COLOR - ARTIC WHITE
SMFT-6A	SHEET METAL FLASHING WALL CAP AND FASCIA TRIM ELEMENT, MATCH COLOR - AGED PEWTER
SMFT-6B	SHEET METAL FLASHING WALL CAP AND FASCIA TRIM ELEMENT, MATCH COLOR - ARTIC WHITE
SSMR-18A	STANDING SEAM SHEET METAL ROOFING
STN-1	NATURAL THIN CUT STONE VENEER: AMERICAN GRANITE LEDGE
TGS-A1	TONGUE & GROOVE, V-EDGE, VERTICAL WOOD SIDING, NATURAL EASTERN CEDAR
TGVS-A1	TONGUE & GROOVE, V-EDGE, VERTICAL WOOD SIDING, NATURAL EASTERN CEDAR

DESIGN MATERIAL & COLOR SCHEME



PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDINGS 1, 3, & 4 - ELEVATIONS

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2 BLDG 1 - LEFT ELEVATION

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

1 BUILDING 1 - BACK (HILLSLOPE) ELEVATION

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

ELEVATION MATERIAL KEY	
Key Value	Keynote Text
CMP-W	EXTERIOR PREFINISHED COMPOSITE FRAME WINDOW, COLOR - DARK BRONZE
CP-64E	CORNICE PROFILE 1, 5 FT. - 4 IN. HEIGHT, WOOD FRAMED, FCT CLAD, EVENING BLUE
FCBB-12A	BOARD & BATTEN: 12 IN., AGED PEWTER, SMOOTH
FCLS-4C	LAP SIDING: 4 IN. EXP., COBBLESTONE, SMOOTH
FCLS-4D	LAP SIDING: 4 IN. EXP., COUNTRYLANE RED, SMOOTH
FCLS-6	
FCLS-6C	LAP SIDING: 6 IN. EXP., COBBLESTONE, SMOOTH
FCLS-8B	LAP SIDING: 8 IN. EXP., ARTIC WHITE, SMOOTH
FCLS-8C	LAP SIDING: 8 IN. EXP., COBBLESTONE, SMOOTH
FCSL-9E	SHIPLAP SIDING: 9 IN. EXP., EVENING BLUE, SMOOTH
FCT-1	
FCT-4A	EXT. TRIM: (5/4 IN. x 4 IN.), AGED PEWTER, SMOOTH
FCT-4B	EXT. TRIM: (5/4 IN. x 4 IN.), ARTIC WHITE, SMOOTH
FCT-4C	EXT. TRIM: (5/4 IN. x 4 IN.), COBBLESTONE, SMOOTH
FCT-4E	EXT. TRIM: (5/4 IN. x 4 IN.), EVENING BLUE, SMOOTH
FCT-6A	EXT. TRIM: (5/4 IN. x 6 IN.), AGED PEWTER, SMOOTH
FCT-8A	EXT. TRIM: (5/4 IN. x 8 IN.), AGED PEWTER, SMOOTH
FCT-8C	EXT. TRIM: (5/4 IN. x 8 IN.), COBBLESTONE, SMOOTH
FCTF-8F	FASCIA BOARD: (5/4 IN. x 8 IN.), IRON GRAY, SMOOTH
FCTF-12F	FASCIA BOARD: (5/4 IN. x 12 IN.), IRON GRAY, SMOOTH
GR-1	PREFABRICATED ALUMINUM GUARDRAIL, COLOR - IRON GRAY
ORL	OVERFLOW RAIN LEADER
PCWC-24A	PRECAST WALL CAP, 3 5/8 IN. TALL PROFILE, 18 IN. WIDTH, CONC. GRAY
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RST-B	6X6 DOUBLAS FIR TIMBER BEAM, NATURAL
RST-C	4X16 DOUGLAS FIR TIMBER COLUMN, NATURAL
SMFT-4B	SHEET METAL FLASHING WALL CAP AND FASCIA TRIM ELEMENT, MATCH COLOR - ARTIC WHITE
SMFT-6A	SHEET METAL FLASHING WALL CAP AND FASCIA TRIM ELEMENT, MATCH COLOR - AGED PEWTER
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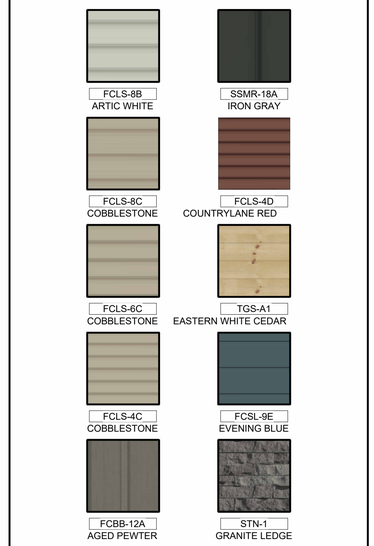
SSMR-18A	STANDING SEAM SHEET METAL ROOFING
STN-1	NATURAL THIN CUT STONE VENEER: AMERICAN GRANITE LEDGE
TGS-A1	TONGUE & GROOVE, V-EDGE, VERTICAL WOOD SIDING, NATURAL EASTERN CEDAR
TGVS-A1	TONGUE & GROOVE, V-EDGE, VERTICAL WOOD SIDING, NATURAL EASTERN CEDAR

DESIGN MATERIAL & COLOR SCHEME



PROJECT NO. 2022061

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BUILDINGS 1, 3, & 4 - ELEVATIONS

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2 BLDG 1 - RIGHT ELEVATION

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

1 BUILDING 1 - FRONT (PARKING) ELEVATION

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

ELEVATION MATERIAL KEY	
Key Value	Keynote Text
CMP-W	EXTERIOR PREFINISHED COMPOSITE FRAME WINDOW, COLOR - DARK BRONZE
CP-64E	CORNICE PROFILE 1, 5 FT. - 4 IN. HEIGHT, WOOD FRAMED, FCT CLAD, EVENING BLUE
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FCLS-4C	LAP SIDING: 4 IN. EXP., COBBLESTONE, SMOOTH
FCLS-4D	LAP SIDING: 4 IN. EXP., COUNTRYLANE RED, SMOOTH
FCLS-6	
FCLS-6C	LAP SIDING: 6 IN. EXP., COBBLESTONE, SMOOTH
FCLS-8B	LAP SIDING: 8 IN. EXP., ARTIC WHITE, SMOOTH
FCLS-8C	LAP SIDING: 8 IN. EXP., COBBLESTONE, SMOOTH
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FCT-4A	EXT. TRIM: (5/4 IN. x 4 IN.), AGED PEWTER, SMOOTH
FCT-4B	EXT. TRIM: (5/4 IN. x 4 IN.), ARTIC WHITE, SMOOTH
FCT-4C	EXT. TRIM: (5/4 IN. x 4 IN.), COBBLESTONE, SMOOTH
FCT-4E	EXT. TRIM: (5/4 IN. x 4 IN.), EVENING BLUE, SMOOTH
FCT-6A	EXT. TRIM: (5/4 IN. x 6 IN.), AGED PEWTER, SMOOTH
FCT-8A	EXT. TRIM: (5/4 IN. x 8 IN.), AGED PEWTER, SMOOTH
FCT-8C	EXT. TRIM: (5/4 IN. x 8 IN.), COBBLESTONE, SMOOTH
FCTF-8F	FASCIA BOARD: (5/4 IN. x 8 IN.), IRON GRAY, SMOOTH
FCTF-12F	FASCIA BOARD: (5/4 IN. x 12 IN.), IRON GRAY, SMOOTH
GR-1	PREFABRICATED ALUMINUM GUARDRAIL, COLOR - IRON GRAY
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RST-C	4X16 DOUGLAS FIR TIMBER COLUMN, NATURAL
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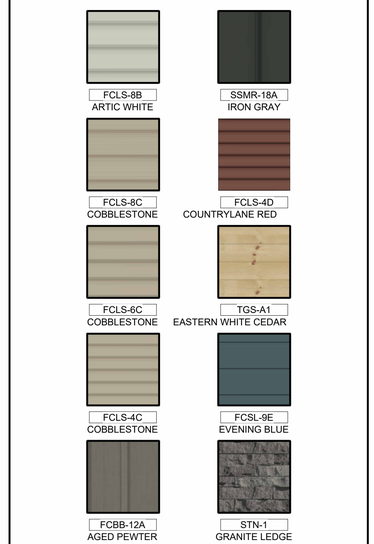
SMFT-6A	SHEET METAL FLASHING WALL CAP AND FASCIA TRIM ELEMENT, MATCH COLOR - AGED PEWTER
SMFT-6B	SHEET METAL FLASHING WALL CAP AND FASCIA TRIM ELEMENT, MATCH COLOR - ARTIC WHITE
SSMR-18A	STANDING SEAM SHEET METAL ROOFING
STN-1	NATURAL THIN CUT STONE VENEER: AMERICAN GRANITE LEDGE
TGS-A1	TONGUE & GROOVE, V-EDGE, VERTICAL WOOD SIDING, NATURAL EASTERN CEDAR
TGVS-A1	TONGUE & GROOVE, V-EDGE, VERTICAL WOOD SIDING, NATURAL EASTERN CEDAR

DESIGN MATERIAL & COLOR SCHEME



PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BLDG 2 - ELEVATIONS

AP.23

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2 BLDG 1 - LEFT ELEVATION

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

1 BUILDING 1 - BACK (HILLSLOPE) ELEVATION

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

ELEVATION MATERIAL KEY	
Key Value	Keynote Text
CMP-W	EXTERIOR PREFINISHED COMPOSITE FRAME WINDOW, COLOR - DARK BRONZE
CP-64E	CORNICE PROFILE 1, 5 FT. - 4 IN. HEIGHT, WOOD FRAMED, FCT CLAD, EVENING BLUE
FCBB-12A	BOARD & BATTEN: 12 IN., AGED PEWTER, SMOOTH
FCLS-4C	LAP SIDING: 4 IN. EXP., COBBLESTONE, SMOOTH
FCLS-4D	LAP SIDING: 4 IN. EXP., COUNTRYLANE RED, SMOOTH
FCLS-6	
FCLS-6C	LAP SIDING: 6 IN. EXP., COBBLESTONE, SMOOTH
FCLS-8B	LAP SIDING: 8 IN. EXP., ARTIC WHITE, SMOOTH
FCLS-8C	LAP SIDING: 8 IN. EXP., COBBLESTONE, SMOOTH
FCSL-9E	SHIPLAP SIDING: 9 IN. EXP., EVENING BLUE, SMOOTH
FCT-1	
FCT-4A	EXT. TRIM: (5/4 IN. x 4 IN.), AGED PEWTER, SMOOTH
FCT-4B	EXT. TRIM: (5/4 IN. x 4 IN.), ARTIC WHITE, SMOOTH
FCT-4C	EXT. TRIM: (5/4 IN. x 4 IN.), COBBLESTONE, SMOOTH
FCT-4E	EXT. TRIM: (5/4 IN. x 4 IN.), EVENING BLUE, SMOOTH
FCT-6A	EXT. TRIM: (5/4 IN. x 6 IN.), AGED PEWTER, SMOOTH
FCT-8A	EXT. TRIM: (5/4 IN. x 8 IN.), AGED PEWTER, SMOOTH
FCT-8C	EXT. TRIM: (5/4 IN. x 8 IN.), COBBLESTONE, SMOOTH
FCTF-8F	FASCIA BOARD: (5/4 IN. x 8 IN.), IRON GRAY, SMOOTH
FCTF-12F	FASCIA BOARD: (5/4 IN. x 12 IN.), IRON GRAY, SMOOTH
GR-1	PREFABRICATED ALUMINUM GUARDRAIL, COLOR - IRON GRAY
ORL	OVERFLOW RAIN LEADER
PCWC-24A	PRECAST WALL CAP, 3 5/8 IN. TALL PROFILE, 18 IN. WIDTH, CONC. GRAY
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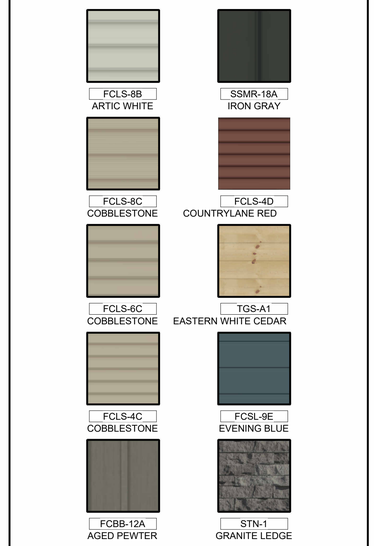
TGVS-A1	TONGUE & GROOVE, V-EDGE, VERTICAL WOOD SIDING, NATURAL EASTERN CEDAR

DESIGN MATERIAL & COLOR SCHEME



PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BLDG 2 - ELEVATIONS

AP.24

03/20/2024

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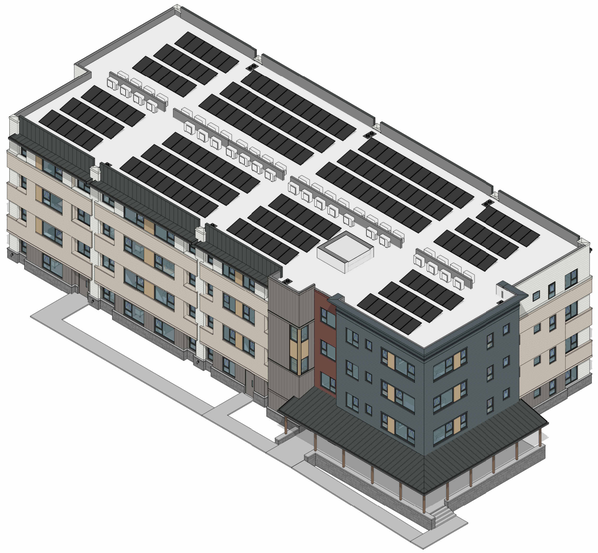
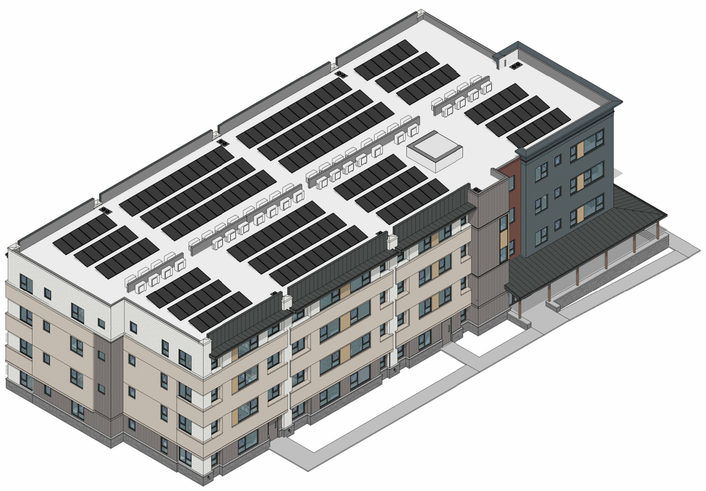
4 SW ISOMETRIC VIEW
SCALE:

3 SE ISOMETRIC VIEW
SCALE:



1 NW ISOMETRIC
SCALE:



2 NE ISOMETRIC
SCALE:

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDINGS 1, 3, & 4 - ISOMETRIC VIEWS

AP.27

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4 SW PERSPECTIVE
SCALE:

2 SE PERSPECTIVE VIEW
SCALE:

3 NE PERSPECTIVE
SCALE:

1 NW PERSPECTIVE
SCALE:

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDINGS 1, 3, & 4 - PERSPECTIVE VIEWS

AP.28

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4 NW PERSPECTIVE OPT 4 - BUILDING CORNER (COUNTRY LANE RED), ENTRY ACCENT (IRON GRAY)

SCALE:

2 NW PERSPECTIVE OPT 2 - BUILDING CORNER (IRON GRAY), ENTRY ACCENT (MOUNTAIN SAGE)

SCALE:

3 NW PERSPECTIVE OPT 3 - BUILDING CORNER (BOOTHBAY BLUE), ENTRY ACCENT (EVENING BLUE)

SCALE:

1 NW PERSPECTIVE OPT 1 - BUILDING CORNER (LIGHT MIST), ENTRY ACCENT (EVENING BLUE)

SCALE:

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BUILDINGS 1, 3, & 4 EXTERIOR COLOR OPTIONS

AP.29

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AP.30

BUILDINGS 1, 2, 3, & 4 (HILLTOP) RENDERINGS

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BUILDING 1 (HILLTOP) RENDERING

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AP.32

BUILDING 2 (HILLTOP) RENDERING

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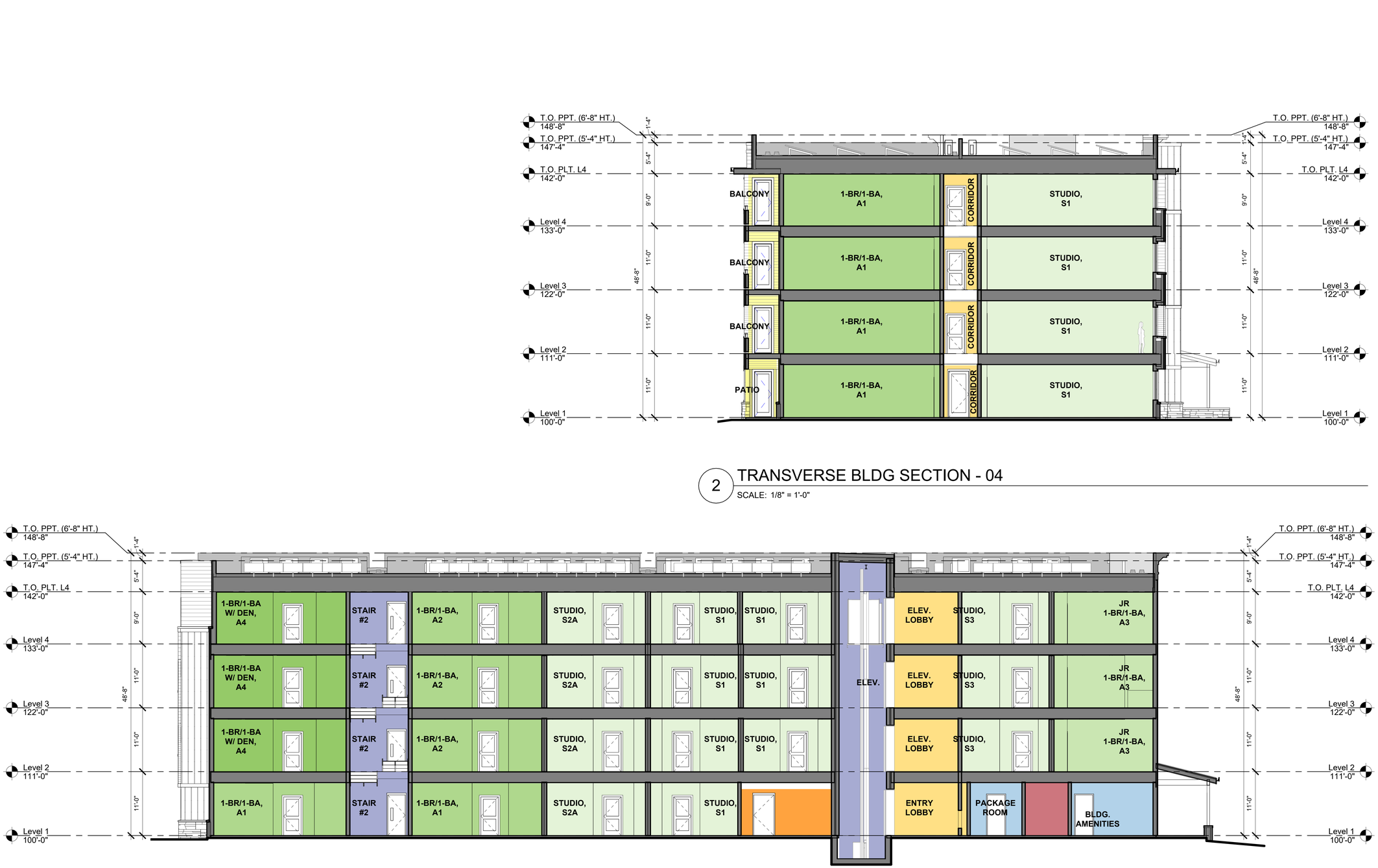
2 TRANSVERSE BLDG SECTION - 04

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



1 LONGITUDINAL BLDG SECTION - 01

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

PROJECT NO. 2022061

BlackRock: White River Junction Multi-Family Housing

BLDG 1 - BUILDING SECTIONS

AP.40

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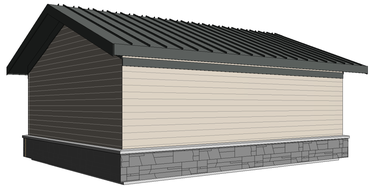
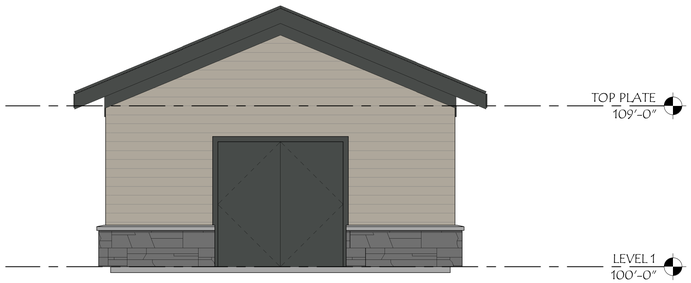
PH: 603.501.0202



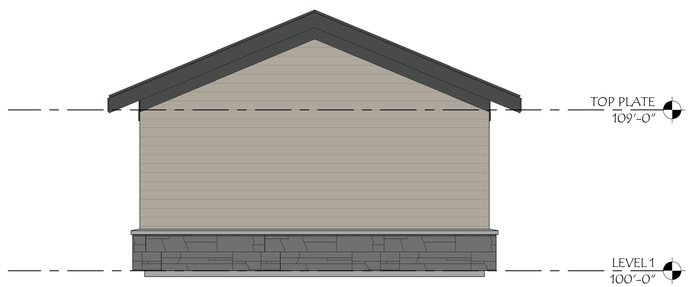


4 ELEVATION - WEST

SCALE: 1/4" = 1'-0"

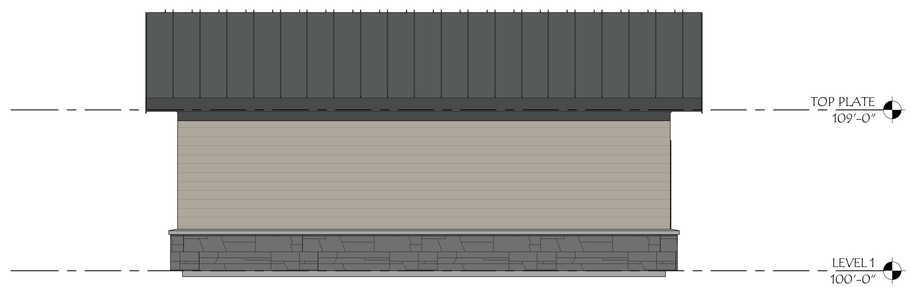
2 ELEVATION - SOUTH

SCALE: 1/4" = 1'-0"



3 ELEVATION - EAST

SCALE: 1/4" = 1'-0"



1 ELEVATION - NORTH

SCALE: 1/4" = 1'-0"

MARKET SQUARE ARCHITECTS
104 Congress St. STE 202C
Portsmouth, NH 03801
PH: 603.501.0202

BLACKROCK; WHITE RIVER JUNCTION

4444 SYKES MOUNTAIN AVE.
HARTFORD, VT 05001

NOT FOR CONSTRUCTION

Revisions:
Description Date

Scale: 1/4" = 1'-0"
Drawn By: MK
Checked By: Checker
Project No.: 2022061
SCHEMATIC DESIGN
Date: 03/20/2024

Title: PUMP HOUSE EXTERIOR ELEVATIONS

A2.00

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4/11/2024 11:15:01 AM

DRAFT

50' 0' 50' 100'

SCALE: 1" = 50FT

NORTH

EXISTING VEGETATION

WOODLAND TRAILS

LOT 45-162
BLACK ROCK INVESTMENTS, LLC

DOG RUN AREA

PLAY AREA

TABLES

GARDENS

BUILDING 1

BUILDING 2

PARKING

GARAGE 1

GARAGE 2

GARAGE 3

GARAGE 4

AMENITY AREA

CHAIRS

BUILDING 3

CROSS SECTION A-A'

ART

GARDENS

BUILDING 4

EXISTING VEGETATION

STORMWATER DETENTION

WOODLAND TRAILS

EXISTING VEGETATION

STORMWATER DETENTION

RESIDENTIAL BUILDING LOT 45-243

PLAY AREA

AMENITY AREA

OVERALL CONCEPT MASTERPLAN

Stamp

Rev. No.	Description	Chkd.

ParkArchitecture.com
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518-605-4345 Mobile, 518-492-3444
Email: parkarchitecture@gmail.com

Client:
BLACK ROCK INVESTMENTS, LLC
2458 CHRISTIAN STREET
WHITE RIVER JUNCTION, VT 05001

Sheet Title: OVERALL CONCEPT PLAN

Project Title: SYKES MOUNTAIN RESIDENTIAL DEVELOPMENT
WHITE RIVER JUNCTION, VERMONT

PA Project #	2316
Checked By:	PS
Drawn By:	PS
Scale:	1"=40'
Date:	03/11/2024

L1.0

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

April 15, 2024

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

Re: **23-25 Site Plan and 13-23 CUA, Lot 45-162, 444 Sykes Mountain Avenue**

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 and Conditional Use Approval. 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:

1. Cover letter.
2. Project Narrative.
3. Responses to comments received February 29, 2024.
4. Signed Application Form
5. Traffic Impact Study
6. View Study
7. Project Plans as noted on the Project Cover Sheet
8. L1.0 Overall Concept Plan – provided for reference.

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

PROJECT NARRATIVE
Application #23-25
Site Plan Review & Conditional Use Approval for 192 Unit multi-family housing on Lot 45-243
LANDOWNERS: BLACK ROCK INVESTMENTS, LLC
APPLICANT: BLACK ROCK INVESTMENTS, LLC
Sykes Mountain Avenue – Hickory Ridge Drive
Hartford, Vermont

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 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.

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:

53.3% of the development will remain as open space, as defined by Hartford Zoning Regulations for public and or common use. 26% of the lot will be covered with impervious surfaces which is well below the 65% maximum coverage allowed.

Parking Requirements

The Project will have a total of 271 parking spaces, which includes the required allocation for disabled-accessible (ADA) parking. There are four 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

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. The height of 50ft is allowed as requested in the Planned Development application.

Landscaping:

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:

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:

1. Pet-friendly, lighted walkways
2. Bike paths
3. Sidewalks, Picnic Areas, Bike racks
4. Trash, Compost and Recycling collection facilities
5. Mail and storage facilities
6. Coworking space with open meeting rooms and personal offices
7. Clubroom with kitchenette, boot seating, table seating, activity area, fireplace and T.V. area
8. Health center and Yoga Studio
9. Public restrooms
10. Leasing area with open meeting rooms, offices, work rooms, activity area, fireplace and T.V. Area
11. Firepits

The Project has been conceptualized to meet Hartford's Zoning Regulations main objectives:

1. Become permanent asset for Hartford.
2. Include an open space and outdoor recreation areas as shown in the Landscaping Plan
3. Maximize the preservation trees and natural geological features, which are to be a key amenity for the project as shown in the Landscaping Plan
4. Efficient Use of land by having a compact envelope as shown in the Engineering Plans.
5. Integration into its natural surroundings

<u>Energy Performance Standards</u>:

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 Drainage:

- 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.

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 an easement as shown in the drawings to allow for a reconfiguration of Hickory Ridge, as coordinated with DPW, pending Selectboard approval. 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 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.

Waivers and Modification:

The Applicant is requesting a waiver of Section 260-4 C of the Zoning Regulations which requires full build out within 2 to 2 ½ years. The applicant requests a full build out allowed within 5 years.

The Applicant is requesting the following parking modification:

- A modification 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.

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.

Comments and Responses
Application #23-25
Site Plan Review & Conditional Use Approval for 192 Unit multi-family housing on Lot 45-162
LANDOWNERS: BLACK ROCK INVESTMENTS, LLC
APPLICANT: BLACK ROCK INVESTMENTS, LLC
Sykes Mountain Avenue – Hickory Ridge Drive
Hartford, Vermont

On behalf of Black Rock Investments please find responses below to staff comment letters and to do list received on February 29th, 2024 and on April 22, 2024. Staff comments are listed below with original comments in black followed by responses in purple text.

Responses to February 29th, 2024 comments:

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.
  A meeting with Hartford DPW, Fire Department and Planning Staff was held on Thursday January 18, 2024. The proposed alignment with Hickory Ridge was found to meet DPW requirements with DPW access and hammerhead configuration which has now been incorporated into the plans. Advanced Transit has agreed to a bus shelter location (AT to provide shelter) and does not want a bus pull-off lane. Water, sewer, and stormwater design will be reviewed by a third-party engineer as coordinated by DPW and discussed at a meeting on March 8, 2024.

- Determine with Planning Staff if a separate application for Subdivision/Lot Line Adjustment is needed for the road realignment.
  At this time easements are proposed; therefore, no lot line adjustment is needed as discussed with Planning Staff on March 8, 2024.

- Clarify that there will be "No Right Turn" for vehicles exiting the development.
  Hickory Ridge will be gated, as shown on the plan, and access restricted to maintenance, emergency, and snowplow vehicles.

- Submit a request for a road name for review.
  The proposed road name of Green Heights Drive has been submitted 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.
  The turning movement plans have been included in the project plans and have been provided to the Town for review.
  See Sheets C1.3 and C1.5

- Provide a Turning Movement plan for a trash hauler.
  A trash hauler turning plan is included with this submittal.
  See Sheets C1.4 and C1.6

3. Phasing

The applicant needs to review the phasing plan with me. We need to discuss:

- What happens if phase #2 is not built?
  Essential infrastructure and utilities will be constructed for Phase 1 consisting of water mains, sewer connections, roadway, parking and stormwater improvements. Stormwater ponds will be constructed for the overall development to allow for future construction of Phase 2. Phase 1 will be constructed as a standalone development and a fully functional development with future utility, parking and driveway/parking lot connection points. Therefore, if Phase 2 is not constructed the development will continue to function as a residential development until which time as the Phase 2 gets constructed.

- The location of the phasing line that splits the patio area and parking spaces.
  A phasing plan has been provided.
  See Sheet C1.2

- Phasing of amenities.
  Outdoor amenities for Lot 45-162 (192 Dwelling Units) will include 2 phases as follows:

  Phase 1 buildout will include completion of:
  1. The Dog Park (includes all dog equipment, seating, and 8ftx12ft structure)
  2. The Playground area (includes the playground structure & balance beam)
  3. 4 Raised Garden Beds adjacent / West of Building 1
  4. The 4 bike racks & pad in front of building 1
  5. The 4 bike racks & pad in front of Building 2
  6. 3 picnic tables North of Building 2
  7. Approximately ½ of the Amenity Plaza abutting Building 2
  8. 3 tables with umbrellas
  9. 1 lounge seating area with outdoor table
  10. 1 lounge seating area with bento gas fire pit
  11. 1 BBQ with counter outdoor grilling station
  12. Stone dust pedestrian walks surrounding Building 1 & 2 to Amenity Plaza
  13. 3 Adirondack chairs at viewing area between Buildings 2 & 3

  Phase 2 buildout will include completion of:

1. The remaining ½ of the Amenity Plaza abutting Building 3
2. 2 tables with umbrellas
3. 1 lounge seating area with outdoor table
4. 1 lounge seating area with bento gas fire pit
5. 1 BBQ with counter outdoor grilling station
6. Stone dust pedestrian walks surrounding Buildings 3 & 4 to Amenity Plaza
7. 4 Adirondack chairs at viewing area between Buildings 2 & 3
8. 4 park benches at viewing area East of Building 3
9. 1 outdoor art sculpture between buildings 3 and 4
10. 6 raised garden beds adjacent / East of Building 4
11. The 16ft Gazebo Structure located within the central green (parking area)
12. The 12 bike racks & 20ft x 30ft Covered Structure between Garage 2 & 3
13. The 4 bike racks & pad in front of building 3
14. The 4 bike racks & pad in front of Building 4
15. Completion of all woodland trails

- 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)
  Based on the project size, financing and supply chain challenges the applicant requests a waiver for a timeline of 5 years to fully build out the project.

4. Amenities

   The applicant needs to provide a detailed/complete list of outdoor and indoor amenities.
   See Section 3 Phasing above.

5. Traffic

   Staff is reviewing the information from VHB regarding Traffic Volume and Parking Demand.
   Noted, item resolved.

6. Misc Plan Amendments

- Sheet C1.1- Remove reference to lot 45-0243-000 as a "Subject Lot"
  The reference has been removed.

- Sheet C2.0

  - Discuss Zoning Chart with me and update sheet C2.0 as necessary
    The zoning chart has been updated to reflect all plan adjustments. This meeting occurred on March 8, 2024, and April 9, 2024.

    - Remove note C1
      Note has been removed.

- Remove/clarify note C6
  Retaining wall details have been provided.
  See Sheet C3.0

- Civil Plans/Landscape Plans- need to depict the trails the same on the plans and need to clarify if the trails are existing/proposed.
  The trails are proposed and are depicted the same on the landscaping plan and civil plans.
  See Sheets C2.0, L1.1 and L1.2

- 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.
  Landscape lighting plan has been revised accordingly to provide footcandles that are legible.
  See Sheets L3.6 and L3.7

  The 40.6 max as stated on sheet L3.7 corresponds to a footcandle data number at the ground-plane of a bollard located just North of Building 3 in the amenity plaza (which should be omitted). Unfortunately, this occurs sometimes on the photometric plans where point data is taken right at and/or very close to the bollard location. Bollard lighting is much closer to the grade plane and unfortunately will skew a photometric study and chart data.

- Are enough ADA parking spaces provided?
  Yes, 8 spaces are required, and 12 spaces have been provided.
  See Sheet C2.0

- Amend the landscape plans to include plantings in the stormwater basins.
  Additional plantings have been included. See landscape and civil plans for stormwater plantings.
  See Sheet C3.6, L1.2 and L1.3

- Amend the plans to indicate the location of conduit for future EV charging stations.
  Future conduits are now shown on the plans.
  See Sheet C2.1.

7. Misc Narrative Documents

   The applicant needs to:

   - Label the Project Narrative and remove the Planning Commission signature.
     The application materials have been revised accordingly.
     See Project Narrative

- Provide a written description of the location and types of fencing.
  We are including the following fencing in the plans:

  4ft high black vinyl chain link fencing surrounding the dog run
  4ft high black vinyl chain link fencing surrounding the playground area
  4ft high black vinyl chain link fencing surrounding buildings 2, 3, and 4 from the East corner of the playground area all the way to the Retaining wall located West of Building 4 adjacent to the Dumpsters.
  6ft high black vinyl chain link fencing along East side of property to address an abutters concern of people entering his lot.
  38" high split rail fence in select areas as including:
    - Two 63ft sections within the open lawn area (in parking lot)
    - Two 24ft sections West of Building 1

  Fence locations and types are shown on **Sheets L1.1, L1.2 and L1.3**
  Fencing details are shown on **Sheet L4.2**

- Clarify the use of lot 45-0198-001.
  This lot is not part of this application and will remain vacant.

- Clarify if open space will be available to the general public.
  The wooded trail portions of the community will be open for public access (dawn to dusk). Use of areas and facilities around the immediate curtilage of the buildings will be limited to building residents and their guests.

- Clarify if parking spaces will be assigned to units.
  Surface parking spaces will not be assigned. Garage parking spaces will be assigned.

- 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
  The plans are limited to this application and show the necessary infrastructure for this development. Please advise if additional information is required.

- When you submit the applications for final approval of the Boundary Line Adjustment and Planned Development, please submit a complete application for Conditional Use & Site Plan Approval since there have been changes and additions since the initial submission.
  Complete applications are provided with this submittal.

Miscellaneous:

- Include a "Master Site Plan" for both projects.
  See landscape plans for overall master plan sheet L 1.0

- Include the dimensions of the walkways on the plans.
  The walkway dimensions are now shown.
- Correct the discrepancy on sheets AP 1.3 and AP 1.6.
  The architecture plans have been updated.

- Include a graphic scale on all plans.
  Graphic scales are provided on all civil plans and landscape plans.

- Provide info about parking areas for delivery trucks such a UPS/Fed Ex and a school bus.
  Delivery locations are now shown on the plans.
  See Sheet C2.0.

- Include the wall mounted lights be included on the photometric plan.
  Wall mounted lights are now included on the lighting plans. Please refer to updated Lighting plans. **See sheets L3.1 through L3.7.**

- Provide a view of the roof of the 48 unit building from the upper lot.
  Landscaping has been added along the entry drive to screen the 48 unit building from the upper lot.
  See sheet L1.3

- Include details regarding the gazebo.
  Gazebo details are now included see landscape details.
  See sheet L4.4

- Confirm that the propane tanks do not interfere with the open space to the east of the gazebo.
  Propane tanks have been eliminated from the project.

- Include info about EV charging stations.
  Conduits to be installed for future EV charging stations along parking lots.

- Include info about solar panels and heat pumps. (Will the building height increase? Provide measurement.)
  Refer to Architectural plans that show building parapet will screen roof top mechanical equipment and future solar panels.
  See sheet AP.40

- Include info about charging stations for elec. bikes.
  Electric bike charging station will be located in the 20ft x 30ft outdoor covered bike storage structure as shown on the Landscape Plans
  See Sheet L1.2

- Clarify if garage parking spaces will be assigned to units.
  Garage parking spaces will be assigned to residents.

- Update the traffic study to address people leaving for work in the morning.

The traffic study has been updated accordingly.
See Project Traffic Impact Study

- The traffic report needs to be updated to reflect any applicable changes to the application including the recent/additional traffic counts and realignment of Sykes Mountain Avenue and Hickory Ridge.
  The traffic study has been updated accordingly.
  See Project Traffic Impact Study

- Provide information regarding public access to the trails.
  The wooded trail portions of the community will be open for public access (dawn to dusk). Use of areas and facilities around the immediate curtilage of the buildings will be limited to building residents and their guests.

- Provide information regarding what will be done to ensure that the landscaping is maintained in a healthy condition.
  There will be a 2-year guarantee / warranty from the time of landscape installation. In addition to this 2-year guarantee, there will be a frequent / ongoing landscape maintenance program in order to maintain all tree and shrub plantings, perennial and groundcover plantings, plant bed areas, and lawn areas, with a landscape contractor.

- Provide information about how the lights comply with section 260-31 E of the Zoning Regulations.
  The proposed project includes a variety of site lighting fixtures including bollards, light pole fixtures mounted 16ft high, pedestrian walkway post lights mounted 10ft high, wall packs mounted at 10ft high, recessed canopy light fixtures within the porch areas, door entry sconces, and bollard lighting mounted at 3ft high. All proposed lighting is designed to be properly located, mounted, aimed, and shielded so as not to cause undue glare, reflected glare, sky glow, or a nuisance to traffic or abutting properties as per the town regulations Section 260-31 E. Fixtures have also been located, aimed and shielded so as to not cause light trespass upon adjacent properties or onto streets or rights-of way. The site lighting proposed includes LED fixtures with dimming capabilities to reduce overall energy consumption. **See Lighting plans sheets L3.1 through L3.7** for proposed lighting locations of bollards, light posts, recessed canopy, wall packs, and pedestrian post lighting. We are utilizing same brand/similar fixtures that have previously been approved in Hartford for other projects and believe the proposed lighting exceeds requirements of section 260-31 E of the Zoning Regulations.
  See sheets L3.1 through L3.7

- Include details for AT bus shelter on plans and in project narratives. Include discussion with AT regarding a bus pull off.
  Bus pull off has been removed as requested by DPW/AT, the location and sidewalk access of the bus shelter are shown on the plans. Shelter will be a typical AT standard pedestrian shelter.
  See Sheet C2.0

- Provide a response to Peter DeCoff's request that a fence be installed along the rear of this property.
  A black vinyl chain link fence is now shown on the plans.

See Sheet L1.2

- Confirm that the schedule/legend on sheet AP1.1 is correct.
  The architectural plans have been revised and schedules/legend have been updated.
  See Sheets AP.04, AP.05, AP.07 and AP.08

- The revised traffic report needs to be reviewed by staff.
  Acknowledged, the traffic study has been updated accordingly.
  See Project Traffic Impact Study

- Once the details of the realignment of Sykes Mountain Ave and Hickory Ridge have been completed and reviewed by staff a meeting with the Town Manager and staff needs to be scheduled followed by a meeting with the Selectboard.
  Acknowledged, a request has been submitted to meet with the Town Manager and Selectboard to review the revisions to Hickory Ridge.

- Realignment of Sykes and Hickory might result in the need for a BLA.
  Noted, easements only are proposed at this time.

- Need info on stormwater maintenance.
  A stormwater maintenance manual will be provided and is required as part of the state stormwater permit submittal.

- An independent technical review of the proposed stormwater and water system needs to be coordinated with DPW and Jo-Ann.
  This has been coordinated.

Responses to April 22, 2024 comments:

1. Please provide a narrative describing the private and public rights-of way and easements for this application and a survey indicating the rights-of-way and easements.

   The BLA survey has been revised to includes 2 additional easements on 45-0162-000 pending approval by the Planning Commission and Selectboard as follows:

   (1) access, maintenance, and utility operations easement for the benefit of the Town of Hartford Public Works to operate and maintain the proposed water booster station.

   (2) access and utility operations easement for the benefit of the Town of Hartford Public Works to operate and maintain the water and sewer lines for the project.

2. Please update the following density calculation based on the new proposed size of the lot:

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

The Zoning Chart on C2.0 has been revised accordingly.

3. Can the snow storage areas be designed to function as rain gardens?
These locations are not conducive to locating rain gardens that will provide stormwater treatment per VT State requirements. Snow melt from these locations will drain to the designed stormwater management areas to receive treatment.

4. What is the height of the wall indicated in note 6 on sheet C2.0?
The maximum height of the wall is 12ft.

5. Please clarify on the plans the purpose of the 16' x 30' area on the access road.
The paved area provides a staging area for maintenance of the nearby stormwater treatment area.

6. Any comments from the DPW will be sent after the 3rd party review is complete. Understood.

7. Please email me a copy and submit 14 hard copies* of: Copies delivered.

- April 15, 2024 Cover Letter
- Application Form
- Project Narrative
- Revised responses to comments received February 29, 2024
- Traffic Impact Study
- Revised Project Plans
- Overall Concept Plan
- Survey
- Response to this memo

*Please consider larger size plans, 11 x17 might be difficult for the Planning Commission and Zoning Board to read. 12"x18" actual half size copies are provided. Additional 24"x36" full size copies can be provided upon request.

Memorandum

To: Irwin Perret-Gentil Acedo
GPA Management LLC
2458 Christian Street
White River Junction, VT 05001

Date: November 28, 2023
rev. March 13, 2024

Project #: 58986.00

From: Evan Haugh, EIT
Joe Vanacore

Re: 444 Sykes Mountain Ave Traffic Impact Study

VHB completed a Traffic Impact Study to support Application #23-23 and #23-25 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

Memorandum

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.

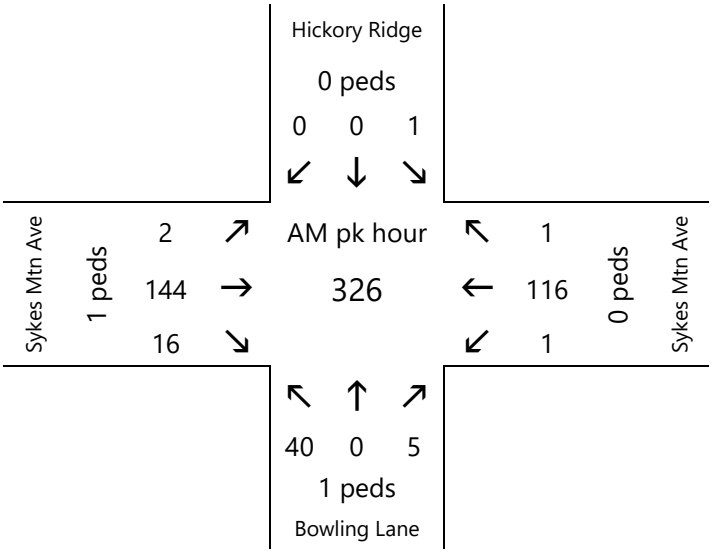
Hickory Ridge and Sykes Mountain Ave (facing south)

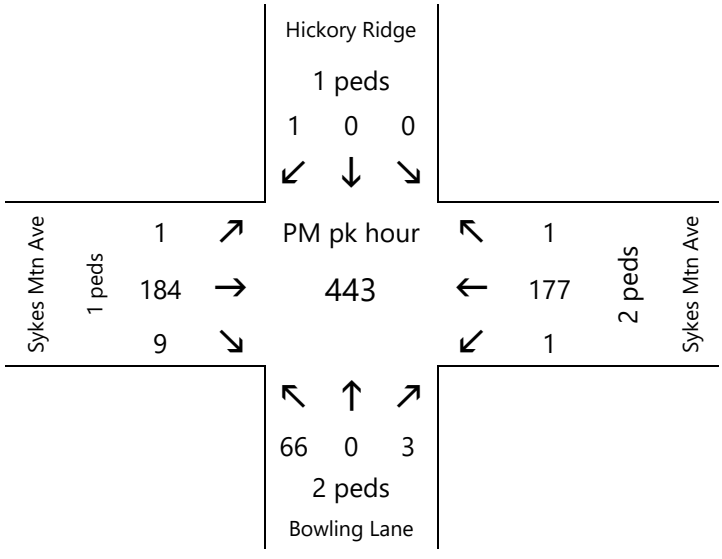
Bus Stop at Hickory Ridge

Traffic Volume & Speed

VHB conducted traffic counts at the Sykes Mountain Avenue / Hickory Ridge intersection on July 17th, 2023, and on January 23-25, 2024. The selected dates represent different days of the week and times of year. For morning peak hour analysis, the highest volumes observed were on 1/23/24 from 8:15-9:15 am. For PM peak hour analysis, the highest volumes observed were on 7/17/23 from 4:15 – 5:15 PM. Turning movement diagrams for the two peak periods are shown in **Figure 2**. The full count data is provided as an appendix.

Figure 2 Turning Movement Diagrams





Vehicle speeds were measured along Sykes Mountain Avenue 60 feet east of Hickory Ridge. The posted speed limit on this segment is 30 mph. The average measured 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 aligned with the existing Sykes Mountain Ave/Hickory Ridge intersection.

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.

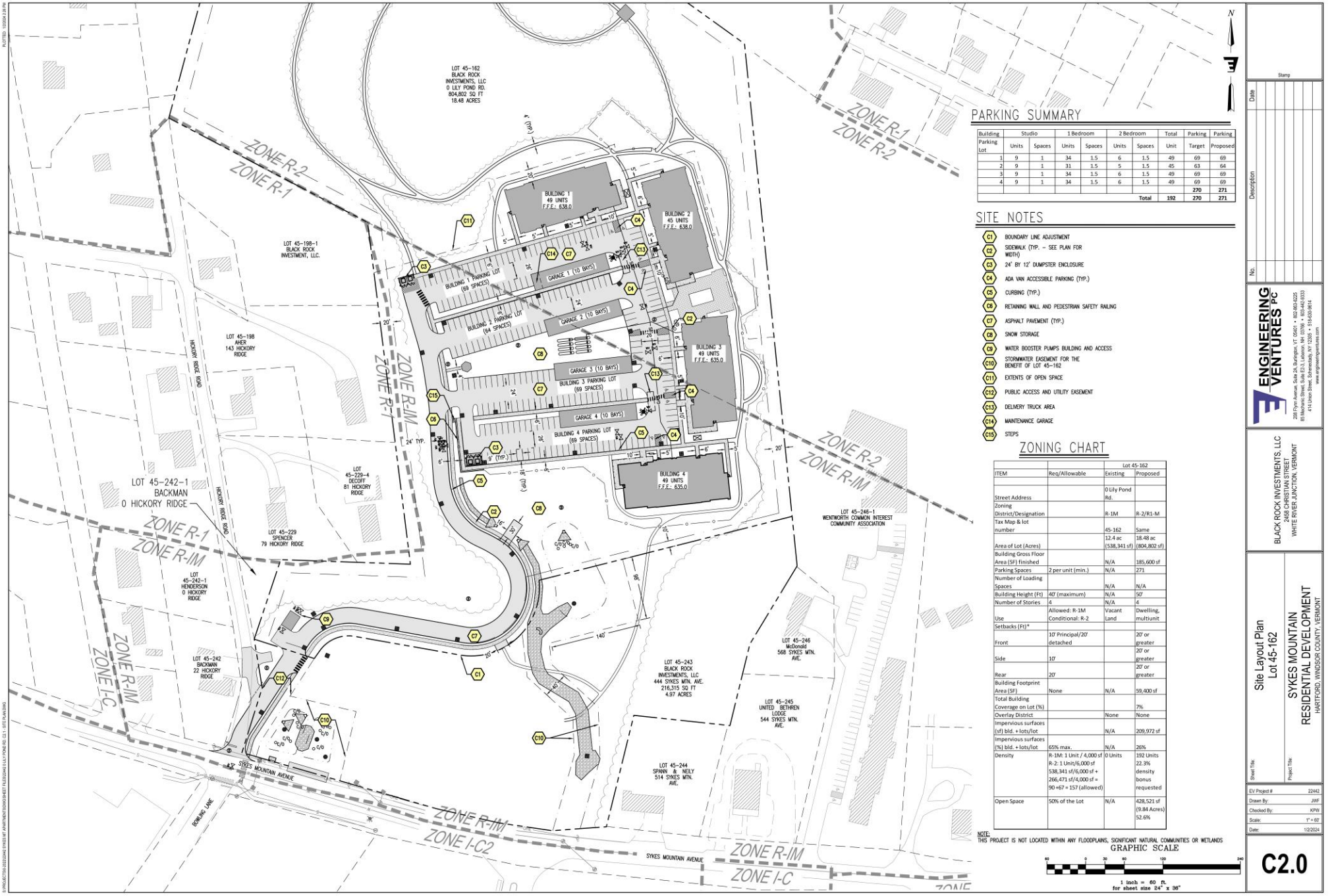
Proposed Development

As shown on the site plan in **Figure 3**, the proposed development consists of five multifamily housing buildings, parking lots, garages, and landscaping. The total unit count is 240 apartments. This includes 192 units in Buildings 1 through 4 (application #23-25) and 48 units in Building 5 (application #23-23).

Access will be via a new driveway overlapping the existing alignment of Hickory Ridge. Hickory Ridge will be gated immediately north of the site to direct all site-generated traffic onto Sykes Mountain Avenue. The driveway will be stop-controlled at Sykes Mountain Avenue. The existing parcel driveway to the east will be closed.

[1] Policy on Geometric Design of Highways and Streets, AASHTO, 2011

Figure 3 Proposed Site Plan



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 AND PEDESTRIAN SAFETY RAILING
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 DELIVERY TRUCK AREA
C14 MAINTENANCE GARAGE
C15 STEPS

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)	18.48 ac (804,802 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	209,972 sf
Impervious surfaces (%) bld. + lots/lot	65% max.	N/A	26%
Density	R-1M: 1 Unit / 4,000 sf R-2: 1 Unit/6,000 sf 538,341 sf/6,000 sf + 266,471 sf/4,000 sf = 90 +67 = 157 (allowed)	0 Units	192 Units 22.3% density bonus requested
Open Space	50% of the Lot	N/A	428,521 sf (9.84 Acres) 52.6%

NOTE:
THIS PROJECT IS NOT LOCATED WITHIN ANY FLOODPLAINS, SIGNIFICANT NATURAL COMMUNITIES OR WETLANDS

GRAPHIC SCALE
60 0 30 60 120 240
1 inch = 60 ft.
for sheet size 24" x 36"

Stamp

No.	Description	Date

ENGINEERING VENTURES PC
238 Flynn Avenue, Suite 2A, Burlington, VT 05401 • 802.863.3225
65 Mechanic Street, Suite E2-3, Lebanon, NH 03766 • 603.448.9333
414 Union Street, Schenectady, NY 12305 • 518.608.9614
www.engineeringventures.com

BLACK ROCK INVESTMENTS, LLC
2406 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" = 60'
Date:	1/2/2024

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. Documentation for this method is provided in the appendix.

The proposed development is expected to generate 94 trips each during the weekday AM peak hour and 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

Peak Period	Rates (ITE)	Site Generated Trips (240 Units)
AM Peak Hour		
Enter	23%	22
Exit	77%	72
Total	(0.44 x Dwelling Units) – 11.61	94
PM Peak Hour		
Enter	61%	57
Exit	39%	37
Total	(0.39 x Dwelling Units) + 0.34	94

Background Development

To improve estimates of future traffic volumes, background development was added. Background development is defined as permitted developments anticipated to open between now and this 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). This calculation is shown in **Table 2**.

Table 2 Background Trips – Key Chrysler/Dodge/Jeep/RAM

Peak Period	Rates (ITE) *Automobile Sales*	New Trips (32,250 ft²)
AM Peak Hour		
Enter	73%	44
Exit	27%	16
Total	(1.86 x 1000 sf floor area)	60
PM Peak Hour		
Enter	40%	32
Exit	60%	47
Total	(2.42 x 1000 sf floor area)	79

Background trips were distributed directionally using the methodology discussed in the next section. 29% of trips are expected to arrive from or depart to the east, corresponding to 17 AM peak hour trips and 23 PM peak hour trips at Sykes Mountain Avenue and Hickory Ridge added by the dealership.

Trip Distribution

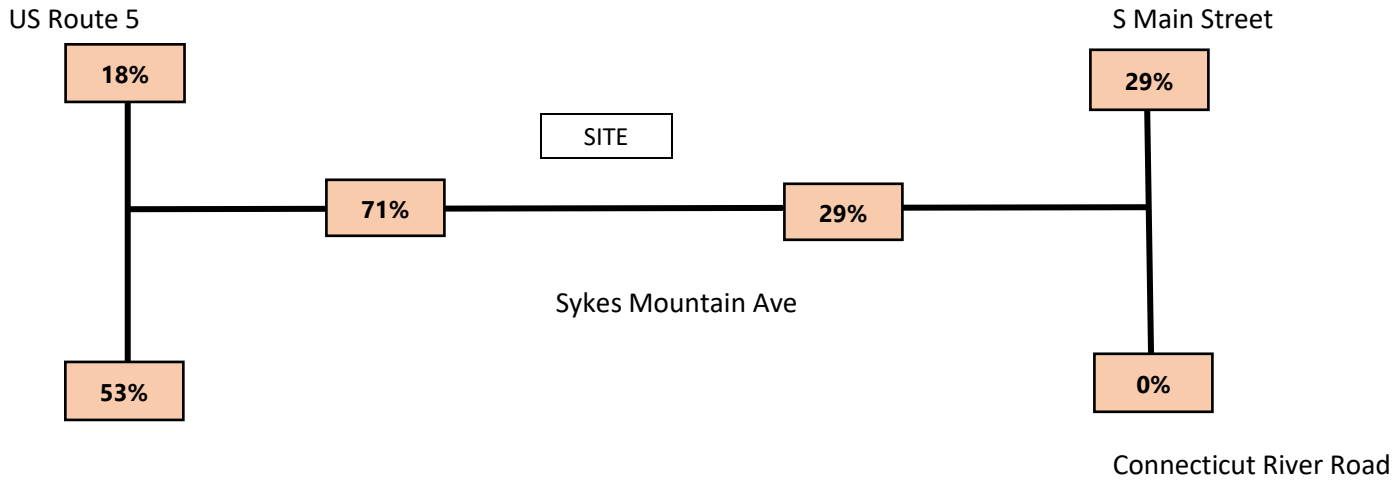
Trips were distributed directionally based on existing traffic patterns. To distribute traffic at the site driveway to the east and west, the existing percentages of left and right turns from southbound Hickory Ridge were applied. Over all days of counts, a total of 55 vehicles turned right from Hickory Ridge and 22 turned left. An additional 5 continued straight onto Bowling Lane but were not weighted in the distribution as they likely represent cut-through traffic from outside the neighborhood. Accordingly, 71% of trips were distributed to the west and the remaining 29% to the east.

Beyond the first intersection, trips were distributed through the next major intersection. To the east, all trips were assumed to turn left at South Main Street towards downtown. To the west, trips were distributed north and south through the roundabout at Sykes Mountain Ave and Route 5 in the same proportions as existing westbound traffic. The directional distribution of new trips is shown in **Figure 4**.

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.

Memorandum

Figure 4 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

As described earlier, traffic volumes were collected on multiple weekdays and at different times of year. The base volumes for this analysis were the highest-traffic morning and evening hours observed. Because Hickory Ridge will be gated in its proposed final condition, existing traffic to and from Hickory Ridge was dropped from the base volumes and presumed to deviate to Lower Hyde Park.

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 applied to the base volumes before adding new trips.

The total volumes for the build scenario are the sum of the base volumes, distributed background development trips, and distributed site-generated trips. This calculation is shown in **Table 3** and **Table 4**.

[2] Highway Capacity Manual, Federal Highway Administration, Transportation Research Board

Table 3 AM Build Volume Calculations

	2023 Base Volumes	2028 Base Volumes[1]	Background Development	Site Trip Generation	2028 AM Build
Sykes Mountain Ave, EB					
EBL	0	0		16	**16**
EBT	144	148	5		**153**
EBR	16	17			**17**
Sykes Mountain Ave, WB					
WBL	1	2			**2**
WBT	116	119	13		**132**
WBR	0	0		6	**6**
Bowling Lane, NB					
NBL	40	41			**41**
NBT	0	0			**0**
NBR	5	6			**6**
Hickory Ridge, SB					
SBL	0	0		21	**21**
SBT	0	0			**0**
SBR	0	0		51	**51**

1. 2.1% five-year growth factor applied.

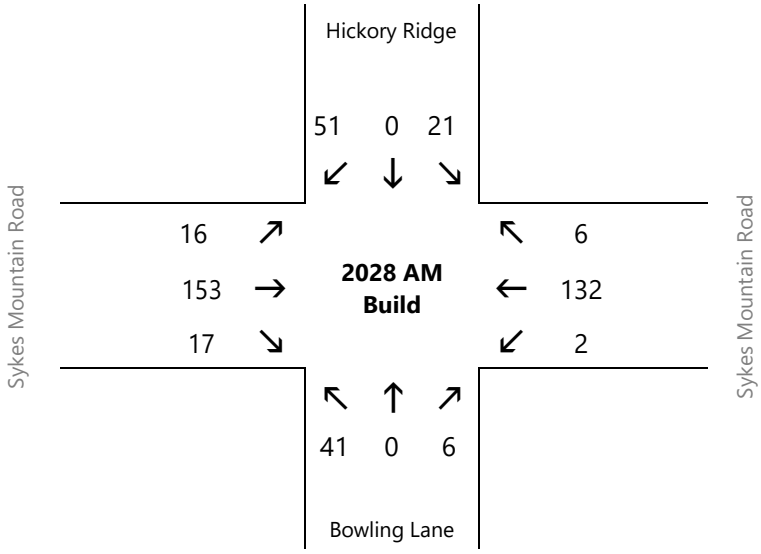
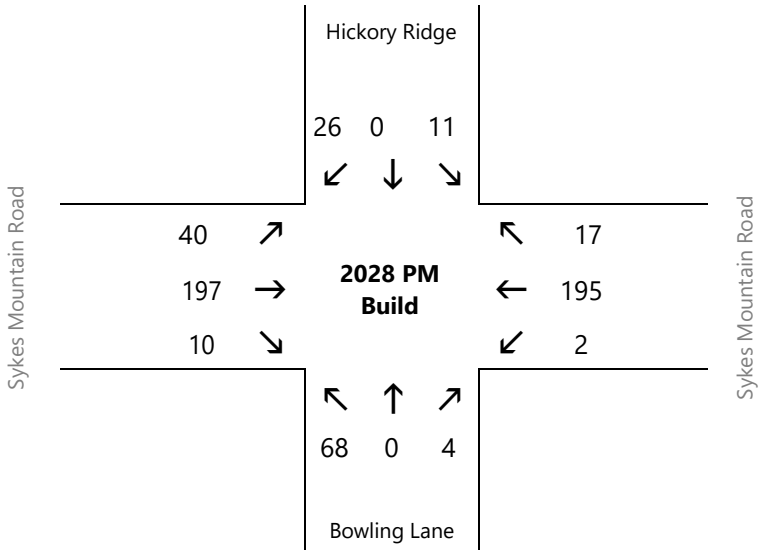


Table 4 PM Build Volume Calculations

	Base Volumes (July 2023 Count)	2028 Base Volumes[1]	Background Development	Site Trip Generation	2028 PM Build
Sykes Mountain Ave, EB					
EBL	0	0		40	**40**
EBT	184	188	9		**197**
EBR	9	10			**10**
Sykes Mountain Ave, WB					
WBL	1	2			**2**
WBT	177	181	14		**195**
WBR	0	0		17	**17**
Bowling Lane, NB					
NBL	66	68			**68**
NBT	0	0			**0**
NBR	3	4			**4**
Hickory Ridge, SB					
SBL	0	0		11	**11**
SBT	0	0			**0**
SBR	0	0		26	**26**

1. 2.1% five-year growth factor applied.



Sykes Mountain Avenue and Hickory Ridge

Table 5 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 5 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	10.8	B	0	0.10	10.1	B	8
Bowling Lane, NB	0.08	11.0	B	8	0.09	12.0	B	8
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		1.6	A			3.2	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	9.3	A	0	0.07	10.8	B	5
Bowling Lane, NB	0.15	12.8	B	13	0.18	15.1	C	15
Sykes Mountain Ave, EB	0.01	0.1	A	0	0.03	1.3	A	3
Sykes Mountain Ave, WB	0.01	0.1	A	0	0.01	0.1	A	0
Overall Intersection		2.0	A			3.2	A	

* Delay expressed in seconds per vehicle
** Level of Service (Delay Range: A: 0-10, B: >10-15, C: >15-25, D: >25-35, E: >35-50, F: >50)
*** 95th percentile queue length expressed in feet

Hickory Ridge Impacts

To prevent cut-through traffic, a gate is proposed on Hickory Ridge just north of the existing intersection with Sykes Mountain Avenue. The existing intersection would only serve the project driveway, and exiting vehicles would not be able to travel north on Hickory Ridge. This design creates minimum inconvenience for current residents of Hickory Ridge, who will use Lower Hyde Park (200 feet west) to access Sykes Mountain Avenue.

Advance Transit has proposed building a new bus shelter at the Hickory Ridge and Sykes Mountain Avenue bus stop. The gate proposed on Hickory Ridge will not block pedestrians, keeping this bus stop accessible to current residents without any detour.

Lower Hyde Park Impacts

This project does not propose any modifications to the intersection of Sykes Mountain Avenue and Lower Hyde Park. Traffic that currently uses Hickory Ridge will deviate to Lower Hyde Park after the gate is installed. There is no ongoing or expected development on Hickory Ridge apart from this project, making current traffic volumes a reliable estimate of the number that will be diverted to Lower Hyde Park.

The average total daily traffic on Hickory Ridge is currently less than 70 vehicles. During the days traffic was counted, the maximum traffic in a single hour was 10 vehicles (counting both directions of travel). This is a minor increase that will not produce a noticeable effect at the intersection.

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 4**, it is anticipated that 71% of trips will travel through the US-5 and Sykes Avenue roundabout while 18% will travel through the US-4 and US-5 intersection. This corresponds to 67 and 17 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 Ridge was noted to be in regular use. Improvements to the bus stop (a shelter) and a proposed crosswalk across Sykes Mountain Avenue to the sidewalk on the south side will improve comfort and safety for these users.

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.

[3] Act 145 Projects and Fees (arcgis.com)

Appendix

A: Traffic Count Data

		Hickory Ridge SB			Sykes Mountain Ave WB			Bowling Lane NB			Sykes Mountain Ave EB			
Date	Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Peds
7/17/2023	6:45 AM	2	0	0	0	16	0	0	0	2	2	17	0	0
	7:00 AM	2	0	0	0	22	0	1	3	2	3	18	1	1
	7:15 AM	1	0	0	0	21	1	0	0	2	3	35	0	0
	7:30 AM	1	0	0	0	44	0	0	1	3	3	29	1	1
	7:45 AM	0	0	0	0	40	0	2	0	5	11	29	0	0
	8:00 AM	1	0	0	0	31	0	1	0	6	3	30	0	1
	8:15 AM	0	0	0	0	29	0	0	0	8	5	29	1	0
	8:30 AM	0	0	0	1	35	0	1	1	9	4	34	0	1
	8:45 AM	2	0	1	0	29	1	0	0	6	3	23	0	0
	12:30 PM	0	0	0	0	32	0	4	1	3	1	44	0	1
	12:45 PM	1	0	0	0	32	0	1	0	7	2	29	0	0
	1:00 PM	0	0	0	0	29	0	2	1	8	6	32	0	1
	1:15 PM	0	0	0	0	29	2	1	1	5	0	41	0	2
	3:00 PM	0	0	0	0	27	0	1	1	7	2	37	1	2
	3:15 PM	0	0	0	2	42	0	0	0	7	3	36	0	0
	3:30 PM	0	0	1	0	37	0	2	3	8	2	27	1	3
	3:45 PM	0	0	0	0	35	0	2	2	11	2	44	1	2
	4:00 PM	0	0	0	0	39	0	0	0	14	2	49	1	1
	4:15 PM	0	0	0	0	49	0	0	1	18	6	37	1	2
	4:30 PM	0	0	0	1	35	1	2	0	15	2	56	0	0
	4:45 PM	0	1	0	0	46	0	0	1	12	0	48	0	4
	5:00 PM	1	0	0	0	49	0	1	0	21	1	44	0	0
	5:15 PM	3	0	0	0	39	0	1	1	10	0	34	0	2
	5:30 PM	0	0	1	1	38	0	0	0	11	2	31	0	0
	5:45 PM	1	0	0	1	41	0	2	0	8	0	37	1	0
1/23/2024	7:00 AM	0	0	0	0	17	0	0	0	1	3	18	0	0
	7:15 AM	0	0	0	0	29	0	0	0	4	8	25	0	0
	7:30 AM	1	0	0	0	33	2	1	0	7	5	24	0	1
	7:45 AM	0	0	0	0	35	1	0	0	3	5	35	0	0
	8:00 AM	1	0	0	1	35	0	2	0	6	3	28	0	1
	8:15 AM	0	0	0	0	32	0	2	0	8	2	24	0	0
	8:30 AM	0	0	0	1	22	0	1	0	13	3	39	0	0
	8:45 AM	0	0	0	0	32	1	1	0	5	4	53	1	2
	9:00 AM	0	0	1	0	30	0	1	0	14	7	28	1	0
	9:15 AM	0	0	0	0	30	0	0	0	6	2	20	0	0
	9:30 AM	0	0	0	0	21	0	1	0	9	5	20	0	1
	9:45 AM	0	0	0	0	32	1	1	0	7	3	30	0	0
	10:00 AM	0	0	0	0	34	0	3	0	11	7	20	0	0
	10:15 AM	2	0	0	0	25	1	1	0	9	8	28	1	0
	10:30 AM	0	0	0	0	26	0	1	0	10	0	20	1	3
	10:45 AM	0	0	1	0	28	0	1	0	10	2	23	0	2
	11:00 AM	2	0	0	0	30	0	2	0	9	4	23	1	1
	11:15 AM	0	0	2	1	18	0	0	0	8	7	23	0	7
	11:30 AM	0	0	1	0	24	1	2	0	13	2	28	0	1
	11:45 AM	1	0	0	0	21	0	2	0	12	5	32	1	2
	12:00 PM	0	1	0	0	25	0	3	1	16	4	27	0	0
	12:15 PM	0	0	0	0	22	1	1	0	6	5	14	1	0
	12:30 PM	0	0	2	0	25	0	1	0	12	2	26	1	2
	12:45 PM	1	0	1	1	37	0	2	0	7	3	34	1	0
	1:00 PM	2	0	0	0	20	3	2	0	8	4	30	0	0
	1:15 PM	0	0	0	0	30	0	1	0	2	1	28	0	0
	1:30 PM	1	0	0	0	35	1	1	0	9	2	28	0	0
	1:45 PM	0	0	1	0	34	1	1	0	7	0	31	0	0
	2:00 PM	0	0	0	1	33	1	1	0	8	1	25	2	0

	2:15 PM	1	0	1	0	26	0	1	0	8	5	28	1	0
	2:30 PM	0	0	1	0	23	0	0	0	11	2	36	0	0
	2:45 PM	0	0	1	0	33	0	1	0	7	2	37	1	0
	3:00 PM	0	0	0	0	34	1	1	0	12	2	35	1	2
	3:15 PM	1	0	0	0	24	1	1	0	10	1	31	0	2
	3:30 PM	0	0	0	1	30	0	2	0	8	2	44	0	2
	3:45 PM	0	0	0	0	37	1	1	0	14	3	34	2	0
	4:00 PM	0	0	0	0	36	0	1	0	18	3	41	0	3
	4:15 PM	0	0	1	0	34	0	2	0	13	0	40	1	0
	4:30 PM	0	1	0	1	58	2	2	0	22	4	38	0	2
	4:45 PM	0	0	0	1	43	0	0	0	15	1	33	0	1
	5:00 PM	0	0	0	0	32	0	2	0	19	0	41	1	0
	5:15 PM	0	0	0	2	24	0	1	0	9	0	32	0	0
	5:30 PM	1	0	0	0	24	0	0	0	12	0	26	2	0
	5:45 PM	0	0	0	0	21	0	0	0	5	1	27	0	2
	6:00 PM	0	0	0	0	26	0	0	0	2	0	24	0	0
	6:15 PM	0	0	0	1	13	0	0	0	5	0	23	1	0
	6:30 PM	0	0	0	1	10	0	0	0	4	0	23	0	0
	6:45 PM	0	0	0	0	20	0	0	0	2	1	15	1	0
	7:00 AM	2	0	0	0	14	0	0	0	2	3	17	0	0
	7:15 AM	0	0	0	0	15	1	0	0	0	3	17	0	0
	7:30 AM	1	0	0	0	35	1	0	0	4	3	14	0	0
	7:45 AM	0	0	0	0	38	0	0	0	1	4	23	0	0
	8:00 AM	0	0	0	0	24	0	1	0	7	1	25	0	0
	8:15 AM	2	0	0	1	30	0	0	0	10	3	27	0	0
	8:30 AM	0	0	0	0	23	0	1	0	5	2	31	0	0
	8:45 AM	0	0	0	0	14	0	0	0	9	3	37	0	0
	9:00 AM	1	0	0	0	18	0	2	0	4	2	24	0	0
	9:15 AM	2	0	0	0	18	0	0	0	4	5	18	0	0
	9:30 AM	0	0	0	0	23	0	0	0	3	3	23	0	1
	9:45 AM	0	0	0	0	25	0	0	0	6	5	17	0	0
	10:00 AM	0	0	0	0	21	1	3	0	9	4	20	1	1
	10:15 AM	0	0	0	0	17	0	0	0	14	2	26	0	0
	10:30 AM	0	0	0	0	31	1	1	0	8	2	12	0	1
	10:45 AM	0	0	0	0	24	0	1	0	13	2	24	0	0
	11:00 AM	0	0	0	0	17	0	1	0	9	1	15	0	1
	11:15 AM	0	0	0	0	18	1	1	0	5	3	27	0	1
	11:30 AM	0	0	0	0	29	0	1	0	11	2	19	1	1
	11:45 AM	0	0	0	1	22	0	0	0	8	1	22	0	3
	12:00 PM	0	0	1	1	25	0	1	0	9	4	23	1	0
	12:15 PM	0	0	0	0	25	0	2	0	15	5	25	2	0
	12:30 PM	2	0	0	0	21	0	1	0	11	3	26	0	0
	12:45 PM	1	0	0	0	18	0	0	0	8	1	29	0	1
1/24/2024	1:00 PM	0	0	0	0	31	0	2	0	4	4	37	0	2
	1:15 PM	0	0	0	1	30	1	2	0	8	3	29	0	0
	1:30 PM	0	0	0	0	26	0	1	0	7	2	35	0	0
	1:45 PM	0	0	0	0	29	0	0	0	4	2	21	0	0
	2:00 PM	0	0	0	0	24	0	2	0	11	0	30	0	1
	2:15 PM	0	0	0	1	30	0	0	0	6	1	34	0	0
	2:30 PM	0	0	0	0	28	1	1	0	8	4	31	1	1
	2:45 PM	0	0	0	0	32	1	0	0	12	2	26	0	2
	3:00 PM	0	0	0	0	39	0	0	0	8	2	33	1	0
	3:15 PM	0	0	0	0	31	0	1	0	11	1	34	0	0
	3:30 PM	0	0	0	0	23	3	0	0	9	0	30	2	0
	3:45 PM	0	0	0	1	23	2	0	0	12	2	32	0	0
	4:00 PM	0	0	0	0	30	1	0	0	10	1	24	0	2

	4:15 PM	0	0	0	0	30	1	3	0	11	0	21	0	0
	4:30 PM	0	0	0	0	30	0	1	0	16	1	24	1	0
	4:45 PM	0	0	0	0	33	2	0	0	16	2	37	1	1
	5:00 PM	0	0	0	0	31	0	1	1	9	3	32	0	0
	5:15 PM	0	0	1	0	20	0	0	0	14	1	34	1	0
	5:30 PM	1	0	0	1	32	0	1	0	6	2	32	0	0
	5:45 PM	0	0	0	0	24	0	0	0	2	0	26	0	0
	6:00 PM	0	0	0	0	29	0	0	0	3	0	24	0	0
	6:15 PM	0	0	0	0	13	0	0	0	1	0	11	0	0
	6:30 PM	0	0	1	0	15	0	0	0	2	0	12	0	0
	6:45 PM	0	0	0	0	8	0	0	0	3	1	8	0	0
	7:00 AM	0	0	0	0	16	0	0	0	4	4	15	0	1
	7:15 AM	1	0	1	0	15	0	0	0	3	4	20	1	2
	7:30 AM	0	0	0	0	21	1	0	0	7	3	20	0	0
	7:45 AM	1	1	0	0	31	0	1	0	5	4	46	1	0
	8:00 AM	1	0	1	0	34	0	0	0	7	4	29	0	0
	8:15 AM	1	0	0	0	29	0	2	0	8	3	33	0	0
	8:30 AM	0	0	0	0	24	2	2	0	4	2	26	0	0
	8:45 AM	0	0	0	1	23	0	0	0	8	6	25	0	1
	9:00 AM	0	0	0	0	25	1	1	0	9	3	38	0	0
	9:15 AM	1	0	0	0	36	0	1	0	6	2	25	0	0
	9:30 AM	0	0	0	0	32	0	0	0	4	5	27	1	0
	9:45 AM	0	0	0	0	40	0	0	0	4	3	36	0	1
	10:00 AM	0	0	0	0	31	0	2	0	10	2	24	0	0
	10:15 AM	0	0	0	0	32	0	3	0	7	1	23	2	1
	10:30 AM	1	0	0	1	24	0	1	0	8	3	28	0	1
	10:45 AM	1	0	0	0	23	1	1	0	11	3	30	0	0
	11:00 AM	0	0	0	0	16	1	0	0	13	3	19	1	1
	11:15 AM	1	0	0	0	26	0	2	0	13	3	24	1	2
	11:30 AM	0	0	0	0	29	0	1	0	10	3	18	0	1
	11:45 AM	0	0	0	1	25	1	0	0	11	4	25	0	1
	12:00 PM	0	0	0	0	29	1	3	0	13	6	30	1	0
	12:15 PM	1	0	0	0	21	1	1	0	11	2	23	0	2
	12:30 PM	1	0	0	1	35	0	1	0	7	8	25	0	1
	12:45 PM	0	1	0	0	29	1	1	0	6	3	30	0	1
1/25/2024	1:00 PM	0	0	0	1	31	1	3	0	9	2	26	0	1
	1:15 PM	0	0	0	0	19	0	0	0	11	4	24	0	1
	1:30 PM	0	0	0	0	29	0	2	0	9	4	31	0	1
	1:45 PM	0	0	0	0	34	1	0	0	14	4	27	0	1
	2:00 PM	0	0	0	0	20	1	3	0	10	1	27	1	1
	2:15 PM	0	0	0	0	25	1	2	0	11	3	20	0	1
	2:30 PM	0	0	0	1	28	0	2	0	10	3	27	1	0
	2:45 PM	0	0	0	0	24	1	0	0	13	6	34	1	3
	3:00 PM	1	0	0	0	28	1	1	0	12	6	35	1	0
	3:15 PM	0	0	0	0	35	0	1	0	13	4	34	0	5
	3:30 PM	0	0	0	0	26	0	2	0	12	2	29	1	0
	3:45 PM	0	0	0	2	24	1	0	0	12	1	26	1	0
	4:00 PM	1	0	0	0	40	0	3	0	9	2	35	0	2
	4:15 PM	0	0	0	0	37	0	3	0	19	1	33	0	1
	4:30 PM	0	0	0	0	26	0	1	0	17	1	35	0	1
	4:45 PM	0	0	0	0	34	0	1	0	11	1	47	0	0
	5:00 PM	1	0	0	1	35	0	1	0	17	4	29	0	1
	5:15 PM	0	0	1	1	32	1	2	0	19	2	26	1	0
	5:30 PM	0	0	0	0	35	0	1	0	9	2	32	1	0
	5:45 PM	1	0	0	0	23	0	0	0	3	1	24	0	0
	6:00 PM	0	0	0	0	25	0	0	0	1	0	29	0	0

	6:15 PM	0	0	0	0	17	0	0	0	2	0	22	0	0
	6:30 PM	0	0	0	0	25	0	0	0	4	0	11	0	0
	6:45 PM	0	0	0	1	18	0	0	0	5	0	23	0	0

Appendix

B: Intersection Capacity Analysis

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	153	17	2	132	1	41	0	6	1	0	0
Future Vol, veh/h	2	153	17	2	132	1	41	0	6	1	0	0
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	166	18	2	143	1	45	0	7	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	144	0	0	184	0	0	327	327	175	331	336	144
Stage 1	-	-	-	-	-	-	179	179	-	148	148	-
Stage 2	-	-	-	-	-	-	148	148	-	183	188	-
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	1414	-	-	1391	-	-	630	595	874	626	588	909
Stage 1	-	-	-	-	-	-	827	755	-	859	779	-
Stage 2	-	-	-	-	-	-	859	779	-	823	748	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1414	-	-	1391	-	-	628	593	874	620	586	909
Mov Cap-2 Maneuver	-	-	-	-	-	-	628	593	-	620	586	-
Stage 1	-	-	-	-	-	-	825	753	-	857	777	-
Stage 2	-	-	-	-	-	-	857	777	-	815	747	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	11	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	651	1414	-	-	1391	-	-	620
HCM Lane V/C Ratio	0.078	0.002	-	-	0.002	-	-	0.002
HCM Control Delay (s)	11	7.5	0	-	7.6	0	-	10.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	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	16	153	17	2	132	6	41	0	6	21	0	51
Future Vol, veh/h	16	153	17	2	132	6	41	0	6	21	0	51
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	17	166	18	2	143	7	45	0	7	23	0	55

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	150	0	0	184	0	0	387	363	175	364	369	147
Stage 1	-	-	-	-	-	-	209	209	-	151	151	-
Stage 2	-	-	-	-	-	-	178	154	-	213	218	-
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	1407	-	-	1391	-	-	575	568	874	596	563	905
Stage 1	-	-	-	-	-	-	798	733	-	856	776	-
Stage 2	-	-	-	-	-	-	828	774	-	794	726	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1407	-	-	1391	-	-	534	559	874	585	555	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	534	559	-	585	555	-
Stage 1	-	-	-	-	-	-	788	723	-	845	774	-
Stage 2	-	-	-	-	-	-	776	772	-	778	717	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	12	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	562	1407	-	-	1391	-	-	780
HCM Lane V/C Ratio	0.091	0.012	-	-	0.002	-	-	0.1
HCM Control Delay (s)	12	7.6	0	-	7.6	0	-	10.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	197	10	2	195	1	68	0	4	0	0	1
Future Vol, veh/h	1	197	10	2	195	1	68	0	4	0	0	1
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	1	214	11	2	212	1	74	0	4	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	213	0	0	225	0	0	439	439	220	441	444	213
Stage 1	-	-	-	-	-	-	222	222	-	217	217	-
Stage 2	-	-	-	-	-	-	217	217	-	224	227	-
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	1369	-	-	1344	-	-	532	515	825	530	511	832
Stage 1	-	-	-	-	-	-	785	723	-	790	727	-
Stage 2	-	-	-	-	-	-	790	727	-	783	720	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1369	-	-	1344	-	-	530	513	825	526	509	832
Mov Cap-2 Maneuver	-	-	-	-	-	-	530	513	-	526	509	-
Stage 1	-	-	-	-	-	-	784	722	-	789	726	-
Stage 2	-	-	-	-	-	-	787	726	-	778	719	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	12.8	9.3
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	541	1369	-	-	1344	-	-	832
HCM Lane V/C Ratio	0.145	0.001	-	-	0.002	-	-	0.001
HCM Control Delay (s)	12.8	7.6	0	-	7.7	0	-	9.3
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	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	40	197	10	2	195	17	68	0	4	11	0	26
Future Vol, veh/h	40	197	10	2	195	17	68	0	4	11	0	26
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	43	214	11	2	212	18	74	0	4	12	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	230	0	0	225	0	0	545	540	220	533	536	221
Stage 1	-	-	-	-	-	-	306	306	-	225	225	-
Stage 2	-	-	-	-	-	-	239	234	-	308	311	-
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	1350	-	-	1344	-	-	452	451	820	461	454	824
Stage 1	-	-	-	-	-	-	708	665	-	782	721	-
Stage 2	-	-	-	-	-	-	769	715	-	706	662	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1350	-	-	1344	-	-	424	434	820	445	437	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	424	434	-	445	437	-
Stage 1	-	-	-	-	-	-	683	641	-	754	720	-
Stage 2	-	-	-	-	-	-	741	714	-	677	638	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	15.1	10.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	436	1350	-	-	1344	-	-	658
HCM Lane V/C Ratio	0.179	0.032	-	-	0.002	-	-	0.061
HCM Control Delay (s)	15.1	7.8	0	-	7.7	0	-	10.8
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	0.2

Appendix

C: Trip Generation Rates, Multi-Family Housing

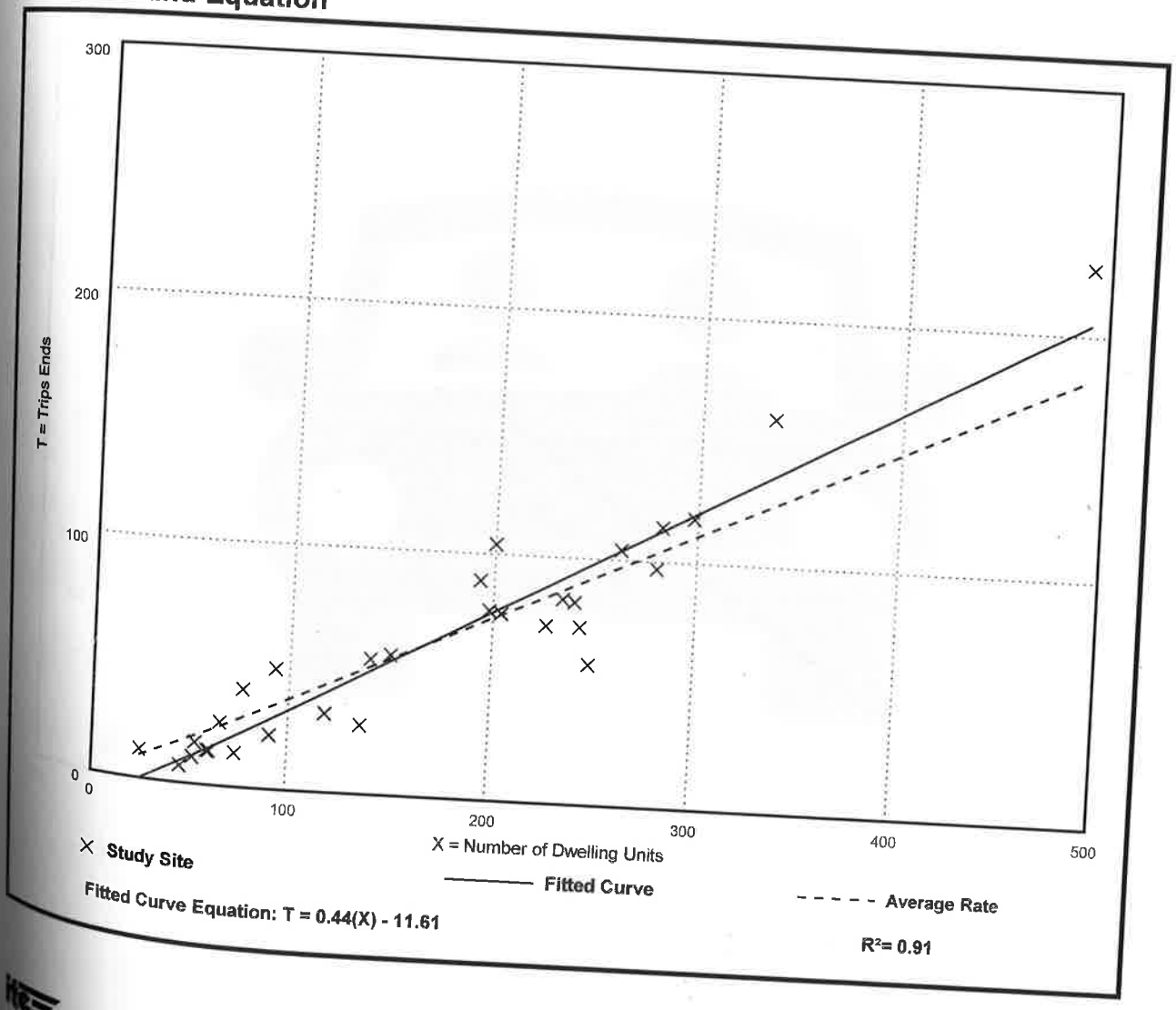
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 30
Avg. Num. of Dwelling Units: 173
Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.37	0.15 - 0.53	0.09

Data Plot and Equation



Fitted Curve Equation: T = 0.44(X) - 11.61

R^2= 0.91

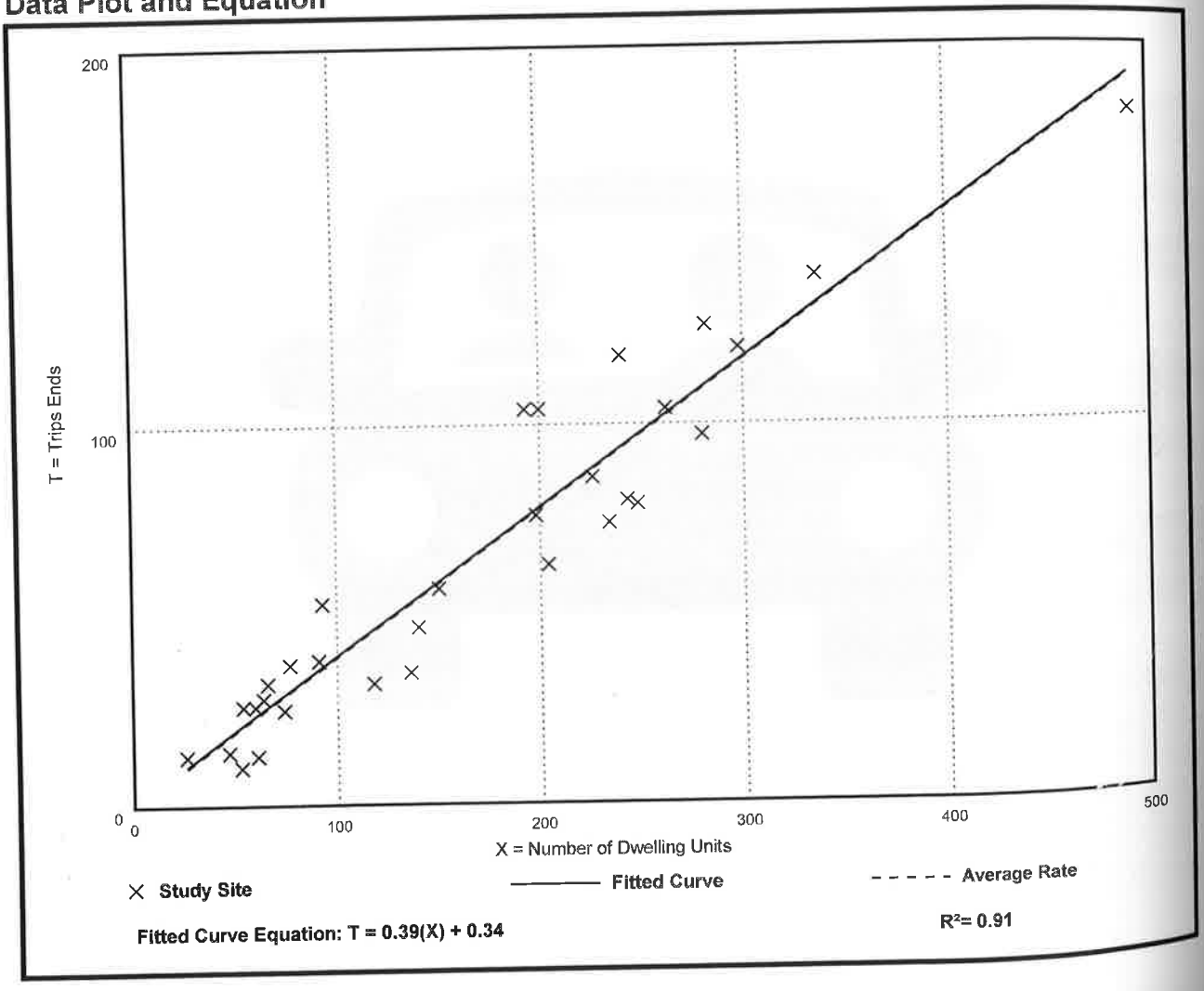
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 31
Avg. Num. of Dwelling Units: 169
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.19 - 0.57	0.08

Data Plot and Equation



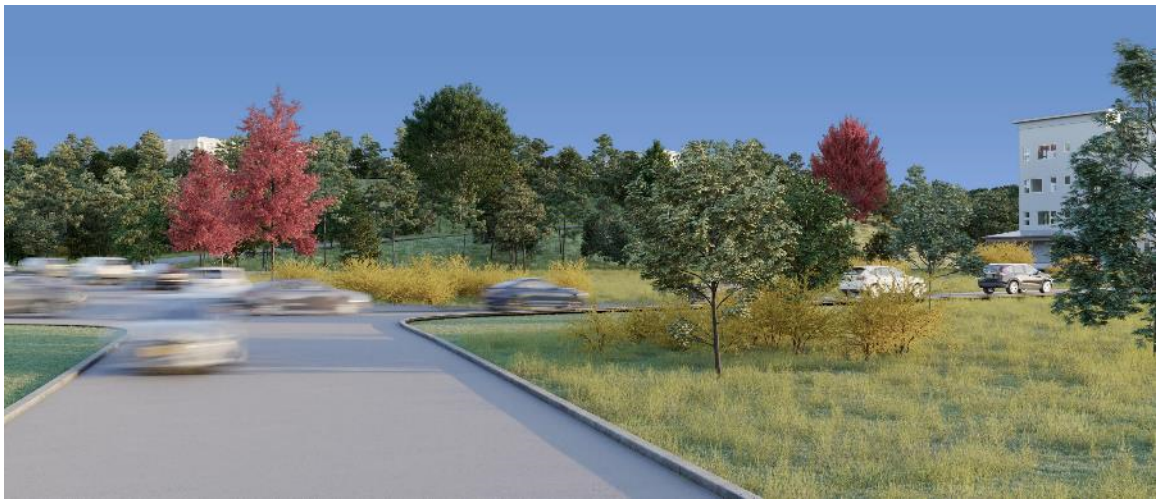
STREET VIEWPOINT STUDY
Application #23-25
Site Plan Review & Conditional Use Approval for 192 Unit multi-family housing on Lot 45-243
LANDOWNERS: BLACK ROCK INVESTMENTS, LLC
APPLICANT: BLACK ROCK INVESTMENTS, LLC
Sykes Mountain Avenue – Hickory Ridge Drive
Hartford, Vermont

Street Viewpoint Location Map

Street Viewpoint 1

Street Viewpoint 2 with foliage

Street Viewpoint 2 without foliage

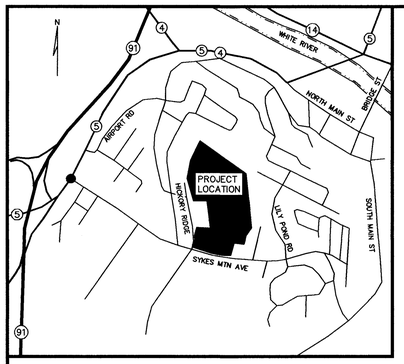


Street Viewpoint 3 with foliage

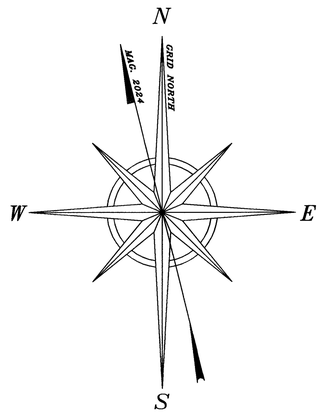
Street Viewpoint 3 without foliage

Street Viewpoint 4 with foliage

Street Viewpoint 4 without foliage



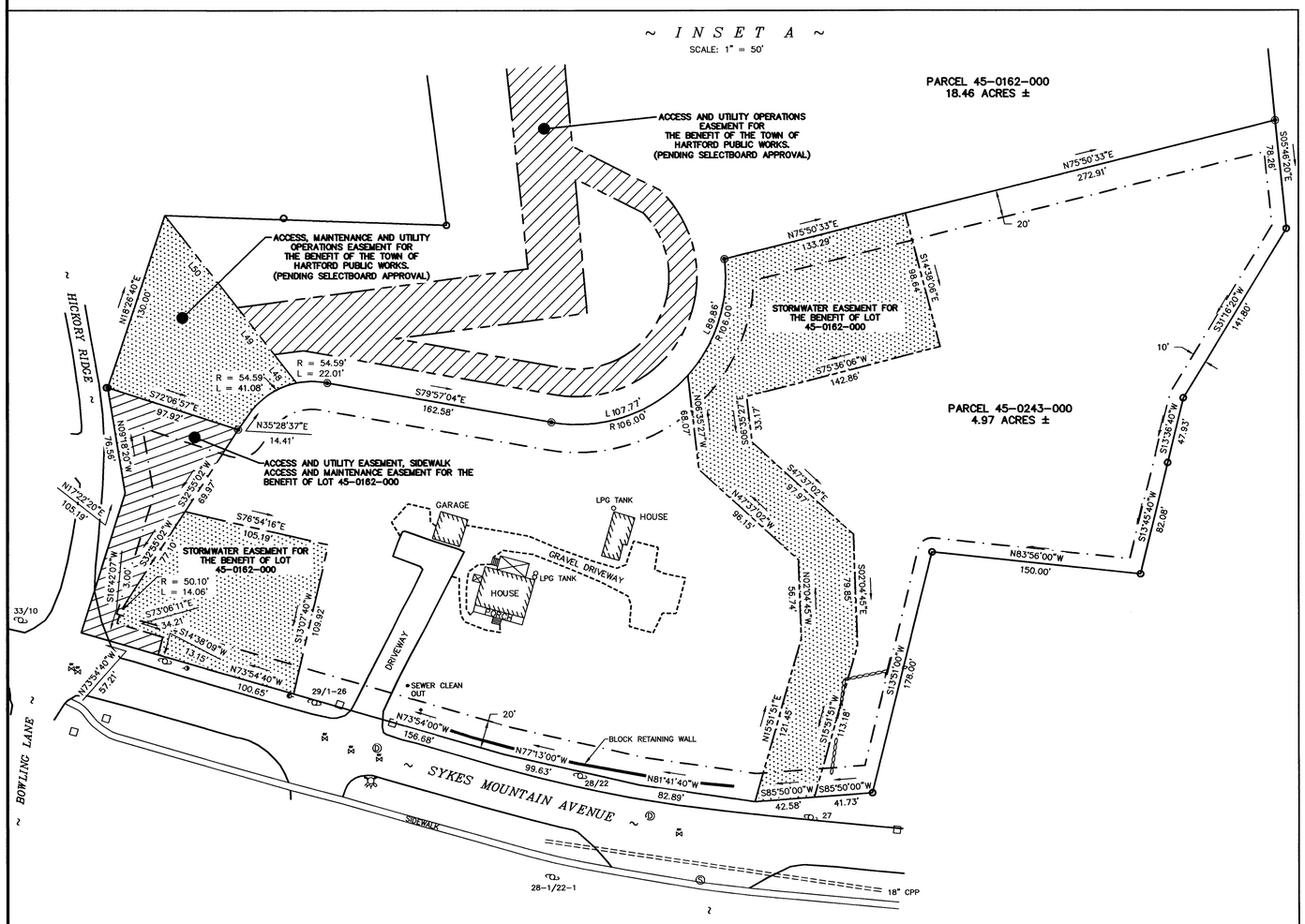
~ LOCATION MAP ~



~ LEGEND ~

- PROPERTY LINE
- RIGHT OF WAY OR EASEMENT LINE
- FORMER PROPERTY LINE
- IRON PIN/PIPE FOUND
- 5/8" ø IRON PIN TO BE SET
- STONE WALL
- UTILITY POLE
- FIRE HYDRANT
- STORMWATER SEWER MANHOLE
- CATCH BASIN
- GATE VALVE
- SANITARY SEWER MANHOLE

~ INSET A ~
SCALE: 1" = 50'



~ NOTES ~

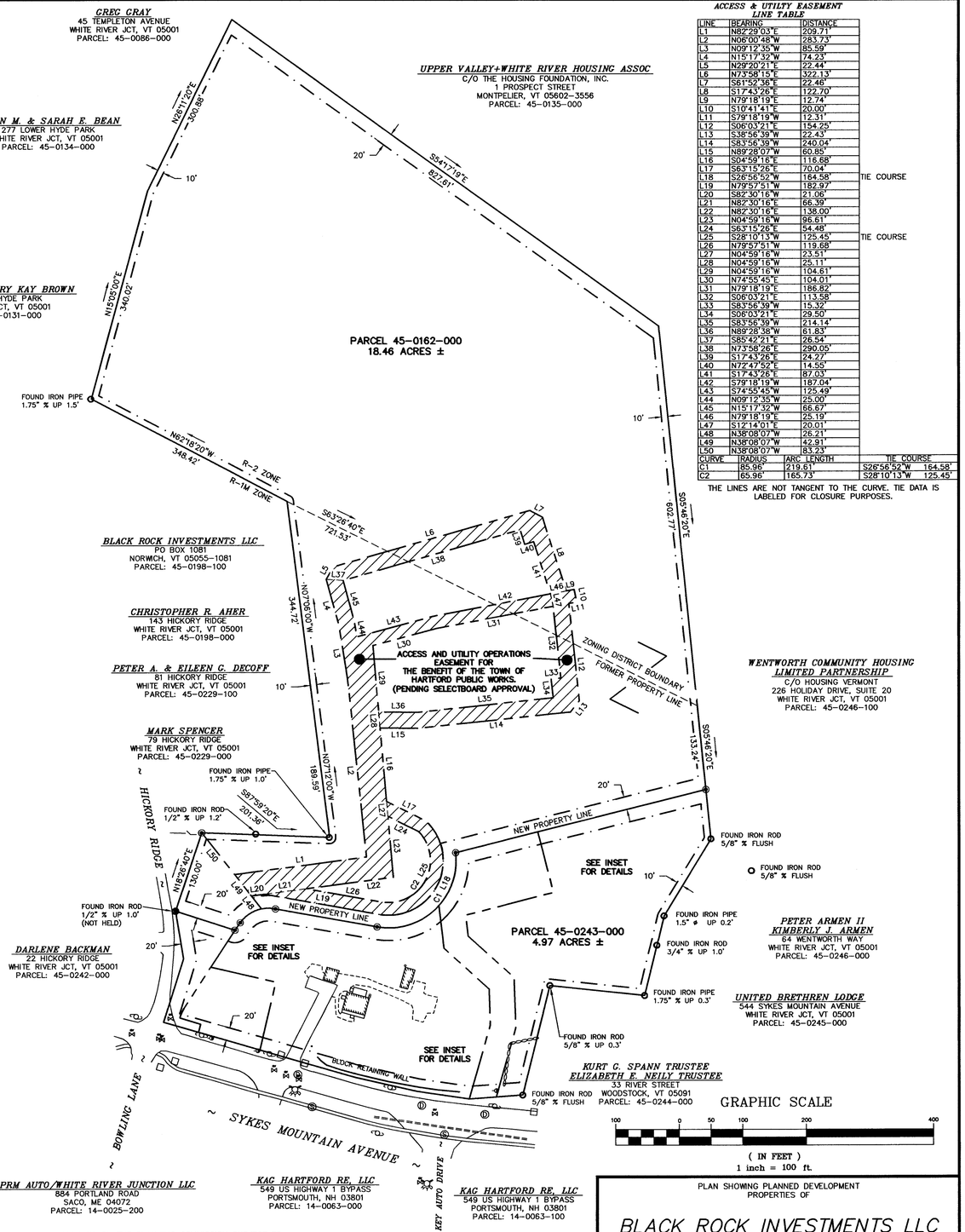
1. METHOD OF SURVEY: LEICA TS 16 ROBOTIC TOTAL STATION.
2. BEARINGS ARE REFERENCED TO VERMONT GRID NORTH.
3. DIBERNARDO ASSOCIATES IS NOT RESPONSIBLE FOR PROPERTY DESCRIPTIONS PREPARED BY OTHER PERSONS FOR CONVEYANCE OF THE PROPERTY SHOWN HEREON.
4. SEE DESIGN PLANS BY ENGINEERING VENTURES FOR MORE DETAILS ON PROPOSED DEVELOPMENT.
5. ONLY THE ADJUSTED PARCEL 45-243 WAS SURVEYED BY THIS FIRM. THE REMAINDER OF THE PROPERTY LINES FOR PARCELS 45-243 AND 45-162 WERE TAKEN FROM THE REFERENCE PLANS. THE PURPOSE OF THIS PLAN IS TO SHOW THE ADJUSTED PARCEL 45-243 AND PROPOSED EASEMENTS FOR FUTURE DEVELOPMENT.
6. THE PROPERTY IS LOCATED IN THE R-1M & R2 ZONING DISTRICTS.

~ REFERENCE DEEDS ~

1. WARRANTY DEED FROM THE VALLEY LAND CORPORATION TO BLACK ROCK INVESTMENTS, LLC RECORDED IN BOOK 539 PAGE 568 ON AUGUST 14, 2017.

~ REFERENCE PLANS ~

1. PLAN ENTITLED "BOUNDARY SURVEY PLAT HARTFORD PARCEL 045-0243-000 BLACK ROCK INVESTMENTS, LLC 444 SYKES MOUNTAIN AVENUE, HARTFORD, VERMONT", DATED JUNE 25, 2015, LAST REVISED APRIL 25, 2017, PROJECT NO. 1294, RECORDED IN SLIDE N649C, PREPARED BY ROCKWOOD LAND SERVICES, LLC.
2. PLAN ENTITLED "BOUNDARY SURVEY PLAT HARTFORD PARCEL 045-0162-000 BLACK ROCK INVESTMENTS, LLC LILLY POND ROAD, HARTFORD, VERMONT", DATED OCTOBER 21, 2016, PROJECT NO. 1294-2, RECORDED IN SLIDE N653C, PREPARED BY ROCKWOOD LAND SERVICES, LLC.
3. PLAN ENTITLED "LOT LINE ADJUSTMENT PLAT HARTFORD PARCELS 045-0246-001, 045-0243-000 AND 045-0162-000 TWIN PINES HOUSING TRUST SYKES MOUNTAIN AVENUE AND LILY POND ROAD, HARTFORD, VERMONT", DATED MARCH 31, 2017, LAST REVISED JULY 19, 2017, PROJECT NO. 1294-04, RECORDED IN SLIDE N657B, PREPARED BY ROCKWOOD LAND SERVICES, LLC.



ACCESS & UTILITY EASEMENT LINE TABLE

LINE	BEARING	DISTANCE	
L1	N82°29'03"E	209.71'	
L2	N06°00'48"W	283.73'	
L3	N09°12'35"W	85.59'	
L4	N15°17'32"W	74.23'	
L5	N29°20'21"E	22.44'	
L6	N73°58'15"E	322.13'	
L7	S61°52'36"E	22.46'	
L8	S17°43'26"E	122.70'	
L9	N79°18'19"E	12.74'	
L10	S10°41'41"E	20.00'	
L11	S79°18'19"W	12.31'	
L12	S06°03'21"E	154.25'	
L13	S38°56'39"W	22.43'	
L14	S83°56'39"W	240.04'	
L15	N89°28'07"W	60.85'	
L16	S04°59'16"E	118.68'	
L17	S63°15'26"E	70.04	
L18	S26°56'52"W	164.58'	TIE COURSE
L19	N79°57'51"W	182.97'	
L20	S82°30'16"W	21.06'	
L21	N82°30'16"E	66.39'	
L22	N82°30'16"E	138.00'	
L23	N04°59'16"W	96.61'	
L24	S63°15'26"E	54.48'	
L25	S28°10'13"W	125.45'	TIE COURSE
L26	N79°57'51"W	119.68'	
L27	N04°59'16"W	23.51'	
L28	N04°59'16"W	25.11'	
L29	N04°59'16"W	104.61'	
L30	N74°55'45"E	104.01'	
L31	N79°18'19"E	186.82'	
L32	S06°03'21"E	113.58'	
L33	S83°56'39"W	15.32'	
L34	S06°03'21"E	29.50'	
L35	S83°56'39"W	214.14'	
L36	N89°28'38"W	61.83'	
L37	S85°42'21"E	26.54'	
L38	N73°58'26"E	290.05'	
L39	S17°43'26"E	24.27'	
L40	N72°47'52"E	14.55'	
L41	S17°43'26"E	87.03'	
L42	S79°18'19"W	187.04'	
L43	S74°55'45"W	125.49'	
L44	N09°12'35"W	25.00'	
L45	N15°17'32"W	66.67'	
L46	N79°18'19"E	25.19'	
L47	S12°14'01"E	20.01'	
L48	N38°08'07"W	26.21'	
L49	N38°08'07"W	42.91'	
L50	N38°08'07"W	85.23'	

CURVE	RADIUS	ARC LENGTH	TIE COURSE	
C1	86.96'	219.61'	S26°56'52"W	164.58'
C2	65.96'	165.73'	S28°10'13"W	125.45'

THE LINES ARE NOT TANGENT TO THE CURVE. TIE DATA IS LABELED FOR CLOSURE PURPOSES.

GREG GRAY
45 TEMPLETON AVENUE
WHITE RIVER JCT, VT 05001
PARCEL: 45-0086-000

KEVIN M. & SARAH E. BEAN
277 LOWER HYDE PARK
WHITE RIVER JCT, VT 05001
PARCEL: 45-0134-000

DENNIS L. & MARY KAY BROWN
253 LOWER HYDE PARK
WHITE RIVER JCT, VT 05001
PARCEL: 45-0131-000

UPPER VALLEY+WHITE RIVER HOUSING ASSOC
C/O THE HOUSING FOUNDATION, INC.
1 PROSPECT STREET
MONTPELIER, VT 05602-3556
PARCEL: 45-0135-000

BLACK ROCK INVESTMENTS LLC
PO BOX 1081
NORWICH, VT 05055-1081
PARCEL: 45-0198-100

CHRISTOPHER R. AHER
143 HICKORY RIDGE
WHITE RIVER JCT, VT 05001
PARCEL: 45-0198-000

PETER A. & EILEEN C. DECOFF
81 HICKORY RIDGE
WHITE RIVER JCT, VT 05001
PARCEL: 45-0229-100

MARK SPENCER
79 HICKORY RIDGE
WHITE RIVER JCT, VT 05001
PARCEL: 45-0229-000

WENTWORTH COMMUNITY HOUSING LIMITED PARTNERSHIP
C/O HOUSING VERMONT
226 HOLIDAY DRIVE, SUITE 20
WHITE RIVER JCT, VT 05001
PARCEL: 45-0246-100

PETER ARMEN II
KIMBERLY J. ARMEN
64 WENTWORTH WAY
WHITE RIVER JCT, VT 05001
PARCEL: 45-0246-000

UNITED BRETHREN LODGE
544 SYKES MOUNTAIN AVENUE
WHITE RIVER JCT, VT 05001
PARCEL: 45-0245-000

KURT C. SPANN TRUSTEE
ELIZABETH E. NEILY TRUSTEE
33 RIVER STREET
WOODSTOCK, VT 05091
PARCEL: 45-0244-000

DARLENE BACKMAN
22 HICKORY RIDGE
WHITE RIVER JCT, VT 05001
PARCEL: 45-0242-000

PRM AUTO/WHITE RIVER JUNCTION LLC
884 PORTLAND ROAD
SACO, ME 04072
PARCEL: 14-0025-200

KAG HARTFORD RE, LLC
549 US HIGHWAY 1 BYPASS
PORTSMOUTH, NH 03801
PARCEL: 14-0063-000

KAG HARTFORD RE, LLC
549 US HIGHWAY 1 BYPASS
PORTSMOUTH, NH 03801
PARCEL: 14-0063-100

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

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

APPROVAL NO. _____ HARTFORD PLANNING COMMISSION

DATE: _____ BY: _____ CHAIRPERSON

~ CERTIFICATION ~

IN MY OPINION AND TO THE BEST OF MY KNOWLEDGE THIS SURVEY AND PLAN IS CONSISTENT WITH INFORMATION ABSTRACTED FROM THE TOWN OF HARTFORD LAND RECORDS AND PHYSICAL EVIDENCE FOUND IN THE FIELD.
THIS PLAT IS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE EVIDENCE SHOWN, AND DOES NOT REPRESENT A WARRANTY OR A GUARANTEE.

JOSEPH A. DIBERNARDO VT LLS. NO. 715

TOWN CLERKS OFFICE
HARTFORD, VT
RECEIVED FOR RECORDING

DATE: _____

AT _____ HR _____ MIN AM/PM

MAP SLIDE: _____

ATTEST:

PLAN SHOWING PLANNED DEVELOPMENT PROPERTIES OF

BLACK ROCK INVESTMENTS LLC

PO BOX 1081
NORWICH, VT 05055-1081
PARCEL ID: 45-0243-000 & 45-0162-000

444 SYKES MOUNTAIN AVENUE ~ VILLAGE OF WHITE RIVER JUNCTION
WINDSOR COUNTY ~ TOWN OF HARTFORD, VERMONT

DIBERNARDO ASSOCIATES, LLC
VT NH
LICENSED LAND SURVEYORS
PO BOX 52
BELLOWS FALLS, VT 05101
802-463-3031 ~ 603-358-5509

STATE OF VERMONT
JOSEPH A. DIBERNARDO NO. 715
LICENSED LAND SURVEYOR

DATE FEB. 12, 2024	SCALE 1" = 100'
DRAWN BY JAD	CK'D BY JTW
SURVEYED BY BG	
DWG.NO. 3562-1	

© COPYRIGHT 2024 DIBERNARDO ASSOCIATES, LLC.

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

Memorandum

To: Kevin Worden

Cc: Irwin Perret Sr., Irwin Perret Jr, Earl Simpson, Dennis Marquise, and Chris Holzwarth

From: Jo-Ann Ells

Date: April 22, 2024

Re: Multi-Unit Dwelling, 192 Units, Lot 45-0162-000

Please submit a response to the following comments/questions on your application for Approval of a multi-unit dwelling before **9:00 a.m., Monday, April 29, 2024.** 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 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 provide a narrative describing the private and public rights-of way and easements for this application and a survey indicating the rights-of-way and easements.

2. Please update the following density calculation based on the new proposed size of the lot:

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

3. Can the snow storage areas be designed to function as rain gardens?

4. What is the height of the wall indicated in note 6 on sheet C2.0?

5. Please clarify on the plans the purpose of the 16’ x 30’ area on the access road.

6. Any comments from the DPW will be sent after the 3rd party review is complete.

7. Please email me a copy and submit 14 hard copies* of:

    - April 15, 2024 Cover Letter
    - Application Form
    - Project Narrative
    - Revised responses to comments received February 29, 2024
    - Traffic Impact Study
    - Revised Project Plans
    - Overall Concept Plan
    - Survey
    - Response to this memo

*Please consider larger size plans, 11 x17 might be difficult for the Planning Commission and Zoning Board to read.

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

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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