Permit # PP-_____-_____

TOWN OF COLCHESTER
APPLICATION FOR PRELIMINARY PLAT REVIEW

All information requested on this application must be completed in full. Failure to provide the requested information either on this application form or on the plat plan will result in your application being rejected and a delay in the review before the Development Review Board.

1) OWNER OF RECORD (Name as shown on deed, mailing address, phone and email) Hazelett Strip-Casting Corporation; 135 W Lakeshore Drive, Colchester, VT 05446
802-863-6376; davedi@hazelett.com

2) APPLICANT (Name, mailing address, phone and email) Same

3) CONTACT PERSON (Name, mailing address, phone and email) Benjamin Avery
Greenfield Growth, LLC; 802-316-0004; ben@greenfieldgrowthllc.com

4) CONSULTANT INFORMATION (Name, mailing address, phone and email) Scott Homsted
Krebs & Lansing Consulting Engineers, Inc.; 802-878-0375; scott.homsted@krebsandlansing.com

5) PROJECT STREET ADDRESS: 166 & 180 West Lakeshore Drive

6) TAX MAP & PARCEL #(can be obtained at Assessor's Office) 65-019002-0000000; 65-020002-0000000

7) PROJECT DESCRIPTION

a) Please note if new lots are being created and whether or not the request is for a regular subdivision, planned residential development, or planned unit development: See attached narrative.

b) Existing Uses on Property (including description and size of each separate use)
Current use is marina and recreational for Hazelett employees. Historical use included a hotel.

c) Proposed Uses on property (include description and size of each new use and existing uses to remain) Proposed use is for a 20 room Inn with a supporting restaurant and event space. The existing marina and recreational use will remain. See attached narrative.

d) Total building square footage on property (proposed buildings and existing buildings to remain)
Proposed: 4,982 total sq.ft. in 1 Main Building, 4 cottages, 1 future Phase 2 cottage.

e) Height of building & number of floors (proposed buildings and existing buildings to remain, specify if basement and mezzanine) Each building will have 2 stories and a basement level; Height will be 40' or less.

f) Number of residential units (if applicable, new units and existing units to remain) 0 new, 0 proposed

g) Number of employees & company vehicles (existing and proposed, note office versus non-office employees): 0 existing employees/vehicles; 12 proposed employees, 0 company vehicles

h) Other (list any other information pertinent to this application not specifically requested above, please note previous approvals and if the Overlay Districts are applicable): Allowed use in the Shoreland Protection Zone. No increase in "usable area" is proposed.

8) LOT INFORMATION

a) Existing Lot Size: 2.0

b) Number of Lots Being Created (please also note lot size): 0; Existing two lots will be merged into one

c) Acreage to be Disturbed: 1.3

d) Overall Coverage (building, parking, outside storage, etc)
Existing 5.5 % Proposed _____ %

e) Front Yard Coverage (along each street) Existing 26.1 % Proposed _____ %

f) Building Setbacks: Front 25 Rear 65 Side 104 Side 15

g) Parking Lot Setbacks: Front 18 Rear 17 Side 19 Side 108

h) Distance From Shoreline (95.5' elevation): 100

9) ESTIMATED PROJECT COMPLETION DATE 2026

10) TYPE OF EXISTING OR PROPOSED ENCUMBRANCES ON PROPERTY (easements, covenants, leases, rights of way, etc.) Easment to the Town of Colchester for existing stormwater pipe

11) PROPOSED EXTENSION, RELOCATION, OR MODIFICATION OF MUNICIPAL FACILITIES (sanitary sewer, water supply, streets, storm drainage, etc.) New water and sewer services lines are proposed to serve the new buildings.

12) PUBLIC IMPROVEMENT, ROAD, & UTILITY INFORMATION

a) Will municipal sewer be used? Yes If yes, has an allocation been requested? No

b) For on site wastewater disposal describe: NA

c) Has the Wastewater Official been contacted to review soil test pits? NA

d) Will municipal water be used? Yes If no describe water supply: NA

e) Linear footage & width of each road/driveway proposed: Reconfigured existing driveway

f) Corner sight distance for each road/driveway: East Entrance: 800' east; 425' west; West Entrance: 500' east, 300' west

g) Do proposed roads include sidewalks? NA

13) COST ESTIMATES

a) Building (including interior renovations): $ 8,000,000.00

b) Landscaping: $ 244,533.10

c) Describe Landscaping & Other Site Improvements: See Plans and Narrative.

14) ESTIMATED TRAFFIC

a) Average daily traffic for entire property (in and out): See attached Traffic Impact Assessment

b) A.M. Peak hour for entire property (in and out): See attached Traffic Impact Assessment

c) P.M. Peak hour for entire property (In and out): See attached Traffic Impact Assessment

15) PEAK HOURS OF OPERATION: 4-6

16) PEAK DAYS OF OPERATION: Fri - Sun

17) PRELIMINARY PLAT PLAN AND FEE

A preliminary plat plan shall be submitted which shows the information listed on Exhibit B attached. A preliminary plat plan application fee shall be paid to the Town at the time of submittal (see Exhibit B). In accordance with Colchester's Fee Ordinance Chapter 6 ½ - 4 (9) applicants for all permits are responsible for costs of reviews conducted by third-party consultants/experts requested by the Town.

*Please submit one paper copy and a digital copy of the application in pdf (file not exceeding 20mb) via email to pzinfo@colchestervt.gov. If online submittal is not feasible, submissions will be accepted via CD/ DVD. Application forms, plans, and supporting documents shall each be separate pdfs and plans shall be submitted as a set whenever feasible. Files shall be named the address of the property and the type of document followed by the year (i.e. 205RooseveltHgwyApp15). Each file name shall be unique with no spaces and characters shall be numbers or letters (no characters such as hyphens, #, &, or *). All pdfs shall be at least at 300dpi, color, and to scale if a plan, elevation, or similar document.*

18) PRELIMINARY PLAT REVIEW CRITERIA NARRATIVE
A narrative description of how the proposed project meets the criteria of Article Nine of the Development Regulations shall be submitted with this application.

See Attached.

I hereby certify that all the information requested as part of this application has been submitted and is accurate to the best of my knowledge.

SIGNATURE OF APPLICANT

SIGNATURE OF PROPERTY OWNER

By the land owner signature, the land owner is authorizing the applicant to act on their behalf.

☒ Check this box if the consultant listed is authorized to act on behalf of the applicant and land owner.

☒ Check this box if the contact person listed is authorized to act on behalf of the applicant and land owner.

Do not write below this line

DATE OF SUBMISSION:_____

FEE PAID:_____

I have reviewed this preliminary plat application and find it to be: ☐ Complete ☐ Incomplete

Zoning Administrator or Designee Date

EXHIBIT A

ADJOINING PROPERTY OWNER INFORMATION

(please use the interactive map at Colchestervt.gov for info & try to include direct abutters as well as adjacent properties along the shoreline within the area of affect as well as across the street)

Example: Tax Map 7, Parcel 57 John and Jane Doe P.O. Box 55, 835 Blakely Road Colchester, VT 05446		

EXHIBIT B

PRELIMINARY PLAT

The following information must be shown on the plat plans meeting Article Nine of the Development Regulations. Failure to provide the following information will result in your application being rejected and a delay in the review before the Development Review Board.

- Complete survey of property by a licensed land surveyor drawn to scale (20 ft. is preferred).
- Name, license number, seal, and contact number of licensed land surveyor & date prepared.
- Survey data (acreage, property lines, zoning boundaries, watercourse, base flood elevation, etc.)
- Location of easements, public lands, r.o.w.s, sidewalks, and public or private street (w/names)
- Contours at two (2) foot elevation intervals (existing and finished)
- Boundaries and area of all abutting properties
- Building elevations & building level floor plans
- Proposed landscaping schedule (number, variety and size)
- Location of streets, abutting properties, fire hydrants, existing buildings, existing landscaping
- Location of proposed hydrants and/or building sprinkler hook-ups and fire lanes.
- Zoning boundaries
- Number and location of parking spaces (including handicapped spaces)
- Location of septic tanks, fields, & lines and/or septic test pit, and percolation information
- Lot coverage information: Building footprint, total lot, and front yard
- Numerical and graphical scale, date last revised, and north arrow.
- Exterior lighting details (cut sheets). All lights should be down casting and shielded.
- Dumpster or trash area locations
- Bicycle rack
- If restaurant is proposed, provide number seats and square footage of floor area provided for patron use but not containing fixed seats
- Area for accumulating snow
- Details of all proposed bridges or culverts.
- Location of temporary markers.
- Water line location (existing & proposed), fire flows, and pressures
- Details of drainage systems & stormwater facilities
- Physical features (streams, wetlands, vegetative cover, etc.)
- Existing highway geometries including access points near project
- Existing & proposed entrances and curb cuts (dimensions, widths, & turning radii)
- Sight distance in both direction of all driveway intersections
- Traffic level of service/capacity analysis for existing/future conditions
- Loading areas & truck circulation patterns
- Existing & proposed sidewalks, recreation paths, and pedestrian walkways
- A list of waivers desired (if any).
- Development timetable (including number of phases and start and completion dates).
- Location & size of open spaces reserved for recreation or conservation
- Location & type of restricted land (i.e. rights-of-way, easements, open space covenants, etc.)

APPLICATION FEE

☐ Base fee $1223 plus:

☐ Tiered cost per unit: Units 1-10: $153/unit, Units 11-20: $102/unit, Units 21+: $72/unit; and

☐ $51/acre

100 feet Abutters List Report

Colchester, VT
March 03, 2025

Subject Properties:

Parcel Number:	06-023002-0000000	Mailing Address:	HAZELETT STRIP-CASTING CORP
CAMA Number:	06-023002-0000000		PO BOX 600
Property Address:	135 WEST LAKESHORE DR		COLCHESTER, VT 05446
Parcel Number:	65-019002-0000000	Mailing Address:	HAZELETT STRIP-CASTING CORP
CAMA Number:	65-019002-0000000		PO BOX 600
Property Address:	180 WEST LAKESHORE DR		COLCHESTER, VT 05446
Parcel Number:	65-020002-0000000	Mailing Address:	HAZELETT STRIP CASTING CORP
CAMA Number:	65-020002-0000000		PO BOX 600
Property Address:	166 WEST LAKESHORE DR		COLCHESTER, VT 05446

Abutters:

Parcel Number:	06-013002-0000000	Mailing Address:	SISON BROADCASTING COMPANY INC
CAMA Number:	06-013002-0000000		118 MALLETTS BAY AVE
Property Address:	118 MALLETTS BAY AVE		COLCHESTER, VT 05446
Parcel Number:	06-013002-0000000	Mailing Address:	SISON BROADCASTING COMPANY INC
CAMA Number:	06-013002-0000000		124 MIDNIGHT PASS
Property Address:	118 MALLETTS BAY AVE		COLCHESTER, VT 05446
Parcel Number:	06-013002-0000000	Mailing Address:	SISON BROADCASTING COMPANY INC
CAMA Number:	06-013002-0000000		PO BOX 136
Property Address:	118 MALLETTS BAY AVE		COLCHESTER, VT 05446
Parcel Number:	06-013002-0000000	Mailing Address:	SISON BROADCASTING COMPANY INC
CAMA Number:	06-013002-0000000		118 MALLETTS BAY AVE
Property Address:	118 MALLETTS BAY AVE		COLCHESTER, VT 05446
Parcel Number:	06-013002-0000000	Mailing Address:	SISON BROADCASTING COMPANY INC
CAMA Number:	06-013002-0000000		124 MIDNIGHT PASS
Property Address:	118 MALLETTS BAY AVE		COLCHESTER, VT 05446
Parcel Number:	06-013002-0000000	Mailing Address:	SISON BROADCASTING COMPANY INC
CAMA Number:	06-013002-0000000		PO BOX 136
Property Address:	118 MALLETTS BAY AVE		COLCHESTER, VT 05446
Parcel Number:	06-013002-0000000	Mailing Address:	SISON BROADCASTING COMPANY INC
CAMA Number:	06-013002-0000000		118 MALLETTS BAY AVE
Property Address:	118 MALLETTS BAY AVE		COLCHESTER, VT 05446

Parcel Number:	06-013002-0000000	Mailing Address:	SISON BROADCASTING COMPANY INC
CAMA Number:	06-013002-0000000		124 MIDNIGHT PASS
Property Address:	118 MALLETTS BAY AVE		COLCHESTER, VT 05446
Parcel Number:	06-013002-0000000	Mailing Address:	SISON BROADCASTING COMPANY INC
CAMA Number:	06-013002-0000000		PO BOX 136
Property Address:	118 MALLETTS BAY AVE		COLCHESTER, VT 05446
Parcel Number:	06-014002-0000000	Mailing Address:	COLCHESTER TOWN SCHOOL DIST
CAMA Number:	06-014002-0000000		PO BOX 27
Property Address:	0 MALLETTS BAY AVE		COLCHESTER, VT 05446
Parcel Number:	06-022002-0000000	Mailing Address:	COLCHESTER TOWN OF
CAMA Number:	06-022002-0000000		781 BLAKLEY RD
Property Address:	34 BLAKELY RD		COLCHESTER, VT 05446
Parcel Number:	06-026072-0000000	Mailing Address:	WINOOSKI VALLEY PARK DIST
CAMA Number:	06-026072-0000000		1 ETHAN ALLEN HOMESTEAD
Property Address:	0 MACRAE RD		BURLINGTON, VT 05408
Parcel Number:	63-025002-0000000	Mailing Address:	BAUMANN WALTER E
CAMA Number:	63-025002-0000000		373 SHORE ACRES DR
Property Address:	373 SHORE ACRES DR		COLCHESTER, VT 05446
Parcel Number:	63-026002-0000000	Mailing Address:	PLACE DENIS H
CAMA Number:	63-026002-0000000		411 SHORE ACRES DR
Property Address:	411 SHORE ACRES DR		COLCHESTER, VT 05446
Parcel Number:	63-027002-0000000	Mailing Address:	SPENGLER JEFFREY E
CAMA Number:	63-027002-0000000		463 SHORE ACRES DR
Property Address:	463 SHORE ACRES DR		COLCHESTER, VT 05446
Parcel Number:	63-030002-0000000	Mailing Address:	COGLEY JOSEPH M
CAMA Number:	63-030002-0000000		581 SHORE ACRES DR
Property Address:	581 SHORE ACRES DR		COLCHESTER, VT 05446
Parcel Number:	63-033002-0000000	Mailing Address:	BOUDREAU THERESA A LIFE ESTATE
CAMA Number:	63-033002-0000000		663 SHORE ACRES DR
Property Address:	663 SHORE ACRES DR		COLCHESTER, VT 05446
Parcel Number:	64-001002-0000000	Mailing Address:	NAULT MATTHEW R
CAMA Number:	64-001002-0000000		683 SHORE ACRES DR
Property Address:	683 SHORE ACRES DR		COLCHESTER, VT 05446
Parcel Number:	64-002002-0000000	Mailing Address:	HAMMOND JAMES F
CAMA Number:	64-002002-0000000		717 SHORE ACRES DR
Property Address:	717 SHORE ACRES DR		COLCHESTER, VT 05446

Parcel Number:	64-003002-0000000	Mailing Address:	MYERS TODD A
CAMA Number:	64-003002-0000000		751 SHORE ACRES DR
Property Address:	751 SHORE ACRES DR		COLCHESTER, VT 05446
Parcel Number:	64-004002-0000000	Mailing Address:	KATZ JON
CAMA Number:	64-004002-0000000		827 SHORE ACRES DR
Property Address:	827 SHORE ACRES DR		COLCHESTER, VT 05446
Parcel Number:	64-005002-0000000	Mailing Address:	FRANCIS AND SUSAN CONNORS REV TRUST
CAMA Number:	64-005002-0000000		849 SHORE ACRES DR
Property Address:	849 SHORE ACRES DR		COLCHESTER, VT 05446
Parcel Number:	64-013002-0000000	Mailing Address:	BARTLETT LIVING TRUST
CAMA Number:	64-013002-0000000		921 SHORE ACRES DR
Property Address:	921 SHORE ACRES DR		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	88 MALLETTS BAY CAMPGROUND LLC
CAMA Number:	65-001002-0000000		75 SO WINOOSKI AVE
Property Address:	88 MALLETTS BAY CAMPGROUND		BURLINGTON, VT 05401
Parcel Number:	65-001002-0000000	Mailing Address:	NEWTON THOMAS
CAMA Number:	65-001002-0010000		1 MALLETTS BAY CAMPGROUND
Property Address:	1 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	MARSHALL TINA
CAMA Number:	65-001002-0010100		40 TYRONE RD
Property Address:	1A MALLETTS BAY CAMPGROUND		MORGANTOWN, WV 26508
Parcel Number:	65-001002-0000000	Mailing Address:	BUSHEY JOHN
CAMA Number:	65-001002-0020010		B10 MALLETTS BAY CAMPGROUND
Property Address:	B10 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	LIBERTY HEATHER
CAMA Number:	65-001002-0020500		16 ELIZABETH ST
Property Address:	B5 MALLETTS BAY CAMPGROUND		SO BURLINGTON, VT 05403
Parcel Number:	65-001002-0000000	Mailing Address:	KING SHAWN
CAMA Number:	65-001002-0020600		PO BOX 604
Property Address:	B6 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	MCDOWELL DOUG
CAMA Number:	65-001002-0020800		B8 MALLETTS BAY CAMPGROUND
Property Address:	B8 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	MCDOWELL DOUG
CAMA Number:	65-001002-0020800		PO BOX 404
Property Address:	B8 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446

Parcel Number:	65-001002-0000000	Mailing Address:	MCDOWELL DOUG
CAMA Number:	65-001002-0020800		B8 MALLETTS BAY CAMPGROUND
Property Address:	B8 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	MCDOWELL DOUG
CAMA Number:	65-001002-0020800		PO BOX 404
Property Address:	B8 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	DUFRESNE KEVIN
CAMA Number:	65-001002-0020900		99 LORI LN
Property Address:	B9 MALLETTS BAY CAMPGROUND		BURLINGTON, VT 05408
Parcel Number:	65-001002-0000000	Mailing Address:	WALL LESLIE
CAMA Number:	65-001002-0021000		B1 MALLETTS BAY CAMPGROUND
Property Address:	B1 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	DEVARAJAN ASHLEY
CAMA Number:	65-001002-0030100		12726 NW NAOMI LN
Property Address:	3A MALLETTS BAY CAMPGROUND		PORTLAND, OR 97229
Parcel Number:	65-001002-0000000	Mailing Address:	VOIGT DENNIS
CAMA Number:	65-001002-0040000		21 LOUBIER DR
Property Address:	4 MALLETTS BAY CAMPGROUND		ESSEX JCT, VT 05452
Parcel Number:	65-001002-0000000	Mailing Address:	ANGIER JOHN
CAMA Number:	65-001002-0040100		4A MALLETTS BAY CAMPGROUND
Property Address:	4A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	BRADLEY ALLEN
CAMA Number:	65-001002-0050100		9 CAPTAIN HALL RD
Property Address:	5A MALLETTS BAY CAMPGROUND		MIDDLEBORO, MA 02346
Parcel Number:	65-001002-0000000	Mailing Address:	STANLEY LEVI
CAMA Number:	65-001002-0060000		PO BOX 256
Property Address:	6 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	MAIN GEORGE
CAMA Number:	65-001002-0060100		8041 MEADOW LARK LANE
Property Address:	6A MALLETTS BAY CAMPGROUND		PORT ST. LUCIE, FL 34952
Parcel Number:	65-001002-0000000	Mailing Address:	CASWELL ANNE G
CAMA Number:	65-001002-0070000		7 MALLETTS BAY CAMPGROUND
Property Address:	7 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	CASWELL ANNE G
CAMA Number:	65-001002-0070000		PO BOX 65084
Property Address:	7 MALLETTS BAY CAMPGROUND		BURLINGTON, VT 05406

Parcel Number:	65-001002-0000000	Mailing Address:	CASWELL ANNE G
CAMA Number:	65-001002-0070000		7 MALLETTS BAY CAMPGROUND
Property Address:	7 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	CASWELL ANNE G
CAMA Number:	65-001002-0070000		PO BOX 65084
Property Address:	7 MALLETTS BAY CAMPGROUND		BURLINGTON, VT 05406
Parcel Number:	65-001002-0000000	Mailing Address:	HARRINGTON STEVE
CAMA Number:	65-001002-0080000		PO BOX 372
Property Address:	8 MALLETTS BAY CAMPGROUND		JONESVILLE, VT 05466
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		22646 CLIFFSIDE WAY
Property Address:	8A MALLETTS BAY CAMPGROUND		LAND O LAKES, FL 34639
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		5015 ABIGAIL LN
Property Address:	8A MALLETTS BAY CAMPGROUND		CHATTANOOGA, TN 37416
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		PO BOX 602
Property Address:	8A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		PO BOX 90
Property Address:	8A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		22646 CLIFFSIDE WAY
Property Address:	8A MALLETTS BAY CAMPGROUND		LAND O LAKES, FL 34639
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		5015 ABIGAIL LN
Property Address:	8A MALLETTS BAY CAMPGROUND		CHATTANOOGA, TN 37416
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		PO BOX 602
Property Address:	8A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		PO BOX 90
Property Address:	8A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		22646 CLIFFSIDE WAY
Property Address:	8A MALLETTS BAY CAMPGROUND		LAND O LAKES, FL 34639

Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		5015 ABIGAIL LN
Property Address:	8A MALLETTS BAY CAMPGROUND		CHATTANOOGA, TN 37416
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		PO BOX 602
Property Address:	8A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		PO BOX 90
Property Address:	8A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		22646 CLIFFSIDE WAY
Property Address:	8A MALLETTS BAY CAMPGROUND		LAND O LAKES, FL 34639
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		5015 ABIGAIL LN
Property Address:	8A MALLETTS BAY CAMPGROUND		CHATTANOOGA, TN 37416
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		PO BOX 602
Property Address:	8A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	GRIFFITH MAURICE
CAMA Number:	65-001002-0080100		PO BOX 90
Property Address:	8A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	DICKINSON JESSICA
CAMA Number:	65-001002-0090000		143 PARK ST
Property Address:	9 MALLETTS BAY CAMPGROUND		BURLINGTON, VT 05401
Parcel Number:	65-001002-0000000	Mailing Address:	CARDINAL RON
CAMA Number:	65-001002-0110000		11 MALLETTS BAY CAMPGROUND
Property Address:	11 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	BRIGHAM SABRINA
CAMA Number:	65-001002-0110100		11A MALLETTS BAY CAMPGROUND
Property Address:	11A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	PARIZO RAY III
CAMA Number:	65-001002-0120000		12 MALLETTS BAY CAMPGROUND
Property Address:	12 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	PARIZO RAY III
CAMA Number:	65-001002-0120000		193 BROWNS RIVER RD
Property Address:	12 MALLETTS BAY CAMPGROUND		ESSEX JCT, VT 05452

Parcel Number:	65-001002-0000000	Mailing Address:	PARIZO RAY III
CAMA Number:	65-001002-0120000		12 MALLETTS BAY CAMPGROUND
Property Address:	12 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	PARIZO RAY III
CAMA Number:	65-001002-0120000		193 BROWNS RIVER RD
Property Address:	12 MALLETTS BAY CAMPGROUND		ESSEX JCT, VT 05452
Parcel Number:	65-001002-0000000	Mailing Address:	PAAP LARRY
CAMA Number:	65-001002-0120100		132 NO CHAMPLAIN ST
Property Address:	12A MALLETTS BAY CAMPGROUND		BURLINGTON, VT 05401
Parcel Number:	65-001002-0000000	Mailing Address:	PAAP LARRY
CAMA Number:	65-001002-0120100		PO BOX 371
Property Address:	12A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	PAAP LARRY
CAMA Number:	65-001002-0120100		132 NO CHAMPLAIN ST
Property Address:	12A MALLETTS BAY CAMPGROUND		BURLINGTON, VT 05401
Parcel Number:	65-001002-0000000	Mailing Address:	PAAP LARRY
CAMA Number:	65-001002-0120100		PO BOX 371
Property Address:	12A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	AMOUR SUE
CAMA Number:	65-001002-0140000		778 SAND HILL RD #24
Property Address:	14 MALLETTS BAY CAMPGROUND		ESSEX JCT, VT 054452
Parcel Number:	65-001002-0000000	Mailing Address:	ALDERMAN KAREN
CAMA Number:	65-001002-0150000		15 MALLETTS BAY CAMPGROUND
Property Address:	15 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	LEMIEUX PIERRE
CAMA Number:	65-001002-0160000		1416 HINESBURG RD
Property Address:	16 MALLETTS BAY CAMPGROUND		SO BURLINGTON, VT 05403
Parcel Number:	65-001002-0000000	Mailing Address:	RAFFERTY THOMAS
CAMA Number:	65-001002-0170000		PO BOX 265
Property Address:	17 MALLETTS BAY CAMPGROUND		WILLISTON, VT 05495
Parcel Number:	65-001002-0000000	Mailing Address:	DAMPIERRE RUTH
CAMA Number:	65-001002-0190000		19 MALLETTS BAY CAMPGROUND
Property Address:	19 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	VANASSE RAYMOND
CAMA Number:	65-001002-0200000		37 ST NICHOLAS ST
Property Address:	20 MALLETTS BAY CAMPGROUND		SOREL TRACY PQ, J3P 4X7

Parcel Number:	65-001002-0000000	Mailing Address:	BUTLER DANIELLE
CAMA Number:	65-001002-0210000		21 MALLETTS BAY CAMPGROUND
Property Address:	21 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	BARTLETT CHRIS
CAMA Number:	65-001002-0220000		22 MALLETTS BAY CAMPGROUND
Property Address:	22 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	BARTLETT CHRIS
CAMA Number:	65-001002-0220000		PO BOX 341
Property Address:	22 MALLETTS BAY CAMPGROUND		SO BARRE, VT 05670
Parcel Number:	65-001002-0000000	Mailing Address:	BARTLETT CHRIS
CAMA Number:	65-001002-0220000		22 MALLETTS BAY CAMPGROUND
Property Address:	22 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	BARTLETT CHRIS
CAMA Number:	65-001002-0220000		PO BOX 341
Property Address:	22 MALLETTS BAY CAMPGROUND		SO BARRE, VT 05670
Parcel Number:	65-001002-0000000	Mailing Address:	HEINRICH WILLIAM
CAMA Number:	65-001002-0260000		26 MALLETTS BAY CAMPGROUND
Property Address:	26 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	COLBERT VIRGINIA
CAMA Number:	65-001002-0270000		27 MALLETTS BAY CAMPGROUND
Property Address:	27 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	GILBERSON GARY
CAMA Number:	65-001002-0270100		27A MALLETTS BAY CAMPGROUND
Property Address:	27A MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	REPOSA DAVID
CAMA Number:	65-001002-0280100		218 MALLETTS BAY AVE 473
Property Address:	28 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	REPOSA DAVID
CAMA Number:	65-001002-0280100		28 MALLETTS BAY CAMPGROUND
Property Address:	28 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	REPOSA DAVID
CAMA Number:	65-001002-0280100		218 MALLETTS BAY AVE 473
Property Address:	28 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	REPOSA DAVID
CAMA Number:	65-001002-0280100		28 MALLETTS BAY CAMPGROUND
Property Address:	28 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446

Parcel Number: CAMA Number: Property Address:	65-001002-0000000 65-001002-0290000 29 MALLETTS BAY CAMPGROUND	Mailing Address:	REPOSA DAVID 218 MALLETTS BAY AVE 473 COLCHESTER, VT 05446
Parcel Number: CAMA Number: Property Address:	65-001002-0000000 65-001002-0300000 30 MALLETTS BAY CAMPGROUND	Mailing Address:	BEVINS RICHARD 30 MALLETTS BAY CAMPGROUND COLCHESTER, VT 05446
Parcel Number: CAMA Number: Property Address:	65-001002-0000000 65-001002-0301000 B4 MALLETTS BAY CAMPGROUND	Mailing Address:	BURKE BILL B4 MALLETTS BAY CAMPGROUND COLCHESTER, VT 05446
Parcel Number: CAMA Number: Property Address:	65-001002-0000000 65-001002-0310000 31 MALLETTS BAY CAMPGROUND	Mailing Address:	GUERIN SHELBY 476 NORTH AVE BURLINGTON, VT 05401
Parcel Number: CAMA Number: Property Address:	65-001002-0000000 65-001002-0310000 31 MALLETTS BAY CAMPGROUND	Mailing Address:	GUERIN SHELBY 6 FIDDLEHEAD RD VERGENNES, VT 05491
Parcel Number: CAMA Number: Property Address:	65-001002-0000000 65-001002-0310000 31 MALLETTS BAY CAMPGROUND	Mailing Address:	GUERIN SHELBY 476 NORTH AVE BURLINGTON, VT 05401
Parcel Number: CAMA Number: Property Address:	65-001002-0000000 65-001002-0310000 31 MALLETTS BAY CAMPGROUND	Mailing Address:	GUERIN SHELBY 6 FIDDLEHEAD RD VERGENNES, VT 05491
Parcel Number: CAMA Number: Property Address:	65-001002-0000000 65-001002-0310000 31 MALLETTS BAY CAMPGROUND	Mailing Address:	GUERIN SHELBY 476 NORTH AVE BURLINGTON, VT 05401
Parcel Number: CAMA Number: Property Address:	65-001002-0000000 65-001002-0310000 31 MALLETTS BAY CAMPGROUND	Mailing Address:	GUERIN SHELBY 6 FIDDLEHEAD RD VERGENNES, VT 05491
Parcel Number: CAMA Number: Property Address:	65-001002-0000000 65-001002-0330000 33 MALLETTS BAY CAMPGROUND	Mailing Address:	CORREIA RICHARD PO BOX 163 COLCHESTER, VT 05446
Parcel Number: CAMA Number: Property Address:	65-001002-0000000 65-001002-0340000 34 MALLETTS BAY CAMPGROUND	Mailing Address:	MERCIER DENNIS 34 MALLETTS BAY CAMPGROUND COLCHESTER, VT 05446
Parcel Number: CAMA Number: Property Address:	65-001002-0000000 65-001002-0350000 35 MALLETTS BAY CAMPGROUND	Mailing Address:	SWEENEY LARRY 35 MALLETTS BAY CAMPGROUND COLCHESTER, VT 05446

Parcel Number:	65-001002-0000000	Mailing Address:	SMITH DENNIS L
CAMA Number:	65-001002-0360000		128 INDIAN CIR 1
Property Address:	36 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	MANNING TOM
CAMA Number:	65-001002-0370000		37 MALLETTS BAY CAMPGROUND
Property Address:	37 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	LAMAR MAX
CAMA Number:	65-001002-0380000		38 MALLETTS BAY CAMPGROUND
Property Address:	38 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	LYNDES CRAIG
CAMA Number:	65-001002-0390000		70 SOUTH WINOOSKI AVE # 121
Property Address:	39 MALLETTS BAY CAMPGROUND		BURLINGTON, VT 05401
Parcel Number:	65-001002-0000000	Mailing Address:	COMBS MARILYN
CAMA Number:	65-001002-0410000		27110 JONSTOP 3306
Property Address:	41 MALLETTS BAY CAMPGROUND		PUNTA GORDA, FL 33982
Parcel Number:	65-001002-0000000	Mailing Address:	GALIETTA STEPHEN
CAMA Number:	65-001002-0420000		260 RAND HILL RD
Property Address:	42 MALLETTS BAY CAMPGROUND		MORRISONVILLE, NY 12962
Parcel Number:	65-001002-0000000	Mailing Address:	LUNDERVILLE FRANCIS
CAMA Number:	65-001002-0430000		403 TIMBER PASSAGE TRAIL
Property Address:	43 MALLETTS BAY CAMPGROUND		WILLIAMSBURG, VA 23185
Parcel Number:	65-001002-0000000	Mailing Address:	LUNDERVILLE FRANCIS
CAMA Number:	65-001002-0430000		6498 POPLAR POND DR
Property Address:	43 MALLETTS BAY CAMPGROUND		GLOUCESTER, VA 23061
Parcel Number:	65-001002-0000000	Mailing Address:	LUNDERVILLE FRANCIS
CAMA Number:	65-001002-0430000		403 TIMBER PASSAGE TRAIL
Property Address:	43 MALLETTS BAY CAMPGROUND		WILLIAMSBURG, VA 23185
Parcel Number:	65-001002-0000000	Mailing Address:	LUNDERVILLE FRANCIS
CAMA Number:	65-001002-0430000		6498 POPLAR POND DR
Property Address:	43 MALLETTS BAY CAMPGROUND		GLOUCESTER, VA 23061
Parcel Number:	65-001002-0000000	Mailing Address:	MCLEOD SANDRA
CAMA Number:	65-001002-0440000		18545 NW 45TH AVE RD
Property Address:	44 MALLETTS BAY CAMPGROUND		CITRA, FL 32113
Parcel Number:	65-001002-0000000	Mailing Address:	LANDON MARK
CAMA Number:	65-001002-0450000		675 LUZERNE RD
Property Address:	45 MALLETTS BAY CAMPGROUND		QUEENSBURY, NY 12804

Parcel Number:	65-001002-0000000	Mailing Address:	FERGUSON GEORGE JR
CAMA Number:	65-001002-0460000		104 FERGUSON RD
Property Address:	46 MALLETTS BAY CAMPGROUND		FAIRFAX, VT 05454
Parcel Number:	65-001002-0000000	Mailing Address:	FERGUSON GEORGE JR
CAMA Number:	65-001002-0460000		88 MALLETTS BAY CAMPGROUND
Property Address:	46 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	FERGUSON GEORGE JR
CAMA Number:	65-001002-0460000		104 FERGUSON RD
Property Address:	46 MALLETTS BAY CAMPGROUND		FAIRFAX, VT 05454
Parcel Number:	65-001002-0000000	Mailing Address:	FERGUSON GEORGE JR
CAMA Number:	65-001002-0460000		88 MALLETTS BAY CAMPGROUND
Property Address:	46 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	BUSHEY MICHAEL
CAMA Number:	65-001002-0470000		2631 N CAMBRIDGE RD
Property Address:	47 MALLETTS BAY CAMPGROUND		JEFFERSONVILLE, VT 05464
Parcel Number:	65-001002-0000000	Mailing Address:	BENNETT JAMES
CAMA Number:	65-001002-0480000		48 MALLETTS BAY CAMPGROUND
Property Address:	48 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	AURELLI MIKE
CAMA Number:	65-001002-0490000		49 MALLETTS BAY CAMPGROUND
Property Address:	49 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	HARVEY ROBERT P
CAMA Number:	65-001002-0500000		1 WILSON ST
Property Address:	50 MALLETTS BAY CAMPGROUND		BARRE, VT 05661
Parcel Number:	65-001002-0000000	Mailing Address:	COOK THEODORE
CAMA Number:	65-001002-0550000		55 MALLETTS BAY CAMPGROUND
Property Address:	55 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	CLEVELAND TOM
CAMA Number:	65-001002-0590000		59 MALLETTS BAY CAMPGROUND
Property Address:	59 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	DAIGLE CAROLYN
CAMA Number:	65-001002-0610000		261 JOURDAN ST
Property Address:	61 MALLETTS BAY CAMPGROUND		HINESBURG, VT 05461
Parcel Number:	65-001002-0000000	Mailing Address:	HOWE GARY
CAMA Number:	65-001002-0740000		74 MALLETTS BAY CAMPGROUND
Property Address:	74 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446

Parcel Number:	65-001002-0000000	Mailing Address:	ASKEW TOBY
CAMA Number:	65-001002-0800000		3524 MARILYN RD
Property Address:	80 MALLETTS BAY CAMPGROUND		PORTSMOUTH, VA 23703
Parcel Number:	65-001002-0000000	Mailing Address:	ASKEW TOBY
CAMA Number:	65-001002-0800000		80 MALLETTS BAY CAMPGROUND
Property Address:	80 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-001002-0000000	Mailing Address:	ASKEW TOBY
CAMA Number:	65-001002-0800000		3524 MARILYN RD
Property Address:	80 MALLETTS BAY CAMPGROUND		PORTSMOUTH, VA 23703
Parcel Number:	65-001002-0000000	Mailing Address:	ASKEW TOBY
CAMA Number:	65-001002-0800000		80 MALLETTS BAY CAMPGROUND
Property Address:	80 MALLETTS BAY CAMPGROUND		COLCHESTER, VT 05446
Parcel Number:	65-003002-0000000	Mailing Address:	HAZELETT STRIP CASTING CORPORATION
CAMA Number:	65-003002-0000000		135 WEST LAKESHORE DR
Property Address:	105 WEST LAKESHORE DR		COLCHESTER, VT 05446
Parcel Number:	65-004002-0000000	Mailing Address:	LURVEY RAYA J
CAMA Number:	65-004002-0000000		42 KYLIES WAY
Property Address:	215 WEST LAKESHORE DR		COLCHESTER, VT 05446
Parcel Number:	65-004002-0000000	Mailing Address:	LURVEY RAYA J
CAMA Number:	65-004002-0000000		4001 ETHAN ALLEN HWY APT D
Property Address:	215 WEST LAKESHORE DR		GEORGIA, VT 05478
Parcel Number:	65-004002-0000000	Mailing Address:	LURVEY RAYA J
CAMA Number:	65-004002-0000000		22 FERN CT #1
Property Address:	215 WEST LAKESHORE DR		COLCHESTER, VT 05446
Parcel Number:	65-004002-0000000	Mailing Address:	LURVEY RAYA J
CAMA Number:	65-004002-0000000		42 KYLIES WAY
Property Address:	215 WEST LAKESHORE DR		COLCHESTER, VT 05446
Parcel Number:	65-004002-0000000	Mailing Address:	LURVEY RAYA J
CAMA Number:	65-004002-0000000		4001 ETHAN ALLEN HWY APT D
Property Address:	215 WEST LAKESHORE DR		GEORGIA, VT 05478
Parcel Number:	65-004002-0000000	Mailing Address:	LURVEY RAYA J
CAMA Number:	65-004002-0000000		22 FERN CT #1
Property Address:	215 WEST LAKESHORE DR		COLCHESTER, VT 05446
Parcel Number:	65-004002-0000000	Mailing Address:	LURVEY RAYA J
CAMA Number:	65-004002-0000000		42 KYLIES WAY
Property Address:	215 WEST LAKESHORE DR		COLCHESTER, VT 05446

100 feet Abutters List Report

Colchester, VT
March 03, 2025

Parcel Number:	65-004002-0000000	Mailing Address:	LURVEY RAYA J
CAMA Number:	65-004002-0000000		4001 ETHAN ALLEN HWY APT D
Property Address:	215 WEST LAKESHORE DR		GEORGIA, VT 05478
Parcel Number:	65-004002-0000000	Mailing Address:	LURVEY RAYA J
CAMA Number:	65-004002-0000000		22 FERN CT #1
Property Address:	215 WEST LAKESHORE DR		COLCHESTER, VT 05446
Parcel Number:	65-005002-0000000	Mailing Address:	DEFORGE GERALD B
CAMA Number:	65-005002-0000000		PO BOX 69
Property Address:	61 JAKES PLACE		COLCHESTER, VT 05446
Parcel Number:	65-006002-0000000	Mailing Address:	332 WEST LAKESHORE DRIVE, LLC
CAMA Number:	65-006002-0000000		218 OVERLAKE DR
Property Address:	0 WEST LAKESHORE DR		COLCHESTER, VT 05446
Parcel Number:	65-017002-0000000	Mailing Address:	SP COVE LLC
CAMA Number:	65-017002-0000000		171 CRESCENT RD
Property Address:	278 WEST LAKESHORE DR		BURLINGTON, VT 05401
Parcel Number:	65-021002-0000000	Mailing Address:	GARDNER NEIL
CAMA Number:	65-021002-0000000		319 MARBLE ISLAND RD
Property Address:	76 WEST LAKESHORE DR		COLCHESTER, VT 05446

135, 166 & 180 West Lakeshore Dr

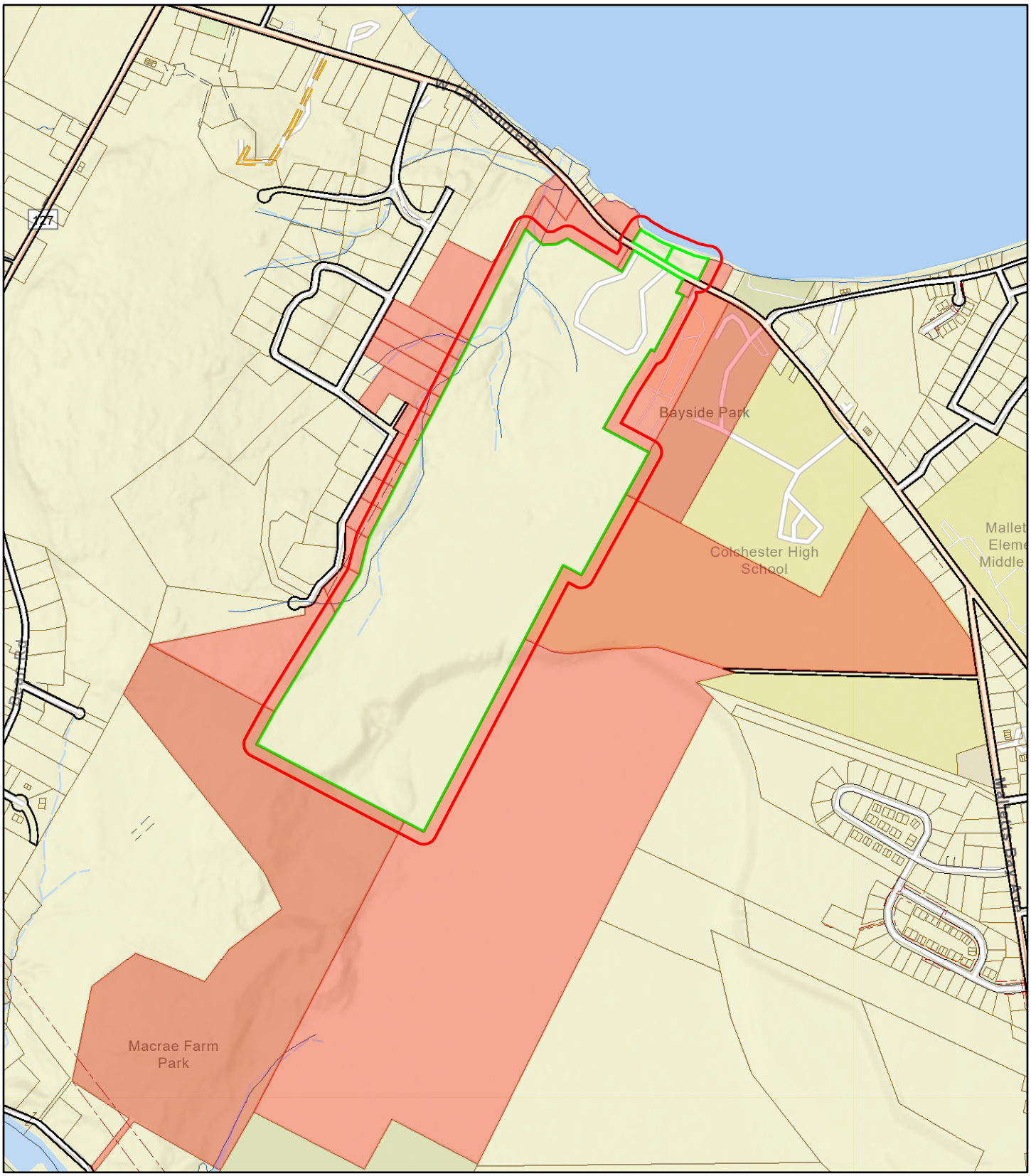
Town of Colchester, VT

1 inch = 1075 Feet

0 1075 2150 3225

March 5, 2025

CAI Technologies
Precision Mapping. Geospatial Solutions.
www.cai-tech.com



THE H AT MALLETTS BAY

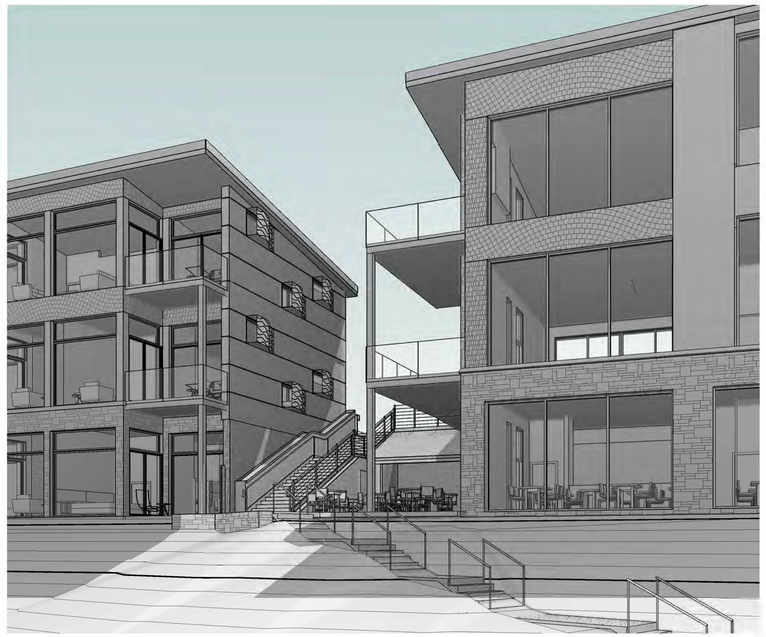
A1

CONCEPTUAL PERSPECTIVES

03/03/25

SCOTT + PARTNERS
ARCHITECTURE

7 CARMICHAEL ST. ESSEX JUNCTION, VT 05452
P: 802.879.5153
F: 802.872.2764
SCOTTPARTNERS.COM



THE H AT MALLETTS BAY

A2

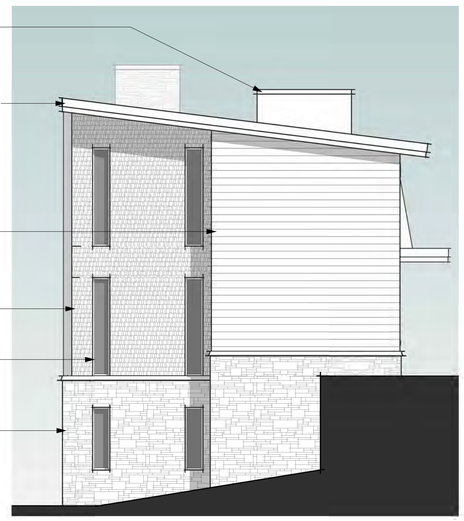
CONCEPTUAL PERSPECTIVES

03/03/25

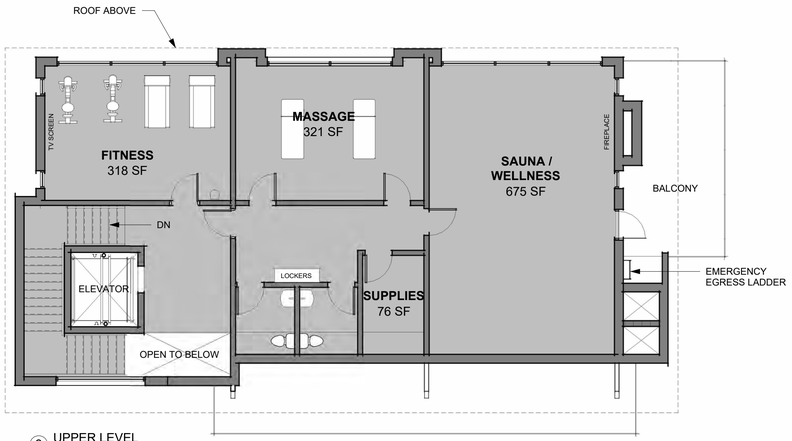
SCOTT + PARTNERS
ARCHITECTURE

7 CARMICHAEL ST. ESSEX JUNCTION, VT 05452
P: 802.879.5153
F: 802.872.2764
SCOTTPARTNERS.COM

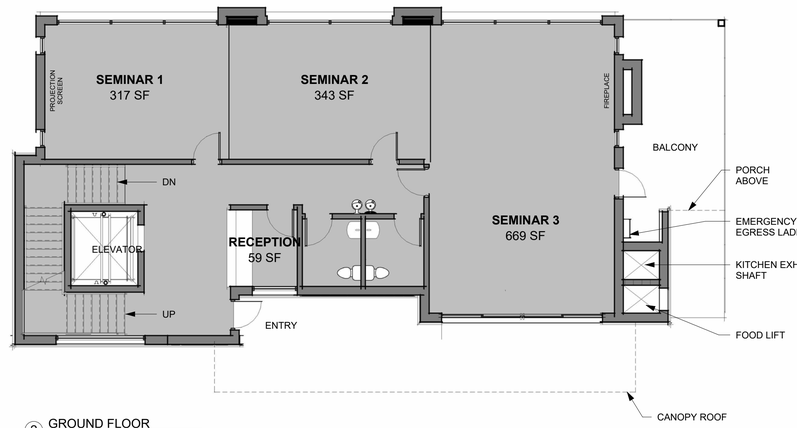
6 NORTH ELEVATION (LAKE SIDE)
1/8" = 1'-0"



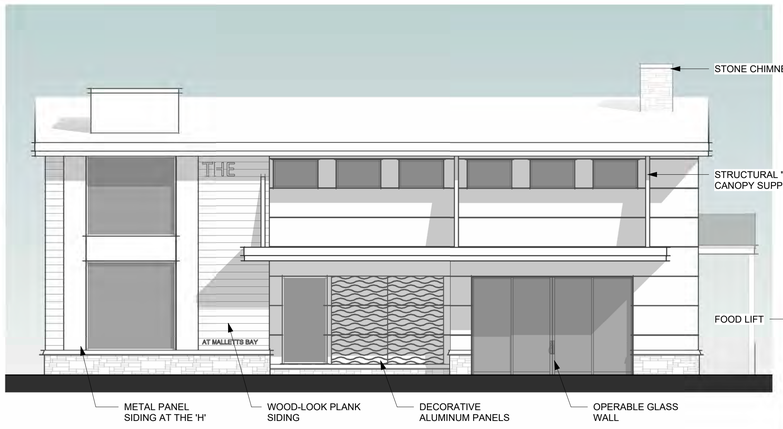
7 WEST ELEVATION
1/8" = 1'-0"



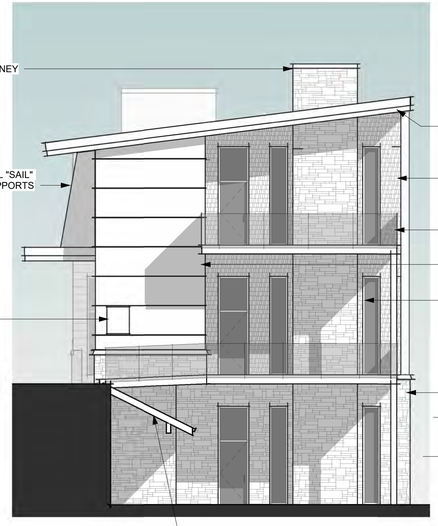
3 UPPER LEVEL
1/8" = 1'-0"



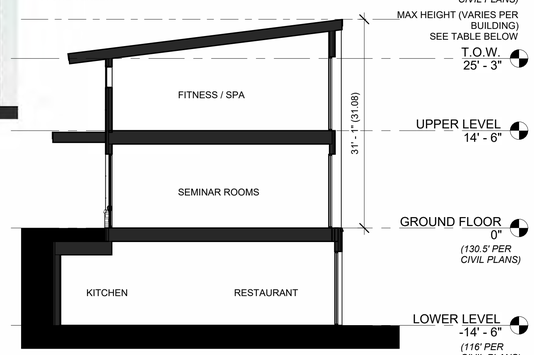
2 GROUND FLOOR
1/8" = 1'-0"



4 SOUTH ELEVATION (STREET SIDE)
1/8" = 1'-0"

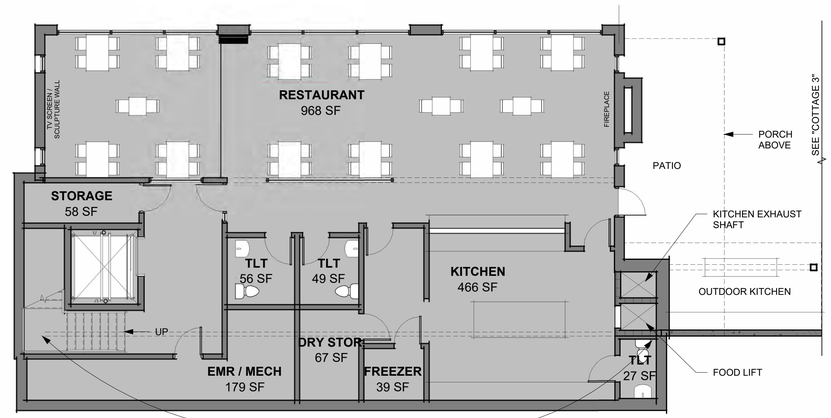


5 EAST ELEVATON
1/8" = 1'-0"



8 CROSS SECTION
3/32" = 1'-0"

AVERAGE EXISTING GRADE = 125.7'
MAX PERMITTED HEIGHT (AVE+40') = 165.7'
MEASURED HEIGHT TO TALLEST RIDGE = 161.6'
ACTUAL HEIGHT = 35.9' (161.6' - 125.7')



1 LOWER LEVEL
1/8" = 1'-0"

ABOVE-GRADE WALL AREAS:
NORTH = 3,192 SF
EAST = 1,444 SF
SOUTH = 1,842 SF
WEST = 1,380 SF
TOTAL ABOVE-GRADE WALL AREA = 7,858 SF

FENESTRATION AREAS:
NORTH = 1,722 SF
EAST = 245 SF
SOUTH = 532 SF
WEST = 116 SF
TOTAL FENESTRATION AREA = 2,615 SF / 33%

MAX 30% ALLOWED PER CBES, BUT 40% ALLOWED IF DAYLIGHT ZONE AND CONTROLS REQUIREMENTS ARE MET

THE H AT MALLETTS BAY

A3

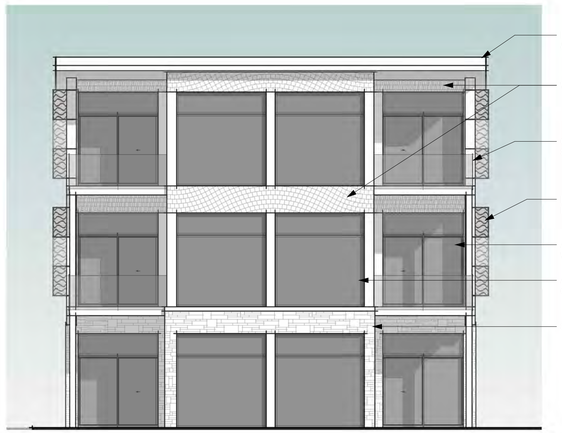
MAIN BUILDING

03/03/25

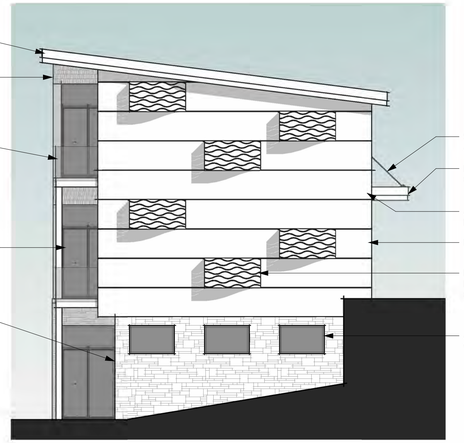
SCALE (CM)
0 50 100 200 300 400 500 600

SCALE: 1/8" = 1'-0" FT / 30.48 CM
0' 1' 5' 10' 20'
30.48 152.4 304.8 609.6

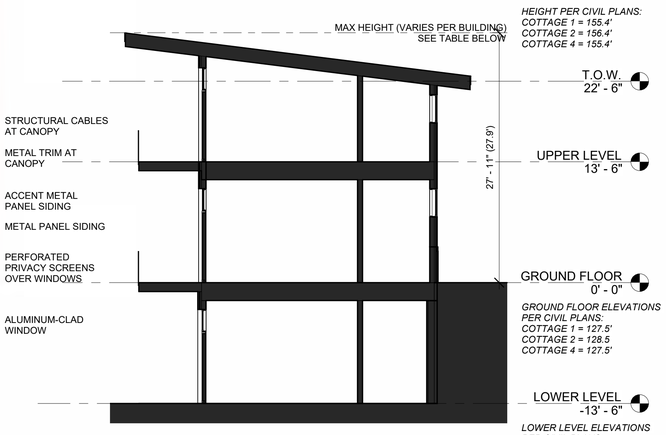
SCOTT + PARTNERS ARCHITECTURE
7 CARMICHAEL ST. ESSEX JUNCTION, VT 05452
P: 802.879.5153
F: 802.872.2764
SCOTTPARTNERS.COM



4 NORTH
1/8" = 1'-0"



5 WEST
1/8" = 1'-0"



HEIGHT PER CIVIL PLANS:
COTTAGE 1 = 155.4'
COTTAGE 2 = 156.4'
COTTAGE 4 = 155.4'

GROUND FLOOR ELEVATIONS PER CIVIL PLANS:
COTTAGE 1 = 127.5'
COTTAGE 2 = 128.5
COTTAGE 4 = 127.5'

LOWER LEVEL ELEVATIONS PER CIVIL PLANS:
COTTAGE 1 = 114'
COTTAGE 2 = 115'
COTTAGE 4 = 114'

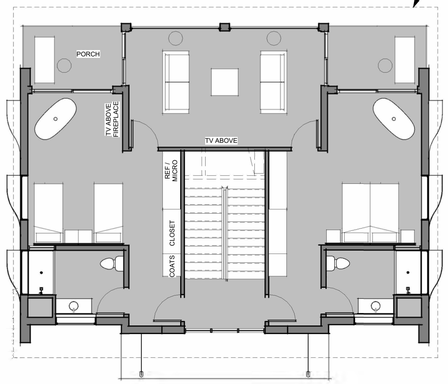
8 CROSS SECTION
1/8" = 1'-0"

AVERAGE EXISTING GRADES:
COTTAGE 1 = 115.4'
COTTAGE 2 = 124.3'
COTTAGE 4 = 115.9'

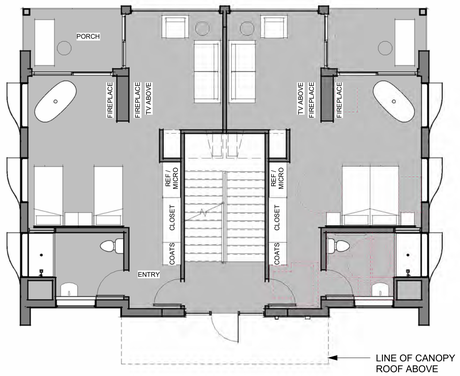
MAX PERMITTED HEIGHTS (AVE+**40'**)
COTTAGE 1 = 155.4'
COTTAGE 2 = 164.3'
COTTAGE 4 = 155.9'

MEASURED HEIGHTS TO TALLEST RIDGE:
COTTAGE 1 = 155.4'
COTTAGE 2 = 156.4'
COTTAGE 4 = 155.4'

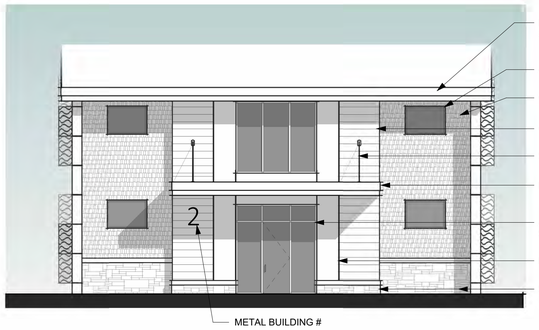
ACTUAL HEIGHTS: *(MEASURED HEIGHT - AVG GRADE)*
COTTAGE 1 = **40'**
COTTAGE 2 = **32.1'**
COTTAGE 4 = **40'**



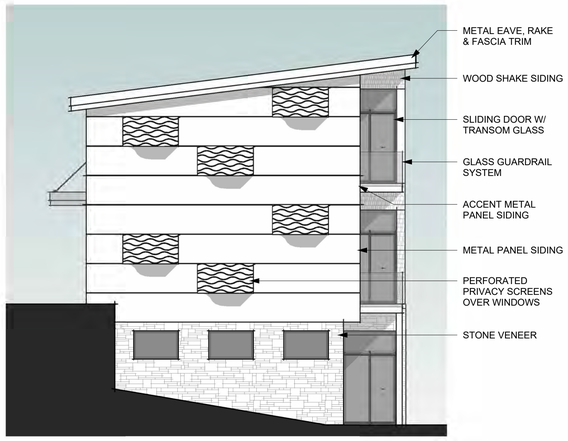
(1) 2-BEDROOM SUITE
3 UPPER LEVEL
1/8" = 1'-0"



(2) STUDIO UNITS
1 GROUND FLOOR
1/8" = 1'-0"



6 SOUTH
1/8" = 1'-0"



7 EAST
1/8" = 1'-0"

ABOVE-GRADE WALL AREAS:
NORTH = 1,819 SF
EAST = 1,266 SF
SOUTH = 1,027 SF
WEST = 1,266 SF
TOTAL ABOVE-GRADE WALL AREA = 5,378 SF

FENESTRATION AREAS:
NORTH = 1,196 SF
EAST = 332 SF
SOUTH = 219 SF
WEST = 332 SF
TOTAL FENESTRATION AREA = 2,079 SF / 39%

MAX 30% ALLOWED PER CBES, BUT 40% ALLOWED IF DAYLIGHT ZONE AND CONTROLS REQUIREMENTS ARE MET

(2) STUDIO UNITS
2 LOWER LEVEL
1/8" = 1'-0"

SCALE: 1/8" = 1'-0" FT / 30.48 CM
0' 1' 5' 10' 20'
30.48 152.4 304.8 609.6

SCALE (CM)
0 50 100 200 300 400 500 600

THE H AT MALLETTS BAY

A4

TYPICAL COTTAGE (1, 2 & 4)

03/03/25 THREE BUILDINGS, EACH CONTAINING (4) STUDIOS & (1) 2-BEDROOM SUITE

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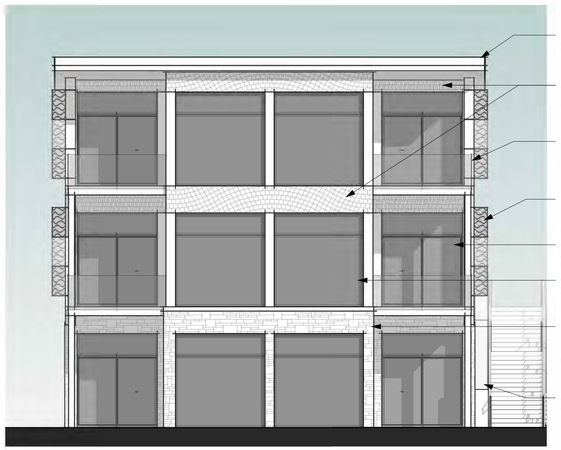
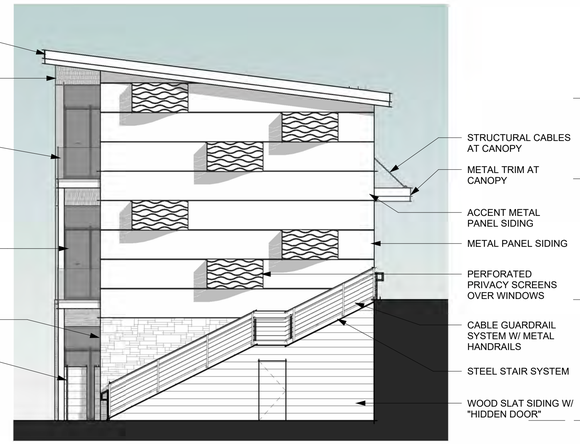
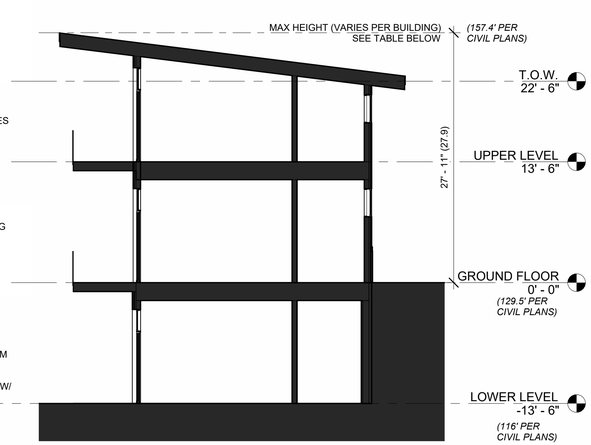


4 NORTH
1/8" = 1'-0"



5 WEST
1/8" = 1'-0"



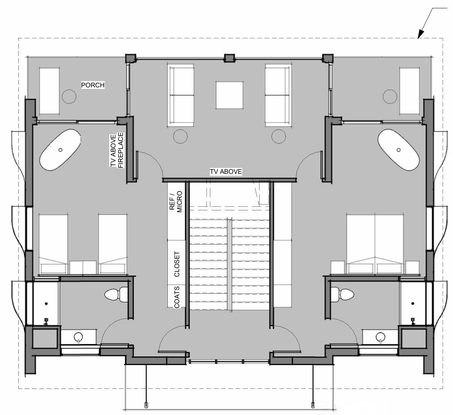
8 CROSS SECTION
1/8" = 1'-0"

AVERAGE EXISTING GRADE = 122.5'

MAX PERMITTED HEIGHT (AVE+40') = 162.5'

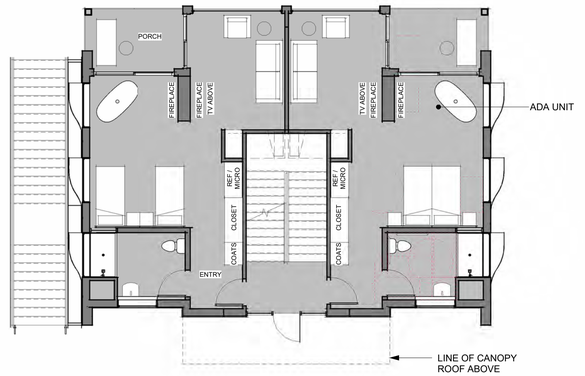
MEASURED HEIGHT TO TALLEST RIDGE = 157.4'

ACTUAL HEIGHT = 34.9' (157.4' - 122.5')



(1) 2-BEDROOM SUITE

3 UPPER LEVEL
1/8" = 1'-0"

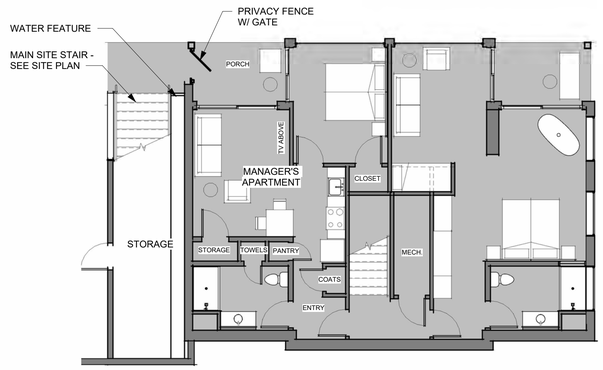


(2) STUDIO UNITS

1 GROUND FLOOR
1/8" = 1'-0"

6 SOUTH
1/8" = 1'-0"

7 EAST
1/8" = 1'-0"



(1) MANAGER'S APARTMENT
(1) STUDIO UNIT

2 LOWER LEVEL
1/8" = 1'-0"

SCALE: 1/8" = 1'-0" FT / 30.48 CM

0' 1' 5' 10' 20'
30.48 152.4 304.8 609.6

SCALE (CM)

0 50 100 200 300 400 500 600

ABOVE-GRADE WALL AREAS:
NORTH = 1,819 SF
EAST = 1,266 SF
SOUTH = 1,027 SF
WEST = 1,266 SF
TOTAL ABOVE-GRADE WALL AREA = 5,378 SF

FENESTRATION AREAS:
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TOTAL FENESTRATION AREA = 2,079 SF / 39%

MAX 30% ALLOWED PER CBES, BUT 40% ALLOWED IF DAYLIGHT ZONE AND CONTROLS REQUIREMENTS ARE MET

THE H AT MALLETTS BAY

COTTAGE 3

03/03/25

ONE BUILDING, EACH CONTAINING (3) STUDIOS, (1) 2-BEDROOM SUITE & MANAGER'S APARTMENT

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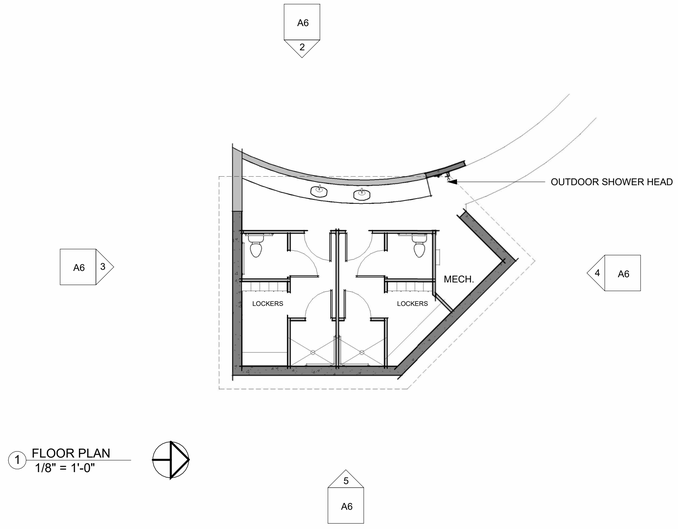
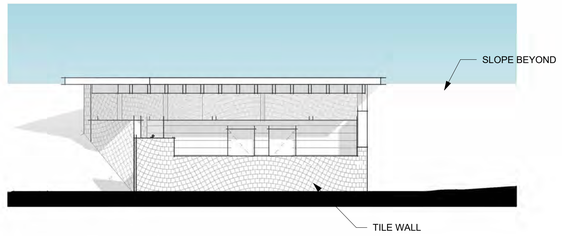
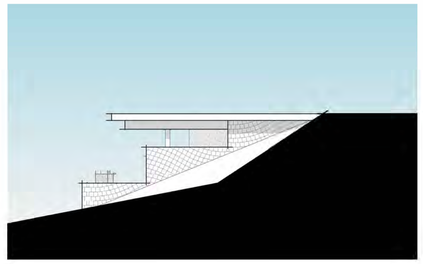


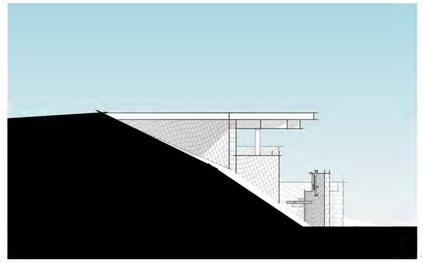
1 FLOOR PLAN
1/8" = 1'-0"



2 WEST ELEVATION
1/8" = 1'-0"

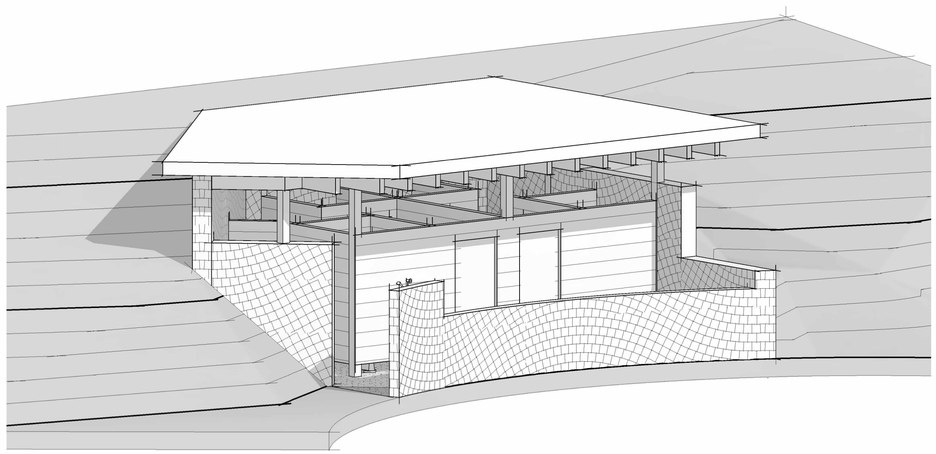


3 SOUTH ELEVATION
1/8" = 1'-0"



4 NORTH ELEVATION
1/8" = 1'-0"

5 EAST ELEVATION
1/8" = 1'-0"



THE H AT MALLETTS BAY

A6

BATH HOUSE

03/03/25

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ARCHITECTURE

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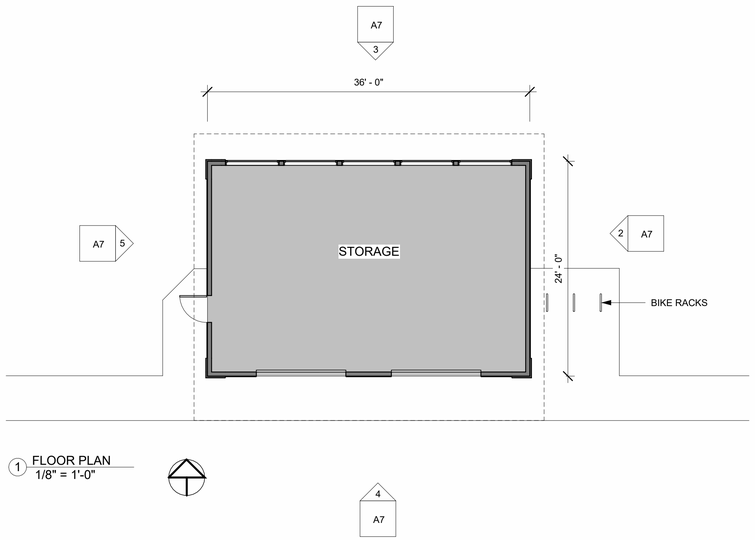
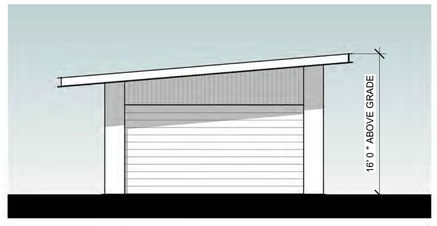
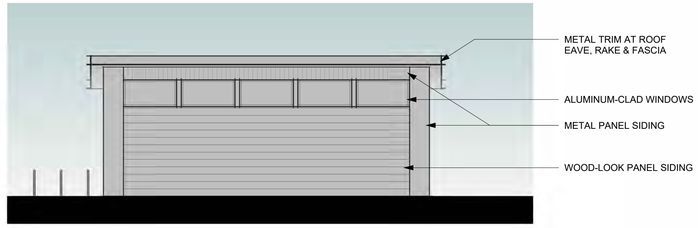


1 FLOOR PLAN
1/8" = 1'-0"

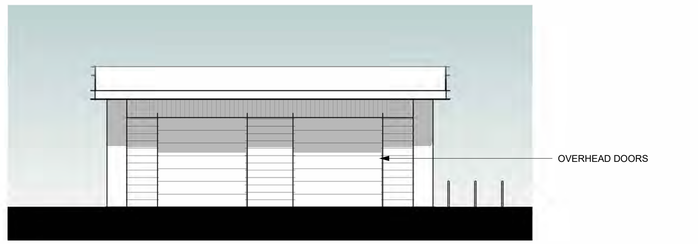


2 EAST ELEVATION
1/8" = 1'-0"

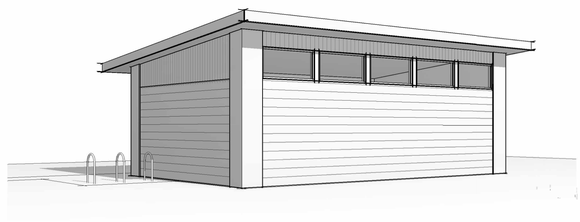


3 NORTH ELEVATION
1/8" = 1'-0"

5 WEST ELEVATION
1/8" = 1'-0"



4 SOUTH ELEVATION
1/8" = 1'-0"



6 PERSPECTIVE

THE H AT MALLETTS BAY

A7

ANNEX BUILDING

03/03/25

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RELOCATED TRASH AND RECYCLING
6' SCREENING FENCE, MATCH
ARCHITECTURAL , SEE DETAIL 5
(WEST ELEVATION) AT COTTAGE 3

ENCROACHMENT INTO 100'
SHORELINE SETBACK:
EXISTING/PREVIOUS: 740 SF
ALLOWABLE: 740SF+10% = 814 SF
PROPOSED: 800.01 SF

6 / L4.0 48" STONE STEPS AND HANDRAIL DETAIL, TYP.

STONE PATH - 48" WIDE DETAIL 3 / L4.0

PAVER DETAIL 1 / L4.0

8 / L4.0 BOULDER WALL DETAIL, TYP.

STONE SEAT WALL DETAIL 5 / L4.0

GREEN ROOF DETAIL 7 / L4.0

100' LAKE SETBACK

15' SIDE YARD SETBACK

15' FRONT YARD SETBACK

BAS: 115.0
1ST: 128.5
2ND: 139.5
(AVG+40'=164.35)

BAS: 114.0
1ST: 127.5
2ND: 138.5
(AVG+40'=155.43)

BAS: 116.0
1ST: 130.5
2ND: 145.0
(AVG+40'=165.74)

BAS: 116.0
1ST: 129.5
2ND: 143.0
(AVG+40'=162.52)

BAS: 114.0
1ST: 127.5
2ND: 141.0
(AVG+40'=155.97)

1ST: 128.5
(AVG+40'=165.83)

FFE: 109.25

SNOW STORAGE

SNOW STORAGE

SNOW STORAGE

SNOW STORAGE

WEST LAKESHORE DRIVE

X / L4.0 SIGN DETAIL (32sf MAX)

WASHED 3-6" RIVER STONE DETAIL, TYP. 2 / L4.0

42" RAILING COORD WITH ARCH 9 / L4.0

4 / L3.0 WALL MOUNTED FIXTURE

20' FRONT YARD SETBACK

15' SIDE YARD SETBACK

1ST: 133.0
(AVG+40'=171.73)

BIKE RACK DETAIL 4 / L4.0

CANOPY FIXTURE 5 / L3.0

SITE LIGHT FIXTURE 1 / L3.0

14 VAN

LANDSCAPE AREA = 2,202.2 SF (10.2%)

PARKING AREA = 21,582.3 SF

TRASH

6' BLACK VINYL CHAIN LINK FENCE WITH PRIVACY SLATS

RELEASED FOR PERMITTING
03/03/2025

T.J. BOYLE ASSOCIATES
LANDSCAPE ARCHITECTURE & PLANNING

REVISIONS	DATE

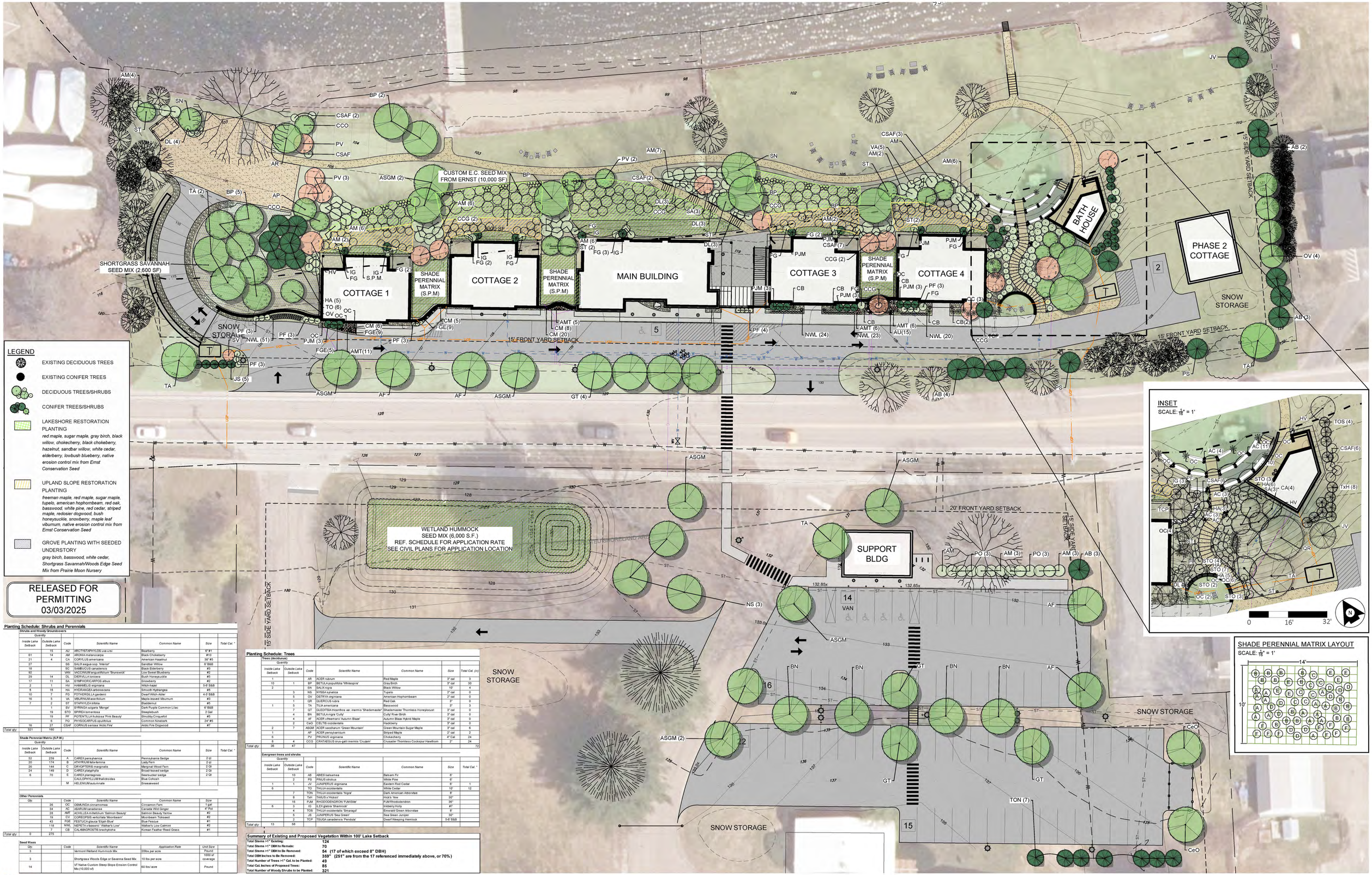
0 500 1000 Centimeters

SCALE: 1" = 20'
0 10' 20' 40'

DATE: MARCH 3, 2025

THE 'H' AT MALLETTS BAY
SITE LAYOUT

L1.0



LEGEND

- EXISTING DECIDUOUS TREES
- EXISTING CONIFER TREES
- DECIDUOUS TREES/SHRUBS
- CONIFER TREES/SHRUBS
- LAKESHORE RESTORATION PLANTING
  red maple, sugar maple, gray birch, black willow, chokecherry, black chokeberry, hazelnut, sandbar willow, white cedar, elderberry, lowbush blueberry, native erosion control mix from Ernst Conservation Seed
- UPLAND SLOPE RESTORATION PLANTING
  freeman maple, red maple, sugar maple, tupelo, american hophornbeam, red oak, basswood, white pine, red cedar, striped maple, redosier dogwood, bush honeysuckle, snowberry, maple leaf viburnum, native erosion control mix from Ernst Conservation Seed
- GROVE PLANTING WITH SEEDED UNDERSTORY
  gray birch, basswood, white cedar, Shortgrass Savannah/Woods Edge Seed Mix from Prairie Moon Nursery

RELEASED FOR PERMITTING
03/03/2025

Planting Schedule: Shrubs and Perennials

Shrubs and Woody Groundcovers

Quantity: Inside Lake Setback	Quantity: Outside Lake Setback	Code	Scientific Name	Common Name	Size	Total Cal. "
	15	AU	ARCTOSTAPHYLOS uva-ursi	Bearberry	8" #1	
61	14	AM	ARONIA melanocarpa	Black Chokeberry	#10	
21	4	CA	CORYLUS americana	American Hazelnut	36" #5	
27		SB	SALIX exigua ssp. 'interior'	Sandbar Willow	6' B&B	
18		SC	SAMBUCUS canadensis	Black Elderberry	#3	
92		VAN	VACCINIUM angustifolium 'Brunswick'	Low Sweet Blueberry	#2	
29	14	DL	DIERVILLA lonicera	Bush Honeysuckle	#5	
17	11	SA	SYMPHORICARPOS albus	Snowberry	#2	
2	1	HV	HAMAMELIS virginiana	Witch-hazel	5-6' B&B	
5	15	HA	HYDRANGEA arborescens	Smooth Hydrangea	#5	
10	7	FG	POTHERGILLA gardeni	Dwarf Witch-Alder	4-5' B&B	
18	5	VA	VIBURNUM acerifolium	Maple-leaved Viburnum	#3	
7	2	ST	STAPHYLEA trifolia	Bladdernut	#5	
	1	SV	SYRINGA vulgaris 'Monge'	Dark Purple Common Lilac	6' B&B	
	19	STO	SPIREA tomentosa	Steeplebush	2 Gal	
	19	PF	POTENTILLA fruticosa 'Pink Beauty'	Shrubby Cinquefoil	#5	
	6	PO	PHYSOCARPUS opulifolius	Common Ninebark	24" #5	
16	27	CSAF	CORNUS sericea 'Arctic Fire'	Arctic Fire Dogwood	#7	
Total qty:	321	160				

Shade Perennial Matrix (S.P.M.)

Quantity: Inside Lake Setback	Quantity: Outside Lake Setback	Code	Scientific Name	Common Name	Size	Total Cal. "
52	259	A	CAREX pensylvanica	Pennsylvania Sedge	2 Gt	
20	174	B	ATHYRIUM felix-femina	Lady Fern	2 Gt	
26	144	C	DRYOPTERIS marginalis	Marginal Wood Fern	2 Gt	
24	149	D	CAREX platyphylla	Broad-leaved sedge	2 Gt	
6	70	E	CAREX plantaginea	Seersucker sedge	2 Gt	
		G	CALLIRHYLLIS triadiciodes	Blue Cohosh		
		M	HELENIUM autumnale	Sneezeweed		

Other Perennials

Qty:		Code	Scientific Name	Common Name	Size
	26	OC	OSMUNDA cinnamomea	Cinnamon Fern	1 gal
	34	AC	ADARUM canadense	Canada Wild Ginger	4" Pot
	28	AMT	ACHILLEA millefolium 'Salmon Beauty'	Salmon Beauty Yarrow	#2
	19	CV	COREOPSIS verticillata 'Moonbeam'	Moonbeam Tickseed	#2
	43	FGE	FESTUCA glauca 'Elijah Blue'	Blue Fescue	#1
	118	NWL	NEPETA x faassenii 'Walker's Low'	Walker's Low Catmint	#2
	7	CB	CALAMAGROSTIS brachytricha	Korean Feather Reed Grass	#1
Total qty:	0	275			

Seed Mixes

Qty:	Code	Scientific Name	Application Rate	Unit Size
3		Vermont Wetland Hummock Mix	20lbs per acre	Pound
3		Shortgrass Woods Edge or Savanna Seed Mix	10 lbs per acre	1000 sf coverage
14		VT Native Custom Steep Slope Erosion Control Mix (10,000 sf)	60 lbs/ acre	Pound

Planting Schedule: Trees

Trees (deciduous)

Quantity: Inside Lake Setback	Quantity: Outside Lake Setback	Code	Scientific Name	Common Name	Size	Total Cal. (in)
1		AR	ACER rubrum	Red Maple	3" cal	3
10	1	BP	BETULA populifolia 'Whitespire'	Gray Birch	3" cal	30
2		BN	SALIX nigra	Black Willow	10'	4
	3	NS	NYSSA sylvatica	Tupelo	2" cal	0
	5	OV	OSTRYA virginiana	American Hophornbeam	2" cal	0
	1	QR	QUERCUS rubra	Red Oak	3"	0
1	5	TA	TILIA americana	Basswood	3"	3
	7	GT	GLEDITSIA triacnthos var. inermis 'Shademaster'	Shademaster Thornless Honeylocust	3" cal	0
	4	BN	BETULA nigra 'Cully'	Cully' River Birch	3" cal	0
	4	AF	ACER x freemanii 'Autumn Blaze'	Autumn Blaze Hybrid Maple	3" cal	0
	2	CeO	CELTIS occidentalis	Hackberry	3" cal	0
2	7	ASGM	ACER saccharum 'Green Mountain'	Green Mountain Sugar Maple	3" cal	6
1		AP	ACER pensylvanicum	Striped Maple	2" cal	2
6		PV	PRUNUS virginiana	Chokecherry	4" Cal	24
8	4	CCG	CRATAEGUS crus-galli inermis 'Cruzam'	Crusader Thornless Cockspur Hawthorn	2"	24
Total qty:	36	47				72

Evergreen trees and shrubs

Quantity: Inside Lake Setback	Quantity: Outside Lake Setback	Code	Scientific Name	Common Name	Size	Total Cal. "
	10	AB	ABIES balsamea	Balsam Fir	6'	
	2	PS	PINUS strobus	White Pine	6'	
1	1	JV	JUNIPERUS virginiana	Eastern Red Cedar	6'	1
6		TO	THUJA occidentalis	White Cedar	10'	12
	7	TON	THUJA occidentalis 'Nigra'	Dark American Arborvitae	8'	
	9	TxH	TAXUS x 'Hicksii'	Hick's Yew	30"	
	19	PJM	RHODODENDRON 'PJM Elite'	PJM Rhododendron	36"	
6	3	IG	ILEX glabra 'Shamrock'	Inkberry Holly	#7	
	4	TOS	THUJA occidentalis 'Smaragd'	Emerald Green Arborvitae	8'	
	5	JS	JUNIPERUS 'Sea Green'	Sea Green Juniper	30"	
	2	TCP	TSUGA canadensis 'Pendula'	Dwarf Weeping Hemlock	5-6' B&B	
Total qty:	13	58				

Summary of Existing and Proposed Vegetation Within 100' Lake Setback

Total Stems >1" Existing:	124
Total Stems >1" DBH to Remain:	70
Total Stems >1" DBH to Be Removed:	54 (17 of which exceed 8" DBH)
Total DBH Inches to Be Removed:	359" (251" are from the 17 referenced immediately above, or 70%)
Total Number of Trees >1" Cal. to be Planted:	49
Total Cal. Inches of Proposed Trees:	85
Total Number of Woody Shrubs to be Planted:	321

T.J. BOYLE ASSOCIATES
LANDSCAPE ARCHITECTURE & PLANNING

REVISIONS | DATE

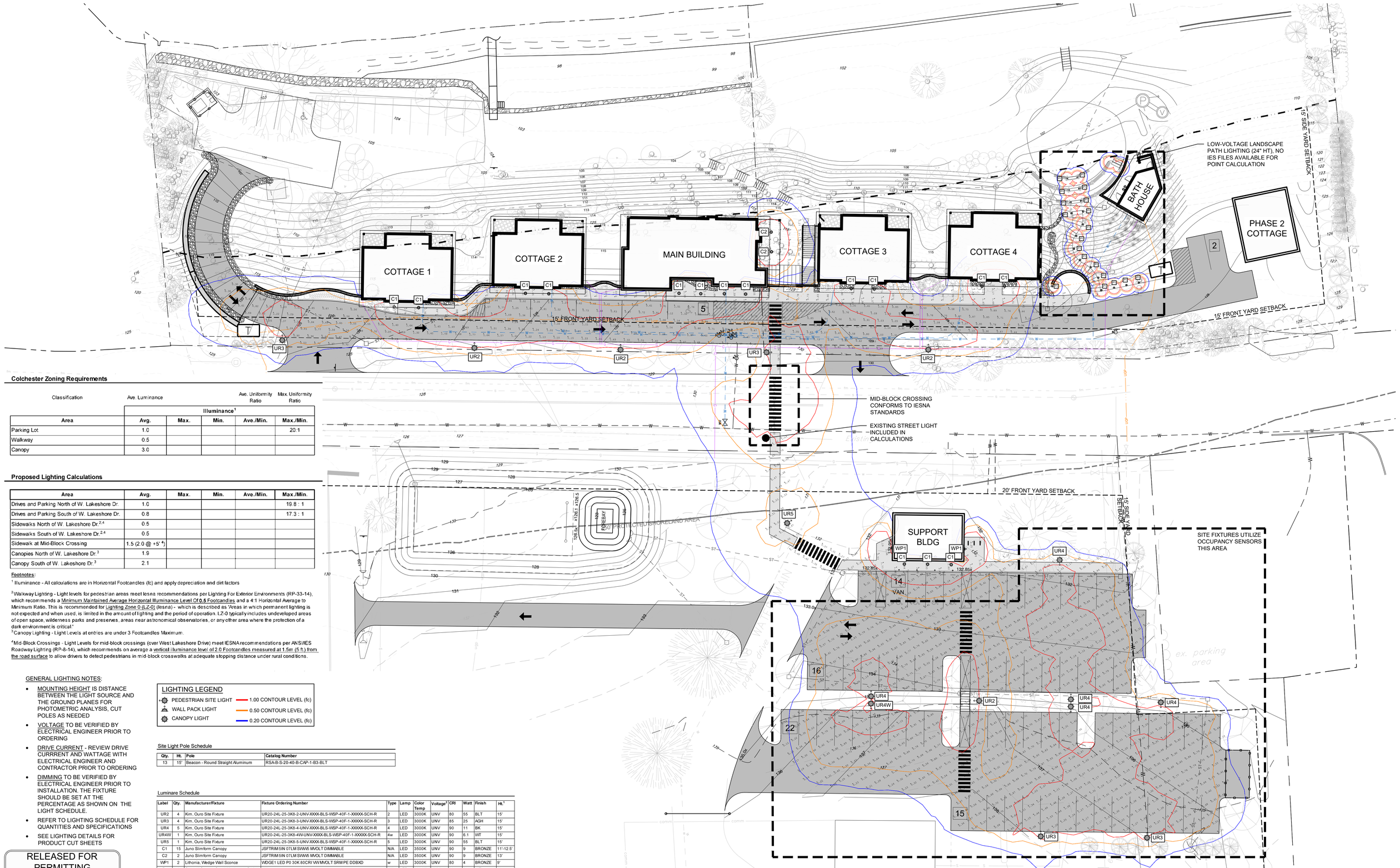
0 500 1000 Centimeters

SCALE: 1" = 20'
0 10' 20' 40'

DATE: MARCH 3, 2025

THE 'H' AT MALLETTS BAY
LANDSCAPE PLAN

L1.1



Colchester Zoning Requirements

Classification	Ave. Luminance			Ave. Uniformity Ratio	Max. Uniformity Ratio
	Illuminance[1]				
Area	Avg.	Max.	Min.	Ave./Min.	Max./Min.
Parking Lot	1.0				20:1
Walkway	0.5				
Canopy	3.0				

Proposed Lighting Calculations

Area	Avg.	Max.	Min.	Ave./Min.	Max./Min.
Drives and Parking North of W. Lakeshore Dr.	1.0				19.8 : 1
Drives and Parking South of W. Lakeshore Dr.	0.8				17.3 : 1
Sidewalks North of W. Lakeshore Dr.[2,4]	0.5				
Sidewalks South of W. Lakeshore Dr.[2,4]	0.5				
Sidewalk at Mid-Block Crossing	1.5 (2.0 @ +5' [4])				
Canopies North of W. Lakeshore Dr.[3]	1.9				
Canopy South of W. Lakeshore Dr.[3]	2.1				

Footnotes:

[1] Illuminance - All calculations are in Horizontal Footcandles (fc) and apply depreciation and dirt factors

[2] Walkway Lighting - Light levels for pedestrian areas meet Iesna recommendations per Lighting For Exterior Environments (RP-33-14), which recommends a Minimum Maintained Average Horizontal Illuminance Level Of 0.5 Footcandles and a 4:1 Horizontal Average to Minimum Ratio. This is recommended for Lighting Zone 0 (LZ-0) (Iesna) - which is described as "Areas in which permanent lighting is not expected and when used, is limited in the amount of lighting and the period of operation. LZ-0 typically includes undeveloped areas of open space, wilderness parks and preserves, areas near astronomical observatories, or any other area where the protection of a dark environment is critical."

[3] Canopy Lighting - Light Levels at entries are under 3 Footcandles Maximum.

[4] Mid-Block Crossings - Light Levels for mid-block crossings (over West Lakeshore Drive) meet IESNA recommendations per ANSI/IES Roadway Lighting (RP-8-14), which recommends on average a vertical illuminance level of 2.0 Footcandles measured at 1.5m (5 ft.) from the road surface to allow drivers to detect pedestrians in mid-block crosswalks at adequate stopping distance under rural conditions.

GENERAL LIGHTING NOTES:

- MOUNTING HEIGHT IS DISTANCE BETWEEN THE LIGHT SOURCE AND THE GROUND PLANES FOR PHOTOMETRIC ANALYSIS, CUT POLES AS NEEDED
- VOLTAGE TO BE VERIFIED BY ELECTRICAL ENGINEER PRIOR TO ORDERING
- DRIVE CURRENT - REVIEW DRIVE CURRENT AND WATTAGE WITH ELECTRICAL ENGINEER AND CONTRACTOR PRIOR TO ORDERING
- DIMMING TO BE VERIFIED BY ELECTRICAL ENGINEER PRIOR TO INSTALLATION. THE FIXTURE SHOULD BE SET AT THE PERCENTAGE AS SHOWN ON THE LIGHT SCHEDULE.
- REFER TO LIGHTING SCHEDULE FOR QUANTITIES AND SPECIFICATIONS
- SEE LIGHTING DETAILS FOR PRODUCT CUT SHEETS

RELEASED FOR PERMITTING
03/03/2025

LIGHTING LEGEND

- PEDESTRIAN SITE LIGHT
- WALL PACK LIGHT
- CANOPY LIGHT
- 1.00 CONTOUR LEVEL (fc)
- 0.50 CONTOUR LEVEL (fc)
- 0.20 CONTOUR LEVEL (fc)

Site Light Pole Schedule

Qty.	Ht.	Pole	Catalog Number
13	15'	Beacon - Round Straight Aluminum	RSA-B-S-20-40-B-CAP-1-B3-BLT

Luminare Schedule

Label	Qty.	Manufacturer/Fixture	Fixture Ordering Number	Type	Lamp	Color Temp	Voltage[3]	CRI	Watt	Finish	Ht.[1]
UR2	4	Kim, Ouro Site Fixture	UR20-24L-25-3K8-2-UNV-XXXX-BLS-WSP-40F-1-XXXXX-SCH-R	2	LED	3000K	UNV	80	55	BLT	15'
UR3	4	Kim, Ouro Site Fixture	UR20-24L-25-3K8-3-UNV-XXXX-BLS-WSP-40F-1-XXXXX-SCH-R	3	LED	3000K	UNV	85	25	AGH	15'
UR4	5	Kim, Ouro Site Fixture	UR20-24L-25-3K8-4-UNV-XXXX-BLS-WSP-40F-1-XXXXX-SCH-R	4	LED	3000K	UNV	90	11	BK	15'
UR4W	1	Kim, Ouro Site Fixture	UR20-24L-25-3K8-4W-UNV-XXXX-BLS-WSP-40F-1-XXXXX-SCH-R	4w	LED	3000K	UNV	90	6.1	WT	15'
UR5	1	Kim, Ouro Site Fixture	UR20-24L-25-3K8-5-UNV-XXXX-BLS-WSP-40F-1-XXXXX-SCH-R	5	LED	3000K	UNV	90	55	BLT	15'
C1	15	Juno Slimform Canopy	JSFTRIM 5IN 07LM SWW5 MVOLT DIMMABLE	N/A	LED	3500K	UNV	90	9	BRONZE	11'-12.5'
C2	2	Juno Slimform Canopy	JSFTRIM 5IN 07LM SWW5 MVOLT DIMMABLE	N/A	LED	3500K	UNV	90	9	BRONZE	13'
WP1	2	Lithonia, Wedge Wall Sconce	WDGE1 LED P0 30K 80CRI VW MVOLT SRM PE DDBXD	w	LED	3000K	UNV	80	4	BRONZE	9'
P1	19*	Coastal Source, Small Mushroom Path	N/A	N/A	LED	3000K	UNV	90	6.1	WT	2'

T.J. BOYLE ASSOCIATES
LANDSCAPE ARCHITECTURE & PLANNING

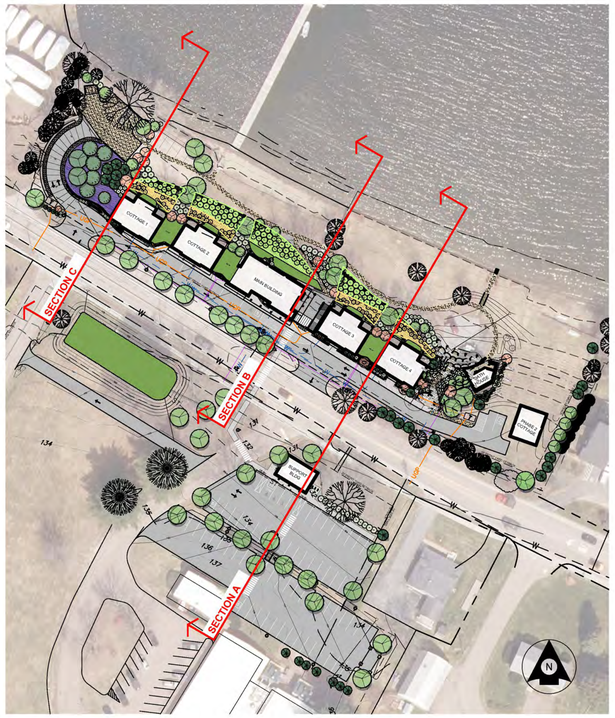
REVISIONS | DATE

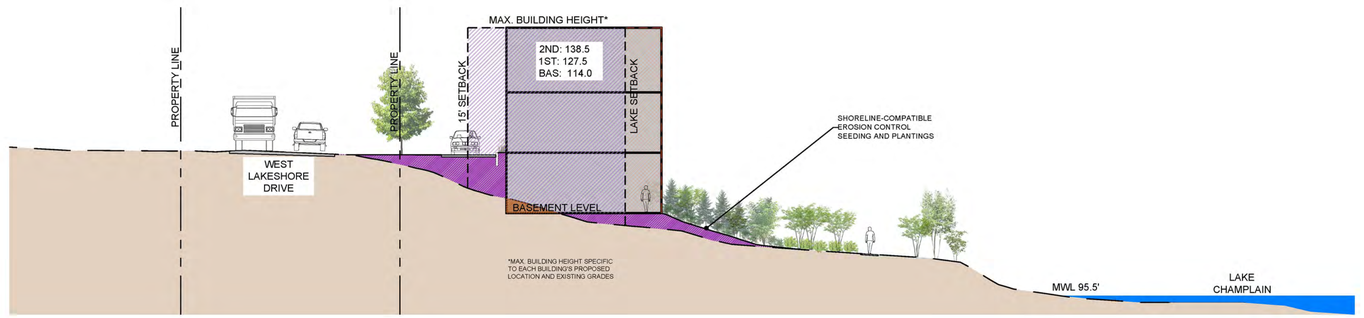
0 500 1000 Centimeters

SCALE: 1" = 20'
0 10' 20' 40'

DATE: MARCH 3, 2025

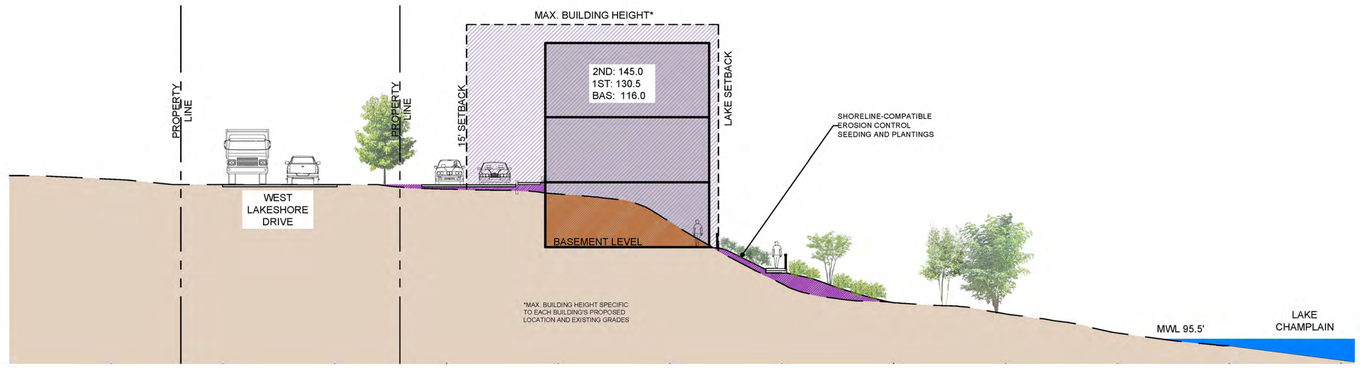
THE 'H' AT MALLETTS BAY
LIGHTING PLAN
L1.2





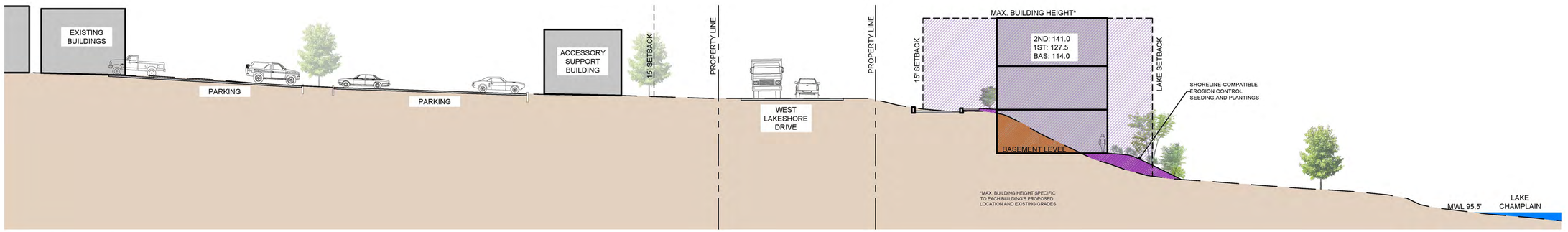
C SECTION C: LOOKING WEST

SCALE: $\frac{1}{16}$" = 1'



B SECTION B: LOOKING WEST

SCALE: $\frac{1}{16}$" = 1'

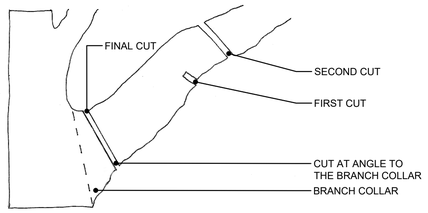


A SECTION A: LOOKING WEST

SCALE: $\frac{1}{16}$" = 1'

TREE PRUNING NOTES:

- REFER TO ANSI A300 (Part 1, MOST UPDATED VERSION) PRUNING SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- WORK SHOULD BE PREFORMED BY A CERTIFIED ARBORIST OR PROFESSIONAL TREE COMPANY.
- AVOID DAMAGING BARK AND OTHER LIVING TISSUE THROUGHOUT THE PRUNING PROCESS.
- MAKE SURE PRUNING TOOLS ARE SHARP.
- MAKE CLEAN CUT AS CLOSE TO THE BRANCH COLLAR AS POSSIBLE. DO NOT LEAVE A STUB.
- REDUCE THE SIZE OF THE BRANCH FOR A BETTER CUT.
- THE FIRST AND SECOND CUTS SHOULD BISECT THE ANGLE BETWEEN ITS BRANCH BARK RIDGE AND AN IMAGINARY LINE PERPENDICULAR TO THE BRANCH OR STEM.
- NOT MORE THAN 25% OF GROWTH SHOULD BE REMOVED FROM A CANOPY DURING A GROWING SEASON.



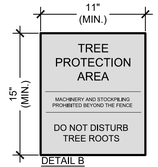
10 / L2.0 TREE PRUNING ILLUSTRATION
NTS

TREE PROTECTION NOTES:

- PRIOR TO ANY CONSTRUCTION ACTIVITY, ALL TREE PRESERVATION MEASURES MUST BE IMPLEMENTED.
- CONTRACTOR CHOSEN FOR THIS WORK WILL BE AN EXPERIENCED TREE SERVICE FIRM THAT HAS SUCCESSFULLY COMPLETED TREE PROTECTION, ROOT PRUNING, AND TRIMMING WORK, SIMILAR TO THAT REQUIRED FOR THIS PROJECT.
- PRIOR TO CONSTRUCTION SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK. CONTACT DIG SAFE TWO FULL BUSINESS DAYS BEFORE PLANTING. (48 HOUR MIN.)
- PRIOR TO THE SITE VISIT ALL TREE PRESERVATION AREAS SHALL BE STAKED OUT ON SITE BY SURVEY.
- TREE PROTECTION FENCING SHALL REMAIN INTACT THROUGHOUT ALL CONSTRUCTION ACTIVITY.
- THERE WILL BE NO EXCAVATION FOR PROPOSED SITE WORK WITHIN FENCED AREA.
- NO MATERIALS OR EQUIPMENT SHALL BE STORED, STOCKPILED OR OPERATED WITHIN TREE PROTECTION AREAS.
- TREE PROTECTED AREAS WILL BE LEFT AS NATURAL AS POSSIBLE.
- IN AREAS OF EXCAVATION NEAR TREE, IDENTIFY AND CUT ROOTS IN CONSULTATION WITH OWNER.
- REMOVE POORLY ATTACHED AND RUBBING LIMBS. CLEAN THE CROWN OF DEAD, DISEASED AND WEAK LIMBS. THINNING OF HEALTHY LIMBS IS NOT RECOMMENDED AT THIS TIME.
- ANY NECESSARY TRENCHING SHALL BE IMMEDIATELY BACKFILLED WITH REMOVED SOIL OR OTHER SOIL MIX AS DESCRIBED IN CONTRACT SPECIFICATIONS.
- AN AIR SPADE/AIR KNIFE IS TO BE USED TO EXCAVATE DOWN TO MINIMUM OF 2'. SEE DETAILS

SIGN DETAIL

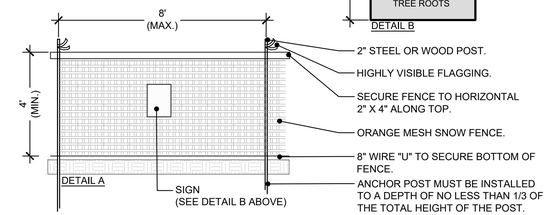
- ATTACHMENTS OF SIGNS TO TREES IS PROHIBITED.
- SIGNS SHOULD BE MADE OF VINYL OR PLASTIC.
- SIGNS SHOULD BE PROPERLY MAINTAINED, PENALTIES WILL BE ENFORCED FOR REMOVAL OF SIGNS.
- AVOID INJURY TO ROOTS WHEN PLACING POSTS FOR THE SIGNS.
- SIGNS SHOULD BE POSTED 50' O.C. AND WITHIN 20' OF THE BEGINNING AND END OF EACH FENCE TO BE VISIBLE TO ALL CONSTRUCTION PERSONNEL.
- SIGNS TO BE SECURELY FASTENED TO THE FENCE OR FENCE POSTS.
- SIGNS TO HAVE A WHITE BACKGROUND AND ORANGE OR RED TEXT.



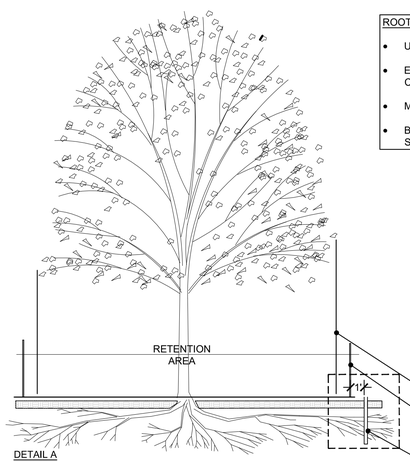
DETAIL B

FENCE DETAIL:

- THIS FENCE SERVES AS A TREE PROTECTION DEVICE ONLY.
- ROOT DAMAGE SHALL BE AVOIDED WITHIN FENCED AREA.
- FENCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.



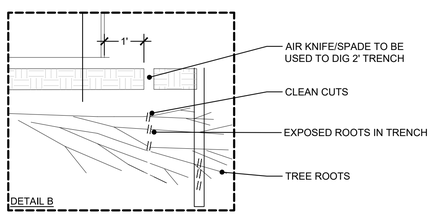
9 / L2.0 TREE PROTECTION FENCE
NTS



DETAIL A

ROOT PRUNING TRENCH NOTES:

- USE AN AIR SPADE/AIR KNIFE TO DIG THE 2' TRENCH AND EXPOSE THE ROOTS.
- EXPOSED ROOTS SHOULD BE CUT WITH A SAW OR LOPPERS TO MAKE A CLEAN SMOOTH CUT, NOT TORN OR RIPPED.
- MULCH EXPOSED ROOTS DURING THE CUTTING PROCESS TO KEEP FROM DRYING OUT.
- BACKFILL TRENCH WITH MIXTURE OF TOPSOIL AND COMPOST AS PER CONTRACT SPECIFICATIONS.



DETAIL B

8 / L2.0 TREE PROTECTION
NTS

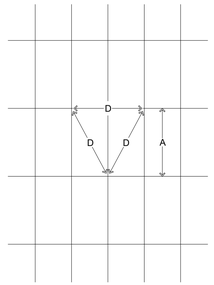
GENERAL PLANTING NOTES:

1. THE LANDSCAPE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK. CONTACT DIG SAFE TWO FULL BUSINESS DAYS BEFORE PLANTING. (48 HOUR MIN.)
2. THE LANDSCAPE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON ALL DRAWINGS. THE PLAN QUANTITIES SHALL ALWAYS SUPERCEDE THE PLANT LIST.
3. ALL PLANT MATERIAL SHALL CONFORM AND BE INSTALLED TO THE GUIDELINES ESTABLISHED BY THE CURRENT ANSI Z60.1.
4. NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN FINISHED AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT OR EQUAL.
5. THE LANDSCAPE CONTRACTOR SHALL PROVIDE AMENDED PLANTING SOIL AS PER THE CONTRACT SPECIFICATIONS.
6. SOIL DEPTH SHOULD BE AS LISTED BELOW. EXISTING SOIL ON SITE WHICH MEETS THE CONTRACT SPECIFICATIONS MAY BE USED. REMOVE SUB GRADE AND OTHER GRAVEL FILL IN PLANTING AREAS ON SITE.
   - 6.1. GROUND COVER BEDS: 12" DEPTH.
   - 6.2. LAWN AREAS: 6" DEPTH
   - 6.3. SHRUB/PLANT BEDS: 18" DEPTH
7. PLANTS SHALL BE INSTALLED SUCH THAT THE ROOT FLARE IS AT OR SLIGHTLY ABOVE FINAL GRADE (DUE TO NURSERY PRACTICES THIS MAY REQUIRE REMOVING SOIL FROM THE TOP OF THE ROOT BALL TO LOCATE THE ROOT FLARE).
8. ALL PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN AS SPECIFIED. NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL ROOT WRAPPING MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED AT THE TIME OF PLANTING.
9. WITH CONTAINER GROWN STOCK, THE CONTAINER SHALL BE REMOVED AND THE CONTAINER BALL SHALL BE CUT THROUGH THE SURFACE IN TWO VERTICAL LOCATIONS.
10. THE DAY PRIOR TO PLANTING, THE LOCATION OF ALL TREES AND SHRUBS SHALL BE FLAGGED FOR APPROVAL BY THE PROJECT LANDSCAPE ARCHITECT OR EQUAL.
11. LANDSCAPE ARCHITECT MAY REQUIRE ALL PLANTS BE SPRAYED WITH AN ANTIDESSICANT WITHIN 24 HOURS AFTER PLANTING. IN TEMPERATE ZONES, ALL PLANTS SHALL BE SPRAYED WITH AN ANTIDESSICANT AT THE BEGINNING OF THEIR FIRST WINTER.
12. STAKING PLANTS IS AT THE DISCRETION OF THE LANDSCAPE CONTRACTOR. ONLY STAKE PLANTS IN THE MANNER SPECIFIED IN THE PLANTING DETAILS.
13. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24 HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL THEN BE WATERED WEEKLY, IF NECESSARY, DURING THE FIRST GROWING SEASON.
14. THE LANDSCAPE CONTRACTOR SHALL REFER TO THE CONTRACT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
15. THE LANDSCAPE CONTRACTOR SHALL REFER TO THE PLANT LIST FOR SEASONAL REQUIREMENTS RELATED TO THE TIME OF PLANTING.

PLANT SPACING CHART

Spacing 'D'	Row 'A'	Number of Plants	Area Unit
6" O.C. 8" O.C. 10" O.C. 12" O.C.	5.2" 6.93" 8.66" 10.4"	4.61 2.6 1.66 1.15	1 SQ. FT.
15" O.C. 18" O.C. 24" O.C. 30" O.C. 36" O.C.	13.0" 15.6" 20.8" 26.0" 30.0"	7.38 5.12 2.91 1.55 1.25	10 SQ. FT.
4' O.C. 5' O.C. 6' O.C. 8' O.C. 10' O.C.	3.46' 4.38' 5.2' 6.93' 8.66'	7.25 4.61 3.2 1.8 1.16	100 SQ. FT.
12' O.C. 15' O.C. 20' O.C. 25' O.C. 30' O.C.	10.4' 13.0' 17.3' 21.65' 26.0'	8 5 2.88 1.85 1.29	1000 SQ. FT.
40' O.C.	34.6'	7.22	10,000 SQ. FT.

O.C. = ON CENTER

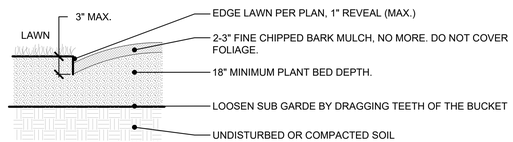


FOR USE WHEN PLANTS ARE SHOWN EQUIDISTANT FROM EACH OTHER (AS SHOWN)

PLANT SPACING CHART

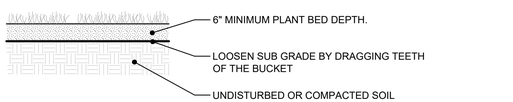
7 / L2.0 PLANT SPACING CHART DETAIL
NTS

- SOIL COMPACTION AFTER INSTALLATION SHALL BE 75-250 PSI AT SOIL MOISTURE BETWEEN FIELD CAPACITY AND WILTING POINT

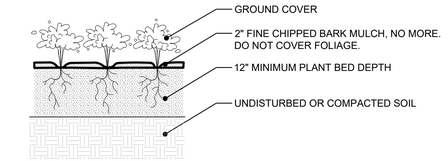


6 / L2.0 PLANT BED
NTS

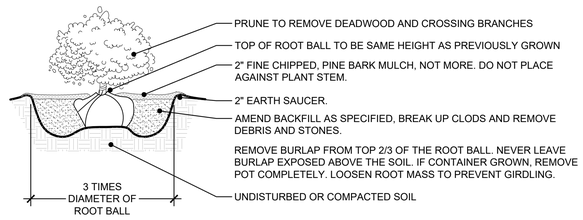
- SOIL COMPACTION AFTER INSTALLATION SHALL BE 75-250 PSI AT SOIL MOISTURE BETWEEN FIELD CAPACITY AND WILTING POINT



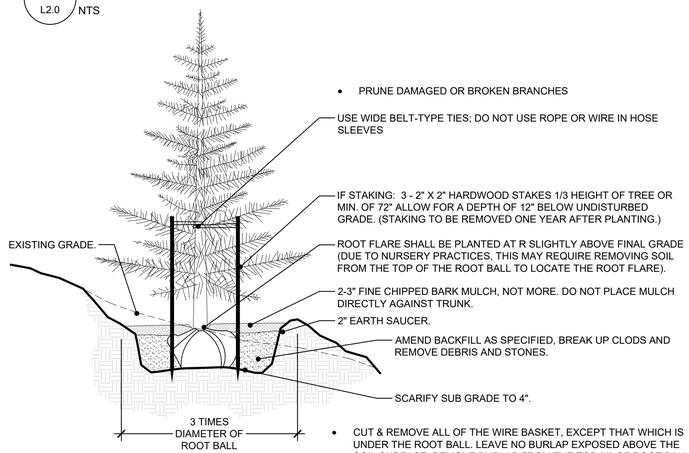
5 / L2.0 LAWN & SEEDING AREA
NTS



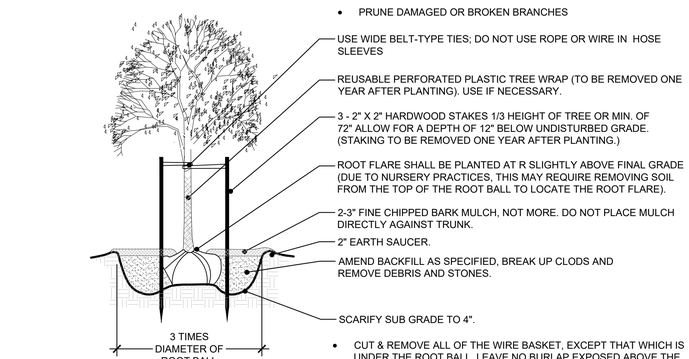
4 / L2.0 GROUNDCOVER PLANTING
NTS



3 / L2.0 SHRUB PLANTING
NTS



2 / L2.0 TREE PLANTING ON SLOPE DETAIL
NTS



1 / L2.0 TREE PLANTING DETAIL
NTS

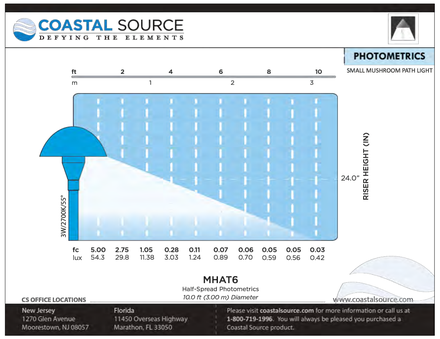
T.J. BOYLE ASSOCIATES
LANDSCAPE ARCHITECTURE & PLANNING

REVISIONS	DATE

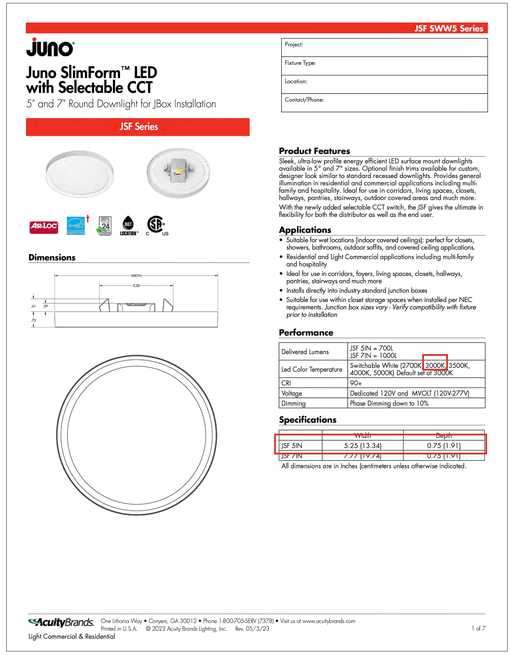
RELEASED FOR PERMITTING
03/03/2025

DATE: MARCH 3, 2025

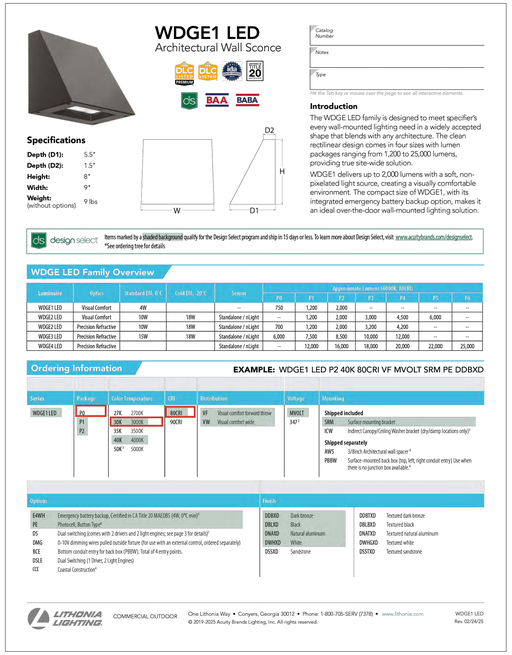
THE 'H' AT MALLETTS BAY
LANDSCAPE DETAILS
L2.0



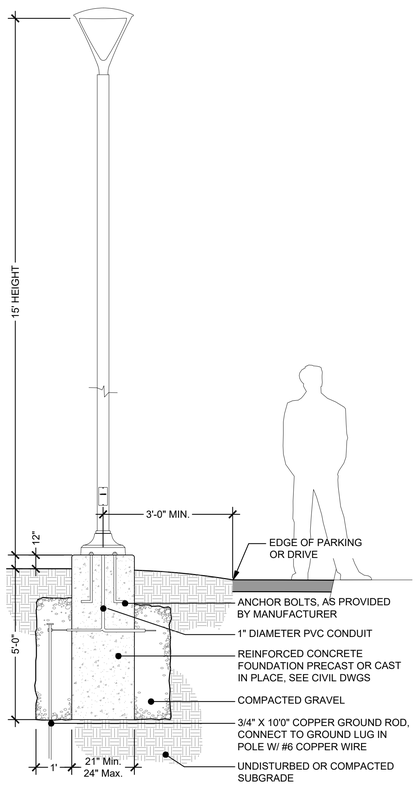
6 L3.0 LOW-VOLTAGE PATH LIGHTING FIXTURE - 24" RISER HT



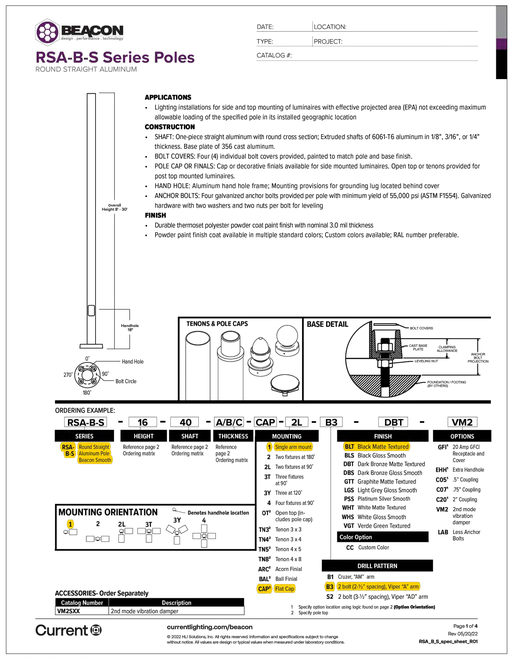
5 L3.0 CANOPY LIGHTING FIXTURE



4 L3.0 WALL MOUNTED LIGHT FIXTURE

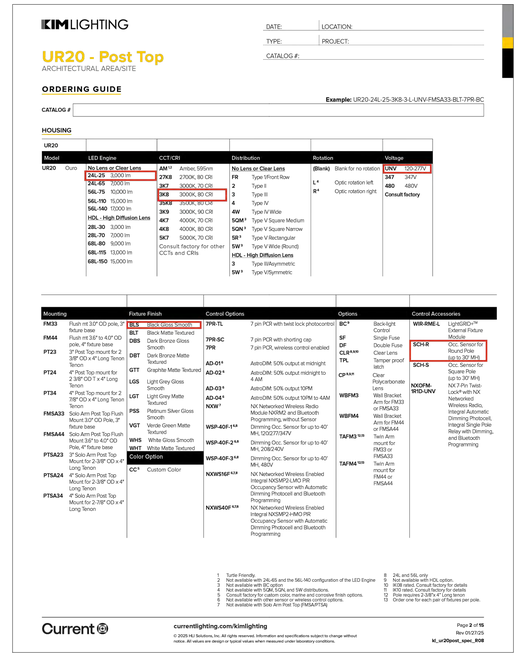


3 L3.0 SITE LIGHT POLE BASE DETAIL SECTION, NTS



2 L3.0 SITE LIGHT POLE

1 L3.0 SITE LIGHT FIXTURE



NOTE:
LIGHT FIXTURE SELECTION MAY BE ADJUSTED FOR FINAL PLAT

GENERAL LIGHTING NOTES:

- MOUNTING HEIGHT EQUATES BETWEEN THE LIGHT SOURCE AND THE POLE BASE FOR USING CALCULATION PHOTOMETRIC ANALYSIS, CUT POLES AS NEEDED
- VOLTAGE TO BE VERIFIED BY ELECTRICAL ENGINEER PRIOR TO ORDERING
- DRIVE CURRENT - REVIEW DRIVE CURRENT AND WATTAGE WITH ELECTRICAL ENGINEER AND CONTRACTOR BEFORE INSTALLATION
- DIMMING TO BE VERIFIED BY ELECTRICAL ENGINEER PRIOR TO INSTALLATION. THE FIXTURE SHOULD BE SET AT THE PERCENTAGE (1/3 THE TOTAL POWER) AS SHOWN ON THE LIGHT SCHEDULE.
- SEE LIGHTING SCHEDULE ON LIGHTING PLAN FOR QUANTITIES AND SPECIFICATIONS

T.J. BOYLE ASSOCIATES
LANDSCAPE ARCHITECTURE & PLANNING

REVISIONS	DATE

RELEASED FOR PERMITTING
03/03/2025

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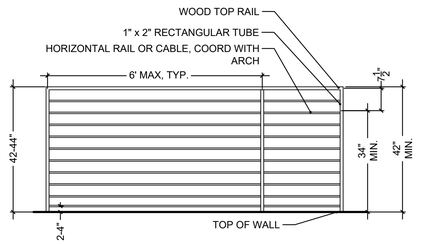
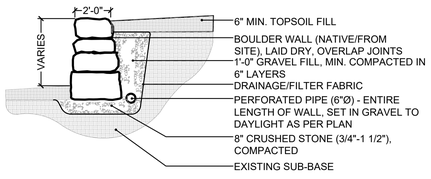
THE 'H' AT MALLETTS BAY
LIGHTING DETAILS
L3.0



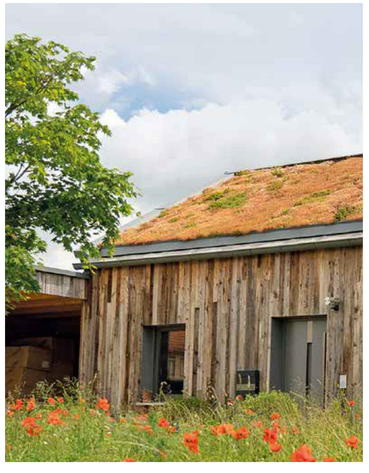
9 L4.0 — 42" RAILING DETAIL - FINAL DESIGN TBD, COORDINATE WITH ARCHITECTURAL PLANS

NTS

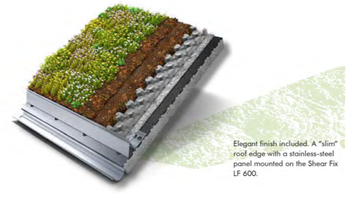


8 L4.0 — BOULDER WALL

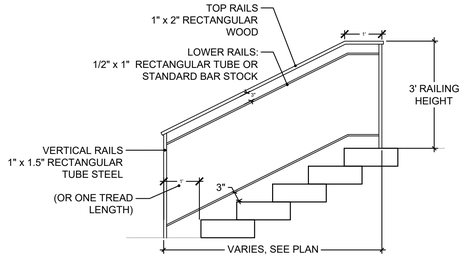
NTS

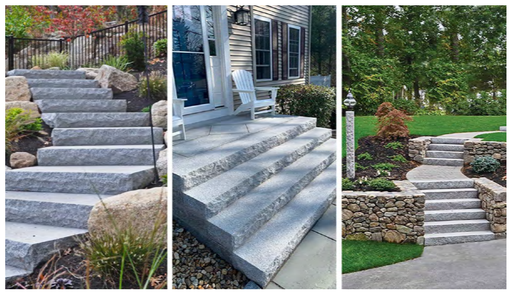


Pitched Green Roof with Floraset® FS 75



7 L4.0 — GREEN ROOF

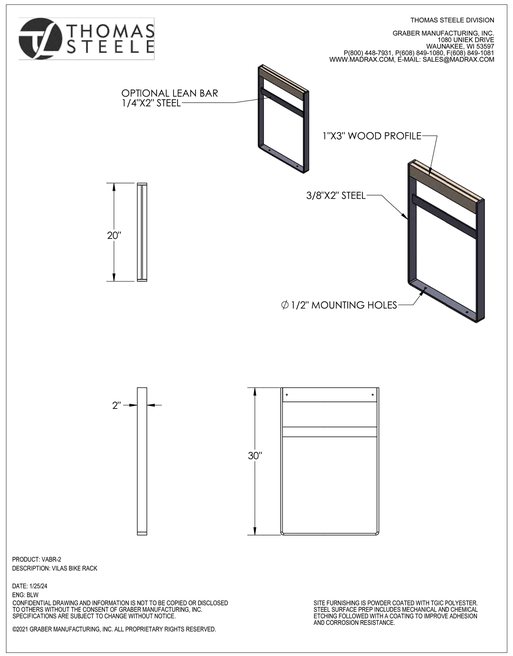




6 L4.0 — STONE STEPS AND HANDRAIL - 48" WIDE

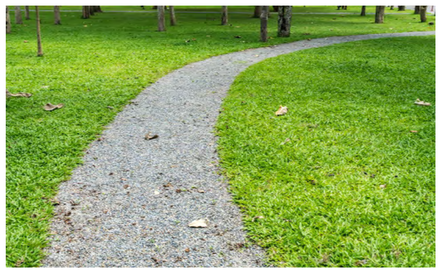
NTS

5 L4.0 — STONE SEAT WALL



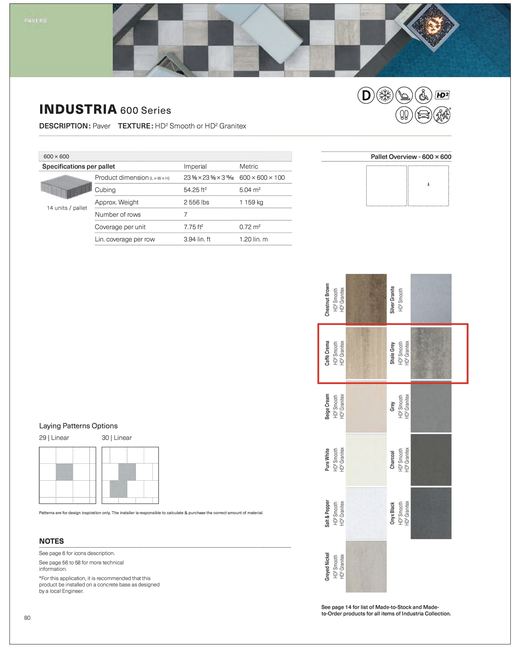
4 L4.0 — BIKE RACK QTY: 3

SPEC SHEET, NTS



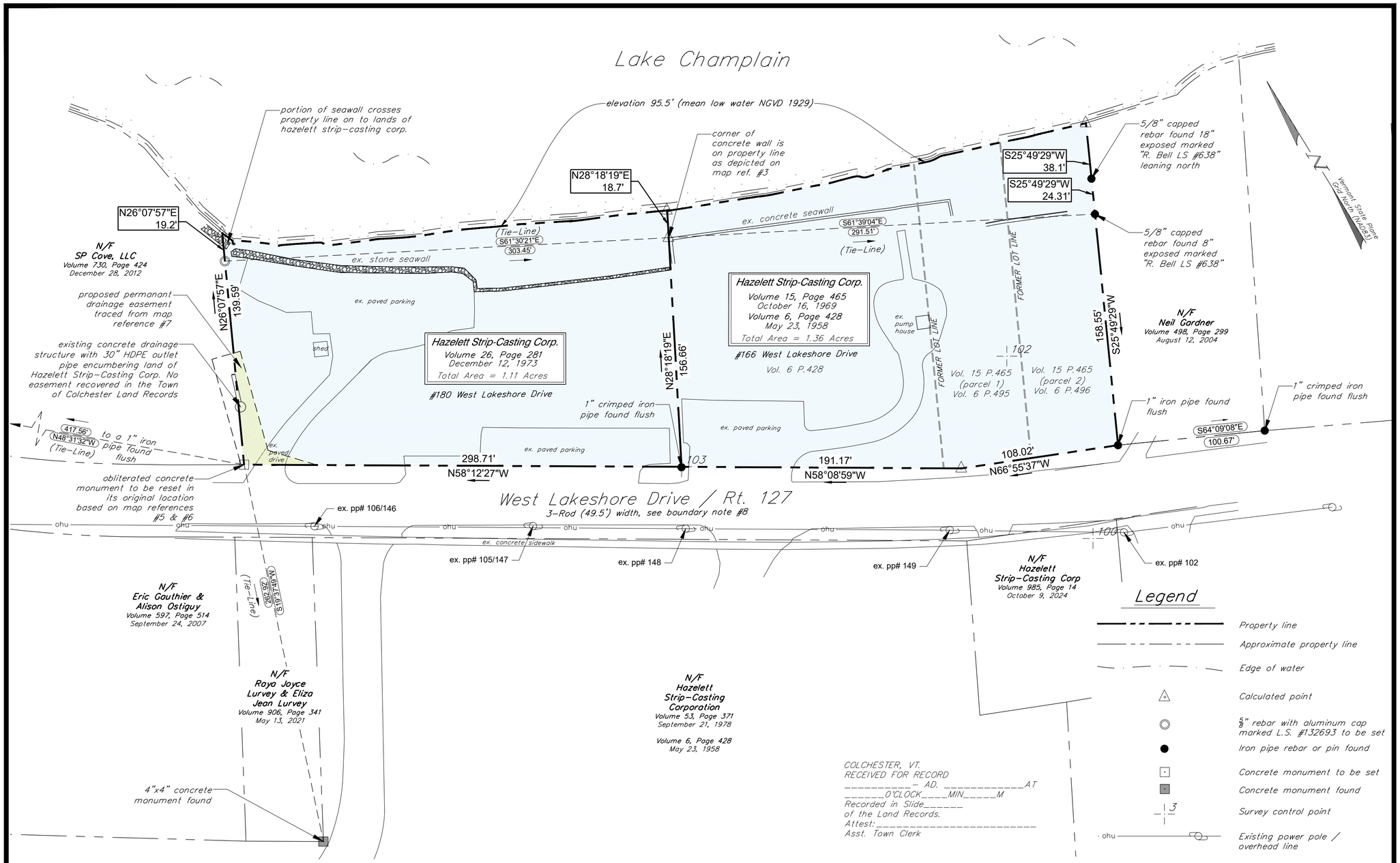
3 L4.0 — STONE PATH - 48" WIDE, 6" DEPTH, COMPACTED

2 L4.0 — WASHED RIVER STONE



1 L4.0 — CONCRETE PAVER

SPEC SHEET, NTS



Boundary Notes

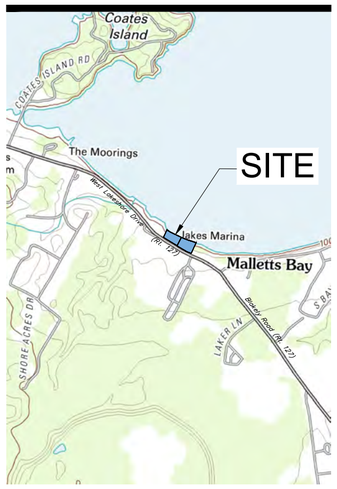
1. The descriptions controlling the locations of the boundaries of the land surveyed and the physical evidence located and existing on the ground were compared and analyzed to provide boundary locations that are most indicative of the original intent of the deeds and in harmony with existing monumentation. Where conflicts between physical evidence and written evidence are substantial, deeds and/or documents should be or will be executed to eliminate any color of title or conflict.
2. This plat of survey depicts boundary location of the lands under the title of Hazelett Strip-Casting Corporation and also the limits, where known, of easements, licenses and/or other servitudes and rights that may encumber or benefit the surveyed premises.
3. Monuments have been set in and on the ground where shown on the plat of survey where, in the opinion of the surveyor, it was necessary to perpetuate a corner not otherwise monumented.
4. Any boundary line location, based on deeds or documents recorded in the public records by which title or rights were conveyed to Hazelett Strip-Casting Corporation, or title or rights in lands of Hazelett Strip-Casting Corporation were otherwise delineated, is subject to accuracy and legality of those deeds or documents. Where those deeds or documents are improperly executed as a matter of law or contain errors or omissions in fact, or contain or are based upon erroneous conclusions of law, then the depicted boundary locations may not be valid.
5. The boundary line locations shown are also subject to accuracy and legality or lack of authority of any grantor or grantee who professed the right or ability to convey, receive or condemn property or rights in the surveyed property.
6. The location and depiction of boundary lines other than those of Hazelett Strip-Casting Corporation are not warranted and all boundary lines depicted are subject to the accuracy and completeness of the public record.
7. This plat of survey is for the sole use of Hazelett Strip-Casting Corporation. Use by other property owners, private or municipal, is specifically unauthorized.
8. The right-of-Way for West Lakeshore Drive/ Route 127 of three rods (49.5') is based on physical evidence and previous surveys. No original road layout or deeds of record were found. Property owners may have certain rights in their frontage to the centerline of the road. The Town of Colchester may have rights to this road by acquiescence, by possession or other means.
9. No drainage rights or easements were found in the Town of Colchester land records for the drainage structure pipe along the westerly edge of the property.

Survey Notes

1. All bearings are calculated and referenced to Vermont State Plane Grid North. Vermont State Plane Grid North was determined from survey grade GPS readings taken at the time of the survey.
2. A closed traverse was completed in August 2024 using a Sokkia CX-103 total station.

Map References

1. Plan entitled "Property of Hazelett Strip-Casting Corporation, Colchester, Vermont" prepared by Civil Engineering Associates, Inc., dated October, 1981 and found in map slide #335 at the Town of Colchester Land Records.
2. Plan entitled "Plat of Survey Showing Portion of Hazelett Strip Casting Corp. Prop. Formerly Tash, VT. RTE #127" prepared by Warren A. Robenstien, dated July 1974 and found in map slide #21 at the Town of Colchester Land Records.
3. Plan entitled "Property Plan Hazlett Strip Casting Corp. Colchester, Vermont" prepared by Warren A. Robenstien, dated February 1972 and found in map slide #149 at the Town of Colchester Land Records.
4. Plan entitled "Property Plan Patrick G. & Mary K. Kearney" prepared by Warren A. Robenstien, dated December 1975 and found in map slide #31 at the Town of Colchester Land Records.
5. Plan entitled "Boundary Line Adjustment, Lands of Hazelett Strip-Casting Corp. & Gerald Deforge West Lakeshore Dr., Colchester, Vermont" prepared by Krebs & Lansing Consulting Engineers, Inc., dated December 21, 2010 and found in map slide #454 at the Town of Colchester Land Records.
6. An unrecorded plan entitled "Boundary Survey, Lands of Sp Cove, LLC & Adams Cove, LLC West Lakeshore Drive, Colchester, Vermont" prepared by Krebs & Lansing Consulting Engineers, Inc., dated February 27, 2013.
7. Sheets 4 and 5 of A Right-of-Way Plan set entitled "Town of Colchester, County of Chittenden, Proporsed Improvements, Bayside Roundabout, Project Number #58530" prepared by VHB and dated August 2022.



Location Map
1" = 2000'

KREBS & LANSING
CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

Certification

This survey is based on physical evidence found in the field and information abstracted from deeds and other pertinent records and this survey is consistent with that evidence. This plat conforms to 27 V.S.A. section 1403.

STATE OF VERMONT
BENJAMIN L. WRIGHT
No. 132693
LICENSED LAND SURVEYOR

Benjamin L. Wright, L.L.S. #132693

0' 50' 100' 150'
0" 1" 2" 3"
STANDARD GRAPHIC SCALE (1" = 50')

BOUNDARY SURVEY

LANDS OF

HAZELETT STRIP-CASTING CORPORATION

#166 & #180 WEST LAKESHORE DRIVE
COLCHESTER, VERMONT

REV. NO.	REVISIONS/COMMENTS	DATE

Drawing Title:

Boundary Survey

DATE of Issue: 03/03/2025 Surveyed by: BLW/CJG
Drawn by: BLW Checked by: JBC
Project No.: 23314 Scale: 1" = 50'
Drawing No.: B-1
Rev No.:

Owner Information

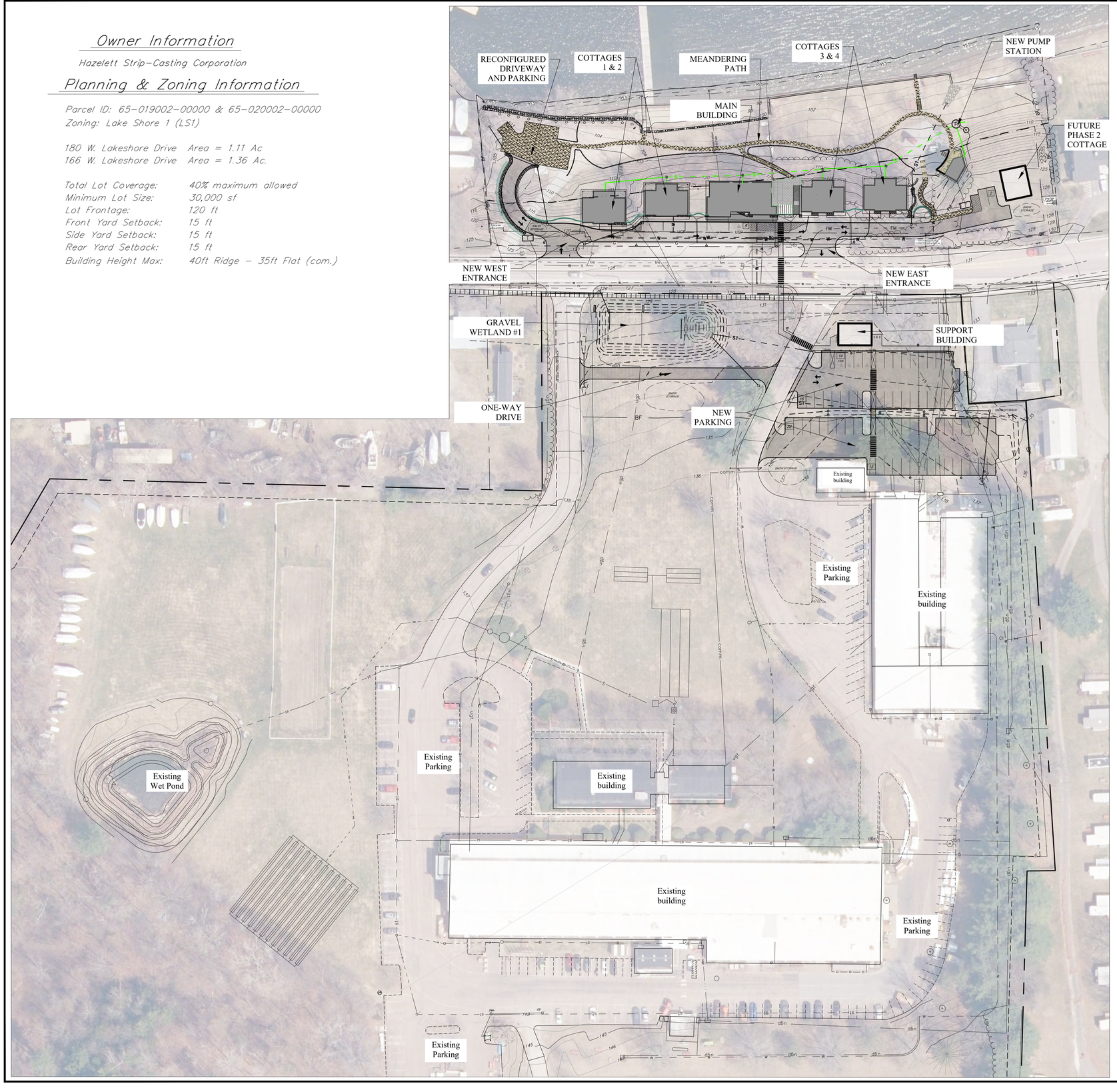
Hazelett Strip-Casting Corporation

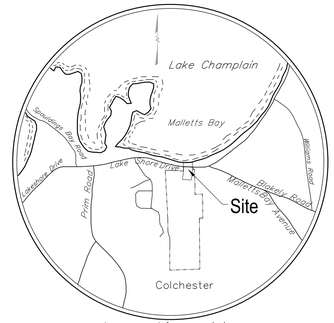
Planning & Zoning Information

Parcel ID: 65-019002-00000 & 65-020002-00000
Zoning: Lake Shore 1 (LS1)

180 W. Lakeshore Drive Area = 1.11 Ac
166 W. Lakeshore Drive Area = 1.36 Ac.

Total Lot Coverage:	40% maximum allowed
Minimum Lot Size:	30,000 sf
Lot Frontage:	120 ft
Front Yard Setback:	15 ft
Side Yard Setback:	15 ft
Rear Yard Setback:	15 ft
Building Height Max:	40ft Ridge - 35ft Flat (com.)





Location Map

not to scale

Notes:

1. This plan is not a boundary survey. Refer to Boundary Survey prepared by Krebs and Lansing Consulting Engineers, "Lands of Hazellet Strip-Casting Corporation, dated March 3, 2025.
2. The underground utilities shown on this plan are based on visible utilities located during a topographic survey performed by Krebs & Lansing in June 2017 and January 2025. Underground utilities are approximate and not warranted to be exact or complete. Dig Safe shall be contacted prior to any excavation.
3. The location of the Malletts Bay sanitary sewer and force main are taken from design plans prepared by Aldrich & Elliot Water Resource Engineers, entitled "West Lakeshore Drive Mainline Sewers Contract No.1A", dated Dec. 2023.
4. Elevations are based on the NAVD 88 (Geoid 12A) vertical datum.
5. Project Horizontal Coordinates derived from GPS observation using reference frame NAD83 (2011) 2010.00 epoch.
5. Aerial photography is based on information provided by the Vermont Center for Geographical Information, 2023 flight.

Legend

- Iron pipe or rebar found
- Survey Control Point
- Existing Sign
- Existing Light Pole
- Existing Deciduous Tree
- Existing Evergreen Tree
- Existing Spot Grade Elevation
- Existing 1ft Contour Interval
- Existing 1ft Contour Interval
- Existing Gas Line/Valve
- Existing Sewer Line/Manhole
- Existing Sewer Forcemain
- Existing Storm Line/Manhole/Basin
- Existing Overhead Electric Line/Power Pole
- Existing Overhead Utility
- Existing Communications Line
- Existing Underground Electric & Telephone Line
- Existing Site Lite Line
- Existing Guardrail
- Existing Tree Line
- Existing Chain Link Fence
- Existing Barbed Wire Fence
- Existing Stockade Fence
- Existing Underground Power
- Existing Water Line/Hydrant/Valve/Shutoff
- Approximate Property Line
- Existing Setback
- Existing Easement
- Existing Rock Retaining Wall
- New Gas Line/Valve
- New Sewer Line/Manhole
- New Sewer Forcemain
- New Storm Line/Manhole/Basin
- New Water Line/Hydrant/Valve/Shutoff
- New Underground Power

HAZELETT STRIP-CASTING CORPORATION

COLCHESTER, VT

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201 P: (802) 878-0375
Colchester, Vermont 05446 www.krebsandlansing.com

STAMP:

0' 50' 100' 150'

Bar Scale 1" = 50'

Project:

THE 'H' AT MALLETTS BAY

180 & 166 W. Lakeshore Drive
Colchester, Vermont

Project No.	23314
Scale	1" = 50'
Drawn by	SWH
Checked by	
Date	03/03/25

Revisions

No.	Date	Description

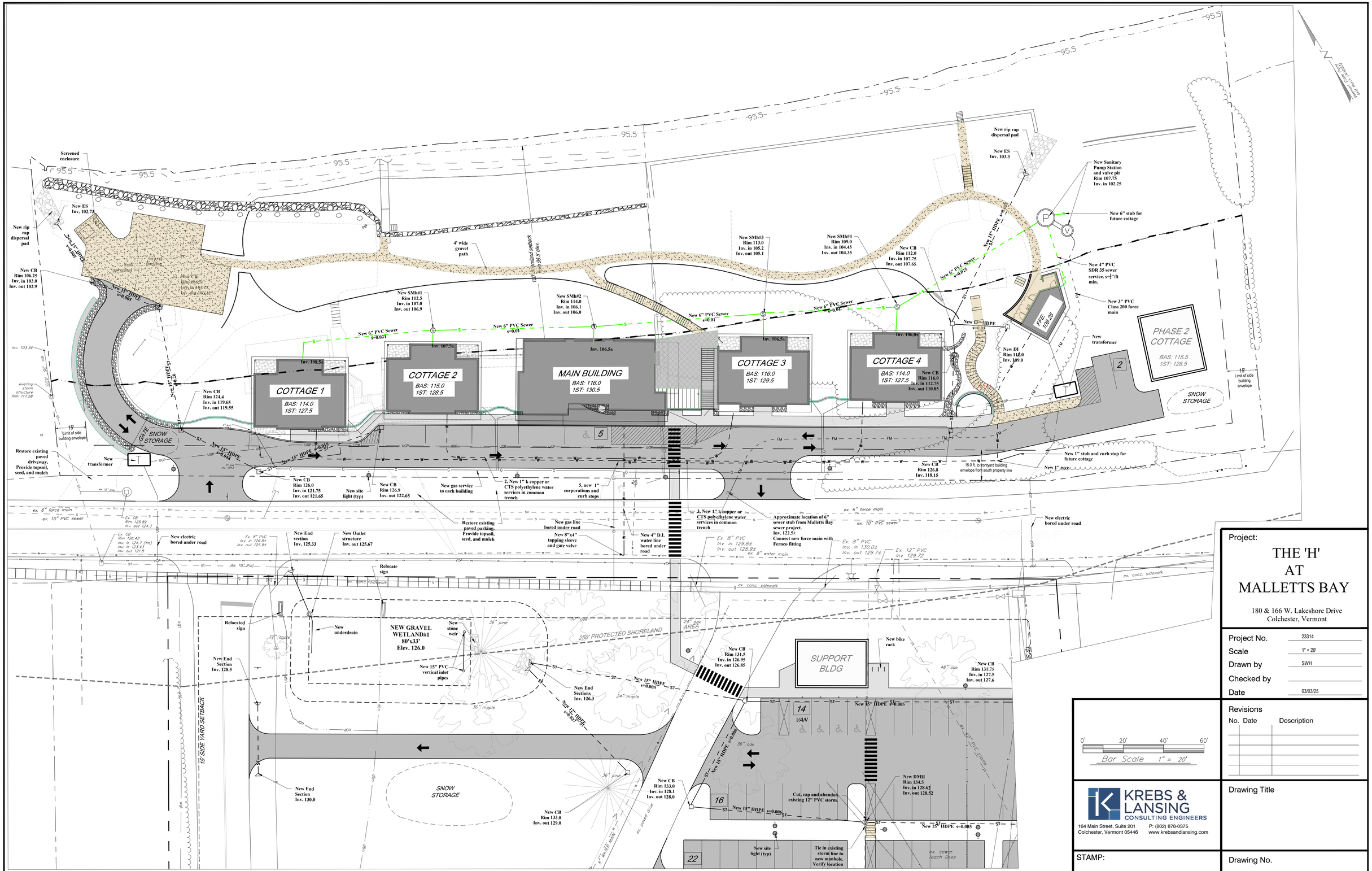
Drawing Title

OVERALL SITE PLAN

Drawing No.

C-1.0

23114\DWGS\23114 Current.dwg



SEE SHEET C-2.1

REFER TO SITE NOTES AND LEGEND SHEET C-1.0

Project:

THE 'H' AT MALLETTS BAY

180 & 166 W. Lakeshore Drive
Colchester, Vermont

Project No.	23314
Scale	1" = 20'
Drawn by	SWH
Checked by	
Date	03/03/25

Revisions

No.	Date	Description

0' 20' 40' 60'
Bar Scale 1" = 20'

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Colchester, Vermont 05446 www.krebsandlansing.com

Drawing Title

STAMP:

Drawing No.

C-2.0

23114\DWGS\23114 Current.dwg

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Bar Scale 1" = 20'

Project:

THE 'H'
AT
MALLETTS BAY

180 & 166 W. Lakeshore Drive
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Drawing Title

SITE & UTILITY PLAN

STAMP:

Drawing No.

C-2.1

23114\DWGS\23114 Current.dwg

REFER TO ADDITIONAL EPSC NOTES
ON DETAIL SHEETS CD-8 AND CD-9

Legend

- Inlet protection around catch basin
- BF — Barrier Fence
- Silt Fence
- Crushed stone for stabilization
- Stone check dam

Install and maintain silt fence downslope of all construction

Screened enclosure

Use erosion control matting where slopes equal or exceed 3:1

4' wide gravel path

100' shoreland setback

Install and maintain silt fence downslope of all construction

Use erosion control matting where slopes equal or exceed 3:1

Install and maintain silt construction limit fence/barrier tape

Install stone check dams in swale. See details

COTTAGE 1
BAS: 114.0
1ST: 127.5

COTTAGE 2
BAS: 115.0
1ST: 128.5

MAIN BUILDING
BAS: 116.0
1ST: 130.5

COTTAGE 3
BAS: 116.0
1ST: 129.5

COTTAGE 4
BAS: 114.0
1ST: 127.5

PHASE 2 COTTAGE
BAS: 115.5
1ST: 128.5

FFE: 109.25

SNOW STORAGE

SITE SNOW STORAGE

SIGN

Restore existing paved driveway. Provide topsoil, seed, and mulch

Install inlet protection at all catch basins

New site light (typ)

Install and maintain silt construction limit fence/barrier tape

Install and maintain stabilized construction entrance

Restore existing paved parking. Provide topsoil, seed, and mulch

Install inlet protection at all catch basins

Install and maintain stabilized construction entrance

WEST LAKESHORE DRIVE

ex. conc. sidewalk

Relocate sign

Relocated sign

Gravel wetland footprint may be used as temporary sediment trap during construction. Accumulated sediment shall be removed prior to installation of permanent gravel wetland.

250' PROTECTED SHORELAND

24" oak AREA

FOREBAY

SUPPORT BLDG
FF 133.0

New bike rack

14 VAN

16

22

New site light (typ)

ex. sewer leach lines

ex. 42" pvc storm

SNOW STORAGE

ex. paved drive

SEE SHEET C-2.1

REFER TO SITE NOTES AND LEGEND
SHEET C-1.0

0' 20' 40' 60'
Bar Scale 1" = 20'

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Date	03/03/25

Revisions

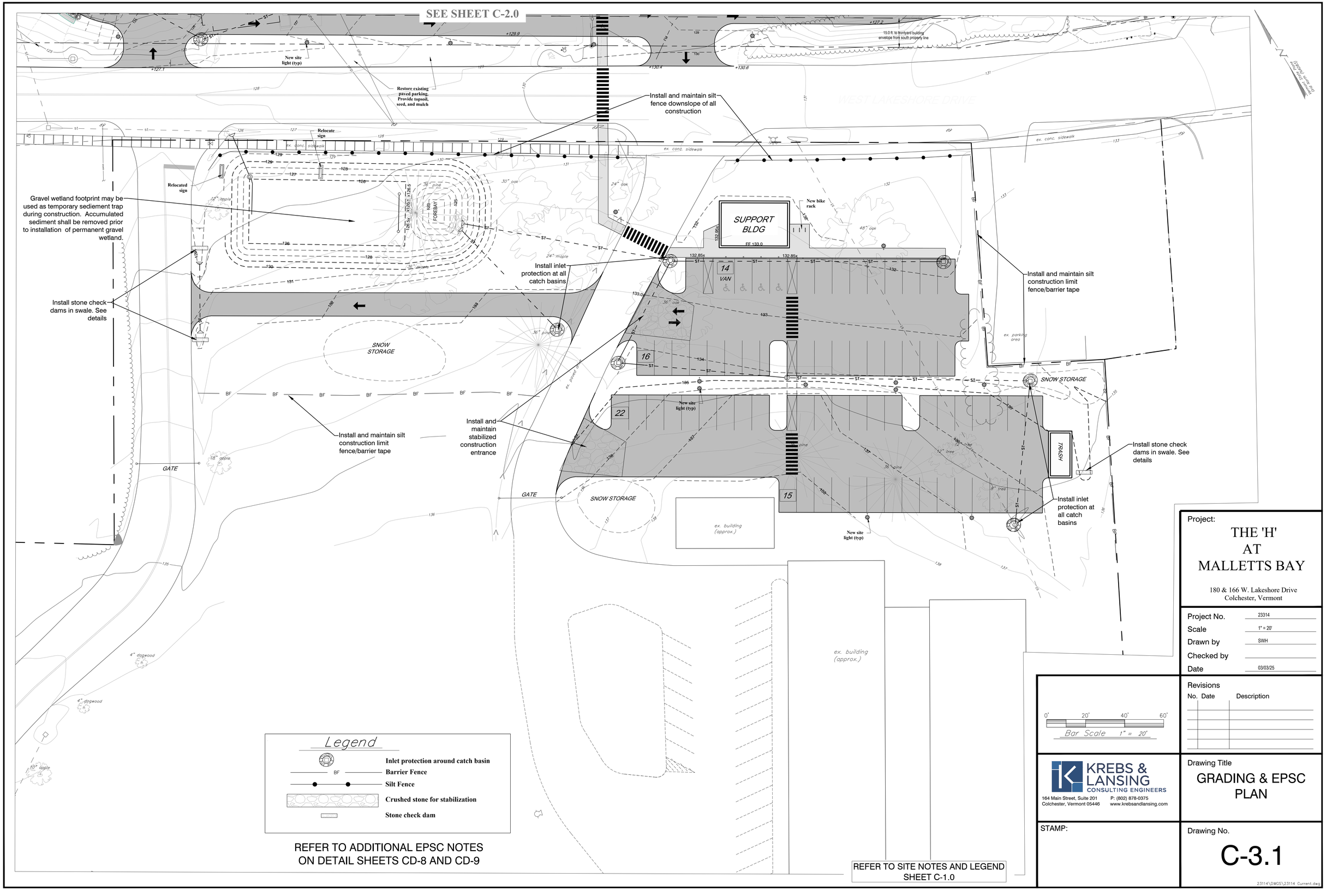
No.	Date	Description

Drawing Title
GRADING & EPSC PLAN

Drawing No.
C-3.0

23114\DWGS\23114 Current.dwg

SEE SHEET C-2.0



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Drawing Title

GRADING & EPSC PLAN

STAMP:

Drawing No.

C-3.1

2:3114\DWGS\2:3114 Current.dwg

740.50 sqft of encroachment into the shoreland setback will be allowed into the setback for the entire project

Encroachment into front setback grandfathered to exact location

100' Shoreland setback from 95.5' elev.

15' Limit of side building envelope

15.0 ft. to frontyard building envelope from south property line

15' SIDE YARD SETBACK

Lake Champlain

West Lokeshore Drive

ex. 6" force main

ex. 10" PVC sewer

ex. 8" water main

ex. conc. sidewalk

ex. pavement

ex. gravel

ex. grass'd covers gravel

ex. beach

ex. stairs

ex. tent

ex. volleyball net

ex. concrete pads

ex. rock retaining wall

ex. concrete retaining wall

existing concrete retaining wall

existing stone retaining wall

existing stone (typ.)

Ex. dock system

Ex. gate with right-of-way electrical outlets

Ex. sign "Use dog waste bags"

Ex. wooden post with water spigot

ex. chainlink fence

ex. post and rail fence (wooden)

ex. gate

ex. woods

ex. landscaping

ex. concrete

Existing shed

footprint of demolished pool

demolished deck

footprint of demolished house

Footprint of demolished Motel

Inv. 103.34

existing storm structure Rim 117.58

4" Ent. Inv. 116.1

Ex. sign (crosswalk ahead)

Ex. CB Rim 125.89 Inv. out 124.3

Ex. CB Rim 126.43 Inv. in 124.1 (nw) Inv. in 123.43 Inv. out 121.8

Ex. 8" PVC Inv. in 126.8± Inv. out 125.9±

Ex. double yellow center line

Ex. white line

Ex. 8" PVC Inv. in 129.8± Inv. out 128.9±

Ex. 8" PVC Inv. in 130.0± Inv. out 129.7±

Ex. 12" PVC Inv. 129.72

ex. 12" pvc storm

ex. sewer leach lines

ex. pond drain

8" W. ISR Main

ex. 18" PVC

ex. 12" cmp

ex. 8" cmp

ex. crdr hedge row

N/F Deforge

N/F Hazelett Strip Casting Corp

12" apple

8" crab apple

36" pine

24" oak

24" maple

36" maple

36" oak

48" oak

12" tree

ex. sign (HAZELETT)

ex. sign (no unauthorized vehicles)

REFER TO SITE NOTES AND LEGEND SHEET C-1.0

SEE SHEET X-1.1

0' 20' 40' 60'

Bar Scale 1" = 20'

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Project No.	23314
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Drawn by	JAR/SWH
Checked by	
Date	03/03/25

Revisions

No.	Date	Description

Drawing Title

EXISTING CONDITIONS PLAN

Drawing No.

X-1.0

23114\DWGS\23114 Current.dwg

SEE SHEET X-1.0

Encroachment into front setback grandfathered to exact location

footprint of demolished house

ex. pavement

ex. gate

ex. woods

15.0 ft. to frontyard building envelope from south property line

ex. landscaping

Existing Curb Cut to be Removed

ex. 6" force main

ex. 10" PVC sewer

ex. 8" water main

ex. conc. sidewalk

Ex. 8" PVC
Inv. in 129.8±
Inv. out 128.9±

Ex. 8" PVC
Inv. in 130.0±
Inv. out 129.7±

Ex. 12" PVC
Inv. 129.72

Ex. CB
Rim 125.89
Inv. out 124.3

Ex. CB
Rim 126.43
Inv. in 124.7 (fm)
Inv. in 123.43
Inv. out 121.8

Ex. 8" PVC
Inv. in 126.8±
Inv. out 125.9±

West Lakeshore Drive

Ex. double yellow center line

Ex. white line

ex. 4" cmp

ex. sign (HAZELETT)

ex. sign (no unauthorized vehicles)

12" apple

8" crab apple

36" pine

30" oak

24" oak

24" maple

36" maple

36" oak

48" oak

15' SIDE YARD SETBACK

ex. 42" PVC storm

ex. parking area

ex. sewer teach lines

ex. paved drive

8" WATER MAIN

ex. cedar hedge row

18" apple

4" dogwood

4" dogwood

ex. valve pit

Pump Station

backup seepage bed

backup seepage bed

backup leachfield "A"

4" DUTILE IRON WATER SERVICE

ex. building (approx.)

12" tree

12" tree

8" tree

12" PVC storm

ex. underground propane tank

Ex. septic tank

OSA

Ex. CB
Rim 134.94
Inv. in (12") 129.72
Inv. in (4") 132.19
Inv. out (12") 129.6

ex. well

ex. campground

ex. building (approx.)

N/F Sharx & Co LLC.

N/F Hazelett Strip Casting Corp

N/F eforge

REFER TO SITE NOTES AND LEGEND SHEET C-1.0

0' 20' 40' 60'

Bar Scale 1" = 20'

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Drawing Title

EXISTING CONDITIONS PLAN

Drawing No.

X-1.1

23114\DWGS\23314 Current.dwg

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL DISTURBED AREAS BACK TO ORIGINAL CONDITION, INCLUDING BUT NOT LIMITED TO CURBING, SIDEWALKS, ROAD, PARKING AREAS, LANDSCAPING, SITE LIGHTING, ELECTRICAL, AND ETC. ALL ASPHALT SHALL BE SAW-CUT PRIOR TO PAVING.
2. THE METHODS AND MATERIALS OF CONSTRUCTION SHALL CONFORM TO THE LATEST STANDARDS OF THE STATE OF VERMONT AND TOWN OF BOLTON, ALL WORK SHALL BE IN CONFORMANCE WITH ALL PERMITS AND APPROVALS ISSUED FOR THE PROJECT. IN CASE OF CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY AS DIRECTED BY ENGINEER. ALL WORK SHALL BE DONE IN A WORKMANLIKE MANNER AND COMPLETED IN THE TIME SPECIFIED BY OWNER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK AND MATERIALS SHOWN AND REQUIRED TO MAKE THE JOB COMPLETE. THESE DRAWINGS DO NOT SHOW EVERY FITTING OR APPURTENANCE. MATERIALS SHALL BE AS SPECIFIED ON THE DRAWINGS. MANUFACTURER'S PRODUCT SPECIFICATIONS SHALL BE SUBMITTED FOR ALL MATERIALS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
4. THE LOCATION AND SIZE OF EXISTING UNDERGROUND UTILITIES IS NOT WARRANTED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES AND SHALL CONTACT THE AFFECTED UTILITY COMPANY, THE ENGINEER AND THE MUNICIPALITY PRIOR TO MAKING ANY HOOK UPS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXISTING UTILITIES AND THEIR UNINTERRUPTED SERVICES. ALL OFF-SITE BACKFILL, SHEETING, SHORING, DEWATERING, CLEARING AND GRUBBING, EROSION CONTROL, DUST CONTROL, TRAFFIC CONTROL, GRADING, AND ALL INCIDENTALS SHALL BE INCLUDED AS PART OF THE REQUIRED WORK.
5. THE CONTRACTOR SHALL VERIFY ALL TEMPORARY BENCH MARKS BEFORE USE.
6. THE WORKMEN AND PUBLIC SHALL BE PROTECTED BY THE CONTRACTOR FROM ANY AND ALL HAZARDS CONNECTED WITH THE CONSTRUCTION WORK. OPEN TRENCHES, MATERIALS, OR EQUIPMENT WITHIN THE WORKING LIMITS ARE TO BE GUARDED BY THE USE OF ADEQUATE BARRICADES OR FLAGMEN. ALL BARRICADES LEFT IN POSITION OVERNIGHT ARE TO BE PROPERLY LIGHTED. KEROSENE POTS ARE NOT ACCEPTABLE. WHEN WORK NARROWS THE USABLE PAVEMENT, FLAGMEN SHALL BE EMPLOYED TO AID THE FLOW OF TRAFFIC SO THAT THERE WILL BE NO UNDUE DELAYS. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE SAFETY OF ALL WORKMEN, THE GENERAL PUBLIC AND ALL DAMAGES TO PROPERTY OCCURRING FROM OR UPON THE WORK OCCASIONED BY NEGLIGENCE OR OTHERWISE GROWING OUT OF A FAILURE ON THE PART OF THE CONTRACTOR TO PROTECT PERSONS OR PROPERTY FROM HAZARDS OF OPEN TRENCHES, MATERIALS, OR EQUIPMENT AT ANY TIME OF THE DAY OR NIGHT WITHIN THE WORKING AREA. ALL WORK SHALL BE IN CONFORMANCE TO OSHA REGULATIONS, TITLE 19, PARTS 1926.651 AND 1926.652, AND APPLICABLE TO VOSHA REGULATIONS.
7. THE CONTRACTOR SHALL VERIFY ALL UTILITY INTERSECTIONS AND CONTACT ENGINEER AND OWNER WITH CONFLICTS.
8. THE CONTRACTOR SHALL CALL, DIG SAFE PRIOR TO ANY EXCAVATION.
9. THE CONTRACTOR SHALL COORDINATE FINAL LOCATION AND INVERTS FOR WATER, SEWER, AND STORM BUILDING CONNECTIONS WITH THE ARCHITECT, STRUCTURAL ENGINEER, AND MECHANICAL ENGINEER.
10. ALL STUMPS, ROCK, AND OTHER NON-APPROVED TRENCH BACKFILL MATERIAL DISCOVERED DURING CONSTRUCTION IS THE EXCLUSIVE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF IN A STATE APPROVED DISPOSAL LOCATION. ALL EXISTING SOILS REUSED FOR FILL SHALL CONFORM TO ALL APPLICABLE SECTIONS OF VTRANS SPECIFICATIONS SECTION 203-EXCAVATION & EMBANKMENTS OR ENGINEER APPROVED EQUAL. CONTRACTOR SHALL REVIEW SOIL INVESTIGATION REPORT AND SOILS LOGS PRIOR TO BID. ANY SOIL REUSED AS FILL UNDER ROADS AND APPLICABLE CONCRETE SIDEWALKS SHALL PASS A SUBGRADE PROOF ROLL WITH A LOADED TANDEM. FILL SOILS THAT DO NOT PASS A SUBGRADE PROOF ROLL SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
11. THE ABOVE NOTE (NOTE #10) DOES NOT INCLUDE TOPSOIL. CONTRACTOR SHALL REUSE THE TOPSOIL AS NEEDED FOR THE PROJECT'S CONSTRUCTION. ANY ADDITIONAL TOPSOIL IS THE PROPERTY OF THE PROJECT OWNER. IF NOT USED DURING CONSTRUCTION, THE CONTRACTOR SHALL DISCUSS ANY REMAINING TOPSOIL WITH THE PROPERTY OWNER. CONTRACTOR SHALL PLACE REMAINING TOPSOIL IN A LOCATION DETERMINED BY THE PROPERTY OWNER OR REMOVE IT FROM THE PROPERTY.
12. ALL PASSING SIEVE, PROCTOR, AND COMPACTION TESTING EXPENSES SHALL BE PAID BY THE CONTRACTOR. TESTING COORDINATION, ALL OTHER REQUIRED TESTING, AND EXPENSES FOR FAILED TESTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
13. THE CONTRACTOR SHALL CONTACT THE GREEN MOUNTAIN POWER (GMP) AND OR VERMONT ELECTRIC COOPPRIOR TO ANY WORK IN THE VICINITY OF THE EXISTING ELECTRIC CONDUITS.
14. THIS PROJECT WILL REQUIRE COVERAGE UNDER AN STATE OF VERMONT GENERAL CONSTRUCTION STORMWATER DISCHARGE PERMIT. THE CONTRACTOR WILL FOLLOW THE PERMIT AS WELL AS THE RULES, REGULATIONS, AND DIRECTION OUTLINED IN THE STATE OF VERMONT "LOW RISK HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL" FROM FEBRUARY 2020.THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING, MAINTAINING AND REMOVING ALL EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THE PLANS OR DETAILS AND, TO THE MAXIMUM EXTENT PRACTICAL, TO MINIMIZE POTENTIAL CONTAMINATION OF STORMWATER RUNOFF FROM THE CONSTRUCTION ACTIVITIES.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL "AS-BUILT" MEASUREMENT AND DRAFTING REQUIREMENTS AS OUTLINED ON THE DETAIL SHEETS. ALL TRENCH EXCAVATIONS SHALL REMAIN OPEN UNTIL ALL AS-BUILT SURVEY SHOTS HAVE BEEN TAKEN. PROGRESS RECORD DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AS INDICATED IN THE RECORD DRAWING SPECIFICATIONS.
16. SEE EROSION PREVENTION AND SEDIMENT CONTROL AND LOGISTICS PLANS FOR LOCATIONS OF STAGING / STORAGE AREAS.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SIGNAGE AND CONSTRUCTION BARRIER/SAFETY FENCING NECESSARY FOR PROVIDING SAFE VEHICULAR AND PEDESTRIAN ACCESS THROUGH OR AROUND THE SITE DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE THIS WITH THE TOWN OF BOLTON AND THE TOWN'S DEPARTMENT OF PUBLIC WORKS.
18. DEFINITION OF "PRECONSTRUCTION EXCAVATION" FOR THESE CONTRACT DOCUMENTS SHALL BE: THE SITE CONTRACTOR SHALL EXPOSE UTILITIES AND OBTAIN ALL NECESSARY INFORMATION, INCLUDING BUT NOT LIMITED TO, INVERT ELEVATION, SIZE, DEPTH, PIPE TYPE, JOINT LOCATION, ETC. CONTRACTOR SHALL TRANSIT SURVEY THE LOCATION AND ELEVATIONS OF THE UTILITY. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH SKETCHES INDICATING HORIZONTAL AND VERTICAL INFORMATION OF PIPE OR CONDUIT TYPE AND SIZE, CROSS-SECTION INFORMATION, CONCRETE ENCASEMENT INFORMATION (TOP AND BOTTOM ELEVATIONS, WIDTH, ETC.), JOINT LOCATION, ETC. OF EACH REQUIRED EXISTING UNDERGROUND UTILITY. ACCURACY OF HORIZONTAL LOCATION IS WITHIN 1 FOOT, AND ACCURACY OF VERTICAL ELEVATION IS WITHIN 0.02 FT. (1/4"). COORDINATE ALL EXCAVATION WITH CITY, OWNER, AND ENGINEER. PRECONSTRUCTION EXCAVATIONS SHALL OCCUR PRIOR TO ORDERING STRUCTURES AND PRIOR TO UTILITY CONSTRUCTION TO FACILITATE REDESIGN AND/OR DESIGN CONFIRMATION.
19. THE LOCATION OF THE PRECONSTRUCTION EXCAVATION SYMBOLS DOES NOT NECESSARILY INDICATE THE LOCATION OF THE BURIED UTILITY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIND AND EXPOSE THE UTILITY.
20. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS OF IMPORTING AND PLACING TOPSOIL AND/OR COMPOST NECESSARY TO COMPLETE THE PROJECT. CONTRACTOR SHALL TEST TOPSOIL FOR APPROVAL BY THE OWNER AND ENGINEER.

10. ALL SEWER AND STORM PIPES SHALL BE PVC SDR 35 UNLESS OTHERWISE NOTED. ALL NEW SANITARY AND STORM PIPES SHALL BE LAID WITH A LASER TO ELEVATION AND SLOPE AS SHOWN ON THE PLANS.
11. CORE AND BOOT ALL EXISTING STRUCTURES UNLESS OTHERWISE NOTED.
12. ALL NEW CATCH BASINS AND SANITARY SEWER MANHOLE MUST HAVE ONE 6" PRECAST CONCRETE GRADE RING.
13. ALL WATERLINE PIPE SHALL BE DUCTILE IRON CLASS 52 OR C900 PVC. ALL BENDS AND FITTINGS SHALL HAVE POURED IN PLACE THRUST BLOCKS, MIXED ONSITE CONCRETE IS NOT ALLOWED.
14. TEMPORARY GROUNDWATER, STORMWATER, AND SEWER BY-PASS PUMPING AND/OR DIVERSION IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY PUMPS AND EQUIPMENT TO PERFORM THE WORK. OVERNIGHT PUMPING IS NOT ALLOWED.
15. ALL SIDEWALKS SHALL HAVE 2% MAXIMUM CROSS SLOPE. ALL RAMPS AND STAIRS SHALL HAVE A LANDING AT THE BOTTOM WITH A MAXIMUM SLOPE OF 2% FOR 5 FEET.
16. CONTRACTOR TO PIN CONCRETE SIDEWALK/SLABS TO ALL CONTACT POINTS WITH STAIRS, BUILDING, BIKE SLAB, RETAINING WALLS, ETC.
17. CONTRACTOR SHALL MAINTAIN FULL OCCUPANCY AND FIRE DEPARTMENT ACCESS TO ALL SURROUNDING BUILDINGS. COORDINATE ALL TEMPORARY ACCESS WITH THE MUNICIPALITY.
18. BURIED NATURAL GAS IS SHOWN FOR ALIGNMENT PURPOSES ONLY. CONTACT VERMONT GAS SYSTEMS FOR DESIGN AND DETAILS OF NEW GAS LINE. SEE ADDITIONAL NOTES ON C-1.01 AND C-1.02.
19. REMOVAL OF ALL EROSION CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR.
20. AT THE END OF THE PROJECT, CLEAN THE SUMPS OF ALL NEW AND EXISTING CATCH BASINS AND STORM MANHOLES WITHIN THE PROJECT LIMITS.
21. ELECTRICAL AND LIGHTING ARE SHOWN FOR ILLUSTRATIVE/COORDINATION PURPOSES ONLY. REFER TO ELECTRICAL PLANS AND SPECIFICATIONS FOR DESIGN.
22. SEE LANDSCAPE AND/OR STRUCTURAL PLANS FOR ALL RETAINING WALLS, UTILITY PADS, STAIRS, AND EXTERIOR CONCRETE AT DOORS.
23. REFER TO PLUMBING, MECHANICAL AND/OR FIRE PROTECTION PLANS FOR WATER, SEWER AND STORM DESIGN WITHIN FIVE FEET OF THE BUILDING.

EPSC GENERAL NOTES:

1. EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PRACTICES SHALL BE IMPLEMENTED IN ALL AREAS WHERE THERE IS AN INCREASED RISK OF EROSION, AND WHERE THERE IS POTENTIAL FOR DISCHARGE OF STORMWATER RUNOFF (EITHER DIRECT OR INDIRECT) TO A WATER BODY.
2. EPSC MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITIES WITHIN A GIVEN DRAINAGE AREA WITH THE EXCEPTION OF LAND DISTURBANCE THAT MAY RESULT FROM ACCESSING THE AREA(S) WITH EQUIPMENT IN WHICH EPSC MEASURES ARE TO BE INSTALLED. THIS EXCEPTION INCLUDES LAND DISTURBANCE THAT MAY RESULT FROM ACCESS OF EQUIPMENT THAT IS NEEDED FOR:EXPLORATION AND/OR EPSC MEASURE INSTALLATION PHASES OF THE PROJECT. TEMPORARY SEDIMENT BASINS, TEMPORARY SEDIMENT TRAPS, PERIMETER DIKES, TEMPORARY SEDIMENT BARRIERS, AND OTHER TEMPORARY MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE WITH THE EXCEPTION OF THOSE ACTIVITIES STATED ABOVE. EARTH DISTURBANCE INCLUDES STUMPING AND GRUBBING OF CLEARED AREAS.
3. EPSC MEASURES SHALL BE INSTALLED PURSUANT TO THE EPSC PLAN, THE 2020 STATE OF VERMONT LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL, THE 2020 VERMONT EROSION PREVENTION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS, AND/OR ANY OTHER RELEVANT PROJECT PERMITS.
4. ALL PROPOSED CHANGES SHALL BE APPROVED BY THE ON-SITE PLAN COORDINATOR (OSPC) OR HIS/HER DESIGNEE PRIOR TO IMPLEMENTATION.
5. LOGGING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH ACCEPTABLE MANAGEMENT PRACTICES FOR MAINTAINING WATER QUALITY ON LOGGING JOBS IN VERMONT (AMPS, 2006).
6. PERMISSION MUST BE GRANTED BY VT DEC PRIOR TO USE OF ANY SUPPORT ACTIVITIES OCCURRING OUTSIDE OF THE APPROVED PROJECT BOUNDARIES.
7. ALL PARTIES ASSOCIATED WITH CONSTRUCTION ACTIVITIES WHO MEET EITHER OF THE FOLLOWING TWO CRITERIA OF "PRINCIPAL OPERATOR" MUST OBTAIN COVERAGE UNDER THE CONSTRUCTION STORMWATER DISCHARGE PERMIT FOR THE PROJECT PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES BY THAT OPERATOR:
   - A. THE PARTY HAS OPERATIONAL CONTROL OVER CONSTRUCTION PLANS AND SPECIFICATION, INCLUDING BUT NOT LIMITED TO THE ABILITY TO MAKE MODIFICATIONS TO THOSE PLANS AND SPECIFICATIONS; OR
   - B. THE PARTY HAS CONTINUOUS DAY-TO-DAY OPERATIONAL CONTROL OF THOSE ACTIVITIES AT THE PROJECT THAT ARE NECESSARY TO ENSURE COMPLIANCE WITH AN EPSC PLAN FOR THE SITE OR OTHER PERMIT CONDITIONS (E.G., THEY ARE AUTHORIZED TO DIRECT WORKERS AT A SITE TO CARRY OUT ACTIVITIES REQUIRED BY THE EPSC PLAN OR COMPLY WITH OTHER PERMIT CONDITIONS).
8. EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED TO THE EXTENT PRACTICABLE.
9. A VEGETATED BUFFER SHALL BE MAINTAINED FOR WATER BODIES WHERE FEASIBLE (E.G., WETLANDS AND STREAMS).
10. TO THE EXTENT PRACTICABLE, SURFACE FLOW SHALL BE DIVERTED AWAY FROM EXPOSED SOILS VIA DIVERSION BERMS, EARTH DIKES, PERIMETER DIKES/SWALES, TEMPORARY SWALES, WATER BARS, AND/OR CHECK DAMS.
11. RESOURCE AREAS (E.G., WETLANDS, STREAMS, RTE PLANT SPECIES) SHALL BE FLAGGED PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES OCCURRING WITHIN CLOSE PROXIMITY TO THOSE AREAS.
12. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT VIOLATE WATER QUALITY STANDARDS OR CONTRIBUTE TO EROSION. DEWATERING DETAILS SHALL BE REVIEWED AND APPROVED BY OSPC PRIOR TO USE.
13. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN STEEP SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL (SEE DETAILS), FLUME, OR SLOPE DRAIN STRUCTURE.
14. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
   - A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
   - B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES, WHERE FEASIBLE, BUT NOT IN RESOURCE AREAS.

8. WHERE FEASIBLE, ALL SEDIMENT REMOVED FROM SEDIMENT CONTROL PRACTICES AS PART OF MAINTENANCE SHALL BE DISPOSED OF IN AN AREA THAT IS AT LEAST ONE OF THE FOLLOWING, WITH IMMEDIATE STABILIZATION FOLLOWING DISPOSAL OF MATERIAL:
   - A. LESS THAN 5±% SLOPE
   - B. AT LEAST 100 FEET FROM ANY DOWNSLOPE WATER BODY OR CONVEYANCE TO A WATER BODY, INCLUDING A DITCH
   - C. VEGETATED
9. DISTURBED AREAS BORDERING OR DRAINING TO EXISTING ROADS SHALL HAVE AN APPROPRIATE SEDIMENT BARRIER (E.G., SILT FENCE) SPANNING THE EDGE OF THE DISTURBANCE TO PREVENT WASHING OF SEDIMENT ONTO ROADWAYS OR INTO ROAD DITCHES.
10. IN ADVANCE OF PREDICTED RAINFALL OR SNOWMELT, ALL EPSC MEASURES THAT ARE LOCATED IN ACTIVE AREAS OF EARTH DISTURBANCE SHALL BE INSPECTED AND REPAIRED, AS NEEDED. IF NECESSARY, THIS SHALL INCLUDE TEMPORARY STABILIZATION OF ALL DISTURBED SOILS ON THE SITE IN ADVANCE OF THE ANTICIPATED RUNOFF PERIOD.
11. DUST CONTROL SHALL BE HANDLED VIA WATER APPLICATION TO ROADWAYS AND OTHER AREAS WHERE DUST MAY BE GENERATED.

GENERAL GRADING AND SITE WORK NOTES

1. ALL AREA DISTURBED AND ALL AREAS WITHIN THE CLEARING LIMITS SHALL BE GRADED AND COVERED WITH A MINIMUM OF 4" OF LOAM TOPSOIL. THE AREAS TO BE LOAMED SHALL BE FREE AND CLEAR OF ROOTS, WASTE MATERIAL AND OTHER DELETERIOUS MATERIAL. TOPSOIL SHALL BE SPREAD AND LIGHTLY COMPACTED TO A DEPTH OF 6". TOPSOIL SHALL BE APPROVED BY THE ENGINEER. ALL SIDE SLOPES ARE TO BE LOAMED.
2. ALL TURF ESTABLISHMENT SHALL BE IN ACCORDANCE WITH SECTION 651 OF THE VT STANDARD SPECIFICATIONS 2018 AND THE MUNICIPALITY SPECIFICATIONS. MULCHING SHALL FOLLOW SEEDING BY NO MORE THAN 24 HOURS.
3. ALL CUT SLOPES SHALL BE NO STEEPER THAN 2.0H ON 1.0V. ALL FILL SLOPES SHALL BE NO STEEPER THAN 2.0H ON 1.0V.
4. THE CONTRACTOR SHALL NOT DISTURB ANY GROUND BETWEEN OCTOBER 15TH BETWEEN APRIL 15TH WINTER MONTHS, UNLESS APPROVED BY THE ENGINEER.
5. TEMPORARY SILT FENCE SHALL BE ERECTED PRIOR TO ANY CLEARING OR CONSTRUCTION. FENCING MAY BE ERECTED IN PHASES, BUT IN NO CASE SHALL GROUND DISTURBANCE PROCEED FENCING. SPECIAL AREAS MAY BE DESIGNATED BY THE OWNER FOR PRESERVATION OF EXISTING TREES. THESE AREAS SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE NO DAMAGE IS DONE TO DESIGNATED TREES.
6. EXISTING PLANTINGS ARE LOCATED IN GENERAL AREAS AS SHOWN ON THIS PLAN. CONTRACTOR SHALL PROTECT PLANTINGS SO AS NOT TO DAMAGE THESE OR THEIR ROOT SYSTEMS.
7. SLOPE STABILITY BASED UPON UNSATURATED SOIL CONDITIONS. IF DURING CONSTRUCTION SATURATED SOILS ARE ENCOUNTERED, CONTACT THE ENGINEER IMMEDIATELY.

ALL CONNECTIONS TO MUNICIPAL WATER UTILITIES INSTALLED ON THE PROJECT TO BE OBSERVED BY THE ENGINEER AND THE AUTHORIZED REPRESENTATIVE OF THE UTILITY; TOWN OF COLCHESTER AND COLCHESTER FIRE DISTRICT PRIOR TO BACKFILLING THE UTILITY BEING INSTALLED. THE ENGINEER SHALL BE NOTIFIED 48 HOURS BEFORE THE WORK IS PLANNED TO BEGIN. ALL DETAILS ARE SUBJECT TO THE MOST RECENT REVISIONS OF THE COLCHESTER PUBLIC WORKS SPECIFICATIONS AND DETAILS FOR THE INSTALLATION OF WATER LINES AND APPURTENANCES. PROJECT SHALL FOLLOW ALL DETAILS IN THIS PLAN SET, COLCHESTER DPW SPECIFICATIONS, AND THE COLCHESTER FIRE DISTRICT SPECIFICATIONS. THE MOST STRINGENT DETAILS WILL APPLY.

WATER & SEWER CONSTRUCTION NOTES

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CONSTRUCTION OF WATER MAIN, STORM AND SANITARY SEWER SYSTEMS AS SHOWN ON THE PLANS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL NECESSARY ADAPTERS, FITTINGS, ETC. TO MAKE CONNECTIONS TO THE EXISTING AND PROPOSED UNITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK SHOWN OR IMPLIED ON THE PLANS AND/OR REFERENCED IN THE SPECIFICATIONS AND PERMITS. THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL BY THE ENGINEER, ALL TYPES OF MATERIALS AND PRODUCTS USED.
2. THE CONTRACTOR SHALL COORDINATE ALL WORK ON THE WATER SUPPLY SYSTEM WITH THE OWNER, THE TOWN OF BOLTON, BOLTON PUBLIC WORKS, BOLTON VALLEY COMMUNITY WATER & SEWER (CWD), AND THE CIVIL ENGINEER. ALL WATER INSTALLATION WORK AND WATER DISTRIBUTION MATERIALS MUST COMPLY WITH THE CURRENT BOLTON PUBLIC WORK SPECIFICATIONS.
3. THESE PLANS ARE NOT RESPONSIBLE FOR DESIGN OF WATER AND SEWER SERVICES WITHIN 5 FEET OF THE BUILDING. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR EXTENDING THE SERVICES TO THE PLUMBING AND/OR FIRE SYSTEM CONNECTION WITHIN THE BUILDING. SEE PLUMBING ENGINEER, MECHANICAL ENGINEER AND/OR FIRE PROTECTION PLANS FOR SCOPE, DESIGN AND SPECIFICATIONS WITHIN 5 FT. OF THE BUILDING.
4. CONTRACTOR SHALL PROVIDE ALL NECESSARY FITTINGS AND APPURTENANCES TO COMPLETE THE WATERLINE CONSTRUCTION WORK. THIS INCLUDES TEMPORARY FITTINGS AND GAUGES NECESSARY TO SAFELY COMPLETE THE FLUSHING ACTIVITIES REQUIRED PRIOR TO MAKING CONNECTIONS WITH BUILDING PLUMBING.
5. THE PROJECT SHALL BE CONSTRUCTED, COMPLETED, MAINTAINED, AND OPERATED IN ACCORDANCE WITH THE APPROVED PLANS. NO CHANGES SHALL BE MADE IN THE PROJECT WITH OUT THE WRITTEN APPROVAL OF THE TOWN, CWD, AND THE CIVIL ENGINEER. A COPY OF THE FINAL APPROVED PLANS SHALL BE SUBMITTED TO CWD AND THE TOWN PRIOR TO CONSTRUCTION OF THE WATER SYSTEM IMPROVEMENTS.
6. THE TOWN AND CWD SHALL BE NOTIFIED IN ADVANCE TO INSPECT ALL MECHANICAL JOINTS FITTINGS, MAIN LINE TAPS, APPURTENANCES, THRUST BLOCKS, WATER LINE CROSSINGS, AND TESTING PRIOR TO OCCURRENCE OR BACKFILLING.
7. ALL DOMESTIC SERVICES AND FIRE SPRINKLER SYSTEMS THAT ARE CONNECTED TO THE PUBLIC WATER SYSTEM SHALL BE PROTECTED WITH A BACKFLOW PREVENTION ASSEMBLY, AND AN APPROPRIATE THERMAL EXPANSION SYSTEM. THE MECHANICAL CONTRACTOR SHALL COORDINATE APPROVED BACKFLOW PREVENTION WITH THE TOWN AND CWD.

WATER MAINS

1. APPLIES TO NEW DOMESTIC WATER MAINS AND SERVICES.
2. THE PIPE FOR WATER MAIN SHALL BE CL52 DUCTILE IRON, ALL D.I. PIPE SHALL BE POLYETHYLENE ENCASED. DUCTILE IRON FITTINGS SHALL CONFORM TO AWWA C110, 350 POUNDS WORKING PRESSURE. VALVES SHALL BE MANUFACTURED TO MEET ALL REQUIREMENTS OF AWWA SPECIFICATION C509 OR C515. FOUR-INCH AND SIX-INCH PIPE SHALL HAVE NO LESS THAN 2 BRASS WEDGES INSTALLED AT EACH JOINT. EIGHT-INCH AND 10" PIPE SHALL HAVE NO LESS THAN 3 WEDGES INSTALLED AT EACH JOINT.
3. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C600. THE PIPE SHALL BE KEPT FREE OF FOREIGN MATTER AND DEBRIS DURING INSTALLATION. WHEN THE PROCESS OF PIPE LAYING HAS STOPPED, ANY OPEN ENDS OF PIPE SHALL BE PLUGGED. THERE SHALL BE A MINIMUM OF 6'-0" COVER OVER ALL PIPE AND SERVICE LINES. ANY PIPE DEFLECTION SHALL NOT EXCEED FIFTY (50%) PERCENT OF RECOMMENDED MANUFACTURER'S MAXIMUM DEFLECTION. BACKFILL MATERIALS AND PROCEDURES SHALL BE AS DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL SHEETING AND/OR SHORING NECESSARY TO COMPLY WITH OSHA - VOSHA REGULATIONS.
4. THE TESTING OF THE WATER MAIN SHALL CONSIST OF THE TESTING OF ALL INSTALLED PIPE, SERVICES AND HYDRANTS IN ACCORDANCE WITH AWWA C600. THE TESTING SHALL CONSIST OF A PRESSURE TEST AND LEAKAGE TEST. ALL TESTING SHALL BE DONE WITH POTABLE WATER AND IN THE PRESENCE OF THE ENGINEER, REPRESENTATIVES FROM THE MUNICIPALITY AND THE MUNICIPALITY PUBLIC WORKS. THE PRESSURE TEST CONSISTS OF MAINTAINING A MINIMUM INTERNAL PIPE PRESSURE OF 200 PSI FOR TWO (2) HOURS. THE TESTING ALLOWANCE SHALL BE DEFINED AS THE MAXIMUM QUANTITY OF MAKEUP WATER THAT IS ADDED INTO A PIPELINE UNDERGOING HYDROSTATIC PRESSURE TESTING, OR ANY VALVED SECTION THEREOF, IN ORDER TO MAINTAIN PRESSURE WITHIN +/- 5 PSI OF THE SPECIFIED TEST PRESSURE (AFTER THE PIPELINE HAS BEEN FILLED WITH WATER AND THE AIR HAS BEEN EXPELLED). NO PIPE INSTALLATION WILL BE ACCEPTED IF THE QUANTITY OF MAKEUP WATER IS GREATER THAN THAT DETERMINED BY THE FOLLOWING FORMULA:

$$L = \frac{SD\sqrt{P}}{148,000}$$

L = TESTING ALLOWANCE (MAKEUP WATER), IN GALLONS PER HOUR
S = LENGTH OF PIPE TESTED, IN FEET
D = NOMINAL PIPE DIAMETER, IN INCHES
P = AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST, IN POUNDS PER SQUARE INCH (GAUGE)

5. CHLORINATING OF THE SYSTEM SHALL BE ACCOMPLISHED AFTER THE WATER MAIN HAS BEEN SUCCESSFULLY PRESSURE TESTED AND THOROUGHLY FLUSHED. DISINFECTING SHALL BE IN ACCORDANCE WITH AWWA C-651. THE DISINFECTING PROCESS SHALL BE DEEMED ACCEPTABLE ONLY AFTER TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES, TAKEN FROM THE FLUSHED AND DISINFECTED MAIN 24 HOURS APART, SHOWS NO EVIDENCE OF BACTERIOLOGICAL CONTAMINATION. FOR PROPER DISINFECTION USE MINIMUM 25 MG/L CHLORINE CONCENTRATION FOR 24 HOURS. THE CONCENTRATION MUST REMAIN ABOVE 10 MG/L. TABLET DISINFECTING IS NOT ACCEPTABLE. DECHLORINATION SHALL BE REQUIRED WHILE FLUSHING THE ORIGINAL CHLORINE FROM THE NEW LINE. COORDINATE WITH THE THE MUNICIPALITY AND THE MUNICIPALITY PUBLIC WORKS REGARDING THE THE DISPOSAL OF THE HIGHLY CHLORINATED WATER FLUSHED FROM THE NEW WATERLINE.
6. THE WATER MAIN SHALL BE THOROUGHLY FLUSHED WITH A MINIMUM FLOW VELOCITY OF 2.5 FT/S TO FLUSH FOREIGN MATERIALS OUT OF THE VALVES AND HYDRANTS. AT LEAST 48 HOURS PRIOR TO WATERLINE FLUSHING, THE CONTRACTOR SHALL CONTACT THE OWNER, MUNICIPALITY FIRE DEPARTMENT, THE DISTRICT WATER SUPPLY COMPANY, AND THE ENGINEER.

SANITARY SEWER

1. ALL SEWER LINES AND MANHOLES SHALL BE THOROUGHLY TESTED BY THE CONTRACTOR IN ACCORDANCE WITH THE ENVIRONMENTAL PROTECTION RULES (11/06/2023).
2. ALL SANITARY MANHOLES SHALL BE VACUUM TESTED IN THE PRESENCE OF THE ENGINEER. THE STRUCTURE SHALL BE TESTED PRIOR TO BACKFILL WITH THE LOWEST SEAM EXPOSED. TEST PROCEDURES AND PRESSURE SHALL BE DETERMINED JOINTLY BY THE LOCAL APPROVAL AGENCY AND THE ENGINEER. FAILURE OF ANY VACUUM TEST SHALL NECESSITATE REPAIR AND/OR REPLACEMENT OF THE STRUCTURE AND RETEST. WATER TESTING MANHOLES IS NOT ACCEPTABLE.
3. ALL SANITARY MAINS SHALL BE AIR TESTED IN THE PRESENCE OF THE ENGINEER. AT A MINIMUM, THE TEST PRESSURE SHALL BE 4 POUNDS PER SQUARE INCH AT THE HIGHEST POINT ALONG THE TEST FOR 4 MINUTES.
4. UTILITY TESTING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING SANITARY TESTING AT A MINIMUM OF 24 HOURS PRIOR TO THE TEST. BASED ON AVAILABILITY OF ENGINEER'S STAFF, THE ENGINEER SHALL ACCOMMODATE THE TESTING SCHEDULE WITHIN 24 HOURS OF THE CONTRACTOR REQUESTED TEST DATE/TIME.
5. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER IF PRE-SCHEDULED TESTING AND/OR WATER/SEWER CONSTRUCTION IS CANCELED. IF CONTRACTOR DOES NOT CONTACT ENGINEER AND ENGINEER VISITS THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENGINEER'S FEES/MILEAGE FOR SITE VISIT.

ADDITIONAL NOTES AND TESTING REQUIREMENTS

1. IN ADDITION TO THE ABOVE REQUIREMENTS AND APPLIES TO WATER AND SANITARY SEWER.
2. ALL WATER LINES AND SEWER LINES SHALL BE THOROUGHLY TESTED BY THE CONTRACTOR IN ACCORDANCE WITH THE ENVIRONMENTAL PROTECTION RULES (11/06/2023) AND THE CHAPTER 21 WATER SUPPLY RULES (03/17/2020) (THE MORE STRINGENT RULE SHALL APPLY).
3. ALL PRIVATE OR MUNICIPAL WATERLINES SHALL BE TESTED BY THE CONTRACTOR IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN AWWA C600 AND/OR NFPA 24.
4. NO WATER MAIN SHALL BE CLOSER THAN TEN (10) FEET TO ANY SANITARY SEWER OR SANITARY MANHOLE AND FIVE (5) FEET TO ANY CATCH BASIN OR STORM SEWER LINE. PROVIDE MINIMUM OF 18" VERTICAL SEPARATION BETWEEN WATER MAIN AND STORM/SANITARY SEWER CROSSING.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AS-BUILTS TO SERVICE LOCATIONS, AND ANY WATER MAIN FITTINGS. AS-BUILTS SHALL BE RECORDED IN ACCORDANCE WITH THE OUTLINED PROCEDURES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ENGINEER AT LEAST 24 HOURS PRIOR TO STARTING CONSTRUCTION ON ANY PORTION OF THE EXTERIOR WATER OR SANITARY SYSTEMS. THIS NOTIFICATION REQUIREMENT SHALL CONTINUE TO THE COMPLETION OF THE WATER AND SANITARY SYSTEMS.
7. UTILITY TESTING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING WATER AND SANITARY TESTING, WITH THE ENGINEER AND MUNICIPALITY PUBLIC WORKS, AT A MINIMUM OF 24 HOURS PRIOR TO THE TEST. BASED ON AVAILABILITY OF ENGINEER'S STAFF, THE ENGINEER SHALL ACCOMMODATE THE TESTING SCHEDULE WITHIN 24 HOURS OF THE CONTRACTOR REQUESTED TEST DATE/TIME.
8. THE CONTRACTOR SHALL PRE-TEST WATER FOR 2 HOURS. THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF PRE-TEST FAILED.
9. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER IF PRE-SCHEDULED TESTING AND/OR WATER/SEWER CONSTRUCTION IS CANCELED. IF CONTRACTOR DOES NOT CONTACT ENGINEER AND ENGINEER VISITS THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENGINEER'S FEES/MILEAGE FOR SITE VISIT.
10. THE CONTRACTOR SHALL COORDINATE WATER/SEWER CONSTRUCTION WITH THE MUNICIPALITY. THE CONTRACTOR SHALL LEAVE THRUST BLOCKS AND OTHER REQUIRED SECTIONS OF NEW LINE EXPOSED UNTIL MUNICIPALITY HAS INSPECTED AND APPROVED IT.

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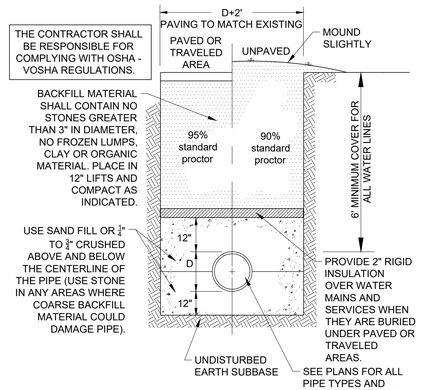

WATER TRENCH DETAIL

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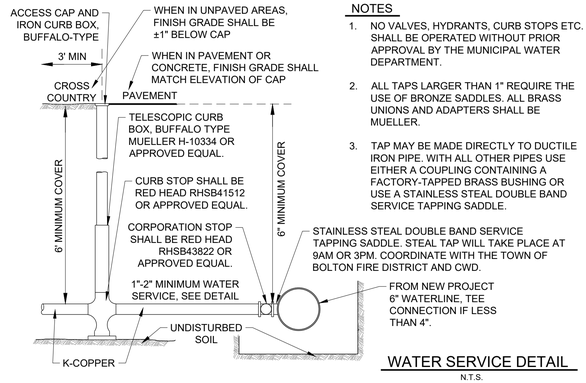
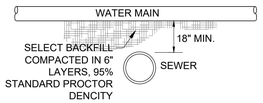


NOTES

1. NO VALVES, HYDRANTS, CURB STOPS ETC. SHALL BE OPERATED WITHOUT PRIOR APPROVAL BY THE MUNICIPAL WATER DEPARTMENT.
2. ALL TAPS LARGER THAN 1" REQUIRE THE USE OF BRONZE SADDLES. ALL BRASS UNIONS AND ADAPTERS SHALL BE MUELLER.
3. TAP MAY BE MADE DIRECTLY TO DUCTILE IRON PIPE. WITH ALL OTHER PIPES USE EITHER A COUPLING CONTAINING A FACTORY-TAPPED BRASS BUSHING OR USE A STAINLESS STEAL DOUBLE BAND SERVICE TAPPING SADDLE.

WATER SERVICE DETAIL

N.T.S.



NOTES

1. THE LOCATION OF SEWER MAINS IN RELATION TO WATER MAINS SHALL BE IN ACCORDANCE WITH THE "RECOMMENDED STANDARDS FOR SEWAGE WORKS" SO-CALLED TEN STATE STANDARDS AND WATER SUPPLY RULES.
2. SEWERS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IF THIS DISTANCE CANNOT BE OBTAINED, THEN THE PIPES SHALL BE INSTALLED ACCORDING TO EPR, CHAPTER 1, APPENDIX 1A, 11A.
3. 18" SEPARATION SHALL BE MAINTAINED WHETHER WATER IS OVER OR UNDER SEWER. IF THIS DISTANCE CANNOT BE OBTAINED, THEN THE PIPES SHALL BE INSTALLED ACCORDING TO EPR CHAPTER 1, 11B.

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 POSSIBLE TO MAINTAIN THE 18" 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 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 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.

WATER AND SEWER CROSSINGS DETAIL

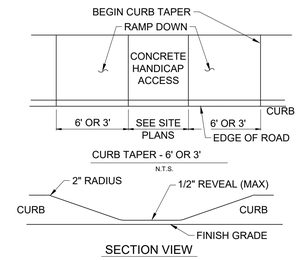
N.T.S.

FIRE SERVICE MAIN

UNDERGROUND PIPING, FROM THE WATER SUPPLY TO THE SYSTEM RISER, AND LEAD-IN CONNECTIONS TO THE SYSTEM RISER SHALL BE COMPLETELY FLUSHED BEFORE THE CONNECTION IS MADE TO DOWNSTREAM FIRE PROTECTION SYSTEM PIPING. ACCEPTABLE WATER MAIN FLUSHING REQUIREMENTS ARE PROVIDED BELOW. PRIOR TO FLUSHING, THE CONTRACTOR SHALL CONTACT THE OWNER, MUNICIPAL FIRE DEPARTMENT, THE DISTRICT WATER SUPPLY COMPANY, AND THE ENGINEER. THE FLUSHING OPERATION SHALL BE CONTINUED FOR A SUFFICIENT TIME TO ENSURE THOROUGH CLEANING. THE MINIMUM RATE OF FLOW SHALL BE NOT LESS THAN ONE OF THE FOLLOWING:

1. HYDRAULICALLY CALCULATED WATER DEMAND FLOW RATE OF THE SYSTEM, INCLUDING ANY HOSE REQUIREMENTS. (PROVIDED BY THE MECHANICAL/SPRINKLER CONSULTANT)
2. FLOW NECESSARY TO PROVIDE A VELOCITY OF 10 FT/SEC (3.1 M/SEC) IN ACCORDANCE WITH THE TABLE.
3. MAXIMUM FLOW RATE AVAILABLE TO THE SYSTEM UNDER FIRE CONDITIONS. FLOW REQUIRED TO PRODUCE A VELOCITY OF 10 FT/SEC (3 M/S) IN PIPES

Pipe Size		Flow Rate	
in.	mm	gpm	L/min
4	102	390	1,476
6	152	880	3,331
8	203	1,560	5,905
10	254	2,440	9,235
12	305	3,520	13,323



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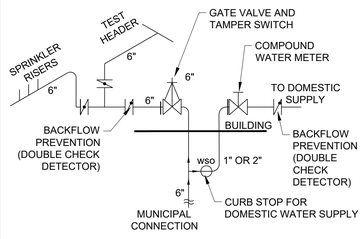
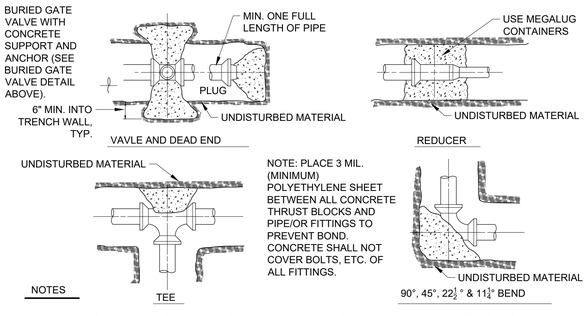


SEE MECHANICAL DRAWINGS FOR COMPLETE DESIGN AND DETAILS OF SPRINKLER SYSTEM, DOMESTIC WATER MUST BE ISOLATED FROM SPRINKLER SYSTEM WITH WATTS SERIES 709DCDA (DOUBLE CHECK DETECTOR ASSEMBLY) OR APPROVED EQUAL.

BACKFLOW PREVENTER SCHEMATIC

N.T.S.

ALL CONNECTIONS TO MUNICIPAL WATER UTILITIES INSTALLED ON THE PROJECT TO BE OBSERVED BY THE ENGINEER AND THE AUTHORIZED REPRESENTATIVE OF THE UTILITY; TOWN OF COLCHESTER AND COLCHESTER FIRE DISTRICT PRIOR TO BACKFILLING THE UTILITY BEING INSTALLED. THE ENGINEER SHALL BE NOTIFIED 48 HOURS BEFORE THE WORK IS PLANNED TO BEGIN. ALL DETAILS ARE SUBJECT TO THE MOST RECENT REVISIONS OF THE COLCHESTER PUBLIC WORKS SPECIFICATIONS AND DETAILS FOR THE INSTALLATION OF WATER LINES AND APPURTENANCES. PROJECT SHALL FOLLOW ALL DETAILS IN THIS PLAN SET, COLCHESTER DPW SPECIFICATIONS, AND THE COLCHESTER FIRE DISTRICT SPECIFICATIONS. THE MOST STRINGENT DETAILS WILL APPLY.



NOTES

1. A THRUST BLOCK SHALL BE INSTALLED AT ALL WATER MAIN BENDS, REDUCERS, END CAPS AND TEES.
2. PRECAST THRUST BLOCKS ARE NOT ACCEPTABLE.
3. POURED CONCRETE (2,500 PSI MIN) MUST BE USED FOR THRUST BLOCKS. SACRETE IS NOT ACCEPTABLE.
4. USE EBAA MEGA-LUG, SIGMA, OR EQUAL, WEDGE-ACTION MECHANICAL JOINT RESTRAINTS WITH TWIST OFF NUTS AT ALL FITTINGS.

MINIMUM AREA OF BEARING SURFACE OF CONCRETE THRUST BLOCK (IN SQUARE FEET)

3"				4"				6"				8"				12"					
ENDS & TEES	VALV 90° ELB.	REDU 45° ELB.	22.5° ELB.	ENDS & TEES	VALV 90° ELB.	REDU 45° ELB.	22.5° ELB.	ENDS & TEES	VALV 90° ELB.	REDU 45° ELB.	22.5° ELB.	ENDS & TEES	VALV 90° ELB.	REDU 45° ELB.	22.5° ELB.	ENDS & TEES	VALV 90° ELB.	REDU 45° ELB.	22.5° ELB.	SOIL CONDITION	SAFE BEARING LOAD(PSF)
0.5	0.5	0.5	0.5	0.5	1.0	0.5	0.5	1.0	1.5	1.0	0.5	2.0	2.5	1.5	1.0	4.0	5.5	3.0	1.5	Sound shale	10,000
1.0	1.0	1.0	0.5	1.5	2.0	1.0	0.5	3.0	4.0	2.0	1.0	4.5	6.5	3.5	2.0	10.0	14.0	7.5	4.0	Cemented gravel & sand	4,000
1.0	1.0	1.0	0.5	2.0	0.5	1.5	1.0	3.5	5.0	3.0	1.5	6.0	8.5	5.0	2.5	13.0	18.5	10.0	5.0	Coarse & fine compact sand	3,000
1.5	2.5	1.5	1.0	2.5	3.5	2.0	1.0	5.5	7.5	4.0	2.0	9.0	13.0	7.0	3.5	20.0	27.5	15.0	8.0	Medium clay (can be spaded)	2,000
3.0	4.5	2.5	1.5	5.0	7.0	4.0	2.0	10.5	15.0	8.0	4.0	18.0	25.0	14.0	7.0	39.0	55.0	30.0	15.0	Soft clay	1,000
MAXIMUM WATER PRESSURE = 200 PSI (140,620 KG/M^2)																					

THRUST BLOCK DETAIL

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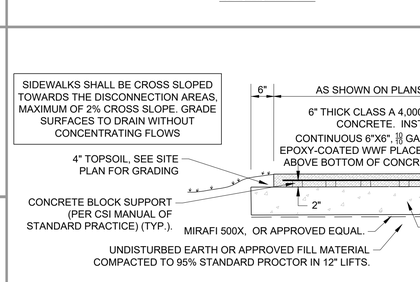


NEW MULTI-USE CONCRETE SIDEWALK DETAIL

N.T.S.

NOTES FOR CONCRETE

1. BROOM FINISH CONCRETE. CONSTRUCTION JOINTS SHALL BE SPACED MAXIMUM 24' IN ALL DIRECTIONS. SAWCUT CONTROL JOINTS 1½" DEPTH AT INTERVALS EQUAL TO WIDTH OF SIDEWALK.
2. APPLY SPECCHEM CURE SHIELD, CURE & SEAL AGENT TO ALL CONCRETE SURFACES IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
3. CONCRETE CONSTRUCTION AND CURING SHALL CONFORM TO SECTION 618.03 OF THE CURRENT VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
4. CONCRETE MAY NOT BE POURED IF FROST IS PRESENT OR THAWING IN THE SUBGRADE, IF THE TEMPERATURE IS 40° F OR LESS, OR DURING UNSEASONABLE WEATHER CONDITIONS.
5. ALL CONCRETE USED IN THE CONSTRUCTION OF MULTI-USE CONCRETE SHALL BE MADE WITH PORTLAND CEMENT. THE CONCRETE SHALL MEET SECTION 541 OF THE STATE OF VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION, HAVE 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI, AND MEET THE FOLLOWING MIX DESIGN.

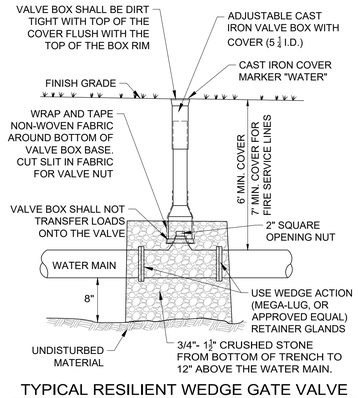
MAX. WATER-CEMENT RATIO (LB./LB.)	0.44
MIN. CEMENT FACTOR (LBS/C.Y.)	660
ENTRAINED AIR CONTENT (%)	5 - 7
SLUMP (INCHES, BEFORE ADDING HRWR)	2 - 4

USE AIR ENTRAINED AGENT CONFORMING TO ASTM C260 WITH 5-7% TOTAL AIR. USE HIGH RANGE WATER REDUCING AGENT CONFORMING TO ASTM C494 IN ALL CONCRETE.

6. CONTRACTOR SHALL POUR AND FINISH ONE SAMPLE PANEL FOR APPROVAL BY OWNER AND ENGINEER. ALL CONCRETE SHALL MATCH THE QUALITY AND APPEARANCE OF THE SAMPLE PANEL. ANY CONCRETE THAT DOES NOT MEET THE STANDARD SHALL BE REMOVED AND REPLACED AT NO COST TO THE OWNER.
7. CONCRETE SHALL BE INSTALLED IN ALTERNATING POURS AT CONSTRUCTION JOINTS. REFER TO CONCRETE CONSTRUCTION JOINT/CONTROL JOINT DETAIL
8. OWNER AND/OR CONTRACTOR IS NOT ALLOWED TO PLACE DEICING MATERIAL ON NEWLY POURED CONCRETE SIDEWALK FOR A PERIOD OF 6 MONTHS.

NOTES

1. VALVES SHALL BE MANUFACTURED TO MEET ALL REQUIREMENTS OF AWWA C509 OR C515 LATEST EDITION. VALVES TWELVE INCHES (12") AND SMALLER SHALL BE BUBBLE TIGHT, ZERO LEAKAGE AT 200 PSI WORKING PRESSURE. VALVES SHALL HAVE NON-RISING STEMS, OPEN COUNTER CLOCKWISE (LEFT) AND PROVIDE A TWO INCH (2") SQUARE OPERATING NUT WITH AN ARROW CAST IN THE METAL INDICATING DIRECTION OF OPENING. EACH VALVE SHALL HAVE THE MAKER'S NAME, PRESSURE RATING AND YEAR IN WHICH IT WAS MANUFACTURED CAST ON THE BODY. VALVES SHALL BE MECHANICAL JOINT ON EACH END, AND SECURED TO THE ADJOINING PIPE WITH AN APPROVED RETAINER GLAND. PRIOR TO SHIPMENT FROM THE FACTORY EACH VALVE SHALL BE TESTED BY HYDROSTATIC PRESSURE EQUAL TO TWICE THE SPECIFIED WORKING PRESSURE.
2. GATE VALVES SHALL BE MUELLER, KENNEDY, AFC, M&H OR APPROVED EQUAL ON WATER DISTRIBUTION MAINS AND MUELLER, AFC, OR APPROVED EQUAL ON CWD TRANSMISSION MAINS.
3. GATE VALVES USED TO CONVEY OR DISPENSE WATER FOR HUMAN CONSUMPTION SHALL COMPLY WITH THE VERMONT LAW (ACT 193) AN ACT RELATING TO PREVENTION OF LEAD POISONING BY EXPOSURE TO LEAD IN CONSUMER PRODUCTS, AND SHALL CONTAIN NO MORE THAN 0.25% LEAD BY WEIGHTED AVERAGE. FIXTURES CONTAINING BRASS MUST COMPLY WITH NSF/ANSI 61 ANNEX G.
4. BURIED GATE VALVES SHALL BE PROVIDED WITH A TWO INCH (2") SQUARE WRENCH NUT AND SHALL BE INSTALLED WITH A CAST IRON VALVE BOX AS REQUIRED TO ALLOW ACCESS TO THE VALVE OPERATING NUT AT ALL TIMES. IN INSTALLATIONS WHERE THE DEPTH FROM GRADE TO TOP OF VALVE OPERATING NUT IS GREATER THAN FIVE FEET (5'), A VALVE STEM RISER SHALL BE PROVIDED AND INSTALLED SUCH THAT THE DEPTH FROM THE VALVE STEM RISER NUT TO GRADE IS FROM FOUR FEET TO FIVE FEET (4'-5'). VALVE STEM RISERS SHALL BE OF HIGH STRENGTH STAINLESS STEEL AND OF WELDED CONSTRUCTION (SEE VALVE STEM EXTENSION DETAIL IN CWD STANDARD SPECIFICATIONS).
5. ALL GATE VALVE BOLTS, STUDS AND NUTS SHALL BE MADE FROM CORROSION RESISTANT STAINLESS STEEL.
6. TAPPING VALVE INLET AND OUTLET CONNECTION SHALL BE STANDARDIZED MECHANICAL JOINT UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS FOR THE TYPE OF PIPE REQUIRED FOR THE BRANCH OR LATERAL PIPELINE.
7. VALVE BOXES LOCATED IN ROADWAYS SHALL HAVE ONE NON-ADJUSTABLE PAVING RISER OF A HEIGHT RANGING FROM ONE AND A HALF INCHES (1.5") TO SIX INCHES (6") AS NEEDED, TO BE BROUGHT TO FINAL PAVEMENT GRADES



TYPICAL RESILIENT WEDGE GATE VALVE

N.T.S.

HAZELETT STRIP-CASTING CORPORATION

COLCHESTER, VT

KREBS & LANSING CONSULTING ENGINEERS

164 Main Street, Suite 201
Colchester, Vermont 05446

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STAMP:

Project:

THE 'H' AT MALLETTS BAY

180 & 166 W. Lakeshore Drive
Colchester, Vermont

Project No.	23314
Scale	N.T.S.
Drawn by	SWH
Checked by	
Date	03/03/25

Revisions

No.	Date	Description

Drawing Title

CIVIL DETAILS

Drawing No.

CD-2

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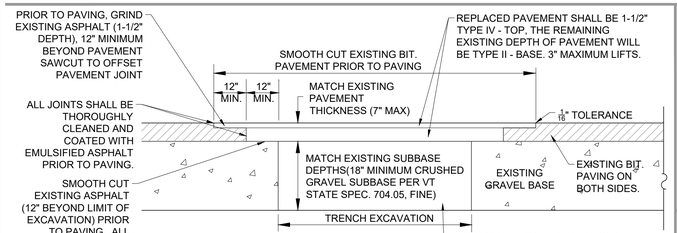
ROAD CONSTRUCTION NOTES

1. ALL REFERENCES TO ROAD SHALL APPLY TO PARKING AREAS AS WELL.
2. NEW ROAD SHALL BE CONSTRUCTED TO THE LINE AND GRADE SHOWN ON THE DRAWINGS. THE ROAD AND UTILITY LOCATIONS SHALL BE AS TYPICALLY DETAILED UNLESS OTHERWISE SHOWN.
3. ALL ROAD AND PARKING CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE VERMONT AGENCY OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" 2018, HEREAFTER CALLED VERMONT HIGHWAY SPECIFICATIONS, SPECIFICATIONS FOUND ON THESE PLANS, AND CITY/TOWN SPECIFICATIONS. IN CASE OF CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY AS DETERMINED BY THE ENGINEER. ALL GRAVEL AND STORM SEWER STRUCTURES SHALL BE APPROVED BY TOWN ENGINEER.
4. THE CONTRACTOR SHALL FOLLOW VERMONT HIGHWAY SPECIFICATIONS (2018) SECTION 203.11 FOR PLACING AND SPREADING EMBANKMENTS.
5. FILL MATERIAL FOR ROAD EMBANKMENT SHALL BE APPROVED BY THE ENGINEER. FILL SHALL BE PLACED IN 12" LIFTS, WETTED AND COMPACTED WITH SATISFACTORY COMPACTION EQUIPMENT TO 95% OF MAXIMUM DENSITY (STANDARD PROCTOR).
6. ROAD IN FILL SECTIONS SHALL BE PLACED AND COMPACTED A MINIMUM OF 3 FEET ABOVE TOP OF ANY UTILITY TO BE INSTALLED BEFORE TRENCH IS EXCAVATED FOR PIPE PLACEMENT. IN TRENCHES AND CUT SECTIONS, THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SHEETING, SHORING AND BRACING TO MAINTAIN COMPLIANCE WITH ALL OSHA/VOSHA REGULATIONS.
7. METHODS FOR CONSTRUCTION OF SUBGRADE SHALL CONFORM TO VERMONT HIGHWAY SPECIFICATIONS (2018) 203.12 OR AS DETERMINED BY THE ENGINEER.
8. ANY SUBGRADE OR SUBBASE DISTURBED BY CONTRACTOR, OR RENDERED UNSUITABLE BY CONSTRUCTION MACHINERY, SHALL BE REMOVED AND REPLACED WITH APPROVED GRANULAR BACKFILL AT THE CONTRACTOR'S EXPENSE. THE SUBGRADE SHALL BE COMPACTED TO ATTAIN AT LEAST 95% OF THE MAXIMUM DENSITY (STANDARD PROCTOR) BEFORE PLACING ROAD OR EMBANKMENT MATERIALS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF COMPACTION IN THE ROAD AND UTILITY TRENCHES.
10. SAND FILL SHALL CONFORM TO VERMONT HIGHWAY SPECIFICATIONS (2018) 703.03, TABLE 703.03A. GRANULAR BORROW SHALL CONFORM TO THE VERMONT HIGHWAY SPECIFICATIONS 703.04 GRANULAR BORROW, TABLE 703.04A.
11. GRAVEL SUBBASE FOR PAVEMENT SHALL CONFORM TO VERMONT HIGHWAY SPECIFICATIONS (2018) 704.05, TABLE 704.05A, COARSE.
12. LEVELING COURSE SHALL CONFORM TO VERMONT HIGHWAY SPECIFICATIONS (2018) 704.05, TABLE 704.05A, FINE. SHOULDERS SHALL CONFORM TO SECTION 704.12, AGGREGATE FOR SHOULDERS.
13. BITUMINOUS CONCRETE PAVEMENT SHALL CONFORM TO VERMONT HIGHWAY SPECIFICATIONS (2018) SECTION 404 AND 406. BINDER COURSE SHALL BE TYPE II, AND FINISH WEARING COURSE SHALL BE TYPE III OR IV. BASE COURSE PAVING TO BE PLACED FIRST YEAR, SURFACE COURSE TO BE PLACED THE SECOND OR THIRD YEAR, DETERMINED BY THE ENGINEER.
14. EMBANKMENT FILL FOR ROAD AND PARKING SHALL BE A SIEVE SPECIFICATION AS FOLLOWS:

SIEVE	% FINER
4"	100
2"	85-100
#4	60-100
#200	12 MAXIMUM

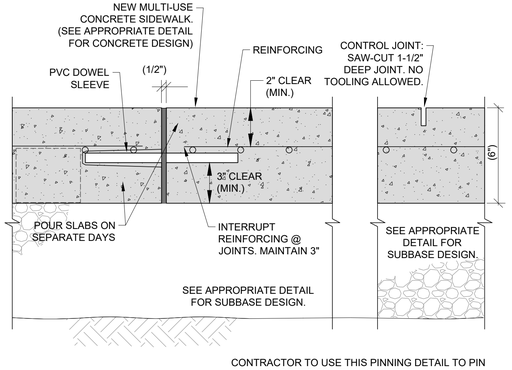
15. IF PROOF ROLL FAILS, CONTRACTOR SHALL REMOVE THE SITE SOIL AND REPLACE IT WITH SAND WITH THE ABOVE SPEC. UNTIL A PROOF ROLE CAN BE PLACED WITHOUT FAILING. ENGINEER WILL JUDGE PASS/FAILURE OF PROOF ROLE, THIS WILL BE PERFORMED WITHOUT FURTHER COSTS TO THE OWNER.



REPLACEMENT OF EXISTING ROAD SUBBASE AND BITUMINOUS PAVEMENT

NOTES

1. SET UP AND MAINTAIN SIGNS AND OTHER SAFETY CONTROL DEVICES.
2. RESHAPE HOLE PATCH AREA BY CUTTING WITH A CONCRETE SAW INTO SQUARE OR RECTANGULAR SHAPE AND CUT SIDE FACED VERTICALLY. RESHAPE DOWNWARD SOLID MATERIAL AND AROUND HOLE TO SOUND PAVEMENT.
3. BACKFILL TRENCH IN 6" LIFTS AND COMPACT EACH TO 95% OF MAXIMUM DENSITY OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 STANDARD PROCTOR.
4. REMOVE ALL LOOSE MATERIAL AND THOROUGHLY SWEEP THE HOLE AREA, CLEAN ANY MUD AND STANDING WATER.
5. APPLY LIQUID ASPHALT TRACK TO VERTICAL FACES IN UNIFORM MANNER. DO NOT PUDDLE TRACK COAT ON BOTTOM HOLE.
6. FILL TOP OF HOLE WITH TYPE IV BITUMINOUS CONCRETE AND COMPACT IN LIFTS NO MORE THAN 2' THICK. EACH LIFT SHOULD BE THOROUGHLY COMPACTED WITH A VIBRATORY PLAT COMPACTOR OR A PORTABLE ROLLER. EXPERIENCE HAS SHOWN THAT 15 TO 20 PASSES WITH THE VIBRATORY ROLLER AND MIX TEMPERATURE ABOVE 250°F (121°C) ARE NECESSARY TO ENSURE GOOD COMPACTION. HAND TAMP SHOULD ONLY BE USED FOR SMALL AREAS LESS THAN 1 S.F.
7. CLEAN UP AREA. DO NOT LEAVE EXCESS FILL OR EXCAVATED MATERIAL ON THE PAVEMENT. REMOVE SAFETY SIGNS.

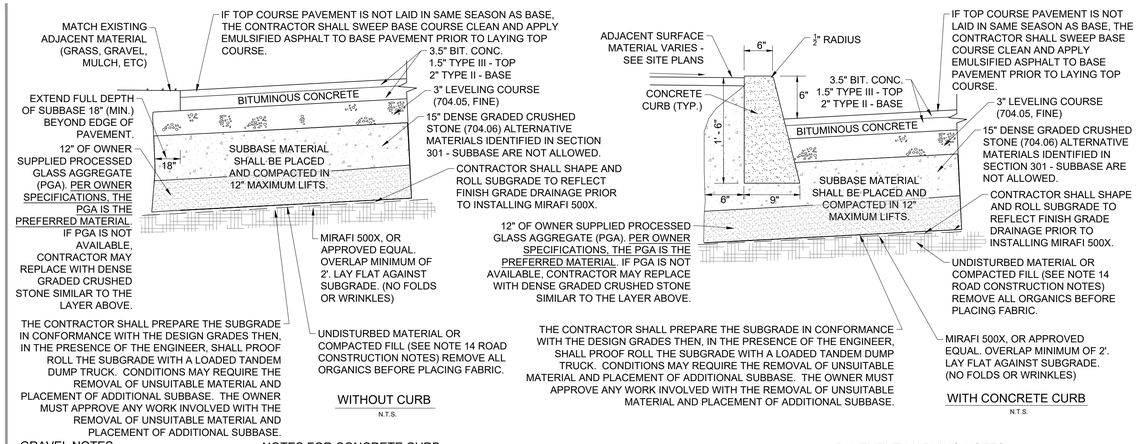


CONTRACTOR TO USE THIS PINNING DETAIL TO PIN NEW CONCRETE TO NEW CONCRETE (WALK TO WALK, WALK TO RETAINING WALLS, STAIRS, ETC).

NEW CONCRETE CONSTRUCTION JOINT/CONTROL JOINT DETAIL

N.T.S.

WHEN IN THE TOWN RIGHT OF WAY (R.O.W.), CONTRACTOR SHALL BE NOTIFY THE TOWN 48 HOURS BEFORE THE WORK IS PLANNED TO BEGIN. ALL DETAILS ARE SUBJECT TO THE MOST RECENT REVISION OF THE TOWN OF COLCHESTER DPW STANDARDS AND SPECIFICATIONS. THE MOST STRINGENT DETAILS WILL APPLY.



GRAVEL NOTES

1. THE CONTRACTOR TO TAKE SIEVE ANALYSIS OF GRAVEL AS SOON IT ARRIVES ON SITE.
2. TRAVEL OVER GRAVEL WITH ANY VEHICLE TRACKING SOIL PRIOR TO PLACEMENT OF PAVEMENT IS PROHIBITED.
3. IF GRAVEL IS CONTAMINATED AFTER PLACEMENT, THE SITE CONTRACTOR SHALL BE RESPONSIBLE REMOVAL OF ALL CONTAMINATED GRAVEL AND PAYING FOR ALL RECOMMENDED SIEVE ANALYSIS AS DETERMINED BY THE ENGINEER.

NOTES FOR CONCRETE CURB

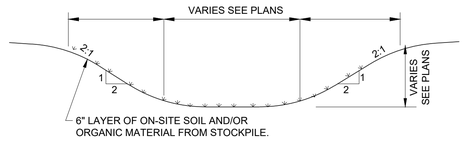
1. BROOM FINISH CONCRETE, ALL JOINTS TO BE TOOL FINISHED, EXPANSION/CONTRACTION JOINTS EVERY 20' WITH 1/2" JOINT FILLER, SCORE 1/3 TOTAL DEPTH AT 10' INTERVALS
2. APPLY 2 COATS OF SPECCHEM CURESHIELD CURE/SEAL COMPOUND TO ALL CONCRETE SURFACES, PER THE MANUFACTURER'S SPECIFICATIONS.
3. CONCRETE MAY NOT BE POURED IF FROST IS PRESENT OR THAWING IN THE SUBGRADE, IF THE TEMPERATURE IS 40° F OR LESS, OR DURING UNSEASONABLE WEATHER CONDITIONS.
4. CONCRETE CURB RADII LESS THAN 200 FT SHALL BE FORMED WITH FLEXIBLE FORMS. ALL CONCRETE USED IN THE CONSTRUCTION OF CONCRETE CURB SHALL BE AIR ENTRAINED AND MADE WITH PORTLAND CEMENT. THE CONCRETE SHALL MEET SECTION 541 OF THE STATE OF VERMONT STANDARD SPECIFICATION FOR CLASS A CONCRETE AND HAVE 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
5. JOINT FILLER SHALL BE RESILIENT NON-EXTRUDING CELLULAR FIBER JOINT, UNIFORMLY SATURATED WITH ASPHALT, OFFERING A MINIMUM OF 70% RECOVERY AFTER COMPRESSION.
6. THE ENGINEER SHALL BE CONTACTED AT LEAST 24 HOURS PRIOR TO FORMING CONCRETE CURB TO REVIEW LAYOUT.

PAVEMENT MARKING NOTES

1. TYPICAL TOWN OF BOLTON PARKING SPACE IS 9'-0" CENTER OF LINE TO CENTER OF LINE MARKED WITH 4" WIDE YELLOW OR WHITE PAINT.
2. ADA SPACE IS YELLOW/WHITE STENCIL, YELLOW/WHITE TRIM. COORDINATE EXACT REQUIREMENTS WITH TOWN OF BOLTON.
3. PAINT FOR PAVEMENT MARKINGS SHALL BE HYDROPHAST WATERBORNE TRAFFIC PAINT BY FRANKLIN PAINT COMPANY. IT SHALL BE REFLECTIVE, VOC COMPLIANT FAST DRYING, 100% ACRYLIC WATERBORNE TRAFFIC PAINT. PAINT FOR STOP BARS AND CROSSWALKS SHALL BE WHITE ALL OTHER LINE STRIPING SHALL BE YELLOW. CONFIRM PAINT COLOR WITH TOWN OF BOLTON AND OWNER.
4. TRAFFIC PAINT SHALL BE APPLIED WITH A UNIFORM THICKNESS AND AT A RATE SUCH THAT NO PAVEMENT IS VISIBLE AFTER DRYING. ADDITIONAL PAINT APPLICATION WILL BE REQUIRED IF UNDERLYING PAVEMENT IS VISIBLE.

TYPICAL ROAD CROSS SECTION DETAILS - WITH CONCRETE CURBS AND WITHOUT CURBS

N.T.S.

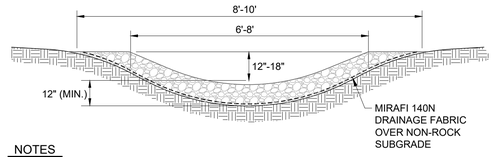


NOTES

1. TYPICAL GRASS SWALE CROSS SECTION. SEE PLAN VIEW FOR LOCATIONS.
2. SWALE TO HAVE 2' WIDE FLAT BOTTOM OR WIDER. TYPICAL SIDE SLOPES TO BE 2:1.
3. APPLY SEED AND MULCH. APPLY UNIFORMLY OVER AREA.
4. CROSS-SECTION SHALL BE EXCAVATED TO NEAT LINES AND GRADES. OVER-EXCAVATED AREAS SHALL BE BACKFILLED WITH MOIST SOIL COMPACTED TO DENSITY OF SURROUNDING MATERIAL.
5. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF IN APPROVED UPLAND AREA (PER OSPC) SUCH THAT IT DOES NOT INTERFERE WITH FUNCTIONING OF SWALE. ALL EXCAVATED SOIL SHALL REMAIN ON SITE.

GRASS SWALE CROSS SECTION

N.T.S.



NOTES

1. STONE-LINED SWALES TO BE USED ON SLOPES ≥5%. DESIGNED FOR VELOCITIES LESS THAN 10 FEET PER SECOND.
2. USE RIP RAP STONE. PROVIDE QUARRY GRADATION TO ENGINEER FOR APPROVAL.
3. SIDE SLOPES NOT TO EXCEED 2:1.
4. STONE LINING THICKNESS SHALL BE 1.5 X MAX. STONE SIZE PLUS THE THICKNESS OF FILTER OR BEDDING.
5. ALL DISTURBED AREAS SHALL BE STABILIZED AND OTHERWISE PROTECTED AGAINST SOIL EROSION.

STONE SWALE CROSS SECTION

N.T.S.

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SANITARY MAINS NOTES

1. THE PIPE AND FITTINGS FOR SANITARY SEWER SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATION D3034 FOR 4" - 15" SDR 35 AND F679 FOR 18" - 27". ALL PIPE SHALL BE LAID TO THE LINE AND GRADE SHOWN ON THE PLANS.

2. THE PIPE FOR GRAVITY SANITARY SEWER SHALL BE AS SHOWN ON THE PLANS AND DETAILED BELOW:
   - ALL PIPE SHALL BE LAID TO THE LINE AND GRADE AS SHOWN ON THE PLANS.
   - PVC SDR 35 - POLYVINYL CHLORIDE PIPE - PIPE SHALL CONFORM TO ASTM SPECIFICATION D-3034 OR F679, (PVC) SEWER PIPE AND FITTINGS, SDR35.
   - PIPE WITH RECYCLED CONTENT IS NOT ACCEPTABLE.

3. PVC SDR 35 SANITARY AND STORM PIPES SHALL BE INSTALLED SO THAT THE INITIAL DEFLECTION SHALL BE LESS THAN 5%.

4. PVC SDR 35 PIPE SHALL NOT BE INSTALLED WHEN THE TEMPERATURE DROPS BELOW 32° F OR GOES ABOVE 100° F UNLESS PRIOR APPROVAL IS OBTAINED FROM THE ENGINEER. EXTRA CARE IS REQUIRED WHEN HANDLING PVC PIPE DURING COLD WEATHER. PVC PIPE SHALL NOT BE STORED OUTSIDE AND EXPOSED TO PROLONGED PERIODS OF SUNLIGHT AS PIPE DISCOLORATION AND REDUCTION IN PIPE IMPACT STRENGTH WILL OCCUR. IF PVC PIPE IS TO BE STORED ON SITE FOR 1 MONTH OR LONGER IT SHALL BE COVERED WITH CANVAS OR OTHER OPAQUE MATERIAL.

5. THE INSTALLED GRAVITY SANITARY SEWER PIPE SHALL BE LOW PRESSURE AIR TESTED IN THE PRESENCE OF THE ENGINEER. AFTER CLEANING THE PIPE, THE PIPE SECTION (MANHOLE TO MANHOLE) SHALL BE TESTED ACCORDING TO THE PROCEDURES OUTLINED IN THE STATE OF VERMONT WASTEWATER SYSTEM AND POTABLE WATER SUPPLY RULES, EFFECTIVE APRIL 12, 2019.

FORCE MAIN PRESSURE & LEAKAGE TEST

UPON COMPLETION OF CONSTRUCTION OF A FORCE MAIN, THE LINE SHALL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE.

PRESSURE TEST:
AFTER THE PIPE HAS BEEN LAID, ALL NEWLY LAID PIPE OR ANY VALVED SECTION THEREOF SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE OF AT LEAST 1.5 X THE HIGHEST WORKING PRESSURE IN THE SECTION.

- TEST PRESSURE RESTRICTIONS. TEST PRESSURE SHALL:
  1. NOT BE LESS THAN 50 PSI AT THE HIGHEST POINT ALONG THE TEST SECTION.
  2. NOT EXCEED PIPE OR THRUST RESTRAINT DESIGN PRESSURES.
  3. BE AT LEAST 2 HOURS IN DURATION.
  4. NOT VARY BY MORE THAT 5 PSI
  5. NOT EXCEED TWICE THE RATED PRESSURE OF THE VALVES WHEN PRESSURE BOUNDARY OF THE TEST SECTION INCLUDES CLOSED GATE VALVES.

PRESSURIZATION. EACH VALVED SECTION OF PIPE SHALL BE FILLED WITH WATER SLOWLY AND THE SPECIFIED TEST PRESSURE, BASED ON THE ELEVATION OF THE LOWEST POINT OF THE LINE OR SECTION UNDER TEST AND CORRECTED TO THE ELEVATION OF THE TEST GAUGE, SHALL BE APPLIED BY MEANS OF A PUMP CONNECTED TO THE PIPE.
AIR REMOVAL. BEFORE APPLYING THE SPECIFIED TEST PRESSURE, AIR SHALL BE EXPELLED COMPLETELY FROM THE PIPE AND VALVES.
EXAMINATION. ALL EXPOSED PIPE, FITTINGS, VALVES, AND JOINTS SHALL BE EXAMINED CAREFULLY DURING THE TEST. ANY DAMAGED OR DEFECTIVE PIPE, FITTINGS, OR VALVES, THAT ARE DISCOVERED FOLLOWING THE PRESSURE TEST SHALL BE REPAIRED OR REPLACED WITH SOUND MATERIAL AND THE TEST SHALL BE REPEATED.

LEAKAGE TEST:
A LEAKAGE TEST SHALL BE CONDUCTED CONCURRENTLY WITH THE PRESSURE TEST.
LEAKAGE DEFINED. LEAKAGE SHALL BE DEFINED AS THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO THE NEWLY LAID PIPE, OR ANY VALVED SECTION THEREOF, TO MAINTAIN PRESSURE WITHIN 5 PSI OF THE SPECIFIED TEST PRESSURE AFTER THE AIR IN THE PIPELINE HAS BEEN EXPELLED AND THE PIPE HAS BEEN FILLED WITH WATER.
ALLOWABLE LEAKAGE. NO PIPE INSTALLATION WILL BE ACCEPTED IF LEAKAGE IS GREATER THAN THAT DETERMINED BY THE FOLLOWING FORMULA:

$$L = \frac{N*D\sqrt{P}}{7400}$$

L IS THE ALLOWABLE LEAKAGE, IN GALLONS PER HOUR; N IS THE NUMBER OF JOINTS IN THE LENGTH OF PIPELINE TESTED; D IS THE NOMINAL DIAMETER OF THE PIPE, IN INCHES; AND P IS THE AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH GAGE.

SECTIONS WHICH FAIL THE PRESSURE/LEAKAGE TEST SHALL BE REPAIRED AND RETESTED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.

SANITARY TESTING AND CONTRACTOR COORDINATION REQUIREMENTS

1. ALL SEWER LINES (MAIN LINES AND SERVICES) AND MANHOLES SHALL BE THOROUGHLY TESTED BY THE CONTRACTOR IN ACCORDANCE WITH THE ENVIRONMENTAL PROTECTION RULES (09/29/07).

2. ALL GRAVITY SANITARY MAINS SHALL BE AIR TESTED IN THE PRESENCE OF THE ENGINEER. AT A MINIMUM, THE TEST PRESSURE SHALL BE 4 POUNDS PER SQUARE INCH AT THE HIGHEST POINT ALONG THE TEST FOR 4 MINUTES.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE ENGINEER AND THE LOCAL MUNICIPALITY PUBLIC WORKS DEPARTMENT AT LEAST 24 HOURS PRIOR TO STARTING CONSTRUCTION ON ANY PORTION OF THE PUBLIC CONNECTIONS TO WATER OR SANITARY SYSTEMS. THIS NOTIFICATION REQUIREMENT SHALL CONTINUE TO THE COMPLETION OF THE SANITARY SYSTEMS.

4. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER IF PRE-SCHEDULED TESTING AND/OR SEWER CONSTRUCTION IS CANCELED. IF CONTRACTOR DOES NOT CONTACT ENGINEER AND ENGINEER VISITS THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENGINEER'S FEES/MILEAGE FOR SITE VISIT.

5. MAINTAIN A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN WATER MAIN AND STORM/SANITARY SEWER CROSSING.

6. UTILITY TESTING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING SANITARY TESTING AT A MINIMUM OF 24 HOURS PRIOR TO THE TEST. BASED ON AVAILABILITY OF ENGINEER'S STAFF, THE ENGINEER SHALL ACCOMMODATE THE TESTING SCHEDULE WITHIN 24 HOURS OF THE CONTRACTOR REQUESTED TEST DATE/TIME.

7. THE CONTRACTOR SHALL PRE-TEST UTILITY PRIOR TO CONTACTING THE ENGINEER. THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF PRE-TEST FAILED.

WASTEWATER BASIS OF DESIGN

EXISTING ALLOCATION = 4,482 GALLONS/DAY (GPD)
(PER WW-C0671 FOR A 166 SEAT RESTAURANT SERVING 2 MEALS/DAY))

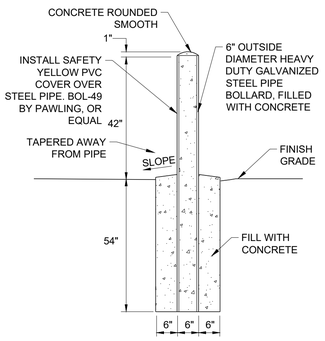
PROPOSED PROJECT
DINING
- 48 SEATS X 27 GPD (2 MEALS/DAY) = 1296 GPD

MEETING SPACE
- 60 PARTICIPANTS X 4 GPD/PARTICIPANT = 240 GPD

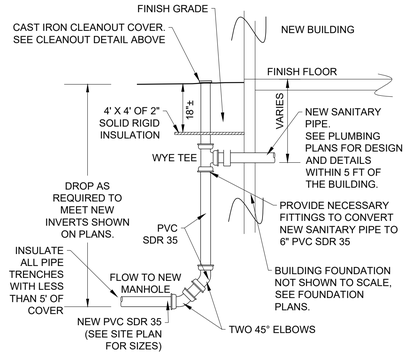
SPA
- 1 MASSAGE THERAPIST X 32 GPD = 32 GPD
- 8 PARTICIPANTS X 4 GPD = 32 GPD

GUEST ROOMS
- MAIN BUILDING
  STAFF MANAGER/OWNER BEDROOM = 140 GPD
- COTTAGES
  46 TOTAL SLEEPING SPACES X 50 GPD = 2300 GPD
- FUTURE PHASE BUILDING
  6 SLEEPING SPACES X 50 GPD = 300 GPD

TOTAL PROPOSED DESIGN FLOW = 4,340 GPD



PIPE BOLLARD DETAIL
N.T.S.



DROP OUTLET PLUMBING CONNECTION DETAIL
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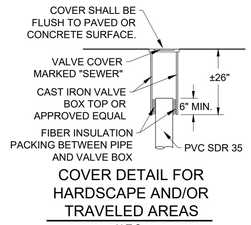

COVER DETAIL FOR HARDSCAPE AND/OR TRAVELED AREAS
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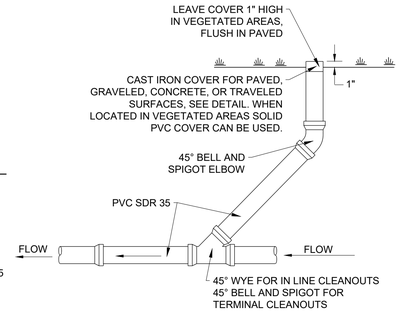

STORM/SANITARY SEWER CLEANOUT DETAIL
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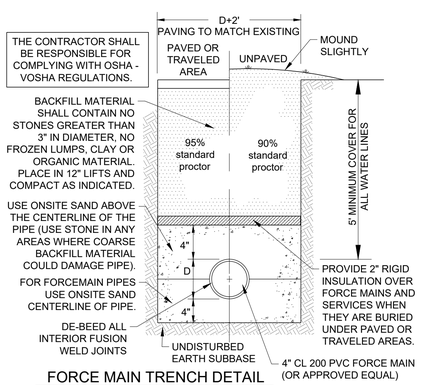

FORCE MAIN TRENCH DETAIL
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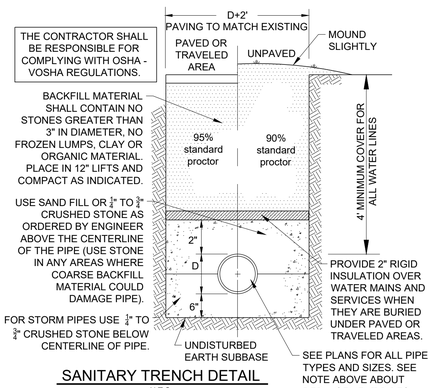

SANITARY TRENCH DETAIL
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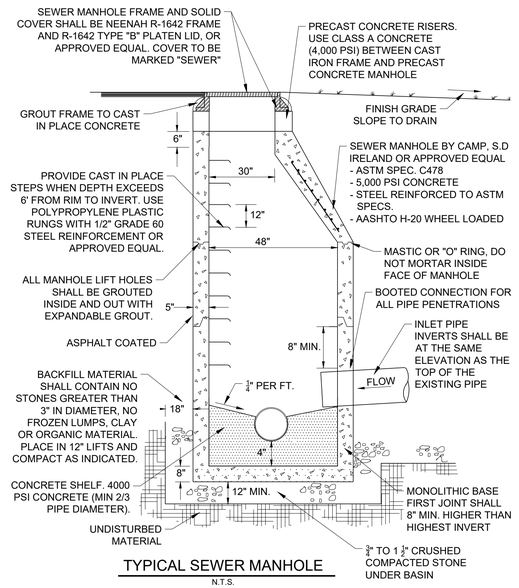

TYPICAL SEWER MANHOLE
N.T.S.

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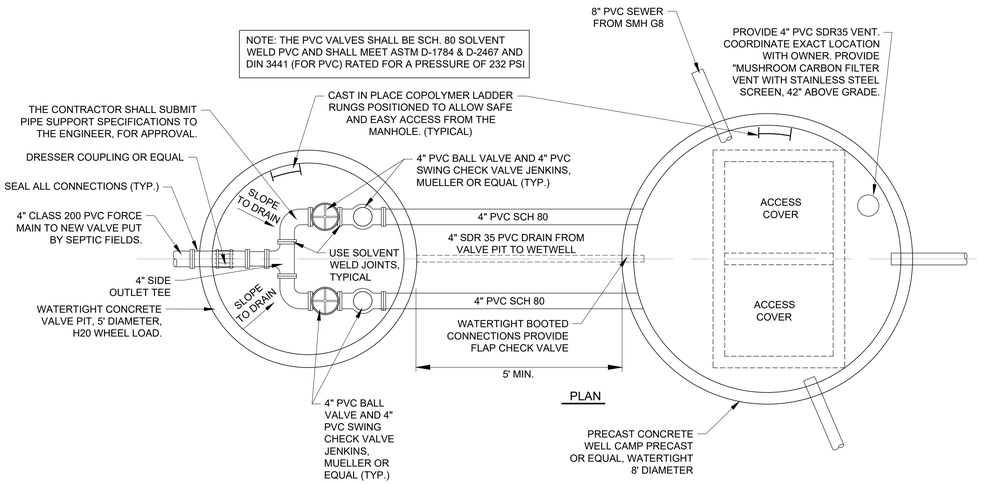
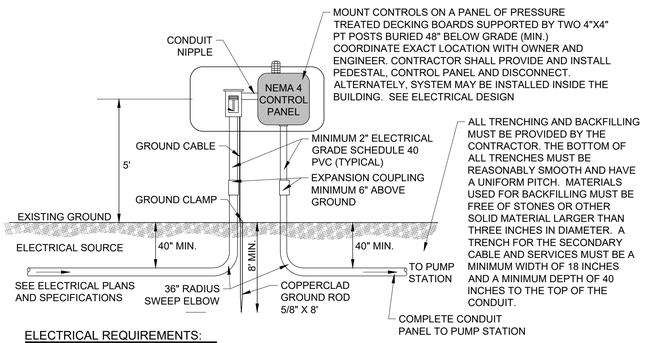


CONTROL PANEL REQUIREMENTS:

1. PANELS SHALL BE NEMA 4 (LOCKABLE) AND HOLDING TANK PANELS SHALL BE EXPLOSION PROOF.
2. TANK PANEL SHALL INCLUDE (AT A MINIMUM) THE FOLLOWING EQUIPMENT:
   - FUSED DISCONNECT FOR MAIN POWER FEED
   - INDIVIDUAL CIRCUIT BREAKERS
   - UL508 STAMP AND APPROVAL
   - INTRINSICALLY SAFE RELAYS
   - AUXILIARY CONTACTS TO CONNECT TO SECURITY SYSTEM
   - AUTO DIALER FUNCTION
   - AUDIBLE ALARM AND THREE LIGHTS ON TOP OF CONTROL PANEL
   - YELLOW LIGHT FOR 75% FULL - LIGHT FLASHES ON ELECTRIC PANEL TO INDICATE TANK IS 75% FULL
   - RED LIGHT - AUDIBLE ALARM AND RED LIGHT FLASHES TO INDICATE THE TANK IS FULL.
4. COORDINATE WITH ELECTRICIAN TO VERIFY ELECTRIC SERVICE.
5. CONTROL PANEL AND FLOAT CONTROL ALARM SYSTEM SHALL BE TESTED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE TO DEMONSTRATE THAT ALL EQUIPMENT IS FULLY OPERATIONAL



ELECTRICAL REQUIREMENTS:

1. ALL MATERIALS AND EQUIPMENT SHALL MEET THE STANDARDS OF THE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION AND UNDERWRITERS LABORATORIES, INC., AND SHALL BEAR THEIR LABEL WHEREVER STANDARDS HAVE BEEN ESTABLISHED AND LABEL SERVICE IS AVAILABLE.
2. INSTALLATION OF ELECTRIC SYSTEMS AND CONTROLS SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE, LOCAL ORDINANCES AND REGULATIONS PRESCRIBED BY THE LOCAL POWER COMPANY.
3. ALL ELECTRICAL COMPONENTS FOR THE HOLDING TANK SHALL MEET CLASS I, DIVISION 1, GROUP C & D EXPLOSION PROOF REQUIREMENTS.
4. COMPLETED ELECTRIC WORK PERFORMED SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE UNDERWRITERS LABORATORIES REGULATIONS AND ALL MUNICIPAL, STATE AND OTHER PUBLIC OR PRIVATE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS. ALL EQUIPMENT AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE FROM MECHANICAL AND ELECTRICAL DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DAY OF FINAL ACCEPTANCE. ANY REPLACEMENT OF PARTS OR ADJUSTMENTS, INCLUDING LABOR MADE NECESSARY BY SUCH DEFECTS AND ADJUSTMENTS, SHALL BE RECTIFIED WITHOUT COST TO THE OWNER.
5. ALL WIRES SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE AND SHALL BE COLOR-CODED AS INDICATED ON THE WIRING DIAGRAM. ALL WIRING OUTSIDE THE PANEL SHALL BE IN CONDUIT, ALL CONDUIT FOR HOLDING TANKS SHALL MEET CLASS 1, DIVISION 1, GROUP C & D EXPLOSION PROOF REQUIREMENTS.

ELECTRIC SERVICE DETAIL FOR NEW PUMP STATION

N.T.S.

SYSTEM CURVE FOR PUMP SELECTION

FLOWRATE (GPM)	VELOCITY (FT/SEC)	STATIC HEAD (FT)	FRICTION LOSS (FT)	MINOR LOSS (FT)	DISCHARGE HEAD (FT)	TOTAL DYNAMIC HEAD (FT)
60	2.38	20.0	1.69	10.0	2.31	34.0
75	2.97	20.0	2.57	10.0	2.31	34.9
90	3.57	20.0	3.61	10.0	2.31	35.9

PUMP SPECIFICATIONS

- DIAMETER OF FORCE MAIN = 3 INCH
- LENGTH OF FORCE MAIN = ±260 FEET

STATIC HEAD = 20± FEET
PRESSURE HEAD TO BE MAINTAINED = 2.3 FEET
MINOR LOSSES FOR ALL FIXTURES AND FITTINGS = 10.0 FEET

PUMP STATION DESIGN CRITERIA

The wastewater disposal system is designed for domestic sanitary waste only for 4,340 gallons per day.

Design Flow = 4,340 gallons/day

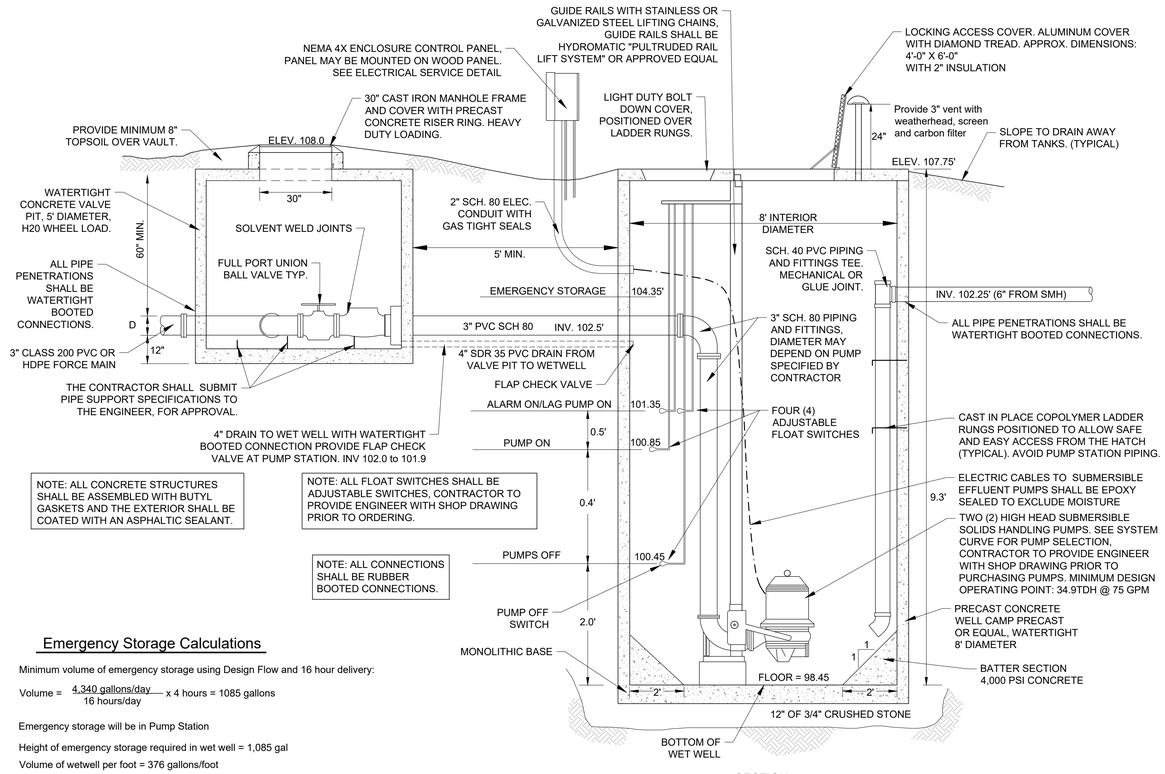
Use duplex pumps in 8 foot diameter wetwell.

Volume of wetwell per foot = 376 gallons/foot

Dose of 32 cycles/day for 30 min. retention time based on 16 hour day

Volume of minimum dose = 4,340 gallons/32 cycles = 135.6 gallons/cycle

Height of pump cycle = $\frac{135.6 \text{ gallons/cycle}}{376 \text{ gallons/foot}}$ = 0.36 feet/cycle
= Provide 0.4 feet/cycle



NOTE: ALL CONCRETE STRUCTURES SHALL BE ASSEMBLED WITH BUTYL GASKETS AND THE EXTERIOR SHALL BE COATED WITH AN ASPHALTIC SEALANT.

NOTE: ALL FLOAT SWITCHES SHALL BE ADJUSTABLE SWITCHES, CONTRACTOR TO PROVIDE ENGINEER WITH SHOP DRAWING PRIOR TO ORDERING.

NOTE: ALL CONNECTIONS SHALL BE RUBBER BOOTED CONNECTIONS.

SECTION

Emergency Storage Calculations

Minimum volume of emergency storage using Design Flow and 16 hour delivery:

Volume = $\frac{4,340 \text{ gallons/day}}{16 \text{ hours/day}}$ x 4 hours = 1085 gallons

Emergency storage will be in Pump Station

Height of emergency storage required in wet well = 1,085 gal

Volume of wetwell per foot = 376 gallons/foot

3' of emergency storage in wet well = 3' x 376 gal/ft = 1,128 gallons

Total Emergency Storage Provided = 1,128gal

DUPLEX PUMP STATION

N.T.S.

NOTES

1. THE STRUCTURE IS TO BE A PACKAGE PUMP STATION W/ EXTERIOR VALVE VAULT. PLANS FOR THE PUMP STATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
2. THE SUBMERSIBLE PUMPS SHALL BE ASSEMBLED AND TESTED AT THE FACTORY.
3. THE CONTRACTOR SHALL PROVIDE THE DESIGN FOR FLOATATION PREVENTION, APPROVED BY THE ENGINEER, PRIOR TO CONSTRUCTION.
4. THE STATION SHALL INCLUDE ALL NECESSARY CONTROLS, ALARMS, SWITCHES, FITTINGS, POWER SERVICE, AND SUPPLY ALL APPURTENANCES NECESSARY TO MAKE THE STATION COMPLETE AND OPERABLE.
5. ALL ELECTRICAL EQUIPMENT SHALL COMPLY WITH LOCAL AND NATIONAL ELECTRICAL CODE REQUIREMENTS.
6. ANY MODIFICATIONS TO PUMP STATION DESIGN OR LOCATION MUST BE APPROVED BY THE ENGINEER AND OTHER PERMITTING AUTHORITIES.
7. THE CONTRACTOR SHALL USE SCHEDULE 80 PVC WITH SOLVENT WELD JOINTS FOR ALL PIPING INSIDE PUMP STATION AND VALVE PIT. ALL PENETRATIONS AND JOINTS SHALL HAVE WATERTIGHT SEALS.

PUMP STATION TESTING NOTES

THE CONTRACTOR SHALL TEST BOTH THE PUMP STATION WETWELL AND THE VALVE PIT FOR WATERTIGHTNESS PRIOR TO BACKFILL. THE WATERTIGHTNESS TEST SHALL CONFORM TO THE ENVIRONMENTAL PROTECTION RULES, CHAPTER 1, WASTEWATER SYSTEM AND POTABLE WATER SUPPLY (CURRENT EDITION) SECTION 1-1010. THIS TEST SHALL BE WITNESSED BY THE ENGINEER AND SHALL BE PERFORMED AS FOLLOWS:

- AFTER THE STRUCTURE HAS BEEN ASSEMBLED IN PLACE, ALL LIFTING HOLES AND EXTERIOR JOINTS SHALL BE FILLED AND POINTED WITH AN APPROVED NON-SHRINKING MORTAR. ALL PIPES AND OTHER OPENINGS INTO THE STRUCTURE SHALL BE SUITABLY PLUGGED AND THE PLUGS PLACED TO PREVENT BLOWOUT.
- 1-1010(b) When required to be tested for watertightness by a permit, tanks shall be tested using the ASTM for testing of tanks or the following:
  - (1) For concrete tanks, complete one of the following tests:
    - (A) Using a water pressure test, seal the tank and risers, fill with water to the top of the risers, and let stand for 24 hours. Refill the tank. The tank is considered watertight if the water level is held for 1 hour.
    - (B) Using a vacuum test, seal the empty tank and risers and apply a vacuum to 2 inches (50 mm) of mercury. The tank is considered watertight if 90 percent of the vacuum is held for 2 minutes.
- IF THE STRUCTURE FAILS THE TEST IT SHALL BE THOROUGHLY CLEANED AND RESEALED, FROM THE OUTSIDE, AND RETESTED AT THE CONTRACTORS EXPENSE.

PUMP STATION MAINTENANCE NOTES

1. AT LEAST ONCE A YEAR THE PUMP STATION AND TANKS SHOULD BE OPENED AND SETTLED SOLIDS REMOVED AS NECESSARY AND CHECKED FOR LEVELNESS. THOROUGHLY CLEAN ANY COMPONENTS WITH SOLIDS BUILDUP AND CHECK FOR SOURCE OF SOLIDS.
2. TOXIC OR HAZARDOUS MATERIALS SHOULD, IN GENERAL, NOT BE DISPOSED OF IN SEPTIC SYSTEMS. THESE SUBSTANCES MAY PASS THROUGH THE SYSTEM IN AN UNALTERED STATE AND CONTAMINATE GROUNDWATER OR REMAIN IN THE SEPTAGE AND SUBSEQUENTLY CONTAMINATE THE SOIL.
3. A CONTINUOUS LOG OF INSPECTIONS AND OBSERVATIONS SHALL BE KEPT. THE LOG SHALL NOTE ALL CLEANING AND OTHER REQUIRED MAINTENANCE.

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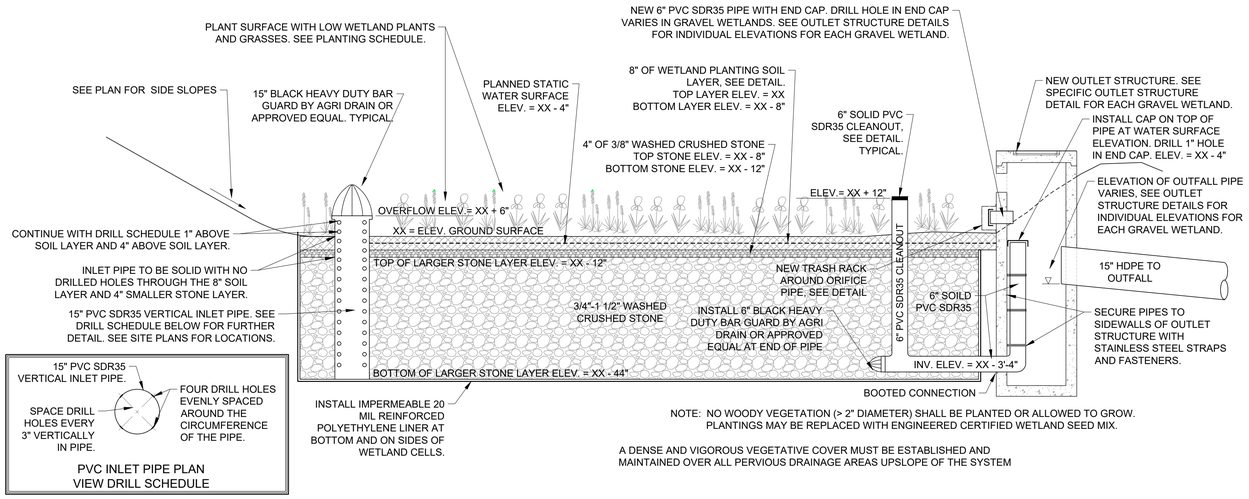


NOTE: NO WOODY VEGETATION (> 2" DIAMETER) SHALL BE PLANTED OR ALLOWED TO GROW. PLANTINGS MAY BE REPLACED WITH ENGINEERED CERTIFIED WETLAND SEED MIX.

A DENSE AND VIGOROUS VEGETATIVE COVER MUST BE ESTABLISHED AND MAINTAINED OVER ALL PERVIOUS DRAINAGE AREAS UPSLOPE OF THE SYSTEM

GRAVEL WETLAND DETAIL

N.T.S.

Gravel Wetland Elevation Schedule

Gravel Wetland	Bottom of Pond & Top of Wetland Cell Elev. (ft) (ELEV. XX in Detail)	Planned Static Water Elev. (ft)	Top Smaller Stone Elev. (ft)	Transition from Small to Large Stone Elev. (ft)	Bottom of Stone & Bottom of Gravel Cell Elev. (ft)
1	126.00	125.67	125.33	125.00	122.33

GRAVEL WETLAND PLANTING SOIL CHARACTERISTICS

PARAMETER	VALUE
PH RANGE	6.0 to 7.0
SOIL (LOW HYDRAULIC CONDUCTIVITY (0.1-0.01 FT/DAY) WITH SOIL TEXTURE CONFORMING TO HYDROLOGIC SOIL GROUP D)	
SIEVE SIZE	PERCENT PASSING BY WEIGHT
NO. 16	100%
NO. 40	85-100%
NO. 60	40-60%
NO. 200	5-10%

GRAVEL WETLAND SOIL SHALL CONFORM TO THE "BIORETENTION AND GRAVEL WETLAND SOIL MEDIA TESTING GUIDANCE" DOCUMENT PREPARED BY THE UNIVERSITY OF VERMONT, SEA GRANT LAKE CHAMPLAIN, AND WATERSHED CONSULTING

THE GRAVEL WETLAND SOIL SHALL BE TESTED IN ACCORDANCE WITH THE PHOSPHORUS TESTING PROCEDURE BELOW:
PHOSPHORUS TESTING IS REQUIRED FOR THE UPPER MEDIA LAYER OF THE GRAVEL WETLAND SOIL. FINAL MIXES MUST HAVE A PHOSPHORUS SATURATION RATIO (PSR) LESS THAN OR EQUAL TO 0.10 AND SHALL BE TESTED IN ACCORDANCE WITH THE FOLLOWING PROTOCOL:

1. SAMPLES ARE TO BE AIR DRIED AND SIEVED THROUGH 2MM PRIOR TO TESTING.
2. AIR-DRIED, SIEVED SOIL SAMPLES ARE TO THEN BE EXTRACTED WITH THE MEHLICH-3 SOLUTION (0.2 M CH_3COOH + 0.25 M NH_4NO_3 + 0.015 M HNO_3 + 0.001 M EDTA) BY SHAKING A SOIL-SOLUTION SUSPENSION FOR 5 MINUTES AT A 1:10 RATIO (SOIL MASS IN GRAMS: SOLUTION VOLUME IN ML), FOLLOWED BY FILTERING TO REMOVE PARTICLES (PORE SIZE OF 2 UM IS RECOMMEDED, MAX PORE SIZE = 8 UM).
3. EXTRACTS FROM THE MEHLICH-3 PROCEDURE ARE TO BE ANALYZED FOR P, FE, AND AL BY ICP-OES.
4. THE PHOSPHORUS SATURATION RATIO (PSR) IS CALCULATED AS FOLLOWS:

$$PSR = \frac{\left(\frac{P_{M3}}{31}\right)}{\left(\frac{Fe_{M3}}{56}\right) + \left(\frac{Al_{M3}}{27}\right)}$$

WHERE,

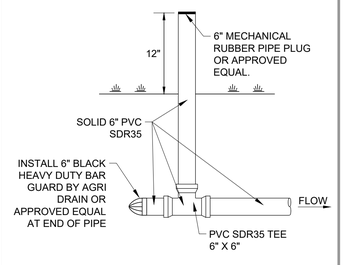
- P_{M3} = MEHLICH-3 P IN MG P PER KG DRY SOIL
- FE_{M3} = MEHLICH-3 FE IN MG FE PER KG DRY SOIL
- AL_{M3} = MEHLICH-3 AL IN MG AL PER KG DRY SOIL

MEHLICH-3 EXTRACTIONS FOLLOW THE ABOVE PROTOCOL. OTHER SOIL EXTRACTIONS, OR EXTRACTIONS USED TO QUANTIFY TOTAL ELEMENTS, ARE NOT ACCEPTABLE FOR THIS REQUIREMENT.

IN CASES WHERE INGREDIENT MIXING HAS NOT YET OCCURRED, INGREDIENTS CAN BE MIXED AT THE INTENDED VOLUMETRIC PROPORTIONS IN A SMALL BATCH (AT LEAST ONE QUART IN VOLUME) FOR TESTING PURPOSES. IF THIS SMALL BATCH TESTING APPROACH IS TAKEN, THE FINAL MATERIAL TO BE USED DURING INSTALLATION MUST BE RETESTED TO CONFIRM ACCEPTABLE PSR.

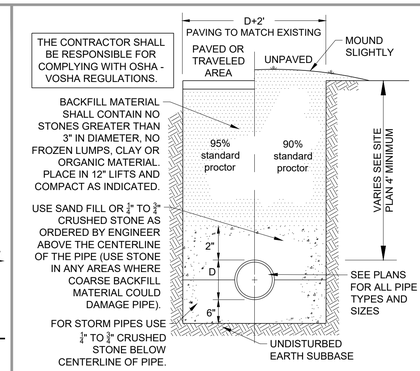
SOIL SAMPLES FOR P, FE, AND AL ANALYSIS VIA MEHLICH-3 EXTRACTION CAN BE SUBMITTED TO THE AGRICULTURAL AND ENVIRONMENTAL TESTING LABORATORY (AETL) LOCATED AT UVM. PLAN TO ALLOW 3-4 WEEKS FOR ANALYSIS.

HOW TO TAKE A SOIL SAMPLE [GO.UVM.EDU/SOIL-SAMPLING]
SUBMITTING A SOIL SAMPLE [GO.UVM.EDU/UVM-SOIL-LAB]



GRAVEL WETLAND CLEANOUT DETAIL

N.T.S.



STORM TRENCH DETAIL

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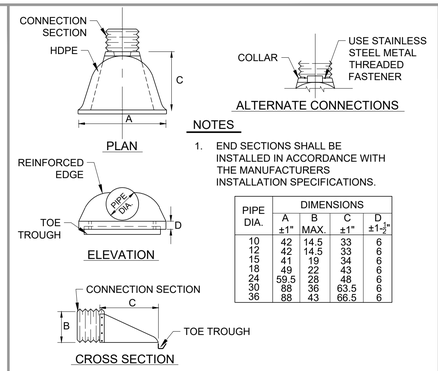


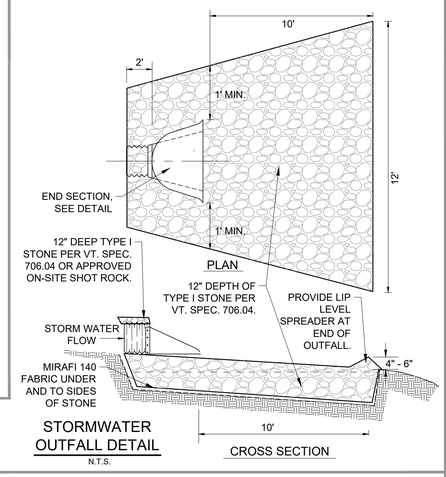
NOTES

1. END SECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION SPECIFICATIONS.

PIPE DIA.	DIMENSIONS A ±1"	B MAX.	C ±1"	D ±1-½"
10	42	14.5	33	6
12	42	14.5	33	6
15	41	19	34	6
18	49	22	43	6
24	59.5	28	48	6
30	88	36	63.5	6
36	88	43	66.5	6

HDPE END SECTION DETAIL

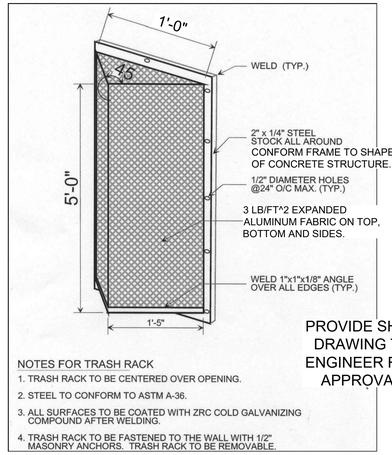
N.T.S.



STORMWATER OUTFALL DETAIL

N.T.S.

The Vermont Stormwater Management Manual — Appendix D5



NOTES FOR TRASH RACK

1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

PROVIDE SHOP DRAWING TO ENGINEER FOR APPROVAL.

Figure D.1. Trash Rack Protection for Low Flow Orifice

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TRASH RACK DETAIL

N.T.S.

HAZELETT STRIP-CASTING CORPORATION
COLCHESTER, VT

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Project:
THE 'H' AT MALLETTS BAY
180 & 166 W. Lakeshore Drive Colchester, Vermont

Project No.	23314
Scale	NTS
Drawn by	SWH
Checked by	
Date	02/14/25

Revisions

No.	Date	Description

Drawing Title
CIVIL DETAILS

Drawing No.
CD-6

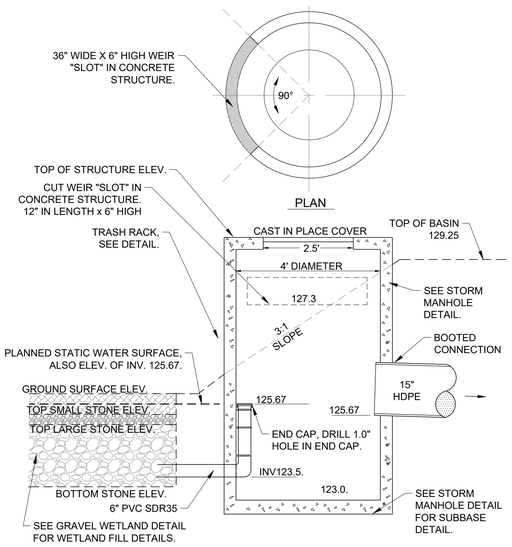
22195\DWGS\BVR-picnic details.dwg

STORMWATER MAINTANCE NOTES

A. GRASS-LINED SWALE: LOCATED ALONG ALL DRIVEWAYS.
   1. INSPECT REGULARLY FOR ACCUMULATION OF SEDIMENT OR DEBRIS, PARTICULARLY AFTER LARGE STORM EVENTS.
   2. INSPECT AND REPAIR ANY EROSION AND RE-SEED BARE SPOTS AS NEEDED.
   3. REMOVE SEDIMENT AND RESHAPE SWALE WHEN 6 INCHES OF SEDIMENT HAS ACCUMULATED.

B. GRAVEL WETLANDS:
   1. INSPECT FOR PROLONGED STANDING WATER AFTER RAIN EVENTS. INSPECT GRATES AND OBSERVATION PORTS.
   2. INSPECT FOR EROSION, ACCUMULATED SEDIMENT, AND ENSURE PLANTS ARE HEALTHY. REMOVE SEDIMENT AND REPLACE PLANTS AS NECESSARY.
   3. INSPECT OUTLET STRUCTURE TO ENSURE GOOD REPAIR AND NO CLOGGING.

E. STONE SPLASH PADS/WEIRS: LOCATED AT POND PIPE OUTLETS AND FOREBAY OVERFLOWS INTO GRAVEL WETLANDS.
   1. INSPECT REGULARLY FOR SIGNS OF EROSION OR DISPLACEMENT OF STONE. REPAIR AS NEEDED.
   2. INSPECT FOR DEBRIS/TRASH ACCUMULATION AND REMOVE AS NEEDED.
   3. MONITOR FOR EVIDENCE OF CONCENTRATED FLOW CHANNELS OR EROSION AT OUTLET. LEVEL STONE IF NEEDED TO RESTORE EVEN FLOW DISTRIBUTION.



GRAVEL WETLANDS
OUTLET STRUCTURE DETAIL
N.T.S.

POST-CONSTRUCTION SOIL DEPTH AND QUALITY NOTES

SOIL RETENTION: RETAIN, IN AN UNDISTURBED STATE, THE DUFF LAYER AND NATIVE TOPSOIL TO THE MAXIMUM EXTENT PRACTICABLE.

SOIL QUALITY: ALL AREAS SUBJECT TO THE STANDARD SHALL DEMONSTRATE THE FOLLOWING:

A TOPSOIL LAYER WITH A MINIMUM ORGANIC MATTER CONTENT OF 4% DRY WEIGHT IN PLANTING BEDS AND TURF AREAS. THE TOPSOIL LAYER SHALL HAVE A MINIMUM DEPTH OF 4 INCHES, EXCEPT WHERE TREE ROOTS LIMIT THE DEPTH OF INCORPORATION OF AMENDMENTS NEEDED TO MEET THE CRITERIA.

COMPOST AND OTHER MATERIALS SHALL BE USED THAT MEET THE FOLLOWING REQUIREMENTS:
- THE COMPOST OR OTHER MATERIALS SHALL HAVE A CARBON TO NITROGEN RATIO BELOW 25:1.
- COMPOST SHALL MEET THE DEFINITION OF "COMPOST" IN THE AGENCY'S SOLID WASTE MANAGEMENT RULES OR SHALL MEET THE CONTAMINANT STANDARDS IN THE VERMONT SOLID WASTE MANAGEMENT RULES §6-1104(G)(6- 7), §6-1105(E)(8-9), AND §6-1106(E)(7-9). COMPOST OR OTHER ORGANIC MATERIALS MAY BE AMENDED TO MEET THE FOREGOING REQUIREMENTS.
- EXCEPTIONAL QUALITY BIOSOLIDS (EQ BIOSOLIDS) MAY BE USED AS A SOIL AMENDMENT, AT A MAXIMUM PROPORTION OF 35% OF THE TOTAL SOIL VOLUME, AND SHALL BE WELL MIXED WITH EXISTING SOIL BEFORE OR DURING APPLICATION.
- THE RESULTING SOIL SHALL BE CONDUCIVE TO THE TYPE OF VEGETATION TO BE ESTABLISHED.

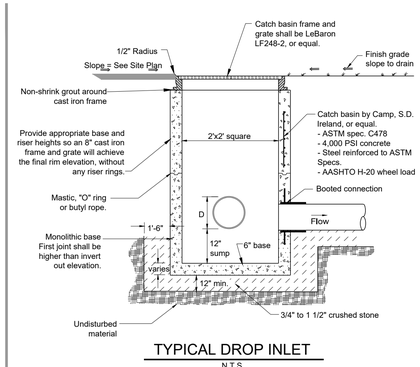
THE SOIL QUALITY REQUIREMENTS SHALL BE MET BY USING ONE OR A COMBINATION OF THE FOLLOWING METHODS:
- OPTION 1: LEAVE UNDISTURBED NATIVE VEGETATION AND SOIL, AND PROTECT FROM COMPACTION DURING CONSTRUCTION. FAILURE TO ESTABLISH AND MAINTAIN EXCLUSIONARY CONTROLS AROUND THESE AREAS DURING THE CONSTRUCTION PHASE MAY TRIGGER THE REQUIREMENT TO RESTORE SOILS PER ONE OF THE FOLLOWING OPTIONS.
- OPTION 2: AMEND EXISTING SITE TOPSOIL OR SUBSOIL IN PLACE.
  a. SCARIFY OR TILL SUBSOILS TO 4 INCHES OF 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;
  b. AMEND SOIL TO MEET ORGANIC CONTENT REQUIREMENTS:
     1. PRE-APPROVED RATE: PLACE 1 INCH OF COMPOSTED MATERIAL WITH AN ORGANIC MATTER CONTENT BETWEEN 40 AND 65% AND ROTOTILL INTO 3 INCHES OF SOIL, OR
     2. 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. *CONTRACTOR TO PROVIDE CALCULATION AND SITE SKETCH INDICATING AREAS USED FOR CALCULATIONS.
  c. RAKE BEDS TO SMOOTH AND REMOVE SURFACE ROCKS LARGER THAN 2 INCHES IN DIAMETER; AND
  d. WATER OR ROLL TO COMPACT SOIL IN TURF AREAS TO 85% OF MAXIMUM DRY DENSITY.
- OPTION 3: REMOVE AND STOCKPILE EXISTING TOPSOIL DURING GRADING.
  a. STOCKPILE SOIL ON SITE IN A DESIGNATED CONTROLLED AREA, AT LEAST 50 FEET FROM SURFACE WATERS, WETLANDS, FLOODPLAINS, OR OTHER CRITICAL RESOURCE AREAS;
  b. 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;
  c. STOCKPILED TOPSOIL SHALL ALSO BE AMENDED, IF NEEDED, TO MEET THE ORGANIC CONTENT REQUIREMENTS:
     1. 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
     2. CALCULATED RATE: INCORPORATE COMPOSTED MATERIAL OR APPROVED ORGANIC MATERIAL AT A CALCULATED RATE TO ACHIEVE 4 INCHES OF SETTLED SOIL AT 4% ORGANIC CONTENT;*
  d. REPLACE STOCKPILED TOPSOIL PRIOR TO PLANTING, SCREEN TOPSOIL, AND;
  e. RAKE TO LEVEL, AND REMOVE SURFACE ROCKS LARGER THAN 2 INCHES IN DIAMETER.
  f. OPTION 4: IMPORT TOPSOIL MIX, OR OTHER MATERIALS FOR MIXING, INCLUDING COMPOST, OF SUFFICIENT ORGANIC CONTENT AND DEPTH.
  g. 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;
  h. 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; SHOP DRAWING SUBMITTAL IS REQUIRED. FIND USDA SIEVE FOR SAND AND SANDY LOAM.
  i. RAKE BEDS TO SMOOTH AND REMOVE SURFACE ROCKS LARGER THAN 2 INCHES IN DIAMETER;
  j. WATER OR ROLL TO COMPACT SOIL IN TURF AREAS TO 85% OF MAXIMUM DRY DENSITY.

SOIL MANAGEMENT

- IDENTIFIES AREAS ON THE SITE SUBJECT TO THE STANDARD;
- SOIL DEPTH AND QUALITY SHALL BE ESTABLISHED TOWARDS THE END OF CONSTRUCTION AND ONCE ESTABLISHED, PROTECTED FROM COMPACTION, SUCH AS FROM LARGE MACHINERY, VEHICLE TRAFFIC, AND FROM EROSION;
- AFTER SOIL AMENDMENTS AND PLACEMENT IS COMPLETE, AND PRIOR TO SEEDING AND MULCHING, CONTRACTOR SHALL PERFORM VERIFICATION SAMPLING IN LOCATIONS INDICATED ON SAMPLING PLAN. VERIFICATION SAMPLING SHALL INCLUDE NINE, 8 INCH DEEP (MIN) TEST HOLES PER ACRE OF AREA SUBJECT TO THE STANDARD. TEST HOLES SHALL BE EXCAVATED USING ONLY A SHOVEL DRIVEN SOLELY BY INSPECTOR'S WEIGHT AND SHALL BE AT LEAST 50 FEET APART FROM EACH OTHER.
- A DENSE AND VIGOROUS VEGETATIVE COVER SHALL BE ESTABLISHED OVER TURF AREAS.

ADDITIONAL SOILS RESTORATION

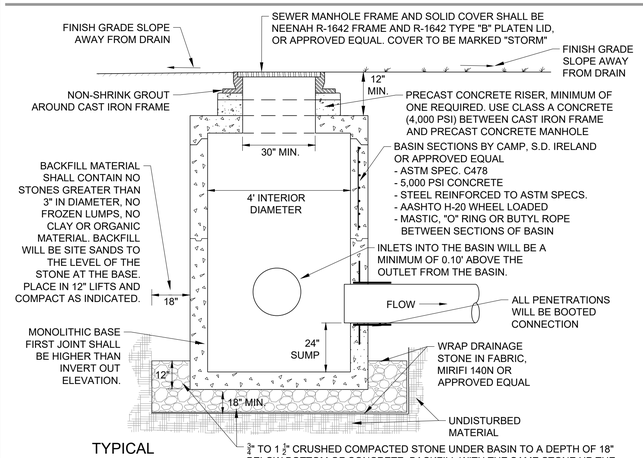
1. SOIL DEPTH AND QUALITY SHALL BE ESTABLISHED TOWARDS THE END OF CONSTRUCTION, AND ONCE ESTABLISHED, BE PROTECTED FROM COMPACTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF THE POST CONSTRUCTION SOIL DEPTH AND QUALITY.
3. VERIFICATION SHALL BE VIA A SAMPLING SCHEME THAT INCLUDES NINE 8" DEEP TEST HOLES PER ACRE OF AREA SUBJECT TO THE STANDARD.
4. TEST HOLES SHALL BE EXCAVATED USING ONLY A SHOVEL DRIVEN SOLELY BY THE INSPECTOR'S WEIGHT AND SHALL BE AT LEAST 50 FEET APART FROM EACH OTHER.
5. ALL DISTURBED AREAS WITHIN THE PROJECT LIMITS (LOD) ARE SUBJECT TO THE POST-CONSTRUCTION SOIL DEPTH AND QUALITY STANDARD
6. THERE IS NO PROPOSED EXCAVATION OR RE-GRADING ANTICIPATED WITHIN THE SOLAR ARRAY BEYOND WHAT IS NECESSARY FOR SETTING POSTS AND INSTALLING CONDUIT. IT IS ANTICIPATED THAT SOME GROUND DISTURBANCE WILL OCCUR WITHIN THE ARRAY FROM FREQUENT TRACKING OF EQUIPMENT. THE CONTRACTOR AND ENGINEER SHALL EVALUATE GROUND DISTURBANCE WITHIN THE SOLAR ARRAY AND EITHER:
   - CONFIRM THAT SOILS HAVE NOT BEEN EXCESSIVELY COMPACTED VIA TEST PITS AND PHOTO DOCUMENTATION.
   - IMPLEMENT THE MEASURES OUTLINED IN THE "POST CONSTRUCTION SOIL DEPTH & QUALITY STANDARD" IF EXCESSIVE COMPACTION HAS OCCURRED.



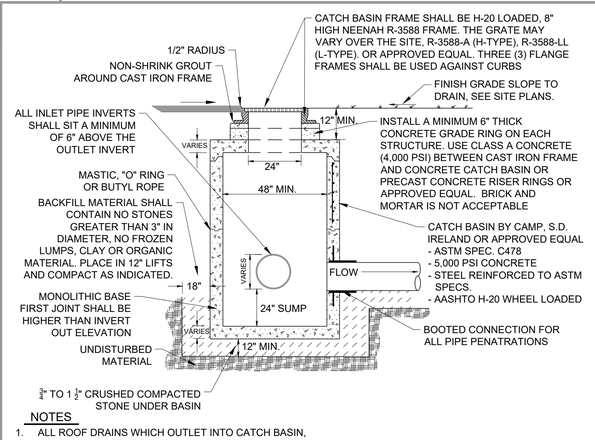
TYPICAL DROP INLET
N.T.S.

EARTH EMBANKMENT CONSTRUCTION NOTES

1. THE AREA WITHIN THE EMBANKMENT AND 15 FEET BEYOND SHALL BE CLEARED AND GRUBBED (EXCEPT IN THE WETLAND BUFFER). ORGANICS AND MATERIALS DEEMED UNSUITABLE BY THE ENGINEER (SUCH AS LOOSE, FROZEN, DISTURBED SOILS, DEBRIS, VEGETATION, TREE STUMPS, OVER SATURATED AND UNSTABLE SOILS) SHALL BE REMOVED AND A FIRM STABLE SUBGRADE SHALL BE PREPARED ON UNDISTURBED SOILS. ALL SUBGRADE SOILS SHALL BE OBSERVED BY THE ENGINEER. EXCAVATION SHALL BE PERFORMED IN A MANNER TO LIMIT DISTURBANCE AND LOOSENING OF THE SUBGRADE.
2. SCHEDULE AND COORDINATE EXCAVATION AND BACKFILL WORK WITH A DRY WEATHER FORECAST TO PREVENT OPEN EXCAVATIONS AND ACCUMULATION OF STORMWATER RUNOFF.
3. THE ENGINEER SHALL BE PRESENT TO OBSERVE THE SUBGRADE SOILS PRIOR TO PLACING THE SELECT EMBANKMENT FILL SOILS. PRIOR TO BACKFILL THE SUBGRADE SHALL BE PROOF-ROLL COMPACTED, IN THE PRESENCE OF THE ENGINEER, USING A SMOOTH DRUM ROLLER IN STATIC MODE AND/OR WITH BUCKET DOWN PRESSURE AS DIRECTED BY THE ENGINEER. THE ENGINEER SHALL BE CONTACTED WITH AT LEAST 48 HOURS NOTICE TO SCHEDULE SUBGRADE PREPARATION AND PROOF COMPACTION.
4. SELECT SOIL SHALL BE USED FOR CONSTRUCTION OF THE CUT-OFF TRENCH AND EARTH EMBANKMENT. THE SOIL SHALL MEET THE UNIFIED SOIL CLASSIFICATION SYSTEM DESIGNATION FOR EITHER CLAYEY SAND (SC) OR SILTY CLAYS (CL) WITH A LOW TO MEDIUM PLASTICITY. A MINIMUM OF TWO UNIFIED SOIL CLASSIFICATION TESTS SHALL BE PERFORMED ON STOCKPILE SOIL SAMPLES FOR APPROVAL. THE SOIL SHALL HAVE NO ROCKS LARGER THAN 2", FROZEN LUMPS, ORGANICS, OR OTHER DELETERIOUS MATERIALS.
5. ALL SELECT EMBANKMENT SOILS SHALL BE PLACED IN 6" LIFTS. SOIL SHALL BE COMPACTED TO 95% OF THE STANDARD PROCTOR.
6. IT IS IMPORTANT THAT THE EXISTING SUBGRADE AND SELECT SOILS BE PROTECTED DURING CONSTRUCTION IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
   - 6.1. TO THE MAXIMUM EXTENT POSSIBLE WORK SHALL BE PLANNED SO SUBGRADE SOILS AND THE EMBANKMENT SOILS ARE NOT EXPOSED TO PRECIPITATION.
   - 6.2. PRIOR TO EXCAVATING, POTENTIAL SOURCES OF SURFACE WATER SHALL BE DIRECTED AWAY FROM THE EXCAVATIONS.
   - 6.3. PLACEMENT OF SELECT EMBANKMENT FILL SOILS SHALL NOT BE PLACED DURING A RAIN EVENT.
   - 6.4. PRIOR TO PERIODS OF FORECASTED RAIN, THE SELECT SOILS SHALL BE GRADED TO DRAIN AND ROLLED SMOOTH WITH A DRUM ROLL COMPACTOR.
   - 6.5. SOIL THAT IS NOT PROTECTED AND BECOMES WEAKENED BY PRECIPITATION SHALL BE REMOVED AND DISPOSED OF AT NO COST TO THE OWNER.
7. THE GRAVEL FILTER LAYER FOR THE EMERGENCY SPILLWAY SHALL BE PLACED WITH THE FOLLOWING REQUIREMENTS:
   - 7.1. MINIMUM 6" SEPARATION BETWEEN PREPARED/ACCEPTED SUBGRADE AND IN PLACE STONE FILL. SEE BELOW FOR MATERIAL SPECIFICATION. THIS LAYER WILL BE PLACED IN A SINGLE 6" LIFT COMPACTED TO 90% STANDARD PROCTOR. THE GRAVEL FILTER MATERIAL SHALL NOT BE FROZEN AND SHALL NOT BE PLACED ON FROZEN SUBGRADE.
   - 7.2. PLACEMENT OF STONE FILL SHALL NOT OCCUR UNTIL FULL COMPACTED THICKNESS OF GRANULAR FILTER HAS BEEN PLACED.
8. THE STONE FILL FOR THE EMERGENCY SPILLWAY SHALL BE PLACED BY METHODS THAT AVOID SEGREGATION AND SHALL BE PLACED TO THE REQUIRED THICKNESS, IN LIFTS RESULTING IN A WELL GRADED HOMOGENOUS MASS WITH A RELATIVELY LOW VOID RATIO AND TIGHTLY INTEGRATED WITH PRIOR LIFTS. GRAVEL FILTER MATERIAL SHALL BE PLACED AND "WASHED IN" WITH WATER TO MINIMIZE VOIDS IN THE STONE FILL. STONE FILL SHALL NOT BE PLACED ON FROZEN MATERIAL.



TYPICAL
STORM MANHOLE
N.T.S.



NOTES
1. ALL ROOF DRAINS WHICH OUTLET INTO CATCH BASIN, SHALL BE DESIGNED BY THE MECHANICAL ENGINEER TO OVERFLOW ROOF SCUPPERS WITHOUT FAILING WITHIN THE BUILDING. ALL ROOF DRAIN INVERTS WILL SIT A MINIMUM OF 12" ABOVE THE INVERT OUT OF CATCH BASIN.

TYPICAL CATCH BASIN
N.T.S.

HAZELETT STRIP-CASTING CORPORATION

COLCHESTER, VT

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201 P: (802) 878-0375
Colchester, Vermont 05446 www.krebsandlansing.com

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Project:

THE 'H' AT MALLETTS BAY

180 & 166 W. Lakeshore Drive
Colchester, Vermont

Project No.	23314
Scale	N.T.S.
Drawn by	SWH
Checked by	
Date	03/03/25

Revisions

No.	Date	Description

Drawing Title

CIVIL DETAILS

Drawing No.

CD-7

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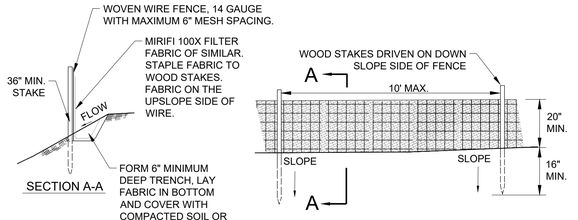


NOTES

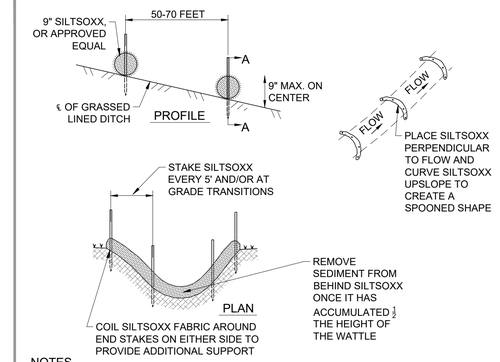
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES WIRE FENCE REINFORCEMENT REQUIRED WITHIN 100 FT UPSLOPE OF RECEIVING WATERS.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH ITIES SPACED 24" AT THE TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED. FILTER CLOTH SHALL BE MIRAFI 100X OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE OR EQUIVALENT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF SILT FENCE IN ALL LOCATIONS SHOWN ON THE PLANS.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT. REMOVE SILT FENCE AFTER SUCCESSFUL ESTABLISHMENT OF VEGETATION.
7. OTHER MEASURES MAY BE USED TO REINFORCE SILT FENCE IN PLACE OF WIRE MESH, CONTRACTOR WILL APPROVE ALL MEASURES WITH ENGINEER PRIOR TO USE.
8. IF SILT FENCE IS INSTALLED WHEN GROUND IS FROZEN, A GRAVEL, SAND OR WATTLE BALLAST MUST BE USED.
9. CONTRACTOR MAY USE IVI WIRE BACK SILT FENCE (IVI PRODUCT 940-3610-B48-W6H) OR EQUIVALENT.
10. SILT FENCE SHALL BE INSTALLED ALONG CONTOURS.
11. SILT FENCE SHALL NOT BE LOCATED IN AREAS OF CONCENTRATED FLOW.
12. DRAINAGE AREA SHALL BE $\leq \frac{1}{4}$ ACRE PER 100 LINEAR FEET OF SILT FENCE.

TYPICAL TEMPORARY REINFORCED SILT FENCE

N.T.S.

PERIMETER EROSION CONTROL SCHEDULE

DISTANCE FROM RECIEVING WATER AND ALL WATER RESOURCE AREAS (WRA)	SLOPE	ACCEPTABLE EPSC MEASURE
$\leq$ 100 FEET	ALL	REINFORCED SILT FENCE, TWO ROWS OF NONREINFORCED SILT FENCE OR ROW OF WATTTLE INSIDE OF NONREINFORCED SILT FENCE
> 100 FEET	ALL	NONREINFORCED SILT FENCE OR WATTLE PER SPECIFICATIONS BELOW



NOTES

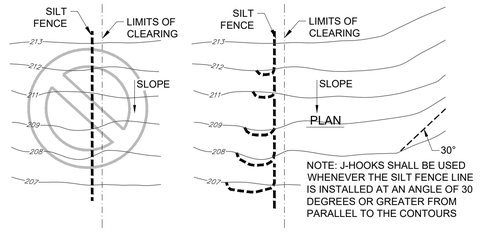
1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF SILTSOXX IN ALL LOCATIONS SHOWN ON THE PLANS. SILTSOXX MAY BE LEFT IN PLACE IF THE CONTRACTOR SEEDS AND MULCHES SILTSOXX FOR GROWTH POST CONSTRUCTION.
2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND ADDITIONAL SILTSOXX WILL BE ADDED WHEN SEDIMENT REACHES HALF OF PRODUCT HEIGHT.
3. WHEN INSTALLING LENGTHS OF SILTSOXX, LENGTHS WILL OVERLAP BY MINIMUM 18" WHEN TRANSITIONING TO A NEW LENGTH OF SILTSOXX.
4. CONTRACTOR SHALL REFER TO ALL MANUFACTURES SPECIFICATIONS AND DETAILS.
5. SILTSOXX CAN ONLY BE USED IN A GRASS LINED SWALE, MAY NOT BE USED IN STONE LINED SWALES.
6. SILTSOXX CHECK DAM CAN ONLY BE USED IN CHANNELS WITH SLOPES LESS THAN 5%.
5. SILTSOXX IS A SPECIFIC MANUFACTURER, OTHER MANUFACTURERS WITH EQUAL PRODUCTS MAY BE USED IF APPROVED BY ENGINEER.

TYPICAL SILTSOXX CHECK DAM DETAIL

N.T.S.

NOTES

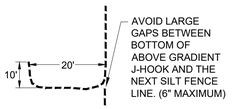
1. PROPER INSTALLATION OF J-HOOKS PROVIDES SILT FENCE THE ABILITY TO TEMPORARILY POND RUNOFF, ALLOWING TIME FOR SEDIMENTS TO SETTLE.
2. LONG RUNS OF SILT FENCE BETWEEN J-HOOKS SHOULD BE AVOIDED REFER TO ADJACENT TABLE FOR PROPER SPACING OF J-HOOKS.
3. J-HOOKS SHOULD BE BUILT ALONG CONTOUR IN A "SMILE" SHAPE WITH A MINIMUM WIDTH OF 20 FEET AND MINIMUM DEPTH OF 10 FEET.
4. ALONG A NARROW RIGHT OF WAY, NARROWER J-HOOKS CAN BE USED WITH A HIGHER SPACING FREQUENCY.



INCORRECT
SILT FENCE INSTALLED PARALLEL TO SLOPE (PERPENDICULAR TO CONTOUR) IN ONE, LONG RUN

CORRECT
SILT FENCE INSTALLED IN SHORTER RUNS WITH J-HOOKS TO AVOID CONCENTRATION OF FLOWS AT ONE LOCATION BY TRAPPING RUNOFF AT MULTIPLE POINTS ALONG A SLOPE.

SLOPE STEEPNESS	MAXIMUM SPACING BETWEEN SILT FENCE J-HOOKS (FT.)
2:1 SLOPE (50%)	25
3:1 SLOPE (33%)	50
4:1 SLOPE (25%)	75
5:1 SLOPE OR FLATTER (50%)	100



TYPICAL SILT FENCE "J-HOOK" CONSTRUCTION

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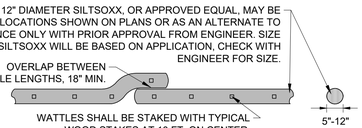
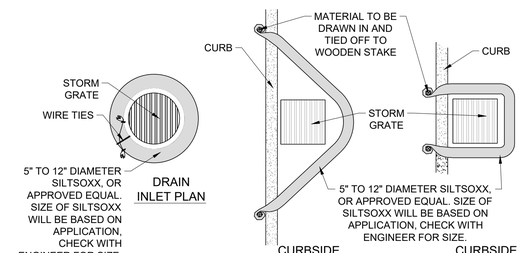


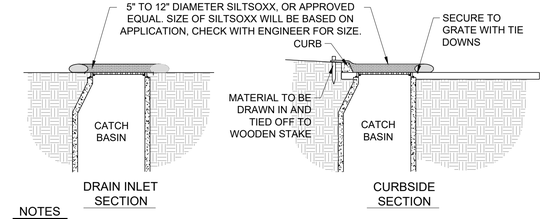
NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF SILTSOXX IN ALL LOCATIONS SHOWN ON THE PLANS. SILTSOXX MAY BE LEFT IN PLACE IF THE CONTRACTOR SEEDS AND MULCHES OVER SILTSOXX FOR GROWTH POST CONSTRUCTION.
2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND ADDITIONAL WATTLES WILL BE ADDED WHEN SEDIMENT REACHES HALF OF PRODUCT HEIGHT.
3. WHEN INSTALLING LENGTHS OF SILTSOXX, LENGTHS WILL OVERLAP BY MINIMUM 18" WHEN TRANSITIONING TO A NEW LENGTH OF SILTSOXX.
4. CONTRACTOR SHALL REFER TO ALL MANUFACTURES SPECIFICATIONS AND DETAILS.
5. SILTSOXX IS A SPECIFIC MANUFACTURER, OTHER MANUFACTURERS WITH EQUAL PRODUCTS MAY BE USED IF APPROVED BY ENGINEER.
6. SILTSOXX CAN BE USED AS A SILT FENCE ALTERNATIVE, WITH PRIOR APPROVAL OF THE ENGINEER.

TYPICAL SILTSOXX SEDIMENT CONTROL

N.T.S.





NOTES

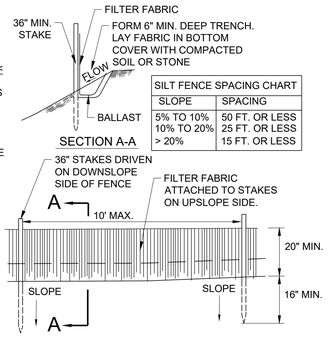
1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF SILTSOXX IN ALL LOCATIONS SHOWN ON THE PLANS.
2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND ADDITIONAL SILTSOXX WILL BE ADDED WHEN SEDIMENT REACHES HALF OF PRODUCT HEIGHT.
3. WHEN INSTALLING LENGTHS OF SILTSOXX, LENGTHS WILL OVERLAP BY MINIMUM 2' WHEN TRANSITIONING TO A NEW LENGTH OF WATTLE.
4. CONTRACTOR SHALL REFER TO ALL MANUFACTURES SPECIFICATIONS AND DETAILS.
5. SILTSOXX IS A SPECIFIC MANUFACTURER, OTHER MANUFACTURERS WITH EQUAL PRODUCTS MAY BE USED IF APPROVED BY ENGINEER.

SILTSOXX INLET PROTECTION

N.T.S.

NOTES

1. AT A MINIMUM, EPSC MEASURES MEET VT DEC STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL OR PREVIOUSLY APPROVED INTERCHANGEABLE PRACTICES.
2. PERIMETER CONTROLS SHALL BE UTILIZED IN SMALL AREAS < 1 ACRE. IN AREAS > 1 ACRE, TEMPORARY SEDIMENT TRAPS OR TEMPORARY SEDIMENT BASINS ARE TO BE UTILIZED.
3. PERIMETER CONTROLS SHALL BE INSTALLED ON DOWNSLOPE SIDE OF PLANNED EARTH DISTURBANCE.
4. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITIES WITHIN UPSLOPE CONTRIBUTING AREA.
5. SILT FENCE SHALL NOT BE USED AS CONSTRUCTION DEMARCATION.
6. SILTSOXX CAN BE USED AS A SILT FENCE ALTERNATIVE, WITH PRIOR APPROVAL OF THE ENGINEER. SEE DETAIL.
7. IF SILT FENCE IS INSTALLED WHEN GROUND IS FROZEN, A GRAVEL, SHOT ROCK, OR SAND BALLAST MUST BE USED.



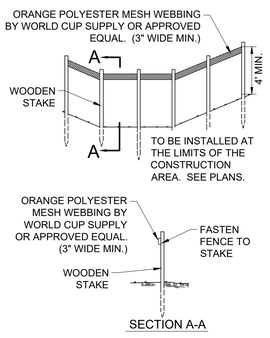
SILT FENCE SPACING CHART	
SLOPE	SPACING
5% TO 10%	50 FT. OR LESS
10% TO 20%	25 FT. OR LESS
> 20%	15 FT. OR LESS

TYPICALTEMPORARY SILT FENCE

N.T.S.

NOTES

1. ACCEPTABLE EPSC MEASURE DETAILS ARE PROVIDED BELOW.
2. AT A MINIMUM, EPSC MEASURES MEET VT DEC STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL OR PREVIOUSLY APPROVED INTERCHANGEABLE PRACTICES.
3. LIMITS OF DISTURBANCE (OR "CONSTRUCTION DEMARCATION") SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
4. BARRIER TAPE/ROPE: FOR USE WHERE PROPOSED DISTURBANCE BORDERS NON-WOODED, VEGETATED AREAS MORE THAN 100 FT FROM THE NEAREST WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC.). BARRIER TAPE IS HIGH VISIBILITY FIBERGLASS TAPE, MINIMUM 3" IN WIDTH COMMONLY USED IN SKI AREAS FOR DEMARCATING CLOSED AREAS. BARRIER TAPE AND ROPE SHOULD BE ATTACHED TO STAKES, AT A MINIMUM HEIGHT OF 4 FT FROM THE GROUND.
5. MINIMUM 1 TO 2 ROWS OF MESH BARRIER TAPE TO BE INSTALLED ALONG CONSTRUCTION PERIMETER.
6. EACH ROW OF BARRIER TAPE TO BE 3" WIDE MINIMUM.
7. BARRIER TAPE TO BE ORANGE.
8. SECURE BARRIER TAPE TO STAKES OR EXISTING TREE TRUNKS WITH BOTTOM ROW AT 4' DISTANCE FROM GROUND SURFACE (MINIMUM).
9. MAINTAIN AND REPLACE AS NEEDED. REMOVE AT COMPLETION OF PROJECT PER OSPC.
10. IN EVENT THE OSPC DETERMINES BARRIER TAPE IS NOT SUFFICIENT, REPLACE WITH ORANGE CONSTRUCTION FENCE OR SNOW FENCE.



TYPICAL CONSTRUCTION LIMIT BARRIER

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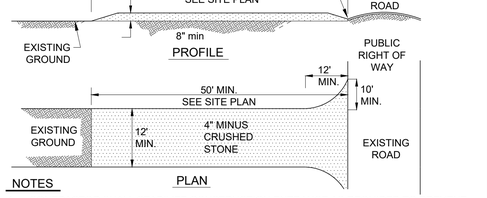


NOTES

1. CONTRACTOR SHALL STABILIZE CONSTRUCTION ENTRANCE AS REQUIRED TO PREVENT TRACKING OF SEDIMENT OFF-SITE.
2. CONTRACTOR TO USE MIRAFI 500X UNDER STONE FOR TEMPORARY CONSTRUCTION ROADS.
3. CRUSHED STONE SHALL BE ADDED OR REPLACED WHEN 80% OF THE VOIDS ARE FILLED WITH SEDIMENT.
4. STONE SIZE SHALL BE 1-4".
5. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES IS ALLOWED.

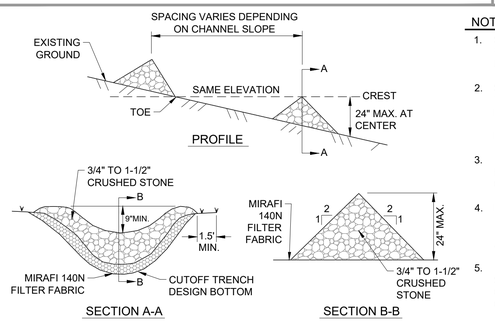
STABILIZED CONSTRUCTION ENTRANCE

N.T.S.

GUIDE TO MULCH MATERIALS, RATES, AND USES

	QUALITY STANDARDS	PER 1000 SQ. FT.	PER ACRE	DEPTH OF APPLICATION	REMARKS
WOOD CHIPS OR SHAVINGS	AIR-DRIED. FREE OF OBJECTIONABLE COARSE MATERIAL	500-900 LBS	10-20 TONS	2 - 7"	USED PRIMARILY AROUND SHRUB AND TREE PLANTINGS AND RECREATION TRAILS TO INHIBIT WEED COMPETITION. RESISTANT TO WIND BLOWING. DECOMPOSES SLOWLY.
WOOD FIBER CELLULOSE (PARTLY DIGESTED WOOD FIBERS)	MADE FROM NATURAL WOOD USUALLY WITH GREEN DYE AND DISPERSING AGENT	50 LBS	2,000 LBS.	-	APPLY WITH HYDROMULCHER. NO TIE DOWN REQUIRED. LESS EROSION CONTROL PROVIDED THAN 2 TONS OF HAY OR STRAW.
GRAVEL, CRUSHED STONE OR SLAG	WASHED; SIZE 2B OR 3A - ½"	9 CU. YDS.	405 CU. YDS.	3"	EXCELLENT MULCH FOR SHORT SLOPES AND AROUND PLANTS AND ORNAMENTALS. USE 2B WHERE SUBJECT TO TRAFFIC. (APPROXIMATELY 2,000 LBS./CU. YD.). FREQUENTLY USED OVER FILTER FABRIC FOR BETTER WEED CONTROL.
HAY OR STRAW	AIR-DRIED; FREE OF UNDESIRABLE SEEDS & COARSE MATERIALS	90-100 LBS 2-3 BALES	2 TONS (100-120 BALES)	COVER ABOUT 90% SURFACE	USE SMALL GRAIN STRAW WHERE MULCH IS MAINTAINED FOR MORE THAN THREE MONTHS. SUBJECT TO WIND BLOWING UNLESS ANCHORED. MOST COMMONLY USED MULCHING MATERIAL. PROVIDES THE BEST MICRO-ENVIRONMENTAL FOR GERMINATING SEEDS.
COMPOST	UP TO 3" PIECES, MODERATELY TO HIGHLY STABLE	3-9 CU. YDS.	134-402 CU. YDS.	1 - 3"	COARSER TEXTURED MULCHES MAY BE MORE EFFECTIVE IN REDUCING WEED GROWTH AND WIND EROSION.
EROSION CONTROL MIX	WELL-GRADED MIXTURE OF PARTICLE SIZES. ORGANIC CONTENT BETWEEN 80-100%, DRY WEIGHT. PARTICLE SIZE SHALL PASS 6" SCREEN (100%)	* SLOPES 3(HZ.):1(VERT.) OR FLATTER = 2 INCH DEPTH PLUS ADDITIONAL 1/2 INCH PER 20 FT. OF SLOPE UP TO 100 FT. ** SLOPES BETWEEN 3(HZ.):1(VERT.) AND 2(HZ.):1(VERT.) = 4 INCH DEPTH PLUS ADDITIONAL 1/2 INCH PER 20 FT. OF SLOPE UP TO 100 FT. *** SLOPES STEEPER THAN 2(HZ.):1(VERT.) USE OF EROSION CONTROL MIX AND MULCH DEPTH TO BE REVIEWED AND APPROVED PRIOR TO USE BY OSPC OR EPSC SPECIALIST			COMPRISED OF SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. MAY CONTAIN ROCK < 4" IN DIAMETER. ORGANICS SHALL BE FIBROUS AND ELONGATED. NO LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS.

NOTE: THIS MULCHING DETAIL IS FOR EROSION PREVENTION AND SEDIMENT CONTROL ONLY. THIS IS TO BE USED DURING CONSTRUCTION AS A BEST MANAGEMENT PRACTICE. LANDSCAPING MULCH IS DIFFERENT, SEE LANDSCAPE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION REGARDING LANDSCAPE MULCH.



STONE CHECK DAM

N.T.S.

NOTES

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
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 CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

PERMANENT SEED MIX SHALL BE USED AS EARLY AS PRACTICABLE BETWEEN 5/15 AND 9/15 AND SHALL MEET THE FOLLOWING CRITERIA:

SEED	% WEIGHT
RED FESCUE	50%
SHEEP FESCUE	25%
RED TOP	5%
WHITE CLOVER	10%
ANNUAL RYE	10%

TEMPORARY SEED MIX SHALL BE USED BETWEEN 9/16 AND 5/14 AND SHALL MEET THE FOLLOWING CRITERIA:

SEED	% WEIGHT	%GERMINATION
WINTER RYE	80% MIN.	85% MIN.
RED FESCUE (CREEPING)	4% MIN.	80% MIN.
PERENNIAL RYE GRASS	3% MIN.	90% MIN.
RED CLOVER	3% MIN.	90% MIN.
OTHER CROP GRASS	0.5% MAX.	
NOXIOUS WEED SEED	0.5% MAX.	
INERT MATTER	1% MAX.	

SEEDING SPECIFICATIONS

HAZELETT
STRIP-CASTING
CORPORATION

COLCHESTER, VT

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

STAMP:

Project:

THE 'H'
AT
MALLETTS BAY

180 & 166 W. Lakeshore Drive
Colchester, Vermont

Project No.	23314
Scale	N.T.S.
Drawn by	SWH
Checked by	
Date	03/03/25

Revisions

No.	Date	Description

Drawing Title

EPSC DETAILS

Drawing No.

CD-8

22195\DWGS\BVR-picnic details.dwg

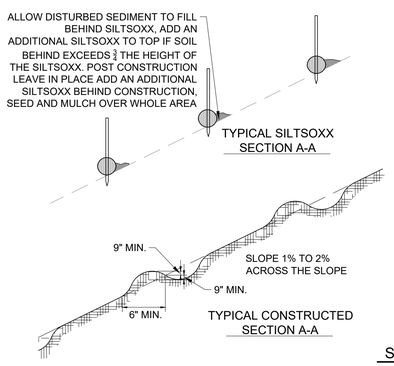
CONSTRUCTION STORMWATER DISCHARGE PERMIT INFORMATION

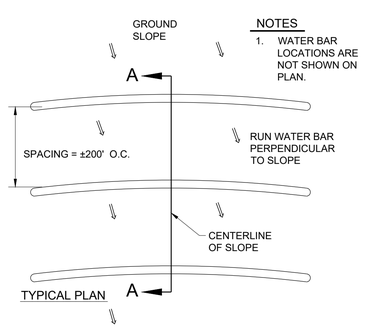
1. THIS PROJECT PROPOSES GREATER THAN 1 ACRE OF SOIL DISTURBANCE ON SITE. THE PROJECT WILL FOLLOW THIS CONSTRUCTION GENERAL PERMIT 3-9020.
2. THE PROPOSED PROJECT HAS BEEN SCORED USING THE STATE OF VERMONT APPENDIX-A RISK EVALUATION. THE PROJECT IS SCORED "MODERATE RISK" BASED ON THE EVALUATIONS CRITERIA.
3. THE MAXIMUM AREA OF EARTH DISTURBANCE AT ANY ONE TIME SHALL NOT EXCEED **5 ACRES.**
4. ALL AREAS OF EARTH DISTURBANCE ASSOCIATED WITH THIS PROJECT MUST BE STABILIZED WITHIN 14-DAYS OF INITIAL DISTURBANCE. AFTER THIS INITIAL 14-DAY PERIOD, ALL EARTH DISTURBANCE AREAS ASSOCIATED MUST BE STABILIZED ON A DAILY BASIS, WITH THE FOLLOWING EXCEPTIONS:
   I. STABILIZATION IS NOT REQUIRED IF WORK IS TO CONTINUE WITHIN THE AREA WITHIN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST FOR THE NEXT 24 HOURS.
   II. STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION (I.E., NO OUTLET FOR STORMWATER) WITH A DEPTH OF 2 FEET OR GREATER (E.G., UNDERGROUND LINE INSTALLATION).
5. PROJECT DOES PROPOSE WINTER CONSTRUCTION.
6. ALL TEMPORARY EPSC MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY EPSC MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED AND APPROVED IN WRITING BY THE OWNER.
7. SOIL STABILIZATION SHALL BE ACHIEVED BY SEED AND MULCH. HYDROSEEDING WITH MULCH TACKIFIER, SOD, STONE, AND/OR ROLLED EROSION CONTROL PRODUCTS (E.G., EROSION CONTROL BLANKET). MULCH SHALL BE COMPRISED OF STRAW, HAY, COMPOST, WOODCHIPS, WOOD STUMP GRINDINGS, AND/OR EROSION CONTROL MIX.
8. APPROPRIATE SEED MIX SHALL BE APPLIED TO DESIGNATED AREAS PER THIS EPSC PLAN AND SEED SPECIFICATIONS.

TEMPORARY & FINAL STABILIZATION NOTES

1. ALL AREAS OF EARTH DISTURBANCE ASSOCIATED WITH THIS PROJECT MUST BE STABILIZED WITHIN 14 DAYS OF INITIAL DISTURBANCE. AFTER THIS INITIAL 14-DAY PERIOD, ALL EARTH DISTURBANCE AREAS ASSOCIATED MUST BE STABILIZED ON A DAILY BASIS, WITH THE FOLLOWING EXCEPTIONS:
   I. STABILIZATION IS NOT REQUIRED IF WORK IS TO CONTINUE WITHIN THE AREA WITHIN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST FOR THE NEXT 24 HOURS.
   II. STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION (I.E., NO OUTLET FOR STORMWATER) WITH A DEPTH OF 2 FEET OR GREATER (E.G., UNDERGROUND LINE INSTALLATION).
2. THE MAXIMUM AREA OF EARTH DISTURBANCE AT ANY ONE TIME SHALL NOT EXCEED **5 ACRES**.
3. SOIL STABILIZATION SHALL BE ACHIEVED BY SEED AND MULCH (SEE DETAILS). HYDROSEEDING WITH MULCH TACKIFIER, SOD, STONE, AND/OR ROLLED EROSION CONTROL PRODUCTS (E.G., EROSION CONTROL BLANKET; SEE DETAIL). MULCH SHALL BE COMPRISED OF STRAW, HAY, COMPOST, WOODCHIPS, WOOD STUMP GRINDINGS, AND/OR EROSION CONTROL MIX (SEE DETAIL).
4. APPROPRIATE SEED MIX SHALL BE APPLIED TO DESIGNATED AREAS PER THIS EPSC PLAN AND SEED SPECIFICATIONS (SEE DETAILS). FOR AN AREA TO BE STABILIZED FOR WINTER BY VEGETATED COVER, SEEDING MUST BE COMPLETED BY SEPTEMBER 15.
5. AREAS TO BE STABILIZED FOR WINTER THAT DO NOT HAVE ESTABLISHED VEGETATION BY OCTOBER 15 SHALL BE STABILIZED BY ANCHORED MULCH AT THE WINTER APPLICATION RATE, OR OTHER APPROVED STABILIZATION MEASURES (E.G., ROLLED EROSION CONTROL PRODUCT; SEE DETAIL). DORMANT SEEDING WITH WINTER RYE IS RECOMMENDED (SEE DETAIL).
6. ALL TEMPORARY EPSC MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY EPSC MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED AND APPROVED IN WRITING BY THE OWNER.
7. FOLLOWING TEMPORARY OR PERMANENT STABILIZATION, MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.
8. EXCEPT AS NOTED BELOW, ALL AREAS OF DISTURBANCE SHALL BE SEEDED AND STABILIZED WITH EPSC MEASURES (E.G., MULCH, EROSION CONTROL MIX, ROCK RIP RAP, OR ROLLED EROSION CONTROL PRODUCT), INCLUDING AREAS WHERE CONSTRUCTION HAS BEEN SUSPENDED OR SECTIONS COMPLETED. THE FOLLOWING SHALL ALSO APPLY:
   A. FOR ACTIVE CONSTRUCTION AREAS SUCH AS BORROW OR STOCKPILE AREAS, ROADWAY IMPROVEMENTS, AND AREAS WITHIN 50 FEET OF A BUILDING UNDER CONSTRUCTION, A PERIMETER SEDIMENT CONTROL SYSTEM (E.G., SILT FENCE) SHALL BE INSTALLED AND MAINTAINED TO CONTAIN SOIL. EXPOSED DISTURBED AREAS ADJACENT TO A CONVEYANCE THAT PROVIDES RAPID OFFSITE DISCHARGE OF SEDIMENT (E.G., A CUT SLOPE AT AN ENTRANCE) SHALL BE COVERED WITH PLASTIC OR GEOTEXTILE TO PREVENT SOIL LOSS UNTIL THE AREA CAN BE STABILIZED. STABILIZED CONSTRUCTION ENTRANCES SHALL BE MAINTAINED TO CONTROL EQUIPMENT AND VEHICLES FROM TRACKING MATERIAL OFF SITE.
   B. PERMANENT SEEDING SHALL ONLY BE UNDERTAKEN IN THE SPRING SEASON FROM APRIL THROUGH MAY AND IN LATE SUMMER AND EARLY FALL UNTIL SEPTEMBER 15; SUMMER PLANTING MAY BE CONDUCTED IF ADEQUATE WATERING IS PROVIDED. DURING THE PEAK SUMMER MONTHS AND IN THE FALL AFTER SEPTEMBER 15, AN APPROPRIATE TEMPORARY STABILIZATION SHALL BE IMPLEMENTED. TEMPORARY SUMMER PLANTING MAY SUFFICE FOR PERMANENT SEEDING IF ADEQUATE NATURAL RAINFALL ALLOWS FOR VIGOROUS GROWTH DURING THE MID SUMMER PERIOD. THE CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE RETURN TO THE SITE THE SPRING FOLLOWING CONSTRUCTION TO PERFORM ANY FURTHER SEEDING THAT MAY BE REQUIRED AND TO REMOVE ANY REMAINING EROSION CONTROL MEASURES THAT ARE NO LONGER NEEDED.
   D. TEMPORARY SEDIMENT TRAPPING DEVICES (E.G., SILT FENCE) SHALL NOT BE REMOVED UNTIL PERMANENT STABILIZATION IS ESTABLISHED IN ALL CONTRIBUTORY DRAINAGE AREAS. SIMILARLY, STABILIZATION SHALL BE ESTABLISHED PRIOR TO CONVERTING SEDIMENT TRAPS AND/OR SEDIMENT BASINS INTO PERMANENT (POST-CONSTRUCTION) STORMWATER MANAGEMENT PRACTICES.
   E. STABILIZATION MEASURES SHALL BE APPLIED TO BARE EARTH SURFACES WITH SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES (E.G., ROLLED EROSION CONTROL PRODUCT) AS SOON AS POSSIBLE AFTER DISTURBANCE.

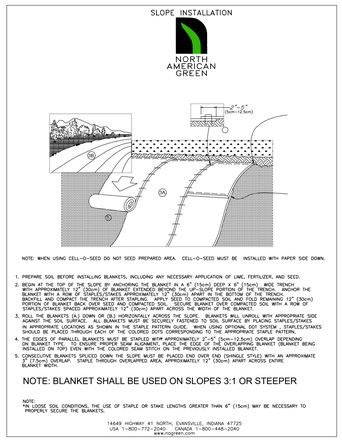
"EPSC" - EROSION PREVENT & SEDIMENT CONTROL
"OSPC" - ON-SITE PLAN COORDINATOR

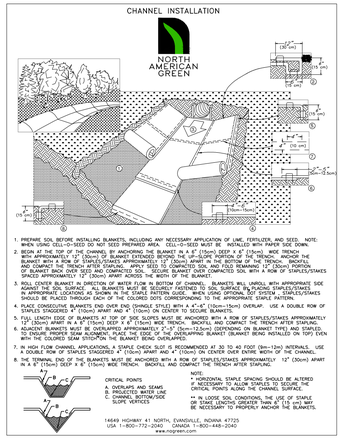




NOTES
1. WATER BAR LOCATIONS ARE NOT SHOWN ON PLAN.

SILTSOXX OR CONSTRUCTED WATER BAR DETAIL
N.T.S.





EROSION CONTROL BLANKET

NORTH AMERICAN GREEN S75BN

MATERIAL SPECIFICATIONS:
- EROSION CONTROL BLANKET SHALL BE A MACHINE-PRODUCED MAT OF 100% AGRICULTURAL STRAW.
- THE BLANKET SHALL BE OF CONSISTENT THICKNESS WITH THE STRAW EVENLY DISTRIBUTED OVER THE ENTIRE AREA OF THE MAT. THE BLANKET SHALL BE COVERED ON THE TOP SIDE WITH 100% BIODEGRADABLE WOVEN NATURAL ORGANIC FIBER NETTING HAVING AN APPROXIMATE 1/2" X 1" MESH AND BE SEWN TOGETHER WITH BIODEGRADABLE THREAD.
- STRAW EROSION CONTROL BLANKET SHALL BE S75BN AS MANUFACTURED BY NORTH AMERICAN GREEN, INC. (812-867-6632) OR EQUIVALENT. EROSION CONTROL BLANKET SHALL HAVE THE FOLLOWING PROPERTIES:

MATERIAL CONTENT:
- STRAW: 100% (0.50 lbs/sq.yd.)(0.27 kg/m^2)
- NETTING: ONE SIDE ONLY, LENO WOVEN 100% BIODEGRADABLE NATURAL ORGANIC FIBER (APPROX. WEIGHT 9.3 lbs./100 sq. ft.)
- THREAD: BIODEGRADABLE

PHYSICAL SPECIFICATIONS (ROLL):
- WIDTH: 6.67 feet (2.03 m)
- LENGTH: 108 feet (32.92 m)
- WEIGHT: 46.4 lbs. ± 10% (21.05 kg)
- AREA: 80 sq. yd. (50 m^2)

RELEVANT DEFINITIONS AS DEFINED BY VT DEC (GP 3-9020, APPENDIX C)

"COMMENCEMENT OF CONSTRUCTION ACTIVITIES"
- THE INITIAL DISTURBANCE OF SOILS ASSOCIATED WITH CLEARING, GRADING, OR EXCAVATING ACTIVITIES OR OTHER CONSTRUCTION-RELATED ACTIVITIES (E.G., STOCKPILING OF FILL MATERIAL).

"CONSTRUCTION AND CONSTRUCTION-RELATED ACTIVITIES"
- ALL CLEARING, GRADING, EXCAVATION, AND STOCKPILING ACTIVITIES THAT WILL RESULT IN THE DISTURBANCE OF ONE OR MORE ACRE OF LAND AREA. EARTH DISTURBANCE THAT IS A NORMAL PART OF THE LONG-TERM USE OR MAINTENANCE OF A PROPERTY IS NOT COVERED BY [THE PERMIT] (E.G., MINING OPERATIONS, DIRT ROAD REGRADING, ROUTINE ROAD RESURFACING).

"CONSTRUCTION SITE"
- THE LAND OR WATER AREA WHERE ANY FACILITY OR ACTIVITY IS PHYSICALLY LOCATED OR CONDUCTED, INCLUDING ADJACENT LAND USED IN CONNECTION WITH THE FACILITY OR ACTIVITY OR THE AREA OF EARTH DISTURBANCE DIRECTLY ASSOCIATED WITH THE PERMITTED ACTIVITY.

"DISTURBED EARTH"
- ANY SOIL ON A CONSTRUCTION SITE OR ASSOCIATED SUPPORT ACTIVITIES (E.G., STAGING AREA, BORROW AREA, DISPOSAL SITE FOR EXCESS FILL) THAT IS EXPOSED TO EROSIVE EFFECTS OF WIND, RAIN, OR RUNOFF DUE TO CONSTRUCTION OR CONSTRUCTION RELATED ACTIVITIES.

"FINAL (OR PERMANENT) STABILIZATION"
- ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND EITHER OF THE TWO FOLLOWING CRITERIA ARE MET:
  1. A UNIFORM (E.G., EVENLY DISTRIBUTED, WITHOUT LARGE BARE AREAS) PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70 PERCENT OF THE NATIVE BACKGROUND VEGETATIVE COVER FOR THE AREA HAS BEEN ESTABLISHED ON ALL UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES, OR
  2. EQUIVALENT FINAL STABILIZATION MEASURES (SUCH AS THE USE OF GRAVEL, RIPRAP, SHOT ROCK, GABIONS, GEOTEXTILES, OR EROSION CONTROL MIX) HAVE BEEN EMPLOYED.

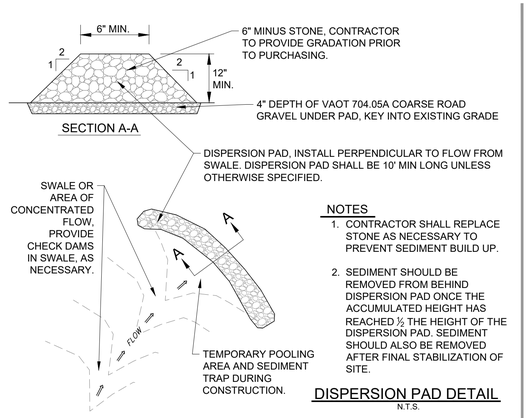
"PRINCIPAL OPERATOR"
- ANY PARTY ASSOCIATED WITH A CONSTRUCTION PROJECT THAT MEETS EITHER OF THE FOLLOWING TWO CRITERIA:
  1. THE PARTY HAS OPERATIONAL CONTROL OVER CONSTRUCTION PLANS AND SPECIFICATIONS INCLUDING, BUT NOT LIMITED TO, THE ABILITY TO MAKE MODIFICATIONS TO THOSE PLANS AND SPECIFICATIONS; OR
  2. THE PARTY HAS DAY-TO-DAY OPERATIONAL CONTROL OF THOSE ACTIVITIES AT A PROJECT WHICH ARE NECESSARY TO ENSURE COMPLIANCE WITH A EPSC PLAN FOR THE SITE OR OTHER PERMIT CONDITIONS (E.G., THEY ARE AUTHORIZED TO DIRECT WORKERS AT A SITE TO CARRY OUT ACTIVITIES REQUIRED BY THE EPSC PLANNER COMPLY WITH OTHER PERMIT CONDITIONS).

"STORMWATER"
- STORMWATER RUNOFF, SNOWMELT RUNOFF, AND SURFACE RUNOFF AND DRAINAGE.

"STORMWATER DISCHARGE-RELATED ACTIVITIES"
- ACTIVITIES THAT CAUSE, CONTRIBUTE TO, OR RESULT IN STORMWATER POINT SOURCE POLLUTANT DISCHARGES, INCLUDING BUT NOT LIMITED TO: EXCAVATION, SITE DEVELOPMENT, GRADING AND OTHER SURFACE DISTURBANCE ACTIVITIES; AND MEASURES TO CONTROL STORMWATER INCLUDING THE SITING, CONSTRUCTION AND OPERATION OF BMPS TO CONTROL, REDUCE OR PREVENT STORMWATER POLLUTION.

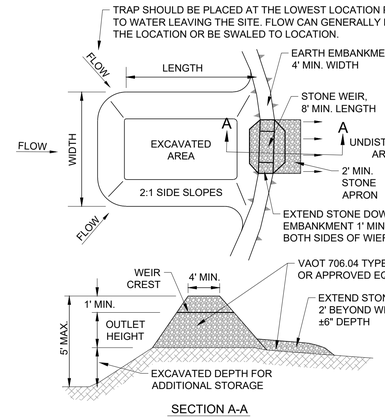
"TEMPORARY STABILIZATION"
- PROTECTING SOILS IN AREAS WHERE ADDITIONAL SOIL DISTURBANCE ACTIVITIES FROM EROSION BY RAINFALL, RUNOFF, OR WIND, WITH A SURFACE COVER, INCLUDING, BUT NOT LIMITED TO, ESTABLISHMENT OF GROUND VEGETATION, APPLICATION OF MULCH, ROLLED EROSION CONTROL PRODUCTS, SHOT ROCK, GRAVELING, EROSION CONTROL MIX OR PAVING.

"WATERS OF THE STATE"
- ALL RIVERS, STREAMS, CREEKS, BROOKS, RESERVOIRS, PONDS, LAKES, SPRINGS, AND ALL BODIES OF SURFACE WATERS, ARTIFICIAL OR NATURAL, WHICH ARE CONTAINED WITHIN, FLOW THROUGH OR BORDER UPON THE STATE OF VERMONT OR ANY PORTION OF IT.



NOTES
1. CONTRACTOR SHALL REPLACE STONE AS NECESSARY TO PREVENT SEDIMENT BUILD UP.
2. SEDIMENT SHOULD BE REMOVED FROM BEHIND DISPERSION PAD ONCE THE ACCUMULATED HEIGHT HAS REACHED ½ THE HEIGHT OF THE DISPERSION PAD. SEDIMENT SHOULD ALSO BE REMOVED AFTER FINAL STABILIZATION OF SITE.

DISPERSION PAD DETAIL
N.T.S.



SECTION A-A

NOTES
1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT (VEGETATION DUFF LAYER). THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS AND OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
3. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER. THE USE OF GREATER SLOPES MAYBE PERMITTED WITH OSPC OR EPSC SPECIALIST APPROVAL.
4. THE STONE USED IN THE OUTLET SHALL BE VAOT 706.04 TYPE 1 STONE OR APPROVED ON SITE SHOT ROCK, PLACED ON MIRAFI 140N OR APPROVED EQUAL DRAINAGE FABRIC.
5. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ½ THE DESIGN DEPTH OF THE TRAP. IT SHALL BE PLACED ON SITE AND STABILIZED.
6. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND AS REQUIRED BY THE PERMIT.
7. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND SEDIMENT ARE CONTROLLED.
8. IF THE SEDIMENT TRAP IS NOT IN THE LOCATION OF A PERMANENT STORMWATER POND, THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
9. THE MAXIMUM CONTRIBUTING DRAINAGE AREA IS 5 ACRES.
10. GENERAL SIZING REQUIREMENTS FOR ANY SEDIMENT TRAPS NOT IN THE LOCATION OF A PERMANENT STORMWATER POND, SHALL BE 3,600 CUBIC FEET PER ACRE OF DRAINAGE AREA. VOLUME CALCULATION FOR NATURAL SEDIMENT TRAPS MAY BE APPROXIMATED USING THE SURFACE AREA AT OUTLET ELEVATION (A), TRAPS MAXIMUM DEPTH (D) AND THE FOLLOWING EQUATION:
    - TOTAL VOLUME = 0.4 * A (IN SQUARE FEET) * D (FEET)

    FOR CONSTRUCTED/EXCAVATED TEMPORARY SEDIMENT TRAPS THE SIZE SHALL BE ADJUSTED PROPORTIONALLY FOR LARGER DRAINAGE AREAS BASED ON THE BELOW CHART.

APPROX. DRAINAGE AREA	APPROX. STORAGE VOLUME	RECOMMENDED BOTTOM DIMENSIONS	RECOMMENDED DIMENSIONS AT OUTLET	DEPTH AT OUTLET	SIDE SLOPES
0.25 ACRES (±10,900 S.F.)	±900 C.F.	10 FT. WIDE X 13 FT. LONG	22 FT. WIDE X 25 FT. LONG	3 FT.	2:1

11. FOR THOSE TEMPORARY SEDIMENT TRAPS TO BE PERMANENT DRY OR WET PONDS, SEDIMENT SHALL BE REMOVED AND THE ENTIRE AREA SEEDED AND MULCHED OR COVERED WITH EROSION CONTROL MATTING PRIOR TO PUTTING THE STORMWATER POND INTO USE.
12. LOCATIONS FOR TEMPORARY SEDIMENT TRAPS TO BE APPROVED BY THE OSPC OR THE EPSC SPECIALIST.

TYPICAL TEMPORARY SEDIMENT TRAP
N.T.S.

WINTER EROSION CONTROL PROCEDURES

(FOR ANY EARTH WORK PERFORMED BETWEEN OCTOBER 15TH AND APRIL 15TH)

WINTER EROSION CONTROL NARRATIVE:
OBJECTIVE - ANY SITE WORK PERFORMED LATER THAN OCTOBER 15TH WILL RESULT IN EXPOSED SOIL THROUGH THE WINTER. THIS PRESENTS A POTENTIAL FOR EROSION THROUGH THE WINTER. THE WINTER EROSION CONTROL MEASURES ARE INTENDED TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION ZONE DURING THAWS AND RAINSTORMS.

WINTER EROSION CONTROL SEQUENCE:
ON-SITE COORDINATOR - THE ON-SITE COORDINATOR SHALL BE SURE ALL EROSION CONTROL MEASURES REQUIRED FOR WINTER CONSTRUCTION ARE INSTALLED BY OCTOBER 15TH AND PRIOR TO GROUND FREEZING. IF A PERMITTED AREA CAN BE LEFT UNDISTURBED UNTIL THE SPRING THE CONTRACTOR SHALL MAKE EVERY EFFORT TO LIMIT THESE AREAS OF DISTURBANCE.

THE CONTRACTOR SHALL STABILIZE ANY PORTION OF THE SITE THAT IS BEING WORKED AND DISTURBED PRIOR TO BEGINNING CONSTRUCTION AT ANOTHER AREA OF THE SITE. AT NO TIME DURING WINTER CONSTRUCTION SHALL THERE BE MORE THAN 1 ACRE OF EXPOSED SOIL ON SITE.

ANTICIPATED WINTER CONSTRUCTION ACTIVITIES WILL INCLUDE ALL ASPECTS OF THE PROJECT PROPOSED DURING SUMMER CONSTRUCTION. THIS IS A CONTINUATION OF WORK WHICH WAS NOT COMPLETED DURING THE SUMMER. MAJOR GRADING IS EXPECTED TO BE COMPLETE BEFORE OCTOBER 15TH.

LIMITS OF DISTURBANCE - LOD WILL BE MOVED AND/OR REPLACED TO REFLECT THE BOUNDARY OF WINTER WORK. CONTRACTOR WILL MAINTAIN A MINIMUM 25' BUFFER FROM PERIMETER CONTROLS TO ALLOW FOR SNOW CLEARING AND MAINTENANCE.

SNOW STORAGE ON SITE - CONTRACTOR WILL CREATE A SNOW MANAGEMENT PLAN. PLAN WILL IDENTIFY LOCATIONS FOR ADEQUATE SNOW STORAGE AND CONTROL SNOW MELT. SNOW STORAGE WILL BE DOWN GRADIENT OF ALL DISTURBED AREAS AND WILL NOT PROHIBIT THE FUNCTION OF ALL PERMANENT STORMWATER TREATMENT STRUCTURES. CONTRACTOR SHALL KEEP ALL DRAINAGE STRUCTURES OPWN AND FREE OF SNOW AND ICE DAMS.

INSTALL SILT FENCE - SILT FENCE SHALL BE INSTALLED ON THE DOWNHILL SIDE OF THE WINTER CONSTRUCTION AREAS AND SOIL STOCKPILE AREAS, AS SHOWN ON THE PLAN, BY OCTOBER 15TH. IF THE GROUND IS UNFROZEN THE SILT FENCE SHALL BE DUG IN AS NORMAL. IF THE GROUND IS FROZEN CONTACT THE ENGINEER FOR ALTERNATE OPTIONS (STONE BERM, FILTREXX SILT SOXX, STRAW WATTLES, ETC.).

STABILIZED CONSTRUCTION ENTRANCE - THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL STABILIZED CONSTRUCTION ENTRANCES TO PREVENT SEDIMENT TRACKING OFF SITE. CONTRACTOR SHALL ENLARGE THE WIDTH OF ACCESS TO PROVIDE ADDITIONAL ROOM FOR SNOW STOCKPILING, IF NEEDED. ADDITIONAL STONE SHALL BE ADDED OR THE LENGTH SHALL BE INCREASED, IF ICE AND SNOW LIMITS CONSTRUCTION ENTRANCE'S ABILITY TO HOLD SEDIMENTS ON SITE.
WINTER STABILIZATION – ALL DISTURBED AREAS NOT INVOLVED IN WINTER CONSTRUCTION SHALL BE AT LEAST TEMPORARILY STABILIZED BY OCTOBER 15. AFTER OCTOBER 15TH, ALL AREAS DISTURBED DURING WINTER CONSTRUCTION SHALL BE STABILIZED DAILY TO PREVENT EXPOSURE FROM RAIN EVENTS AND ACCUMULATION OF SNOWFALL (SEE EXCEPTIONS BELOW). CONTRACTOR SHALL ADD ADDITIONAL STONE, AS NECESSARY, TO PROVIDE STABILIZATION THROUGH WINTER CONSTRUCTION ON ALL AREAS WHERE CONSTRUCTION TRAFFIC IS ANTICIPATED.

EXCEPTIONS:
- HYDROSEEDING AFTER OCTOBER 15TH AND BEFORE APRIL 15TH MUST BE STABILIZED WITH STRAW MULCH OR EROSION CONTROL MATTING.*
- SNOW AND/OR ICE MUST BE REMOVED TO, AT MOST, ONE INCH PRIOR TO APPLYING MULCH OR EROSION CONTROL STABILIZATION MATTING.
- IF NO PRECIPITATION, WITHIN 24 HOURS, IS FORECASTED AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
- DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS OPEN UTILITY TRENCHES, REQUIRE STABILIZATION AT THE END OF EACH WORK WEEK.

MAINTENANCE - ALL DISTURBED AREAS SHALL BE MONITORED BY THE CONTRACTOR AND THE ON-SITE PLAN COORDINATOR IN ACCORDANCE WITH THE INSPECTION REQUIREMENT OUTLINED IN THE INDIVIDUAL CONSTRUCTION STORMWATER PERMIT. THE CONTRACTOR AND ON-SITE PLAN COORDINATOR SHALL EVALUATE THE SITE AFTER A THAW OR RAINSTORM. THE CONTRACTOR OR ON-SITE PLAN COORDINATOR SHALL NOTIFY THE ENGINEER IF ANY EROSION CONTROL MEASURES APPEAR TO BE INADEQUATE. THE CONTRACTOR OR ON-SITE PLAN COORDINATOR SHALL IMMEDIATELY (WITHIN THE SAME BUSINESS DAY) IMPLEMENT ANY FURTHER EROSION CONTROL MEASURES SPECIFIED BY THE ENGINEER. THE CONTRACTOR OR ON-SITE PLAN COORDINATOR SHALL ADD MULCH, AS NECESSARY, THROUGHOUT THE WINTER AFTER THAWS OR RAINSTORMS. THE MULCH DEPTH SHALL BE BROUGHT UP TO 2". THE MULCH AND SILT FENCE SHALL BE MAINTAINED UNTIL A PERMANENT GROUND COVER (70% STABILIZATION) IS ESTABLISHED IN THE SPRING. THE SITE SHALL BE REMULCHED AND RESEEDED, IN THE SPRING, AS REQUIRED TO ESTABLISH A VIGOROUS PERMANENT GROUND COVER.

INSPECTION - THE ON-SITE COORDINATOR SHALL BE RESPONSIBLE FOR, AT A MINIMUM, DAILY WRITTEN INSPECTIONS WHILE THE SITE IS DISTURBED OR WEEKLY IF EVERYTHING IS STABILIZED BUT CONSTRUCTION IS ON-GOING. IF, DURING WINTER CONSTRUCTION, EARTH DISTURBANCE ACTIVITIES TEMPORARILY CEASE AND THE SITE HAS BEEN FULLY STABILIZED, INSPECTION AND MONITORING REQUIREMENTS FOR THE ON-SITE COORDINATOR MAY BE REDUCED TO ONCE PER MONTH MINIMUM. ALL INSPECTION SHEETS SHALL BE KEPT ON SITE AND BE AVAILABLE UPON REQUEST.

ON-SITE PLAN COORDINATOR (OSPC) NOTES

1. A QUALIFIED PERSON OR PERSONS SHALL BE DESIGNATED AS THE ON-SITE PLAN COORDINATOR (OSPC).
2. THE OSPC SHALL BE KNOWLEDGEABLE IN PRINCIPLES AND PRACTICES OF EPSC IMPLEMENTATION AND POSSESS SKILLS TO ASSESS CONDITIONS AT THE CONSTRUCTION SITE THAT COULD IMPACT STORMWATER QUALITY AND TO ASSESS EFFECTIVENESS OF EPSC MEASURES SELECTED TO CONTROL QUALITY OF STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY.
3. THE OSPC SHALL BE RESPONSIBLE FOR ON-SITE IMPLEMENTATION OF THIS EPSC PLAN, INCLUDING INSPECTION REPORTS, TURBIDITY MONITORING AND DISCHARGE REPORTING.
4. THE OSPC SHALL HAVE AUTHORITY TO STOP AND/OR MODIFY CONSTRUCTION ACTIVITIES AS NECESSARY TO COMPLY WITH THIS EPSC PLAN AND TERMS AND CONDITIONS OF THE PERMIT.
5. THE OSPC SHALL BE RESPONSIBLE FOR INSPECTIONS AND REPORTING PER THE PERMIT.
6. THE OSPC OR HIS/HER DESIGNEE SHALL BE ON-SITE ON A DAILY BASIS DURING ACTIVE CONSTRUCTION.
7. THE OSPC'S CONTACT INFORMATION SHALL BE PROVIDED TO VT DEC PRIOR TO START OF CONSTRUCTION.

HAZELETT STRIP-CASTING CORPORATION

COLCHESTER, VT

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201 P: (802) 878-0375
Colchester, Vermont 05446 www.krebsandlansing.com

STAMP:

Project:
THE 'H' AT MALLETTS BAY
180 & 166 W. Lakeshore Drive
Colchester, Vermont

Project No.	23314
Scale	N.T.S.
Drawn by	SWH
Checked by	
Date	03/03/25

Revisions

No.	Date	Description

Drawing Title
EPSC DETAILS

Drawing No.
CD-9

22195\DWGS\BVR-picnic details.dwg

Project Overview: “The H”

The vision for “The H” is to establish a unique hospitality destination that attracts visitors to Malletts Bay year-round. This development has been meticulously planned to provide a diverse range of experiences and activities, offering an immersive connection to the waterfront while maintaining a harmonious relationship with the surrounding environment.

The proposed plan includes the following key elements:

- **Accommodations**:
  - Four cottage-style buildings, housing a total of **19 guest rooms**, ranging from studio units to one- and two-bedroom suites.
- **Main Building (Project Centerpiece)**:
  - A **48-seat restaurant**, featuring both indoor dining and an outdoor patio on the lower level.
  - **Event and meeting space** on the main floor, designed for gatherings, conferences, and community events.
  - **Health and wellness amenities** on the upper level, providing guests with access to fitness and relaxation facilities.
- **Waterfront Access and Recreation**:
  - All accommodations and amenities will offer **unobstructed lake views**, direct **waterfront access**, and a designated **lakeside recreational area**.
- **Future Expansion**:
  - A **single cottage** to the east, with design and planning to be completed at a later stage through a separate approval process.

Design Approach

Our design approach has been guided by a commitment to preserving and enhancing the historic character of the Malletts Bay shoreline district. The project has been carefully crafted to seamlessly integrate with the surrounding environment while providing a welcoming and visually appealing experience for guests and the public alike.

- **Architectural Considerations**:
  - All buildings are **two stories in height**, adhering to required height limitations while ensuring a traditional and unobtrusive shoreline aesthetic.
  - Thoughtful building placement has been implemented to **preserve lake views**, creating an open and inviting atmosphere.
  - A carefully developed **landscaping plan** will enhance the site's visual appeal from both the road and the water, meeting all planning requirements while maintaining natural beauty.
- **Lakeside Experience & Outdoor Activities**:
  - The buildings feature **private lower walkout areas** for guests, offering direct access to the lake.
  - A **central lakefront access point** has been designed to serve as a communal gathering area, providing space for seating and various recreational activities.
  - Guests will have the opportunity to enjoy a range of **outdoor activities**, including **kayaking, paddleboarding, pétanque, volleyball, curling, and sailing**.
- **Community Gathering Space**:
  - A **multi-functional communal gathering area** has been designed to overlook the water, seamlessly blending into the natural landscape of the hillside.
  - This space will provide a scenic and welcoming environment for social engagement, relaxation, and special events.

Parking & Site Integration

To maintain a pedestrian-friendly and guest-centric environment, parking and related accessory structures have been strategically positioned to minimize visual and functional disruption to the site. These facilities have been designed to integrate efficiently with the **main Hazelett operation**, streamlining parking and maintenance logistics while preserving the overall guest experience.

Conclusion

We believe that this **thoughtfully designed, well-planned project** will serve as a valuable addition to Malletts Bay and the broader Colchester community. By blending **modern hospitality offerings with a deep respect for the natural landscape**, "The H" is poised to bring **fresh energy, innovation, and year-round activity** to this iconic waterfront location.

Thank you for your time and consideration. We look forward to your feedback and the opportunity to bring this vision to life.

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PRELIMINARY PLAT REVIEW CRITERIA NARRATIVE
The "H" at Malletts Bay

Project Description

The project is a proposed redevelopment of the Hazelett water parcel located at 166 and 180 West Lakeshore Drive, entitled "The H at Mallets Bay". This will be a hospitality project comprised of an Inn with a series of 5 cottages and a total of 20 rooms. In addition, the centerpiece of the project s a main building with a 48-seat restaurant at the main level, event space, and spa facilities. A new bathhouse will be constructed as well to enable beach users to use the facilities without having to go back the cottages/main building. New parking will be constructed across the street at 135 West Lakeshore Drive as part of a Site Plan application for that parcel.

We offer the following description of how the site complies with the Subdivision Review Standards of the Colchester Development Regulations.

Section 9.05-A Required Improvement List

The project features the merging of the lots encompassing 166 and 180 West Lakeshore Drive. A boundary survey of these parcels has been completed and any missing monuments or lot markers will be set.
A complete set of Landscaping Plans and budget has been prepared by T.J. Boyle Associates, LLC.
Potable water supply and wastewater disposal will be via new municipal connections.
There are no new roadways proposed as part of the project.
Stormwater management will be done in conjunction with stormwater improvements at 135 Lakeshore Drive which shares the same discharge point.

Section 9.05-B Suitability of Land

The area of land proposed for development is well suited for type of development proposed. There are no wetlands, natural areas, or areas prone to flooding near the proposed building sites. The slopes on the site are conducive to "walk out" buildings that are desirable for this type of project.

Section 9.05-C Lot Layout

There are no new lots proposed as part of the project. The lots serving 166 and 180 West Lakeshore Drive will be merged into a single lot.

Section 9.05-D Building Envelope

The building envelope for the merged lots is defined by the zoning setbacks to the front and side, and the lakeshore setback to the rear. These setbacks are shown on the plans.

Section 9.05-E Monuments and Lot Corners Markers

There are no public streets being created as part of this subdivision. Lot corners created as part of the subdivision shall be marked in accordance with regulations.

Section 9.05-F Energy Conservation

The proposed buildings will be constructed to current Vermont Residential Energy Standards.

Section 9.05-G Water

The proposed project is located in an area served by Colchester Fire District#2 (CFD2). CFD2 has previously indicated there is adequate water capacity to serve the project. A new 4" water line will be tapped from the existing main on West Lakeshore Drive and extended to the main building. Individual service lines for each cottage will be tapped off the 4" line. An additional service will be extended to the proposed bathhouse.

Section 9.05-H Wastewater Disposal

The proposed project is located in an area to be served by the new Mallets Bay sewer project. The site has previously approved plan for an on-site wastewater disposal system accommodating 4,482 gallons/day. It is our understanding that this design flow has been allocated to the property in terms of flows to the municipal sewer. The "H" has been designed to have flows within this original allocation. We have attached a worksheet outlining the project design flows as well as correspondence with Town Public Works staff indicating the that our strategy is acceptable.
A State of Vermont Wastewater Disposal System and Potable Water Supply Permit Application will be filed for the project.

The system will include individual sanitary services from each building, flowing to a collection system. The sanitary sewer collection line will flow via gravity to a new pump station. The pump station will pump wastewater to one of the two sewer stubs installed for the property as part of the Mallets Bay sewer project.

Section 9.05-I Site Preservation and Landscaping
The project proposes grading and site improvements located on a steep, northeast-facing slope along the Lake Champlain shoreline in Colchester, VT, part of which is located within the 100' Protected Lakeshore Buffer. The existing vegetation on this slope is a mix of native and invasive species. The proposed finished grades within the lakeshore buffer will not exceed 2:1, and disturbed areas will be stabilized with erosion control measures, seeding and native vegetation. Biodegradable erosion control matting and an appropriate annual cover crop that germinates quickly will provide short-term stabilization and protection from storm events, while a custom seed mix of long-lived, deep-rooted species formulated for the sandy, north-facing slope will provide more permanent stabilization once established. Woody shrub and tree species have been carefully selected to reflect the naturally occurring plant communities found along Lake Champlain and nearby forests. The newly rebuilt slope is designed with ecology, reduced maintenance and aesthetics in mind. Matrix-style plantings comprised of native ferns, sedges, and groundcovers are proposed to surround the north foundations and courtyards. These dense, mixed plantings mimic the way plants grow together naturally, fomenting a

resilient plant community that requires less weeding, watering, and mulching than traditional landscaping installations. Larger trees and shrubs are also proposed in appropriate locations on the slope, replacing the predominantly invasive black locust that currently exists (see https://vtinvasives.org/invasive/black-locust). A survey of the existing trees with greater than 1" caliper has been conducted, and a more thorough evaluation of the various species will be conducted later in the spring.

A complete set of landscaping plans and details has been prepared by T.J. Boyle Associates, LLC and is attached.

Section 9.05-J Streets

No new streets are proposed with this project. The proposed project will be accessed from curb cuts located on West Lakeshore Drive. In order to reduce impervious surface and impacts to the existing slopes on the site, a narrow, one-way driveway is proposed. The entrance will be on the south end of the site, and the exit will be on the north end. Both curb cuts will align with existing curb cuts serving the Hazelett property across the street. Each curb cut will be approximately 45' in length, with a 30' throat. This is a massive reduction in the existing curb cuts on the property. There are currently three curb cuts with a total length of approximately 270 feet. Five parallel parking spaces are proposed in front of the main building. These will be primarily for check-in and drop off purposes, with the main parking areas being located across the road.

Access to south marina area will be maintained via a reconfigured driveway. This driveway will be 2-way and have room for a turnaround, and 6 parking spaces. The existing driveway to the recreation area to the north of the site will be removed and replaced with a pedestrian path.

Section 9.05-K Pedestrian Access

Pedestrian routes are an integral part of the site design. There is a sidewalk along the front of the buildings. Access to the waterfront is provided via a central stair and path near the main building. An additional path/stair on the north end of the site will replace the existing paved driveway at that end. A gravel walkway along the base of the slop will provide pedestrian connectivity through the site. There is a net reduction of impervious surface in the Shoreland protection zone.

The parking area at 135 Lakeshore Drive will connect to the site via a sidewalk from the parking lot and a cross-walk at West Lakeshore Drive. A flashing beacon is proposed for pedestrian safety.

The design team met with Amanda Clayton, the Town Engineer at the time, regarding the request at Sketch Plan for "*A 5-ft permanent easement for future sidewalk along West Lakeshore Drive and a 10-ft temporary construction easement adjacent to the permanent easement shall be granted to the Town of Colchester".* We explained that due to the limited space for development on the lot, easements of this width would actually extend well into the travel way of our design plan. It was determined that any future sidewalk along the west side of West Lakeshore Drive could be located within the Town right of way, and that only the construction easement would be needed.

Section 9.05-L Utilities

There are no public utilities proposed with this subdivision. Utility services to the new buildings will be underground.

Section 9.05-M Traffic

A Traffic Impact Analysis has been prepared by Vanasse Hangen Brustlin (VHB) and is attached.

Section 9.05-N Stormwater & Erosion Control

The project will greater than 5,000 square feet of impervious surface to a common plan of development having greater than one acre of impervious surface. Therefore, a State of Vermont Stormwater Discharge Permit (coverage under General Permit 3-9050) will be required. We have prepared a stormwater narrative and supporting modeling and calculations, which are attached.

Erosion prevention and sediment control measures will be installed during construction in accordance with the Vermotn Standards for Erosion Prevention and Sediment Control. Temporary erosion prevention and sediment control practices will include silt fence, rolled erosion control products, limiting disturbed areas, and stabilized construction entrances. Because over one acre of ground disturbance is proposed, coverage under State of Vermont General Permit 3-9020 will be required.

Section 9.05-O Excavation and Grading

No construction of public improvements is proposed as part of this subdivision. Excavation and grading related to construction of the buildings, driveways, and utilities will be conducted in the locations shown on the plan.

Section 9.05-P Outdoor Lighting

Site lighting is shown on the plans. All proposed lighting is downshielded and in compliance with Town regulations.

Section 9.05-Q Municipal Facilities & Recreation Areas

No additional recreation areas are required or proposed.

Section 9.05-R Governmental Services

The driveway for the proposed buildings is shown on the plans. E-911 address will be displayed on the buildings. The site is readily accessible from and existing municipal road.

Section 9.05-S Aesthetics

The project design provides appealing architecture and landscaping while maintaining lake views from the existing road.

Section 9.05-T Town Plan

No additional recreation areas are required or proposed.

Section 9.05-U Owners' Association

The project will remain under the control of a single owner.

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Colchester, VT 05446

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HAZELETT INN (THE "H") PARKING WORKSHEET

Values taken from Colchester Regulations Section O, Table 10-2

PROPOSED PROJECT

RESTAURANT

- 22 Spaces/1,000 SF GFA
- Presume 1,800 SF GFA
- 22 * 1.8 = 40 spaces

Meeting Space (Use "Community Center")

- 0.33 Spaces/Permitted occupancy
- 50 occupants * 0.33 = 17 spaces

Spa (Use "Personal or Business Service")

- 2 spaces/treatment station
- 1 space = 2 spaces

Guest Rooms (Use "Bed and Breakfast)

- 1.5 per guest bedroom plus 2 spaces
- Presume 20 rooms
- (20 * 1.5) + 2 = 32 spaces

TOTAL SPACES REQUIRED FOR NEW PROJECT

- 40 + 17 + 2 + 32 = **91 spaces**
- Spaces provided = **76 spaces**

EXISTING SITE

- 0.5 spaces/1000 GFA + 1 space/employee
- 150 employees = 150 spaces
- (84,000 s.f./1000) * 0.5 = 42 spaces
- Total required spaces = **192 spaces**
- Total existing spaces = **210 spaces**

FULL BUILDOUT

- Required = 192 + 94 = **286 spaces**
- Proposed = 210+ 762 = **286 spaces**

The H
Planting Schedule
Prepared by T.J. Boyle Associates, LLC

Cost Estimate - 03/03/2025

Planting Schedule: Trees

Trees (deciduous)

Quantity									
Inside Lake Setback	*Outside Lake Setback*	*Code*	*Scientific Name*	*Common Name*	*Size*	*Total Cal. (in)*	*Unit Price*	*Subtotal*	*Installed*
1		AR	ACER rubrum	Red Maple	3" cal	3	$ 295	$ 295	$ 885.00
10	1	BP	BETULA populifolia 'Whitespire'	Gray Birch	3" cal	30	$ 317	$ 3,487	$ 10,461.00
2		SN	SALIX nigra	Black Willow	10'	4	$ 192	$ 384	$ 1,152.00
	3	NS	NYSSA sylvatica	Tupelo	2" cal	0	$ 266	$ 798	$ 2,394.00
	5	OV	OSTRYA virginiana	American Hophornbeam	2" cal	0	$ 207	$ 1,035	$ 3,105.00
	1	QR	QUERCUS rubra	Red Oak	3"	0	$ 373	$ 373	$ 1,119.00
1	5	TA	TILIA americana	Basswood	3"	3	$ 295	$ 1,770	$ 5,310.00
	7	GT	GLEDITSIA tricanthos var. inermis 'Shademaster'	Shademaster Thornless Honeylocust	3" cal	0	$ 317	$ 2,219	$ 6,657.00
	4	BN	BETULA nigra 'Cully'	Cully' River Birch	3" cal	0	$ 317	$ 1,268	$ 3,804.00
	4	AF	ACER x freemanii 'Autumn Blaze'	Autumn Blaze Hybrid Maple	3" cal	0	$ 295	$ 1,180	$ 3,540.00
	2	CeO	CELTIS occidentalis	Hackberry	3" cal	0	$ 338	$ 676	$ 2,028.00
2	7	ASGM	ACER saccharum 'Green Mountain'	Green Mountain Sugar Maple	3" cal	6	$ 317	$ 2,853	$ 8,559.00
1		AP	ACER pensylvanicum	Striped Maple	2" cal	2	$ 202	$ 202	$ 606.00
6		PV	PRUNUS virginiana	Chokecherry	4" Cal	24	$ 371	$ 2,226	$ 6,678.00
8	4	CCG	CRATAEGUS crus-galli inermis 'Cruzam'	Crusader Thornless Cockspur Hawthorn	2"	24	$ 177	$ 2,124	$ 6,372.00
Total qty: 36	47					72		*Subtotal*	$ 56,298.00

Evergreen trees and shrubs

Quantity									
Inside Lake Setback	*Outside Lake Setback*	*Code*	*Scientific Name*	*Common Name*	*Size*	*Total Cal. "*	*Unit Price*	*Subtotal*	*Installed*
	10	AB	ABIES balsamea	Balsam Fir	6'		$ 165	$ 1,650	$ 4,950.00
	2	PS	PINUS strobus	White Pine	6'		$ 165	$ 330	$ 990.00
1	1	JV	JUNIPERUS virginiana	Eastern Red Cedar	6'	1	$ 165	$ 330	$ 990.00
6		TO	THUJA occidentalis	White Cedar	10'	12	$ 389	$ 2,334	$ 7,002.00
	7	TON	THUJA occidentalis 'Nigra'	Dark American Arborvitae	8'		$ 266	$ 1,862	$ 5,586.00
	8	TxH	TAXUS x 'Hicksii'	Hick's Yew	30"		$ 59	$ 470	$ 1,410.00
	16	PJM	RHODODENDRON 'PJM Elite'	PJM Rhododendron	36"		$ 84	$ 1,348	$ 4,044.00
6	3	IG	ILEX glabra 'Shamrock'	Inkberry Holly	#7		$ 82	$ 738	$ 2,214.00
	4	TOS	THUJA occidentalis 'Smaragd'	Emerald Green Arborvitae	8'		$ 266	$ 1,064	$ 3,192.00
	5	JS	JUNIPERUS 'Sea Green'	Sea Green Juniper	30"		$ 49	$ 245	$ 735.00
	2	TCP	TSUGA canadensis 'Pendula'	Dwarf Weeping Hemlock	5-6' B&B		$ 595	$ 1,190	$ 3,570.00
Total qty: 13	58							*Subtotal*	$ 34,683.00

Planting Schedule: Shrubs and Perennials

Shrubs and Woody Groundcovers

Quantity									
Inside Lake Setback	*Outside Lake Setback*	*Code*	*Scientific Name*	*Common Name*	*Size*	*Total Cal. "*	*Unit Price*	*Subtotal*	*Installed*
	15	AU	ARCTYSTAPHYLOS uva-ursi	Bearberry	6" #1		$ 14	$ 210	$ 630.00
61	14	AM	ARONIA melanocarpa	Black Chokeberry	#10		$ 66	$ 4,950	$ 14,850.00
21	4	CA	CORYLUS americana	American Hazelnut	36" #5		$ 62	$ 1,550	$ 4,650.00
27		SS	SALIX exigua ssp. 'Interior'	Sandbar Willow	6' B&B		$ 119	$ 3,213	$ 9,639.00
18		SC	SAMBUCUS canadensis	Black Elderberry	#3		$ 31	$ 558	$ 1,674.00
92		VAN	VACCINIUM angustifolium 'Brunswick'	Low Sweet Blueberry	#2		$ 21	$ 1,932	$ 5,796.00
29	14	DL	DIERVILLA lonicera	Bush Honeysuckle	#5		$ 48	$ 2,064	$ 6,192.00
17	11	SA	SYMPHORICARPOS albus	Snowberry	#2		$ 31	$ 868	$ 2,604.00
2	1	HV	HAMAMELIS virginiana	Witch-hazel	5-6' B&B		$ 195	$ 585	$ 1,755.00
5	15	HA	HYDRANGEA arborescens	Smooth Hydrangea	#5		$ 35	$ 700	$ 2,100.00
10	7	FG	FOTHERGILLA gardenii	Dwarf Witch-Alder	4-5' B&B		$ 300	$ 5,100	$ 15,300.00
16	5	VA	VIBURNUM acerifolium	Maple-leaved Viburnum	#3		$ 49	$ 1,029	$ 3,087.00
7	2	ST	STAPHYLEA trifolia	Bladdernut	#5		$ 70	$ 630	$ 1,890.00
	1	SV	SYRINGA vulgaris 'Monge'	Dark Purple Common Lilac	6' B&B		$ 245	$ 245	$ 735.00
	19	STO	SPIREA tomentosa	Steeplebush	2 Gal		$ 24	$ 456	$ 1,368.00
	19	PF	POTENTILLA fruticosa 'Pink Beauty'	Shrubby Cinquefoil	#5		$ 39	$ 741	$ 2,223.00
	6	PO	PHYSOCARPUS opulifolius	Common Ninebark	24" #5		$ 28	$ 168	$ 504.00
16	27	CSAF	CORNUS sericea 'Arctic Fire'	Arctic Fire Dogwood	#7		$ 69	$ 2,967	$ 8,901.00
Total qty: 321	160							*Subtotal*	$ 83,898.00

Shade Perennial Matrix (S.P.M.)

Quantity									
Inside Lake Setback	*Outside Lake Setback*	*Code*	*Scientific Name*	*Common Name*	*Size*	*Total Cal. "*	*Unit Price*	*Subtotal*	*Installed*
52	259	A	CAREX pensylvanica	Pennsylvania Sedge	2 qt		14.00	$ 4,354	$ 11,755.80
20	174	B	ATHYRIUM felix-femina	Lady Fern	2 qt		14.00	$ 2,716	$ 7,333.20
26	144	C	DRYOPTERIS marginalis	Marginal Wood Fern	2 Qt		17.00	$ 2,890	$ 7,803.00
24	149	D	CAREX platyphylla	Broad-leaved sedge	2 Qt		17.00	$ 2,941	$ 7,940.70
6	70	E	CAREX plantaginea	Seersucker sedge	2 Qt		14.00	$ 1,064	$ 2,872.80
			CAULOPHYLLUM thalictroides	Blue Cohosh					
		M	HELENIUM autumnale	Sneezeweed					

Other Perennials

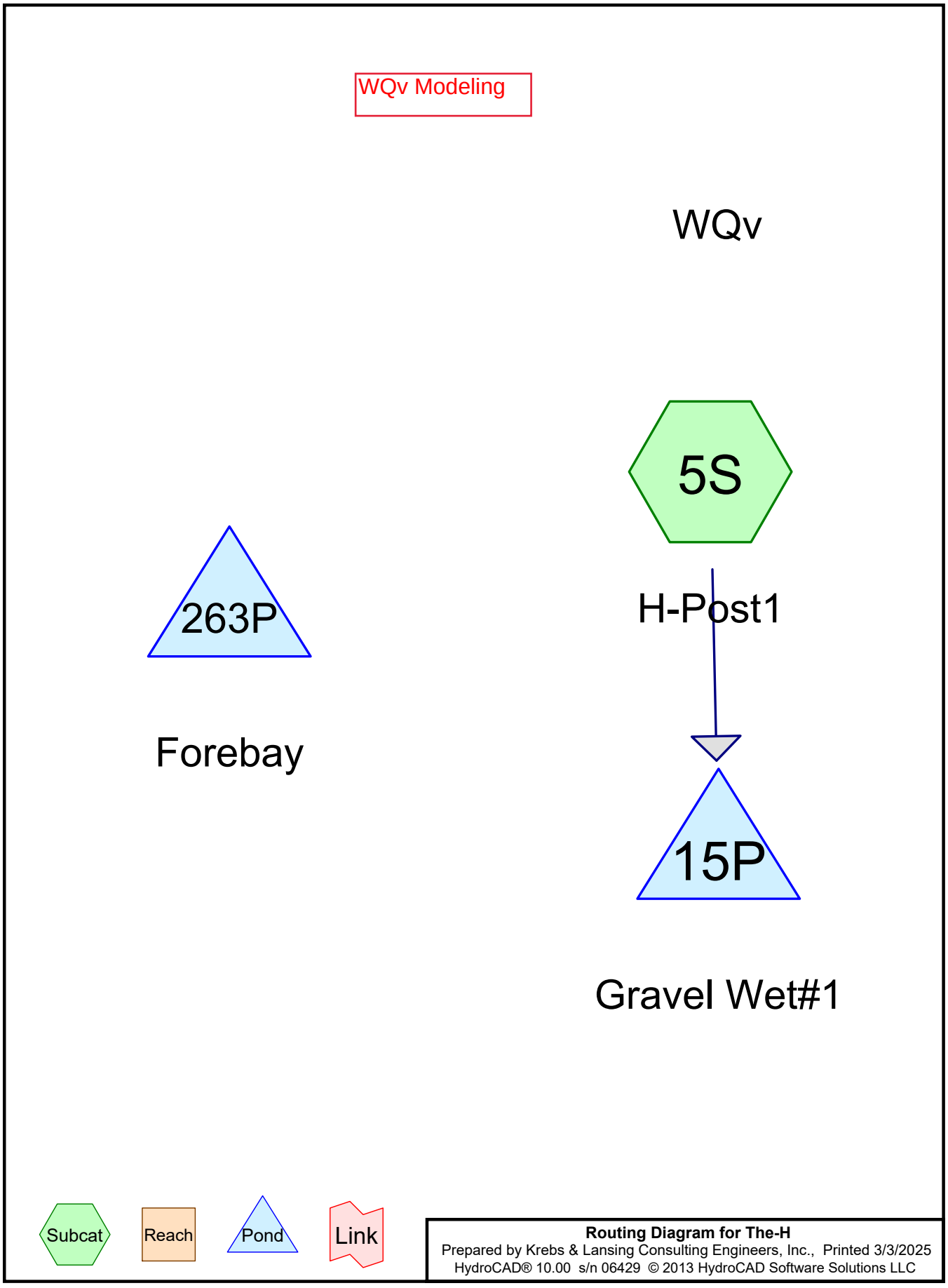
Qty.		*Code*	*Scientific Name*	*Common Name*	*Size*		*Unit Price*	*Subtotal*	*Installed*
	26	OC	OSMUNDA cinnamomea	Cinnamon Fern	1 gal		11.00	$ 286	$ 772.20
	34	AC	ASARUM canadense	Canada Wild Ginger	4" Pot		6.00	$ 204	$ 550.80
	28	AMT	ACHILLEA millefolium 'Salmon Beauty'	Salmon Beauty Yarrow	#2		15.00	$ 420	$ 1,134.00
	19	CV	COREOPSIS verticillata 'Moonbeam'	Moonbeam Tickseed	#2		12.50	$ 238	$ 641.25
	43	FGE	FESTUCA glauca 'Elijah Blue'	Blue Fescue	#1		12.00	$ 516	$ 1,393.20
	118	NWL	NEPETA x faasenii ' Walker's Low'	Walker's Low Catmint	#2		13.75	$ 1,623	$ 4,380.75
	7	CB	CALAMAGROSTIS brachytricha	Korean Feather Reed Grass	#1		$ 12	$ 84	$ 226.80
Total qty: 0	275							*Subtotal*	$ 9,099.00

Seed Mixes

Qty.		*Code*	*Scientific Name*	*Application Rate*	*Unit Size*		*Price/unit*	*Subtotal*	*Installed*
3			Vermont Wetland Hummock Mix	20lbs per acre	Pound		140.00	$ 420	$ 500.00
3			Shortgrass Woods Edge or Savanna Seed Mix	10 lbs per acre	1000 sf coverage		73.00	$ 219	$ 300.00
14			VT Native Custom Steep Slope Erosion Control Mix (10,000 sf)	60 lbs/ acre	Pound		$ 17	$ 238	$ 300.00
								Subtotal	$ 1,100.00
			.						
			Green Roof Allowance						$ 20,000.00

TOTAL $ 244,533.10

WQv Modeling



Routing Diagram for The-H
Prepared by Krebs & Lansing Consulting Engineers, Inc., Printed 3/3/2025
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Project Notes

The H at Malletts Bay
Post Development Stormwater Model

Summary for Subcatchment 5S: H-Post1

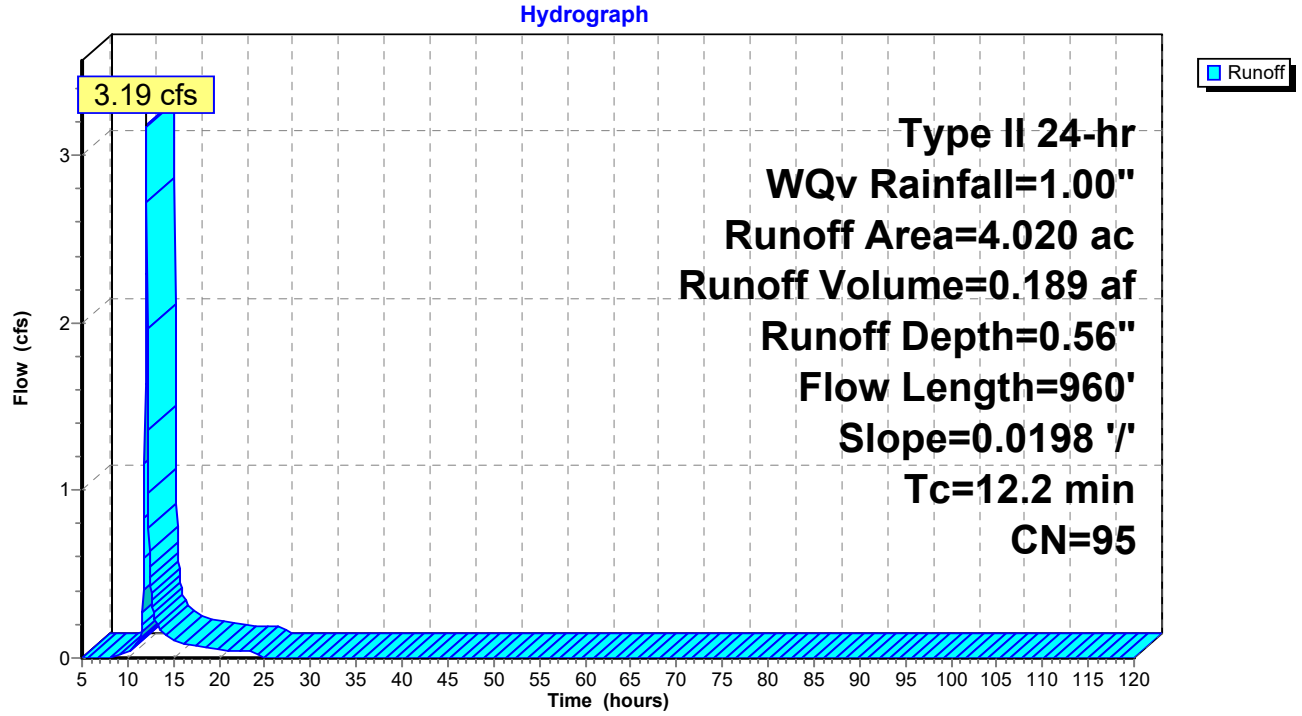
Runoff = 3.19 cfs @ 12.04 hrs, Volume= 0.189 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-120.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (ac)	CN	Description
*	4.020	95	watershed area
	4.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	960	0.0198	1.31		**Lag/CN Method, lag CN**

Subcatchment 5S: H-Post1



Summary for Pond 15P: Gravel Wet#1

Inflow Area = 4.020 ac, 0.00% Impervious, Inflow Depth = 0.56" for WQv event
Inflow = 3.19 cfs @ 12.04 hrs, Volume= 0.189 af
Outflow = 0.13 cfs @ 14.13 hrs, Volume= 0.189 af, Atten= 96%, Lag= 125.1 min
Primary = 0.13 cfs @ 14.13 hrs, Volume= 0.189 af

Routing by Stor-Ind method, Time Span= 5.00-120.00 hrs, dt= 0.05 hrs
Starting Elev= 125.67' Surf.Area= 5,280 sf Storage= 3,258 cf
Peak Elev= 127.23' @ 14.13 hrs Surf.Area= 9,840 sf Storage= 7,854 cf (4,596 cf above start)

Plug-Flow detention time= 771.0 min calculated for 0.114 af (60% of inflow)
Center-of-Mass det. time= 416.7 min (1,243.3 - 826.7)

Volume	Invert	Avail.Storage	Storage Description
#1	122.33'	3,168 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 7,920 cf Overall x 40.0% Voids
#2	125.33'	177 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,769 cf Overall x 10.0% Voids
#3	126.00'	14,045 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		17,390 cf	Total Available Storage

50% of WQv in stone voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.33	2,640	0	0
125.33	2,640	7,920	7,920

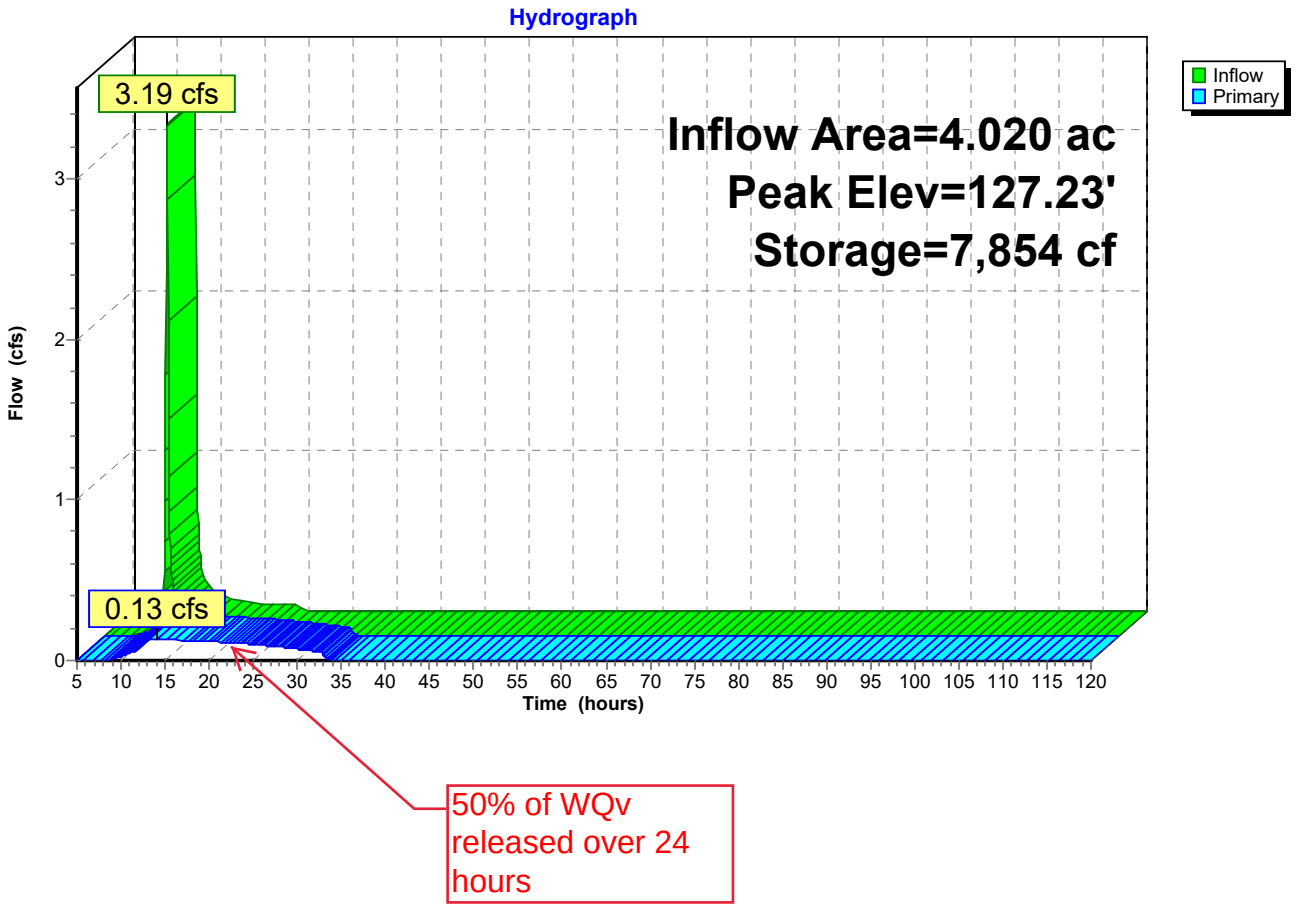
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
125.33	2,640	0	0
126.00	2,640	1,769	1,769

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
126.00	2,640	0	0
127.00	4,354	3,497	3,497
128.00	5,260	4,807	8,304
129.00	6,222	5,741	14,045

Device	Routing	Invert	Outlet Devices
#1	Primary	125.67'	**15.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 125.67' / 125.33' S= 0.0170 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	125.67'	**2.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	127.30'	**30.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.13 cfs @ 14.13 hrs HW=127.23' (Free Discharge)
└**1=Culvert** (Passes 0.13 cfs of 4.50 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.13 cfs @ 5.85 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)

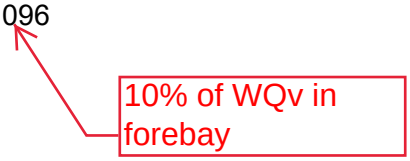
Pond 15P: Gravel Wet#1



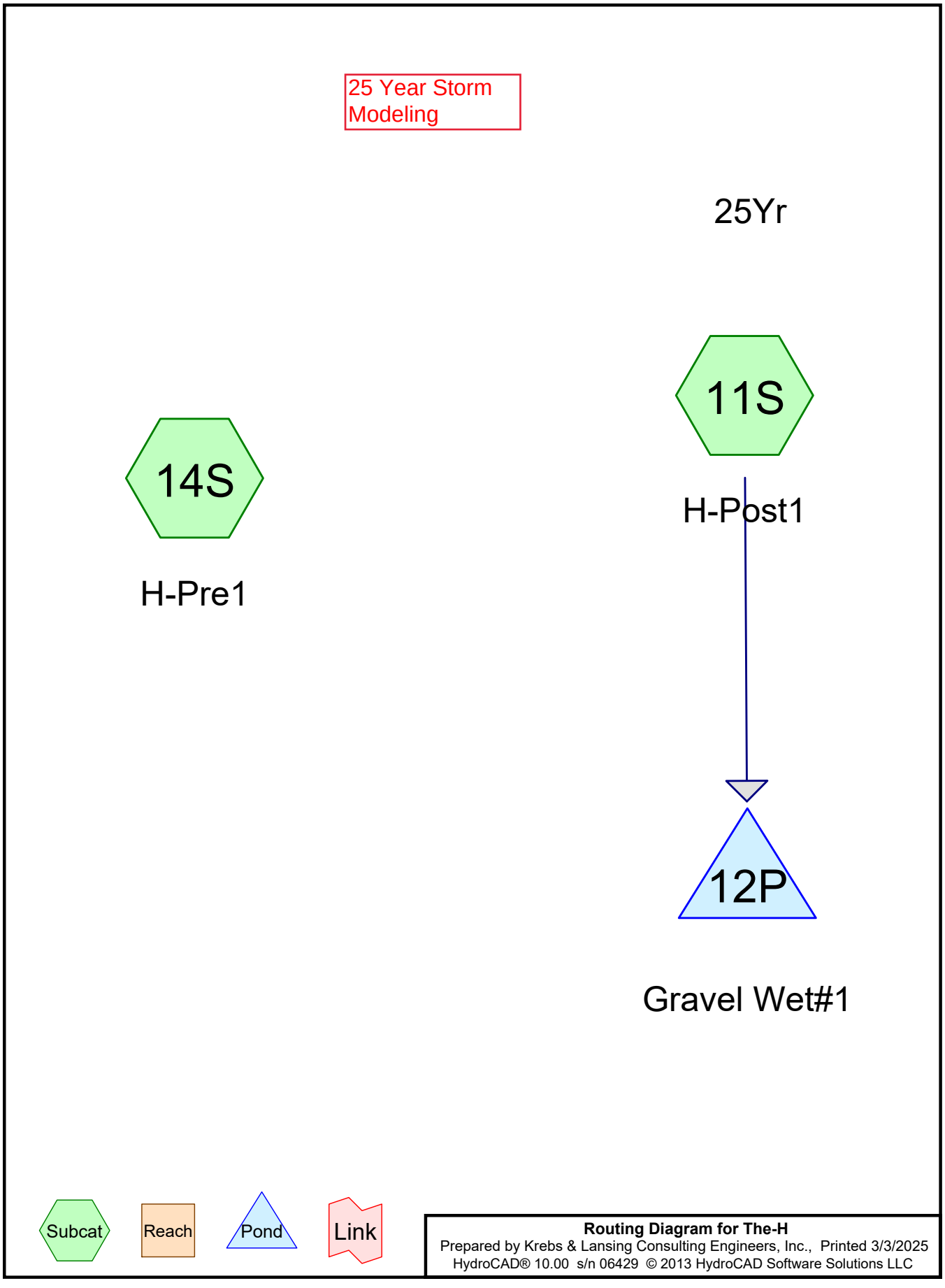
Summary for Pond 263P: Forebay

Volume	Invert	Avail.Storage	Storage Description
#1	123.00'	1,096 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.00	96	0	0
124.00	244	170	170
125.00	449	347	517
126.00	710	580	1,096



25 Year Storm Modeling



Routing Diagram for The-H
Prepared by Krebs & Lansing Consulting Engineers, Inc., Printed 3/3/2025
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Project Notes

The H at Malletts Bay
Post Development Stormwater Model

Summary for Subcatchment 11S: H-Post1

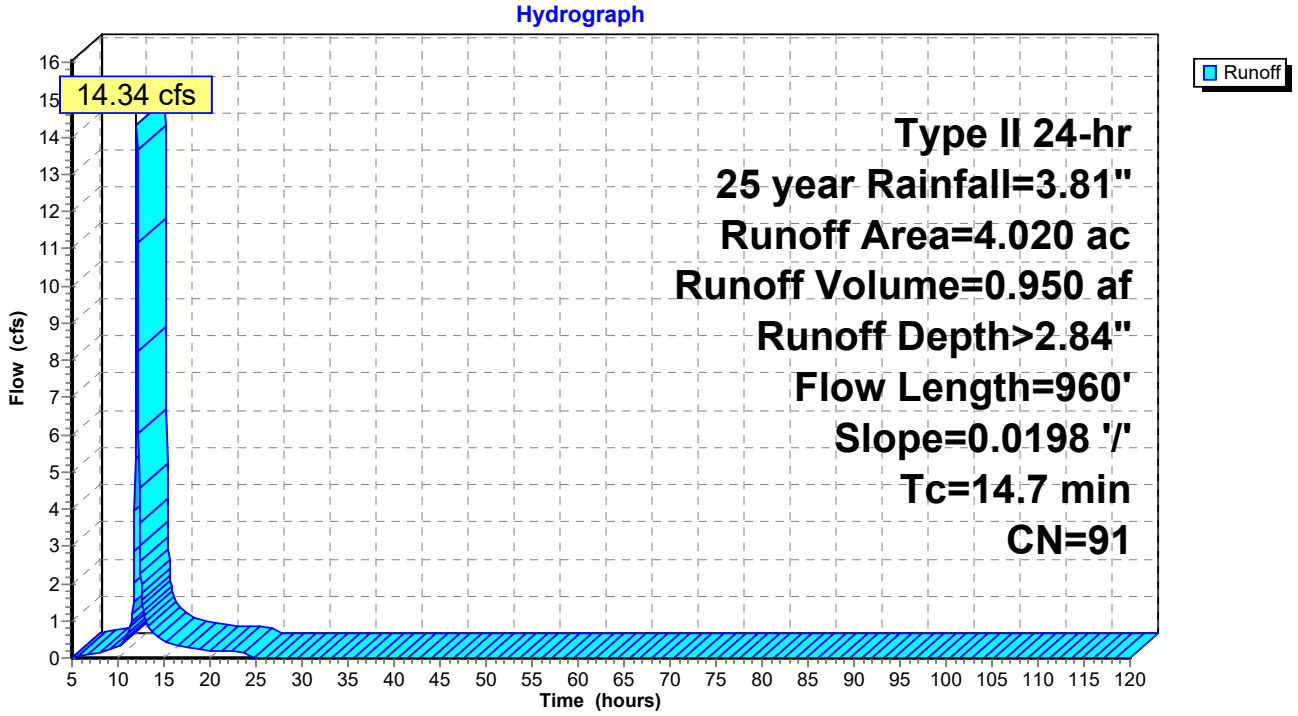
Runoff = 14.34 cfs @ 12.06 hrs, Volume= 0.950 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-120.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 year Rainfall=3.81"

	Area (ac)	CN	Description
*	4.020	91	watershed area
	4.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	960	0.0198	1.09		**Lag/CN Method, lag CN**

Subcatchment 11S: H-Post1



Summary for Subcatchment 14S: H-Pre1

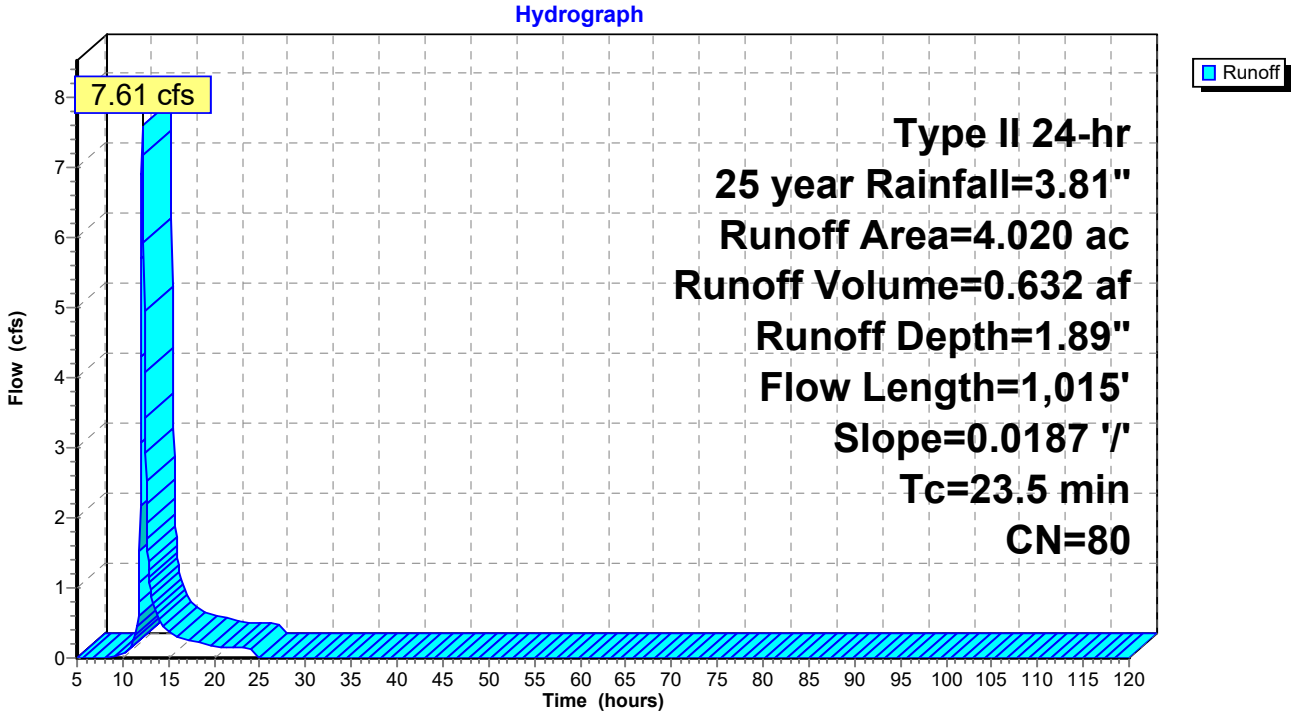
Runoff = 7.61 cfs @ 12.17 hrs, Volume= 0.632 af, Depth= 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-120.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 year Rainfall=3.81"

	Area (ac)	CN	Description
*	4.020	80	watershed area
	4.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.5	1,015	0.0187	0.72		**Lag/CN Method, lag CN**

Subcatchment 14S: H-Pre1



Summary for Pond 12P: Gravel Wet#1

Inflow Area = 4.020 ac, 0.00% Impervious, Inflow Depth > 2.84" for 25 year event
Inflow = 14.34 cfs @ 12.06 hrs, Volume= 0.950 af
Outflow = 7.22 cfs @ 12.22 hrs, Volume= 0.950 af, Atten= 50%, Lag= 9.8 min
Primary = 7.22 cfs @ 12.22 hrs, Volume= 0.950 af

Routing by Stor-Ind method, Time Span= 5.00-120.00 hrs, dt= 0.05 hrs
Starting Elev= 125.67' Surf.Area= 5,280 sf Storage= 3,258 cf
Peak Elev= 128.92' @ 12.22 hrs Surf.Area= 11,423 sf Storage= 16,883 cf (13,625 cf above start)

Plug-Flow detention time= 228.6 min calculated for 0.875 af (92% of inflow)
Center-of-Mass det. time= 158.5 min (959.6 - 801.2)

Volume	Invert	Avail.Storage	Storage Description
#1	122.33'	3,168 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 7,920 cf Overall x 40.0% Voids
#2	125.33'	177 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,769 cf Overall x 10.0% Voids
#3	126.00'	14,045 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		17,390 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.33	2,640	0	0
125.33	2,640	7,920	7,920

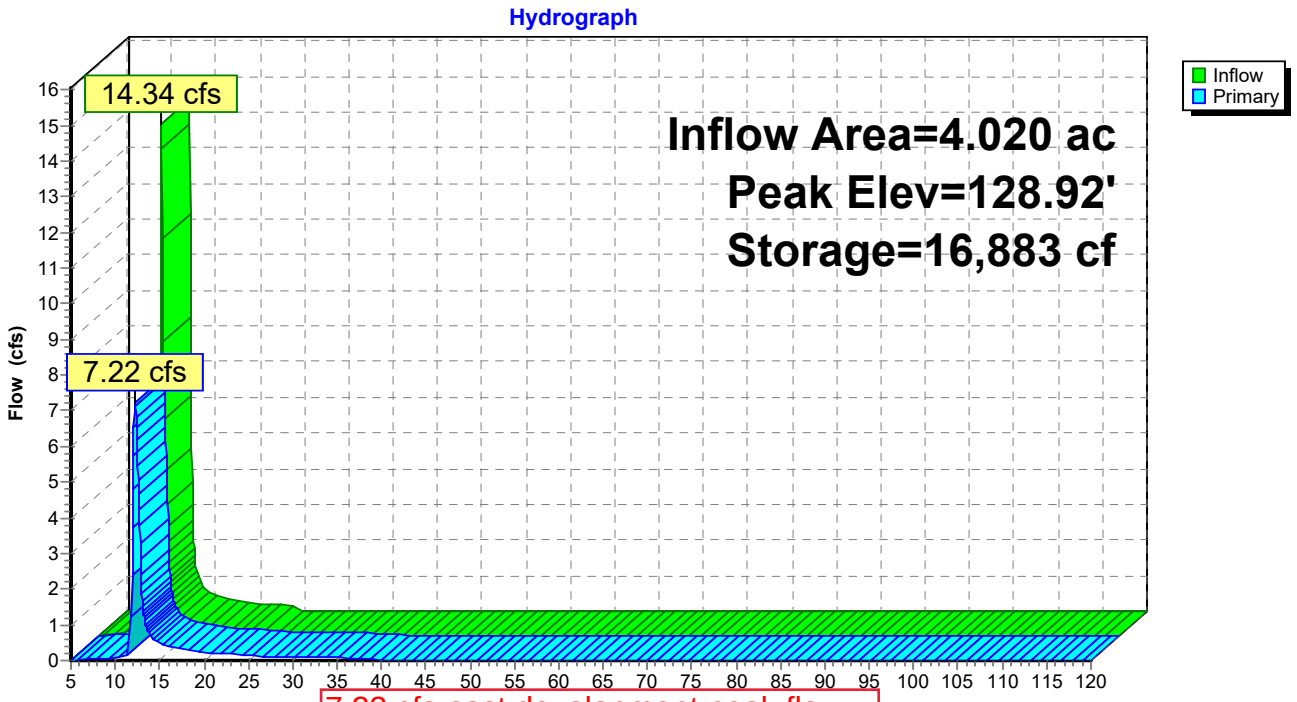
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
125.33	2,640	0	0
126.00	2,640	1,769	1,769

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
126.00	2,640	0	0
127.00	4,354	3,497	3,497
128.00	5,260	4,807	8,304
129.00	6,222	5,741	14,045

Device	Routing	Invert	Outlet Devices
#1	Primary	125.67'	**15.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 125.67' / 125.33' S= 0.0170 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	125.67'	**2.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	127.30'	**30.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=7.19 cfs @ 12.22 hrs HW=128.91' (Free Discharge)
└**1=Culvert** (Passes 7.19 cfs of 7.54 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.19 cfs @ 8.55 fps)
  └**3=Orifice/Grate** (Orifice Controls 7.00 cfs @ 5.60 fps)

Pond 12P: Gravel Wet#1



7.22 cfs post development peak flow is less than 7.61 pre-development peak flow

Attachment 1: Narrative, Location Map, and Soils Map
The "H" at Mallets Bay

1. **Introduction**
   Krebs and Lansing Consulting Engineers Inc. (K&L) are writing on behalf of Summit Properties to apply for a State Stormwater Discharge Permit pursuant to General Permit 3-9050 for the H at Mallets Bay project located on West Lakeshore Drive in Colchester.

2. **Project Description**
   The applicant proposes a redevelopment of the Hazelett waterfront parcels located at 166 and 180 West Lakeshore Drive, entitled "The H at Mallets Bay". This will be a hospitality project comprised of an Inn with a series of 5 cottages and a total of 20 rooms. In addition, the centerpiece of the project s a main building with a 48-seat restaurant at the main level, event space, and spa facilities. A new bathhouse will be constructed as well to enable beach users to use the facilities without having to go back the cottages/main building. New parking will be constructed across the street at 135 West Lakeshore Drive.

   Stormwater treatment for the site will involve site balancing and a new Gravel Wetland #1 and a Simple Disconnection. A pre-treatment forebay will be used in conjunction with Gravel Wetland #1.

3. **Existing Condition**
   The existing site at 166 and 180 West Lakeshore Drive is the site of a demolished hotel. There is a large curb cut along West Lakeshore Drive and existing paved parking. A driveway to west serves as access to a small marina. A driveway to the east serves as access to the waterfront from Hazelett employees.

   The site of the proposed parking and Gravel Wetland #1 is 135 West Lakeshore Drive. This site contains the existing Hazelett manufacturing facility and associated drives and parking
   .
   Existing soil types on this portion of both sites are Belgrade and Eldridge soils. These soils are classified as type D by the U.S. Soil Conservation Service, which indicates a high degree of runoff and low infiltrative capacity.

4. **Existing Stormwater System**
   The 166/180 West Lakeshore Drive site has no existing stormwater infrastructure other than an existing municipal storm drain that outlets on the westerly side of the property.

   The 135 West Lakeshore Drive site is divided into two main watersheds. The southeastern portion of the site drains to a series of catch basins and enclosed piping prior to being directed to an existing wet pond. The northwest portion of the site drains to catch basins and piping that discharge directly to the drainage swale along West Lakeshore Drive. This swale crosses West Lakeshore Drive and discharges directly to Lake Champlain via an existing culvert.

5. Proposed Stormwater System:

The proposed stormwater collection, treatment, and detention system will site balancing and a gravel wetland, along with a simple disconnection for treatment.

The 166 and 180 West Lakeshore Drive site features a relatively steep bank down to a waterfront area. All of the waterfront is in a shoreland protection zone. To avoid disturbance associated with a large-scale stormwater management practice in the lakeshore protection area, site balancing of existing impervious surface at the 180 West Lakeshore Drive site is proposed. The following is a summary of the proposed treatment:

- Impervious area at 166 and 180 W. Lakeshore Drive = 0.66 acres
- New Impervious at 135 W. Lakeshore Drive = 0.60 acres
- Total required area to be treated = 1.26 acres
- Area of total impervious area to be treated via Gravel Wetland #1 = 2.17 acres.

Therefore, the proposed treatment exceeds what is required.

The treatment will be provided by Gravel Wetland #1. Runoff will be directed to the gravel wetland via a series of catch basins and enclosed drainage. The existing pipes outleting directly the West Lakeshore Drive swale will be intercepted with new structures and pipes to direct those flows to the gravel wetland. lPre-treatment will occur in a forebay. The gravel wetland will discharge via a controlled outlet structure and stabilized outfall.

In addition to the gravel wetland, the meandering path along the base of the slope will sheet drain across vegetated terrain in accordance with a Simple Disconnection.

a) Description of Impervious Area: The proposed permitted area of impervious surface is 2.17 acres. All of this has been treated as new impervious surface. The new impervious surface is from building roofs, paved roads, driveways, parking, and concrete sidewalks and pads.

b) Receiving Body: S/N001: Lake Champlain.

c) Fish Habitat Designation for Receiving Water: Warm

d) Description of compliance with each of the treatment standards in the 2017 VSMM including the treatment practices or waivers used to meet each of the following standards:
   i) Post-Construction Soil Depth and Quality Standard:
      This standard will be met via two options outlined in the VSMM.
      Option 1: Areas outside of construction will be left undisturbed and protected from compaction during construction. This option will apply only to the far westerly portion of the site.
      Option 2: Remove and stockpile existing topsoil during construction. On site soil testing indicates and existing sandy loam topsoil layer on the site ranging from 7-13 inches in depth. Given that much of the finish site

will be covered in building or paving, there will be an excess of existing topsoil to re store other disturbed areas such as setbacks, vegetated islands, swales, and side-slopes. Compost will be incorporated into the existing topsoil stockpile if needed to achieve 4% organic content.

ii) Groundwater Recharge Standard:

The Groundwater Recharge standard is waived because all of the soils on-site are Type D.

iii) Water Quality Treatment Standard (WQ_V):

S/N001: WQ_V will be met for the use of Gravel Wetlands #1. The stone voids in the gravel wetland will store 50% of the WQv draining to each wetland. The remaining 50% WQv is provided by extended detention using small diameter orifices to release the remaining WQv over a 24- hour period. Pre-treatment is provided by a forebay. Additional WQv is provided via Simple Disconnection of the meandering path closest to the lakeshore.

iv) Channel Protection Standard (CP_V):

S/N001: The CP_V standard is waived because the site discharges directly to a receiving water with a drainage area of over 10 square miles.

v) Overbank Flood Protection Standard (Q_{P10}):

S/N002: The Overbank Flood Protection Standard is waived because the site discharges directly to a receiving water with a drainage area of over 10 square miles.

vi) Extreme Flood Protection Standard (Q_{P100}):

S/N002: The Extreme Flood Protection Standard is waived because the site discharges directly to a receiving water with a drainage area of over 10 square miles.

The following items are attached for review:

- **Complete NOI form**
- **Attachment 1: Narrative:** Narrative, Location Map, and Soils Map.
- **Attachment 2: Workbooks:** STP Selection Tool and Standards Compliance Workbook
- **Attachment 3: Worksheets:** STP and waiver worksheets, grouped by discharge point
- **Attachment 4: Modeling:** Runoff modeling and calculations demonstrating compliance with the applicable treatment standards.

- **Attachment 5: Plans:** Pertinent plan sheets with all required information outlined in Part 7 of the Application Requirements for Operational Permit Document.
- **Payment** in the amount of $2106.20 to “State of Vermont”.

Location Map

[Insert project specific location map here. You may download topographic map from the Natural Resource Atlas. Please show the site outline, the location of the discharge point(s) and receiving waters. The scale of the location map should be between 1:20,000 and 1:40,000.]

See Attached Location Map.

Soils Map

[Insert project specific soils map here. Soils information can be found at the Web Soil Survey website. Hydrologic Soil Groups— “HSGs” shall be overlaid with site outline. Soils information can also be provided as data layer on an existing or proposed condition plan sheet (if included as a data layer on one of the plan sheets please indicate that here]

See Attached Soils Map.

The H at Mallets Bay Location Map

Vermont Agency of Natural Resources

vermont.gov

LEGEND

- Hazardous Site
- Hazardous Waste Generators
- Public Water Sources
  - Active
  - Inactive
  - Proposed
  - Active Non-Public, Previously Permitted
  - Inactive Non-Public, Previously Permitted
- Private Wells
  - GPS Located
  - Screen Digitized
  - E911 Address Matched
  - Welldriller/Clarion
  - Unknown Location Method
  - Incorrectly Located
- SurfaceWaterSPA
  - ACTIVE
  - INACTIVE
- Ground Water SPA
  - Active/Shared
  - Proposed
  - Inactive
- Parcels (standardized)
- Stream
  - Stream
  - Intermittent Stream
- Roads
  - Interstate
  - US Highway; 1
  - State Highway
  - Town Highway (Class 1)
  - Town Highway (Class 2,3)
  - Town Highway (Class 4)
  - State Forest Trail
  - National Forest Trail
  - Legal Trail
  - Private Road/Driveway
  - Proposed Roads
- Town Boundary

1: 15,630

1in = 1302 ft.
1cm = 156 meters

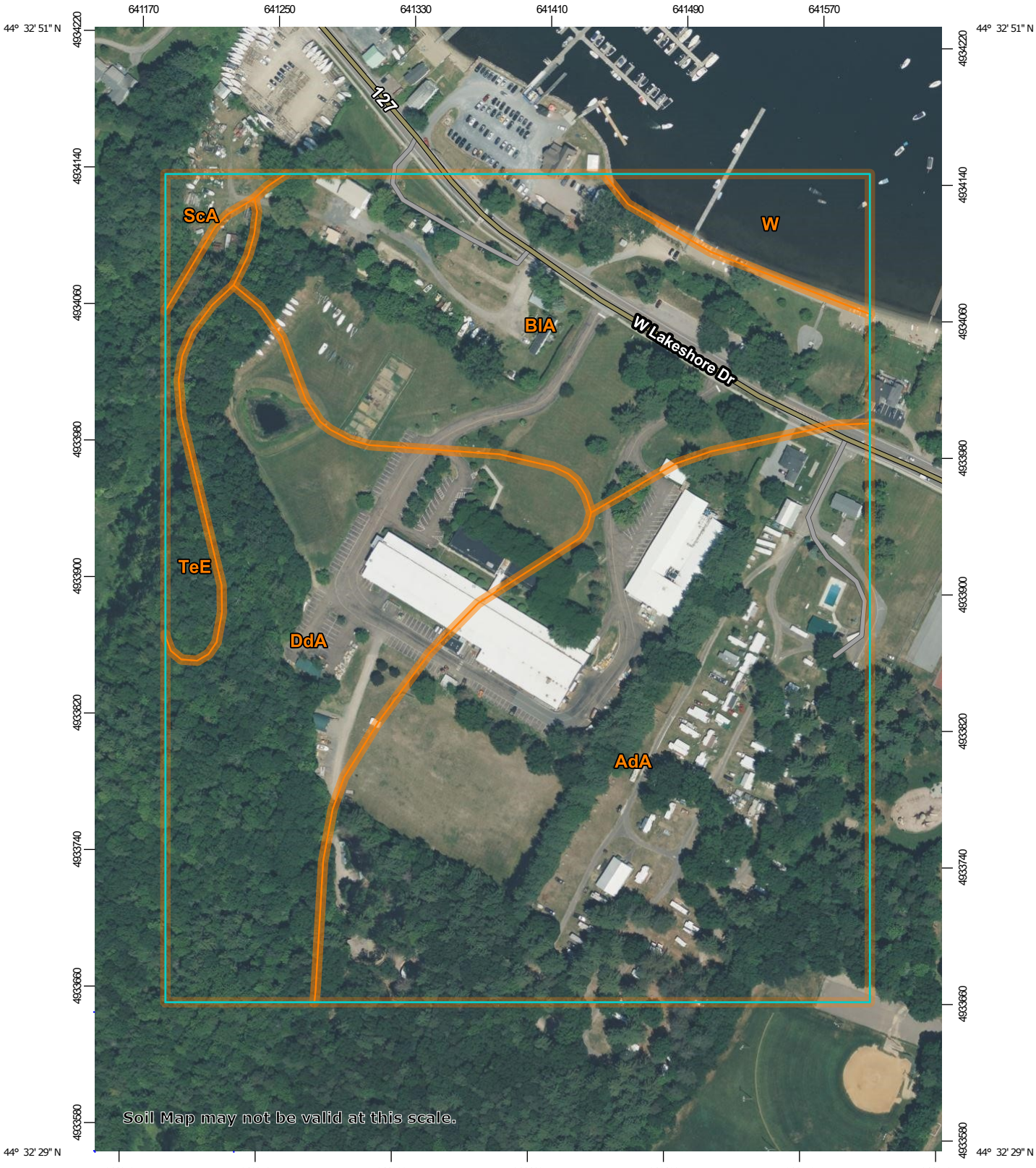
794.0 0 397.00 794.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

NOTES

Map created using ANR's Natural Resources Atlas

Soil Map—Chittenden County, Vermont



Map Scale: 1:3,210 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Chittenden County, Vermont
Survey Area Data: Version 28, Aug 28, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 18, 2020—Jun 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdA	Adams and Windsor loamy sands, 0 to 5 percent slopes	21.3	42.8%
BlA	Belgrade and Eldridge soils, 0 to 3 percent slopes	12.3	24.7%
DdA	Duane and Deerfield soils, 0 to 5 percent slopes	12.4	24.8%
ScA	Scantic silt loam, 0 to 2 percent slopes	0.6	1.1%
TeE	Terrace escarpments, silty and clayey	1.4	2.9%
W	Water	1.9	3.8%
Totals for Area of Interest		**49.9**	**100.0%**

Vermont Operational Stormwater Permit - Standards Compliance Workbook

General Discharge Point Information

Project name	**The H at Mallets Bay**
Discharge point serial number (e.g. S/N 001)	S/N 001
Name of receiving water	Lake Champlain
Latitude (decimal degrees to five decimal places)	44.54664
Longitude (decimal degrees to five decimal places)	-73.21928

Precipitation Data

* Preciptation values shall be obtained from NOAA Atlas 14

Storm	WQ Storm	1 yr, 24 hr	10 yr, 24 hr	100 yr, 24 hr
Precipitation (inches)	1.00	1.87	3.19	4.76

Drainage Area Information

Pre Development Land Use (acres)

Landuse	A	B	C	D	Total
Grass	0.000	0.000	0.000	2.995	**2.995**
Meadow	0.000	0.000	0.000	0.000	**0.000**
Woods	0.000	0.000	0.000	0.000	**0.000**
Existing Impervious	0.000	0.000	0.000	1.025	**1.025**
Impervious previously authorized under 2002 VSMM (not included in calculations)					**0.000**
Total Pre Site Area					**4.020**

Post Development Land Use (acres)

Landuse	A	B	C	D	Total	%
Grass	0.000	0.000	0.000	1.850	**1.850**	
Meadow	0.000	0.000	0.000	0.000	**0.000**	
Woods	0.000	0.000	0.000	0.000	**0.000**	
New Impervious	0.000	0.000	0.000	1.145	**1.145**	*28.5%*
Existing for Permit Coverage (Treated to New Standards)	0.000	0.000	0.000	1.025	**1.025**	*25.5%*
Existing Impervious Not for Permit Coverage					**0.000**	*0.0%*
Redeveloped Impervious					**0.000**	*0.0%*
Impervious previously authorized under 2002 VSMM					**0.000**	
Total Site Area					**4.020**	
Total Impervious for Permit Coverage					**2.170**	
Net Reduced Impervious					**0.000**	*0.0%*
Reduced Existing Impervious (for redevelopment)					**0.000**	*0.0%*

Information for Calculating T_C by the Watershed Lag Method

	Average Catchment Slope, Y (%)	Hydraulic Length, l (ft)
Pre Development	1.87	1015.00
Post Development	1.98	960.00

Last Updated 8/28/2018

Vermont Operational Stormwater Permit - Standards Compliance Workbook

Runoff Calculations

	1 yr, 24-hr	10 yr, 24-hr	100 yr, 24-hr
Predevelopment runoff volume (ac-ft)	0.2616	0.6006	1.0564
Pre-routed, post development runoff volume (ac-ft)	0.3723	0.7498	1.2319

Tier 1/Runoff Reduction Practices

List all Tier 1 practices below with the associated treatment volume (T_V). The T_V will be applied to all treatment standards, except for Green Roofs, which do not receive recharge or water quality credit. Please include the appropriate STP worksheet(s) with the application.

Practice	T_V (ac-ft)	Practice	T_V (ac-ft)
Simple Disconnection	0.003		

Runoff Reduction Calculations

Standard	Re	WQ	CP	Q_{P10}	Q_{P100}
T_V Required (ac-ft)	0.0000	0.1795	0.2188	0.2989	0.3549
T_V Provided (ac-ft)	0.0029	0.0029	0.0029	0.0029	0.0029
T_V Remaining (ac-ft)	0.0000	0.1766	0.2159	0.2960	0.3520
Standard met with HCM?	n/a	No	No	No	No
Post-Development CN	n/a	95	92	91	90
CN_{adj}	n/a	94	92	91	90
Pre-Development CN	n/a	n/a	87	86	85

Groundwater Recharge Standard (Re)

Standard Applicable? ○ Yes ◉ No

Reason recharge not required (if No is selected): HSG D Soils

Re_V: 0.0000

Standard met with Tier 1 Practices? n/a

Recharge Notes:

Vermont Operational Stormwater Permit - Standards Compliance Workbook

Water Quality Treatment Standard (WQ)

	(ac-ft)
WQ_V - New & Existing	0.1795
WQ_V - Redevelopment	0.0000
Total WQ_V	0.1795
WQ_V met with Tier 1 practices	0.0029
WQ_V to be met with Tier 2 and/or Tier 3 practices	0.1766

		Apply Reduction?
% Net Reduction	0.0%	(•) No ( ) Yes
% Removed Existing Impervious (Redevelopment)	0.0%	(•) No ( ) Yes

Is all impervious treated by disconnection? (•) No ( ) Yes (WQv met)

NOTE: Please include a copy of the appropriate STP worksheet(s) with the application.

Tier 2 & 3 Water Quality Practice	WQ_V Provided (ac-ft)	Tier
Gravel Wetland	0.1795	Tier 2

Total WQ_V Provided (ac-ft): 0.1795 ac-ft

Is the WQ_V Standard met? Yes

Water Quality Notes:

Channel Protection Standard (CP)

Standard Applicable? ( ) Yes (•) No

Waiver (if No is selected): Direct discharge to drainage area ≥10 sq.mi

Standard Met with HCM? No

The channel protection standard has not been fully met. Either increase Tv credit to fully meet HCM or provide extended detention.

Provide Extended Detention for: 0.369 ac-ft

Warm or Cold Water Fishery? (•) Cold ( ) Warm

→ Provide: 12 hours of extended detention

OR

☐ The Alternative Extended Detention Method (§2.2.5.4) is being used.

[See the Vermont Water Quality Standards for warm and cold water designations]

Extended Detention STP:

Modeling Info: When demonstrating CP compliance with extended detention in a hydrologic model, use the CN and T_C below if the practice being modelled is not a Tier 1 practice. The CN_{Adj} takes into account the reduction in runoff volume achieved through Tier 1 practices. The T_C is calculated by the watershed lag method using CN_{Adj} as CN'.

CN_{Adj}: 92 Post Development T_C (min): 14.3 (Watershed Lag Method)

Channel Protection Notes:

Last Updated 8/28/2018

Vermont Operational Stormwater Permit - Standards Compliance Workbook

Overbank Flood Protection (Q_{P10})

Standard Applicable? ○ Yes ◉ No

Waiver (if No is selected): Direct discharge to drainage area ≥10 sq.mi

Standard Met with HCM? **No**

The QP10 standard has not been fully met. Provide additional STPs to ensure post development peak runoff does not exceed pre development peak runoff for the 10 yr, 24 hour storm event.

STP used:

Pre-development peak discharge rate (cfs)

Pre-routed, post-development peak discharge rate (cfs)

Routed, post-development peak discharge rate (cfs)

Modeling Info: *When demonstrating Q_{P10} compliance in a hydrologic model, use the following CN and T_C below, if the practice used to meet Q_{P10} is not itself a Tier 1 practice. The CN_{Adj} takes into account the reduction in runoff volume achieved through Tier 1 practices. The T_C is calculated by the watershed lag method using CN_{Adj} as CN'.*

Pre-Development CN (Flow-weighted composite)	86	Pre Development T_C (min)	19.5	(Watershed Lag Method)
CN_{Adj}	91	Post Development T_C (min)	14.8	

Overbank Flood Notes:

Extreme Flood Protection (Q_{P100})

Standard Applicable? ○ Yes ◉ No

Waiver (if No is selected): <10 acres impervious

Standard Met with HCM? **No**

The extreme standard has not been fully met. Provide additional STPs to ensure post development peak runoff does not exceed pre development peak runoff for the 100 yr, 24 hour storm event.

STP used:

Pre-development peak discharge rate (cfs)

Pre-routed, post-development peak discharge rate (cfs)

Routed, post-development peak discharge rate (cfs)

Modeling Info: *When demonstrating Q_{P100} compliance in a hydrologic model, use the following CN and T_C below, if the practice used to meet Q_{P100} is not a Tier 1 practice. The CN_{Adj} takes into account the reduction in runoff volume achieved through runoff reduction practices. The T_C is calculated by the watershed lag method using CN_{Adj} as CN'.*

Pre-Development CN (Flow-weighted composite)	85	Pre Development T_C (min)	19.9	(Watershed Lag Method)
CN_{Adj}	90	Post Development T_C (min)	15.2	

Extreme Flood Notes:

STP Selection Matrix

Version 5/8/2017

Project Name:	The H at Mallets Bay
Discharge Point:	1

Step 1: Is the Water Quality Treatment Standard entirely managed with one or more of the following Tier 1 practices?

Infiltration Basins/ Trenches/ Chambers
Drywells
Bioretention (designed to infiltrate)
Filters (designed to infiltrate)
Reforestation[1]
Simple Disconnection
Disconnection to Filter Strips and Vegetated Buffers
Dry Swales (designed to infiltrate)
Permeable Pavement[1]

○ Yes ◉ No

Proceed to Step 2

1. These practices do not require specific justification due to feasibility limitations

Step 2: Assess the feasibility of using Tier 1 Practices

Complete the matrix below in its entirety for each drainage area.

Tier 1 Practices are available to meet the Water Quality Treatment Standard. If using one of these practices, stop here. If additional site constraints exist other than those listed here, proceed to Step 3.		**Infiltration Basin/ Trench/ Chamber**	**Drywell**	**Bioretention (infiltrating)**	**Simple Disconnection**	**Disconnection to Filter Strips or Vegetated Buffer**	**Dry Swales (infiltrating)**	**Filters (infiltrating)**
Practice Availability for Water Quality Treatment?		Not Feasible	Not Feasible	Not Feasible	Yes	Yes	Not Feasible	Not Feasible
Feasibility Restriction	**Response**	**Practice Availability Based on Restrictions**						
Do underlying soils have an infiltration rate of less than 0.2 inches per hour, as confirmed by field geotechnical tests or are classified as Hydrologic Soil Group D according to the NRCS Soil survey?	◉ Yes ○ No	Not Feasible	Not Feasible	Not Feasible	n/a	n/a	Not Feasible	Not Feasible
Will runoff to the practice include discharge from a hotspot landuse or activity?	○ Yes ◉ No	Available	Available	Available	Available	Available	Available	Available
Is the site a brownfield or contaminated site where infiltration is restricted or where infiltration would increase the threat of pollution migration, as confirmed in writing by the Department's Waste Management and Prevention Division?	○ Yes ◉ No	Available	Available	Available	Available	Available	Available	Available
Is the slope of the vegetated buffer greater than 15%	○ Yes ◉ No	n/a	n/a	n/a	Available	Available	n/a	n/a
Is the slope of the filter strip greater than 15%	○ Yes ◉ No	n/a	n/a	n/a	Available	n/a	n/a	n/a
Is the slope of the vegetated buffer greater than 8%	○ Yes ◉ No	n/a	n/a	n/a	n/a	Available	n/a	n/a
Are natural slopes where an infiltration trench or basin could be sited greater than 15%	○ Yes ◉ No	Available	n/a	Available	n/a	n/a	Available	Available
Bottom of practice would be below seasonal high water table	○ Yes ◉ No	Available	Available	Available	n/a	n/a	Available	Available
Seasonal high water table or bedrock would be less than 1 foot from the bottom of the practice.	○ Yes ◉ No	Available	Available	n/a	n/a	n/a	n/a	n/a
Seasonal high water table or bedrock would be less than 3 feet from the bottom of the practice.	○ Yes ◉ No	Available	n/a	n/a	n/a	n/a	n/a	n/a

Will the practice be located within 75 feet down-gradient of a wastewater disposal area system, within 35 feet up-gradient or 75 feet down-gradient of a wastewater disposal system?	○ Yes ◉ No	Available	Available	Available	n/a	n/a	Available	Available
Will the practice be located within 150 feet of a drinking water source located in an unconfined aquifer?	○ Yes ◉ No	Available	Available	Available	n/a	n/a	Available	Available
Will the practice be located within 100 feet of a drinking water source located in bedrock or a confined unconsolidated aquifer?	○ Yes ◉ No	Available	Available	Available	n/a	n/a	Available	Available
Will the practice be located within Zone 1 or Zone 2 of a public community groundwater source protection area?	○ Yes ◉ No	Available	Available	Available	n/a	n/a	Available	Available
Will the practice be located within 200 feet of non-transient non-community groundwater source?	○ Yes ◉ No	Available	Available	Available	n/a	n/a	Available	Available
Will the practice violate any restrictions of the Vermont Wastewater and Potable Water Supply Rules, or their replacement?	○ Yes ◉ No	Available	Available	Available	Available	Available	Available	Available

Step 3: Other feasibility constraints for remaining Tier 1 and Tier 2 practices

If, following completion of Step 2 of the STP Selection Tool there are no Tier 1 Practices available for use on the project site, designers shall consider the use of Tier 2 practices for treatment of the Water Quality Treatment Standard.

Is the Water Quality Treatment Standard entirely managed with Tier 2 Practices?

◉ Yes ○ No

Stop. No further justification is needed.

If the the use of a Tier 1 or Tier 2 Practice is infeasible for reasons beyond those listed in Step 2 of the STP Selection Matrix, a designer may submit site specific detailed feasibility justification that such practices are not feasible following the guidance in Section 2.2.4.1 of the 2017 VSMM. Only after completion of the STP Selection Matrix and determination that Tier and Tier 2 Practices are infeasible shall a designer consider Tier 3 Practices or existing stormwater infrastructure for meeting the Water Quality Treatment Standard (WQTS) on the project site.

Provide written feasibilty justification below or list attachments

Version: 11/30/2020

Project Name:	**Hazelett**
Discharge Point:	**S/N 001**
Treatment Wetland #	**1**

Treatment Wetlands (4.3.5)

	Practice Drainage Area	For Permit Coverage	Not for Permit Coverage	Total to Practice
1	Total Area (acres)	4.010	0.000	4.010
2	New Impervious (acres)	2.170	0.000	2.170
3	Redeveloped Impervious	0.000	0.000	0.000
		WQ_V for credit	WQ_V not for credit	Total WQ_V
4	WQ_V to practice	0.1795	0.0000	0.1795

Modified CN for WQ (1.0") storm: 95

↑Enter this value on the Standards Compliance Workbook

5	Practice Type	○ Shallow surface wetland ◉ Gravel wetland
6	Discharges to Cold or Warm Water Fishery?	◉ Cold ○ Warm

Note: Designers may use the Practice Drainage Area Runoff Calculator (second tab) for calculation of practice-specific runoff volumes for other treatment standards.

** Questions preceded by an asterix (*) may change based on previously entered values*

	Conveyance (4.3.5.2)	Response	Attachment location
7	Are inlets stabilized to ensure that non-erosive conditions exist for at least the 1-year, 24 hour storm?	○ Yes ○ No	Plan Sheet C-2.1
8	Has a low for orifice been provided to meet the the WQ_V and CP_V extended	◉ Yes ○ No	Detail Sheet CD-6
9	Have the outfalls and the conveyance to the discharge point been designed and protected to avoid erosion?	◉ Yes ○ No	Plan Sheet C-2.1 & Detail Sheet CD-6
10	Has a liner designed in accordance with Section 4.3.5.2 been provided if the infiltration rate exceed 0.05 inches per hour and the wetland is located above	◉ Yes ○ No	Detail Sheet CD-6
11*	Have inlet pipes been set at the permanent pool or the base of the gravel bed?	◉ Yes ○ No	Plan Sheet C-2.1 & Detail CD-7
12*	Is outlet elevation designed such that a sub-surface water level is maintained in the gravel wetland?	◉ Yes ○ No	Detail CD-7
13*	If the gravel wetland is designed with an organic soil layer at the surface, have vertical perforated riser pipes been provided to deliver stormwater stormwater from the surface down to the gravel bed?	◉ Yes ○ No	Detail CD-6

	Pre-Treatment (4.3.6.3)	Response	Attachment location
14	Has pretreatment been provided for non-rooftop runoff?	◉ Yes ○ No	Sheet C-2.1

15	What type of pretreatment is being used?	☐ Swale ☑ Forebay (10% WQv) ☐ Proprietary ☐ Filter Strip ☐ Deep Sump Catch Basins	

	Treatment (4.3.6.4)		Response	Attachment location
16	What is the volume stored in the forebay or other volumetric pre-treatment if used? (minimum 10% WQ_V)	ft^3	782	N/A
17	What is the volume stored in the permanent pool?	ft^3	3149	WQV Modeling
18	What is the total WQ_V stored at the normal water level (pre-treatment + permanent pool)?	ft^3	3931	WQv Modeling
19*			○ Yes ◉ No	
20*			○ Yes ○ No	
21	Does the pre-treatment volume plus the permanent pool equal at least 50% of the WQ_V?		50.3%	**Yes**
22	Is the remaining WQ_V provided for by extended detention over 24 hours?		◉ Yes ○ No	N/A
23	Has a minimum flow path at normal water level of 3:1 been provided?		◉ Yes ○ No	Plan Sheet C-2.1
24	What is the Storage Volume of the practice. Include the permanent pool and any volume used for providing extended detention.	ac-ft	0.0547	**Enter this on the eNOI**

	Landscaping (4.3.6.5)	Response	Attachment location
25	Are all deep pool areas of ≥ 4 feet depth with side slopes steeper than 4:1 (H:V) surrounded by a safety bench with ≤6% slope extending 10 feet outward from the normal water edge to the toe of the side slope?	◉ Yes ○ No	Plan Sheet C-2.1
26	Has an aquatic been been provided that extends at least 5 feet inward from the normal water edge and is no more than 18 inches deep?	◉ Yes ○ No	Plan Sheet C-2.1
27	Has a planting plan been prepared showing how aquatic and terrestrial areas will be stabilized, including plant species, plant locations, sources of plant material and any required soil amendments?	◉ Yes ○ No	Detail CD-6
28	Has a setback been provided that extends 25 feet from the maximum design water surface elevation of the practice?	◉ Yes ○ No	Plan Sheet C-2.1
29	Does the planting plan specify that no woody vegetation >2 inches in diameter shall be planted or allowed to grow on the dam, within 15 feet of the dam or the toe of the embankment, or within 25 of a principal spillway outlet?	◉ Yes ○ No	Detail CD-6
30	Are any donor organic soils used in the practice obtained from a source other than natural wetlands?	◉ Yes ○ No	N/A

Attachment location: Indicate the specific location (i.e. appendix, page, plan sheet) where the requisite support documentation has been provided within the application.

Version: 3/28/2018

Project Name: The H at Mallets Bay
Discharge Point: 1
Disconnection Area # 1

Simple Disconnection (4.2.2)

	Disconnected Area	For Permit Coverage	Not for Permit Coverage	Total to Practice
1	Total Area (acres)	0.070	0.000	0.070
2	Impervious (acres)	0.035	0.000	0.035
		WQ_V for credit	WQ_V not for credit	Total WQ_V
3	WQ_V to practice	0.0029	0.0000	0.0029

Modified CN for WQ (1.0") storm: 94

4 Disconnected Area Type
- ☐ >10 ft, or conveyed by downspout
- ☑ 10 ft contributing length or less

** Questions preceded by an asterix (*) may change based on previously entered values*

	Feasibility (4.2.2.1)	Response	Attachment location
5	For areas conveyed by sheetflow, is the width of the disconnection area (perpendicular to the direction of flow) equal to or greater than the area being disconnected?	◉ Yes ○ No	Sidewalk/RecPath
6*		○ Yes ○ No	
7*		○ Yes ○ No	
8	Do the underlying soils of the disconnection area meet the Post-Construction Soil Depth and Quality Standard?	◉ Yes ○ No	
9*		○ Yes ○ No	
10*	Is the maximum flow path length from the contributing impervious area 10 feet or less?	◉ Yes ○ No	
11	Are disconnection areas configured such that there is no overlap between adjacent disconnection areas?	◉ Yes ○ No	
12	Is the maximum slope of the disconnection area no steeper than 15%?	◉ Yes ○ No	
13	For sites with septic systems, is the disconnection flow path cross-gradient or down-gradient of the leachfield?	○ Yes ○ No	NA

	Conveyance (4.2.2.2)	Response	Attachment location
14	Is the runoff conveyed as sheet flow across the disconnection area for the applicable design storms and prevented from channelizing?	◉ Yes ○ No	
15	Is the disconnection surface directed away from buildings so as to protect foundations and basements?	◉ Yes ○ No	

16*		◯ Yes ◯ No	
17*		◯ Yes ◯ No	
18	For runoff not conveyed by downspout, does the runoff drain either as sheet flow or drain to a subsurface drain field that is not directly connected to the drainage network?	◉ Yes ◯ No	

	Pretreatment (4.2.2.3)	**Response**	**Attachment location**
19	Is runoff from qualifying surfaces prevented from co-mingling with other runoff, such that pre-treatment is not required?	◉ Yes ◯ No	

	Required Disconnection Length for Contributing Areas >10 ft and Downspouts	**Response**	**Attachment location**
20*	n/a, Downspout/Contributing area >10 ft is not selected in Question 4 acres	0.00	
21*	$f_c \geq 1$ in/hr for $T_V = HC_V$ $f_c \geq 0.5$ in/hr for $T_V = WQ_V$ $f_c < 0.5$ in/hr for $T_V = WQ_V$	◯ A ◯ A/B ◯ C/D	
22*		◯ <8% ◯ 8-15%	
23*	inches	0.00	
24*	ft	0.0	
25*	ft	0.0	

	Required Disconnection for Contributing Areas ≤10 ft	**Response**	**Attachment location**
26*	Disconnected Area ≤10ft wide acres	0.035	
27*	What is the flow path length from the sidewalk, path, or driveway? (max 10 ft) ft	4	
28*	What is the slope of the disconnection area?	◉ <8% ◯ 8-15%	
29*	Is the disconnection area on A soils (fc ≥ 1 in/hr)?	◯ Yes ◉ No	
30*	inches	0.00	
31*	What is required length of the disconnection for the path/sidewalk/driveway (≤10 ft)? ft	4.0	
32*	What disconnection length is provided for the path/sidewalk/driveway (≤10 ft)? ft	10.0	

Treatment Volume Calculation

33	What is the treatment volume provided by the STP?	T_V (cu-ft)	127.05	
34	What is the treatment volume provided by the STP?	T_V (ac-ft)	0.0029	

↑ Enter this value on the Standards Compliance Worksheet

	Treatment (4.2.2.4)	**Response**	**Attachment location**
35*		○ Yes ○ No	

	Landscaping (4.3.2.5)	**Response**	**Attachment location**
36	Is a dense vegetative cover specified for the disconnection area on the plan sheet/detail sheet?	◉ Yes ○ No	

Attachment location: Indicate the specific location (i.e. appendix, page, plan sheet) where the requisite support documentation has been provided within the application.

Channel Protection Standard Waiver Worksheet

Fill out this worksheet for each discharge point in which use of this waiver is sought.

Channel Protection Standard (CP_V) Waiver (*check only one*)**:**

☐ 1. A site where the pre-routed, post-development discharge from the 1-year, 24-hour storm event is less than 2 cubic feet per second (cfs).

Enter the total pre-routed post-development stormwater discharge rate (cfs):	

Guidance: "Pre-routed post development discharge" means the runoff after development, including post-development conveyance, but without STPs. Curve Numbers should not be adjusted based on T_V credit from Tier 1 practices. When examining whether or not the site qualifies for this waiver, off-site runoff does not need to be considered, however the overall common plan of development shall be considered. Please attach the runoff calculations/hydrologic modeling for the pre-routed, post-development during the 1-year, 24-hour storm event.

☒ 2. A site with a direct discharge to waters with a drainage area equal to or greater than 10 square miles and that is less than 5% of the watershed area at the site's upstream boundary.

Name of Water at Discharge Point:	Lake Champlain
Drainage Area of Water at Discharge Point (square miles):	8234

For a project that has more than one discharge point and that discharges to different receiving waters, waiver eligibility shall be determined on a "per receiving water" basis. Receiving waters are considered separate if the drainage area at their downstream point of confluence is greater than 10 square miles.

For example, if discharge point S/N 001 discharges directly to the Winooski River (drainage area of greater than 10 square miles), but discharge point S/N 002 discharges directly to a small tributary of the Winooski River, then S/N 001 could be waived from the Channel Protection Standard using Waiver 2, but S/N 002 could not. However S/N 002 may still be eligible for Waiver 1.

Project Name: The "H" at Mallets Bay **Discharge Point: SN001**

Overbank Flood Protection Standard Waiver Worksheet

Fill out this worksheet for each discharge point in which use of this waiver is sought.

Overbank Flood Protection Standard (Q_{P10}) Waiver (*check only one*)**:**

☐ 1. The pre-routed, post-development discharge for the 10-year, 24-hour storm is less than 2 cubic feet per second.

Enter the total pre-routed post-development stormwater discharge rate (cfs): _____

Guidance: "Pre-routed post development discharge" means the runoff after development, including post-development conveyance, but without STPs. When examining whether or not the site qualifies for this waiver, off-site runoff does not need to be considered, however the overall common plan of development shall be considered. Please attach the runoff calculations/hydrologic modeling for the pre-routed, post-development during the 10-year, 24-hour storm event.

☒ 2. A site that has a direct discharge to waters with a drainage area equal to or greater than or equal to 10 square miles.

Name of Waters at Discharge Point: Lake Champlain

Drainage Area of Waters at Discharge Point (square miles): 8234

☐ 3. A downstream analysis was completed, pursuant to Section **Error! Reference source not found.** of the 2017 VSMM, that indicated extreme flood control is not necessary for the site.

Has adequate conveyance from the site to the discharge point been verified? ☐ **Yes** ☐ **No**

Has supporting information (e.g. narrative description, calculations, modeling) for the completed downstream analysis been included with the application? ☐ **Yes** ☐ **No**

For a project that has more than one discharge point and that discharges to different receiving waters, waiver eligibility shall be determined on a "per receiving water" basis. Receiving waters are considered separate if the drainage area at their downstream point of confluence is greater than 10 square miles.

For example, if discharge point S/N 001 discharges directly to the Winooski River (drainage area of greater than 10 square miles), but discharge point S/N 002 discharges directly to a small tributary of the Winooski River, then S/N 001 could be waived from the Overbank Flood Protection Standard using Waiver 2, but S/N 002 could not. However S/N 002 may still be eligible for Waivers 1 or 3.

For additional information please go to the 2017 Vermont Stormwater Management Manual, Sections 2.2.6 and 2.5.

Extreme Flood Protection Standard Waiver Worksheet

Fill out this worksheet for each discharge point in which use of this waiver is sought.

Extreme Flood Protection Standard (Q_{P100}) Waiver (*check only one*)**:**

☒ 1. A site that has a direct discharge to waters with a drainage area equal to or greater than or equal to 10 square miles and that is less than 5% of the watershed area at the site's upstream boundary.

Name of Waters at Discharge Point:	Lake Champlain
Drainage Area of Waters at Discharge Point (square miles):	8234

☐ 2. The impervious on site or otherwise associated within a common plan of development, constructed after 2002, is less than 10 acres.

☐ **Yes** ☐ **No**

☐ 3. A downstream analysis was completed, pursuant to Section **Error! Reference source not found.** of the 2017 VSMM, that indicated extreme flood control is not necessary for the site.

Has adequate conveyance from the site to the discharge point been verified?	☐ **Yes**	☐ **No**
Has supporting information (e.g. narrative description, calculations, modeling) for the completed downstream analysis been included with the application?	☐ **Yes**	☐ **No**

For a project that has more than one discharge point and that discharges to different receiving waters, waiver eligibility shall be determined on a "per receiving water" basis. Receiving waters are considered separate if the drainage area at their downstream point of confluence is greater than 10 square miles.

For example, if discharge point S/N 001 drains directly to the Winooski River (greater than 10 square miles), but discharge point S/N 002 drains to a small tributary of the Winooski River, then S/N 001 could be waived from the Extreme Flood Protection Treatment Standard using Waiver 2, but S/N 002 could not. However, S/N002 may be still eligible for Waiver 1.

For additional information please go to the 2017 Vermont Stormwater Management Manual, Sections 2.2.7 and 2.5.

Memorandum

To: Greenfield Growth Consulting
c/o Benjamin Avery

Date: January 21, 2025

Project #: 59245.00

From: Jennifer Conley, PE, PTOE

Re: H Residential and Restaurant Traffic Impact Memorandum

Introduction

Vanasse Hangen Brustlin (VHB) has been requested to conduct a traffic impact analysis for a proposed mixed-use development located at 166 and 180 West Lakeshore Drive in Colchester, Vermont. The project aims to establish a site comprising 20 inn rooms in small cottages and a 48-seat restaurant. As part of the permitting process, a comprehensive transportation analysis is required to assess the potential impacts of the development on local traffic conditions. The following memorandum involves analyzing existing traffic volumes, projecting future trip generation, and evaluating the operational efficiency of the site driveway intersection.

Access and Circulation

The proposed project aims to enhance site access and driveway efficiency while mitigating environmental impacts. The current design includes two new curb cuts, each approximately 45 feet in width to be placed on West Lakeshore Drive. This new configuration reduces the existing three curb cuts, which total about 270 feet, to two shorter curb cuts, significantly lessening the impervious surface and preserving the site's natural slopes. The entrances and exits—located at the south and north ends of the site, respectively—align with the curb cuts on the Hazelett property across the street, supporting a streamlined and cohesive traffic flow.

The one-way driveway will lead to five parallel parking spaces in front of the main building, primarily designated for check-in and drop-offs. The main parking area is situated across the road to optimize space usage and site organization.

Additionally, the project includes enhancements to the south marina area access through a reconfigured two-way driveway, which includes a turnaround and six parking spaces. Similarly, the Hazelett employee recreation area will benefit from a revised two-way driveway, designed exclusively for drop-offs, loading, and unloading, with no permanent parking spaces.

The proposed layout of the project site is shown below in Figure 1.

Memorandum

Figure 1 Proposed Site Plan

Existing Conditions

To establish a baseline for assessing the traffic impact of the proposed mixed-use development, VHB utilized traffic volume data collected as part of the ongoing improvements at the intersection of West Lakeshore Drive, East Lakeshore Drive, and Blakely Road. This data provides a detailed account of current traffic conditions, capturing the two-way traffic volumes along West Lakeshore Drive near the project site.

Traffic Volume Data

Turning movement count data available in the area was collected on July 16, 2014 at the intersection of West Lakeshore Drive, East Lakeshore Drive, and Blakely Road. Given the need to project traffic volumes forward to 2025, appropriate adjustments were necessary. VHB utilized data from the following VTrans permanent count stations to inform this adjustment:

- D088 – West Lakeshore Road (east of Prim Road)
- D453 – Blakley Road (Just east of West Lakeshore Drive, East Lakeshore Drive, and Blakely Road intersection)

Memorandum

The data from the permanent count stations indicated that traffic volumes had declined significantly in recent years, largely due to the COVID-19 pandemic and resultant shifts in travel behaviors. For a summer recreational area, the 2014 count data was found to be higher than the anticipated Design Hour Volume (DHV) as outlined in the VTrans Redbook[1].

Therefore, VHB determined the two-way volumes for West Lakeshore Drive based on the most recently available VTrans daily volumes for this link. The approximate 2023 Annual Average Daily Traffic (AADT) was around 8,380 vehicles per day. Using the VTrans table to determine the DHV for a summer recreational area resulted in a two-way volume of 1,000 vehicles on West Lakeshore Drive. Based on VTrans factors to adjust to the future, a background growth rate of 1.007 was applied to project traffic volumes up to 2025.

Trip Generation

Trip generation estimates for the proposed residential units and restaurant space are calculated based on industry standards and number of dwelling units and seats respectively. Trip estimates were calculated based on rates published by the Institute of Transportation Engineers (ITE) in the 11th edition of the Trip Generation Manual for the weekday AM and PM peak hours. As such, trip generation rates were calculated using the ITE land use code (LUC) for Single-Family Detached Housing (LUC 210) and High-Turnover (Sit-Down) Restaurant (LUC 932) assuming an estimate of 20 dwelling units and 48 restaurant seats. To remain conservative, the peak hour trips of the restaurant were assumed to be for the peak hour of the generator as opposed to the peak hour of the adjacent network. In addition, the housing land use code selected is more conservative than using a land use for a more recreational housing style. The total unadjusted trip generation of the site is anticipated to be 49 AM and 59 PM peak hour trips. The trip generation data is provided in Table 1 below.

Table 1 Trip Generation Summary

Peak Period	LUC 210 – 20 Dwelling Units	LUC 932 – 48 Seats	Total Trips
AM Peak Hour			
Enter	6	17	23
Exit	15	11	26
Total	21	28	49
PM Peak Hour			
Enter	15	19	34
Exit	8	17	25
Total	23	36	59

[1] VTrans Redbook: https://vtrans.vermont.gov/sites/aot/files/documents/Redbook%202021.pdf

As shown above the development is not anticipated to exceed the Vermont Agency of Transportation (VTrans) threshold of 75 peak hour trips at any intersection.

The Hazelett facility, located on the south side of West Lakeshore Drive, needs to be factored into the analysis of the proposed site's entrance and exit. Since direct count data for the Hazelett facility was unavailable, estimates were based on LUC 110 – General Light Industrial. The additional trips associated with the Hazelett facility during peak hours are as follows:

- AM Peak Hour: An estimated total of 11 trips (9 entering, 2 exiting).
- PM Peak Hour: An estimated total of 8 trips (1 entering, 7 exiting).

Trip Distribution and Assignment

A trip distribution pattern for the site was developed based on the 2-way traffic patterns at West Lakeshore Drive. Site related trips were added to the roadway network.

Traffic Analysis

The operations at the Site Driveway with West Lakeshore Drive were evaluated. Intersection capacity analyses were performed for the subject intersection in the AM and PM peak hours for the typical weekday. Level of service (LOS) and average vehicle delay were evaluated using simulations developed with Synchro/SimTraffic Version 12. Each simulation was conducted using industry standard parameters and software settings. All simulations results reported in this evaluation are the average of five modeling runs.

The term "level of service" (LOS) is used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is an indicator of travel speed, delay, and freedom to maneuver. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service ranges from A to F, with LOS A representing free flow operating conditions and LOS F representing congested operating conditions.

For unsignalized intersections, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. Thus, the LOS designation is for the critical movement exiting the side street and is typically the left turn out of the side street or site driveway.

Table 2 Level of Service and Delay Summary – Unsignalized Intersections

Level of Service	Unsignalized Intersection Delay (sec)
A	<10.0
B	10.1 – 15.0
C	15.1 – 25.0
D	25.1 – 35.0
E	35.1 – 50.0
F	>50.0

Intersection Operations Analysis Results

The following Tables 3 and 4 summarize the traffic operation analysis results at both the site entrance and exit after occupancy. At unsignalized intersections, such as the site driveways with West Lakeshore Drive, LOS is typically focused on the delay experienced by vehicles making critical movements, such as left turns from the side street onto the main street. The results of the capacity analysis at the site entrance (Table 3) show that during the AM peak hour, eastbound and westbound approaches on West Lakeshore Drive operate at LOS A, while the northbound movement from the Hazelett property operates at LOS B. During the PM peak hour, the LOS for the eastbound approach remains at an LOS A, and the northbound movement improves to LOS A.

Similarly, the capacity analysis at the site exit (Table 4) shows that during the AM and PM peak hours, the site exit operates at LOS B. The primary movements on West Lakeshore Drive maintain LOS A for both AM and PM peak hours.

These results indicate that all movements at the site driveway will operate efficiently. These levels are within acceptable limits for unsignalized, two-way stop controlled intersections, and the project is not anticipated to negatively impact the adjacent roadway network.

Table 3 West Lakeshore Drive / Site Entrance Capacity Analysis Results

Approach	2025 Build		
	Delay[1]	LOS[2]	Q95[3]
AM Peak Hour			
West Lakeshore Drive EB	1.5	A	38
West Lakeshore Drive WB	0.3	A	0
Hazelett Property NB	12.9	B	37
PM Peak Hour			
West Lakeshore Drive EB	2.0	A	58
West Lakeshore Drive WB	0.5	A	0
Hazelett Property NB	9.3	A	37

[1]*Delay expressed in seconds per vehicle*
[2]*Level of Service*
[3]*95th percentile queue length expressed in vehicle length*

Memorandum

Table 4 West Lakeshore Drive / Site Exit Capacity Analysis Results

Approach	2025 Build		
	Delay[1]	LOS[2]	Q95[3]
AM Peak Hour			
West Lakeshore Drive EB	0.5	A	0
West Lakeshore Drive WB	0.7	A	14
Hazelett Property NB	7.1	A	35
Site Exit SB	10.7	B	43
PM Peak Hour			
West Lakeshore Drive EB	0.5	A	3
West Lakeshore Drive WB	0.8	A	0
Hazelett Property NB	8.4	A	32
Site Exit SB	11.6	B	50

[1]*Delay expressed in seconds per vehicle*
[2]*Level of Service*
[3]*95th percentile queue length expressed in vehicle length*

Conclusions

Based on the analysis, the proposed mixed-use development at 166 and 180 West Lakeshore Drive in Colchester, Vermont, is expected to have manageable impacts on local traffic conditions. Key findings from the traffic impact study are summarized below:

1. Baseline Traffic Conditions and Growth Projections:
    - VHB developed two-way volumes for West Lakeshore Drive based on the most recently available VTrans daily volumes for this link. The approximate Annual Average Daily Traffic (AADT) was around 8,400 vehicles per day. Using typical adjustments to reflect DHV conditions, a two-way volume of approximately 1,000 vehicles on West Lakeshore Drive was estimated.
2. Trip Generation Estimates:
    - Using the ITE Trip Generation Manual (11th Edition), the site was estimated to generate 49 trips during the AM peak hour and 59 trips during the PM peak hour. This is well below the Vermont Agency of Transportation's threshold of 75 peak hour trips for requiring additional analysis.
3. Intersection Capacity Analysis:
    - The site's entrance and exit intersections with West Lakeshore Drive were evaluated. The analysis showed that, under 2025 conditions with the project in place, the driveways would operate at acceptable levels of service (LOS) during both AM and PM peak hours, and trips associated with the proposed development are not anticipated to negatively impact the adjacent roadway network.

KREBS & LANSING
CONSULTING ENGINEERS

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HAZELETT INN (THE "H") WASTEWATER FLOWS WORKSHEET

EXISTING ALLOCATION = 4,482 GALLONS/DAY (gpd)
(Per WW-C0671 for a 166 seat restaurant serving 2 meals/day))

PROPOSED PROJECT

Dining
- 48 seats x 27 gpd (2 meals/day) = 1296 gpd

Meeting Space
- 60 participants x 4 gpd/participant = 240 gpd

Spa
- 1 massage therapist x 32 gpd = 32 gpd
- 8 participants x 4 gpd = 32 gpd

Guest Rooms
- **Main Building**
  Staff Manager/Owner Bedroom = 140 gpd

- **Cottages**
  46 TOTAL sleeping spaces x 50 gpd = 2300 gpd

- **Future Phase building**
  6 sleeping spaces x 50 gpd = 300 gpd

TOTAL PROPOSED DESIGN FLOW = 4,340 gpd

RE: Hazelett Property

1 message

Karen Adams <kadams@colchestervt.gov> Mon, Sep 9, 2024 at 3:16 PM
To: Scott Homsted <scott.homsted@krebsandlansing.com>, Norm Baldwin <nbaldwin@colchestervt.gov>
Cc: Benjamin Avery <ben@greenfieldgrowthllc.com>, Zachary Maia <ZMaia@colchestervt.gov>

Hi Scott,

Appreciate you sharing your thinking on this, and sounds like you have a solid plan. I spoke with Norm about this today and DPW is supportive of these design flows being approved for the site, given they are within the allocation that will be assigned (the 4,482GPD). I am cc'ing in Zach so that when the time comes to document this for the Board, he can give us some guidance on what he's looking for. Usually, we'd issue what's called an "ability to serve" letter, but in this case, we're constructing the infrastructure now so we don't currently have the ability to serve you yet, and, the allocation is going to be issued instead of purchased. So, we're in support and can document in whatever way Zach needs as you move through the DRB. Let us know if you have other questions.

Best,

Karen Adams

Technical Services Manager

Department of Public Works

Town of Colchester
781 Blakely Rd.
Colchester, Vermont 05446
P: 802.264.5621 | F: 802.264.5503

colchestervt.gov

From: Scott Homsted <scott.homsted@krebsandlansing.com>
Sent: Monday, September 9, 2024 11:21 AM
To: Norm Baldwin <nbaldwin@colchestervt.gov>; Karen Adams <kadams@colchestervt.gov>
Cc: Benjamin Avery <ben@greenfieldgrowthllc.com>
Subject: Hazelett Property

Hi Norm and Karen,

As you know, we are working on a redevelopment project for property located at 180 and 166 West Lakeshore Drive for Hazelett. After meeting with Norm and P&Z staff, we came away with an understanding that wastewater allocation for the site could be limited to what was previously permitted. Additional allocation could possibly be obtained in the future, but it is uncertain, and likely to be limited. With that in mind, the design team examined the project program to determine a design that will work with the existing allocation. We've attached a document detailing the program. The end result is a total design flow of **4,340 gpd**. This is slightly less than the 4,482 gpd permitted via WW-C-0671 for the site.

We are preparing a Sketch Plan application for the project, and would like to include confirmation that the proposed wastewater design flows for the project will be acceptable for connection to municipal sewer. This is likely to come up with the DRB and we'd like to make it a non-issue. Please reach out if you have any questions. Thanks for your help!

Scott

Scott Homsted, P.E.

Krebs & Lansing Consulting Engineers, Inc.

164 Main Street

Colchester, Vermont 05446

Scott.Homsted@krebsandlansing.com