

LOCATION
NTS

RECEIVED
MAR 01 2019
PLANNING/ZONING

Upon finding that the final plans complied with all requirements of the *Williston Development Bylaw* and all conditions imposed on the approval of Discretionary Permit 19 - 13, the Williston Zoning Administrator approved the final plans on the 11 day of March, 2019.

Matthew Balogh



January 23, 2019	"Final Plan"	whn	1/23/19
Date revised	Description	Checked	Date
Design <u>MHN</u>	Overall Site Plan 291 HURRICANE LANE		
Drawn <u>SLM</u>			
Checked <u>MHN</u>			
Scale <u>1" = 120'</u>			
Date <u>12/13/18</u>			
Project <u>16351/14133</u>	<u>Hurricane Lane</u>	Williston, Vermont	
KREBS & LANSING Consulting Engineers, Inc. 164 Main Street, Colchester, Vermont 05446		0V-1	

FINAL PLANS



Existing Elevation - Rear



Existing Elevations - Front

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw, and all conditions imposed on the approval of Discretionary Permit 19-13, the Williston Zoning Administrator approved the final plans on the 11 day of MARCH 2019.

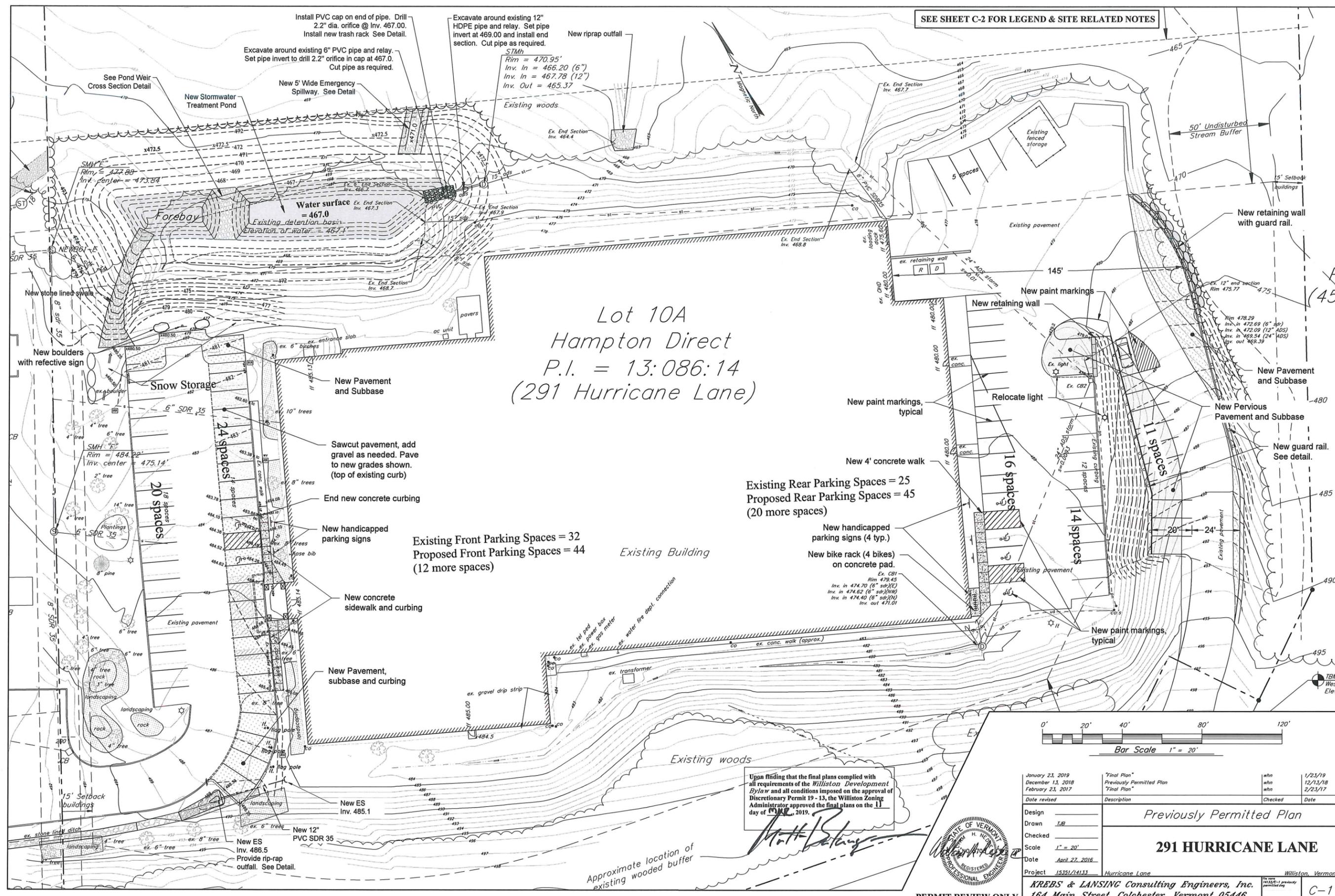
Matt Kellogg

Date revised	Description	whn	1/23/19
January 23, 2019	"Final Plan"	whn	1/23/19
<i>Existing Elevation Photos</i>			
291 HURRICANE LANE			
Project 15351/14133 Hurricane Lane Williston, Vermont			
KREBS & LANSING Consulting Engineers, Inc. 164 Main Street, Colchester, Vermont 05446			
			SP-2

FINAL PLANS

SEE SHEET C-2 FOR LEGEND & SITE RELATED NOTES

Lot 10A
Hampton Direct
P.I. = 13:086:14
(291 Hurricane Lane)



Install PVC cap on end of pipe. Drill 2.2" dia. orifice @ Inv. 467.00. Install new trash rack. See Detail.

Excavate around existing 6" PVC pipe and relay. Set pipe invert to drill 2.2" orifice in cap at 467.0. Cut pipe as required.

Excavate around existing 12" HDPE pipe and relay. Set pipe invert at 469.00 and install end section. Cut pipe as required.

STMh
Rim = 470.95'
Inv. In = 466.20 (6")
Inv. In = 467.78 (12")
Inv. Out = 465.37

See Pond Weir Cross Section Detail

New 5' Wide Emergency Spillway. See Detail

New riprap outfall

New Stormwater Treatment Pond

Water surface = 467.0

Existing detention basin
Elevation of water = 467.1

50' Undisturbed Stream Buffer

15' Setback buildings

New retaining wall with guard rail.

Forebay

5 spaces

Existing fenced storage

New retaining wall

New paint markings

Rim 478.29
Inv. in 472.69 (6" ADS)
Inv. in 472.09 (12" ADS)
Inv. in 469.54 (24" ADS)
Inv. out 469.39

New Pavement and Subbase

New Pervious Pavement and Subbase

New guard rail. See detail.

Snow Storage

New Pavement and Subbase

Sawcut pavement, add gravel as needed. Pave to new grades shown. (top of existing curb)

End new concrete curbing

New handicapped parking signs

Existing Front Parking Spaces = 32
Proposed Front Parking Spaces = 44
(12 more spaces)

Existing Building

New concrete sidewalk and curbing

New Pavement, subbase and curbing

Existing Rear Parking Spaces = 25
Proposed Rear Parking Spaces = 45
(20 more spaces)

New handicapped parking signs (4 typ.)

New bike rack (4 bikes) on concrete pad.

Ex. CB1
Rim 479.45
Inv. in 474.70 (6" sdr)(E)
Inv. in 474.62 (6" sdr)(W)
Inv. in 474.40 (6" sdr)(N)
Inv. out 471.01

Relocate light

New 4' concrete walk

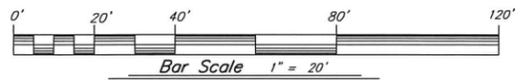
16 spaces

12 spaces

14 spaces

11 spaces

New paint markings, typical



Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 19-13, the Williston Zoning Administrator approved the final plans on the 11 day of June, 2019.

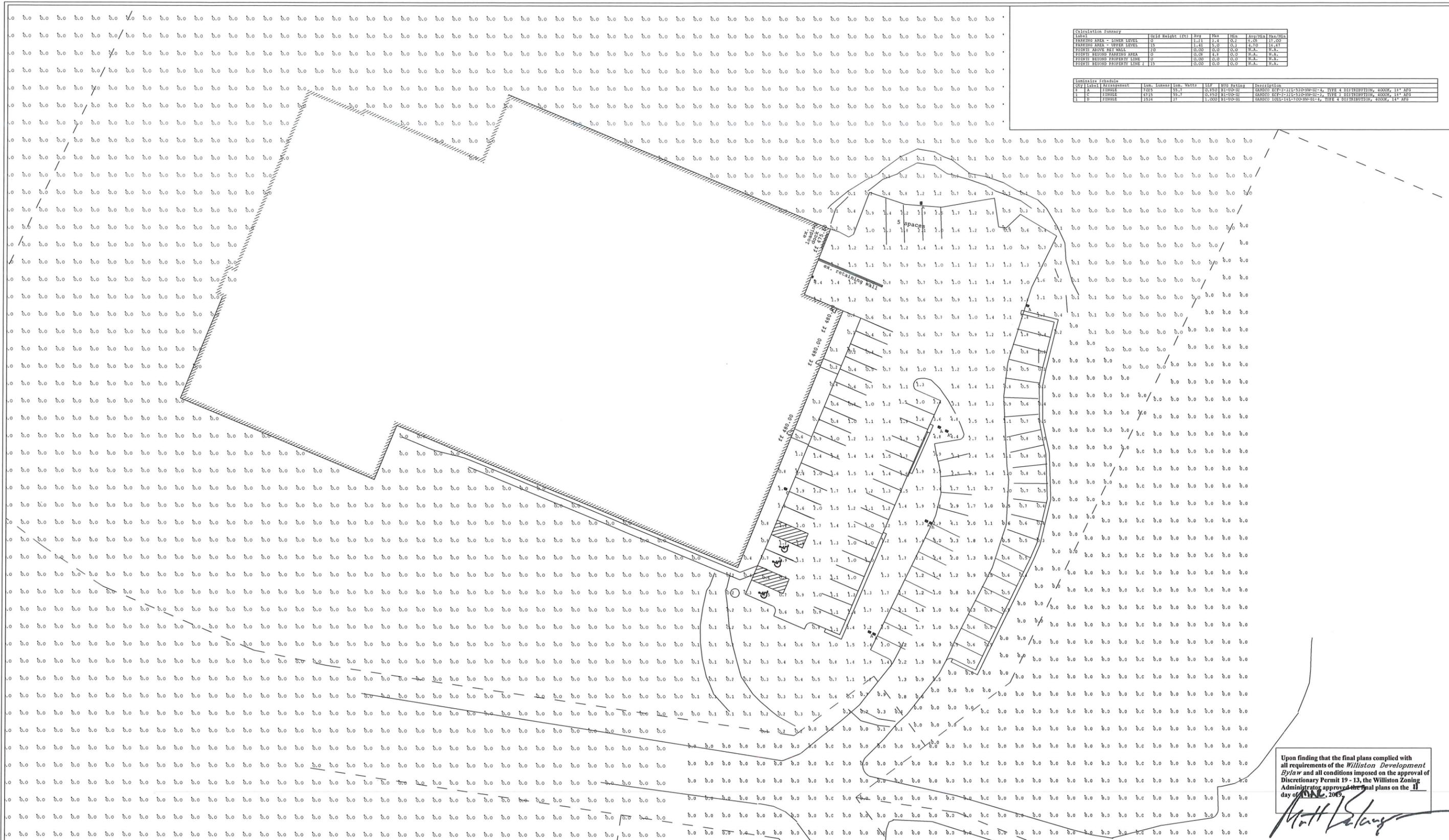
Matthew Blasing



PERMIT REVIEW ONLY

January 23, 2019	"Final Plan"	whn	1/23/19
December 13, 2018	Previously Permitted Plan	whn	12/13/18
February 23, 2017	"Final Plan"	whn	2/23/17
Date revised	Description	Checked	Date
Design			
Drawn	J.R.		
Checked			
Scale	1" = 20'		
Date	April 27, 2016		
Project	15351/14133 Hurricane Lane		
KREBS & LANSING Consulting Engineers, Inc.		Williston, Vermont	
164 Main Street, Colchester, Vermont 05446		C-1	

FINAL PLANS



Calculation Summary						
Label	Grid Weight (ft)	Avg	Max	Min	Avg/Min	Max/Min
PARKING AREA - LOWER LEVEL	15	1.41	5.0	0.3	47.0	14.67
PARKING AREA - UPPER LEVEL	15	0.00	0.0	0.0	N/A	N/A
POINT BEYOND PARKING AREA	0	0.00	4.3	0.0	N/A	N/A
POINT BEYOND PROPERTY LINE	0	0.00	0.0	0.0	N/A	N/A
POINT BEYOND PROPERTY LINE	15	0.00	0.0	0.0	N/A	N/A

Luminaire Schedule						
Qty	Label	Arrangement	Low Lumen	High Water	LLF	IES Rating
1	A	TRIUMPH	175	35J	0.950	BI-00-01
1	C	TRIUMPH	875	35J	0.950	BI-00-01
1	B	TRIUMPH	350	37	1.000	BI-00-01

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Matthew Stang

GENERAL DISCLAIMER:
Calculations have been performed according to IES standards and good practice. Some differences between measured values and calculated results may occur due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and field conditions such as voltage and temperature variations. Input data used to generate the attached calculations such as room dimensions, reflectances, furniture and architectural elements significantly affect the lighting calculations. If the real environment conditions do not match the input data, differences will occur between measured values and calculated values.
* LLF Determined Using Current Published Lamp Data

NOTE TO REVIEWER:
Total Light Loss Factor (LLF) applied at time of design is determined by applying the Lamp Lumen Depreciation (LLD) from current lamp manufacturer's catalog, a Luminaire Dirt Depreciation Factor (LDD) based on IES recommended values and a Ballast Factor (BF) from current ballast specification sheets. Application of an incorrect Light Loss Factor (LLF) will result in forecasts of performance that will not accurately depict actual results.
For proper comparison of photometric layouts, it is essential that you insist all designers use correct Light Loss Factors.



PROJECT TITLE:
291 HERCULIES LANE
SITE LIGHTING LAYOUT

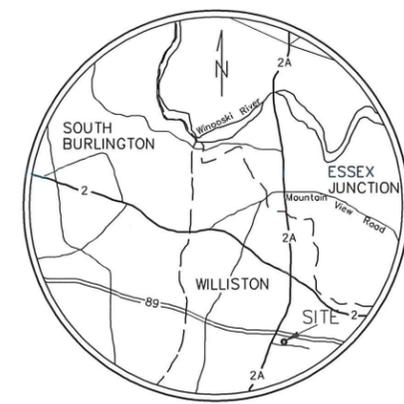
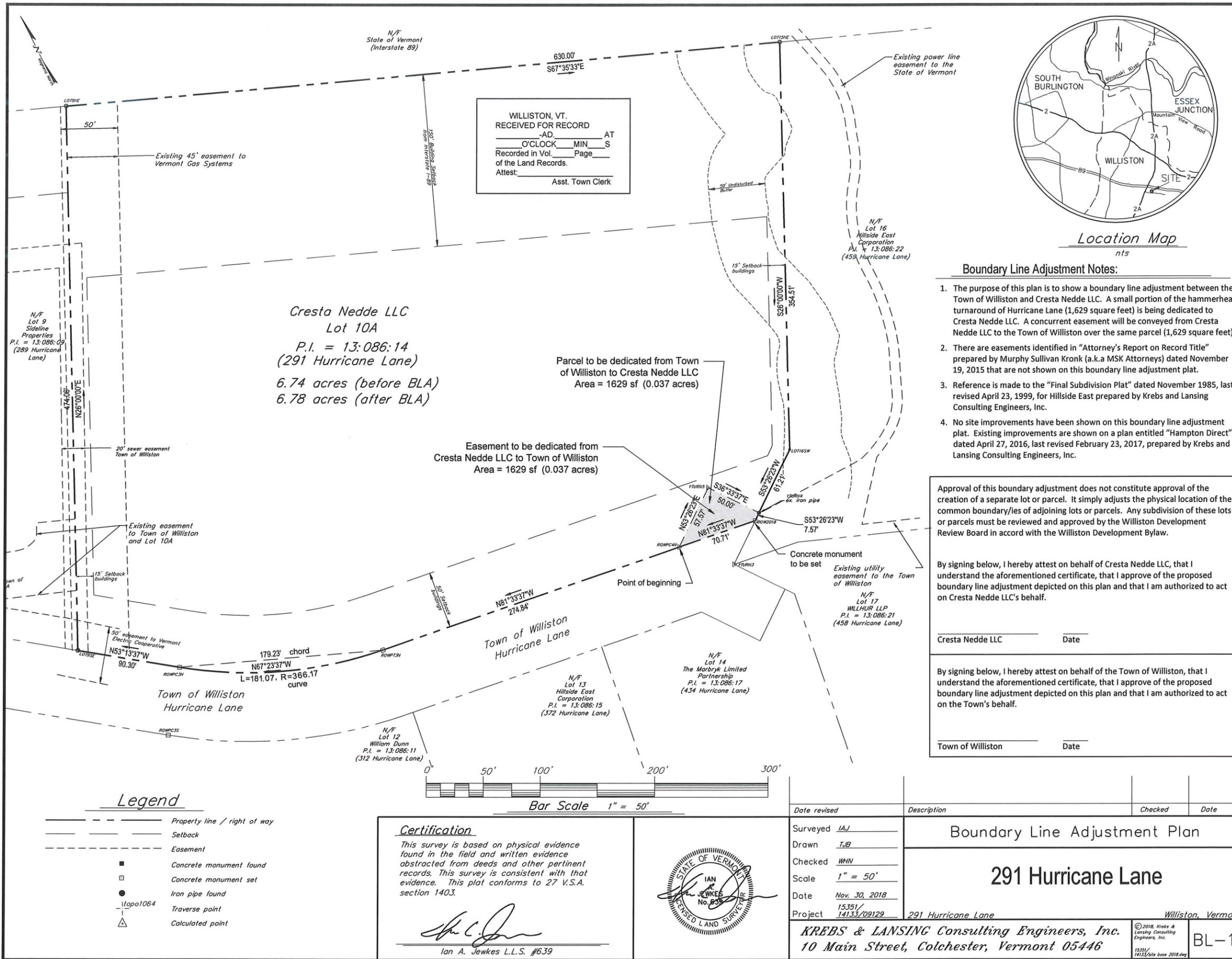
DRAWING TITLE:
EXTERIOR PHOTOMETRIC
POINT CALCULATION

FILE NAME: 291 HURRICANE LANE-10-19.dwg

SCALE: 1"=20'-0"
DATE: 1/10/19
DRAWN BY: JW
SHEET:

L-1

FINAL PLANS



Location Map
nts

Boundary Line Adjustment Notes:

1. The purpose of this plan is to show a boundary line adjustment between the Town of Williston and Cresta Nedde LLC. A small portion of the hammerhead turnaround of Hurricane Lane (1,629 square feet) is being dedicated to Cresta Nedde LLC. A concurrent easement will be conveyed from Cresta Nedde LLC to the Town of Williston over the same parcel (1,629 square feet).
2. There are easements identified in "Attorney's Report on Record Title" prepared by Murphy Sullivan Kronk (a.k.a MSK Attorneys) dated November 19, 2015 that are not shown on this boundary line adjustment plat.
3. Reference is made to the "Final Subdivision Plat" dated November 1985, last revised April 23, 1999, for Hillside East prepared by Krebs and Lansing Consulting Engineers, Inc.
4. No site improvements have been shown on this boundary line adjustment plat. Existing improvements are shown on a plan entitled "Hampton Direct" dated April 27, 2016, last revised February 23, 2017, prepared by Krebs and Lansing Consulting Engineers, Inc.

Approval of this boundary adjustment does not constitute approval of the creation of a separate lot or parcel. It simply adjusts the physical location of the common boundary/ies of adjoining lots or parcels. Any subdivision of these lots or parcels must be reviewed and approved by the Williston Development Review Board in accord with the Williston Development Bylaw.

By signing below, I hereby attest on behalf of Cresta Nedde LLC, that I understand the aforementioned certificate, that I approve of the proposed boundary line adjustment depicted on this plan and that I am authorized to act on Cresta Nedde LLC's behalf.

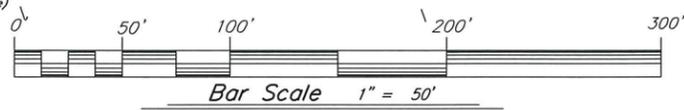
Cresta Nedde LLC _____ Date _____

By signing below, I hereby attest on behalf of the Town of Williston, that I understand the aforementioned certificate, that I approve of the proposed boundary line adjustment depicted on this plan and that I am authorized to act on the Town's behalf.

Town of Williston _____ Date _____

Legend

- Property line / right of way
- - - - - Setback
- - - - - Easement
- Concrete monument found
- Concrete monument set
- Iron pipe found
- |apo1064 Traverse point
- △ Calculated point



Certification

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

[Signature]
Ian A. Jewkes L.L.S. #639



Date revised	Description	Checked	Date
Surveyed	IAJ		
Drawn	TJB		
Checked	WHN		
Scale	1" = 50'		
Date	Nov. 30, 2018		
Project	15351/14133/09129	291 Hurricane Lane	Williston, Vermont

Boundary Line Adjustment Plan

291 Hurricane Lane

KREBS & LANSING Consulting Engineers, Inc.
10 Main Street, Colchester, Vermont 05446

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15351/14133/site base 2018.dwg

BL-1

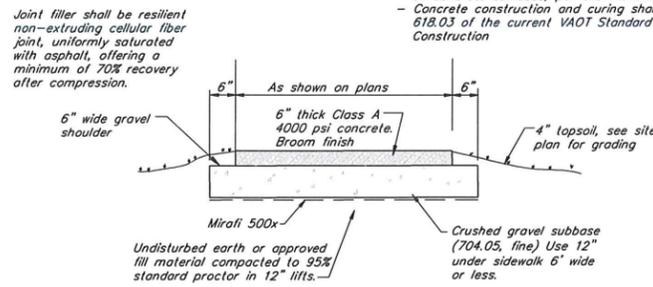
FINAL PLANS

Construction Notes

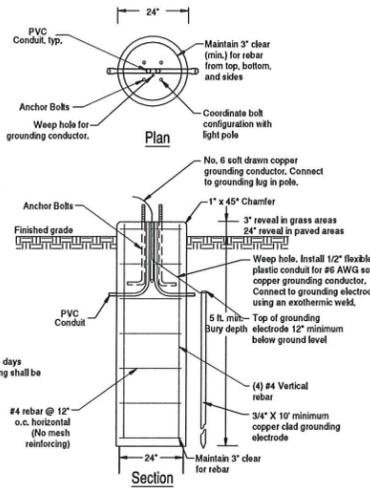
- The methods and materials of construction shall conform to the latest standards of the Town of Williston and the State of Vermont. All work shall be in conformance with all permits and approvals issued for the project. In case of conflict, the more stringent specification shall apply as directed by Engineer. All work shall be done in a workmanlike manner and completed in the time specified by Owner.
- 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.
- 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 Town of Williston 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 and shoring, dewatering, clearing and grubbing, erosion control, dust control, traffic control, grading, and all incidentals shall be included as part of the required work.
- Repair of all disturbed areas, grading, seeding, mulching, repair of roads and curbs, paving, and other incidentals are included as part of the required work. All disturbed areas shall be loamed and mulched until permanent ground cover is established.
- The Contractor shall verify all horizontal control and temporary bench marks before use.
- The workers 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 flaggers. All barricades left in position overnight are to be properly lighted. Kerosene pots are not acceptable. When work narrows the usable pavement, flaggers 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 workers and the general public and all damages to property occurring from or upon the work occasioned by negligence or shall be held responsible for the safety of all workers and the general public and all damages to property occurring from or upon the work occasioned by negligence or 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.
- Contractor shall contact Dig Safe prior to any excavation.
- All new storm pipes extending from structures shall be laid with a pipe laser to elevation and slope as shown on the plans.
- The Contractor shall sawcut all existing pavement to be removed. The Contractor shall minimize the pavement area disturbance. Contractor shall be responsible for all pavement repair and restoration necessary to complete the work.
- The Contractor shall be responsible for all construction layout. See Construction Stakeout Notes.
- Temporary sill fence shall be erected prior to any clearing or construction. Fencing may be erected in phases, but in no case shall construction of clearing 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.
- Existing plantings are located in general areas as shown on the plans. Contractor shall protect plantings scheduled to remain so as not to damage these or their root systems.
- Contractor shall comply with all permits and approvals issued for this project.
- Contractor shall sign on as the Co-Permittee for the State of Vermont Erosion Prevention and Sediment Control permit for the project.
- Slope stability upon unsaturated soil conditions. If during construction saturated soils are encountered, contact the Engineer immediately.
- All new signs shall be mounted on 2"x2" galvanized steel posts with a 48" (min.) anchor depth.

Concrete Notes

- Broom finish concrete
- Construction joints shall be spaced max. 24' in all directions.
- Tool finish control joints 1-1/2" depth at intervals equal to width of sidewalk. Contractor is responsible for providing appropriately sized tooling trowel.
- Apply 2 coats of Euclid Everclear VDX cure/seal compound to all concrete surfaces, per the manufacturer's specifications.
- Concrete construction and curing shall conform to section 618.03 of the current VDOT Standard Specifications for Construction



New Concrete Sidewalk Detail
N.T.S.

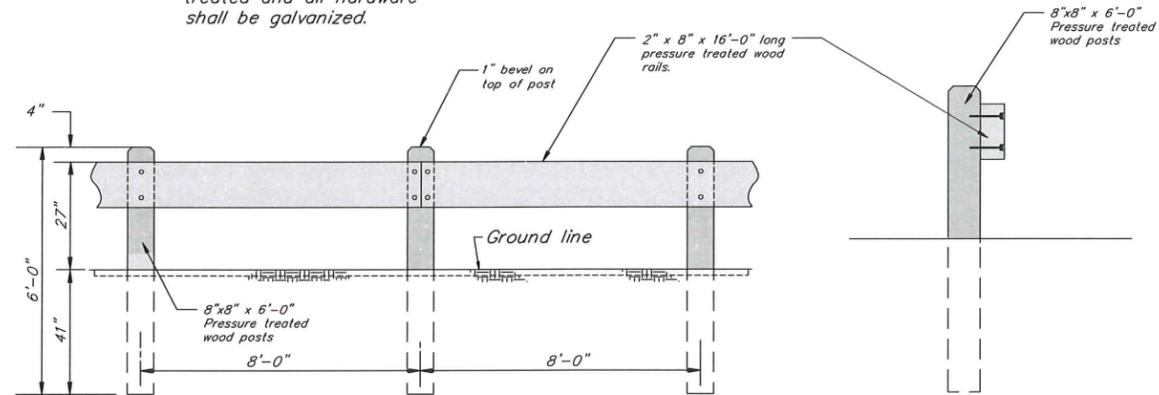


Typical Light Pole Base
N.T.S.

NOTE:
See Electrical Plans for electrical, conduit, light pole bolt pattern, and grounding design.

- SPECIFICATIONS:**
- Concrete Minimum Strength 5000psi @ 28 days
 - Reinforcement per Specification. Reinforcing shall be ASTM A615 Grade 60
 - PVC Conduit Supplied by Others
 - Anchor Bolts Supplied by Others
 - Weights Subject to Variation

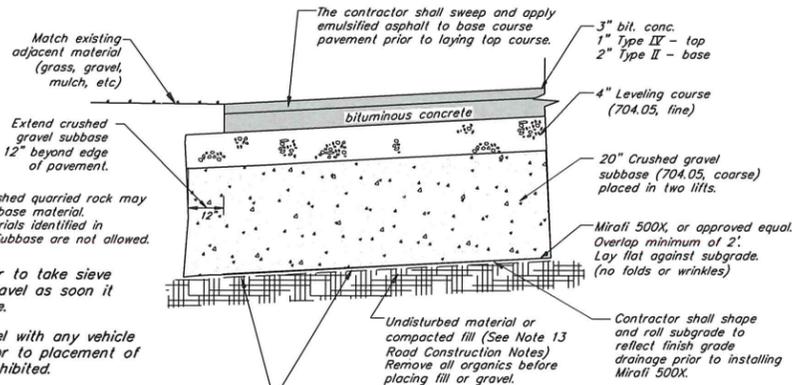
All lumber shall be pressure treated and all hardware shall be galvanized.



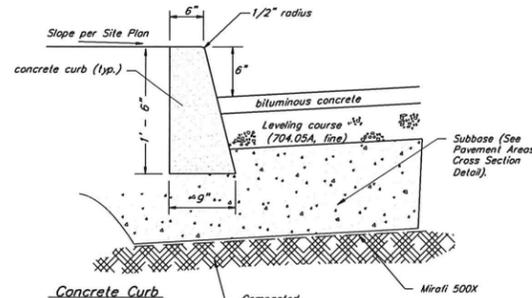
Section Detail

Section Detail

Guard Rail Detail
N.T.S.



New Pavement Areas Cross Section Detail
N.T.S.



Typical New Concrete Curb Detail
N.T.S.

- Concrete Curb**
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.
- All concrete used in the construction of concrete curb shall be air entrained (5 - 7%) 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.
- Apply 2 coats of Euclid Everclear VDX cure/seal compound to all concrete surfaces per manufacturer's specifications.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 19-13, the Williston Zoning Administrator approved the final plans on the 11 day of JAN 2019.

Matthew Lansing



PERMIT REVIEW ONLY

January 23, 2019	"Final Plan"	whn	1/23/19
December 13, 2018	notes	whn	2/23/17
February 23, 2017	"Final Plan"	whn	2/23/17
Date revised	Description	Checked	Date
Design	WHN		
Drawn	DMR		
Checked	WHN		
Scale	N.T.S.		
Date	April 27, 2016		
Project	14133/09129	291 Hurricane Lane	Williston, Vermont
KREBS & LANSING Consulting Engineers, Inc.		164 Main Street, Colchester, Vermont 05446	
CD-1		18 300	

FINAL PLANS

Winter Construction Requirements (October 15th - April 15th)

- For areas to be stabilized with vegetative cover, seeding shall be completed no later than September 15th to ensure adequate growth and cover.
- If seeding is not completed by September 15th, additional non-vegetative protection must be used to stabilize the site for the winter period. This includes the use of Erosion Control Matting or netting of a heavy mulch layer.
- Where mulch is used for temporary stabilization it must be applied at double the standard rate, or a minimum of 3 inches with an 80%-90% cover.
- Stabilized Construction Entrances shall be enlarged to provide for snow stacking.
- Limits of disturbance shall be moved or replaced to reflect any revised boundaries of winter work.
- The site shall be managed to provide adequate snow storage and control of meltwater. Cleared snow shall be stored down slope of all areas of disturbance and out of stormwater treatment structures.
- A minimum 25 foot buffer shall be maintained from perimeter controls such as silt fence.
- Drainage structures must be kept open and free of snow and ice dams.
- Silt fence and other practices requiring earth disturbance must be installed ahead of frozen ground.
- To ensure cover of disturbed soil in advance of a melt event, areas of disturbed soil must be stabilized at the end of each work day, with the following exceptions:
 - If no precipitation within 24 hours is forecast and work will resume in the same disturbed area within 24 hours, daily stabilization is not necessary.
 - Disturbed areas that collect and retain runoff, such as house foundation or open utility trenches.
- Prior to stabilization, snow or ice must be removed to less than 1 inch thickness.
- Use stone to stabilize areas such as the perimeter of buildings under construction or where construction vehicle traffic is anticipated. Stone paths should be 10-20 feet wide to accommodate vehicular traffic.

Erosion Prevention & Sediment Control Notes

- Contractor shall be responsible for complying with all State and Local erosion prevention and sediment control standards and permit requirements during construction.
- The limit of disturbance shall be clearly defined by Contractor's surveyor prior to clearing. Erosion and sediment control devices shall be established to trap sediment on site.
- Clearing and grubbing shall not begin until disturbance limits and sediment controls are in place. All roots, stumps and deleterious materials shall be removed from the site. The Contractor shall minimize the amount of disturbed land at any given time.
- All erosion control shall be placed as shown on the drawings or as ordered by the Engineer. The Contractor shall maintain the erosion control measures until the Engineer is satisfied that permanent ground cover is established and that further measures are not required. It shall be the responsibility of the Contractor to employ appropriate erosion control as shown on these drawings and any other measures as necessary to trap sediment on site. Refer to permit maintenance and inspection requirements.
- All areas of disturbance shall be permanently or temporarily stabilized as soon as possible and within 48 hours of final grading. All areas of disturbance shall be at least temporarily stabilized within 14 days of initial disturbance. Any disturbance after 14 consecutive days of exposed soil shall be stabilized daily unless the following exceptions apply:
 - Stabilization is not required if earthwork is to continue in the area in the next 24 hours and there is no precipitation forecast in the next 24 hours.
 - Stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 ft. or greater (e.g. house foundation excavation, utility trenches). Stabilization measures shall include mulch and netting, erosion control matting, crushed stone, gravel, or pavement.
- Unless specifically indicated on the plans acceptable methods of stabilization include:
 - Straw Mulching - 2 tons per acre. Approximately 1" uniform thickness. Only allowed on relatively flat areas with minimum upslope watershed. Mulch must be properly anchored to prevent material from being blown away by wind (windthrow).
 - Hydroseeding* - Applied at the manufacturer's recommended application rate. Contractor shall provide evidence of proper application rate. Hydroseeding is not allowed in areas of concentrated flow.
 - Erosion control matting - S75BN rolled matting must be applied to all slopes 3:1 (H:V) or greater (unless otherwise indicated).
 - Crushed stone or crushed gravel - Typically used for temporary access roads and construction staging areas.
- The Contractor shall use water for dust control.
- The Contractor shall provide install Marsh Mat air inlet filters over grates of all catch basins (existing or new) that collect construction site stormwater runoff.
- At a minimum dewatering shall be accomplished by creating a sump pit filled with crushed stone and pumping to a sediment filter bag placed downslope of any disturbed soils. The pumpout water shall be monitored to ensure visibly discolored water does leave the project site.
- The Contractor shall be responsible for providing a dewatering/stormwater bypass plan for approval by the Engineer. The objective of the plan is to provide a strategy that, when implemented, the pumped water is not visibly discolored when it leaves the project site.
- A stabilized construction entrance shall be installed and maintained at ALL construction access locations. Contractor shall be responsible for installing crushed stone to provide stable areas for construction vehicle traffic, staging, and storage. The Contractor is responsible for providing and maintaining sufficient stone to prevent rutting and sediment tracking offsite.
- Any paved roads used by construction vehicles shall be swept daily, or at a greater frequency, if dirt or gravel is tracked from the site. The swept debris shall be immediately removed from face of curb if applicable.
- All temporary erosion and sediment control measures shall be removed within 30 days after final stabilization or after the measures are no longer needed, unless otherwise authorized.
- All sediment removed from sediment control practices shall be placed in an approved soil disposal area.
- All areas that do not have established vegetation by October 15th must be stabilized in accordance with the Winter Stabilization requirements outlined in the Low Risk Site Handbook. See Details.
- After permanent seeding the Contractor shall be responsible for watering to ensure adequate vegetative growth.
- The Contractor shall be responsible for providing all necessary temporary construction fencing, temporary roads, staging areas, etc., necessary to complete the work.
- The Contractor shall be responsible for all inspection and maintenance of the erosion prevention and sediment control practices for the project. Inspections and corresponding reports shall be performed at a minimum, once a week and after every precipitation event that results in a discharge from the site.

CONSTRUCTION STAKEOUT NOTES

The Contractor shall be responsible for all construction stakeout for the project. The Engineer shall provide the Contractor an AutoCAD R2000 drawing of the site design. The drawing will include horizontal and vertical survey control. Additional survey control will be the responsibility of the Contractor.

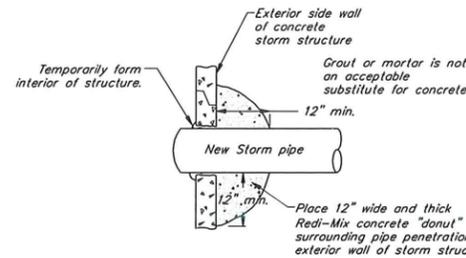
- The Contractor shall be responsible for using proper survey equipment and having properly trained personnel to use this information. Any Contractor that does not have proper equipment or personnel shall subcontract the work to a competent consultant.
- The horizontal control datum may be based on a coordinate system that is unique for this project. Project north may not refer to astronomic or magnetic north.
- The Contractor shall check the integrity of survey control points by occupying a control point checking distance to back sight and checking distance and angle to another control point prior to any construction stakeout. The contractor shall not proceed with stakeout if either measured distances or angles do not match calculated values.
- Graphical images of infrastructure in the AutoCAD drawing may not be in an accurate representation of its size. It is the Contractor's responsibility to verify size and shape of all items to be staked out.
- After completion of radial stakeout with the survey transit, the Contractor shall check each stakeout point as necessary to verify the horizontal and vertical position of the point and that it is correct in relationship to the rest of the project.
- The Contractor shall complete all construction stakeout to an accuracy of 0.1 feet (excluding building stakeout).

Soil and Seeding Notes

- Topsoil shall be screened and shall have a minimum 4" depth unless additional depth is specified on the plans (including Landscaping design). Topsoil shall be natural, fertile, friable soil representative of local productive soil and free of clay lumps, stones, subsoil or other foreign matter, not frozen or muddy. Acidity range PH 5-7 not less than three (3) percent humus. Samples will be required for approval. All testing costs will be paid by Contractor.
- Commercial fertilizer shall be a complete plant food containing nitrogen (50% organic) phosphoric acid and potash. Soil tests will indicate composition required.
- Hydro seeding is the preferred practice for turf establishment. Specifications are:
 - Fertilizer: 19-19-19 75 lbs per 1,000 gallons of water
 - Lime: 100 lbs. per 1,000 gallons of water
 - Seed: 6 lbs per 1,000 square feet.
 - 71.46% Min. Futura 3000 Per Rye Grass Germ: 90%
 - 14.81% Min. Dynasty Tall Fescue Germ: 90%
 - 9.74% Min. Creeping Red Fescue Germ: 90%
 - 2.32% Max. Crop
 - 1.61% Max. Inert
 - 0.06% Max. Weed
 - Mulch: 300 lbs. per 1,000 gallons of water.
 - Traffic: 5 lbs. per 1,000 gallons of water.
- The grass seed may be applied by hand method at a rate of 6 lbs. per 1,000 sq. ft.
- Areas having soil compaction as a result of construction shall be re-aerated prior to seeding.
- If hand seeding, only straw mulch is to be used and secured by netting either organic or inorganic. If inorganic is used, it must be removed before the first mowing.
- Starter fertilizer shall be applied at the normal rate at the time of seeding. Fertilizer application will not be allowed in sensitive areas adjacent to drainage ways as determined by the Engineer.
- Watering is to be done by the Contractor to maintain proper growth. Contractor shall supply the water and all apparatus necessary to apply the water (i.e. hoses, sprinklers, etc.).
- Staking of all topsoiled areas to control foot traffic will be required. Acceptable staking materials will be grade stakes and twine or string with flagging attached for visibility. Contractor is responsible to maintain stakes throughout the warranty period.
- A guarantee through the first growing season is required with any sparse or bare areas larger than 1 sq. ft. to be redone.
- The Contractor shall test topsoil to determine proper application rate of lime and fertilizer. Submit tests to Engineer for approval.
- Seeding is permitted from May 15 - June 15, and August 15 - September 15. Other seeding is possible at other times with prior approval from the Engineer.

Construction Limit Barriers

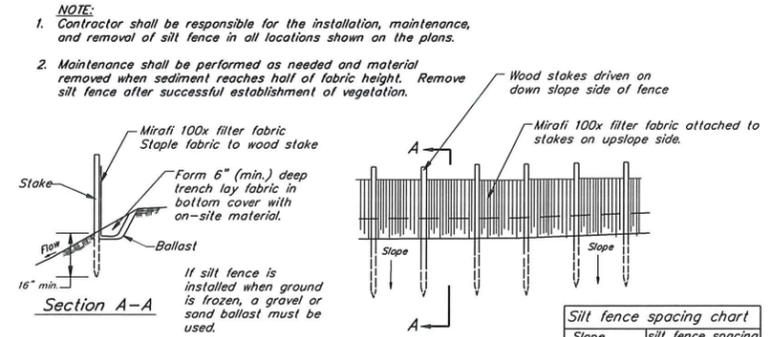
- Temporary chain-linked construction fence shall be used to delineate construction limits where practical or where directed in the Contract Documents.
- Orange construction fence or snow fence shall be used to demarcate short-term construction activities as well as around the drip line of any existing trees to remain and within 50 feet of any stream, lake, pond, or wetland.
- 3" thick orange polyester mesh webbing may also be used to demarcate construction limits except within 50 feet of any stream, lake, pond or wetland. For this project, polyester mesh webbing should not be used in areas that are proximate to pedestrian or vehicular traffic.



Structure Penetration Detail

N.T.S.

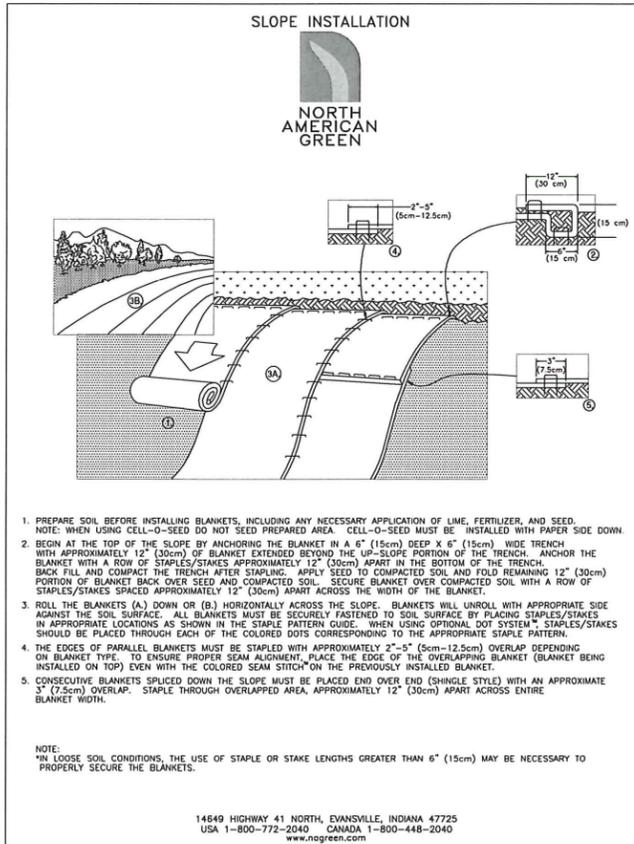
Straw wattles may be used as substitute for silt fence for areas pre-approved by the Engineer.



Typical Temporary Silt Fence

N.T.S.

Slope	Silt fence spacing
5% to 10%	50 ft. or less
10% to 20%	25 ft. or less
> 20%	15 ft. or less



North American Green S75BN

Material Content

Straw 100% (.50 lbs/sq.yd.) (.27 kg/m2)

Netting Leno woven, 100% biodegradable jute fiber

Weight approximately 1.64 lbs/1000 sq. ft.

Thread Biodegradable

Installed as per manufacturer's specifications.

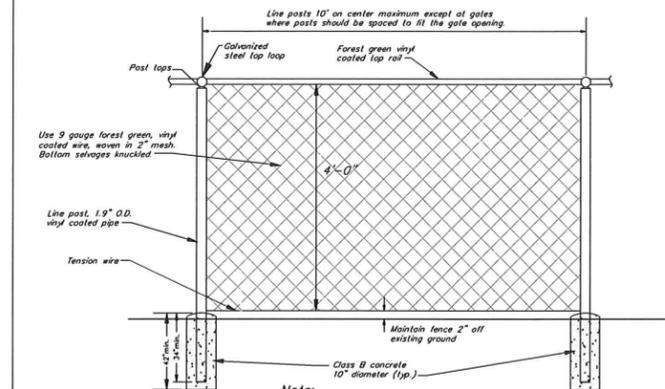
Material Specifications

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 natural fiber netting having an approximate 1/2" x 1/2" 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:

Erosion Control Matting

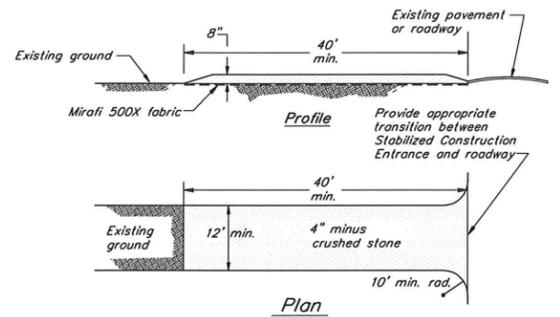


Typical Chain Link Fence

N.T.S.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 19-13, the Williston Zoning Administrator approved the final plans on the 11 day of May, 2019.

Matthew Kellogg



Note:

- Contractor shall be responsible for the installation, maintenance, and removal of a stabilized construction entrance at each construction entrance for the project. The Construction Stabilized Entrance and its continued maintenance shall be a minimum measure to prevent tracking of sediment off-site.
- Contractor to use Mirafi 500x under stone for temporary construction roads.
- Stabilized construction entrances shall be repaired when sediment is tracked offsite. Repair shall include adding additional 4" minus crushed stone and/or removal of contaminated stone.

THIS DETAIL TO BE USED FOR ALL TEMPORARY STONE STABILIZATION AREAS IDENTIFIED ON THE PLANS

Temporary Stabilized Construction Entrance & Staging Areas

Date	Description	Checked	Date
January 23, 2019	"Final Plan" notes	whn	1/23/19
January 10, 2019	notes	whn	1/10/2019
December 13, 2018	notes	whn	12/13/18
February 23, 2017	"Final Plan"	whn	2/23/17
Date revised	Description	Checked	Date
Design	whn		
Drawn	DMR		
Checked	whn		
Scale	N.T.S.		
Date	April 27, 2016 (1535)		
Project	14133/09129	291 Hurricane Lane	Williston, Vermont
KREBS & LANSING Consulting Engineers, Inc.		164 Main Street, Colchester, Vermont 05446	
PERMIT REVIEW ONLY		CD-2	

FINAL PLANS

The Low Risk Site Handbook

for Erosion Prevention and Sediment Control

VERMONT
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
August 2006

The Low Risk Site Handbook for Erosion Prevention and Sediment Control

Any construction activity that disturbs 1 or more acres of land, or is part of a larger development on that land will disturb 1 or more acres, requires a Vermont state permit for stormwater discharges from construction sites.

Construction General Permit 3-9020 guides an applicant in the determination of the potential for erosion and sediment control activities and categorizes the applicant's activity as Low Risk, Moderate Risk, or High Risk, which requires an individual permit.

The standards in this handbook serve as the required Erosion Prevention and Sediment Control Plan for construction sites determined to be "Low Risk" under GP-3-9020.

Contact Information
VT DEP Water Quality Division
Stormwater Section
103 South Main Street, Building 10 North
Washburn, VT 05671-0408
Tel: 802-241-3770 or 4320
www.waterquality.org/stormwater.htm

Table of Contents

Section 1: Introduction

What is erosion prevention and sediment control? 1
Do I need a permit? 2
Application Process 2

Section 2: The Requirements

1. Mark Site Boundaries 3
2. Limit Disturbance Area 5
3. Stabilize Construction Easement 7
4. Install Silt Fence 11
5. Diverter Upland Runoff 15
6. Slow Down Channelized Runoff 19
7. Construct Permanent Controls 23
8. Stabilize Exposed Soil 25
9. Winter Stabilization 29
10. Stabilize Soil at Final Grade 33
11. Dewatering Activities 35
12. Inspect Your Site 37

Section 3: Additional Resources

How to calculate slope 39
How to estimate area 39

Section 1 Introduction

What is erosion prevention and sediment control?

Sediment washing into streams is one of the largest water quality problems in Vermont. Sediment can kill or weaken fish and other organisms and adversely impact aquatic habitat.

On most construction sites, vegetation that holds the soil in place and protects it from erosive forces of rain and runoff is removed, leaving large areas of soil exposed to the elements. During rainfall or snowmelt, the exposed soil may be easily eroded and transported to nearby streams, lakes, or wetlands.

To prevent this, a sediment control plan is developed from a permit. A small number of simple, effective erosion prevention and sediment control practices can be used on the construction site.

Do I need a permit?

Any construction activity that disturbs 1 or more acres of land, or is part of a larger development plan that will disturb 1 or more acres, requires a Vermont state permit for stormwater discharges from construction sites.

Application Process

- Obtain a copy of the permit and determine the Risk Category of the proposed project. The permit is available online at: www.waterquality.org/stormwater.htm.
- Submit the Notice of Intent (NOI) form, notifying the Department of your intent to begin construction. "Submit the NOI to DEC or DEC Regional Office before you plan to begin construction to allow sufficient time for processing."
- Upon receipt of written authorization from DEC, you are covered under the permit and may begin construction.
- If your project is determined to be "Low Risk", you must follow this handbook for erosion prevention and sediment control on your construction site.
- If your site is not classified as Low Risk, then you must follow the Department guidance in GP 3-9020 for Moderate Risk activities or those requiring an individual permit.

Section 2 The Requirements

1. Mark Site Boundaries

Purpose: Mark the site boundaries to identify the limits of construction. Delineating your site will help to limit the area of disturbance, preserve existing vegetation and limit erosion potential on the site.

Requirements: You must physically mark the limits of construction.

How to comply:

Before beginning construction, walk the site boundaries and flag trees, post signs, or install orange safety fence.

Fence is required on any boundary within 50 feet of a stream, lake, pond, or wetland, unless the area is already developed (existing roads, buildings, etc.).

Mark Site Boundaries 4

2. Limit Disturbance Area

Purpose: Limit the amount of soil exposed at one time to reduce the potential erosion on site.

Requirements: The permitted disturbance area is specified on the site's written authorization to discharge. Only the acreage listed on the authorization can be exposed at any given time.

Limit Disturbance Area 5

How to comply:

Plan ahead and phase the construction activities to ensure that no more than the permitted acreage is disturbed at one time.

Be sure to properly stabilize exposed soil with seed and mulch or erosion control matting before beginning work in a new section of the site.

Limit Disturbance Area 6

3. Stabilize Construction Entrance

Purpose: A stabilized construction entrance helps remove mud from vehicles to prevent tracking onto streets.

Requirements: If there will be any vehicle traffic off of the construction site, you must install a stabilized construction entrance before construction begins.

Stabilize Construction Entrance 7

How to install:

Rock Strip: Use a mix of 1 to 4 inch stone. Depth: 6 inches minimum. Width: 12 feet minimum. Length: 40 feet minimum (or length of driveway, if shorter).

Gravel Bed: Place 1/4 inch gravel under entire gravel bed.

Maintenance: Redress with clean stone as required to keep sediment from tracking onto the street.

Stabilize Construction Entrance 8

4. Install Silt Fence

Purpose: Silt fence intercepts runoff and slows suspended sediment to settle out.

Requirements: Silt fence must be installed: on the downhill side of the construction activities; between any ditch, swale, storm sewer inlet, or water of the State and the disturbed soil; and between any ditch, swale, storm sewer inlet, or water of the State and any other water body.

Install Silt Fence 11

How to install silt fence:

- Dig a trench 6 inches deep across the slope.
- Use silt fence along the trench.
- Secure stakes along the downhill side of the fence.
- Join fencing by rolling the ends and stakes together.
- Drive stakes in against downhill side of trench.
- Drive stakes until 1/2 inch of fabric is in trench.
- Push fabric into trench and spread along bottom.
- Fill trench with soil and pack down.

Maintenance: Remove accumulated sediment before it is halfway up the fence. Ensure that silt fence is braced in ground and there are no gaps.

Install Silt Fence 12

5. Diverter Upland Runoff

Purpose: Diversion berms intercept runoff from above the construction site and divert it around the disturbed area. This prevents "clean" water from becoming modified with soil from the construction site.

Requirements: If stormwater runs onto your site from up slope areas and your site meets the following two conditions, you must install a diversion berm before disturbing any soil.

- You plan to have 3/4 or more acres of soil exposed at any one time (including roads).
- Average slope of the disturbed area is 20% or steeper.

Diverter Upland Runoff 15

How to install:

1. Slope Definition: A-Berm Height: 1.5 feet. C-Flow Width: 4 feet. D-Berm Width: 2 feet. E-Side Slope: 2:1 or flatter.

- Compact the berm with a shovel or earthmoving equipment.
- Seed and mulch berm or cover with erosion control matting immediately after installation.
- Stabilize the flow channel with seed and stream mulch or erosion control matting. Line the channel with 4 inch stone if the channel slope is greater than 20%.
- Ensure the berm drains to an outlet stabilize with stone. Ensure that there is no erosion at the outlet.
- The diversion berm shall remain in place until the disturbed areas are completely stabilized.

* See page 39 for slope calculations.

Diverter Upland Runoff 16

6. Slow Down Channelized Runoff

Purpose: Stone check dams reduce erosion in drainage channels by slowing down the stormwater flow.

Requirements: If there is a concentrated flow (e.g. in a ditch or channel) of stormwater on your site, then you must install stone check dams. Hay bales must not be used as check dams.

How to install: Height: No greater than 2 feet. Center of dam should be 6 inches lower than the side elevation. Side slopes: 2:1 or flatter (see p.39 for slope calculation). Stone Size: Use 8 inches or 2 1/2 inch stone. Width: Dams should span the width of the channel and extend up the sides of the banks. Spacing: Space the dams so that the bottom (heel) of the upstream dam is at the elevation of the top (crest) of the downstream dam. This spacing is equal to the height of the check dam divided by the channel slope. Spacing (in feet) = Height of check dam (in feet) / Slope in channel (ft/ft).

Maintenance: Remove sediment accumulated behind the dam.

Slow Down Channelized Runoff 19

7. Construct Permanent Controls

Purpose: Permanent stormwater treatment practices are constructed to maintain water quality, ensure groundwater flow, and prevent downstream flooding. Practices include detention ponds and wetlands, infiltration basins, and stormwater filters.

Requirements: If the total impervious area on your site, or within the common plan of development, will be 1 or more acres, you must apply for a State Stormwater Discharge Permit and construct permanent stormwater treatment practices on your site. These practices must be installed before the construction of any impervious surfaces.

How to comply: Contact the Vermont Stormwater Program and follow the requirements in the Vermont Stormwater Management Manual. The Stormwater Management Manual is available at www.waterquality.org/stormwater.htm.

* An impervious surface is a man-made surface, including, but not limited to, paved and unpaved roads, parking areas, roofs, driveways, and walkways, from which precipitation runs off rather than infiltrates.

Construct Permanent Controls 24

8. Stabilize Exposed Soil

Purpose: Seeding and mulching, applying erosion control matting, and hydroseeding are all methods to stabilize exposed soil. Mulches and matting protect the soil surface while grass is establishing.

Requirements: All areas of disturbance must have temporary or permanent stabilization within 7, 14, or 21 days of initial disturbance, as stated in the project authorization. After this time, any disturbance in an area must be stabilized at the end of each work day.

The following exceptions apply:

- Stabilization is not required if earthwork is to continue in the area within the next 24 hours and there is no precipitation forecast for the next 24 hours.
- Stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches).

All areas of disturbance must have permanent stabilization within 48 hours of reaching final grade (See page 33).

Stabilize Exposed Soil 25

9. Winter Stabilization

Purpose: Managing construction sites to minimize erosion and prevent sediment loading of waters is a year-round challenge. In Vermont, erosion becomes even greater during the late fall, winter, and early spring months.

"Winter construction" as discussed here, describes the period between October 15 and April 15, when erosion prevention and sediment control is significantly more difficult.

Rains in late fall, throughout the winter, and spring melt and rains can produce significant flows over frozen and saturated ground, greatly increasing the potential for erosion.

Requirements for Winter Shutdown: For those projects that will complete earth disturbance activities prior to the winter period (October 15), the following requirements must be adhered to:

- For areas to be stabilized by vegetation, seeding shall be completed no later than September 15 to ensure adequate growth and cover.
- If seeding is not completed by September 15, additional nonvegetative protection must be used to stabilize the site for the winter period. This includes use of Erosion Control Matting or netting of a heavy mulch layer. Seeding with winter rye is recommended to allow for early germination during wet spring conditions.
- When a mulch is specified, apply roughly 2 inches with an 80-90% cover. Mulch should be tracked to or stabilized with netting in open areas susceptible to wind.

Winter Stabilization 29

How to comply:

Prepare bare soil for seeding by grading the top 3 to 6 inches of soil and removing any large rocks or debris.

Seeding Rates for Temporary Stabilization: Sept 15 - Sept 15 - Ryegrass (annual or perennial) 20 lbs/acre Sept. 15 - April 15 - Winter rye 120 lbs/acre

Seeding Rates for Final Stabilization:

Grass Name	Seeding Rate (lb/acre)	Seed Rate (lb/1000 sq ft)
Perennial Ryegrass	15	0.15
Creeping Red Fescue	15	0.15
Perennial Ryegrass	15	0.15
Perennial Ryegrass	15	0.15

Erosion Control Matting: As per manufacturer's instructions.

Hydroseed: As per manufacturer's instructions.

Stabilize Exposed Soil 26

10. Stabilize Soil at Final Grade

Purpose: Stabilizing the site with seed and mulch or erosion control matting when a reaches final grade is the best way to prevent erosion while construction continues.

Requirements: Within 48 hours of final grading, the exposed soil must be seeded and mulched or covered with erosion control matting.

Stabilize Soil at Final Grade 33

11. Dewatering Activities

Purpose: Treat water pumped from dewatering activities so that it is clear when leaving the construction site.

Requirements: Water from dewatering activities that flows off of the construction site must be clear. Water must not be pumped into storm sewers, lakes, or wetlands unless the water is clear.

How to comply: Using silt filters or sediment filter bags on dewatering discharge hoses or pipes, discharge water into a filter enclosure installed in vegetated areas away from waterways. Remove accumulated sediment after the water has dispersed and stabilize the area with seed and mulch.

Dewatering Activities 36

12. Inspect Your Site

Purpose: Perform site inspections to ensure that all sediment and erosion control practices are functioning properly. Regular inspections and maintenance of practices will help to reduce erosion and protect water quality.

Requirements: Inspect the site at least once every 7 days and after every rainfall or snowmelt that results in a discharge from the site. Perform maintenance to ensure that practices are functioning according to the specifications outlined in this handbook.

In the case of a visible sediment discharge from the construction site, you must take immediate action to prevent and contain existing erosion and sediment runoff from the site. For detailed information on the proper use of the handbook, please refer to the Vermont Stormwater Management Manual at www.waterquality.org/stormwater.htm.

Example Site Inspection Form

Item	Y	N
1. Boundary markers set up and visible		
2. Disturbance area clearly marked with orange flags		
3. Silt fence installed and maintained		
4. Diverter berms installed and maintained		
5. Check dams installed and maintained		
6. Erosion control matting or mulch applied		
7. Sediment filter bags or silt filters installed		
8. Water discharge into vegetated area		
9. Erosion control matting or mulch applied		
10. Final grade stabilized		

Inspection 37

13. Dewatering Activities

Purpose: Treat water pumped from dewatering activities so that it is clear when leaving the construction site.

Requirements: Water from dewatering activities that flows off of the construction site must be clear. Water must not be pumped into storm sewers, lakes, or wetlands unless the water is clear.

How to comply: Using silt filters or sediment filter bags on dewatering discharge hoses or pipes, discharge water into a filter enclosure installed in vegetated areas away from waterways. Remove accumulated sediment after the water has dispersed and stabilize the area with seed and mulch.

Dewatering Activities 36

14. Winter Stabilization

Purpose: Managing construction sites to minimize erosion and prevent sediment loading of waters is a year-round challenge. In Vermont, erosion becomes even greater during the late fall, winter, and early spring months.

"Winter construction" as discussed here, describes the period between October 15 and April 15, when erosion prevention and sediment control is significantly more difficult.

Rains in late fall, throughout the winter, and spring melt and rains can produce significant flows over frozen and saturated ground, greatly increasing the potential for erosion.

Requirements for Winter Shutdown: For those projects that will complete earth disturbance activities prior to the winter period (October 15), the following requirements must be adhered to:

- For areas to be stabilized by vegetation, seeding shall be completed no later than September 15 to ensure adequate growth and cover.
- If seeding is not completed by September 15, additional nonvegetative protection must be used to stabilize the site for the winter period. This includes use of Erosion Control Matting or netting of a heavy mulch layer. Seeding with winter rye is recommended to allow for early germination during wet spring conditions.
- When a mulch is specified, apply roughly 2 inches with an 80-90% cover. Mulch should be tracked to or stabilized with netting in open areas susceptible to wind.

Winter Stabilization 29

15. Diverter Upland Runoff

Purpose: Diversion berms intercept runoff from above the construction site and divert it around the disturbed area. This prevents "clean" water from becoming modified with soil from the construction site.

Requirements: If stormwater runs onto your site from up slope areas and your site meets the following two conditions, you must install a diversion berm before disturbing any soil.

- You plan to have 3/4 or more acres of soil exposed at any one time (including roads).
- Average slope of the disturbed area is 20% or steeper.

Diverter Upland Runoff 15

16. Stabilize Exposed Soil

Purpose: Seeding and mulching, applying erosion control matting, and hydroseeding are all methods to stabilize exposed soil. Mulches and matting protect the soil surface while grass is establishing.

Requirements: All areas of disturbance must have temporary or permanent stabilization within 7, 14, or 21 days of initial disturbance, as stated in the project authorization. After this time, any disturbance in an area must be stabilized at the end of each work day.

The following exceptions apply:

- Stabilization is not required if earthwork is to continue in the area within the next 24 hours and there is no precipitation forecast for the next 24 hours.
- Stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches).

All areas of disturbance must have permanent stabilization within 48 hours of reaching final grade (See page 33).

Stabilize Exposed Soil 25

17. Diverter Upland Runoff

Purpose: Diversion berms intercept runoff from above the construction site and divert it around the disturbed area. This prevents "clean" water from becoming modified with soil from the construction site.

Requirements: If stormwater runs onto your site from up slope areas and your site meets the following two conditions, you must install a diversion berm before disturbing any soil.

- You plan to have 3/4 or more acres of soil exposed at any one time (including roads).
- Average slope of the disturbed area is 20% or steeper.

Diverter Upland Runoff 15

18. Stabilize Exposed Soil

Purpose: Seeding and mulching, applying erosion control matting, and hydroseeding are all methods to stabilize exposed soil. Mulches and matting protect the soil surface while grass is establishing.

Requirements: All areas of disturbance must have temporary or permanent stabilization within 7, 14, or 21 days of initial disturbance, as stated in the project authorization. After this time, any disturbance in an area must be stabilized at the end of each work day.

The following exceptions apply:

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- Stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches).

All areas of disturbance must have permanent stabilization within 48 hours of reaching final grade (See page 33).

Stabilize Exposed Soil 25

19. Slow Down Channelized Runoff

Purpose: Stone check dams reduce erosion in drainage channels by slowing down the stormwater flow.

Requirements: If there is a concentrated flow (e.g. in a ditch or channel) of stormwater on your site, then you must install stone check dams. Hay bales must not be used as check dams.

How to install: Height: No greater than 2 feet. Center of dam should be 6 inches lower than the side elevation. Side slopes: 2:1 or flatter (see p.39 for slope calculation). Stone Size: Use 8 inches or 2 1/2 inch stone. Width: Dams should span the width of the channel and extend up the sides of the banks. Spacing: Space the dams so that the bottom (heel) of the upstream dam is at the elevation of the top (crest) of the downstream dam. This spacing is equal to the height of the check dam divided by the channel slope. Spacing (in feet) = Height of check dam (in feet) / Slope in channel (ft/ft).

Maintenance: Remove sediment accumulated behind the dam.

Slow Down Channelized Runoff 19

20. Slow Down Channelized Runoff

Purpose: Stone check dams reduce erosion in drainage channels by slowing down the stormwater flow.

Requirements: If there is a concentrated flow (e.g. in a ditch or channel) of stormwater on your site, then you must install stone check dams. Hay bales must not be used as check dams.

How to install: Height: No greater than 2 feet. Center of dam should be 6 inches lower than the side elevation. Side slopes: 2:1 or flatter (see p.39 for slope calculation). Stone Size: Use 8 inches or 2 1/2 inch stone. Width: Dams should span the width of the channel and extend up the sides of the banks. Spacing: Space the dams so that the bottom (heel) of the upstream dam is at the elevation of the top (crest) of the downstream dam. This spacing is equal to the height of the check dam divided by the channel slope. Spacing (in feet) = Height of check dam (in feet) / Slope in channel (ft/ft).

Maintenance: Remove sediment accumulated behind the dam.

Slow Down Channelized Runoff 19

21. Slow Down Channelized Runoff

Purpose: Stone check dams reduce erosion in drainage channels by slowing down the stormwater flow.

Requirements: If there is a concentrated flow (e.g. in a ditch or channel) of stormwater on your site, then you must install stone check dams. Hay bales must not be used as check dams.

How to install: Height: No greater than 2 feet. Center of dam should be 6 inches lower than the side elevation. Side slopes: 2:1 or flatter (see p.39 for slope calculation). Stone Size: Use 8 inches or 2 1/2 inch stone. Width: Dams should span the width of the channel and extend up the sides of the banks. Spacing: Space the dams so that the bottom (heel) of the upstream dam is at the elevation of the top (crest) of the downstream dam. This spacing is equal to the height of the check dam divided by the channel slope. Spacing (in feet) = Height of check dam (in feet) / Slope in channel (ft/ft).

Maintenance: Remove sediment accumulated behind the dam.

Slow Down Channelized Runoff 19

22. Slow Down Channelized Runoff

Purpose: Stone check dams reduce erosion in drainage channels by slowing down the stormwater flow.

Requirements: If there is a concentrated flow (e.g. in a ditch or channel) of stormwater on your site, then you must install stone check dams. Hay bales must not be used as check dams.

How to install: Height: No greater than 2 feet. Center of dam should be 6 inches lower than the side elevation. Side slopes: 2:1 or flatter (see p.39 for slope calculation). Stone Size: Use 8 inches or 2 1/2 inch stone. Width: Dams should span the width of the channel and extend up the sides of the banks. Spacing: Space the dams so that the bottom (heel) of the upstream dam is at the elevation of the top (crest) of the downstream dam. This spacing is equal to the height of the check dam divided by the channel slope. Spacing (in feet) = Height of check dam (in feet) / Slope in channel (ft/ft).

Maintenance: Remove sediment accumulated behind the dam.

Slow Down Channelized Runoff 19

23. Construct Permanent Controls

Purpose: Permanent stormwater treatment practices are constructed to maintain water quality, ensure groundwater flow, and prevent downstream flooding. Practices include detention ponds and wetlands, infiltration basins, and stormwater filters.

Requirements: If the total impervious area on your site, or within the common plan of development, will be 1 or more acres, you must apply for a State Stormwater Discharge Permit and construct permanent stormwater treatment practices on your site. These practices must be installed before the construction of any impervious surfaces.

How to comply: Contact the Vermont Stormwater Program and follow the requirements in the Vermont Stormwater Management Manual. The Stormwater Management Manual is available at www.waterquality.org/stormwater.htm.

* An impervious surface is a man-made surface, including, but not limited to, paved and unpaved roads, parking areas, roofs, driveways, and walkways, from which precipitation runs off rather than infiltrates.

Construct Permanent Controls 24

24. Construct Permanent Controls

Purpose: Permanent stormwater treatment practices are constructed to maintain water quality, ensure groundwater flow, and prevent downstream flooding. Practices include detention ponds and wetlands, infiltration basins, and stormwater filters.

Requirements: If the total impervious area on your site, or within the common plan of development, will be 1 or more acres, you must apply for a State Stormwater Discharge Permit and construct permanent stormwater treatment practices on your site. These practices must be installed before the construction of any impervious surfaces.

How to comply: Contact the Vermont Stormwater Program and follow the requirements in the Vermont Stormwater Management Manual. The Stormwater Management Manual is available at www.waterquality.org/stormwater.htm.

* An impervious surface is a man-made surface, including, but not limited to, paved and unpaved roads, parking areas, roofs, driveways, and walkways, from which precipitation runs off rather than infiltrates.

Construct Permanent Controls 24

25. Stabilize Exposed Soil

Purpose: Seeding and mulching, applying erosion control matting, and hydroseeding are all methods to stabilize exposed soil. Mulches and matting protect the soil surface while grass is establishing.

Requirements: All areas of disturbance must have temporary or permanent stabilization within 7, 14, or 21 days of initial disturbance, as stated in the project authorization. After this time, any disturbance in an area must be stabilized at the end of each work day.

The following exceptions apply:

- Stabilization is not required if earthwork is to continue in the area within the next 24 hours and there is no precipitation forecast for the next 24 hours.
- Stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches).

All areas of disturbance must have permanent stabilization within 48 hours of reaching final grade (See page 33).

Stabilize Exposed Soil 25

26. Stabilize Exposed Soil

Purpose: Seeding and mulching, applying erosion control matting, and hydroseeding are all methods to stabilize exposed soil. Mulches and matting protect the soil surface while grass is establishing.

Requirements: All areas of disturbance must have temporary or permanent stabilization within 7, 14, or 21 days of initial disturbance, as stated in the project authorization. After this time, any disturbance in an area must be stabilized at the end of each work day.

The following exceptions apply:

- Stabilization is not required if earthwork is to continue in the area within the next 24 hours and there is no precipitation forecast for the next 24 hours.
- Stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches).

All areas of disturbance must have permanent stabilization within 48 hours of reaching final grade (See page 33).

Stabilize Exposed Soil 25

27. Stabilize Exposed Soil

Purpose: Seeding and mulching, applying erosion control matting, and hydroseeding are all methods to stabilize exposed soil. Mulches and matting protect the soil surface while grass is establishing.

Requirements: All areas of disturbance must have temporary or permanent stabilization within 7, 14, or 21 days of initial disturbance, as stated in the project authorization. After this time, any disturbance in an area must be stabilized at the end of each work day.

The following exceptions apply:

- Stabilization is not required if earthwork is to continue in the area within the next 24 hours and there is no precipitation forecast for the next 24 hours.
- Stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches).

All areas of disturbance must have permanent stabilization within 48 hours of reaching final grade (See page 33).

Stabilize Exposed Soil 25

28. Stabilize Exposed Soil

Purpose: Seeding and mulching, applying erosion control matting, and hydroseeding are all methods to stabilize exposed soil. Mulches and matting protect the soil surface while grass is establishing.

Requirements: All areas of disturbance must have temporary or permanent stabilization within 7, 14, or 21 days of initial disturbance, as stated in the project authorization. After this time, any disturbance in an area must be stabilized at the end of each work day.

The following exceptions apply:

- Stabilization is not required if earthwork is to continue in the area within the next 24 hours and there is no precipitation forecast for the next 24 hours.
- Stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches).

All areas of disturbance must have permanent stabilization within 48 hours of reaching final grade (See page 33).

Stabilize Exposed Soil 25

29. Winter Stabilization

Purpose: Managing construction sites to minimize erosion and prevent sediment loading of waters is a year-round challenge. In Vermont, erosion becomes even greater during the late fall, winter, and early spring months.

"Winter construction" as discussed here, describes the period between October 15 and April 15, when erosion prevention and sediment control is significantly more difficult.

Rains in late fall, throughout the winter, and spring melt and rains can produce significant flows over frozen and saturated ground, greatly increasing the potential for erosion.

Requirements for Winter Shutdown: For those projects that will complete earth disturbance activities prior to the winter period (October 15), the following requirements must be adhered to:

- For areas to be stabilized by vegetation, seeding shall be completed no later than September 15 to ensure adequate growth and cover.
- If seeding is not completed by September 15, additional nonvegetative protection must be used to stabilize the site for the winter period. This includes use of Erosion Control Matting or netting of a heavy mulch layer. Seeding with winter rye is recommended to allow for early germination during wet spring conditions.
- When a mulch is specified, apply roughly 2 inches with an 80-90% cover. Mulch should be tracked to or stabilized with netting in open areas susceptible to wind.

Winter Stabilization 29

30. Winter Stabilization

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Winter Stabilization 29

31. Winter Stabilization

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Winter Stabilization 29

32. Winter Stabilization

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