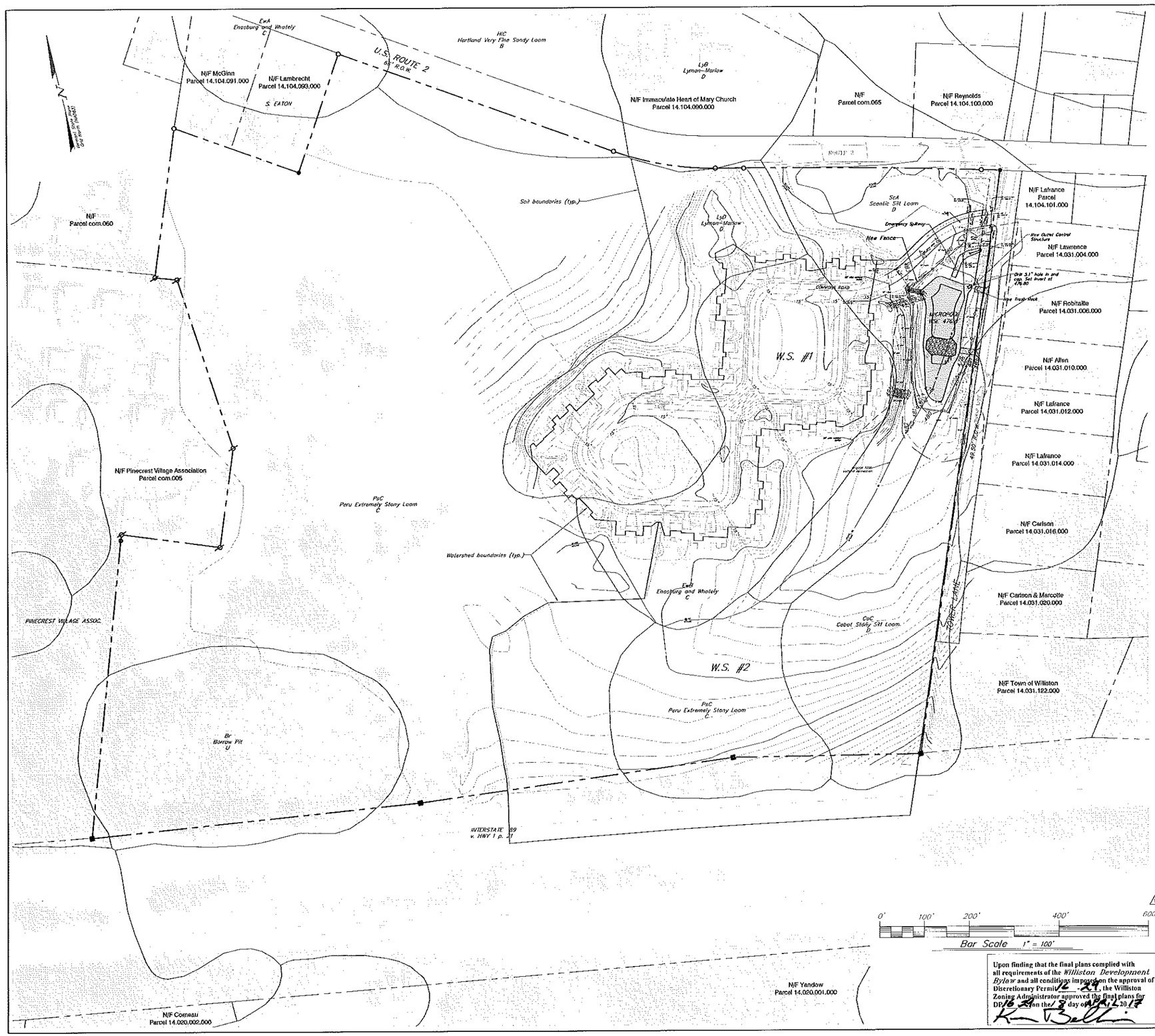
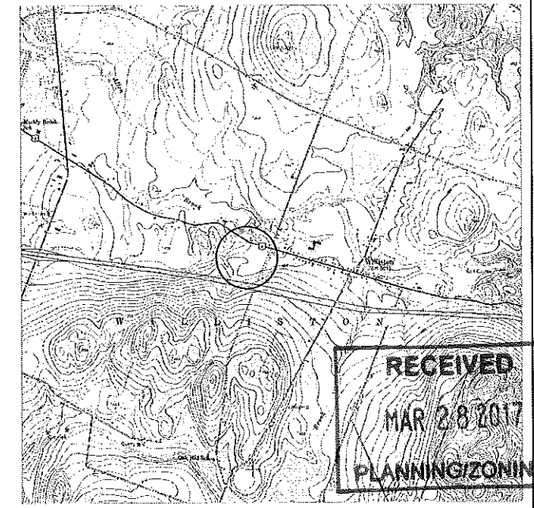




LOCATION

NTS

RECEIVED
MAR 28 2017
PLANNING/ZONING

NOTES

1. See Sheet EX-1 for additional notes and legend related to Existing Conditions.
2. See Sheet C-3 for additional notes related to erosion prevention and sediment control.
3. The Contractor shall be responsible for repairing all disturbed areas back to original or better condition, including but not limited to curbing, sidewalks, road, parking areas, landscaping, site lighting, electrical, and etc. All asphalt shall be sawcut prior to paving.
4. 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 site and disposed of in a State approved disposal location.
5. Contractor shall be responsible for providing a passing sieve of the representative gravel delivered to the site for the construction of the stable vegetated access path.
6. The Contractor shall comply with the procedures outlined in the Low Risk Site Handbook for Erosion Prevention and Sediment Control. 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.
7. The Contractor shall be responsible for all construction barrier/safety fencing required for the project.
8. Contractor shall be responsible for importing topsoil as required to complete the project. Contractor shall test topsoil for approval.
9. The Contractor shall be responsible for all signage and fencing necessary to providing safe vehicular and pedestrian access through or around the site during construction.
10. All storm pipes shall be PVC SDR 35 unless otherwise noted. PVC pipe shall contain no recycled content.
11. Temporary groundwater dewatering and stormwater 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.
12. Dewatering shall be accomplished by creating a sump pit filled with crushed stone and pumping to a sediment filter bag placed downslope of the disturbed soils. The pumpout water shall be monitored to ensure visibly discolored water does leave the project site.
13. This project is subject to all erosion prevention and sediment control measures including the monitoring, inspection, and reporting requirements of State of Vermont Construction Stormwater Discharge Permit. The Contractor shall be the Principal Operator for the project.
14. Removal of all erosion control matting and inlet protection is the responsibility of the Contractor.
15. Contractor shall use select soil for the construction of the pond earth embankment. Remove topsoil & organics. Place fill in 6" lifts. Permeability testing shall be performed on a minimum two stockpile soil samples prior to placing soil on earth embankment. Soil permeability shall be less than 0.003 mm/sec. and shall be approved by the Engineer. Soil shall be placed and compacted to 95% of the Standard Proctor. Topsoil, seed, and properly secure mulch all portions of the earth embankment above the proposed water surface elevation.
16. Area of wetland impact: 40,335 s.f.
17. Area of wetland buffer impact: 3,027 s.f.
18. Pre-construction Excavation areas shown on the plan shall be completed prior to beginning site utility work and prior to ordering structures. The Contractor shall provide the Engineer with utility cross section information (pipe type, size, duct bank width height, etc.) and shall provide horizontal location (minimum 2 swing ties) accurate to 1 ft. and vertical elevations accurate to 0.1'. After the information is provided the Engineer shall be allowed one week to provide design decisions based on information obtained from the Pre-construction Excavation. The Contractor shall contact the Engineer at least 24 hours in advance of performing the excavation. In addition to the designated Pre-construction Excavations, the Contractor shall verify all utility intersections and contact Engineer and Owner with conflicts.
19. Contractor shall be responsible for all "As-built" measurements, testing and drafting as required in the Town of Williston Public Works Standards. Contractor shall meet with Public Work prior to construction to verify full scope of work required.

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 16-29, the Williston Zoning Administrator approved the final plans for DP 16-29 on the 13 day of April, 2017
K. Bell

Date revised	Description	Checked	Date
Feb. 13, 2017	Williston Final Plans	WHN/DMR	2/13/2017
5-31-16	Add Williston Town easement		

Design	WHN
Drawn	DMR/SLM
Checked	WHN/DMR
Scale	1" = 100'
Date	4/28/2016
Project	14114

Overall Site Plan

WILLISTON COMMONS
Stormwater EFA

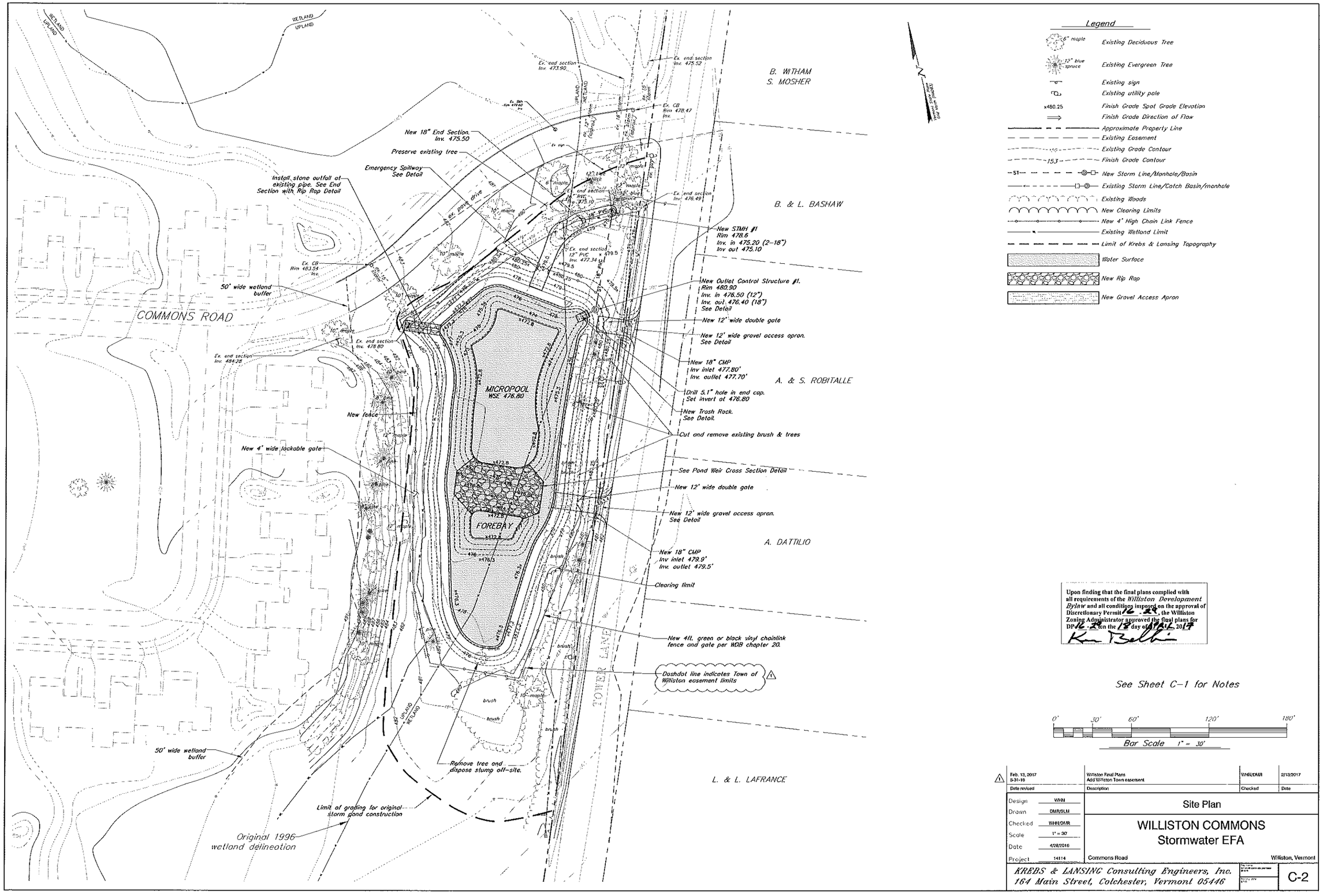
Commons Road — Williston, Vermont

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

C-1

FINAL PLANS

DP 16-29



1 Feb. 13, 2017 5-31-16	Williston Final Plans Add Williston Town easement	WHN/DMR	2/13/2017
Date revised	Description	Checked	Date

Design	WHN
Drawn	DMR/SLM
Checked	WHN/DMR
Scale	1" = 30'
Date	4/28/2016
Project	14114

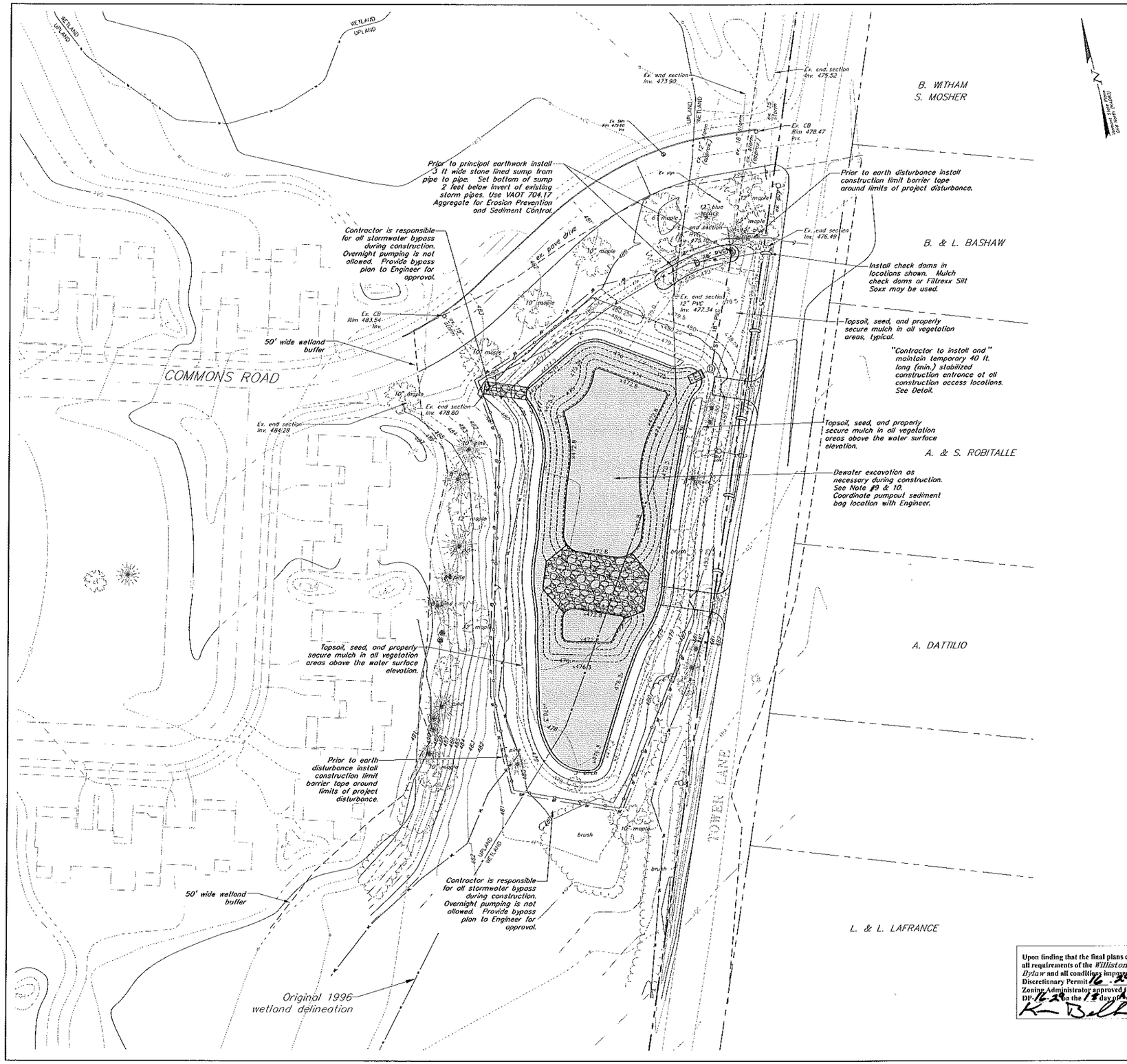
Site Plan

WILLISTON COMMONS
Stormwater EFA

Commons Road — Williston, Vermont

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

C-2



Erosion Prevention and Sediment Control Notes

1. This plan is for erosion prevention and sediment control design only. See Site Plans for all other site related design.
2. Contractor shall be responsible for complying with all State and Local erosion prevention and sediment control standards and permit requirements during construction.
3. 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.
4. 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.
5. 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.
6. 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:
   a. 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.
   b. 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.
8. Unless specifically indicated on the plans acceptable methods of stabilization shall 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 - 6708N 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.
7. The Contractor shall use water for dust control.
8. The Contractor shall provide inlet protection around all catch basins (existing or new) that collect construction site stormwater runoff.
9. At a minimum dewatering shall be accomplished by creating a sump pit filled with crushed stone and pumping to a sediment filter bag placed downstope of any disturbed soils. The pumpout water shall be monitored to ensure visibly discolored water does leave the project site.
10. 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.
11. 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.
12. 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.
13. 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.
14. All sediment removed from sediment control practices shall be placed in an approved soil disposal area.
15. 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.
16. After permanent seeding the Contractor shall be responsible for watering to ensure adequate vegetative growth.
17. The location of temporary construction fencing and temporary access roads shown on the plan are for schematic purposes only. The Contractor shall be responsible for providing all necessary temporary construction fencing, temporary roads, staging areas, etc., necessary to complete the work.
18. 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.

Legend

- Check dam
- New Storm Line/Manhole/Basin
- Existing Storm Line/Catch Basin/manhole
- Existing Contours
- Proposed Finish Grade Contours
- Construction Disturbance Limit Barrier
- New Rip Rap

See Sheet C-2 for Additional Legend Information

0' 30' 60' 120' 180'

Bar Scale 1" = 30'

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 16-29, the Williston Zoning Administrator approved the final plans for DP-16-29 on the 13 day of April, 2017

Feb. 13, 2017	Williston Final Plans	WHN/DMR	2/13/2017
Date revised	Description	Checked	Date

Design	WHN
Drawn	DMR/SLM
Checked	WHN/DMR
Scale	1" = 30'
Date	4/28/2016
Project	14114

Erosion Prevention & Sediment Control Plan

WILLISTON COMMONS
Stormwater EFA

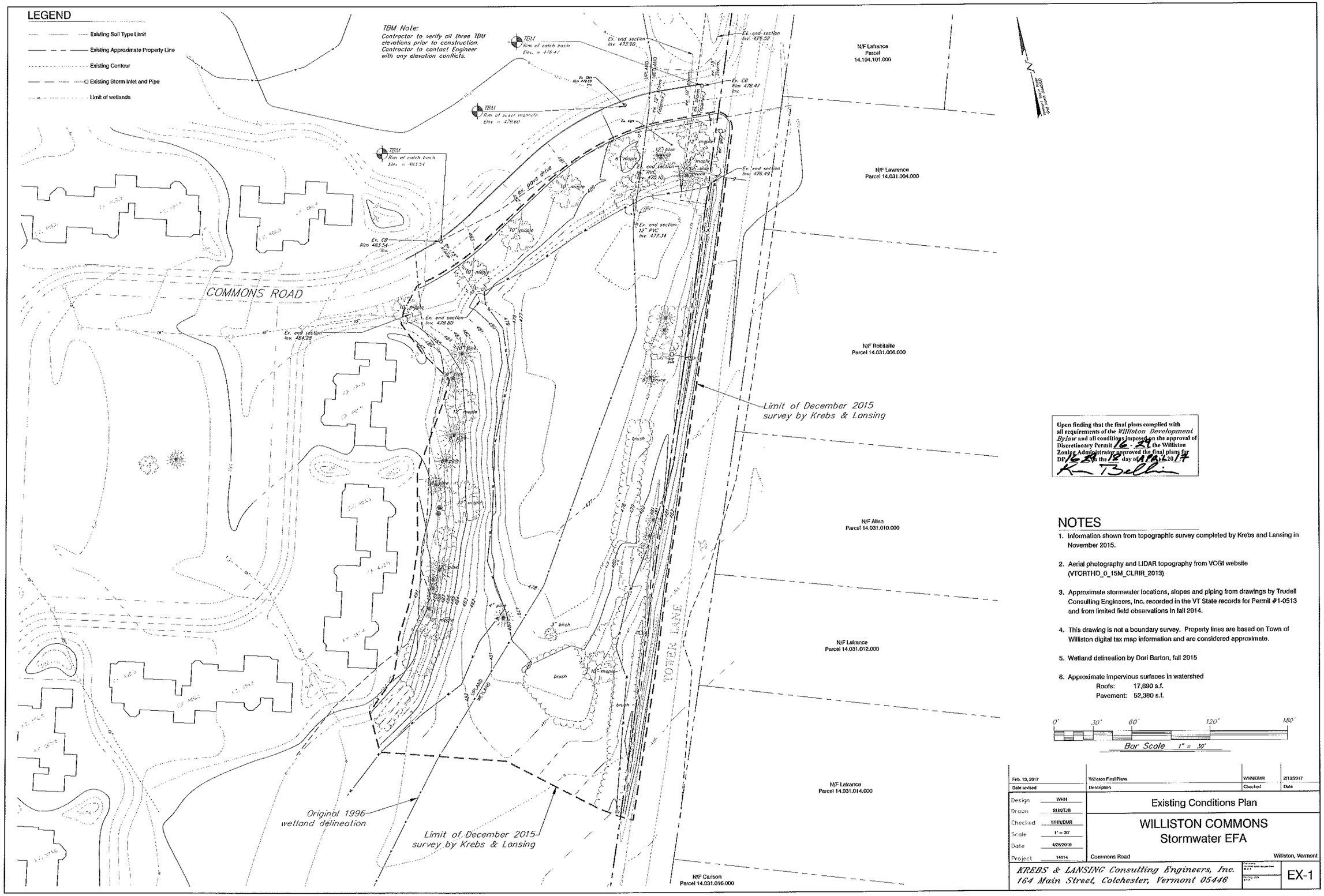
Commons Road — Williston, Vermont

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

C-3

LEGEND

- Existing Soil Type Limit
- Existing Approximate Property Line
- Existing Contour
- Existing Storm Inlet and Pipe
- Limit of wetlands



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 16-29, the Williston Zoning Administrator approved the final plans for DP 16-29 on the 18 day of April, 2017

K. Belliveau

NOTES

1. Information shown from topographic survey completed by Krebs and Lansing in November 2015.
2. Aerial photography and LIDAR topography from VCGI website (VTORTHO_0_15M_CLRIR_2013)
3. Approximate stormwater locations, slopes and piping from drawings by Trudell Consulting Engineers, Inc. recorded in the VT State records for Permit #1-0513 and from limited field observations in fall 2014.
4. This drawing is not a boundary survey. Property lines are based on Town of Williston digital tax map information and are considered approximate.
5. Wetland delineation by Dori Barton, fall 2015
6. Approximate impervious surfaces in watershed
   Roofs: 17,690 s.f.
   Pavement: 52,380 s.f.

0' 30' 60' 120' 180'

Bar Scale 1" = 30'

Feb. 13, 2017	Williston Final Plans	WHN/DMR	2/13/2017
Date revised	Description	Checked	Date

Design	WHN
Drawn	SUM/TJB
Checked	WHN/DMR
Scale	1" = 30'
Date	4/28/2016
Project	14114

Existing Conditions Plan

WILLISTON COMMONS
Stormwater EFA

Commons Road — Williston, Vermont

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

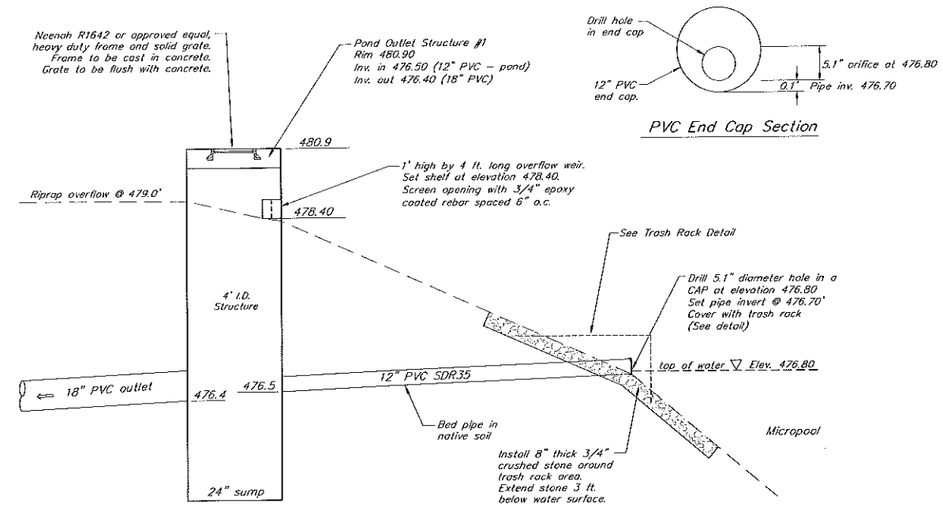
EX-1

Construction Notes

1. 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.
2. 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.
3. 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.
4. 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.
5. The Contractor shall verify all horizontal control and temporary bench marks before use.
6. 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.
7. Contractor shall contact Dig Safe prior to any excavation.
8. All new storm pipes extending from structures shall be laid with a pipe laser to elevation and slope as shown on the plans.
9. 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.
10. The Contractor shall be responsible for all construction layout. See Construction Stakeout Notes.
11. Temporary silt 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.
12. 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.
13. Contractor shall comply with all permits and approvals issued for this project.
14. Contractor shall sign on as the Co-Permittee for the State of Vermont Erosion Prevention and Sediment Control permit for the project.
15. Slope stability upon unsaturated soil conditions. If during construction saturated soils are encountered, contact the Engineer immediately.

Soil and Seeding Notes

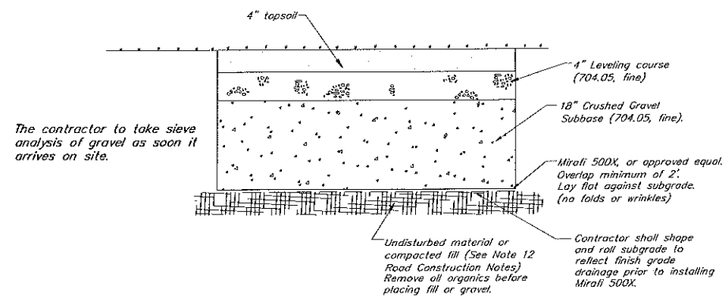
1. Topsoil shall be screened and shall have a minimum 4" depth unless additional depth is specified on the plans (including Landscaping design). Topsoil shall be natural, fertile, friable soil representative of local productive soil and free of clay lumps, stones, subsoil or other foreign matter, not 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.
2. Commercial fertilizer shall be a complete plant food containing nitrogen (50% organic) phosphoric acid and potash. Soil tests will indicate composition required.
3. 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%
   14.91% Min. Dynasty Tall Fescue — Germ: 90%
   9.74% Min. Creeping Red Fescue — Germ: 90%
   2.32% Max. Crop
   1.61% Max. Inert
   0.05% Max. Weed
   Mulch: 300 lbs. per 1,000 gallons of water.
   Tacifer: 5 lbs. per 1,000 gallons of water.
4. The grass seed may be applied by hand method at a rate of 6 lbs. per 1,000 sq. ft.
5. Areas having soil compaction as a result of construction shall be roto-tilled prior to seeding.
6. 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.
7. Starter fertilizer shall be applied at the normal rate at the time of seeding. Fertilizer application will not be allowed in sensitive areas and adjacent to drainage ways as determined by the Engineer.
8. 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.).
9. 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.
10. A guarantee through the first growing season is required with any sparse or bare areas larger than 1 sq. ft. to be redone.
11. The Contractor shall test topsoil to determine proper application rate of lime and fertilizer. Submit tests to Engineer for approval.
12. 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.



PVC End Cap Section

Pond Outlet Control Structure Details

N.T.S.



The contractor to take sieve analysis of gravel as soon it arrives on site.

New 12' Wide Gravel Access Apron Section Detail

N.T.S.

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.

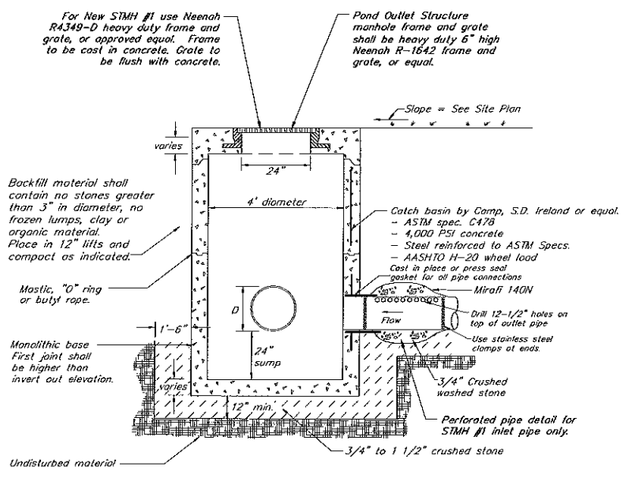
Road Construction Notes

(All references to road shall apply to gravel access apron as well.)

1. 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.
2. All road and parking construction shall be completed in accordance with the Vermont Agency of Transportation "Standard Specifications for Construction" 2011, hereafter called Vermont Highway Specifications, specifications found on these plans, and project specifications. In case of conflict, the more stringent specification shall apply as determined by the Engineer.
3. The Contractor shall follow Vermont Highway Specifications (2011) Section 203.11 for placing and spreading embankments.
4. Fill material for road embankment shall meet Note #13 below and 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).
5. 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.
6. Methods for construction of subgrade shall conform to Vermont Highway Specifications (2011) 203.12 or as determined by the Engineer.
7. 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.
8. Sand borrow and cushion shall conform to Vermont Highway Specifications (2011) 703.03. Granular borrow shall conform to the Vermont Highway Specifications 703.04.
9. Gravel subbase for pavement shall conform to Vermont Highway Specifications (2011) 704.05, coarse unless otherwise noted.
10. Leveling course shall conform to Vermont Highway Specifications (2011) 704.05, fine grading. Shoulders shall conform to Section 704.12, Aggregate for Shoulders.
11. Bituminous concrete pavement shall conform to Vermont Highway Specifications (2011) Section 404 and 406. Binder course shall be Type I + II, and finish wearing course shall be Type III, IV, or as detailed.
12. Embankment fill for all impervious areas, EXCLUDING BUILDINGS, shall be a sieve specification as follows:

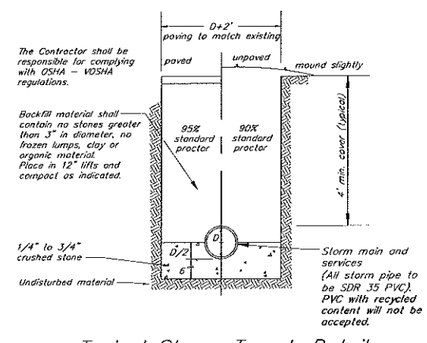
Sieve	% Finer
4"	100
2"	85-100
#4	60-100
#200	30 maximum

13. Gravel Subbase or Leveling Course shall not be contaminated by work. Construction traffic shall not travel over exposed areas of this material.



Typical Storm Manhole Inlet

N.T.S.



Typical Storm Trench Detail

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 16-29, the Williston Zoning Administrator approved the final plans for DP 16-29 on the 18 day of April, 2017

Feb. 13, 2017	Williston Final Plans	WHN/DMR	2/13/2017
Date revised	Description	Checked	Date

Design	DMR
Drawn	DMR
Checked	WHN/DMR
Scale	N.T.S.
Date	4/28/2016
Project	14114

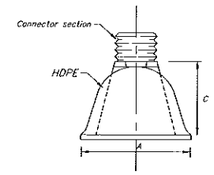
Civil Details

Williston Commons

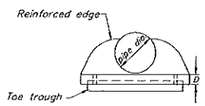
Commons Road — Williston, Vermont

KREDS & LANSING Consulting Engineers, Inc.
164 Main Street, Colchester, Vermont 05446

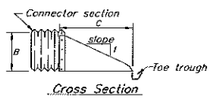
CD-1



Plan



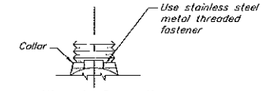
Elevation



Cross Section

HDPE End Section Detail

N.T.S.

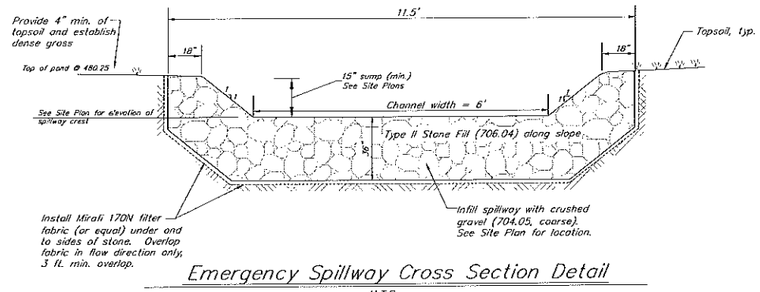


Alternate Connections

Notes:

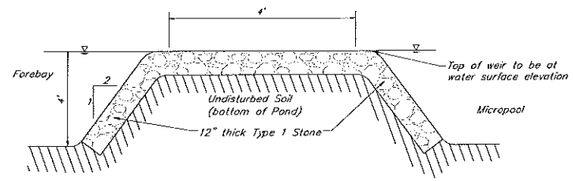
End sections shall be installed in accordance with the manufacturers installation specifications.

Pipe Diameter	Dimensions A 1"±	B Max.	C 1"±	D 1 1/2"±
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	49	6
30	68	36	63.5	6
36	88	43	66.5	6



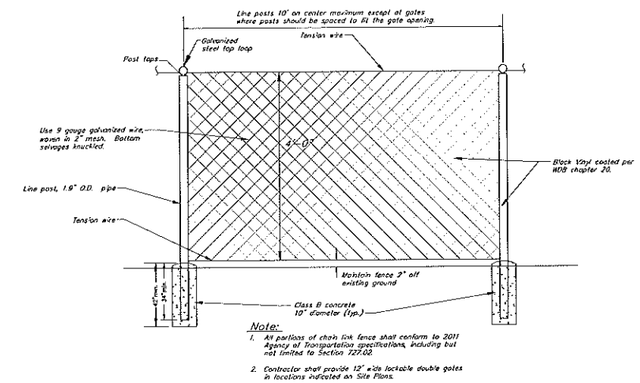
Emergency Spillway Cross Section Detail

N.T.S.



Pond Weir Cross Section Detail

N.T.S.

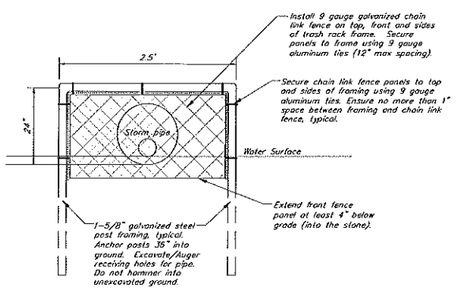


Note:

1. All portions of chain link fence shall conform to 2011 Agency of Transportation specifications, including but not limited to Section 727.02.
2. Contractor shall provide 12' wide lockable double gates in locations indicated on Site Plans.

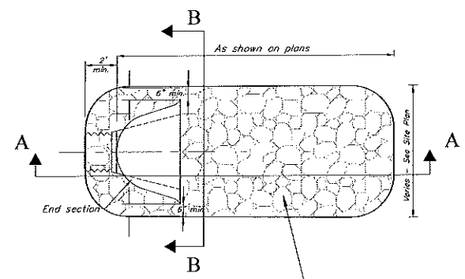
Typical Chain Link Fence to be Installed around Stormwater Pond

N.T.S.

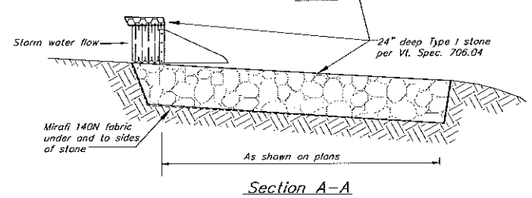


Trash Rack – Front View

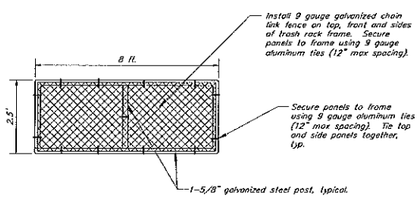
N.T.S.



Plan

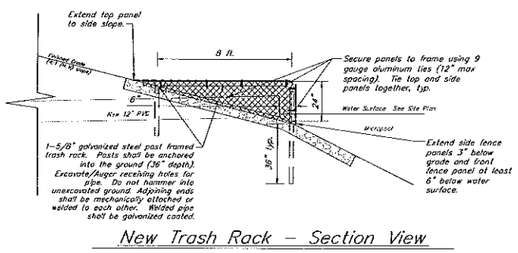


Section A–A



Trash Rack – Plan View

N.T.S.



New Trash Rack – Section View

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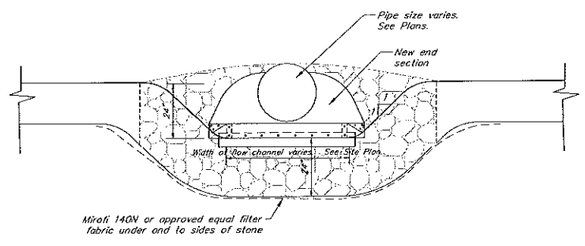


Section B–B

Typical End Section with Rip Rap Detail

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 16-22 the Williston Zoning Administrator approved the final plans for DP 16-22 on the 18 day of April, 2017.

Ken Belair

Feb. 13, 2017	Williston Final Plans	WHH/DMR	2/13/2017
Date revised	Description	Checked	Date

Design DMR
Drawn DMR
Checked WHH/DMR
Scale N.T.S.
Date 4/28/2016
Project 14114

Civil Details

Williston Commons

Commons Road — Williston, Vermont

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

CD-2

Erosion Prevention and Sediment Control Notes

1. Contractor shall be responsible for complying with all State and Local erosion prevention and sediment control standards and permit requirements during construction.
2. 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.
3. 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.
4. 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:
   1. 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.
   2. 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.
5. Refer to the Low Risk Site Handbook for Erosion Prevention and Sediment Control for acceptable methods of stabilization.
6. The Contractor shall use water for dust control.
7. The Contractor shall provide inlet protection around all catch basins (existing or new) that collect construction site stormwater runoff. Crushed stone inlet protection may be used in non-paved areas.
8. A stabilized construction entrance (See Detail) 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.
9. All paved roads used by construction vehicles shall be swept daily during periods of active construction, or at a greater frequency, if dirt or gravel is tracked from the site. The swept debris shall be immediately removed from the curb face if applicable.
10. 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.
11. All sediment removed from sediment control practices shall be placed in an approved soil disposal area.
12. All areas that do not have established vegetation by October 15th must be stabilized in accordance with the Winter Construction Requirements listed on this sheet.
13. After permanent seeding the Contractor shall be responsible for watering, if necessary, to ensure adequate vegetative growth.
14. Water from dewatering activities that flows off site must be clear. Water must not be pumped into storms sewers, lakes, or wetlands unless the water is clear.
15. 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.

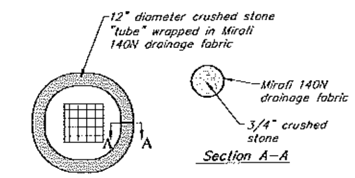
Winter Construction Requirements (October 15th - April 15th)

1. For areas to be stabilized with vegetative cover, seeding shall be completed no later than September 15th to ensure adequate growth and cover.
2. 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.
3. 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.
4. Stabilized Construction Entrances shall be enlarged to provide for snow stockpiling.
5. Limits of disturbance shall be moved or replaced to reflect any revised boundaries of winter work.
6. 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.
7. A minimum 25 foot buffer shall be maintained from perimeter controls such as silt fence.
8. Drainage structures must be kept open and free of snow and ice dams.
9. Silt fence and other practices requiring earth disturbance must be installed ahead of frozen ground.
10. To ensure cover of disturbed soil in advance of a melt event, areas of disturbed soil must be stabilized at the end of each work day, with the following exceptions:
    - 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.
11. Prior to stabilization, snow or ice must be removed to less than 1 inch thickness.
12. Use stone to stabilize areas where construction vehicle traffic is anticipated. Stone paths should be 10-20 feet wide to accommodate vehicular traffic.

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.

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. The Contractor shall complete all construction stakeout to an accuracy of 0.1 feet (excluding building stakeout).



If catch basin is in paved area, wrap 12" diameter clean crushed stone "tube" in Mirafi 140N filter fabric and encircle the catch basin cover. Overlap fabric 12" min and place overlap under stone.

ALTERNATE: Secure "Marsh Mat", or approved equal, coir inlet filter over catch basin.

Inlet Protection
(Pavement Areas)

NTS

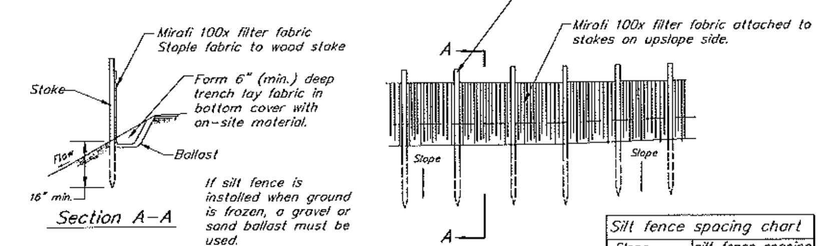
Construction Limit Barriers

- 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.
- 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.

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

NOTE:

1. Contractor shall be responsible for the installation, maintenance, and removal of silt fence in all locations shown on the plans.
2. Maintenance shall be performed as needed and material removed when sediment reaches half of fabric height. Remove silt fence after successful establishment of vegetation.



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

Typical Temporary Silt Fence

N.T.S.

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 s.f.
Thread	Biodegradable

Installed as per manufacturer's specifications.

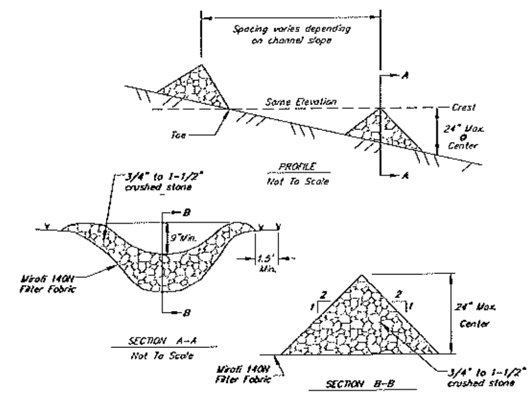
Material Specifications

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

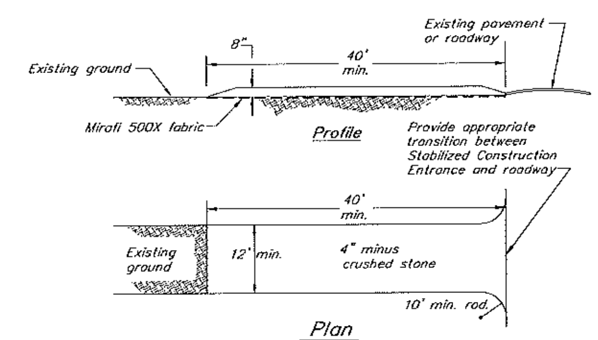


CONSTRUCTION SPECIFICATIONS

1. Stone will be placed on a filter fabric foundation to the lines, grades and locations shown on 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.

Stone Check Dam

N.T.S.



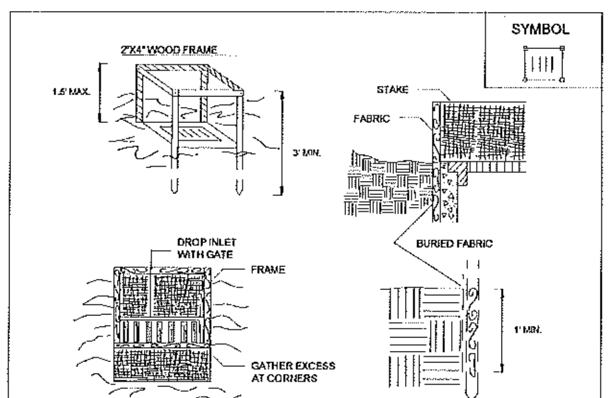
Note:

- 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 voids are 80% filled with sediment. 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

N.T.S.



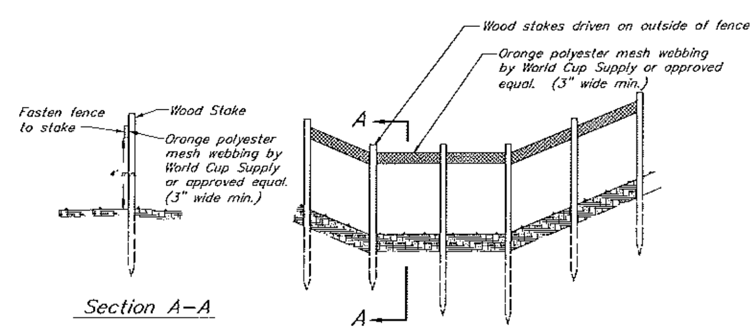
CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

ADAPTED FROM DETAILS PROVIDED BY: NY STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	FILTER FABRIC DROP INLET PROTECTION

Figure 5.3b Storm Drain Inlet Protection: Filter Fabric



To be installed at clearing limits and open limits of the construction area. Not to be used for individual tree protection or to demarcate construction disturbance limits for riparian buffer areas. Snow fence shall be used in these areas. See Plans.

Construction Limit Barrier

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 16 - 29, the Williston Zoning Administrator approved the final plans for DP 16 - 29 on the 18 day of APRIL 2017

Feb. 13, 2017	Williston Final Plans	WHN/DMR	2/13/2017
Date revised	Description	Checked	Date

Design: DMR	Civil Details
Drawn: DMR	
Checked: WHN/DMR	Williston Commons
Scale: N.T.S.	
Date: 4/28/2016	
Project: 14114	Commons Road — Williston, Vermont

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

CD-3

The Low Risk Site Handbook
for
Erosion Prevention and Sediment Control

VERMONT
Agency of Natural Resources
August 2008

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 plan that will disturb 1 or more acres, requires a Vermont state permit for stormwater discharges from construction sites.

Construction General Permit 3-0020 guides an applicant in the determination of the potential risk to water quality from the construction activity and categorizes the applicant's activity as Low Risk, Moderate Risk, or that 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-3-0020.

Contact Information
VT DEC - Water Quality Division
Stormwater Section
103 South Main Street, Building 10 North
Waterbury, VT 05671-0408
Tel: 802-241-3770 or 4300
www.vtwaterquality.org/stormwater.htm

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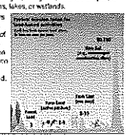
Section 1
Introduction

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 from happening, a small number of simple practices to prevent erosion and contain soil on the construction site must be used.



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

1. Obtain a copy of the permit and determine the Risk Category of the proposed project. The permit is available online at: www.vtwaterquality.org/stormwater.htm
2. Submit the Notice of Intent (NOI) form, notifying the Department of your intent to begin construction. *Submit the NOI to DEC at least 60 days before you plan to begin construction to allow sufficient time for processing.*
3. Upon receipt of written authorization from DEC, you are covered under the permit and may begin construction.
4. If your project is determined to be "Low Risk", you must follow the standards for erosion prevention and sediment control on your construction site.
5. If your site is not classified as Low Risk, then you must apply for the Individual permit 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. Only treating 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, mark 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.)

Properly placed barrier fence marks a safe distance around the edge of construction on this site.

---

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 state-written authorization to discharge. Only the acreage listed on the authorization form may be exposed at any given time.

This residential subdivision is being constructed in phases. Before the second phase begins, only a few lots are open and stabilized as a new phase begins.

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.

---

3. Stabilize Construction Entrance

Purpose:

A stabilized construction entrance helps remove mud from vehicle wheels 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.

Construction entrance detail. Entrance will need enough multiple tracking pads to keep it from becoming muddy.

How to install:

Rock Size: Use a mix of 1 to 4 inch stone
Depth: 8 inches minimum
Width: 12 feet minimum
Length: 40 feet minimum (or length of driveway, if shorter)
Geotextile: Place filter cloth under entire gravel bed

Maintenance

Add rock with clean stone as required to keep sediment from tracking onto the street.

Good stabilized construction entrance. Adequate width to permit vehicle traffic and equipment that may be coming and going from the site. Properly placed rock keeps mud off the road.

Plan ahead and prepare for your site to have a stabilized entrance. Although it may be a temporary one, it will be much easier for vehicles and equipment to get in and out of your site if you have a stable entrance.

Poor entrance. Much of the mud on the road will be tracked onto the street by vehicles. Should be used for short-term use only.

Rock pad and washing area are right out of the picture. A portion of the rock pad may be covered with sand and over time the dirt. Rate building of mud on the road. Vehicles then must pass through the washing area before exiting the site.

---

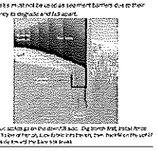
4. Install Silt Fence

Purpose:

Silt fences intercept runoff and allow suspended sediment to settle out.

Requirements:

Silt fence must be installed:
- on the downhill side of site construction activities
- between any ditch, swale, storm sewer inlet, or waters of the State and the disturbed soil
- *No silt fence should be used as sediment barriers due to their tendency to migrate and fail apart.*



Poorly installed silt fence. Silt fence must be installed on the contour of the slope. Do not allow the ends to turn uphill. If the fence is not installed properly, it will not be effective and will fail.

Where to place:

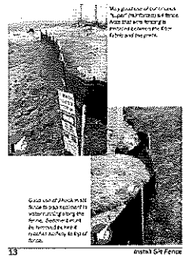
- Place silt fence on the downhill edge of bare soil. At the bottom of slopes, place fence 50 feet downhill from the end of the slope (if space is available).
- Ensure the silt fence catches all runoff from bare soil.
- Maximum drainage area is ½ acre for 100 feet of silt fence.
- Install silt fence across the slope (not up and down hill)
- Install multiple rows of silt fence on long hills to break up flow.
- Do not install a silt fence across ditches, channels, or streams or in stream buffers.

How to install: Silt fence

- Dig a trench 6 inches deep across the slope where silt fence along the trench
- Ensure stakes are on the downhill side of the fence
- Join fending by rolling the end stakes together
- Drive stakes in against downhill side of trench
- Drive stakes until 16 inches of stake is in trench
- Push fabric into trench and fill trench with soil and pack down

Maintenance

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



Good use of rock wall to help keep sediment in water and out of the street. Rock wall should be used in place of silt fence only in the right situation.

Poor installation of silt fencing. Stakes are not in the downhill side of fence. Bottom of fence is not buried in a trench. Fence is not in a straight line along the slope.

---

5. Divert Upland Runoff

Purpose:

Diversions or berms intercept runoff from above the construction site and direct it around the disturbed area. This prevents "clean" water from becoming muddied with soil from the construction site.

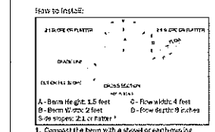
Requirements:

If stormwater flows onto your site from upslope areas and your site meets the following two conditions, you must install a diversion berm before disturbing any soil.

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

Berms are three dimensional structures that slow down runoff and reduce erosion. Diversions are two dimensional structures that redirect flow without slowing down.

How to install:



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

* See page 39 for slope calculations.

Good installation, including stabilization of downslope berm. Note that diversion ditch is lined with green erosion control matting on the steep part of slope, and with rock on the flatter part.

Patches of vegetation have started growth in the berm and ditch. Should be stabilized for permanent use. Regrading, reseeding and mulching will improve the appearance.

Good installation of check dams. Rock is the right size and placed in the middle of the channel. Rock should be at least 2 feet wide at the top of the check dam. Check dams should be lower than the sides of the channel so that water does not flow around the dam.

---

6. Slow Down Channelized Runoff

Purpose:

Stone check dams reduce erosion in drainage channels by slowing down the storm water 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 9 inches lower than the side elevation
Side slopes: 2:1, or flatter (see p 39 for slope calculation)
Stone size: Use a mixture of 2 to 9 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 (toe) 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)

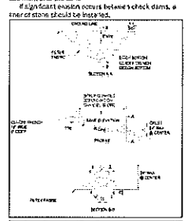
Maintenance:

Remove sediment accumulated behind the dam

---

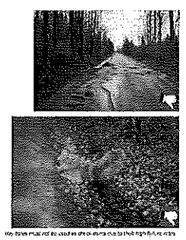
as needed to allow channel to drain through the stone check dam and prevent large flows from carrying sediment over the dam.

If significant erosion occurs between check dams, a liner of stone should be installed.



Slow Down Channelized Runoff 20

Good installation of temporary check dams. Flat rock stone should sit along the sides of the channel. Middle section should be lower than the sides. Check dams should be spaced so that the toe of the upstream dam is at the elevation of the crest of the downstream dam.



Hay bales must not be used as check dams due to their tendency to float.

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7. Construct Permanent Controls

Purpose:

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

Requirements:

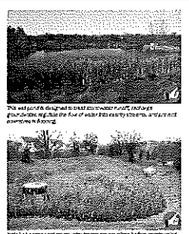
If the total impervious area on your site, or within the common plan of development, will be 1 or more acres, you must apply for a State Stormwater Discharge Permit and construct permanent stormwater treatment practices on your site. These practices must be installed before the construction of any impervious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

*Underground pipes, storm drains, culverts, including the water-tight or partially sealed manhole covers, parking areas, curb, driveways, and sidewalks, from which precipitation runs off rather than infiltrates.



Wet pond is designed to treat stormwater runoff, and must provide enough volume for at least the water quality storm, and must prevent erosion in flowing.

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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 the 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. an outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trench etc)

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

How to comply:

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

Seeding Dates for Temporary Stabilization
April 15 - Sept. 15 — Ryegrass (annual or perennial) 30 lbs/acre
Sept. 15 - April 15 — Rye or Triticale 150 lbs/acre

Seeding Dates for Final Stabilization:

Choose From:	Variety	lbs/acre	lbs/1000 sq.ft.
Bluegrass mixture	Kenpro, Barisan	37	0.50
or			
Bluegrass mixture blend	Various	8	0.20
or			
Tall Fescue	All 3 Varieties	50	0.75
or			
Fescue	Various	2	0.05
or			
Perennial Ryegrass	Various	15	0.50

* Will not establish well if seeded after the end of the date shown.

Mulching Dates
April 15 - Sept 15 - Hay or Straw: 1 ½ ton/ac (90 lbs/1000 sq ft)
Sept 15 - April 15 - Hay or Straw: 2 ½ ton/ac (140 lbs/1000 sq ft)

Erosion Control Matting
As per manufacturer's instructions

Hydroseed
As per manufacturer's instructions

Proper installation of large slope is one of the most difficult situations. Multiple layers of erosion control matting and hydroseed are used to establish vegetation on this steep slope.

Good seeding job and erosion control matting. Proper grading, good soil and minimal compaction. More mulch is needed.

Hydroseeding equipment will be good option for stabilizing large areas. Multiple seeding dates, mulches, matting and additional mulch at the month prior to the first growing season.

Excellent application of hay mulch. Good mulch layer and stabilization for several last stockpiles.

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9. Winter Stabilization

Purpose:

Managing construction sites to minimize erosion and prevent sediment loading of waters is a year-round challenge. In Vermont, this challenge becomes more 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.

Prior to late fall, thaws 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 Stabilization.

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

1. For areas to be stabilized by vegetation, seeding shall be completed no later than September 15 to ensure adequate growth and cover.
2. If seeding is not completed by September 15, additional nonvegetative protection must be used to

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Stabilization and seeding practices before winter are reduced or eliminated in the spring. The grass on the slope is growing and will be ready for a mowing at the end of the growing season.

stabilize the site for the winter period. This includes use of Erosion Control Matting or netting or a heavy mulch layer. Seeding with winter rye is recommended to allow for early germination during wet spring conditions.

3. Where mulch is specified, apply roughly 2 inches with an 80-90% cover. Mulch should be tacked or crimped in place in areas where it is anticipated to be windy.

Requirements for Winter Construction

If construction activities including earth disturbance continue past October 15 or begin before April 15, the following requirements must be adhered to:

1. Enlarged erosion points, stabilized to provide for snow storage.
2. Limits of disturbance moved or replaced to reflect boundary of winter work.
3. A snow management plan prepared with adequate storage and controlled of meltwater, requiring cleared snow to be stored down slope of all areas of disturbance and out of stormwater treatment structures.
4. A minimum 25 foot buffer shall be maintained from perimeter controls such as silt fence.
5. In areas of disturbance that drain to a water body within 100 feet, two rows of silt fence must be installed along the contour.
6. Drainage structures must be kept open and free of snow and ice dams.

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7. Silt fence and other practices requiring earth disturbance must be installed ahead of frozen ground.
8. Mulch used for temporary stabilization must be applied double the standard rate, or a minimum of 3 inches with an 80-90% cover.
9. 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 foundations or open utility trenches.
10. Prior to stabilization, snow or ice must be removed to less than 1 inch thickness.
11. Use stone to stabilize areas such as the perimeter of buildings under construction or where construction vehicle traffic is anticipated. Stone pads should be 50-60 feet wide to accommodate vehicular traffic.

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10. Stabilize Soil at Final Grade

Purpose:

Stabilizing the site with seed and mulch or erosion control matting when it 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.

Good job of stabilized before construction. A completed utility home site.

How to comply:

Bring the site or sections of the site to final grade as soon as practicable after construction is completed. This will reduce the need for additional sediment and erosion control measures and will reduce the total disturbed area.

For seeding and mulching rates, follow the specifications under Rule 8, 'Stabilize Exposed Soil'.

Within 48 hours of final grading, erosion control seeding and mulch has been applied.

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12. Dewatering Activities

Purpose:

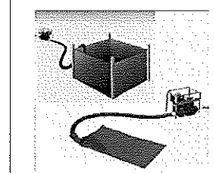
Treat water pumped from dewatering activities so that it is clear when leaving the construction site.

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



Water is pumped from the construction site to a sediment enclosure on a vegetated area away from any waterways.

Dewatering Activities 36

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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 controls will help to reduce costs 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.

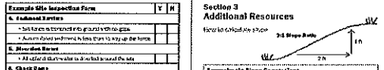
In the case of a reportable sediment release, the site contractor will, you must take immediate action to implement interim erosion control and sediment control practices. Report the release to the Vermont Department of Environmental Conservation within 24 hours of the release.

Form for reporting discharges are available at: www.vtwaterquality.org/stormwater.htm

Example Site Inspection Form	Y	N
1. Sediment Barriers		
• Silt fence is trenched in properly and in the right place		
• Autumn leaves and trees, branches, trash, litter, etc.		
2. Stabilized Exit		
• Mud and dirt on the road is removed from the site		
3. Check Dams		
• Check dams are in place and stretch the width of the channel		
• Stones are stable and not washed out		
4. Stabilize Exposed Soil		
• Seed and mulch, and/or erosion control blankets and netting cover all areas that will be left exposed for 14 days		
5. Winter Stabilization		
• After September 15, all disturbed areas have been seeded and mulched to 2 inches deep, or have mulch or erosion control blankets		
• For ongoing construction, additional mulch is applied to the top of stockpiles		
6. Stabilize Soil at Final Grade		
• Within 48 hours of reaching final grade, seed or install erosion control blankets, loam, then seed and mulch		
Water Leaving off the site		
• Water is free of sediment (not a muddy color)		

Section 3
Additional Resources

How to calculate slope



Approximate Slope Conversion			
Steepness	Percent	Slope ratio (ft/ft)	Degrees
Very steep	100%	1:1	45°
	50%	2:1	27°
Moderate	33%	3:1	18°
	25%	4:1	14°
	20%	5:1	11°
Slight	5%	20:1	2°

How to calculate area of disturbance area:
1 acre = 43,560 square feet = 4,840 square yards

Area in acres (width in feet x length in feet)							
Width	100	150	200	300	400	500
100	0.2	0.3	0.5	0.7	0.9	1.1
150	0.3	0.5	0.7	1.0	1.4	1.7
200	0.5	0.7	0.9	1.4	1.8	2.3
300	0.7	1.0	1.4	2.1	2.8	3.4
400	0.9	1.4	1.8	2.8	3.7	4.6
500	1.1	1.7	2.3	3.4	4.6	5.7

Acknowledgements

Design details and standards for sediment and erosion control practices have been adapted from the New York State Standards and Specifications for Erosion and Sediment Control, August 2005.

Photographs and illustrations provided by Tetra Tech, Kim Greenwood, Doug Mann, Jim Pease, and Hydroseed Technologies.

This document has been adapted from the Kentucky Erosion Prevention and Sediment Control Field Guide produced by the Tetra Tech Water Resources Division in Fairfax, VA at the Kentucky Division of Conservation and Division of Water. Inquiries regarding this publication should be directed to Kenny Fanning, Tetra Tech, 10306 Eaton Place, Suite 340, Fairfax VA 22030 (703) 385-6005.

Printing of this manual is sponsored by the Vermont Natural Resources Conservation District through a grant by the US Environmental Protection Agency.

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This document is available upon request in large print, Braille or audio cassette.

VT Relay Service for the Hearing Impaired
1-800-253-0191 (TDD/Voice) - 1-800-253-0195 (Voice/TDD)

Vermont Department of Environmental Conservation
Water Quality Division - Stormwater Section
103 South Main Street, Building 10 North
Waterbury, VT 05671-0408
Tel: 802-241-3770 or 3777
Fax: 802-241-3287

www.vtwaterquality.org/stormwater.htm

Contractor shall employ as many of these best management practices to prevent soil from leaving the construction site. If evidence is found of soil leaving the construction site, the Engineer may direct Site Contractor to implement additional best management practices at no additional cost to Owner.

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 16-23 the Williston Zoning Administrator approved the final plans for DP-16 on this 13 day of April, 2020 AD

Feb. 13, 2017	Williston Final Plans	WHN/DMR	2/13/2017
Date revised	Description	Checked	Date

Design	DMR
Drawn	DMR
Checked	KHN/DMR
Scale	N.T.S.
Date	4/28/2016
Project	14114

Low Risk Site Handbook for Erosion Prevention & Sediment Control

Williston Commons

Commons Road — Williston, Vermont

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