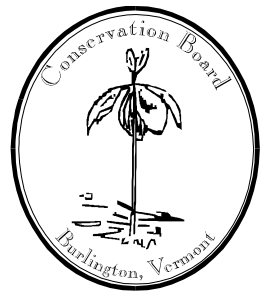


Burlington Conservation Board

149 Church Street
Burlington, VT 05401
<http://www.ci.burlington.vt.us/planning/>
Telephone: (802) 865-7188
(802) 865-7195 (FAX)

*Matt Moore, Chair
Will Flender, Vice Chair
Scott Mapes
Don Meals
Jeff Severson
Miles Waite
Damon Lane
Zoe Richards
Stephanie Young*



Conservation Board Meeting Public Notice

August 25, 2014 at 5:30 PM
Planning and Zoning Conference Room - City Hall Lower Level
149 Church Street

Agenda

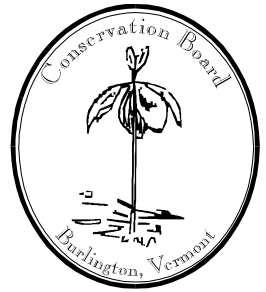
- I. Minutes (5:30)** – Accept minutes from June 30 & August 4, 2014 meetings
- II. Board Comment (5:35)**
- III. Public Comment (5:45)**
- IV. Open Space Subcommittee (5:50)**
- V. Project Review (6:00)**
 - 1. 14-1181CA/CU: 8 College St (Multiple Zones, Wards 3, 5, & 7) Dept. of Parks & Recreation**
EPSC review of Bike Path rehabilitation, including phase 1 from Perkins Pier to North Beach as conditioned by the Development Review Board
 - 2. 14-1321CA: 111 Colchester Avenue (I, Ward 1) FAHC**
New impatient building west of Ambulatory Care Center with associated parking, lighting & landscaping
- VI. Update & Discussion (7:00)**
 - 1. Updated VT Public Meeting Law**
- VII. Adjournment (7:10)**

The City of Burlington will not tolerate unlawful harassment or discrimination on the basis of political or religious affiliation, race, color, national origin, place of birth, ancestry, age, sex, sexual orientation, gender identity, marital status, veteran status, disability, HIV positive status or genetic information. The City is also committed to providing proper access to services, facilities, and employment opportunities. For accessibility information or alternative formats, please contact Human Resources Department at 865-7145.

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Conservation Board Meeting Minutes

Monday, June 30, 2014 – 5:30 pm

Planning & Zoning Conference Room – City Hall Lower Level
149 Church Street

Attendance

- **Board Members:** Scott Mapes (SM), Matt Moore (MM), Miles Waite (MW), Don Meals (DM), Will Flender (WF), Stephanie Young (SY), Damon Lane (DL)
- **Absent:** Zoe Richards (ZR), Jeff Severson (JS)
- **Public:** Josh Kendrick, Daniel Baker, Margot Halpin (Sustainability Tools), Frank von Turkovich (South Forty Solar), Brian Dunkiel, Betsy Kaplan (8 College St), Karen Bates (Watershed Improvement)
- **Staff:** Scott Gustin (Planning & Zoning), Jen Francis, Jesse Bridges (Parks & Recreation)

WF, Chair, called the meeting to order at 5:30 p.m.

Minutes of June 2, 2014

A MOTION was made by DM and SECONDED by SY:

Approve as written.

Vote: 4-0-1

Update & Discussion

1. Sustainability Tools for Assessing & Rating (STAR) Communities

Josh Kendrick, Daniel Baker, Margot Halpin (interns) appeared for this item.

Margot Halpin said the STAR program is a national rating system. It include 500+ data points in 7 categories for assessment. She will be coming to the Board to ask about data.

Jen Francis will make the initial contact. Interns will follow up with date.

MW asked about what kind of data may be needed. Ms. Halpin said most as related to natural systems. Its qualitative data relative to what the city is engaged in. Josh Kendrick said once all of the date is collected, a rating will be issued from 1-5 stars. DM, would you be willing to tell the Board what the results are? Daniel Baker said yes.

MM & SM appeared.

WF asked if the process is yearly. Ms. Halpern said that it is. The ratings are updated yearly.

Board Comment

DM mentioned the Shoreland Protection Act info sheet included in the packet. He and SG attended an informational meeting about it last month. SG noted the July 1, 2014 date of effect and the city's intent to pursue delegation. SM mentioned the city's 250' buffer is from 100' elevation and is therefore more expansive than the state's 250' buffer from 95.5'. MM mentioned the number of post-flood seawall and

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shoreline stabilization projects. Many did not trigger clearing or additional land disturbance. SM said that the projects would likely not have been problematic under the Shoreland Protection Act.

Public Comment

Frank von Turkovich attended in light of the South Forty Solar agenda item. MM said the item is a continuation of a work session from the prior meeting. The Board reflected on the process so far and were updated on the status of the application. The 248 application had not yet been submitted. Mr. von Turkovich said it's still not been submitted. MM said there was no specific outline for discussion. It was fairly open ended. No action was taken or will be taken tonight. Mr. von Turkovich said that he could provide the Board with an update tonight. MM said that would be helpful. Mr. von Turkovich said the project is still alive, but the 248 application has not been submitted. There are many factors that affect this project that he is dealing with. Some additional wetland info will be provided to the state in the next week. Some of it is self-generated, and some is in response to input so far. This site is unique in Burlington. There are not many similar locations within the city that could host a solar project of this size. If the project moves ahead, there will be additional items to resolve like stormwater.

MM asked about the wetlands permit application. Mr. von Turkovich said he's decided to pull some of the solar panels away from the wetlands. This info will be submitted to ANR. There have been ongoing talks about landscaping buffers with neighbors along Sunset Cliff Rd. Stormwater discussions with Strathmore continue. MW asked about – Brian Dunkiel interjected to oppose. Mr. von Turkovich agreed to speak with MW afterward. MM asked about timelines. Mr. von Turkovich said that none of the revisions constitute a whole new project. Within the next few weeks, it should be back on track. MM said that outstanding issues were fairly technical in nature. Are these details being reviewed? Mr. von Turkovich said that things like cover type on the land are being considered. The results will be transparent.

MM asked if Board members had additional questions. None. Mr. von Turkovich said he'd be happy to discuss further at a future meeting. Brian Dunkiel said a working session relative to the wetlands application would be better had once all of the information has been provided.

SM said it makes sense, if new information has been provided, to look at the completed information. WF said he thought they were on hold pending issuance of the wetland permit application. DM said the Board would welcome another discussion to address the new wetlands information. MM said we could put this item on the August 4 agenda.

Open Space Subcommittee

1. 28 Archibald St

Jesse Bridges appeared. Defer to after 8 College Street.

Jesse Bridges addressed this item. We've got a P&S, but the phase II requires remediation. We are looking at the possibility of spot remediation. We are requesting use of acquisition funds for this risk assessment. The city has long wished to acquire this site for use as a community garden. If it is not acquired, it will likely be developed.

MW said the \$6K cost estimate looks reasonable. MM noted that it has a not-to-exceed number.

A MOTION was made by WF and SECONDED by MW:

Approve the requested expenditure

Vote: 7-0-0, motion carried

Project Review

1. 14-1181CU/CU: 8 College Street (Bikepath) (Multiple Zones, Wards 3, 5, & 7) Parks & Recreation

Bike path rehabilitation, including phase 1 from Perkins Pier to North Beach. Also, improvements to Waterfront Park, including replacement lighting, potable water improvements, boardwalk renovation, and landscaping improvements.

Jesse Bridges, Jen Francis, Brian Dunkiel, and Betsy Kaplan appeared.

Jesse Bridges recapped the overview provided at the prior BCB meeting. The project runs from Perkins Pier through the Urban Reserve. Parts of the project go through public right-of-way, and others do not. He noted the realignment through the urban reserve. He said that some spot treatments for shoreline stabilization will be done. They are working with VT DEC relative to soils management. No net new impervious surface is proposed. There will probably be a net reduction. DL asked if the existing path will remain. Jesse said it will be removed pending soil tests. MM asked about sections within the ROW versus not. SG said most of the path not in the ROW is in the Urban Reserve, Waterfront Park, and a small section by the wastewater treatment plant. WF asked if the dirt road to the snow storage site will be adjusted as part of WAN. Mr. Bridges said it's included in the project design.

MW noted the Shoreland Protection Act would affect the UR section of work. Mr. Bridges said that not much has changed since last month's meeting except that the project details are now included in a permit

A MOTION was made by WF seconded by MW

Support the project as proposed.

Discussion: MM had questions about the UR. What's being relocated and where?

Mr. Bridges noted the limited construction work through the silver lindens to save these trees. The dirt access road will be replaced with a grass-crete paver system. The realigned bike path will run parallel with the revamped access road. The cross path will be removed. SM, what will happen with the stormwater runoff? Mr. Bridges, it will be directed into the access road infiltration system. There will be no impact on the lake in terms of stormwater. A small section of grass-crete will be installed by the HC access by the put-in. The dog park in the UR will be made smaller. The path will be realigned closer to the lakeshore. SM asked about Lake Street. Mr. Bridges said it would be formalized up to the line with the interim development area. It will be maintained as it in the UR. MM, how wide? Mr. Bridges, 11" with 2' gravel shoulders. It will connect back into the existing path by Texaco beach. Mr. Bridges pointed out a would-be tie in with the Burlington College footpath.

MM said he's concerned about much of the path through the UR. There is an existing path along the lakeshore berm. Will the path be right on this footpath? Mr. Bridges, no, it will be next to the footpath. MW, was there consideration to leave the path through the UR where it is? Mr. Bridges, yes, there was such conversation during the public comment period, but most public comment has been in support of the realignment.

DL clarified the de-pavement versus the shoreline protection symbology. SM asked about the proposed spot treatment along the shoreline. Mr. Bridges said that the shoreline work would involve some vegetation and some armoring. It is not included in this application. Separate application will be filed for review.

MM said it's a cool spot that could use some help relative to resource protection. It may be worthwhile to retain some of the existing features such as the oil bollards. Mr. Bridges said that this bike path project will not alter these items. He went on to say that future planning efforts will look towards improved public accessibility in this area. MM said that he does not like the realigned bike path in this section. It would be better in its present location. He supports the recent efforts to clear out the underbrush to improve visibility and access to the lake.

Vote: 6-1-0 (MM opposed), motion carried

Update & Discussion (Cont.)

2. Continued discussion to identify potential watershed improvement projects

Karen Bates appeared.

Karen Bates noted that Burlington submitted for permeable sidewalks and for a cistern system to hold onto runoff prior to discharge into the city's combined system.

Ms. Bates said areas eligible for watershed improvement grants are within the city's combined sewer system. Selected sites should be able to attenuate stormwater onsite. Can water be collected and used for irrigation or other uses? Are areas of the worst overflows obvious? WF asked about Edmunds. Ms. Bates said that the site was found to be ineligible. It needs to reduce sediment and phosphorous. The grant cannot be used to help fulfil a permit requirement. The monies are available to go above and beyond permit requirements. SM said that 70% of downtown Burlington connects to the combined system. Ms. Bates said that compliance with the NPDES permit needs to be demonstrated. SM suggested that projects with city stormwater permit requirements and not state stormwater permit requirements are not precluded. Ms. Bates noted that grants cannot go to private parties. It must be through the city or the Board or similar entity. The property/project itself can be privately held. DL asked about eligibility of template projects to be implemented throughout the city. Ms. Bates said such an idea could be a really good project. DL said that his street has no catch basins. Something like a bump-out project could improve runoff management within his neighborhood. Ms. Bates said money could be provided to support community discussion about how and where. Another round of grant funding would likely be needed to follow up with implementation. Ms. Bates mentioned C Street in Seattle as a complete street that includes comprehensive stormwater management.

MM said Megan Moir would be a good point of contact for projects along these lines. DL asked about frequency of grant windows. Ms. Bates said there are two per year. SM said he's still considering the Edmunds School project.

3. South Forty Solar, LLC

See public input.

Annual Organizational Meeting

A MOTION was made by DM and SECONDED by MW:

Reelect existing slate of officers

Vote: 7-0-0, motion carried

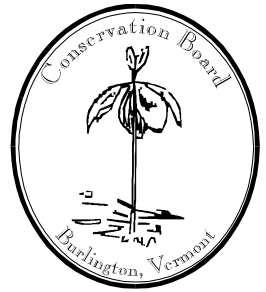
Adjournment

The meeting adjourned at 7:15 PM.

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Conservation Board Meeting Minutes

Monday, August 4, 2014 – 5:30 pm

Planning & Zoning Conference Room – City Hall Lower Level
149 Church Street

Attendance

- **Board Members:** Jeff Severson (JS), Matt Moore (MM), Don Meals (DM), Will Flender (WF), Stephanie Young (SY)
- **Absent:** Damon Lane (DL), Scott Mapes (SM), Miles Waite (MW) Zoe Richards (ZR)
- **Public:** Gail Henderson-King, Jason Williams, Bill Brothers, Jack Meyers, Hannah Luke, Lani Ravin, Bill Nedde, Frank von Turkovich
- **Staff:** Scott Gustin (Planning & Zoning)

WF, Vice Chair, called the meeting to order at 5:30 p.m.

Minutes of June 30, 2014

None.

Board Comment

None.

Public Comment

None.

Open Space Subcommittee

No meeting was held today.

Project Review

1. 14-1321CA: 111 Colchester Avenue (I, Ward 1) FAHC

New inpatient building west of Ambulatory Care Center with associated parking, lighting, & landscaping

Gail Henderson-King, Jason Williams, Bill Brothers, Jack Meyers, Bill Nedde, and Hannah Luke appeared.

Gail Henderson-King overviewed the project. 208,000 sf building. No net additional parking. 128 inpatient rooms in the new building. Noted that the industry is 1 patient per room for privacy and infection control. Ms. Henderson-King discussed the project's place within the hospital's strategic goals. She addressed the city permitting schedule. It will go before the DRB September 2, 2014. Vehicular access will remain unchanged. The building will be constructed over an existing parking area. The building will be minimally visible from public streets. She noted the associated UVM project to demolish Chittenden, Buckham, & Willis dorms.

Bill Brothers overviewed the proposed building. It reflects existing building forms and materials in an effort to blend into its setting. The new building ties into the existing west pavilion and steps back from Converse Hall to limit impacts to that historic structure. He displayed a perspective drawing to demonstrate the point.

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Ms. Henderson-King addressed the proposed landscaping. It includes a mix of shade trees, shrubs, perennials, and ornamental shrubs. She also noted the proposed Green Mountain Walkway on the UVM property.

Jack Meyers addressed stormwater. He pointed out the Centennial Brook watershed on a map. Stormwater from the project will be within the north campus watershed. Stormwater will be collected within an existing pond and discharged into Centennial Brook. Bill Nedde clarified that the stormwater facility is behind the baseball field. The stormwater pond is fully compliant.

JS asked if the prior improvements had been done in anticipation of this project. Mr. Nedde responded affirmatively. Ms. Henderson-King noted that the stormwater design is under review with Megan Moir but not yet finalized. Jack Meyers noted that there is post-construction stormwater management and there is EPSC during construction. The construction phasing is what is complicating the EPSC. Each phase needs to be incorporated into a comprehensive EPSC plan. As for post-construction stormwater management, Centennial Brook is impaired. He has been in touch with VT ANR about permitting the project. There are a number of different approaches. Because the brook has an approved flow restoration plan and TMDL, there is now a clear path forward. The intent is that the brook will see no net change from existing conditions. The project needs to remove 137 pounds of sediment to have no net increase in the brook. A series of small measures will be implemented to achieve this goal. Bio-retention, rain gardens.

JS asked where the sediment comes from. Mr. Meyers said it generally comes off of the roads and parking lots.

MM recapped that the specific stormwater treatment details have not been finalized. Can you describe the typical EPSC methods? Mr. Meyers said that a construction general permit from ANR will be required. Temporary haul roads, silt fences, seeding and stabilization will be utilized. Time frames around certain project components need to be defined for this 3-year project.

MM asked if there are any particular issues beyond project phasing? Anything nonconventional? Mr. Meyers said no. The site has a relatively gentle slope with no highly erodible soils.

WF said his biggest concern is that we don't get a big storm with brown water pouring down onto Colchester Avenue.

MM asked where the "risky" spots are. Jack Meyers said the site won't look like the site plan until the project is complete. There are a number of interim items, such as the haul road. The goal is to ensure that nothing leaves the site. The complexity is within the phasing, not with the EPSC measures themselves.

MM, can the receiving stormwater pond handle the runoff? Bill Nedde responded that it can. Jack Meyers said that an engineer will be onsite to oversee construction.

DM, less concerned with EPSC than with post-construction measures. Has stormwater modeling been completed? Jack Meyers said that he's just gotten definitive direction from ANR as to how to approach the project. Bill Nedde said the hydrologic model has been done. What's not been completed is the sediment offset. There are two options: onsite BMP or off-site sediment offset elsewhere within the Centennial Brook watershed. Either way, one will work. DM, do you have modeling to show that post-construction is acceptable? Bill Nedde said that it's been done, and the forebay needs to be expanded. DM, where is the origin of stormwater intended for the proposed rain gardens? Ms. Henderson-King pointed out several locations for rain gardens within parking and circulation roads. DM, will the rain gardens be under-drained? Jack Meyers said they would be. The soils are "d." DM, will the water level in the gardens be controlled? Mr. Meyers said that the intent would be to have catch basins within to provide relief if they are inundated. DM said that if soils are not kept saturated, the effectiveness of the rain gardens is diminished. There is less evapotranspiration. DM, what percent of stormwater will be directed through the rain gardens? Mr. Meyers did not yet know.

JS, when the forebay is enlarged, it will be adequate. These other feature are being proposed to capture above and beyond. Bill Nedde agreed. The bulk of treatment will occur in the stormwater pond.

WF asked about the Shepardson building. Ms. Henderson-King said there will be internal programmatic changes.

Ms. Henderson-King said they are aiming to have city and state permits by this coming fall. She said a certificate of need is required. Construction would extend from 2015 to 2018.

MM asked about the connection with UVM's concurrent project. Ms. Henderson-King noted that the UVM project is under separate permit, but the stormwater facilities are shared. Lani Ravin spoke to the separate permits. Whatever is on UVM's property needs to be on UVM's application. Whatever is on FAHC's property needs to be on FAHC's application. Bill Nedde clarified that all of the stormwater will end up in the same pond.

MM, will there be a net gain in parking? Lani Ravin replied that there will be no net gain in parking. Ms. Henderson-King said that there are 47 parking spaces and 89 parking spaces for Fletcher Allen and UVM, respectively, now and as proposed. MM asked how many beds at UVM are being demolished. Ms. Ravin replied it will be 391. They will be replaced offsite in South Burlington until such time that new on-campus housing is constructed. Ms. Ravin noted that UVM has issued a request for proposals for new student housing on campus. The RFP is due at the end of August. MM asked about how many beds would be included. Ms. Ravin noted the RFP seeks a range, but in any event, results in more beds being lost. MM asked how UVM would guarantee that displaced students would live in the proposed interim housing offsite and not in nearby city neighborhoods. He said that UVM needs to provide information to address these concerns to the satisfaction of the Conservation Board.

DM said he has no doubt of the good intentions, but we don't have the necessary info to bless this application yet. We just have oral descriptions. He doesn't see how the Board can act yet. WF agreed. Table the application until the stormwater designs are more complete.

A MOTION was made by WF and SECONDED by DM

Table until next meeting.

Discussion:

JS asked about expected timeline from ANR. Jack Meyers is unsure. Bill Nedde said the stormwater model could be delivered as soon as tomorrow. Ms. Henderson-King requested conditioned approval with a requirement for follow up. Mr. Meyers said that by September, the post-construction stormwater management should have a higher degree of certainty. He'd be surprised, however, if a detailed phasing plan would be worked out. WF said his concern is more about post-construction stormwater management than with EPSC. Mr. Meyers said that Megan Moir has indicated a pre-release condition would be acceptable relative to the final stormwater design. JS asked about the sediment offset. Mr. Nedde said the framework is set with ANR. The details as to how to achieve the goal are not yet determined.

WF suggested that perhaps the BCB could meet again August 25 rather than delay the project with the DRB into late September.

DM said that this project has been percolating for about a decade. The information provided tonight is very incomplete and should be tabled. SY asked if August 25 date would be helpful. Ms. Henderson-King said it would be. They should have more answers from ANR by then as well. JS agreed that additional information is needed. The hydrological model and how/why the forebay expansion will handle it. It is unfortunate that this project did not do sketch plan review with the Conservation Board. This feedback could have been provided then. He'd like to hear from Megan Moir as to this project too.

MM requested that UVM provide complete information relative to UVM demolition project, including how and where replacement housing will be provided, and that it be placed on the meeting agenda. Ms. Ravin said the information has been provided with their pending permit application.

Vote: 5-0-0

WF, let's aim for August 25 for next meeting. Need to follow up with the rest of the Board. JS said bringing along the entire FAHC team will not be necessary.

Adjournment

The meeting adjourned at 7:20 PM.

AN EROSION PREVENTION AND SEDIMENT CONTROL PLAN

FOR THE PROJECT AT:

HAS BEEN FILED WITH THE CITY OF BURLINGTON
STORMWATER MANAGEMENT PROGRAM IN ACCORDANCE
WITH CHAPTER 26 OF THE BURLINGTON CODE OF ORDINANCES

THIS REQUIRES THAT MEASURES BE INSTALLED OR TAKEN TO
PREVENT SEDIMENT FROM LEAVING THE SITE AND ENTERING
WATERWAYS AND IMPACTING CITY INFRASTRUCTURE
(RIGHT OF WAY AND STORMDRAINS)

FOR QUESTIONS OR TO REPORT SEDIMENT LEAVING THE SITE
CALL 802-540-1748

This notice to be posted in full view at all times during earth
disturbance. Additional conditions on attached.

Plan Approved by: _____ Date: _____
Megan J. Moir, CPESC, CPSWQ



Burlington Department of Public Works

Stormwater Program

645 Pine Street

Burlington, VT 05401

PH: 802-540-1748 Email: mmoir@ci.burlington.vt.us



Small Project Erosion Prevention & Sediment Control Plan

This questionnaire, at a minimum, is required to accompany all zoning or building permit applications which involve 400 sq. ft. or more of land disturbance. Please also provide a site plan indicating the locations of all erosion prevention and sediment control measures (silt fence, hay bales etc).

Properties with greater than 2500 sq. ft. of total impervious surfaces, that are adding more impervious, will also be required to comply with additional long term stormwater management requirements.

1. Project Location _____
2. Brief Project Description (i.e. house foundation, swimming pool)

3. Owner Name: _____
4. Owner Mailing Address: _____
5. Owner Phone: _____ 6. Owner email: _____
7. Contractor Name: _____
8. Contractor Phone: _____ 9. Contractor Email: _____
10. Estimated Project Start Date _____ Estimated End Date _____
11. Area of Land Disturbance _____ sq. ft.
12. Total proposed (existing + new) amount of impervious: _____ sq. ft.
13. Estimated distance in feet from disturbance to nearest:

- a. City Sidewalk or Street _____ ft
- b. Drainage Ditch _____ ft
- c. Catch Basin (storm drain) _____ ft
- d. Lake/River/Stream _____ ft

14. Site plan/sketch MUST BE ATTACHED showing the following:
☐ Limits of disturbance ☐ Direction of stormwater flow on site
☐ Location of stockpiles (if any) ☐ Location of sediment control BMP's (silt fence etc.)

EPSC QUESTIONNAIRE (See last page for typical solutions to these questions)

A) Nature of all site disturbances (check all that apply):

- ☐ Underground utility trench(es) ☐ curb cut/driveway ☐ foundation ☐ cut/fill/regrading ☐ landscaping
☐ other _____

B) Do you anticipate the need for any dewatering of excavations during the construction? ☐ Yes ☐ No

- If yes, how will the pumped water be managed or filtered to prevent the discharge of dirty water?

C) Will excavated soil be stockpiled on the site? ☐ Yes ☐ No

- If yes, how long will the stockpile be on site? (i.e. 1 day, 1 week) _____

How do you propose to control erosion of the stockpile? _____

- If no, where is the ultimate disposal of excess soil? _____

D) How do you propose to prevent sediment from leaving the site and entering nearby city sidewalks/streets and storm drains and/or lakes, rivers and streams? (see page 4 for examples)

E) Do you plan to park construction vehicles on or disturb City owned property like the greenbelt area? ☐ Yes ☐ No

- If yes, tell us how you agree to repair all disturbances or damage to City owned property and provide a written approval from the City allowing construction vehicles to park on City owned property.

- If no, then please monitor all construction and visitor vehicles and advise all not to park on City owned property.

F) How do you propose to either prevent or clean sediment generated from construction vehicles and activities that becomes deposited on City streets, sidewalks, or bikepaths and how frequently this will be done.

G) Will stockpiles or disturbed soils be present and/or exposed after Nov. 1st of any construction year? ☐ Yes ☐ No

- If yes, tell us how you plan to stabilize any stockpile and/or disturbed soils.

Do you agree to abide by the following conditions?

☐Y ☐N Applicant will call 540-1748 or email mmoir@burlingtonvt.us at least 24 hours prior to initiating earth disturbance and submit the name and contact (cell phone and email) of the erosion control coordinator for the project

☐Y ☐N Applicant will post the notice in a visible location

☐Y ☐N I acknowledge that it is the responsibility of the owner and his/her representatives to ensure that:

- o sediment does not enter surface water bodies (streams, ditches, ponds, lakes, wetlands etc.)
- o sediment does not enter City conveyance infrastructure (catch basins, sewers etc.) and
- o All sediment must be removed from the city ROW (sidewalks and roadways) by the end of each work day.

☐Y ☐N Sediment control measures will be installed prior to the initiation of earth disturbance.

☐Y ☐N During the non-winter construction season (April 15 – November 1): After an initial 14 day period of initial disturbance, temporary or permanent stabilization (mulching, erosion control matting or tarps for stockpiles, or other approved method) of exposed areas and stockpiles will occur at the end of each work day unless:

- o Earthwork is to continue in the area within the next 24 hours and there is NO liquid precipitation forecast for the next 24 hours; or
- o If work is occurring in a self contained excavation (no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation or utility trenches.

- ☐Y ☐N During the winter construction period from November 1 to April 15, any new disturbance must be temporarily or permanently stabilized (mulching, erosion control matting or tarps for stockpiles, or other approved method) will occur at the end of each work day unless:
- ☐ Earthwork is to continue in the area within the next 24 hours and there is NO liquid precipitation forecast for the next 24 hours; or
 - ☐ If work is occurring in a self-contained excavation (no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation or utility trenches)
- ☐Y ☐N The perimeter of the site and all BMPs will be inspected at the end of each workday to ensure that sediment will not leave the site. If sediment has travelled beyond the site boundary, it shall be swept up or otherwise removed and deposited on-site in an upgradient area at the end of each work day.
- ☐Y ☐N The owner and his/her representatives shall abide by the best management practices (BMPs) indicated in this plan and conditions and in the Vermont DEC Low Risk Site Handbook for Erosion Prevention and Sediment Control (2006). Contact 802-540-1748 for a hard copy or go to the web:
http://vtwaterquality.org/stormwater/docs/construction/sw_low_risk_site_handbook.pdf
- ☐Y ☐N If soils will be exposed after November 1st and winter construction has not been permitted the project will notify DPW prior to October 15th. If the project is completed during the winter months, an additional inspection will be required to ensure that the site is buttoned up for the winter.
- ☐Y ☐N Within 48 hours of reaching final grading, the exposed soil will be seeded and mulched or covered with erosion control matting (for slopes steeper than 3:1 or high wind prone areas). Erosion control matting is preferred.
- ☐Y ☐N The owner will contact DPW to schedule a stabilization inspection when site work is finished and stabilization measures (seeding and mulching or matting) have been installed.

AGREEMENT

By filling out and signing this plan, I agree to abide by the terms and conditions outlined above. Failure to follow this plan can result in a stop work order by the City of Burlington, fines, or both.

By: ☐ Owner ☐ Contractor ☐ Architect/Engineer

Name

Signature

Date

Additional Conditions of Approval:

Required Compliance Items:

- Notification of start/identification of EPSC responsible party
- Winter Stabilization Inspection (if applicable)
- Final Stabilization

TYPICAL SOLUTIONS TO PREVENT OR CONTROL SEDIMENT AND EROSION

STOCKPILES

- Cover small stockpiles with a tarp when not being used.
- Install silt fencing or other appropriate devices around the stockpiles to filter sediment.
- Cover stockpiles with straw or other approved mulching material.
- Plan to remove any unusable material as soon as possible from the site to an approved location.
- Plant grass and mulch stockpiles that will be on site for more than 14 days.
- Cover, vegetate or install erosion matting on stockpiles that will remain disturbed over the winter.

DISTURBED AREAS

- Maintain vegetated buffers around disturbed areas.
- Install silt fencing or other appropriate device to filter sediment washing off from disturbed areas. Remember that the bottom of the silt fence must be “keyed in” (dug into ground) to work correctly.
- To prevent sediment from running off your site via your driveway (or other paved areas where you can’t install silt fence) use a row of hay bales or tube sand.
- Cover disturbed areas as soon as possible with straw or other approved mulching material. Use erosion control matting in high wind, traffic or slopes steeper than 3:1 (horizontal to vertical), and follow the manufacturer’s guidelines staple the matting down.
- Plant grass and mulch or use erosion control matting all disturbed areas that will remain exposed for more than 14 days.
- Cover, vegetate or install erosion matting on areas that will remain disturbed over the winter.
- Protect ditches, catch basins or water bodies off-site by using silt fencing, gravel check dams or other approved sediment control methods.

CONSTRUCTION VEHICLES

- Do not park construction vehicles on City owned green space. Vehicles disturb vegetation and compact the soil, thereby reducing its ability to infiltrate stormwater. Any green belt disturbance will need to be permanently stabilized with grass seed and erosion control matting.
- Prevent sediment from leaving the project by cleaning the tires of vehicles, or use clean gravel at project access points to clean tires.
- Sweep city streets, sidewalks and bikepaths daily or as needed to remove sediment transported from the project.

RESOURCES

The Vermont Handbook for Erosion Prevention and Sediment Control at:

http://vtwaterquality.org/stormwater/docs/construction/sw_low_risk_site_handbook.pdf

The City of Burlington Stormwater Program Page at

<http://www.dpw.ci.burlington.vt.us/stormwater/>

The City of Burlington Conservation Board Stormwater and Erosion Control Fact sheet at

<http://www.ci.burlington.vt.us/planning/cb/stormwater/management.html>

CITY OF BURLINGTON
DEPARTMENT OF PARKS, RECREATION & WATERFRONT



PROPOSED IMPROVEMENT
BURLINGTON BIKE PATH
REHABILITATION PROJECT, PHASE 1A

CITY OF BURLINGTON
COUNTY OF CHITTENDEN

INDEX OF SHEETS

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LIST OF STANDARDS

A-80	SHARED USE PATH DETAILS	03-31-2004
C-2A	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK ADJACENT TO CURB	10-14-2005
C-2B	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK AND GREEN STRIP	10-14-2005
C-3A	SIDEWALK RAMPS	03-10-2008
C-3B	SIDEWALK RAMPS AND MEDIAN ISLANDS	03-10-2008
C-10	CURBING	02-11-2008
D-4	VARIOUS DRAINAGE DETAILS	08-13-2007
E-180A	STREET LIGHTING DETAILS	08-09-1995
E-180B	STREET LIGHTING DETAILS	08-09-1995
E-195	SHARED USE PATH PAVEMENT MARKINGS AND SIGN DETAILS	06-09-2008

PROJECT LOCATION:

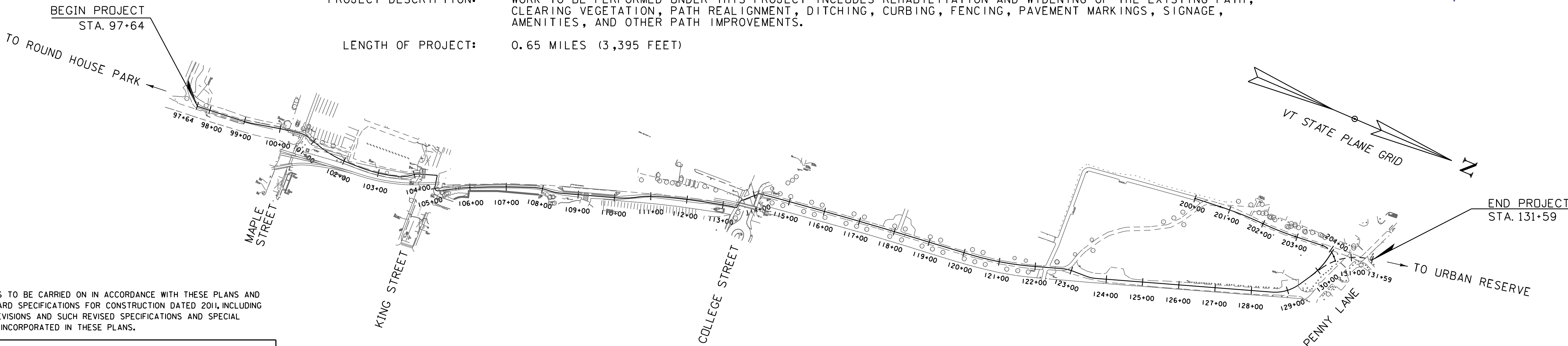
LOCATED IN THE COUNTY OF CHITTENDEN, CITY OF BURLINGTON, THE PROJECT BEGINS AT A POINT APPROX. 200 FEET SOUTH OF THE INTERSECTION OF MAPLE STREET AND RAILWAY LANE AT STATION 97+64. THE PROJECT FOLLOWS ALONG LAKE CHAMPLAIN AND EXTENDS NORTHERLY 0.65 MILES TO THE NEW ALIGNMENT OF PENNY LANE.

PROJECT DESCRIPTION:

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REHABILITATION AND WIDENING OF THE EXISTING PATH, CLEARING VEGETATION, PATH REALIGNMENT, DITCHING, CURBING, FENCING, PAVEMENT MARKINGS, SIGNAGE, AMENITIES, AND OTHER PATH IMPROVEMENTS.

LENGTH OF PROJECT:

0.65 MILES (3,395 FEET)



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE VTRANS STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

SURVEYED BY : VHB
ALDRICH + ELLIOT, PC
BUTTON PROFESSIONAL LAND SURVEYORS, PC
CROSS CONSULTING ENGINEERINGS

SURVEYED DATE : AUGUST 2013

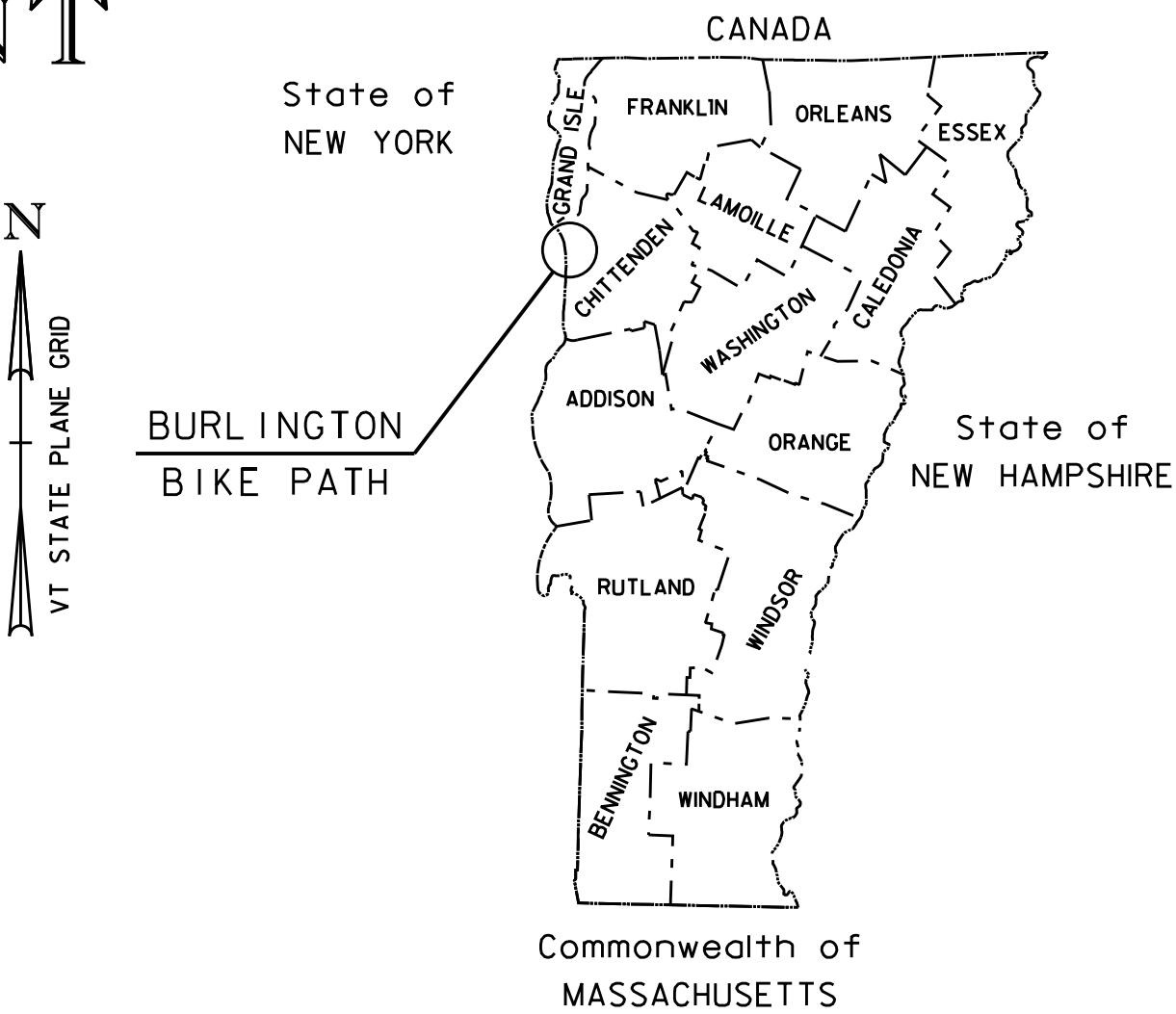
DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (07)

SCALE IN FEET
150 0 150

PROJECT MANAGER : JEN FRANCIS

PROJECT NAME : BURLINGTON BIKE PATH
PROJECT NUMBER : 57634.00

SHEET 1 OF 59 SHEETS



GENERAL INFORMATION

SYMBOLOLOGY LEGEND NOTE

THE SYMBOLOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOLOGY. THE SYMBOLOLOGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLOLOGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R.O.W. ABBREVIATIONS (CODES) & SYMBOLS

POINT	CODE	DESCRIPTION
	CH	CHANNEL EASEMENT
	CONST	CONSTRUCTION EASEMENT
	CUL	CULVERT EASEMENT
	D&C	DISCONNECT & CONNECT
	DIT	DITCH EASEMENT
	DR	DRAINAGE EASEMENT
	DRIVE	DRIVEWAY EASEMENT
	EC	EROSION CONTROL
	HWY	HIGHWAY EASEMENT
	I&M	INSTALL & MAINTAIN EASEMENT
	LAND	LANDSCAPE EASEMENT
	R&RES	REMOVE & RESET
	R&REP	REMOVE & REPLACE
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
■	BDNS	BOUND SET
▣	BDNS	BOUND TO BE SET
●	IPNS	IRON PIN SET
⊙	IPNS	IRON PIN TO BE SET
⊠	CALC	EXISTING ROW POINT
○	PROW	PROPOSED ROW POINT
[LENGTH]		LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT	CODE	DESCRIPTION
⌘	APL	BOUND APPARENT LOCATION
▣	BM	BENCH MARK
▣	BND	BOUND
▣	CB	CATCH BASIN
⊕	COMB	COMBINATION POLE
▣	DITHR	DROP INLET THROATED DNC
⊕	EL	ELECTRIC POWER POLE
⊙	FPOLE	FLAGPOLE
○	GASFIL	GAS FILLER
○	GP	GUIDE POST
⌘	GSO	GAS SHUT OFF
⊙	GUY	GUY POLE
⊙	GUYW	GUY WIRE
⌘	GV	GATE VALUE
⊗	H	TREE HARDWOOD
△	HCTRL	CONTROL HORIZONTAL
△	HVCTRL	CONTROL HORIZ. & VERTICAL
◇	HYD	HYDRANT
⊙	IP	IRON PIN
⊙	IPIPE	IRON PIPE
⊕	LI	LIGHT - STREET OR YARD
⊕	MB	MAILBOX
○	MH	MANHOLE (MH)
▣	MM	MILE MARKER
⊙	PM	PARKING METER
▣	PMK	PROJECT MARKER
⊙	POST	POST STONE/WOOD
⊕	RRSIG	RAILROAD SIGNAL
⊕	RRSL	RAILROAD SWITCH LEVER
⊕	S	TREE SOFTWOOD
⊕	SAT	SATELLITE DISH
⊕	SHRUB	SHRUB
⊕	SIGN	SIGN
⊕	STUMP	STUMP
⊕	TEL	TELEPHONE POLE
⊙	TIE	TIE
⊕	TSIGN	SIGN W/DOUBLE POST
⊕	VCTRL	CONTROL VERTICAL
⊙	WELL	WELL
⌘	WSO	WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADUIS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLOLOGY

UNDERGROUND UTILITIES

— UT —	— · · · · · —	TELEPHONE
— UE —	— · · · · · —	ELECTRIC
— UC —	— · · · · · —	CABLE (TV)
— UEC —	— · · · · · —	ELECTRIC+CABLE
— UET —	— · · · · · —	ELECTRIC+TELEPHONE
— UCT —	— · · · · · —	CABLE+TELEPHONE
— UECT —	— · · · · · —	ELECTRIC+CABLE+TELEP.
— G —	— · · · · · —	GAS LINE
— W —	— · · · · · —	WATER LINE
— S —	— · · · · · —	SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

— T —	— · · · · · —	TELEPHONE
— E —	— · · · · · —	ELECTRIC
— C —	— · · · · · —	CABLE (TV)
— EC —	— · · · · · —	ELECTRIC+CABLE
— ET —	— · · · · · —	ELECTRIC+TELEPHONE
— AER E&T —	— · · · · · —	ELECTRIC+TELEPHONE
— CT —	— · · · · · —	CABLE+TELEPHONE
— ECT —	— · · · · · —	ELECTRIC+CABLE+TELEP.
— · · —	— · · · · · —	UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOLOGY

— · · —	— CZ —	— · · —	CLEAR ZONE
————			PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

△	△	△	△	TOP OF CUT SLOPE
○	○	○	○	TOE OF FILL SLOPE
⊗	⊗	⊗	⊗	STONE FILL
---				BOTTOM OF DITCH
==				CULVERT PROPOSED
---				STRUCTURE SUBSURFACE
PDF	PDF			PROJECT DEMARCATION FENCE
BF	BF			BARRIER FENCE
xxxxxxxxxxxxxxxxxxxx				TREE PROTECTION ZONE (TPZ)
////				STRIPING LINE REMOVAL
~~~~				SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOLOGY

BOUNDARY LINES

	TOWN LINE		TOWN BOUNDARY LINE
	COUNTY LINE		COUNTY BOUNDARY LINE
	STATE LINE		STATE BOUNDARY LINE
			PROPOSED STATE R.O.W. (LIMITED ACCESS)
			PROPOSED STATE R.O.W.
			STATE ROW (LIMITED ACCESS)
			STATE ROW
			TOWN ROW
			PERMANENT EASEMENT LINE (P)
			TEMPORARY EASEMENT LINE (T)
			SURVEY LINE
			PROPERTY LINE (P/L)
			SLOPE RIGHTS
			6F PROPERTY BOUNDARY
			4F PROPERTY BOUNDARY
			HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLOLOGY

EPSC MEASURES

ONNOONNOONNO	FILTER CURTAIN
▣	SILT FENCE
▣	SILT FENCE WOVEN WIRE
▶	CHECK DAM
▣	DISTURBED AREAS REQUIRING RE-VEGETATION
⊗	EROSION MATTING

ENVIRONMENTAL RESOURCES

▼	WETLAND BOUNDARY
---	RIPARIAN BUFFER ZONE
---	WETLAND BUFFER ZONE
---	SOIL TYPE BOUNDARY
T&E	THREATENED & ENDANGERED SPECIES
HAZ	HAZARDOUS WASTE AREA
AG	AGRICULTURAL LAND
HABITAT	FISH & WILDLIFE HABITAT
FLOOD PLAIN	FLOOD PLAIN
OHW	ORDINARY HIGH WATER (OHW)
◆	STORM WATER
---	USDA FOREST SERVICE LANDS
---	WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC

ARCH	ARCHEOLOGICAL BOUNDARY
HISTORIC DIST	HISTORIC DISTRICT BOUNDARY
HISTORIC	HISTORIC AREA
H	HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOLOGY

EXISTING FEATURES

---	ROAD EDGE PAVEMENT
---	ROAD EDGE GRAVEL
---	DRIVEWAY EDGE
---	DITCH
---	FOUNDATION
x	FENCE (EXISTING)
▣	FENCE WOOD POST
○	FENCE STEEL POST
~~~~	GARDEN
○	ROAD GUARDRAIL
	RAILROAD TRACKS
---	CULVERT (EXISTING)
---	STONE WALL
---	WALL
~~~~	WOOD LINE
~~~~	BRUSH LINE
~~~~	HEDGE
---	BODY OF WATER EDGE
---	LEDGE EXPOSED

PROJECT NAME: BURLINGTON BIKE PATH

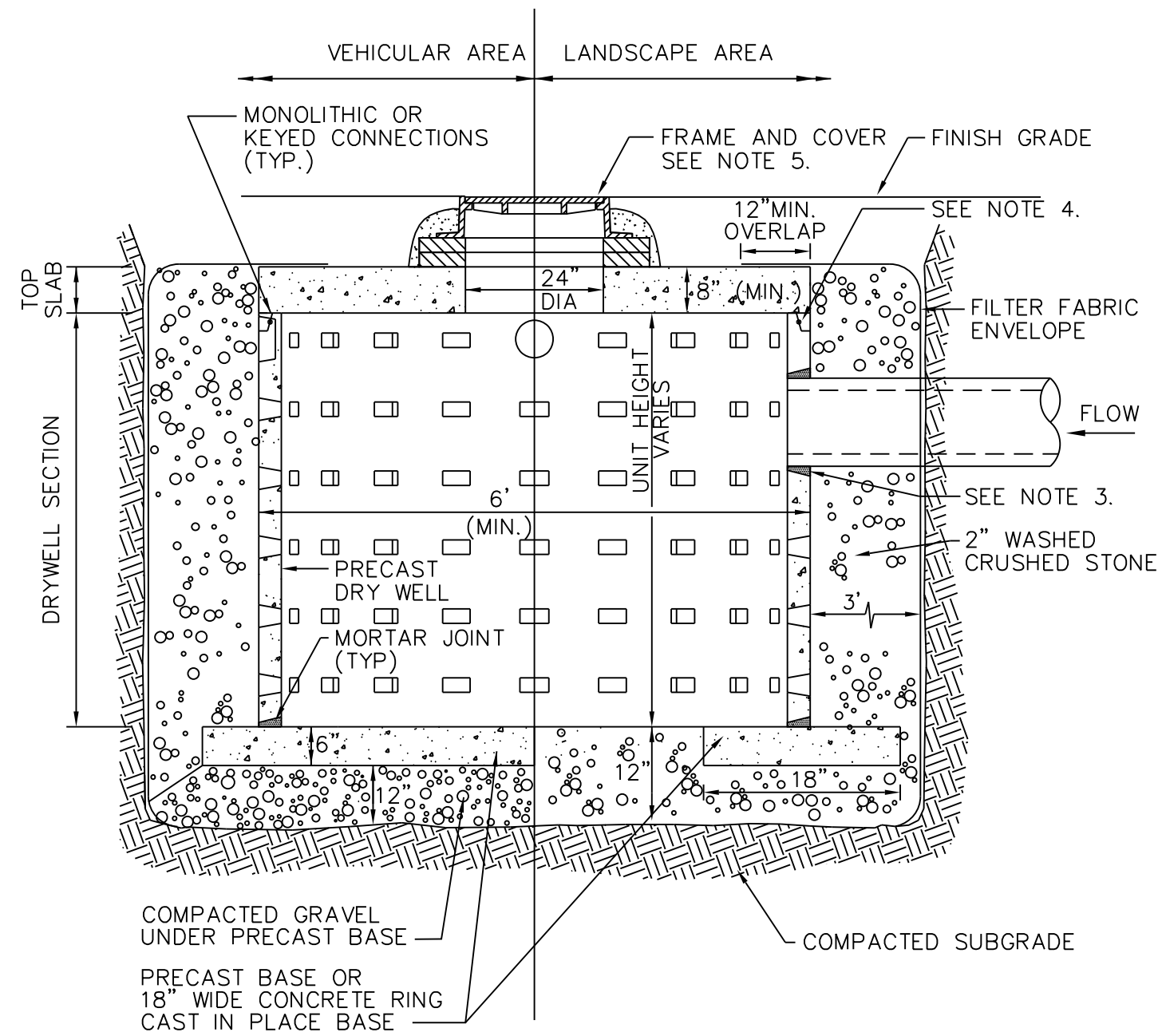
PROJECT NUMBER: 57634

FILE NAME: z57634LegendSheet.dgn  
PROJECT LEADER: M.A. COLGAN  
DESIGNED BY: VTRANS  
CONVENTIONAL SYMBOLOLOGY LEGEND

PLOT DATE: 7/25/2014  
DRAWN BY: D.A. GINGRAS  
CHECKED BY: G. BAKOS  
SHEET 2 OF 59





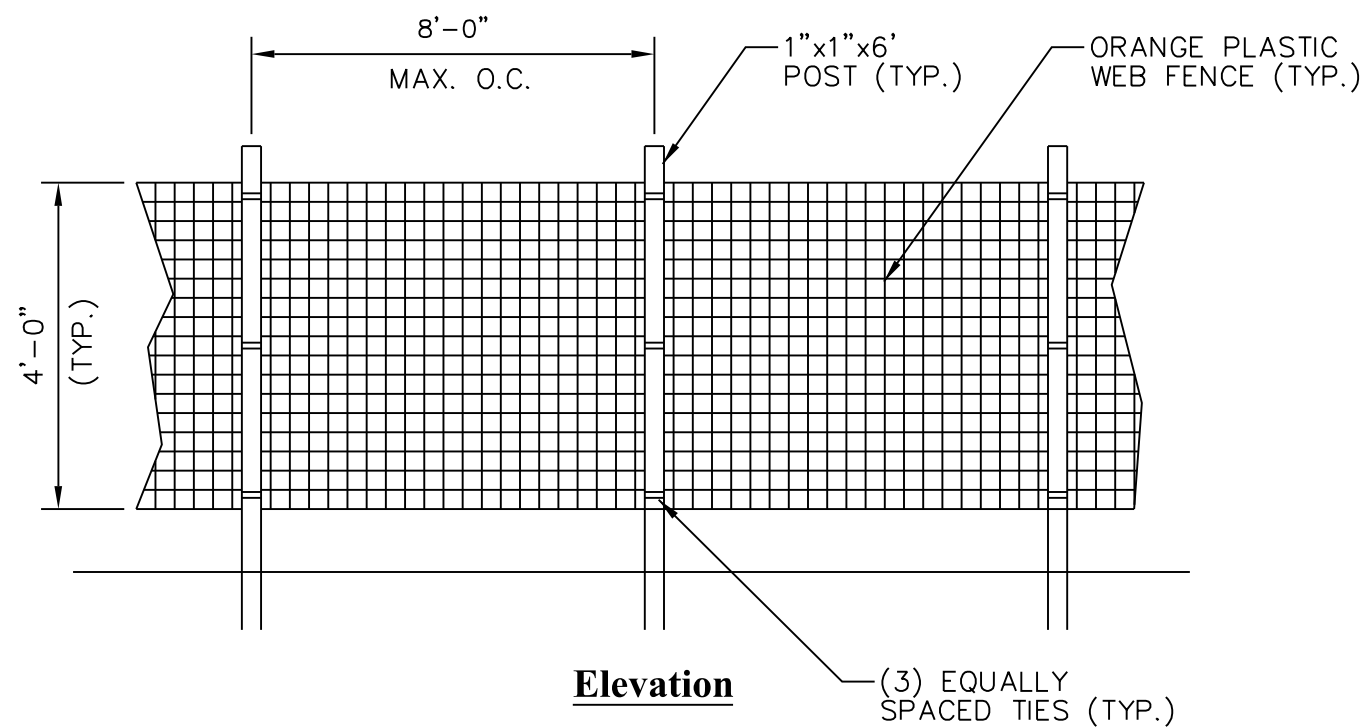


**Notes:**

1. BASE SECTION SHALL BE PRECAST CONCRETE WITH MORTARED JOINTS OR CAST IN PLACE.
2. ALL COMPONENTS SHALL BE DESIGNED FOR HS-20 LOADING.
3. PROVIDE PRECAST OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
5. FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSE MINIMUM, 5 BRICK COURSE MAXIMUM)

**Leaching Chamber**

N.T.S. Source: VHB 2/09 LD_180

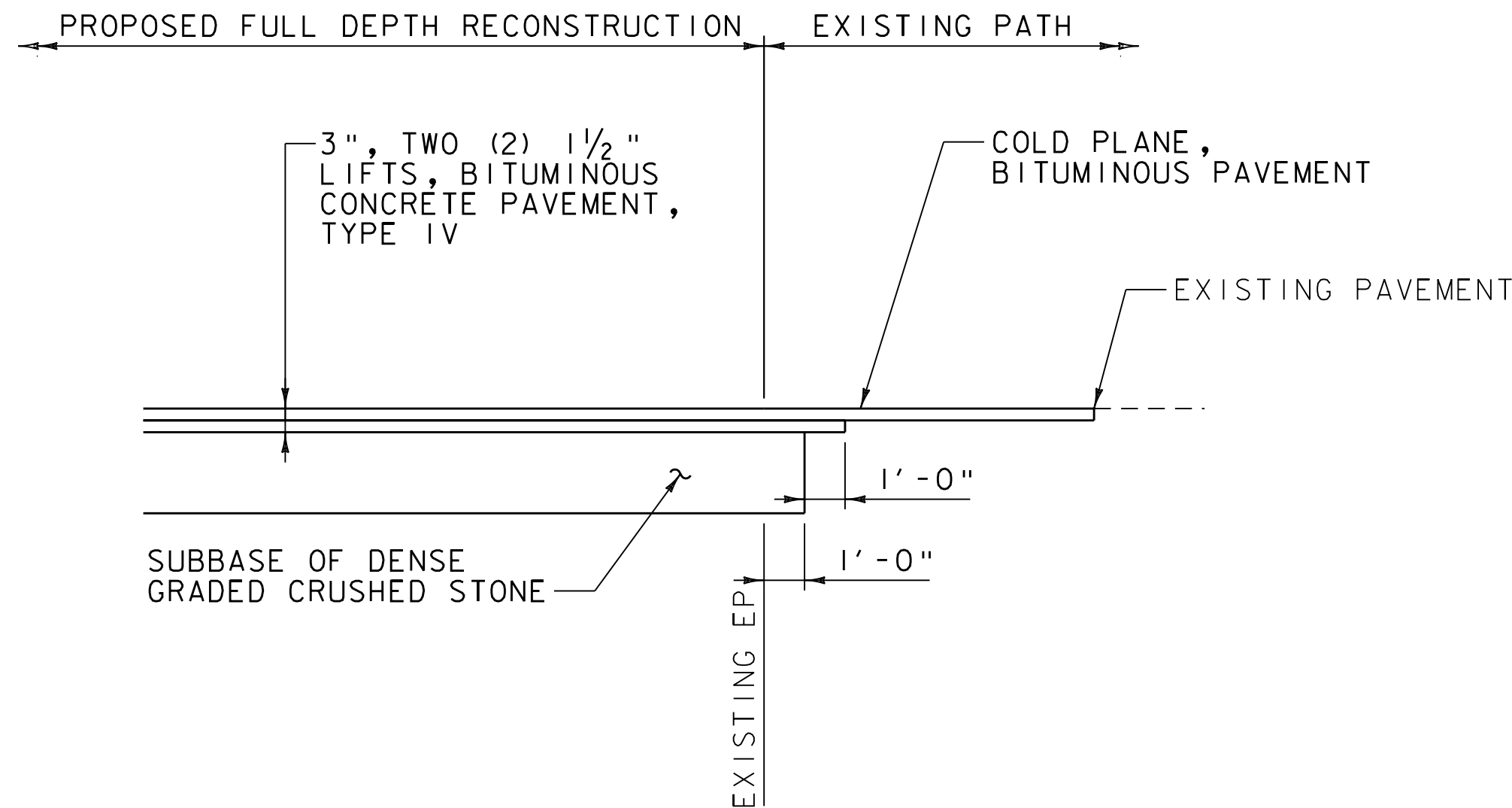


**Notes:**

1. INSTALL TREE PROTECTION FENCE AS SHOWN IN PLANS.

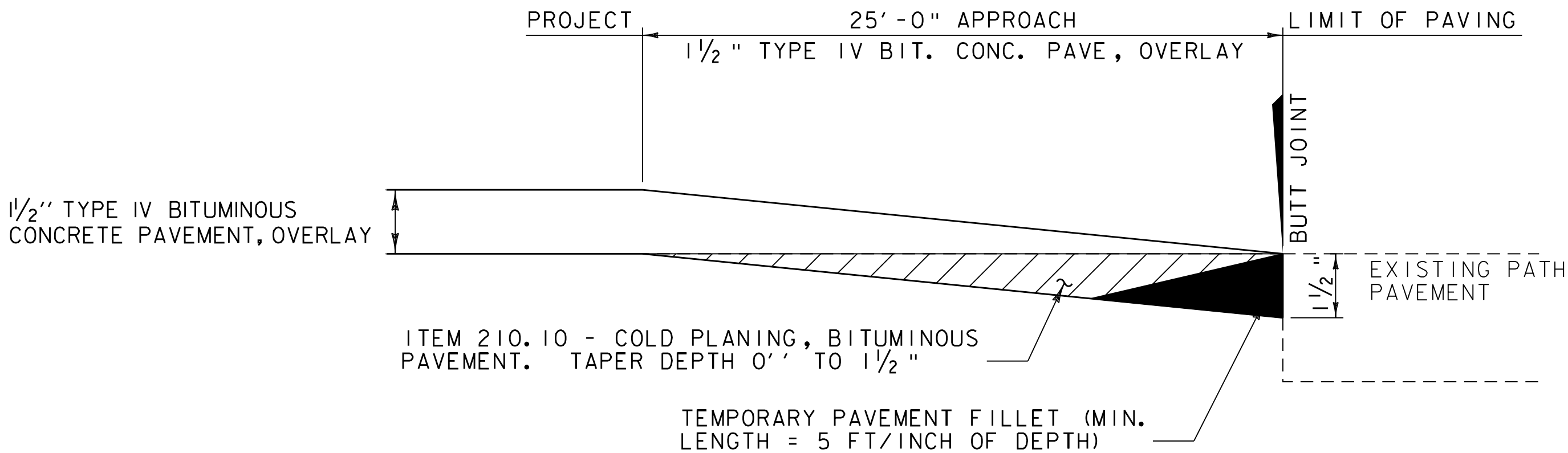
**Tree Protection Fence**

N.T.S. Source: VHB 7/13 LD_610



**BIKE PATH LONGITUDINAL TRANSITION**

NOT TO SCALE



**OVERLAY PAVEMENT MATCH TRANSITION DETAIL**

NOT TO SCALE

PROJECT NAME: BURLINGTON BIKE PATH

PROJECT NUMBER: 57634.00

FILE NAME: z57634det.dgn  
PROJECT LEADER: M.A. COLGAN  
DESIGNED BY: E.B. PARIZO  
MISCELLANEOUS DETAILS

PLOT DATE: 7/25/2014  
DRAWN BY: E.B. PARIZO  
CHECKED BY: M.J. SERVETAS  
SHEET 6 OF 59





PROJECT NOTES

GENERAL

- 1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS.
- 2. PER ADA GUIDELINES, PATH CROSS SLOPES SHALL NOT EXCEED 2%.
- 3. ALL SHARED USE PATH LONGITUDINAL RAMPS AT ROADWAY AND DRIVEWAY CROSSINGS SHALL NOT EXCEED 5%.
- 4. ALL EXISTING PAVED SURFACES CALLED OUT FOR REMOVAL ON THE LAYOUT PLANS SHALL BE REPLACED WITH 6” OF TOPSOIL & SEED, UNLESS OTHERWISE NOTED ON THE PLANS.
- 5. ALL EXISTING TREES WITHIN THE PROPOSED CONSTRUCTION LIMITS SHALL BE SAVED UNLESS OTHERWISE NOTED IN THE PLANS. TREE REMOVAL SHALL BE PAID FOR UNDER THE APPROPRIATE CONTRACT ITEMS.
- 6. ANY WASTE MATERIAL SHALL BE REMOVED AND HAULED TO A PREVIOUSLY APPROVED FACILITY.

CONSTRUCTION

- 7. THE CONTRACTOR SHALL ERECT, MAINTAIN, REMOVE, AND/OR RESET AS REQUIRED ALL ON-PROJECT CONSTRUCTION SIGNS AND BARRICADES. ALL SIGNS AND BARRICADES SHALL BE INSPECTED AND REPAIRED DAILY. ALL SIGNS AND BARRICADES SHALL CONFORM TO THE LATEST VERSION OF THE MUTCD AND SHALL BE CLEANED OF DUST AND DEBRIS WEEKLY.
- 8. ANY EXISTING SIGNS NOT REUSED SHALL REMAIN THE PROPERTY OF THE CITY OF BURLINGTON. THESE SIGNS SHALL BE REMOVED BY THE CONTRACTOR AND STOCKPILED FOR REMOVAL BY THE CITY. STOCKPILE LOCATION TO BE DETERMINED BY THE CITY.
- 9. FULL ACCESS TO ALL DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. IF FULL ACCESS CANNOT BE MAINTAINED, THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH THE BUSINESS OR PROPERTY OWNER AT LEAST 24 HOURS IN ADVANCE OF TEMPORARILY CLOSING OFF THE ACCESS.
- 10. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL BURIED AND AERIAL UTILITIES AND POLES PRIOR TO STARTING WORK. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY OWNERS TO CONFIRM ACTUAL LOCATIONS PRIOR TO CONSTRUCTION.

DIG-SAFE (1-888-344-7233)

CONTRACTOR SHALL COORDINATE THE ADJUSTMENT OF ANY EXISTING GATE VALVES WITH THE OWNER OF THE GAS LINES. ADJUSTMENT OF GAS VALVES SHALL BE DONE BY THE GAS COMPANY.

- 11. THE FOLLOWING IS A LIST OF CONTACTS THE CONTRACTOR SHALL NOTIFY AT LEAST SEVEN (7) FULL BUSINESS DAYS PRIOR TO EXCAVATING:

CITY OF BURLINGTON:  
JESSE BRIDGES, DIRECTOR OF PARKS AND RECREATION/HARBOR MASTER;  
(802) 865-7557  
JEN FRANCIS, BURLINGTON BIKE PATH REHABILITATION PROJECT MANAGER;  
(802) 865-7248

- 12. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS, STATE AND LOCAL REQUIREMENTS.
- 13. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- 14. IN THE EVENT CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE RESIDENT ENGINEER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
- 15. DAMAGE RESULTING FROM CONTRACTOR CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
- 16. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION AS PER THE THE EPSC PLANS AND THE ANR LOW RISK HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, ANDSHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.

UTILITY

- 17. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR DESIGN ENGINEER HAVE NOT INDEPENDENTLY VERIFIED ALL OF THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY. EXPLORATORY EXCAVATION SHALL BE PAID FOR UNDER ITEM 204.22 - TRENCH EXCAVATION OF EARTH, EXPLORATORY.
- 18. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY

- 19. DETERMINED AND THE INFORMATION FURNISHED IN WRITING TO THE RESIDENT ENGINEER FOR THE RESOLUTION OF THE CONFLICT.
- 20. SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GENERAL PLANS, CROSS SECTIONS AND DRAINAGE NOTES.
- 21. RIM ELEVATIONS FOR DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE PULL BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
  - A. PAVEMENTS AND CONCRETE SURFACES: FLUSH
  - B. ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
  - C. LANDSCAPE, TOPSOIL AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION
- 22. THE USE OF BRICK AND MORTAR TO ADJUST THE ELEVATION OF DRAINAGE OR SANITARY STRUCTURES IS PROHIBITED. ALL ELEVATION ADJUSTMENTS SHALL BE MADE USING EITHER GRADE RINGS OR A SYNTHETIC RISER.
- 23. ALL CONNECTIONS BETWEEN PRECAST DRAINAGE STRUCTURES AND NEW DRAINAGE PIPES SHALL BE A BOOTED CONNECTION.
- 24. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND ADJUSTING ALL CURB STOPS, WATER VALVES, MANHOLES, & DRAINAGE STRUCTURES WITHIN THE PROJECT LIMITS TO THE FINAL GRADE ELEVATION. PAYMENT FOR ADJUSTMENTS SHALL BE PAID FOR UNDER THE APPROPRIATE CONTRACT PAY ITEMS.

TRAFFIC CONTROL

- 25. PLEASE SEE TRAFFIC CONTROL PLANS FOR ALL NOTES PERTAINING TO TRAFFIC CONTROL.

EROSION PREVENTION AND SEDIMENT CONTROL

- 26. EPSC MEASURES SHALL BE INSTALLED PURSUANT TO THE CONSTRUCTION PHASE STORMWATER DISCHARGE PERMIT FOR THE PROJECT, THE EPSC PLAN, THE VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL (2006, AMENDED 2008), THE LOW RISK SITE HANDBOOK, AND OTHER RELEVANT PROJECT PERMITS.
- 27. PROJECT CONSTRUCTED SHALL BE INSPECTED PER SECTION 2.12 OF THE LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL.
- 28. CONSTRUCTION DEMARCATION AND PERIMETER CONTROLS SHALL COMPLY WITH THE FOLLOWING:

CONSTRUCTION DEMARCATION:

- A. CONSTRUCTION DEMARCATION TO BE INSTALLED ALONG PERIMETER OF LIMITS OF DISTURBANCE PER THE EPSC PLAN.
- B. DEMARCATION IS NOT TO CROSS ACTIVE ACCESS ROUTES.
- C. WITHIN 50 FEET OF A WATER RESOURCE AREA, DEMARCATION MUST INCLUDE:
  - i. 2 TO 3 ROWS OF STAKED, STAPLED, OR TIED 3-INCH ORANGE BARRIER MESH TAPE,
  - ii. ORANGE CONSTRUCTION FENCE, OR
  - iii. ORANGE SNOW FENCE.
- D. GREATER THAN 50 FEET FROM A WATER RESOURCE AREA, DEMARCATION MAY INCLUDE:
  - i. ONE ROW OF STAKED (OR STAPLED) 3 INCH ORANGE BARRIER MESH TAPE, OR
  - ii. ORANGE FLAGGING.

PERIMETER CONTROLS:

- A. PERIMETER CONTROLS ARE TO BE INSTALLED ON THE DOWNSLOPE SIDE OF AREAS OF DISTURBANCE WHERE THERE IS POTENTIAL FOR SEDIMENT RUNOFF AND/OR SOIL EROSION.
- B. PERIMETER CONTROLS ARE NOT TO CROSS ACTIVE ACCESS ROUTES OR PERENNIAL FLOW PATHS (E.G., A STREAM).
- C. WITHIN 50 FEET OF A WATER RESOURCE AREA, PERIMETER CONTROLS MUST INCLUDE:
  - i. REINFORCED SILT FENCE - TO BE REINFORCED WITH WIRE MESH, STAKED HAYBALES, STAKED FIBER ROLLS.
- D. GREATER THAN 50 FEET FROM A WATER RESOURCE AREA, PERIMETER CONTROLS MAY INCLUDE:
  - i. SILT FENCE (NON-REINFORCED)
  - ii. STAKED AND KEYED-IN FIBER ROLLS
- E. PERIMETER CONTROL MAY EXTEND BEYOND THE LIMITS OF DISTURBANCE IN THE CASE OF A DOWN-GRADIENT BASIN.

- 29. PROJECT DEMARCATION OF AN AREA SHALL BE INSTALLED PRIOR TO EARTH DISTURBING ACTIVITIES WITHIN THAT AREA. AN EXCEPTION IS LAND DISTURBANCE THAT MAY BE NEEDED TO ACCESS THE AREA WITH EQUIPMENT IN ORDER TO INSTALL EPSC MEASURES.
- 30. ANY STONE AND/OR GEOTEXTILE FABRIC THAT IS USED TO PROVIDE A STABILIZED SURFACE IN ACCESS ROUTES, LAYDOWN/STAGING AREAS, WORK SPACES, ETC., DURING CONSTRUCTION MUST BE REMOVED AND ANY EXPOSED SOIL STABILIZED ONCE AREAS ARE NO LONGER NEEDED.
- 31. STABILIZED CONSTRUCTION ENTRANCES SHALL BE MAINTAINED REGULARLY TO CONTROL EQUIPMENT AND VEHICLES FROM TRACKING MATERIAL OFF SITE AND ONTO ROADWAYS.
- 32. INSPECT ROADWAYS DAILY AND CONDUCT ROUTINE SWEEPING OF ROADWAYS AS NEEDED AND DIRECTED.
- 33. IN ADVANCE OF FORECASTED RAINFALL OR SNOWMELT, EPSC MEASURES SHALL BE INSPECTED AND REPAIRED, AS NEEDED.
- 34. TO THE EXTENT PRACTICABLE, SURFACE FLOW SHALL BE DIVERTED AWAY FROM EXPOSED SOILS.
- 35. DUST CONTROL SHALL BE HANDLED VIA WATER OR CALCIUM CHLORIDE APPLICATION TO ROADWAYS AND OTHER AREAS WHERE DUST MAY BE GENERATED.

- 36. DURING REGULAR CONSTRUCTION SEASON (APRIL 15 TO OCTOBER 15), ALL AREAS OF EARTH DISTURBANCE MUST BE STABILIZED WITHIN 7 DAYS OF INITIAL DISTURBANCE. AFTER THIS INITIAL 7-DAY PERIOD, ALL EARTH DISTURBANCE AREAS MUST BE STABILIZED BY THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:
  - A. WORK IS TO CONTINUE IN THAT AREA WITHIN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST FOR THE NEXT 24 HOURS.
  - B. WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION (I.E., NO OUTLET FOR STORMWATER) WITH A DEPTH OF 2 FEET OR GREATER (E.G., UNDERGROUND LINE INSTALLATION).
- 37. DURING WINTER CONSTRUCTION SEASON (OCTOBER 15 TO APRIL 15), ALL AREAS OF EARTH DISTURBANCE MUST BE STABILIZED BY THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:
  - A. WORK IS TO CONTINUE IN THAT AREA WITHIN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST FOR THE NEXT 24 HOURS.
  - B. WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION (I.E., NO OUTLET FOR STORMWATER) WITH A DEPTH OF 2 FEET OR GREATER (E.G., UNDERGROUND LINE INSTALLATION).
- 38. TEMPORARY STABILIZATION OF EXPOSED SOILS SHALL GENERALLY BE ACHIEVED BY MULCH (E.G., HAY/STRAW, COMPOST, WOOD CHIPS, WOOD STUMP GRINDINGS, AND/OR EROSION CONTROL MIX), SEED AND MULCH, AND/OR HYDROSEEDING WITH MULCH TACKIFIER TO PROVIDE COMPLETE COVER AT LEAST UNTIL PERMANENT STABILIZATION.
- 39. PERMANENT STABILIZATION OF EXPOSED SOILS SHALL BE ACHIEVED BY 70% VEGETATIVE COVER, STONE, ASPHALT, BEDROCK, OR OTHER PERMANENT MATERIAL (E.G., WOOD CHIPS) THAT PROVIDES COMPLETE COVER.
- 40. ALL TEMPORARY EPSC MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY EPSC MEASURES ARE NO LONGER NEEDED.

PROJECT NAME: BURLINGTON BIKE PATH

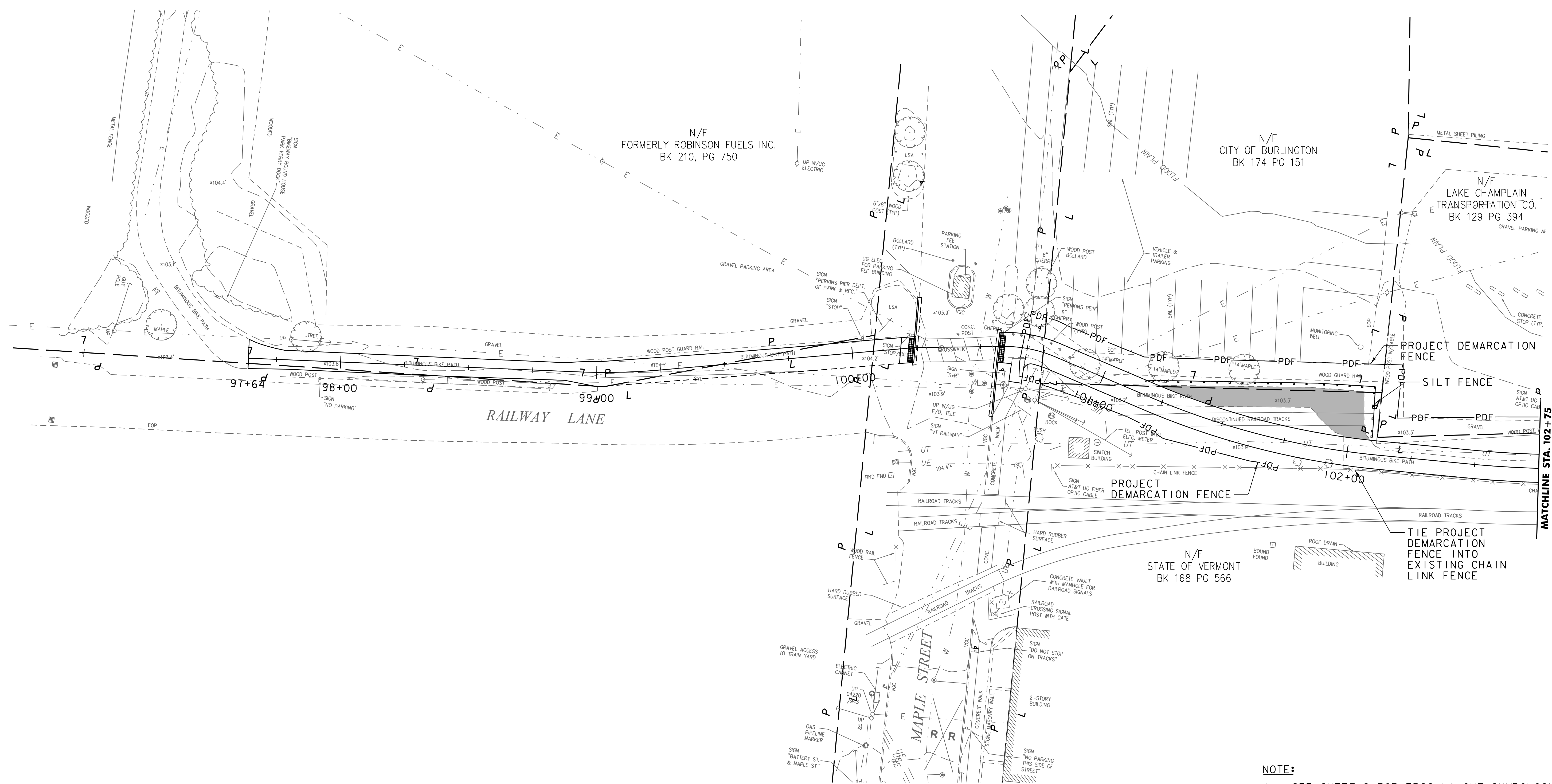
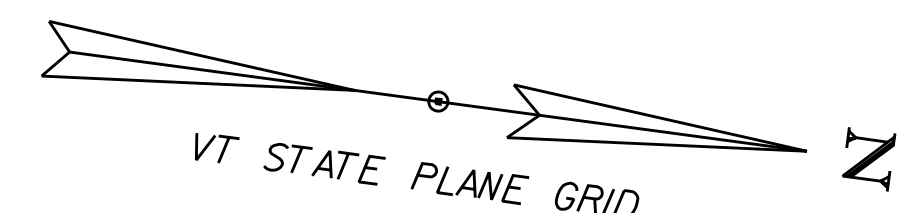
PROJECT NUMBER: 57634.00

FILE NAME: z57634pn.dgn  
PROJECT LEADER: M.A. COLGAN  
DESIGNED BY: D.A. GINGRAS  
PROJECT NOTES

PLOT DATE: 7/25/2014  
DRAWN BY: D.A. GINGRAS  
CHECKED BY: G.L. BAKOS  
SHEET 7 OF 59







SCALE 1" = 20'-0"  
20 0 20

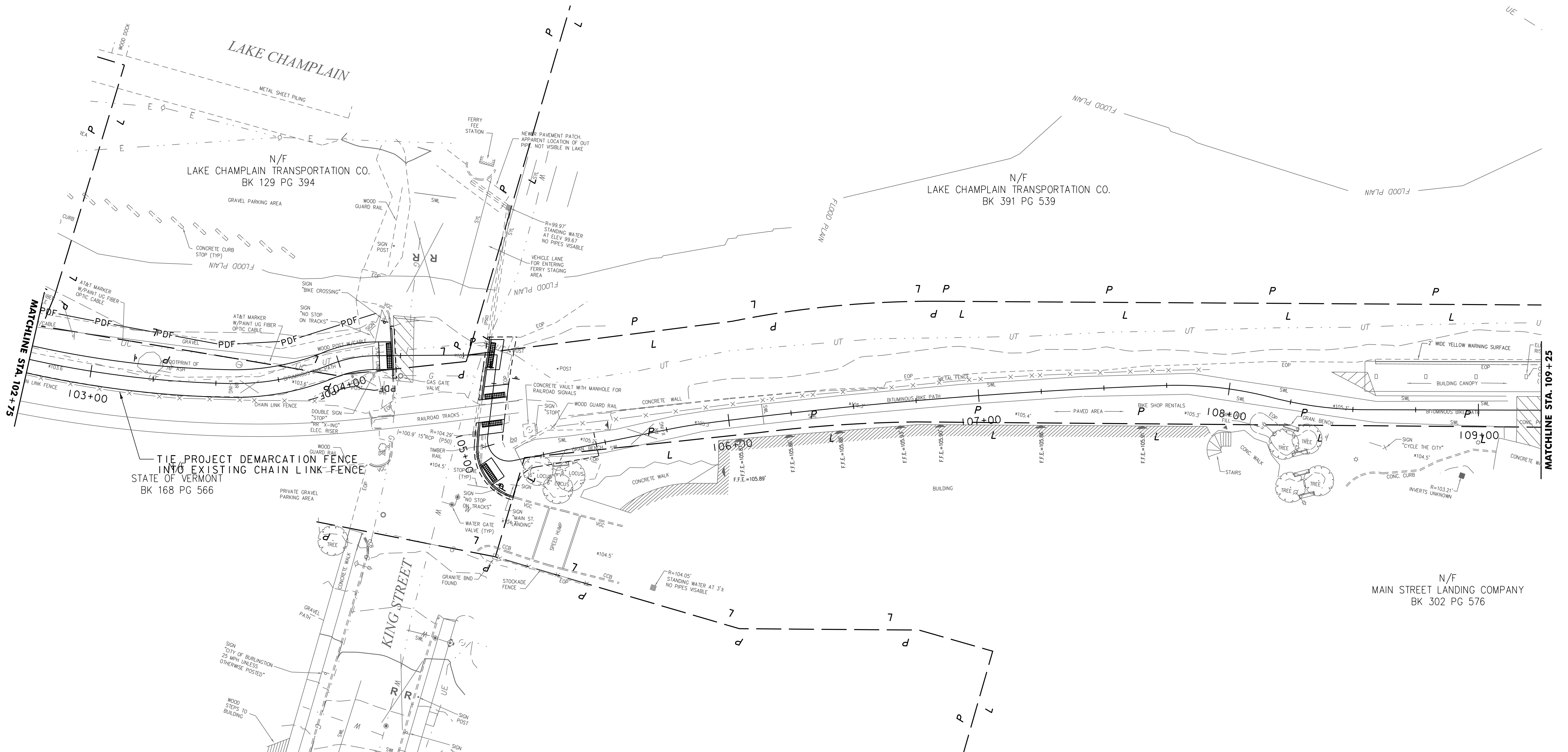
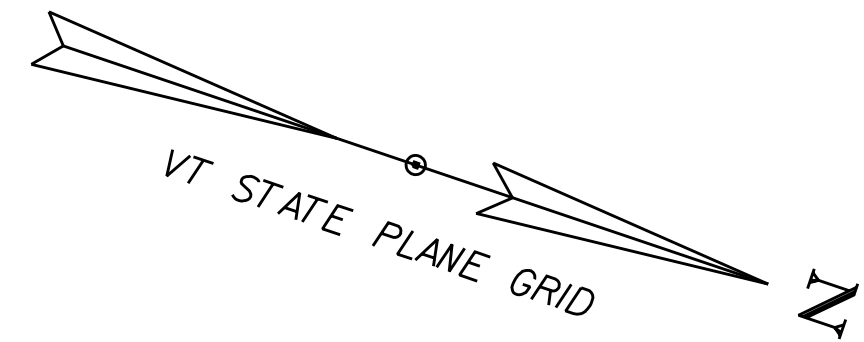
NOTE:  
1. SEE SHEET 2 FOR EPSC LAYOUT SYMBOLOLOGY LEGEND.

PROJECT NAME: BURLINGTON BIKE PATH  
PROJECT NUMBER: 57634.00

FILE NAME: z57634bdr_ero.dgn	PLOT DATE: 7/25/2014
PROJECT LEADER: M.A. COLGAN	DRAWN BY: D.A. GINGRAS
DESIGNED BY: D.A. GINGRAS	CHECKED BY: M.A. COLGAN
EPSC CONSTRUCT. CONDITIONS PLAN (1 OF 6)	SHEET 51 OF 59





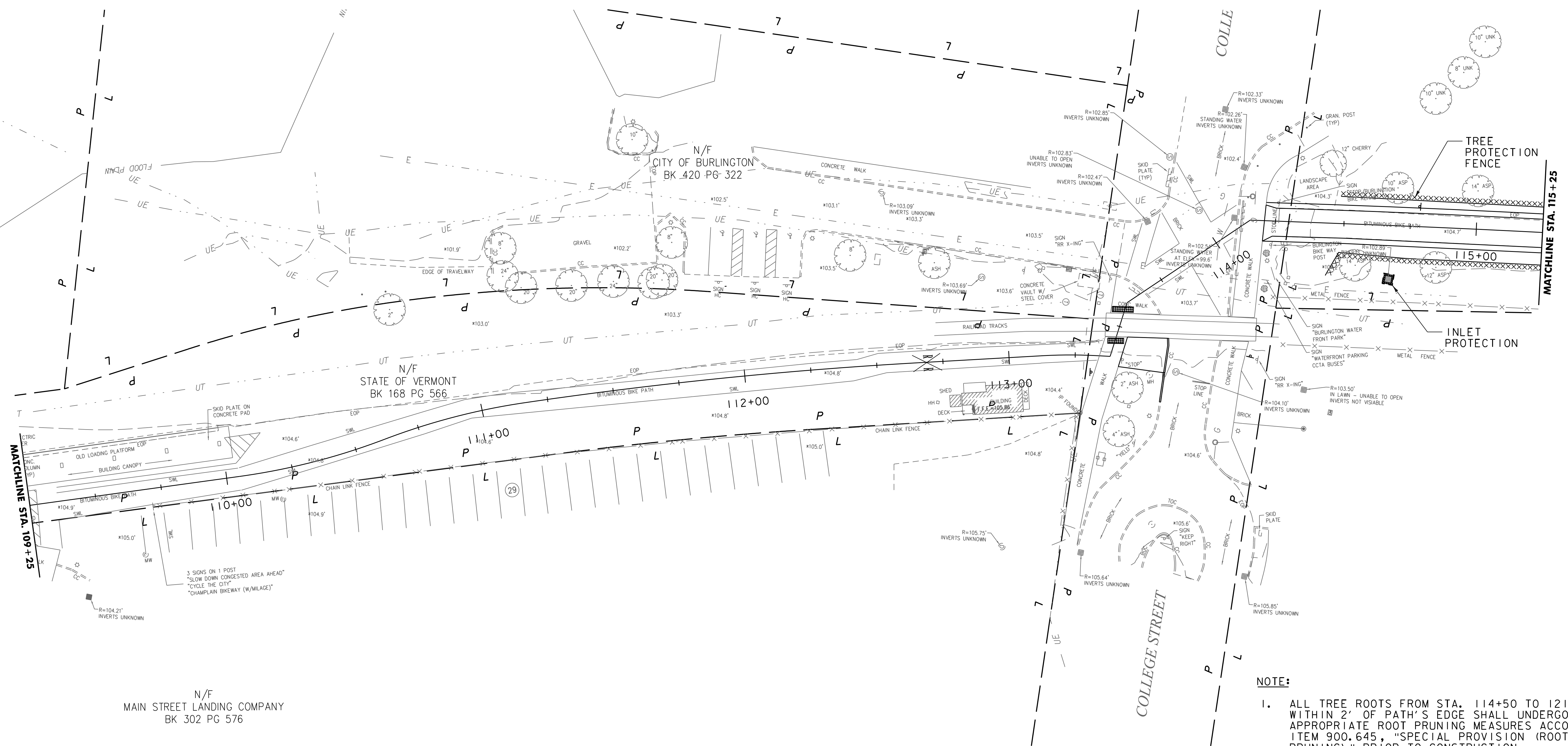
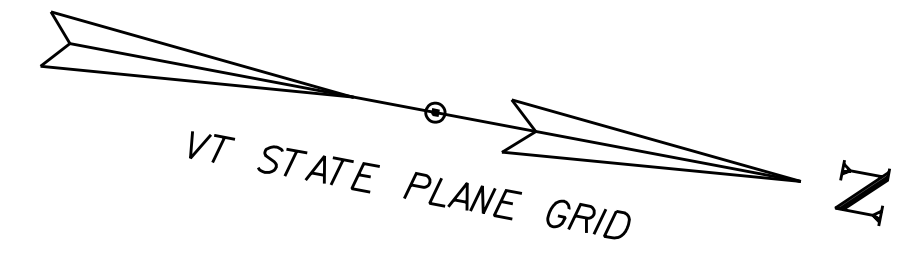


SCALE 1" = 20'-0"  
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PROJECT NAME: BURLINGTON BIKE PATH	
PROJECT NUMBER: 57634.00	
FILE NAME: z57634bdr_ero.dgn	PLOT DATE: 7/25/2014
PROJECT LEADER: M.A. COLGAN	DRAWN BY: D.A. GINGRAS
DESIGNED BY: D.A. GINGRAS	CHECKED BY: M.A. COLGAN
EPSC CONSTRUCT. CONDITIONS PLAN (2 OF 6) SHEET 52 OF 59	





**NOTE:**

1. ALL TREE ROOTS FROM STA. 114+50 TO 121+75 WITHIN 2' OF PATH'S EDGE SHALL UNDERGO APPROPRIATE ROOT PRUNING MEASURES ACCORDING TO ITEM 900.645, "SPECIAL PROVISION (ROOT PRUNING)" PRIOR TO CONSTRUCTION.

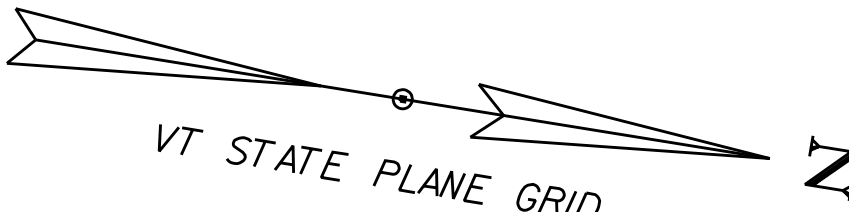
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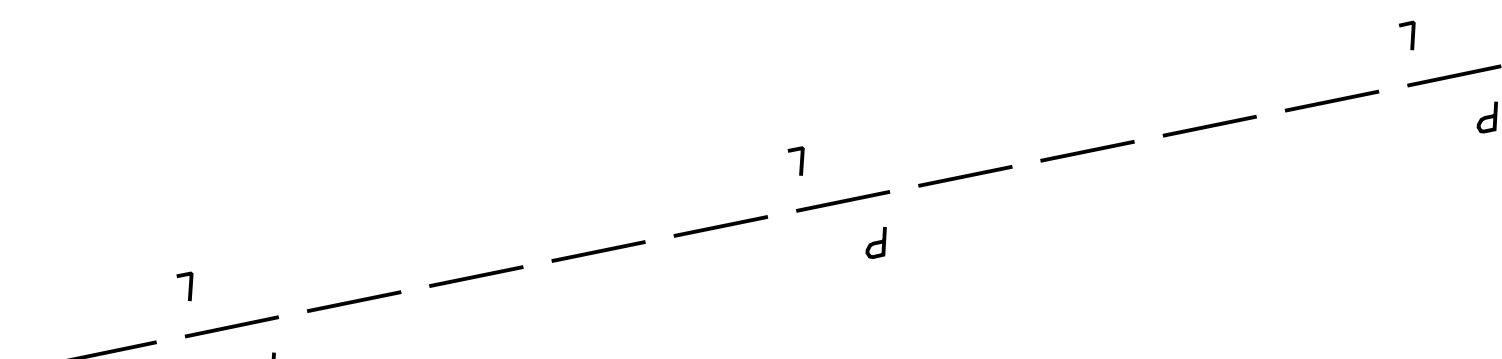
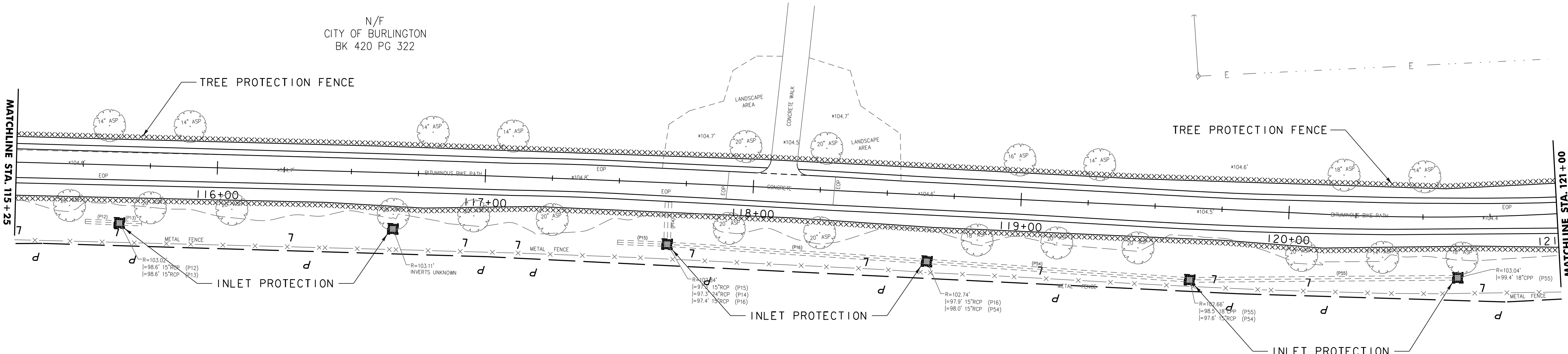
PROJECT NAME: BURLINGTON BIKE PATH	
PROJECT NUMBER: 57634.00	
FILE NAME: z57634bdr_ero.dgn	PLOT DATE: 7/25/2014
PROJECT LEADER: M.A. COLGAN	DRAWN BY: D.A. GINGRAS
DESIGNED BY: D.A. GINGRAS	CHECKED BY: M.A. COLGAN
EPSC CONSTRUCT. CONDITIONS PLAN (3 OF 6) SHEET 53 OF 59	





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CITY OF BURLINGTON  
BK 420 PG 322



SCALE 1" = 20'-0"  
20 0 20

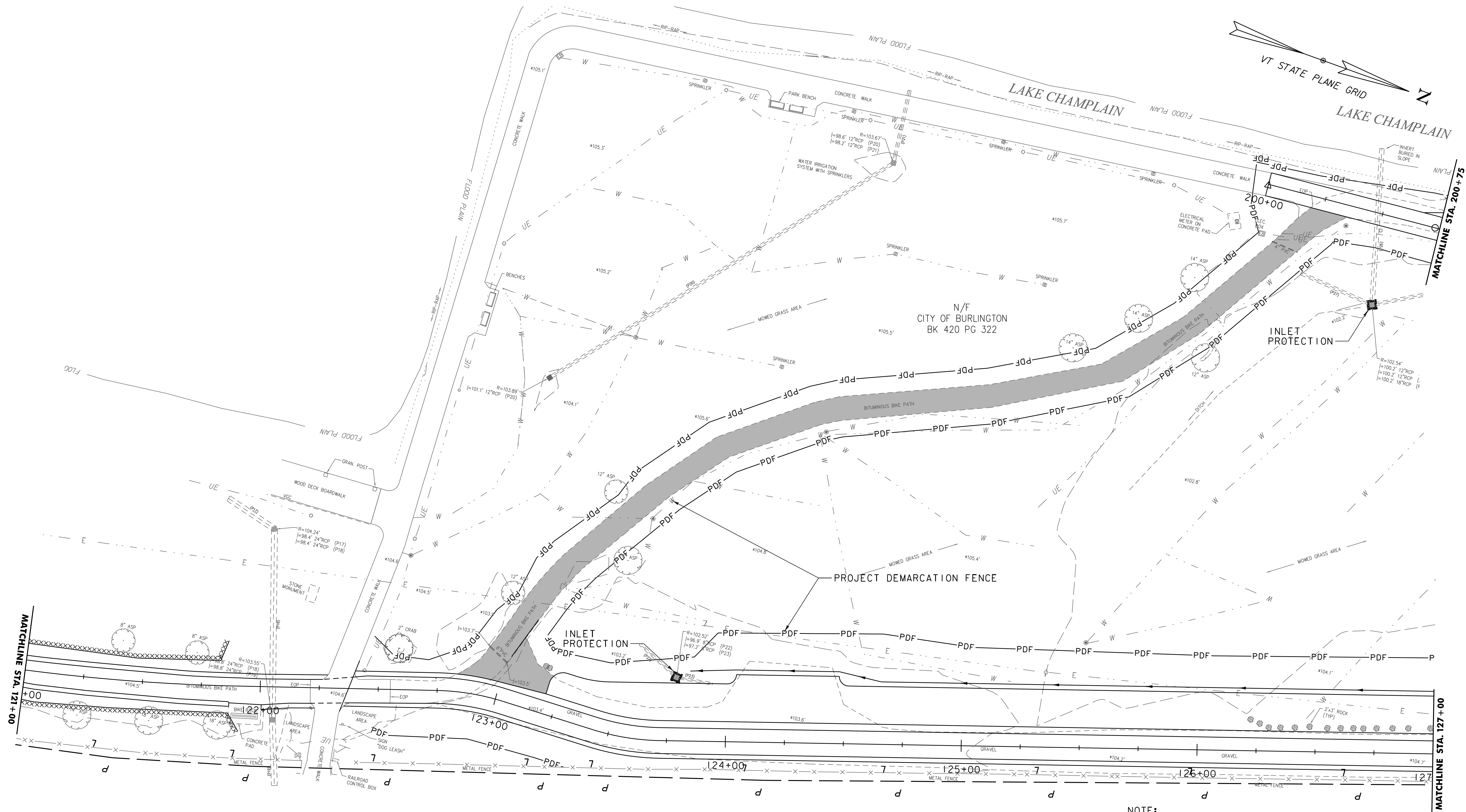
**NOTE:**

1. ALL TREE ROOTS FROM STA. 114+50 TO 121+75 WITHIN 2' OF PATH'S EDGE SHALL UNDERGO APPROPRIATE ROOT PRUNING MEASURES ACCORDING TO ITEM 900.645, "SPECIAL PROVISION (ROOT PRUNING)" PRIOR TO CONSTRUCTION.

PROJECT NAME: BURLINGTON BIKE PATH	
PROJECT NUMBER: 57634.00	
FILE NAME: z57634bdr_ero.dgn	PLOT DATE: 7/25/2014
PROJECT LEADER: M.A. COLGAN	DRAWN BY: D.A. GINGRAS
DESIGNED BY: D.A. GINGRAS	CHECKED BY: M.A. COLGAN
EPSC CONSTRUCT. CONDITIONS PLAN (4 OF 6) SHEET 54 OF 59	







NOTE:

- ALL TREE ROOTS FROM STA. 114+50 TO 121+75 WITHIN 2' OF PATH'S EDGE SHALL UNDERGO APPROPRIATE ROOT PRUNING MEASURES ACCORDING TO ITEM 900.645, "SPECIAL PROVISION (ROOT PRUNING)" PRIOR TO CONSTRUCTION.

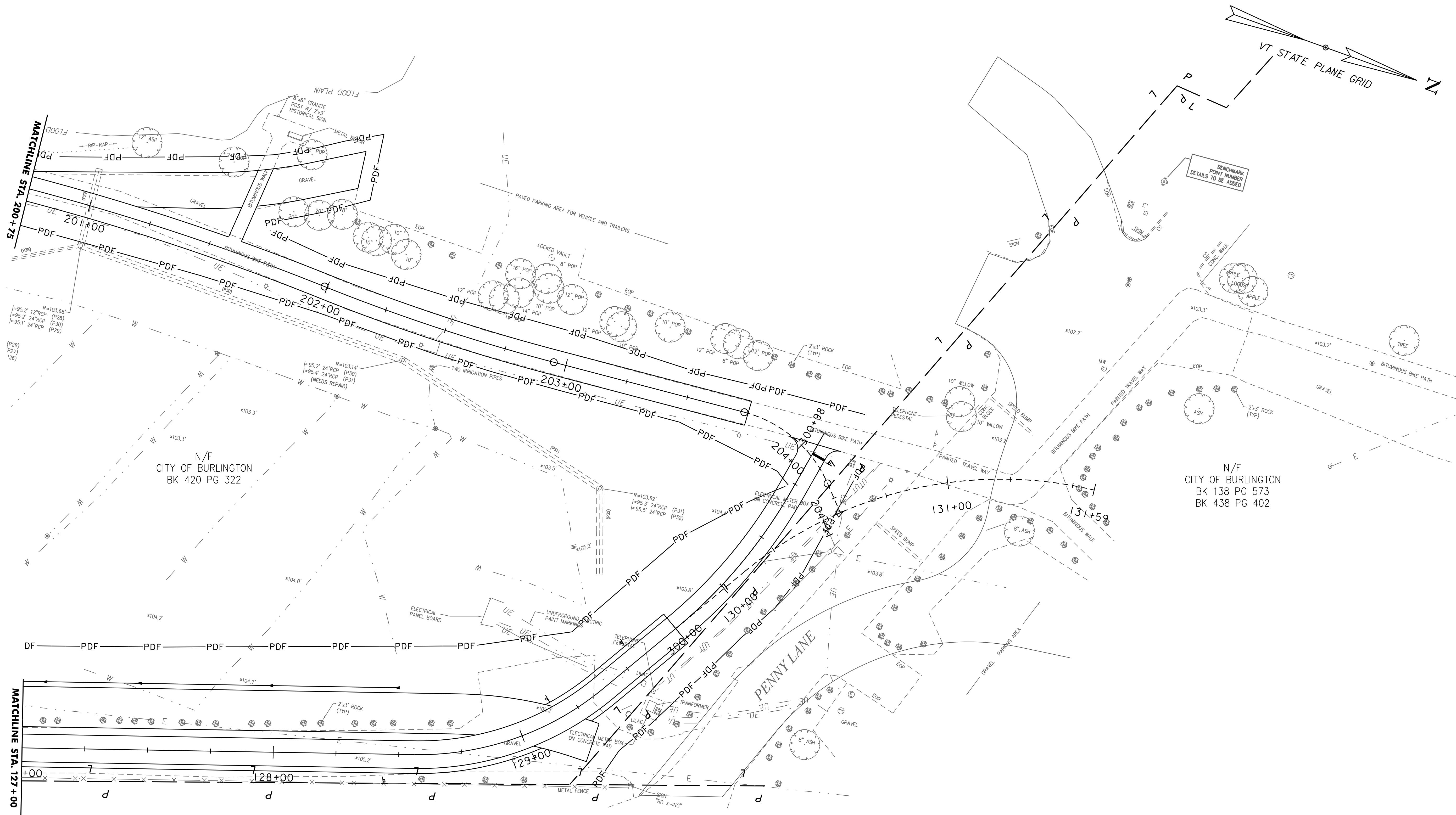
SCALE 1" = 20'-0"

20 0 20



PROJECT NAME: BURLINGTON BIKE PATH	
PROJECT NUMBER: 57634.00	
FILE NAME: z57634bdr_ero.dgn	PLOT DATE: 7/25/2014
PROJECT LEADER: M.A. COLGAN	DRAWN BY: D.A. GINGRAS
DESIGNED BY: D.A. GINGRAS	CHECKED BY: M.A. COLGAN
EPSC CONSTRUCT. CONDITIONS PLAN (5 OF 6) SHEET 55 OF 59	



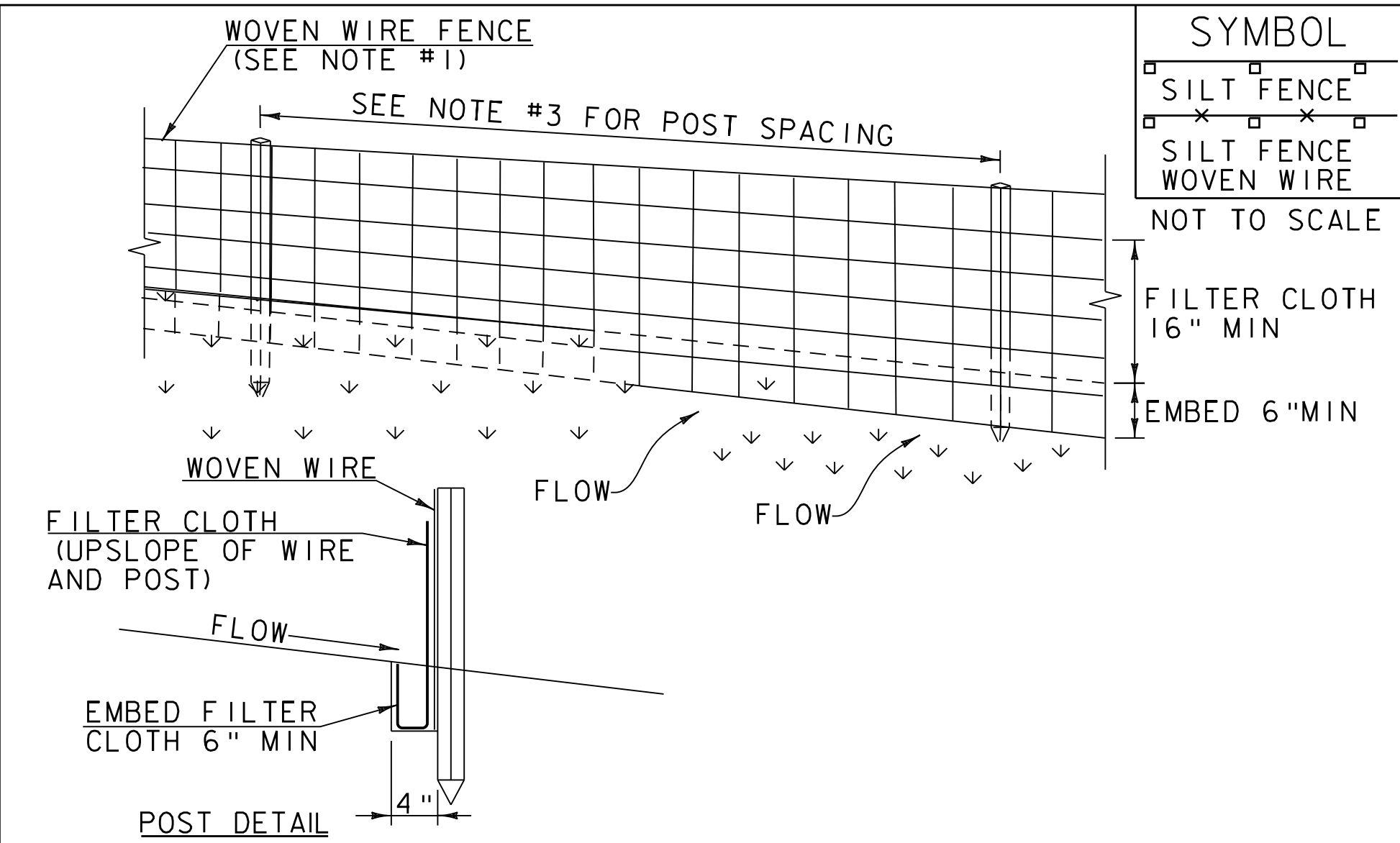


SCALE 1" = 20'-0"  
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PROJECT NAME: BURLINGTON BIKE PATH	
PROJECT NUMBER: 57634.00	
FILE NAME: z57634bdr_ero.dgn	PLOT DATE: 7/25/2014
PROJECT LEADER: M.A. COLGAN	DRAWN BY: D.A. GINGRAS
DESIGNED BY: D.A. GINGRAS	CHECKED BY: M.A. COLGAN
EPSC CONSTRUCT. CONDITIONS PLAN (6 OF 6) SHEET 56 OF 59	





1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAF1100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

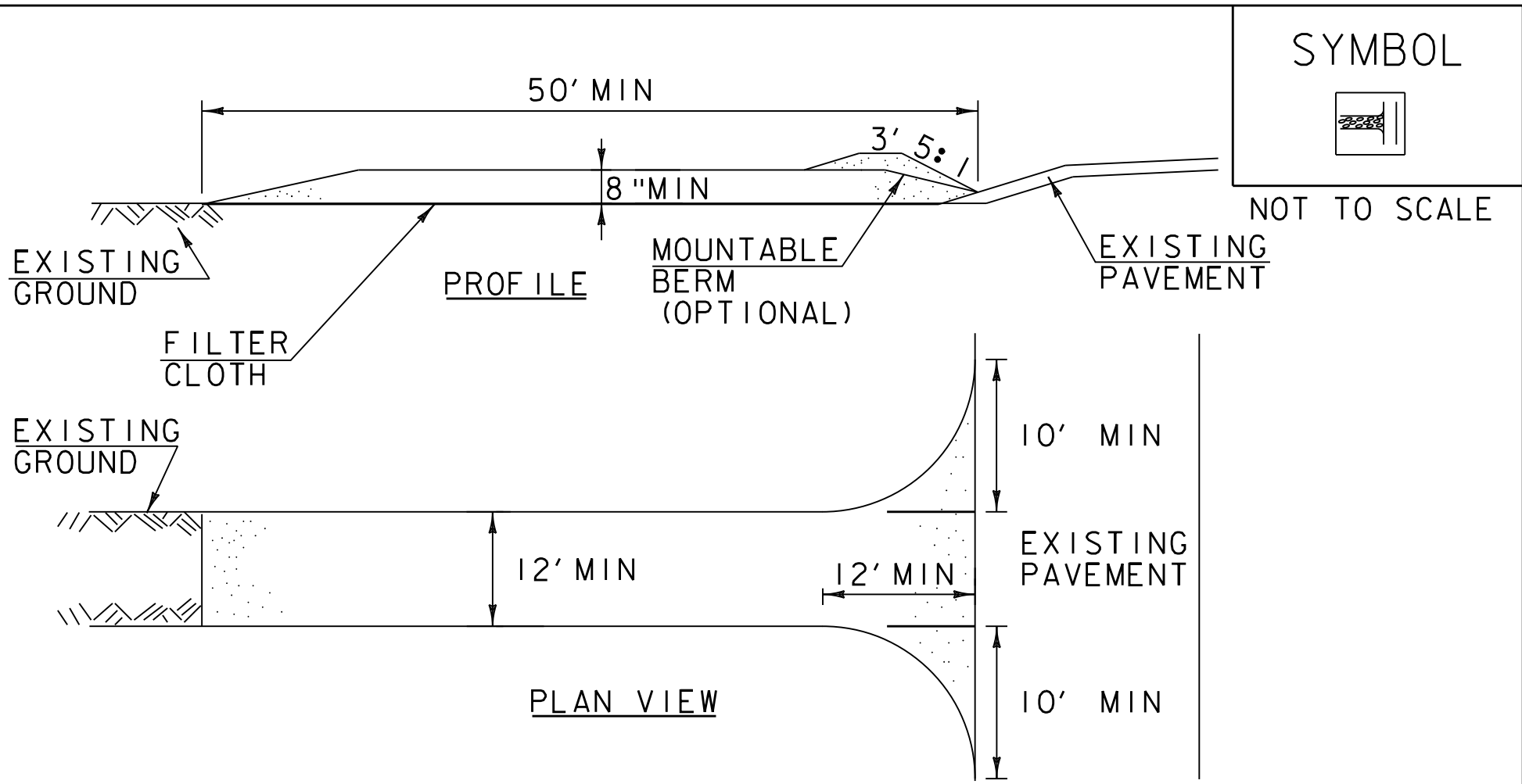
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS  
MARCH 21, 2008 WHF  
DECEMBER 11, 2008 WHF  
JANUARY 13, 2009 WHF



1. STONE SIZE- USE 1-4" STONE , RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
3. THICKNESS- NOT LESS THAN 8".
4. WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STABILIZED CONSTRUCTION ENTRANCE

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

REVISIONS  
MARCH 24, 2008 WHF  
JANUARY 13, 2009 WHF

VAOT RURAL AREA MIX					
		LBS/AC			
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
37.5%	22.5	45	CREEPING RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	BIRDSFOOT TREFOIL	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

VAOT URBAN AREA MIX					
		LBS/AC			
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

SOIL AMENDMENT GUIDANCE				
FERTILIZER		LIME		
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED	
10-20-10	FOLLOW	PELLETIZED	FOLLOW	
1000 <del>X</del> LBS/AC	MANUFACTURER	4 TONS/AC	MANUFACTURER	

1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 4 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
7. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
8. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR  
ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

REVISIONS  
JUNE 23, 2009 WHF  
JANUARY 15, 2010 WHF  
FEBRUARY 16, 2011 WHF

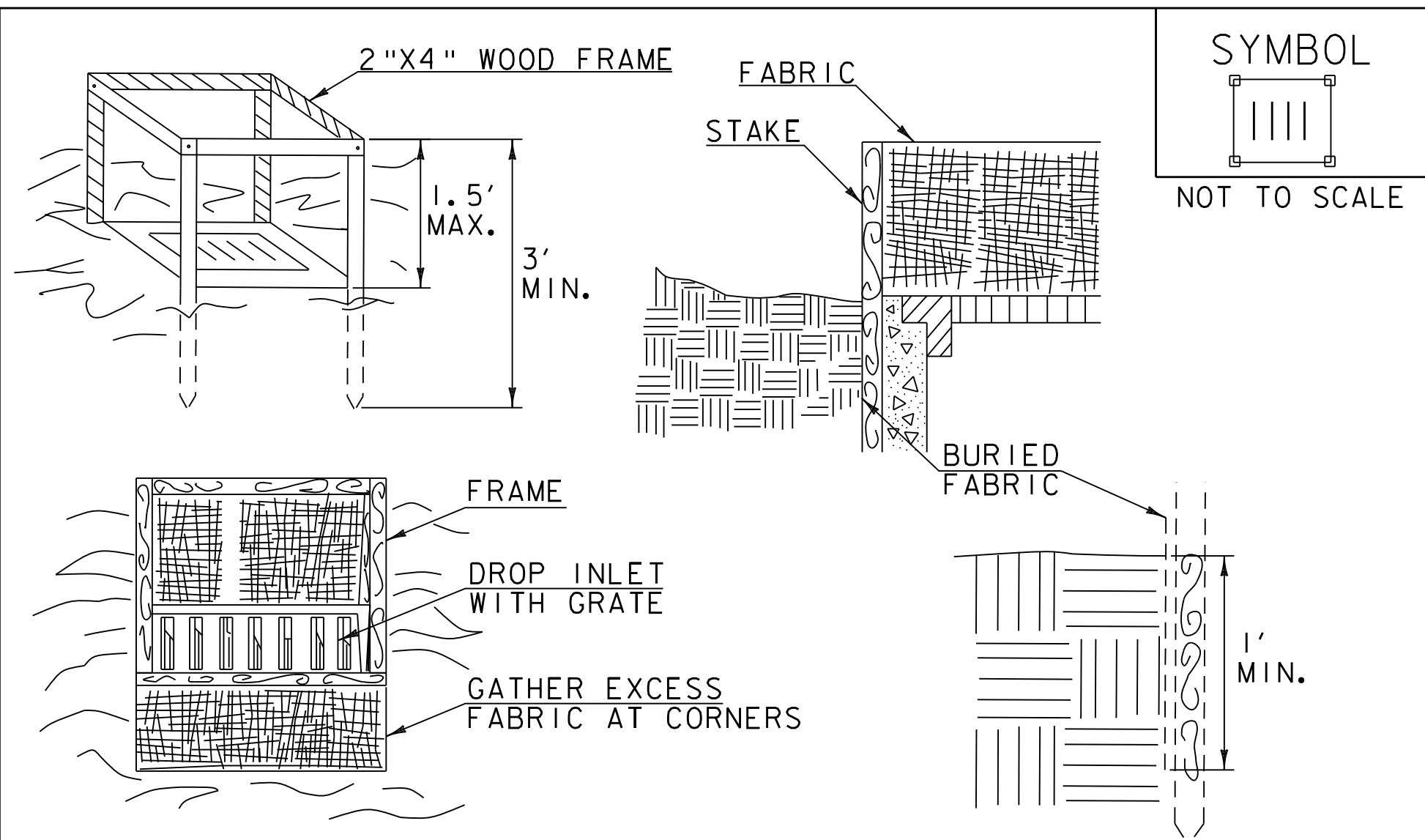
PROJECT NAME: BURLINGTON BIKE PATH  
PROJECT NUMBER: 57634.00

FILE NAME: z57634ero_details.dgn  
PROJECT LEADER: M.A. COLGAN  
DESIGNED BY: VTRANS  
EPSC DETAILS (1 OF 3)

PLOT DATE: 7/25/2014  
DRAWN BY: D.A. GINGRAS  
CHECKED BY: M.A. COLGAN  
SHEET 57 OF 59



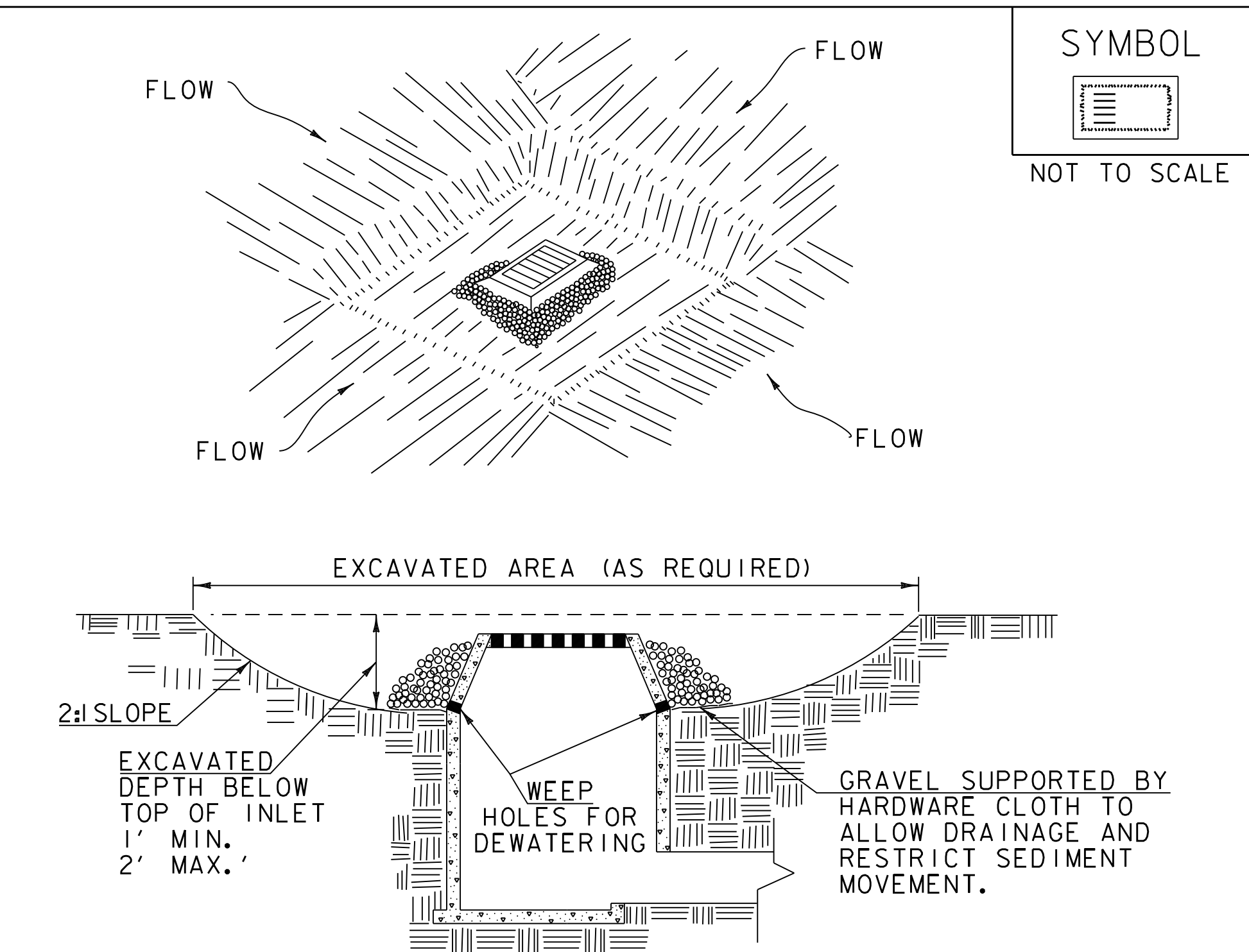




CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN APPARENT OPENING SIZE 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'.
4. SPACE STAKES EVENLY AROUND INLET 3' APART AND DRIVE A MINIMUM 18" DEEP. SPANS GREATER THAN 3' MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1' 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.
7. MAXIMUM DRAINAGE AREA 1 ACRE

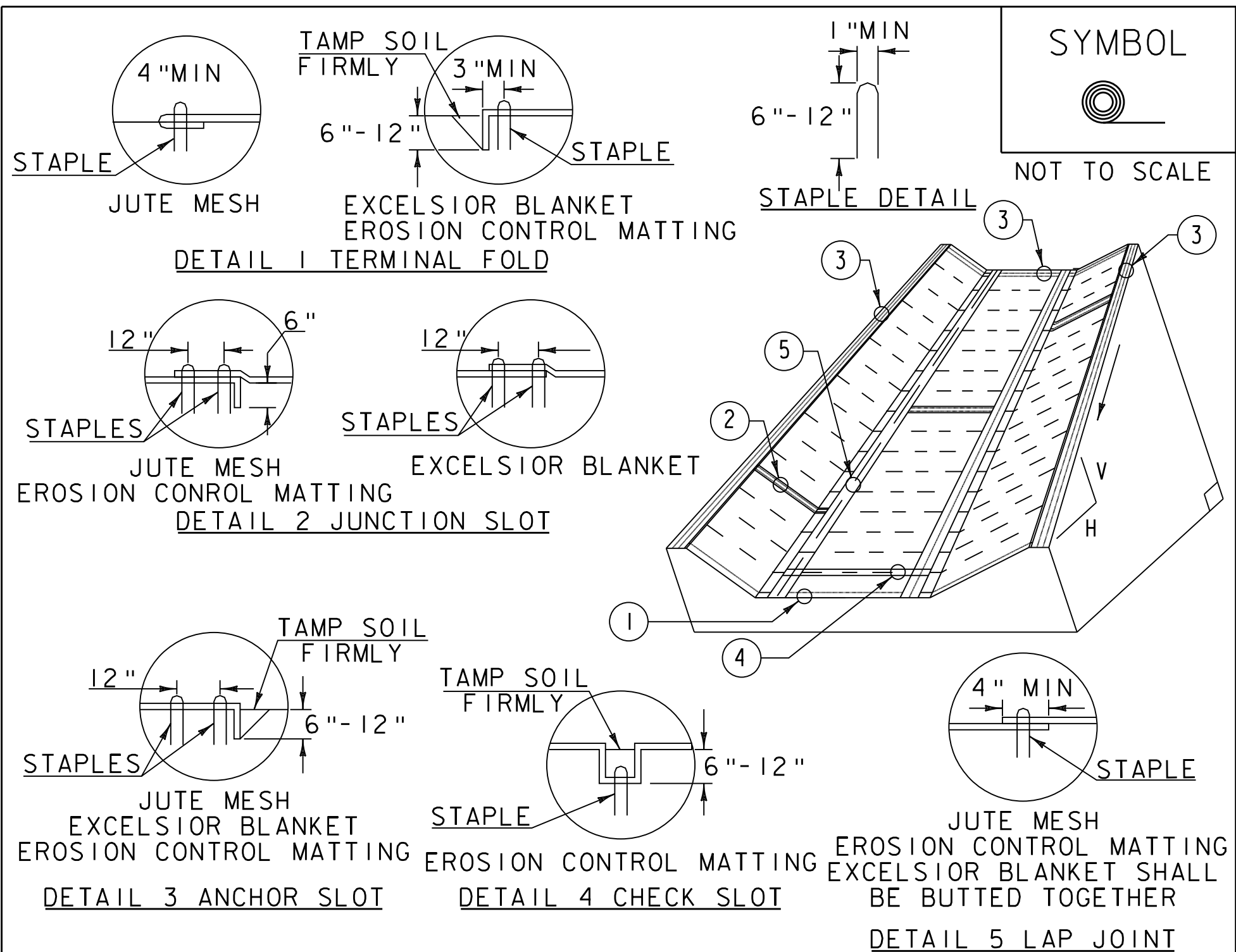
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	FILTER FABRIC DROP INLET PROTECTION
NOTES: REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.	
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR INLET PROTECTION DEVICE, TYPE 1(PAY ITEM 653.40).	
REVISIONS	
MARCH 7, 2008      WHF	
JANUARY 13, 2009      WHF	



CONSTRUCTION SPECIFICATIONS

1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.
5. MAXIMUM DRAINAGE AREA 1 ACRE

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	EXCAVATED DROP INLET PROTECTION
NOTES: REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.	
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR INLET PROTECTION DEVICE, TYPE 1(PAY ITEM 653.40).	
REVISIONS	
MARCH 6, 2008      WHF	
JANUARY 13, 2009      WHF	



CONSTRUCTION SPECIFICATIONS

1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	ROLLED EROSION CONTROL PRODUCT (RECP) DITCH
NOTES: REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.	
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).	
REVISIONS	
MARCH 8, 2007      JMF	
APRIL 16, 2007      WHF	
JANUARY 13, 2009      WHF	

PROJECT NAME: BURLINGTON BIKE PATH

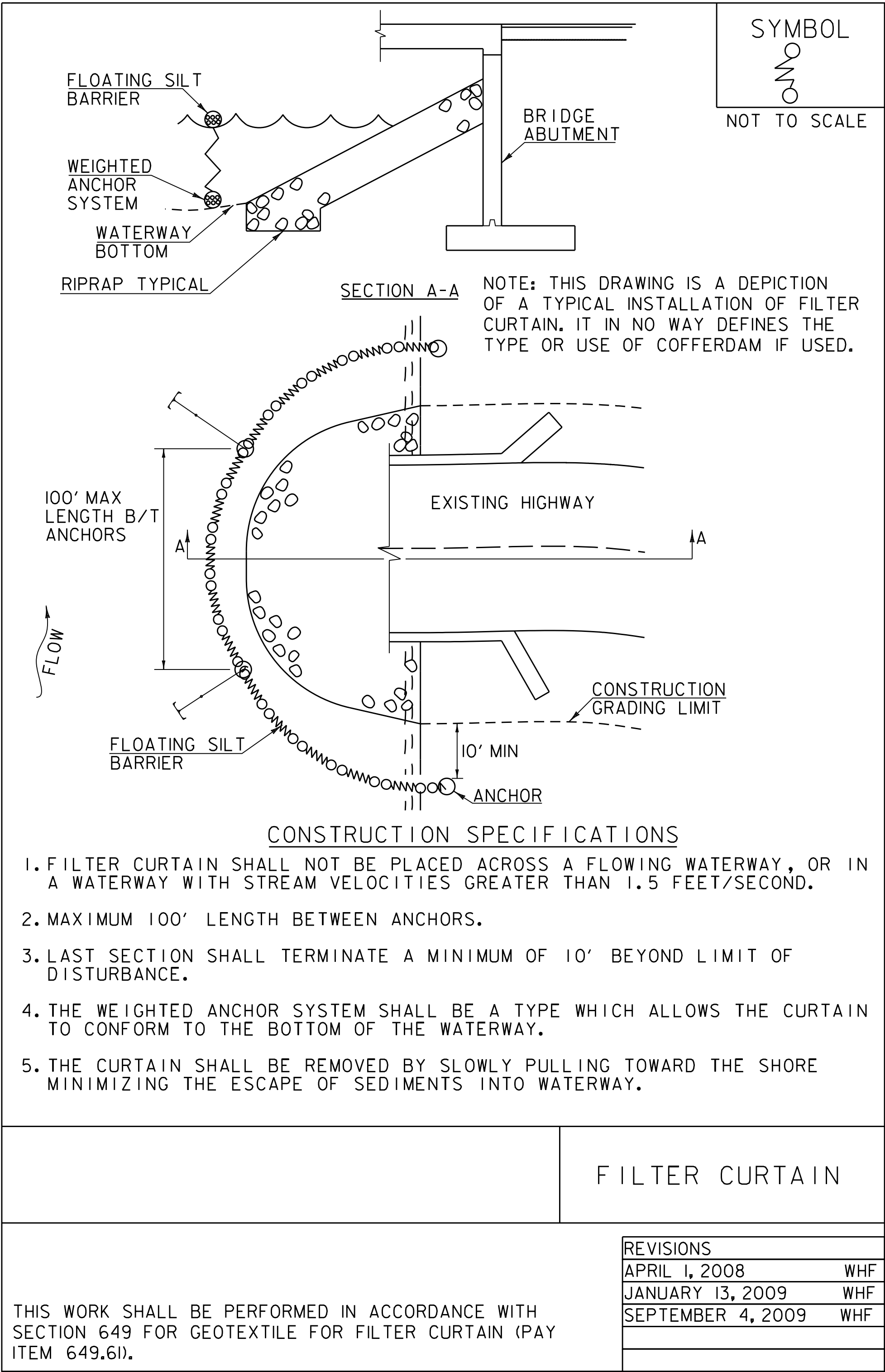
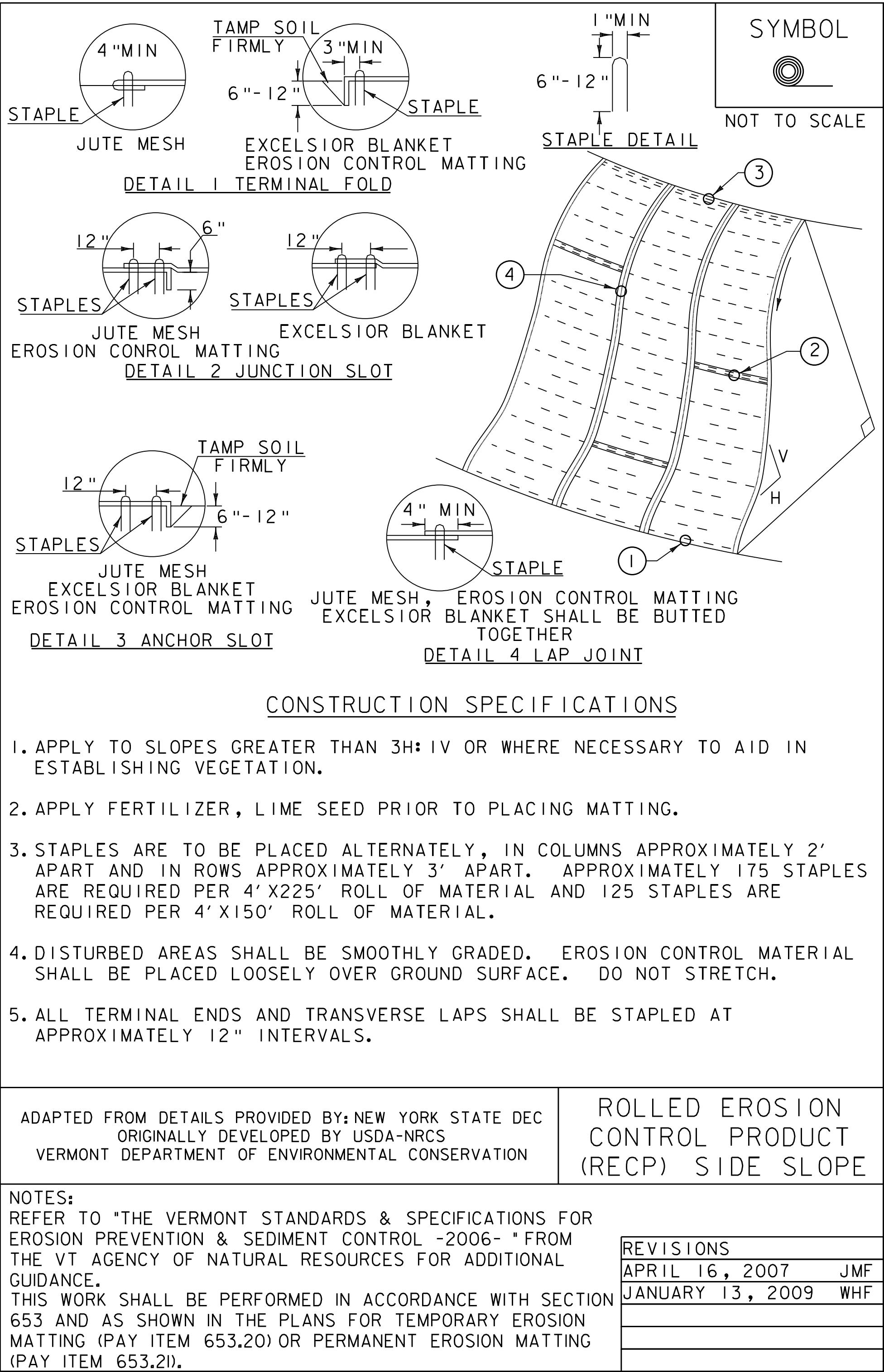
PROJECT NUMBER: 57634.00

FILE NAME: z57634ero_details.dgn  
PROJECT LEADER: M.A. COLGAN  
DESIGNED BY: VTRANS  
EPSC DETAILS (2 OF 3)

PLOT DATE: 7/25/2014  
DRAWN BY: D.A. GINGRAS  
CHECKED BY: M.A. COLGAN  
SHEET 58 OF 59







PROJECT NAME: BURLINGTON BIKE PATH

PROJECT NUMBER: 57634.00

FILE NAME: z57634ero-details.dgn  
PROJECT LEADER: M.A. COLGAN  
DESIGNED BY: VTRANS  
EPSC DETAILS (3 OF 3)

PLOT DATE: 7/25/2014  
DRAWN BY: D.A. GINGRAS  
CHECKED BY: M.A. COLGAN  
SHEET 59 OF 59



## MEMORANDUM

To: Scott Gustin, Senior Planner  
City of Burlington, Department of Planning and Zoning

From: Gail Henderson-King, Senior Project Manager  
White + Burke Real Estate Investment Advisors

Date: August 19, 2014

Re: Fletcher Allen Health Care Inpatient Building – Final Site Plan Application:  
Additional Information for the Conservation Board

On behalf of Fletcher Allen Health Care, enclosed please find the following additional information regarding the Final Site Plan Application plan for the proposed Inpatient Building at 111 Colchester Avenue in Burlington, for the Conservation Board:

1. Summary Narrative describing the updated stormwater and erosion control information for the Conservation Board from White + Burke dated August 15, 2014.
2. Conservation Board package prepared by Krebs and Lansing Consulting Engineers, Inc. dated August 18, 2014. Stormwater hydraulic model appendices prepared by Krebs and Lansing Consulting Engineers, Inc. dated August 15, 2014 including: Water Quality Volume analysis, Channel Protection Volume analysis, and Overbank Flood Protection analysis. This information outlines the model results that are used to determine the needed expansion of the forebay of the North Campus Stormwater Facility and the stormwater offsets required. Included with this information is the North Campus watershed plan.
3. North Campus Stormwater Facility Improvement Preliminary Plan sheets prepared by Krebs and Lansing Consulting Engineers, Inc:  
EX-1: Existing Conditions Plan dated July 16, 2014;  
CS-100: Proposed Site Plan dated August 14, 2014.
4. Stormwater Detail Sheet from Fletcher Allen Health Care Renaissance Project prepared by TSO / Kobus & Associates Architects dated February 21, 2001 highlighting Section Detail A-C10.3 A-A Sediment Forebay.
5. Updated Sheet L2-0: Planting Plan prepared by Wagner Hodgson Landscape Architecture dated August 19, 2014 showing proposed rain garden areas.

Scott Gustin, City Planner

August 19, 2014

Fletcher Allen Health Care Inpatient Building – Final Site Plan Application:  
Additional Information for the Conservation Board

6. Civil Plan Stormwater Detail Sheet C-503 prepared by Stantec dated August 15, 2014. This includes a standard detail depicting rain gardens as located on Sheet L2-0. Note: Sediment offset will be handled off-site.
7. Updated Erosion Prevention and Sediment Control Detail Sheet C-504 prepared by Stantec dated August 15, 2014.
8. Email from Megan Moir, Stormwater Program Manager at the Burlington Public Works Department, dated August 17, 2014.

Fletcher Allen Health Care Inpatient Building Project  
**Summary Narrative of Stormwater and Erosion Prevention and Sediment Control**  
**Additional Information for the Conservation Board**

August 15, 2014

**I. Overview**

Fletcher Allen Health Care (Fletcher Allen) is proposing an approximately 208,000 square foot (sq. ft.) inpatient building project (the Project) to be located next to the Emergency Department on the west side of its Medical Center Campus. The Project will consist of approximately 128 inpatient replacement beds to be hosted in single rooms with connections to the McClure Building and the West Pavilion of the Ambulatory Care Center. The Project will require a small boundary line adjustment with the University of Vermont.

Fletcher Allen submitted a Final Site Plan application to the City Planning and Zoning Office on June 30, 2014. As part of the City permitting review, the project needs to be reviewed by the Conservation Board. The outcome of the Conservation Board review will be a recommendation to the Development Review Board regarding the project's effect on environmental quality and the environment.

**II. Conservation Board Review**

On August 4, 2014, Fletcher Allen met with the Conservation Board to review the Inpatient Building Project final site plan submittal. Specifically, we presented information regarding the site and landscape design along with the proposed stormwater design and erosion prevention and sediment control (EPSC) measures to be used.

The Conservation Board tabled the hearing and requested additional information on the stormwater design and EPSC measure from Fletcher Allen for review at their next meeting on August 25th. The requested additional information includes the stormwater hydraulic model data, specifics of the stormwater design including the forebay expansion at the North Campus stormwater facility, erosion control details and information, and a letter from Megan Moir, Department of Public Works regarding her review and approval process. This summary narrative outlines and briefly describes the additional information Fletcher Allen is submitting to the Conservation Board to address the proposed stormwater design and EPSC measures.

### **III. Additional Information on Stormwater Design and EPSC Measures**

#### State Permitting Requirements

We have now clarified with the Agency of Natural Resources (ANR) the process that they will use for permitting the Inpatient Building project. In the next month, Fletcher Allen will apply to renew its existing State stormwater permit as an individual permit and will include the new impervious for the new inpatient bed facility. UVM will be co-applicant because UVM owns the North Campus pond. Fletcher Allen will have to ensure that there is no net increase of sediment discharge to Centennial Brook.

#### Stormwater Design

The project causes a small increase in impervious area from 19.02 acres to 19.71 acres. Stormwater management will be accomplished using two approaches. One approach will be connecting to the existing collection system that conveys runoff to the North Campus stormwater facility. The North Campus facility provides treatment to portions of both the UVM and Fletcher Allen campuses. This facility is designed to fully treat all UVM and Fletcher Allen impervious areas, in accordance with the State of Vermont's Stormwater Management Manual requirements. Secondly, some on-site green stormwater design features (rain gardens) are included. See Attachment 5 for Planting Plan and rain garden locations.

In order to determine the needed stormwater treatment methods, Krebs and Lansing Consulting Engineers, Inc. prepared an updated hydraulic model for the Project for one and ten year storm events. See Attachment 2: Conservation Board package including hydraulic model data and results along with the North Campus watershed plan. The results of the hydraulic model indicate the need for expanding the forebay for the North Campus Stormwater Facility to handle the stormwater volume. See Attachments 3 and 4: Preliminary Design Plans and details for the forebay expansion.

Based on the sediment calculations, the total sediment that needs to be offset is 123 lbs. There will be no net increase in sediment load to Centennial Brook from this project. The source for sediment offsets include participating in an offsite sediment offset project at Jaycee Park.



### Erosion Prevention and Sediment Control (EPSC)

For erosion prevention and sediment control, the project will meet the best practices to prevent and / or minimize erosion during construction following the State EPSC manuals and guidelines. Currently, Fletcher Allen has hired a construction manager that is working on a detailed logistics / phasing plan. Due to the size of the project as well as constructing the building over an active Emergency Department, there are a series of complex steps the contractor will have to undertake in order to construct the project while maintaining access to the Emergency Department. The anticipated temporary and permanent EPSC details that will be employed on the site have been included on the updated erosion control detail sheet in Attachment 7.

Once the logistics plan is completed and signed off on, a detailed Erosion Prevention and Sediment Control (EPSC) Plan set will be developed and submitted to the State Agency of Natural Resources as part of their construction general permit program (CGP). This plan will take into account the phases / steps that will be required for construction and reflect the measures that will be applied as part of each phase of the project. Megan Moir, the City's Stormwater Program Manager, will be consulted with as part of this plan development as well as receiving copies of the final plan. Attachment 8 contains correspondence from Ms. Moir regarding the proposed Inpatient Building project.

# Appendix – Water Quality Volume

## Fletcher Allen Inpatient Building Project

August 15, 2014

For the area draining to*:

North Campus Pond

Located in drainage area for S/N:

001

**WQ Volume and Modified Curve Number Calculation for Water Quality Treatment in Flow-Based Practice**

*Use this worksheet to calculate your WQv if you need to determine the Peak Q for the WQ storm (i.e. designing a grass channel, flow-splitter or other flow based practice) and you are not using any of the site design credits in section 3 of the 2002 VSWMM. See page 2 for "Calculating Peak WQ Discharge Rate (0.9" storm) using the Modified Curve Number." Please note that in the case of grass channels you must include any off-site area draining to the practice as this will affect the peak discharge rate which will ultimately affect the hydraulics, and thus residence time, in your channel.*

**Water Quality Volume Calculations**

Line		value/calculation	units
1	Area draining to practice A=	84.87	acres
2	Impervious area	42.56	acres
3	Percent Impervious Area = [(line 2/line 1) * 100] = I =	50.15	% (whole #)
4	Precipitation P =	0.9	inches
5	Runoff coefficient calculation = (0.05 + (0.009*I)) Rv =	0.501	
6	WQ Volume (in watershed inches) Calculation = (P * Rv) =	0.451	Qa (watershed inches, a.k.a. inches of runoff)
7	Minimum WQ Volume ¹	0.2	watershed inches
8	Enter the greater of line 6 or line 7 WQv =	0.451	watershed inches
9	WQ Volume Calculation = (line 8 * A)/12 = WQv =	3.191	ac. ft.
10	WQ Volume Calculation = (line 9 * 43560) = WQv =	139003	cu. ft.

**Notes:**

1: Sites with low impervious cover (~19%) but that do not employ a **significant** use of the stormwater design credits in Section 3 of the VSWMM are required to treat the minimum water quality volume of 0.2 watershed inches. Sites that have a **significant** portion of their impervious cover addressed via the stormwater credits (section 3 of the VSWMM) will be able to reduce this WQv and will only be required to treat the volume calculated on the "WQ Volume (with credit reduction)" worksheet which will be less than the 0.2 watershed inches.

* Enter the name of the STP (both type and label) which has been designed to treat this particular WQv (e.g. Wet Pond #2)

For the area draining to*:

North Campus Pond

Located in drainage area for S/N:

001

**Calculating Peak WQ Peak Discharge Rate (0.9" storm) using the Modified Curve Number**

Because NRCS methods underestimate the peak discharge for rainfall events of less than 2", simply plugging in 0.9" of rainfall into your hydrologic model with the standard curve numbers will not produce the correct peak discharge during the WQv storm, nor will it produce a volume of runoff equivalent to that which you have calculated using the WQv formula ( $WQv = P \cdot Rv \cdot A/12$ ). In order to calculate the peak discharge for the 0.9" storm, a modified curve number must be calculated. This modified curve number is based on the runoff (in inches) calculated using the short cut method formula ( $WQv = P \cdot Rv$ ) that is also the basis of the familiar WQv calculations provided in the 2002 VSWMM (and on the WQv calculation worksheets). Essentially, the curve number that is calculated using the methods below is the curve number that will generate the volume of runoff calculated using the WQv formula.

Above, you should have calculated the **WQv in watershed inches draining to the facility/practice** for which you need to calculate the WQ-peak discharge. As provided in the guidance listed on the grass channel worksheet, please remember that the WQv calculation should include runoff from on-site as well as **off-site area** draining to the grass channel since this will have an impact on the channel hydraulics and thus the velocity and residence time.

Steps:

1. Transfer information from WQv calculation worksheets.

Enter the Qa ( line 8 from WQv sheet )

Qa = 0.451 inches

Enter the area (site +off-site draining to practice) used in calculating the percent impervious (I)

A = 84.9 acres

2. Use the following equation to calculate a corresponding curve number

where P = 0.9 inches

$$CN = 1000 / (10 + (5 \cdot P) + (10 \cdot Qa) - (10 \cdot (Qa^2 + (1.25 \cdot Qa \cdot P))^{0.5}))$$

CN =

94.5

- Modified  
Curve Number

3. If you are using **hand hydrologic runoff calculations**, use the computed CN above along with your calculated time of concentration and the drainage area (A) to calculate the peak discharge (Qwq) for the water quality storm using the TR-55 Graphical Peak Discharge Method.

OR

3. If you are using a computer aided hydrologic model, simply revise the curve number for your subwatershed(s) draining to the practice using the curve number calculated above; the computed curve number should be applied to the total area (A) used in the WQv calculation. As a check, you should note that now when you run the 0.9" storm, your runoff depth should be roughly equal to Qa (WQ runoff in inches) and your total runoff volume roughly equal to your WQv (in ac. ft.). If this is not the case, make sure that the time span for your modelling run is long enough to capture the entire storm. Small variations are likely due to having to round your computed CN to a whole number. Remember that for storms larger than 2", you do not need to use the modified curve number and you should calculate your composite curve number based on the accepted values for different types of land-use (see TR-55).

Subsection: Master Network Summary

**Catchments Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
North Campus	WQvstorm - Synthetic Curve, 0 yrs	0	2.861	12.300	23.18

**Node Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
Pond Outlet	WQvstorm - Synthetic Curve, 0 yrs	0	2.861	18.600	2.48

**Pond Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
North Campus (IN)	WQvstorm - Synthetic Curve, 0 yrs	0	2.861	12.300	23.18	(N/A)	(N/A)
North Campus (OUT)	WQvstorm - Synthetic Curve, 0 yrs	0	2.861	18.600	2.48	238.17	1.499

WSE = 235.7

Extended Detention to elevation 238.17'

Subsection: Diverted Hydrograph  
Label: NORTH-OUT

Return Event: 0 years  
Storm Event: TypeII 24hr (0.9 in)

Peak Discharge	2.48 ft ³ /s
Time to Peak	18.600 hours
Hydrograph Volume	2.861 ac-ft

Release flows  
greater than 24 hour  
detention

**HYDROGRAPH ORDINATES (ft³/s)**  
**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
9.350	0.00	0.00	0.00	0.00	0.00
9.600	0.00	0.00	0.01	0.01	0.01
9.850	0.01	0.01	0.01	0.01	0.02
10.100	0.02	0.02	0.02	0.03	0.03
10.350	0.03	0.04	0.04	0.04	0.05
10.600	0.05	0.06	0.06	0.07	0.07
10.850	0.08	0.08	0.09	0.10	0.11
11.100	0.12	0.13	0.14	0.15	0.16
11.350	0.17	0.18	0.20	0.21	0.23
11.600	0.25	0.27	0.30	0.33	0.37
11.850	0.43	0.50	0.61	0.75	0.93
12.100	1.15	1.41	1.70	1.79	1.89
12.350	1.99	2.09	2.18	2.27	2.35
12.600	2.42	2.48	2.48	2.48	2.48
12.850	2.48	2.48	2.48	2.48	2.48
13.100	2.48	2.48	2.48	2.48	2.48
13.350	2.48	2.48	2.48	2.48	2.48
13.600	2.48	2.48	2.48	2.48	2.48
13.850	2.48	2.48	2.48	2.48	2.48
14.100	2.48	2.48	2.48	2.48	2.48
14.350	2.48	2.48	2.48	2.48	2.48
14.600	2.48	2.48	2.48	2.48	2.48
14.850	2.48	2.48	2.48	2.48	2.48
15.100	2.48	2.48	2.48	2.48	2.48
15.350	2.48	2.48	2.48	2.48	2.48
15.600	2.48	2.48	2.48	2.48	2.48
15.850	2.48	2.48	2.48	2.48	2.48
16.100	2.48	2.48	2.48	2.48	2.48
16.350	2.48	2.48	2.48	2.48	2.48
16.600	2.48	2.48	2.48	2.48	2.48
16.850	2.48	2.48	2.48	2.48	2.48
17.100	2.48	2.48	2.48	2.48	2.48
17.350	2.48	2.48	2.48	2.48	2.48
17.600	2.48	2.48	2.48	2.48	2.48
17.850	2.48	2.48	2.48	2.48	2.48
18.100	2.48	2.48	2.48	2.48	2.48
18.350	2.48	2.48	2.48	2.48	2.48
18.600	2.48	2.48	2.48	2.47	2.46
18.850	2.45	2.45	2.44	2.43	2.43

43.65 hrs - 9.75 hrs  
= 33.9 hrs



Subsection: Diverted Hydrograph  
Label: NORTH-OUT

Return Event: 0 years  
Storm Event: TypeII 24hr (0.9 in)

# **HYDROGRAPH ORDINATES (ft³/s)**

**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
19.100	2.42	2.41	2.41	2.40	2.39
19.350	2.38	2.38	2.37	2.36	2.36
19.600	2.35	2.34	2.34	2.33	2.32
19.850	2.31	2.31	2.30	2.29	2.29
20.100	2.28	2.27	2.27	2.26	2.25
20.350	2.24	2.24	2.23	2.22	2.22
20.600	2.21	2.20	2.20	2.19	2.18
20.850	2.18	2.17	2.16	2.16	2.15
21.100	2.14	2.13	2.13	2.12	2.12
21.350	2.11	2.10	2.10	2.09	2.08
21.600	2.08	2.07	2.06	2.06	2.05
21.850	2.04	2.04	2.03	2.03	2.02
22.100	2.01	2.01	2.00	1.99	1.99
22.350	1.98	1.98	1.97	1.96	1.96
22.600	1.95	1.95	1.94	1.93	1.93
22.850	1.92	1.92	1.91	1.90	1.90
23.100	1.89	1.89	1.88	1.88	1.87
23.350	1.86	1.86	1.85	1.85	1.84
23.600	1.84	1.83	1.83	1.82	1.81
23.850	1.81	1.80	1.80	1.79	1.79
24.100	1.78	1.78	1.77	1.76	1.76
24.350	1.75	1.75	1.74	1.73	1.73
24.600	1.72	1.71	1.71	1.70	1.68
24.850	1.66	1.64	1.61	1.59	1.56
25.100	1.54	1.52	1.50	1.47	1.45
25.350	1.43	1.41	1.39	1.36	1.34
25.600	1.32	1.30	1.28	1.26	1.24
25.850	1.22	1.21	1.19	1.17	1.15
26.100	1.13	1.12	1.10	1.08	1.07
26.350	1.05	1.03	1.02	1.00	0.99
26.600	0.97	0.96	0.94	0.93	0.91
26.850	0.90	0.89	0.87	0.86	0.85
27.100	0.83	0.82	0.81	0.79	0.78
27.350	0.77	0.76	0.75	0.74	0.72
27.600	0.71	0.70	0.69	0.68	0.67
27.850	0.66	0.65	0.64	0.63	0.62
28.100	0.61	0.60	0.59	0.58	0.57
28.350	0.57	0.56	0.55	0.54	0.53
28.600	0.52	0.52	0.51	0.50	0.49
28.850	0.48	0.48	0.47	0.46	0.46
29.100	0.45	0.44	0.44	0.43	0.42
29.350	0.42	0.41	0.40	0.40	0.39
29.600	0.38	0.38	0.37	0.37	0.36
29.850	0.36	0.35	0.35	0.34	0.33

Subsection: Diverted Hydrograph  
Label: NORTH-OUT

Return Event: 0 years  
Storm Event: TypeII 24hr (0.9 in)

**HYDROGRAPH ORDINATES (ft³/s)**  
**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
30.100	0.33	0.32	0.32	0.31	0.31
30.350	0.31	0.30	0.30	0.29	0.29
30.600	0.28	0.28	0.27	0.27	0.27
30.850	0.26	0.26	0.25	0.25	0.25
31.100	0.24	0.24	0.23	0.23	0.23
31.350	0.22	0.22	0.22	0.21	0.21
31.600	0.21	0.20	0.20	0.20	0.19
31.850	0.19	0.19	0.19	0.18	0.18
32.100	0.18	0.17	0.17	0.17	0.17
32.350	0.16	0.16	0.16	0.16	0.15
32.600	0.15	0.15	0.15	0.15	0.14
32.850	0.14	0.14	0.14	0.13	0.13
33.100	0.13	0.13	0.13	0.12	0.12
33.350	0.12	0.12	0.12	0.12	0.11
33.600	0.11	0.11	0.11	0.11	0.11
33.850	0.10	0.10	0.10	0.10	0.10
34.100	0.10	0.09	0.09	0.09	0.09
34.350	0.09	0.09	0.09	0.08	0.08
34.600	0.08	0.08	0.08	0.08	0.08
34.850	0.08	0.07	0.07	0.07	0.07
35.100	0.07	0.07	0.07	0.07	0.07
35.350	0.07	0.06	0.06	0.06	0.06
35.600	0.06	0.06	0.06	0.06	0.06
35.850	0.06	0.05	0.05	0.05	0.05
36.100	0.05	0.05	0.05	0.05	0.05
36.350	0.05	0.05	0.05	0.05	0.04
36.600	0.04	0.04	0.04	0.04	0.04
36.850	0.04	0.04	0.04	0.04	0.04
37.100	0.04	0.04	0.04	0.04	0.04
37.350	0.04	0.03	0.03	0.03	0.03
37.600	0.03	0.03	0.03	0.03	0.03
37.850	0.03	0.03	0.03	0.03	0.03
38.100	0.03	0.03	0.03	0.03	0.03
38.350	0.03	0.03	0.02	0.02	0.02
38.600	0.02	0.02	0.02	0.02	0.02
38.850	0.02	0.02	0.02	0.02	0.02
39.100	0.02	0.02	0.02	0.02	0.02
39.350	0.02	0.02	0.02	0.02	0.02
39.600	0.02	0.02	0.02	0.02	0.02
39.850	0.02	0.02	0.02	0.02	0.02
40.100	0.02	0.01	0.01	0.01	0.01
40.350	0.01	0.01	0.01	0.01	0.01
40.600	0.01	0.01	0.01	0.01	0.01
40.850	0.01	0.01	0.01	0.01	0.01

Subsection: Diverted Hydrograph  
Label: NORTH-OUT

Return Event: 0 years  
Storm Event: TypeII 24hr (0.9 in)

# **HYDROGRAPH ORDINATES (ft³/s)**

**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
41.100	0.01	0.01	0.01	0.01	0.01
41.350	0.01	0.01	0.01	0.01	0.01
41.600	0.01	0.01	0.01	0.01	0.01
41.850	0.01	0.01	0.01	0.01	0.01
42.100	0.01	0.01	0.01	0.01	0.01
42.350	0.01	0.01	0.01	0.01	0.01
42.600	0.01	0.01	0.01	0.01	0.01
42.850	0.01	0.01	0.01	0.01	0.01
43.100	0.01	0.01	0.01	0.01	0.01
43.350	0.01	0.01	0.01	0.01	0.01
43.600	0.01	0.01	0.00	0.00	0.00
43.850	0.00	0.00	0.00	0.00	0.00
44.100	0.00	0.00	0.00	0.00	0.00
44.350	0.00	0.00	0.00	0.00	0.00
44.600	0.00	0.00	0.00	0.00	0.00
44.850	0.00	0.00	0.00	0.00	0.00
45.100	0.00	0.00	0.00	0.00	0.00
45.350	0.00	0.00	0.00	0.00	0.00
45.600	0.00	0.00	0.00	0.00	0.00
45.850	0.00	0.00	0.00	0.00	0.00
46.100	0.00	0.00	0.00	0.00	0.00
46.350	0.00	0.00	0.00	0.00	0.00
46.600	0.00	0.00	0.00	0.00	0.00
46.850	0.00	0.00	0.00	0.00	0.00
47.100	0.00	0.00	0.00	0.00	0.00
47.350	0.00	0.00	0.00	0.00	0.00
47.600	0.00	0.00	0.00	0.00	0.00
47.850	0.00	0.00	0.00	0.00	0.00
48.100	0.00	0.00	0.00	0.00	0.00
48.350	0.00	0.00	0.00	0.00	0.00
48.600	0.00	0.00	0.00	0.00	(N/A)

# Appendix – Channel Protection Volume

## Fletcher Allen Inpatient Building Project

August 15, 2014

Subsection: Detention Time  
Label: Micropool (IN)

Return Event: 1 years  
Storm Event: TypeII 24hr (2.1 in)

Infiltration	
Infiltration Method (Computed)	No Infiltration
Approximate Detention Times	
Time to Centroid (Outflow)	26.365 hours
Time to Centroid (Inflow)	13.838 hours
Detention Time (Centroid to Centroid)	12.527 hours ✓

Centroid to Centroid needs to be between 11.5 and 12.9 hours

Subsection: Master Network Summary

**Catchments Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
105A	Chitten 1yr	1	0.008	12.000	0.12
11	Chitten 1yr	1	0.052	11.950	0.84
110	Chitten 1yr	1	0.002	12.050	0.02
113	Chitten 1yr	1	0.028	11.950	0.49
116	Chitten 1yr	1	0.015	11.950	0.24
118	Chitten 1yr	1	0.037	12.050	0.52
12	Chitten 1yr	1	0.007	11.950	0.13
124A	Chitten 1yr	1	0.022	11.950	0.36
124B	Chitten 1yr	1	0.059	11.950	0.95
124C	Chitten 1yr	1	0.063	11.950	1.01
124D	Chitten 1yr	1	0.024	11.950	0.38
124E	Chitten 1yr	1	0.055	11.950	0.88
124F	Chitten 1yr	1	0.074	11.950	1.19
124G	Chitten 1yr	1	0.044	11.950	0.71
124H	Chitten 1yr	1	0.055	11.950	0.88
13	Chitten 1yr	1	0.068	11.950	1.22
134	Chitten 1yr	1	0.174	11.950	2.79
135	Chitten 1yr	1	0.055	12.000	0.91
138	Chitten 1yr	1	0.042	12.000	0.66
139	Chitten 1yr	1	0.074	12.050	1.10
14	Chitten 1yr	1	0.027	12.000	0.44
140	Chitten 1yr	1	0.063	12.050	0.94
141	Chitten 1yr	1	0.021	11.950	0.36
142	Chitten 1yr	1	0.021	12.050	0.30
143	Chitten 1yr	1	0.023	12.050	0.33
143A	Chitten 1yr	1	0.039	11.950	0.69
144	Chitten 1yr	1	0.039	15.600	0.05
145	Chitten 1yr	1	0.021	12.050	0.11
146	Chitten 1yr	1	0.158	11.950	2.79
147	Chitten 1yr	1	0.097	11.950	1.71
148	Chitten 1yr	1	0.063	11.950	1.12
149	Chitten 1yr	1	0.012	12.050	0.14
15	Chitten 1yr	1	0.025	12.200	0.25
150	Chitten 1yr	1	0.006	12.150	0.03
152	Chitten 1yr	1	0.156	12.000	2.59
16	Chitten 1yr	1	0.029	12.050	0.44
16A	Chitten 1yr	1	0.016	12.200	0.16
1A	Chitten 1yr	1	0.131	11.950	2.09
1B	Chitten 1yr	1	0.118	11.950	1.89
20	Chitten 1yr	1	0.055	12.050	0.77
24	Chitten 1yr	1	0.092	11.950	1.47
25	Chitten 1yr	1	0.084	12.250	0.79
27	Chitten 1yr	1	0.036	11.950	0.58
29	Chitten 1yr	1	0.094	12.000	1.47
31	Chitten 1yr	1	0.028	12.150	0.31



Subsection: Master Network Summary

**Catchments Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
32	Chitten 1yr	1	0.025	11.950	0.45
33	Chitten 1yr	1	0.018	11.950	0.29
34	Chitten 1yr	1	0.088	12.000	1.42
35	Chitten 1yr	1	0.004	11.950	0.07
36	Chitten 1yr	1	0.072	11.950	1.16
36A	Chitten 1yr	1	0.004	11.950	0.07
38	Chitten 1yr	1	0.019	12.000	0.30
41	Chitten 1yr	1	0.067	11.950	1.07
41.5	Chitten 1yr	1	0.067	11.950	1.07
44	Chitten 1yr	1	0.010	12.150	0.11
45	Chitten 1yr	1	0.159	11.950	2.55
46	Chitten 1yr	1	0.039	11.950	0.70
47	Chitten 1yr	1	0.028	11.950	0.51
49	Chitten 1yr	1	0.065	11.950	1.15
61	Chitten 1yr	1	0.034	11.950	0.54
65	Chitten 1yr	1	0.013	12.000	0.21
65B	Chitten 1yr	1	0.107	11.950	1.92
65C	Chitten 1yr	1	0.004	11.950	0.06
66	Chitten 1yr	1	0.051	11.950	0.82
67	Chitten 1yr	1	0.007	11.950	0.13
73	Chitten 1yr	1	0.003	12.100	0.04
74A	Chitten 1yr	1	0.030	11.950	0.55
74B	Chitten 1yr	1	0.013	11.950	0.24
75	Chitten 1yr	1	0.029	12.050	0.40
76	Chitten 1yr	1	0.015	11.950	0.27
77	Chitten 1yr	1	0.021	12.050	0.32
77A	Chitten 1yr	1	0.023	12.000	0.38
78	Chitten 1yr	1	0.059	12.050	0.87
79	Chitten 1yr	1	0.012	12.050	0.17
80	Chitten 1yr	1	0.004	12.050	0.03
81	Chitten 1yr	1	0.022	11.950	0.35
82	Chitten 1yr	1	0.037	11.950	0.66
83	Chitten 1yr	1	0.009	11.950	0.16
84	Chitten 1yr	1	0.012	12.050	0.15
95	Chitten 1yr	1	0.001	12.150	0.00
96	Chitten 1yr	1	0.009	11.950	0.17
99B	Chitten 1yr	1	0.023	12.150	0.21
COM1	Chitten 1yr	1	0.013	11.950	0.23
COM10	Chitten 1yr	1	0.044	11.950	0.79
COM11	Chitten 1yr	1	0.046	11.950	0.84
COM12	Chitten 1yr	1	0.090	11.950	1.44
COM13	Chitten 1yr	1	0.056	11.950	1.01
COM14	Chitten 1yr	1	0.086	12.100	1.13
COM15	Chitten 1yr	1	0.088	11.950	1.50
COM16	Chitten 1yr	1	0.012	12.000	0.19

Subsection: Master Network Summary

**Catchments Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
COM17	Chitten 1yr	1	0.089	12.050	1.33
COM2	Chitten 1yr	1	0.029	11.950	0.51
COM3	Chitten 1yr	1	0.021	12.000	0.35
COM4	Chitten 1yr	1	0.100	12.000	1.60
COM5	Chitten 1yr	1	0.071	11.950	1.19
COM7	Chitten 1yr	1	0.063	11.950	1.13
COM8	Chitten 1yr	1	0.032	11.950	0.58
COM9	Chitten 1yr	1	0.047	12.050	0.67
Centennial1	Chitten 1yr	1	0.085	11.950	1.43
Centennial2	Chitten 1yr	1	0.084	11.950	1.52
FAHC-1	Chitten 1yr	1	0.073	11.950	1.30
FAHC-10	Chitten 1yr	1	0.045	12.000	0.75
FAHC-10A	Chitten 1yr	1	0.041	11.950	0.71
FAHC-11	Chitten 1yr	1	0.173	11.950	2.77
FAHC-12	Chitten 1yr	1	0.155	11.950	2.49
FAHC-13	Chitten 1yr	1	0.049	11.950	0.82
FAHC-14	Chitten 1yr	1	0.130	11.950	2.30
FAHC-15	Chitten 1yr	1	0.041	11.950	0.74
FAHC-16	Chitten 1yr	1	0.046	11.950	0.82
FAHC-17	Chitten 1yr	1	0.065	11.950	1.06
FAHC-18	Chitten 1yr	1	0.059	12.000	0.95
FAHC-18A	Chitten 1yr	1	0.024	11.950	0.42
FAHC-19	Chitten 1yr	1	0.070	11.950	1.25
FAHC-2	Chitten 1yr	1	0.044	11.950	0.80
FAHC-20	Chitten 1yr	1	0.080	11.950	1.28
FAHC-21	Chitten 1yr	1	0.017	11.950	0.28
FAHC-22	Chitten 1yr	1	0.015	11.950	0.24
FAHC-3	Chitten 1yr	1	0.077	11.950	1.34
FAHC-4	Chitten 1yr	1	0.027	11.950	0.43
FAHC-5	Chitten 1yr	1	0.095	11.950	1.69
FAHC-6	Chitten 1yr	1	0.187	12.050	2.61
FAHC-7	Chitten 1yr	1	0.053	12.050	0.71
FAHC-8	Chitten 1yr	1	0.060	12.000	0.93
FAHC-9	Chitten 1yr	1	0.146	12.000	2.26
PERK1	Chitten 1yr	1	0.029	11.950	0.52
STEM	Chitten 1yr	1	0.232	11.950	4.17
UCOM6	Chitten 1yr	1	0.062	11.950	1.11

**Node Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
ADDS9.5	Chitten 1yr	1	0.063	11.950	1.01
AIK1	Chitten 1yr	1	0.186	12.050	2.44

Subsection: Master Network Summary

**Node Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
AIKEN1	Chitten 1yr	1	0.058	11.950	0.95
AUD1	Chitten 1yr	1	0.029	12.050	0.40
BAIL1	Chitten 1yr	1	1.045	12.050	13.90
BAIL2	Chitten 1yr	1	1.035	12.050	13.80
BEN1	Chitten 1yr	1	0.110	11.950	1.98
BEN2	Chitten 1yr	1	0.123	11.950	2.16
BEN3	Chitten 1yr	1	0.013	12.000	0.21
BEN3B	Chitten 1yr	1	0.013	12.000	0.21
BEN4	Chitten 1yr	1	0.126	11.950	2.19
BEN5	Chitten 1yr	1	0.126	11.950	2.19
BH1	Chitten 1yr	1	0.221	12.050	2.90
BIL2	Chitten 1yr	1	0.037	11.950	0.66
BIL3	Chitten 1yr	1	0.055	12.050	0.77
BIL4	Chitten 1yr	1	0.055	12.050	0.77
BILO1	Chitten 1yr	1	0.021	11.950	0.36
BILO2	Chitten 1yr	1	0.084	12.000	1.24
BILO3	Chitten 1yr	1	0.063	12.050	0.94
BILO4	Chitten 1yr	1	0.221	12.000	3.28
BILO5	Chitten 1yr	1	0.021	12.050	0.30
BILO6	Chitten 1yr	1	0.116	12.000	1.75
BOOTH1	Chitten 1yr	1	0.149	11.950	2.38
BUCK1	Chitten 1yr	1	2.785	11.950	26.68
BUCK2	Chitten 1yr	1	2.893	11.950	28.10
BUCK2A	Chitten 1yr	1	0.108	11.950	1.55
BUCK3	Chitten 1yr	1	2.917	12.000	28.18
BUCK3A	Chitten 1yr	1	0.023	12.150	0.21
BURGESS1	Chitten 1yr	1	0.037	12.050	0.52
CASE2	Chitten 1yr	1	0.158	11.950	2.79
CASE4	Chitten 1yr	1	0.158	11.950	2.79
CENT4A	Chitten 1yr	1	7.062	12.250	94.40
COLCHESTER4A	Chitten 1yr	1	0.149	11.950	2.38
COLCHESTER1	Chitten 1yr	1	4.559	12.050	50.43
COLCHESTER2	Chitten 1yr	1	4.559	12.050	50.43
COLCHESTER3	Chitten 1yr	1	4.497	12.000	50.84
COLCHESTER4	Chitten 1yr	1	4.348	12.000	48.98
COOK1	Chitten 1yr	1	0.025	12.200	0.25
COOK1A	Chitten 1yr	1	0.121	12.000	0.96
COOK3	Chitten 1yr	1	0.016	12.200	0.16
COOK4	Chitten 1yr	1	0.092	11.950	1.47
COOK5	Chitten 1yr	1	0.029	12.050	0.44
CULV1	Chitten 1yr	1	0.047	12.050	0.67
Cent2	Chitten 1yr	1	7.062	12.300	90.21
DEAD1	Chitten 1yr	1	0.174	11.950	2.79
DS1.0	Chitten 1yr	1	0.041	11.950	0.74
DS1.5	Chitten 1yr	1	0.015	11.950	0.24

Subsection: Master Network Summary

**Node Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
DS1.7	Chitten 1yr	1	0.015	11.950	0.24
DS1T	Chitten 1yr	1	0.702	11.950	10.58
DS2.10	Chitten 1yr	1	0.024	11.950	0.42
DS2.9	Chitten 1yr	1	0.886	11.950	13.57
DS2T	Chitten 1yr	1	0.139	11.950	2.23
DS3.15	Chitten 1yr	1	0.546	11.950	8.06
DS3.17	Chitten 1yr	1	0.460	12.000	6.68
DS4.18	Chitten 1yr	1	0.060	12.000	0.93
DS7.4	Chitten 1yr	1	0.144	11.950	2.51
DS8.1	Chitten 1yr	1	0.125	11.950	2.13
DS8.32	Chitten 1yr	1	0.015	11.950	0.24
DS9.11	Chitten 1yr	1	0.095	11.950	1.69
DS9.13	Chitten 1yr	1	0.049	11.950	0.82
DS9.15	Chitten 1yr	1	0.221	11.950	3.87
DS9.16	Chitten 1yr	1	0.052	11.950	0.84
DS9.2	Chitten 1yr	1	0.405	11.950	5.56
DS9.20	Chitten 1yr	1	0.143	11.950	2.53
DS9.25	Chitten 1yr	1	0.027	11.950	0.43
DS9.3	Chitten 1yr	1	0.250	12.000	3.34
DS9.34	Chitten 1yr	1	0.073	11.950	1.30
DS9.40	Chitten 1yr	1	0.187	12.050	2.61
EAST4	Chitten 1yr	1	0.039	11.950	0.69
EAST5	Chitten 1yr	1	0.055	12.000	0.91
EAST6A	Chitten 1yr	1	0.281	12.050	4.11
EAST6C	Chitten 1yr	1	0.023	12.050	0.33
EAST8	Chitten 1yr	1	4.732	12.050	50.19
EAST9	Chitten 1yr	1	4.559	12.050	50.17
East1	Chitten 1yr	1	6.399	12.000	89.45
East3	Chitten 1yr	1	0.375	12.000	5.63
East6	Chitten 1yr	1	5.795	12.100	61.21
East7	Chitten 1yr	1	5.795	12.050	61.74
East7A	Chitten 1yr	1	5.795	12.050	63.09
FLEM1	Chitten 1yr	1	0.188	11.950	2.71
FLEM2	Chitten 1yr	1	0.179	12.000	2.55
FLETCHER1	Chitten 1yr	1	0.129	11.950	2.07
FLETCHER2	Chitten 1yr	1	0.129	11.950	2.07
Foulball	Chitten 1yr	1	6.978	12.150	101.26
GARAGE1	Chitten 1yr	1	0.061	11.950	1.06
HEAT1	Chitten 1yr	1	0.094	12.000	1.47
HEAT3	Chitten 1yr	1	0.079	11.950	1.37
HOME1	Chitten 1yr	1	0.335	12.050	3.74
HOME2	Chitten 1yr	1	0.058	11.950	0.95
HOWE1	Chitten 1yr	1	0.028	12.150	0.31
HOWE2	Chitten 1yr	1	1.350	12.000	17.51
HOWE3	Chitten 1yr	1	0.266	11.950	4.43

Subsection: Master Network Summary

**Node Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
HOWE3A	Chitten 1yr	1	1.311	12.000	16.88
HOWE4	Chitten 1yr	1	0.079	11.950	1.37
HOWE5	Chitten 1yr	1	0.079	11.950	1.37
INT1	Chitten 1yr	1	1.057	11.950	16.56
INT2	Chitten 1yr	1	3.106	12.000	30.89
INT3	Chitten 1yr	1	1.243	11.950	19.81
INT5	Chitten 1yr	1	3.106	12.000	30.89
IRA1	Chitten 1yr	1	0.150	12.000	2.08
IRA2	Chitten 1yr	1	0.126	12.000	1.74
LAF1	Chitten 1yr	1	0.036	11.950	0.58
LAF2	Chitten 1yr	1	0.036	11.950	0.58
LAF3	Chitten 1yr	1	0.036	11.950	0.58
LIB1	Chitten 1yr	1	0.021	12.050	0.32
LIB2	Chitten 1yr	1	0.045	12.000	0.70
LIB3	Chitten 1yr	1	0.491	11.950	7.89
LIB5	Chitten 1yr	1	0.088	12.000	1.42
LIB6	Chitten 1yr	1	0.059	12.050	0.87
LIB7	Chitten 1yr	1	0.209	11.950	3.45
LIFE1	Chitten 1yr	1	0.170	11.950	2.74
Lot1	Chitten 1yr	1	6.893	12.150	112.41
MARSH1	Chitten 1yr	1	0.512	12.050	6.17
MARSH2	Chitten 1yr	1	0.042	11.950	0.64
MARSH3	Chitten 1yr	1	0.470	12.050	5.70
MARSH5	Chitten 1yr	1	0.008	12.000	0.12
MARSH5A	Chitten 1yr	1	0.008	12.000	0.12
MC1	Chitten 1yr	1	0.784	11.950	11.85
MC12	Chitten 1yr	1	0.250	12.000	3.34
MC3	Chitten 1yr	1	0.273	11.950	4.71
MC4	Chitten 1yr	1	0.273	11.950	4.71
MC5	Chitten 1yr	1	0.273	11.950	4.71
MC6	Chitten 1yr	1	0.273	11.950	4.71
MC7	Chitten 1yr	1	0.130	11.950	2.30
MC8	Chitten 1yr	1	0.666	11.950	9.96
MCHVLOT1	Chitten 1yr	1	1.062	11.950	16.43
MCHVLOT2	Chitten 1yr	1	1.062	11.950	16.43
MCHVLOT2A	Chitten 1yr	1	1.062	11.950	16.43
MCHVLOT6B	Chitten 1yr	1	0.065	11.950	1.06
NORWAY1	Chitten 1yr	1	0.063	11.950	1.12
NORWAY2	Chitten 1yr	1	0.069	11.950	1.12
Norway3	Chitten 1yr	1	6.577	12.100	78.48
Norway4	Chitten 1yr	1	6.893	12.100	123.11
OLDMARY1	Chitten 1yr	1	0.827	11.950	12.71
OLDMARY2	Chitten 1yr	1	0.702	11.950	10.58
OVAL2	Chitten 1yr	1	0.186	12.000	2.44
OVAL5	Chitten 1yr	1	0.086	12.100	1.13

## Subsection: Master Network Summary

### Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
PAT1	Chitten 1yr	1	0.084	11.950	1.32
PERK1	Chitten 1yr	1	0.179	12.000	2.55
Pond Outlet	Chitten 1yr	1	7.436	14.350	4.79
ROW1	Chitten 1yr	1	0.209	11.950	3.45
ROW2	Chitten 1yr	1	0.044	11.950	0.79
ROW2A	Chitten 1yr	1	0.044	11.950	0.79
ROW2B	Chitten 1yr	1	0.013	11.950	0.24
ROW3	Chitten 1yr	1	0.008	11.950	0.14
ROW4	Chitten 1yr	1	0.004	11.950	0.07
ROW5	Chitten 1yr	1	0.004	11.950	0.07
ROW5A	Chitten 1yr	1	0.004	11.950	0.07
SD132	Chitten 1yr	1	0.055	11.950	0.88
SMITH4A	Chitten 1yr	1	0.061	11.950	0.96
STMH1	Chitten 1yr	1	0.037	12.050	0.52
TER2	Chitten 1yr	1	0.232	12.050	2.85
THTR1	Chitten 1yr	1	0.192	12.050	2.55
THTR2	Chitten 1yr	1	0.121	12.050	1.92
THTR5	Chitten 1yr	1	0.121	12.000	1.92
THTR7	Chitten 1yr	1	0.021	12.000	0.35
Ticket1	Chitten 1yr	1	0.156	12.000	2.59
Ticket2	Chitten 1yr	1	0.156	12.000	2.59
UCOM1	Chitten 1yr	1	0.303	12.000	4.75
UCOM11	Chitten 1yr	1	0.056	11.950	1.01
UCOM2	Chitten 1yr	1	0.270	12.000	4.30
UCOM5	Chitten 1yr	1	0.118	11.950	2.04
UNDER3	Chitten 1yr	1	0.008	12.000	0.12
UNDER4	Chitten 1yr	1	0.008	12.000	0.12
UNIVRD2	Chitten 1yr	1	0.012	12.050	0.14
UNIVRD3	Chitten 1yr	1	0.097	11.950	1.71
UNK2	Chitten 1yr	1	0.084	11.950	1.32
UNK6	Chitten 1yr	1	0.156	12.000	2.59
Univrd1	Chitten 1yr	1	6.508	12.100	79.32
WAT137	Chitten 1yr	1	0.037	12.050	0.52
WIL2	Chitten 1yr	1	0.025	11.950	0.45
WIL3	Chitten 1yr	1	2.535	12.000	33.87
WIL4	Chitten 1yr	1	0.075	11.950	1.35
WIL6A	Chitten 1yr	1	0.007	11.950	0.13
WIL7	Chitten 1yr	1	0.007	11.950	0.13
cent1	Chitten 1yr	1	7.062	12.300	90.21
cent4	Chitten 1yr	1	7.062	12.250	93.67
cent5	Chitten 1yr	1	7.062	12.200	100.64
univrd4	Chitten 1yr	1	6.399	12.050	84.75

### Pond Summary

Subsection: Master Network Summary

**Pond Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Forebay (IN)	Chitten 1yr	1	7.436	12.300	91.21	(N/A)	(N/A)
Forebay (OUT)	Chitten 1yr	1	7.436	12.300	91.04	245.59	0.485
Micropool (IN)	Chitten 1yr	1	7.436	12.300	91.04	(N/A)	(N/A)
Micropool (OUT)	Chitten 1yr	1	7.436	14.350	4.79	241.78	6.133

Peak discharge = 4.79 cfs



## Appendix – Overbank Flood Protection

### Fletcher Allen Inpatient Building Project

August 15, 2014

Natural Conditions  
10 yr - 24hr storm

Subsection: Master Network Summary

**Catchments Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
A1-D1	Chitt 10 yr	10	0.195	12.150	2.18
A2	Chitt 10 yr	10	0.162	12.150	1.83
A3-B1-C1	Chitt 10 yr	10	1.236	12.150	12.95
A4	Chitt 10 yr	10	0.000	0.000	0.00
B2	Chitt 10 yr	10	0.092	12.250	0.55
B3	Chitt 10 yr	10	0.134	12.250	0.80
C2	Chitt 10 yr	10	0.288	12.250	1.71
D2	Chitt 10 yr	10	4.173	12.200	40.99
D3	Chitt 10 yr	10	0.091	12.150	1.03
D4	Chitt 10 yr	10	0.278	11.950	5.01

**Node Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
J-A1-D1	Chitt 10 yr	10	0.195	12.150	2.18
J-A2	Chitt 10 yr	10	0.162	12.150	1.83
J-A3-B1-C1	Chitt 10 yr	10	1.236	12.150	12.95
J-B2	Chitt 10 yr	10	0.092	12.250	0.55
J-C2	Chitt 10 yr	10	0.288	12.250	1.71
J-D2	Chitt 10 yr	10	4.173	12.200	40.99
J-D3	Chitt 10 yr	10	0.091	12.150	1.03
Study Point	Chitt 10 yr	10	6.650	12.500	59.32

59.32 cfs > 49.95 cfs ok.

Post-Development  
10yr-24 hour storm

Subsection: Master Network Summary

**Catchments Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
105A	Chitten 10yr	10	0.016	12.000	0.25
11	Chitten 10yr	10	0.083	11.950	1.29
110	Chitten 10yr	10	0.007	12.000	0.12
113	Chitten 10yr	10	0.057	11.950	1.02
116	Chitten 10yr	10	0.024	11.950	0.37
118	Chitten 10yr	10	0.070	12.050	0.99
12	Chitten 10yr	10	0.015	11.950	0.28
124A	Chitten 10yr	10	0.035	11.950	0.55
124B	Chitten 10yr	10	0.094	11.950	1.47
124C	Chitten 10yr	10	0.100	11.950	1.56
124D	Chitten 10yr	10	0.037	11.950	0.58
124E	Chitten 10yr	10	0.087	11.950	1.36
124F	Chitten 10yr	10	0.117	11.950	1.83
124G	Chitten 10yr	10	0.070	11.950	1.09
124H	Chitten 10yr	10	0.087	11.950	1.36
13	Chitten 10yr	10	0.135	11.950	2.42
134	Chitten 10yr	10	0.275	11.950	4.31
135	Chitten 10yr	10	0.118	12.000	1.97
138	Chitten 10yr	10	0.095	12.000	1.55
139	Chitten 10yr	10	0.149	12.000	2.24
14	Chitten 10yr	10	0.053	12.000	0.85
140	Chitten 10yr	10	0.134	12.050	2.00
141	Chitten 10yr	10	0.036	11.950	0.62
142	Chitten 10yr	10	0.039	12.050	0.56
143	Chitten 10yr	10	0.045	12.050	0.66
143A	Chitten 10yr	10	0.073	11.950	1.28
144	Chitten 10yr	10	0.324	12.300	1.51
145	Chitten 10yr	10	0.092	12.000	1.36
146	Chitten 10yr	10	0.340	11.950	6.14
147	Chitten 10yr	10	0.208	11.950	3.76
148	Chitten 10yr	10	0.136	11.950	2.45
149	Chitten 10yr	10	0.034	12.050	0.50
15	Chitten 10yr	10	0.054	12.150	0.58
150	Chitten 10yr	10	0.021	12.100	0.24
152	Chitten 10yr	10	0.298	12.000	4.86
16	Chitten 10yr	10	0.062	12.050	0.93
16A	Chitten 10yr	10	0.035	12.200	0.36
1A	Chitten 10yr	10	0.207	11.950	3.24
1B	Chitten 10yr	10	0.187	11.950	2.93
20	Chitten 10yr	10	0.097	12.050	1.33
24	Chitten 10yr	10	0.146	11.950	2.28
25	Chitten 10yr	10	0.161	12.250	1.51
27	Chitten 10yr	10	0.057	11.950	0.90
29	Chitten 10yr	10	0.157	12.000	2.38
31	Chitten 10yr	10	0.064	12.100	0.75

Subsection: Master Network Summary

**Catchments Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
32	Chitten 10yr	10	0.049	11.950	0.89
33	Chitten 10yr	10	0.029	11.950	0.45
34	Chitten 10yr	10	0.194	12.000	3.20
35	Chitten 10yr	10	0.009	11.950	0.16
36	Chitten 10yr	10	0.115	11.950	1.79
36A	Chitten 10yr	10	0.010	11.950	0.17
38	Chitten 10yr	10	0.032	11.950	0.51
41	Chitten 10yr	10	0.105	11.950	1.65
41.5	Chitten 10yr	10	0.105	11.950	1.65
44	Chitten 10yr	10	0.021	12.150	0.23
45	Chitten 10yr	10	0.252	11.950	3.94
46	Chitten 10yr	10	0.072	11.950	1.28
47	Chitten 10yr	10	0.050	11.950	0.87
49	Chitten 10yr	10	0.113	11.950	1.93
61	Chitten 10yr	10	0.054	11.950	0.84
65	Chitten 10yr	10	0.027	12.000	0.42
65B	Chitten 10yr	10	0.207	11.950	3.71
65C	Chitten 10yr	10	0.006	11.950	0.09
66	Chitten 10yr	10	0.081	11.950	1.26
67	Chitten 10yr	10	0.013	11.950	0.23
73	Chitten 10yr	10	0.007	12.050	0.09
74A	Chitten 10yr	10	0.060	11.950	1.08
74B	Chitten 10yr	10	0.025	11.950	0.44
75	Chitten 10yr	10	0.060	12.050	0.86
76	Chitten 10yr	10	0.027	11.950	0.47
77	Chitten 10yr	10	0.041	12.000	0.62
77A	Chitten 10yr	10	0.045	12.000	0.72
78	Chitten 10yr	10	0.122	12.050	1.82
79	Chitten 10yr	10	0.025	12.050	0.38
80	Chitten 10yr	10	0.012	12.000	0.19
81	Chitten 10yr	10	0.034	11.950	0.54
82	Chitten 10yr	10	0.066	11.950	1.14
83	Chitten 10yr	10	0.017	11.950	0.30
84	Chitten 10yr	10	0.028	12.050	0.40
95	Chitten 10yr	10	0.006	12.050	0.08
96	Chitten 10yr	10	0.018	11.950	0.31
99B	Chitten 10yr	10	0.060	12.150	0.66
COM1	Chitten 10yr	10	0.022	11.950	0.36
COM10	Chitten 10yr	10	0.082	11.950	1.46
COM11	Chitten 10yr	10	0.087	11.950	1.54
COM12	Chitten 10yr	10	0.142	11.950	2.22
COM13	Chitten 10yr	10	0.109	11.950	1.95
COM14	Chitten 10yr	10	0.162	12.050	2.09
COM15	Chitten 10yr	10	0.159	11.950	2.66
COM16	Chitten 10yr	10	0.024	12.000	0.39

Subsection: Master Network Summary

### Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
COM17	Chitten 10yr	10	0.176	12.050	2.62
COM2	Chitten 10yr	10	0.052	11.950	0.92
COM3	Chitten 10yr	10	0.040	12.000	0.64
COM4	Chitten 10yr	10	0.177	12.000	2.76
COM5	Chitten 10yr	10	0.116	11.950	1.90
COM7	Chitten 10yr	10	0.115	11.950	2.03
COM8	Chitten 10yr	10	0.066	11.950	1.18
COM9	Chitten 10yr	10	0.089	12.050	1.27
Centennial1	Chitten 10yr	10	0.172	11.950	2.95
Centennial2	Chitten 10yr	10	0.161	11.950	2.86
FAHC-1	Chitten 10yr	10	0.133	11.950	2.35
FAHC-10	Chitten 10yr	10	0.092	12.000	1.51
FAHC-10A	Chitten 10yr	10	0.070	11.950	1.17
FAHC-11	Chitten 10yr	10	0.274	11.950	4.28
FAHC-12	Chitten 10yr	10	0.246	11.950	3.85
FAHC-13	Chitten 10yr	10	0.081	11.950	1.31
FAHC-14	Chitten 10yr	10	0.227	11.950	3.88
FAHC-15	Chitten 10yr	10	0.082	11.950	1.47
FAHC-16	Chitten 10yr	10	0.082	11.950	1.41
FAHC-17	Chitten 10yr	10	0.107	11.950	1.70
FAHC-18	Chitten 10yr	10	0.113	12.000	1.79
FAHC-18A	Chitten 10yr	10	0.043	11.950	0.74
FAHC-19	Chitten 10yr	10	0.128	11.950	2.25
FAHC-2	Chitten 10yr	10	0.085	11.950	1.51
FAHC-20	Chitten 10yr	10	0.127	11.950	1.98
FAHC-21	Chitten 10yr	10	0.028	11.950	0.43
FAHC-22	Chitten 10yr	10	0.024	11.950	0.38
FAHC-3	Chitten 10yr	10	0.132	11.950	2.22
FAHC-4	Chitten 10yr	10	0.042	11.950	0.66
FAHC-5	Chitten 10yr	10	0.168	11.950	2.91
FAHC-6	Chitten 10yr	10	0.331	12.050	4.53
FAHC-7	Chitten 10yr	10	0.103	12.050	1.39
FAHC-8	Chitten 10yr	10	0.106	12.000	1.61
FAHC-9	Chitten 10yr	10	0.264	12.000	4.02
PERK1	Chitten 10yr	10	0.053	11.950	0.94
STEM	Chitten 10yr	10	0.434	11.950	7.68
UCOM6	Chitten 10yr	10	0.117	11.950	2.09

### Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
ADDS9.5	Chitten 10yr	10	0.100	11.950	1.56
AIK1	Chitten 10yr	10	0.344	12.050	4.48

Subsection: Master Network Summary

**Node Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
AIKEN1	Chitten 10yr	10	0.094	11.950	1.49
AUD1	Chitten 10yr	10	0.060	12.050	0.86
BAIL1	Chitten 10yr	10	1.899	12.050	25.13
BAIL2	Chitten 10yr	10	1.878	12.050	24.93
BEN1	Chitten 10yr	10	0.213	11.950	3.79
BEN2	Chitten 10yr	10	0.240	11.950	4.18
BEN3	Chitten 10yr	10	0.027	12.000	0.42
BEN3B	Chitten 10yr	10	0.027	12.000	0.42
BEN4	Chitten 10yr	10	0.246	11.950	4.25
BEN5	Chitten 10yr	10	0.246	11.950	4.25
BH1	Chitten 10yr	10	0.386	12.050	4.99
BIL2	Chitten 10yr	10	0.066	11.950	1.14
BIL3	Chitten 10yr	10	0.097	12.050	1.33
BIL4	Chitten 10yr	10	0.097	12.050	1.33
BILO1	Chitten 10yr	10	0.036	11.950	0.62
BILO2	Chitten 10yr	10	0.170	12.000	2.55
BILO3	Chitten 10yr	10	0.134	12.050	2.00
BILO4	Chitten 10yr	10	0.453	12.000	6.89
BILO5	Chitten 10yr	10	0.039	12.050	0.56
BILO6	Chitten 10yr	10	0.244	12.000	3.79
BOOTH1	Chitten 10yr	10	0.244	11.950	3.83
BUCK1	Chitten 10yr	10	5.006	11.950	28.62
BUCK2	Chitten 10yr	10	5.186	11.950	30.87
BUCK2A	Chitten 10yr	10	0.180	11.950	2.46
BUCK3	Chitten 10yr	10	5.252	12.000	31.15
BUCK3A	Chitten 10yr	10	0.060	12.150	0.66
BURGESS1	Chitten 10yr	10	0.070	12.050	0.99
CASE2	Chitten 10yr	10	0.340	11.950	6.14
CASE4	Chitten 10yr	10	0.340	11.950	6.14
CENT4A	Chitten 10yr	10	12.709	12.150	120.45
COLCHESTER4A	Chitten 10yr	10	0.244	11.950	3.83
COLCHESTER1	Chitten 10yr	10	8.056	12.000	72.46
COLCHESTER2	Chitten 10yr	10	8.056	12.000	72.46
COLCHESTER3	Chitten 10yr	10	7.950	11.950	70.95
COLCHESTER4	Chitten 10yr	10	7.706	11.950	68.78
COOK1	Chitten 10yr	10	0.054	12.150	0.58
COOK1A	Chitten 10yr	10	0.218	12.050	1.72
COOK3	Chitten 10yr	10	0.035	12.200	0.36
COOK4	Chitten 10yr	10	0.146	11.950	2.28
COOK5	Chitten 10yr	10	0.062	12.050	0.93
CULV1	Chitten 10yr	10	0.089	12.050	1.27
Cent2	Chitten 10yr	10	12.709	12.200	116.29
DEAD1	Chitten 10yr	10	0.275	11.950	4.31
DS1.0	Chitten 10yr	10	0.082	11.950	1.47
DS1.5	Chitten 10yr	10	0.024	11.950	0.38

Subsection: Master Network Summary

**Node Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
DS1.7	Chitten 10yr	10	0.024	11.950	0.38
DS1T	Chitten 10yr	10	1.213	11.950	18.03
DS2.10	Chitten 10yr	10	0.043	11.950	0.74
DS2.9	Chitten 10yr	10	1.541	11.950	23.31
DS2T	Chitten 10yr	10	0.221	11.950	3.45
DS3.15	Chitten 10yr	10	0.965	11.950	14.15
DS3.17	Chitten 10yr	10	0.804	12.000	11.52
DS4.18	Chitten 10yr	10	0.106	12.000	1.61
DS7.4	Chitten 10yr	10	0.250	11.950	4.22
DS8.1	Chitten 10yr	10	0.215	11.950	3.61
DS8.32	Chitten 10yr	10	0.024	11.950	0.37
DS9.11	Chitten 10yr	10	0.168	11.950	2.91
DS9.13	Chitten 10yr	10	0.081	11.950	1.31
DS9.15	Chitten 10yr	10	0.392	11.950	6.73
DS9.16	Chitten 10yr	10	0.083	11.950	1.29
DS9.2	Chitten 10yr	10	0.677	11.950	9.09
DS9.20	Chitten 10yr	10	0.260	11.950	4.51
DS9.25	Chitten 10yr	10	0.042	11.950	0.66
DS9.3	Chitten 10yr	10	0.430	12.000	5.68
DS9.34	Chitten 10yr	10	0.133	11.950	2.35
DS9.40	Chitten 10yr	10	0.331	12.050	4.53
EAST4	Chitten 10yr	10	0.073	11.950	1.28
EAST5	Chitten 10yr	10	0.118	12.000	1.97
EAST6A	Chitten 10yr	10	0.569	12.000	8.46
EAST6C	Chitten 10yr	10	0.045	12.050	0.66
EAST8	Chitten 10yr	10	8.331	12.050	73.46
EAST9	Chitten 10yr	10	8.056	12.050	70.88
East1	Chitten 10yr	10	11.576	12.000	95.43
East3	Chitten 10yr	10	0.760	12.000	11.61
East6	Chitten 10yr	10	10.547	12.000	161.69
East7	Chitten 10yr	10	10.157	12.050	95.99
East7A	Chitten 10yr	10	10.157	12.000	96.73
FLEM1	Chitten 10yr	10	0.351	11.950	5.08
FLEM2	Chitten 10yr	10	0.333	11.950	4.77
FLETCHER1	Chitten 10yr	10	0.204	11.950	3.19
FLETCHER2	Chitten 10yr	10	0.204	11.950	3.19
Foulball	Chitten 10yr	10	12.548	12.100	124.66
GARAGE1	Chitten 10yr	10	0.106	11.950	1.79
HEAT1	Chitten 10yr	10	0.157	12.000	2.38
HEAT3	Chitten 10yr	10	0.135	11.950	2.30
HOME1	Chitten 10yr	10	0.607	12.050	6.76
HOME2	Chitten 10yr	10	0.094	11.950	1.49
HOWE1	Chitten 10yr	10	0.064	12.100	0.75
HOWE2	Chitten 10yr	10	2.408	12.000	30.99
HOWE3	Chitten 10yr	10	0.437	11.950	7.10

Subsection: Master Network Summary

**Node Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
HOWE3A	Chitten 10yr	10	2.336	12.000	29.85
HOWE4	Chitten 10yr	10	0.135	11.950	2.30
HOWE5	Chitten 10yr	10	0.135	11.950	2.30
INT1	Chitten 10yr	10	1.772	11.950	27.16
INT2	Chitten 10yr	10	5.603	12.000	36.18
INT3	Chitten 10yr	10	2.104	11.950	32.85
INT5	Chitten 10yr	10	5.603	12.000	36.18
IRA1	Chitten 10yr	10	0.280	12.000	3.92
IRA2	Chitten 10yr	10	0.225	12.000	3.09
LAF1	Chitten 10yr	10	0.057	11.950	0.90
LAF2	Chitten 10yr	10	0.057	11.950	0.90
LAF3	Chitten 10yr	10	0.057	11.950	0.90
LIB1	Chitten 10yr	10	0.041	12.000	0.62
LIB2	Chitten 10yr	10	0.086	12.000	1.34
LIB3	Chitten 10yr	10	0.882	11.950	14.07
LIB5	Chitten 10yr	10	0.194	12.000	3.20
LIB6	Chitten 10yr	10	0.122	12.050	1.82
LIB7	Chitten 10yr	10	0.356	11.950	5.80
LIFE1	Chitten 10yr	10	0.334	11.950	5.39
Lot1	Chitten 10yr	10	12.376	12.050	123.11
MARSH1	Chitten 10yr	10	0.942	12.050	11.38
MARSH2	Chitten 10yr	10	0.070	11.950	1.06
MARSH3	Chitten 10yr	10	0.873	12.050	10.60
MARSH5	Chitten 10yr	10	0.016	12.000	0.25
MARSH5A	Chitten 10yr	10	0.016	12.000	0.25
MC1	Chitten 10yr	10	1.298	11.950	19.13
MC12	Chitten 10yr	10	0.430	12.000	5.68
MC3	Chitten 10yr	10	0.474	11.950	8.02
MC4	Chitten 10yr	10	0.474	11.950	8.02
MC5	Chitten 10yr	10	0.474	11.950	8.02
MC6	Chitten 10yr	10	0.474	11.950	8.02
MC7	Chitten 10yr	10	0.227	11.950	3.88
MC8	Chitten 10yr	10	1.110	11.950	16.20
MCHVLOT1	Chitten 10yr	10	1.826	11.950	27.83
MCHVLOT2	Chitten 10yr	10	1.826	11.950	27.83
MCHVLOT2A	Chitten 10yr	10	1.826	11.950	27.83
MCHVLOT6B	Chitten 10yr	10	0.107	11.950	1.70
NORWAY1	Chitten 10yr	10	0.136	11.950	2.45
NORWAY2	Chitten 10yr	10	0.157	11.950	2.59
Norway3	Chitten 10yr	10	11.975	12.050	100.19
Norway4	Chitten 10yr	10	12.376	12.000	123.11
OLDMARY1	Chitten 10yr	10	1.428	11.950	21.65
OLDMARY2	Chitten 10yr	10	1.213	11.950	18.03
OVAL2	Chitten 10yr	10	0.344	12.000	4.48
OVAL5	Chitten 10yr	10	0.162	12.050	2.09



## Subsection: Master Network Summary

### Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
PAT1	Chitten 10yr	10	0.137	11.950	2.13
PERK1	Chitten 10yr	10	0.333	11.950	4.77
Pond Outlet	Chitten 10yr	10	13.763	12.750	49.95
ROW1	Chitten 10yr	10	0.356	11.950	5.80
ROW2	Chitten 10yr	10	0.085	11.950	1.52
ROW2A	Chitten 10yr	10	0.085	11.950	1.52
ROW2B	Chitten 10yr	10	0.025	11.950	0.44
ROW3	Chitten 10yr	10	0.018	11.950	0.33
ROW4	Chitten 10yr	10	0.010	11.950	0.17
ROW5	Chitten 10yr	10	0.009	11.950	0.16
ROW5A	Chitten 10yr	10	0.009	11.950	0.16
SD132	Chitten 10yr	10	0.087	11.950	1.36
SMITH4A	Chitten 10yr	10	0.102	11.950	1.58
STMH1	Chitten 10yr	10	0.070	12.050	0.99
TER2	Chitten 10yr	10	0.431	12.050	5.25
THTR1	Chitten 10yr	10	0.333	12.050	4.37
THTR2	Chitten 10yr	10	0.217	12.050	3.37
THTR5	Chitten 10yr	10	0.217	12.000	3.37
THTR7	Chitten 10yr	10	0.040	12.000	0.64
Ticket1	Chitten 10yr	10	0.298	12.000	4.86
Ticket2	Chitten 10yr	10	0.298	12.000	4.86
UCOM1	Chitten 10yr	10	0.550	12.000	8.58
UCOM11	Chitten 10yr	10	0.109	11.950	1.95
UCOM2	Chitten 10yr	10	0.484	12.000	7.66
UCOM5	Chitten 10yr	10	0.227	11.950	3.94
UNDER3	Chitten 10yr	10	0.016	12.000	0.25
UNDER4	Chitten 10yr	10	0.016	12.000	0.25
UNIVRD2	Chitten 10yr	10	0.034	12.050	0.50
UNIVRD3	Chitten 10yr	10	0.208	11.950	3.76
UNK2	Chitten 10yr	10	0.137	11.950	2.13
UNK6	Chitten 10yr	10	0.298	12.000	4.86
Univrd1	Chitten 10yr	10	11.818	12.050	98.24
WAT137	Chitten 10yr	10	0.070	12.050	0.99
WIL2	Chitten 10yr	10	0.049	11.950	0.89
WIL3	Chitten 10yr	10	4.620	12.000	61.38
WIL4	Chitten 10yr	10	0.150	11.950	2.69
WIL6A	Chitten 10yr	10	0.015	11.950	0.28
WIL7	Chitten 10yr	10	0.015	11.950	0.28
cent1	Chitten 10yr	10	12.709	12.200	116.29
cent4	Chitten 10yr	10	12.709	12.200	119.34
cent5	Chitten 10yr	10	12.709	12.150	122.64
univrd4	Chitten 10yr	10	11.576	12.050	95.14

### Pond Summary

Subsection: Master Network Summary

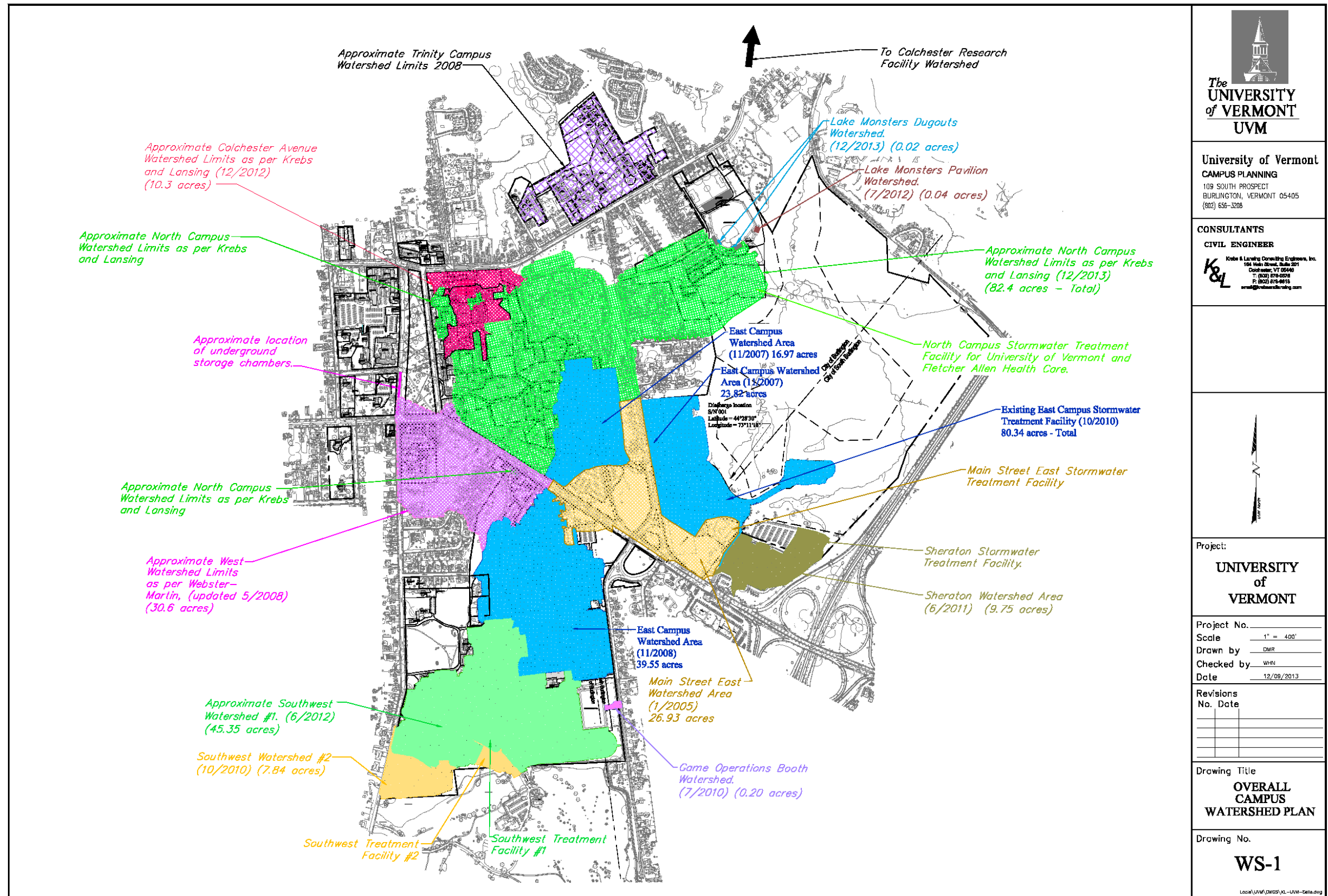
**Pond Summary**

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Forebay (IN)	Chitten 10yr	10	13.763	12.200	120.44	(N/A)	(N/A)
Forebay (OUT)	Chitten 10yr	10	13.763	12.250	121.31	245.81	0.528
Micropool (IN)	Chitten 10yr	10	13.763	12.250	121.31	(N/A)	(N/A)
Micropool (OUT)	Chitten 10yr	10	13.763	12.750	49.95	243.02	7.419











**The UNIVERSITY of VERMONT**  
UVM

**University of Vermont**  
CAMPUS PLANNING  
109 SOUTH PROSPECT  
BURLINGTON, VERMONT 05405  
(802) 656-3208

**CONSULTANTS**  
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email@krlconsulting.com



Project:

**UNIVERSITY of VERMONT**

Project No. _____

Scale 1" = 400'

Drawn by DMR

Checked by WHN

Date 12/09/2013

Revisions	No.	Date

Drawing Title

**OVERALL CAMPUS WATERSHED PLAN**

Drawing No.

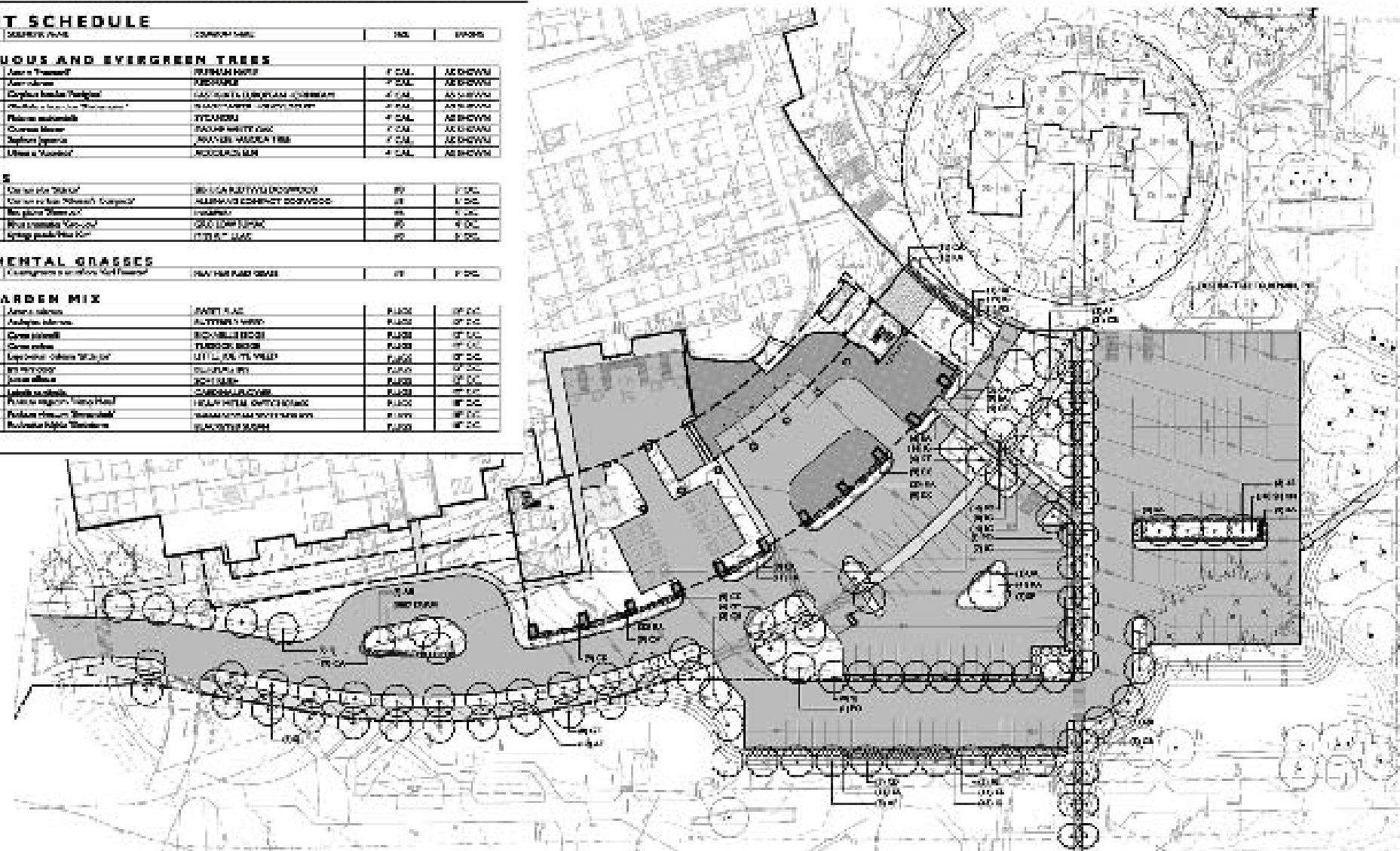
**WS-1**

Local\UVM\DWGSET\VL-UVM-Cells.dwg

# Landscape Plan



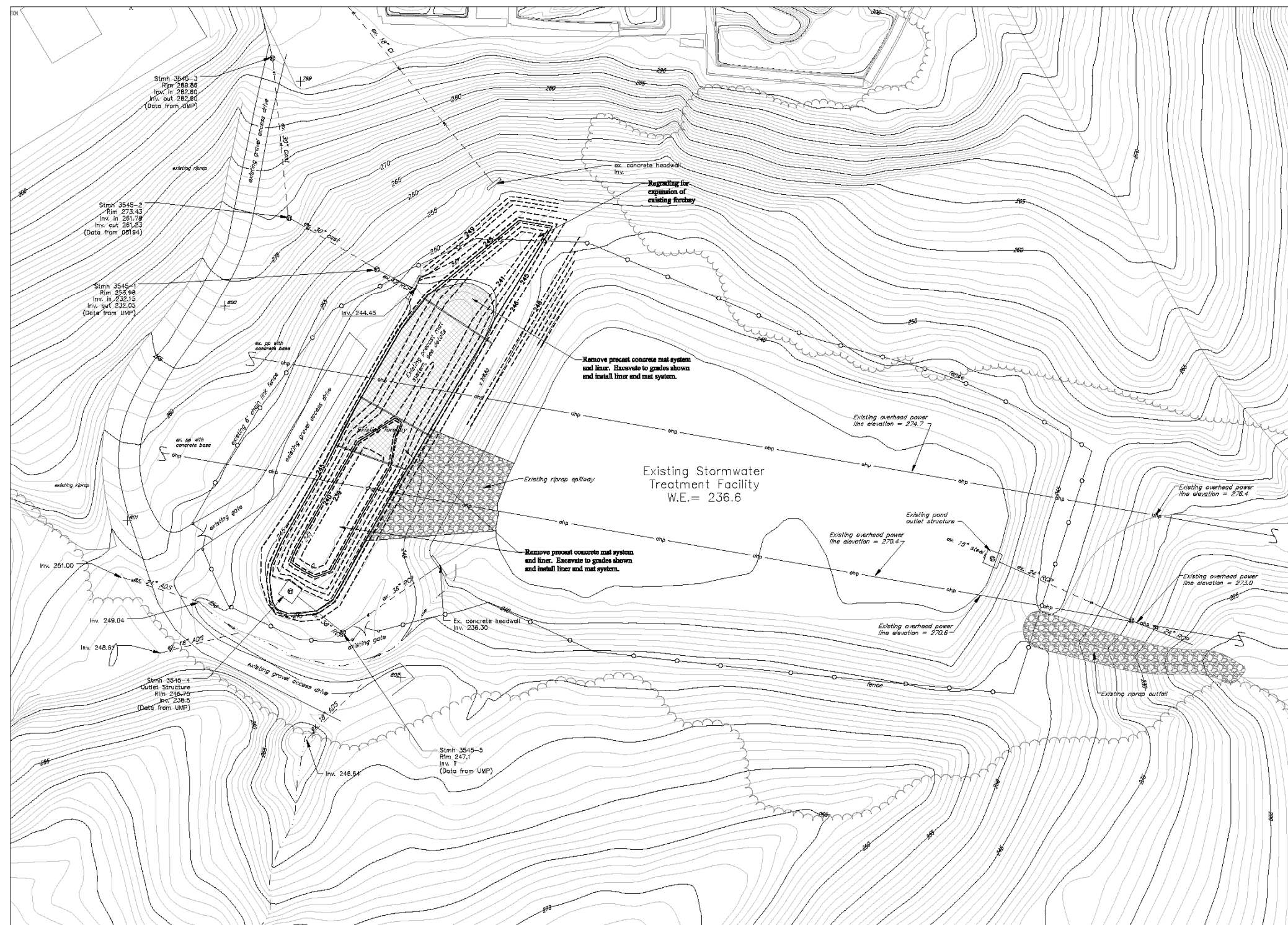
PLANT SCHEDULE				
REF	QTY	COMMON NAME	COUNCIL NAME	SIZE
<b>DECIDUOUS AND EVERGREEN TREES</b>				
01	11	Japanese Tree	REDWOOD	12" CAL.
02	9	Japanese Tree	REDWOOD	12" CAL.
03	15	Japanese Tree	REDWOOD	12" CAL.
04	18	Japanese Tree	REDWOOD	12" CAL.
05	3	Japanese Tree	REDWOOD	12" CAL.
06	15	Japanese Tree	REDWOOD	12" CAL.
07	30	Japanese Tree	REDWOOD	12" CAL.
08	3	Japanese Tree	REDWOOD	12" CAL.
<b>SHRUBS</b>				
09	27	Japanese Tree	REDWOOD	12" CAL.
10	27	Japanese Tree	REDWOOD	12" CAL.
11	12	Japanese Tree	REDWOOD	12" CAL.
12	12	Japanese Tree	REDWOOD	12" CAL.
13	7	Japanese Tree	REDWOOD	12" CAL.
<b>ORNAMENTAL GRASSES</b>				
14	12	Japanese Tree	REDWOOD	12" CAL.
<b>RAIN GARDEN MIX</b>				
15	12	Japanese Tree	REDWOOD	12" CAL.
16	12	Japanese Tree	REDWOOD	12" CAL.
17	12	Japanese Tree	REDWOOD	12" CAL.
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95	12	Japanese Tree	REDWOOD	12" CAL.
96	12	Japanese Tree	REDWOOD	12" CAL.
97	12	Japanese Tree	REDWOOD	12" CAL.
98	12	Japanese Tree	REDWOOD	12" CAL.
99	12	Japanese Tree	REDWOOD	12" CAL.
100	12	Japanese Tree	REDWOOD	12" CAL.



25

FletcherAllen.org





# **Stormwater Discharge Fletcher Allen Inpatient Building Project**

August 18, 2014

## **Proposed Stormwater Treatment**

The project is located in the University of Vermont designated North Campus Watershed. Stormwater in the watershed is collected and piped to the North Campus Stormwater Treatment Facility located behind Centennial Field. Stormwater is detained and treated in the facility prior to discharging to the Centennial Brook Watershed which is impaired for stormwater as classified by the State of Vermont.

The Water Quality Treatment Standard, Channel Protection Treatment Standard, and Overbank Flood Protection Standard for the project will be obtained through the North Campus Treatment Facility. The following is a brief summary of the measures taken to comply with the Stormwater Treatment Standards outlined in the Vermont Stormwater Management Manual. The calculations have been provided as supporting material.

### **Water Quality Treatment Standard:**

The North Campus Stormwater Facility is considered a P-1 Micropool Extended Detention Pond. The Water Quality Treatment Standard has been met by providing extended detention, using the modified curve number, for the 0.9" Water Quality storm. The Water Quality Volume has been provided, not just for this project, but for all portions of Fletcher Allen and the University of Vermont that are included in the North Campus Watershed. The forebay is at least 4 feet deep and will be expanded with the project to contain more than the minimum required 10% Water Quality Volume (See attached Forebay Expansion Plan). The micropool is 8 feet deep and has both an aquatic and safety bench around the perimeter. The appropriate calculations have been provided in the Water Quality Volume Appendix.

### **Groundwater Recharge Treatment Standard:**

Because all the soils on the site are classified as hydrologic soil group D, the Groundwater Recharge Treatment Standard is waived for this site.

### **Channel Protection Treatment Standard (Cpv):**

A Reg-U-Flo Vortex Valve is currently used to control both the Water Quality and Channel Protection storms. This structure has proven to be an effective and relatively maintenance free outlet device. The vortex valve control device was designed to provide the required cold water 12 hour centroid to centroid detention for the 1-year 24 hour storm event. The calculations for this standard have been provided in the Channel Protection Volume Appendix.

### **Overbank Flood Protection Treatment Standard (Qp10):**

A pre-development hydrologic model was created to ensure runoff from the post-development 10 year, 24 hour storm event does not exceed the existing pre-development flows for the same storm event. The pre-development model was created considering the site under natural conditions. All pervious surfaces were modeled as a wood-grass combination. The pond outlet structure has been designed to control the post-development runoff from the 10 year, 24 hour storm to a level less than that of the pre-development 10 year, 24 hour storm. The calculations have been provided in the Overbank Flood Protection Appendix.

Pre-development 10 year, 24 hour storm = 59.32 c.f.s.  
Post-development 10 year, 24 hour storm = 49.95 c.f.s.

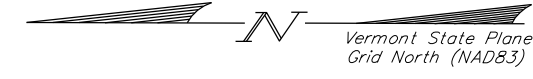
### **Extreme Flood Protection Standard:**

The Extreme Flood Protection Standard is waived because the total impervious area proposed for the development is less than 10 acres. The waiver for this standard is included in the Extreme Flood Protection Appendix.

### **Sediment Offset**

Because the project is located in an impaired water way, the sediment release from the project cannot exceed the current sediment release from the existing conditions. We have calculated the sediment release from the project as 400 lbs/year. We have calculated the existing sediment release as 277 lbs/year which means the project is required to provide a 123 lbs/year sediment offset. The project will contribute to the large stormwater infiltration sediment offset for Jaycee Park.





SMITH

McCLURE

WEST  
PAVILION

McCLURE

ACC WEST

ROWELL HALL

WILLS HALL

BUCKHAM HALL

CHITTENDEN HALL

Limits of area  
calculations

Limit of area  
calculations

	FAHC	UVM
REDEVELOPMENT IMPERVIOUS	49, 580 sf	25, 886 sf
NEW IMPERVIOUS	30,804 sf	10,852 sf
RESTORE (IMPERV TO PERV.)	13,143 sf	2,081 sf
EX. IMPERVIOUS TO REMAIN	642 sf	0 sf
EX. PERVIOUS TO REMAIN	12,094 sf	3,501 sf

TOTAL PROJECT AREA = 148,583 sf

<i>Date revised</i>	<i>Description</i>	<i>Checked</i>	<i>Date</i>
Design <u>FA</u>	OVERALL AREA WORK SHEET 7/24/2014		
Drawn <u>FA</u>			
Checked _____	<i>Fletcher Allen In-Patient Bed Project</i>		
Scale <u>1" = 30'</u>			
Date <u>July 24, 2014</u>			
Project <u>14117</u>			
	<i>Colchester Avenue</i>	<i>Burlington, Vermont</i>	
<i>KREBS &amp; LANSING Consulting Engineers, Inc. 164 Main Street, Colchester, Vermont 05446</i>		File name 7-22-14	
		Printing date 7/24/14	



# Fletcher Allen Sediment Load Analysis Inpatient Building Project

Date: 08/17/2014

## Post Development Conditions Draining to Centennial Brook

Watershed Name	Area (acres)	Impervious Area (acres)	Percent Impervious area	RV*	C factor	Pre-Treatment Load (lbs/year)**	Percent Efficiency (pre)	Final Load (lbs/year)***
GRASS	1.57	0.00	0	0.05	75	40	80	8
Paved Road	1.71	1.71	100	0.95	172	1881	80	376
Sidewalks	0.20	0.2	100	0.95	27	35	80	7
ROOFS	0.78	0.78	100	0.95	9	45	80	9
<b>Totals:</b>	<b>4.26</b> (acres)	<b>2.69</b> (acres)				<b>2,000</b> (lbs/year)		<b>400</b> (lbs/year)

* RV= .05+.009*(Percent Impervious Area)

** Pre-Treatment Load= [(P)(P)(RV)/12](C)(A)(2.72)

*** Final Load= Pre-Treatment Load *removal efficiency

where:

Load = lbs/year

P = 33 inches in annual precipitation

Pj = .9 correction factor based on 10% of storms not producing any runoff

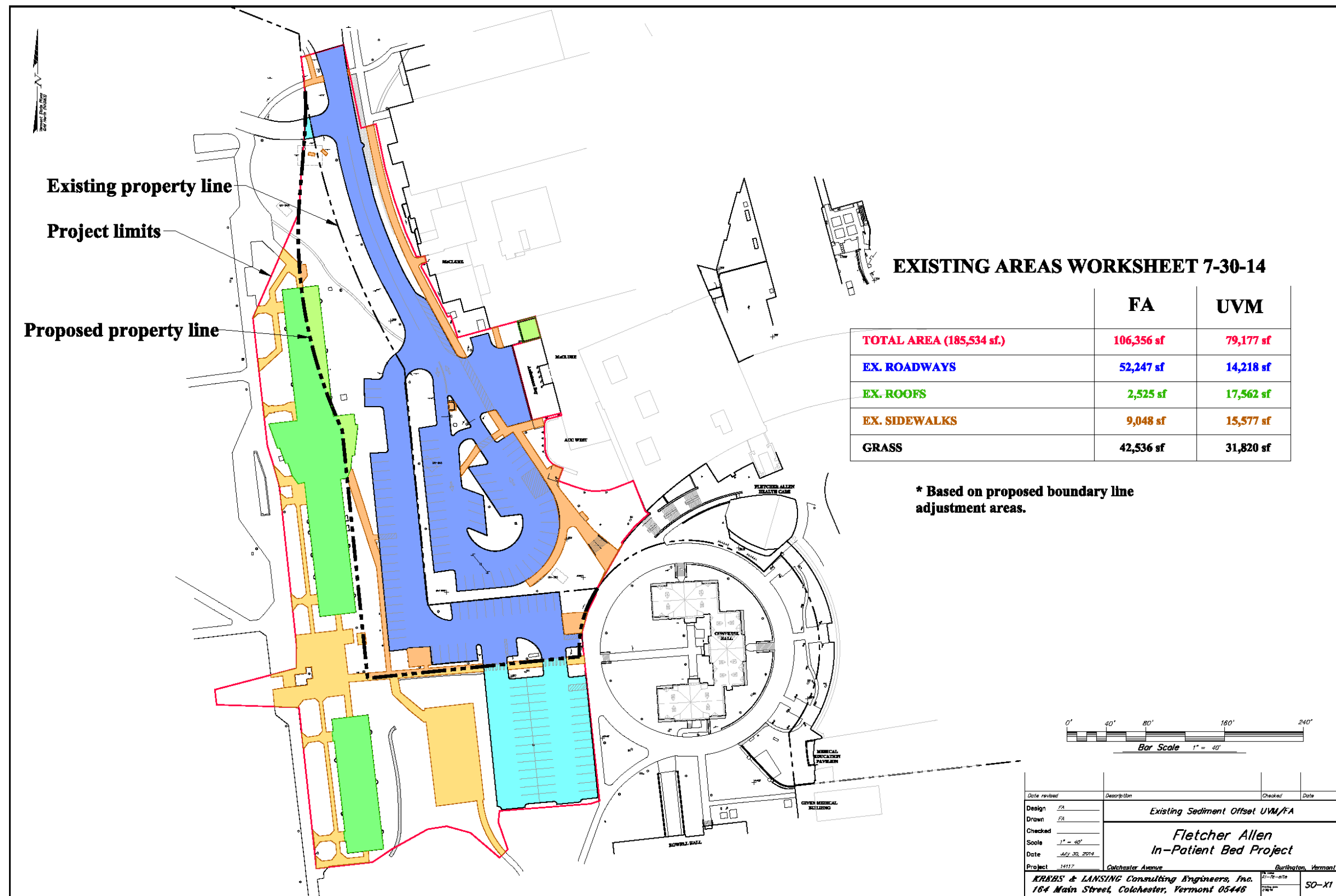
RV = runoff coefficient (dependent on level of imperviousness)

C = flow weighted mean concentration for pollutants (in mg/l except for bacteria in #100ml)

A = contributing area (in acres)

2.72 = conversion factor

14167:\Stormwater\POST-Sediment-Inpatient Building 8-17-14.XLS



# Fletcher Allen Sediment Load Analysis Inpatient Building Project

## PRE Development Conditions Draining to Centennial Brook - Fletcher Allen Only

Date: 08/17/2014

Watershed Name	Area (acres)	Impervious Area (acres)	Percent Impervious area	RV*	C factor	Pre-Treatment Load (lbs/year)**	Percent Efficiency (pre)	Final Load (lbs/year)***
GRASS	0.98	0.00	0	0.05	75	25	80	5
Paved Road	1.20	1.20	100	0.95	172	1320	80	264
Sidewalks	0.21	0.21	100	0.95	27	36	80	7
ROOFS	0.06	0.06	100	0.95	9	3	80	1
<b>Totals:</b>	<b>2.44</b> (acres)	<b>1.47</b> (acres)				<b>1,384</b> (lbs/year)		<b>277</b> (lbs/year)

* RV= .05+.009*(Percent Impervious Area)

** Pre-Treatment Load=  $[(P)(P)](RV)/12](C)(A)(2.72)$

*** Final Load= Pre-Treatment Load *removal efficiency

where:

Load = lbs/year

P = 33 inches in annual precipitation

Pj = .9 correction factor based on 10% of storms not producing any runoff

RV = runoff coefficient (dependent on level of imperviousness)

C = flow weighted mean concentration for pollutants (in mg/l except for bacteria in #100ml)

A = contributing area (in acres)

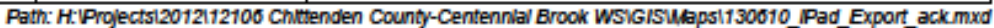
2.72 = conversion factor

**Sediment Offset Required = 400 lbs./year from project - 277 lbs./year existing = 123 lbs./year**

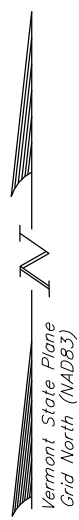
14167:\Stormwater\sediment\PRE-Sediment-Inpatient Building FA 8-17-14.XLS

ID#: Retrofit 15		
Name: Jaycee Park		
<b>Concept Description:</b> Pretreatment tank to underground infiltration chambers. Pretreatment could be proprietary device (e.g., StormCeptor or equal) before underground chambers. Access would need to be coordinated with playing fields. Flow diversion structure would be in Patchen Road, with depth to drain pipe at approx 6.5 feet.		
<b>Notes/Feasibility:</b> Flow diversion from Patchen Road drives depth of inflow approx 10.5 feet below grade (bottom of chambers 12-13 feet). Existing trees in park, reconstruction of fields. Soils at design depth, unknown.		
<b>GENERAL SITE INFORMATION</b>		
Site Contact Info: South Burlington Parks and Rec.		<b>RETROFIT DETAILS</b>
Ownership: Public		Project Candidate: Yes.
Land Use 1: Park		Retrofit of new or existing BMP: New BMP
Land Use 2: -None Selected-		Proposed Retrofit Practice 1: Underground infiltration
Existing BMP on site? No		Proposed Retrofit Practice 2: Pretreatment structure
Is site a hotspot? No		Non-Structural Controls: -None Selected-
Sources/pollutants 1: Sediment		Non-Structural Other: -None Selected-
Sources/pollutants 2: -None Selected-		Maintenance Burden: Medium
Soils: Good Infiltration		<b>Benefits:</b> Storage: YES Water Quality: YES Recharge: YES Demo: NO Repair: NO Reuse: NO  <b>Conflicts:</b> Soils: NO Access: NO Land Use: YES Utilities: YES Polluted: NO High WT: NO Wetlands: NO  <b>Other:</b> -None Selected-
Use in Retrofit DA: streets, SF res, some commercial		
<b>SIZING INFO</b>		
Drainage Area (ac): 15.74		
Impervious Area (ac): 5.81		
Practice Area Available (ft ² ): 32,220 + 2,530 (pretreatment area)		
Existing Head Available? Yes (12- 13 ft depth, overflow ok)		
Date Assessed: May 17, 2013, 10:42 AM		Assessed by: RAC, SMM









Seals

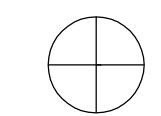
Consultant

**K&L** Krebs & Lansing Consulting Engineers, Inc.  
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Colchester, VT 05445  
T: (802) 878-0375  
F: (802) 878-9618  
email@krebssandlansing.com

Consultant

DD Approval Signature	Date

Project North



Key Plan N.T.S.


Revision Date No



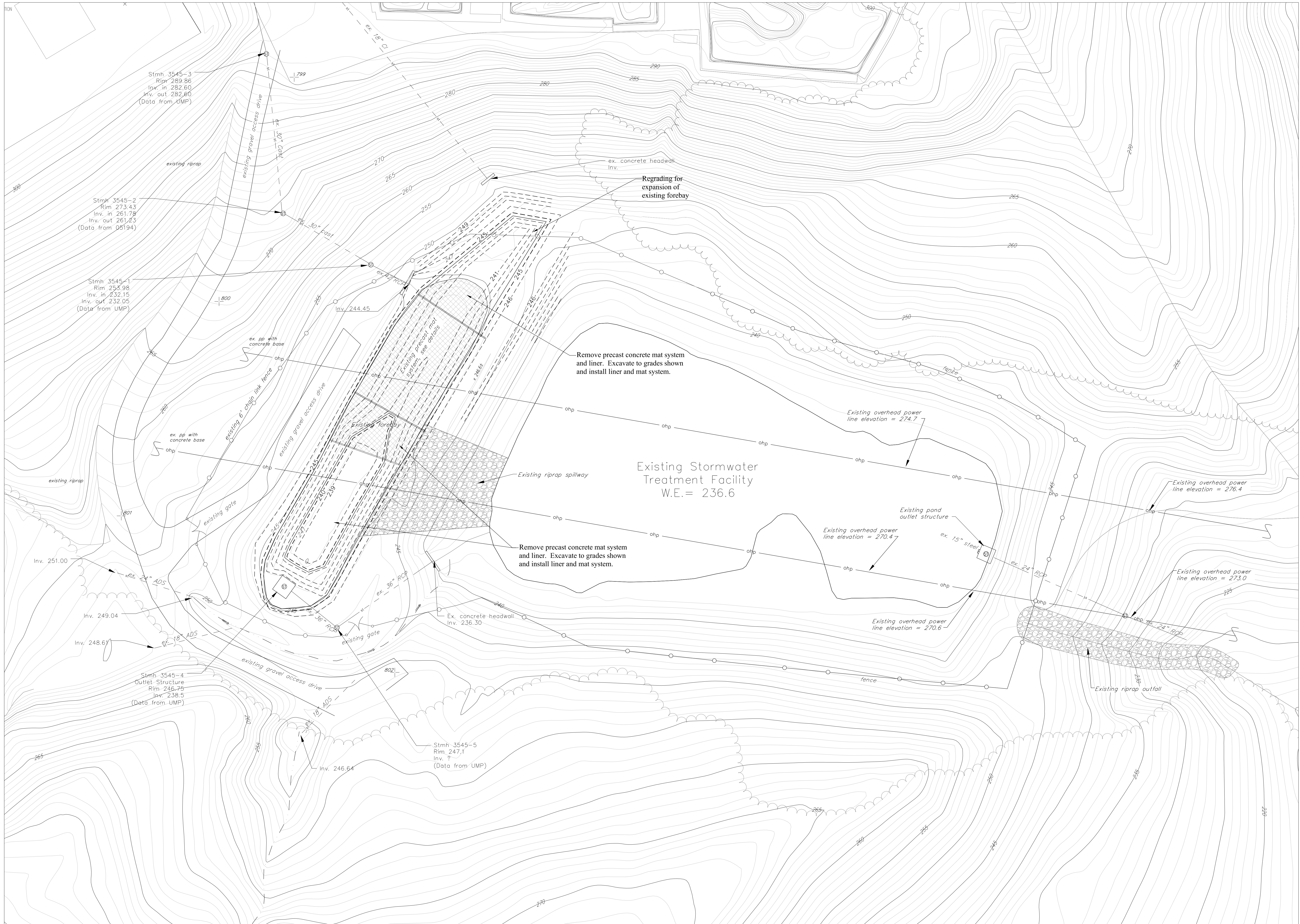
## INPATIENT BUILDING

MorrisSwitzer Project Number 201254  
Date 14 AUGUST 2014  
Scale 1" = 20'

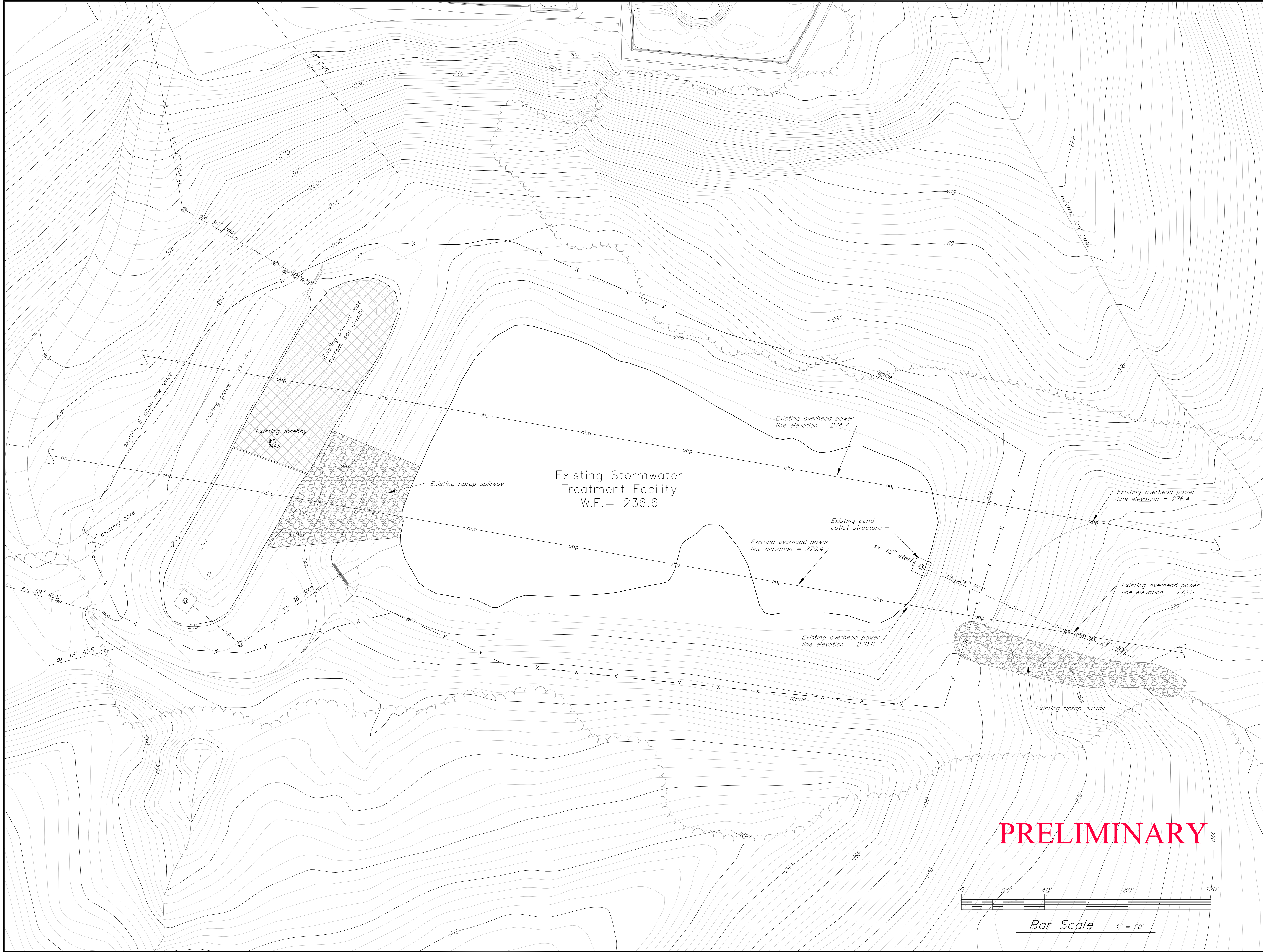
Sheet title and Number

## PROPOSED SITE PLAN

# CS-100







CENTENNIAL  
BROOK FLOW  
RESTORATION  
PLAN

City of Burlington  
City of South Burlington  
Vermont Agency of  
Transportation  
University of Vermont



Project:  
**NORTH CAMPUS  
STORMWATER  
FACILITY  
IMPROVEMENTS**

Project No. 13170  
Scale 1" = 20'  
Drawn by DMR/TJB  
Checked by  
Date 7/16/2014

Revisions	No.	Date

Drawing Title  
**Existing  
Conditions  
Plan**

Drawing No.  
**EX-1**







KEY	QTY.	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING
-----	------	-----------------	-------------	------	---------

DECIDUOUS AND EVERGREEN TREES					
AF	21	Acer x freemanii 'Autumn Blaze'	AUTUMN BLAZE MAPLE	4" CAL.	AS SHOWN
AR	7	Acer rubrum	RED MAPLE	4" CAL.	AS SHOWN
CB	29	Carpinus betulus 'Fastigiata'	FASTIGIATA EUROPEAN HORNBREAM	4" CAL.	AS SHOWN
GT	18	Gleditsia triacanthos 'Shademaster'	SHADEMASTER HONEYLOCUST	4" CAL.	AS SHOWN
PO	3	Platanus occidentalis	SYCAMORE	4" CAL.	AS SHOWN
QB	10	Quercus bicolor	SWAMP WHITE OAK	4" CAL.	AS SHOWN
SJ	20	Sophora japonica	JAPANESE PAGODA TREE	4" CAL.	AS SHOWN
UA	2	Ulmus x 'Accolade'	ACCOLADE ELM	4" CAL.	AS SHOWN

CA	37	Cornus alba 'Sibirica'	SIBIRICA REDTWIG DOGWOOD	#3	3' O.C.
CS	27	Cornus sericea 'Alleman's Compacta'	ALLEMAN'S COMPACT DOGWOOD	#3	5' O.C.
IG	131	Ilex glabra 'Shamrock'	INKBERRY	#3	3' O.C.
RA	111	Rhus aromatica 'Gro-Low'	GRO LOW SUMAC	#3	4' O.C.
SP	7	Syringa patula 'Miss Kim'	MISS KIM LILAC	#3	6' O.C.

CK	63	Calamagrostis x acutiflora 'Karl Foerster'	FEATHER REED GRASS	#3	3' O.C.
----	----	--------------------------------------------	--------------------	----	---------

AC	761	Acorus calamus	SWEET FLAG	#1	12" O.C.
AT	761	Asclepias tuberosa	BUTTERFLY WEED	#1	12" O.C.
CB	761	Carex bicknellii	BICKNELL'S SEDGE	#1	12" O.C.
CS	761	Carex stricta	TUSSOCK SEDGE	#1	12" O.C.
ED	761	Eupatorium dubium 'Little Joe'	LITTLE JOE PYE WEED	#1	12" O.C.
IV	761	Iris versicolor	BLUEFLAG IRIS	#1	12" O.C.
JE	761	Juncus effusus	SOFT RUSH	#1	12" O.C.
LC	761	Lobelia cardinalis	CARDINAL FLOWER	#1	12" O.C.
PH	331	Panicum virgatum 'Heavy Metal'	HEAVY METAL SWITCHGRASS	#1	18" O.C.
PS	331	Panicum virgatum 'Shenandoah'	SHENANDOAH SWITCHGRASS	#1	18" O.C.
RF	331	Rudbeckia fulgida 'Goldsturm'	BLACKEYED SUSAN	#1	18" O.C.

10. All plant material in the plant schedule shall be nursery grown in accordance with ANSI in accordance with 2.6.0.1 Standards for measurement of nursery stock.
11. The Contractor shall be responsible for the Contractor for a period of one year from date of receipt of Provisional Acceptance of the completed installation by the Owner.
12. Replacement plantings will be required prior to Final Acceptance for any plantings not true to specifications, have died or are unhealthy or uncharacteristic of the species (due to excessive pruning, dieback or other reasons).
13. All plant materials shall be selected and tagged at the nursery by Landscape Architect.
14. The Landscape Architect's approval is required for any plant material substitutions.
15. The Contractor is responsible for immediately notifying the Landscape Architect if any plant quantity discrepancies exist between the planting schedule and actual quantities.
16. All shrubs and trees will be sprayed with the anti-desiccant "Wilt-Pruf" (or approved equal) prior to the first Winter (no later than November 30).
17. The Landscape Contractor shall have the General Contractor locate all underground utilities in areas to be landscaped prior to commencing any excavation. Adjustments to tree locations will be allowed where utility conflicts are clearly a problem and with prior site approval by Landscape Architect.
18. All trees, shrub, and tree location shall be staked in the field by Contractor for Landscape Architects approval prior to installation.
19. Adjustments to plant beds shall be approved by Landscape Architect.
20. General Contractor is responsible for all erosion control measures.
21. All disturbed areas are to be topsoiled and seeded or sodded, as indicated in the planting plan.
22. Mulch shall consist of double-shredded hardwood mulch or approved equal. Contractor is responsible for providing samples of mulch to be used for all plant materials as shown on plan and detail.
23. It is the intent of this contract to avoid any disturbance to existing trees or shrubs on site other than those specifically designated for transplant or removal.
24. The Contractor shall be responsible for damages by construction operation shall be \$500 per caliper inch. Shrubs shall be \$100 each.
25. During construction, and until the end of warranty period, existing trees that are showing signs of stress as determined by the Landscape Architect are to be deep root fertilized, two injections per caliper inch per year in accordance with Peet's 2020/2021 fertilizing and plant care schedule. Contractor approved equal.
26. Contractor is responsible for verifying and confirming all plant counts as supplied by the Landscape Architect with field conditions as determined by the Landscape Architect shall be reported to Landscape Architect for approval and direction.
27. Tree transplanting shall be performed by a suitable hydraulic tree spade, sized as necessary to perform the work.
28. Prior to commencement of any work, all existing trees to be removed shall receive tree protection fence at outer edge of drip-line whenever possible.

1. Proposed methods, and schedule for effecting tree and plant protection shall be submitted for approval.
2. Proposed methods, materials, and schedule for root pruning, construction of trench and root barriers shall be submitted for approval.
3. Certain specimen trees adjacent to construction areas and in other key locations will be identified by the Owner and Architect, and marked with red tags. Loss of any of these trees will result in fines assessed at \$5,000 per tree. Loss of any other trees or plants or property not assessed at the rate of \$500 per inch caliper of the tree.
4. A fine of \$1,000 will be levied against the Contractor for each incident of construction material or equipment damage to trees.
5. Damaged trees, shrubs, and other vegetation will be assessed by the Architect and Owner in accordance with the International Society of Arboriculture (ISA) Guide.
6. The Contractor will cause the Owner to withhold from the Contractor an assessed amount conforming to the requirements stipulated above for a period of two years. After that period the impact of the damages to any tree will be assessed accordingly.
7. The Contractor shall be responsible for the saved and replaced and replacement trees. The Contractor shall be responsible for the assessment. If replacement is required, a number and diameter of trees or shrubs of the same species and variety, as specified by the Owner and Architect, shall be furnished and planted by the Contractor. The total inch diameter of the replacement trees shall be equal to the diameter of the trees lost. The Contractor shall not be liable for any loss or damage which occurs while the Contractor is complying with instructions given by the Owner, Architect, or arborist working on the Project.
8. The Contractor shall be called to the fact that certain areas on the site exist as natural woodland spaces and are to remain as natural woodlands. Therefore, all construction operations must be performed in such a manner which will preserve these existing natural environments as wood preserves.
9. Removal of trees, understory, and wildflowers are to remain untouched and unharmed.
11. Clearly mark all clearing limits in the field and accompany Architect on a joint review of clearing limits before clearing operations have commenced.
12. Galvanized chain link fencing, 4 feet high. Stakes for fencing shall be 8 feet galvanized steel posts, driven a minimum of 3 feet into the ground. Posts shall be spaced on 6 foot centers.
13. Prior to start, a demolition work and clearing and grubbing operations protection fencing shall be installed in accordance with the following:
  - A. Fencing shall be installed at the tree protection areas indicated on the drawings.
  - B. Fencing shall be installed a minimum of 15 feet beyond the drip line of the trees to be protected, unless otherwise approved by the Architect.
16. Where construction will be in close proximity to existing trees designated for retention, the Contractor shall be responsible for the safety as determined in the field by the Landscape Architect or Arborist.
17. Suitable means for root pruning include: trenching, vibrating plow, and water jet pruning. Any method which tears roots or disturbs the soil beyond the drip line shall be prohibited.
18. Trees to receive root pruning shall be reviewed by an arborist for canopy pruning, fertilization and trench backfill recommendations.
19. Selective clearing within tree protection areas shall only be performed as directed by the Landscape Architect. Refer to Section 0215 for work methods.
20. Except as otherwise indicated or requested by Landscape Architect, temporary protection devices and facilities installed during course of the work shall be removed after all work which may injure or damage trees and plants is completed.

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Seals

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LANDSCAPE ARCHITECTURE

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Consultant

DD Approval Signature _____ Date _____


Project North

Key Plan N.T.S.

[illegible]

CONSERVATION BOARD	8.19.14	
SITE PERMIT APPLICATION	6.30.14	

Revision                      Date                      No



## INPATIENT BUILDING

MorrisSwitzer Project Number	201254
Date	30 JUNE 2014
Scale	1" = 30'-0"
Sheet Title and Number	

## PLANTING PLAN

L2-0











**From:** Megan Moir [<mailto:mmoir@burlingtonvt.gov>]  
**Sent:** Sunday, August 17, 2014 3:51 PM  
**To:** Myers, Jack  
**Cc:** Scott Gustin  
**Subject:** FAHC

Hi Jack,  
I am largely without cell/wifi coverage while on vacation.

However, I did want to convey to you and Scott Gustin and the BCB – that I had a chat with Bill Nedde and confirmed that the impervious (both redeveloped and new) will receive full 2002 VSWMM treatment in the North Campus pond, with the modification/enlargement of the forebay.

Thus, I am not overly concerned with the stormwater management for this project. I would still like to know if FAHC is planning on including some green infrastructure components for the project. I am not going to make these a requirement per se of the project and Chapter 26 compliance (I still need to see full EPSC plans prior to earth disturbance).

Perhaps a better use of the projects investment would be to find some other stormwater improvement(s) – such as stabilization of the goat path that heads down from the FAHC area to Colchester Avenue – or perhaps FAHC would want to invest in a project that treats some other untreated impervious that drains to Centennial Brook to leverage the project. That sort of thing will have to be discussed when I return (and/or perhaps the BCB can suggest some ideas).

Again, I would love to see any intentional use of permeable pavers etc – but not in a forced way that necessarily requires UD's etc.

Hope that helps.  
MJM

***Please note that our email domain has changed to [@burlingtonvt.gov](mailto:mmoir@burlingtonvt.gov); please DELETE [mmoir@ci.burlington.vt.us](mailto:mmoir@ci.burlington.vt.us) in your address books as it will not work. My new email address is below.***

**Megan Moir, CPESC, CPSWQ**  
*Stormwater Program Manager*  
Burlington Public Works Department  
C [\(802\) 734.4595](tel:8027344595)  
P [\(802\) 540.1748](tel:8025401748)  
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CITY OF BURLINGTON, VERMONT  
OFFICE OF  
THE CITY ATTORNEY  
AND  
CORPORATION COUNSEL

**MEMORANDUM RE: CHANGES TO OPEN MEETING LAW**

To: Mayor, City Council, Clerk/Treasurer's Office, Department Heads  
From: Eileen Blackwood, City Attorney  
Gene Bergman, Sr. Asst. City Attorney  
Re: Act 143, 2014 Changes to the Vermont Open Meeting Law  
Date: July 28, 2014

On May 23, 2014, the Governor signed into law Act 143, a bill (H. 497) that made the first changes to Vermont's open meeting law in many years. The Act went into effect on July 1. This memo is meant to assist you and the other City committees and boards in understanding and meeting the obligations of the amended law.

**Public body**

The open meeting law was enacted to enable the people of Vermont to monitor the effectiveness and accountability of their governing bodies; the right of the people to have an open government is enshrined in the Vermont constitution. *Vt. Const. Ch. I, Art. VI; 1 V.S.A. § 311*. As such, every "public body" is subject to the requirements spelled out in Title 1 of the Vermont Statutes in sections 310 through 314. The amended law does not change the definition of "public body," except that it specifically exempts "meetings of restorative justice panels and meetings to conduct restorative justice group conferencing or mediation" from the law. 24 V.S.A. § 1964(b) (2014). The City Council and all the boards and commissions established by the Charter or by City Council resolution or ordinance are defined by the law as public bodies, as are all of the committees these bodies create to assist them in their work. *1 V.S.A. § 310 (3)* (definition of "public body"). It is likely that a group of citizens who meet together, but do not have an established set of members that make up that committee, even if they are recognized by the City Council, may not be a public body, but it should be assumed that all committees fall within this definition unless the City Attorney's Office has given a clear opinion that the specific committee or council is not a public body.



## Open meetings

The purpose of the open meeting law is to give the public access to the meetings of public bodies so people can observe, be heard and participate in the deliberations and decisions of the public body. *State v. Vermont Emergency Bd.*, 136 Vt. 506, 508 (1978). Consequently, all public body meetings must be open to the public at all times of the meeting except during a legally called executive session, and no action can be taken by a public body unless it is taken at a meeting that is open to the public at all times of the meeting. *1 V.S.A. § 312 (a) (1)*. This means that the doors to the building and the meeting room must remain open throughout the duration of the meeting (except during an executive session). This is not a change from existing law.

At the meeting, the public must be given a reasonable opportunity to express its opinion on the matters being considered by the body during the meeting, as long as order is maintained. The chair may create reasonable rules to govern public comment--such as providing a public forum period or limiting verbal comments to a reasonable length of time to allow all to participate. *1 V.S.A. § 312 (h)*. The chair should, however, allow every member of the public who wishes to speak an opportunity to do so before the public body acts on a question. This is not a change from existing law.

## Meeting defined

The law defines a meeting as "a gathering of a quorum of the member of a public body for the purpose of discussing the business of the public body or for the purpose of taking action." *1 V.S.A. § 310 (2)*.

The new law excludes from being considered a "meeting" the exchange between members of the body (even if it is between a quorum) of written correspondence or electronic communications (i.e. email, phone calls, teleconferencing) "for the purpose of scheduling a meeting, organizing an agenda, or distributing materials to discuss at a meeting." *Act 143 § 1, page 1, amending 1 V.S.A. § 310 (2)*, as long as those communications are available for inspection and copying under the Vermont Public Records Law. This means that if, for example, emails are sent by another means than the City's system, the individual member of the public body must make sure they are maintained, or that method may not be used for City business. Generally, all written or recorded information related to scheduling, organizing the agenda, and materials to discuss for any public body of the City should be considered a public record subject to the Public Records Act and must be made available to the public on request.

Given the purpose of the law, the courts' interpretation of the statute that broadly favors openness and, the new clarification of the definition excluding scheduling, a "meeting" under the open meeting law should be seen as happening whenever a quorum of the public body gets together and discusses business under its jurisdiction, whether or not the members came together for the purpose of discussing this business. Certainly, any time a quorum of the public body meets together for the purpose of taking action, the members are meeting and must follow all the requirements of the law.

An example would be when a quorum, a majority of the body, attends a social event or party and begins to talk about city business; this should not happen unless all the requirements of the open meeting law have been satisfied--which includes posting an agenda and keeping minutes.

The changes to the law also clarify that a meeting occurs when members of the public body discuss an issue over the phone or by email, if all or at least a quorum of the body is on the call or cc'd on the email (even if they aren't all reading it at the same time or responding), unless the task is only one of the three areas identified above (scheduling, organizing an agenda, or distributing materials). Discussions of City business that involve a quorum or more of the public body cannot be held by email! You may distribute information to be discussed at the meeting, but you may not discuss it. This means that with three-person committees, two of the members may not discuss committee business (except those three routine administrative activities) outside the meeting, no matter how informally.

The law recognizes three types of meetings: regular, special, and emergency. A "regular" meeting is one set by statute, charter, regulation, ordinance, or bylaw or by a resolution or formal action of the public body. So, public bodies who plan to have regular meetings that aren't designated in a formal legal document should take formal action to set the date and time of those meetings. A "special" meeting is a meeting that occurs outside that schedule. An "emergency" meeting is what it sounds like--a meeting to deal with an unforeseen condition that requires immediate attention. The requirements for notice and posting below vary depend on what type of meeting is being held.

### **Accessible meetings**

The "open at all times" requirement was clarified in the new law to make it clear that meetings must comply with the public accommodation mandate established by the public accommodations law in chapter 139 of Title 9 of the Vermont Statutes. *Act 143, § 1, page 3, amending 1 V.S.A. § 312(a)(1)*. The open meeting law, therefore, requires officials of the public body who are scheduling, setting up, and conducting a meeting to: (1) ensure the meeting is accessible to persons with disabilities; (2) allow service animals accompanying a person with disabilities and persons training service animals for a person with disabilities; and (3) make reasonable accommodations, including the provision of auxiliary aids and services, to allow access to and participation in the meeting by persons with disabilities.

### **Attendance without being physically present**

Members of the body may attend a meeting through electronic or other means without being physically present in the designated meeting location. If a member attends by electronic or other means, then the member must identify himself or herself when the meeting is convened and must be able to hear the conduct of the meeting and be heard throughout the meeting. *Act 143, § 2 amending 1 V.S.A. § 312 (a) (2)*. All votes must be taken by roll call. This is a new requirement.

If a quorum attends without being physically present at the designated location, then at least 24 hours before the meeting or as soon as practicable prior to an emergency meeting, the body shall (1) "publicly announce" the meeting, (2) post a meeting notice in or near the clerk's office and at least 2 other designated public places in the city, (3) designate in the public announcement and posted notice at least 1 physical location where a member of the public can attend and participate in the meeting, and (4) ensure that at least one member of the body or at least one staff or designee of the body is physically present at each designated meeting location. *Act 143, § 2 amending 1 V.S.A. § 312 (a) (2)*. These are new requirements.

Remember that voting may not be done by email or proxy, because it must be done in open session.

### Notice

All meetings of public bodies must be noticed. Any adjourned meeting is considered a new meeting unless the time and place for the adjourned meeting is announced before the meeting adjourns. *1 V.S.A. § 312 (c)(4)*. All regular meetings must have the time and place of the meeting clearly designated by either statute, charter, regulation, ordinance, bylaw, resolution, or other legitimate action of the body; however, this information must be made available to any person upon that person's request. The request does not need to be in writing. *1 V.S.A. § 312 (c) (1)*. None of this is a change to existing law. It is recommended that each public body that plans to meet on a regular basis act formally (by making a motion, for example) to adopt a regular meeting schedule.

"Special" meetings are those meetings that don't qualify as being either "regular" or "emergency." This means that all meetings that are not pre-designated in time or place by an authorized means (e.g. resolution) are either special or emergency meetings. The time, place, and purpose of a special meeting must be "publicly announced" at least 24 hours before the meeting. *1 V.S.A. § 312 (c)(2)*. Again, this is not a change from existing law.

"Publicly announced" means that a notice is sent to an editor, publisher, or news director of a newspaper or radio station serving the area in which the body has jurisdiction and to any person who has requested notice in writing—this written notice being good only for the calendar year in which it is made unless it is made in December, in which case it goes through the next year. *1 V.S.A. §§ 310 (4), 312 (c)(5)*. The newspaper and radio notices, therefore, must be sent to, at a minimum, one paper or radio station that serves Burlington. While the requirement of providing public announcements to the media is not new, the ability of any person to request personal notice of special meetings is new; that ability was previously limited to media personnel.

"Special" meeting notices must be posted in or near the City Clerk's Office and in at least 2 other designated public places in the city at least 24 hours before the meeting. *1 V.S.A. § 312(c)(2)*. The City Council has designated the posting places as noted below. Notice of the special meeting must also be given to each member of the body (orally or in writing) at least 24 hours before the meeting (except the member may waive notice). *Id.*



In addition to posting the notice of a regular or special meeting, the amended law requires that the agenda for the meeting must also be posted; these could be printed on the same page. For a regular meeting, the agenda must be posted at least 48 hours before the meeting in four places: on the City's website, in or near the municipal office and in at least two other public places. The City Council has designated the following locations for all municipal public notices: outside the Clerk/Treasurer's Office, on the Fletcher Free Library bulletin board, and on the bulletin board at the Parks/Public Works building on Pine Street. The agenda for a special meeting must be posted in the same places at least 24 hours before the meeting. Agendas must be made available to any person before the meeting on request, oral or written, and any person (previously this just applied to news media) may request in writing (for the calendar year) that s/he be notified of all special meetings of a public body. When such a request is received, both the clerk of the public body and the Clerk/Treasurer's Office should be informed.

Another new requirement is that additions to or deletions from an agenda must be made as the first act of business at the meeting, but any other adjustment can be made at any time during the meeting. *Act 143, § 2, amending 1 V.S.A. § 312 (d)*. We believe this means you can still vote to table or postpone action on a matter when you get to it on the agenda, as that is taking an action on the item.

"Emergency" meetings are meetings needed to respond to an unforeseen occurrence or condition that requires immediate attention by the body. Emergency meetings can be held without a public announcement, without posting any notice, and without giving members 24 hour notice as long as some public notice is given as soon as possible before the meeting. There was no change in this provision of the law. *1 V.S.A. § 312 (c)(3)*.

## Minutes

Minutes must be taken of all meetings of public bodies. *1 V.S.A. § 312 (b)*. The minutes must cover all topics and motions that come up in the meeting and give a true indication of the business that occurred in the meeting. Because the minutes are the basic notes of the meeting, a record of what was done, the audio or video recording of the meeting cannot be used as the minutes of that meeting.

There is no change to the requirements of the content of the minutes: Minutes must still include at least (1) a listing of all members of the body who were present, (2) a listing of all the other "active" participants in the meeting, (3) all the motions, proposals, and resolutions that were made, offered, and considered and what happened with them, and (4) the results of any votes, with a record of individual votes if a roll call is taken. *1 V.S.A. § 312 (b) (1)*. None of this is a change from existing law.

Minutes are public records and must be kept by the clerk or secretary of the body and must be available for inspection within 5 days from the date of the meeting. The new law, however, requires that the minutes be posted no later than 5 days from the meeting date to the body's designated website. *Act 143, § 1 amending 1 V.S.A. § 312 (b) (2)*. The City Council has designated the City's website, [www.burlingtonvt.gov](http://www.burlingtonvt.gov), as the designated website for posting.

Because for most of the City's bodies, the minutes will not be adopted within 5 days, they may posted as "subject to approval" or "draft" until approval is obtained.

### **Executive sessions**

Members may go into executive session (which means a session from which the public is excluded) only for certain specific, limited purposes. *1 V.S.A. § 313(a)*. To go into executive session there must be a vote by a majority of those members who are present in an open meeting, and the result of that vote must be recorded in the minutes. There must be a motion to go into the session, and the motion must indicate the nature of the executive session's business by specifically stating which of the permissible purposes in the statute apply. No other business may be conducted in the session. *1 V.S.A. § 313 (a)*. None of these requirements is new.

No formal action can be taken in executive session except for actions relating to the securing of options for the purchase or lease of real estate. Therefore, if the public body needs to take action, it must come out of executive session, resume its public meeting, and then take the action needed. *1 V.S.A. § 313(a)*. No minutes of the session need to be taken and if they are, they are not made public by the provisions of § 312 (b). Again, none of these reasons is new.

**These are the only reasons an executive session can only be held under 1 V.S.A. § 313:**

(1) If the public body makes a specific finding that premature general public knowledge would clearly place the body or a person involved at a substantial disadvantage, the body can go into executive session to discuss contracts, labor agreements with employees, arbitration or mediation, non-tax grievances, pending or probable civil litigation or a prosecution to which the body is or may be a party, or confidential attorney-client communications made to provide professional legal services to the body. The requirement of a specific finding is new, and the legal topics have been changed. A statement of that finding of substantial disadvantage should be placed on the record as a motion. Then, a vote should be taken on that finding. Then a separate motion should be made to go into executive session. For instance, in the case of a contract under negotiation, the motion might be: "I move to find that premature general public knowledge of the city's contract with ABC Company would clearly place this council at a substantial disadvantage because the council risks disclosing its negotiation strategy if it discusses the proposed contract terms in public." In this hypothetical situation, the "substantial disadvantage" is the risk of losing the competitive edge in the negotiations by talking about the specific terms in public. For instance, once ABC Company hears the council talk about the maximum price it can afford to pay, ABC Company may refuse to take anything less than that amount. The second motion follows from the first and should recite the specific statutory provision that gives authority to enter into such session. For instance: "Based on the finding of substantial disadvantage, I move that we enter into executive session to discuss the city's contract with ABC Company under the provisions of Title 1, Section 313(a)(1)(A) of the Vermont Statutes."

(2) The body can go into executive session to discuss the negotiating or securing of real estate purchase or lease options. The word "lease" is new.

(3) The body can go into session to discuss the appointment or employment of a public officer or employee, but the body must make a final decision to hire or appoint in an open meeting and must explain the reasons for its decisions at the open meeting. The requirement to explain reasons for hiring or appointment in public session is new.

(4) The body can go into executive session to discuss a disciplinary or dismissal action against a public officer or employee, although the officer or employee has a right to a public hearing if formal charges are brought. This provision is unchanged.

(5) The body can go into executive session to discuss a clear and imminent peril to public safety. This provision is unchanged.

(6) The body can go into executive session to discuss records that are exempt from disclosure under the Public Records Act as long as the discussion of the record does not extend into the general subject to which the record pertains (unless it meets another purpose for executive session and that purpose has been stated on the record). There was some change to the language of this provision, but no real substantive changes.

(7) The body can go into executive session to discuss the academic records or suspension or discipline of students. This provision is unchanged.

(8) The body can go into executive session to discuss municipal or school security or emergency response measures if the disclosure could jeopardize public safety. This is a new provision.

#### Exceptions to Requirements:

#### Quasi-judicial proceedings, site inspections, & routine day-to-day administrative matters

The deliberations of a quasi-judicial public body are not subject to the requirements of §§ 312 or 313 (executive sessions). *1 V.S.A. §312(e)*. That means they are not required to be open to the public; prior notice and agendas do not have to be posted; and minutes do not have to be kept. A quasi-judicial proceeding is a proceeding in which the legal rights of a person or persons are adjudicated, which is conducted in a way so all parties have the chance to present evidence and cross examine witnesses, and which results in an appealable written decision. *1 V.S.A. §310(5)*. Please note that this only applies to the deliberations of that body. Deliberations do not include conducting business matters (electing officers, for example), taking evidence, or hearing the arguments of the parties--these sections of the meeting must be open to the public. *1 V.S.A. §§ 312 (e)*.

Similarly, the written decision of a quasi-judicial proceeding need not be adopted at an open meeting, as long as the decision will be a public record, *1 V.S.A. sec. 312 (f)*. This exemption means that after all the evidence has been taken, and the public body has entered into a deliberative session, it may discuss drafts of a written decision or issues that have arisen while preparing the written decision by email or phone without holding a formal meeting. This is intended to be a limited exception, however.



Also, site inspections for assessing damage or making tax assessments or abatement are not subject to the open meeting law. Neither is clerical work or staff work assignments. Routine day-to-day administrative matters that don't require action by the body can be conducted outside of a meeting as long as no money is appropriated, expended, or encumbered. *1 V.S.A. § 312 (g)*.

### **Enforcement and Response to Complaints**

Learning these changes to the Open Meeting Law is important because a member of a public body or another person, on behalf of the public body, who knowingly and intentionally violates these provisions or knowingly and intentionally participates in the wrongful exclusion of a person from an open meeting shall be guilty of a misdemeanor and shall be fined up to \$500. While members of public bodies were subject to these remedies in the past, staff or other persons acting on their behalf had not been explicitly included.

The law delays the effective date for prosecutions of violations of posting to the website so that a failure to post minutes of a meeting held before July 1, 2015 will not be subject to prosecution for knowingly and intentionally violating the law. *Act 143, § 4, amending 1 V.S.A. § 314 (a)*. But starting next year, the failure to post will be subject to prosecution.

The new law now requires the Attorney General or an aggrieved party to notify the public body in writing of the specific violation and request a specific cure; if the public body cures the violation, it will not be liable for attorney's fees or costs. *1 V.S.A. §314(b)(1)*.

The new law also now requires a public response to any written notice of the violation. *1 V.S.A. §314(b)(2)*. When the public body receives a written notice from the AG or any other aggrieved person, asserting that there is a violation and requesting a cure, the public body must respond within seven business days by acknowledging the violation and stating an intent to cure it within 14 calendar days or by stating that it has determined there is no violation. *Id.*

Logistically, this means that the public body must immediately call a special meeting and provide adequate notice and warning of that meeting, including an agenda. During the meeting, the body should publicly discuss the situation and determine whether there was an inadvertent violation of the law. Based on this determination, it should issue a statement that either denies the allegation and states that no cure is necessary, or acknowledges that there was an inadvertent violation that will be cured within 14 calendar days. The public body should not publicly acknowledge a violation that is anything other than inadvertent without specific legal advice to do so. In the event that the public body is sued for a violation of the law, the court will assess attorneys' fees and costs based in part on whether there was a timely response to a notice of violation. *1 V.S.A. § 314(d)*.

Members of public bodies who receive a written complaint (including email) should immediately forward it to the chair of the public body, the City Attorney's Office, and the CAO so that the appropriate response may be made within the seven business days required. The chair of the public body is responsible for ensuring that the response is ultimately made, but that

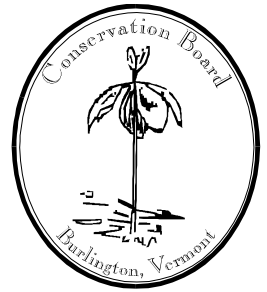
response should not be made until the chair has consulted with the City Attorney's Office. The failure of a public body to respond within seven business days is treated as a denial. *1 V.S.A. §312(b)(3)*.

The cure that must occur within 14 calendar days, if the public body finds a violation, is made by either ratifying or declaring as void any action taken at (or resulting from) the meeting that was in violation and adopting specific measures that actually prevent future violations. *1 V.S.A. §314(b)(4)*. This requirement to respond and cure is new. Thus, how to cure a violation should be discussed with the City Attorney's Office before the cure is carried out.

The AG or any person aggrieved by a violation may bring an action in state civil court, but no later than one year after the meeting involved. *1 V.S.A. §314(c)*. This one-year limitation is new. If a court finds a violation, it must assess reasonable attorney's fees and costs incurred unless the public body had a reasonable basis in fact and law for its position and acted in good faith. Part of that good faith requires responding to the notice of violation in a timely manner. The court also need not assess attorney's fees and costs if the public body cured the violation. *1 V.S.A. section 314(d)*.

## **Burlington Conservation Board**

149 Church Street  
Burlington, VT 05401  
<http://www.burlingtonvt.gov/>  
Telephone: (802) 865-7189  
(802) 865-7195 (FAX)



## **Conservation Board Meeting Minutes**

Monday, August 25, 2014 – 5:30 pm  
City Hall Lower Level – Planning and Zoning Conference Room

### **Attendance:**

- **Board Members:** Scott Mapes (SM), Don Meals (DM), Matt Moore (MM), Jeff Severson (JS), Stephanie Young (SY), Will Flender (WF), Damon Lane (DL), Zoe Richards (ZR), Miles Waite (MW)
- **Absent:** Jeff Severson arrived 5:38 pm, followed by Matt Moore arrived at 6:20 pm
- **Public:** See items below
- **Staff:** Jay Appleton (Planning and Zoning); Mary O'Neil (Planning and Zoning)

WF, vice chair, called the meeting to order at 5:30 pm.

### **Minutes of June 30, 2013.**

DL offered a revision to the June Minutes, to replace an acronym on page 4 with SEA, which stands for Street Edge Alternatives. A MOTION was made by DM and SECONDED by MW to accept the minutes of June 30 as revised. The motion passed 6-0-1.

### **Minutes of August 4, 2014.**

A MOTION was made by DM and SECONDED by SY to accept the minutes of August 4 as written. The motion passed 5-0-2.

### **Board Comment.**

- None were heard.

### **Public Comment.**

- None were heard.

### **Open Space Subcommittee Report.**

The subcommittee chair WF reported that the committee did not meet in the past month, and had nothing to report.

### **Project Review:**

#### **14-1321CA: 111 Colchester Avenue (I, Ward 1) Fletcher Allen Health Care**

In attendance for the item were Gail Henderson-King (White and Burke), Bill Nedde (Krebs and Lansing), Dave Keilty (Fletcher Allen Health Care), and Jack Myers (Stantec).

Gail Henderson-King gave an overview of the project to construct a 208,000 square foot, seven story inpatient hospital building adjacent to the existing Ambulatory Care Center of Fletcher Allen Health Care

The programs and services of the Dept. of Planning and Zoning are accessible to people with disabilities.  
For accessibility information call 865-7188 (865-7142 TTY).



(FAHC). The building will provide single-bed rooms. Three University of Vermont (UVM) dormitories (Chittenden, Buckham, and Wills Halls) will be demolished to provide room for the project, combined with a lot line adjustment. The dormitory demolition will be reviewed under a separate zoning permit application. Existing parking areas will be reconfigured with no net increase in parking for both FAHC and UVM.

Bill Nedde reviewed the proposed stormwater management system that will serve the project site, which is in the North Campus watershed. It drains into the existing North Campus Stormwater Treatment Facility (NCSTF). The NCSTF in turn discharges into Centennial Brook, and impaired waterway as classified by the Vermont Agency of Natural Resources.

Bill Nedde reported that the City's Stormwater Administrator, Megan Moir, will do her EPSC permitting after zoning review as permit pre-release conditions. An email dated August 17, 2014 from Megan Moir to Jack Myers and Scott Gustin (Planning and Zoning) documents this and the reasons why.

The forebay of the NCSTF will be enlarged linearly to the north to accommodate increased sediment transport from the project site. However an increase of 123 lbs/year of sediment discharge into Centennial Brook will result from the project. To offset this, FAHC proposes to contribute to a large stormwater infiltration project to capture sediment flowing from Jaycee Park in South Burlington. The park is located on Patchen Road and drains into a tributary of Centennial Brook.

Bill Nedde gave a presentation on the formulas and resulting data from stormwater computer modelling for the NCSTF.

Jack Myers said that the FAHC building will be built in 12 phases, with the stormwater component in 5 phases.

DM asked for more information about proposed rain gardens on the site. Dave Keelty reported that borings revealed that the land under FAHC is essentially a bedrock bowl filled with glacial till from which water cannot escape. Therefore the rain gardens are more "window dressing" than functional.

Both JS and DM said they are comfortable with the fact that not all stormwater is done at this time, and there were enough checks and balances in place to insure adequate treatment of stormwater from the site.

A MOTION was made by JS and seconded by MW:

*The Board supports the FAHC new inpatient building project with standard stormwater conditions.*

The motion passed 8-0-0.

#### **Project Review:**

#### **14-1181CA/CU: 8 College Street (multiple Zones in Wards 3, 5, 7) Dept. of Parks and Recreation**

Jesse Bridges, Director of the City's Department of Parks and Recreation was in attendance for the item.

Jesse Bridges stated he was back before the Board regarding the Waterfront Bikepath Rehabilitation Project because the Development Review Board conditioned its approval upon a subsequent review of the project's Erosion Prevention and Sediment Control (EPSC) plan, approved by Megan Moir, the City's Stormwater Administrator.

The zoning permit (1181CA/CU) is for Phase 1 of Bikepath rehabilitation and Waterfront Park improvements from Perkins Pier to North Beach. Phase 1A of the bikepath rehabilitation will span from Perkins Pier to Waterfront Park.

The project's EPSC plan was distributed to the Board in their meeting packets.  
A MOTION was made by DM and seconded by SM:

*The Board approves the Bikepath Rehabilitation Erosion Prevention and Sediment Control Plan.*

The motion passed 8-0-0.

**Other Business:**

**Revised Vermont Public Meeting Law**

A memo from City Attorney, Eileen Blackwood, regarding changes to the Vermont Open Meeting Law enacted by the State Legislature in May 2014, was distributed to the Board in their meeting packets.

DM questioned whether the Conservation Board, which is an advisory body as opposed to a decision-making body, should be subject to the more rigorous requirements of the new law. Jay Appleton stated he had asked this question as well, and the answer is yes.

**Adjournment.**

DM moved and WF seconded to adjourn the August/September meeting. The meeting was adjourned at 6:26 pm.