316 Flynn Avenue – Zoning Permit Application Narrative

Description of the Proposed Development and Proposed Use:

The proposed project consists of the redevelopment of a parcel in the Neighborhood Mixed Use zone at 316 Flynn Avenue. The property is a 0.61 acre parcel, or approximately 26,428 square feet of land, with three existing structures totaling approximately 6,304 finished square feet above ground. The current development intensity represents a FAR (floor area ratio) of only 0.24 in a zoning district that encourages dense mixed-use development of up to 2.0 FAR. The majority of the parcel is paved for parking and driveway access with two existing curb cuts- onto Flynn Avenue and Pine Street. At the northern end of the site the paved parking gives way to gravel which ends at a vegetated slope down to Engelsby Brook.

The Pine Street corridor is an important mixed-use spine in the South End neighborhood of Burlington and the gateway into the City of Burlington from many destinations south of the city center. A number of positive redevelopment projects have occurred along the Pine Street corridor over the past 20 years or so including the reuse of numerous formerly industrial and commercial buildings to house retail businesses, office space and artists' studios. Dealer.com, Zero Gravity Brewery, Citizen Cider, Arts Riot, Feldman's Bagels, Wind & Waves and Conant Metal & Light are just some of the businesses contributing to the revitalization of a former industrial corridor. A new branch of the successful City Market co-op grocery store is presently being permitted west down Flynn Avenue from the proposed project location.

This project endeavors to continue the ongoing evolution of Pine Street into a vibrant mixed-use district creating neighborhood oriented retail and new residences. The project adds density in a mixed-use zone that seeks compact transit/bike/pedestrian oriented development. The development involves demolition of the existing approximately 2,800 SF Pine Street Deli building and construction of an approximately 26,000 SF, four-story, flat-roofed building.

The primary use of the new building will be for 30 apartments (anticipated to be 14 efficiency units, 12 one-bedroom units and 4 two-bedroom units) located on the second, third and fourth floors, with elevator service and common room located in the southern portion of the ground floor to be used for laundry. Indoor bike storage will be accommodated at the ground floor with a lockable bike room, while exterior open bike rack storage will be at the front of the building along Flynn Avenue and under the cover of the parking garage.

Two commercial spaces of 1,500 SF proposed for restaurant use will be located in the west and southwest portions of the ground floor, with the main entrance to both commercial spaces located off the sidewalk running along Pine Street. The main entrance to the residences will be off the sidewalk along Flynn Avenue. A partial basement is proposed to be located under the building to provide additional storage and possibly mechanical/electrical room space.

The existing site is almost completely impervious, covered by parking areas to the north and east of the existing building footprint. The proposed site plan better defines the access drive from Flynn Ave by narrowing it and moving it to the east away from the intersection. The Pine Street access drive is shifted to the north, also away from the intersection. Green strips of lawn and landscape plantings will be created along the southern, Flynn Avenue, side of the proposed building footprint as well as at the western, Pine Street side.

Proposed Days and Hours of Operation:
The proposed commercial space is anticipated to be utilized as a restaurant, with operations 7 days a week and hours of operation from 5:30am to 11pm Sunday through Thursday and from 5:30am to 1:00am on Fridays and Saturdays.

Estimated Number of Employees:
The small commercial spaces are each anticipated to have approximately three employees working during their hours of operation. Leasing and management of the residential units will not entail any full-time, on-site employees based out of the property. Marketing and maintenance functions will be conducted on a part-time basis by employees who are based off-site.

Traffic Generation and Parking Analysis:
The property is located in the shared use parking district within the Neighborhood Mixed-Use District and based on the owners' experience, the close proximity to downtown is expected to attract tenants that are more apt to bike/walk, use public transportation, and use CarShare. The proposed site plan includes a total of 34 off-street parking spaces with access from curb cuts, slightly altered from the existing, to the south from Flynn Avenue and the west from Pine Street.

Under separate cover is a copy of our traffic impact and parking impact analysis prepared by Stantec. The intent of the report is to fully address the traffic and parking issues raised by Public Works at the TRC meeting. More specifically it demonstrates that:

- The project has adequate parking to serve site generated demands and should not significantly impact the unrestricted parking on Flynn Avenue; and,
- Use of the Flynn Avenue on-street spaces by site visitors, if any, would likely occur during the midday, off-peak traffic hours and have no significant impact on operations at the Pine Street and Flynn Avenue intersection.

The study constitutes a "full traffic study" as requested by DPW. It does not include reference to the City Market project as the traffic study has not been completed for that project. It also does not reference the Champlain Parkway project although that project will likely draw traffic away from the Pine Street and Flynn Avenue intersection. More importantly, the traffic study has demonstrated that the proposed development will have no measurable impact on intersection operations and that conclusion remains valid whether or not the City Market and/or Champlain Parkway projects are completed.

The restaurant use requires 3 parking spaces per 1,000 square feet, yielding a requirement of 9 parking spaces for the proposed project. 1 parking space is required for each apartment, yielding a requirement of 30 parking spaces for the apartments. The total parking requirement is therefore:

- Restaurant – 9 parking spaces
- Apartments – 30 parking spaces
- Total – 39 parking spaces

Parking Waiver:
We are requesting a parking waiver of 5 parking spaces in light of site's walkable and bikable location, bus stop located adjacent to the site and nearby opportunities for on-street parking. Our site plan accommodates 34 total parking spaces with the configuration presented. We have studied alternative parking layouts and have determined that the current site plan accommodates the most parking possible.

Our management experience shows that a dense neighborhood mixed use location in close proximity to downtown requires less parking. Many sites in the neighborhood function without dedicated off-street parking and there is ample on-street parking in the vicinity along Flynn Ave, Richardson Street and Ferguson Street to accommodate short-term parking for restaurant patrons.

We are also providing bike storage at the ground level, and promote CarShare and CCTA to our tenants. The proposed parking lot is slated to host a CarShare pod. The Pine Street CCTA bus route passes in front of the proposed building on Pine Street, providing easy access to the Cherry Street hub and routes covering Chittenden County and points beyond.

In summary:

1. Mixed use location close to downtown/promotion of public transportation and CarShare
2. Adequate secure bike storage
3. Direct access to CCTA bus route

316 Flynn Avenue Parking Management Plan:
Given the neighborhood mixed use location in close proximity to downtown we are confident the project will attract tenants that are more apt to bike/walk, use public transportation and/or use CarShare. Parking will be shared between the restaurant and residents. It will be explicit in all leases that parking is first come, first served during weekday daytime hours from 9am-5pm and that during nights and weekends each apartment will be permitted to use one parking space. While the 34 off-street spaces are sufficient to provide at least one space per apartment, parking will be made available as an option- and if some tenants choose not to rent the parking space assigned to their unit it may be re-assigned to another tenant who chooses to rent an extra space.

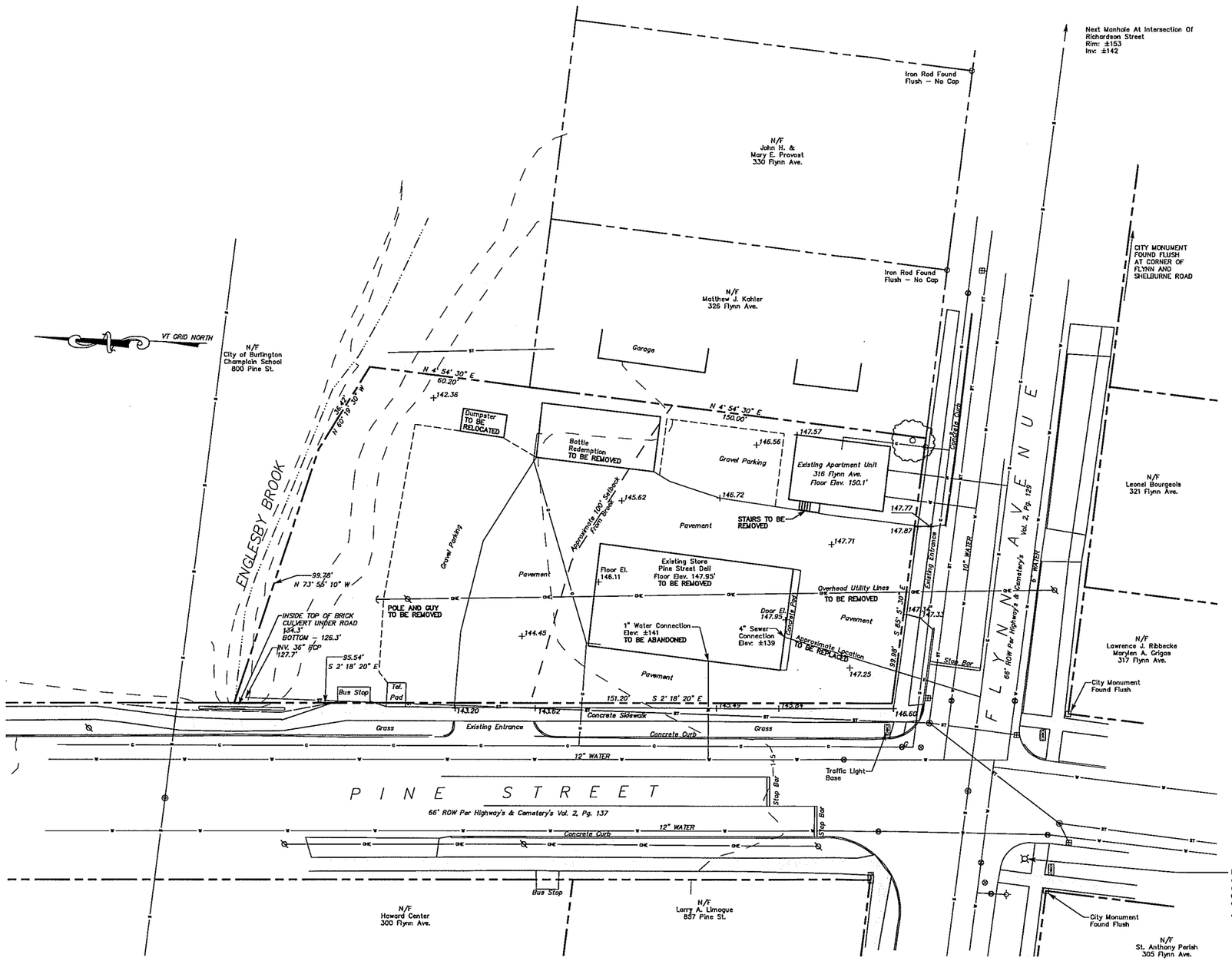
The vehicular access is from Flynn Avenue with traffic entering the site at the curb cut east of the building, and from Pine Street with traffic entering the site at the curb cut south of the building. The proposed building will have entries off Flynn Avenue and the parking lot that allow for easy access to the secure bike storage located on the ground floor, as well as additional storage located in the building's partial basement. Exterior bike storage will be located at the front of the building along Flynn Avenue and under cover in the lot. Depending on the specific retail tenant's needs, DPW is open to potentially creating short-term on-street parking to the east of the building and/or a loading zone for deliveries along Flynn Avenue.

Phasing and Construction Schedule:
The redevelopment is proposed to occur in a single phase with demolition and initial site work occurring first, immediately followed by construction of the new building, with final utility connections and finish site work including landscaping to occur last. The overall construction schedule is anticipated to take approximately 11 months, with a target start date of Spring 2017 (dependent on zoning approval, Act 250 approval, and issuance of a building permit).

Storm water management:
The approach to long-term stormwater management is to reduce the amount of impervious surfaces from the current level and to employ infiltration where possible and to reduce the peak discharge rate of the remaining runoff into the existing connection to the municipal system under Flynn Avenue. Stormwater flow into Engelsby Brook will be reduced from present levels and controlled by filtering through a bioswale to a flow reducing tank and level spreader into the brook. A construction period stormwater and erosion control plan will be employed that complies with the City of Burlington Department of Public Works and Planning & Zoning guidelines. Additional information on stormwater and erosion control is included in the materials from our civil engineer, Doug Hewitt of Summit Engineering, Inc.

Capacity of municipal utilities, services & existing or planned community facilities:
Based on the similarity of the proposed uses to recently approved projects, the stated planning goals of the Neighborhood Mixed Use District and initial feedback obtained from the Technical Review Committee the applicant's understanding is that there is sufficient capacity of municipal utilities, services and existing or planned community facilities to accommodate the proposed new development.

Utilization of renewable energy resources:
The applicant will be working with BED, Vermont Gas and Efficiency Vermont to minimize energy usage in the proposed building though EnergyStar certification and installation of the most energy efficient available technology for primary space heating and cooling (cold-climate air source heat pumps). The building's design will also provide for future installation of rooftop solar through adequate structural load capacity and conduit run from the basement utility room to the roof when it becomes economically feasible to do so.



Location Map

Areas			
Total Lot	26,427.9 s.f.	0.61 acre	100%
Paved Area	10,143.7 s.f.	0.23 acre	38.4%
Gravel Parking	4,555.0 s.f.	0.10 acre	17.2%
Building Area	4,741.5 s.f.	0.11 acre	17.9%
Total Impervious	19,440.2 s.f.	0.45 acre	73.6%
Pervious Area	6,987.6 s.f.	0.16 acre	26.4%

LEGEND

- Property/R.O.W. Line
- OHE — Overhead Utility Line
- G — Gas Line
- W — Water Line
- S — Sanitary Line
- ST — Storm Line
- Utility Pole
- Concrete Monument
- Rebar Found
- Storm Catch Basin
- Gate Valve
- Manhole
- Gas Valve
- Traffic Light Base
- +146.56 Spot Elevation

Reference Plans

1. "Englesby Farm" plan of the former Flynn Estate property by A.R. Dow, CE dated May, 1899 and recorded in Vol. 120, Pg. 55 of the Burlington City Land Records
2. "Plat of Survey – BCDH Realty, LLC" by Civil Engineering Assoc., Inc. last dated 2/26/07 and recorded in Map Slide 419B of the Burlington City Land Records
3. "Property Survey Plat – G&C Properties, LLC" by Summit Engineering, Inc, dated 11/4/10, last revised 7/14/11

Note: Previous deeds describe the easterly line of this property as being parallel to Pine Street. The referenced 1899 plan shows the easterly line to be parallel with Shelburne Road which coincides with apparent usage.

Horizontal and Vertical information shown hereon are related to NAD 83(2007) and NAVD 88 datums based upon this Station "ANTHONY" and upon Station "PUMP STA PINE" located on the easterly side of Pine St. opposite Lakeside Ave.

"ANTHONY" Elevation = 111.29' NAVD 88

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

Notes:

It is noted that no site assessment of hazardous or other waste materials has been made and S.E. takes no responsibility for any materials or conditions that may exist on this site.

The Contractor is to notify Dig-Safe (Tel. 1-800-DIG-SAFE) 48 hours prior to any excavation.

Underground locations shown are drawn from structure to structure or located per City Public Works plans.

All utility services enter this lot through a public right-of-way or recorded easement.

Owner of Record
G&C Properties, LLC
316 Flynn Ave.
Burlington, Vermont
Tax Map Parcel No. 057-4-066-000
Bk. 1151, Pg. 457
16,420 Sq. Ft. (0.377 Acres)
10,006 SF License From City
Total 26,426 SF (0.474 Acres)

Redstone

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CLIENT
PINE & FLYNN
DEVELOPMENT

LOCATION
316 FLYNN AVE (CORNER OF PINE & FLYNN
BURLINGTON, VERMONT

OWNER
G & C PROPERTIES
BURLINGTON, VERMONT
TEL: 802 343 6789

CONTRACTOR

CIVIL ENGINEER
SUMMIT ENGINEERING, INC
Engineers / Surveyors / Planners / Landscape Architects
1233 Shelburne Road C2
South Burlington, VT 05403
(802) 846-3566

STAMP

Issue	Date	Issue	Date

Project

Drawing Title EXISTING CONDITIONS PLAN

Project No. 8163 Drawn By BEG Date 6/29/15 Scale 1"=20'

Floor(s)

Drawing No.
EC1

G&C Properties LLC
316-322 Flynn Avenue, Burlington, VT
Water and Sanitary Sewer Basis of Design
June 1, 2015

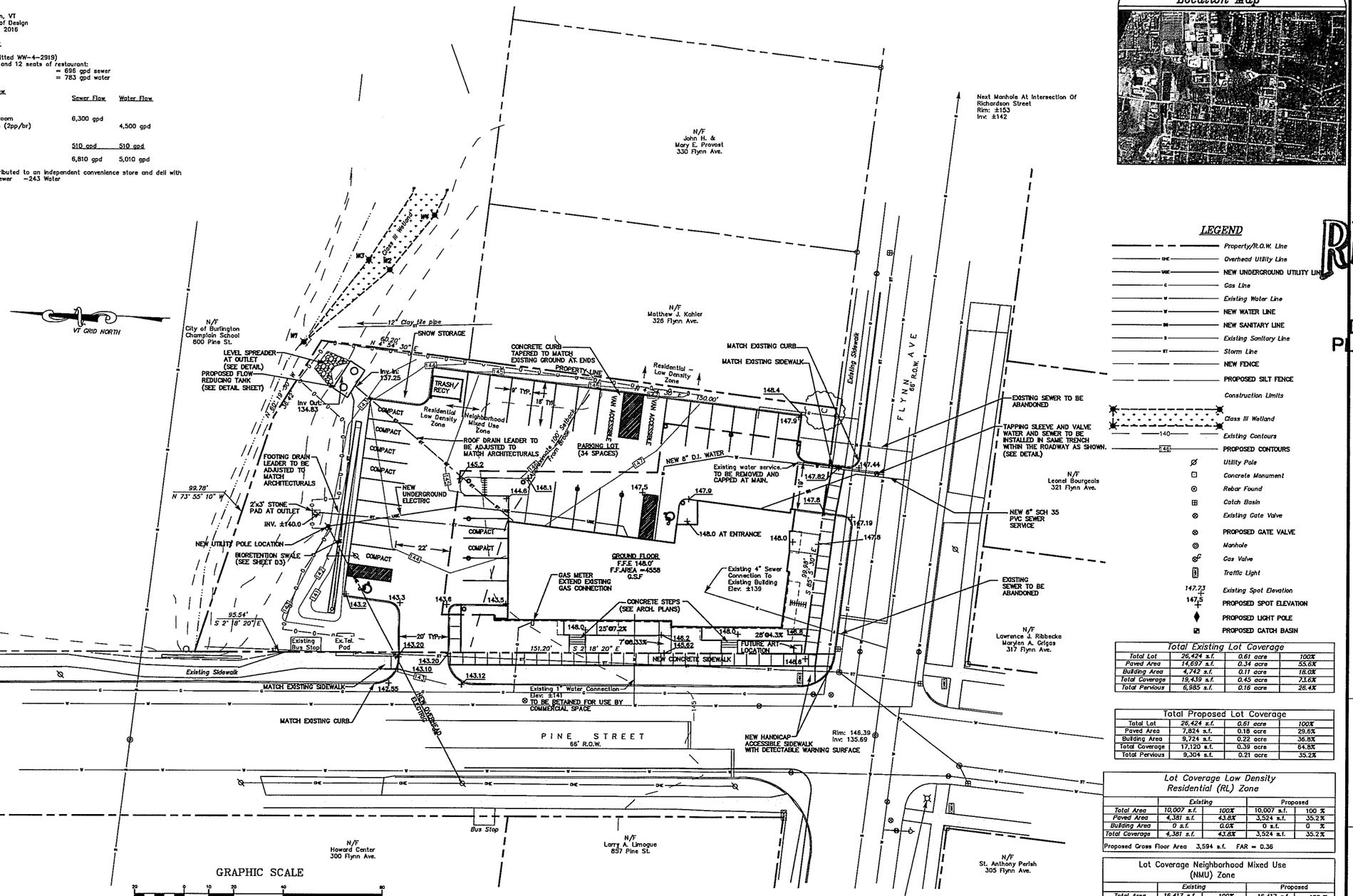
Existing Water/Sewer Design Flow

Water and Wastewater: (as permitted WW-4-2919)
Convenience store with deli and 12 seats of restaurant:
= 696 gpd sewer
= 783 gpd water

Proposed Water/Sewer Design Flow

	Sewer Flow	Water Flow
New Residential Apartments:		
thirty units @ 210 gpd/bedroom	6,300 gpd	
thirty units @ 75gpd/person (2pp/br)		4,500 gpd
Commercial Space:		
	510 gpd	510 gpd
Total	6,810 gpd	5,010 gpd

Deduction of flows previously attributed to an independent convenience store and deli with sit-down restaurant: −216 Sewer −243 Water



GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

Horizontal and Vertical Information shown hereon are related to NAD 83(2007) and NAVD 88 datums based upon this Station "ANTHONY" and upon Station "PUMP STA PINE" located on the easterly side of Pine St. opposite Lakeside Ave.

"ANTHONY" Elevation = 111.29' NAVD 88

GROUND FLOOR:	4,980 S.F. GROSS FLOOR AREA COMMERCIAL
	4,558 S.F. GROSS FLOOR AREA RESIDENTIAL
2ND FLOOR:	9,298 S.F. GROSS FLOOR AREA RESIDENTIAL
3RD FLOOR:	9,298 S.F. GROSS FLOOR AREA RESIDENTIAL
ROOF	2,551 S.F. GROSS FLOOR AREA RESIDENTIAL
	30,681 S.F.

Notes:

It is noted that no site assessment of hazardous or other waste materials has been made and S.E. takes no responsibility for any materials or conditions that may exist on this site.

The Contractor is to notify Dig-Safe (Tel. 1-800-DIG-SAFE) 48 hours prior to any excavation.

Underground locations shown are drawn from structure to structure or located per City Public Works plans.

All utility services enter this lot through a public right-of-way or recorded easement.

Class Three wetland delineated by Jeffrey Severson, Principal Ecologist from Goldedge Environmental Services, Inc. on 7/8/11. Wetland delineation and Class Three wetland designation reviewed and approved by Julie Foley, ANR District Wetlands Ecologist on 7/12/11. Field located from flag W1 found 3/6/15 by Summit Engineering, and flags W2-W4, which identify approximate wetland boundary locations re-established by Jeffrey Severson on 3/6/15.

Reference Plans

1. "Englesby Farm" plan of the former Flynn Estate property by A.R. Dow, CE dated May, 1899 and recorded in Vol. 120, Pg. 55 of the Burlington City Land Records
2. "Plat of Survey – BCCDH Realty, LLC" by Civil Engineering Assoc., Inc. last dated 2/26/07 and recorded in Map Slide 4198 of the Burlington City Land Records
3. "Property Survey Plat – G&C Properties, LLC" by Summit Engineering, Inc, dated 11/4/10, last revised 7/14/11

Note: Previous deeds describe the easterly line of this property as being parallel to Pine Street. The referenced 1899 plan shows the easterly line to be parallel with Shelburne Road which coincides with apparent usage.

Owner of Record
G&C Properties, LLC
316 Flynn Ave.
Burlington, Vermont
Tax Map Parcel No. 057-4-066-000
Bk. 1151, Pg. 457
16,420 Sq. Ft. (0.377 Acres)
10,006 SF License From City
Total 26,426 SF (0.474 Acres)

SITE INFORMATION
Zone: RL Residential Low Density/NMU Neighborhood Mixed Use
Existing Dwelling Units: 3
Proposed Dwelling Units: 30

PARKING
Parking District: Shared Use
21 Spaces Required

Proposed Parking Spaces 34 (2 Van-Accessible Handicap and 2 Standard Handicap Included)

Location Map

LEGEND

- Property/R.O.W. Line
- OHE — Overhead Utility Line
- UGE — NEW UNDERGROUND UTILITY LINE
- G — Gas Line
- W — Existing Water Line
- W — NEW WATER LINE
- SS — NEW SANITARY LINE
- S — Existing Sanitary Line
- ST — Storm Line
- NEW FENCE
- PROPOSED SILT FENCE
- Construction Limits
- Class III Wetland
- 140 — Existing Contours
- 146 — PROPOSED CONTOURS
- Utility Pole
- Concrete Monument
- Rebar Found
- Catch Basin
- Existing Gate Valve
- PROPOSED GATE VALVE
- Manhole
- Gas Valve
- Traffic Light
- 147.23 — Existing Spot Elevation
- 147.5 — PROPOSED SPOT ELEVATION
- PROPOSED LIGHT POLE
- PROPOSED CATCH BASIN

Total Existing Lot Coverage

Total Lot	26,424 s.f.	0.61 acre	100%
Paved Area	14,697 s.f.	0.34 acre	55.6%
Building Area	4,742 s.f.	0.11 acre	18.0%
Total Coverage	19,439 s.f.	0.45 acre	73.6%
Total Pervious	6,985 s.f.	0.16 acre	26.4%

Total Proposed Lot Coverage

Total Lot	26,424 s.f.	0.61 acre	100%
Paved Area	7,824 s.f.	0.18 acre	29.6%
Building Area	9,724 s.f.	0.22 acre	36.8%
Total Coverage	17,120 s.f.	0.39 acre	64.8%
Total Pervious	9,304 s.f.	0.21 acre	35.2%

Lot Coverage Low Density Residential (RL) Zone

	Existing		Proposed	
Total Area	10,007 s.f.	100%	10,007 s.f.	100 %
Paved Area	4,381 s.f.	43.8%	3,524 s.f.	35.2%
Building Area	0 s.f.	0.0%	0 s.f.	0 %
Total Coverage	4,381 s.f.	43.8%	3,524 s.f.	35.2%

Proposed Gross Floor Area 3,594 s.f. FAR = 0.36

Lot Coverage Neighborhood Mixed Use (NMU) Zone

	Existing		Proposed	
Total Area	16,417 s.f.	100%	16,417 s.f.	100 %
Paved Area	10,338 s.f.	63.0%	9,038 s.f.	55.0 %
Building Area	4,601 s.f.	28.0%	4,558 s.f.	27.8 %
Total Coverage	14,939 s.f.	91.0%	13,596 s.f.	82.8 %

Proposed Gross Floor Area 12,702 s.f. FAR = 0.77

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JUN 29 2016
DEPARTMENT OF PLANNING & ZONING

CLIENT
PINE & FLYNN DEVELOPMENT

LOCATION
316 FLYNN AVE (CORNER OF PINE & FLYNN
BURLINGTON, VERMONT

OWNER
G & C PROPERTIES
BURLINGTON, VERMONT
TEL: 802 343 6789

CONTRACTOR

CIVIL ENGINEER
SUMMIT ENGINEERING, INC
Engineers • Surveyors • Planners • Landscape Architects
1233 Shelburne Road C2
South Burlington, VT 05403
(802) 846-3666

STAMP
STATE OF VERMONT DOUGLAS E HEWITT NO. 7479 CIVIL REGISTERED PROFESSIONAL ENGINEER

Issue	Date	Issue	Date

Project

Drawing Title SITE PLAN

Project No 8163 Drawn By BSCOFF Date 6/29/16 Scale 1"=20'

Floor(s)

Drawing No S1

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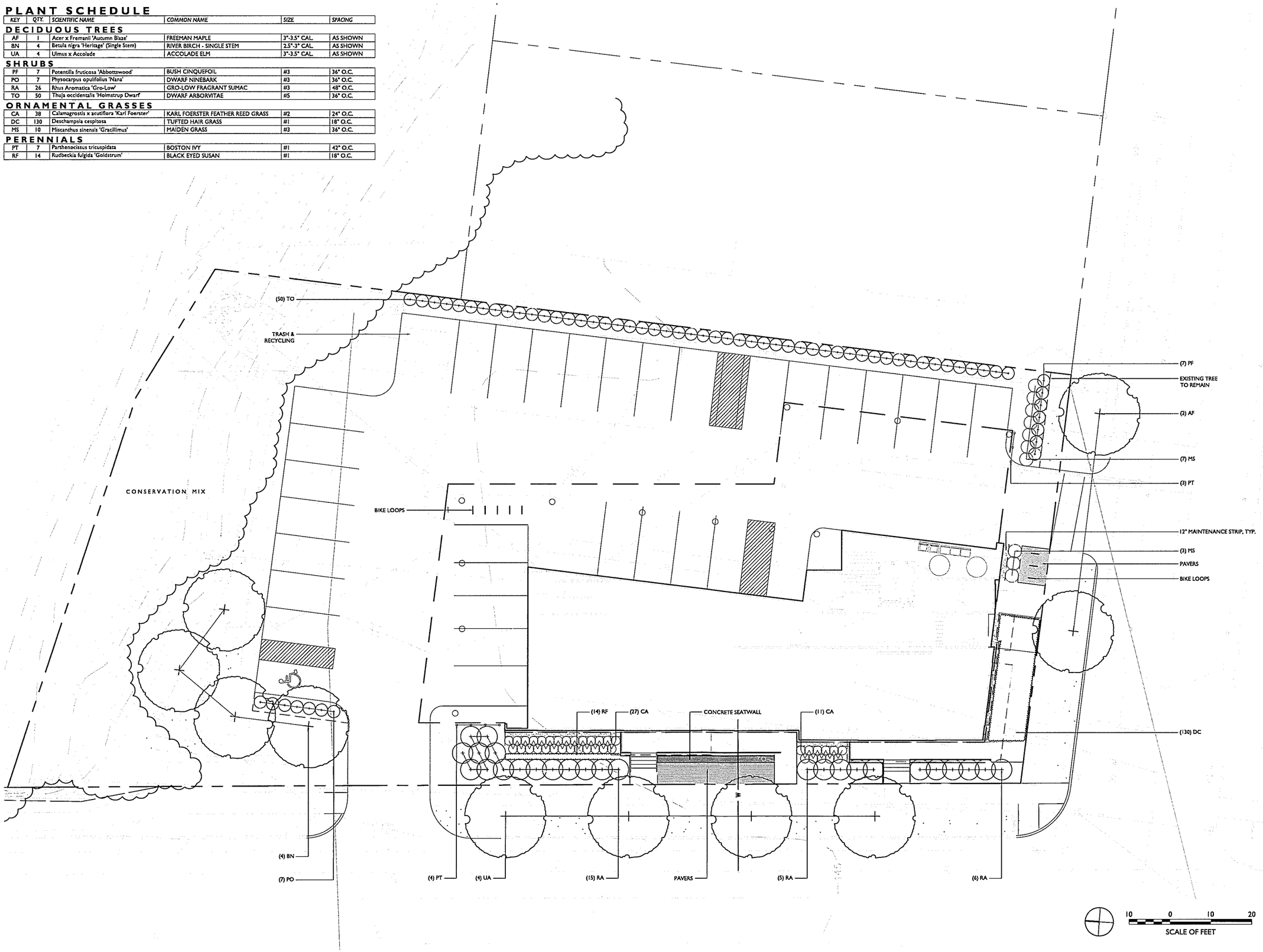
PLANT SCHEDULE

KEY	QTY.	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING
DECIDUOUS TREES					
AF	1	Acer x Fremanii 'Autumn Blaze'	FREEMAN MAPLE	3"-3.5" CAL.	AS SHOWN
BN	4	Betula nigra 'Heritage' (Single Stem)	RIVER BIRCH - SINGLE STEM	2.5"-3" CAL.	AS SHOWN
UA	4	Ulmus x Accolade	ACCOLADE ELM	3"-3.5" CAL.	AS SHOWN
SHRUBS					
PF	7	Potentilla fruticosa 'Abbottswood'	BUSH CINQUEFOIL	#3	36" O.C.
PO	7	Physocarpus opulifolius 'Nana'	DWARF NINEBARK	#3	36" O.C.
RA	26	Rhus Aromatica 'Gro-Low'	GRO-LOW FRAGRANT SUMAC	#3	48" O.C.
TO	50	Thuja occidentalis 'Holmstrup Dwarf'	DWARF ARBORVITAE	#5	36" O.C.
ORNAMENTAL GRASSES					
CA	38	Calamagrostis x acutiflora 'Karl Foerster'	KARL FOERSTER FEATHER REED GRASS	#2	24" O.C.
DC	130	Deschampsia cespitosa	TUFTED HAIR GRASS	#1	18" O.C.
MS	10	Miscanthus sinensis 'Gracillimus'	MAIDEN GRASS	#3	36" O.C.
PERENNIALS					
PT	7	Parthenocissus tricuspidata	BOSTON IVY	#1	42" O.C.
RF	14	Rudbeckia fulgida 'Goldstrum'	BLACK EYED SUSAN	#1	18" O.C.



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DRAFT
NOT FOR CONSTRUCTION

PINE AND FLYNN

PLANTING PLAN

REVISIONS

DRAWING NO.

JOB NO. 643

SCALE 1" = 10'-0"

DATE 06.29.16

L1.0

Stormwater Management Plan
Pre-Screening

Please provide the following information to the Stormwater Program (stormwater@burlingtonvt.gov, ph: 863-4501) in order to determine what the requirements will be for your project.

- General Information
  - Project Address:
  - Owner:
  - Engineer:
  - Brief project description:

- Stormwater Management Plan
  - Impervious[1] change summary

Condition	Type	Total Impervious (s.f.)
Existing Conditions	Existing Impervious	19439
Proposed	Total Proposed (1+2+3)	17120
	1) New[2]	
	2) Existing to Remain	
	3) Redeveloped	
Net New	Total Proposed – Existing	-2319

If available at this time:

- Existing conditions: *description of existing conditions, description of existing stormwater system, existing drainage issues, current connectivity to City system*

- Proposed Conditions: *description of proposed conditions, brief description of proposed stormwater system, proposed method of discharge to receiving water or City system (overland flow, direct connection via pipe, existing or new manhole or CB)*

[1] Impervious = any surface off of which water runs off rather than infiltrates, including, but not limited to rooftops and paved/unpaved (gravel/packed dirt) driveways, walkways and patios
[2] Impervious where there is not currently impervious

SUMMIT ENGINEERING, INC
Engineers + Surveyors + Planners + Landscape Architects

Stormwater Management Plan

Pine and Flynn
316-322 Flynn Avenue, Burlington, Vermont
June 28, 2016

Owner: G&C Properties LLC
316 Flynn Avenue, Burlington, VT 05401
(802) 343-6789

Engineer: Summit Engineering, Inc.
1233 Shelburne Road, C2
So. Burlington, VT 05403
(802) 658-5588

Architect: Innovative Design Inc.
8 Carmichael Street, Suite104
Essex Jct., Vt. O5452
Phone: 802.872.8430

Contractor: Snyder Homes Inc.
4076 Shelburne Road, Suite 6
Shelburne, VT 05482
Phone: 802.985-5722

Project Description

The project consists of the construction of a Multi-Use Building at 316 Flynn Avenue on the lot of the currently operating Pine Street Deli and the associated utilities, parking and landscaping. The improvements will include reconstruction of the adjacent city sidewalks and the installation of a stormwater attenuation and treatment tank.

Using the state of Vermont stormwater guidelines, the risk category has been defined as "Low". The site improvements include items that will be phased (building excavation and construction, sidewalk replacement, site regarding, utility installation and replacement, etc.) to minimize the time of exposed soils.

Existing Conditions

The site runoff from the existing site runs to Englesby Brook via sheet flow, gutter flow, a catch basin in Flynn Avenue and the Outlet drainage pipe in Pine Street. The site has no collection system with all the runoff exiting the site via sheet flow and overland flow. The majority of the site is covered by paved parking and rooftops.

Soils –

The soils along the brook are mapped by the NRCS as Munson and Belgrade Silt Loams with C & D Hydrologic Soils Groups.

Stormwater Treatment and Drainage Considerations –

The proposed stormwater treatment methods are the result of space limitations and the poor infiltration properties of the underlying soils. Roof drain systems create a concentration of runoff to a new culvert to Englesby Brook. The installation of a Flow Attenuator/Sedimentation Tank with level spreader prior to the final discharge is the most efficient method of improving the runoff characteristics of the roof-top runoff from the site. Paved surfaces are directed via sheet and gutter flow to a bioretention structure that is connected to the Attenuator/Sedimentation tank. Fringe impervious areas of the site will continue to drain to the adjacent street systems and runoff directly to Englesby Brook.

Site Runoff will continue to enter the City of Burlington Municipal Stormwater system and the adjacent brook (Englesby) via overland flow, gutter flow, attenuatin/sedimentation tank, bioretention structure and level spreader. The overall impervious area of the site will be reduced by approximately 500 sf with 9,300 sf of the new roof directed to the attenuation tank and 12000 sf of paved surfaces being directed to the bioretention structure and routed through the treatment tank.

Runoff Attenuation –

The resulting stormwater design, including the Flow Reducer Tank, based on a TR-55 runoff model, will result in a reduction of the peak design flows for the 1, 2, 10, 25 and 100-year, 24-hour design storms as specified in the table included on the design plans and stormwater management details.

Erosion Prevention and Sediment Control Practices and Features

Referenced Specifications –

Reference is made to The Vermont Standards and Specifications for Erosion Prevention & Sediment Control, 2006 - Vermont Department of Environmental Conservation. A copy of this document is to be kept on-site as a guide and reference during construction.

Minimization of Disturbance -

Work areas to be disturbed are to be defined with construction control fencing to eliminate the expansion to and protect undisturbed vegetated areas.

Temporary/Permanent Stabilization-

All disturbed areas are to be stabilized promptly, within 7 days of initial disturbance and after the end of each workday if further disturbance occurs. Both temporary and permanent

measures are to rely heavily on mulching and the reestablishment of healthy vegetative growth. Guidelines and specifications outlined on the plans. Permanently stabilized areas will not be considered completed until a healthy vegetative ground cover is in place.

Construction Control Fencing –

The fencing is to be 3-foot high minimum orange safety fence located along the perimeters where shown on the plan or determined as necessary by the on-site plan coordinator.

Silt Fencing –

Silt fence is to be installed down gradient of all disturbed embankment areas and around temporary soil stockpiles. In preparation of winter construction, the fencing is to be installed before ground freezes. In areas where receiving waters are less than 100 feet down slope, a double row of silt fence must be installed. Silt fence is to be installed in accordance with the plan details.

Erosion Control Matting –

Erosion Control matting is to be installed in all new permanent and temporary diversion channels and cut/fill slopes steeper than 1 vertical:4 horizontal.

Site Inspections –

Site inspections shall be performed at least once every seven days and with 24 hours of a precipitation event that causes runoff to leave the construction site. Upon completion of all construction and installation of the permanent erosion controls, the disturbed areas are to be evaluated once a month until a healthy vegetative cover is in place. Features or practices that are in place shall be evaluated and repaired as necessary in accordance with the plan details.

Construction Schedule -

The following sequencing of activities associated with erosion and sediment control is expected:

1. Install construction control fencing and stabilized construction entrance. The fencing is to be installed, maintained and removed as necessary to facilitate the construction of the various site features.

2. Install catch basin sedimentation traps and grading of stormwater treatment areas and basins that are to receive runoff from disturbed areas.

3. Proceed with construction, installing the Flow Reducing Tank for use during the construction process.

4. Stabilize all disturbed areas as defined in the construction plans with temporary or permanent measures as required by the plan and referenced specifications pertaining to the completion of the construction and the conditions of winter construction.

Winter Construction –

1. Winter construction season is defined as October 15 though May 1 of each year. During this period, the following extra precautions shall be observed:
2. Non-Vegetative protection must be installed after September 15th to bare soils including erosion control blankets and /or heavy mulch layer.
3. Apply a minimum of 3 inches uncompacted mulch to bare areas. Mulch shall be tracked or stabilized with netting in open areas exposed to wind.
4. Areas not to be subject to winter construction are to be defined and protected until they become active again or permanently stabilized.
5. Areas for snow storage are to be defined and snow removed from the site and disposed of properly if on-site areas cannot be provided.
6. Snow storage shall occur down slope of all areas of disturbance.
7. Areas of disturbance closer to 100 feet uphill of receiving waters shall receive two rows of silt fence installed in accordance with plan details.
8. Silt fence and other erosion control features shall be installed prior to ground freeze.
9. Disturbed soils must be stabilized at the end of each work day unless no precipitation is forecast within 24 hours and work will resume within 24 hours in the same disturbed area. In areas that collect and retain runoff such as foundations and utility trenches daily stabilization is not required.
10. Prior to permanent and/or temporary stabilization, snow and ice shall be removed to less than 1 inch thickness.
11. Stone is to be applied to drip areas of buildings under construction and where vehicular traffic is expected.

Impervious Change Summary

Condition	Type	Impervious (s.f.)
Existing Conditions	Existing Impervious	17,548
Proposed	New Building	9,296
	New Parking, Patio, Walkways	7,824
	and Misc.	
	Total Proposed	17,120

Stormwater Management Summary:

	Amount of impervious managed	
Standard	New Impervious	Redeveloped Impervious
Water Quality	10,100	10,100

*Redeveloped impervious is used to describe the rehabilitation of asphalt pavement and the replacement of concrete sidewalks.

Improved Stormwater Management Methods

Included in the site design to provide management of stormwater runoff from the site is a stormwater sedimentation and attenuation tank to detain the design flows and trap sediment. The design of the site will control the peak runoff from the site to a rate less than the existing conditions. .

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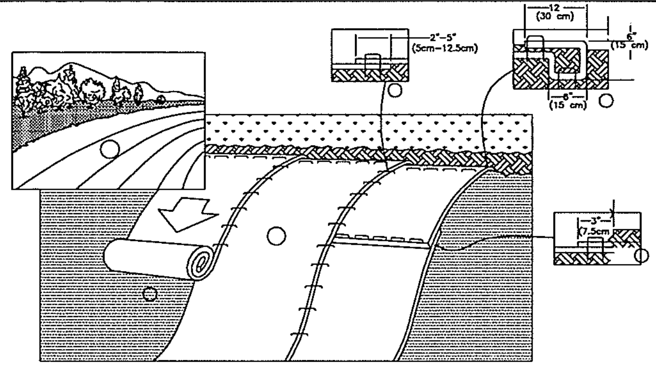

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCT (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) OF RECP's APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF RECP's
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5CM – 12.5CM) OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ENTIRE RECP's EDITH.

NOTE:
IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

EROSION CONTROL MATTING - SLOPE INSTALLATION

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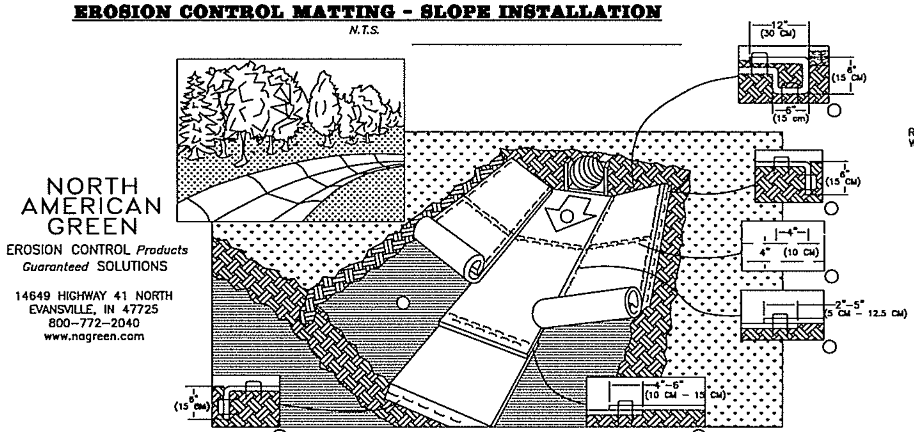

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMAPCT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) ACROSS THE WIDTH OF THE RECP's.
3. ROLL CENTER RECP's IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE RECP's END OVER END (SHINGLE STYLE) WITH A 4" – 6" (10 CM –15 CM) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER TO SECURE RECP's.
5. FULL LENGTH EDGE OF RECP's AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECP's MUST BE OVERLAPPED APPROXIMATELY 2" – 5" (5 CM –12.5 CM) (DEPENDING ON RECP's TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9 M – 12 M) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECP's MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

NOTE:
* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

EROSION CONTROL MATTING - CHANNEL INSTALLATION

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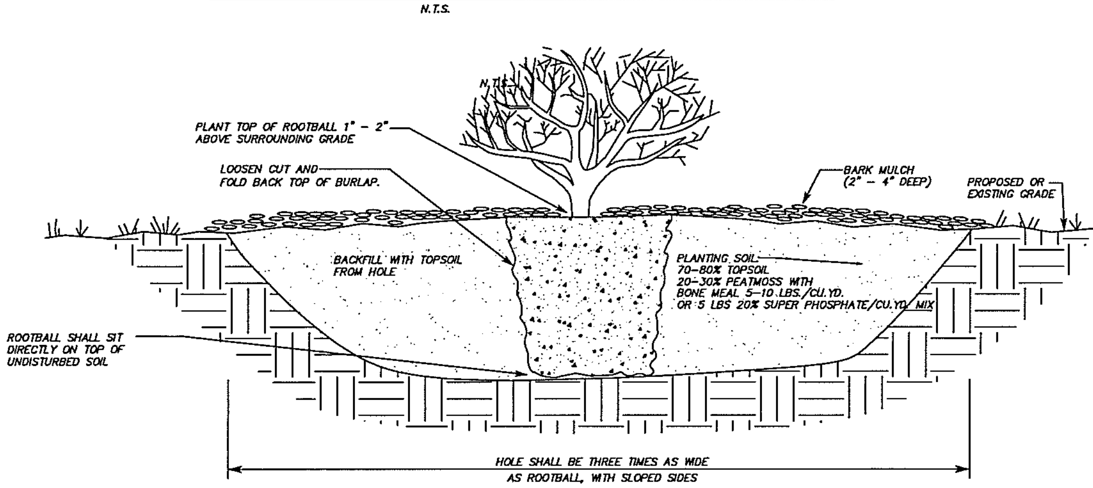

SHRUB PLANTING TYPICAL

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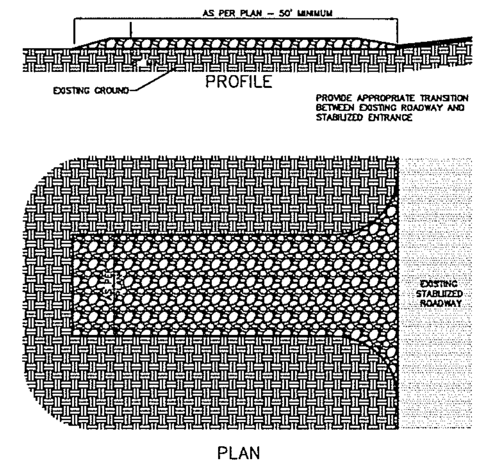
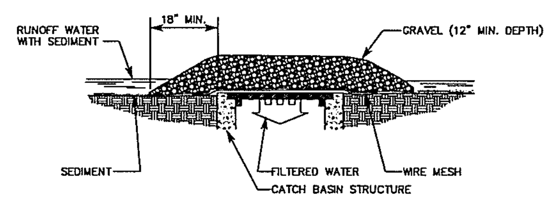


NOTES:

1. STONE SHALL BE 1.5 TO 4 INCHES WITH A MINIMUM THICKNESS OF 8 INCHES.
2. LENGTH, WIDTH AND RETURN RADIUSES SHALL BE AS SHOWN ON THE APPLICABLE CONSRTUCTION STABILIZATION PLAN.
3. MAINTAINANCE OF ENTRANCE WILL BE NECESSARY TO PREVENT TRACKING OF SEDIMENT OFF SITE. THIS MAY INCLUDE ADDING STONE, AND/OR REMOVING AND REPLACING STONE.
4. THE EMPLOYMENT OF APPROVED ALTERNATIVE METHODS OF REMOVING SEDIMENT FROM VEHICLE PRIOR TO EXITING SITE IS ENCOURAGED TO MINIMIZED REQUIRED MAINTAINANCE OF STABILIZED ENTRANCE.
5. CONSTRUCT STABILIZED APRON AROUND BUILDING AS SHOWN ON THE PLAN, AND WITH THE PROFILE SHOWN ABOVE.

STABILIZED CONTRUCTION ENTRANCE

NOT TO SCALE



1. A WIRE MESH SHALL BE PLACED OVER THE DROP INLET OR CURB OPENING SO THAT THE ENTIRE OPENING AND A MINIMUM OF 12 INCHES AROUND THE OPENING ARE COVERED BY THE MESH. THE MESH MAY BE ORDINARY HARDWARE CLOTH OR WIRE MESH WITH OPENINGS UP TO 1/4 INCH.
2. THE WIRE MESH SHALL BE COVERED WITH CLEAN COARSE AGGREGATE SUCH AS CRUSHED STONE FOR A MINIMUM DEPTH OF 12 INCHES. CRUSHED STONE SHALL BE . BEDDING STONE FOR SEWERS (ASTM STONE SIZE NO. 67). SEE SPECIFICATIONS.
3. THE COARSE AGGREGATE SHALL EXTEND AT LEAST 18 INCHES BEYOND ALL SIDES OF THE CATCH BASIN/DRAIN OPENING.
4. THIS SEDIMENTATION CONTROL SHALL BE UTILIZED AT ALL CATCH BASINS THAT WILL RECEIVE RUNOFF FROM DISTURBED AREAS.
5. *GEOTEXTILE BAG PRODUCTS DESIGNED FOR EROSION CONTROL AT CATCHBASINS ARE ACCEPTABLE ALTERNATIVES PROVIDED THEY ARE INSTALLED AND MAINTAINED PER MANUFACTURERS RECOMMENDATIONS.*
6. *SILT FENCING PROPERLY INSTALLED AND MAINTAIN AROUND CATCH BASINS IN GRASS AREAS IS AN ACCEPTABLE ALTERNATIVE.*

SEDIMENTATION CONTROL AT CATCH BASIN

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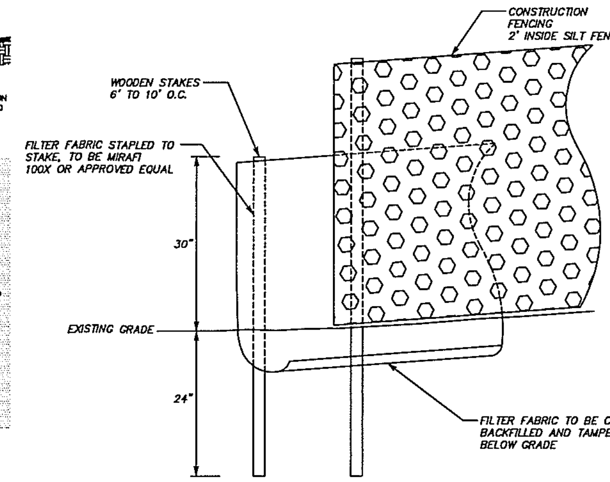
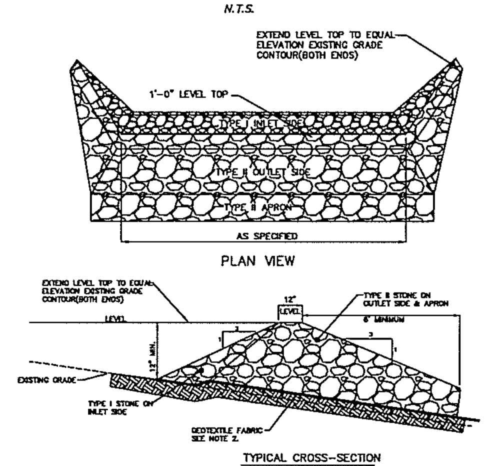


NOTES:
INSTALL SILT FENCES AT TOES OF UNPROTECTED SLOPES AND AS PARALLEL TO CONTOURS AS POSSIBLE. CURVE THE ENDS OF THE FENCE UP INTO THE SLOPE. REMOVE SEDIMENT WHEN ACCUMULATED TO HALF THE HEIGHT OF THE FENCE. CONTRACTOR SHALL INSTALL SILT FENCES AT THE TOE OF ALL FILLED OR UNPROTECTED SLOPES CREATED DURING CONSTRUCTION. NOT NECESSARILY REFLECTED ON FINAL PLANS. SILT FENCES ARE TO BE MAINTAINED UNTIL SLOPES ARE STABILIZED, AND REMAIN THE PROPERTY OF THE CONTRACTOR.

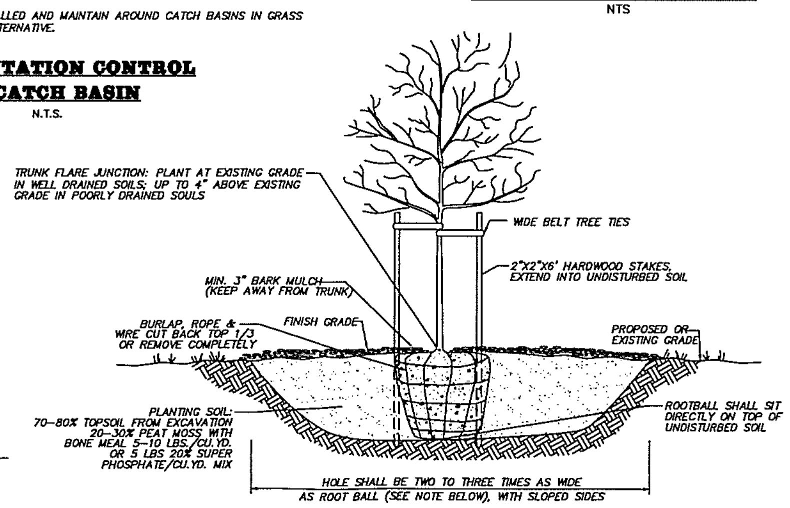
SILT/CONSTRUCTION FENCE EROSION CONTROL TYPICAL

N.T.S.



LEVEL SPREADER DETAIL

NTS



DECIDUOUS TREE PLANTING DETAIL

N.T.S.

NOTES:
1. PLANTING HOLE SHALL BE 3 TIMES ROOT BALL DIAMETER IN HIGHLY COMPACTED SOIL; 2 TIMES ROOT BALL DIAMETER MINIMUM IN ALL OTHERS.
2. STAKES AND GUY WIRE PLACEMENT SHALL NOT INTERFERE WITH PEDESTRIAN TRAFFIC.

Landscaping Notes:
1. Landscape architect shall be notified to inspect proposed locations of plant material and condition of plant materials when delivered to site prior to installation.
2. All plant material is to conform to the requirements of ANSI Z60.1 "American Standard for Nursery Stock" for quality, size, genus, species and variety shown on the planting plan.
3. Landscape contractor shall be responsible for identifying locations of underground utilities prior to excavation for planting.

EROSION PREVENTION AND SEDIMENT CONTROL STABILIZATION NOTES:

1. MULCH SHALL BE APPLIED TO ALL DISTURBED AREAS AT 2 TONS PER ACRE. MULCH SHALL CONSIST OF AIR-DRIED HAY OR STRAW FREE OF SEEDS AND COARSE MATERIALS.
2. TOPSOIL PILES SHALL BE MULCHED AND RINGED WITH SILT FENCE.
3. DISTURBED SOILS TO BE STABLED AS FOLLOWS:

CHANNEL SLOPE	LINING
1% TO 5%	NORTH AMERICAN GREEN S150
> 5%	STONE RIP RAP

SIDE SLOPES	LINING
<3:1	MULCH
>=3:1	NORTH AMERICAN GREEN S150 OR EQUAL.
>2:1	NORTH AMERICAN GREEN SC250 OR EQUAL

4. LIME MAY BE APPLIED TO ACHIEVE SOIL PH OF 6.5 FOR AREAS TO BE SEEDED.
5. APPLY COMMERCIAL FERTILIZER AT 1.0 LBS/1,000SQ. FT OF N20, P5 AND K20, IF REQUIRED.
6. LIME AND FERTILIZER SHALL BE MIXED THOROUGHLY INTO THE SEEDBED DURING SOIL PREPARATION.
7. GRASSED CHANNELS SHALL HAVE A MIN. OF 4" OF TOPSOIL PRIOR TO SEEDING.
8. DISTURBED SOILS SHALL BE SEEDED ACCORDING TO THE FOLLOWING TABLE:

SEEDING RATES FOR TEMPORARY STABILIZATION:
APRIL 15 - SEPT. 15: RYEGRASS (ANNUAL OR PERENNIAL: 20 LBS/ACRE)
SEPT. 15 - APRIL 15: WINTER RYE (120 LBS/ACRE)

SEEDING RATES FOR FINAL STABILIZATION:

CHOOSE FROM:	VARIETY	LBS./ACRE	LBS./1000 SQ. FT.
BIRDSFOOT TREFOIL	EMPIRE/PARDEE	5*	0.1
OR			
COMMON WHITE CLOVER	COMMON	8	0.2
PLUS			
TALL FESCUE	KY-31/REBEL	10	0.25
PLUS			
REDTOP	COMMON	2	0.05
OR			
RYEGRASS (PERENNIAL)	PENNFINE/LINN	5	0.1

* - MIX 2.5 LBS. EACH OF EMPIRE AND PARDEE OR 2.5 LBS. OR BIRDSFOOT AND 2.5 LBS. WHITE CLOVER PER ACRE.

LIMIT–OF–DISTURBANCE CORDON CONSTRUCTION SPECIFICATIONS

1. LIMIT OF DISTURBANCE CORDON SHALL BE 3–FOOT HIGH ORANGE "CONSTRUCTION" SAFETY FENCE OR APPROVED EQUIVALENT, AND SHALL BE LOCATED AS SHOWN ON THE APPLICABLE PHASE PLAN. INSTALLATION OF PERMANENT SECURITY FENCING IS ALSO ACCEPTABLE.
2. SAID FENCE SHALL BE SUPPORTED BY STEEL 'U' OR 'T' TYPE POSTS PLACED AT MAXIMUM 18–FOOT INTERVALS.
3. FENCE SHALL BE WIRE OR "ZIP" TIED TO THE SUPPORT POSTS.
4. THE FENCE SHALL BE MAINTAINED IN A WORKMAN LIKE MANNER, AND SHALL REMAIN IN PLACE UNTIL FINAL SITE STABILIZATION IS ACHIEVED.

EROSION PREVENTION AND SEDIMENT CONTROL CONSTRUCTION NOTES:

1. NEW LOT OWNERS/CONTRACTORS MUST COMPLY WITH THE EROSION PREVENTION AND SEDIMENT CONTROL STANDARDS OF THE CITY OF BURLINGTON.
2. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED.
3. ALL AREAS MUST HAVE TEMPORARY OR PERMANENT STABILIZATION WITHIN 14 DAYS OF INITIAL DISTURBANCE. AFTER THIS TIME ANY DISTURBANCE IN THE AREAS MNUST BE STABILIZED AT THE END OF EACH WORK DAY. THE FOLLOWING EXCEPTIONS APPLY:
   - STABILIZATION IS NOT REQUIRED IF WORK IS TO CONTINUE IN THE AREA WITHIN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST WITHIN THE NEXT 24 HOURS.
   - STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF–CONTAINED EXCAVATION (I.E. NO OUTLET) WITH A DEPTH OF 2 FEET OR GREATER (E.G. HOUSE FOUNDATION EXCAVATION, UTILITY TRENCHES)
4. ALL EROSION CONTROL MEASURES MUS BE INSPECTED AT A FREQUENCY OF EVERY 7 DAYS OR WITHIN 24 HOURS OF A PRECIPITATION EVENT CAUSING RUNOFF TO LEAVE CONSTRUCTION SITE, AND REPLACED OR REPAIRED AS NECESSARIES.

EROSION CONTROL SEQUENCING

1. DELINEATE THE AREA TO BE DISTURBED WITH LIMIT OF DISTURBANCE CORDON, SILT FENCE OR CONSTRUCTION FENCING AS APPROPRIATE.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCES.
3. INSTALL TEMPORARY AND PERMANENT EROSION CONTROL FEATURES AS APPROPRIATE AND AS DESCRIBED IN THESE DETAILS.

WINTER CONSTRUCTION EROSION CONTROL MEASURES

ADDITIONAL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED DURING THE WINTER CONSTRUCTION SEASON IF EARTH DISTURBANCE IS PLANNED DURING THIS TIME (OCTOBER 15TH TO APRIL 15TH). CONTRACTOR/LANDOWNER SHALL READ AND UNDERSTAND THE FOLLOWING ITEMS:

1. NON-VEGETATIVE PROTECTION MUST BE INSTALLED AFTER SEPTEMBER 15TH TO BARE SOILS INCLUDING EROSION CONTROL BLANKETS AND/OR HEAVY MULCH LAYER.
2. APPLY A MINIMUM OF 3 INCHES OF MULCH WITH AN 80–90% GROUND COVER. MULCH SHALL BE TRACKED OR STABILIZED WITH NETTING IN OPEN AREAS VULNERABLE TO WIND.
3. PROVIDE ENLARGED ACCESS POINTS TO THE SITE, STABLED TO PROVIDE FOR SNOW STOCKPILING.
4. LIMITS OF DISTURBANCE MOVED OR REPLACED TO REFLECT BOUNDARY OF WINTER WORK.
5. CLEARED SNOW SHALL BE STOCKPILED DOWNSLOPE OF ALL AREAS OF DISTURBANCE AND OUT OF STORMWATER TREATMENT STRUCTURES.
6. A MINIMUM 25 FOOT BUFFER SHALL BE MAINTAINED ON PERIMETER CONTROLS SUCH AS SILT FENCE.
7. IN AREAS OF DISTURBANCE THAT DRAIN TO A WATERBODY WITHIN 100 FEET, TWO ROWS OF SILT FENCE MUST BE INSTALLED ALONG THE CONTOUR.
8. DRAINAGE STRUCTURES MUST BE KEPT FREE AND CLEAR OF SNOW AND ICE DAMS.
9. SILT FENCE AND OTHER PRACTICES MUST BE INSTALLED AHEAD OF FROZEN GROUND.
10. DISTURBED SOILS MUST BE STABILIZED AT THE END OF EACH WORK DAY, UNLESS NO PRECIPITATION IS FORECAST WITHIN 24 HOURS AND WORK WILL RESUME WITHIN 24 HOURS IN THE SAME DISTURBED AREA. IN AREAS THAT COLLECT AND RETAIN RUNOFF SUCH AS HOUSE FOUNDATIONS AND UTILITY TRENCHES DAILY STABILIZATION IS NOT REQUIRED.
11. PRIOR TO STABILIZATION SNOW AND ICE SHALL BE REMOVED TO LESS THAN 1 INCH THICKNESS.
12. USE STONE TO STABILIZE AREAS SUCH AS THE PERIMETER OF BUILDINGS UNDER CONSTRUCTION OR WHERE CONSTRUCTION VEHICULAR TRAFFIC IS ANTICIPATED.

Redstone

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CLIENT
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LOCATION
316 FLYNN AVE (CORNER OF PINE & FLYNN
BURLINGTON, VERMONT

OWNER
G & C PROPERTIES
BURLINGTON, VERMONT
TEL: 802 343 6789

CONTRACTOR

CIVIL ENGINEER
SUMMIT ENGINEERING, INC
Engineers • Surveyors • Planners • Landscape Architects
1233 Shelburne Road C2
South Burlington, VT 05403

STAMP
STATE OF VERMONT
DOUGLAS F. HEWITT
NO. 7479
CIVIL
LICENSED PROFESSIONAL ENGINEER

Issue	Date	Issue	Date

Project

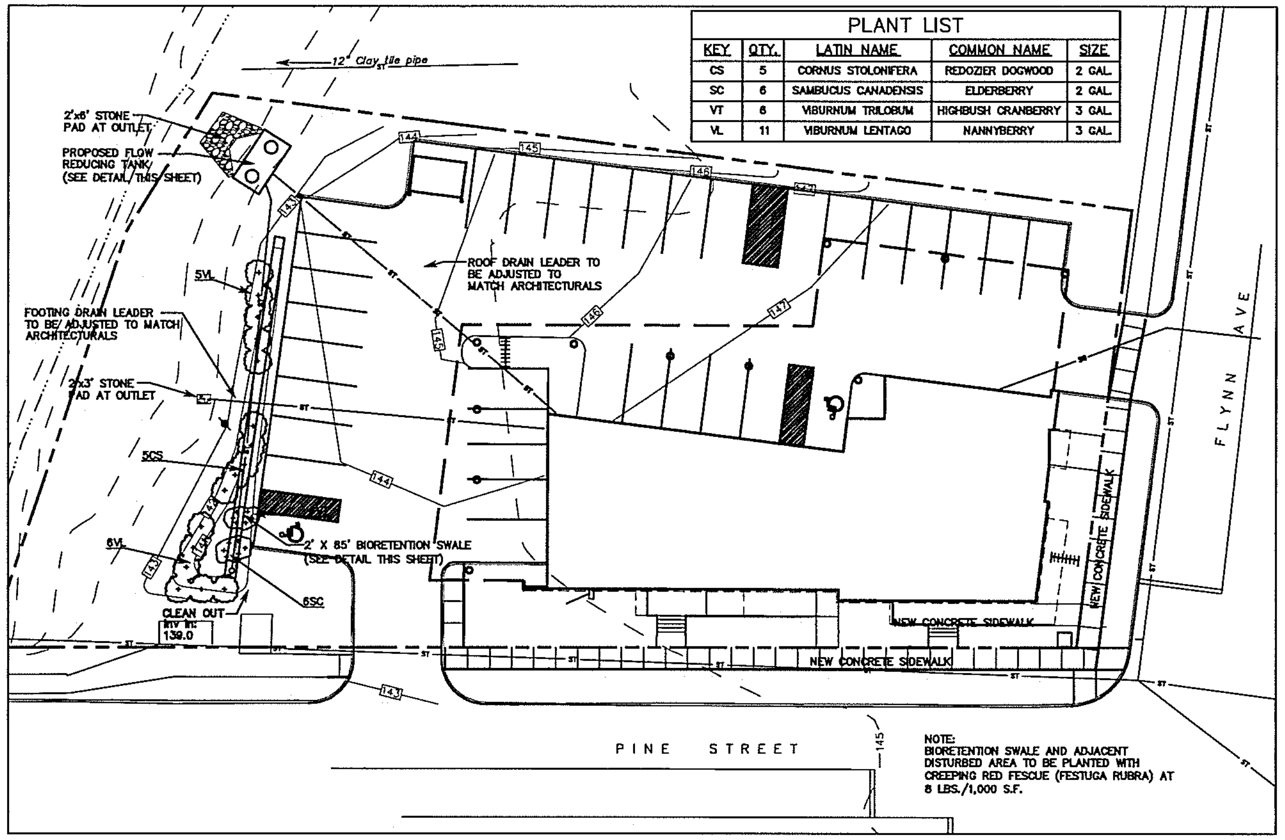
Drawing Title: EROSION CONTROL AND LANDSCAPINGDETAILS

Project No. 8163 Drawn By BEG Date 6/29/15 Scale N.T.S.

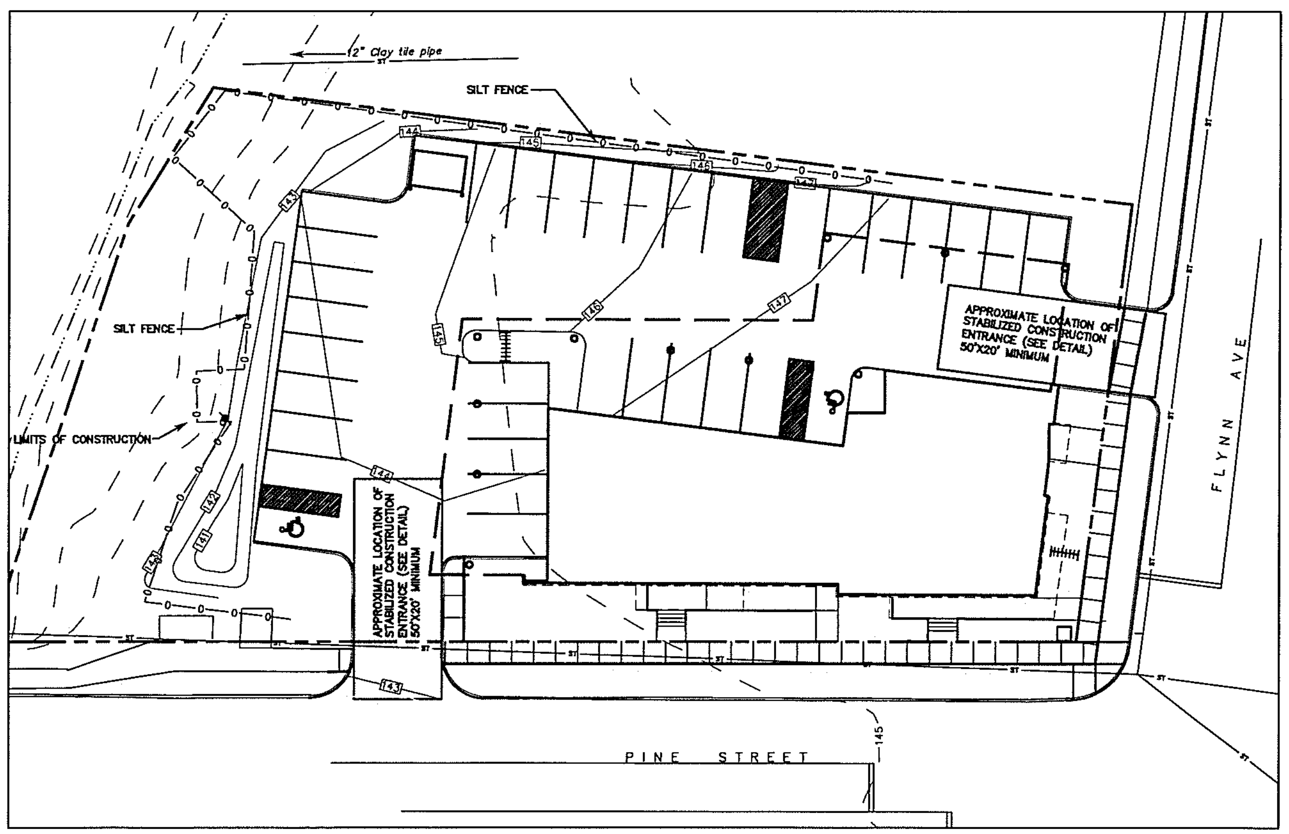
Floor(s)

Drawing No. D2

PLANT LIST				
KEY	QTY.	LATIN NAME	COMMON NAME	SIZE
CS	5	CORNUS STOLONIFERA	REDOZIER DOGWOOD	2 GAL.
SC	6	SAMBUCUS CANADENSIS	ELDERBERRY	2 GAL.
VT	6	VIBURNUM TRILOBUM	HIGHBUSH CRANBERRY	3 GAL.
VL	11	VIBURNUM LENTAGO	NANNYBERRY	3 GAL.

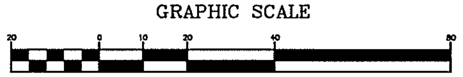


STORMWATER MANAGEMENT VIEW



EROSION CONTROL VIEW

GRAPHIC SCALE



(IN FEET)
1 inch = 20 ft.

STORMWATER SYSTEM MAINTENANCE REQUIREMENTS

1. The system is to be inspected annually after spring snow melt, prior to June 15th. The inspection shall evaluate the operation and maintenance and condition of the stormwater collection, treatment and control system.
2. The stormwater treatment tank is to be inspected monthly and after significant rainfall events.
3. The owner shall prepare an annual inspection summary which shall be submitted to the Burlington Department of Public Works and the State of Vermont Stormwater Office by July first of each year. The report shall include the dates and details of all stormwater system maintenance and repairs performed in the previous year.
4. The inspection shall include an evaluation of all catch basins, treatment tank, and natural areas. The features are to be inspected for sediment accumulation and stability.
5. Sediment shall be removed from the catch basins when the sediment level is within 10" of the pipe invert and from the treatment tank when the depth reaches 6".
6. Any sediment or erosion observed on the site shall be removed/repaired and full vegetation reestablished.

PROJECT DESCRIPTION

The project consists of the construction of a Multi-Use Building at 316 Flynn Avenue on the lot of the currently operating Pine Street Deli and the associated utilities, parking and landscaping. The improvements will include reconstruction of the adjacent city sidewalks and the installation of a stormwater attenuation and treatment tank.

Using the state of Vermont stormwater guidelines, the risk category has been defined as "Low". The site improvements include items that will be phased (building excavation and construction, sidewalk replacement, site regarding, utility installation and replacement, etc.) to minimize the time of exposed soils.

EXISTING CONDITIONS

The site runoff from the existing site runs to Englesby Brook via sheet flow, gutter flow, a catch basin in Flynn Avenue and the Outlet drainage pipe in Pine Street. The site has no collection system with all the runoff exiting the site via sheet flow and overland flow. The majority of the site is covered by paved parking and rooftops.

Soils –

The soils along the brook are mapped by the NRCS as Munson and Belgrade Silt Loams with C & D Hydrologic Soils Groups.

STORMWATER TREATMENT AND DRAINAGE CONSIDERATIONS -

The proposed stormwater treatment methods are the result of space limitations and the poor infiltration properties of the underlying soils. The inclusion of catch basins and roof drain systems create a concentration of runoff to a new culvert to Englesby Brook. The installation of a Flow Attenuator/Sedimentation Tank prior to the final discharge is the most efficient method of improving the runoff characteristics of the site. Impervious portions of the site will continue to drain to the adjacent street systems and runoff directly to Englesby Brook.

Site Runoff will continue to enter the City of Burlington Municipal Stormwater system and the adjacent brook (Englesby) via overland flow, gutter flow, on-site and municipal catch basins, storm pipes and a new treatment structure. The overall impervious area of the site will be reduced by approximately 2,200 sf with 9,000 sf of the new roof and paved surfaces being routed through the treatment tank.

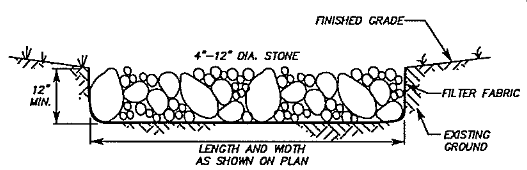
RUNOFF ATTENUATION -

The resulting stormwater design, including the Flow Reducer Tank, based on a TR-55 runoff model, will result in a reduction of the peak design flows for the 1, 2, 10, 25 and 100-year, 24-hour design storms as specified in the table included on the design plans and stormwater management details.

Existing Impervious Lot Coverage			
Total Lot	26,424 s.f.	0.61 acre	100%
Paved Area	14,697 s.f.	0.34 acre	55.6%
Building Area	4,742 s.f.	0.11 acre	18.0%
Total Coverage	19,439 s.f.	0.45 acre	73.6%

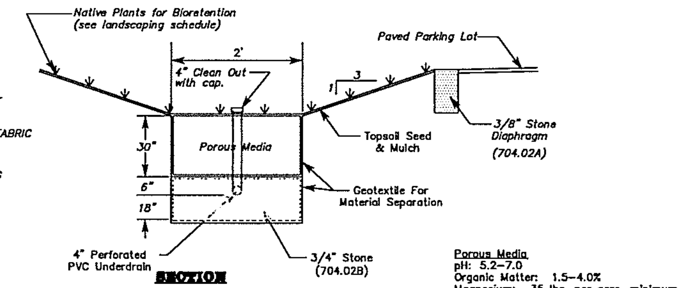
Proposed Impervious Lot Coverage			
Total Lot	26,424 s.f.	0.61 acre	100%
Paved Area	11,101 s.f.	0.25 acre	42.0%
Building Area	6,119 s.f.	0.14 acre	23.2%
Total Coverage	17,220 s.f.	0.40 acre	65.2%
Effective Impervious	17,220 s.f.	0.40 acre	65.2%
New Impervious	−2,219 s.f.	−0.05 acre	−8.4%

Impervious Surface Management		
Standard	Net New Impervious	Redeveloped/Existing Impervious
Water Quality	0 s.f.	13,373 s.f.
Runoff Reduction	0 s.f.	13,373 s.f.
Q1 Peak Control	0 s.f.	13,373 s.f.
Q10 Peak Control	0 s.f.	13,373 s.f.



NOTE: APRON SIZE FOR FLOWS LESS THAN 5 cfs AT 12" PIPE OUTLET

STONE PAD DETAIL
N.T.S.



Porous Media
pH: 5.2–7.0
Organic Matter: 1.5–4.0%
Magnesium: 35 lbs. per acre, minimum
Phosphorus (P2O5): 75 lbs. per acre, minimum
Potassium (K20): 85 lbs. per acre, minimum
Soluble salts: 500 ppm
Clay: 10–25%
Silt: 30–55%
Sand: 35–60%

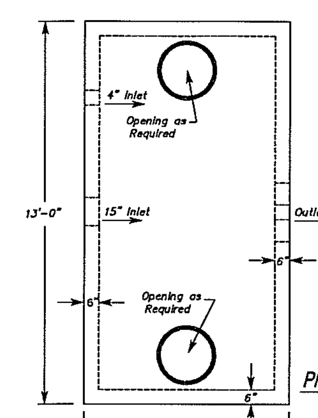
BIORETENTION SWALE DETAIL
N.T.S.

- Void Ratio= 0.4
- Vertical Permeability of Porous Media = 10 Min/Inch
- Max Q For 1" Orifice = 0.07 cfs
- Storage Volume : 2' Wide Swale = 20 C.F./L.F.
  4' Wide Swale – 40 C.F./L.F.

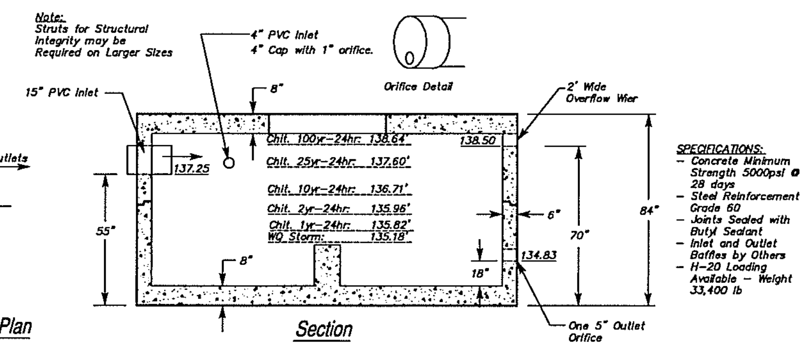
Q-in / Q-out Of Treatment Tank		
Storm	Q-in	Q-out
WQ Storm	0.25 c.f.s	0.24 c.f.s.
Chit. 1yr-24hr	0.64 c.f.s.	0.58 c.f.s.
Chit. 2yr-24hr	0.71 c.f.s.	0.63 c.f.s.
Chit. 10yr-24hr	1.00 c.f.s.	0.85 c.f.s.
Chit. 25yr-24hr	1.28 c.f.s.	1.05 c.f.s.
Chit. 100yr-24hr	1.63 c.f.s.	1.55 c.f.s.

Q Into Englesby Brook Before and After Construction			
Design Storm	Q-Pre Development	Q-Improvement Goal	Q-Post Development
WQ Storm	0.61 c.f.s.	0.49 c.f.s.	0.18 c.f.s.
Chit. 1yr-24hr	1.49 c.f.s.	0.75 c.f.s.	0.55 c.f.s.
Chit. 2yr-24hr	1.67 c.f.s.	0.90 c.f.s.	0.61 c.f.s.
Chit. 10yr-24hr	2.46 c.f.s.	1.63 c.f.s.	0.86 c.f.s.
Chit. 25yr-24hr	3.26 c.f.s..	2.42 c.f.s..	1.10 c.f.s..
Chit. 100yr-24hr	4.25 c.f.s.	3.41 c.f.s.	1.39 c.f.s.

Note: WQ flows based on calculations to maintain the minimum WQ Volume of 0.2"
Q-Improvement Goal models the site as if half the existing impervious is returned to natural condition.



Note:
Struts for Structural Integrity may be Required on Larger Sizes



SPECIFICATIONS:
- Concrete Minimum Strength 5000psi @ 28 days
- Steel Reinforcement Grade 60
- Joints Sealed with Butyl Sealant
- Inlet and Outlet Baffles by Others
- H-20 Loading Available - Weight 33,400 lb

FLOW REDUCER TANK DETAIL

HEAVY DUTY 2500 GALLON TANK MODIFIED AS SHOWN.
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South Burlington, VT 05403

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Issue	Date	Issue	Date

Project

Drawing Title
STORMWATER MANAGEMENT PLAN AND DETAILS

Project No. 8163 Drawn By BCG/DFH Date 6/29/15 Scale N.T.S.

Floor(s)

Drawing No.
D3