

Burlington Design Advisory Board

149 Church Street, City Hall

Burlington, VT 05401

www.burlingtonvt.gov/PZ/DAB

Phone: (802) 865-7188

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*Matthew Bushey
Ron Wanamaker
Sean McKenzie
Steven Offenhart
Chris Alley
Philip Hammerslough, Alt.
Jeremy Gates, Alt.*



DESIGN ADVISORY BOARD Tuesday July 12, 2016 at 3:00 PM Conference Room 12, City Hall, Burlington, VT Agenda

- 1. 16-1507CA/MA; 316-322 FLYNN AVENUE (NMU, Ward 5S) G & C Properties, LLC**
Demolish existing buildings. Construct mixed use building with 30 residential units and 2 commercial spaces and associated site improvements.
(Project Manager, Scott Gustin)

Department of Planning and Zoning

149 Church Street
Burlington, VT 05401
Telephone: (802) 865-7188
(802) 865-7195 (FAX)
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David White, AICP, Director
Meagan Tuttle, AICP, Comprehensive Planner
Jay Appleton, GIS Manager
Scott Gustin, AICP, CFM, Principal Planner
Mary O'Neil, AICP, Principal Planner
Ryan Morrison, CFM, Associate Planner
Anita Wade, Zoning Clerk
Elsie Tillotson, Department Secretary



TO: Design Advisory Board
FROM: Scott Gustin
DATE: July 12, 2016
RE: 16-1507CA/MA, 316-322 Flynn Avenue

=====

Zone: NMU	Ward: 5
Owner/Representative:	G&C Properties / 316 Flynn LLC

Request: Demolish existing buildings. Construct mixed use building with 30 residential units and 2 commercial spaces and associated site improvements.

OVERVIEW:

The applicant is requesting approval of a proposed mixed use building and associated parking. The existing corner market building will be demolished along with the detached triplex and redemption center.

This project underwent sketch plan review with the Design Advisory Board on April 12, 2016. The DAB recommended improving the building's ground floor; specifically, strengthening its pedestrian interface and distinguishing it from the upper stories. Additional screening of the parking was advised too. The application plans submitted address these recommendations.

ARTICLE 6: DEVELOPMENT REVIEW STANDARDS

Article 6: Development Review Standards:

Part 1, Land Division Design Standards

Not applicable.

Part 2, Site Plan Design Standards

Sec. 6.2.2, Review Standards

(a) Protection of important natural features

Important natural features onsite include Englesby Brook and associated wetlands. In light of this waterway's impaired status, construction site erosion control measures and post-construction stormwater management are particularly important. The application contains plans to address both erosion control and post construction stormwater management. Review and approval of erosion control and stormwater management measures by the Conservation Board and the Stormwater Administrator are required.

(b) Topographical alterations

The site is generally flat and will remain so. Some grading work is proposed; however, it will not substantially alter the existing topography of the site.

(c) Protection of important public views

There are no designated view sheds from or through the property.

(d) Protection of important cultural resources

The proposed development site has no known archaeological resources.

(e) Supporting the use of alternative energy

The application materials assert that the most energy efficient available technology will be used for heating and cooling within the proposed building. The rooftop will be constructed in order to be solar ready in the event that rooftop solar becomes financially feasible.

(f) Brownfield sites

The property is not an identified brownfield.

(g) Provide for nature's events

The project plans depict a net reduction in lot coverage (~10%). Stormwater from proposed impervious surfaces will be collected and treated prior to discharge into Englesby Brook. The stormwater management plan calls for filtration and controlled discharge of runoff into the Brook. Some portion of runoff will be collected and discharged into the city's combined sewer system at a controlled rate so as to avoid exacerbating peak flows.

The front entries into the building are sheltered under a canopy. The rear entries will be sheltered as well. Ample room remains onsite for seasonal snow storage.

(h) Building location and orientation

Placement of the proposed building is essentially consistent with that of the existing commercial building. The new structure will be set to the street corner while still observing the required setback from the curb. Any encroachments into the street right-of-way (including underground structure such as footings) will require an encumbrance permit from the City Council in consultation with the Department of Public Works.

The primary façade faces Pine Street. Both ground floor commercial spaces present well-defined entries and shop front glazing. The Flynn Avenue façade has been revised since sketch plan to incorporate an additional entry to strengthen this second street-facing façade.

As recommended during sketch plan review, the ground floor of the proposed building has been differentiated from the upper stories. The shop front glazing, hardscaping, and projecting entry canopies all work towards presenting an inviting face to the public space along the street.

(i) Vehicular access

As with existing conditions, vehicular access will be provided from both Flynn Avenue and Pine Street, albeit in better defined form.

(j) Pedestrian access

The two commercial spaces may be accessed by steps or walkways connecting to the public sidewalk. The Flynn Avenue entry will be provided direct at-grade access to the public sidewalk. Two entries facing the under-building parking will provide access into the building from the parking spaces behind and to the side of the building.

The public sidewalk along this property's street frontages will be reconstructed. Review and approval by the Department of Public Works is required. Note that the project plans show a discontinuous public sidewalk across the Pine Street driveway. The concrete sidewalk must be continued across both driveways.

(k) Accessibility for the handicapped

The proposed parking area depicts handicap parking spaces and all building entries appear to be accessible at grade. The 2012 Vermont Access Rules require that all of the proposed dwelling units be "adaptable." It is the applicant's responsibility to comply with all applicable ADA requirements.

(l) Parking and circulation

Reconstructed surface parking is placed to the side and underneath the building. The existing streetfront pavement will be removed and replaced with the new building and associated walkways and stairs. The building mass screens some of the parking from the street. The project plans have been revised since sketch plan to incorporate additional screening of the parking. Screening measures include fencing and landscaping at the northwest and southeast corners.

Dimensionally, the parking spaces are smaller than the standard. Most of the proposed parking spaces are just 18' deep, whereas 20' is the standard. Several compact spaces are proposed at 8' width, but have 20' length. Back-up length for the 90-degree parking spaces has been improved since sketch plan to allow for 20' – 24' or more. The standard for such spaces is 24.' A site circulation plan has been provided that demonstrates the sufficiency of the proposed parking and circulation layout. A small walkway of sorts has been provided at the northeast corner of the building to afford pedestrian access from the parking area into the northeast building entry.

Exposed surface parking totals 17 spaces. Surface parking areas of 15 or more spaces require at least 1 shade tree for every 5 parking spaces. Those shade trees are not evident in the project plans and must be provided. The shade trees must be 2.5" – 3" caliper at planting with an expected mature canopy of at least 25' diameter. At least 30% of the surface parking should be shaded. No shading analysis has been provided and must be.

The project plans depict indoor and outdoor bike parking spaces. Additional details relative to type and number of bike parking spaces are needed.

(m) Landscaping and fences

A planting plan has been provided. New plantings will help to screen surface parking from the street and neighboring property. It will also be used to enhance the property's visual appeal along its street frontages. Note that several new street trees are proposed. They will require the review and approval of the City Arborist.

(n) Public plazas and open space

No public plazas or open space are included in this proposal.

(o) Outdoor lighting

Outdoor illumination is proposed. Fixture cutsheets and a photometric plan have been provided. All of the fixtures are cutoff and acceptable. The photometric plan demonstrates acceptable parking and circulation illumination levels. No entry illumination is depicted in the photometric

plan. Building entries are limited to 5.0 footcandle average. Entry lighting levels must be included in the photometric plan.

(p) Integrate infrastructure into the design

All new utility lines must be buried. No ground-mounted mechanical equipment is included in the proposal. A trash and recycling enclosure will be provided at the northeast corner of the parking area. Enclosure details have been provided and consist of solid 6' fencing with a slatted chain link gate. The dumpster must be set on a concrete pad.

Part 3, Architectural Design Standards

Sec. 6.3.2, Review Standards

(a) Relate development to its environment

1. Massing, Height, and Scale

The proposed structure is significantly larger than the present building or even the previously approved (but not built) building. That said, the proposed scale remains within the context of other existing buildings in the area, particularly along Pine Street to the north. The building is a full 3 stories tall with a significantly smaller 4th story. The proposed building is very similar in appearance to other recently constructed apartment buildings: boxy and angular with variations in exterior color, cladding, and building plane to break up perceived mass. As recommended, the building design has been improved to give it a distinct street level with differentiated materials, color, and fenestration. Upper stories have uniform cladding and fenestration. Overall, the building's mass is broken up into individual geometric components.

2. Roofs and Rooflines

The proposed building includes varying roof planes on each of the separate building components. Most have a slight pitch. While unusual in the neighborhood, this arrangement works with the overall design of the building.

3. Building Openings

The proposed building exhibits two fenestration patterns, both of which are consistent with the overall appearance of the building. The ground level fenestration presents as that of a shop front while the upper stories incorporate a fenestration pattern more consistent with an apartment building. Fenestration throughout is appropriately scaled and suited to its intended purpose. The front entries are embellished with projecting awnings over the doorways.

(b) Protection of important architectural resources

The existing building is not historic, nor is it eligible for listing on an historic register. Its demolition will have no adverse impact on Burlington's architectural resources.

(c) Protection of important public views

See 6.2.2 (c) above.

(d) Provide an active and inviting street edge

As proposed, the building employs physical step-backs of its façade along Pine Street and Flynn Avenue to break up its perceived mass. The front entries are defined with shop front fenestration and canopies overhead. As noted above, street level improvements have been made in order to strengthen the building's pedestrian interface.

(e) Quality of materials

Exterior cladding will consist of cement fiberboard on the upper stories and insulated metal panels at the ground level. Composite corner boards and metal soffit trim are proposed. Storefront windows will be aluminum-framed and apartment windows will be fiberglass. Presumably, membrane roofing is proposed. Wooden board screening is proposed by the Pine Street parking entrance. The proposed materials are acceptable.

(f) Reduce energy utilization

As noted previously, the applicants are seeking to utilize energy efficient technologies for heating and cooling. The rooftop will be solar-ready. Current city and state energy efficiency standards must be adhered to.

(g) Make advertising features complimentary to the site

The elevation drawings depict two signs over the two commercial entries. Sign size and placement appear to be compliant and integrated into the building design. These signs and any other on the exterior will require a separate zoning permit.

(h) Integrate infrastructure into the building design

The project plans depict interior mechanical spaces. Exterior equipment appears to be limited to just a rooftop HVAC enclosure. The enclosure has limited visibility in the elevation drawings and may well not be perceptible at all from the public sidewalk or street.

(i) Make spaces safe and secure

All building entries will be illuminated. An intercom system for residents is encouraged. Adherence to applicable building codes will be required.

RECOMMENDED MOTION:

Recommend approval and forward to the Development Review Board with the following conditions:

1. The concrete public sidewalk must be continued across both driveways.
2. Shade trees are required – 1 for every 5 surface parking space (3 trees in this case). At least 30% shading of the surface parking and circulation should be achieved. A shading plan must be provided.
3. New street trees are subject to review and approval by the City Arborist.
4. Building entry lighting levels must be included in the photometric plan.
5. The dumpster must be placed on a concrete pad.



Department of Planning and Zoning

149 Church Street, City Hall
Burlington, VT 05401-8415
Phone: (802) 865-7188
Fax: (802) 865-7195

www.burlingtonvt.gov/pz

Zoning Permit Application

Use this form for ALL zoning permit applications. See the relevant checklist for specific requirements.

PROJECT LOCATION ADDRESS: 316 Flynn Avenue

PROPERTY OWNER*: G and C Properties, LLC

*If condominium unit, written approval from the Association is also required

APPLICANT: 316 Flynn LLC

POSTAL ADDRESS: 316 Flynn Avenue

CITY, ST, ZIP: Burlington, VT 05401

DAY PHONE: 802-734-3613

EMAIL: michael@jrmadesignstudio.com

SIGNATURE:
I am the owner. In addition, I duly authorize the applicant (if noted) to act on my behalf for all matters pertaining to this zoning permit application.

POSTAL ADDRESS: 210 College Street, Suite

CITY, ST, ZIP: Burlington, VT 05401

DAY PHONE: 802-658-7400 x15

EMAIL: ehokstra@redstonevt.com

SIGNATURE:

Description of Proposed Project: The proposed project consists of demolishing an existing garage commercial building and residential building on site, and building a four-story mixed-use building and associated parking lot. Thirty apartments, two commercial spaces and thirty-four parking spaces are proposed.

Existing Use of Property: ☐ Single Family ☐ Multi Family: #__ Units ☒ Other: Pine St D

Proposed Use of Property: ☐ Single Family ☒ Multi Family: #30 Units ☒ Other: two commercial spaces

- **Does your project involve new construction, addition, alteration, renovation, or repair to a structure that is heated or cooled?** Yes ☒ No ☐
(If yes, the Vermont Residential Building Energy Standards (VRBES) apply. Visit the P&Z Office, Public Service Board or PSB website for details.)
- **Will 400 sq ft or more of land be disturbed, exposed and/or developed?** Yes ☒ No ☐
(If yes, you will need to submit the 'Erosion Prevention and Sediment Control Plan' questionnaire, with a site plan)
- **For Single Family & Duplex, will total impervious area be 2500 sq ft or more?** Yes ☐ No ☒
(If yes, you will need to submit the 'Stormwater Management Plan' questionnaire, with a site plan)
- **Are you proposing any work within or above the public right of way?** Yes ☒ No ☐
(If yes, you will need to receive prior approval from the Department of Public Works)

Estimated Construction Cost (value)*: \$ 2,800,000.00

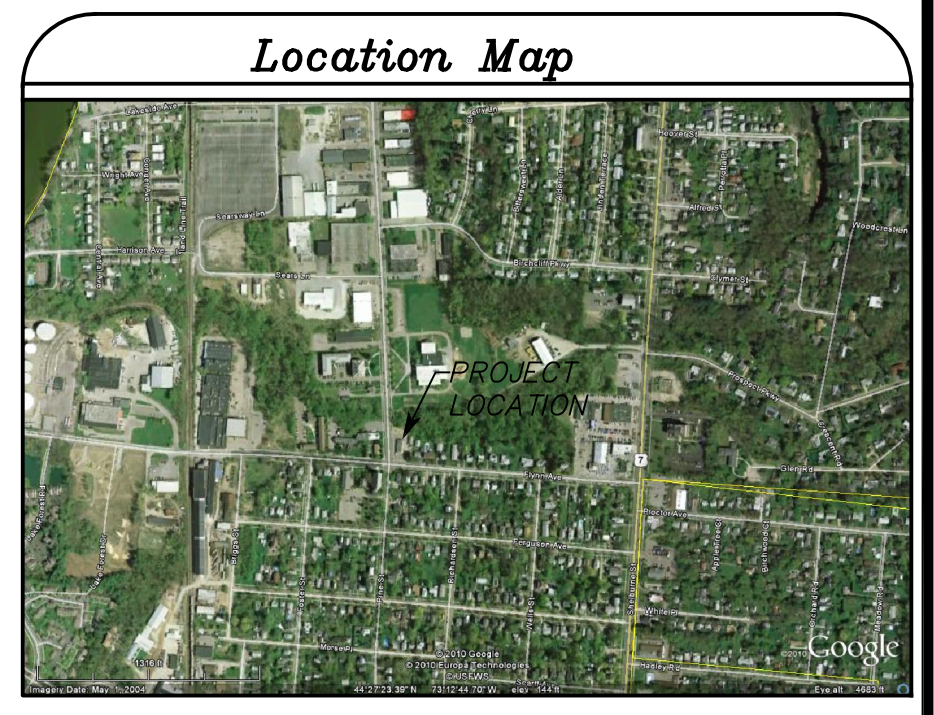
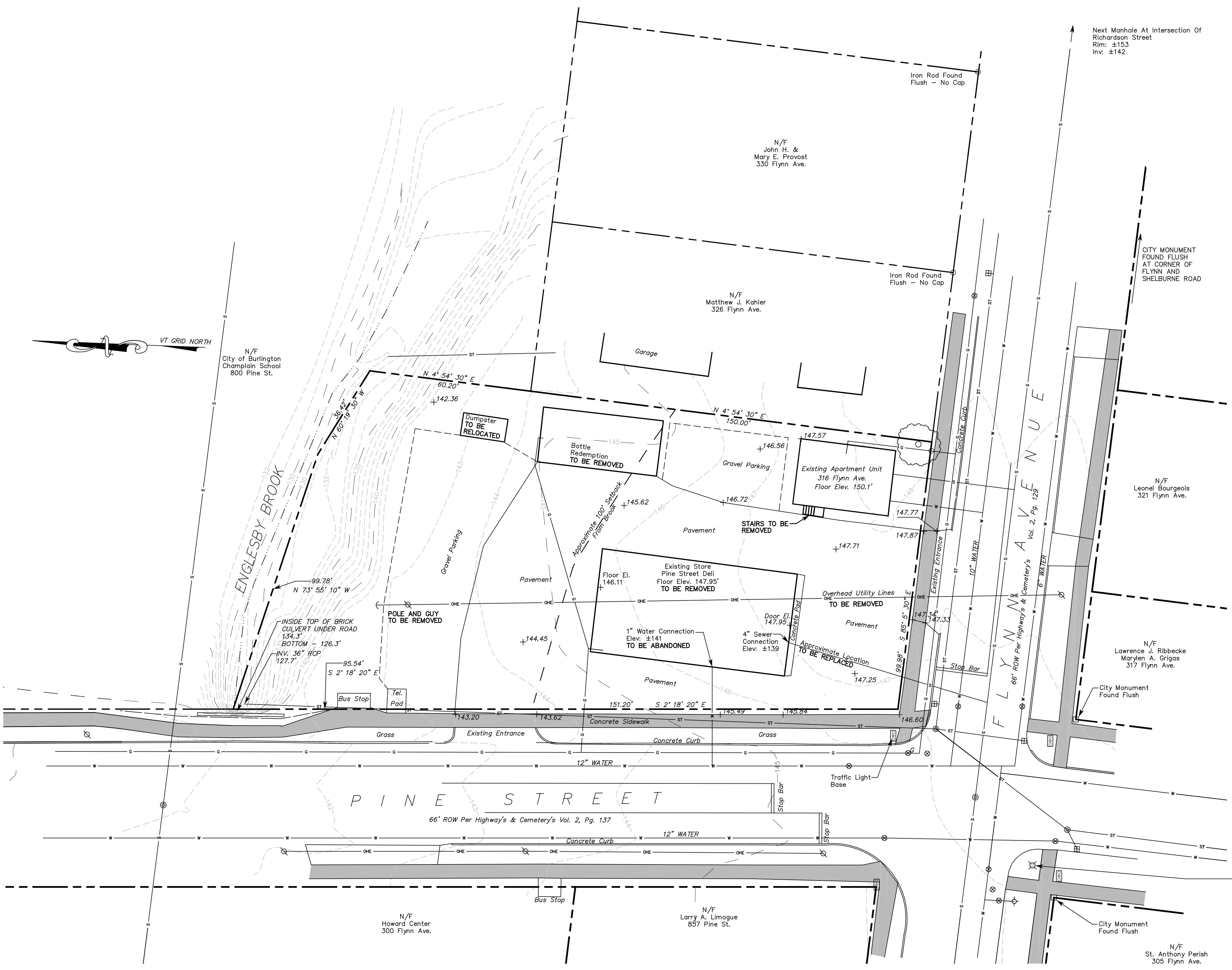
(*Estimated cost a typical contractor would charge for all materials and labor, regardless of who physically completes the work)

Within 30 days of submission, the permit application will be reviewed for completeness, and, if complete, will be processed administratively or referred to a board for review. All permit approvals or denials are subject to an appeal period (15 days for administrative permit; 30 days for board permit). A building (and/or electrical, mechanical, plumbing, curb cut) permit will also be required. Contact the Department of Public Works at 802-863-9094 to inquire. Please ask for assistance if you have any questions about filling out this form. Call the Planning and Zoning at 802-865-7188, or visit the office in the lower level of City Hall, 149 Church Street.

Office Use Only: Zone: _____ Eligible for Design Review? _____ Age of House _____ Lot Size _____

Type: SN _____ AW _____ FC _____ BA _____ COA 1 _____ COA 2 _____ COA 3 _____ CU _____ MA _____ VR _____ HO _____ SP _____ DT _____ MP _____

Check No. _____ Amount Paid _____ Zoning Permit # _____



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
---	Overhead Utility Line
---	Gas Line
---	Water Line
---	Sanitary Line
---	Storm Line
Ø	Utility Pole
□	Concrete Monument
○	Rebar Found
⊞	Storm Catch Basin
⊗	Gate Valve
⊙	Manhole
⊕	Gas Valve
⊞	Traffic Light Base
+	Spot Elevation

- Reference Plans
- "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
 - "Plat of Survey - BCCDH Realty, LLC" by Civil Engineering Assoc., Inc. last dated 2/26/07 and recorded in Map Slide 4196 of the Burlington City Land Records
 - "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

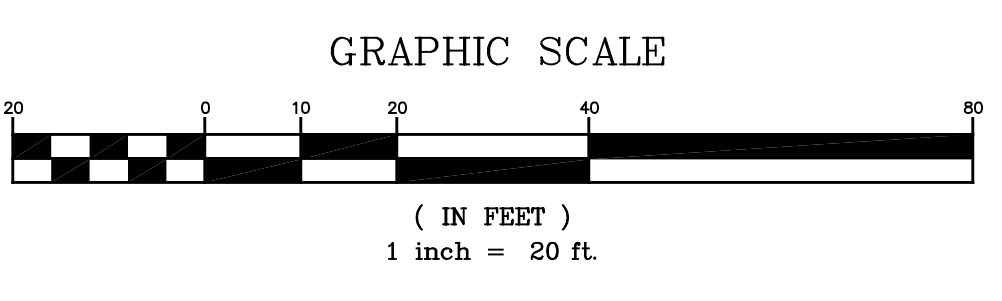
Notes:

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.

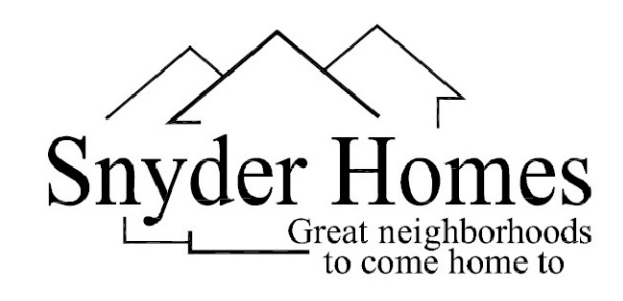
Underground locations shown are drawn from structure to structure or located per City Public Works plans.

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



4076 Shelburne Road, Suite 6
Shelburne, Vermont 05482
p 802.985.5722 - f 802.497.0701
www.SnyderHomesVT.com

CLIENT

PINE & FLYNN
DEVELOPMENT

LOCATION

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

OWNER

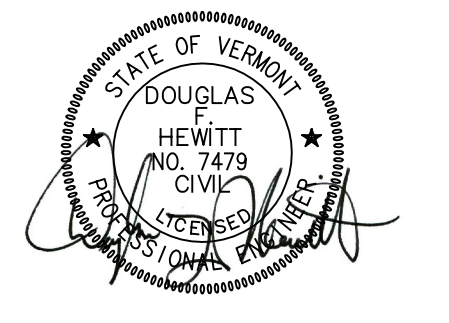
G & C PROPERTIES
BURLINGTON, VERMONT
TEL: 802 343 6789

CONTRACTOR

CIVIL ENGINEER



STAMP



Issue	Date	Issue	Date

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, 2016

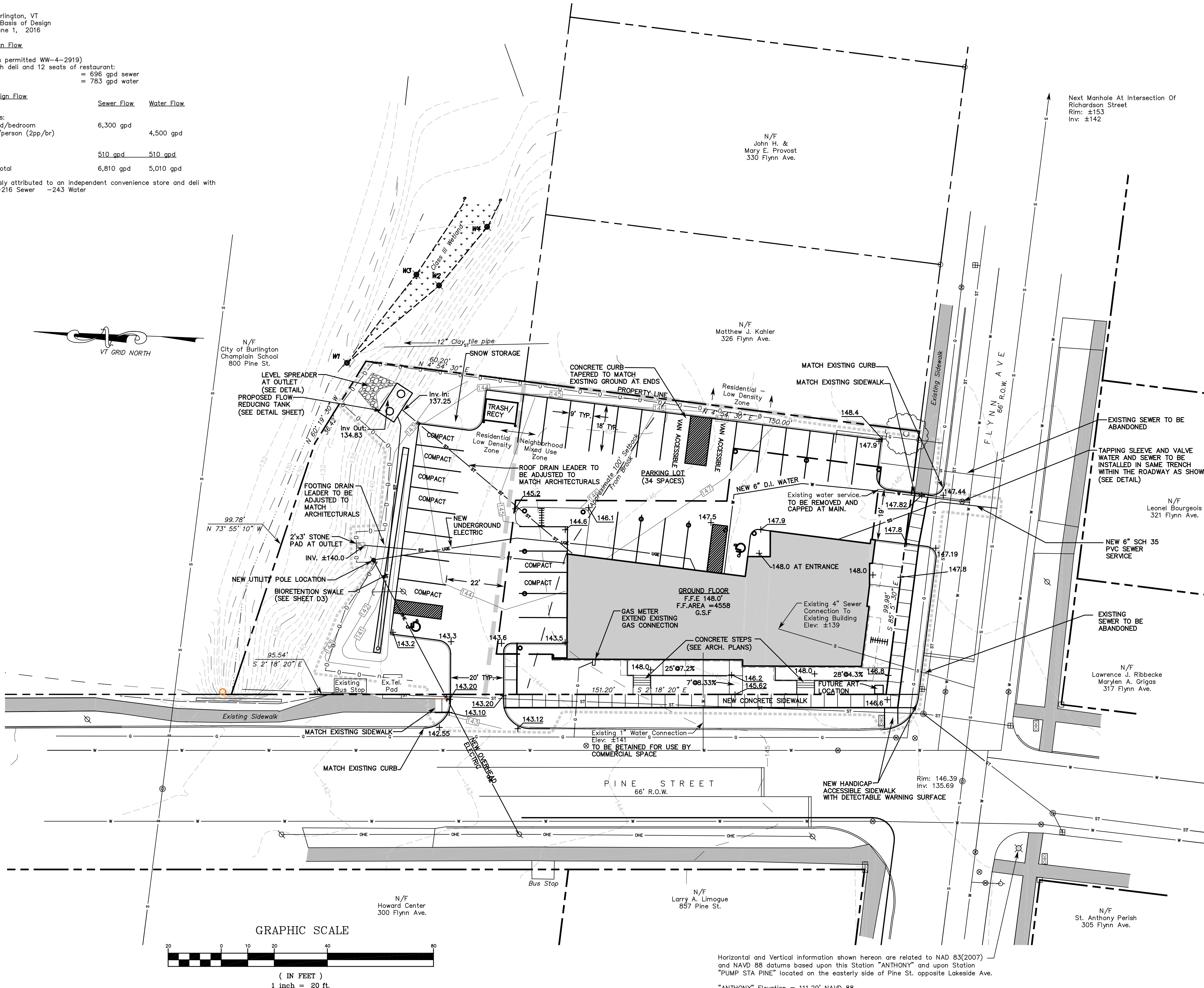
Existing Water/Sewer Design Flow

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 thirty units @ 75gpd/person (2pp/br)	6,300 gpd	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



GROUND FLOOR:	4,980 S.F. GROSS FLOOR AREA COMMERCIAL
	4,558 S.F. GROSS FLOOR AREA RESIDENTIAL
2ND FLOOR:	9,296 S.F. GROSS FLOOR AREA RESIDENTIAL
3RD FLOOR:	9,296 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 Oakledge 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

- "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
- "Plat of Survey - BCCDH Realty, LLC" by Civil Engineering Assoc., Inc. last dated 2/26/07 and recorded in Map Slide 419B of the Burlington City Land Records
- "Property Survey Plat - G&C Properties, LLC" by Summit Engineering, Inc. dated 11/4/10, last revised 7/14/11

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Tax Map Parcel No. 057-4-066-000
Bk. 1151, Pg. 457
16,420 Sq. Ft. (0.377 Acres)
10,008 SF License From City
Total 26,428 SF (0.474 Acres)



LEGEND

---	Property/R.O.W. Line
---HE---	Overhead Utility Line
---	NEW UNDERGROUND UTILITY LINE
---	Gas Line
---	Existing Water Line
---	NEW WATER LINE
---	NEW SANITARY LINE
---	Existing Sanitary Line
---	Storm Line
---	NEW FENCE
---	PROPOSED SILT FENCE
---	Construction Limits
---	Glass III Wetland
---	Existing Contours
---	PROPOSED CONTOURS
---	Utility Pole
---	Concrete Monument
---	Rebar Found
---	Catch Basin
---	Existing Gate Valve
---	PROPOSED GATE VALVE
---	Manhole
---	Gas Valve
---	Traffic Light
---	Existing Spot Elevation
---	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				

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)

Redstone

Snyder Homes
Great neighborhoods
to come home to

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Shelburne, Vermont 05482
p 802.985.5722 - f 802.497.0701
www.SnyderHomesVT.com

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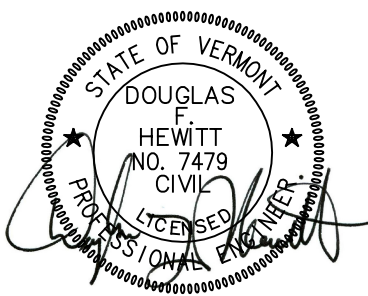
G & C PROPERTIES
BURLINGTON, VERMONT
TEL: 802 343 6789

CONTRACTOR

CIVIL ENGINEER



STAMP



Issue Date Issue Date

Project

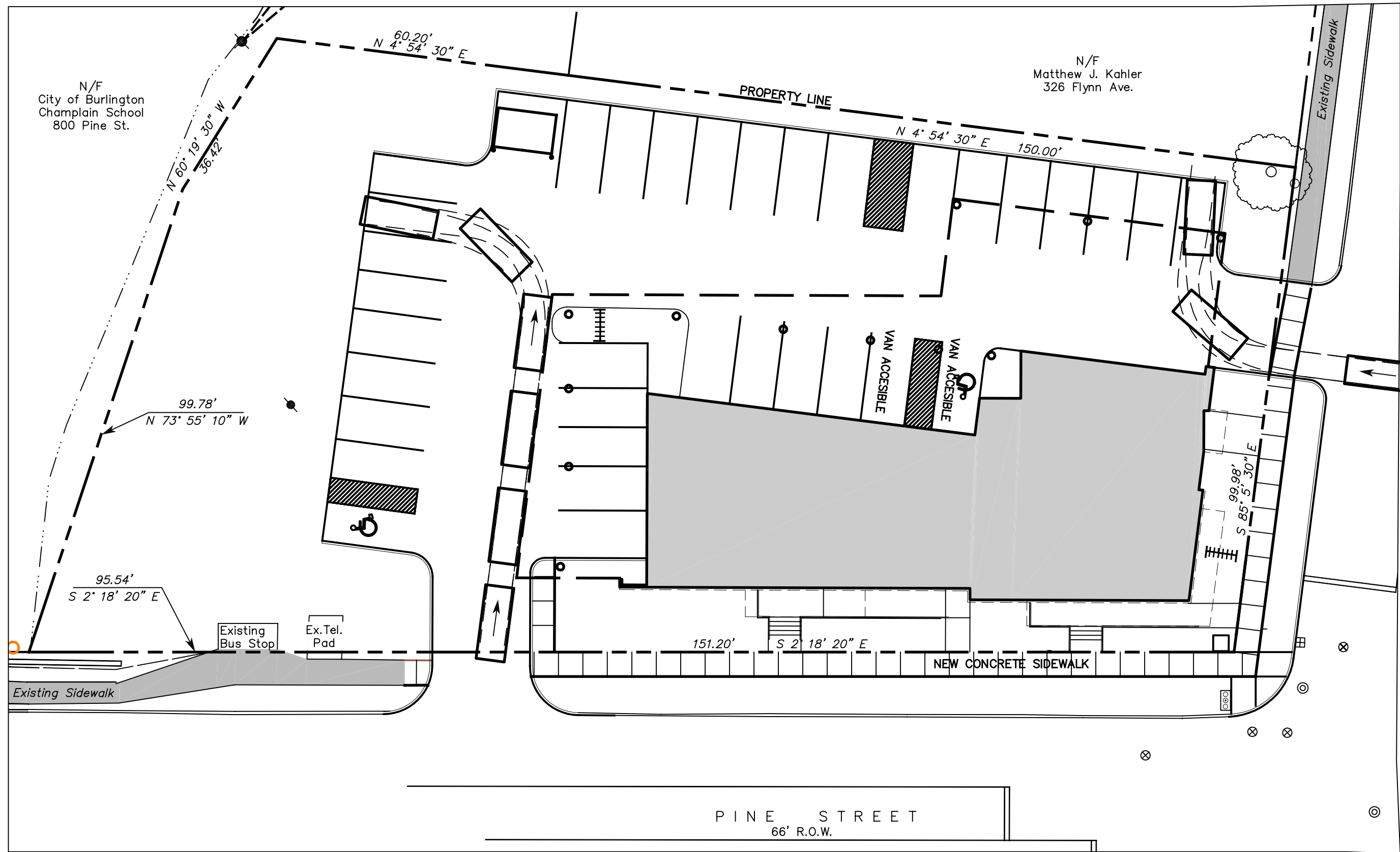
Drawing Title SITE PLAN

Project No. 8163 Drawn By: BGD/DFH Date: 6/29/16 Scale: 1"=20'

Floor(s)

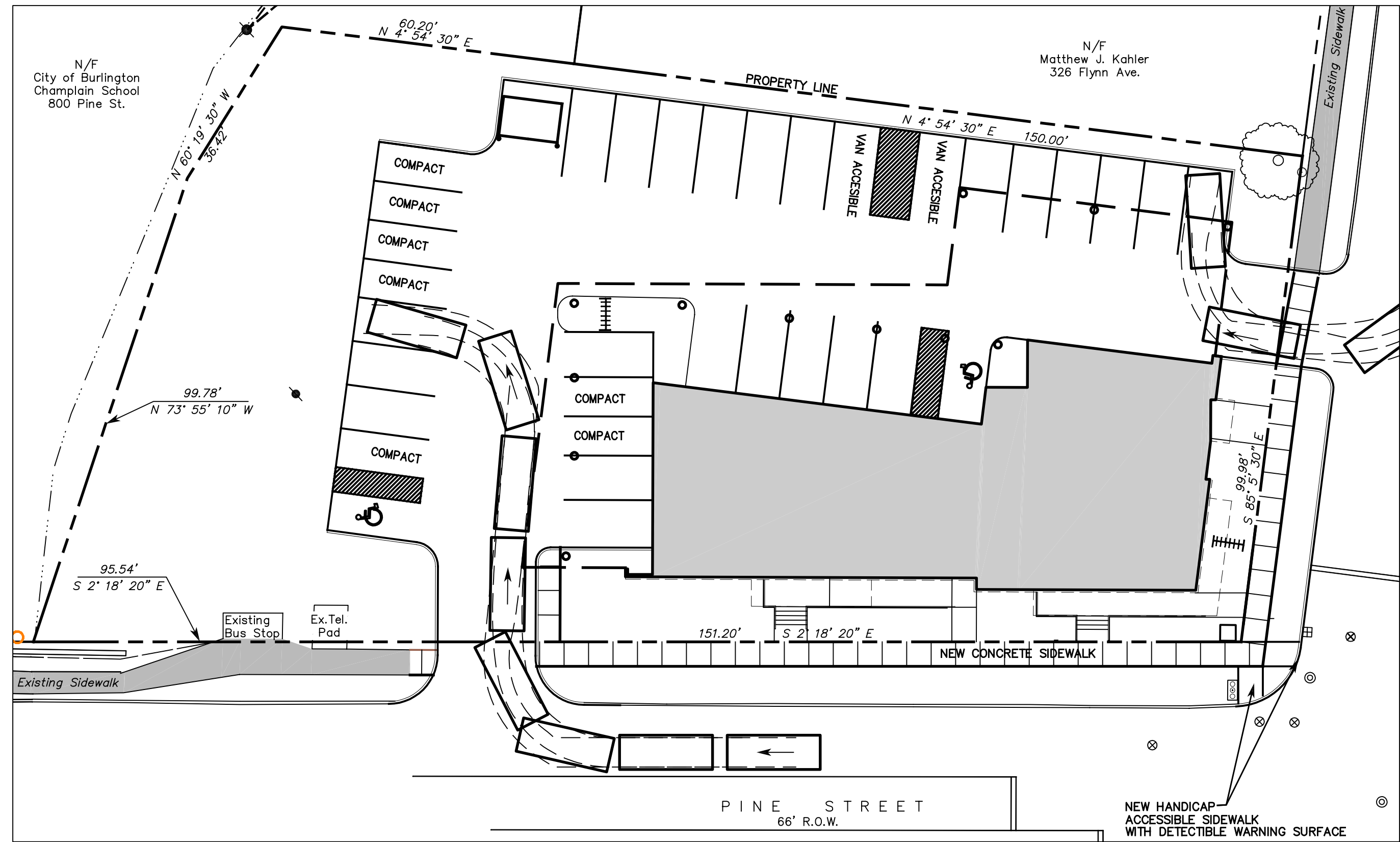
Drawing No.

S1

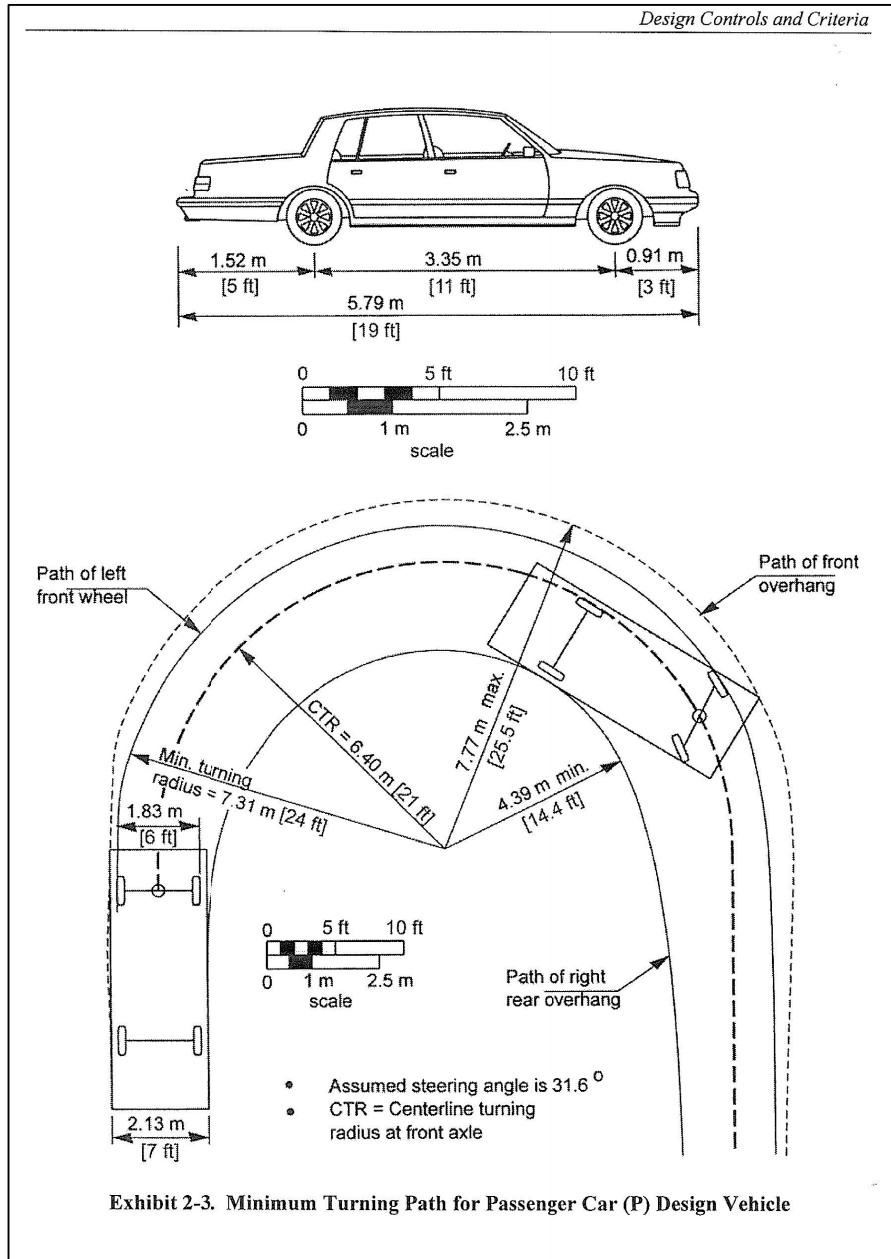
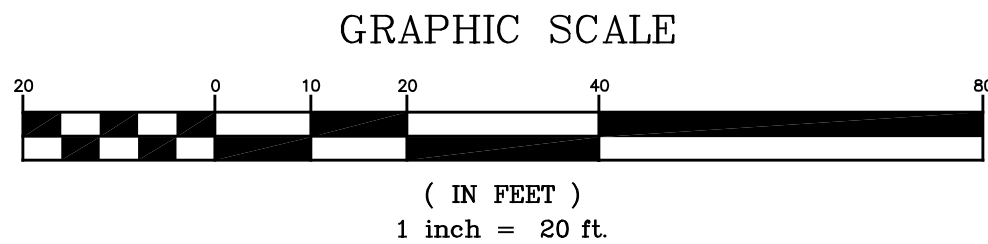


CIRCULATION CUSTOM COMPACT CAR (2014 TOYOTA COROLLA) VEHICLE

2014 Toyota Corolla
Width: 5' 9.9"
Length: 15' 2.6"
Wheel width: 5' 4"
Wheel base: 8' 10.3"
Turning Circle: 35.6'
<http://www.edmunds.com/toyota/corolla/2014/features-specs/>



CIRCULATION FOR PASSENGER CAR (P) DESIGN VEHICLE

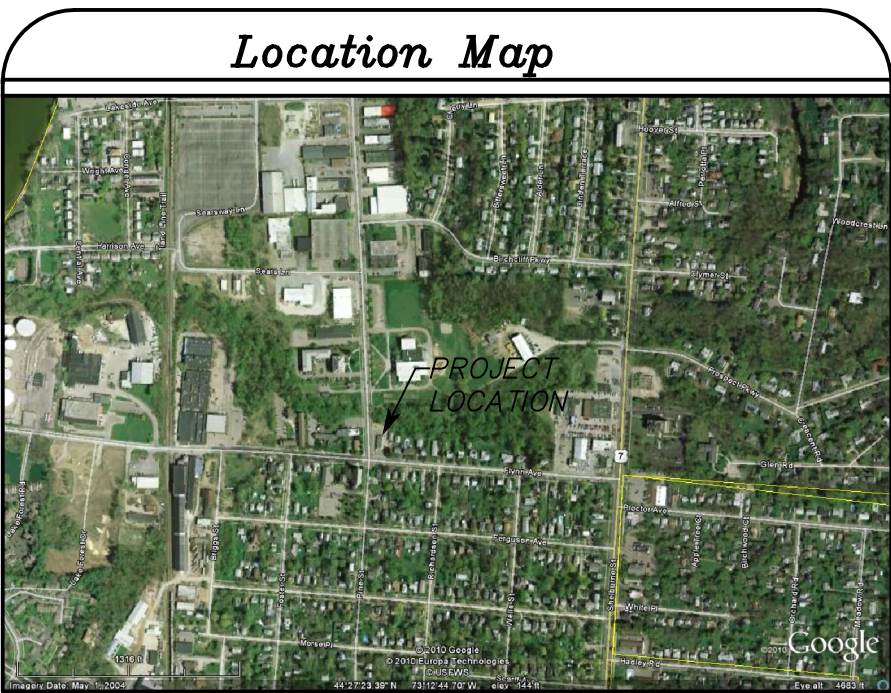


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Note: Previous deeds describe the easterly line of this property as being parallel to Pine Street. The referenced 1899 plan shows the easterly line to be parallel with Shelburne Road which coincides with apparent usage.

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)
10,008 SF License From City
Total 26,428 SF (0.474 Acres)



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Shelburne, Vermont 05482
p 802.985.5722 - f 802.497.0701
www.SnyderHomesVT.com

CLIENT

PINE & FLYNN
DEVELOPMENT

LOCATION

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

OWNER

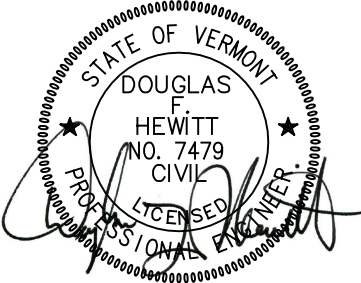
G & C PROPERTIES
BURLINGTON, VERMONT
TEL: 802 343 6789

CONTRACTOR

CIVIL ENGINEER

SUMMIT ENGINEERING, INC
Engineers • Architects • Planners • Landscape Architects
1233 Shelburne Road C2
South Burlington, VT 05403
(802) 686-0888

STAMP



Issue	Date	Issue	Date

Project

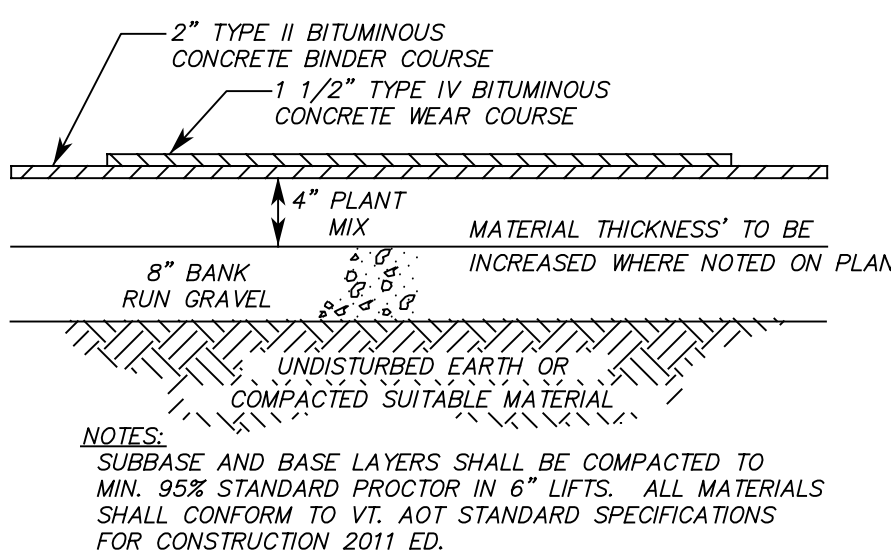
Drawing Title SITE CIRCULATION PLAN

Project No. 8163 Drawn by: BGD/DFH Date: 6/29/2016 Scale: 1"=20'

Floor(s)

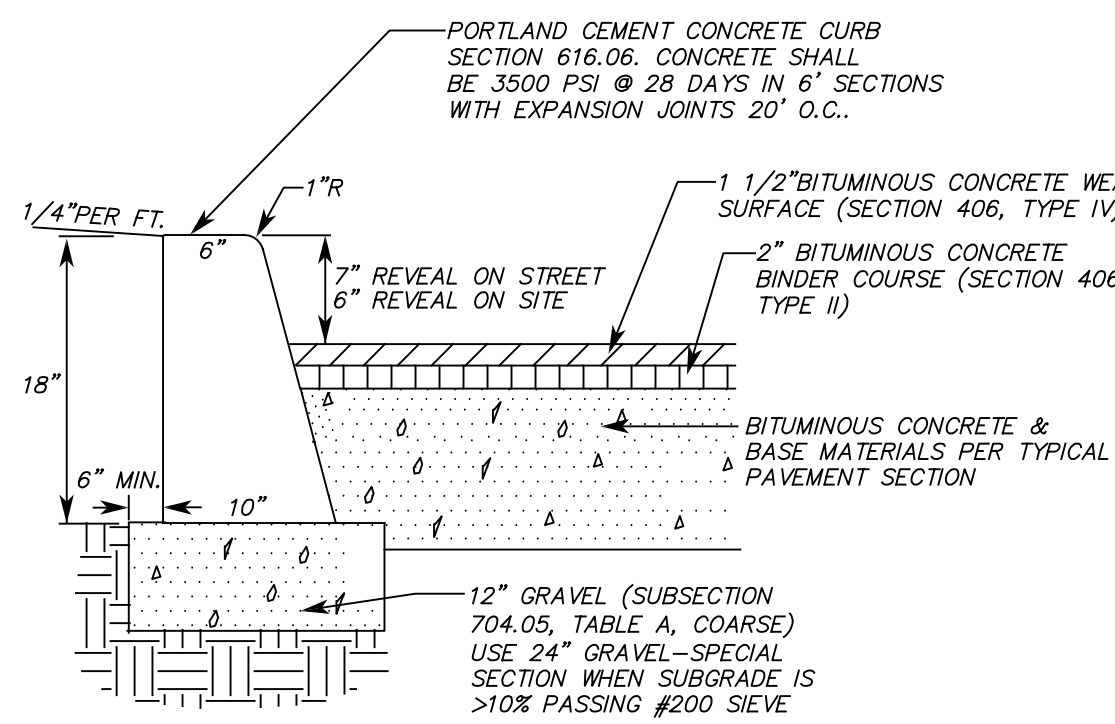
Drawing No.

SSP

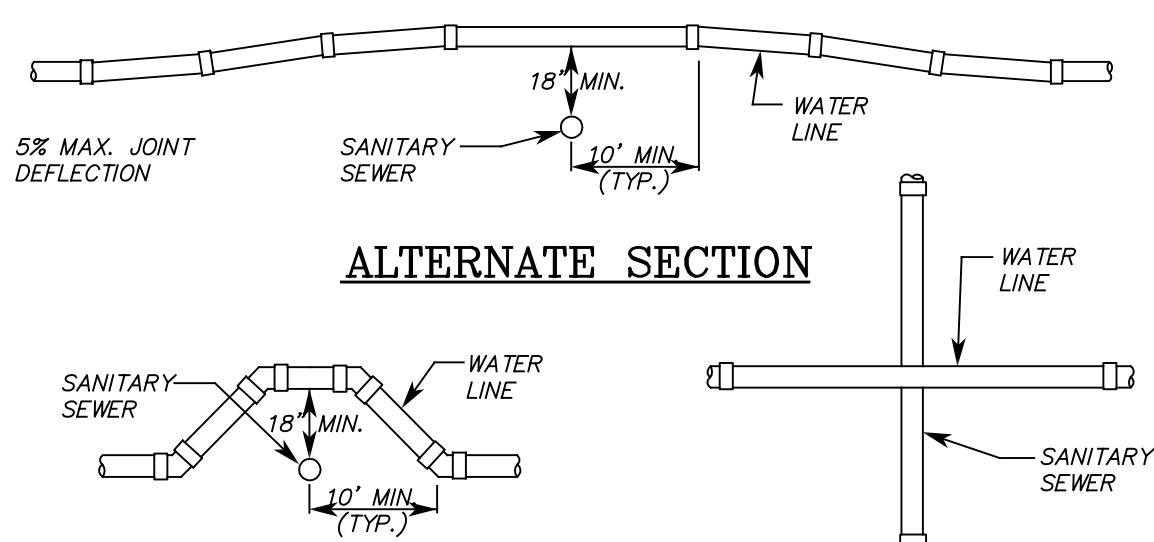


*SECTION TO BE USED WHERE RECLAIM IS NOT ADEQUATE

TYPICAL PAVEMENT SECTION

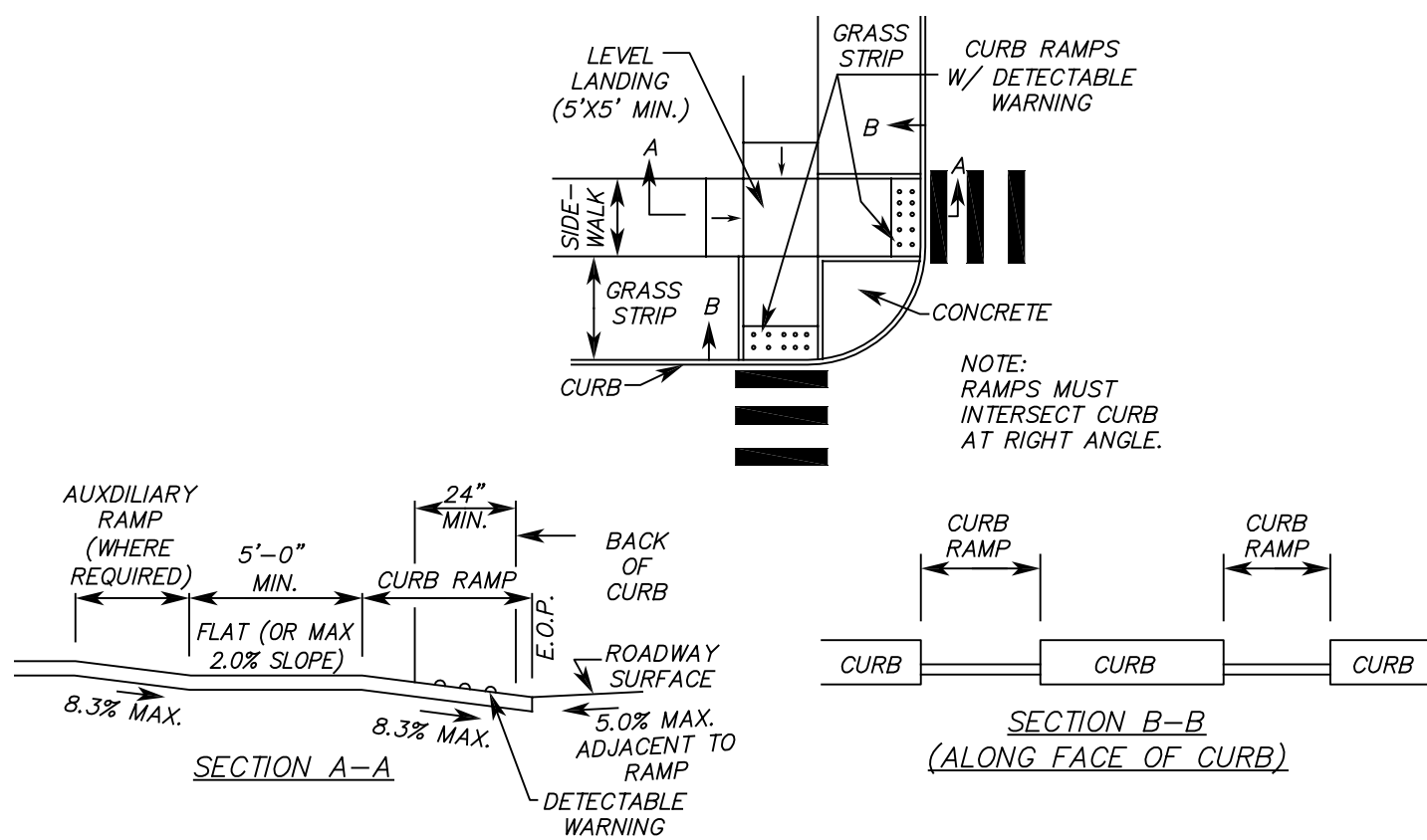


CURB AND PAVEMENT TYPICAL

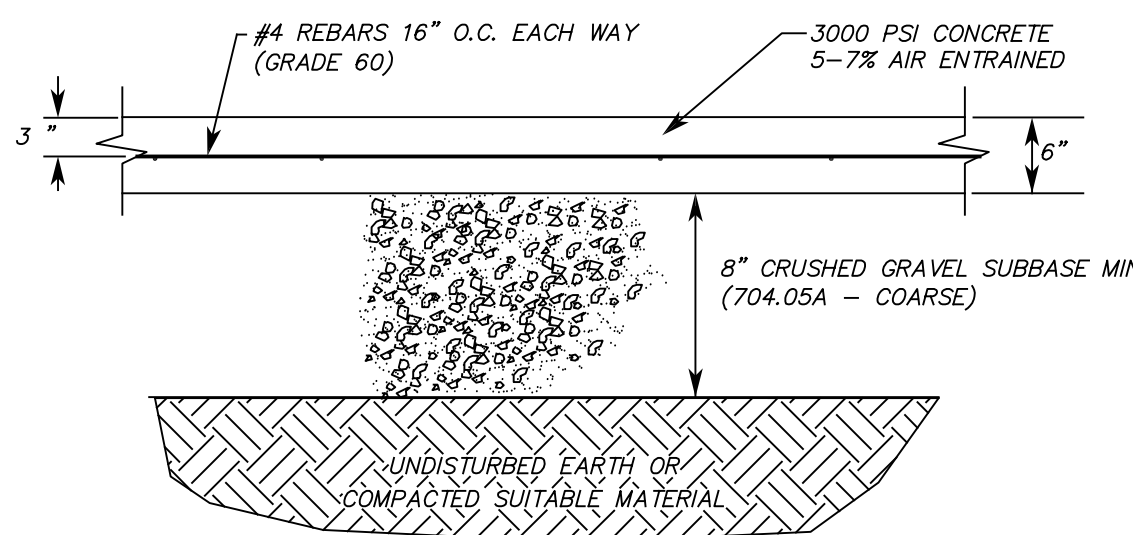


NOTES:
THE CROSSING SHALL BE ARRANGED AS SHOWN SO THAT THE SEWER JOINTS ARE AS FAR AS POSSIBLE AND EQUIDISTANT FROM THE POINT OF INTERSECTION. PROVIDE PIPE FITTING RESTRAINTS AND BLOCKING AS NECESSARY.

WATER/SEWER CROSSING TYPICAL



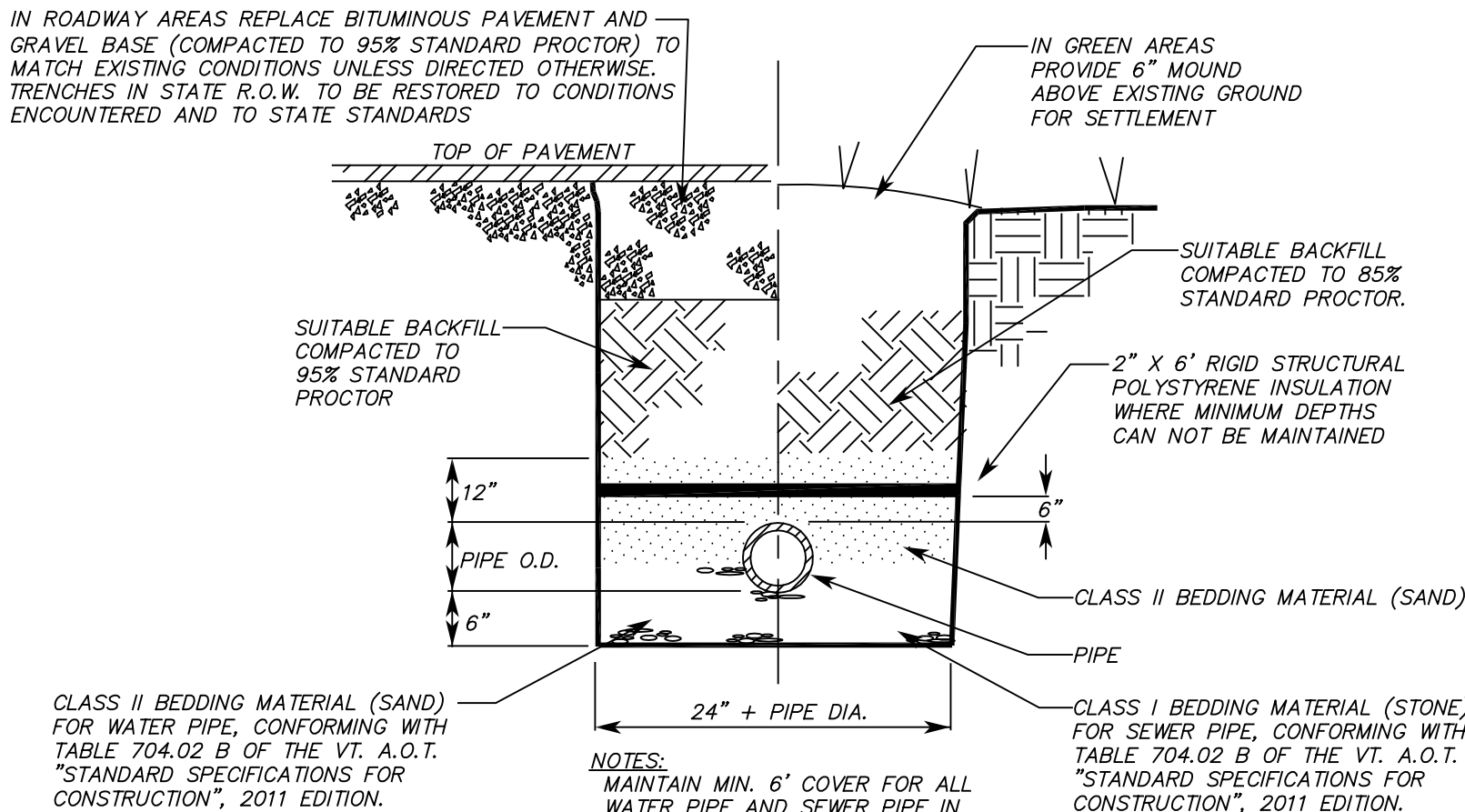
SIDEWALK RAMP DETAIL



DIMENSIONS OF PADS SHOWN ON PLAN:
6 - 10'x10' DUMPSTER PADS

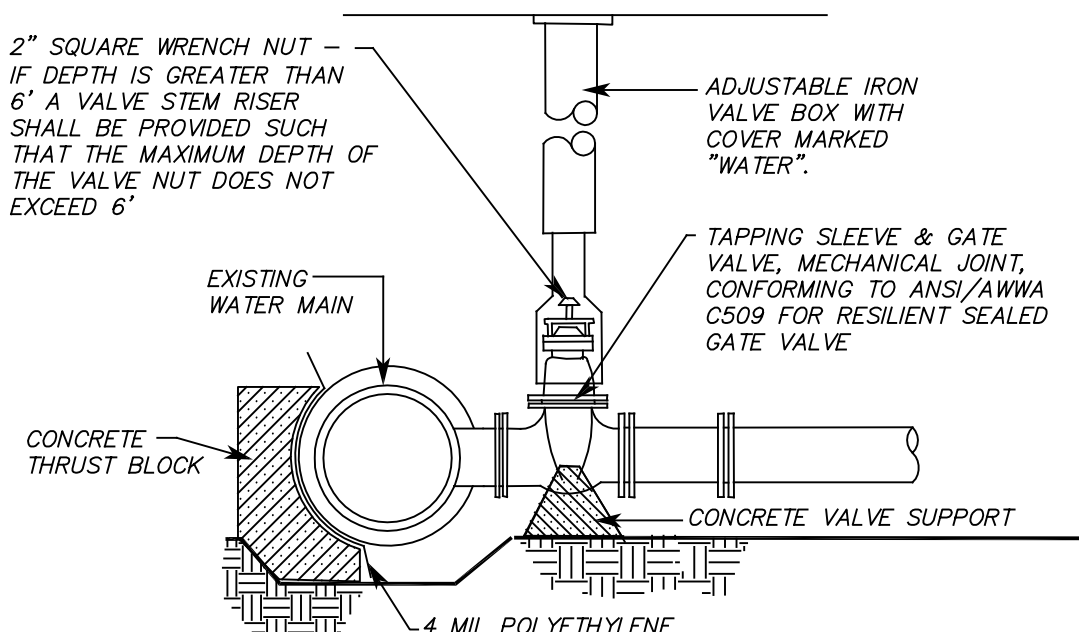
NOTES:
SUBBASE AND BASE LAYERS SHALL BE COMPACTED TO MIN. 95% PROCTOR IN 6\"/>

TYPICAL DUMPSTER PAD



CLASS II BEDDING MATERIAL (SAND) FOR WATER PIPE, CONFORMING WITH TABLE 704.02 B OF THE VT. A.O.T. \"STANDARD SPECIFICATIONS FOR CONSTRUCTION\", 2011 EDITION.

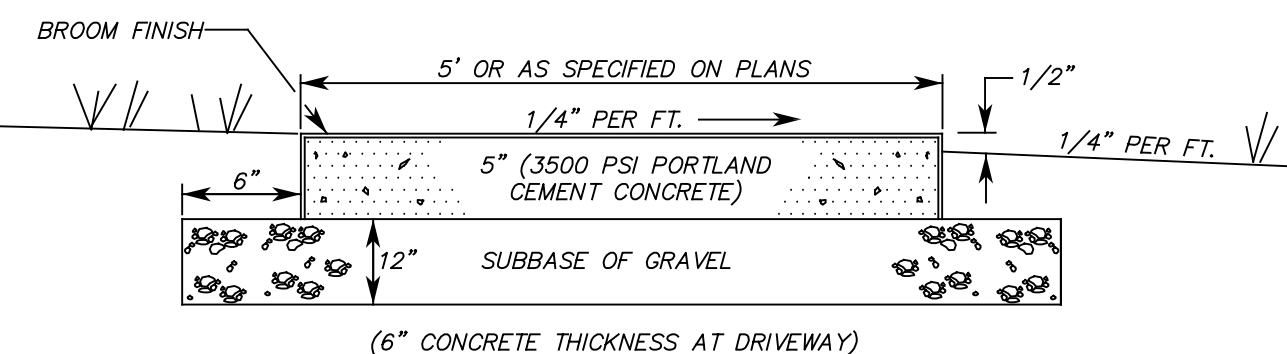
TRENCH TYPICAL



NOTE: TAPPING SLEEVE SHALL BE OF THE SPLIT SLEEVE DESIGN CONSTRUCTED WITH TWO SOLID HALF-SLEEVES BOLTED TOGETHER. SLEEVES SHALL BE CONSTRUCTED OF CAST IRON OR DUCTILE IRON, SHALL HAVE A WORKING PRESSURE OF AT LEAST OF 150 PSI, AND SHALL HAVE MECHANICAL JOINT ENDS WITH END AND SIDE GASKET SEALS. SLEEVES SHALL BE PROVIDED WITH A 3/4\"/>

TAPPING VALVES SHALL HAVE A MINIMUM WORKING PRESSURE OF 150 PSI. THE INLET FLANGES SHALL BE CLASS 125 CONFORMING TO ANSI B16.1 OF ANSI/AWWA C110/A21.10 AND OUTLET CONNECTION SHALL BE STANDARDIZED MECHANICAL JOINT.

TAPPING SLEEVE AND VALVE

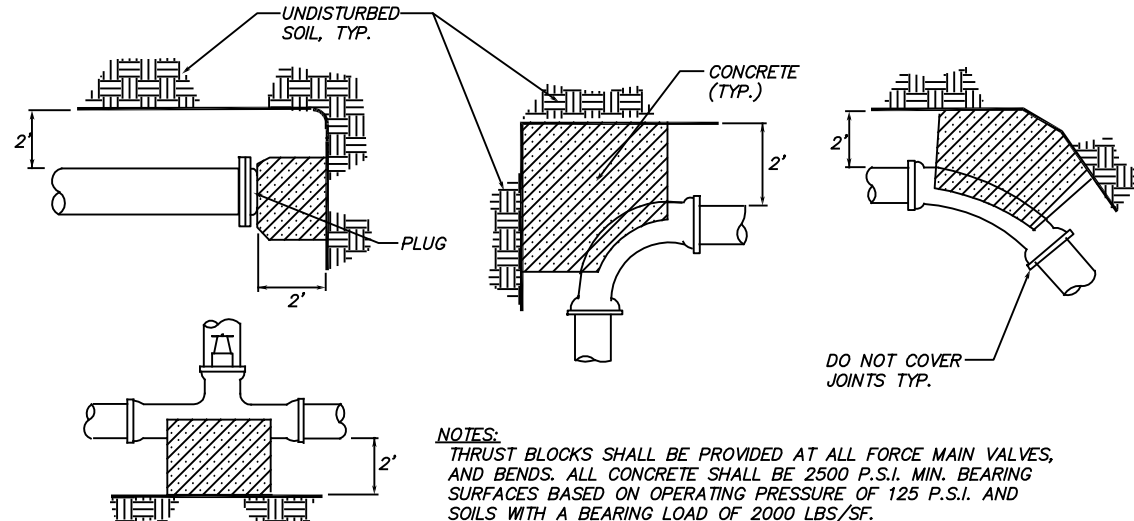


NOTE:
CONSTRUCT EXPANSION & CONTRACTION JOINTS EVERY 20' WITH DUMMY JOINTS EVERY 5'.

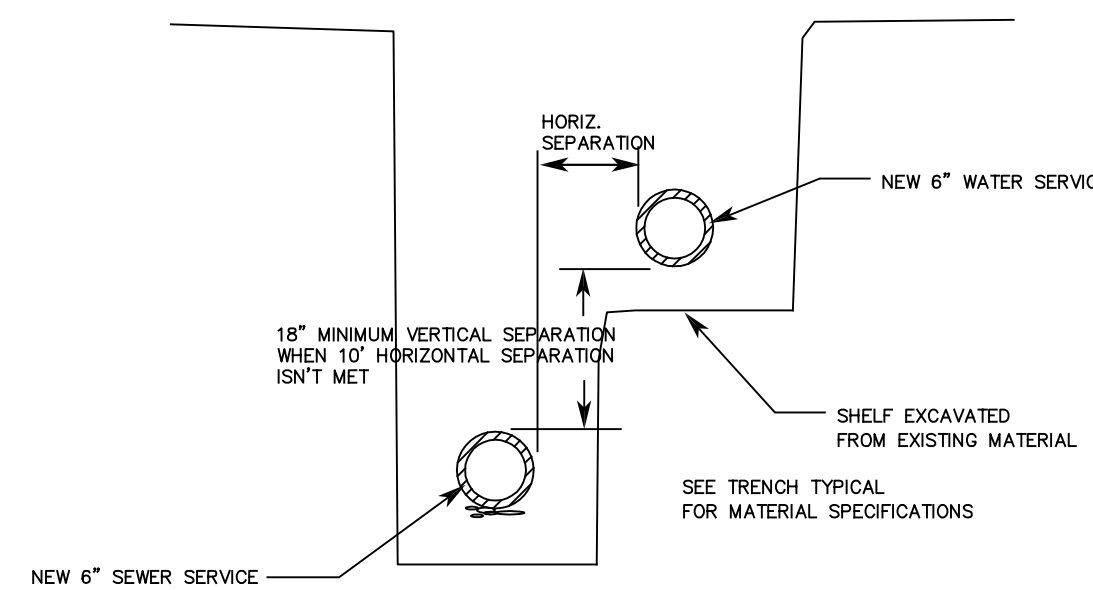
SIDEWALK TYPICAL

3"				4"				6"				8"				SOIL CONDITIONS	SAFE BEARING LOAD (PSF)	
ENDS & TEES	90° ELB	45° ELB	22.5° ELB	ENDS & TEES	90° ELB	45° ELB	22.5° ELB	ENDS & TEES	90° ELB	45° ELB	22.5° ELB	ENDS & TEES	90° ELB	45° ELB	22.5° ELB			
0.5	0.5	0.5	0.5	0.5	1.0	0.5	0.5	1.0	1.5	1.0	0.5	0.5	2.0	2.5	1.5	1.0	SOUND SHALE	10,000
1.0	1.0	1.0	0.5	1.5	2.0	1.0	0.5	3.0	4.0	2.0	1.0	4.5	6.5	3.5	2.0		CEMENTED GRAVEL & SAND	4,000
1.0	1.5	1.0	0.5	2.0	2.5	1.5	1.0	3.5	5.0	3.0	1.5	6.0	8.5	5.0	2.5		COARSE & FINE COMPACT SAND	3,000
1.5	2.5	1.5	1.0	2.5	3.5	2.0	1.0	5.5	7.5	4.0	2.0	9.0	13.0	7.0	3.5		MEDIUM CLAY (CAN BE SPREAD)	2,000
3.0	4.5	2.5	1.5	5.0	7.0	4.0	2.0	10.5	15.0	8.0	4.0	18.0	25.0	14.0	7.0		SOFT CLAY	1,000
MAXIMUM WATER PRESSURE = 300 PSI																		
NOTE: REDUCER BEARING AREA = 45° BEND, LARGER PIPE																		

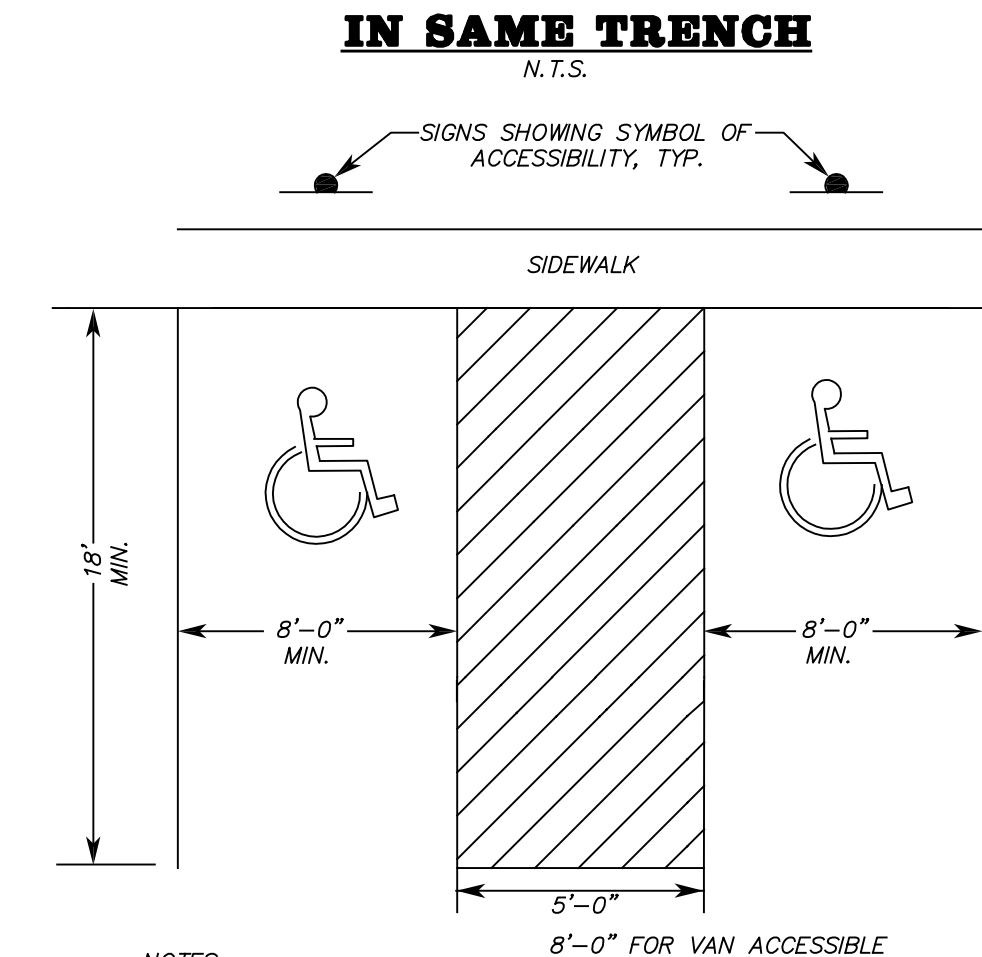
NOTE: THURST BLOCKS ON PIPE LARGER THAN 16\"/>



THRUST BLOCK TYPICALS



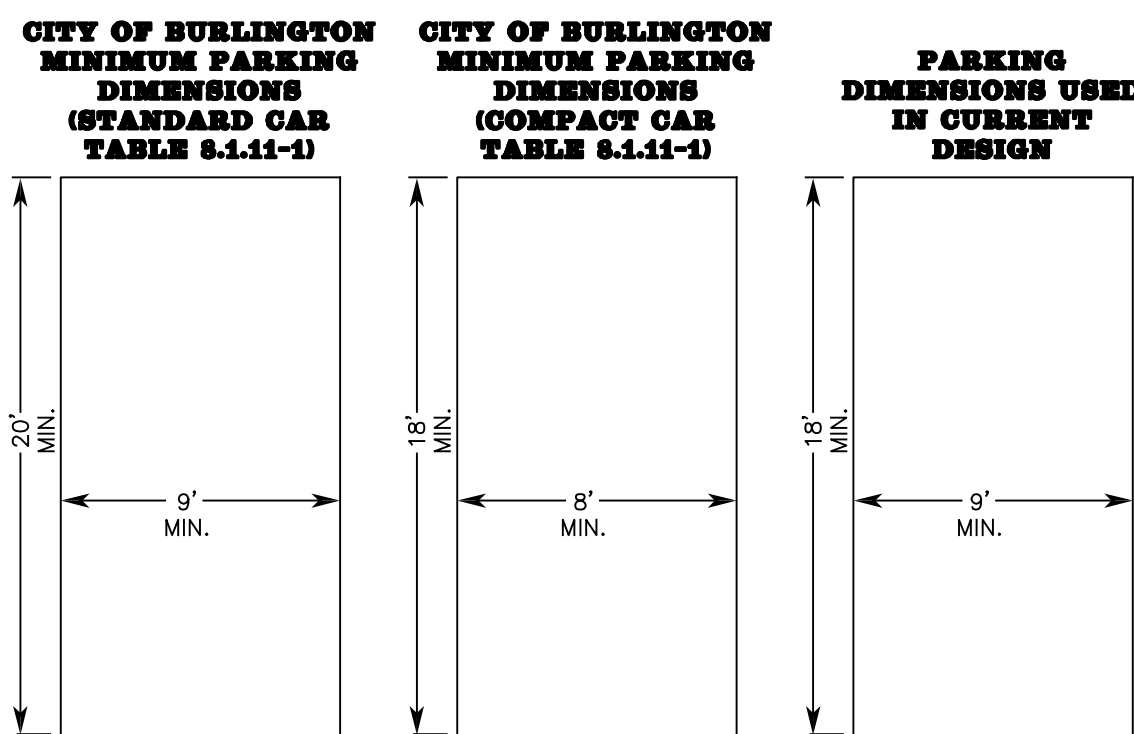
WATER AND SEWER IN SAME TRENCH



NOTES:

- 1) BITUMINOUS CONCRETE RAMP SHALL MEET TOP OF SIDEWALK CURB.
- 2) HANDICAP SYMBOL SHALL BE CENTERED IN PARKING STALLS.
- 3) HANDICAP RAMP SHALL BE STRIPED AND TEXTURED IN CONFORMANCE WITH VTRANS STD C-3A & C-3B
- 4) HANDICAP RAMP SLOPE SHALL NOT EXCEED 8.3%.

HANDICAP PAVEMENT MARKING DETAIL



PARKING DIMENSIONS

WATER LINE INSTALLATION AND TESTING

1. BEFORE CONSTRUCTION OF ANY UTILITIES OR IMPROVEMENTS, THE CONTRACTOR SHALL NOTIFY THE MUNICIPAL WATER DEPARTMENT IN WRITING, OF THEIR INTENT TO PROCEED AND SHALL ARRANGE FOR A MEETING WITH THE DEPT., THE ENGINEER, AND THE CONTRACTOR TO DISCUSS THE PROJECT.
2. ALL WATER MAINS, FITTINGS, APPURTENANCES, AND OTHER MATERIALS AND CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE AWWA, STATE AND TOWN CODES, STANDARDS, AND REGULATIONS. IN CASE OF CONFLICT BETWEEN THESE CONSTRUCTION DETAILS AND SPECIFICATIONS, AND A CODE OR REGULATION, THE DECISION OF THE VERMONT DEPT. OF HEALTH OR THE MUNICIPAL WATER DEPARTMENT SHALL BE BINDING.
3. CONNECTION TO AN EXISTING WATER MAIN SHALL BE DONE BY OR UNDER THE SUPERVISION OF, AND WITH THE APPROVAL OF THE MUNICIPAL WATER DEPARTMENT. IT IS THE CONTRACTORS RESPONSIBILITY TO SECURE ALL NECESSARY PERMITS AND PERMISSION TO MAKE THE CONNECTION AND TO COORDINATE ALL PARTIES INVOLVED IN THE PROCESS. THE MUNICIPAL WATER DEPARTMENT AND ENGINEER SHALL BE NOTIFIED AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF THE INTENDED CONNECTION TIME.
4. ALL WATER MAINS SHALL HAVE AT LEAST A TEN (10) FOOT SEPARATION HORIZONTALLY FROM SANITARY SEWERS.
5. ALL PUBLIC AND PRIVATE WATER MAINS: 1) 4\"/>

SEWER CONSTRUCTION AND TESTING NOTES

1. All sewer pipe shall be PVC SDR 35 gravity sewer pipe manufactured in conformance with ASTM D 3034 (4\"/>

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Shelburne, Vermont 05482
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CLIENT

PINE & FLYNN

DEVELOPMENT

LOCATION

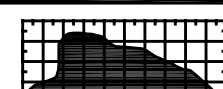
316 FLYNN AVE (CORNER OF PINE & FLYNN
BURLINGTON, VERMONT

OWNER

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

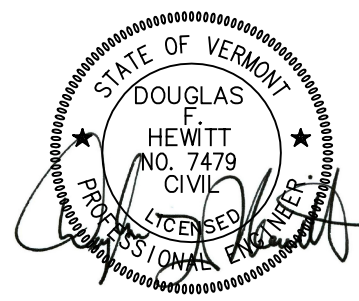
CONTRACTOR

CIVIL ENGINEER



1233 Shelburne Road C2
South Burlington, VT 05403
(802) 658-0555

STAMP



Issue Date Issue Date

Project

Drawing Title **SITE DETAILS**

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

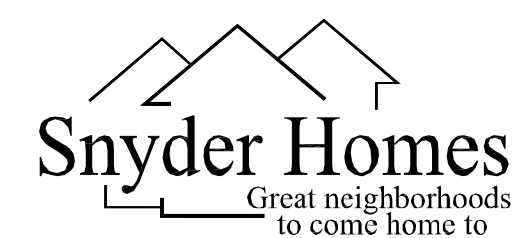
Floor(s)

Drawing No.

D1



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PINE & FLYNN DEVELOPMENT

JULY 29, 2016

PROPOSED ELEVATIONS
scale 1/8" 1'-0"

A-1



Redstone



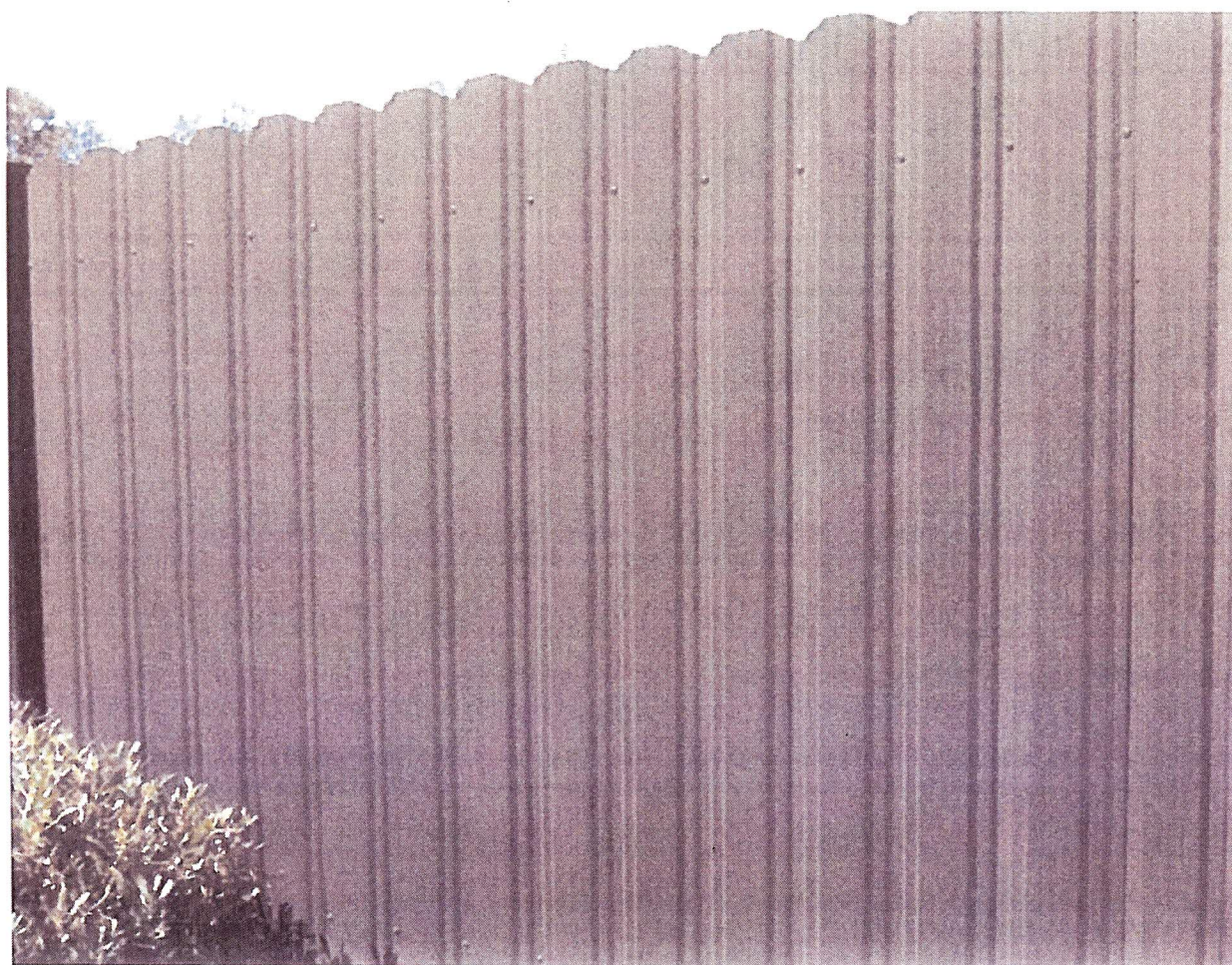
4076 Shelburne Road, Suite 6
Shelburne, Vermont 05482
p 802.985.5722 - f 802.497.0701
www.SnyderHomesVT.com

PINE & FLYNN DEVELOPMENT

JULY 29, 2016

PROPOSED ELEVATIONS
scale 1/8" 1'-0"

A-2



6 Fortress Privacy - Dumpster Anilovire

72" tall Chainlink Fabric with
Knuckle / Knuckle Selvage and 2"
Mesh Size.

108" tall, 4" diameter Gate Posts
with 12" post footing diameter and
48" post footing depth

The opening width of the Double
Gate is 21'

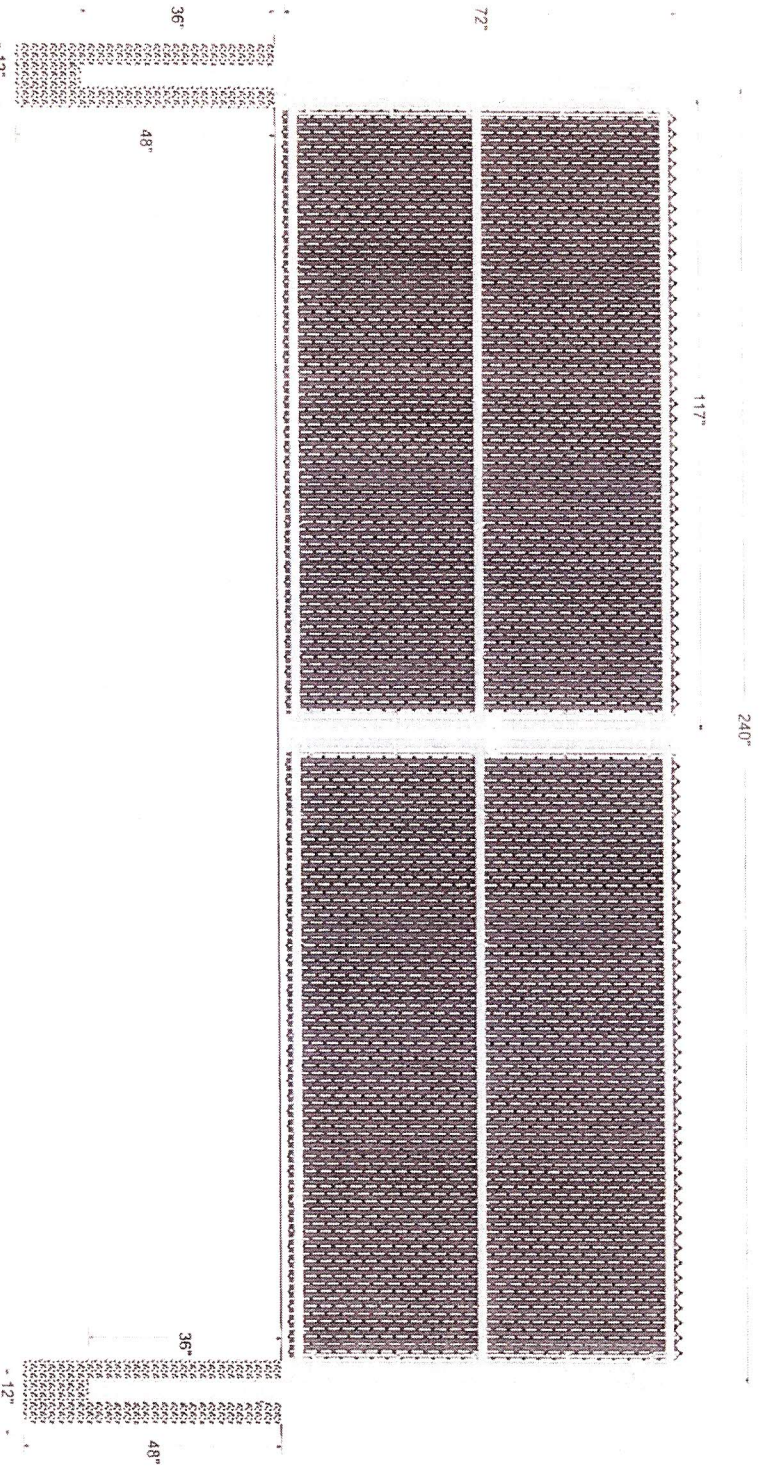
The gate frame is constructed with
1 5/8" pipe

Gate is braced with 1 5/8" diameter
Horizontal Brace

Fence contains Vertical Slats -
Color is GRAY

Gate is hung with Bulldog Hinges.
Gate is secured with a Strong Arm
Latch

The Wire Spacing is every 24" on
Rails.



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"Call the Fence People"

MIDDLEBURY FENCE COMPANY
1341 ETHAN ALLEN HIGHWAY
NEW HAVEN, VERMONT 05472
(802) 388-2225

Naylor & Breen
247 Pearl St
Burlington, Vermont

72" X 21' Chainlink Double Drive Gate

Drawn: 10/14/2015
File:

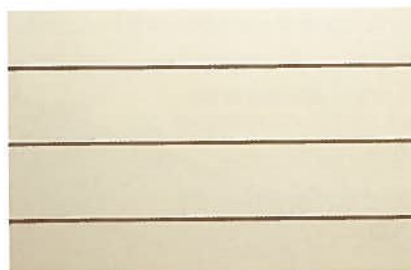
HardiePlank Lap Siding Product Description

HardiePlank® lap siding is factory-primed fiber-cement lap siding available in a variety of styles and textures. Please see your local James Hardie® product dealer for product availability. HardiePlank boards come in 12-ft. lengths. Nominal widths from 5 1/4 in. to 12 in. create a range of exposures from 4 in. to 10 3/4 in.

HardiePlank lap siding is also available with ColorPlus Technology as one of James Hardie's prefinished products. ColorPlus Technology is a factory applied, oven-baked finish available on a variety of James Hardie siding and trim products. See your local dealer for details and availability of products, colors and accessories.



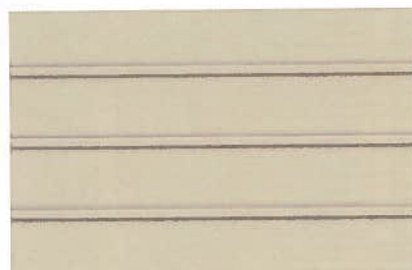
Cedarmill®



Smooth



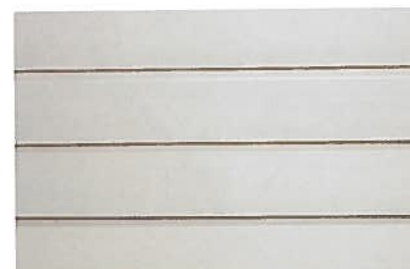
Beaded Cedarmill®



Beaded Smooth



Colonial Roughsawn



Colonial Smooth



Description

IW Series offers six interesting configurations: IW-10A, IW-11A, IW-12A, IW-13A, IW-14A and IW-15. All IW panels share a common lock-joint design which makes them interchangeable on a project. The lock also permits the placement of concealed fasteners, and minimizes moisture intrusion.

All IW Series wall panels can be installed in a variety of rainscreen applications to form a complete wall system. Systems may vary from an uninsulated screen wall to MetalWrap™ Series, an insulated composite backup panel system with Advanced Thermal and Moisture Protection (ATMP®). Contact your local CENTRIA sales person for more information regarding the performance of CENTRIA's rainscreens.

Notes

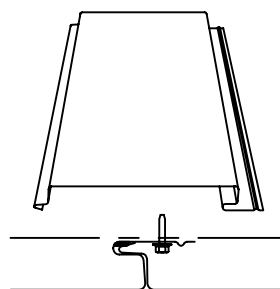
- For information on special applications, contact your local CENTRIA Sales Representative.
- All IW panels may be used on walls & soffits but not on roofs.
- Panel length tolerance is $\pm 1/4"$ [6mm].
- For protective coatings - see CENTRIA color chart.
- Oil canning within mill tolerances will not be cause for rejection.
- Panels must be ordered as "horizontal" when used in a horizontal application.
- Horizontal Panels must be erected from top to bottom.
- Maximum panel length for Zinc is 10' [3.048m].
- IW-10A, IW-11A, IW-12A, IW-13A, IW-14A and IW-15A must be installed in a vertical orientation if a zinc substrate is selected.

Panel Availability

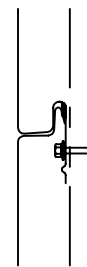
	GALVANIZED¹ (G90)	STAINLESS STEEL¹ (304)	ALUMINUM¹ (3003-H14)	ZINC¹ (PRE-WEATHERED)
PANEL THICKNESS	1 1/2" [38mm]	1 1/2" [38mm]	1 1/2" [38mm]	1 1/2" [38mm]
PANEL COVERAGE	12" [305mm]	12" [305mm]	12" [305mm]	12" [305mm]
SIDE LAP	Interlocking	Interlocking	Interlocking	Interlocking
END LAPS	(see standard detail) Shop notched and swaged 2" [51mm] for 22 [.76mm] and 20 [.91mm] gages only. ^{4,5,6} Flash or extrusion for all gages	Flash or extrusion for all thicknesses ^{5,6}	(see standard detail) Shop notched and swaged 2" [51mm] for 0.040" [1.02mm] only. ^{4,5,6} Flash or extrusion for all other thicknesses	Flash or extrusion for all thicknesses ^{5,6}
GAGES (STANDARD)	20 [.91mm], 22 [.76mm]	20 [.91mm], 22 [.76mm]	.040" [1.02mm], .050" [1.27mm]	1mm [.039"]
GAGES (OPTIONAL)	18 [1.19mm] ³	N/A	N/A	Contact CENTRIA
STANDARD LENGTH	5 [1.524m] - 30 ft. [9.144m]	5 [1.524m] - 30 ft. [9.144m]	5 [1.524m] - 20 ft. [6.096m]	5 [1.524m] - 10 ft. [3.048m]
STANDARD TEXTURE	Smooth	Smooth	Smooth	Smooth - Directional
OPTIONAL TEXTURE	Embossed ² (20 [.91mm] - 22 [.76mm] gage only)	Embossed ²	N/A	N/A
FINISHES	See CENTRIA Color Chart	#4 Brushed	See CENTRIA Color Chart	Jarden Zinc Color Chart

- Alternate base material, panel lengths and gages may also be available. Contact CENTRIA.
- Embossing is non-directional.
- IW-12A and IW-13A are not available in 18 gage or stainless steel of any gage.
- Shop swaged ends are not available for IW-12A, IW-14A, IW-15A.

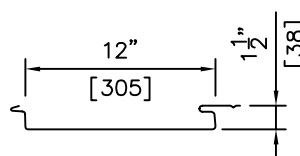
- Shop swaged ends are not available for 18 gage steel, .050 aluminum, any thickness Stainless Steel or Zinc panels.
- MicroLine Extrusions can be used with horizontally installed panels only.



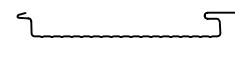
VERTICAL
JOINT DETAIL



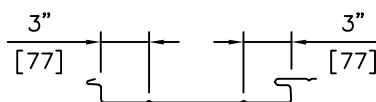
HORIZONTAL
JOINT DETAIL



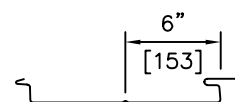
IW-10A



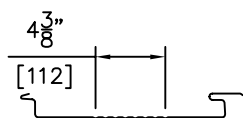
IW-13A



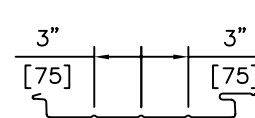
IW-11A



IW-14A



IW-12A



IW-15A



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COLORS



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Black

Florida Iron

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ADVANTAGES:

- Reminiscent of the Old Wooden Privacy Fence
- Clear Boundary Definition

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FORTRESS



BOARD ON BOARD



V-BOX

3

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Privacy-Fortress



SNYDER HOMES

New Project 1

Quote #: W68PYCA

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Job Site:
05401

Shipping Address:

R K MILES INC-MIDDLEBURY
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Middlebury, VT 05753

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middlebury, vermont 05753
802 388 2721 • toll free 800 564 2721

WEST HATFIELD, MA
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west hatfield, massachusetts 01088
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WILLIAMSTOWN, MA
385 cole avenue
williamstown, massachusetts 01267
413 458 8121 • toll free 800 670 7433

rkiles.com

NICKI LANZA
R K MILES INC-MIDDLEBURY
PO BOX 746
MIDDLEBURY, VT 05753-0746
Phone: (802) 385-1147
Fax: (802) 382-8600
Email: lanzan@rkiles.com

This report was generated on 6/27/2016 1:55:24 PM using the Marvin Order Management System, version 0002.09.00 (Current). Price in USD. Unit availability and price are subject to change. Dealer terms and conditions may apply.

Global Specs

The following product and option choices were designated as part of this project's Global Spec. Global Specs can be over-ridden on a line item basis. Exceptions to the specification are outlined in Line Item Quotes. Please proof all units thoroughly to ensure accuracy.

UNIT SUMMARY

The following is a schedule of the windows and doors for this project. For additional unit details, please see Line Item Quotes.

Additional charges, tax or Terms and Conditions may apply. Detail pricing is per unit.

NUMBER OF LINES: 1

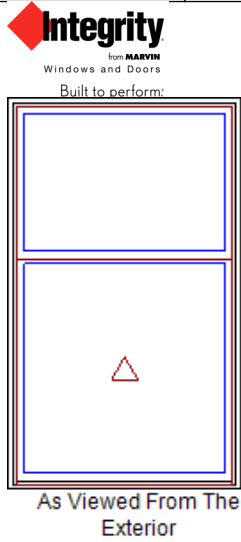
TOTAL UNIT QTY: 1

LINE	MARK UNIT	BRAND	ITEM	QTY
1		Integrity	All Ultrex Single Hung CN 3050 RO 36" X 60" Entered as CN 3050	1

LINE ITEM QUOTES

The following is a schedule of the windows and doors for this project. For additional unit details, please see Line Item Quotes. Additional charges, tax or Terms and Conditions may apply. Detail pricing is per unit.

Line #1	Mark Unit:			
Qty: 1				



Stone White Exterior
Stone White Interior
Integrity Single Hung
All Ultrex
CN 3050
Rough Opening 36" X 60"
Cottage 2.0:5.0
Top Sash
G.S. 31 11/16" X 21 61/64"
IG - 1 Lite
Low E2 w/Argon
Bottom Sash
G.S. 31 11/16" X 32 59/64"
IG - 1 Lite
Low E2 w/Argon
2 White Sash Lock
White Sash Lift
Exterior Half Screen
Stone White Surround
Charcoal Fiberglass Mesh
2" Jambs
Nailing Fin

Entered As: CN
CN 3050
FS 35 1/2" X 59 1/2"
RO 36" X 60"
Egress Information
No Egress Information available.
Performance Information
U-Factor: 0.3
Solar Heat Gain Coefficient: 0.33
Visible Light Transmittance: 0.57
Condensation Resistance: 57
CPD Number: MAR-N-361-00150-00001
ENERGY STAR: NC
Performance Grade
Licensee #871
AAMA/WDMA/CSA/101/ I.S.2/A440-08
LC-PG30 901X1816 mm (35.5X71.5 in)
LC-PG30 DP +30/-30
FL 12374

Terms and Conditions

ESTIMATE VALID FOR 30 DAYS.

VERIFICATION OF ALL QUANTITIES, SPECIFICATIONS AND SIZING AS THE RESPONSIBILITY OF THE OWNER, BUILDER OR ARCHITECT.

SPECIAL ORDERS ARE NON RETURNABLE AND CAN NOT BE CHANGED ONCE THE ORDER HAS BEEN PLACED.

ORDERS WILL NOT BE PLACED UNTIL A SIGNED COPY OF THE ESTIMATE IS RETURNED TO r. k. MILES INC.

ALL SALES ARE FINAL AND CHANGES OR CANCELLATIONS ARE NOT ABLE TO BE MADE AFTER THE ORDER IS PLACED.

THANK YOU FOR THE OPPORTUNITY AND WE APPRECIATE YOUR BUISNESS.

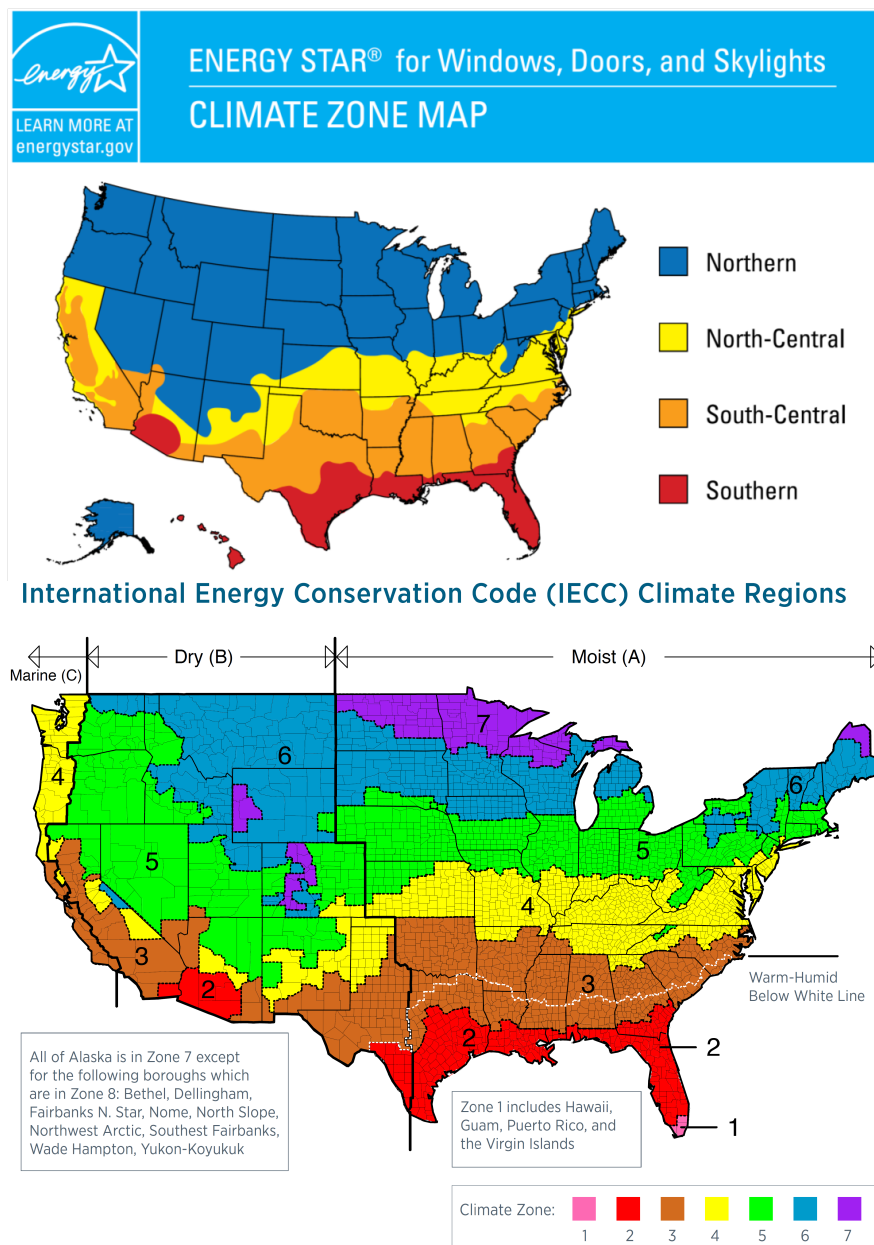
Product and Performance Information

NFRC energy ratings and values may vary depending on the exact configuration of glass thickness used on the unit. This data may change over time due to ongoing product changes or updated test results or requirements.

The National Fenestration Rating Council (NFRC) has developed and operates a uniform national rating system for the energy performance of fenestration products, including windows and doors. For additional information regarding this rating system, see www.nfrc.org/WindowRatings.

NFRC energy values and ratings may change over time due to ongoing product changes, updated test results or requirements.

Review the map below to determine if your units meet ENERGY STAR for your location.

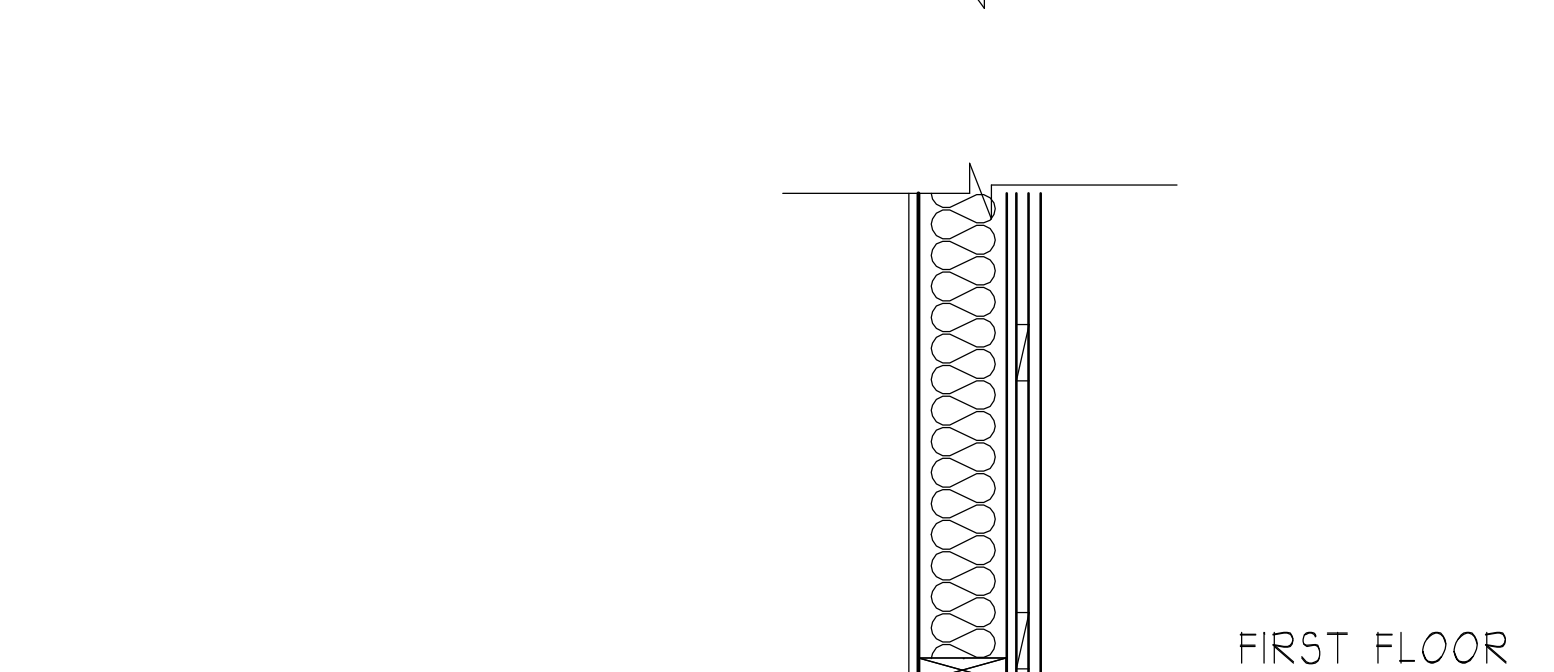
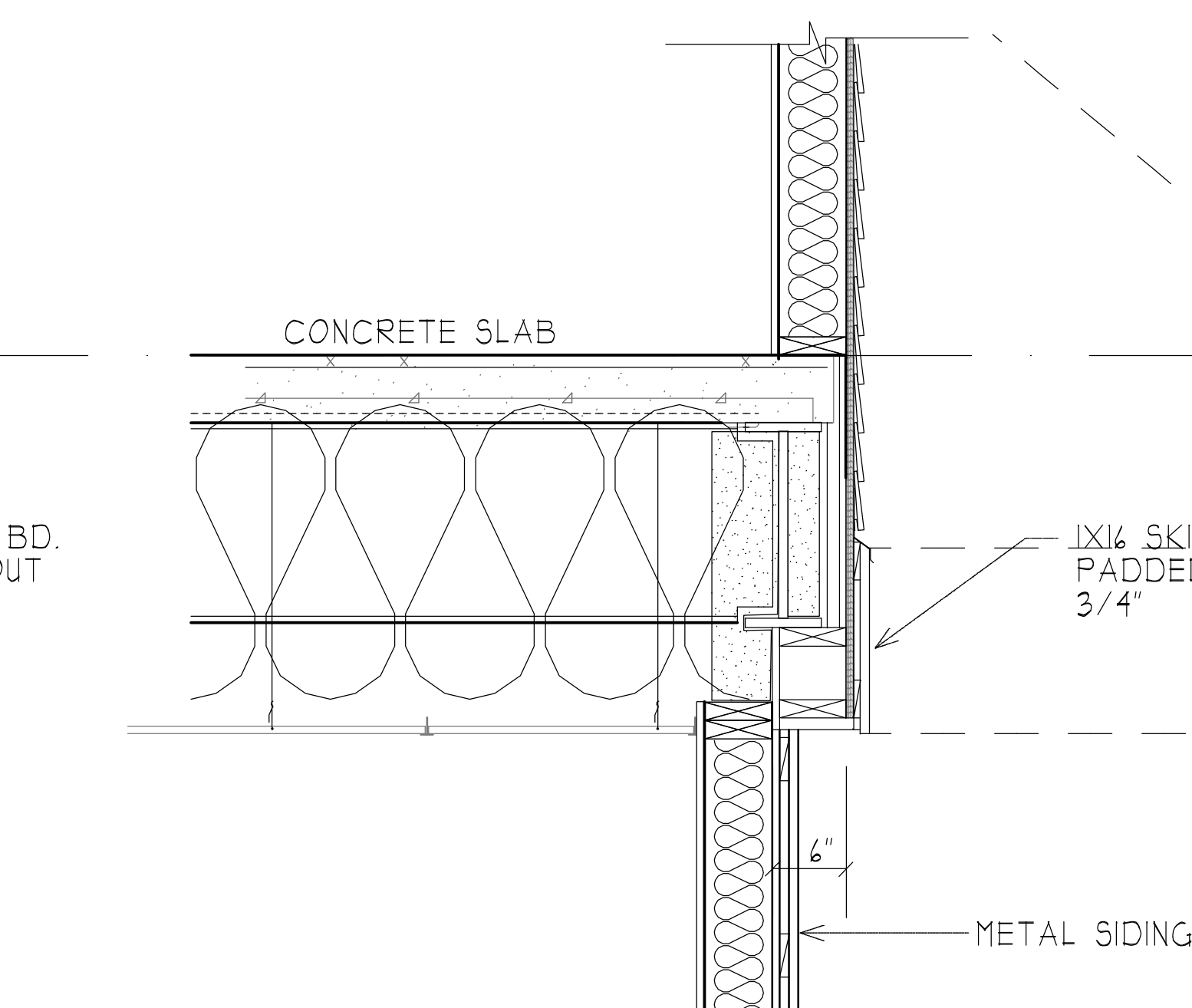
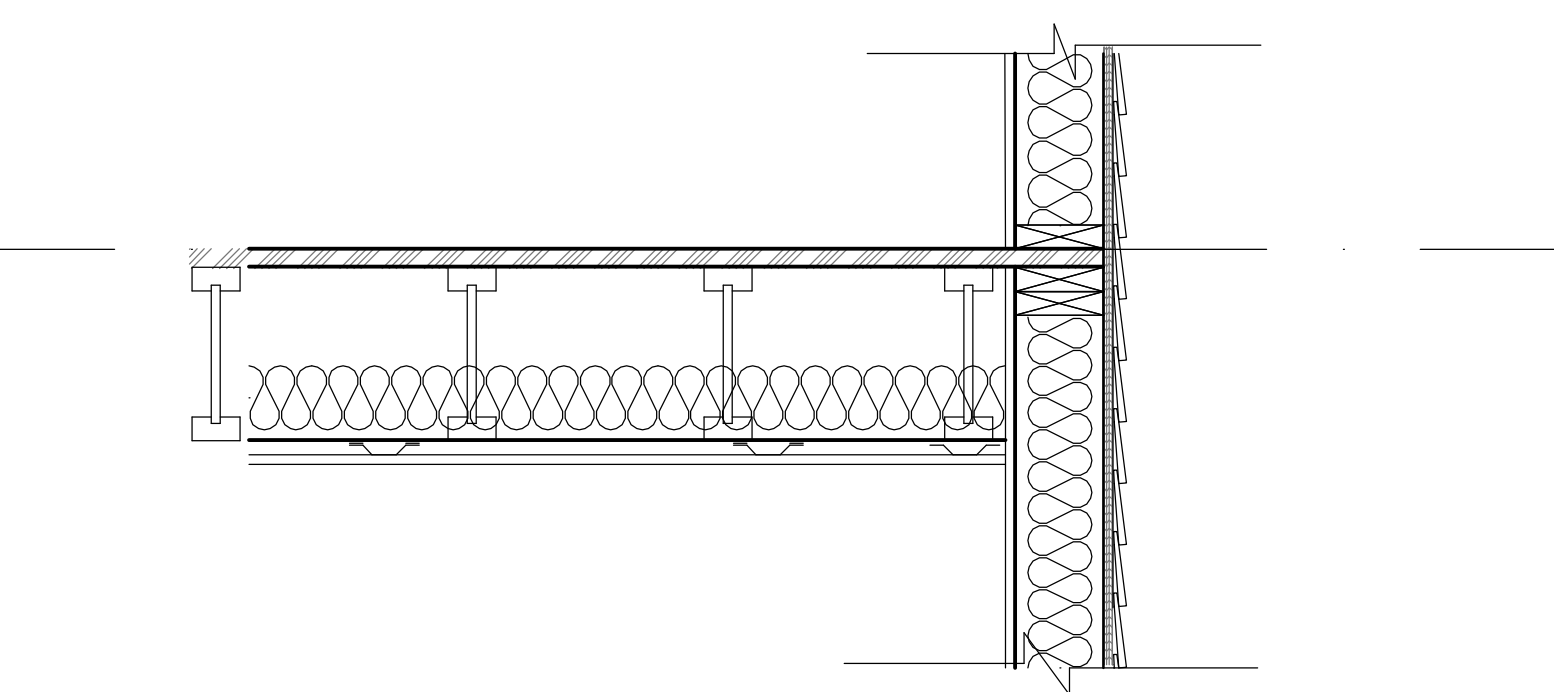
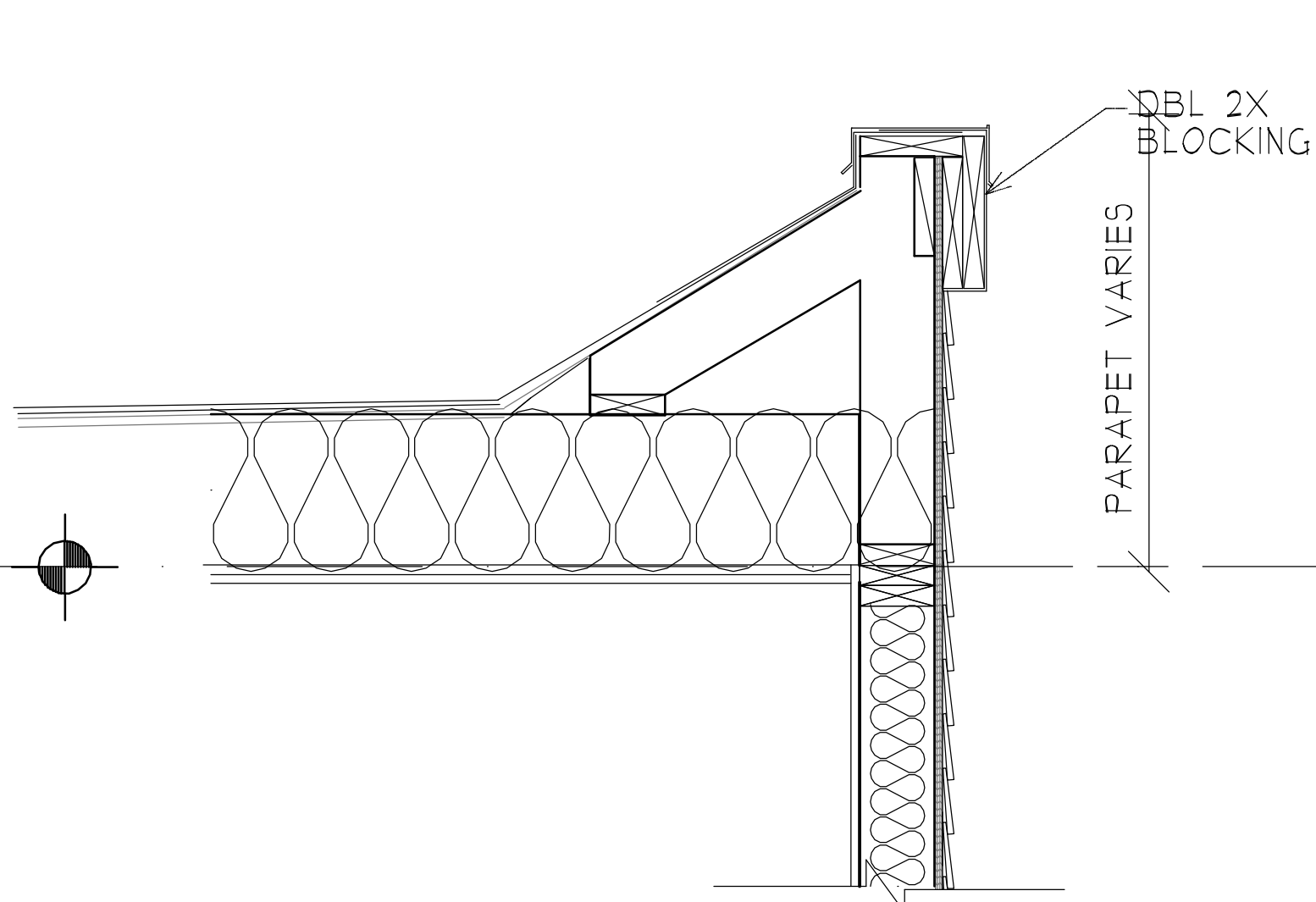
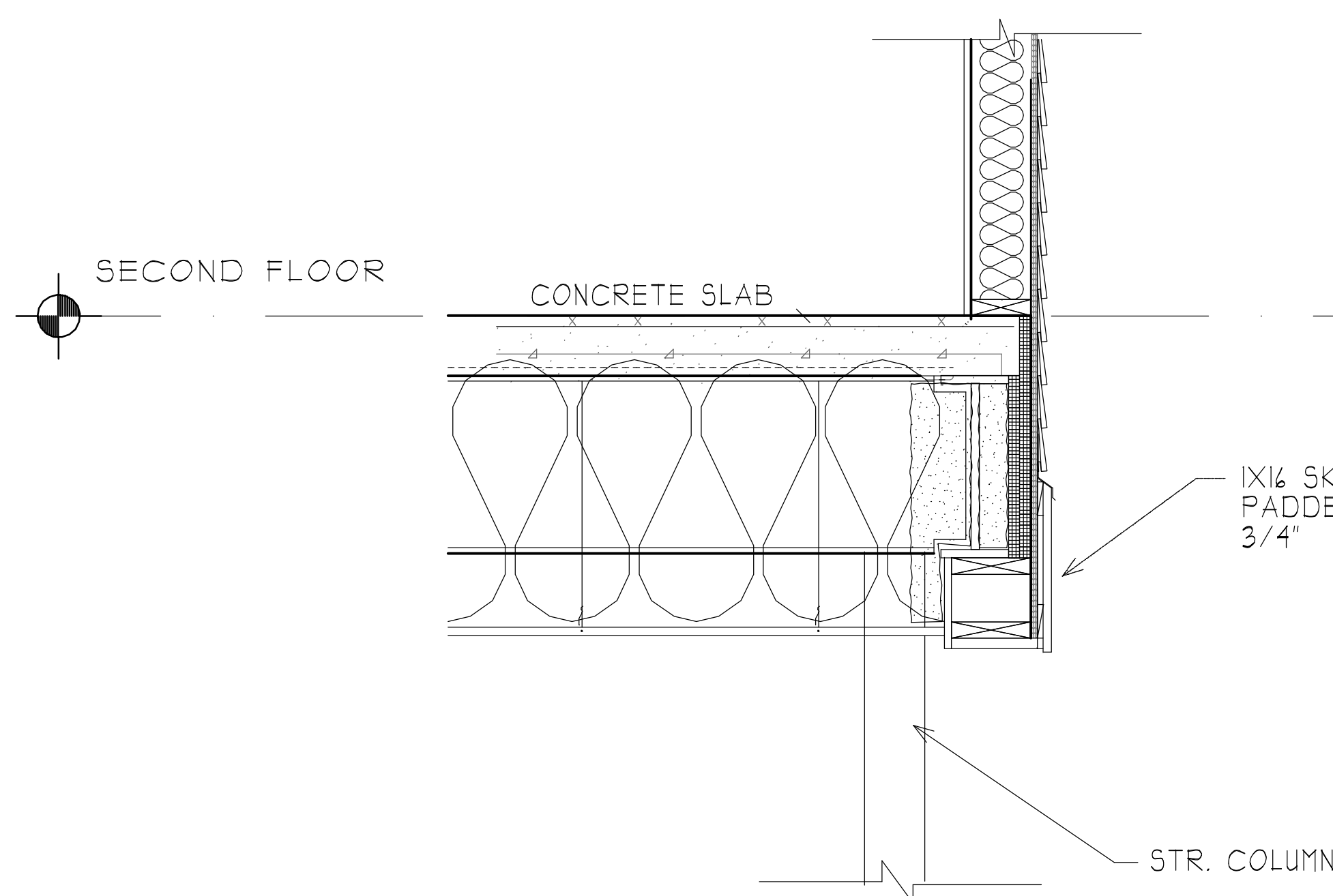
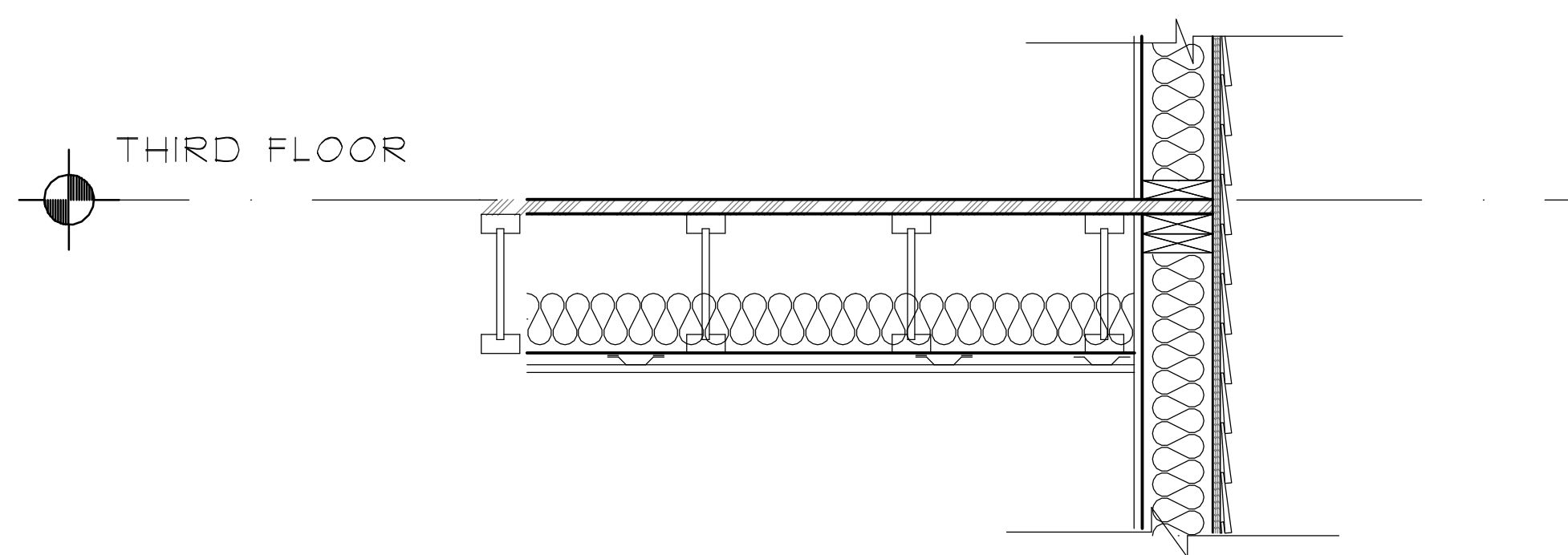
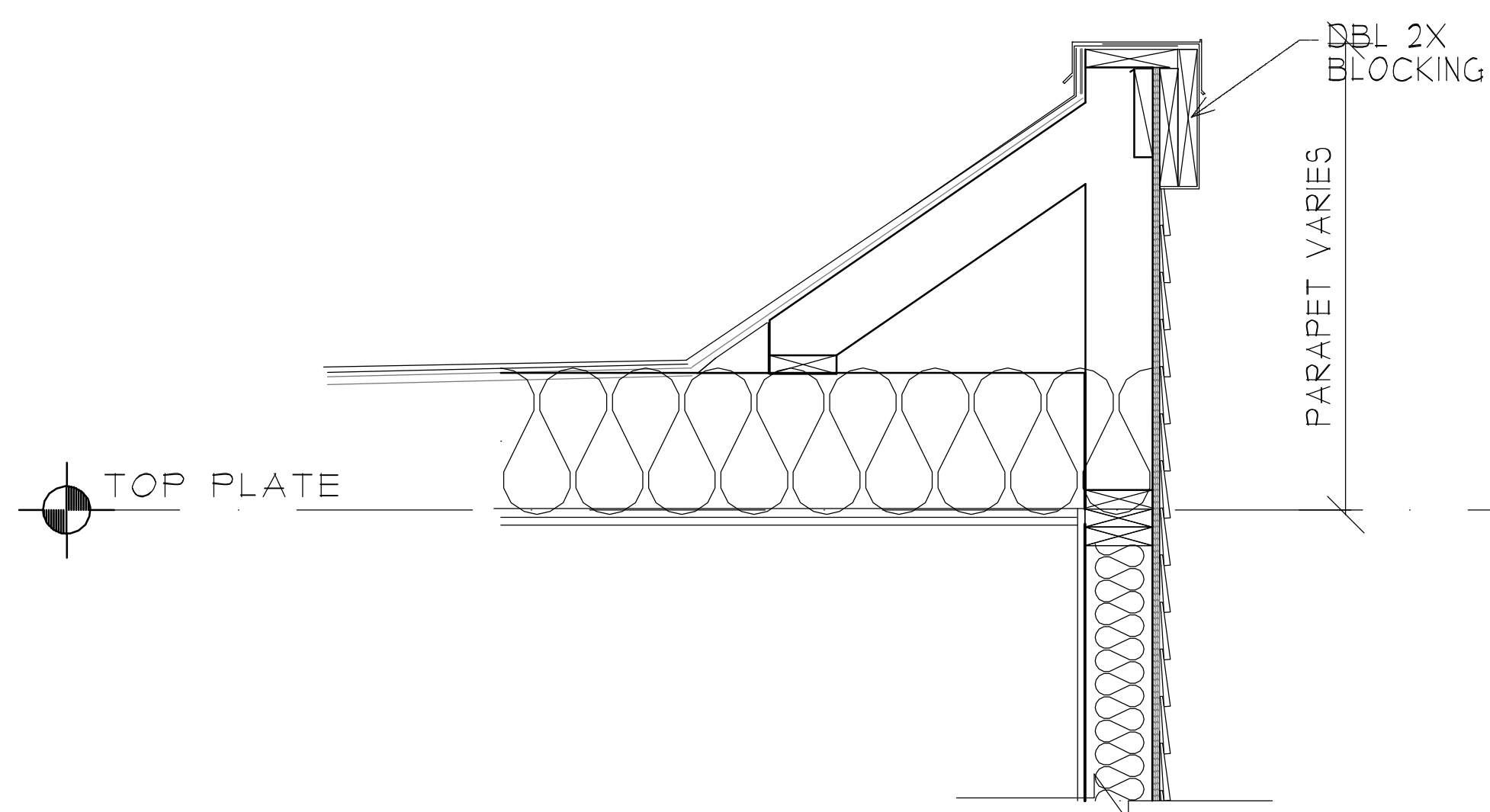


PURCHASE APPROVAL/SIGN OFF

I have reviewed all line item quotes in detail and agree that the product specifications and pricing are accurate, and I approve the project for order. I acknowledge that additional charges, tax or Terms and Conditions may apply.

Seller: _____

Buyer: _____



PINE & FLYNN
SECTION @ PRK'G AREA
1" = 1'-0"

PINE & FLYNN
SECTION @ COMMERCIAL AREA
1" = 1'-0"

Redstone

JUNE 29, 2016

Snyder Homes
Great neighborhoods
to come home to

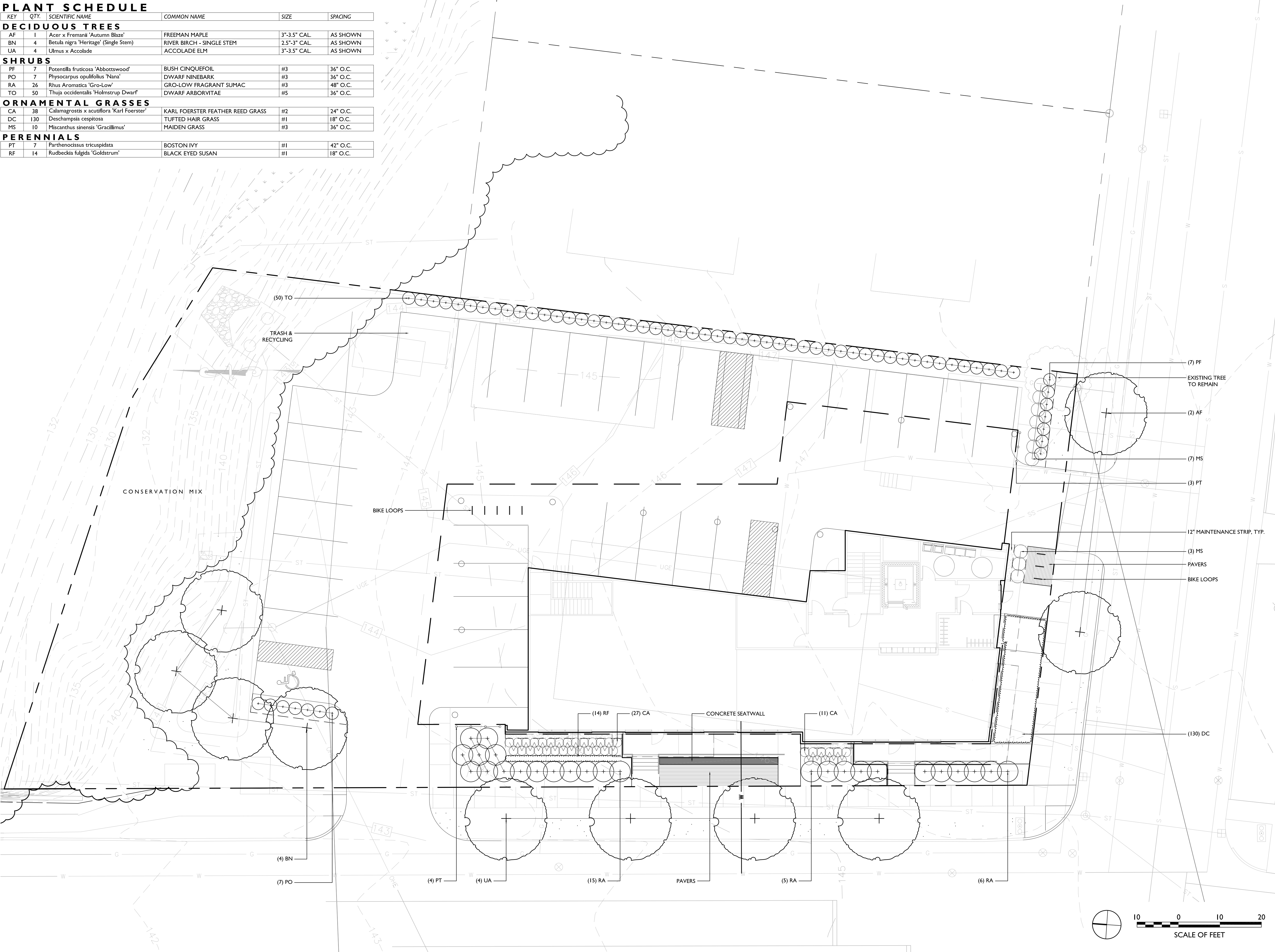
4076 Shelburne Road, Suite 6
Shelburne, Vermont 05482
p 802.985.5722 - f 802.497.0701
www.SnyderHomesVT.com



LINCOLN BROWN ILLUSTRATION

PLANT SCHEDULE

KEY	QTY.	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING
DECIDUOUS TREES					
AF	1	Acer x Freemanii '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.

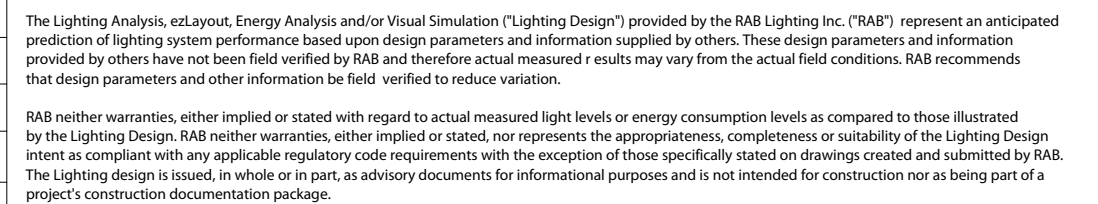


DRAFT
NOT FOR CONSTRUCTION

PINE AND FLYNN

PLANTING PLAN

REVISIONS



Calculation Summary											
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Description	PtSpcLr	PtSpcTb	Meter Type
CalcPts - 20' From Prop Line	Illuminance	Fc	0.02	0.1	0.0	N.A.	N.A.	Readings taken at 0'-0" AFG	4	N.A.	Horizontal
CalcPts - Parking Lot	Illuminance	Fc	1.42	3.5	0.2	7.10	17.50	Readings taken at 0'-0" AFG	4	4	Horizontal

Luminaire Schedule												
Symbol	Qty	Tag	Label	Arrangement	Lum. Lumens	Arr. Lum. Lumens	LLF	Description	Lum. Watts	Arr. Watts	Total Watts	Filename
	5	B	SLIM37N	SINGLE	2587	2587	1.000	SLIM37N	37.6	37.6	188	SLIM37N - Neutral - ITL76691.IES
	7	C	WPLED13N	SINGLE	1063	1063	1.000	WPLED13N	14.8	14.8	103.6	WPLED13N - Neutral - ITL82639.IE

Expanded Luminaire Location Summary							
LumNo	Label	Tag	X	Y	MTG HT	Orient	Tilt
1	WPLED13N	C	109.946	55.098	12.5	180	0
2	WPLED13N	C	110.017	79.315	12.5	180	0
3	WPLED13N	C	130.032	85.123	12.5	82.08	0
4	WPLED13N	C	162.522	81.396	12.5	82.971	0
5	WPLED13N	C	196.521	95.193	12.5	84.808	0
6	WPLED13N	C	221.877	92.459	12.5	84.601	0
7	SLIM37N	B	102.064	106.441	20	90	0
8	SLIM37N	B	132.314	106.441	20	90	0
9	SLIM37N	B	164.778	106.719	20	90	0
10	SLIM37N	B	84.937	62.885	20	175.007	0
11	SLIM37N	B	89.753	98.792	20	173.106	0
12	WPLED13N	C	201.837	123.693	15	86.576	0
Total Quantity: 12							



WPLED13N



SLIM37N

NOTES:

* The light loss factor (LLF) is a product of many variables, only lamp lumen depreciation (LLD) has been applied to the calculated results unless otherwise noted. The LLD is the result (quotient) of mean lumens / initial lumens per lamp manufacturers' specifications.

* Illumination values shown (in footcandles) are the predicted results for planes of calculation either horizontal, vertical or inclined as designated in the calculation summary. Meter orientation is normal to the plane of calculation.

* The calculated results of this lighting simulation represent an anticipated prediction of system performance. Actual measured results may vary from the anticipated performance and are subject to means and methods which are beyond the control of RAB Lighting Inc.

* Mounting height determination is job site specific, our lighting simulations assume a mounting height (insertion point of the luminaire symbol) to be taken at the top of the symbol for ceiling mounted luminaires and at the bottom of the symbol for all other luminaire mounting configurations.

* RAB Lighting Inc. luminaire and product designs are protected under U.S. and International intellectual property laws. Patents issued or pending apply.



Grayscale Rendering : Back of Lot



Prepared For:
Holbrook Associated Warehouse
PO Box 401
Rockland, MA 02370

Job Name:
Pine and Flynn
Burlington, VT
Lighting Layout
Version A

Scale: as noted

Date:6/28/2016 CASE # : 00048313

Filename: Pine and Flynn Layout 00048313 A.AGI

Drawn By: A. Murphy

Filename: Z:\Job Files\Holbrook Associated\Green Mountain Electric\Colchester 110256\Pine & Flynn\Working Files_- REVISION\Pine and Flynn Layout 00048313 A.AGI

The Lighting Analysis, ezLayout, Energy Analysis and/or Visual Simulation ("Lighting Design") provided by the RAB Lighting Inc. ("RAB") represent an anticipated prediction of lighting system performance based upon design parameters and information supplied by others. These design parameters and information provided by others have not been field verified by RAB and therefore actual measured r esults may vary from the actual field conditions. RAB recommends that design parameters and other information be field verified to reduce variation.

RAB neither warranties, either implied or stated with regard to actual measured light levels or energy consumption levels as compared to those illustrated by the Lighting Design. RAB neither warranties, either implied or stated, nor represents the appropriateness, completeness or suitability of the Lighting Design intent as compliant with any applicable regulatory code requirements with the exception of those specifically stated on drawings created and submitted by RAB. The Lighting design is issued, in whole or in part, as advisory documents for informational purposes and is not intended for construction nor as being part of a project's construction documentation package.



37, 57 and 62 Watt SLIM Wallpacks are designed to cover the footprint of most traditional wallpacks. They are suitable for mounting heights from 20' to 30', and replace HID Wattages from 200W MH to 320W MH. These ultra-high efficiency fixtures are available in cutoff or full cutoff models.

Color: Bronze

Weight: 7.5 lbs

Project:
Pine and Flynn

Type:
B

Prepared By:
A. Murphy

Date:
06/28/16

Driver Info

Type:	Constant Current
120V:	0.31A
208V:	0.19A
240V:	0.16A
277V:	0.14A
Input Watts:	38W
Efficiency:	98%

LED Info

Watts:	37W
Color Temp:	4000K
Color Accuracy:	82 CRI
L70 Lifespan:	100000
Lumens:	2,587
Efficacy:	69 LPW

Technical Specifications

Listings

UL Listing:

Suitable for wet locations. Wall Mount only.

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80, and have received the Department of Energy "Lighting Facts" label.

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: P00001722

Construction

Footprint:

Designed to replace RAB HID WP1 wallpacks, both in size and footprint template, so upgrading to LED is easy and seamless.

IP Rating:

Ingress Protection rating of IP66 for dust and water.

Cold Weather Starting:

The minimum starting temperature is -40°F/-40°C.

Ambient Temperature:

Suitable for use in 40°C (104°F) ambient temperatures

Thermal Management:

Superior thermal management with internal Air-Flow fins.

Housing:

Precision die-cast aluminum housing and door frame.

Mounting:

Die-cast back box with four (4) conduit entry points and knockout pattern for junction box or direct wall mounting. Hinged housing and bubble level for easy installation.

Cutoff:

Cutoff (7.5°)

Recommended Mounting Height:

Up to 20 ft.

Lens:

Microprismatic diffusion glass lens reduces glare and has smooth and even light distribution.

Reflector:

Specular thermoplastic.

Gaskets:

The unique design of the tight-lock gasket ensures no water or environmental elements will ever get inside the SLIM.

Finish:

Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contains no VOC or toxic heavy metals.

Green Technology:

Mercury and UV free, and RoHS compliant.

LED Characteristics

LED:

Long-life, high-efficiency, micro-power, surface mount LEDs; binned and mixed for uniform light output and color.

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

Correlated Color Temp. (Nominal CCT):

4000K

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Consistency:

7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Electrical

Driver:

Constant Current, 100-277V. 50/60Hz, 100-277VAC 0.6A, 4kV Surge Protection, 700mA, Power Factor 99.4%.

THD:

7.5% at 120V, 7.6% at 277V

Other

HID Replacement Range:

The SLIM37 can be used to replace 200W MH based on delivered lumens.

Accessories:

Available accessories include polyshield and wire guard. Click to see all accessories.

Technical Specifications (continued)

Other

California Title 24:

See SLIM37/BL for a 2013 California Title 24 compliant product. Any additional component requirements will be listed in the Title 24 section under technical specifications on the product page.

Patents:

The design of the SLIM™ is protected by patents pending in US, Canada, China, Taiwan and Mexico.

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Country of Origin:

Designed by RAB in New Jersey and assembled in the USA by RAB's IBEW Local 3 workers.

Buy American Act Compliant:

This product is a COTS item manufactured in the United States, and is compliant with the Buy American Act.

Recovery Act (ARRA) Compliant:

This product complies with the 52.225-21 "Required Use of American Iron, Steel, and Manufactured Goods-- Buy American Act-- Construction Materials (October 2010).

Trade Agreements Act Compliant:

This product is a COTS item manufactured in the United States, and is compliant with the Trade Agreements Act.

GSA Schedule:

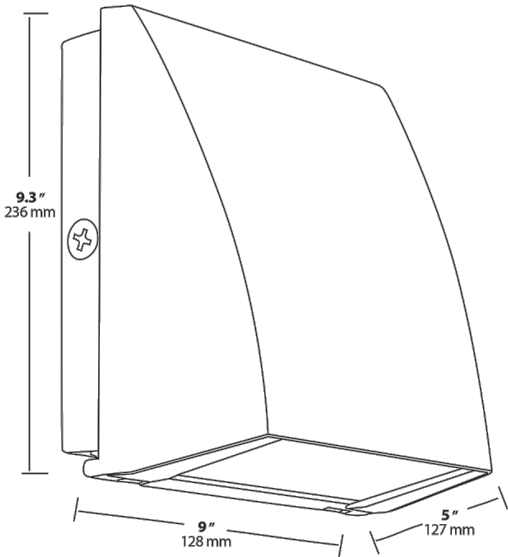
Suitable in accordance with FAR Subpart 25.4.

Optical

BUG Rating:

B1 U1 G1

Dimensions



Features

- Covers footprint of most traditional wallpacks
- Easy installation with hinged access, bubble level and multiple conduit entries
- Tight-lock gasket keeps elements out
- 100,000-hour LED lifespan
- 5-Year warranty

Ordering Matrix

Family	Cutoff	Watts	Color Temp	Finish	Photocell	Bi-Level
SLIM						
	= Standard	62 = 62W	= 5000K (Cool)	= Bronze	= No Photocell	= No Bi-Level
	C = Cutoff	57 = 57W	Y = 3000K (Warm)	W = White	/PC = 120V Button	/BL = Bi-Level
	FC = Full Cutoff	37 = 37W	N = 4000K (Neutral)		/PC2 = 277V Button	
					/PCS = 120V Swivel	
					/PCS2 = 277V Swivel	



LED 10W & 13 Wallpacks. Patent Pending thermal management system. 100,000 hour L70 lifespan. 5 Year Warranty.

Color: Bronze

Weight: 3.3 lbs

Project:
Pine and Flynn

Type:
C

Prepared By:
A. Murphy

Date:
06/28/16

Driver Info

Type:	Constant Current
120V:	0.13A
208V:	0.08A
240V:	0.07A
277V:	0.06A
Input Watts:	15W
Efficiency:	87%

LED Info

Watts:	13W
Color Temp:	4000K
Color Accuracy:	83 CRI
L70 Lifespan:	100000
Lumens:	673
Efficacy:	45 LPW

Technical Specifications

Listings

UL Listing:

Suitable for Wet Locations as a Downlight. Suitable for Damp Locations as an Uplight. Wall Mount only. Suitable for Mounting within 4ft. of ground.

Dark Sky Approved:

The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire.

IESNA LM-79 & IESNA LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and 80, and have received the Department of Energy "Lighting Facts" label.

Optical

Lumen Maintenance:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

Fixture Efficacy:

44.6 Lumens per Watt

Lumen Maintenance:

The LED will deliver 70% of its initial lumens at 100,000 hours of operation.

BUG Rating:

B1 U0 G0

Construction

Cold Weather Starting:

The minimum starting temperature is -40°F/-40°C.

Ambient Temperature:

Suitable for use in 50°C (122°F) ambient temperatures.

Finish:

Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contains no VOC or toxic heavy metals.

Green Technology:

RAB LEDs are Mercury and UV free.

For use on LEED Buildings:

IDA Dark Sky Approval means that this fixture can be used to achieve LEED Credits for Light Pollution Reduction.

Gaskets:

High Temperature Silicone.

Electrical

Driver:

Multi-chip 13W high output long life LED Driver Constant Current, Class 2 100V - 277V, 50/60 Hz.

Surge Protection:

4KV

LED Characteristics

Color Temperature (Nominal CCT):

4000K

Color Accuracy:

86 CRI

Color Consistency:

3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated color temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2015.

Other

Patents:

The design of the LPACK is protected by U.S. Pat. D604,004 and patents pending in Canada, China and Taiwan.

California Title 24:

See WPLED13/PC for a 2013 California Title 24 compliant model.

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Equivalency:

The WPLED13 is Equivalent in delivered lumens to a 100W Metal Halide Wallpack.

HID Replacement Range:

The WPLED13 can be used to replace 70-150W Metal Halide Wallpacks based on delivered lumens.

Country of Origin:

Designed by RAB in New Jersey and assembled in the USA by RAB's IBEW Local 3 workers.

Technical Specifications (continued)

Other

Buy American Act Compliant:

This product is a COTS item manufactured in the United States, and is compliant with the Buy American Act.

Recovery Act (ARRA) Compliant:

This product complies with the 52.225-21 "Required Use of American Iron, Steel, and Manufactured Goods-- Buy American Act-- Construction Materials (October 2010).

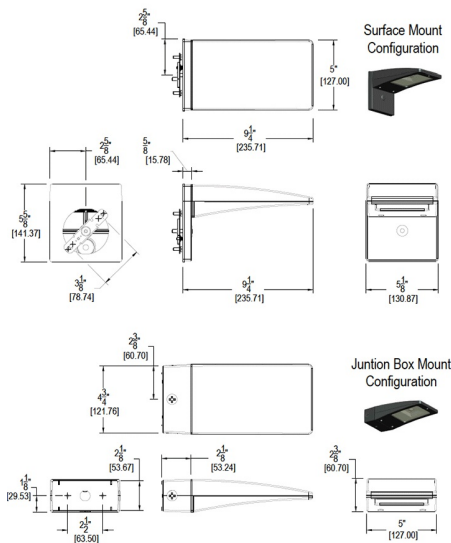
Trade Agreements Act Compliant:

This product is a COTS item manufactured in the United States, and is compliant with the Trade Agreements Act.

GSA Schedule:

Suitable in accordance with FAR Subpart 25.4.

Dimensions

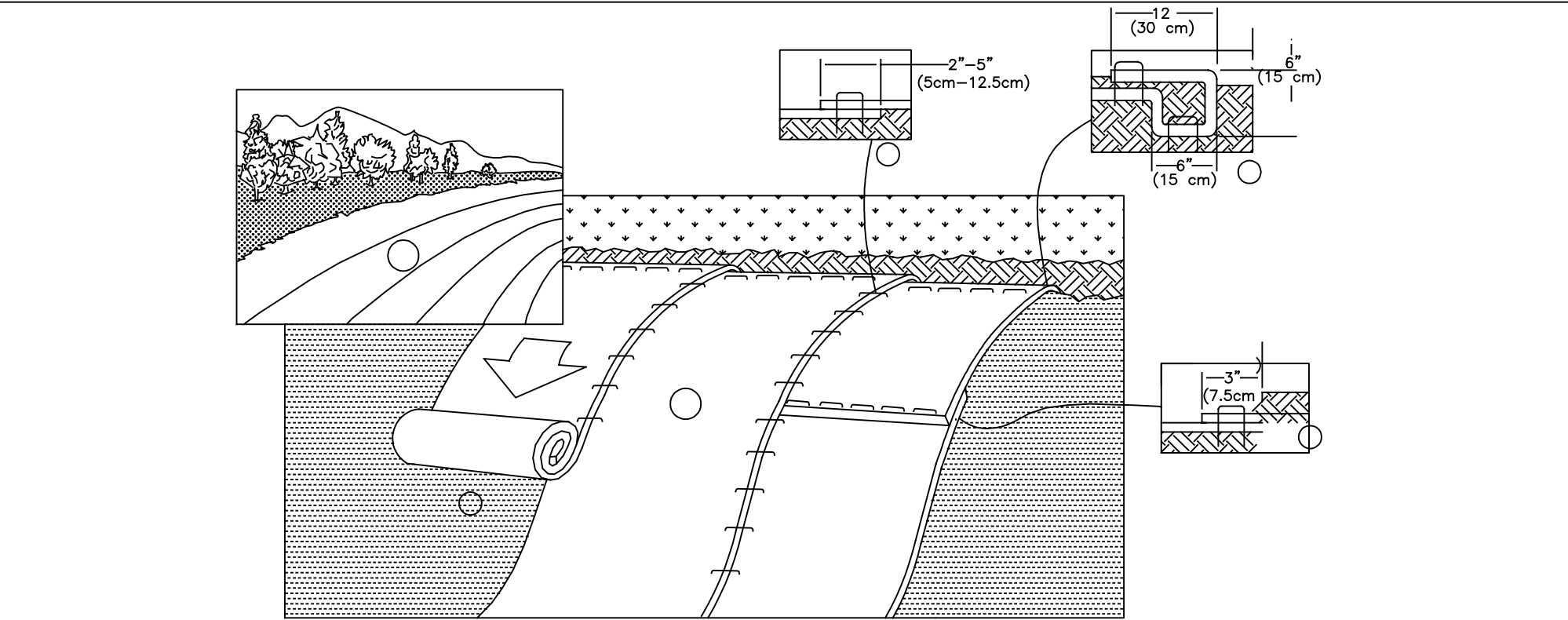


Features

- High performance LED light engine
- Maintains 70% of initial lumens at 100,000 hours
- Weatherproof high temperature silicone gaskets
- Superior heat sinking with die cast aluminum housing and external fins
- 5-year warranty

Ordering Matrix

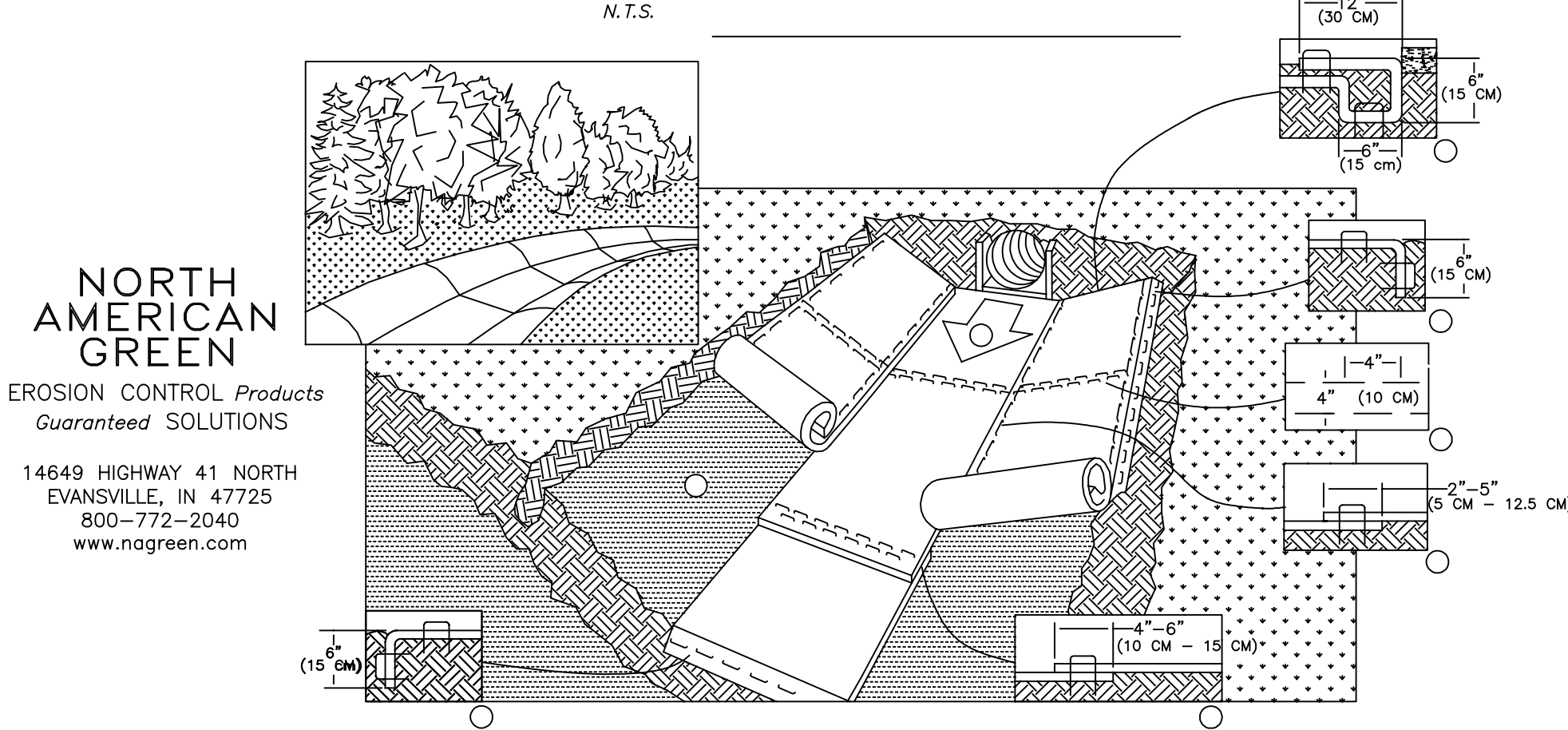
Family	Watts	Color Temp	Sensor	Surface Plate	Surface Place	Finish	Photocell
WPLED							
	10 = 10W	= 5000K (Cool)	= No Sensor	= No Surface Plate	S = Surface Plate	= Bronze	= No Photocell
	13 = 13W	Y = 3000K (Warm)	MS = Mini Sensor			W = White	/PC = 120V Button
		N = 4000K (Neutral)					/PCS = 120V Swivel
							/PC2 = 277V Button



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCT (REC^P'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 SLOPE BY ANCHORING THE REC^P's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF REC^P's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR REC^P's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) 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 REC^P's BACK OVER SEED AND COMPACTED SOIL. SECURE REC^P's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF REC^P's
3. ROLL THE REC^P's (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. REC^P's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL REC^P'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 REC^P's MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5CM - 12.5CM) OVERLAP DEPENDING ON REC^P's TYPE.
5. CONSECUTIVE REC^P's SPICED 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 REC^P'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 REC^P's.

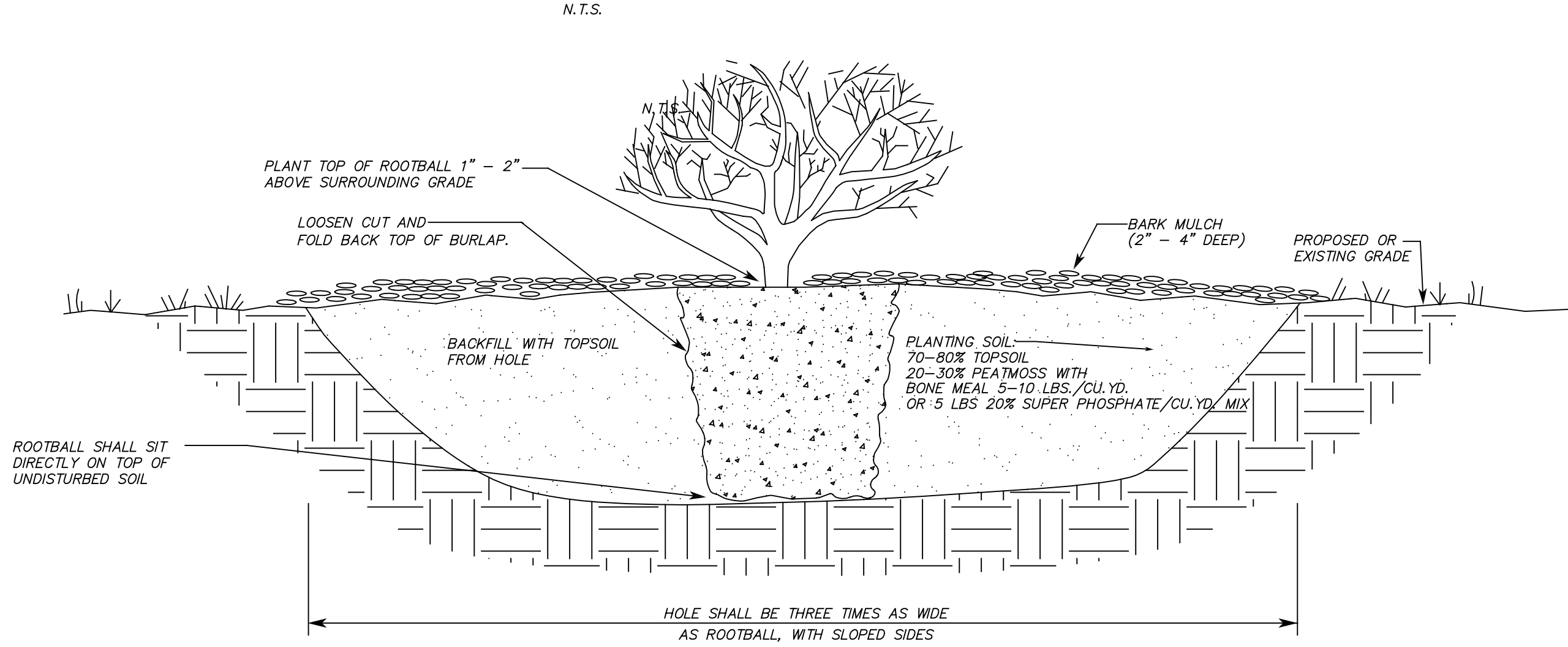
EROSION CONTROL MATTING - SLOPE INSTALLATION



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (REC^P'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 REC^P's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF REC^P's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE REC^P's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) 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 REC^P's BACK OVER SEED AND COMPACTED SOIL. SECURE REC^P's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) ACROSS THE WIDTH OF THE REC^P's.
3. ROLL CENTER REC^P's IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. REC^P's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL REC^P'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 REC^P'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 REC^P's.
5. FULL LENGTH EDGE OF REC^P'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 REC^P's MUST BE OVERLAPPED APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) (DEPENDING ON REC^P'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 REC^P'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.

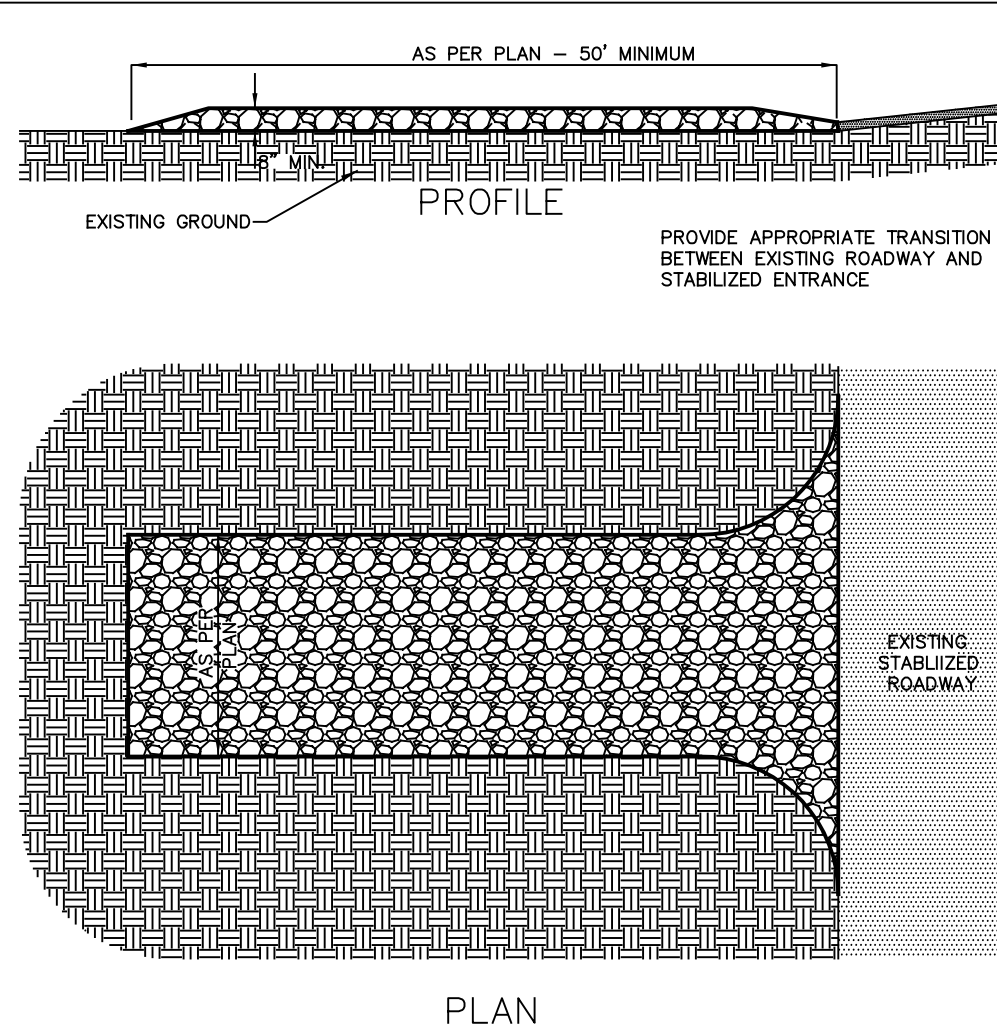
NOTE:
* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE REC^P's.

EROSION CONTROL MATTING - CHANNEL INSTALLATION



SHRUB PLANTING TYPICAL

N.T.S.

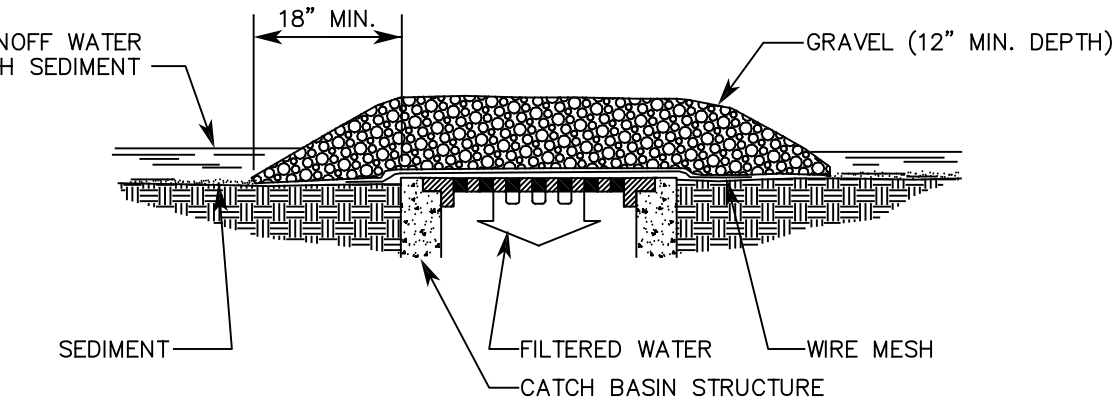


NOTES:

1. STONE SHALL BE 1.5 TO 4 INCHES WITH A MINIMUM THICKNESS OF 8 INCHES.
2. LENGTH, WIDTH AND RETURN RADII SHALL BE AS SHOWN ON THE APPLICABLE CONSTRUCTION STABILIZATION PLAN.
3. MAINTENANCE 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 MINIMIZE REQUIRED MAINTENANCE OF STABILIZED ENTRANCE.
5. CONSTRUCT STABILIZED APRON AROUND BUILDING AS SHOWN ON THE PLAN, AND WITH THE PROFILE SHOWN ABOVE.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



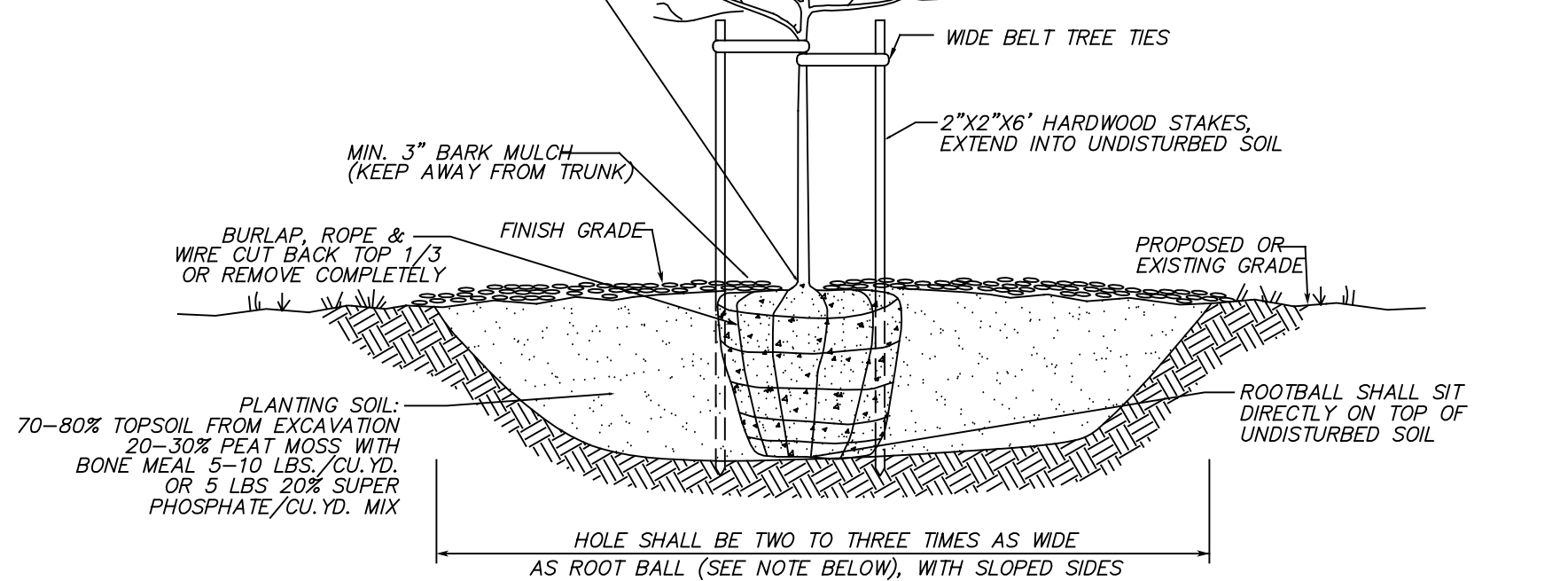
1. A WIRE MESH SHALL BE PLACED OVER THE DROP INLET OR CURB OPENING SO THAT THE ENTIRE OPENING AND A MINIMUM OF 12 INCHES AROUND THE OPENING ARE COVERED BY THE MESH. THE MESH MAY BE ORDINARY HARDWARE CLOTH OR WIRE MESH WITH OPENINGS UP TO 1/4 INCH.
2. THE WIRE MESH SHALL BE COVERED WITH CLEAN COARSE AGGREGATE 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

N.T.S.

TRUNK FLARE JUNCTION: PLANT AT EXISTING GRADE IN WELL DRAINED SOILS, UP TO 4" ABOVE EXISTING GRADE IN POORLY DRAINED SOILS



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.

Landscape 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 1% TO 5% ≤5%	LINING NORTH AMERICAN GREEN S150 STONE RIP RAP ≥5%
SIDE SLOPES ≤3:1 ≥3:1 ≥2:1	LINING MULCH NORTH AMERICAN GREEN S150 OR EQUAL 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 OR COMMON WHITE CLOVER PLUS TALL FESCUE PLUS REDTOP OR RYEGRASS (PERENNIAL)	EMPIRE/PARDEE COMMON KY-31/REBEL COMMON PENNFINE/LINN	5* 8 10 2 5	0.1 0.2 0.25 0.05 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.

* - 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 16-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 MUST 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 (E.G. NO OUTLET) WITH A DEPTH OF 2 FEET OR GREATER (E.G. HOUSE FOUNDATION EXCAVATION, UTILITY TRENCHES).
4. ALL EROSION CONTROL MEASURES MUST 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.

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DEVELOPMENT

LOCATION

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

OWNER

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

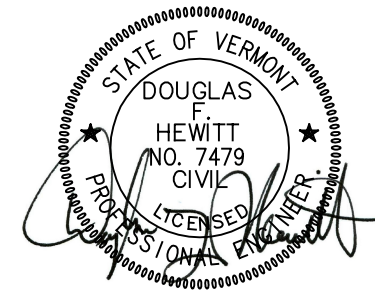
CONTRACTOR

CIVIL ENGINEER



SUMMIT ENGINEERING, INC.
Engineers • Architects • Planners • Landscape Architects
1233 Shelburne Road C2
South Burlington, VT 05403
(802) 686-0066

STAMP



Issue	Date	Issue	Date

Project

EROSION CONTROL AND
LANDSCAPING DETAILS

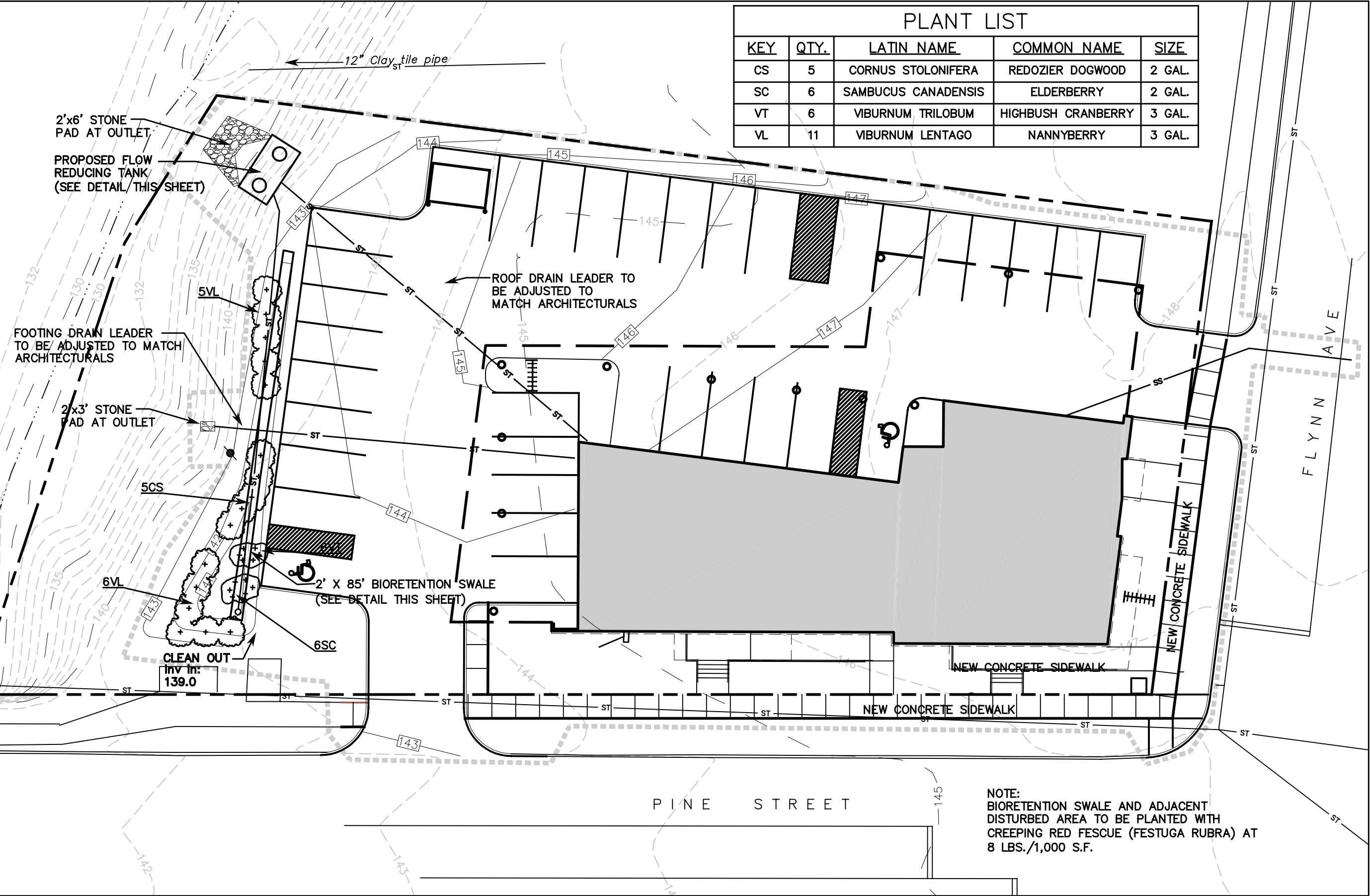
Drawing Title

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

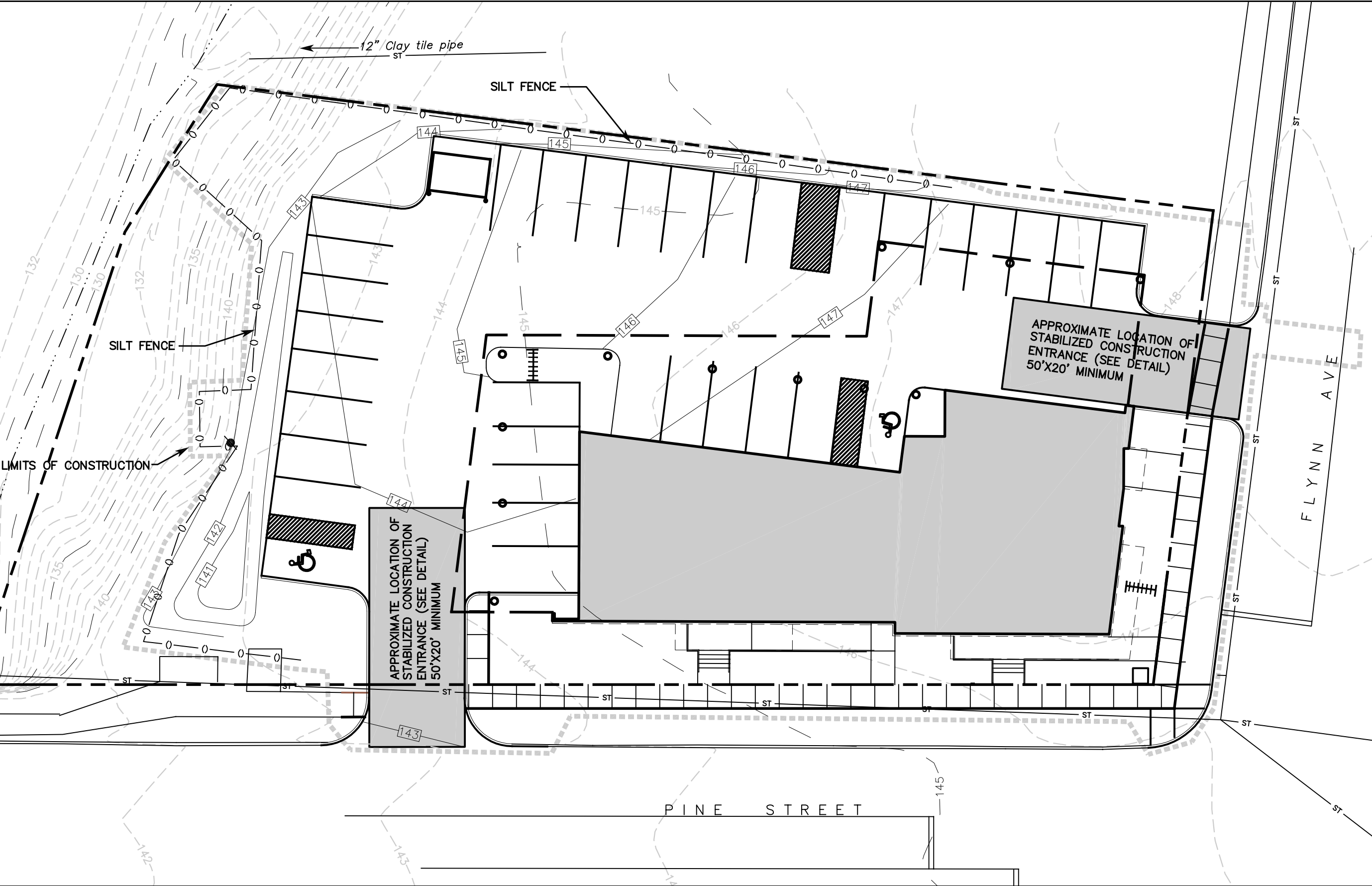
Floor(s)

Drawing No.

D2



STORMWATER MANAGEMENT VIEW



EROSION CONTROL VIEW

STORMWATER SYSTEM MAINTENANCE REQUIREMENTS

- 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.
- The stormwater treatment tank is to be inspected monthly and after significant rainfall events.
- 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.
- 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.
- 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".
- 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.

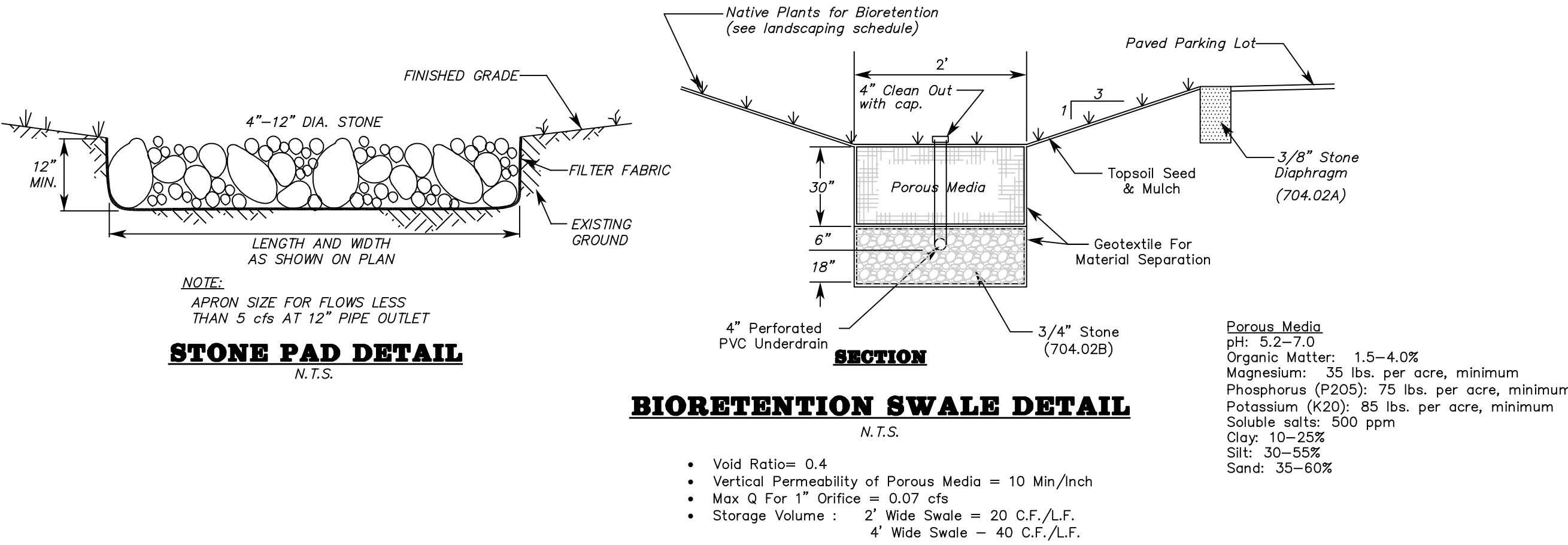
RUNOFF ATTENUATION -

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.

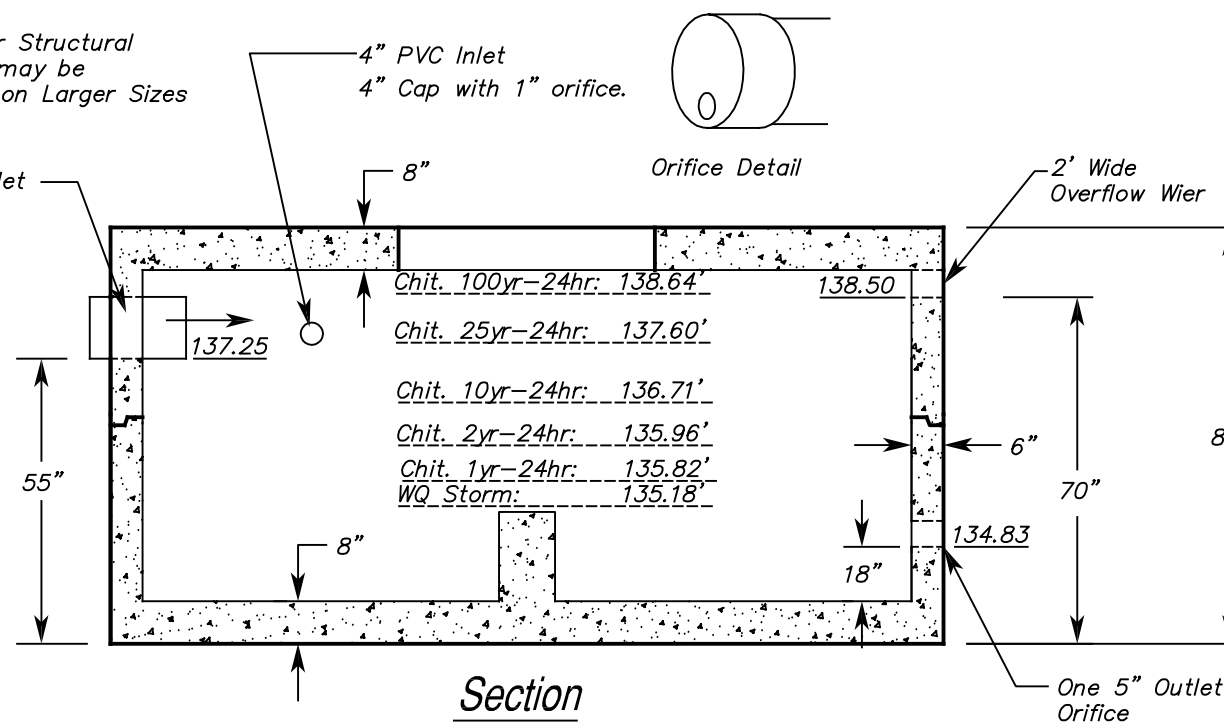
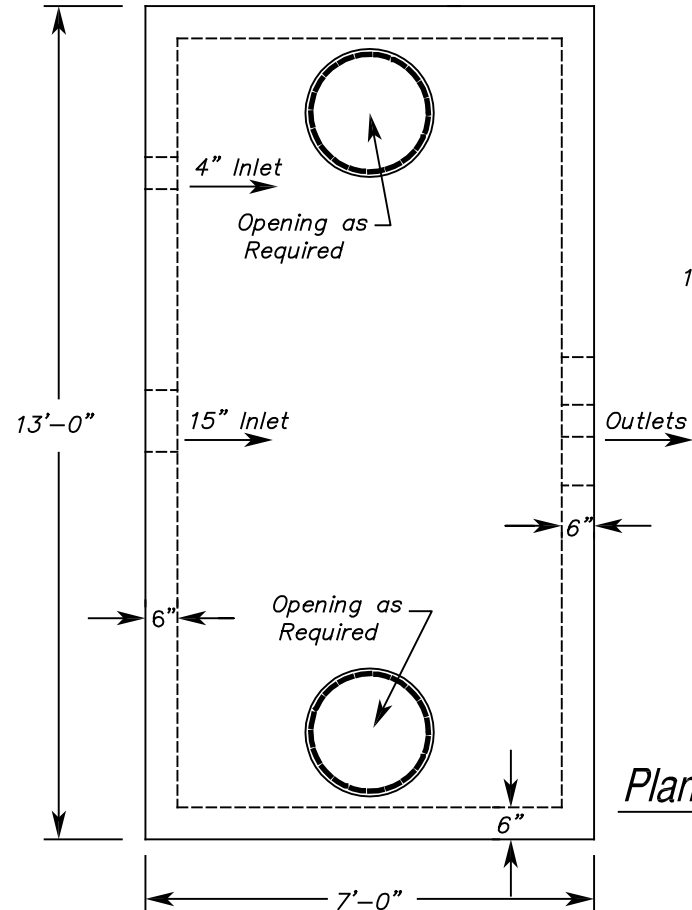
Existing Impervious Lot Coverage			
Total Lot	26,424 s.f.	0.61 acre	100%
Paved Area	14,887 s.f.	0.34 acre	55.6%
Building Area	4,742 s.f.	0.11 acre	18.0%
Total Coverage	19,439 s.f.	0.45 acre	73.6%

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.



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.



FLOW REDUCER TANK DETAIL

HEAVY DUTY 2500 GALLON TANK MODIFIED AS SHOWN.
CAMP PRECAST OR EQUAL.

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LOCATION

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OWNER

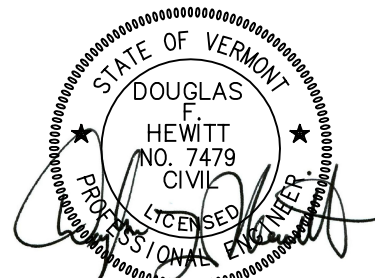
G & C PROPERTIES
BURLINGTON, VERMONT
TEL: 802 343 6789

CONTRACTOR

CIVIL ENGINEER

SUMMIT ENGINEERING, INC.
Engineers • Architects • Planners • Landscape Architects
1233 Shelburne Road C2
South Burlington, VT 05403
(802) 686-0888

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Issue	Date	Issue	Date

Project

STORMWATER MANAGEMENT
PLAN AND DETAILS

Project No. 8163 Drawn by: BGD/PH Date: 6/29/15 Scale: N.T.S.

Floor(s)

Drawing No.

D3



Burlington Department of Public Works
Stormwater Program

234 Penny Lane (Water Plant)
Burlington, VT 05401

PH: 802-863-4501 Email: stormwater@burlingtonvt.gov



Standard Erosion Prevention & Sediment Control (EPSC) Plan

This questionnaire and associated EPSC plan sheets are required for projects

- on properties other than single family (R1) or duplexes (R2) that require a level II or III Certificate of Appropriateness or Major Impact zoning applications and involve 5000 sq. ft. or more of earth disturbance; or
- any activity where a zoning permit is not required but where the project involves 10,000 sq. ft. or more of earth disturbance; or
- if requested by the Stormwater Program due to project characteristics such as slope, soils or proximity to drainage structures or waterbodies.

Please note that you must submit EPSC plan and detail sheets as outlined in section A below.

All projects involving redevelopment or addition of impervious surface must submit the stormwater management screening project (attached) for evaluation or meet with the Stormwater Program to determine the stormwater management requirements for your project.

1. Project Location _____

2. Zoning Permit Address (if different from above): _____

3. Brief Project Description (i.e. building construction, subdivision, site work)

4. Owner Name: _____

5. Owner Mailing Address: _____

6. Owner Phone: _____ 6. Owner email: _____

7. Contractor Name: _____ ☐ Contractor not known at this time

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.

14. Does your project require a State Construction Stormwater Permit (9020 or INDC) ? ☐ Yes ☐ No
(You will be required to submit proof of your authorization to discharge prior to initiation of earth disturbance).

A. REQUIRED PLAN SHEETS:

15. Plan sheet(s) 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.) |
| ☐ Location of stabilized construction entrances | ☐ Stabilization measures |
| ☐ Phasing plan (if appropriate) | |

*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

16. Detail sheet **MUST BE ATTACHED** and include details for all EPSC measures listed on the EPSC Plan Sheet.

Additionally, notes must be included related to:

- ☐ Daily inspection of roadways and sweeping as necessary
- ☐ Dewatering measures (if applicable)
- ☐ Temporary site stabilization requirements
- ☐ Final site stabilization requirements
- ☐ Winter site stabilization (for disturbance after November 1)
- ☐ Inspection requirements

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

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

- If yes, please indicate which plan sheet has details for how dewatering operations will be managed to prevent the discharge of sediment laden water. Sheet(s): _____

B) Will excavated soil be stockpiled on the site? ☐ Yes ☐ No If yes, show locations and EPSC measures for the stockpile on plan sheet(s)

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

C) 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.

D) 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 863-4501 or email gjohnson@burlingtonvt.gov 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 attached 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:
- ☐ 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 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 802-863-4501 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 and ensure that sediment control is installed PRIOR to soil freezing.** 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

Name

Signature

Date

Additional Conditions of Approval:

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 802-863-4501

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

Plan Approved by: _____ Date: _____
Burlington Stormwater Program

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.burlingtonvt.gov/DPW/Stormwater-Management>



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
 - Impervious¹ change summary

Condition	Type	Total Impervious (s.f.)
Existing Conditions	Existing Impervious	
Proposed	Total Proposed (1+2+3)	
	1) New ²	
	2) Existing to Remain	
	3) Redeveloped	
Net New	Total Proposed – Existing	

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, Suite 104
Essex Jct., Vt. 05452
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, attenuator/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 through 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 and Misc.	7,824
	Total Proposed	17,120

Stormwater Management Summary:

Pine and Flynn Stormwater Management Plan

Standard	Amount of impervious managed	
	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. .

F:\PEADATA\PROJECT\8163\EPSCNarrative3.doc

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 through 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.

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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 partial 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.

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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, similar to what was previously approved for another proposed project on this site, 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.

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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:

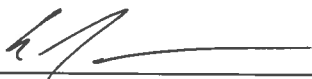
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SAMPLE

Pre-Application Public Neighborhood Meeting Certification

I, Erik Hoekstra, certify that that the Pre-Application Public Neighborhood Meeting requirement pursuant to Sec. 3.2.1(d) of the *Burlington Comprehensive Development Ordinance* has been satisfied in accordance with the procedures and requirements set forth by the Department of Planning and Zoning for a public neighborhood meeting held on March 17, 2016 at DPW building.

A copy of the meeting date, time and location; list of attendees with contact information; NPA meeting minutes or meeting notes summarizing the discussion; and method and copy of public notice is attached and made a part of this Certification.

Signature: 

STATE OF VERMONT

COUNTY OF CHITTENDEN

The above and foregoing Affidavit as subscribed before me this 29 day of JUNE, A.D., 2016 personally by EM BRAULT.



NotaryPublic

My Commission expires: 6/29/16

Seal

March 3, 2016

Re: New Residential Building to be presented at Ward 5 Neighborhood Meeting
Project Location: 316 Flynn Avenue, Burlington, VT

Dear Sir or Madam:

The City of Burlington has a relatively new requirement that any proposed new development project be presented at a Neighborhood Planning Assembly meeting to give neighbors an opportunity to become aware of the project at the early stage of conceptual design. We are on the Ward 5 NPA agenda for their March 17th meeting, to be held at the Department of Public Works building at 645 Pine St. The NPA meeting begins at approximately 7:00pm, though we ask that you please check with the City of Burlington website to confirm time and location.

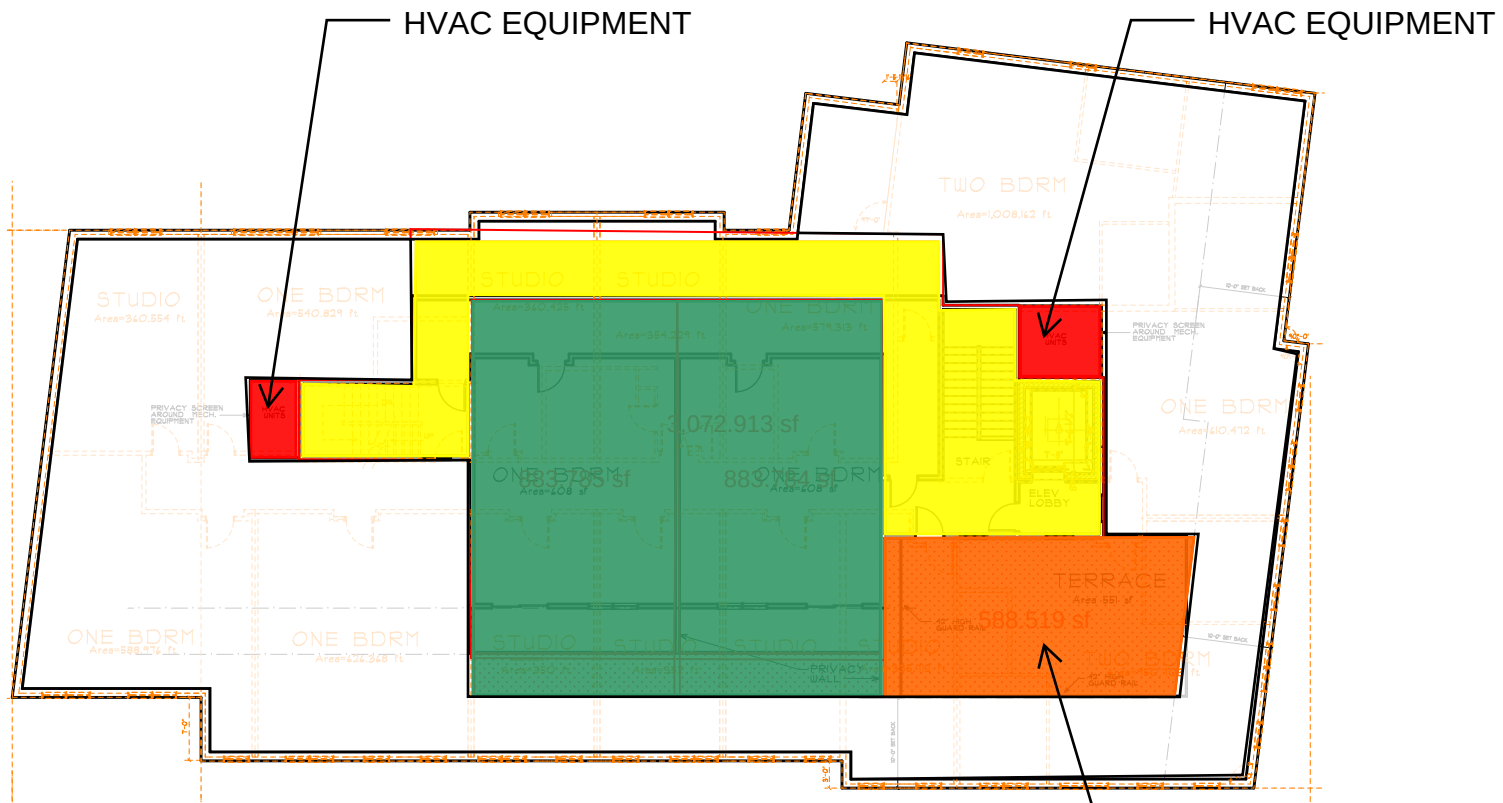
The proposed project is an approximately 25,000 square foot residential building. The property is the current location of the Pine Street Deli.

The conceptual design for the new building consists of three stories of apartments over two ground-level neighborhood-scaled commercial spaces. The three stories of apartments will partially overhang a surface parking lot containing roughly 30 spaces.

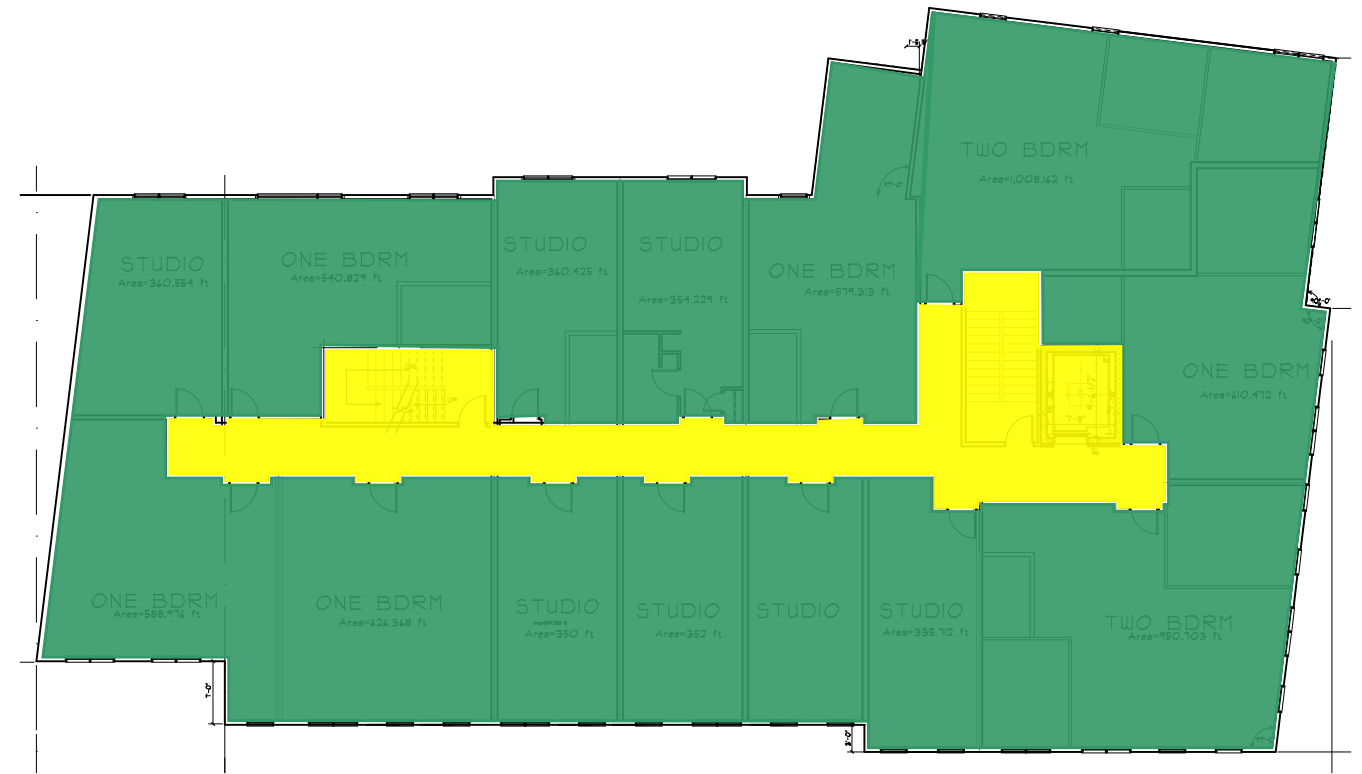
We look forward to hearing any questions or comments you may have.

Sincerely,

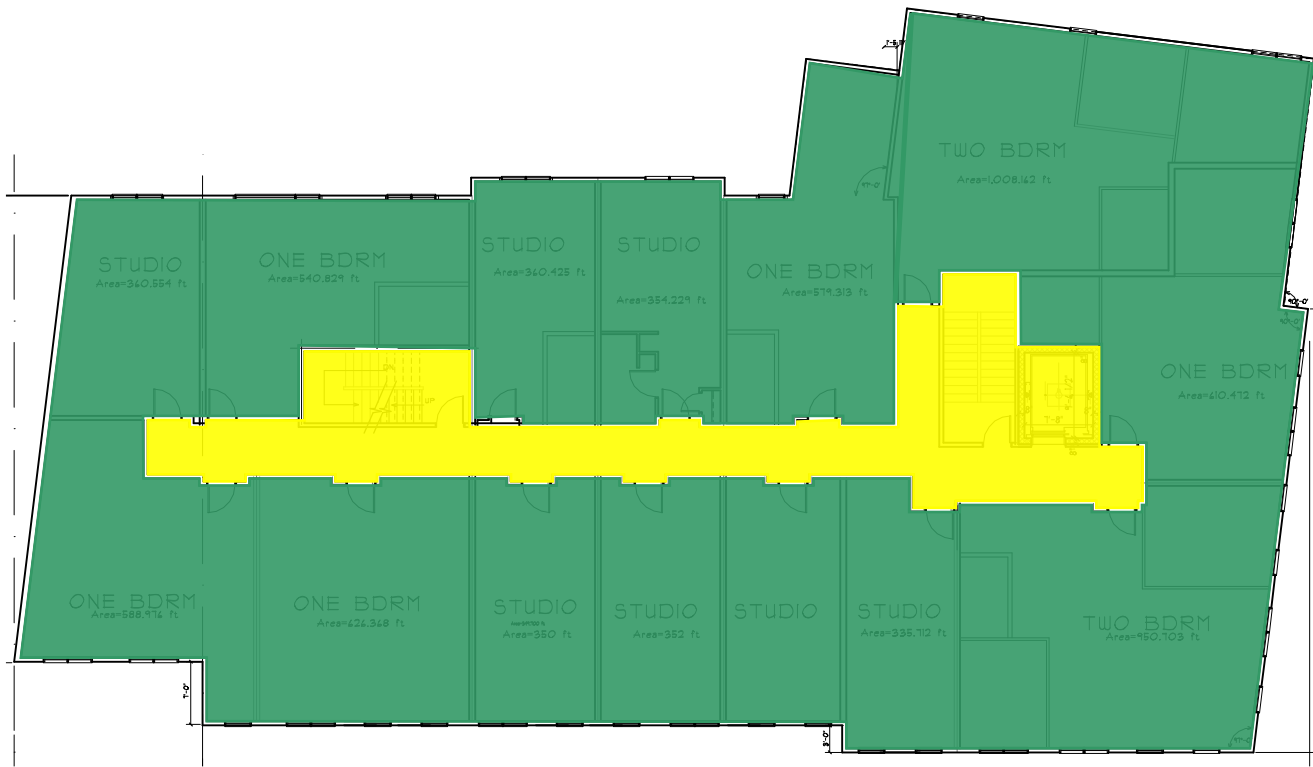
Redstone Development Group



ROOF - RESIDENTIAL- 2,500SF



SECOND FLOOR - RESIDENTIAL- 9,300SF



THIRD FLOOR - RESIDENTIAL- 9,300SF

316 FLYNN AVENUE - USES PLANS

- CIRCULATION
- MECHANICAL
- TENANT AMENITY
- COMMERCIAL
- RESIDENTIAL



GROUND FLOOR - COMMERCIAL- 3,000SF



Stantec

55 Green Mountain Drive
South Burlington, VT 05403

June 28, 2016
File: 195311267

Attention: Mr. Dan Goltzman

Redstone
210 College Street, Ste. 201
Burlington, VT 05401

Dear Dan,

Reference: Pine Street Deli Site, Burlington, VT

Per your request we have conducted an investigation of potential traffic and parking impacts associated with the above referenced project. Based on this investigation we conclude that the project will have only nominal impacts on the area roadway system. Furthermore, the roadway system operates at a high level of service under existing conditions and has adequate capacity to also accommodate the project related traffic increases at the same high level of service. Additionally we find that the proposed on-site parking supply is adequate to serve estimated peak demands. More specifically we find that:

- The project will generate only ten to twelve peak hour vehicle trips;
- The project will add only one or two new peak hour vehicle trips through the Pine Street and Flynn Avenue intersection; and,
- The project will generate a peak parking demand of 30 vehicles compared to a proposed parking supply of 34 spaces.

PROJECT DESCRIPTION

The proposed project is a mixed-used development to be located on the site of the existing Pine Street Deli and bottle redemption center at the intersection of Pine Street and Flynn Avenue in Burlington, Vermont. The current use consists of an approximately 2,800 square feet deli/convenience store, an approximate 1,000 square bottle redemption center and a three-unit apartment building. These uses are supported by 16 marked and approximately ten informal (unmarked) parking spaces on the site. Vehicular access is available by way of curb cuts on both Pine Street and Flynn Avenue. The proposed project includes demolition of the existing buildings on the site. In their place, a multi-story building will be constructed housing 30 residential apartment units on the upper floors and 3,000 square feet of commercial space at street level. Approximately 34 shared parking spaces will be provided. The two existing vehicular access points will be reconstructed and maintained. The conceptual site plan is shown in Figure 1.



June 28, 2016
Mr. Dan Goltzman

Reference: Pine Street Deli Site, Burlington, VT

EXISTING CONDITIONS

The project study is principally limited to the Pine Street and Flynn Avenue intersection. Existing conditions in the study area are described below.

Site and Roadways

The project site is located adjacent to the signalized Pine Street and Flynn Avenue intersection. Two-way, two-lane site driveways are provided on both streets. The Pine Street driveway is located approximately 200 feet north of the centerline of Flynn Avenue and the Flynn Avenue driveway is located approximately 80 east of the centerline of Pine Street. The site locus is shown in Figure 2.

The Pine Street and Flynn Avenue intersection operates with single lane approaches northbound and eastbound. The southbound approach provides a shared through/right-turn lane and a dedicated left-turn lane. The southbound left-turn movement operates with an advance signal phase. Green and yellow left-turn arrows are provided on this approach. The westbound approach is striped as a single lane; however, traffic informally stacks in two-lanes on occasion with the right lane dedicated to right-turn movements. No “right-turn-on-red” is allowed from Flynn Avenue westbound when pedestrians are crossing Pine Street. Special signage is provided to control this movement. Sidewalks are provided on both sides of both streets. Pedestrian signals with “push button” actuation are also provided crossing each leg of the intersection.

Pine Street and Flynn Avenue serve commuter traffic headed into and out of Burlington. Inbound traffic will turn left from Shelburne Street (US Route 7) northbound at a signalized intersection located approximately one-quarter mile east of Pine Street and then turn right on Pine Street to continue northbound. Flynn Avenue is wide enough to provide one travel lane in each direction and on-street parking on this segment. West of Pine Street Flynn Avenue terminates at Oakledge Park and Lake Champlain. This section also includes on-street parking however the roadway is not as wide here. Pine Street at the intersection draws northbound commuter traffic from both Flynn Avenue and Pine Street south of the intersection. In the site vicinity no parking is allowed on Pine Street. North of the site and south of the intersection a single lane is provided in each direction. There is a bus stop and shelter located on the east side of Pine Street just north of the Pine Street site driveway. North of the bus stop is the Champlain Elementary School.

Public Transportation

The Chittenden County Transit Authority (CCTA) operates several bus routes along Pine Street adjacent to the project site. Route 3, Pine Street, provides frequent local service. Three commuter routes originating outside the City, including the LINK Express service between Burlington and Montpelier, also operate along Pine Street however, with many fewer trips. Commuter route operations are generally limited to commuter hours. As noted there is a sheltered bus stop at the north end of the project site on the east side of Pine Street. Other stops are located along Pine Street and Flynn Avenue.

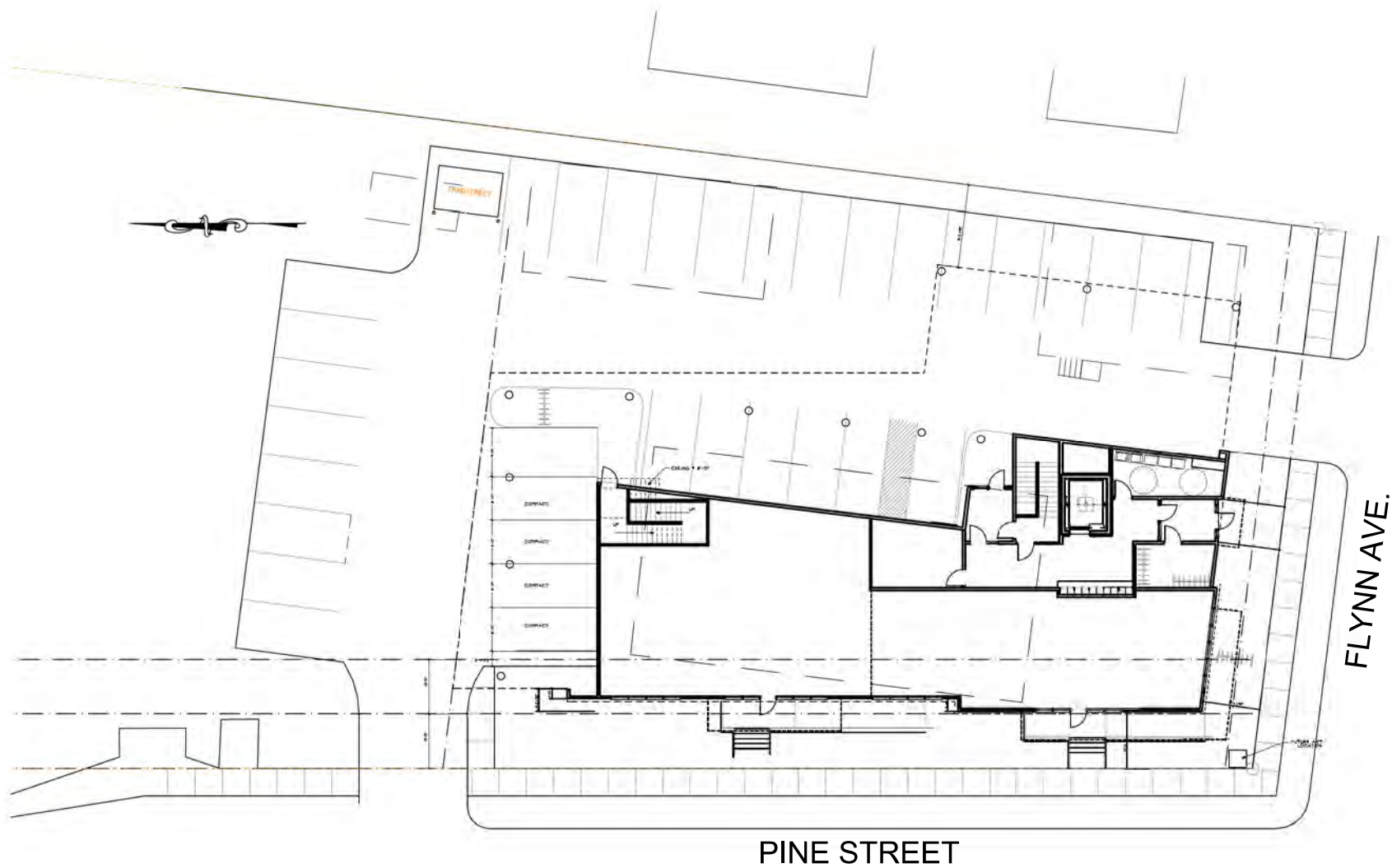


FIGURE 1
CONCEPTUAL SITE PLAN



June 28, 2016
Mr. Dan Goltzman

Reference: Pine Street Deli Site, Burlington, VT

Traffic Volumes

Traffic volume data are collected periodically by the Vermont Agency of Transportation (VTrans) and by the Chittenden County Regional Planning Commission (CCRPC) at major intersections in the region. Vehicle classification counts taken before 2014 were compiled and reviewed most recently for *Plan BTV-South End*. The Transportation section of the *Plan BTV-South End* February 9, 2015 report was used to identify 2014 Design Hour Volumes for the Pine Street and Flynn Avenue intersection. Design Hour Volumes are calculated to represent the 30th highest volume hour of the year and therefore represent a conservative design condition. The Plan BTV volumes are attached to this report. The volumes define existing commuter patterns with the heaviest flows during the morning peak hour headed northbound on Pine Street and during the evening peak hour headed southbound on Pine Street.

Stantec conducted peak period traffic counts at or adjacent to the project site in early June 2016 prior to the end of the school year at the Champlain School. Volumes were collected for a variety of purposes. Weekday counts were done from 7 to 9 AM and from 4 to 6 PM to determine: existing traffic generation at the project site; existing through traffic volumes on three legs of the Pine Street and Flynn Avenue intersection; and existing trip generation and trip distribution for two existing residential projects in the site vicinity. The collected data are attached. The collected data are described below.

Vehicle turning movement counts were taken at both of the site driveways and at the driveways to the Flynn Housing Co-op located on Flynn Avenue a few hundred feet west of Pine Street and at the Champlain School Apartments located just north and west of the deli site. In addition to counting vehicles turning at each driveway, traffic volumes were also counted on the adjacent streets. A comparison of peak hour volumes on three legs of the intersection measured in June 2016 to the reported 2014 Design Hour Volumes in *Plan BTV, South End* showed that the 2016 volumes were six percent higher during the AM peak hour and 15 percent higher during the PM peak hour or ten percent higher on average. As such, the Pine Street and Flynn Avenue intersection volumes reported in *Plan BTV, South End* were increased by ten percent and then combined with the volumes measured at the site driveways in 2016 to develop the Existing 2016 traffic networks. These networks are shown in Figures 3 and 4. As shown, the site generates 77 vehicle trips during the AM peak traffic hour and 61 vehicle trips during the PM peak traffic hour. Traffic is fairly evenly split between the two driveways. The balance of incoming and outgoing trips also is consistent with the short-duration visits associated with the existing deli.

Parking

Parking demands at the subject site are assumed to peak at midday when the deli workers are busy serving lunchtime customers. Measurements were made of the on-site parking demands in early June 2016 from 11:30 AM to 12:30 PM on a typical weekday. Similar observations were made at the above referenced residential developments. The collected data are attached. The observations indicate a peak parking demand at the deli of 15 vehicles occurring at 12:30 PM. This demand includes three vehicles associated with the non-deli uses on the site. As such, the existing peak parking demand for the deli is estimated at 12 vehicles or approximately 4.3 spaces per 1000

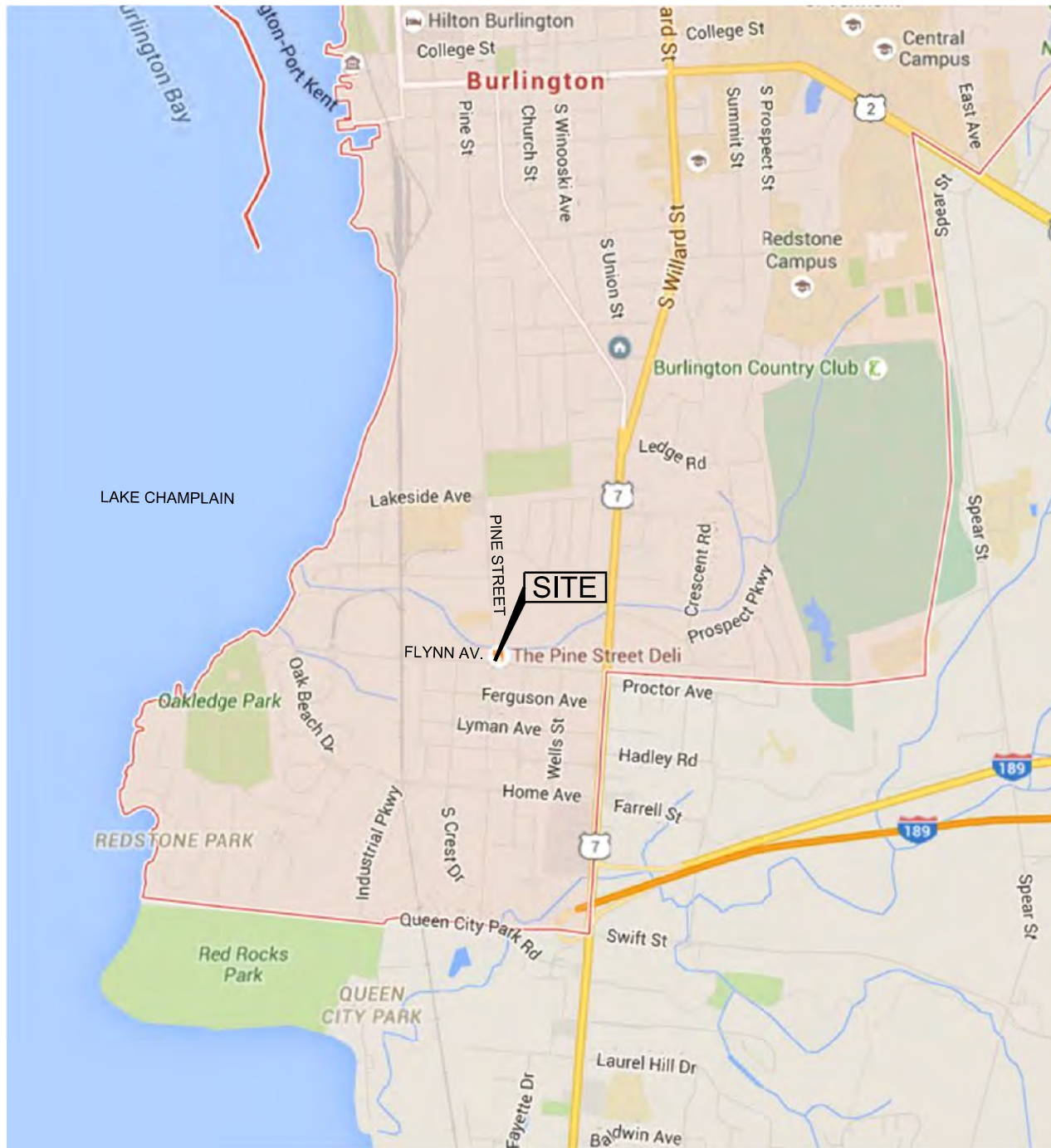


FIGURE 2
SITE LOCATION MAP



PINE STREET DELI SITE
BURLINGTON, VT
JUNE 2016

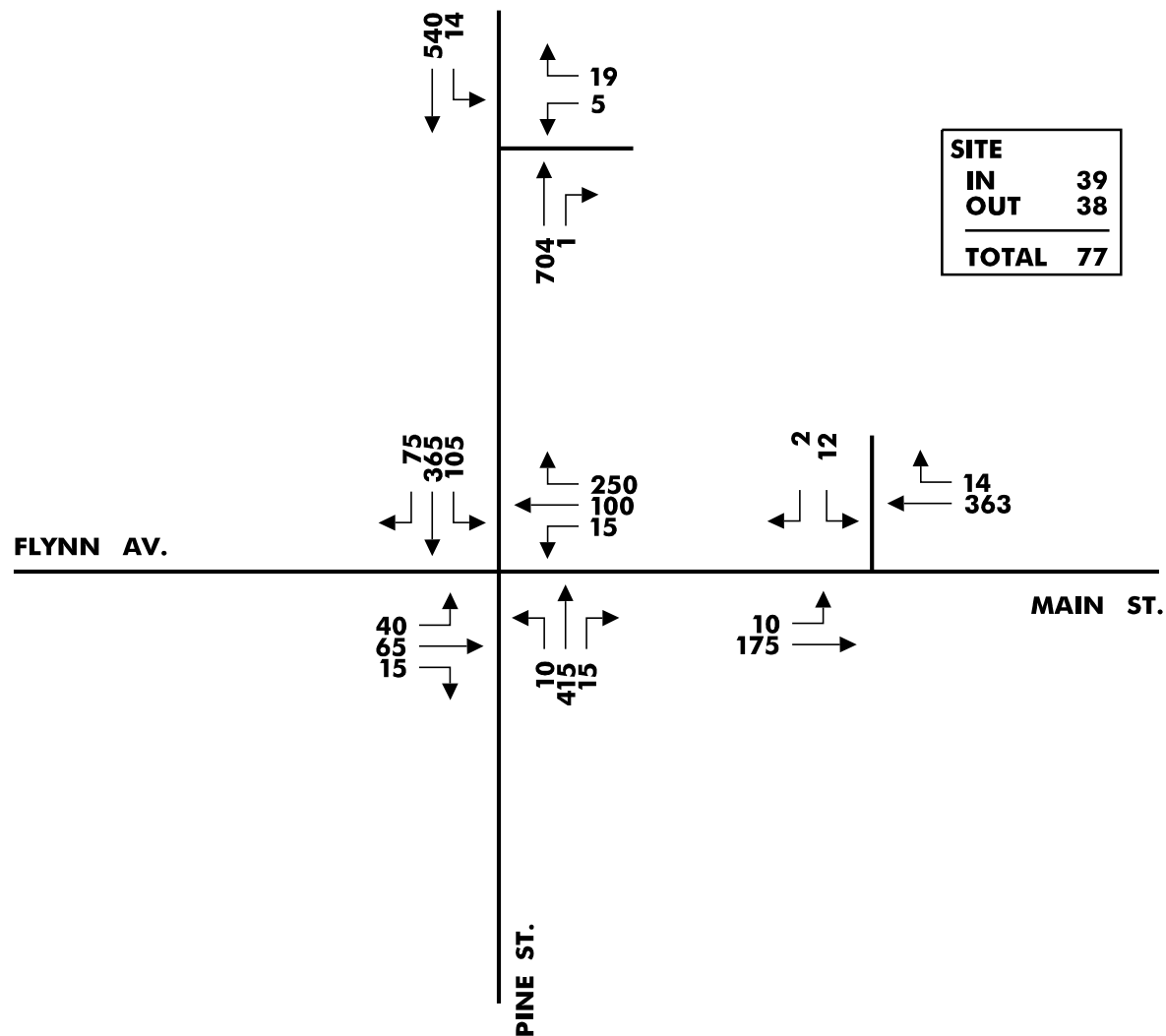


FIGURE 3
2016 EXISTING AM PEAK HOUR TRAFFIC VOLUMES

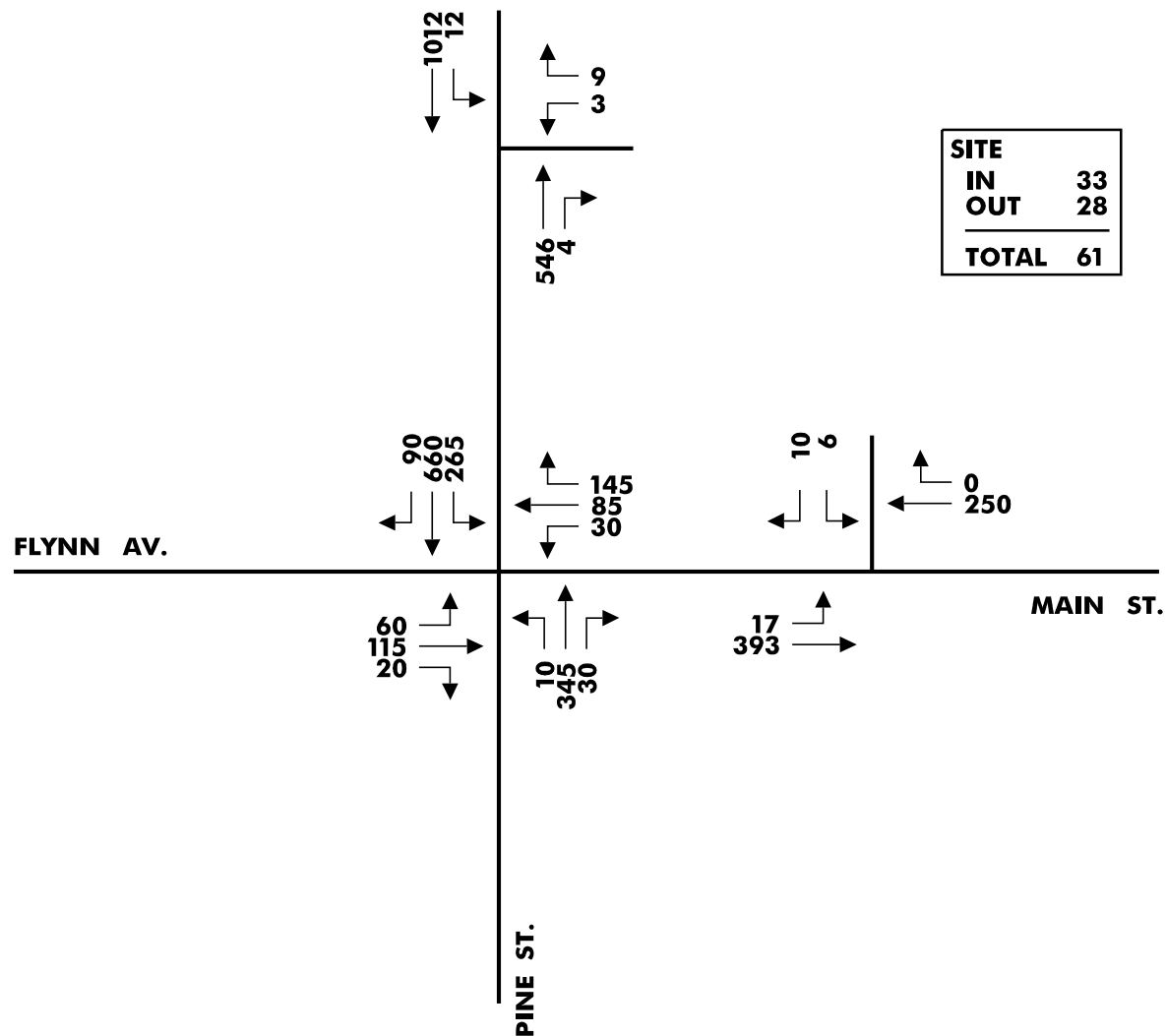


FIGURE 4
2016 EXISTING PM PEAK HOUR TRAFFIC VOLUMES



June 28, 2016
Mr. Dan Goltzman

Reference: Pine Street Deli Site, Burlington, VT

square feet of floor area for the 2800 square-foot deli. Parking demand for the two residential apartment buildings is discussed in a later section of this report.

Operations

Existing intersection peak hour operating levels of service were calculated for the Pine Street and Flynn Avenue Street intersection following procedures described in the latest edition of the *Highway Capacity Manual*. Operating level of service (LOS) is a term used to describe the quality of traffic flow on a roadway. It is an aggregate measure of travel delay, travel speed, congestion, driver discomfort, convenience, and safety based on a comparison of roadway capacity to travel demand. Operating levels of service are reported on a scale of A to F with LOS A representing the best operating conditions (little or no delay to motorists) and LOS F representing the worst operating conditions (long delays and with traffic demands sometimes exceeding roadway capacity.) As noted in Table 1, the study intersection presently operates at LOS B during the AM and PM peak hours. Operating conditions reported in *Plan BTV, South End* are also shown in Table 1. As expected, the higher traffic volumes used in the 2016 analysis indicate slightly longer vehicle delays than reported for 2014 conditions.

	Existing 2016			2014 Design Hour		
	Stantec			Plan BTV, South End		
Peak Hour	LOS ¹	Delay ²	V/C ³	LOS	Delay	V/C
AM	B	18	0.76	B	12	0.60
PM	B	20	0.89	B	12	0.70

¹LOS= Level of Service

²Delay = Average delay expressed in seconds per vehicle

³V/C = Volume-to-capacity ratio for critical movements

Table 1 Existing Pine Street/Flynn Avenue Intersection Operations

FUTURE CONDITIONS

Traffic volume conditions on the area roadway system were developed for a future Build scenario. The "Build" scenario assumes that traffic generated by the proposed development is combined with the Existing 2016 traffic volumes. Future traffic conditions at the Pine Street and Flynn Avenue intersection were analyzed and compared to 2016 Conditions to quantify the impact of project traffic on operations.

Site Traffic

Traffic forecasts for the proposed development project were developed considering the proposed change in land use conditions at the site. As noted above, the project will include 30 residential apartment units and 3000 square feet of commercial space. All existing uses on the site will be removed.



June 28, 2016
Mr. Dan Goltzman

Reference: Pine Street Deli Site, Burlington, VT

In order to estimate project related traffic increases on the roadway system it was assumed that all existing site traffic will remain and only traffic associated with the proposed residential use would be treated as new traffic. This is considered a conservative analysis given the uncertainty regarding the future use of the commercial space. The commercial space could be used as office and/or retail, uses that generate substantially less traffic per square foot floor space than the existing deli. A “worst case” scenario would assume that another food service business replaces the existing deli and generates the same vehicular traffic that is now generated by the deli, bottle redemption service and three apartments located on the site.

The second part of the traffic forecasting requires estimating the number of vehicle trips associated with the proposed 30 apartment units. Typically, trip generation rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation* could be applied. ITE trip rates for Land Use Code 220-Apartment indicate that apartments generate 0.51 AM peak hour vehicle trips per dwelling unit and 0.62 PM peak hour vehicle trips per dwelling unit. These trip rates however, are based on data generally collected at suburban sites where pedestrian, bike and transit trips are nominal. Downward adjustments to the ITE rates are appropriate where alternative travel modes may represent a significant portion of all site trips. Given the proximity of the project site to downtown Burlington and its convenient access to transit, local data were collected to determine an appropriate trip generation rate for this site.

As noted above, peak period traffic counts were conducted at the 28-unit Flynn Housing Co-op on Flynn Avenue and at the 76-unit Champlain School Apartments. The proposed residential use would be expected to exhibit vehicle trip generation characteristics similar to these residential properties given their proximity to the project site. Counts done at these two sites indicate that they generate vehicle trips at rates that amount to only 62 to 75 percent of the applicable ITE rates as shown in Table 2.

Site	Dwelling Units	Peak Hour	Vehicle Trips	Trip Rate ¹	ITE Rate ²	Local Rate as % of ITE Rate
Champlain School	76	AM	24	0.32	0.51	62%
		PM	29	0.38	0.62	62%
Flynn Ave. Co-op	28	AM	9	0.32	0.51	63%
		PM	13	0.46	0.62	75%

¹Vehicle trips per dwelling unit.

²Source: ITE, *Trip Generation*, 9th Edition, Land Use Code 220 – Apartment.

Local trip rates based on driveway counts conducted by Stantec June 2016.

Table 2 Locally Observed Trip Generation Rates

In consideration of the locally observed data, trip estimates developed for the proposed residential use using ITE trip rates were reduced to 65 percent of their calculated value for this study. The estimated vehicle trip generation is shown in Table 3. The proposed new residential use at the site is only expected to generate ten new AM peak hour vehicle trips and 12 new PM peak hour vehicle trips.



June 28, 2016
Mr. Dan Goltzman

Reference: Pine Street Deli Site, Burlington, VT

Peak	Direction	Trip Rate ¹	Unadjusted Trips	Adjusted Trips
AM	IN	0.10	3	2
	OUT	0.41	12	8
	TOTAL	0.51	15	10
PM	IN	0.40	12	8
	OUT	0.22	7	4
	TOTAL	0.62	19	12
Daily	IN	3.33	100	65
	OUT	3.33	100	65
	TOTAL	6.65	200	130

¹Source: ITE, *Trip Generation*, 9th Edition, Land Use Code 220 – Apartment. Vehicle trips per dwelling unit. Adjusted Trips reflect 65 percent of the unadjusted trips.

Table 3 Estimated New Site Traffic (Residential Trips)

Trip Assignments

Anticipated new site generated vehicle trips were assigned to the site driveways and area roadway network. It was assumed that approximately half of the trips would be oriented to north of the site and approximately half of the trips would be oriented to the south and Flynn Avenue. This distribution is based on the observed traffic patterns at the Champlain School Apartments driveway. The resulting traffic assignments for the AM and PM peak hours are shown in Figure 5. As shown, the two site driveways provided allow traffic to disperse with nominal impacts on the Pine Street and Flynn Avenue intersection. Only one or two peak hour vehicles are added to the intersection resulting in traffic increases that are well below one percent of the existing volume through the intersection. Traffic increases of only 0.2 percent during the AM peak hour and 0.1 percent during the PM peak hour are expected.

Future Traffic Networks

The combined project traffic and existing traffic volumes represent the Build condition traffic volumes. The Build volumes are shown in Figures 6 and 7, respectively.

Future Traffic Operations

The traffic operations analyses completed above for existing traffic conditions were repeated for Build conditions for the Pine Street and Flynn Avenue intersection. The results are presented in Table 4. As shown, the subject intersection will experience no measurable decline in operations due to the proposed development. The calculated level of services under Build conditions remain the same as reported for Existing conditions. Capacity analysis worksheets for all analysis conditions are attached.

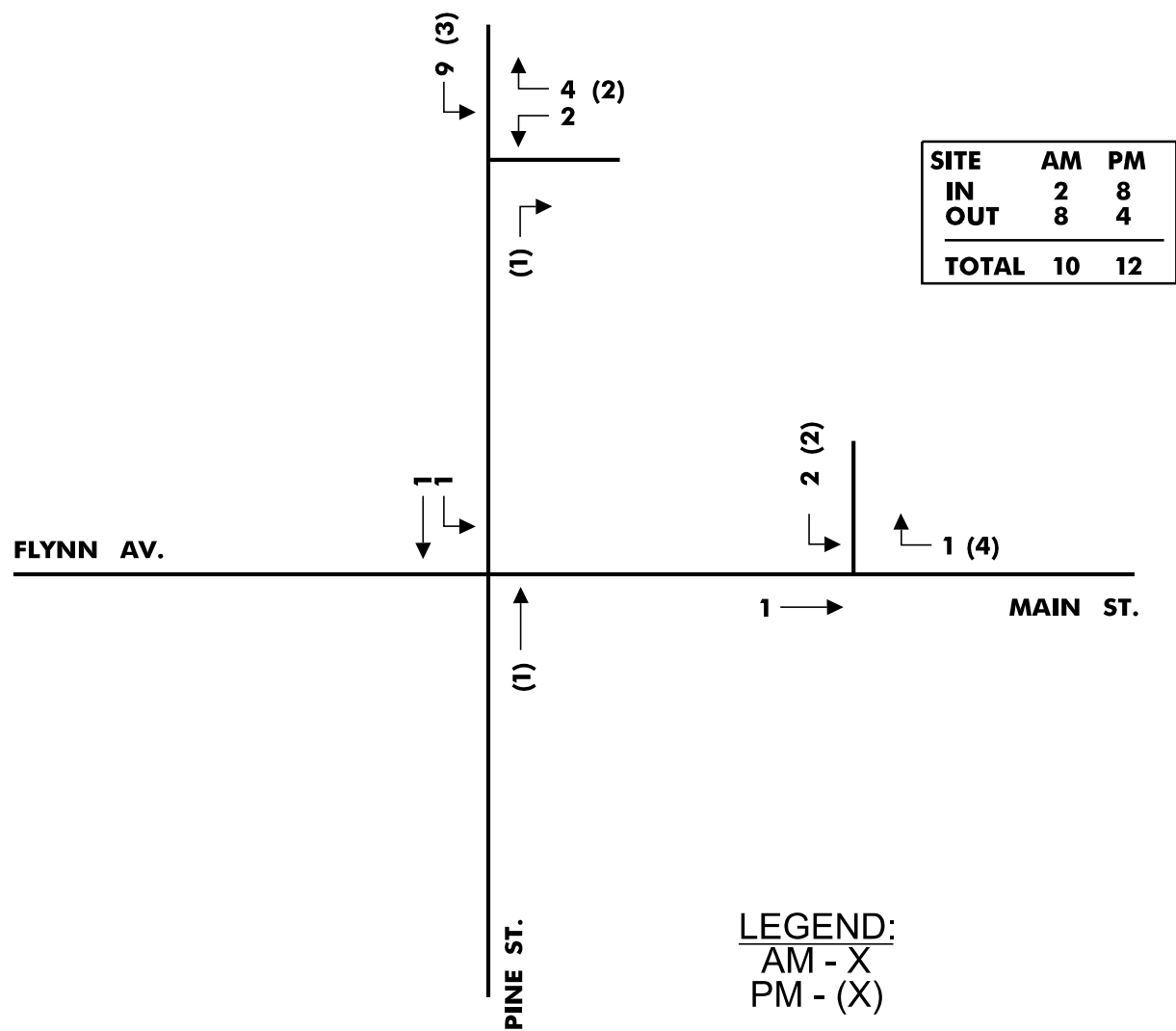
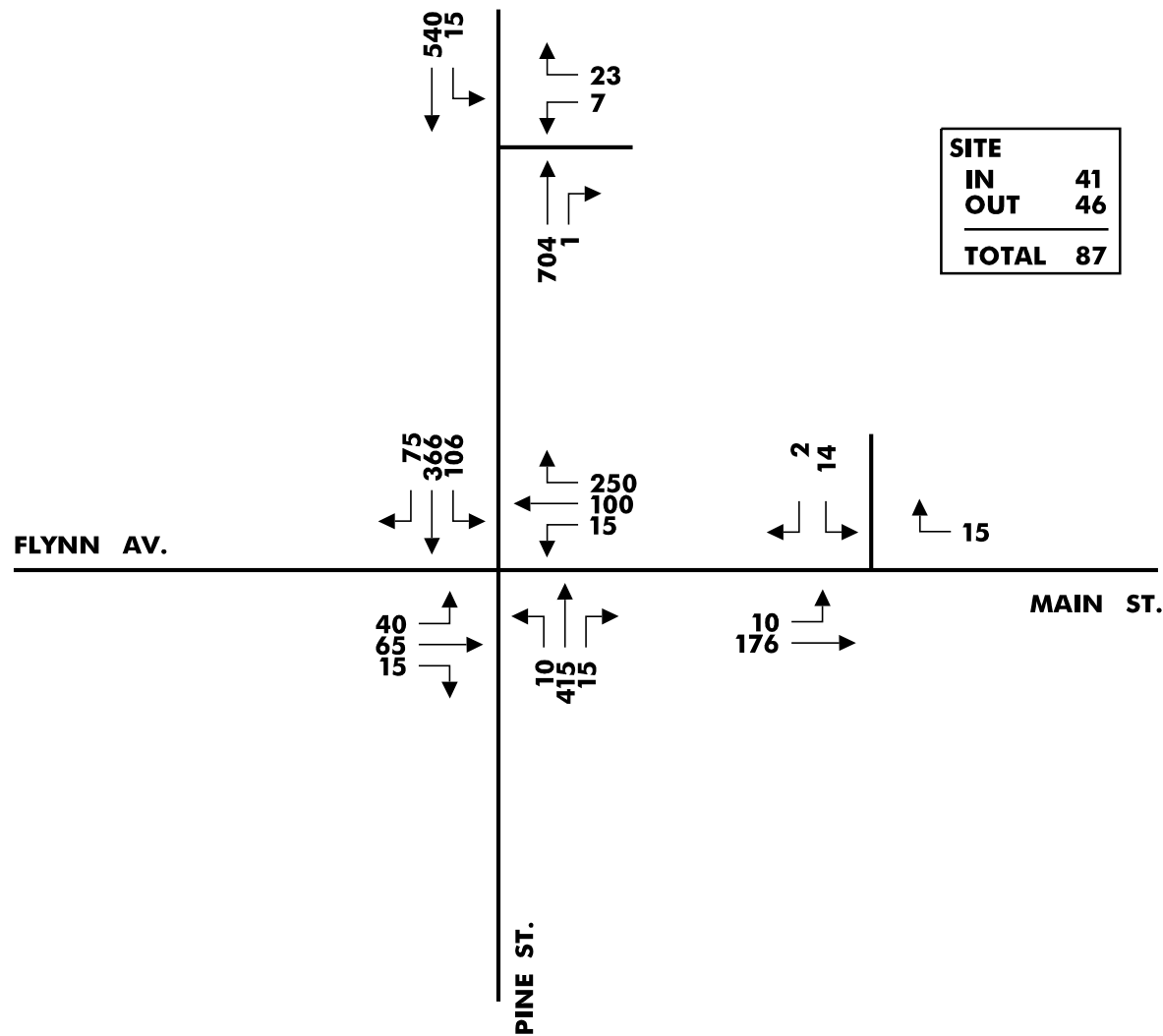


FIGURE 5
NEW SITE GENERATED TRAFFIC VOLUMES



SITE	
IN	41
OUT	46
TOTAL	87

FIGURE 6
2016 AM PEAK HOUR BUILD TRAFFIC VOLUMES



PINE STREET DELI SITE
BURLINGTON, VT
JUNE 2016

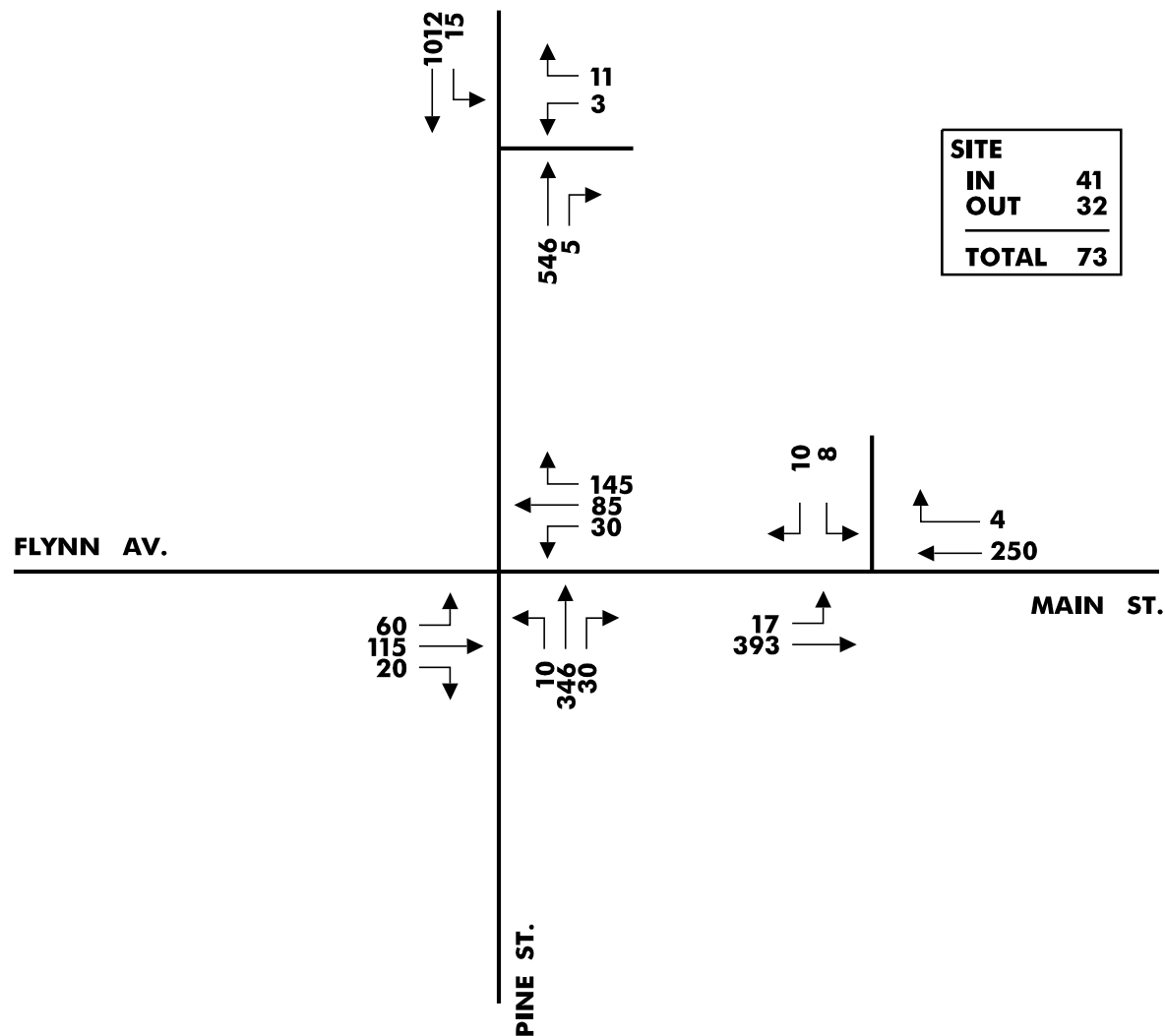


FIGURE 7
2016 PM PEAK HOUR BUILD TRAFFIC VOLUMES



June 28, 2016
Mr. Dan Goltzman

Reference: Pine Street Deli Site, Burlington, VT

Peak Hour	Existing 2016			2016 Build		
	LOS ¹	Delay ²	V/C ³	LOS	Delay	V/C
AM	B	18	0.76	B	18	0.76
PM	B	20	0.89	B	20	0.89

¹ LOS= Level of Service

² Delay = Average delay expressed in seconds per vehicle

³ V/C = Volume-to-capacity ratio for critical movements

Table 4 Future Pine Street/Flynn Avenue Intersection Operations

Future Parking Conditions

The parking analysis for this project was conducted consistent with the traffic analysis. It was generally assumed that the future commercial use would generate parking demands similar to those of the existing deli use at the site. As such, the future parking demand represents the combined parking demand of the deli and the proposed residential use.

The parking analysis considered midday peak parking demands as food service demands will peak at lunch time. Residential parking demands typically peak at midnight or later. The critical analysis period is therefore midday when the proposed 34 on-site parking spaces must serve the midday food service demand while simultaneously accommodating residents' vehicles which may be left at the site during the day.

As noted above, the midday parking demand for the existing deli is approximately 12 vehicles. Parking demand for the proposed residential use was again determined by examining conditions at nearby, comparable residential developments. Measurements taken in June 2016 indicate that the 28-unit Flynn Housing Coop development uses a peak of 14 spaces at midday or 0.50 spaces per dwelling unit. The 76-unit Champlain School Apartments uses 41 spaces at midday or 0.54 spaces per dwelling unit. Applying the higher ratio (0.54) to the proposed project indicates that the residential component of the project will require 16 parking spaces at midday. The expected combined midday parking demand at the project site is there 30 vehicles. The proposed on-site parking supply will include 34 spaces.

RECOMMENDATIONS

As noted above, the proposed development will not have a significant impact on traffic operations at the Pine Street and Flynn Avenue intersection. Proposed construction at the site will alter the existing site driveways and move the Flynn Avenue driveway slightly closer to the existing CCTA bus stop. Future parking demands at the site should be met with a reserve capacity of four spaces at midday based on the assumption that future commercial tenants at the project generate no more midday parking demand than the existing deli. In light of the above findings it is recommended that:



June 28, 2016
Mr. Dan Goltzman

Reference: Pine Street Deli Site, Burlington, VT

- The applicant work closely with the CCTA in the development of final design plans to ensure that adequate and appropriate access is provided for the existing bus stop;
- The applicant reassess expected site parking demands when tenants for the proposed commercial space are identified; and,
- The applicant will monitor and manage future on-site parking to ensure that all users' needs are being adequately met.

CONCLUSION

The proposed development will not have a significant impact on area traffic operations. It will add negligible volume to Pine Street and Flynn Avenue intersection. The intersection presently operates well below its capacity during commuter peak hours and will continue to do so after the project is built.

Thank you for the opportunity in assisting you with this project. Please do not hesitate to call if you have questions regarding the above.

Regards,

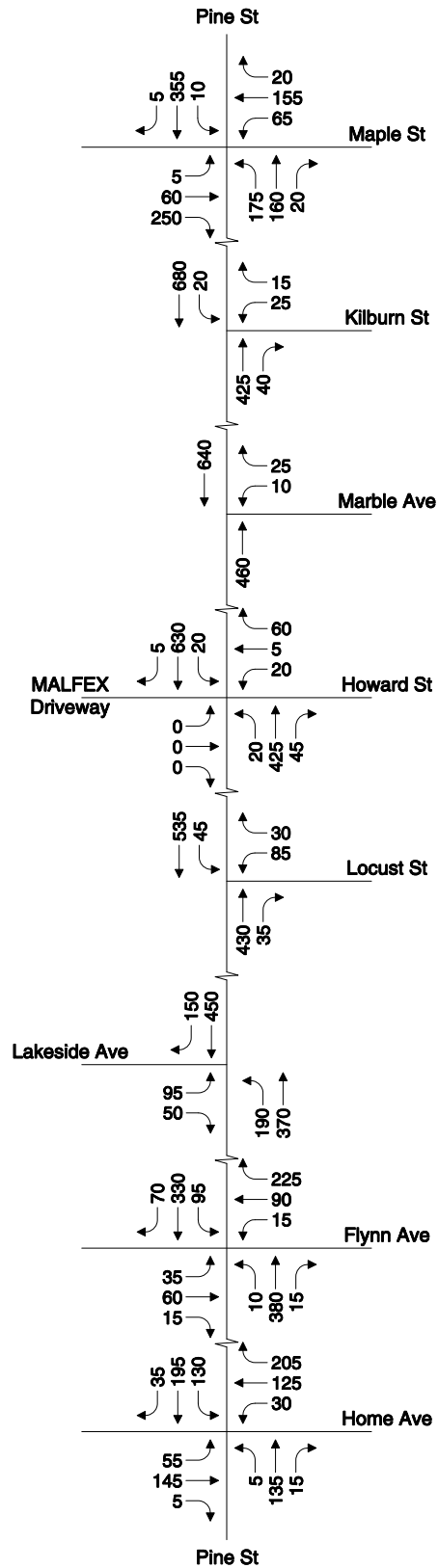
Stantec Consulting Services Inc.

Richard S. Bryant
Associate
Phone: 802 864 0223
Fax: 802 864 0165
Richard.Bryant@stantec.com

Attachments: Plan BTV, South End Traffic Volumes, Stantec June 2016 Traffic and Parking Counts, Capacity Analysis Worksheets

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Plan BTV, South End
Traffic Volumes

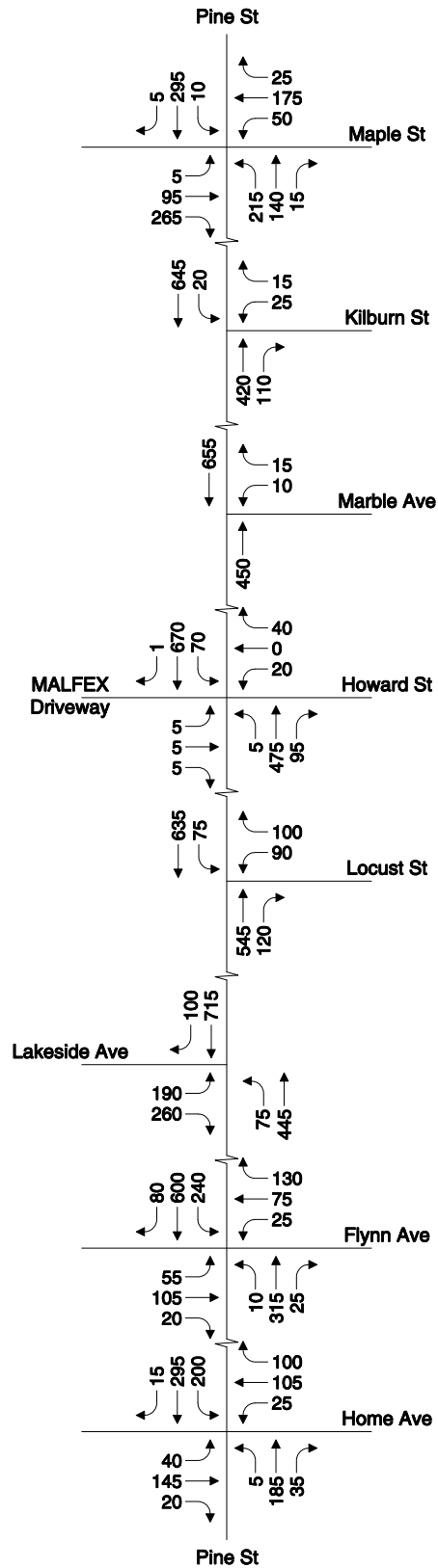


Not to Scale

Vanasse Hangen Brustlin, Inc.

2014 Weekday Morning
Peak Hour Traffic Volumes

Figure 1



Not to Scale

Vanasse Hangen Brustlin, Inc.

2014 Weekday Evening
Peak Hour (DHV) Traffic Volumes

Figure 2

Stantec, June 2016

Traffic and Parking Counts

Pine Street Deli - Traffic Counts AM

Date: 6/7/2016 Done By: CBM/greg

Time Slot	Flynn Ave.				Pine Street				Flynn Ave. @ Stop Bar	
	In		Out		In		Out		Westbound	Eastbound
7:00 - 7:15 AM	3	1	1	1	1	2	1	1	44	30
7:15 - 7:30 AM	6/3	1/φ	5/4	1/φ	2/1	5/3	3/2	4/3	80/44	56/26
7:30 - 7:45 AM	6/φ	3/2	7/2	3/2	7/5	5/φ	3/φ	9/5	140/60	70/20
7:45 - 8:00 AM	8/2	3/φ	10/3	4/1	10/3	7/2	4/1	12/3	205/77	106/30
8:00 - 8:15 AM	12/4	13/10	14/4	5/1	14/4	7/φ	6/2	18/6	331/106	146/40
8:15 - 8:30 AM	13/1	14/1	19/5	5/φ	15/1	8/1	7/1	23/5	394/63	194/48
8:30 - 8:45 AM	16/3	14/φ	20/1	6/1	19/4	8/φ	8/1	26/3	446/52	225/31
8:45 - 9:00 AM	18/2	17/3	22/2	6/φ	24/5	8/φ	9/1	31/5	553/107	267/42
	10	14	12	2	14	1	5	19	328	161

Flynn → N



8-9 PM

Pine Street Dell - Traffic Counts PM

Date: 6/5/2016 Done By: G. B. [Signature]

Time Slot	Flynn Ave.				Pine Street				Flynn Ave. @ Stop Bar	
	In		Out		In		Out		Westbound	Eastbound
									OK/Range	Part 27
4:00 - 4:15 PM	0	1	4	0	1	3	1	3	44	83
4:15 - 4:30 PM	7/7	1/0	5/1	2/2	2/1	4/1	2/1	5/2	94/50	167/84
4:30 - 4:45 PM	8/1	1/0	7/2	3/1	5/3	5/1	2/0	7/2	133/39	262/95
4:45 - 5:00 PM	12/4	1/0	7/0	3/0	6/1	5/0	3/1	12/5	185/52	340/78
5:00 - 5:15 PM	10/6	1/0	10/3	4/1	9/3	5/0	5/2	15/3	233/48	445/105
5:15 - 5:30 PM	22/4	1/0	12/2	6/2	14/5	6/1	6/1	19/4	292/59	531/86
5:30 - 5:45 PM	24/2	1/0	13/1	10/4	16/2	7/1	6/0	20/1	350/58	627/96
5:45 - 6:00 PM	29/5	1/0	13/0	13/3	18/2	9/2	6/0	21/1	461/51	694/67
	17	0	6	10	17	4	3	9	216	354

127

134

134

130

153

145

154

138

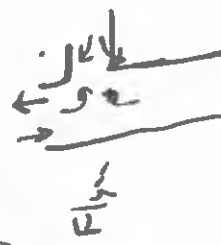
Flynn Ave. Development - Traffic Counts AM (7AM - 9AM)

Date: 6/1/2016 Done By: G. BURGMEIER

Time Slot	Flynn Ave. Development Drive				Flynn Ave Through traffic		
	In	Out			West Bound	East Bound	
							
7:00 - 7:15 AM	$\emptyset$	$\emptyset$	$\emptyset$	$\emptyset$	19	24	43
7:15 - 7:30 AM	1/1	1/1	2/2	2/2	60/41	36/12	53
7:30 - 7:45 AM	$\emptyset/\emptyset$	3/2	3/1	3/1	100/40	51/15	55
7:45 - 8:00 AM	2/1	4/1	3/4	3/4	167/67	85/34	111
8:00 - 8:15 AM	3/1	5/1	4/1	4/1	228/61	121/36	97
8:15 - 8:30 AM	3/4	6/1	4/4	4/4	208/60	141/20	80
8:30 - 8:45 AM	4/1	8/2	4/4	4/4	349/61	159/18	79
8:45 - 9:00 AM	4/4	9/1	4/4	4/4	409/60	188/29	49

#/# TOTAL COUNT
DEDUCTED INTERVAL COUNT

7:45 - 8:45



* NOTE: 30-40% OF WESTBOUND TRAFFIC W/TS FROM LT TURNS OFF OF FOSTER STREET

Flynn Ave. Development - Traffic Counts PM (4 PM - 6 PM)
 Date: 6/1/2016 Done By: G. B. BACCHIERA

Time Slot	Flynn Ave. Development Drive				Flynn Ave Through traffic		
	In	Out	West Bound	East Bound	West Bound	East Bound	
4:00 - 4:15 PM	4	1	0	0	36	32	
4:15 - 4:30 PM	6/2	5/4	0/0	0	70/34	86/54	88
4:30 - 4:45 PM	8/2	6/1	1/1	0	113/43	160/74	117
4:45 - 5:00 PM	11/3	7/1	1/0	0	159/46	216/56	102
5:00 - 5:15 PM	11/0	10/3	1/0	0	210/51	283/67	118
5:15 - 5:30 PM	12/1	11/1	1/0	0	272/62	347/64	126
5:30 - 5:45 PM	13/1	12/1	1/0	0	317/45	404/57	102
5:45 - 6:00 PM	14/1	13/1	1/0	0	375/58	434/30	88

#/## TOTAL COUNT
 #/## DEDUCTED
 INTERVAL
 COUNT

4:30 - 5:30

6 6 1 702 261

NOTE: 30% of EASTBOUND TRAFFIC and
 NOTE: TRAFFIC FLOW OFF POSTAL ST. WAS EASTBOUND

8:00-6 parked
8:03-6 parked
8:05-8 parked
8:06 9 parked
8:08 9 parked

busses: Champlain College
CCTA
MT Transit
730 CCTA School Buses

Pine Street Development - Traffic Counts AM

Date: 10/11/19 Done By: Nora Varhue

Time Slot	Pine Street Development Drive				Pine Street Through traffic	
	Left	Thru	Right	Out	North	Bound
7:00 - 7:15 AM	1	1	1	1	69 C T B P	106 99 2 B P
7:15 - 7:30 AM	2	1	3	3	95 87 5 C T B P	96 87 5 C T B P
7:30 - 7:45 AM	3	2	7	7	112 103 5 C T B P	141 139 1 C T B P
7:45 - 8:00 AM	4	0	2	1	113 99 3 C T B P	196 191 1 C T B P
8:00 - 8:15 AM	1	1	0	1	98 90 5 C T B P	213 207 2 C T B P
8:15 - 8:30 AM	3	0	1	3	90 80 4 C T B P	183 173 6 C T B P
8:30 - 8:45 AM	0	0	5	1	111 97 4 C T B P	162 159 2 C T B P
8:45 - 9:00 AM	3	0	2	3	126 113 3 C T B P	198 192 4 C T B P

7
(17)
8
(5)
8
N
425
756

0-9

Pine Street Development - Traffic Counts PM

Date: 6/7/16 Done By: Nora Varkave

South Hill School

Time Slot	Flynn Ave. Development Drive				Flynn Ave Through traffic			
	In		Out		North	Bound	South	Bound
	LT	RT	LT	RT				
4:00 - 4:15 PM	3	3	2	2	195 P 5 T 2 B 1	198 P 1 T 0 B 3	116 P 0 T 0 B 3	119 P 2 T 0 B 2
4:15 - 4:30 PM	3	1	0	0	208 P 4 T 3 B 1	212 P 0 T 0 B 3	113 P 2 T 0 B 3	116 P 2 T 0 B 3
4:30 - 4:45 PM	3	3	1	2	246 P 6 T 0 B 1	247 P 3 T 1 B 3	84 P 1 T 1 B 3	88 P 0 T 1 B 1
4:45 - 5:00 PM	0	2	1	0	224 P 5 T 0 B 2	231 P 3 T 0 B 3	117 P 2 T 0 B 1	118 P 2 T 0 B 3
5:00 - 5:15 PM	7	4	0	0	274 P 3 T 0 B 1	275 P 3 T 2 B 5	132 P 3 T 2 B 5	139 P 3 T 2 B 5
5:15 - 5:30 PM	1	0	0	4	292 P 1 T 1 B 1	294 P 1 T 1 B 5	112 P 0 T 0 B 1	113 P 0 T 0 B 2
5:30 - 5:45 PM	7	1	1	1	241 P 3 T 1 B 2	244 P 3 T 1 B 2	112 P 1 T 1 B 2	115 P 1 T 1 B 1
5:45 - 6:00 PM	4	2	3	2	200 P 5 T 1 B 2	208 P 5 T 1 B 2	104 P 0 T 0 B 3	109 P 0 T 0 B 3

15 7 2 5 1099 485

20) (11) (11)

Pine Street Deli - Parking Count

Date: 6/7 Done By: Glen

	Time Slot	Number of spaces	Number of Parked Cars
Pine Street Deli	11:30 AM	22 (6) DIRT	411
	12:00 PM		8
	12:30 PM		15
	1:00 PM		12
	1:30 PM		13

Date: 6/7 Done By: Glen

Flynn Ave. Development Lot	11:30 AM	42	14
	12:00 PM		10
	12:30 PM		10
	1:00 PM		11
	1:30 PM		13

Date: 6/7 Done By: Glen

Pine Street Development Lot	11:30 AM	84	33 33
	12:00 PM		38
	12:30 PM		39
	1:00 PM		40
	1:30 PM		41

Intersection Capacity Analysis Worksheets

Queues

3: Pine Street & Flynn Avenue

Existing Conditions
AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø3	ø7
Lane Configurations										
Traffic Volume (vph)	40	65	15	100	10	415	105	365		
Future Volume (vph)	40	65	15	100	10	415	105	365		
Lane Group Flow (vph)	0	120	0	365	0	440	105	440		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4		8		2	1	6	3	7
Permitted Phases	4		8		2		6			
Detector Phase	4	4	8	8	2	2	1	6		
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.0	18.0	18.0	18.0	23.0	23.0	10.0	18.0	6.0	6.0
Total Split (s)	23.0	23.0	23.0	23.0	27.0	27.0	10.0	37.0	6.0	6.0
Total Split (%)	34.8%	34.8%	34.8%	34.8%	40.9%	40.9%	15.2%	56.1%	9%	9%
Maximum Green (s)	17.0	17.0	17.0	17.0	21.0	21.0	4.0	31.0	4.0	4.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0		
Total Lost Time (s)		6.0		6.0		6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead		Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min	None	Min	None	None
Walk Time (s)									2.0	2.0
Flash Dont Walk (s)									2.0	2.0
Pedestrian Calls (#/hr)									5	5
Act Effct Green (s)		13.4		13.4		17.1	24.4	24.4		
Actuated g/C Ratio		0.26		0.26		0.33	0.47	0.47		
v/c Ratio		0.45		0.76		0.73	0.31	0.54		
Control Delay		23.4		23.9		25.9	10.9	12.6		
Queue Delay		0.0		0.0		0.0	0.0	0.0		
Total Delay		23.4		23.9		25.9	10.9	12.6		
LOS		C		C		C	B	B		
Approach Delay		23.4		23.9		25.9		12.2		
Approach LOS		C		C		C		B		
Queue Length 50th (ft)		30		59		126	17	83		
Queue Length 95th (ft)		84		#204		#289	47	191		
Internal Link Dist (ft)		397		21		284		90		
Turn Bay Length (ft)										
Base Capacity (vph)		370		604		810	339	1087		
Starvation Cap Reductn		0		0		0	0	0		
Spillback Cap Reductn		0		0		0	0	0		
Storage Cap Reductn		0		0		0	0	0		
Reduced v/c Ratio		0.32		0.60		0.54	0.31	0.40		
Intersection Summary										
Cycle Length: 66										
Actuated Cycle Length: 51.9										
Natural Cycle: 60										
Control Type: Actuated-Uncoordinated										
Maximum v/c Ratio: 0.76										

Queues

3: Pine Street & Flynn Avenue

Existing Conditions

AM Peak Hour

Intersection Signal Delay: 20.1

Intersection LOS: C

Intersection Capacity Utilization 85.4%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Pine Street & Flynn Avenue

 ø1	 ø2	 ø3	 ø4
10 s	27 s	6 s	23 s
 ø6	 ø7	 ø8	
37 s	6 s	23 s	

HCM Signalized Intersection Capacity Analysis

3: Pine Street & Flynn Avenue

Existing Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	65	15	15	100	250	10	415	15	105	365	75
Future Volume (vph)	40	65	15	15	100	250	10	415	15	105	365	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.97			1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.91			1.00		1.00	0.97	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1413			1417			1850		1667	1703	
Flt Permitted		0.71			0.98			0.99		0.29	1.00	
Satd. Flow (perm)		1013			1397			1824		517	1703	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	65	15	15	100	250	10	415	15	105	365	75
RTOR Reduction (vph)	0	8	0	0	120	0	0	2	0	0	11	0
Lane Group Flow (vph)	0	112	0	0	245	0	0	438	0	105	429	0
Confl. Peds. (#/hr)	10		5	7		12	5		7	12		10
Heavy Vehicles (%)	13%	13%	13%	3%	3%	3%	2%	2%	2%	6%	6%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	5	5	5
Parking (#/hr)	5	5	5	5	5	5						
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		13.4			13.4			17.1		26.0	26.0	
Effective Green, g (s)		13.4			13.4			17.1		26.0	26.0	
Actuated g/C Ratio		0.25			0.25			0.32		0.48	0.48	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		251			346			577		310	819	
v/s Ratio Prot										0.02	c0.25	
v/s Ratio Perm		0.11			c0.18			c0.24		0.14		
v/c Ratio		0.45			0.71			0.76		0.34	0.52	
Uniform Delay, d1		17.2			18.5			16.6		9.7	9.7	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		1.3			6.5			5.7		0.7	0.6	
Delay (s)		18.4			25.0			22.3		10.3	10.3	
Level of Service		B			C			C		B	B	
Approach Delay (s)		18.4			25.0			22.3			10.3	
Approach LOS		B			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			18.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			54.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			85.4%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

3: Pine Street & Flynn Avenue

Build Conditions
AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø3	ø7
Lane Configurations										
Traffic Volume (vph)	40	65	15	100	10	415	106	366		
Future Volume (vph)	40	65	15	100	10	415	106	366		
Lane Group Flow (vph)	0	120	0	365	0	440	106	441		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4		8		2	1	6	3	7
Permitted Phases	4		8		2		6			
Detector Phase	4	4	8	8	2	2	1	6		
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.0	18.0	18.0	18.0	23.0	23.0	10.0	18.0	6.0	6.0
Total Split (s)	23.0	23.0	23.0	23.0	27.0	27.0	10.0	37.0	6.0	6.0
Total Split (%)	34.8%	34.8%	34.8%	34.8%	40.9%	40.9%	15.2%	56.1%	9%	9%
Maximum Green (s)	17.0	17.0	17.0	17.0	21.0	21.0	4.0	31.0	4.0	4.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0		
Total Lost Time (s)		6.0		6.0		6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead		Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min	None	Min	None	None
Walk Time (s)									2.0	2.0
Flash Dont Walk (s)									2.0	2.0
Pedestrian Calls (#/hr)									5	5
Act Effct Green (s)		13.4		13.4		17.1	24.4	24.4		
Actuated g/C Ratio		0.26		0.26		0.33	0.47	0.47		
v/c Ratio		0.45		0.76		0.73	0.31	0.54		
Control Delay		23.4		23.9		25.9	10.9	12.6		
Queue Delay		0.0		0.0		0.0	0.0	0.0		
Total Delay		23.4		23.9		25.9	10.9	12.6		
LOS		C		C		C	B	B		
Approach Delay		23.4		23.9		25.9		12.3		
Approach LOS		C		C		C		B		
Queue Length 50th (ft)		30		59		126	17	83		
Queue Length 95th (ft)		84		#204		#289	48	191		
Internal Link Dist (ft)		397		21		284		90		
Turn Bay Length (ft)										
Base Capacity (vph)		370		604		810	339	1087		
Starvation Cap Reductn		0		0		0	0	0		
Spillback Cap Reductn		0		0		0	0	0		
Storage Cap Reductn		0		0		0	0	0		
Reduced v/c Ratio		0.32		0.60		0.54	0.31	0.41		
Intersection Summary										
Cycle Length: 66										
Actuated Cycle Length: 51.9										
Natural Cycle: 60										
Control Type: Actuated-Uncoordinated										
Maximum v/c Ratio: 0.76										

Queues

3: Pine Street & Flynn Avenue

Build Conditions

AM Peak Hour

Intersection Signal Delay: 20.1

Intersection LOS: C

Intersection Capacity Utilization 85.5%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Pine Street & Flynn Avenue

 ø1	 ø2	 ø3	 ø4
10 s	27 s	6 s	23 s
 ø6	 ø7	 ø8	
37 s	6 s	23 s	

HCM Signalized Intersection Capacity Analysis

3: Pine Street & Flynn Avenue

Build Conditions

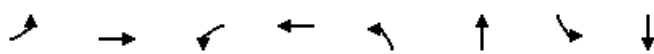
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	65	15	15	100	250	10	415	15	106	366	75
Future Volume (vph)	40	65	15	15	100	250	10	415	15	106	366	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.97			1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.91			1.00		1.00	0.97	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1413			1417			1850		1667	1703	
Flt Permitted		0.71			0.98			0.98		0.29	1.00	
Satd. Flow (perm)		1013			1397			1824		517	1703	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	65	15	15	100	250	10	415	15	106	366	75
RTOR Reduction (vph)	0	8	0	0	120	0	0	2	0	0	11	0
Lane Group Flow (vph)	0	112	0	0	245	0	0	438	0	106	430	0
Confl. Peds. (#/hr)	10		5	7		12	5		7	12		10
Heavy Vehicles (%)	13%	13%	13%	3%	3%	3%	2%	2%	2%	6%	6%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	5	5	5
Parking (#/hr)	5	5	5	5	5	5						
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		13.4			13.4			17.1		26.0	26.0	
Effective Green, g (s)		13.4			13.4			17.1		26.0	26.0	
Actuated g/C Ratio		0.25			0.25			0.32		0.48	0.48	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		251			346			577		310	819	
v/s Ratio Prot										0.02	c0.25	
v/s Ratio Perm		0.11			c0.18			c0.24		0.15		
v/c Ratio		0.45			0.71			0.76		0.34	0.53	
Uniform Delay, d1		17.2			18.5			16.6		9.7	9.7	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		1.3			6.5			5.7		0.7	0.6	
Delay (s)		18.4			25.0			22.3		10.4	10.3	
Level of Service		B			C			C		B	B	
Approach Delay (s)		18.4			25.0			22.3			10.3	
Approach LOS		B			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			18.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			54.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			85.5%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

3: Pine Street & Flynn Avenue

Existing Conditions
PM Peak Hour

									ø3	ø7
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT		
Lane Configurations										
Traffic Volume (vph)	60	115	30	85	10	345	265	660		
Future Volume (vph)	60	115	30	85	10	345	265	660		
Lane Group Flow (vph)	0	195	0	260	0	385	265	750		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4		8		2	1	6	3	7
Permitted Phases	4		8		2		6			
Detector Phase	4	4	8	8	2	2	1	6		
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.0	18.0	18.0	18.0	23.0	23.0	10.0	18.0	6.0	6.0
Total Split (s)	20.0	20.0	20.0	20.0	28.0	28.0	12.0	40.0	6.0	6.0
Total Split (%)	30.3%	30.3%	30.3%	30.3%	42.4%	42.4%	18.2%	60.6%	9%	9%
Maximum Green (s)	14.0	14.0	14.0	14.0	22.0	22.0	6.0	34.0	4.0	4.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0		
Total Lost Time (s)		6.0		6.0		6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead		Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min	None	Min	None	None
Walk Time (s)									2.0	2.0
Flash Dont Walk (s)									2.0	2.0
Pedestrian Calls (#/hr)									5	5
Act Effct Green (s)		12.8		12.8		16.6	28.9	28.9		
Actuated g/C Ratio		0.23		0.23		0.30	0.53	0.53		
v/c Ratio		0.67		0.70		0.71	0.62	0.79		
Control Delay		34.9		27.2		25.2	15.9	19.1		
Queue Delay		0.0		0.0		0.0	0.0	0.0		
Total Delay		34.9		27.2		25.2	15.9	19.1		
LOS		C		C		C	B	B		
Approach Delay		34.9		27.2		25.2		18.2		
Approach LOS		C		C		C		B		
Queue Length 50th (ft)		54		49		107	44	175		
Queue Length 95th (ft)		#169		#175		214	#108	#439		
Internal Link Dist (ft)		397		21		284		90		
Turn Bay Length (ft)										
Base Capacity (vph)		323		403		728	429	1133		
Starvation Cap Reductn		0		0		0	0	0		
Spillback Cap Reductn		0		0		0	0	0		
Storage Cap Reductn		0		0		0	0	0		
Reduced v/c Ratio		0.60		0.65		0.53	0.62	0.66		
Intersection Summary										
Cycle Length: 66										
Actuated Cycle Length: 54.9										
Natural Cycle: 60										
Control Type: Actuated-Uncoordinated										
Maximum v/c Ratio: 0.79										

Queues

3: Pine Street & Flynn Avenue

Existing Conditions

PM Peak Hour

Intersection Signal Delay: 22.7

Intersection LOS: C

Intersection Capacity Utilization 98.3%

ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Pine Street & Flynn Avenue

 $\phi 1$	 $\phi 2$	 $\phi 3$	 $\phi 4$
12 s	28 s	6 s	20 s
 $\phi 6$		 $\phi 7$	 $\phi 8$
40 s		6 s	20 s

HCM Signalized Intersection Capacity Analysis

3: Pine Street & Flynn Avenue

Existing Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	115	20	30	85	145	10	345	30	265	660	90
Future Volume (vph)	60	115	20	30	85	145	10	345	30	265	660	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.96			1.00		1.00	0.99	
Flpb, ped/bikes		0.99			1.00			1.00		1.00	1.00	
Frt		0.99			0.92			0.99		1.00	0.98	
Flt Protected		0.98			0.99			1.00		0.95	1.00	
Satd. Flow (prot)		1559			1370			1817		1729	1783	
Flt Permitted		0.77			0.95			0.97		0.32	1.00	
Satd. Flow (perm)		1217			1304			1768		574	1783	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	115	20	30	85	145	10	345	30	265	660	90
RTOR Reduction (vph)	0	6	0	0	67	0	0	5	0	0	7	0
Lane Group Flow (vph)	0	189	0	0	193	0	0	380	0	265	743	0
Confl. Peds. (#/hr)	26		14	11		23	14		11	23		26
Heavy Vehicles (%)	2%	2%	2%	7%	7%	7%	3%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	5	5	5
Parking (#/hr)	5	5	5	5	5	5						
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.8			12.8			16.8		28.9	28.9	
Effective Green, g (s)		12.8			12.8			16.8		28.9	28.9	
Actuated g/C Ratio		0.23			0.23			0.30		0.51	0.51	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		276			295			526		419	913	
v/s Ratio Prot										0.07	c0.42	
v/s Ratio Perm		c0.16			0.15			0.21		0.26		
v/c Ratio		0.68			0.65			0.72		0.63	0.81	
Uniform Delay, d1		19.9			19.8			17.7		9.9	11.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		6.8			5.1			4.9		3.1	5.6	
Delay (s)		26.8			24.9			22.6		13.0	17.1	
Level of Service		C			C			C		B	B	
Approach Delay (s)		26.8			24.9			22.6			16.0	
Approach LOS		C			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			19.8			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			56.4			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			98.3%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

Queues

3: Pine Street & Flynn Avenue

Build Conditions
PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø3	ø7
Lane Configurations										
Traffic Volume (vph)	60	115	30	85	10	346	265	660		
Future Volume (vph)	60	115	30	85	10	346	265	660		
Lane Group Flow (vph)	0	195	0	260	0	386	265	750		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4		8		2	1	6	3	7
Permitted Phases	4		8		2		6			
Detector Phase	4	4	8	8	2	2	1	6		
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.0	18.0	18.0	18.0	23.0	23.0	10.0	18.0	6.0	6.0
Total Split (s)	20.0	20.0	20.0	20.0	28.0	28.0	12.0	40.0	6.0	6.0
Total Split (%)	30.3%	30.3%	30.3%	30.3%	42.4%	42.4%	18.2%	60.6%	9%	9%
Maximum Green (s)	14.0	14.0	14.0	14.0	22.0	22.0	6.0	34.0	4.0	4.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0		
Total Lost Time (s)		6.0		6.0		6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead		Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min	None	Min	None	None
Walk Time (s)									2.0	2.0
Flash Dont Walk (s)									2.0	2.0
Pedestrian Calls (#/hr)									5	5
Act Effct Green (s)		12.8		12.8		16.6	28.9	28.9		
Actuated g/C Ratio		0.23		0.23		0.30	0.53	0.53		
v/c Ratio		0.67		0.70		0.71	0.62	0.79		
Control Delay		34.9		27.2		25.3	15.9	19.1		
Queue Delay		0.0		0.0		0.0	0.0	0.0		
Total Delay		34.9		27.2		25.3	15.9	19.1		
LOS		C		C		C	B	B		
Approach Delay		34.9		27.2		25.3		18.2		
Approach LOS		C		C		C		B		
Queue Length 50th (ft)		54		49		107	44	175		
Queue Length 95th (ft)		#169		#175		215	#108	#439		
Internal Link Dist (ft)		397		21		284		90		
Turn Bay Length (ft)										
Base Capacity (vph)		323		403		728	429	1133		
Starvation Cap Reductn		0		0		0	0	0		
Spillback Cap Reductn		0		0		0	0	0		
Storage Cap Reductn		0		0		0	0	0		
Reduced v/c Ratio		0.60		0.65		0.53	0.62	0.66		
Intersection Summary										
Cycle Length: 66										
Actuated Cycle Length: 54.9										
Natural Cycle: 60										
Control Type: Actuated-Uncoordinated										
Maximum v/c Ratio: 0.79										

Queues

3: Pine Street & Flynn Avenue

Build Conditions

PM Peak Hour

Intersection Signal Delay: 22.7

Intersection LOS: C

Intersection Capacity Utilization 98.3%

ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Pine Street & Flynn Avenue

 $\phi 1$	 $\phi 2$	 $\phi 3$	 $\phi 4$
12 s	28 s	6 s	20 s
 $\phi 6$	 $\phi 7$	 $\phi 8$	
40 s	6 s	20 s	

HCM Signalized Intersection Capacity Analysis

3: Pine Street & Flynn Avenue

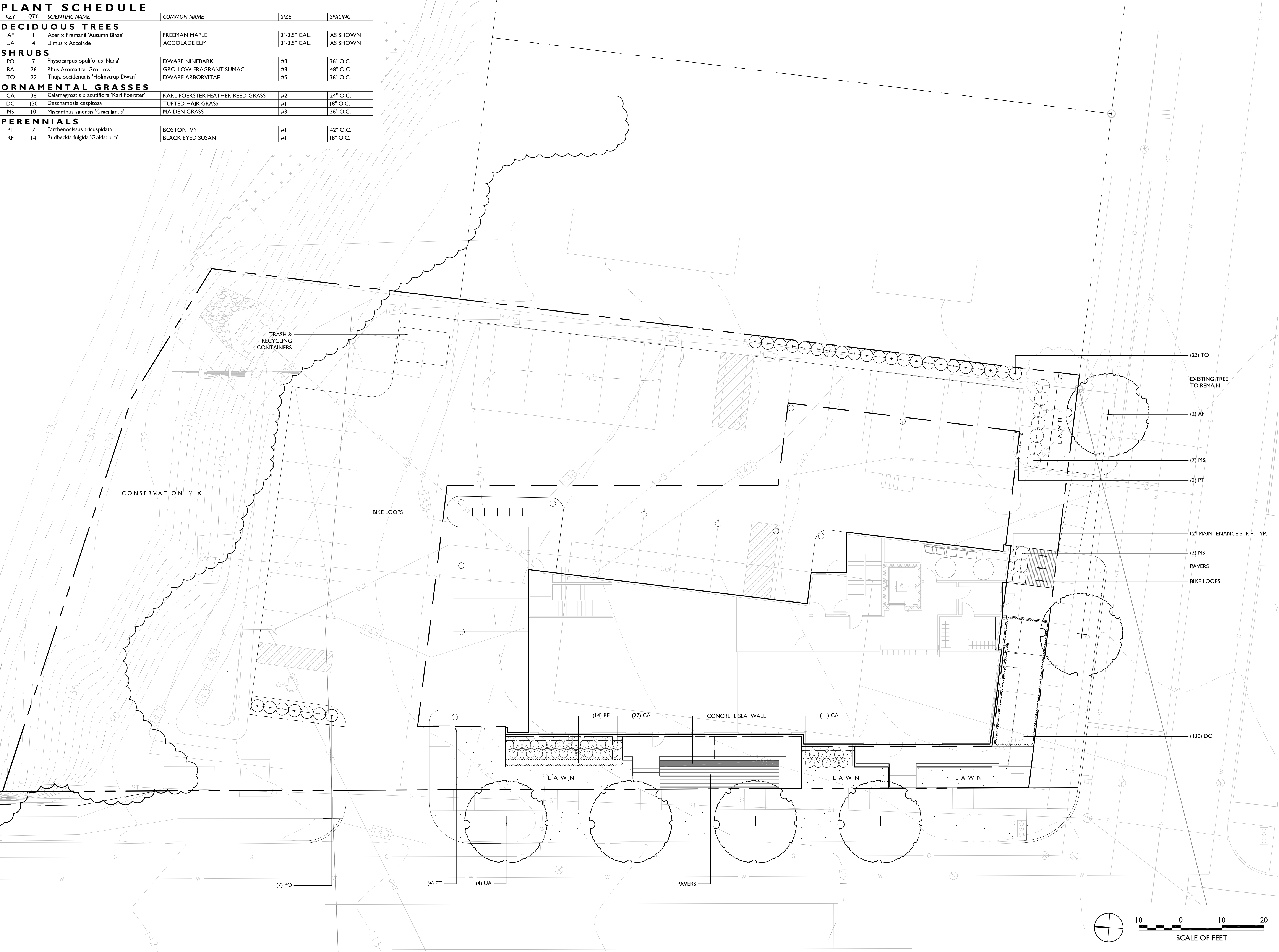
Build Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	115	20	30	85	145	10	346	30	265	660	90
Future Volume (vph)	60	115	20	30	85	145	10	346	30	265	660	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.96			1.00		1.00	0.99	
Flpb, ped/bikes		0.99			1.00			1.00		1.00	1.00	
Frt		0.99			0.92			0.99		1.00	0.98	
Flt Protected		0.98			0.99			1.00		0.95	1.00	
Satd. Flow (prot)		1559			1370			1817		1729	1783	
Flt Permitted		0.77			0.95			0.97		0.31	1.00	
Satd. Flow (perm)		1217			1304			1768		573	1783	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	115	20	30	85	145	10	346	30	265	660	90
RTOR Reduction (vph)	0	6	0	0	67	0	0	5	0	0	7	0
Lane Group Flow (vph)	0	189	0	0	193	0	0	381	0	265	743	0
Confl. Peds. (#/hr)	26		14	11		23	14		11	23		26
Heavy Vehicles (%)	2%	2%	2%	7%	7%	7%	3%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	5	5	5
Parking (#/hr)	5	5	5	5	5	5						
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.8			12.8			16.8		28.9	28.9	
Effective Green, g (s)		12.8			12.8			16.8		28.9	28.9	
Actuated g/C Ratio		0.23			0.23			0.30		0.51	0.51	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		276			295			526		418	913	
v/s Ratio Prot										0.07	c0.42	
v/s Ratio Perm		c0.16			0.15			0.22		0.26		
v/c Ratio		0.68			0.65			0.72		0.63	0.81	
Uniform Delay, d1		19.9			19.8			17.7		9.9	11.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
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Delay (s)		26.8			24.9			22.6		13.0	17.1	
Level of Service		C			C			C		B	B	
Approach Delay (s)		26.8			24.9			22.6			16.0	
Approach LOS		C			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			19.8			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			56.4			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			98.3%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

PLANT SCHEDULE

KEY	QTY.	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING
DECIDUOUS TREES					
AF	1	Acer x Freemanii 'Autumn Blaze'	FREEMAN MAPLE	3"-3.5" CAL.	AS SHOWN
UA	4	Ulmus x Accolade	ACCOLADE ELM	3"-3.5" CAL.	AS SHOWN
SHRUBS					
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	22	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.



WAGNERHODGSONLANDSCAPE ARCHITECTS

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DRAFTNOT FOR CONSTRUCTION

PINE AND FLYNN

PLANTING PLAN

REVISIONS

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DRAWING NO.

JOB NO.

643

SCALE

1" = 10'-0"

DATE

07.06.16

LI.0

Burlington Design Advisory Board

149 Church Street, City Hall
Burlington, VT 05401

<http://www.burlingtonvt.gov/PZ/Boards/Design-Advisory-Board/>

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*Matt Bushey, Chair
Ron Wanamaker, Vice Chair
Sean McKenzie
Chris Alley
Steve Offenhartz
Jeremy Gates, Alternate
Phil Hammerslough, Alternate*



Minutes

Burlington Design Advisory Board

Tuesday, July 12, 2016 3:00 p.m.

Conference Room 12, City Hall, 149 Church Street, Burlington, VT

Present: Matt Bushey, Steve Offenhartz, Chris Alley

Absent: Sean McKenzie, Ron Wanamaker, Jeremy Gates (alternate), Phil Hammerslough (alternate)

Staff present: Scott Gustin

Session I - 3:00-3:30 p.m.

16-1507CA/MA; 316-322 Flynn Ave (NMU, Ward 5S) G & C Properties

Demolish existing buildings. Construct mixed use building with 30 residential units and 2 commercial spaces and associated site improvements.

Present: Erik Hoekstra, Dan Goltzman, Chris Snyder, Joe __, Michelle Dufrense, Michael Alvanos

MB – Motion: Recommend approval of the project as submitted and forward to the Development Review Board subject to staff recommended conditions 3 and 4.

3. New street trees are subject to review and approval by the City Arborist.
4. Building entry lighting levels must be included in the photometric plan.

SO – Second.

Vote 3-0-0, motion carries.