Burlington Development Review Board
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BURLINGTON DEVELOPMENT REVIEW BOARD
Wednesday February 19th 2020, 5:00 PM
PUBLIC HEARING NOTICE

The Burlington Development Review Board will hold a meeting on Wednesday February 19th, 2020 at 5:00 PM at 645 Pine Street.

1. **19-0980CA/MA; 110 Riverside Avenue (NAC-R, Ward 1E) Sisters & Brothers Investment Group, LLP**
   Re-open hearing to accept requested submission information; detailed shoring plan; confirmation of Stormwater approval, revision to site plan. Time extension request for 19-0980CA/MA, 57-unit apartment building with underground parking

2. **20-0646SD; 49 Fletcher Place (RM, Ward 1E) Nancy Reid**
   2-lot subdivision of an existing single-family residential lot. Construct new 2-story home with driveway and full foundation on new lot

Plans may be viewed at the Department of Permitting & Inspections, (645 Pine Street, Burlington), between the hours of 8:00 a.m. and 4:30 p.m. Participation in the DRB proceeding is a prerequisite to the right to take any subsequent appeal. Please note that ANYTHING submitted to the Zoning office is considered public and cannot be kept confidential. This may not be the final order in which items will be heard. Please view final Agenda, at www.burlingtonvt.gov/pz/drb/agendas or the office notice board, one week before the hearing for the order in which items will be heard.

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Ryan Morrison, Associate Planner
Charlene Orton, Permitting & Inspections Admin
Layne Darfler, Planning Technician
Alison Davis, Zoning Clerk

MEMORANDUM

To: Development Review Board
From: Mary O'Neil & Scott Gustin, Principal Planners
Date: February 19, 2020
RE: ZP19-0980CA/MA, 110 Riverside Avenue

Note: These are staff comments only. Decisions on projects are made by the Development Review Board, which may approve, deny, table or modify any project. THE APPLICANT OR REPRESENTATIVE MUST ATTEND THE MEETING.

File Number: ZP19-0980CA/MA
Zone: NAC-R **Ward**: 1
Date application accepted: June 12, 2019 (incomplete)
Date traffic study received: November 12, 2019
Applicant/ Owner: G4 Design Studio/Sisters and Brothers Investment Group / Joe Handy
Request: Reapplication to demolish existing c. 1935 former auto repair structure; construct new 4 story 57 unit apartment building with underground parking on 1.22 acre site. Height bonus exercised by providing Senior Housing. Originally approved with amended conditions, July 2, 2013. Two time extensions procured; permit expired without exercise.
NPA Review Date: May 8, 2019.

Background:

- **ZP18-1007AP** (ZP13-0680CA/MA); Administrative determination that Zoning Permit 13-0680CA/MA had expired. Appeal of administrative decision; Upheld up DRB June 2018; appealed to Vermont Superior Court Environmental Decision. Agreement reached December 27, 2018' Stipulation of Dismissal with Prejudice January 3, 2019.

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- ZP13-0680CA/MA, 2nd DRB Time Extension July 25, 2016.
- Application filed for Act 250 June 30, 2015. Per **Section 3.2.9 (f), Exception to Permit Time Limits**: *Except for projects **subject to additional state or federal permitting** jurisdiction, or which have been appealed to Vermont Environmental Court pursuant to the requirements of Article 12, there shall be no exceptions to the time limits specified in Section 3.2.9 (d) and (e) unless longer or shorter time limits are specifically imposed as permit conditions of approval by the DRB at the time of approval.*

  For projects subject to additional state or federal permitting jurisdiction, the date of decision shall be deemed to be the latest date of decision of the state or federal permitting authority.

  The application for Act 250 review tolled the approval date. Act 250 approval date July 21, 2016.
- **ZP13-0650CA.MA**; One Year Time Extension approved by DRB June 3, 2014.
- **ZP13-0650CA.MA;** Demolish existing c. 1935 former auto repair structure; construct new 4 story 57 unit apartment building with underground parking on 1.22 acre site. Height bonus exercised by providing Senior Housing. Approved April 23, 2013; hearing re-opened; approved with amended conditions, July 2, 2013.
- **.ZP 13-0129; Sketch Plan** review of project. Reviewed by DRB September 18, 2012.
- **Zoning Permit 05-065SN;** 4' x 6' parallel sign for M & H Auto. Approved August 2004.
- **Zoning Permit 04-314;** Increase number of display cars from 25 to 45 and decrease 10 spaces for repair business to 6 spaces. Approved January 2004.
- **Zoning Permit 01**-318 / COA 097-029; Installation of a new nonilluminatd parallel sign over the entry of the existing used car sales establishment within the existing commercial complex. No change in use. Approved February 2001.
- **Zoning Permit 99-362**; Change of use from vacant commercial to auto and light truck repairs. No exterior changes proposed to the structure. Site currently contains a used auto dealer. Approved March 1999.
- **Zoning Permit 99-419 / COA 097-029B**; Installation of a nonilluminated freestanding sign for the existing auto and light truck repair facility. Approved April 1999.
- **Zoning Permit 99-570 / COA 097-029C**; Installation of two signs for the existing auto repair facility. Approved June 1999.
- **Zoning Permit 98-311 / COA 097-029**; replacement of existing sign faces at existing auto sales building. Approved January 1998.
- **Zoning Permit 98-310 / COA 097-029B**; Change of use from retail (see COA 97-029) to used car sales. Maximum outdoor storage of 25 cars. Approved January 1998.
- **Zoning Permit 97-460 / COA 097-029A**; Partial demolition of the existing structure and parking area to facilitate improvements included in COA 97-029. Approved May 1997.

- **Zoning Permit 97-274 / 097-029**; Renovation to the existing commercial complex, addition to create multiple retail storefronts. 1987 net new square feet. Approved January 1997.
- **Zoning Permit 88-031**; one internally illuminated aluminum sign. Approved August 1988.
- **Zoning Permit COA 87-199**; Convert building to auto body shop; minor exterior work. Approved January 1988.
- **Zoning Permit** 87-746 / COA 87-199A; install one sign. Approved April 1988.
- **Zoning Permit 85-491**; construct a chain fence 4' to run along the west boundary of the property. Approved October 1985.
- **Zoning Permit 84-446 / COA 84-118**; Remove front wall of plate glass and replace with 2 x 6 frame, insulate and finish exterior with vinyl siding. Install thermopane picture window. Approved September 1984.
- **Zoning Permit 84-328 / COA 84-088**; construct 30 x 30' one story building to be used as a repair shop to replace a building of the same size and use that was destroyed by fire 4 months previous. Approved July 1984.
- **Zoning Permit 82-546**; parallel sign for "First Quality Carpets." Approved December 1982.
- **Zoning Permit 82-525**; To establish a floor covering and home decoration store. Prior use was a furniture store. Approved December 1982.
- **Zoning Permit 82-344** / COA 82-75; Change pitch of roof. July 1982.
- **Zoning Permit 82-337 / COA 82-73;** establish use as a building supply and material retail outlet – dealing in hot tubs and plumbing fixtures for residential installation. 1000 sq ft devoted to retail use. Approved July 1982.
- **Zoning Permit 81-292**; Change of use from automobile retail business into a furniture retail business. No structural alterations. Approved December 1980.
- **Zoning Permit 78-162**; Used car sales, service and repair. Build partitions and 3 phase electric power in order to create car painting stalls in existing large garage. No additional coverage. Paint shop presently exists in the small garage at 110 Riverside. Issued October 1978.
- **Zoning Permit 75-891**? ; Erect a pylon sign flat against the building. May 1975.

- **Zoning Permit,** erect a 30' x 60' addition on the north side of the existing garage and remodel the front of the showroom.
  Issued August 1971.

Overview:
The application for a 57 unit residential building was originally approved in 2013, with 32 permit conditions. Despite several time extensions, the permit expired. The applicant has re-applied to raze all buildings on this corner site and develop a multi-story 57 unit residential building with 60 parking spaces, 48 of those provided under the building and 12 more on a small surface lot. (Revised parking, Plan A1-1. 8/1/19). 25% of the units (14) are intended to be low to moderate income Senior Housing to qualify for the additional height bonus.

The Development Review Board considered this application most recently at their November 19, 2019 meeting. The Board closed the public hearing, but upon deliberating the Board acted to re-open the public hearing to receive additional information relative to shoring work at the back of the property and as to stormwater. Such information has since been provided. The project plans have also been revised slightly to relocate a dumpster enclosure out of the residential/NMU zone district setback.

This application has been pending since its July 16, 2019 review with the DRB. As such, it requires an initial 3-month time extension to continue review.

The findings below have been revised to reflect these changes. Changes are noted in red. The remainder of the findings remain largely unchanged.

Recommended motion: <u>Major Impact and Certificate of Appropriateness approval</u> as per, and subject to, the following findings and conditions:

I. <u>Findings</u>

<u>Article 2: Administrative Mechanisms</u>
Section 2.7.8 Withhold Permit
Per this standard, the applicant is required to remedy all violations and close out all zoning permits issued after July 13, 1989 prior to issuance of a Certificate of Occupancy for this permit. There are a significant number of open permits, all of which must be closed out with issuance of Certificates of Occupancy. See attached list. **Affirmative finding as conditioned.**

<u>Article 3: Applications, Permits, and Project Reviews</u>
Section 3.2.1 (d) Pre-application Neighborhood Meeting
The applicant has provided evidence of an NPA meeting May 8, 2019. **Affirmative finding.**

Sec. 3.2.5 Completeness of Submission, Administrator's Action

This section limits application reviews to 6 months with provision for up to two 3-month time extensions for DRB applications. This application has been pending before the DRB since July 16, 2019 and requires an extension. Insofar as materials have been submitted to address the DRB's motion to re-open the public hearing, granting a 3-month extension is warranted.
(Affirmative finding)

Part 3: Section 3.3.2 Impact Fees: Applicability
Any new development or additions to existing buildings which result in new dwelling units or in new nonresidential buildings square footage are subject to impact fees as is any change of use which results in an added impact according to Sec. 3.3.4.
Impact fees are assessed for the gross new floor area, with a credit for the existing square footage currently associated with the automobile service use.

As submitted, the estimated Impact Fee calculation:

Estimated Impact Fees (recalculated 11.12.2019, under FY19 schedule):

SF of Project	88,772	Based on Drawing A1-1
	Residential	
Department	**Rate**	**Fee**
Traffic	0.196	17,399.31
Fire	0.222	19,707.38
Police	0.044	3,905.97
Parks	0.743	65,957.60
Library	0.460	40,835.12
Schools	0.961	85,309.89
Total	2.626	**$ 233,115.27**

Credit for existing service use: 13,666 sq. ft.

	Offices & Other	
Department	**Rate**	**Fee**
Traffic	0.676	9,238.22
Fire	0.199	2,719.53
Police	0.351	4,796.77
Parks	0.418	5,712.39
Library	0.000	0.00
Schools	0.000	0.00
Total	1.644	**$ 22,466.91**

Estimated Impact Fees Due, based on difference: **$210,648.36**

Allocation by Department:

Enter Total Fee:	$210,648.36	

	Residential	
Department	**Rate**	**Fee**
Traffic	0.196	15722.42
Fire	0.222	17808.05
Police	0.044	3529.52
Parks	0.743	59600.81
Library	0.460	36899.56
Schools	0.961	77087.99
Total	2.626	**$210,648.35**

Article 3.3.3 Exemptions and Waivers

(a) Exemptions

If units are dedicated to Senior Housing (as proposed, for the height bonus), the following exemption will apply:

(b) School Impact Fee Exemption:

That portion of impact fees attributable to school impacts shall not be required for senior citizen housing projects or for that portion of a project where certain units are reserved specifically for the elderly. Any project, or portion thereof, which meets either state or federal guidelines for elderly housing, shall be deemed a senior citizen housing project and eligible for a full or partial waiver of school impact fees.

A waiver of Impact Fees is applicable to affordable housing units:

Sec. 3.3.3 (c) Affordable Housing Waivers

Any residential project containing newly constructed units or substantially rehabilitated housing units that are affordable for households as described in subsections (1), (2) or (3) below are eligible for a waiver of impact fees for that portion of the project. The terms, rules and regulations used herein shall be the same as those defined and specified in this Ordinance pertaining to Inclusionary Zoning (Article 9).

The applicability of any waiver of Impact Fees shall be determined by the Housing Trust Fund Manager in the Community and Economic Development Office. Any such waiver, if determined, will be provided to staff (with the associated square foot measurement) to facilitate an appropriate impact fee assessment. **Affirmative finding as conditioned.**

Sec. 3.3.7 Time and Place of Payment

Impact Fees must be paid to the city's chief administrative officer/city treasurer according to the following schedule:

(a) *New Buildings: Impact fees must be paid at least seven (7) days prior to occupancy of a new building or any portion thereof.* **Affirmative finding as conditioned.**

Part 4: Site Plan and Design Review

(a) Site Plan Review, and

(b) **Design Review** will both be applicable for this project.

Section 3.4.3 Submission Requirements

In addition to the applicable application and submission requirements pursuant to Sec. 3.2.2, all applications for a zoning permit subject to Site Plan and/or Design Review under this Part shall provide any additional information necessary for the adequate review of the proposal under the applicable development principles and standards found in Article 6.

Given the historic use of the property for many decades as an automotive service center, it is appropriate to discern the environmental disposition of the parcel prior to development. The applicant submitted a Phase I study in previous review, which had, been reviewed by the Vermont Department of Environmental Conservation. In July of 2019, a communication from the Verterre Group (Environmental Scientists and Field Services) stated that the property is not currently listed as a State of Vermont DEC identified site. The DEC does have a copy of the Phase I report (prepared by this group) dated February 7, 2013. Verterre proposes being on-site during building demolition to investigate if abandoned tanks, buried lifts, drains, and oil/water separators are present. Any contamination will be brought to the attention of the State of Vermont DEC. Verterre will then conduct a Phase II investigation, with results forwarded to the City and the State of Vermont DEC. Staff recommends constructing a timetable for timely assessment, reporting, and creation of an appropriate plan (Corrective Action Plan, if warranted) before advancing development.
Affirmative finding as conditioned.

Part 5: Conditional Use and Major Impact Review
Sec. 3.5.2 Applicability
(b) Major Impact Review
In Neighborhood Mixed Use districts, Major Impact Review is required for the creation of twenty-five or more dwelling units. The development proposes 57 new residential units. Therefore, Major Impact Review is required.

Sec. 3.5.6 Review Criteria
(c) Major Impact Review Standards:
1. Not result in undue water, air or noise pollution;
110 Riverside Avenue has been mis-identified as Site #94-1733 by the Vermont Department of Environmental Conservation. In an email of January 16, 2013, DEC acknowledges the error, but notes the following:

> *There are other significant potential environmental issues with 110 Riverside property too. It was a filling station at one time and had at least three gasoline underground storage tanks and a few garage bays for auto repairs (likely with floor drains and/or mechanics pits and associated dry wells or other subsurface drainage appurtenances.) From photographs taken from a UVM archive site, it is apparent that the dispenser pumps are not all located just above the tanks – expanding the areas for potential onsite releases.*

While the construction of new residential dwelling units does not immediately trigger alarm, the previous use as commercial / car repair coupled with the expressed concern of the Department of Environmental Conservation warrants attention. There exists the potential for soil contamination, which would have an impact on appropriate soil disturbance as well as storm and groundwater. A Phase I Environmental Site Assessment was submitted to staff March 11, 2013, and the Executive Summary indicates "recognized and historic environmental conditions." A Phase II is warranted to fully understand the site conditions and to actively pursue a cleanup as

recommended by the Conservation Board (and if deemed appropriate by the Department of Environmental Conservation.) The applicant has proposed that Verterre Environmental Scientists be present a building demolition to ascertain risk features (see Section 3.4.3, above), and to conduct a Phase II evaluation, with results forwarded to the City and State DEC. After conferring with staff at the Department of Public Works, staff again recommends construct of a timetable for building demolition, site assessment, soil testing and reporting prior to advancement of a construction timetable to assure a site conducive to redevelopment for residential use. **Affirmative finding if conditioned.**

2. *Have sufficient water available for its needs;*

A letter dated November 12, 2012 from Burlington's Department of Public Works informs that Burlington's water and wastewater treatment facilities have sufficient capacity to handle demand associated with the proposed apartment building. Submission materials reference communication with the Water engineering division, but a companion letter of capacity has not been provided. The application will need to provide renewed confirmation from the Water division to confirm the continued capacity.
Affirmative finding as conditioned.

3. *Not unreasonably burden the city's present or future water supply or distribution system;*

See comment above.

4. *Not cause unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may result;*

See Secs. 5.5.3 and 6.2.2 (b) as revised.

5. *Not cause unreasonable congestion or unsafe conditions on highways, streets, waterways, railways, bikeways, pedestrian pathways or other means of transportation, existing or proposed;*

Staff received a revised Traffic Study November 12, 2019, which had received preliminary review by the Department of Public Works. It includes the following:

AM Peak (7:30-8:30 am) - 21trips (5 entering, 16 exiting)
PM Peak (4:30 – 5:30 pm) - 25 trips (16 entering, 10 exiting)

The November 2019 staff report pointed out a discrepancy between these numbers and those in the 2012 traffic assessment. The applicants have responded that the ITE Trip Generation manual in effect in 2012 had a more generic "apartment" code. The current manual divides apartments into low, mid, or high-rise. The current standards are applied to the current traffic analysis.

The Trudell November 2019 traffic analysis asserts the 25 PM trips represents 1.5% of the total PM design hour traffic on Riverside Avenue.

Two driveways are proposed; the eastern driveway will allow both ingress and egress, while the west driveway movements will be limited to right-in only for direct access to the parking garage. A crosswalk featuring pedestrian activated flashing beacons is proposed in front of the proposed project to connect the sidewalk that is currently in front of the project with the multi-use path on the north side of Riverside Avenue. Although project generated traffic volume is low, traffic

from the project will make use of the adjacent intersection system (Colchester Avenue / Barrett Street) for which an improvement plan is in place. The applicant has agreed to pay a fair share mitigation fee toward those improvements as part of their already approved Act 250 permit. **Affirmative finding.**

6. *Not cause an unreasonable burden on the city's ability to provide educational services;*

Staff made initial inquiries and repeated notifications to the school district when the plan came for 2013 review, and forwarded information as the project progressed through decision. If the entire building is dedicated to senior housing, there will be no impact to educational services, reflected in the exemption from School impact fees. If the 57 units are intended to be divided by 14 senior units (25% of whole, to be eligible for the additional building height) and the remainder are fair market value, impact fees for the non-senior units should off-set any new demand on city educational services. **Affirmative finding as conditioned.**

7. *Not place an unreasonable burden on the city's ability to provide municipal services;*

Letters of sufficient water supply and wastewater capacity were submitted in 2013 and again in 2019 from the Department of Public Works. A State Wastewater Permit will be required as well. Required impact fees will address other service demands. **Affirmative finding as conditioned.**

8. *Not have an undue adverse effect on rare, irreplaceable or significant natural areas, historic or archaeological sites, nor on the scenic or natural beauty of the area of any part of the city;*

This site is not identified as having irreplaceable historic or archaeological merit; however, the steep embankment at the rear is a concern with the large development proposed. See Sec. 6.2.2 (b) as to topographic alterations and bank stabilization. **Affirmative finding.**

Not have an undue adverse effect on the city's present or future growth patterns nor on the city's fiscal ability to accommodate such growth, nor on the city's investment in public services and facilities;

This is a developed lot. A letter of supply was provided from the Department of Public Works to address water capacity in 2013; an updated letter confirming the same is a condition of any approval. Water pressure issues must be resolved during site development by the applicant. The applicant will be required to work with engineering staff from the Department of Public Works to address and remedy any deficiencies relative to public water pressure/supply infrastructure. **Affirmative finding as conditioned**.

9. *Be in substantial conformance with the city's municipal development plan and all incorporated plans;*

planBTV: Comprehensive Plan (2019 Update) includes the following policies that are in sync with this development proposal:

- *Creating new opportunities for mixed-use infill and redevelopment in the most densely developed areas consistent with the City's scale and urban form, while conserving and strengthening adjacent residential neighborhoods. (* P. 37*)*
- *Expand housing opportunity, fill gaps in the housing tenure ladder, ensure perpetual affordability, and increase the overall supply and inclusiveness of housing.* (P. 61)

- *Neighborhood Center: The purpose of these areas is to provide nodes of neighborhood-supporting commercial activity and services. These are areas that allow for commercial, residential, and community-oriented uses, sometimes in mixed-use buildings, at a higher density than nearby residential areas. These areas feature a variety of building and architectural types and are typically within walking or biking distance of nearby homes.(p. 95)*
- *Evaluate capacity of neighborhood mixed-use areas to support additional development. (*Appendices, cross-reference to 2014 Plan Chapters, p. 110.*)*
- *Remove barriers and disincentives to housing production, and encourage infill and redevelopment of underutilized sites. (*Appendices, Cross- Reference to 2014 Plan Chapters.) p. 114.
- *Cleanup and redevelop brownfield sites, particularly in the South End.* (Appendices, Cross-Reference to 2014 Plan Chapters.) p. 110.
- *This plan (planBTV) anticipates a more urban configuration of higher-density mixed residential and commercial uses on the south side of Riverside Avenue…Studies are currently underway to identify short and long term improvements that can be made to these important gateways to Burlington. Implementing these enhancements will improve pedestrian and bicyclist safety, efficiency of and access to public transit, enhance these important city gateways, improve the quality of life in nearby residential areas, facilitate connectivity between Burlington and nearby Winooski and better link recreation resources to the city's transportation system.* (p.105.)

Affirmative finding for increased density. **Affirmative finding** for access to bicycle and pedestrian routes with condition of approval that requires installation of a pedestrian-activated crosswalk light.

- *Re*: Brownfields: "The Burlington Brownfields Pilot Initiative is a US Environmental Protection Agency program that facilitates redevelopment of properties with real or perceived contamination issues through the assessment of environmental risk, remediation planning, and relief from liability. The City has made the cleanup and redevelopment of Brownfields a high priority to improve the environment, increase the tax base, create and retain jobs, and curb sprawl."

Staff note: Final disposition of the site will be determined after a Phase II analysis. Staff recommends a stepped approval based on advancement through site analysis, reporting, remediation (if warranted), soil stability analysis, more detailed engineered plans and securement of appropriate instruments or approval for encroachments prior to redevelopment of the site. **Affirmative finding as conditioned.**

10. *Not have an undue adverse impact on the present or projected housing needs of the city in terms of amount, type, affordability, and location;*

The proposal will provide 57 new housing units, 14 of which will be set aside for low to moderate senior residents of the City. The one and two bedroom units will be most welcome due to their size, location, and easy access to public transportation. **Affirmative finding**.

and/or

11. *Not have an undue adverse impact on the present or projected park and recreation needs of the city.*

Impact Fees will substantially offset any impacts to park and recreation needs. **Affirmative finding.**

<u>Article 4: Zoning Maps and Districts</u>

Sec. 4.4.2 Neighborhood Mixed Use Districts

(a) Purpose: *The NAC-Riverside is intended to allow commercial development in areas already predominantly built along this corridor while encouraging emerging mixed-use development. The zone's development standards promote attractive development, an open and pleasant street appearance, and compatibility with adjacent residential areas. Development is intended to be aesthetically pleasing for motorists, transit users, pedestrians, and the businesses themselves. Parking is intended to be placed behind or to the side of principle buildings.*

The proposal, to construct a large multi-unit residential building, conforms to the intent to allow new development in areas already developed along a major traffic corridor. Although no service or commercial use is proposed, residential uses are permitted within the NAC-R. These new residential units will profit from close proximity to the travel corridor and public transit. Parking is proposed both beneath, and next to the primary structure. **Affirmative finding.**

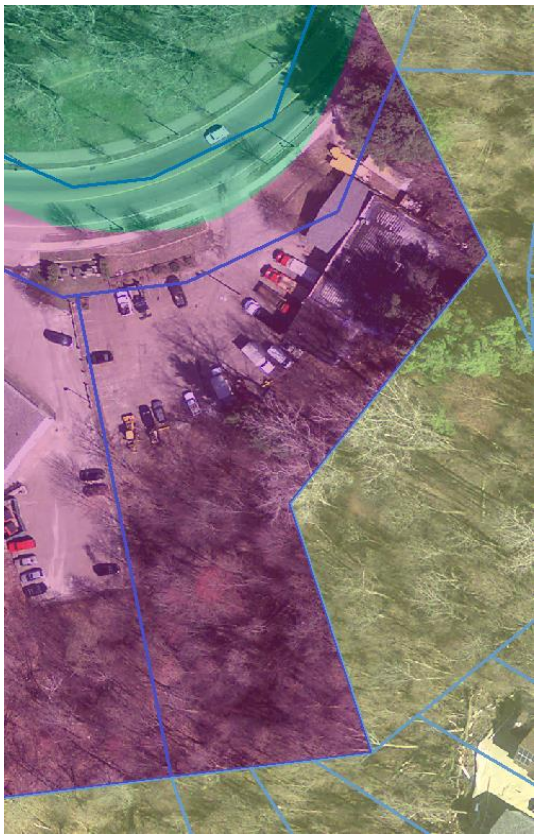
(b) Dimensional Standards and Density

Table 4.4.2-1, Dimensional Standards and Density

NAC-R	**Max Intensity(floor area ration)**	**Max lot coverage**	**Minimum Building Setbacks**			**Height**
NAC-(Riverside)	2.0 FAR See bonus provision, below.	80%	0 Front*	0 Side**	0 Rear**	Min 22' two stories Max 35'
110 Riverside Avenue proposal	1.49 per plan dated 11.21.12	51.7%	Approx. 40' from Riverside Avenue	50' east 10' west	150'	45' at elevator shaft, 39.5' to roof.
Table 4.4.2-2 Sec. 4.4.2 (d) C., Maximum Bonus)	3.0 FAR					Max height 45'

*All structures shall be setback 12 feet from the curb on a public street.

** Structures shall be set back a minimum of 15 feet along any property line that abuts a residential zoning district. [In practice, this has only applied to primary structures and not parking areas. See zoning district map, below. Yellow is residential; purple is NAC-R. Per footnote 2, a 15 foot setback is required on any boundary line abutting a residential zone.]



Affirmative finding, using bonus provision.

(c) Permitted and Conditional Uses
Attached dwellings – Multi-Family (3 or more) is a permitted use in the NAC-R.

(d) District Specific Regulations

3. Development Bonuses/Additional Allowances

B. Senior Housing

A maximum of an additional 10 feet of building height, and corresponding FAR, may be permitted at the discretion of the DRB in the NAC and NAC-Riverside districts where no less than twenty-five per cent (25%) of the total number of onsite units are reserved for low-moderate income senior households as defined by state or federal guidelines, including no less than ten percent (10%) reserved for low-income households. The total gross floor area dedicated to the senior housing shall be equivalent to the gross floor area resulting from the additional allowance.

The applicant has agreed to dedicate 25% of the proposed (57) residential units to low-moderate seniors, with 10% of those reserved for low-income senior households, to achieve an additional 10' in height and corresponding FAR. The proposal exercises the height bonus within this application. Plan A1-1 details the gross floor area of the fourth floor (bonus allowance) as 13,066

sq. ft. The required Senior Housing is 25% of the units, or 14 dedicated residential units to exercise the height bonus. This provision states: *The total gross floor area dedicated to the senior housing shall be equivalent to the gross floor area resulting from the additional allowance.* Therefore, the area dedicated to Senior Housing (14 dedicated senior residential units, 25% of 57.) shall be equivalent to the area of the fourth floor. The senior housing does not need to be located on the fourth floor; but the gross floor area provided by the height bonus shall be equal to or less than the gross floor area of the dedicated senior units.

The applicant shall provide an annotated floor plan to identify the senior housing units to assure the equivalent gross floor area (13,066 sq. ft.) with the gross floor area achieved through the height bonus. Although the entire fourth floor is identified as Senior Housing, an additional four units for a total of 14 are required to secure the height bonus. **Affirmative finding as conditioned.**

<u>Article 5: Citywide General Regulations</u>
Sec. 5.1.1 Uses
(c) Permitted Uses
Per Appendix A, Attached Multi-Family, 3 or more units, is a permitted use in the NAC –R zoning district. **Affirmative finding.**

Part 2: Dimensional Requirements
See Section 4.4.2 (b), above. **Affirmative finding.**

Sec. 5.1.2 (d) Accessory Residential Structures
The plan includes an area for trash, with a plan for a trash enclosure. **Affirmative finding.**

Sec. 5.2.3, Lot Coverage Requirements
See Section 4.4.2 (b), above. **Affirmative finding.**

Sec. 5.2.4, Buildable Area Calculation
For any properties two or more acres in size within any RCO, WRM, RM, WRL, or RL zoning district…
110 Riverside Avenue is not over two acres in size nor part of RCO, WRM, RM, WRL, or RL zoning district; but within the NAC-R zoning district. **Not applicable.**

Sec. 5.2.5, Setbacks
See Sec. 4.4.2 (b) above. Note that the easterly property boundary abuts a Residential district. A 15' district setback applies. The site plan has been revised to relocate the proposed dumpster enclosure outside of this setback. Parking is allowable with a 5' minimum setback. **Affirmative finding.**

Sec. 5.2.6, Building Height Limits
See Sec. 4.4.2 (b) and Sec. 4.4.2 (d). 4. (C), above. **Affirmative finding.**

Sec. 5.2.7, Density and Intensity of Development Calculations
(a) District-specific provisions of Article 4 are based on FAR, not units-per-acre.

(b) Floor Area Ratio

In accordance with the district-specific provisions of Article 4 where the intensity of development is measured on a floor area ration basis, the calculation of development intensity shall be measured by dividing the gross floor area of all structures on a site, or portion of the site where split by a zoning district boundary, by the gross site area.

For a site of 53,143 square feet (provided on the Engineer's Plan, C2-01), the maximum FAR allowance would be 159,429 sq. ft. (Bonus max 3.0 FAR.) The application proposes 88,772 (69,499 total gross floor area of the building, 19,273 surface parking = 88,772); or 1.67 FAR. **Affirmative finding.**

Sec. 5.4.8 Historic Buildings and Sites

(a) Applicability

Although the core building is estimated to have been constructed in 1935, significant modifications and alteration (especially loss by fire) have rendered the extant building without historic merit. The building is not listed on any historic register, nor identified as eligible for historic designation. **Not applicable.**

c. 1920s, looking toward center of Riverside Avenue

Sec. 5.4.9 Brownfield Remediation

The City of Burlington encourages the remediation and redevelopment of brownfield sites through the waiver or modification of the requirements of this ordinance in situations where development otherwise authorized by the underlying zoning is constrained due to the presence of surface and subsurface contamination. Specifically, these regulations seek to achieve the following goals:

- *To promote the public health and safety by remediating contaminated sites that pose a threat to human and environmental health; and*
- *To encourage an efficient pattern of development in Burlington by supporting the redevelopment of previously developed sites.*

(c) ***Application Submission Requirements:***

In addition to the submission requirements pursuant to Article 3, the following information as applicable specifying any and all use and development limitations of the site shall also be provided at the time of application:

1. *A VT DEC Approved Corrective Action Plan (CAP) pursuant to 10 VSA 6615a (h);*
2. *A Record of Decision (ROD) issued by the US EPS:*
3. *A VT DEC Approved Corrective Action Plan (CAP) pursuant to VHWMR 7-105(b); and*
4. *Any warranty deed specifying any and all use and development limitations of the site.*

None of the above specified required submission materials have been submitted.

This parcel is identified with a "star" on the Vermont Department of Environmental Conservation Hazardous Sites map. After lengthy communication with DEC, it was ultimately determined that the site had been misidentified as an existing hazardous site. An official of DEC did remark, however, that given the known use of the parcel as an automobile repair shop since the 1930s, there is a probability of site involvement for contaminants. An overlay of a Sanborn Fire Insurance Map with Google Maps indicates the historic presence of at least 3 underground storage tanks (USTs) on the site. There is no documentation for their present condition, or removal. A Phase I ESA was submitted to staff March 11, 2013, who requested a copy be forwarded to the Department of Environmental Conservation. A Phase II study has been recommended, and offered by the Verterre Environmental Group.

Given the historic use of the site and the proposed redevelopment, Burlington's Department of Public Works recommends further site evaluation to determine the disposition of the soils relative to contaminants. (See email from Caleb Manna, 11.13.2019.)
If a Phase II study deems a brownfield, the State of Vermont has the authority to require this work be completed under Title 10 VSA 6615b.
If a Corrective Action Plan (CAP) or Site Management Activity Completed (SMAC) is required, these must be developed and implemented prior to redevelopment of the site. All documentation relative to site evaluation and treatment plan, if warranted, needs to be under the direction and with the approval of the Vermont Division for Environmental Conservation and the City's Department of Public Works. **Affirmative finding as conditioned.**

Sec. 5.5.1, Nuisance Regulations
Nothing in the proposal appears to result in creating a nuisance as defined under this criterion. **Affirmative finding.**

Sec. 5.5.2 Outdoor Lighting
Sec. 5.5.2 (e) General Outdoor Lighting Standards

5. *All outdoor lighting fixtures, other than those using only low output lamps and alternative specifically allowed under these regulation, shall be "Full Cut-Off" or "Cut-Off" as defined by the Illuminating Engineering Society of North America to*

ensure that glare is minimized, that lighting is directed only to the area to be illumination, that illumination is directed below a horizontal plane, and that illumination does not cast direct light beyond the boundaries of the property on which they are located. Light levels on adjacent properties shall not exceed one tenth (0.1) footcandle as a direct result of the on-site lighting measured 20 feet beyond the property line of the development site.

The submitted photometric plan includes several lighting measurements on the northerly boundary exceeding the .1 threshold 20' outside the property boundary. Revision of the lighting plan, as noted shall be a condition of approval. **Affirmative finding as conditioned.**

5.5.2 (f) Specific Outdoor Lighting Standards

1. Parking Lot Lighting

A. The Maximum mounting height for any fixture shall be 25 ft.

Affirmative finding.

A. The maximum illumination level shall not exceed 4 footcandles at any point.

The lighting plan does not indicate any illumination levels that exceed 4 fc in the parking lot area. **Affirmative finding.**

B. The maximum illumination level shall only be computed for the functional area of the parking lot.

The parking lot area is defined by color on the photometric plan. No separate calculation is offered for the parking lot area; however, the light levels do not exceed the maximum as defined by this section. **Affirmative finding.**

C. *The maximum to minimum uniformity ration shall not exceed 20:1.* **Affirmative finding.**

D. *Illumination levels are encouraged to be reduced by at least 50% within one hour after the end of public business hours.*

This is a residential development; although there are no public business hours, encouragement is offered in the spirit of this standard. **Affirmative finding.**

1. Walkway Lighting:

A. The average illumination level on a walkway or pathway surface shall not exceed 0.5 footcandles. Maximum lighting levels shall not exceed 2 footcandles.

Affirmative finding.

Staff notes that a pole mounted light fixture is proposed within the ROW. It is not on the "existing conditions" plan C1-03, but may be visible in photographs of the site. Any lighting installation within the public ROW shall be in cooperation, approval and partnership with Burlington Electric Department. **Affirmative finding as conditioned.**

5. Parking Garage Lighting

A. Light Levels shall not exceed minimums recommended in IESNA document RP-20-98 or current edition.

B. Any fixture visible from the exterior of the garage facility shall be a full cutoff or cut-off fixture or shall be constructed in a manner that prevents glare to be visible from the exterior of the parking garage.

Revised lighting fixture information for the parking garage was submitted June 15, 2017 and resubmitted for this application. **Affirmative finding.**

Sec. 5.5.3 Stormwater and Erosion Control

The applicant provided an erosion prevention and sediment control plan (EPSC), as well as a stormwater management plan at initial application in 2012. Approval of both was issued by the city's stormwater program. The applicant has confirmed no changes are proposed in this pending application. As a result, stormwater program staff have determined that no additional approval is needed for this pending application. **Affirmative finding.**

Sec. 5.5.4 Tree Removal

The limits of the tree clearing are identified on Plan 5-01. This is particularly important, given the steep slope and potential for erosion at the rear of the site. An email from Trudell Engineering notes that they have contacted Knight Consulting to work with this project relative to steep slopes, as they did the original geo exploration in 2012 and made recommendations for slope stabilization and sheeting. **Affirmative finding as conditioned.**

<u>Article 6: Development Review Standards</u>

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:

As noted previously, the site contains no significant natural features as depicted in the Natural Resource Protection Overly district. Tree clearing limits are noted on the project plans. **Affirmative finding**.

(b) Topographical Alterations:

As required, geotechnical details have been provided as to the proposed retaining walls behind the building. Significant cut into the bank is proposed. Sheet piling will hold back the bank to allow space for the building and related parking. Site plan details, elevations, cross sections, and anchoring details have been provided. All have been provided by a Vermont licensed engineer. Final review and approval of the retaining wall by the city engineer is required. A draft easement with the adjoining property for anchoring and maintaining the proposed retaining wall has been submitted for review. **Affirmative finding as conditioned.**

(c) Protection of Important Public Views:

Not applicable.

(d) Protection of Important Cultural Resources:

Although the existing building is greater than 50 years old, it is not historically sensitive or to retain any characteristics that would merit attentive examination. **Not applicable.**

(e) Supporting the Use of Renewable Energy Resources:

The proposed building will back into a site cratered on the south by a large elevation change that will likely hinder opportunity to maximize solar gain. Proposed broad expanses of window glass are likely the limited exercise in capturing solar gain. The Design Advisory Board has previously recommended the installation of conduit to permit the future use of rooftop solar. **Affirmative finding.**

(f) Brownfield Sites:

*Where a proposed development involves a known **or suspected brownfield**, the site plan shall indicate areas of known or **suspected** contamination, and the applicant shall identify completed or planned remediation necessary to support the intended use(s).*

110 Riverside Avenue was originally misidentified as Hazardous Site #941733 by the Vermont Department of Environmental Conservation. Since that time, DEC has acknowledged the error, but expressed concern that given the historic use of the site as an automotive service center, there is the potential for site contamination. Sanborn Maps confirm the historic presence of underground storage tanks (USTs; see Sanborn Map overlay above.) An assessment is recommended to explore evidence of any contamination from the longstanding use. A Phase I study was submitted to staff on March 11, 2013; however, no research has been identified that would shed light on the disposition of the USTs.

The applicant has submitted an email from Russell W. Barton, indicating the intent to monitor soil excavation activities and collect soil samples, and more recently from the Verterre Group to conduct a Phase II study. Given the lengthy use as an automotive garage, the common use of pit drains for that use, and the likelihood of extant USTs, further site examination is appropriate. If warranted, a Corrective Action Plan / Site Management Action Complete (SMAC) should be in place prior to soil disturbance, site excavation and redevelopment. The applicant shall work either directly or through consultants with the State of Vermont Department of Environmental Conservation to appropriately and adequately address site conditions and document appropriate remediation, if necessary. Conversely, a site evaluation may identify the site as clean and of no concern to further development, which would free the applicant from further investigation. The DRB requires that approval or certification from DEC on the suitability of the site as remediated for residential use. **Affirmative finding as conditioned.**

(g) Provide for nature's events:

The application includes stormwater management and erosion prevention measures. These measures have been reviewed and approved by the city's stormwater program staff.

Design features which address the effects of rain, snow, and ice at building entrances, and to provisions for snow and ice removal or storage from circulation areas are required. Balconies would provide some measure of weather protection, as will drive-in parking. The pedestrian entrances on the north elevation and the access door to the south (playground) should be revised to include a canopy or other protection from inclement weather. **Affirmative finding as conditioned.**

(h) Building Location and Orientation:

The proposed residential building is "L" shaped, with the backbone facing Riverside Avenue and the base projecting into the southerly hillside. There is an unusually large Right-of Way expanse of land between the project site and the street, so meeting the required 12' setback from the public curb does not pose a problem. The developer will be required to work with the Department of Public Works for any work proposed within the ROW, and securement of any encroachment permits as may be necessary. **Affirmative finding as conditioned.**

(i)Vehicular Access:

Two curb cuts are proposed: One for direct access to the underground parking area; the other to the small surface parking lot on the east. A modified version of the traffic pattern was accepted in 2013: right turn only into the garage at the western curb cut as described in the hearing on March 19, 2013. Although VTrans guidance limits access drives to one per parcel, DPW engineering staff are willing to entertain a second ingress for purposes of mitigating congestion on Riverside Avenue.

See Section 3.5.6 c) 5, above. **Affirmative finding as conditioned**.

(j) Pedestrian Access:

Sidewalks are provided to two entrances on the north, and from the building to the playground area on the south. The public sidewalk terminates at the property line on the east; it is not clear how pedestrians can maneuver off-site (no crosswalk within 1900,' no traffic light, no continuous sidewalk toward Winooski.) The DRB approved either of two options: An extension of the sidewalk on the south side of Riverside Avenue to Colchester Avenue, or alternately, a pedestrian activated crosswalk that would spur a red light for oncoming traffic**.** For the 2013 review, a pedestrian activated crosswalk was accepted and is therefore submitted for this review. **Affirmative finding.**

(k) Accessibility for the Handicapped:

An internal elevator is proposed to allow access to all levels of the development. Handicapped parking spaces have been identified (A1-1 shows parking spaces 9 and 10 to be H/C; plan C2-01 shows a surface parking space H/C with a loading area as required by ADA. ADA access compliance is under the jurisdictional review of the building inspector, and subject to his or her approval. **Affirmative finding as conditioned.**

(l) Parking and Circulation:

For the 57 unit residential building, one space per unit is required. The application proposes 48 spaces within the underground lot, and a 12 space surface parking area on the east of the lot. As this does not meet the 15 space threshold, the standard to provide parking lot shading does not apply. The applicant is certainly encouraged to provide shade in an attempt to reduce the effect of the parking area on the local microclimate, air quality, and stormwater runoff.

The plan proposes 7 compact parking spaces within the underground lot (per Plan A1-1), which is compliant with the 15% limitation under Article 8. A maximum of **7** compact spaces may be provided (15% of 48 structured spaces.)

A proposed pedestrian walkway is proposed that provides a physical separation between moving and parked vehicles and pedestrians in a manner that minimizes conflicts and gives pedestrians a safe and unobstructed route to the building entrance and the public sidewalk.

Bicycle parking is provided within the parking garage. Three locations have been identified on Plan A1-1. None provide secure storage (lockers or similar, as recommended by the Design Advisory Board.) From a use standpoint, the isolated location of bike storage facilities is not commensurate with the anticipated need and likely use of the facilities.

Short-term bike storage/parking is identified on the exterior of the building, immediately adjacent to the building entrance and the pedestrian walkway (Plan C-2.01.)

All bicycle parking shall be in conformance with applicable design & construction details as provided by the dept. of public works. **Affirmative finding.**

(m) Landscaping and Fences:

A list of proposed plantings and a landscaping plan has been submitted. The C2-01 site plan notes removal of a tree fronting Riverside Avenue and removal of wood planters and stone wall.

A rain garden is proposed for the northeastern part of the ROW, within the public right-of-way (Plan L1-01). The Conservation Board noted that the identification, maintenance and retention of the rain garden should be included within the Homeowners Association (HOA) recording (or similar ownership documentation) to prevent the filling-in and removal of the rain garden in the future. The proposed rain garden will drain to the city overflow, into the city system.

Per Sec. 5.2.5 (b) 2, retaining walls are permitted within setbacks.

Retaining walls greater than 5 feet tall shall incorporate textured surfaces, terracing, and/or vegetation to avoid long monotonous unarticulated expanses and to minimize adverse visual impacts to neighboring properties. Contrary to prior information, the current retaining wall plans submitted to address the DRB's motion to re-open the public hearing depict steel sheet piling (rather than textured concrete block). This criterion calls for avoidance of long monotonous expanses of retaining wall. Steel sheet piling is commonly used for retaining walls; however, as proposed it does not address the intent of this criterion. Varied material, terracing, and/or landscaping is needed to comply with this criterion. Note that some of the project plans continue to note concrete block retaining walls. Consistency among the plans is needed.

New or replacement street trees shall be provided consistent with the city's Street Tree Master Plan. Consultation with the city arborist will be required.

New fencing will run the length of the proposed retaining walls as a safety measure. Fencing will be black vinyl coated chain link of 4' height. **Affirmative finding as conditioned.**

(n) Public Plazas and Open Space:

While this is proposed to be a private residential development, the plan includes a play and recreational in the rear (south) for the residents. This is a private area, which will be secure from the street area in visibility and access. **Affirmative finding.**

(o)Outdoor Lighting:

Where exterior lighting is proposed the applicant shall meet the lighting performance standards as per Sec 5.5.2.

See Section 5.5.2.

(p) Integrate infrastructure into the design:

Exterior storage areas, machinery and equipment installations, service and loading areas, utility meters and structures, mailboxes, and similar accessory structures shall utilize setbacks, plantings, enclosures and other mitigation or screening methods to minimize their auditory and visual impact on the public street and neighboring properties to the extent practicable.

Utility meters/connections shall be illustrated on site plans and building elevations. Plan C2-01 notes removal of existing gas meter; the new location is on the north/east corner of the building. Plan L1-01 shows landscaping as screening.

Utilities must be undergrounded for all new development.

Utility and service enclosures and screening shall be coordinated with the design of the principal building, and should be grouped in a service court away from public view. The dumpster has been moved out of the required 15' district setback from the abutting residential property.

A plan for the dumpster enclosure, enclosed on all four (4) sides to prevent blowing trash, and screened from public view is on plan A0. **Affirmative finding as conditioned.**

Any development involving the installation of machinery or equipment which emits heat, vapor, fumes, vibration, or noise shall minimize, insofar as practicable, any adverse impact on neighboring properties and the environment pursuant to the requirements of Article 5, Part 4 Performance Standards.

If the applicant proposes any HVAC or rooftop equipment, the submission should be augmented with that information and anticipated noise level (dB) of each unit. **Affirmative finding as conditioned.**

Part 3: Architectural Design Standards
Sec. 6.3.2 Review Standards

(a)Relate development to its environment:

Proposed buildings and additions shall be appropriately scaled and proportioned for their function and with respect to their context. They shall integrate harmoniously into the topography, and to the use, scale, and architectural details of existing buildings in the vicinity.

The following shall be considered:

1. Massing, Height and Scale:

While architectural styles or materials may vary within a streetscape, proposed development shall maintain an overall scale similar to that of surrounding buildings, or provide a sensitive transition, where appropriate, to development of a dissimilar scale.

There are no four story buildings on Riverside Avenue; however the looming embankment that rises to the south and connects to Colchester Avenue/Nash Place alters the perspective of the proposed building.

Where the zoning encourages greater intensity and larger scale buildings in high density residential and non-residential zoning districts, buildings that are over 3-stories should provide a transition by employing design elements that reduce the apparent building mass from the street level. Taller buildings and elements are most appropriate where they provide a focal point of a terminal view, anchor a street corner, frame view corridors, or relate to larger scaled structures

The proposed residential building is presented as "layers"; with horizontal elements (materials, colors) that break up the vertical mass. The window alignment accentuates the horizontality of the plan as well. Additionally, the basement/parking level is situated partly below grade and the fourth floor is set back (see plan A6) so the full four stories are not readily apparent.

Buildings should maintain consistent massing and perceived building height at the street level, regardless of the overall bulk or height of the building. Buildings should maintain a relationship to the human scale through the use of architectural elements, variations of proportions and materials, and surface articulations. Large expanses of undifferentiated building wall along the public street or sidewalk shall be avoided. The apparent mass and scale of buildings shall be broken into smaller parts by articulating separate volumes reflecting existing patterns in the streetscape, and should be proportioned to appear more vertical than horizontal in order to avoid monotonous repetition. (See also (d) Provide an active and inviting street edge below.)

The proposed building has an undulated wall surface that alternates between projecting/receding, articulated with balconies and varying window groupings. The heavy cornice line "caps" the building, providing a strong terminus to the building's height.

The proposed development site is at a major turn on Riverside Avenue; therefore a visual terminus of a different sort. The building will be clearly visible to travelers from either the north, west, or northeast. In that manner, the building will be monumental as a visual and structural anchor on the Riverside Avenue corridor. **Affirmative finding.**

2. Roofs and Rooflines.

As noted above, the building has a strong cornice line along the proposed flat roof that minimizes the actual structural height. Existing conditions on Riverside Avenue are a mixture of development styles and patterns. A flat-roofed building would not be out-of-place at this location.

Roof-top mechanicals shall be screened from view from the public street, and should be incorporated into and hidden within the roof structure whenever possible.

None have been identified; however if any are proposed, it is unlikely that they will be visible from the pedestrian way due to the building's siting and height.

Solar panels, light colored ballast or roof membranes, split roof clerestories, planted or "green" roof technologies (with a clearly articulated maintenance plan) and "gray water" collection are encouraged. Active rooftop uses are also encouraged to add to the visual complexity and activity of the city's skyline, and afford public access to otherwise unseen views of the city and surrounding landscape.

A working rooftop is encouraged, specifically for stormwater retention/mitigation or for solar collection. The Design Advisory Board has recommended installation of conduit to allow the future inclusion of solar technology. The applicant is encouraged to explore all options.
Affirmative finding.

3. Building Openings

Principal entrances shall be clearly defined and readily identifiable from a public street whether by a door, a canopy, porch, or other prominent architectural or landscape features. People with physical challenges should be able to use the same entrance as everyone-else and shall be provided an "accessible route" to the building. Attention shall also be accorded to design features which provide protection from the effects of rain, snow, and ice at building entrances, and to provisions for snow and ice removal or storage.

There are several pedestrian access points: Two on the north (street) elevation, one on the west, one through the east (parking entrance), and one on the rear for access to the play space. There is a feel of polite entry on the north elevation, if the proposed landscaping is installed and the access walkway is permitted to be constructed within the public ROW. Plan A6 suggests that entry may be achieved at grade; however the color illustration accompanying the plans show access steps at this entrance. Confirmation is needed.

Window openings shall maintain consistent patterns and proportions appropriate to the use. The window pattern should add variety and interest to the architecture, and be proportioned to appear more vertical than horizontal. Where awnings over windows or doors are used, the lowest edge of the awning shall be at least eight (8) feet above any pedestrian way, and shall not encroach into the public right-of-way without an encroachment permit issued by the dept. of public works.

The proposed window arrangement displays a rhythm and cadence that break up the building mass yet provide needed daylight to the residences. No awnings are illustrated on the plan, or any building mass that encroaches into the public right-of-way. Much of the site development on the north, however, is within the ROW. Agreement needs to be secured with the department of public works about the feasibility of completing this work (pedestrian walkways, plantings, curbing, utility locations).

Buildings placed on a side or rear property line where no setback is required shall contain neither doors nor windows along such façade so as not to restrict future development or re-development options of the adjacent property due to fire safety code restrictions. Otherwise they should be setback a minimum of 5-feet.

While no setbacks may be required within the NAC-R district, a 15' setback is required for any development that abuts a residential zoning district. This is the case on all but one property line of 110 Riverside Avenue. A dumpster will need to be relocated out of that setback.

The building along the westerly portion of the site, is set back at least 5' from the property line. This elevation proposes to have both windows and a door, which is acceptable per this standard.
Affirmative finding as conditioned.

(b) Protection of Important Architectural Resources:

The existing buildings on the site have no documented architectural significance or merit; therefore this standard does not apply. Not applicable.

(c) Protection of Important Public Views:

There are no protected public views from this site. Not applicable.

(d) Provide an active and inviting street edge:

Building facades shall be varied along the street edge by the integration of architectural features, building materials, or physical step-backs of the façade along its length. Large expanses of undifferentiated building wall shall be avoided. This may be accomplished by incorporating fenestration patterns, bays, horizontal and vertical façade articulations, the rhythm of openings and prominent architectural features such as porches, patios, bays, articulated bases, stepping back an elevation relative to surrounding structures, and other street level details. The use of traditional facade components such as parapet caps, cornices, storefronts, awnings, canopies, transoms, kick plates, and recessed entries are highly encouraged. In areas where high volumes of pedestrian traffic are desired, the use of architectural recesses and articulations at the street-level are particularly important in order to facilitate the flow of pedestrian traffic.

As previously noted, the proposed building exercises a variety of methods to provide interest: varying materials, planes, recesses, balconies, material colors, window arrangements, and a heavy cornice line.

Buildings in downtown districts that provide open space by way of building setbacks at the ground level shall utilize landscaping, street furniture, public art, sitting walls, fountains, etc. to maintain a sense of the existing street wall, define a sense of entry for the building and create a space that enhances the pedestrian's experience.

Although this is within the NAC-R corridor rather than the downtown, the broad setback due to an extraordinarily large public ROW offers the possibility of providing similar amenities: benches, plantings, public art, or sitting walls.

Urban "open" space shall maximize accessibility for all individuals including the disabled, and encourage social interaction.

Plans detail handicap curb ramps within the public ROW. Confirmation that all pedestrian access walks and at least one building entrance is h/c accessible is required. **Affirmative finding as conditioned.**

(e) Quality of materials:

All development shall maximize the use of highly durable building materials that extend the life cycle of the building, and reduce maintenance, waste, and environmental impacts. Such materials are particularly important in certain highly trafficked locations such as along major streets, sidewalks, loading areas, and driveways. Efforts to incorporate the use of recycled content materials and building materials and products that are extracted and/or manufactured within the region are highly encouraged.

The principle building elevation (north) is illustrated with brick veneer, standing seam metal roofing, vertical metal siding, and vinyl siding within balcony areas. Vinyl has been proposed for much of the rest of the building, particularly those areas not readily visible from the street. Vinyl is not a notably durable material, and does not age well.

The DAB included an allowance for differing material on the rear elevation, recommending a more substantial clapboard material on visible elevations and within the balconies; but encouraged consistency throughout.

The DAB also favored metal railings, which are identified on plans A6.

Window specs define proposed double hung vinyl windows. Steel entry doors, with glazing are proposed. **Affirmative finding.**

(f) Reduce energy utilization:

New structures should incorporate the best available technologies and materials in order to maximize energy efficient design. All new construction shall meet the Guidelines for Energy Efficient Construction pursuant to the requirements of Article VI. Energy Conservation, Section 8 of the City of Burlington Code of Ordinances.

New structures should take advantage of solar access where available, and shall undertake efforts to reduce the impacts of shadows cast on adjacent buildings where practicable, in order to provide opportunities for the use of active and passive solar utilization.

New construction will be required to meet the above noted Guidelines for Energy Efficient Construction. As previously noted, solar access is encouraged. The DAB has recommended installation of conduit to allow for its future exercise. **Affirmative finding as conditioned.**

(g)Make advertising features complementary to the site:

No signage is included within this application. Any signs will require a separate sign permit. **Affirmative finding as conditioned.**

(h) Integrate infrastructure into the building design:

See Section 6.2.2. (p) above.

(i) Make spaces secure and safe:

Spaces shall be designed to facilitate building evacuation, accessibility by fire, police or other emergency personnel and equipment, and, to the extent feasible, provide for adequate and secure visibility for persons using and observing such spaces. Building entrances/entry points shall be visible and adequately lit, and intercom systems for multi-family housing should be incorporated where possible, to maximize personal safety.

All requirements for building ingress and egress shall meet the approval of the building inspector and fire marshal.

An intercom system for resident safety is encouraged per this standard.
Affirmative finding as conditioned.

Article 7: Signs
No signage is proposed. Any signage will require a separate sign permit. **Affirmative finding as conditioned.**

Article 8: Parking
This is a Shared-Use Parking District. Per Table 8.1.8-1, 1 parking space is required per residential unit. With 57 units proposed, 57 parking spaces will be required. The application proposes 60 parking spaces. **Affirmative finding.**

Sec. 8.1.9 Maximum Parking Spaces
*The total number of parking spaces provided **in all parking districts** shall not be more than 125% of the minimum number of spaces required for the Neighborhood Parking District for any given use as required in Table 8.1.8-1.*
This is not the Neighborhood Parking District, but the Shared Use Parking District.

(a) Exemptions

1. ***Structured parking**: Spaces provided within the footprint of a structure containing one or more other uses, including rooftop, at-grade, or below grade spaces shall not be counted towards the maximum, provided the floor area dedicated to parking is less than 50% of the total gross floor area of the structure.*

The provided parking is less than 50% of the total gross floor area of the structure; therefore the project is exempt from the maximum parking spaces accounting. **Not applicable.**

Sec. 8.2.5 Bicycle Parking Requirements
Table 8.2.5-1
Long Term Bicycle Parking requirement = 1 for every 4 units
Short Term Bicycle Parking requirement = 1/10 units.
For **57 units**, requirement will be **14 long term** bicycle parking spaces, **6 short term** bicycle spaces. The location of these bicycle parking / storage areas has been identified on the parking lot (floor) plan, with 3 dedicated areas for secure bicycle parking. A short term bicycle parking location to meet the required 6 short term parking spaces is illustrated on Plan C2-01; adjacent to the entrance stairs and pedestrian path. **Affirmative finding.**

Article 9: Inclusionary and Replacement Housing
(See Section 9.1.6, below)
The applicant proposes exercising the opportunity for a height and FAR bonus for providing senior housing. To exercise the height and FAR bonus, 25%, or **14 units will have to be dedicated to low to moderate income senior housing**. The applicant is encouraged to have early discussion with the housing representative from the Community and Economic Development Office, to determine the level of affordability, and whether any bonus provisions or waivers from Impact Fees will apply. In any case, the project must provide 14 senior units (25% of 57 units) to achieve the height bonus (up to 45'), with 10% of the total reserved for low-income households. As previously noted under Sec. 4.4.2 (d) 3.B., the total gross floor area dedicated to the additional senior housing shall be equivalent to the gross floor area resulting from the additional allowance; or 13,066 sq. ft. Confirmation of that area equivalency is required. **Affirmative finding as conditioned.**

Sec. 9.1.6 Exemptions

Exempt from the requirements of this article are:

c) Projects created using the Senior Housing Development Bonus pursuant to the provisions of Article 4.

The redevelopment of 110 Riverside Avenue, proposed to exercise the Senior Housing (height) bonus, is therefore exempt from the requirements of Article 9. Income requirements for affected units, however, shall remain per Sec. 4.4.2 (d) 3. B., Senior Housing. **Affirmative finding as conditioned.**

II. <u>Recommended conditions:</u>

1. **Prior to release of the zoning permit**, revised plans shall be submitted subject to staff review and approval. The revised plans shall address the following:
    a. The requirements of Sec. 6.2.2 (m) - varied material, terracing, and/or landscaping of the proposed retaining walls is needed to comply with this criterion.
    b. Consistency among the plans as to the retaining wall information is needed. Property boundary monuments shall be placed and referenced on project plans.
    c. Balcony and other railings will be metal.
    d. A more durable exterior sheathing than vinyl is recommended. Also, the composite trim proposed has a tendency to fade in color over a period of time. Deep colors of Azek (or similar) are therefore not recommended.
    e. An entry canopy is recommended for all exterior doors, including two on the north and one on the west.
2. **Prior to release of the zoning permit**, final review and approval of the proposed retaining wall shall be obtained from the city engineer.
3. The applicant shall resolve any water pressure issues as necessary with the water division of Public Works to accommodate the development of new residential units.
4. This plan assumes the accuracy of the provided Estimated Construction Cost (previously submitted as Condition #2: $4,560,000.) Any increase in the ECC will result in revised application fees as allowed under the Stipulated Agreement of January 3, 2019. Any additional application or development review fees incurred as a result of cost estimation adjustment shall be paid **prior to release of any zoning permit**.
5. There are a number of open permits on the property, which must be closed out with issuance of a Final Certificate of Occupancy. This must occur **before a Certificate of Occupancy may be issued for this zoning permit**.
6. Impact Fees must be paid to the city's chief administrative officer/city treasurer according to the following schedule:
    *(a) New Buildings: Impact fees must be paid **at least seven (7) days prior to occupancy** of a new building or any portion thereof.*

    Fees shall be as noted in Sec. 3.3.2 and 3.3.3, unless revised to reflect a change in the total gross square footage of the development or to reflect the appropriateness of Impact Fee waivers or reductions. Any request for waivers or reductions of Impact Fees shall be accompanied by a Certificate of Inclusionary Housing Compliance issued by the manager of the city's Housing Trust Fund, confirming applicability for any such waiver or reduction, and providing the Square foot calculation benefiting from the waiver.

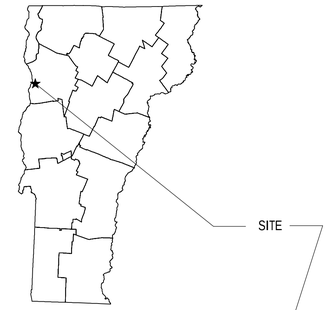
7. The project must provide **14 low to moderate income senior housing units, (25% of 57), with not less than 10% of those (6) reserved for low-income households** to secure the building height bonus identified in ***Sec. 4.4.2 (d) 3. B; Senior Housing*** (up to 45'.) Although the development is exempt per Article 9 for Inclusionary Housing (See Article 9, Sec. 9.1.6), income eligibility for reserved senior units shall remain. Per the Housing Trust Fund officer:

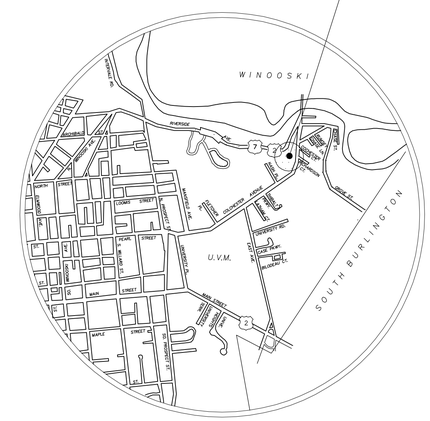
   Under the Senior Housing bonus, 10% of the units are affordable to and occupied by low-income households (80% Area Median Income), and another 15% are affordable to and occupied by moderate-income households (100% of AMI). Article 9 Inclusionary Housing requires at least 15% of the units be affordable to and occupied by households at 65% of AMI.
8. The height bonus is available where no less than 25% of the total number of onsite units are reserved for low-moderate income senior households, including no less than 10% reserved for low-income households. The total gross floor area dedicated to the senior housing must be equivalent to the gross floor area resulting from the additional allowance, or 13, 066 sq. ft. A floor plan has been submitted by Guild Design defining the required floor area dedicated to senior housing. 10 units are identified at the fourth floor; 4 more units specifically for senior housing are identified within the building.
9. The applicant will provide a Phase II study, a CAP or SMAC issued by the Department of Environmental Conservation. Any demolition, site disturbance, development or other work on the site shall be in concert with plans and actions approved by the Vermont Department of Environmental Conservation. The DRB requires approval or certification from the Vermont Department of Environmental Conservation (DEC) on the suitability of the site as remediated for residential use. Absent that, the applicant shall return to the DRB for further review. Any site remediation, which may include Site Management Activity Completion (SMAC) shall be defined by and coordinated by the Vermont Department of Environmental Conservation.
10. Verterre Environmental Scientists and Field Services (or similar contractor) will be on-site during building demolition to investigate the presence of abandoned tanks, buried lifts, drains, and oil/water separators and to discern appropriate remediation. Any contamination will be brought to the attention of the State of Vermont Department of Environmental Conservation (DEC).
11. The applicant submits a pedestrian crossing with the pedestrian activated flashing light signal. This must be acceptable to the Department of Public Works. There will be limited access at the westerly entrance into the garage with stops signs and gate to control improper use.
12. Illumination levels of the parking lot are encouraged to be reduced by at least 50% within one hour after the end of public business hours.
13. Light levels on adjacent properties shall not exceed one tenth (0.1) footcandle as a direct result of the on-site lighting measured 20 feet beyond the property line of the development site. This shall be confirmed with photometric readings that include those adjacent areas within the specified 20' of all property boundaries**.**
14. Any fixture visible from the exterior of the garage facility shall be a full cutoff or cut-off fixture or shall be installed in a manner that prevents glare to be visible from the exterior of the parking garage.

15. Internal bicycle storage shall be provided to accommodate at least **14 long term bicycle parking spaces**. It is highly recommended that these are locker-style or secure/lockable storage units to prevent theft. Per the ordinance, **6 short term bicycle parking spaces** are required as well (1/10 units.)
16. New or replacement street trees shall be provided consistent with the city's *Street Tree Master Plan.* All proposed street trees shall be selected and planted in accordance with specifications provided by the city arborist. That information shall be provided to the DRB.
17. Any outdoor signs will require a separate zoning permit.
18. The erosion prevention and sediment control plan and post-construction stormwater management plan associated with the original approval of zoning permit 13-0650CA/MA shall apply to this zoning permit.
19. A State Wastewater Permit (on confirmation of the continued validity of issued permit) will be required for water and sewer service. It is the obligation of the owner/applicant to seek this or to provide evidence that prior approval is still valid.
20. ADA compliance is under the jurisdiction of the building inspector.
21. The applicant/owner shall obtain written approval from the Department of Public Works in the development of any part of this project within the public right-of-way, including but not limited to lighting, rain gardens, sidewalk installation, utilities, landscaping, etc.
22. Standard Permit Conditions 1-15.

SISTERS & BROTHERS INVESTMENT GROUP

110 RIVERSIDE AVE.
BURLINGTON, VERMONT





DRAWING INDEX

C1-01	STANDARD NOTES & LEGEND
C1-03	EXISTING CONDITIONS
C2-01	SITE PLAN
C2-02	GRADING PLAN
C2-03	UTILITY PLAN
C4-01	WATERSHED DELINEATION PLAN
C5-01	DEMOLITION & EROSION CONTROL PLAN
L1-01	PLANTING PLAN
L1-02	PLANTING PLAN
L2-01	LIGHTING PLAN
C8-01	SITE DETAILS
C8-02	STORM DETAILS
C8-03	WATER DETAILS
C8-04	SEWER DETAILS

Applicant/Owner:
SISTERS & BROTHERS INVESTIMENT GROUP
75 S. WINOOSKI AVE.
BURLINGTON, VERMONT 05401

Civil Engineer:
TRUDELL CONSULTING ENGINEERS (TCE)
ATTN. JEREMY MATOSKY, PE, CPESC
478 BLAIR PARK ROAD
WILLISTON, VT 05495
PHONE: (802)879-6331

Architect:
Steve Guild Design
One Steel Street
Burlington, VT 05401
802-363-1482

Structural:
Concepts in Structures, LLC
Roland VanDyk
139 Cozzens Road
Huntington, VT 05462
802-540-3030

Geotechnical:
Knight Consulting Engineers
Eric Goddard
51 Knight Lane
Williston, VT 05495
802-879-6376

PLAN INTENT:
THESE PLANS ARE INTENDED FOR PERMITTING PURPOSES.

STATE OF VERMONT
ABIGAIL A. DEAN
No. 9020
CIVIL
LICENSED PROFESSIONAL ENGINEER

USE AND INTERPRETATION OF THE DRAWINGS

1. Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such.

2. Only drawings specifically marked "For Construction" are intended to be used in conjunction with contract documents, specifications, owner/contractor agreements and to be fully coordinated with other disciplines, including but not limited to, the Architect, if applicable. These Drawings shall not be used for construction layout. Contact TCE for any construction surveying services or to obtain electronic data suitable for construction layout.

3. These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.

4. By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings and have met with all applicable parties/disciplines to insure these plans are properly coordinated with other aspects of the Project. The Owner and Architect, are responsible for any buildings shown, including an area measured five (5) feet around any building.

5. It is the User's responsibility to ensure this copy contains the most current revisions.

BEFORE USING THESE PLANS ENSURE THAT YOU HAVE THE LATEST REVISION

LAST REVISED:	1/16/20

TCE PROJECT NO: 10-083

LEGEND

LINE

	EXISTING	PROPOSED	REMOVED/ABANDONED
SITE			
PAVED DRIVE OR ROAD			
GRAVEL DRIVE OR ROAD			
PAVED DRIVE OR ROAD WITH CURB			
TREE LINE			
TRAIL			
WETLAND LIMIT			
TOPOGRAPHIC CONTOURS	124	124	
STREAM			
SILT FENCE			
UTILITIES			
SEWER MAINS AND SERVICES	S	S	S S S S
SEWER FORCEMAIN	FM	FM	FM FM FM
WATER MAINS AND SERVICES	W	W	W W W W
STORM DRAINAGE	D	D	D D D D
CURTAIN DRAIN	CD	CD	CD CD CD
UNDERDRAIN	UD	UD	UD UD UD
ROOF DRAIN	RD	RD	RD RD RD
FOOTING DRAIN	FD	FD	FD FD FD
LIQUID PROPANE OR NATURAL GAS	G	G	G G G
OVERHEAD POWER	OHP	OHP	OHP OHP OHP
UNDERGROUND POWER	UP	UP	UP UP UP
OVERHEAD TELEPHONE	OHT	OHT	OHT OHT OHT
UNDERGROUND TELEPHONE	UT	UT	UT UT UT
OVERHEAD POWER & TELEPHONE	OHP&T	OHP&T	OHP&T OHP&T
UNDERGROUND POWER & TELEPHONE	UP&T	UP&T	UP&T UP&T
OVERHEAD POWER, TELEPHONE & CABLE	OHP&T&C	OHP&T&C	OHP&T&C OHP&T&C
UNDERGROUND POWER, TELEPHONE & CABLE	UP&T&C	UP&T&C	UP&T&C UP&T&C
CABLE TELEVISION		CTV	
FIBER OPTIC			
SURVEY			
PROPERTY LINE			
RIGHT-OF-WAY LINE			
EASEMENTS			
STONEWALL			
FENCE	X	X	X
BUILDING SETBACKS			

SYMBOL

	EXISTING	PROPOSED	REMOVED/ABANDONED
SITE			
SIGN			
WETLAND FLAG			
UTILITIES			
SEWER MANHOLE (SMH)			
SEWER CLEANOUT (CO)			
PUMP STATION (PS)	PS		PS
STORM DRAINAGE MANHOLE (DMH)			
CATCH BASIN (CB)			
STORM DRAINAGE CLEANOUT			
OUTLET OR END SECTION			
VALVE			
CURB STOP (CS)			
FIRE HYDRANT (HYD)			
WATER SUPPLY WELL			WW
END CAP			
BLOWOFF			
UTILITY POLE			
MTC OR TRANSFORMER			
TELEPHONE MANHOLE			
TELEPHONE PEDESTAL			
LUMINAIRE			
BOLLARD LIGHT			
TELEVISION PEDESTAL			
FIELD			
CALCULATED POINT			
TCE CONTROL POINT STEEL REBAR			
TCE CONTROL POINT PK NAIL			
OBSERVATION WELL			
PERCOLATION TEST			
SOIL TEST PIT			
SOIL BORING			
BENCHMARK			
SURVEY	FOUND	TO BE SET	SET

CONSTRUCTION NOTES:

1. CONTRACT DOCUMENTS:THESE PLANS WERE PREPARED BY TRUDELL CONSULTING ENGINEERS (TCE) AND ARE INTENDED TO BE USED IN CONJUNCTION WITH THE STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT, #C-700 PREPARED BY THE ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE (EJCDC), LATEST EDITION. COPIES ARE AVAILABLE AT WWW.NSPE.ORG/EJCDC

2. UNDERGROUND IMPROVEMENTS: THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS SHOWN ARE ASSUMED BASED ON RESEARCH, UTILITY PLANS PROVIDED BY OTHERS, AND/OR SURFACE EVIDENCE AVAILABLE AND WERE OBTAINED IN A MANNER CONSISTENT WITH THE ORDINARY STANDARD OF PROFESSIONAL CARE AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE DESIGN ENGINEER.

3. DIFFERING SUBSURFACE OR PHYSICAL CONDITIONS: IF CONTRACTOR BELIEVES THAT ANY SUBSURFACE OR PHYSICAL CONDITION AT OR CONTIGUOUS TO THE SITE THAT IS UNCOVERED OR REVEALED EITHER: (1) IS OF SUCH A NATURE AS TO ESTABLISH THAT ANY "TECHNICAL DATA" ON WHICH CONTRACTOR RELIED IS MATERIALLY INACCURATE; OR (2) IS OF SUCH A NATURE AS TO REQUIRE A CHANGE IN THE PLANS/ CONTRACT DOCUMENTS; OR (3) DIFFERS MATERIALLY FROM THAT SHOWN OR INDICATED IN THE PLANS/CONTRACT DOCUMENTS; OR (4) IS OF AN UNUSUAL NATURE, AND DIFFERS MATERIALLY FROM CONDITIONS ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERENT IN WORK OF THE CHARACTER PROVIDED FOR IN THE PLANS/CONTRACT DOCUMENTS; THEN CONTRACTOR SHALL, PROMPTLY AFTER BECOMING AWARE THEREOF AND BEFORE FURTHER DISTURBING THE SUBSURFACE OR PHYSICAL CONDITIONS OR PERFORMING ANY WORK IN CONNECTION THEREWITH (EXCEPT IN AN EMERGENCY), NOTIFY OWNER AND ENGINEER ABOUT SUCH CONDITION. CONTRACTOR SHALL NOT FURTHER DISTURB SUCH CONDITION OR PERFORM ANY WORK IN CONNECTION THEREWITH (EXCEPT AS AFORESAID) UNTIL RECEIPT OF WRITTEN ORDER TO DO SO.

4. UTILITIES: PRIVATE AND PUBLIC UTILITIES SUCH AS ELECTRIC, TELEPHONE, GAS, CABLE, FIBER OPTIC ETC. ARE THE RESPONSIBILITY OF THE RESPECTIVE UTILITY COMPANY. ANY INFORMATION SHOWN BY TCE SHOULD BE CONSIDERED PRELIMINARY (USUALLY TO ASSIST WITH PERMITTING). FINAL DESIGN, CONSTRUCTION AND MAINTENANCE ARE THE RESPONSIBILITY OF RESPECTIVE UTILITY COMPANIES. COMPLIANCE WITH EASEMENTS AND REGULATIONS (STATE AND LOCAL) ARE THE RESPONSIBILITY OF RESPECTIVE UTILITY COMPANY.

5. DIGSAFE: IN ACCORDANCE WITH VERMONT STATE LAW (VSA TITLE 30 CHAPTER 86 AND PSB RULE 3.800) THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT DIGSAFE SYSTEMS, INC., "DIGSAFE", AT LEAST 48 HOURS , EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS, BUT NOT MORE THAN 30 DAYS BEFORE COMMENCING EXCAVATION ACTIVITIES, EXCEPT IN AN EMERGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRE-MARKING THE SITE AND MAINTAINING DESIGNATED MARKINGS. FOR MORE INFORMATION ON DIGSAFE REQUIREMENTS SEE WWW.DIGSAFE.COM

6. JOBSITE SAFETY: NEITHER THE PROFESSIONAL ACTIVITIES OF TRUDELL CONSULTING ENGINEERS (TCE), NOR THE PRESENCE OF TCE OR ITS EMPLOYEES AND SUB CONSULTANTS AT A CONSTRUCTION SITE, SHALL RELIVE THE GENERAL CONTRACTOR AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. TCE AND ITS PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PRECAUTIONS. THE CLIENT AGREES THAT THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR JOBSITE SAFETY, AND WARRANTS THAT THIS INTENT SHALL BE MADE EVIDENT IN THE CLIENT'S AGREEMENT WITH THE GENERAL CONTRACTOR. THE CLIENT ALSO AGREES THAT THE CLIENT, TCE AND TCE'S CONSULTANTS SHALL BE INDEMNIFIED AND SHALL BE MADE ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S GENERAL LIABILITY INSURANCE POLICY.

7. CODES AND STANDARDS COMPLIANCE:TCE SHALL EXERCISE USUAL AND CUSTOMARY PROFESSIONAL CARE IN ITS EFFORTS TO COMPLY WITH CODES, STANDARDS, REGULATIONS, AND ORDINANCES IN EFFECT. THE OWNER ACKNOWLEDGES THAT SUCH REQUIREMENTS MAY BE SUBJECT TO VARIOUS AND CONTRADICTORY INTERPRETATIONS. TCE, THEREFORE, WILL ITS REASONABLE PROFESSIONAL EFFORTS AND JUDGMENT TO INTERPRET APPLICABLE REQUIREMENTS AS THEY APPLY TO THE PROJECT. TCE, HOWEVER, CANNOT AND DOES NOT WARRANT OR GUARANTEE THAT THE PROJECT WILL COMPLY WITH ALL INTERPRETATIONS OF SUCH REQUIREMENTS.

8. CONSTRUCTION OBSERVATION: TCE MAY VISIT THE PROJECT AT APPROPRIATE INTERVALS DURING CONSTRUCTION TO BECOME GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE CONTRACTOR'S WORK AND TO DETERMINE IF THE WORK IS PRECEDING IN GENERAL ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE OWNER HAS NOT RETAINED TCE TO MAKE DETAILED INSPECTIONS OR TO PROVIDE EXHAUSTIVE OR CONTINUOUS PROJECT REVIEW AND OBSERVATION SERVICES. TCE DOES NOT GUARANTEE THE PERFORMANCE OF, AND SHALL NOT HAVE RESPONSIBILITY FOR, THE ACTS OR OMISSIONS OF ANY CONTRACTOR, SUB-CONTRACTOR, SUPPLIER OR ANY OTHER ENTITY FURNISHING MATERIALS OR PERFORMING ANY WORK ON THE PROJECT. TCE SHALL NOT SUPERVISE, DIRECT OR HAVE CONTROL OVER THE CONTRACTOR'S WORK NOR HAVE ANY RESPONSIBILITY FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF THE CONTRACTOR. IF THE OWNER DESIRES MORE EXTENSIVE PROJECT OBSERVATION OR FULL-TIME PROJECT REPRESENTATION, THE OWNER SHALL REQUEST SUCH SERVICES BE PROVIDED BY TCE AS ADDITIONAL SERVICES.

9. UTILITIES SHOWN ARE APPROXIMATE AND DO NOT NECESSARILY REPRESENT ALL UTILITIES LOCATED ON OR ADJACENT TO THE AREA SURVEYED. THE CONTRACTOR SHALL FIELD VERIFY ALL UTILITY CONFLICTS. ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER.

10. ALL EXISTING UTILITIES NOT INCORPORATED INTO THE FINAL DESIGN ARE TO BE REMOVED OR ABANDONED AS INDICATED ON THE PLANS.

11. THE CONTRACTOR SHALL MAINTAIN AS-BUILT PLANS (WITH TIES) FOR ALL UNDERGROUND UTILITIES. THOSE PLANS SHALL BE SUBMITTED TO THE OWNER AT THE COMPLETION OF THE PROJECT.

12. THE CONTRACTOR SHALL REPAIR/RESTORE ALL DISTURBED AREAS (ON OR OFF THE SITE) AS A DIRECT OR INDIRECT RESULT OF THE CONSTRUCTION.

13. ALL GRASSED AREAS SHALL BE MAINTAINED UNTIL FULL VEGETATION IS ESTABLISHED.

14. MAINTAIN ALL TREES OUTSIDE OF CONSTRUCTION LIMITS.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK NECESSARY FOR COMPLETE AND OPERABLE FACILITIES AND UTILITIES.

16. IN ADDITION TO THE REQUIREMENTS SET IN THESE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL COMPLETE THE WORK IN ACCORDANCE WITH ALL PERMIT CONDITIONS, LOCAL PUBLIC WORKS STANDARDS AND ALL CONSTRUCTION SAFETY REGULATIONS.

17. ANY DEWATERING NECESSARY FOR THE COMPLETION OF THE SITEWORK SHALL BE CONSIDERED AS PART OF THE CONTRACT AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

18. IF THERE ARE ANY CONFLICTS OR INCONSISTENCIES WITH THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR VERIFICATION BEFORE WORK CONTINUES ON THE ITEM(S) IN QUESTION.

19. ALL SYSTEM COMPONENTS (TANKS, PIPES, JOINTS) SHALL BE WATERTIGHT.

20. CONTRACTOR SHALL SUBMIT FINAL PROPOSED SHORING SCHEME TO THE GEOTECHNICAL ENGINEER TO CHECK COMPLIANCE WITH OVERALL SLOPE STABILITY FACTORS-OF-SAFETY.

GENERAL NOTES:

1. CONTRACTOR TO ADJUST ANY POTABLE WATER LINE CROSSINGS AND CONSULT WITH ENGINEER TO MEET REQUIREMENTS SHOWN ON THE DETAIL SHEET "WATER/SEWER CROSSING" DETAIL.

2. SEWER LATERAL CONNECTIONS ARE SHOWN FOR CLARITY. CONTRACTOR TO CONSULT WITH ENGINEER AND SUPPLY BENDS, CLEANOUTS, ETC. AS NECESSARY TO FACILITATE PROPER CONNECTION BETWEEN FOUNDATION WALL AND SEWER MAIN LINE.

3. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH ALL RELEVANT PARTIES (INCLUDING, BUT NOT LIMITED TO OWNER, ARCHITECT AND UTILITY COMPANIES) TO DETERMINE FINAL LAYOUT AND DESIGN.

4. DESIGN AND CONSTRUCTION OF PEDESTRIAN WALKS, RAMPS AND DECKS BETWEEN BUILDINGS AND PARKING LOTS IS PROVIDED BY THE ARCHITECT AND INCORPORATED INTO THE BUILDING DESIGN.

5. ALL CURB STOP VALVES TO BE INSTALLED WITH ACCESS COVER AT FINISHED GRADE.

6. ALL WATER LINE TAPS SHALL BE LIVE TAPS; EXISTING WATER LINE MUST REMAIN IN SERVICE DURING CONNECTION, UNLESS INDICATED OTHERWISE.

SURVEY NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT PERTINENT EXISTING CONDITIONS AS OF THE DATE OF SURVEY. TOPOGRAPHIC INFORMATION SHOWN IS BASED ON A FIELD SURVEY USING A TOPCON TOTAL STATION, PERFORMED BY TRUDELL CONSULTING ENGINEERS ON APRIL 26, 2011.

2. BEARINGS SHOWN ARE MAGNETIC NORTH TAKEN ALONG A LEG OF THE SURVEY TRAVERSE.

3. VERTICAL DATUM IS ASSUMED BASED ON TCE CONTROL POINT #1 ELEV.=500.0.

4. THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS SHOWN ARE ASSUMED BASED ON RESEARCH, UTILITY PLANS PROVIDED BY OTHERS, AND/OR SURFACE EVIDENCE AVAILABLE AND WERE OBTAINED IN A MANNER CONSISTENT WITH THE ORDINARY STANDARD OF PROFESSIONAL CARE AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE DESIGN ENGINEER. ENGINEER SHALL BE NOTIFIED IF ANY DISCREPANCIES ARE ENCOUNTERED. ACTUAL LOCATION OF UNDERGROUND UTILITIES MAY VARY. DIGSAFE MUST BE CONTACTED PRIOR TO AY EXCAVATION.

tce
ENGINEERING • SURVEY
PLANNING • ENVIRONMENTAL
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 | WWW.TCEVT.COM

Revisions

No.	Description	Date	By
1	Conservation Board	1/17/13	AAD
2	For Local Submittal	2/15/19	AAD
3	Per DPW Comments	11/6/19	AAD

Use of These Drawings

1. Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not inked as construction drawings unless noted as such or marked approved by a regulatory authority.

2. By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings, obtained all necessary permits, and have met with all applicable parties/disciplines, including but not limited to, the Engineer and the Architect, to insure these plans are properly coordinated including, but not limited to, contract documents, specifications, owner/contractor agreements, building and mechanical plans, private and public utilities, and other pertinent permits for construction.

3. Owner and Architect, are responsible for final design and location of buildings shown, including an area measured a minimum five (5) feet around any building and coordinating final utility connections shown on these plans.

4. Prior to using these plans for construction layout, the user shall contact TCE to ensure the plan contains the most current revisions.

5. These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.

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STATE OF VERMONT
ABIGAIL A. DEAN
No. 9020
CIVIL
LICENSED
PROFESSIONAL ENGINEER

Project Title

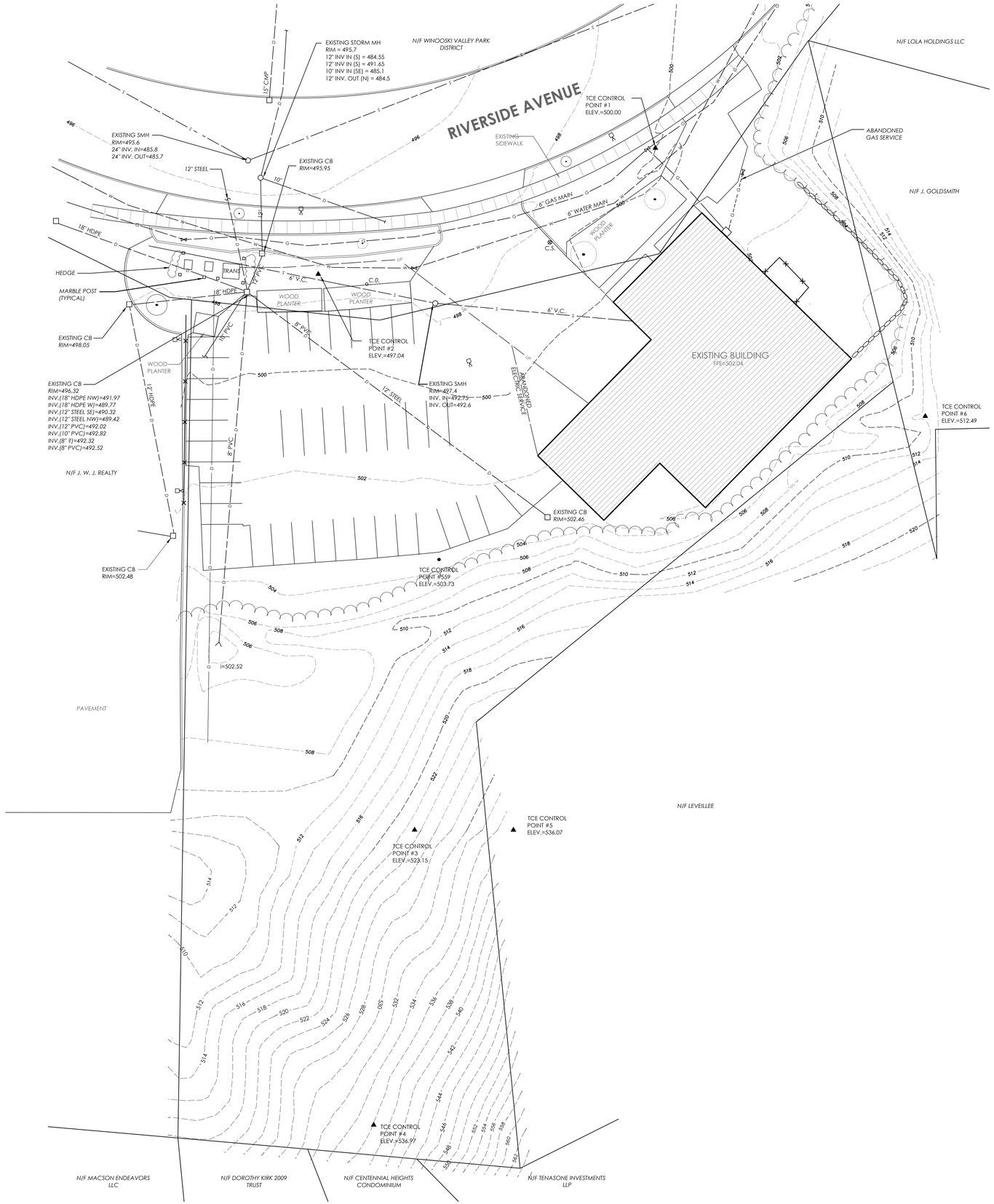
Sisters and Brothers Investment Group
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Legend & Notes

Date:	11/21/2012
Scale:	
Project Number:	2010083
Drawn By:	RMP
Project Engineer:	AAL
Approved By:	
Field Book:	

C1-01



GENERAL NOTES:

1. OWNER OF RECORD: SISTERS AND BROTHERS INVESTMENT GROUP
2. TAX PARCEL ID: 046–3–081
3. PHYSICAL ADDRESS OF PROPERTY: 110 RIVERSIDE AVE. BURLINGTON, VERMONT 05401
4. PARCEL SIZE: 1.22 ACRES±
5. LOT COVERAGE: BUILDINGS – 6,887 SQ. FT. OR 13.0%
   OVERALL – 21,409 SQ. FT. OR 40.4%
6. PARKING: 36 SPACES

SURVEY NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT PERTINENT EXISTING CONDITIONS AS OF THE DATE OF SURVEY. TOPOGRAPHIC INFORMATION SHOWN IS BASED ON A FIELD SURVEY USING A TOPCON TOTAL STATION, PERFORMED BY TRUDELL CONSULTING ENGINEERS ON APRIL 26, 2011.
2. BEARINGS SHOWN ARE MAGNETIC NORTH TAKEN ALONG A LEG OF THE SURVEY TRAVERSE.
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Graphic Scale

20 0 20 40 60 80 Feet

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Revisions

No.	Description	Date	By
1	For Local Submittal	2/15/19	AAD

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STATE OF VERMONT
ABIGAIL A. LEE
No. 9020
CIVIL
LICENSED PROFESSIONAL ENGINEER

Project Title

Sisters and Brothers Investment Group

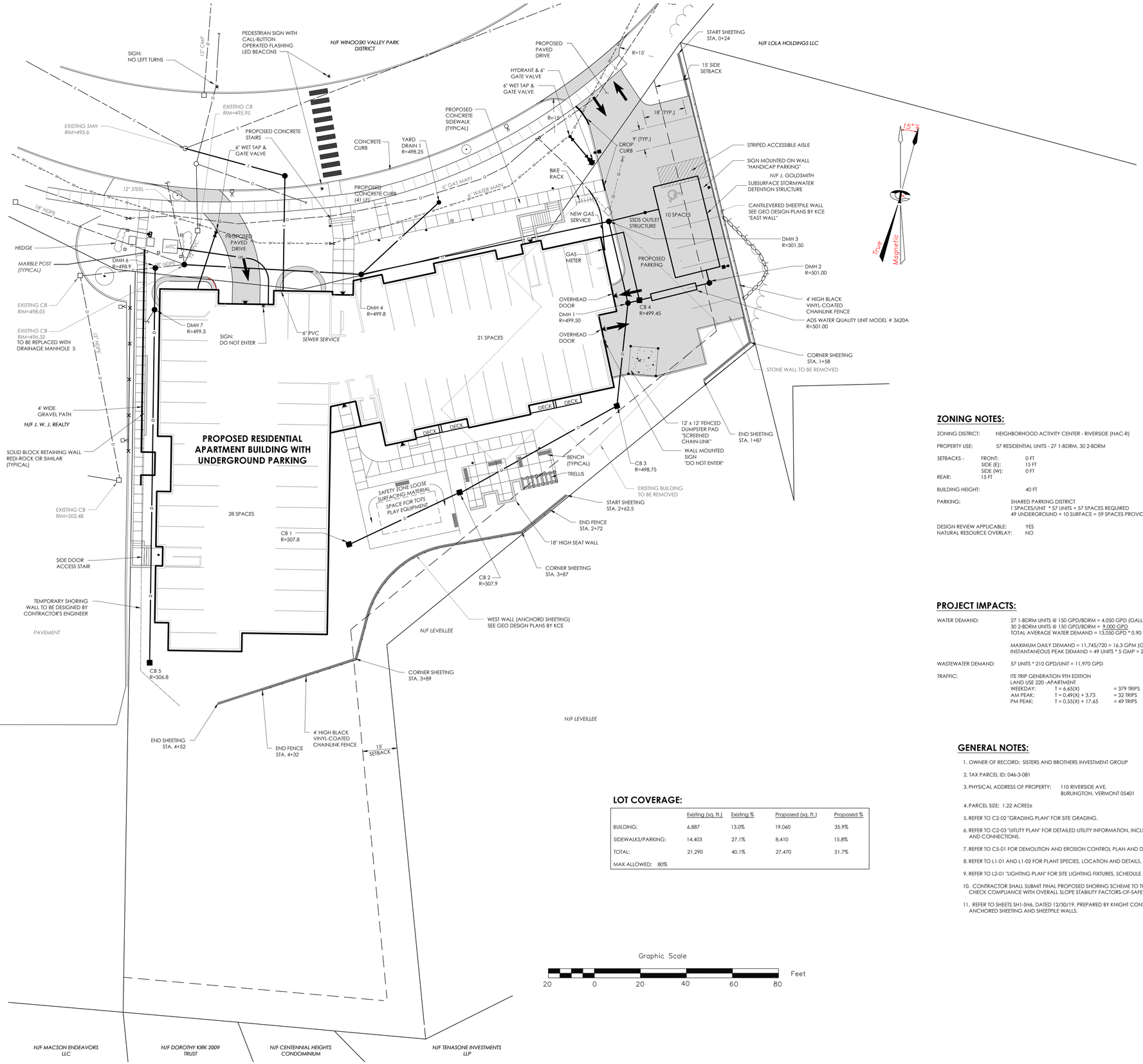
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Existing Conditions

Date:	11/21/12
Scale:	1" = 20'
Project Number:	2010083
Drawn By:	PJM
Project Engineer:	AAL
Approved By:	
Field Book:	

C1-03



LOT COVERAGE:

	Existing (sq. ft.)	Existing %	Proposed (sq. ft.)	Proposed %
BUILDING:	6,887	13.0%	19,060	35.9%
SIDEWALKS/PARKING:	14,403	27.1%	8,410	15.8%
TOTAL:	21,290	40.1%	27,470	51.7%
MAX ALLOWED: 80%				

ZONING NOTES:

ZONING DISTRICT: NEIGHBORHOOD ACTIVITY CENTER - RIVERSIDE (NAC-R)

PROPERTY USE: 57 RESIDENTIAL UNITS - 27 1-BDRM, 30 2-BDRM

SETBACKS - FRONT: 0 FT
SIDE (E): 15 FT
SIDE (W): 0 FT
REAR: 15 FT

BUILDING HEIGHT: 40 FT

PARKING: SHARED PARKING DISTRICT
1 SPACES/UNIT * 57 UNITS = 57 SPACES REQUIRED
49 UNDERGROUND + 10 SURFACE = 59 SPACES PROVIDED.

DESIGN REVIEW APPLICABLE: YES
NATURAL RESOURCE OVERLAY: NO

PROJECT IMPACTS:

WATER DEMAND: 27 1-BDRM UNITS @ 150 GPD/BDRM = 4,050 GPD (GALLONS PER DAY)
30 2-BDRM UNITS @ 150 GPD/BDRM = 9,000 GPD
TOTAL AVERAGE WATER DEMAND = 13,050 GPD * 0.90 = 11,745 GPD

MAXIMUM DAILY DEMAND = 11,745/720 = 16.3 GPM (GALLONS PER MINUTE)
INSTANTANEOUS PEAK DEMAND = 49 UNITS * 5 GMP = 285 GPM

WASTEWATER DEMAND: 57 UNITS * 210 GPD/UNIT = 11,970 GPD

TRAFFIC: ITE TRIP GENERATION 9TH EDITION
LAND USE 220 -APARTMENT
WEEKDAY: T = 6.65(X) = 379 TRIPS
AM PEAK: T = 0.49(X) + 3.73 = 32 TRIPS
PM PEAK: T = 0.55(X) + 17.65 = 49 TRIPS

GENERAL NOTES:

1. OWNER OF RECORD: SISTERS AND BROTHERS INVESTMENT GROUP
2. TAX PARCEL ID: 046-3-081
3. PHYSICAL ADDRESS OF PROPERTY: 110 RIVERSIDE AVE. BURLINGTON, VERMONT 05401
4. PARCEL SIZE: 1.22 ACRES±
5. REFER TO C2-02 "GRADING PLAN" FOR SITE GRADING.
6. REFER TO C2-03 "UITLITY PLAN" FOR DETAILED UTILITY INFORMATION, INCLUDING RIMS, INVERTS, CROSSINGS, AND CONNECTIONS.
7. REFER TO C5-01 FOR DEMOLITION AND EROSION CONTROL PLAN AND DETAILS.
8. REFER TO L1-01 AND L1-02 FOR PLANT SPECIES, LOCATION AND DETAILS.
9. REFER TO L2-01 "LIGHTING PLAN" FOR SITE LIGHTING FIXTURES, SCHEDULE AND DETAILS.
10. CONTRACTOR SHALL SUBMIT FINAL PROPOSED SHORING SCHEME TO THE GEOTECHNICAL ENGINEER TO CHECK COMPLIANCE WITH OVERALL SLOPE STABILITY FACTORS-OF-SAFETY.
11. REFER TO SHEETS SH1-SH6, DATED 12/30/19, PREPARED BY KNIGHT CONSULTING ENGINEERS FOR DETAIL ON ANCHORED SHEETING AND SHEETPILE WALLS.

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Revisions

No.	Description	Date	By
1	Conservation Board	1/17/13	AAD
2	Crosswalk & Driveway	3/28/13	AAD
3	For Local Submittal	2/15/19	AAD
4	Per DPW Comments	2/15/2019	AAD
5	Geotech Notes & Dumpster	1/16/2020	AAD

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STATE OF VERMONT
No. 9020
CIVIL
LICENSED PROFESSIONAL ENGINEER

Project Title

Sisters and Brothers Investment Group

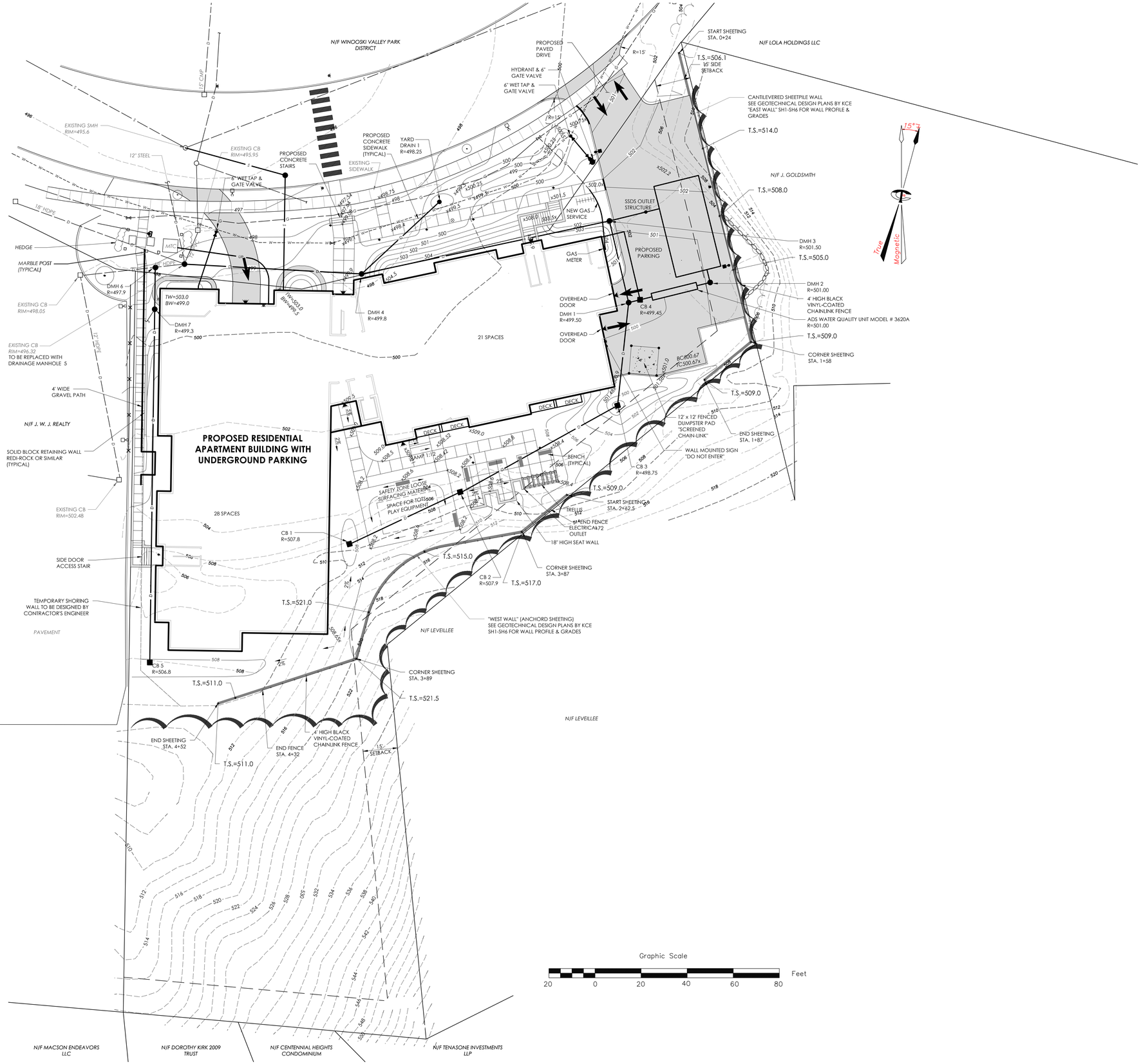
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Site Plan

Date:	11/21/2012
Scale:	1" = 20'
Project Number:	2010083
Drawn By:	PJM
Project Engineer:	AAL
Approved By:	
Field Book:	

C2-01



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Revisions

No.	Description	Date	By
1	For Local Submittal	2/15/19	AAL
2	Per DPW Comments	11/6/19	AAD
3	Geotech Notes & Dumpster	1/16/20	AAD

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No. 9020
CIVIL
LICENSED PROFESSIONAL ENGINEER

Project Title

Sisters and Brothers Investment Group

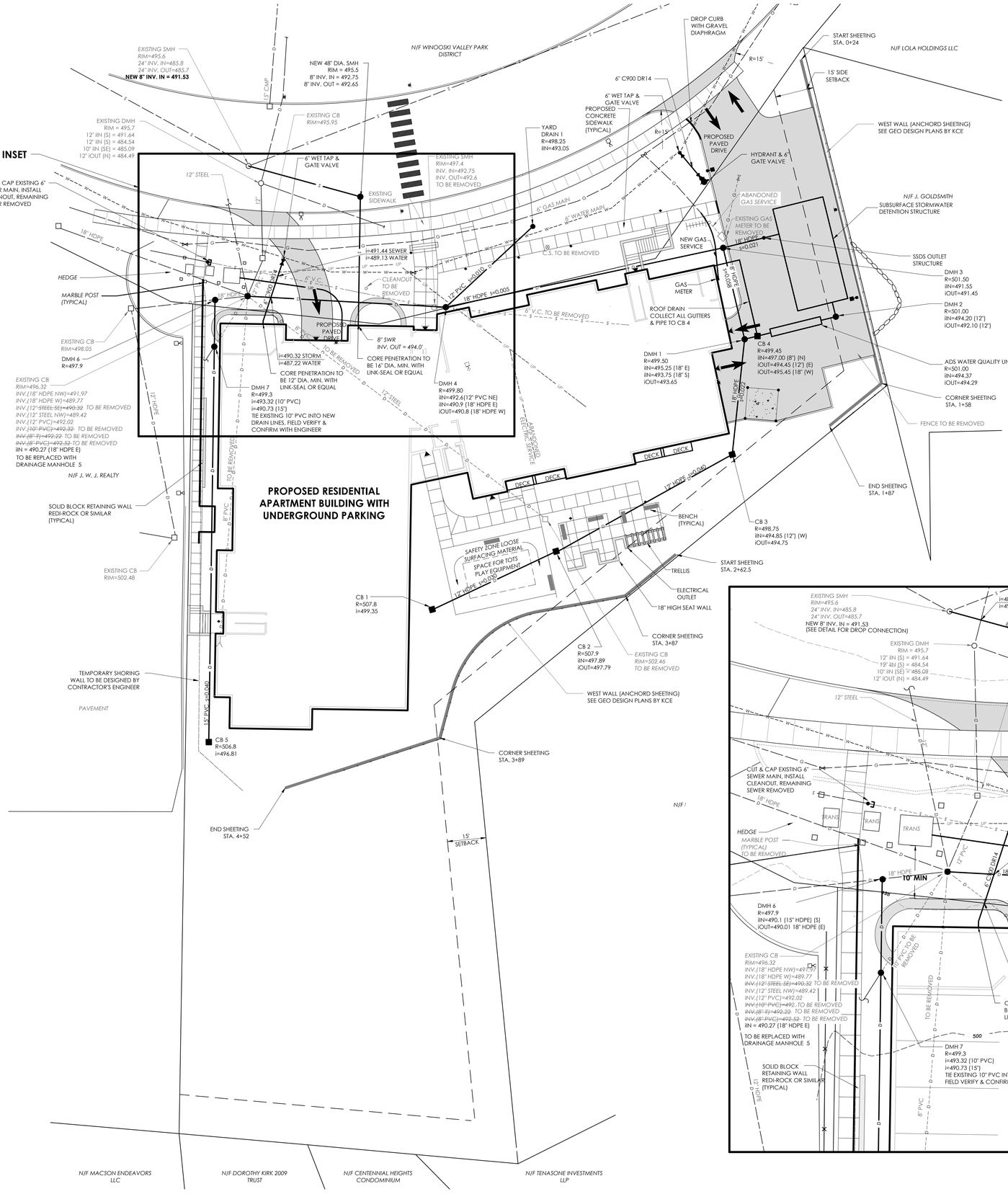
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Grading Plan

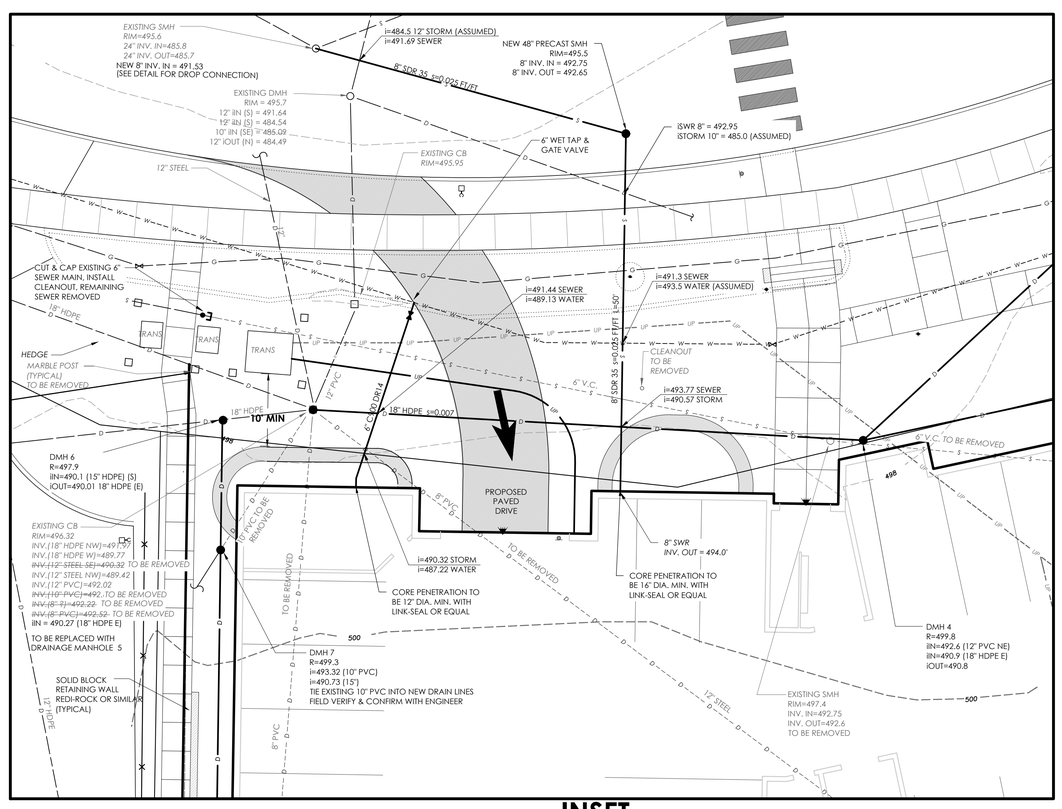
Date:	11/21/2012
Scale:	1" = 20'
Project Number:	2010083
Drawn By:	RMP
Project Engineer:	AAL
Approved By:	
Field Book:	

C2-02



NOTES:
THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF BURLINGTON PRIOR TO ANY WORK WITHIN RIVERSIDE AVENUE. NO ALTERATIONS TO TRAFFIC PATTERNS, DETOURS, ETC. SHALL OCCUR WITHOUT APPROVAL BY THE CITY OF BURLINGTON PUBLIC WORKS DEPARTMENT.

THE CONTRACTOR SHALL ONLY DISTURB THE MINIMUM AMOUNT OF ROADWAY NECESSARY TO INSTALL THE PROPOSED UTILITIES IN ACCORDANCE WITH THE DESIGN PLANS AND PAVEMENT CUT DETAIL.



INSET
1" = 10'

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Revisions

No.	Description	Date	By
1	For Local Submittal	2/15/19	AAD
2	Sewer Connection Rev.	9/11/19	CMJ
3	Penetration Note and C900 Rev.	11/7/19	CMJ
4	Geotech Notes & Dumpster	1/16/20	AAD

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STATE OF VERMONT
No. 9020
CIVIL
LICENSED PROFESSIONAL ENGINEER

Project Title

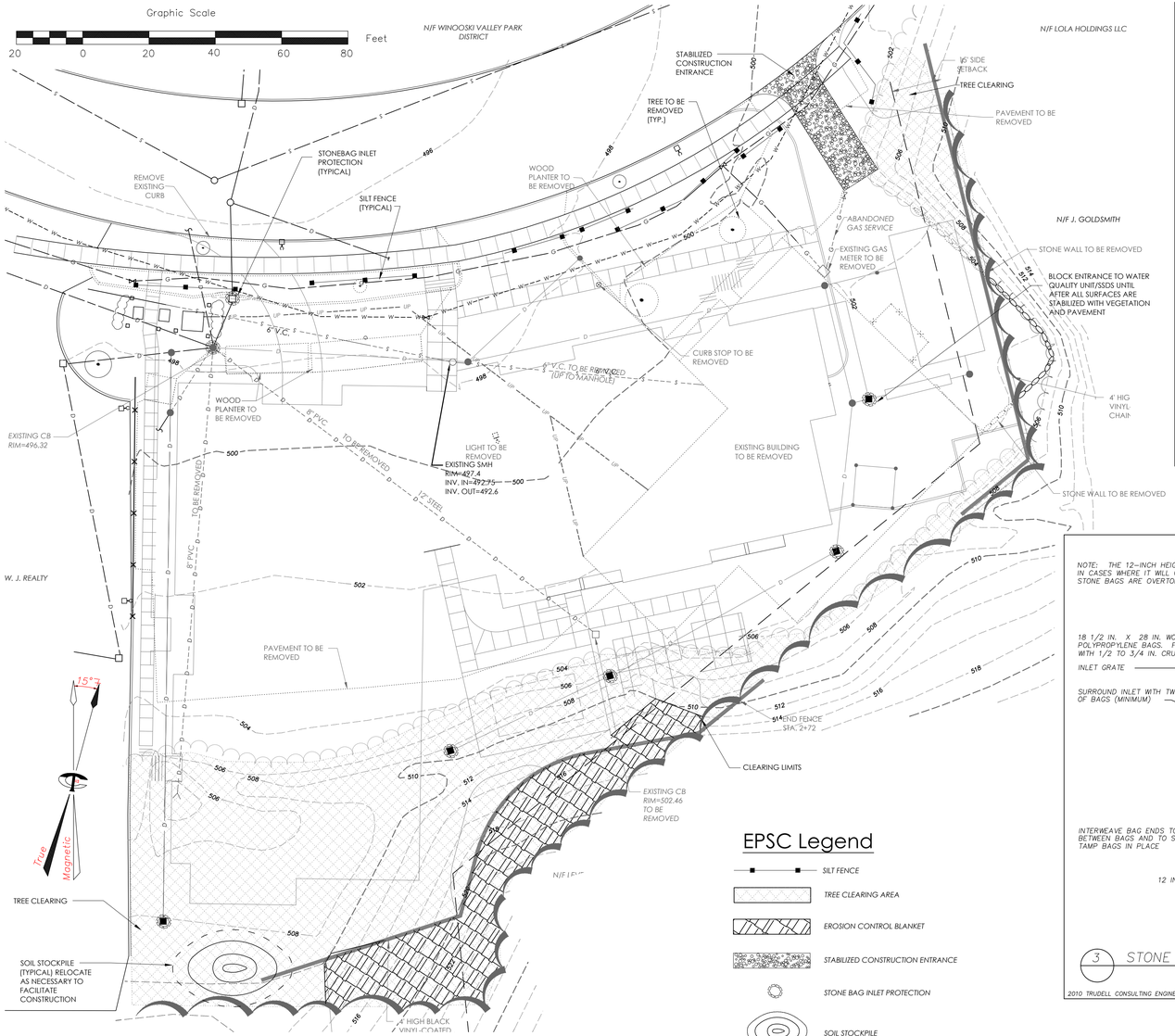
Sisters and Brothers Investment Group
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Utility Plan

Date:	11/21/2012
Scale:	SHOWN
Project Number:	2010083
Drawn By:	RMP
Project Engineer:	AAL
Approved By:	
Field Book:	

C2-03



EPSC Legend

- SILT FENCE
- TREE CLEARING AREA
- EROSION CONTROL BLANKET
- STABILIZED CONSTRUCTION ENTRANCE
- STONE BAG INLET PROTECTION
- SOIL STOCKPILE

TEMPORARY EROSION CONTROL MEASURES:

1) THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME.

2) CONSTRUCT TEMPORARY AND PERMANENT SEDIMENT AND EROSION CONTROL FACILITIES. EROSION AND SEDIMENT MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH MOVING OPERATIONS.

3) SILT FENCE PLACEMENT SHALL BE INSTALLED AS NOTED ON PLANS. PERIODICALLY SILT FENCES SHALL BE MAINTAINED AND CLEANED UNTIL ALL DISTURBED AREAS HAVE A HEALTHY STAND OF GRASS.

4) BEGIN PERMANENT AND TEMPORARY MULCHING AND SEEDING AS LISTED IN THE MAINTENANCE AND TIME OF PLACEMENT SCHEDULE.

5) AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED.

EROSION CONTROL UTILITY CONSTRUCTION NOTES:

1) THE CONTRACTOR SHALL DISTURB AND OPEN TRENCH THE MINIMUM PRACTICAL AREA REQUIRED TO ACCOMPLISH EACH DAY'S WORK.

2) EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON UPSTREAM SIDE OF TRENCH.

3) IMMEDIATELY FOLLOWING PIPE INSTALLATION, THE TRENCH SHALL BE BACKFILLED, COMPACTED, AND IMMEDIATELY STABILIZED (MULCHED AND SEEDED OR SODDED).

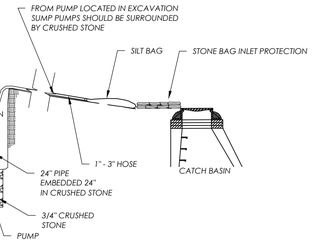
4) TEMPORARY SILT FENCES SHALL BE PLACED IMMEDIATELY DOWN STREAM (AND PARALLEL TO THE CONTOURS) OF ANY WORK AREA INTENDED TO BE DISTURBED FOR MORE THAN ONE WORKING DAY.

5) EXCAVATION AND PIPE INSTALLATION SHALL BE AVOIDED DURING PERIODS OF SIGNIFICANT PRECIPITATION.

6) ALL SEDIMENT AND EROSION CONTROL PRACTICES AND VEGETATIVE STABILIZATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS HEREON, AND THE VERMONT HANDBOOK FOR SOIL EROSION AND SEDIMENT CONTROL ON CONSTRUCTION SITES.

1 EROSION CONTROL NOTES

2005 TRUDELL CONSULTING ENGINEERS — LAST REVISED 02/23/05



1. ALL DEWATERING OF CONSTRUCTION TRENCH SHALL BE PUMPED THROUGH A SILT BAG (ACF INTERNATIONAL), OR APPROVED EQUAL, PUMPED-SILT CONTROL SYSTEM.

2. THE PUMPED-SILT CONTROL SYSTEM SHALL BE NON-WOVEN BAG, WHICH IS SEWN WITH DOUBLE NEEDLE MACHINE USING HIGH STRENGTH THREAD.

3. THE PUMPED-SILT CONTROL SYSTEM SHALL BE INSTALLED ON A SHALLOW SLOPE. IT SHOULD BE PLACED SO THE INCOMING WATER FLOWS INTO THE BAG AND WILL FLOW THROUGH THE PUMPED-SILT CONTROL SYSTEM AND THEN FLOW OFF THE SITE WITHOUT CREATING MORE EROSION. THE NECK OF THE PUMPED-SILT CONTROL SYSTEM SHOULD BE TIED OFF TIGHTLY, TO STOP THE WATER FROM FLOWING OUT OF THE PUMPED-SILT CONTROL SYSTEM, WITHOUT GOING THROUGH THE WALLS OF THE BAG. TO INCREASE THE SURFACE AREA BEING USED THE PUMPED-SILT CONTROL SYSTEM SHALL BE PLACED ON A GRAVEL BED TO MAXIMIZE DIRTBAG FLOW CAPACITY AND FILTERING.

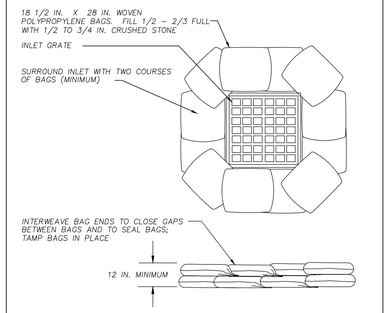
4. THE PUMPED-SILT CONTROL SYSTEM IS CONSIDERED FULL AND SHOULD BE DISPOSED WHEN IT IS IMPRACTICAL FOR THE BAG TO FILTER THE SEDIMENT OUT AT A REASONABLE FLOW RATE AND SHALL BE REPLACED.

2 EXCAVATION DEWATERING DETAIL

N.T.S.

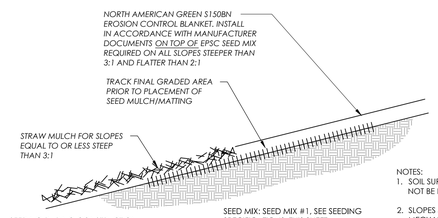
2012 TRUDELL CONSULTING ENGINEERS — LAST REVISED 11/15/12

NOTE: THE 12–INCH HEIGHT REQUIREMENT IS WAIVED IN CASES WHERE IT WILL CAUSE FLOOD DAMAGE IF THE STONE BAGS ARE OVERTOPPED



3 STONE BAG INLET PROTECTION

2010 TRUDELL CONSULTING ENGINEERS — LAST REVISED 04/06/10 — DR–088M



SEEDING DURING CONSTRUCTION
THE SEED MIX SPECIFIED BELOW IS FOR ALL AREAS THAT ARE STABILIZED TEMPORARILY PER THIS DETAIL DURING CONSTRUCTION. FOR ALL AREAS WITH FINAL GRADE AND TOPSOIL ESTABLISHED REFER TO THE "FINAL SEEDING SPECIFICATIONS" FOR SEEDING REQUIREMENTS

1. SEED MIX:
   30% RED FESCUE
   30% ANNUAL RYEGRASS
   30% PERENNIAL RYEGRASS
   10% TALL FESCUE
   (*or APPROVED EQUIVALENT)
2. APPLICATION RATE:
   60lb/acre (1.4 lb/1000 s.f.)
3. MULCH APPLICATION RATE:
   1.5" THICK MINIMUM
   90-100% COVERAGE

SEED MIX: SEED MIX #1, SEE SEEDING SPECIFICATIONS, THIS SHEET

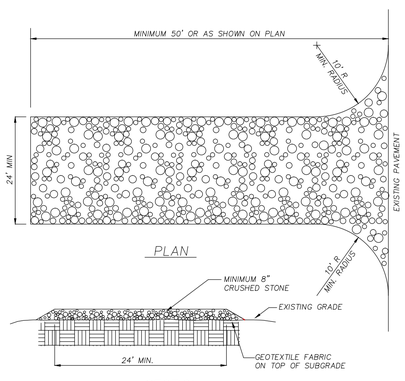
MULCH APPLICATION RATE: 1.5" THICK MIN.

NOTES:
1. SOIL SURFACE AND FILL COMPONENTS MUST NOT BE FROZEN WHEN PLACED.
2. SLOPES STEEPER THAN 2:1 MUST BE MECHANICALLY STABILIZED WITH A RETAINING STRUCTURE OR APPROPRIATE GEOTEXTILE (AS SPECIFIED BY ENGINEER).
3. STRAW MULCH or EROSION CONTROL BLANKET CAN BE USED ON AREAS WITH SLOPES EQUAL TO OR LESS STEEP THAN 3:1.
4. HAY MULCH SHALL CONSIST OF MOWED AND PROPERLY CURED STEMS OF CEREAL GRAINS (WHEAT, OATS, BUCKWHEAT, ETC.) REASONABLY FREE OF WEEDS, TWIGS, DEBRIS OR OTHER OBJECTIONABLE MATERIAL. IT SHALL BE FREE FROM ROT OR MOLD AND SHALL BE ACCEPTABLE TO THE ENGINEER.
5. BANKS, SWALES OR OTHER GRADED AREAS THAT HAVE BEEN WASHED OUT OR HAVE BECOME DAMAGED SHALL BE REPAIRED IMMEDIATELY.

4 TYPICAL SOIL STABILIZATION DETAIL

N.T.S.

2012 TRUDELL CONSULTING ENGINEERS — LAST REVISED 11/20/12 — ER-002



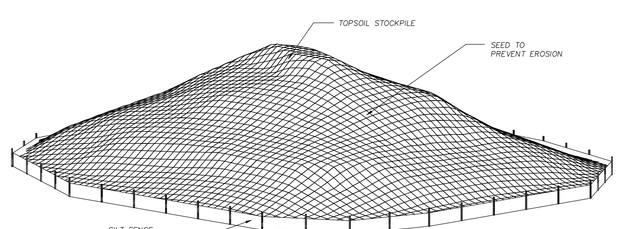
CONSTRUCTION SPECIFICATIONS FOR STABILIZED CONSTRUCTION ENTRANCE

1. *STONE SIZE SHALL BE 4"–8" CRUSHED STONE OR RECYCLED/RECLAIMED CONCRETE EQUIVALENT*
2. *LENGTH SHALL BE NOT LESS THAN 50 FEET*
3. *THICKNESS SHALL NOT BE LESS THAN 8 INCHES.*
4. *FILTER FABRIC (MIRIFI 500X, OR EQUAL) SHALL BE PLACED OVER ENTIRE AREA PRIOR TO PLACEMENT OF STONE.*
5. *WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS AND EGRESS.*
6. *WHEN NECESSARY, TRUCK WHEELS SHALL BE WASHED OR CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN ON AN AREA STABILIZED WITH CRUSHED STONE, WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE, THROUGH USE OF APPROVED EROSION CONTROL METHOD.*
7. *THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO A PUBLIC RIGHT–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS MAINTENANCE OF ALL SITE SEDIMENT CONTROL MEASURES. ALL SEDIMENT DEPOSITED ONTO PUBLIC RIGHT–OF–WAY SHALL BE REMOVED IMMEDIATELY*
8. *ALL SURFACE WATER FLOWING OR DIVERTED TOWARDS CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.*

5 STABILIZED CONSTRUCTION ENTRANCE

1" = 10'

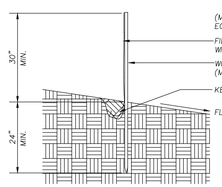
TRUDELL CONSULTING ENGINEERS (TCE)



NOTE:
INSTALL SILT FENCE ALONG CONTOUR ON DOWNSLOPE SIDES AT A DISTANCE OF 5–10 FEET FROM THE TOE OF THE STOCKPILE. COMPLETELY ENCLOSE STOCKPILE ON FLAT SITES. SILT FENCE TO REMAIN IN PLACE UNTIL MATERIAL IS REMOVED AND AREA IS STABILIZED.

6 TEMPORARY TOPSOIL STOCKPILE EROSION PROTECTION

2010 TRUDELL CONSULTING ENGINEERS, INC. — LAST REVISED 04/06/10 — DR–080M



CONSTRUCTION SPECIFICATIONS FOR SILT FENCE

SILT FENCE SHALL BE EITHER PRE–FABRICATED EROSION CONTROL FENCE (MIRAFI SILT FENCE, OR EQUAL), OR CONSTRUCTED–IN–PLACE, AS SPECIFIED HEREIN.

PRE–FABRICATED SILT FENCE

1) *FENCE SHALL BE INSTALLED PARALLEL TO GROUND CONTOURS, AND FILTER FABRIC SIDE SHALL FACE UPSTREAM; MESH AND STAKES SHALL FACE DOWNSTREAM.*
2) *TRENCH SHALL BE EXCAVATED MINIMUM 6 INCHES DEEP ON UPSTREAM SIDE OF FENCE LINE. EXCESS FLAP OF FILTER FABRIC (MINIMUM 8 INCHES) SHALL BE PLACED IN TRENCH. TRENCH SHALL BE BACKFILLED AND COMPACTED. CONSTRUCTION IN THIS MANNER PREVENTS SEDIMENT–LADEN RUNOFF FROM FLOWING UNDER SILT FENCE.*
3) *SILT FENCE SHALL BE INSPECTED WEEKLY, AND AFTER EACH SIGNIFICANT PRECIPITATION EVENT. MAINTENANCE SHALL BE PERFORMED AS NEEDED, AND SEDIMENT SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.*
4) *BROKEN STAKES SHALL BE REPLACED PROMPTLY.*

CONSTRUCTED–IN–PLACE SILT FENCE

1) *FENCE POST SHALL BE DRIVEN, 10 FEET MAXIMUM ON CENTER; POSTS SHALL BE DRIVEN MINIMUM 24" BELOW GRADE. FENCE SHALL BE POSITIONED AS SHOWN, PARALLEL TO THE GROUND CONTOURS.*
2) *TRENCH SHALL BE EXCAVATED MINIMUM 6 INCHES DEEP ON UPSTREAM SIDE OF FENCE LINE.*
3) *WOVEN WIRE FABRIC (14 GA., 6 INCH MAX. MESH OPENING) SHALL BE STAPLED OR FASTENED SECURELY WITH WIRE TIES TO UPSTREAM SIDE OF FENCE POSTS. WOVEN WIRE FABRIC SHALL EXTEND MINIMUM 36 INCHES ABOVE GRADE.*
4) *FILTER FABRIC SHALL BE FASTENED SECURELY ON UPSTREAM SIDE OF WOVEN WIRE FABRIC WITH WIRE TIES, SPACED EVERY 24 INCHES, AT TOP AND MID–SECTION OF FENCE. MINIMUM 8 INCH FLAP OF FILTER FABRIC SHALL BE PLACED IN TRENCH ON UPSTREAM SIDE OF FENCE, AND BACKFILLED.*
5) *WHEN TWO SECTIONS OF FABRIC ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.*
6) *SILT FENCE SHALL BE INSPECTED WEEKLY, AND AFTER EACH SIGNIFICANT PRECIPITATION EVENT. MAINTENANCE SHALL BE PERFORMED AS NEEDED, AND SEDIMENT REMOVED WHEN "BULGES" DEVELOP IN SILT FENCE, OR WHEN SEDIMENT REACHES 1/3 THE HEIGHT OF THE FENCE.*

7 SILT FENCE

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Revisions

No.	Description	Date	By
1	CONDITIONS OF APPROVAL	6/16/17	AAD
2	For Local Submittal	2/15/19	AAD
3	Per DPW Comments	11/6/19	AAD
4	Geotech & Dumpster	1/16/20	AAD

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STATE OF VERMONT — STEPHEN A. LEFF — No. 9020 — CIVIL — LICENSED PROFESSIONAL ENGINEER

Project Title

Sisters and Brothers Investment Group

110 Riverside Ave.
Burlington, Vermont

Sheet Title

Demolition & Erosion Control Plan

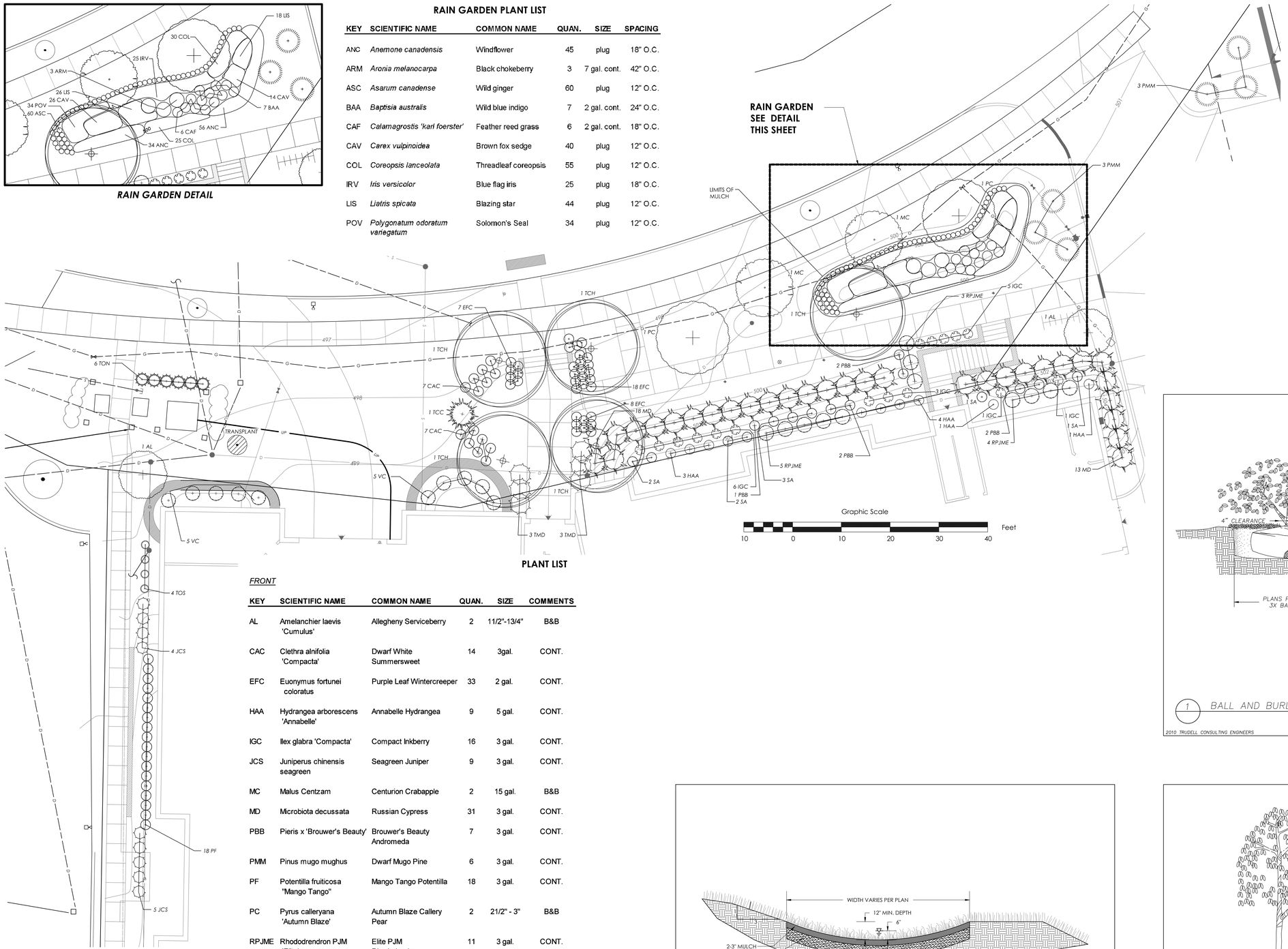
Date:	11/21/2012
Scale:	1" = 20'
Project Number:	2010083
Drawn By:	RMP
Project Engineer:	AAL
Approved By:	
Field Book:	

C5-01

RAIN GARDEN DETAIL

RAIN GARDEN PLANT LIST

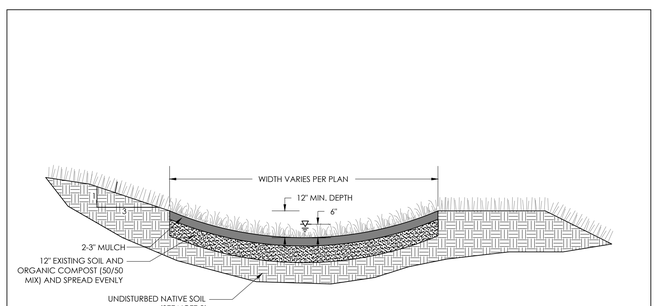
KEY	SCIENTIFIC NAME	COMMON NAME	QUAN.	SIZE	SPACING
ANC	*Anemone canadensis*	Windflower	45	plug	18" O.C.
ARM	*Aronia melanocarpa*	Black chokeberry	3	7 gal. cont.	42" O.C.
ASC	*Asarum canadense*	Wild ginger	60	plug	12" O.C.
BAA	*Baptisia australis*	Wild blue indigo	7	2 gal. cont.	24" O.C.
CAF	*Calamagrostis 'karl foerster'*	Feather reed grass	6	2 gal. cont.	18" O.C.
CAV	*Carex vulpinoidea*	Brown fox sedge	40	plug	12" O.C.
COL	*Coreopsis lanceolata*	Threadleaf coreopsis	55	plug	12" O.C.
IRV	*Iris versicolor*	Blue flag iris	25	plug	18" O.C.
LIS	*Liatris spicata*	Blazing star	44	plug	12" O.C.
POV	*Polygonatum odoratum variegatum*	Solomon's Seal	34	plug	12" O.C.



PLANT LIST

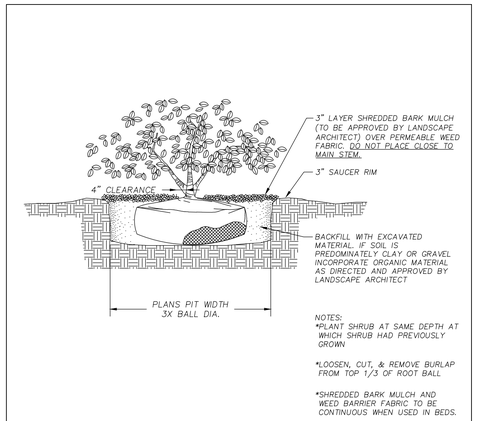
FRONT

KEY	SCIENTIFIC NAME	COMMON NAME	QUAN.	SIZE	COMMENTS
AL	Amelanchier laevis 'Cumulus'	Allegheny Serviceberry	2	11/2"-13/4"	B&B
CAC	Clethra alnifolia 'Compacta'	Dwarf White Summersweet	14	3gal.	CONT.
EFC	Euonymus fortunei coloratus	Purple Leaf Wintercreeper	33	2 gal.	CONT.
HAA	Hydrangea arborescens 'Annabelle'	Annabelle Hydrangea	9	5 gal.	CONT.
IGC	Ilex glabra 'Compacta'	Compact Inkberry	16	3 gal.	CONT.
JCS	Juniperus chinensis seagreen	Seagreen Juniper	9	3 gal.	CONT.
MC	Malus Centzam	Centurion Crabapple	2	15 gal.	B&B
MD	Microbiota decussata	Russian Cypress	31	3 gal.	CONT.
PBB	Pieris x 'Brouwer's Beauty'	Brouwer's Beauty Andromeda	7	3 gal.	CONT.
PMM	Pinus mugo mughus	Dwarf Mugo Pine	6	3 gal.	CONT.
PF	Potentilla fruiticosa "Mango Tango"	Mango Tango Potentilla	18	3 gal.	CONT.
PC	Pyrus calleryana 'Autumn Blaze'	Autumn Blaze Callery Pear	2	21/2" - 3"	B&B
RPJME	Rhododrendron PJM 'Elite'	Elite PJM Rhododendron	11	3 gal.	CONT.
SA	Symphoricarpos albus	Snowberry	9	3 gal.	CONT.
TCC	Taxus cuspidata 'capitata'	Pyramidal Upright Japanese Yew	1	4'-5'	B&B
TMD	Taxus media densiformis	Dense Yew	6	18"-24"	CONT.
TON	Thuja occidentalis nigra	Dark American Arborvitae	6	4'-5'	B&B
TOS	Thuja occidentalis	Smaragd Arborvitae	4	5'-6'	B&B
TCH	Tilia cordata 'Chancellor'	Chancellor Littleleaf Linden	5	2 1/2"-3"	B&B
VC	Viburnum cassinoides	Witherod Viburnum	10	7 gal.	CONT.



NOTES:
1. PLANT NATIVE SPECIES SUITABLE FOR CONDITIONS WITHIN LIMITS OF RAIN GARDEN PER LANDSCAPE PLAN.
2. DONT DRIVE VEHICLES ACROSS RAIN GARDEN TO PREVENT SUBSOIL COMPACTION.

2 RAIN GARDEN — SCALE: N.T.S.



NOTES:
*PLANT SHRUB AT SAME DEPTH AT WHICH SHRUB HAD PREVIOUSLY GROWN
*LOOSEN, CUT, & REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL
*SHREDDED BARK MULCH AND WEED BARRIER FABRIC TO BE CONTINUOUS WHEN USED IN BEDS.

1 BALL AND BURLAP SHRUB

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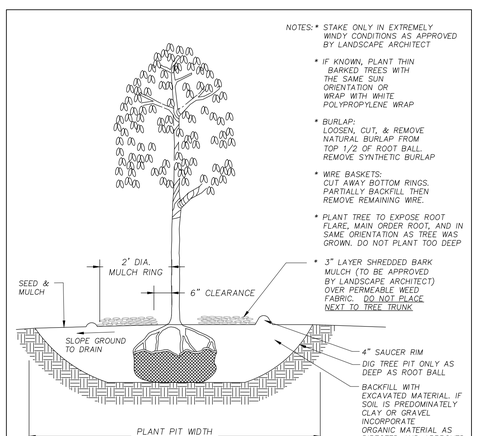

NOTES:
- STAKE ONLY IN EXTREMELY WINDY CONDITIONS AS APPROVED BY LANDSCAPE ARCHITECT
- IF KNOWN, PLANT THIN BARKED TREES WITH THE SAME SUN ORIENTATION OR WRAP WITH WHITE POLYPROPYLENE WRAP
- BURLAP: LOOSEN, CUT, & REMOVE NATURAL BURLAP FROM TOP 1/2 OF ROOT BALL. REMOVE SYNTHETIC BURLAP
- WIRE BASKETS: CUT AWAY BOTTOM RINGS. PARTIALLY BACKFILL THEN REMOVE REMAINING WIRE.
- PLANT TREE TO EXPOSE ROOT FLARE, MAIN ORDER ROOT, AND IN SAME ORIENTATION AS TREE WAS GROWN. DO NOT PLANT TOO DEEP
- 3" LAYER SHREDDED BARK MULCH (TO BE APPROVED BY LANDSCAPE ARCHITECT) OVER PERMEABLE WEED FABRIC. DO NOT PLACE NEXT TO TREE TRUNK

3 TREE PLANTING DETAIL

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Revisions

No.	Description	Date	By
1	For Local Submittal	2/15/19	AAD
2	Per DPW Comments	11/6/19	AAD
3	Geotech & Dumpster	1/16/20	AAD

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STATE OF VERMONT — AARON A. DEAN — No. 9020 CIVIL — LICENSED PROFESSIONAL ENGINEER

Project Title

Sisters and Brothers Investment Group

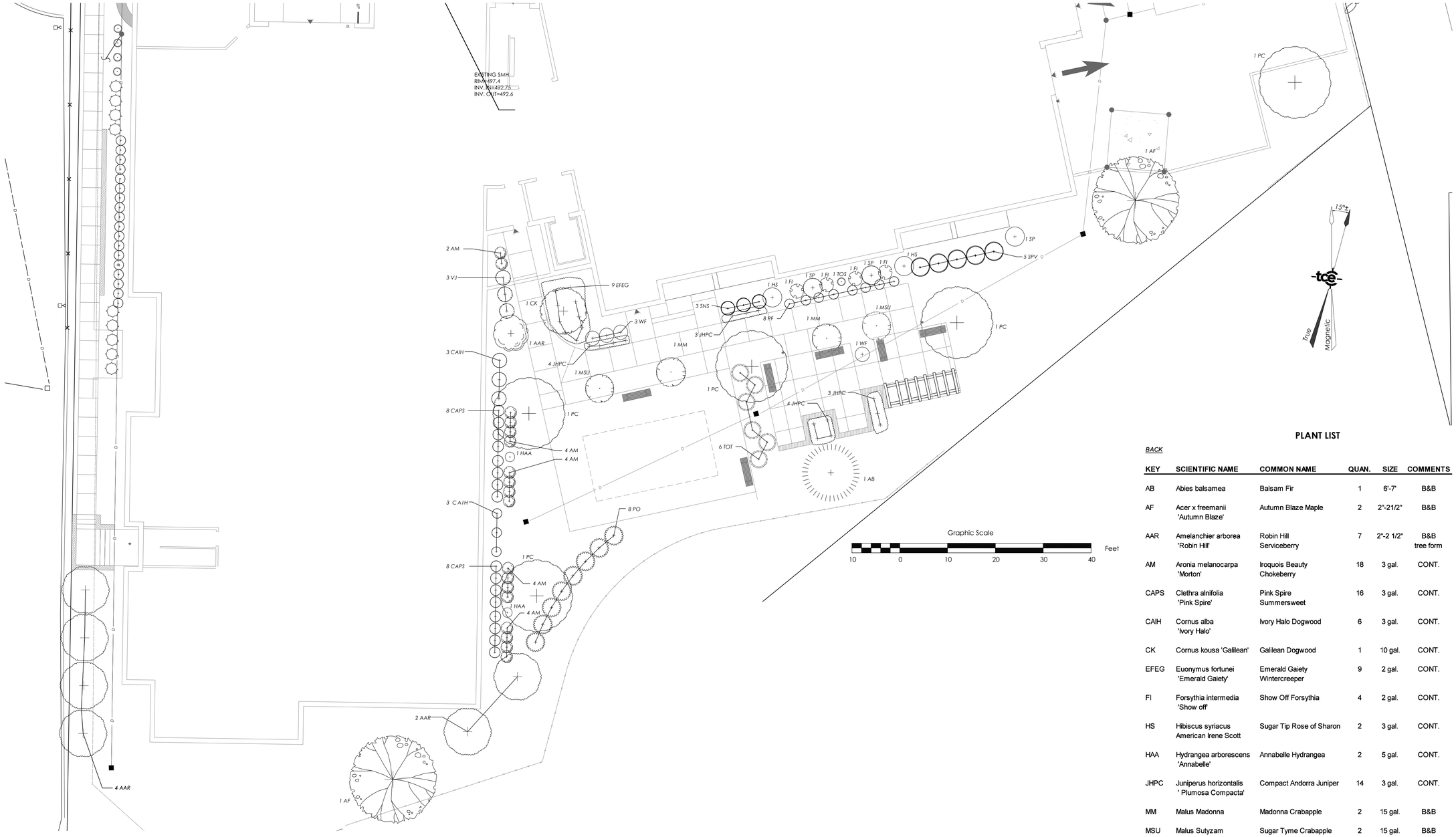
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Planting Plan

Date:	11/21/2012
Scale:	1" = 10'
Project Number:	2010083
Drawn By:	RMP
Project Engineer:	AAL
Approved By:	
Field Book:	

L1-01



PLANT LIST

BACK

KEY	SCIENTIFIC NAME	COMMON NAME	QUAN.	SIZE	COMMENTS
AB	Abies balsamea	Balsam Fir	1	6'-7'	B&B
AF	Acer x freemanii 'Autumn Blaze'	Autumn Blaze Maple	2	2"-21/2"	B&B
AAR	Amelanchier arborea 'Robin Hill'	Robin Hill Serviceberry	7	2"-2 1/2"	B&B tree form
AM	Aronia melanocarpa 'Morton'	Iroquois Beauty Chokeberry	18	3 gal.	CONT.
CAPS	Clethra alnifolia 'Pink Spire'	Pink Spire Summersweet	16	3 gal.	CONT.
CAIH	Cornus alba 'Ivory Halo'	Ivory Halo Dogwood	6	3 gal.	CONT.
CK	Cornus kousa 'Galilean'	Galilean Dogwood	1	10 gal.	CONT.
EFEG	Euonymus fortunei 'Emerald Gaiety'	Emerald Gaiety Wintercreeper	9	2 gal.	CONT.
FI	Forsythia intermedia 'Show off'	Show Off Forsythia	4	2 gal.	CONT.
HS	Hibiscus syriacus American Irene Scott	Sugar Tip Rose of Sharon	2	3 gal.	CONT.
HAA	Hydrangea arborescens 'Annabelle'	Annabelle Hydrangea	2	5 gal.	CONT.
JHPC	Juniperus horizontalis ' Plumosa Compacta'	Compact Andorra Juniper	14	3 gal.	CONT.
MM	Malus Madonna	Madonna Crabapple	2	15 gal.	B&B
MSU	Malus Sutyzam	Sugar Tyme Crabapple	2	15 gal.	B&B
PO	Physocarpus opulifolius 'Summer Wine'	Summer Wine Ninebark	8	3 gal.	CONT.
PF	Potentilla fruiticosa 'Pink Beauty'	Pink Beauty Cinquefoil	8	3 gal.	CONT.
PC	Pyrus calleryana 'Autumn Blaze'	Autumn Blaze Callery Pear	5	21/2" - 3"	B&B
SNS	Spiraea x nipponica 'Snowmound'	Snowmound Spirea	3	3 gal.	CONT.
SPV	Spiraea vanhouttei	Vanhoutte Spirea	5	3 gal.	CONT.
SP	Syringa patula "Miss Kim"	Miss Kim Manchurian Lilac	1	2'-2 1/2'	CONT.
TOS	Thuja occidentalis 'Smaragd'	Smaragd Arborvitae	1	5'-6'	B&B
TOT	Thuja occidentalis 'Techny'	Techny Arborvitae	6	3 gal.	CONT.
VJ	Viburnum x juddii	Judd Viburnum	3	5 gal.	CONT.
WF	Weigela florida 'French Lace'	French Lace Weigela	4	3 gal.	CONT.

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STATE OF VERMONT
No. 9020
CIVIL
LICENSED
PROFESSIONAL ENGINEER

Project Title

Sisters and Brothers Investment Group

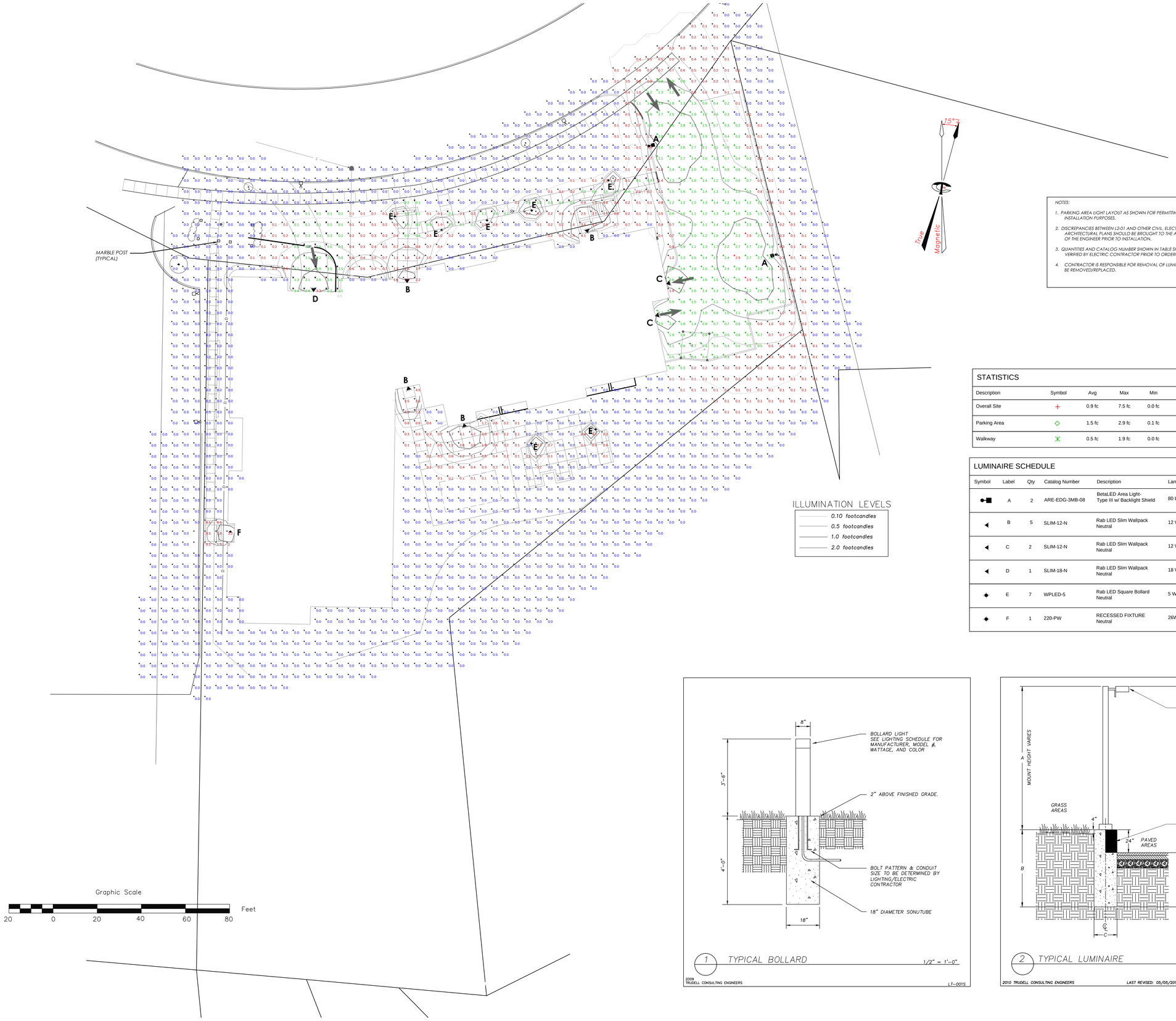
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Planting Plan

Date:	11/21/2012
Scale:	1" = 10'
Project Number:	2010083
Drawn By:	RMP
Project Engineer:	AAL
Approved By:	
Field Book:	

L1-02



ILLUMINATION LEVELS

- 0.10 footcandles
- 0.5 footcandles
- 1.0 footcandles
- 2.0 footcandles

NOTES:

1. PARKING AREA LIGHT LAYOUT AS SHOWN FOR PERMITTING AND INSTALLATION PURPOSES.
2. DISCREPANCIES BETWEEN L2-01 AND OTHER CIVIL, ELECTRICAL, OR ARCHITECTURAL PLANS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO INSTALLATION.
3. QUANTITIES AND CATALOG NUMBER SHOWN IN TABLE SHOULD BE VERIFIED BY ELECTRIC CONTRACTOR PRIOR TO ORDERING.
4. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF LUMINAIRES TO BE REMOVED/REPLACED.

STATISTICS

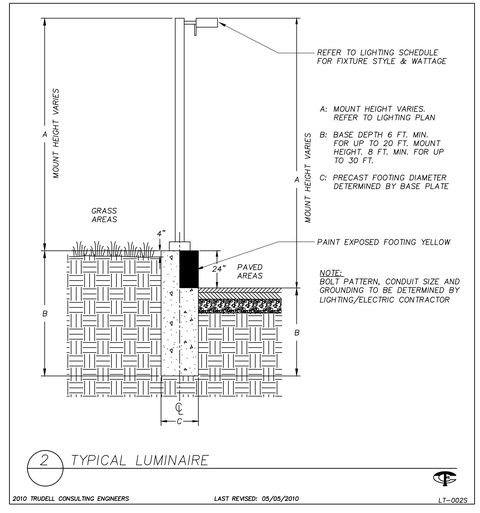
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Overall Site	+	0.9 fc	7.5 fc	0.0 fc	N / A	N / A
Parking Area	◇	1.5 fc	2.9 fc	0.1 fc	29.0:1	15.0:1
Walkway	✕	0.5 fc	1.9 fc	0.0 fc	N/A	N/A

LUMINAIRE SCHEDULE

Symbol	Label	Qty	Catalog Number	Description	Lamp	Mount Height
	A	2	ARE-EDG-3MB-08	BetaLED Area Light- Type III w/ Backlight Shield	80 LEDs - 90 Watts	15 ft
	B	5	SLIM-12-N	Rab LED Slim Wallpack Neutral	12 Watt LED Array	10 ft
	C	2	SLIM-12-N	Rab LED Slim Wallpack Neutral	12 Watt LED Array	15 ft
	D	1	SLIM-18-N	Rab LED Slim Wallpack Neutral	18 Watt LED Array	15 ft
	E	7	WPLED-5	Rab LED Square Bollard Neutral	5 Watt LED Array	3.5 ft
	F	1	220-PW	RECESSED FIXTURE Neutral	26W CFL	9 ft

1 TYPICAL BOLLARD 1/2" = 1'-0"

2009 TRUDELL CONSULTING ENGINEERS LT-001S



2 TYPICAL LUMINAIRE

2010 TRUDELL CONSULTING ENGINEERS LAST REVISED: 05/05/2010 LT-002S

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STATE OF VERMONT
AARON A. GRAY
No. 9020
CIVIL
LICENSED
PROFESSIONAL ENGINEER

Project Title

Sisters and Brothers Investment Group

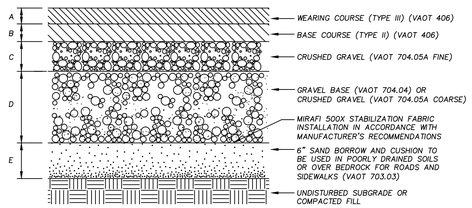
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Lighting Plan

Date:	11/21/2012
Scale:	1" = 20'
Project Number:	2010083
Drawn By:	RMP
Project Engineer:	AAL
Approved By:	
Field Book:	

L2-01



SECTION

	THICKNESS (INCHES)				
	ROADS		PARKING LOTS		PRIVATE
	RESIDENTIAL	COMMERCIAL	RESIDENTIAL	COMMERCIAL	DRIVEWAYS
A	1.5	1.5	1	1.5	2
B	2.5	2.5	2	2.5	N/A
C	6	6	6	6	4
D	12	18	12	18	12
E	6	6	6	6	6

NOTES:
1. SUBBASE, SAND CUSHION AND SUBGRADE SHOULD BE CONSTRUCTED AND COMPACTED TO THE DIMENSIONS SHOWN IN ACCORDANCE WITH VERMONT AGENCY OF TRANSPORTATION SPECIFICATIONS, STANDARD A-76. WHERE MORE STRINGENT LOCAL ORDINANCES HAVE BEEN ADOPTED RELATIVE TO ROAD DIMENSIONS AND CONSTRUCTION, THEY SHOULD GOVERN.

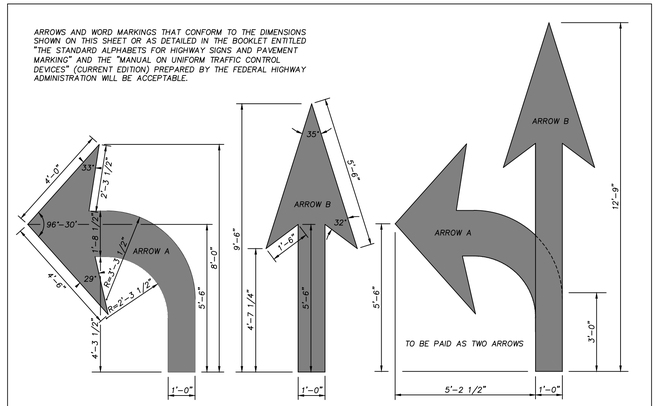
2. COMPACT ALL SUBBASE MATERIALS TO 95% MAXIMUM DENSITY (STANDARD PROCTOR).

3. IF GROUNDWATER OR SOFT SPOTS ARE ENCOUNTERED CONTACT THE ENGINEER TO DISCUSS ADDED MEASURES SUCH AS UNDERDRAIN. SLOPE SUBBASE TO UNDERDRAIN LOW POINTS.

1 BITUMINOUS PAVEMENT

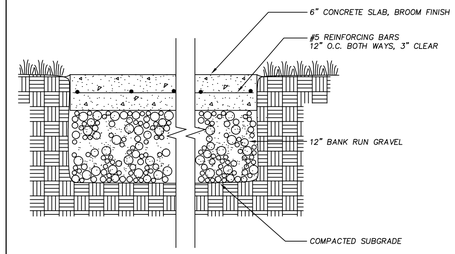
2010 TRUDELL CONSULTING ENGINEERS — LAST REVISED 04/08/2011 — L-RS031M

ARROWS AND WORD MARKINGS THAT CONFORM TO THE DIMENSIONS SHOWN ON THIS SHEET OR AS DETAILED IN THE BOOKLET ENTITLED "THE STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (CURRENT EDITION) PREPARED BY THE FEDERAL HIGHWAY ADMINISTRATION WILL BE ACCEPTABLE.



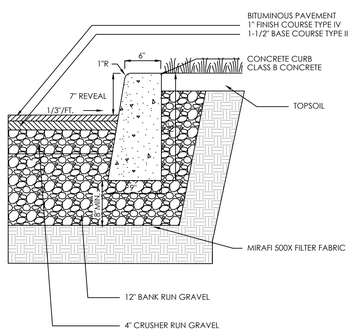
2 PAVEMENT MARKING FOR DIRECTIONAL ARROWS

2011 TRUDELL CONSULTING ENGINEERS — LAST REVISED 05/09/2011 — L-SG008M



3 REINFORCED CONCRETE PAD FOR DUMPSTER

1"=1'



4 PAVEMENT AND CURB DETAIL

1"=1'

2012 TRUDELL CONSULTING ENGINEERS — LAST REVISED 07/26/2012 — L-0345

SPECIFICATIONS:

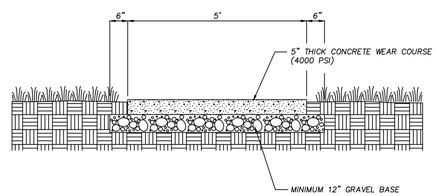
1/2" EXPANSION/CONTRACTION JOINT WITH ASPHALT IMPREGNATED FIBER BOARD FILLER EVERY 20 FEET.

SCORED OR TOOLED JOINT (1" DEPTH OR 1/3 THE TOTAL DEPTH OF WALK) WITH A SEPARATION DISTANCE EQUAL TO THE WIDTH OF THE SIDEWALK.

FULL-BREAK OR COMPLETE JOINT EVERY 20 FEET.

INCREASE CONCRETE THICKNESS TO 8" WHEN SIDEWALK CROSSES A DRIVEWAY.

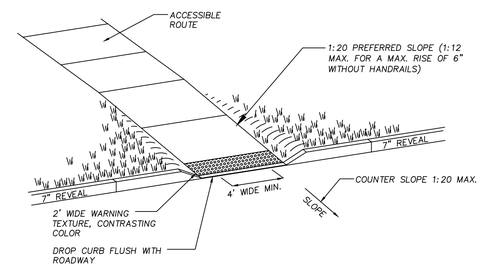
NOTE: DISTANCES ARE TYPICAL AND MAY BE ALTERED FOR SPECIFIC SITE CONDITIONS.



5 TYPICAL CONCRETE SIDEWALK

1/2" = 1'-0"

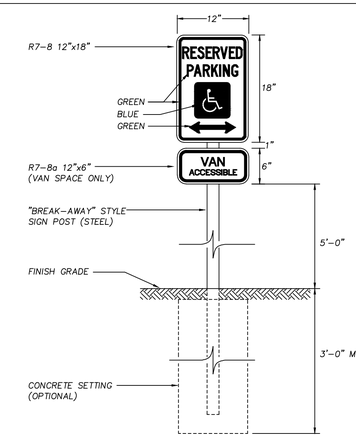
2011 TRUDELL CONSULTING ENGINEERS — LAST REVISED 01-14-2011 — L-SW009S



ROUTE PERPENDICULAR TO STREET

6 HANDICAP CURB RAMP - PUBLIC R-O-W

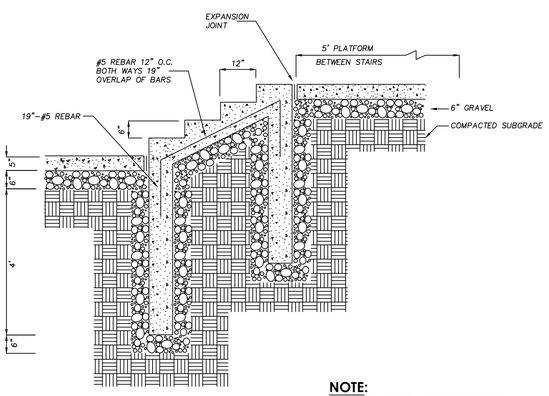
2010 TRUDELL CONSULTING ENGINEERS — LAST REVISED 04/07/10 — L-HC-08L



7 "RESERVED PARKING" SIGN

1"=1'-0"

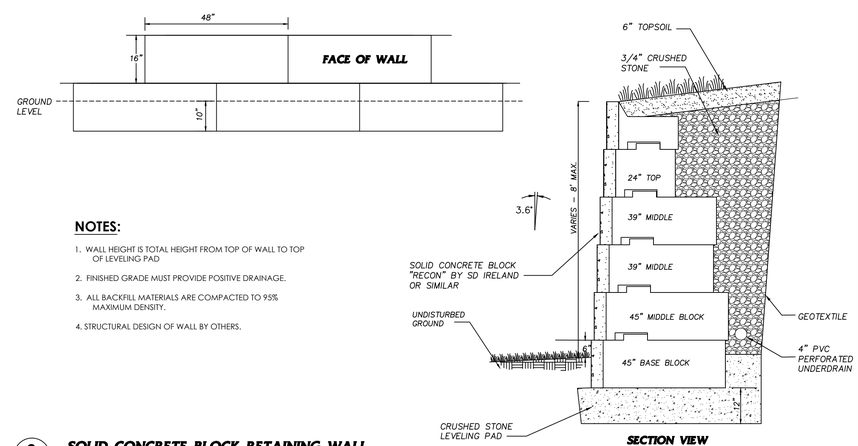
2010 TRUDELL CONSULTING ENGINEERS — LAST REVISED 04/07/10 — L-SG001S



NOTE:
HAND RAILS NOT SHOWN, DESIGN BY OTHERS.

8 CONCRETE EXTERIOR STAIR

2012 TRUDELL CONSULTING ENGINEERS — L-MS003M



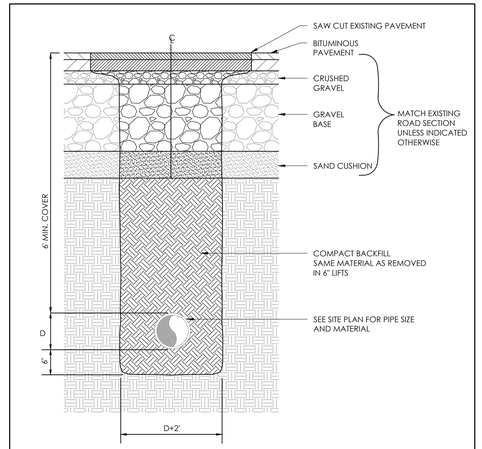
NOTES:

1. WALL HEIGHT IS TOTAL HEIGHT FROM TOP OF WALL TO TOP OF LEVELING PAD
2. FINISHED GRADE MUST PROVIDE POSITIVE DRAINAGE.
3. ALL BACKFILL MATERIALS ARE COMPACTED TO 95% MAXIMUM DENSITY.
4. STRUCTURAL DESIGN OF WALL BY OTHERS.

SECTION VIEW

9 SOLID CONCRETE BLOCK RETAINING WALL (FOR PRICING ONLY)

2012 TRUDELL CONSULTING ENGINEERS



PAVEMENT CUT TRENCH

3/4" = 1'-0"

TRUDELL CONSULTING ENGINEERS — LAST REVISED 03/27/2013 — SD-010

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Revisions

No.	Description	Date	By
1	For Local Submittal	2/15/19	AAD
2	Pavement Cut Detail Revision	9/24/19	CMJ

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6. It is the User's responsibility to ensure this copy contains the most current revisions.

STATE OF VERMONT — ANGELL A. DEA — No. 9020 CIVIL — LICENSED PROFESSIONAL ENGINEER

Project Title

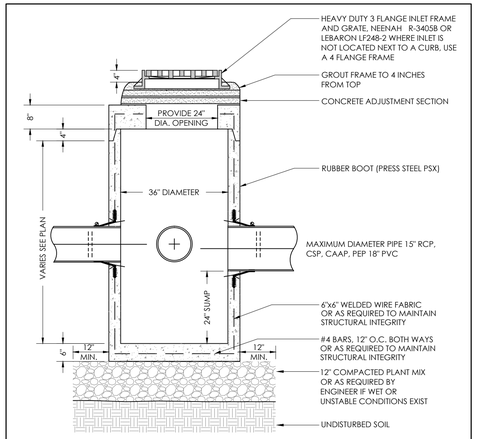
Sisters and Brothers Investment Group
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Site Details

Date:	11/21/2012
Scale:	Shown
Project Number:	2010083
Drawn By:	PJM
Project Engineer:	AAL
Approved By:	
Field Book:	

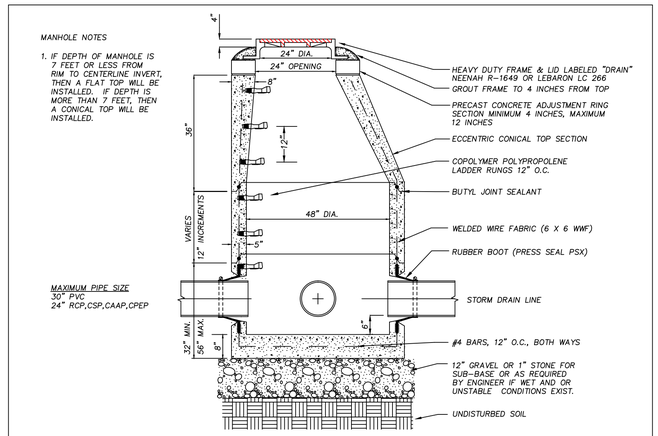
C8-01



1 TYPE "B" CATCH BASIN

1/2"=1'-0"

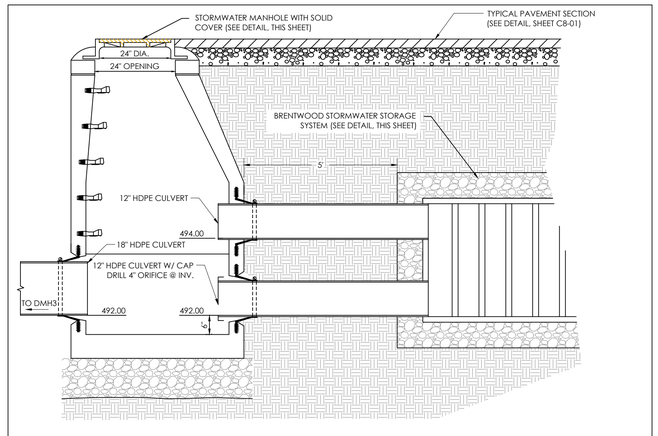
2012 TRUDELL CONSULTING ENGINEERS — LAST REVISED 08/23/2012 — DR-006S



2 TYPICAL STORMWATER MANHOLE

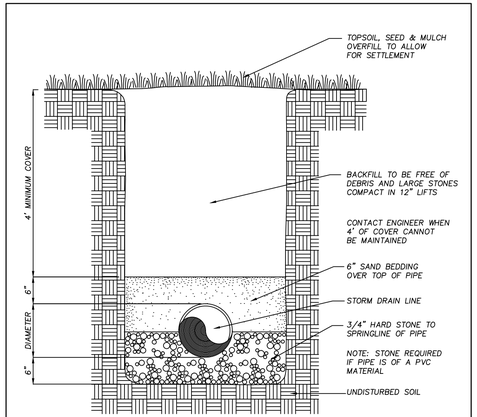
1/2"=1'

2007 TRUDELL CONSULTING ENGINEERS — LAST REVISED 03/05/07 — DR-010M



3 SUBSURFACE STORMWATER DETENTION SYSTEM OUTLET STRUCTURE

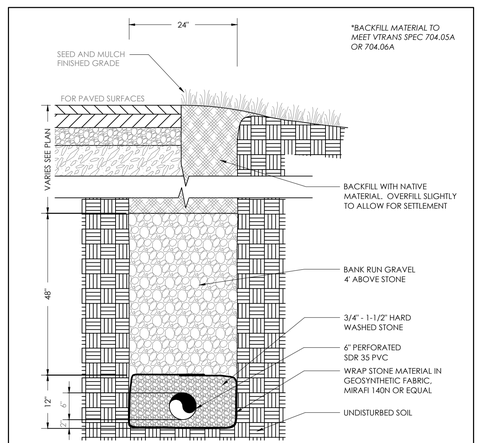
2012 TRUDELL CONSULTING ENGINEERS — LAST REVISED 11/14/2012



4 TYPICAL STORM DRAIN TRENCH

3/4"=1'-0"

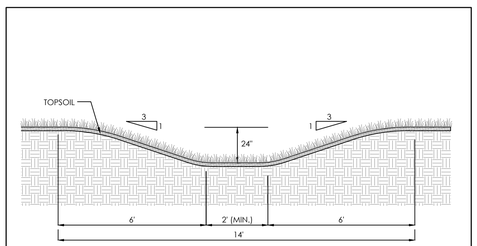
2012 TRUDELL CONSULTING ENGINEERS — LAST REVISED 08/03/2012 — DR-069S



5 TYPICAL UNDERDRAIN CROSS SETCION

3/4"=1'

2012 TRUDELL CONSULTING ENGINEERS — LAST REVISED 08/03/2012 — DR-069S

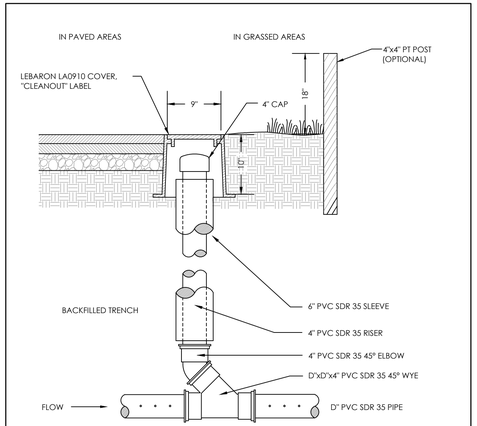


NOTES:
1. SEE EROSION CONTROL BLANKETS FOR CHANNELS DETAIL, THIS SHEET
2. PROVIDE SIX (6) INCHES TOPSOIL (MIN.)
3. USE SEEDING MIX #3, SEE SEEDING SPECIFICATIONS, THIS SHEET

6 VEGETATED SWALE

1/2"=1'-0"

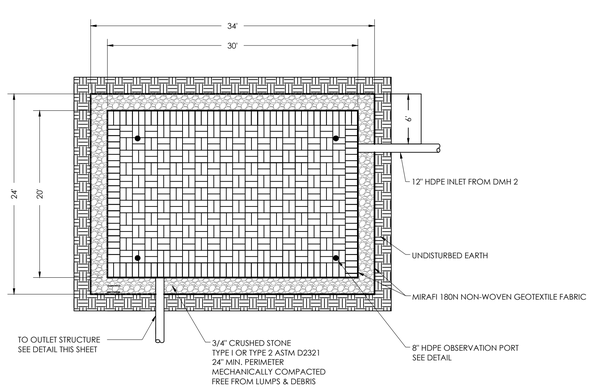
2012 TRUDELL CONSULTING ENGINEERS — LAST REVISED 07/12/2012 — DR-036S



7 UNDERDRAIN CLEANOUT DETAIL

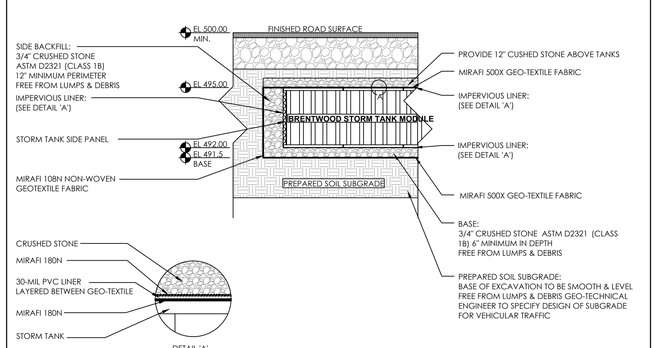
1"=1'

2012 TRUDELL CONSULTING ENGINEERS — LAST REVISED 07/23/2012 — DR-096S



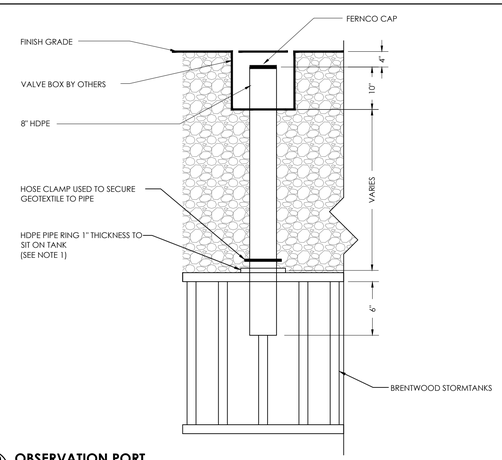
8 SUBSURFACE STORMWATER DETENTION STRUCTURE

2012 TRUDELL CONSULTING ENGINEERS — LAST REVISED 11/13/2012 — DR-125M



9 SUBSURFACE STORMWATER DETENTION STRUCTURE CROSS SECTION

2012 TRUDELL CONSULTING ENGINEERS — LAST REVISED 11/13/2012 — DR-126M



10 OBSERVATION PORT

2012 TRUDELL CONSULTING ENGINEERS — LAST REVISED 11/13/2012 — DR-127M

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Revisions

No.	Description	Date	By
1	For Local Submittal	2/15/19	AAD

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STATE OF VERMONT — ARNOLD A. GERE — No. 9020 CIVIL — LICENSED PROFESSIONAL ENGINEER

Project Title

Sisters and Brothers Investment Group

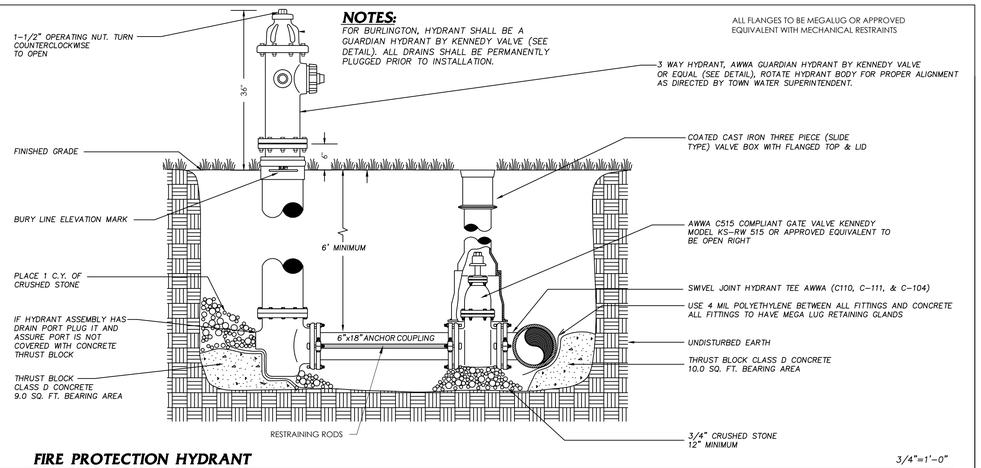
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Storm Details

Date:	11/21/2012
Scale:	Shown
Project Number:	2010083
Drawn By:	PJM
Project Engineer:	AAL
Approved By:	
Field Book:	

C8-02



NOTES:
FOR BURLINGTON, HYDRANT SHALL BE A GUARDIAN HYDRANT BY KENNEDY VALVE (SEE DETAIL). ALL DRAINS SHALL BE PERMANENTLY PLUGGED PRIOR TO INSTALLATION.

ALL FLANGES TO BE MEGALUG OR APPROVED EQUIVALENT WITH MECHANICAL RESTRAINTS

3 WAY HYDRANT, AWWA GUARDIAN HYDRANT BY KENNEDY VALVE OR EQUAL (SEE DETAIL), ROTATE HYDRANT BODY FOR PROPER ALIGNMENT AS DIRECTED BY TOWN WATER SUPERINTENDENT.

FIRE PROTECTION HYDRANT (CITY OF BURLINGTON)

3/4"=1'-0"

WTR-062L

Specifications for:

Burlington VT K-81AWC Complete Insert Fire Hydrant

Kennedy Valve Item #15468655351OBVT (HYDT 5" K81AWC, PVC FROST JKT, 6)
Upper: 5-1/4" K81AW-BL 3-W AWWA
Color: Red (01)
Hose: 2-1/2" – 3.058 x 3 Double TPI 1/6 Pitch – 1/3 Lead
Steamer: 4" – 5.250" OD x 4 TPI
Nut Size: 1-3/2" P W/AW Dirt Shield
Open: Left
Trench: 6'-6" w/Prot Case Cap & Frost Jacket
!!! Must have a No Drain Seat Ring !!!
Elbow: M62 6" MJ – Expoxy
Stencil: "Burlington, VT"

---Hydrants shall be Complete Insert type with the lower barrel threaded into the elbow. Designs using fasteners to secure the lower barrel to the elbow will not be accepted.

---The lower barrel and elbow shall be ductile iron. Cast iron will not be accepted.

---The elbow shall be epoxy coated and utilize brass tube drain holes. A brass seat ring insert shall be threaded into the elbow and mechanically retained by two brass set screws.

---The protective case shall be C909 pipe. The case cap shall be polyester coated iron.

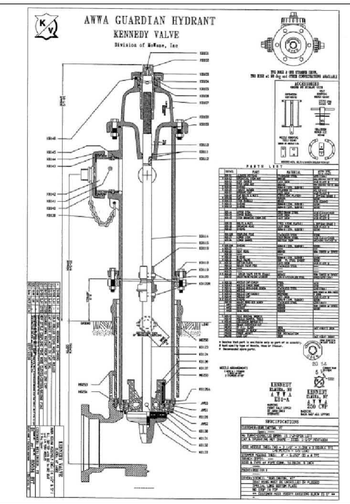
---The hydrant shall be fully maintainable through the unitized one piece designed bonnet.

---The operating nut shall be of one piece bronze construction incorporating an iron dirt shield.

---Nozzles shall be tamper resistant ¼ turn type with O-rings and stainless steel retaining screws.

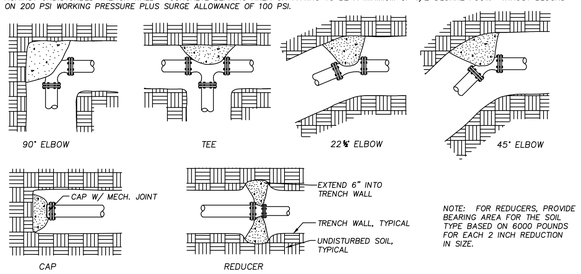
---The main valve shall be synthetic rubber reinforced with steel.

---Hydrants shall be Guardian K-81AWC as manufactured by Kennedy Valve or approved equal.



FIRE PROTECTION HYDRANT

USE CLASS D (2500 PSI) CONCRETE FOR THRUST BLOCKS. PLACE 4 MIL. POLYETHYLENE BETWEEN FITTING AND THRUST BLOCK. PLACE THRUST BLOCK AGAINST UNDISTURBED TRENCH WALL – CONCRETE BEARING AREA ON FITTING TO BE A MINIMUM OF 1/2 SQUARE FOOT. THRUST BLOCKS BASED ON 200 PSI WORKING PRESSURE PLUS SURGE ALLOWANCE OF 100 PSI.



NOTE: FOR REDUCERS, PROVIDE BEARING AREA FOR THE SOIL TYPE BASED ON 6000 POUNDS FOR EACH 2 INCH REDUCTION IN SIZE.

THRUST BLOCK TABLE

MINIMUM BEARING AREA IN SQUARE FEET ON UNDISTURBED TRENCH WALL

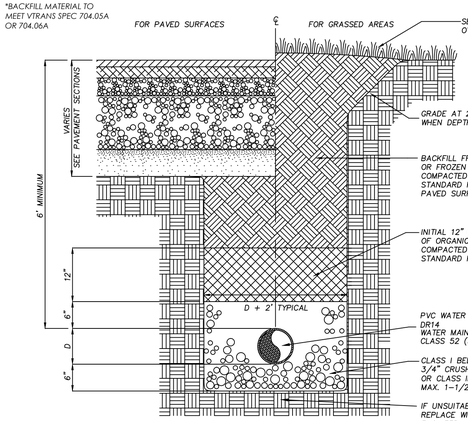
SOIL TYPE	SAFE BEARING LOAD LBS/FT.²	2", 3" & 4"				6"				8"				10"				12"			
		CAP OR TEE	90°	45°	22.5°	CAP OR TEE	90°	45°	22.5°	CAP OR TEE	90°	45°	22.5°	CAP OR TEE	90°	45°	22.5°	CAP OR TEE	90°	45°	22.5°
CLAY	1000	5.0	7.0	4.0	2.0	10.5	15.0	8.0	4.0	18.0	25.0	14.0	7.0	28.0	38.0	21.0	10.5	39.0	55.0	30.0	15.0
SAND	2000	2.5	3.5	2.0	1.0	5.5	7.5	4.0	2.0	9.0	13.0	7.0	3.5	14.0	19.0	10.0	5.0	20.0	27.5	15.0	8.0
GRAVEL	3000	2.0	2.5	1.5	1.0	3.5	5.0	3.0	1.5	6.0	8.5	5.0	2.5	9.0	12.5	7.0	4.5	13.0	18.5	10.0	5.0
TILL	4000	1.5	2.0	1.0	0.5	3.0	4.0	2.0	1.0	4.5	6.5	3.5	2.0	7.0	9.5	5.0	2.5	10.0	14.0	7.5	4.0
SHALE	10000	0.5	1.0	0.5	0.5	1.0	1.5	1.0	0.5	2.0	2.5	1.5	1.0	3.0	3.5	2.0	1.0	4.0	5.5	3.0	1.5

3 WATER MAIN THRUST BLOCKS

NTS

2011 TRUDELL CONSULTING ENGINEERS — LAST REVISED 02/07/11 — WTR-021M

*BACKFILL MATERIAL TO MEET VTRANS SPEC 704.05A OR 704.06A



SEED AND MULCH, OVERFILL FOR SETTLEMENT

INSTALL CLAY BARRIERS OR TRENCH DAM IN TRENCH AS NEEDED TO PREVENT GROUNDWATER MOVEMENT IN THE PIPE BEDDING. 100' SPACING MAXIMUM.

GRADE AT 2:1 SLOPE WHEN DEPTH EXCEEDS 5'

BACKFILL FREE OF ORGANIC OR FROZEN MATERIAL COMPACTED TO 95% DENSITY STANDARD PROCTOR UNDER ROADS OR PAVED SURFACES, AND 90% DENSITY ELSEWHERE.

INITIAL 12" OF SELECT BACKFILL FREE OF ORGANIC OR FROZEN MATERIAL COMPACTED TO 95% DENSITY STANDARD PROCTOR.

PVC WATER MAIN (AWWA C-900) DR14
WATER MAIN (AWWA-C151.51)
CLASS 52 (SEE SITE PLAN FOR SIZE & TYPE)

CLASS I BEDDING 3/4" CRUSHED STONE OR CLASS II BEDDING MAX. 1-1/2" COARSE SAND & GRAVEL

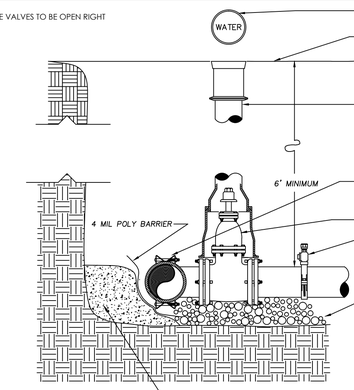
IF UNSUITABLE MATERIAL IS REMOVED REPLACE WITH MATERIAL REVIEWED BY ENGINEER. COMPACT TO 95% DENSITY

4 TYPICAL WATER TRENCH

3/4"=1'-0"

2011 TRUDELL CONSULTING ENGINEERS — LAST REVISED 02/07/11 — WTR-026M

ALL GATE VALVES TO BE OPEN RIGHT



"WATER" CAST IN COVER PROVIDE WITH MUD PLUG

FINISHED GRADE

COATED CAST IRON TWO PIECE (SLIP TYPE) VALVE BOX WITH FLANGED TOP & LID. PROVIDE GATE BOX ALIGNER

ALL FITTINGS ARE TO HAVE "MEGA-LUG" RETAINER GLANDS AND STAINLESS STEEL BOLTS AND NUTS

STAINLESS STEEL TAPPING SLEEVE OVER EXISTING WATER MAIN, POWER SEAL 3490 MJ OR APPROVED EQUAL WITH RESTRAINTS

GATE VALVE (AWWA C515) TO BE OPEN RIGHT

3/4" CORPORATION STOP FOR TESTING MUELLER B-25008 OR CAMBRIDGE BRASS MODEL 301

3/4" STONE BEDDING

NOTE FOR MUNICIPAL CONNECTIONS
CONTRACTOR TO APPLY TO TOWN WATER DEPARTMENT FOR WATER LINE TAPPING PERMIT. CONTRACTOR TO SUBMIT COMPLETE SPECIFICATION OF MATERIALS WITH PERMIT APPLICATION.

ALL FLANGES TO BE MEGALUG OR APPROVED EQUIVALENT WITH MECHANICAL RESTRAINTS

CLASS D CONCRETE THRUST BLOCK (REFER TO THRUST BLOCK TABLE FOR SIZE)

5 TYPICAL TAPPING VALVE

3/4"=1'-0"

2007 TRUDELL CONSULTING ENGINEERS — LAST REVISED 08/14/12 — WTR-007M

CONTRACTOR'S CERTIFICATION REQUIRED

PRIOR TO THE DESIGN ENGINEER CERTIFYING THAT THE INSTALLATION HAS BEEN INSTALLED IN ACCORDANCE WITH THE PERMITTED DESIGN, THE CONTRACTOR SHALL PROVIDE A CERTIFICATION THAT THE WATER SYSTEM WAS INSTALLED AND TESTED IN ACCORDANCE WITH THE APPROVED DESIGN PLANS. STATE PERMITS REQUIRE THERE SHALL BE NO DEVIATIONS FROM THE APPROVED PLANS WITHOUT PRIOR APPROVALS. THE DESIGN ENGINEER SHALL BE NOTIFIED AND ALLOWED TO OBSERVE THE CRITICAL PHASES OF CONSTRUCTION INCLUDING ANY REQUIRED TESTS. LIKEWISE, THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DEVIATIONS FROM THE APPROVED PLANS. SINCE THE DESIGN ENGINEER DOES NOT CUSTOMARILY OBSERVE ALL PHASES OF THE WORK, OR ALL TESTING, HE MAY RELY ON THE CONTRACTOR'S CERTIFICATION AS THE BASIS FOR FINAL CERTIFICATION. THE CONTRACTOR SHALL THEREFORE SIGN AND RETURN A COPY OF THE FOLLOWING CERTIFICATION UPON COMPLETION OF THE WORK:

"I HEREBY CERTIFY THAT I HAVE INSTALLED, PROPERLY TESTED, AND SUCCESSFULLY PASSED THOSE TESTS, AND THE WATER SYSTEM(S) ARE BUILT IN ACCORDANCE WITH THE APPROVED DESIGN PLANS AND APPLICABLE PERMIT CONDITIONS."

CONTRACTOR NAME _____

AUTHORIZED AGENTS NAME _____

SIGNATURE _____ DATE _____

NOTE ANY DEVIATIONS FROM APPROVED PLANS HERE:

_____

6 CONTRACTOR'S CERTIFICATION FOR POTABLE WATER SYSTEMS

2009 TRUDELL CONSULTING ENGINEERS — LAST REVISED 11/06/09 — WTR-064S

TESTING WATER MAINS

*ALL TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE TOWN ENGINEER OR PUBLIC WORKS DEPARTMENT AND TRUDELL CONSULTING ENGINEERS (TCE)

A. AFTER THE PIPE HAS BEEN LAID AND 7 DAYS AFTER THE CONCRETE THRUST BLOCKS AND ANCHORS HAVE BEEN PLACED, THE WATER MAIN SHALL BE HYDROSTATICALLY TESTED ACCORDING TO THE LATEST EDITION OF THE AWWA SPECIFICATION C-600.

B. CONTRACTOR SHALL SUPPLY ALL NECESSARY APPARATUS TO PERFORM THE HYDROSTATIC TEST.

C. TEST PRESSURE SHALL BE 200 POUNDS PER SQUARE INCH OR 1.5 TIMES THE WORKING PRESSURE MEASURED AT OR NEAR THE HIGH POINT IN THE SYSTEM, WHICHEVER IS GREATER. TEST SHALL BE A MINIMUM OF 2 HOURS IN DURATION. TESTING ALLOWANCE SHALL BE DEFINE AS THE QUANTITY OF MAKEUP WATER THAT MUST BE SUPPLIED INTO THE NEWLY LAID PIPE OR ANY VALVED SECTION THEREOF TO MAINTAIN PRESSURE WITHIN 5 PSI (34.5 kPa) OF THE SPECIFIED TEST PRESSURE AFTER THE PIPE HAS BEEN FILLED WITH WATER AND THE AIR HAS BEEN EXPELLED. TESTING ALLOWANCE SHALL NOT BE MEASURED BY A DROP IN PRESSURE IN A TEST SECTION OVER A PERIOD OF TIME.

D. THE PROJECT ENGINEER AND THE MUNICIPALITY SHALL BE CONTACTED 48 HOURS PRIOR TO TESTING.

E. ALL VALVES SHOULD BE VERIFIED AS BEING OPEN OR CLOSED AS APPROPRIATE FOR THE PORTION OF THE WATER MAIN BEING TESTED.

F. ALLOWABLE LEAKAGE SHALL BE COMPUTED BY THE FORMULA: $L=(S \times D \times \sqrt{P})/148{,}000$ WHERE L IS LEAKAGE IN GALLONS PER HOUR, S IS THE LENGTH OF PIPE TESTED IN FEET, D IS THE NOMINAL DIAMETER OF THE PIPE IN INCHES AND P IS THE AVERAGE TEST PRESSURE IN POUNDS PER SQUARE INCH DURING THE TEST.

G. REPLACE AND RETEST ANY WORK FOUND TO BE DEFECTIVE AT NO EXPENSE TO OWNER.

TESTING HYDRANTS

A. AFTER TESTING THE WATER MAINS, OPEN THE HYDRANT FULLY AND FILL WITH WATER. TO PREVENT CAPS FROM BEING BLOWN OFF, VENT AIR FROM ONE OF THE CAPS WHILE IT IS BEING FILLED. WHEN ALL THE AIR HAS ESCAPED, TIGHTEN THE CAP.

B. ALLOW THE PRESSURE TO BUILD UP TO MAIN LINE PRESSURE AND CHECK FOR LEAKAGE AT FLANGES, NOZZLES AND THE OPERATING STEM.

C. CLOSE THE HYDRANT, REMOVE ONE NOZZLE CAP AND PLACE THE PALM OF YOUR HAND OVER THE OPENING. DRAINAGE SHOULD CREATE A NOTICEABLE SUCTION.

7 TESTING WATER MAINS AND HYDRANTS

2010 TRUDELL CONSULTING ENGINEERS — LAST REVISED 04/12/2010 — WTR-030S

DISINFECTING WATER MAINS AND SYSTEMS

*ALL TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE TOWN ENGINEER OR PUBLIC WORKS DEPARTMENT AND TRUDELL CONSULTING ENGINEERS (TCE)

A. PRIOR TO BEING PUT INTO SERVICE, WATER MAINS SHALL BE DISINFECTED ACCORDING TO THE LATEST EDITION OF AWWA SPECIFICATION C-651. THE TABLET METHOD IN AWWA STANDARD 651 IS NOT ACCEPTABLE.

B. THE NEW LINE SHALL BE FLUSHED AT A VELOCITY OF NOT LESS THAN 2.5 FEET PER SECOND (OPEN 2-1/2 INCH HYDRANT CONNECTION). FLUSH FOR A PERIOD DETERMINED BY THE ENGINEER FOR THE LENGTH OF MAIN TO BE DISINFECTED.

C. CHLORINATION SHALL BE ACCOMPLISHED BY INTRODUCING A HYPOCHLORITE SOLUTION WITH A CONCENTRATION OF GREATER THAN 25 PARTS PER MILLION OF FREE CHLORINE.

D. USING A NOZZLE AT EACH END HYDRANT, CONTROL THE RATE OF FLOW INTO THE NEW MAIN AND PROPORTIONALLY FEED THE HYPOCHLORITE SOLUTION INTO THE MAIN. AFTER THE CHLORINE HAS REACHED ALL POINTS IN THE SYSTEM, CLOSE THE VALVE SUPPLYING WATER FROM THE EXISTING MAIN AND THE END HYDRANTS. MAINTAIN THE HEAVILY CHLORINATED WATER IN THE MAIN FOR 24 HOURS DURING WHICH TIME ALL MAIN LINE VALVES SHOULD BE OPERATED. AFTER 24 HOURS THE MINIMUM CHLORINE RESIDUAL MUST BE AT LEAST 10 PARTS PER MILLION.

E. FLUSH HEAVILY CHLORINATED WATER FROM THE LINE AND REFILL THE LINE FOR SERVICE (USE CHLORINE DIFFUSER). TAKE AND SUBMIT TWO BACTERIOLOGICAL SAMPLES OF THE WATER TO THE STATE OF VERMONT OR A STATE APPROVED TESTING LABORATORY IF THE RESULTS ARE UNSATISFACTORY, THE DISINFECTION PROCEDURE WILL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED.

F. FINISHED WATER STORAGE STRUCTURES SHALL BE DISINFECTED IN ACCORDANCE WITH CURRENT AWWA STANDARD C652. TWO OR MORE SUCCESSIVE SETS OF SAMPLES, TAKEN AT 24 HOUR INTERVALS, SHALL INDICATE MICROBIOLOGICALLY SATISFACTORY WATER BEFORE THE FACILITY IS PLACES INTO OPERATION.

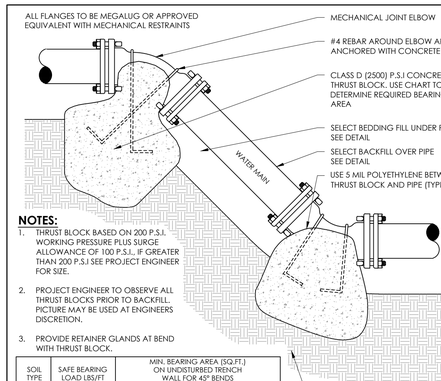
G. DISPOSAL OF HEAVILY CHLORINATED WATER FROM THE TANK DISINFECTION PROCESS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SECRETARY.

H. THE DISINFECTION PROCEDURE (AWWA CHLORINATION METHOD 3, SECTION 4.3 C652) WHICH ALLOWS USE OF THE CHLORINATED WATER HELD IN THE STORAGE TANK FOR DISINFECTION PURPOSES IS NOT RECOMMENDED. WHEN THAT PROCEDURE IS USED, IT IS REQUIRED THAT THE INITIAL HEAVILY CHLORINATED WATER BE PROPERLY DISPOSED IN ORDER TO PREVENT RELEASE OF WATER WHICH MAY CONTAIN VARIOUS CHLORINATED ORGANIC COMPOUNDS INTO THE DISTRIBUTION SYSTEM.

8 DISINFECTION OF WATER SYSTEM

2010 TRUDELL CONSULTING ENGINEERS — LAST REVISED 02/16/10 — WTR-029S

ALL FLANGES TO BE MEGALUG OR APPROVED EQUIVALENT WITH MECHANICAL RESTRAINTS



MECHANICAL JOINT ELBOW

#4 REBAR AROUND ELBOW AND ANCHORED WITH CONCRETE

CLASS D (2500) P.S.I CONCRETE THRUST BLOCK. USE CHART TO DETERMINE REQUIRED BEARING AREA

SELECT BEDDING FILL UNDER PIPE SEE DETAIL

SELECT BACKFILL OVER PIPE SEE DETAIL

USE 5 MIL POLYETHYLENE BETWEEN THRUST BLOCK AND PIPE (TYPICAL)

UNDISTURBED SUBGRADE

NOTES:

1. THRUST BLOCK BASED ON 200 P.S.I. WORKING PRESSURE PLUS SURGE ALLOWANCE OF 100 P.S.I.. IF GREATER THAN 200 P.S.I SEE PROJECT ENGINEER FOR SIZE.
2. PROJECT ENGINEER TO OBSERVE ALL THRUST BLOCKS PRIOR TO BACKFILL. PICTURE MAY BE USED AT ENGINEERS DISCRETION.
3. PROVIDE RETAINER GLANDS AT BEND WITH THRUST BLOCK.

SOIL TYPE	SAFE BEARING LOAD LBS/FT	MIN. BEARING AREA (SQ.FT.) ON UNDISTURBED TRENCH WALL FOR 45° BENDS			
		6"	8"	10"	12"
CLAY	1000	8.0	14.0	21.0	30.0
SAND	2000	4.0	7.0	10.0	15.5
GRAVEL	3000	3.0	5.0	7.0	10.5
TILL	4000	2.0	3.5	5.0	7.5
SHALE	10000	1.0	1.5	2.0	3.0

TYPICAL THRUST BLOCK FOR VERTICAL BENDS

1"=1'

TRUDELL CONSULTING ENGINEERS — LAST REVISED 03/22/2017 — W-018

tce
ENGINEERING • SURVEY
PLANNING • ENVIRONMENTAL
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 | WWW.TCEVT.COM

Revisions

No.	Description	Date	By
1	For Local Submittal	2/15/19	AAD
2	Hydrant	07/29/19	CMJ
3	Revisions per City Comments	09/03/19	CMJ
4	Revisions per City Comments	11/06/19	CMJ

Use of These Drawings

1. Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such or marked approved by a regulatory authority.

2. By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings, obtained all necessary permits, and have met with all applicable parties/disciplines, including but not limited to, the Engineer and the Architect, to insure these plans are properly coordinated including, but not limited to, contract documents, specifications, owner/contractor agreements, building and mechanical plans, private and public utilities, and other pertinent permits for construction.

3. Owner and Architect, are responsible for final design and location of buildings shown, including an area measured a minimum five (5) feet around any building and coordinating final utility connections shown on these plans.

4. Prior to using these plans for construction layout, the user shall contact TCE to ensure the plan contains the most current revisions.

5. These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.

6. It is the User's responsibility to ensure this copy contains the most current revisions.

STATE OF VERMONT — STEPHEN A. LEE — No. 9020 CIVIL — LICENSED PROFESSIONAL ENGINEER

Project Title

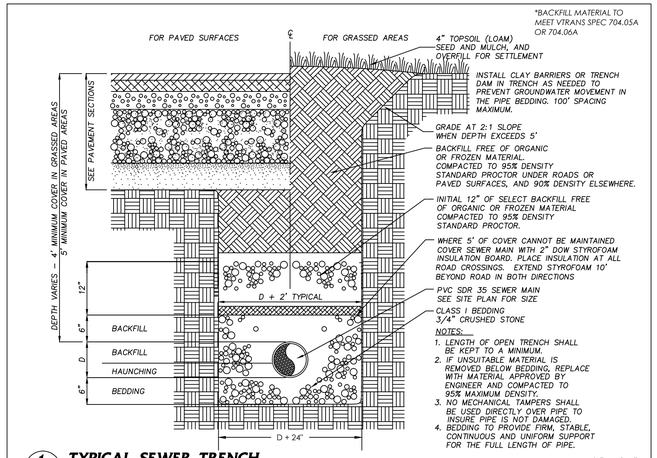
Sisters and Brothers Investment Group
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Water Details

Date:	11/21/2012
Scale:	Shown
Project Number:	2010083
Drawn By:	PJM
Project Engineer:	AAL
Approved By:	
Field Book:	

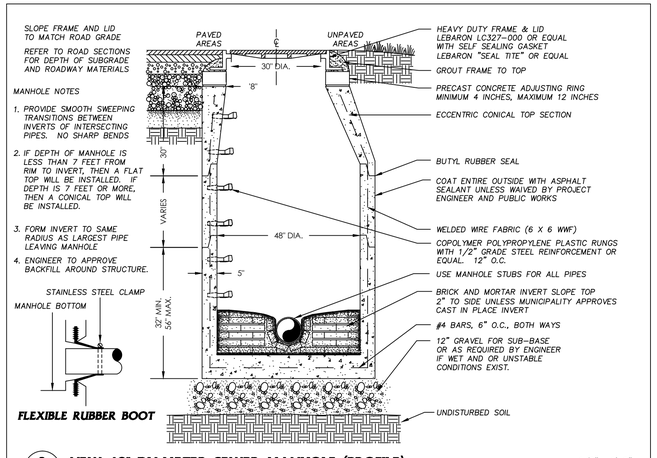
C8-03



1 TYPICAL SEWER TRENCH

3/4"= 1' 0"

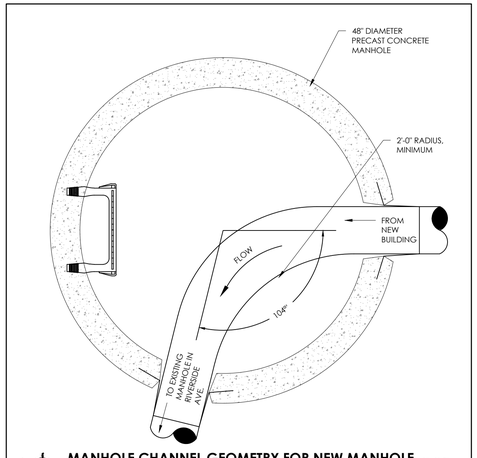
2010 TRUDELL CONSULTING ENGINEERS — LAST REVISED 1/07/10 — SWR-057M



2 NEW 48" DIAMETER SEWER MANHOLE (PROFILE) WITH 30" DIA. COVER

1/2"= 1' 0"

2010 TRUDELL CONSULTING ENGINEERS (TCE) — LAST REVISED 12/01/2010 — SWR-160M



MANHOLE CHANNEL GEOMETRY FOR NEW MANHOLE PLAN VIEW

1"=1'-0"

TRUDELL CONSULTING ENGINEERS — LAST REVISED 3/5/2013 — S-005*

CONTRACTOR'S CERTIFICATION REQUIRED

PRIOR TO THE DESIGN ENGINEER CERTIFYING THAT THE INSTALLATION HAS BEEN INSTALLED IN ACCORDANCE WITH THE PERMITTED DESIGN, THE CONTRACTOR SHALL PROVIDE A CERTIFICATION THAT THE WASTEWATER SYSTEM WAS INSTALLED AND TESTED IN ACCORDANCE WITH THE APPROVED DESIGN PLANS. STATE PERMITS REQUIRE THERE SHALL BE NO DEVIATIONS FROM THE APPROVED PLANS WITHOUT PRIOR APPROVALS. THE DESIGN ENGINEER SHALL BE NOTIFIED AND ALLOWED TO OBSERVE THE CRITICAL PHASES OF CONSTRUCTION INCLUDING ANY REQUIRED TESTS. LIKEWISE, THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DEVIATIONS FROM THE APPROVED PLANS. SINCE THE DESIGN ENGINEER DOES NOT CUSTOMARILY OBSERVE ALL PHASES OF THE WORK, OR ALL TESTING, THEY MAY RELY ON THE CONTRACTOR'S CERTIFICATION AS THE BASIS FOR FINAL CERTIFICATION. THE CONTRACTOR SHALL THEREFORE SIGN AND RETURN A COPY OF THE FOLLOWING CERTIFICATION UPON COMPLETION OF THE WORK:

"I HEREBY CERTIFY THAT I HAVE INSTALLED, PROPERLY TESTED, AND SUCCESSFULLY PASSED THOSE TESTS, AND THE WASTEWATER SYSTEM(S) ARE BUILT IN ACCORDANCE WITH THE APPROVED DESIGN PLANS AND APPLICABLE PERMIT CONDITIONS."

CONTRACTOR NAME _____

AUTHORIZED AGENTS NAME _____

SIGNATURE _____ DATE _____

NOTE ANY DEVIATIONS FROM APPROVED PLANS HERE:

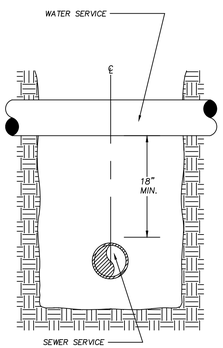
_____

_____

_____

_____

4 CONTRACTOR'S CERTIFICATION FOR WASTEWATER SYSTEMS



CROSSINGS: SEWERS CROSSING WATER MAINS SHALL BE LAID BENEATH THE WATER MAIN WITH AT LEAST 18 INCHES VERTICAL CLEARANCE BETWEEN THE OUTSIDE OF THE SEWER AND THE OUTSIDE OF THE WATER MAIN. WHEN IT IS IMPOSSIBLE TO MAINTAIN THE 18" VERTICAL SEPARATION OR WHERE THE SEWER MUST BE LAID ABOVE THE WATER MAIN:

1) THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AS POSSIBLE FROM WATER JOINTS;

2) THE SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 20 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF THREE PIPE LENGTHS, WHICHEVER IS GREATER;

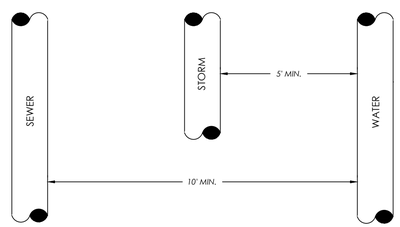
3) THE SECTION CONSTRUCTED TO WATER MAIN STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 50 PSI FOR 15 MINUTES WITHOUT LEAKAGE PRIOR TO BACKFILLING BEYOND ONE FOOT ABOVE THE PIPE TO ASSURE WATER TIGHTNESS;

4) WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN.

7 WATER / SEWER CROSSING

1"= 1' 0"

2010 TRUDELL CONSULTING ENGINEERS — LAST REVISED 01/07/10 — SWR-062S



REQUIREMENTS:

1. WATER MAINS SHALL BE LAID AT LEAST 10' HORIZONTALLY FROM ANY EXISTING OR PROPOSED MANHOLE OR SANITARY SEWER. THIS DISTANCE CAN BE REDUCED TO 5' FOR STORM DRAINS. THE DISTANCE SHALL BE MEASURED EDGE OF PIPE TO TO EDGE OF PIPE. CONSULT WITH ENGINEER IF THESE SEPARATIONS ARE NOT AVAILABLE.
2. THE PROJECT ENGINEER SHALL PERIODICALLY OBSERVE THIS DURING CONSTRUCTION TO ENSURE PROPER SEPARATION AND THE CONTRACTOR SHALL SUPPLY AS-BUILTS REFERENCING PROPER SEPARATIONS.

PARALLEL WATER INSTALLATION WSR APPENDIX SUBSECTION 8.6.2

TRUDELL CONSULTING ENGINEERS — LAST REVISED 03/22/2017 — W-010

AIR TESTING SEWERS

*ALL TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE TOWN ENGINEER OR PUBLIC WORKS DEPARTMENT AND TRUDELL CONSULTING ENGINEERS (TCE). CONTRACTOR SHALL PRE-TEST SUCCESSFULLY PRIOR TO CONTACTING ENGINEER. THE PRE-TEST IS TO ENSURE PASSING RESULTS PRIOR TO OFFICIAL TESTING OBSERVATION.

A. TEST THE GRAVITY SEWER BY A PRESSURIZED AIR TEST BETWEEN CONSECUTIVE MANHOLES. PLUG ALL OPENINGS OF THE TEST SECTION AND CONNECT THE AIR CONTROL EQUIPMENT TO THE TAPPED END.

B. SUPPLY AIR SLOWLY TO THE PIPE UNTIL REACHING A CONSTANT PRESSURE OF 4.0 PSI GREATER THAN THE AVERAGE PRESSURE OF ANY SURROUNDING GROUNDWATER. PRESSURE WILL NORMALLY DROP AS TEMPERATURE STABILIZES. SUPPLY THE AIR SO THAT THE PRESSURE REMAINS ABOVE 3.0 PSI FOR AT LEAST 5 MINUTES DURING TEMPERATURE STABILIZATION. USE A PRESSURE GAUGE HAVING A RANGE FROM 0 TO 5 PSI. THE GAUGE SHOULD HAVE MINIMUM DIVISIONS OF 0.1 PSI AND AN ACCURACY OF +- 0.04 PSI. REGULATE THE AIR PRESSURE TO PREVENT IT FROM EXCEEDING 5.0 PSI.

C. AFTER STABILIZATION, ADJUST PRESSURE TO 3.5 PSI OR ABOVE AND SHUT OFF AIR SUPPLY. START THE STOP WATCH. THE TIME REQUIRED FOR THE TEST IS DEPENDENT ON PIPE DIAMETER PER TOTAL LENGTH OF PIPE BEING TESTED AND MUST BE AT LEAST:

NOMINAL PIPE DIA. IN INCHES	T (TIME) MIN/100 FT.	NOMINAL PIPE DIA. IN INCHES	T (TIME) MIN/100 FT.
3	0.2	21	3.0
4	0.3	24	3.6
6	0.7	27	4.2
8	1.2	30	4.8
10	1.5	33	5.4
12	1.8	36	6.0
15	2.1	39	6.6
18	2.4	42	7.3

D. IF THE SECTION OF LINE TO BE TESTED INCLUDES MORE THAN ONE PIPE SIZE, CALCULATE THE TEST TIME FOR EACH SIZE AND ADD THE TEST TIMES TO EQUAL THE TOTAL SECTION TEST TIME.

E. IF THERE IS GROUND WATER ABOVE THE SEWER LINE THE AIR TEST PRESSURE WILL BE INCREASED BY 0.5 PSI FOR EACH FOOT OF WATER ABOVE THE INVERT OF THE PIPE. DIFFERENCES DUE TO AIR TEMPERATURE AND BAROMETRIC PRESSURE WILL BE CONSIDERED NEGLIGIBLE.

F. IF THE PRESSURE DROPS MORE THAN 1 PSI DURING THE TEST TIME, THE PIPE WILL HAVE FAILED AND ADEQUATE REPAIRS AND RETESTING WILL BE REQUIRED AT NO EXPENSE TO OWNER.

G. IT IS NOT NECESSARY TO HOLD THE TEST FOR THE WHOLE PERIOD WHEN IT IS CLEARLY EVIDENT THAT THE RATE OF AIR LOSS IS LESS THAN THE ALLOWABLE.

DEFLECTION TESTING SEWERS

A. AFTER A FLEXIBLE PIPE SEWER, SUCH AS PVC, HAS BEEN BACKFILLED FOR 30 DAYS, A PIPE DEFLECTION TEST SHALL BE PERFORMED.

B. THE TEST SHALL BE CONDUCTED USING A RIGID BALL OR MANDREL HAVING A DIAMETER EQUAL TO 92.5% OF THE PIPE DIAMETER. THIS DEVICE WILL BE PULLED THROUGH THE SEWER BY A ROPE WITHOUT THE MEANS OF MECHANICAL EQUIPMENT. THE MAXIMUM ALLOWABLE VERTICAL DEFLECTION SHALL BE 7.5%.

C. IF THE BALL OR MANDREL CANNOT BE SUCCESSFULLY PULLED THROUGH THE SEWER PIPE, THOSE SECTIONS OF PIPE NOT MEETING THE DEFLECTION REQUIREMENTS SHALL BE EXCAVATED AND THE EMBEDMENT AND BACKFILL REPLACED. IF, IN THE OPINION OF THE ENGINEER, THE PIPE HAS BEEN DAMAGED, IT SHALL BE REMOVED AND REPLACED.

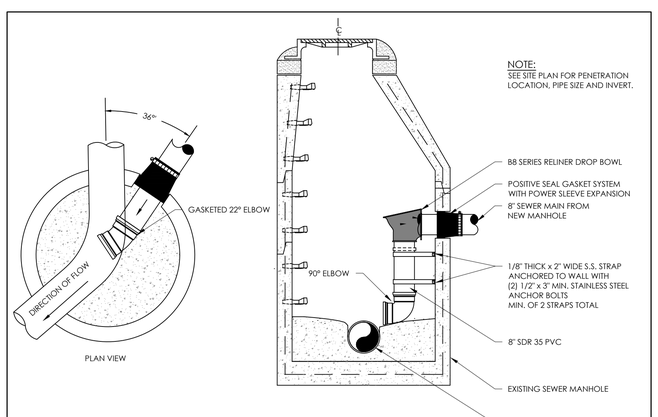
TESTING GRAVITY SEWERS (ENVIRONMENTAL PROTECTION RULES) CH 1 EFFECTIVE 9/29/07 SECTION 1-A-03(K)(2)

TRUDELL CONSULTING ENGINEERS — LAST REVISED 08/02/2017 — SN-008

1. *ALL TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE TOWN ENGINEER OR PUBLIC WORKS DEPARTMENT AND TRUDELL CONSULTING ENGINEERS (TCE). CONTRACTOR SHALL PRE-TEST SUCCESSFULLY PRIOR TO CONTACTING ENGINEER. THE PRE-TEST IS TO ENSURE PASSING RESULTS PRIOR TO OFFICIAL TESTING OBSERVATION.
2. EACH STRUCTURE SHALL BE TESTED BY MEANS OF A WATER TEST OR VACUUM TEST PRIOR TO THE BACKFILLING OF THE STRUCTURE. IN ANY CASE THERE SHALL BE NO VISIBLE LEAKAGE INTO THE BASE OR WALLS OF A COMPLETED STRUCTURE.
3. AFTER THE STRUCTURE HAS BEEN ASSEMBLED IN PLACE, ALL LIFTING HOLES AND EXTERIOR JOINTS SHALL BE FILLED AND PAINTED WITH AN APPROVED NON-SHRINKING MORTAR.IN MANHOLES THE TEST SHALL BE MADE PRIOR TO PLACING THE SHELF AND INVERT. IF THE GROUNDWATER TABLE HAS BEEN ALLOWED TO RISE ABOVE THE BOTTOM OF THE STRUCTURE, THE ENGINEER MAY DIRECT IT TO BE LOWERED FOR THE DURATION OF THE TEST. ALL PIPES AND OTHER OPENINGS INTO THE STRUCTURE SHALL BE SUITABLY PLUGGED AND THE PLUGS BRACED TO PREVENT DISPLACEMENT.
4. IF THE CONTRACTOR ELECTS TO BACKFILL PRIOR TO WATER TESTING, FOR ANY REASON, IT SHALL BE AT HIS OWN RISK AND IT SHALL BE INCUMBENT UPON THE CONTRACTOR TO DETERMINE THE REASON FOR ANY FAILURE OF THE TEST. NO ADJUSTMENT IN THE LEAKAGE ALLOWANCE WILL BE MADE FOR UNKNOWN CAUSES SUCH AS LEAKAGE OF PLUGS, ABSORPTION, ETC. I.E., IT WILL BE ASSUMED THAT ALL LOSS OF WATER DURING THE TEST IS A RESULTS OF LEAKS THROUGH THE JOINTS OR THROUGH THE CONCRETE. FURTHERMORE, THE CONTRACTOR SHALL TAKE ANY STEPS NECESSARY TO ASSURE THE ENGINEER THAT THE WATER TABLE IS BELOW THE BOTTOM OF THE STRUCTURE THROUGHOUT THE TEST.
5. IF THE GROUNDWATER TABLE IS ABOVE THE HIGHEST JOINT IN THE STRUCTURE, AND IF THERE IS NO LEAKAGE INTO THE STRUCTURE AS DETERMINED BY THE ENGINEER, SUCH A TEST CAN BE USED TO EVALUATE THE WATER TIGHTNESS OF THE STRUCTURE. HOWEVER, IF THE ENGINEER IS NOT SATISFIED, THE CONTRACTOR SHALL LOWER THE WATER TABLE AND CARRY OUT THE TEST AS DESCRIBED HEREINBEFORE.
6. MANHOLE WATER TEST: THE STRUCTURE SHALL BE FILLED WITH WATER TO THE TOP OF THE RISERS, PAST ALL SEAMS, THE TANKS SHALL SIT FOR A PERIOD OF ONE HOUR TO ALLOW FOR ABSORPTION. AFTER ONE HOUR, THE STRUCTURE SHALL BE REFILLED TO THE TOP ABOVE ALL SEAMS. THE TANK SHALL BE TESTED FOR A MINIMUM OF 6 HOURS. AT THE END OF THE 6-HOUR TEST PERIOD, THE MANHOLE SHALL BE REFILLED TO THE STARTING POINT, MEASURING THE VOLUME OF WATER ADDED. THE VOLUME OF WATER ADDED SHALL BE CONVERTED TO A 24-HOUR RATE AND THE LEAKAGE DETERMINED ON THE BASIS OF DEPTH. THE LEAKAGE FOR EACH MANHOLE SHALL NOT EXCEED ONE GALLON PER VERTICAL FOOT FOR A 24 HOUR PERIOD AND THERE SHALL BE NO VISIBLE INFILTRATION. REPAIRS BY APPROVED METHODS MAY BE MADE, AS DIRECTED BY THE ENGINEER, TO BRING THE LEAKAGE WITHIN ALLOWABLE RATE OF ONE GALLON PER FOOT PER DAY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UNCOVER THE MANHOLE, AS NECESSARY, AND TO DISASSEMBLE, RECONSTRUCT OR REPLACE IT AS DIRECTED BY THE ENGINEER. THE MANHOLE SHALL THEN BE RETESTED.
7. TANK WATER TEST: THE STRUCTURE SHALL BE FILLED WITH WATER TO THE TOP OF THE RISERS, PAST ALL SEAMS. THE TANKS SHALL SIT FOR A PERIOD OF 24-HOURS TO ALLOW FOR ABSORPTION. PLASTIC, STEEL, AND FIBERGLASS TANKS DO NOT NEED A 24-HOUR ABSORPTION PERIOD AND MAY BE TESTED IMMEDIATELY. AFTER 24-HOURS, REFILL THE TANK. IF AFTER ONE HOUR THERE IS NO MEASURABLE DROP IN FLUID LEVEL THE TANK SHALL BE CONSIDERED WATER TIGHT.
8. MANHOLE VACUUM TEST: THE CONTRACTOR SHALL FURNISH THE MANHOLE CONE SEAL, VACUUM PUMP, ALL NECESSARY GAUGES, HOSES, AND EQUIPMENT TO PERFORM THE TEST.
   - 8.1. MANHOLES THAT HAVE BEEN BACKFILLED SHALL BE EXCAVATED TO EXPOSE THE ENTIRE EXTERIOR OR THE WATER TEST SHALL BE USED.
   - 8.2. A PLATE WITH AN INFLATABLE RUBBER RING THE SIZE OF THE TOP OF THE MANHOLE SHALL BE INSTALLED BY INFLATING THE RING WITH AIR TO A PRESSURE ADEQUATE TO PREVENT LEAKAGE OF AIR BETWEEN THE RUBBER RING AND THE MANHOLE WALL.
   - 8.3. PUMP THE AIR OUT OF THE MANHOLE THROUGH AN OPENING IN THE TEST PLATE UNTIL A VACUUM IS CREATED INSIDE THE MANHOLE EQUAL TO 10 INCHES OF MERCURY USING AN APPROVED VACUUM GAUGE. THEN STOP THE REMOVAL OF AIR AND BEGIN THE TEST.
   - 8.4. THE VACUUM DROP SHALL NOT EXCEED 1 INCH OF MERCURY OVER A 2 MINUTE PERIOD FOR MANHOLES 0-10' DEEP, OVER 2.5 MINUTES FOR MANHOLES 10.1-15' DEEP, AND OVER 3 MINUTES FOR MANHOLES DEEPER THAN 15'. IF MORE THAN A 1 INCH DROP OCCURS WITHIN 2 MINUTES, THE MANHOLE HAS FAILED THE TEST, AND IT SHALL BE REPAIRED OR RECONSTRUCTED AND THEN RETESTED UNTIL IT PASSES AT NO EXPENSE TO OWNER.
9. TANK VACUUM TEST:
   - 9.1. USING A VACUUM TEST, SEAL THE EMPTY TANK AND RISERS AND APPLY A VACUUM TO 2 INCHES (50 MM) OF MERCURY. THE TANK IS CONSIDERED WATERTIGHT IF 90% OF THE VACUUM IS HELD FOR 2 MINUTES.
10. BACKFILL AROUND THE STRUCTURE UPON SATISFACTORY TEST RESULTS.

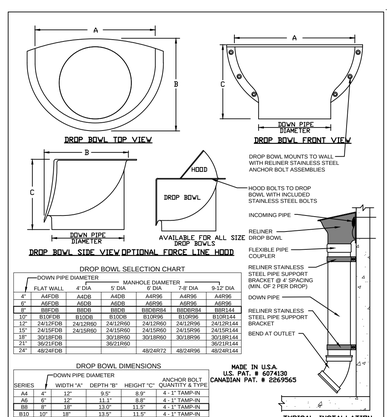
TESTING MANHOLES, TANKS, AND STRUCTURES

TRUDELL CONSULTING ENGINEERS — LAST REVISED 05/22/2019 — SN-007



DROP SEWER CONNECTION TO EXISTING MANHOLE IN RIVERSIDE AVENUE

2013 TRUDELL CONSULTING ENGINEERS — LAST REVISED 09/25/2019 — S-044



DROP BOWL SELECTION CHART

DOWN PIPE DIAMETER	MANHOLE DIAMETER				
FLAT WALL	4' DIA	5' DIA	6' DIA	7-8' DIA	9-12' DIA
4"	A4FDB	A4DB	A4DB	A4RP96	A4RP96
6"	A6FDB	A6DB	A6DB	A6RP96	A6RP96
8"	B8FDB	B8DB	B8DB	B8RP96	B8RP96
10"	B10FDB	B10DB	B10DB	B10RP96	B10RP96
12"	24/12FDB	24/12RP60	24/12RP60	24/12RP96	24/12RP144
15"	24/15FDB	24/15RP60	24/15RP60	24/15RP96	24/15RP144
18"	30/18FDB	30/18RP60	30/18RP60	30/18RP96	30/18RP144
21"	36/21FDB	36/21RP60			36/21RP144
24"	48/24FDB		48/24RP72	48/24RP96	48/24RP144

DROP BOWL DIMENSIONS

SERIES	DOWN PIPE DIAMETER WIDTH "A"	DEPTH "B"	HEIGHT "C"	ANCHOR BOLT QUANTITY & TYPE
A4	4"	12"	9.5"	8.9"	4 - 1" TAMP-IN
A6	6"	12"	11.1"	8.8"	4 - 1" TAMP-IN
B8	8"	18"	13.0"	11.5"	4 - 1" TAMP-IN
B10	10"	18"	13.5"	11.5"	4 - 1" TAMP-IN
24/12	12"	24"	16.5"	15.0"	6 - 1" TAMP-IN
24/15	15"	24"	19.3"	15.8"	6 - 1" TAMP-IN
30/18	18"	30"	23.5"	18.5"	6 - 1" TAMP-IN
36/21	21"	36"	31.6"	23.0"	8 - 3" WEDGE
48/24	24"	48"	30.5"	30.0"	10 - 3" WEDGE

RELINER INSIDE DROP BOWLS ARE FABRICATED IN MARINE GRADE FIBERGLASS AND FINISHED IN BRIGHT WHITE GEL COAT.

USE RELINER STAINLESS STEEL PIPE BRACKETS TO SUPPORT DOWN PIPE. EXTERNAL PIPE COUPLER REQUIRED. PROVIDE SWEEP AT DOWN PIPE OUTLET.

MADE IN U.S.A.
U.S. PAT. # 6074130
CANADIAN PAT. # 2269565

RELINER / DURAN, INC.
53 MT. ARCHER ROAD, LYME, CT 06371
(800) 508-6001 FAX: (860)434-3195
WWW.RELINER.COM

DESCRIPTION	DATE	SCALE
SANITARY MANHOLE INSIDE DROP BOWL	12/14/15	NONE
	DRAWING NUMBER DROP BOWL	

tce
ENGINEERING • SURVEY
PLANNING • ENVIRONMENTAL
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 | WWW.TCEVT.COM

Revisions

No.	Description	Date	By
1	For Local Submittal	2/15/19	AAD
2	Sewer Connection Revision	9/25/19	CMJ
3	Manhole Drop Bowl Detail	11/6/19	CMJ

Use of These Drawings

1. Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such or marked approved by a regulatory authority.

2. By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings, obtained all necessary permits, and have met with all applicable parties/disciplines, including but not limited to, the Engineer and the Architect, to insure these plans are properly coordinated including, but not limited to, contract documents, specifications, owner/contractor agreements, building and mechanical plans, private and public utilities, and other pertinent permits for construction.

3. Owner and Architect, are responsible for final design and location of buildings shown, including an area measured a minimum five (5) feet around any building and coordinating final utility connections shown on these plans.

4. Prior to using these plans for construction layout, the user shall contact TCE to ensure the plan contains the most current revisions.

5. These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.

6. It is the User's responsibility to ensure this copy contains the most current revisions.

STATE OF VERMONT — ABIGAIL A. ADAMS — No. 9020 CIVIL — LICENSED PROFESSIONAL ENGINEER

Project Title

Sisters and Brothers Investment Group

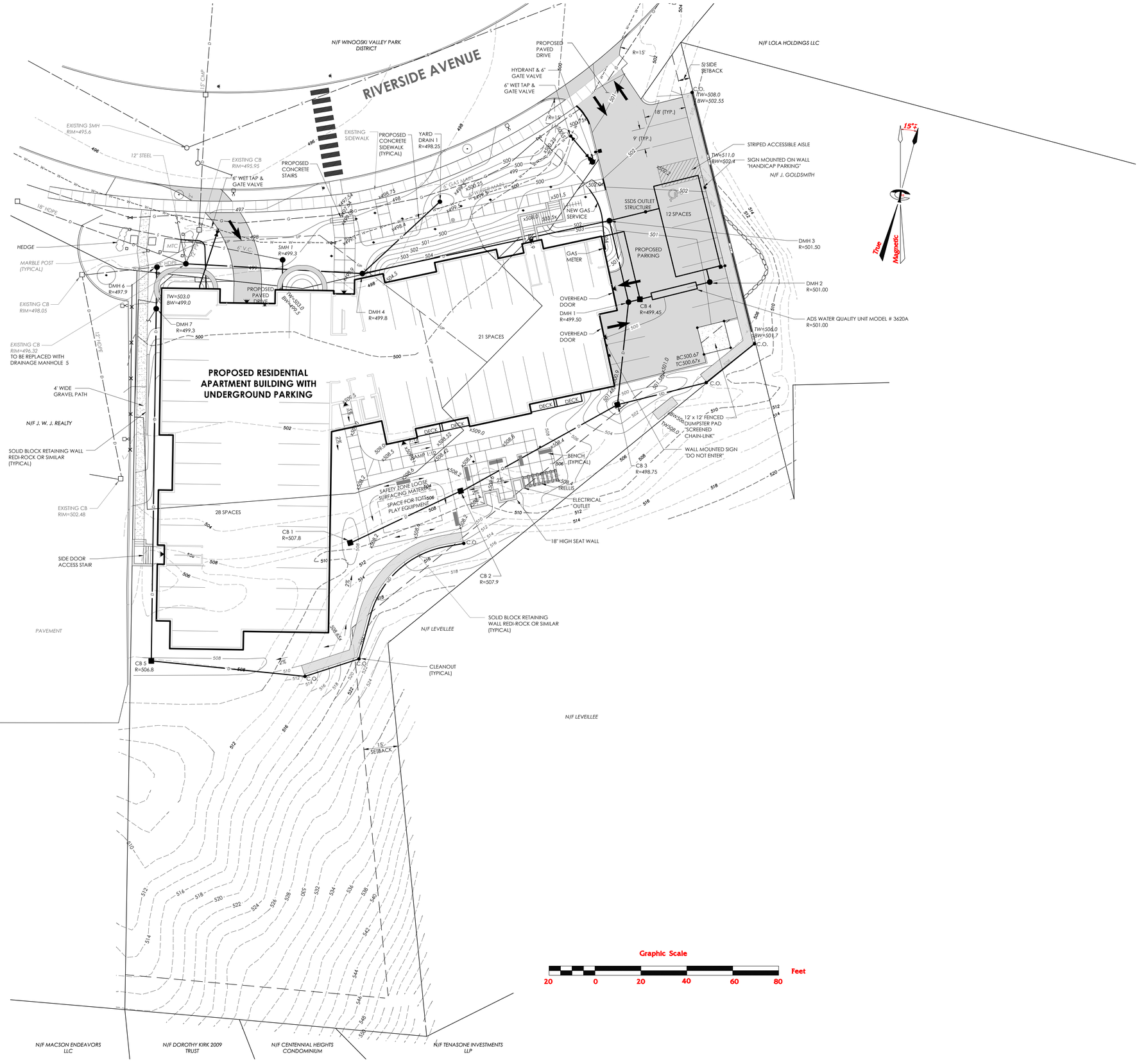
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Sewer Details

Date:	11/21/2012
Scale:	Shown
Project Number:	2010083
Drawn By:	PJM
Project Engineer:	AAL
Approved By:	
Field Book:	

C8-04



Project Reference:

TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 |
WWW.TCE.VT.COM

Revisions

No.	Description	Date	By
1	revision	1/1/12	xxx

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STATE OF VERMONT
ANGELL A. DEVITO
LICENSED PROFESSIONAL ENGINEER

Project Title

Sisters and Brothers Investment Group

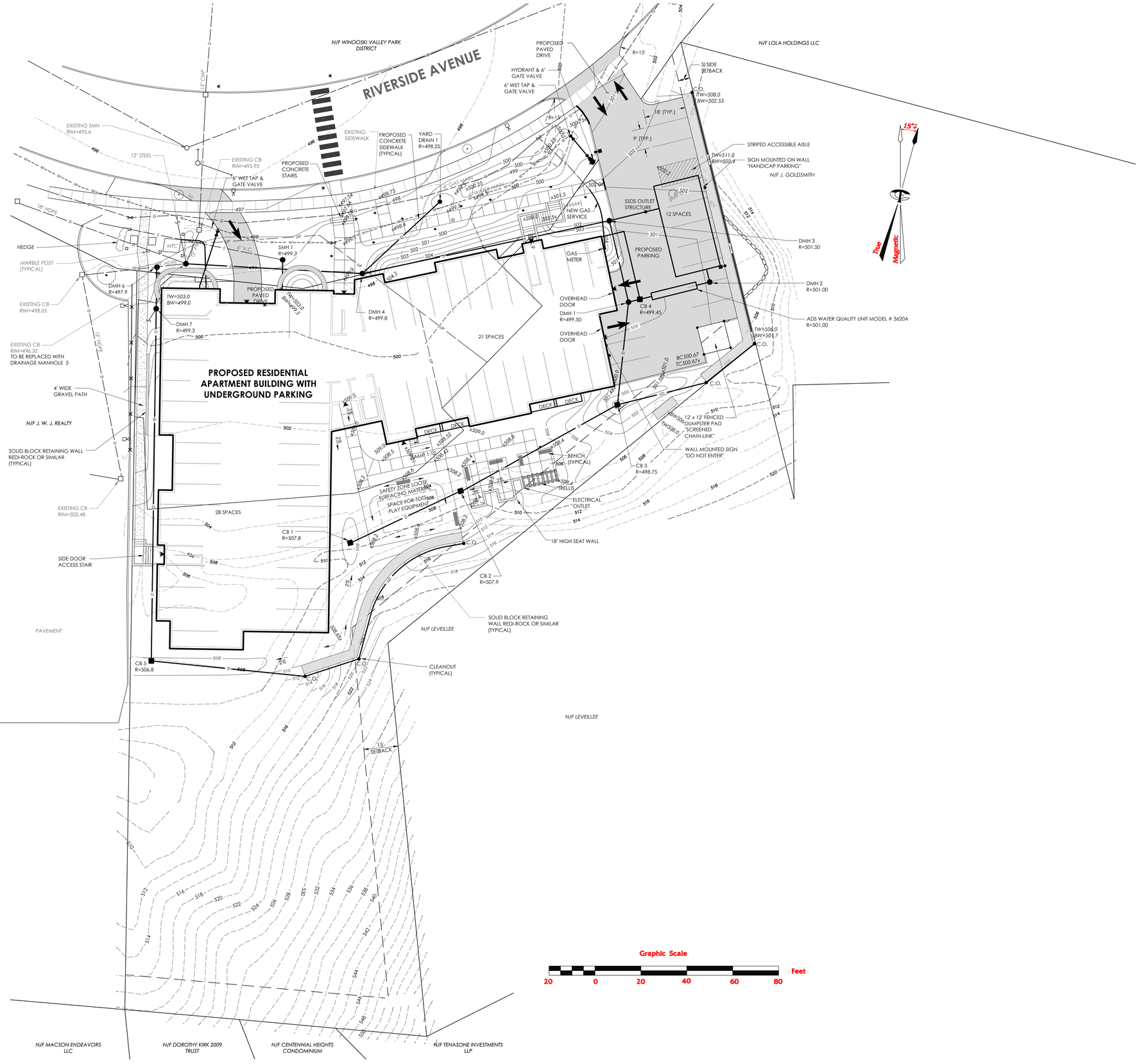
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Grading Plan

Date:	11/21/2012
Scale:	1" = 20'
Project Number:	2010083
Drawn By:	RMP
Project Engineer:	AAL
Approved By:	
Field Book:	

C2-02



Project Reference:

TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 |
WWW.TCE.VT.COM

Revisions

No.	Description	Date	By
1	revision	1/1/12	xxx

Use of These Drawings

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STATE OF VERMONT
ANGELL A. DEVITO
LICENSED PROFESSIONAL ENGINEER

Project Title

Sisters and Brothers Investment Group

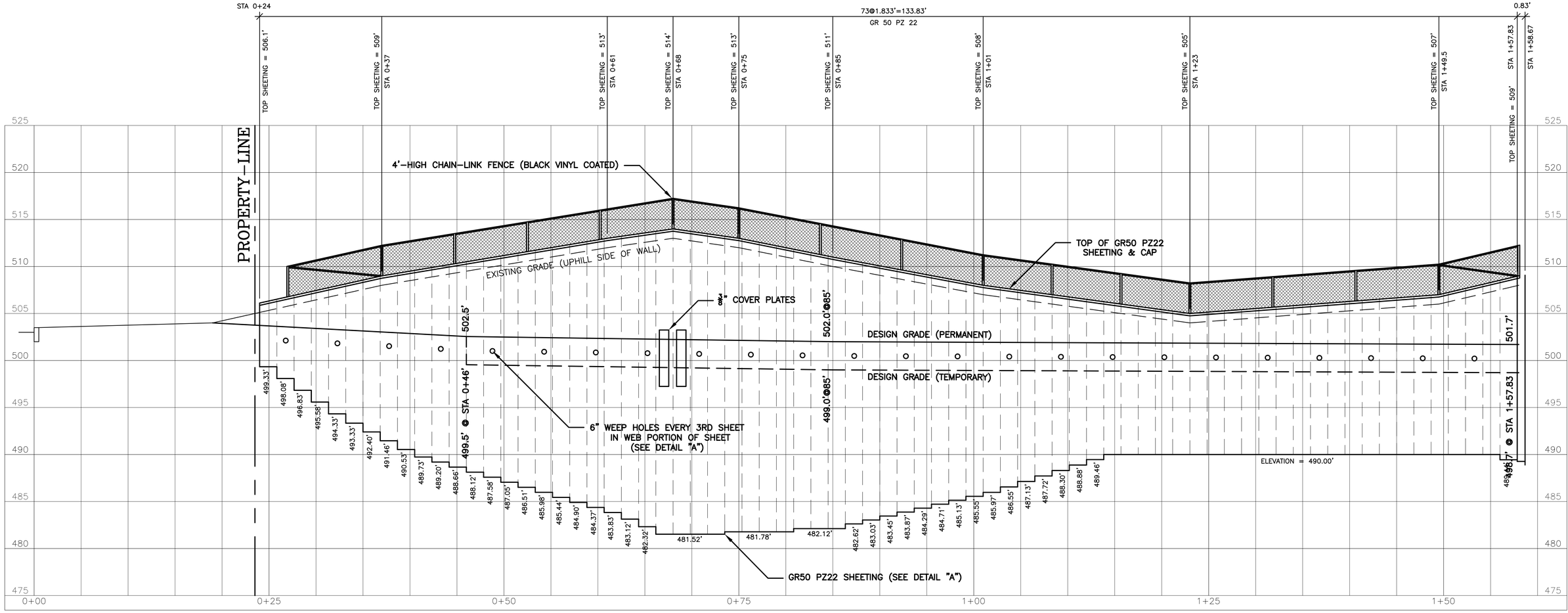
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Grading Plan

Date:	11/21/2012
Scale:	1" = 20'
Project Number:	2010083
Drawn By:	RMP
Project Engineer:	AAL
Approved By:	
Field Book:	

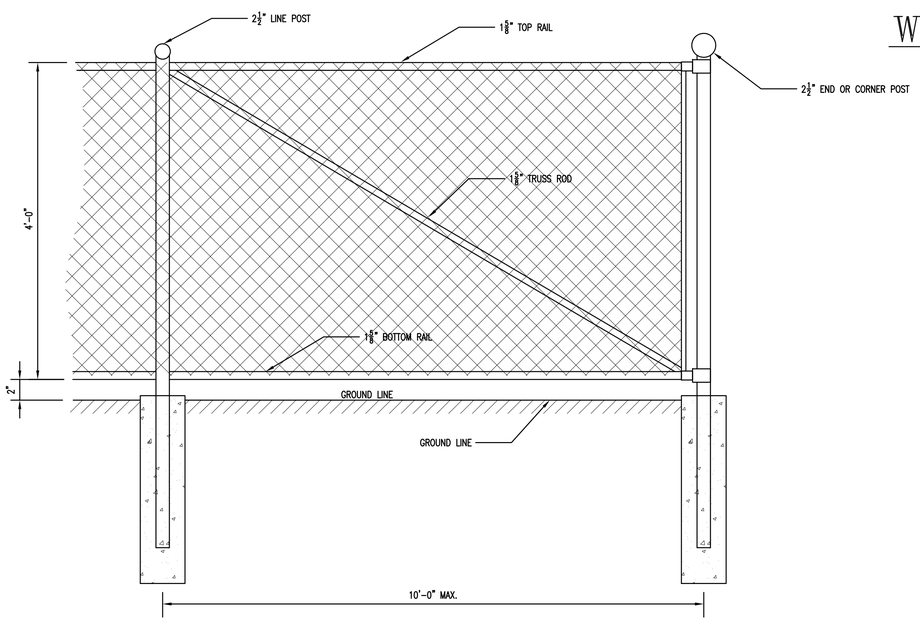
C2-02



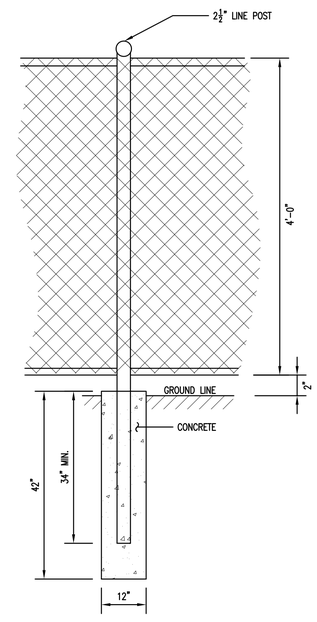
WEST ELEVATION (EAST WALL)

SCALE: 1" = 5' HOR.
1" = 5' VERT.

NOTE:
SHOP PRIME ALL SURFACES OF SHEETING & WALES.
FIELD PAINT EXPOSED FACES OF SHEETING & WALES (RUSTY BROWN COLOR OR AS SELECTED BY OWNER).



1 SH1 DETAIL – TYPICAL END OR CORNER POST
N.T.S.



2 SH1 DETAIL – TYPICAL POST ANCHORAGE
N.T.S.

0	12/30/19	Final Design

West Elev. (East Wall)

EXCAVATION SHEETING
110 RIVERSIDE AVE.
HOUSING
BURLINGTON, VT

DWG. NO. SH1

PROJ. NO. 19239

DATE: 09/04/

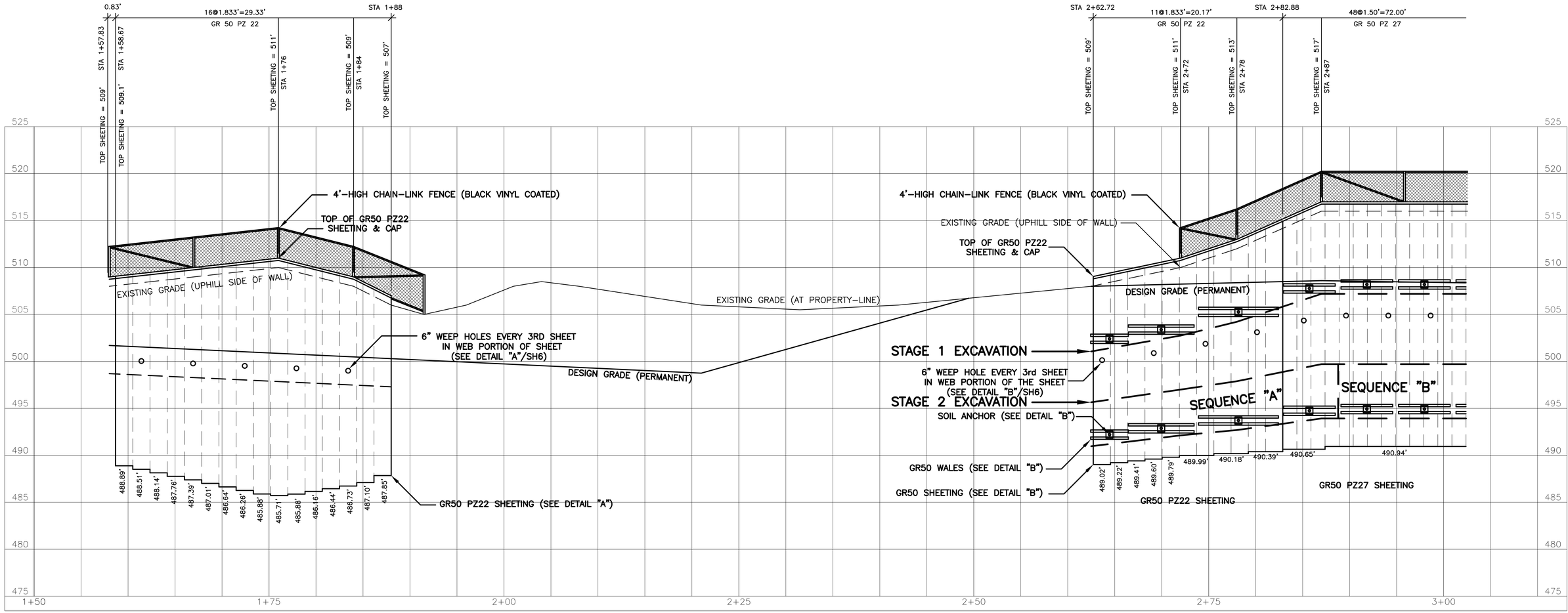
SCALE: NOTED

KNIGHT CONSULTING ENGINEERS, INC
183 COMMERCE STREET, WILLISTON, VT., 05495 – TEL. 879-6343

DWN: EHG CKD: EHG

STATE OF VERMONT ERICK GORDON No. 6 REGISTERED PROFESSIONAL ENGINEER

SH1.DWG(1=5)



NORTH ELEVATION (SOUTH PROPERTY-LINE)

SCALE: 1" = 5' HOR.
1" = 5' VERT.

NOTE:
SHOP PRIME ALL SURFACES OF SHEETING & WALES.
FIELD PAINT EXPOSED FACES OF SHEETING & WALES (RUSTY BROWN COLOR OR AS SELECTED BY OWNER).

SOUTH WALL GENERAL SEQUENCE

1. CLEAR THE TREES & BRUSH FROM THE AREA OF THE SHEETING.
2. DO NOT EXCAVATE PRIOR TO INSTALLING THE SHEETING.
3. DRIVE THE SHEETING (SHOP-PRIMED) TO THE SPECIFIED DEPTHS.
4. STARTING AT THE HIGH POINT, EXCAVATE DOWN TO THE LEVEL OF THE TOP ROW OF ANCHORS (STAGE 1). DO NOT SLOPE THE EXCAVATION AWAY FROM THE SHEETING BY MORE THAN 5%. ALSO, DO NOT OVER-EXCAVATE MORE THAN 12" BELOW THE ANCHOR ELEVATIONS WITHOUT WRITTEN APPROVAL FROM THE GEOTECHNICAL ENGINEER.
5. INSTALL THE TOP ROW OF SOIL ANCHORS AND ALLOW TO SET.
6. AFTER THE SOIL ANCHORS HAVE SET, INSTALL THE TOP ROW OF PRE-FABRICATED STEEL WALES (SHOP-PRIMED) AND ENVELOPE WALES IN CONCRETE (LEAVE ACCESS FOR TENSIONING THE SOIL ANCHOR).
7. AFTER CONCRETE HAS CURED AND THE SOIL ANCHORS HAVE ACHIEVED FULL STRENGTH, TENSION THE TOP ROW OF SOIL ANCHORS TO 75% OF THE SPECIFIED DESIGN LOAD.
8. ONCE ALL THE TOP ANCHORS ARE PRE-LOADED, CONTINUE THE EXCAVATION BY EXPOSING THE TOP 65% OF THE SHEETING (STAGE 2). DO NOT SLOPE THE EXCAVATION AWAY FROM THE SHEETING BY MORE THAN 5%.
9. EXCAVATE THE FIRST ANCHOR INSTALLATION TRENCH (SEQUENCE "A") PERPENDICULAR TO THE SHEETING. DO NOT OVER-EXCAVATE MORE THAN 12" BELOW THE ANCHOR ELEVATIONS WITHOUT WRITTEN APPROVAL FROM THE GEOTECHNICAL ENGINEER. DO NOT SLOPE THE EXCAVATION AWAY FROM THE SHEETING BY MORE THAN 5%.
10. EXCAVATE TO INSTALL THE SEQUENCE "A" BOTTOM ROW OF SOIL ANCHORS. DO NOT OVER-EXCAVATE LATERALLY. DO NOT OVER-EXCAVATE MORE THAN 12" BELOW THE ANCHOR ELEVATIONS WITHOUT WRITTEN APPROVAL FROM THE GEOTECHNICAL ENGINEER. INSTALL THE SEQUENCE "A" SOIL ANCHORS.
11. AFTER THE SEQUENCE "A" SOIL ANCHORS HAVE PROPERLY CURED TO FULL CAPACITY, INSTALL THE CORRESPONDING BOTTOM ROW OF PRE-FABRICATED STEEL WALES (SHOP-PRIMED) AND ENVELOPE WALES IN CONCRETE (LEAVE ACCESS FOR TENSIONING THE SOIL ANCHOR).
12. AFTER CONCRETE HAS CURED AND THE SOIL ANCHORS HAVE ACHIEVED FULL STRENGTH, TENSION THE SEQUENCE "A" SOIL ANCHORS TO 75% OF THE SPECIFIED DESIGN LOAD.
13. REPEAT STEPS 10 THRU 12 FOR SEQUENCE "B", THEN SEQUENCE "C", AND SO ON UNTIL THE LAST SEQUENCE IS COMPLETED.
14. CLEAN OFF THE EXPOSED SHEETING AND TOUCH-UP THE PRIMER PAINT ON THE SHEETING, WALES & HARDWARE.
15. PAINT THE EXPOSED STEEL WITH 2 COATS OF PAINT (COLOR BY OWNER).
16. INSTALL THE 4'-HIGH FENCE.

STA	TOP ANCHOR	ANCHOR ELEVATION	TOP WALE	BOTTOM ANCHOR	ANCHOR ELEVATION	BOTTOM WALE	SEQUENCE
2+64.45	100-KIP	502.41	(2)C10x20x4'-0"	200-KIP	492.21	(2)MCx12x31x4'-0"	A
2+69.95	100-KIP	503.39	(2)C12x25x7'-0"	200-KIP	492.87	(2)Cx15x40x7'-0"	
2+78.17	150-KIP	505.27	(2)C15x33.9x8'-6"	300-KIP	493.71	(2)MCx18x58x8'-6"	
2+85.72	150-KIP	507.77	(2)MC12x31x5'-6"	300-KIP	494.75	(2)Cx15x50x5'-6"	
2+91.84	150-KIP	508.19	(2)MC12x31x5'-6"	300-KIP	494.92	(2)Cx15x50x5'-6"	B
2+97.95	150-KIP	508.19	(2)MC12x31x5'-6"	300-KIP	494.92	(2)Cx15x50x5'-6"	

1	01/03/20	Corrected bottom wale at STA 2+78.17
0	12/30/19	Final Design

STATE OF VERMONT
BRIAN GOODE
No. 6043
REGISTERED
PROFESSIONAL ENGINEER

North Elev. (South Side)

EXCAVATION SHEETING
110 RIVERSIDE AVE.
HOUSING
BURLINGTON, VT

DWG. NO. SH2

PROJ. NO. 19239

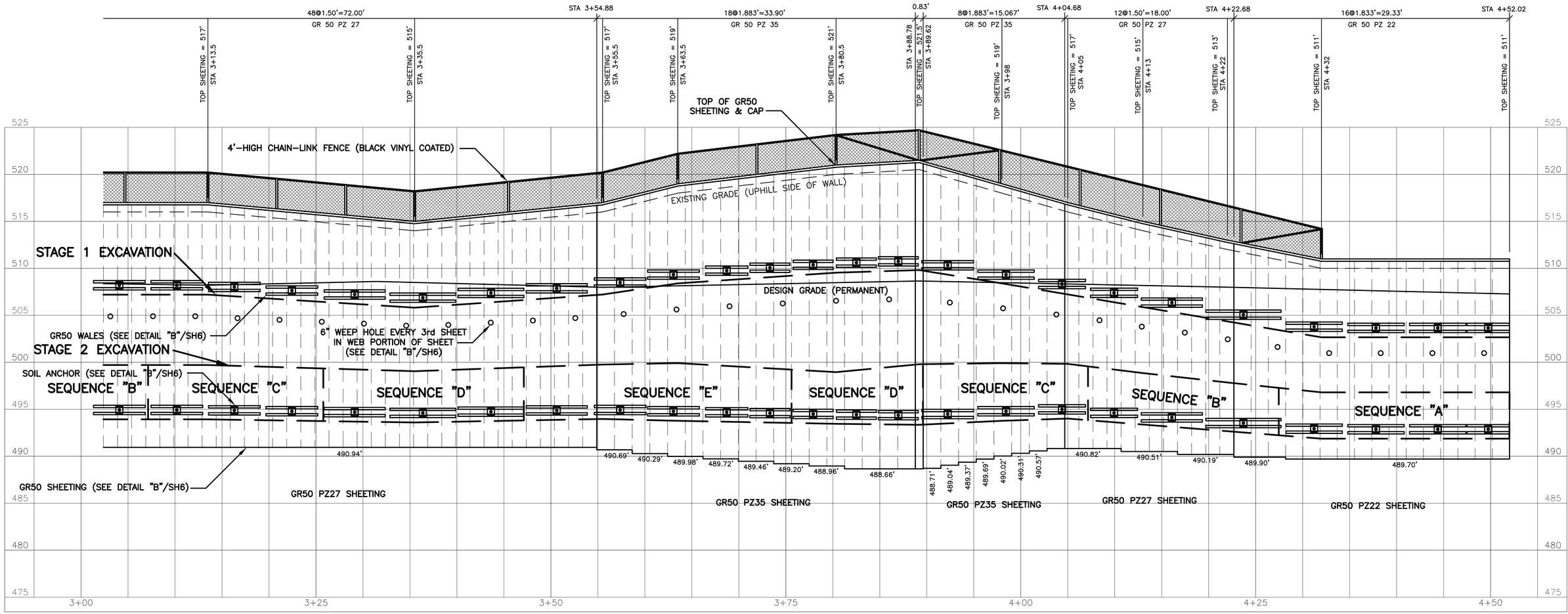
DATE: 09/06/

SCALE: NOTED

KCE KNIGHT CONSULTING ENGINEERS, INC
183 COMMERCE STREET, WILLISTON, VT., 05495 - TEL. 879-6343

DWN: EHG CKD: EHG

SH2.DWG(1=5)



NORTHWEST ELEVATION (WEST WALL)

SCALE: 1" = 5' HOR.
1" = 5' VERT.

NOTE:
SHOP PRIME ALL SURFACES OF SHEETING & WALES.
FIELD PAINT EXPOSED FACES OF SHEETING & WALES (RUSTY BROWN COLOR OR AS SELECTED BY OWNER).

SOUTH WALL GENERAL SEQUENCE

1. CLEAR THE TREES & BRUSH FROM THE AREA OF THE SHEETING.
2. DO NOT EXCAVATE PRIOR TO INSTALLING THE SHEETING.
3. DRIVE THE SHEETING (SHOP-PRIMED) TO THE SPECIFIED DEPTHS.
4. STARTING AT THE HIGH POINT, EXCAVATE DOWN TO THE LEVEL OF THE TOP ROW OF ANCHORS (STAGE 1). DO NOT SLOPE THE EXCAVATION AWAY FROM THE SHEETING BY MORE THAN 5%. ALSO, DO NOT OVER-EXCAVATE MORE THAN 12" BELOW THE ANCHOR ELEVATIONS WITHOUT WRITTEN APPROVAL FROM THE GEOTECHNICAL ENGINEER.
5. INSTALL THE TOP ROW OF SOIL ANCHORS AND ALLOW TO SET.
6. AFTER THE SOIL ANCHORS HAVE SET, INSTALL THE TOP ROW OF PRE-FABRICATED STEEL WALES (SHOP-PRIMED) AND ENVELOPE WALES IN CONCRETE (LEAVE ACCESS FOR TENSIONING THE SOIL ANCHOR).
7. AFTER CONCRETE HAS CURED AND THE SOIL ANCHORS HAVE ACHIEVED FULL STRENGTH, TENSION THE TOP ROW OF SOIL ANCHORS TO 75% OF THE SPECIFIED DESIGN LOAD.
8. ONCE ALL THE TOP ANCHORS ARE PRE-LOADED, CONTINUE THE EXCAVATION BY EXPOSING THE TOP 65% OF THE SHEETING (STAGE 2). DO NOT SLOPE THE EXCAVATION AWAY FROM THE SHEETING BY MORE THAN 5%.
9. EXCAVATE THE FIRST ANCHOR INSTALLATION TRENCH (SEQUENCE "A") PERPENDICULAR TO THE SHEETING. DO NOT OVER-EXCAVATE MORE THAN 12" BELOW THE ANCHOR ELEVATIONS WITHOUT WRITTEN APPROVAL FROM THE GEOTECHNICAL ENGINEER. DO NOT SLOPE THE EXCAVATION AWAY FROM THE SHEETING BY MORE THAN 5%.
10. EXCAVATE TO INSTALL THE SEQUENCE "A" BOTTOM ROW OF SOIL ANCHORS. DO NOT OVER-EXCAVATE LATERALLY. DO NOT OVER-EXCAVATE MORE THAN 12" BELOW THE ANCHOR ELEVATIONS WITHOUT WRITTEN APPROVAL FROM THE GEOTECHNICAL ENGINEER. INSTALL THE SEQUENCE "A" SOIL ANCHORS.
11. AFTER THE SEQUENCE "A" SOIL ANCHORS HAVE PROPERLY CURED TO FULL CAPACITY, INSTALL THE CORRESPONDING BOTTOM ROW OF PRE-FABRICATED STEEL WALES (SHOP-PRIMED) AND ENVELOPE WALES IN CONCRETE (LEAVE ACCESS FOR TENSIONING THE SOIL ANCHOR).
12. AFTER CONCRETE HAS CURED AND THE SOIL ANCHORS HAVE ACHIEVED FULL STRENGTH, TENSION THE SEQUENCE "A" SOIL ANCHORS TO 75% OF THE SPECIFIED DESIGN LOAD.
13. REPEAT STEPS 10 THRU 12 FOR SEQUENCE "B", THEN SEQUENCE "C", AND SO ON UNTIL THE LAST SEQUENCE IS COMPLETED.
14. CLEAN OFF THE EXPOSED SHEETING AND TOUCH-UP THE PRIMER PAINT ON THE SHEETING, WALES & HARDWARE.
15. PAINT THE EXPOSED STEEL WITH 2 COATS OF PAINT (COLOR BY OWNER).
16. INSTALL THE 4'-HIGH FENCE.

STA	TOP ANCHOR	ANCHOR ELEVATION	TOP WALE	BOTTOM ANCHOR	ANCHOR ELEVATION	BOTTOM WALE	SEQUENCE
3+04.08	150-KIP	508.19	(2)MC12x31x5'-6"	300-KIP	494.92	(2)Cx15x50x5'-6"	B
3+10.20	150-KIP	508.19	(2)MC12x31x5'-6"	300-KIP	494.92	(2)Cx15x50x5'-6"	C
3+16.32	150-KIP	508.02	(2)MC12x31x5'-6"	300-KIP	494.88	(2)Cx15x50x5'-6"	
3+22.44	150-KIP	507.63	(2)MC12x31x5'-6"	300-KIP	494.79	(2)Cx15x50x5'-6"	
3+29.12	150-KIP	507.21	(2)MC12x31x6'-6"	300-KIP	494.69	(2)MCx18x42.7x6'-6"	D
3+36.37	150-KIP	506.87	(2)MC12x31x7'-0"	300-KIP	494.61	(2)MCx18x45.8x7'-0"	
3+43.62	150-KIP	507.38	(2)MC12x31x7'-0"	300-KIP	494.74	(2)MCx18x45.8x7'-0"	
3+50.62	200-KIP	507.87	(2)C15x33.9x6'-6"	400-KIP	494.87	(2)MCx18x58x6'-6"	E
3+57.37	200-KIP	508.49	(2)MC12x31x5'-6"	400-KIP	494.92	(2)MCx18x51.9x5'-6"	
3+63.04	200-KIP	509.33	(2)MC12x31x5'-6"	400-KIP	494.78	(2)MCx18x51.9x5'-6"	
3+68.71	200-KIP	509.75	(2)MC12x31x4'-6"	400-KIP	494.67	(2)MCx18x42.7x4'-6"	
3+73.31	200-KIP	510.06	(2)MC12x31x4'-3"	400-KIP	494.59	(2)MCx18x42.7x4'-3"	
3+77.91	200-KIP	510.37	(2)MC12x31x4'-3"	400-KIP	494.50	(2)MCx18x42.7x4'-3"	D
3+82.51	200-KIP	510.60	(2)MC12x31x4'-3"	400-KIP	494.43	(2)MCx18x42.7x4'-3"	
3+86.97	200-KIP	510.74	(2)MC12x31x4'-3"	400-KIP	494.37	(2)MCx18x42.7x4'-3"	
3+92.23	200-KIP	510.33	(2)MC13x35x5'-6"	400-KIP	494.49	(2)MCx18x51.9x5'-6"	C
3+98.44	200-KIP	509.32	(2)MC13x35x6'-0"	400-KIP	494.79	(2)MCx18x58x6'-0"	
4+04.39	150-KIP	508.33	(2)MC12x31x5'-0"	300-KIP	494.99	(2)MC13x50x5'-0"	
4+09.93	150-KIP	507.39	(2)MC12x31x5'-0"	300-KIP	494.62	(2)MC13x50x5'-0"	B
4+16.08	150-KIP	506.35	(2)MC12x31x6'-6"	300-KIP	494.13	(2)MCx18x45.8x6'-6"	
4+23.70	150-KIP	505.06	(2)MC13x35x8'-0"	300-KIP	493.53	(2)MCx18x58x8'-0"	
4+31.22	100-KIP	503.79	(2)C12x25x6'-0"	200-KIP	492.93	(2)MC13x35x6'-0"	A
4+37.80	100-KIP	503.66	(2)C12x25x6'-0"	200-KIP	492.87	(2)MC13x35x6'-0"	
4+44.38	100-KIP	503.66	(2)C12x25x6'-0"	200-KIP	492.87	(2)MC13x35x6'-0"	
4+49.75	100-KIP	503.66	(2)C10x20x4'-6"	200-KIP	492.87	(2)MC12x31x4'-6"	

0	12/30/19	Final Design

STATE OF VERMONT — BRIAN E. GOODE — No. 6044 — REGISTERED PROFESSIONAL ENGINEER

NW Elev. (West Wall)

EXCAVATION SHEETING
110 RIVERSIDE AVE.
HOUSING
BURLINGTON, VT

DWG. NO. SH3

PROJ. NO. 19239

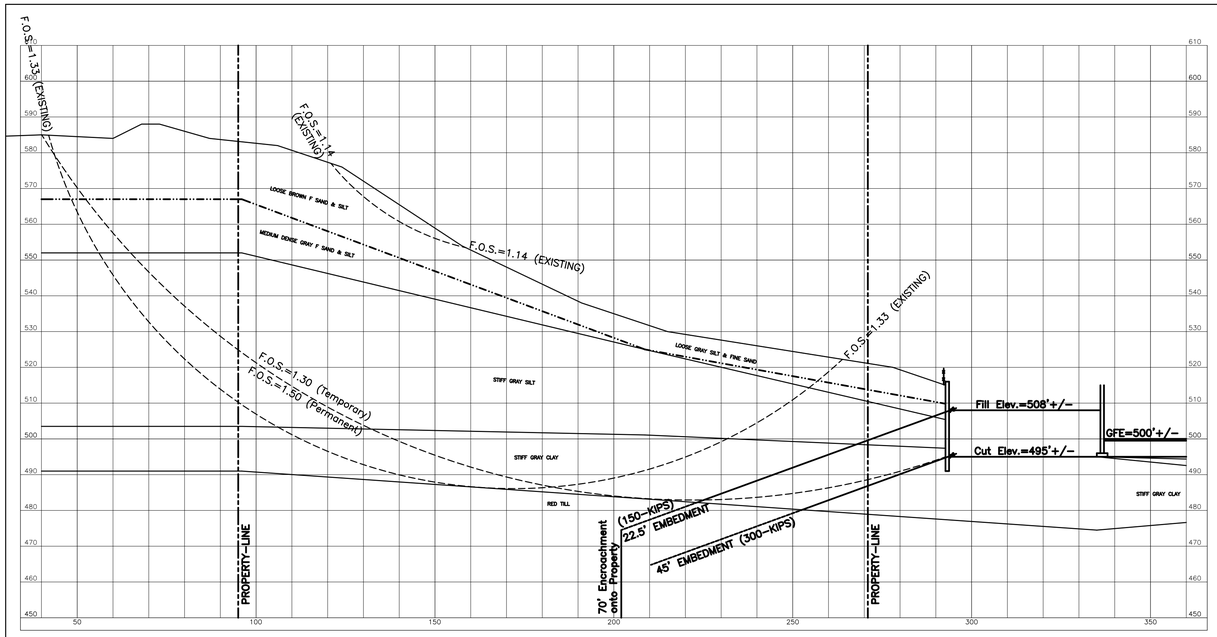
DATE: 09/06/

SCALE: NOTED

KCE KNIGHT CONSULTING ENGINEERS, INC
183 COMMERCE STREET, WILLISTON, VT., 05495 – TEL. 879-6343

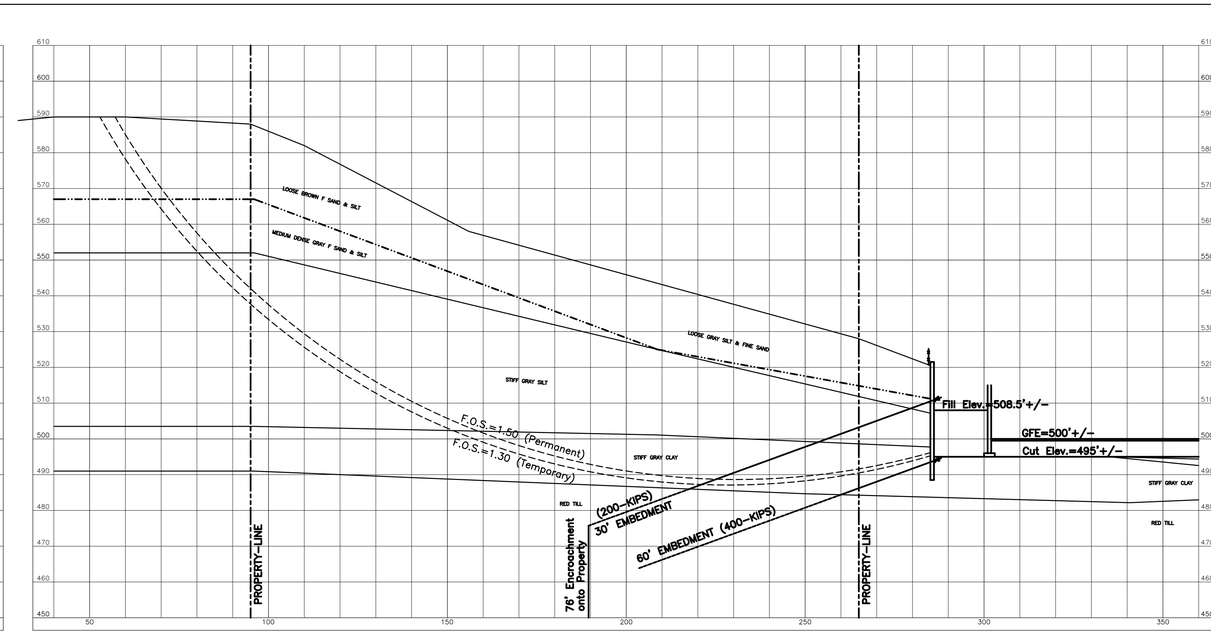
DWN: EHG CKD: EHG

SH3.DWG(1=5)



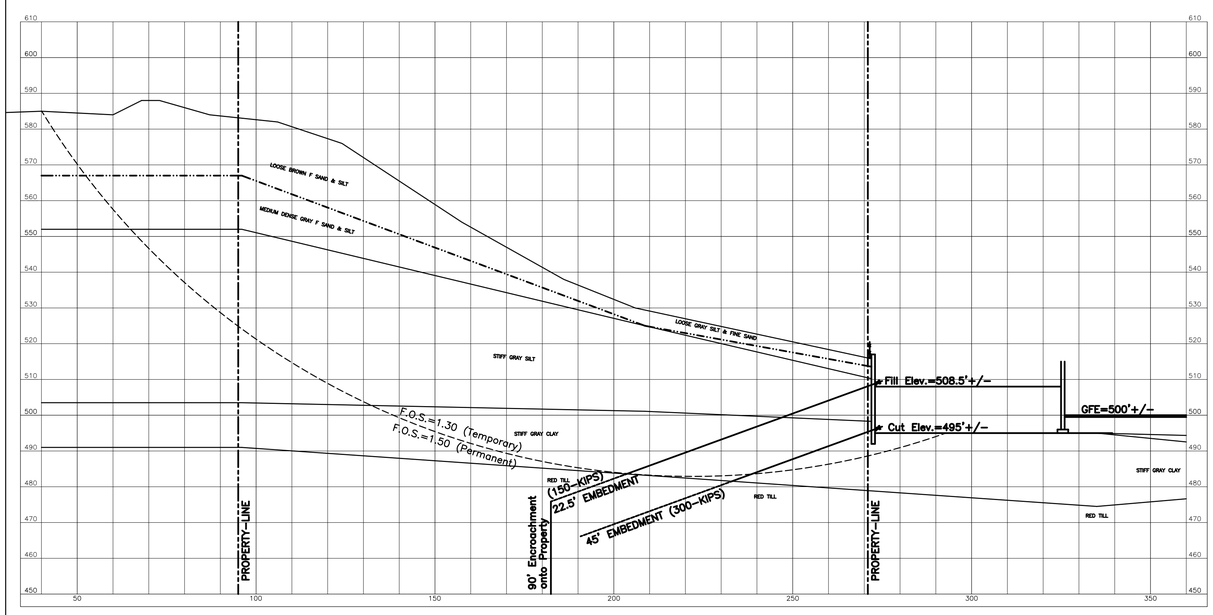
SECTION C (515' Uphill & 508' Downhill)

SCALE: 1" = 20' HOR.
1" = 20' VERT.



SECTION C WEST (520.5' Uphill & 508.5' Downhill)

SCALE: 1" = 20' HOR.
1" = 20' VERT.



SECTION C EAST (516' Uphill & 508.5' Downhill)

SCALE: 1" = 20' HOR.
1" = 20' VERT.

0	12/30/19	Final Design	

Sections

EXCAVATION SHEETING
110 RIVERSIDE AVE.
HOUSING
BURLINGTON, VT

DWG. NO. SH4

PROJ. NO. 19239

DATE: 09/06/

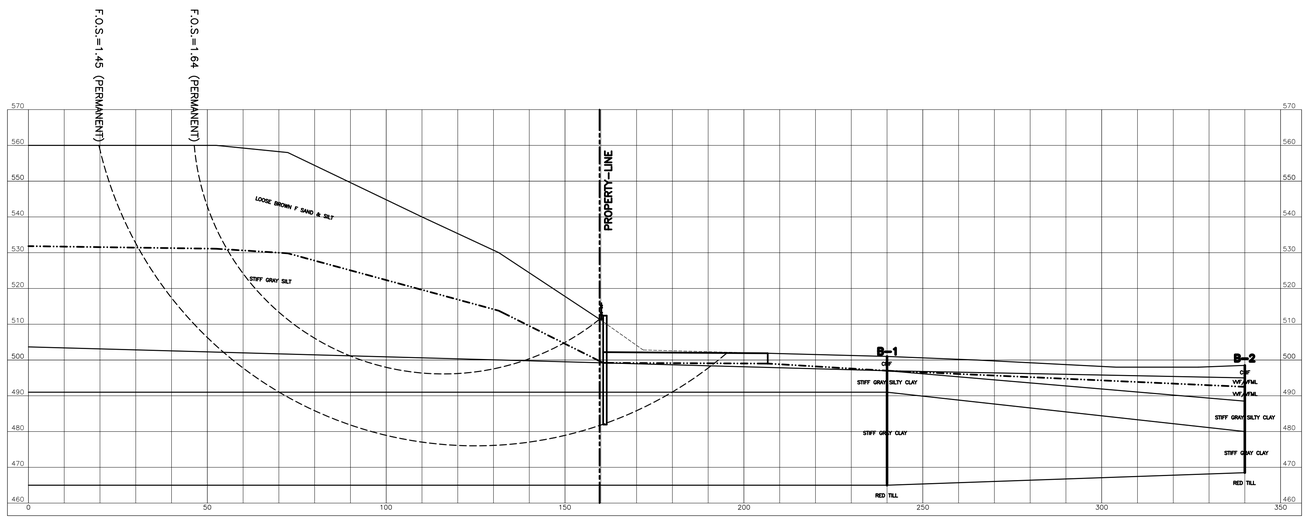
SCALE: NOTED

KNIGHT CONSULTING ENGINEERS, INC
183 COMMERCE STREET, WILLISTON, VT., 05495 – TEL. 879-6343

DWN: EHG CKD: EHG

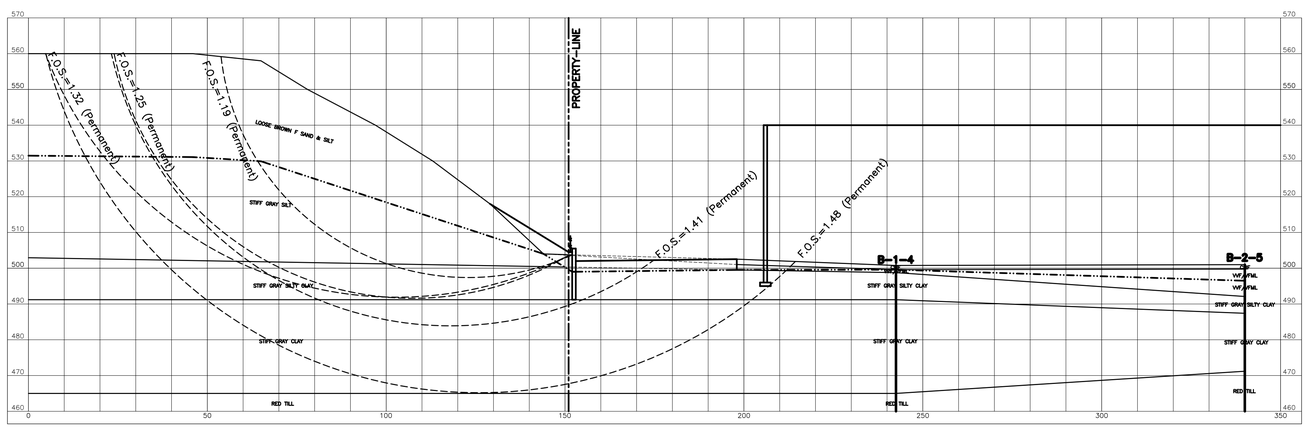
STATE OF VERMONT
ERIC H. GODDARD
No. 6763
REGISTERED PROFESSIONAL ENGINEER

SH4.DWG(1=20)



SLOPE SECTION D (PERMANENT)

SCALE: 1" = 10' HOR.
1" = 10' VERT.



SLOPE SECTION E (PERMANENT)

SCALE: 1" = 10' HOR.
1" = 10' VERT.

0	12/30/19	Final Design

STATE OF VERMONT
ERIC H. GOODRICH
No. 6743
REGISTERED PROFESSIONAL ENGINEER

Sections

EXCAVATION SHEETING
110 RIVERSIDE AVE.
HOUSING
BURLINGTON, VT

DWG. NO. SH5

PROJ. NO. 19239

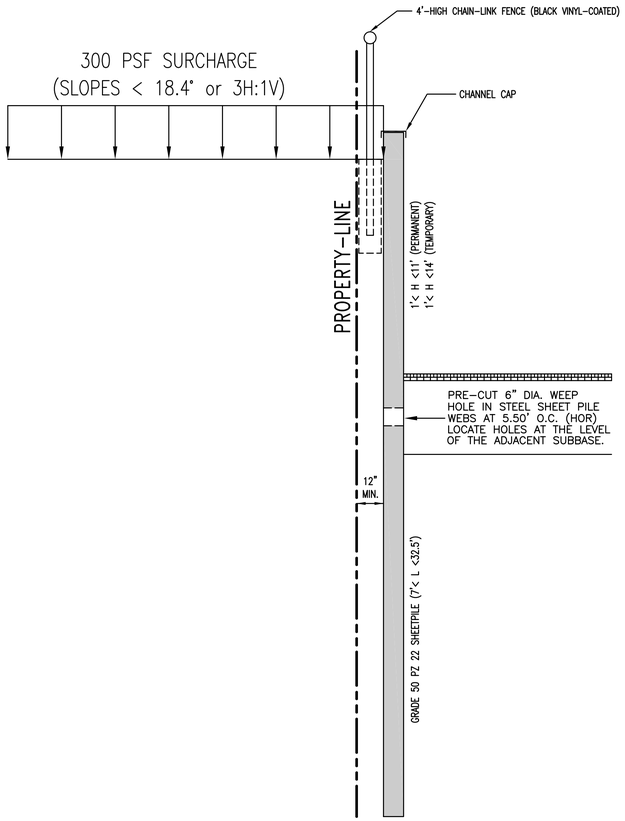
DATE: 09/06/

SCALE: NOTED

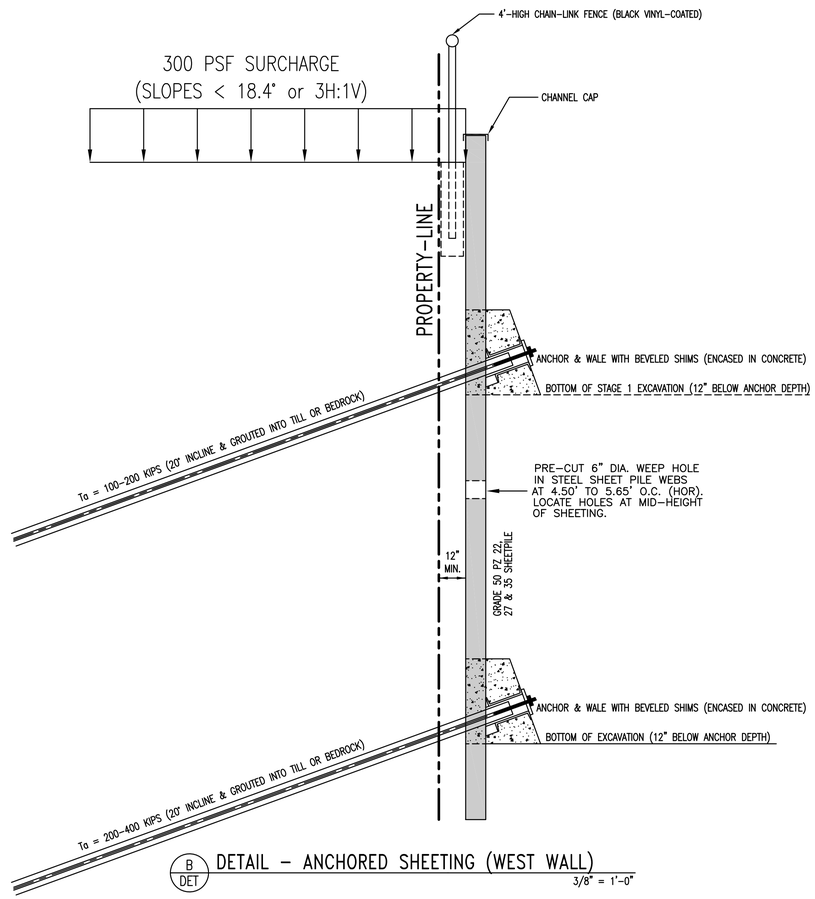
KCE KNIGHT CONSULTING ENGINEERS, INC
183 COMMERCE STREET, WILLISTON, VT., 05495 – TEL. 879-6343

DWN: EHG CKD: EHG

SH5.DWG(1=20)



A DET — DETAIL – CANTILEVERED SHEETING (EAST WALL)
3/8" = 1'-0"



B DET — DETAIL – ANCHORED SHEETING (WEST WALL)
3/8" = 1'-0"

TECHNICAL SPECIFICATIONS – 110 Riverside Avenue Apartments Permanent Sheeting

1A. SPECIAL CONDITIONS
- A. GENERAL:
  1) OBTAIN ALL REQUIRED PERMITS BEFORE COMMENCING WORK.
  2) THE CONTRACTOR SHALL FIELD VERIFY ALL CRITICAL DIMENSIONS AND ELEVATIONS.
  3) CONTACT OWNER FOR TIME AND METHODS OF OPERATION AND MOVEMENT OF LOADS OR MATERIALS THROUGH OR OVER THE SITE.
  4) BARRICADES SHALL BE PLACED AROUND ALL OPEN EXCAVATIONS TO PROTECT PEDESTRIANS OR VEHICULAR TRAFFIC ADJACENT TO THE WORK AREA.
  5) FOR WORK NOT RELATED TO THE RETAINING WALL AND 4'-HIGH BARRIER FENCE, SEE OTHER DRAWINGS.
  6) ALL TECHNICAL QUESTIONS SHALL BE DIRECTED TO KNIGHT CONSULTING ENGINEERS, AT (802) 879-6343x2.
- B. SCOPE OF WORK: THE WORK OF THIS CONTRACT INCLUDES PROVIDING AND INSTALLING THE FOLLOWING, BUT MAY NOT BE LIMITED TO:
  1) INSTALLATION OF NEW STEEL SHEETING.
  2) TEMPORARY PROTECTION OF EXISTING STRUCTURES AND UTILITIES.
  3) EXCAVATION & INSTALLATION OF SOIL ANCHORS & WALES.
  4) INSTALLATION OF 4'-HIGH CHAIN-LINK BARRIER FENCE.

2A. EARTHWORK/RELATED ITEMS:
- A. MATERIALS: (REFER TO CIVIL DRAWINGS & SPECIFICATIONS)
- B. EXCAVATION:
  1) CARE SHALL BE TAKEN WHEN EXCAVATING DOWNHILL OF THE SHEETING SO AS NOT TO DISTURB THE EXISTING SOILS THAT ARE TO REMAIN AS THIS MAY CAUSE PERMANENT LOSS OF SOIL STRENGTH.
  2) EXCAVATION OF MATERIAL SHALL BE DONE BY HAND AT ANY EXISTING FOOTINGS AND UTILITIES. EXISTING FOOTINGS AND FOUNDATIONS SHALL BE PROTECTED AGAINST UNDERMINING AND DAMAGE. EXCAVATE TO THE ELEVATIONS INDICATED.
  3) DIVERSION DITCHES, DIKES, OR OTHER SUITABLE MEANS WILL BE USED TO PREVENT SURFACE WATER FROM ENTERING AN EXCAVATION AND TO PROVIDE ADEQUATE DRAINAGE OF THE AREA ADJACENT TO THE EXCAVATION. WATER WILL NOT BE ALLOWED TO ACCUMULATE IN AN EXCAVATION.
  4) EXCAVATIONS DEEPER THAN FIVE (5') WILL BE SAFELY SHORED OR LAID BACK TO A 1.5:1 SLOPE ABOVE THE TRENCH BOTTOM. WHEN A PERSON IS IN THE TRENCH, A LADDER OR OTHER SUITABLE MEANS OF EXIT MUST BE PROVIDED.
  5) CONTACT OWNER FOR DISPOSITION OF ANY UNDERGROUND UTILITIES NOT SHOWN ON DRAWINGS.
  6) THE CONTRACTOR SHALL PROTECT EXISTING STRUCTURES AND UTILITIES FROM DAMAGE AND EXCESSIVE SETTLEMENT DURING EXCAVATION, BACKFILLING, COMPACTION, AND DEWATERING ACTIVITIES. THE CONTRACTOR SHALL REPAIR ANY SUCH DAMAGE AT HIS OWN EXPENSE. IF THE CONTRACTOR ELECTS TO USE BRACED EXCAVATIONS HE SHALL SUBMIT SHEETING, SHORING, AND BRACING PLANS AND CALCULATIONS TO THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO COMMENCING BRACING OPERATIONS. THE PLANS AND CALCULATIONS SHALL BE PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF VERMONT.
  7) THE CONTRACTOR SHALL PROPERLY BARRICADE OPEN EXCAVATIONS TO INSURE SAFETY FOR PEDESTRIAN AND VEHICULAR TRAFFIC NEARBY.

2D. CHAIN LINK FENCE:
- A. MATERIALS:
  1) GALVANIZED & VINYL COATED FENCE – CHAIN LINK FENCE SHALL BE 4'-HIGH AND CONFORM TO THE REQUIREMENTS OF ASTM A-116 (LATEST EDITION). FABRIC SHALL BE HOT-DIPPED GALVANIZED STEEL #9 GAUGE (BLACK VINYL COATING) WITH A UNIFORM SQUARE MESH MEASURING APPROXIMATELY TWO INCHES BETWEEN ITS PARALLEL SIDES. FABRIC SHALL BE FASTENED TO TOP, BOTTOM, AND ALL LATERAL SUPPORTS AT 2' O.C. BY MEANS OF #6 GAUGE ZINC COATED WIRE CLIPS. POSTS, RAILS, AND BRACES SHALL BE ZINC-COATED STEEL WITH A BLACK VINYL COATING). POSTS SHALL BE BRACED AS REQUIRED TO ADEQUATELY RETAIN FENCE ENDS AND CORNERS.
- B. INSTALLATION:
  1) REFER TO CONTRACT DRAWINGS FOR ALL DIMENSIONAL REQUIREMENTS.

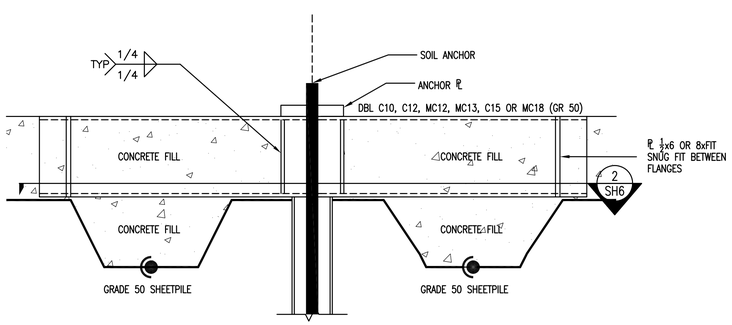
3A. CONCRETE, REINFORCING & EMBEDDED ITEMS:
- A. FOR GENERAL REQUIREMENTS, REFER TO ACI 318 & 350.
- B. MATERIAL/QUALITY (EXTERIOR STRUCTURAL CONCRETE):
  1) MINIMUM COMPRESSIVE STRENGTH: 3000 PSI @ 28 DAYS.
  2) TRANSIT MIX MUST CONFORM TO ASTM C94: MIN. CEMENT 5½ BAGS/C.Y.
  3) WATER/CEMENT RATIO: 0.50 (MAX.)
  4) AIR ENTRAINMENT: 5-7% BY VOLUME.
  5) SLUMP: 2-4 INCHES
  6) CEMENT: TYPE I OR II, GRAY.
  7) REINFORCING STEEL – ASTM A615 GRADE 60; DEFORMATION PER ASTM A305.
  8) NO CHLORIDE OR OTHER UNAUTHORIZED ADMIXTURES SHALL BE USED.
  9) FIELD TESTING PER ACI.

5A. STRUCTURAL STEEL (WALES & ANCHORAGE HARDWARE):
- A. FOR GENERAL REQUIREMENTS, REFER TO AISC, 9TH EDITION.
- B. MATERIAL – STRUCTURAL TUBES SHALL BE A500, GRADE B. STEEL PIPE SHALL BE A53, TYPE E, GRADE B. STEEL BEAMS, H-PILES & CHANNELS SHALL BE A572, GRADE 50. ALL OTHER STRUCTURAL STEEL SHALL BE A36.
- C. FABRICATION – SHALL BE IN ACCORDANCE WITH THE AISC SPECIFICATION, 9TH EDITION.
- D. SHOP DRAWINGS – SUBMIT 4 COPIES OF STRUCTURAL STEEL DRAWINGS FOR APPROVAL BEFORE FABRICATION OF STEEL.
- E. WELDING SHALL BE DONE IN ACCORDANCE WITH AWS SPECIFICATIONS BY PREQUALIFIED WELDERS (AWS CERTIFIED) ONLY. USE E70XX ELECTRODES UNLESS OTHERWISE NOTED.
- F. SHOP PAINT OR FINISH: COMMERCIAL BLAST CLEAN PER SSPC-SP6. APPLY ONE COAT OF TNEMEC 37-77 CHEMPRIME OR APPROVED EQUAL. PAINT SHALL BE APPLIED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

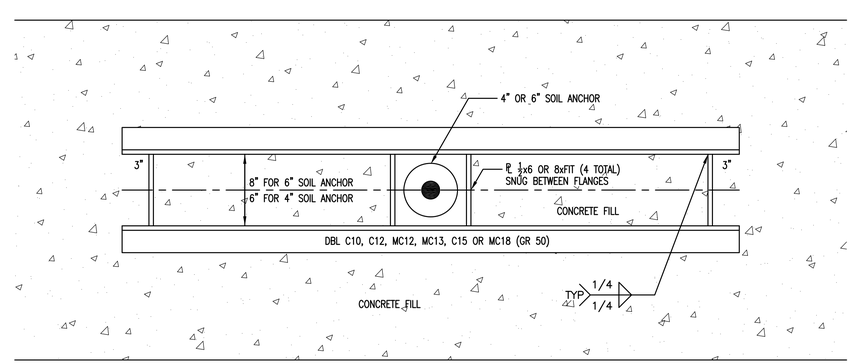
5B. HOT-ROLLED STEEL SHEETING:
- A. ALTERNATE SHEETING SECTIONS WILL BE EVALUATED ON A CASE-BY-CASE BASIS. DESIGN ELASTIC SECTION MODULUS SHALL BE REDUCED BY DEDUCTING 0.0625" THICKNESS LOSS ON EACH FACE (0.125" TOTAL) DUE TO CORROSION LOSS.
- B. MATERIAL – THE SHEETING ON THE DRAWINGS REFLECTS ASTM A-572 (GRADE 50) HOT-ROLLED PZ SHEETING.
- C. SHOP PAINT OR FINISH: COMMERCIAL BLAST CLEAN PER SSPC-SP6. APPLY ONE COAT OF TNEMEC 37-77 CHEMPRIME OR APPROVED EQUAL. PAINT SHALL BE APPLIED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

9C. PAINTS AND FINISHES:
- A. REFER TO THE MANUFACTURER'S APPLICATION REUIREMENTS.
- B. MATERIALS:
  1) ABOVE-GROUND SHEETING, WALES & ANCHORAGE HARDWARE (ALL SHOP PRIMED):
     - a) 2 COATS TNEMEC 66 EPOXOLINE, (4-6 MILS D.F.T. EACH)
     - b) USE A FLAT RUSTY BROWN COLOR AS SELECTED BY THE OWNER.
- C. SUBMIT TO THE OWNER COLOR SAMPLES FOR ALL FINISHES (WHERE APPLICABLE) FOR SELECTION AND/OR APPROVAL, EVEN WHERE COLORS HAVE BEEN SPECIFIED.
- D. APPLY ALL MATERIALS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, TO CLEANED AND PROPERLY PREPARED SURFACES. TAKE ALL RECOMMENDED PRECAUTIONS RELATING TO VENTILATION, FIRE AND TEMPERATURE, SAFETY CLOTHING, MIXING RESTRICTIONS, ETCETERA. REMOVE ANY SPILLED FINISHES FROM SURFACES FOR WHICH THEY WERE NOT INTENDED.

31A. SOIL ANCHORS:
- A. DESIGN:
  1) DOUBLE-CORROSION PROTECTION (50-YEAR MINIMUM DESIGN LIFE).
  2) DESIGN ULTIMATE BOND STRENGTH SHALL BE 200% OF THE DESIGN ANCHOR LOAD.
  3) MULTI-STRAND GROUTED SOIL ANCHOR WITH BOTH UNBONDED & BONDED ZONES.
- B. TESTING:
  1) PROOF TEST TO 133% OF THE ANCHOR DESIGN LOAD.
  2) PRE-TENSION TO 75% OF THE DESIGN ANCHOR LOAD AND LOCK-OFF.



1 SH6 — DETAIL – ANCHOR CONNECTION
1-1/2" = 1'-0"



2 SH6 — SECTION – SOIL ANCHOR WALES
1-1/2" = 1'-0"

0	12/30/19	Final Design

Details & Specifications

EXCAVATION SHEETING
110 RIVERSIDE AVE.
HOUSING
BURLINGTON, VT

DWG. NO. SH6

PROJ. NO. 19239

DATE: 12/30/

SCALE: NOTED

KNIGHT CONSULTING ENGINEERS, INC
183 COMMERCE STREET, WILLISTON, VT., 05495 – TEL. 879-6343

DWN: EHG CKD: EHG

SH6.DWG(3/4"=1'-0")

STATE OF VERMONT ERIC H. GOODRICH No. 6343 REGISTERED PROFESSIONAL ENGINEER

EASEMENT FOR SUPPORT

KNOW ALL PERSONS BY THESE PRESENTS that I, Nathaniel M. Hayward, of the Town of South Hero, County of Grand Isle, and State of Vermont, GRANTOR, in consideration of Ten and More Dollars paid to my full satisfaction by Sisters and Brothers Investment Group, LLP, of the City of Burlington, County of Chittenden and State of Vermont, GRANTEE, by these presents, do freely GIVE, GRANT, SELL, CONVEY, and CONFIRM unto the said Sisters and Brothers Investment Group, LLP, and its successors and assigns forever, the perpetual use and easement for support on and under certain lands located at 380 Colchester Avenue, in the City of Burlington, County of Chittenden and State of Vermont, for the purpose of providing support to a retaining wall to be constructed by the Grantee at 110 Riverside Avenue, in the City of Burlington and State of Vermont, and more particularly described herein:

> Being a perpetual easement for support for the purposes of maintaining a certain retaining wall to be located on property owned by the Grantee herein by virtue of a certain Warranty Deed from _____ to Sisters and Brothers Investment Group dated _____ and recorded at Volume ___, Page ___ of the Land Records of the City of Burlington; specifically, for the installation, use, and maintenance of certain underground fixtures to be installed by Grantee for the purpose of securing Grantee's retaining wall, all as shown on a plan entitled "Exhibit A, Permanent and Temporary Construction Easements, Sisters & Brothers Investment Group, 110 Riverside Avenue, Burlington, Vermont" and prepared by Trudell Consulting Engineers, dated _____, and shown and designated on said Exhibit A as "proposed permanent easement area subsurface for soil anchors."
>
> Said easement for support is located on a portion of all and the same lands and premises conveyed to the Grantor herein, Nathaniel M. Hayward, by Warranty Deed of Ghislaine I. Leveillee, dated March 7, 2014, and recorded at Volume 1244, Pages 201-203 of the Land Records of the City of Burlington.
>
> Said easement shall be used by the Grantee, its successors and assigns, for underground support of the aforementioned retaining wall only, and after construction by the Grantee, and no other use of said easement is hereby authorized or permitted.
>
> Grantee, its successors and assigns, shall have the right to construct, reconstruct, repair, maintain, and replace said supports and soil anchors at its sole cost and expense.

Grantee further agrees, for itself and its successors and assigns, that any ground lying either inside or outside the area of the easement and within the easement itself which shall be disturbed by the installation, replacement, maintenance or repair of said subsurface structures shall be restored to its previous condition at Grantee's own cost and within a reasonable time of any disturbance, not to exceed thirty days therefrom.

Reference is hereby made to the above-mentioned plan and deed and the records thereof, and the references therein made all in further aid of this description.

TO HAVE AND TO HOLD said granted premises, with all the privileges and appurtenances thereof, to the said GRANTEE, Sisters and Brothers Investment Group, LLP, and its successors and assigns forever, to its own use and behoof forever; And I the said GRANTOR, Nathaniel M. Hayward, my heirs, executors, administrators, successors, and assigns, do covenant with the said GRANTEE, Sisters and Brothers Investment Group, LLP, and its successors and assigns forever, the GRANTOR is lawfully seized in fee simple of the aforesaid lands, that said lands are free from all encumbrances, except any easements, rights of way, covenants and restrictions of record, and that the GRANTOR has good right and title to sell and convey the rights aforesaid and shall WARRANT AND DEFEND the same against all lawful claims whatever, except as aforesaid.

IN WITNESS WHEREOF, I hereunto set my hand and seal this _____ day of February, 2020.

GRANTOR

_____
Nathaniel M. Hayward

STATE OF VERMONT
COUNTY OF CHITTENDEN, SS.

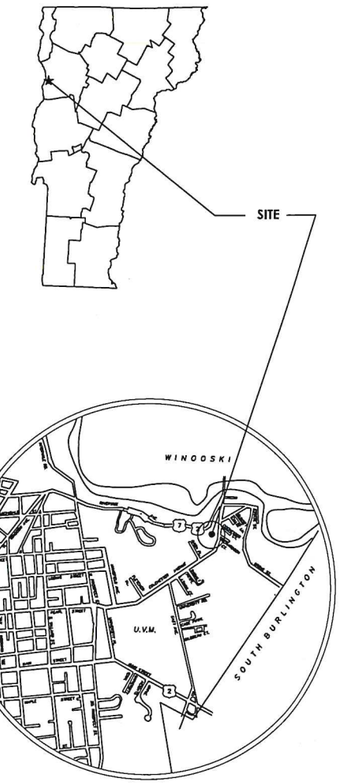
At Burlington, Vermont, this ____ day of February, 2020, personally appeared Nathaniel M. Hayward and acknowledged this instrument, by him, sealed and subscribed, to be his free act and deed.

Before me, _____
Notary Public
My commission expires 1/31/2021
Name:_____

Commission Number: _____

SISTERS & BROTHERS INVESTMENT GROUP

110 RIVERSIDE AVE.
BURLINGTON, VERMONT



DRAWING INDEX

C1-01	STANDARD NOTES & LEGEND
C1-02	BOUNDARY PLAT
C1-03	EXISTING CONDITIONS
C2-01	SITE PLAN
C2-02	GRADING PLAN
C2-03	UTILITY PLAN
C4-01	WATERSHED DELINEATION PLAN
C5-01	DEMOLITION & EROSION CONTROL PLAN
L1-01	PLANTING PLAN
L1-02	PLANTING PLAN
L2-01	LIGHTING PLAN
C8-01	SITE DETAILS
C8-02	STORM DETAILS
C8-03	WATER DETAILS
C8-04	SEWER DETAILS

Applicant/Owner:
SISTERS & BROTHERS INVESTIMENT GROUP
75 S. WINOOSKI AVE.
BURLINGTON, VERMONT 05401

Civil Engineer:
TRUDELL CONSULTING ENGINEERS (TCE)
ATTN. JEREMY MATOSKY, PE, CPESC
478 BLAIR PARK ROAD
WILLISTON, VT 05495
PHONE: (802)879-6331

Architect:
Steve Guild Design
One Steel Street
Burlington, VT 05401
802-363-1482

Structural:
Concepts in Structures, LLC
Roland VanDyk
139 Cozzens Road
Huntington, VT 05462
802-540-3030

Geotechnical:
Knight Consulting Engineers
Eric Goddard
51 Knight Lane
Williston, VT 05495
802-879-6376

PLAN INTENT:
THESE PLANS ARE INTENDED FOR PERMITTING PURPOSES.

STATE OF VERMONT
ABIGAIL A. DOYE
No. 9020
CIVIL
LICENSED PROFESSIONAL ENGINEER

USE AND INTERPRETATION OF THE DRAWINGS

1. Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such.

2. Only drawings specifically marked "For Contractor" are intended to be used in conjunction with contract documents, specifications, owner/contractor agreements and to be fully coordinated with other disciplines, including but not limited to, the Architect, if applicable. These Drawings shall not be used for construction layout. Contact TCE for any construction surveying services or to obtain electronic data suitable for construction layout.

3. These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.

4. By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings and have met with all applicable parties/disciplines to ensure these plans are properly coordinated with other aspects of the Project. The Owner and Architect are responsible for any buildings shown, including an area measured five (5) feet around any building.

5. It is the User's responsibility to ensure this copy contains the most current revisions.

BEFORE USING THESE PLANS ENSURE THAT YOU HAVE THE LATEST REVISION

LAST REVISED:	11/6/19

TCE PROJECT NO: 10-083

1 NORTHWEST ELEVATION
N.T.S.

2 NORTH ELEVATION
N.T.S.

RECEIVED
JUN 12 2019
DEPARTMENT OF
PLANNING & ZONING

3 NORTHEAST ELEVATION
N.T.S.

4 SOUTH ELEVATION
N.T.S.

NO.	DATE:	REVISION

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G4 Design Studios
77 College Street, Ste. 2A Burlington, VT 05401
(P)802-497-0695 (F)802-861-3110 G4designStudios.com

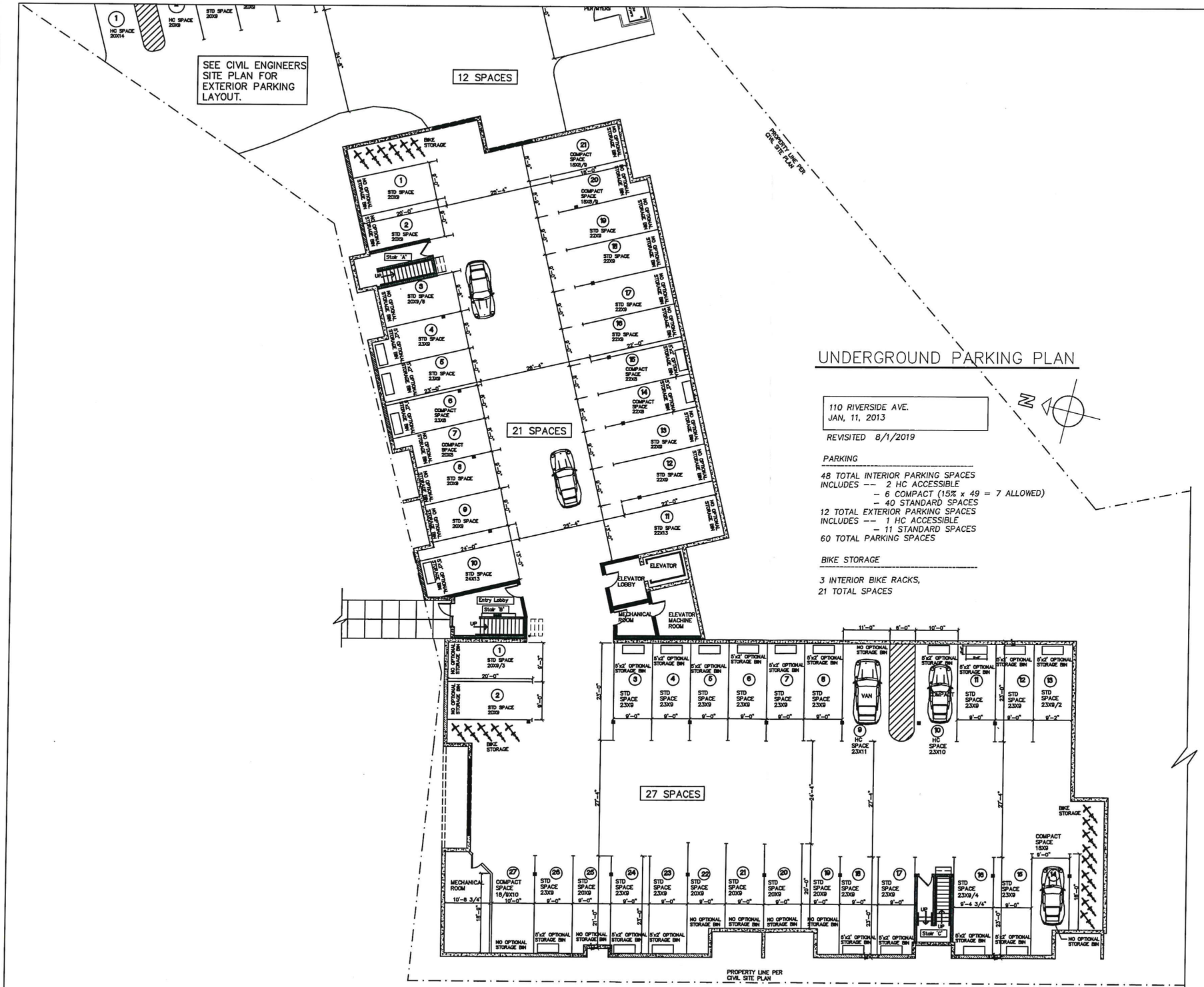
RIVERSIDE APARTMENTS
NEW APARTMENT BUILDING
110 RIVERSIDE AVE., BURLINGTON

SCALE:	NO SCALE
DATE:	5-31-19
DRAWN BY:	SCG
CHECKED BY:	SCG
PROJECT:	xxxxxxxx

SHEET TITLE:

RENDERINGS

DRAWING NO.
XX



UNDERGROUND PARKING PLAN

110 RIVERSIDE AVE.
JAN, 11, 2013

REVISITED 8/1/2019

PARKING

48 TOTAL INTERIOR PARKING SPACES
INCLUDES -- 2 HC ACCESSIBLE
– 6 COMPACT (15% x 49 = 7 ALLOWED)
– 40 STANDARD SPACES
12 TOTAL EXTERIOR PARKING SPACES
INCLUDES -- 1 HC ACCESSIBLE
– 11 STANDARD SPACES
60 TOTAL PARKING SPACES

BIKE STORAGE

3 INTERIOR BIKE RACKS,
21 TOTAL SPACES

PRICING & PLANNING ONLY NOT FOR CONSTRUCTION 8/1/19

RECEIVED
SEP 18 2019
DEPARTMENT OF PLANNING & ZONING

STEVE GUILD DESIGN, LLC
110 MAIN STREET, SUITE 102, BURLINGTON, VT 05401
PHONE: 802-383-11452 FAX: 802-658-6400 EMAIL: steve@stevegulddesign.com

NO.	DATE:	REVISION

RIVERSIDE APARTMENTS

NEW APARTMENT BUILDING
BURLINGTON, VERMONT

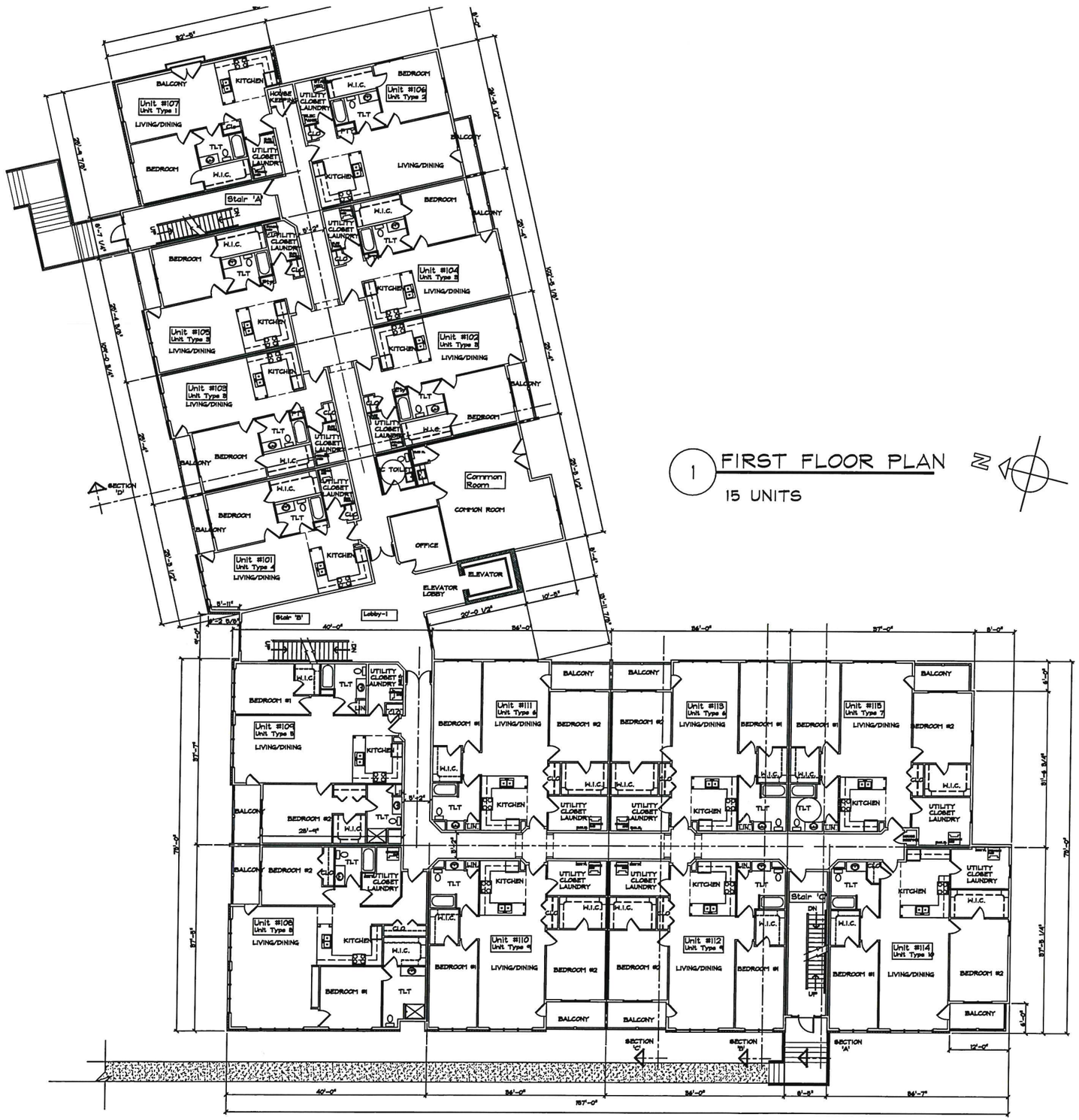
SCALE:	3/32" = 1'-0"
DATE:	FRN
DRAWN BY:	SCG
CHECKED BY:	SCG
PROJECT:	–

SHEET TITLE:

BASEMENT PARKING PLAN

DRAWING NO.

A1-1



1 FIRST FLOOR PLAN

15 UNITS

N

RECEIVED
JUN 12 2019
DEPARTMENT OF
PLANNING & ZONING

PERMITS ONLY
NOT FOR
CONSTRUCTION
1/18/13

STEVE GUILD DESIGN, LLC
110 MAIN STREET, SUITE 102, BURLINGTON, VT 05401
PHONE: 802-353-1452 FAX: 802-658-8400 EMAIL: steve@steveguilddesign.com

NO.	DATE:	REVISION

RIVERSIDE APARTMENTS
NEW APARTMENT BUILDING
BURLINGTON, VERMONT

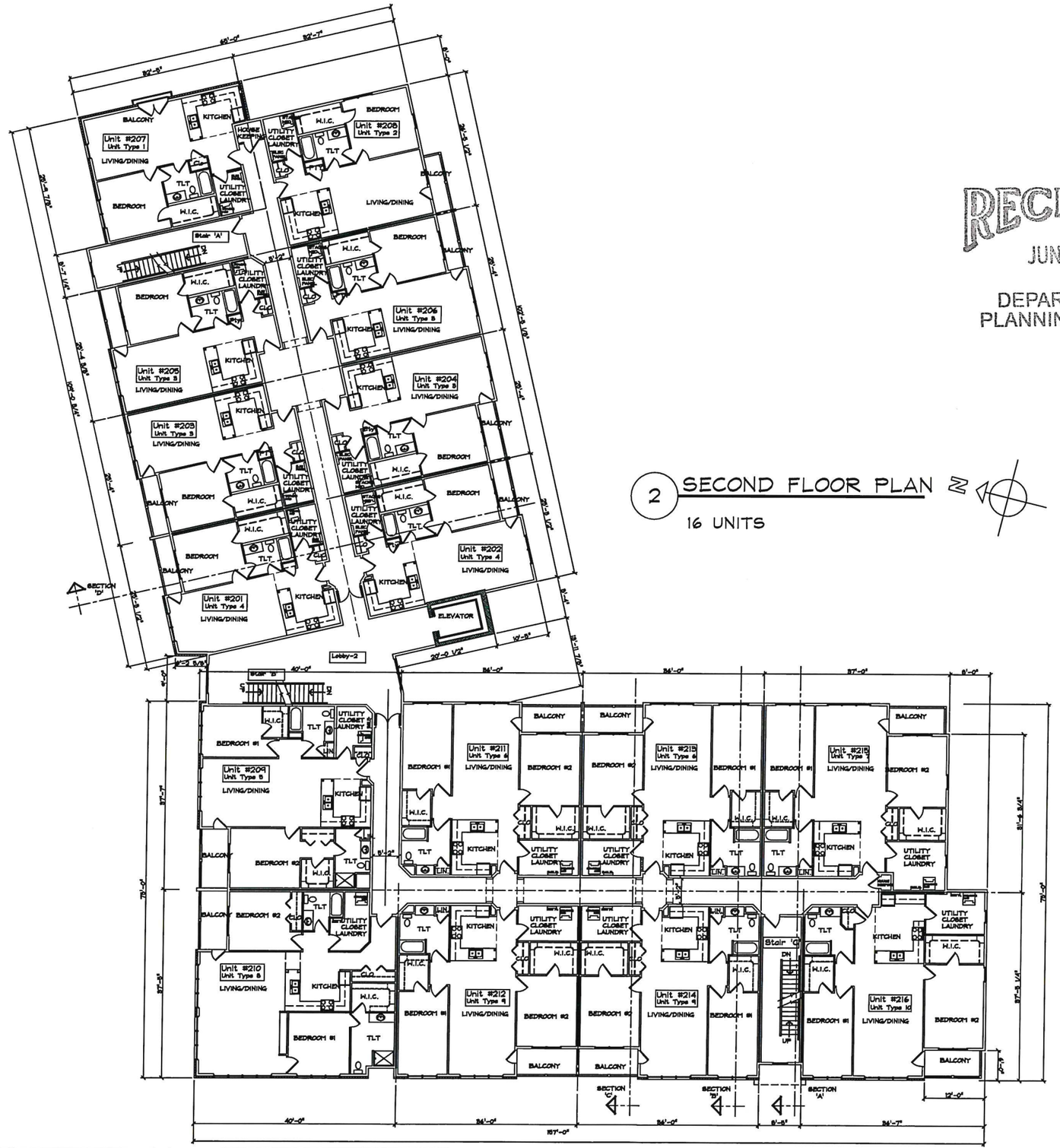
SCALE:	3/32" = 1'-0"
DATE:	01/16/2013
DRAWN BY:	FRN
CHECKED BY:	SCG
PROJECT:	–

SHEET TITLE:

PROPOSED
1ST FLOOR
PLAN

DRAWING NO.

A2



2 SECOND FLOOR PLAN

16 UNITS

N

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CONSTRUCTION
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STEVE GUILD DESIGN, LLC
110 MAIN STREET, SUITE 102, BURLINGTON, VT 05401
PHONE: 802-363-1482 FAX: 802-658-8400 EMAIL: steve@steveguilddesign.com

NO.	DATE:	REVISION

RIVERSIDE APARTMENTS

NEW APARTMENT BUILDING
BURLINGTON, VERMONT

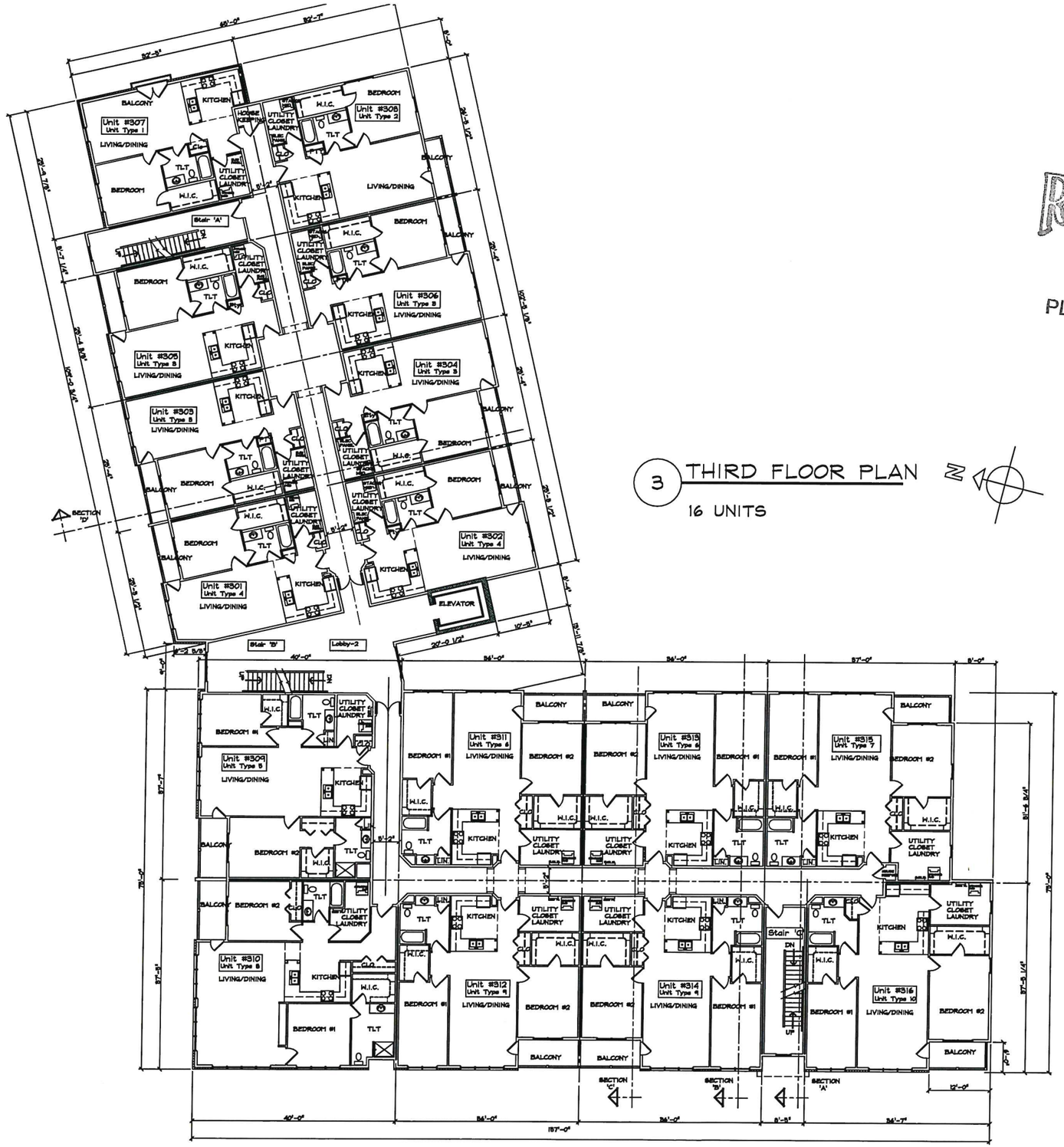
SCALE:	3/32" = 1'-0"
DATE:	01/16/2013
DRAWN BY:	FRN
CHECKED BY:	SCG
PROJECT:	–

SHEET TITLE:

2ND FLOOR PLAN

DRAWING NO.

A3



3 THIRD FLOOR PLAN

16 UNITS

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PHONE: 802-863-1482 FAX: 802-658-8400 EMAIL: steve@steveguilddesign.com

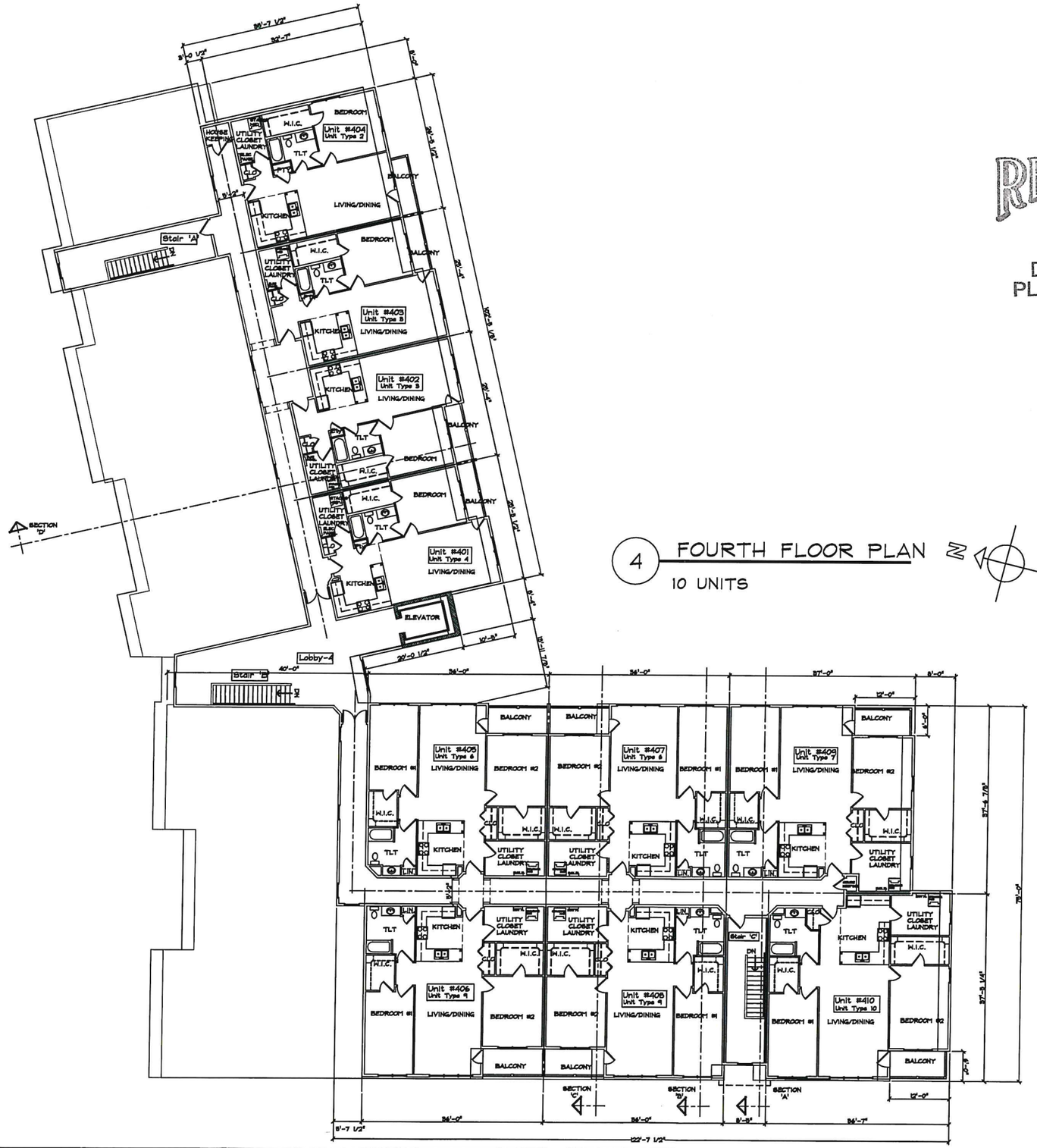
NO.	DATE:	REVISION

RIVERSIDE APARTMENTS
NEW APARTMENT BUILDING
BURLINGTON, VERMONT

SCALE:	3/32" = 1'-0"
DATE:	01/16/2013
DRAWN BY:	FRN
CHECKED BY:	SCG
PROJECT:	–

SHEET TITLE:
3RD FLOOR PLAN

DRAWING NO.
A4



4 FOURTH FLOOR PLAN

10 UNITS

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NO.	DATE:	REVISION

RIVERSIDE APARTMENTS

NEW APARTMENT BUILDING
BURLINGTON, VERMONT

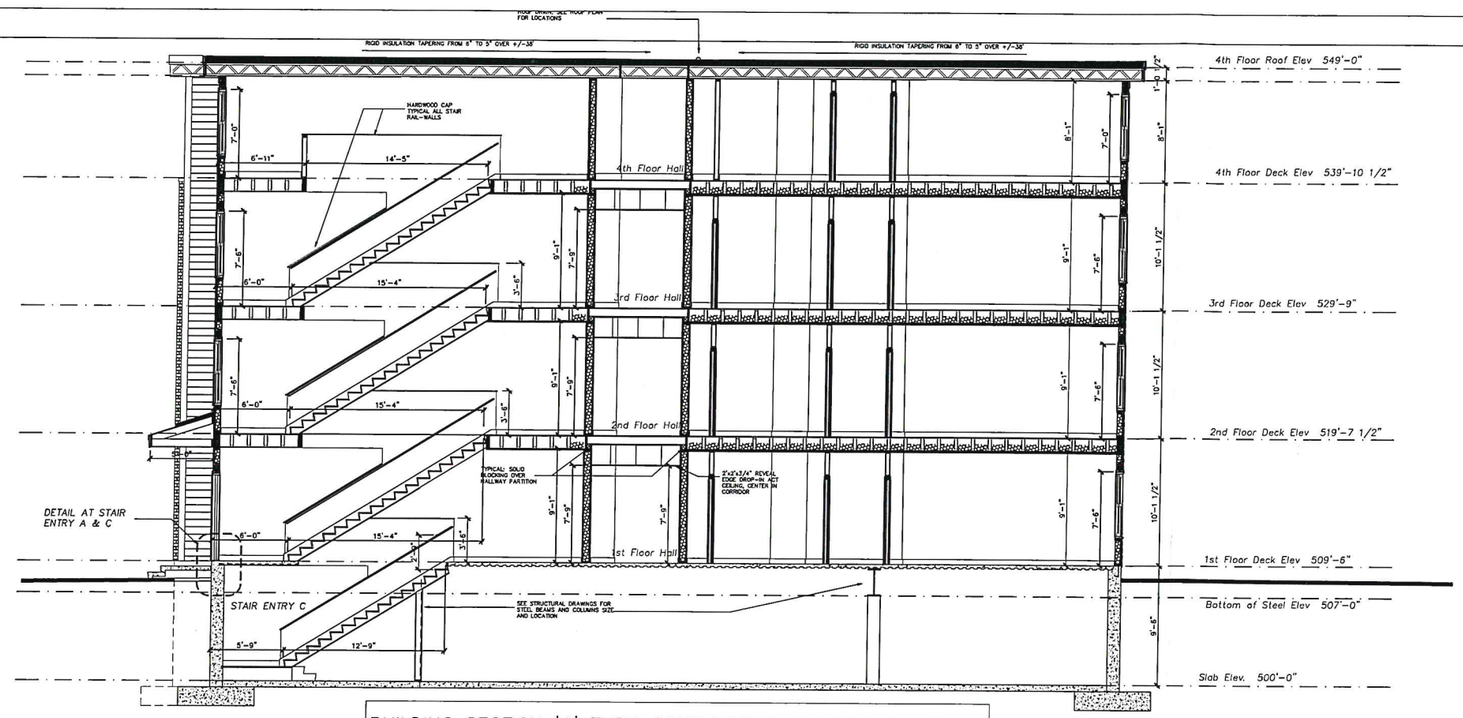
SCALE:	1'-0" NOTED
DATE:	01/16/2013
DRAWN BY:	FRN
CHECKED BY:	SCG
PROJECT:	–

SHEET TITLE:

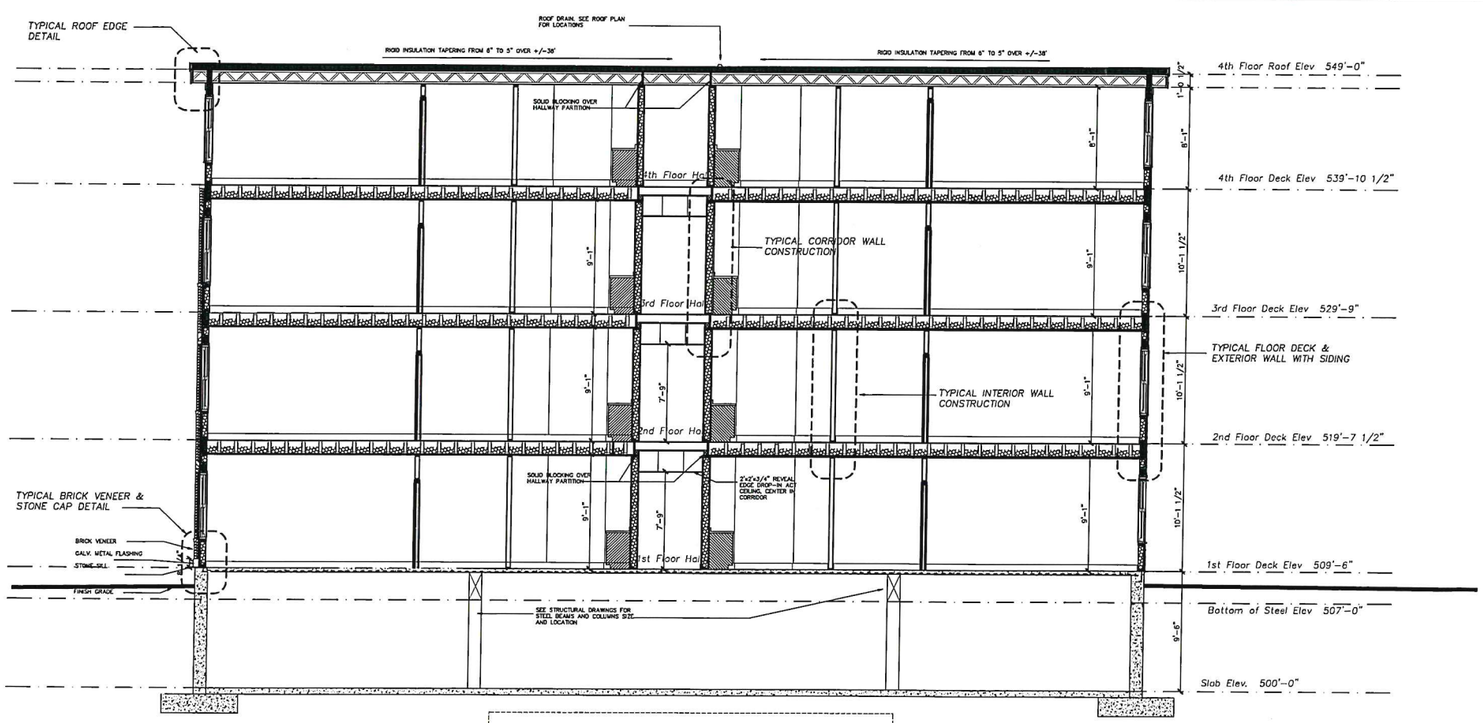
4th FLOOR PLAN

DRAWING NO.

A5



BUILDING SECTION 'A' THRU SOUTH STAIR-C LOOKING NORTH



BUILDING SECTION 'B' LOOKING NORTH

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SCHEMATIC DESIGN 1-30-13
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PHONE: 802-363-1482 FAX: 802-658-8400 EMAIL: steve@steveguilddesign.com

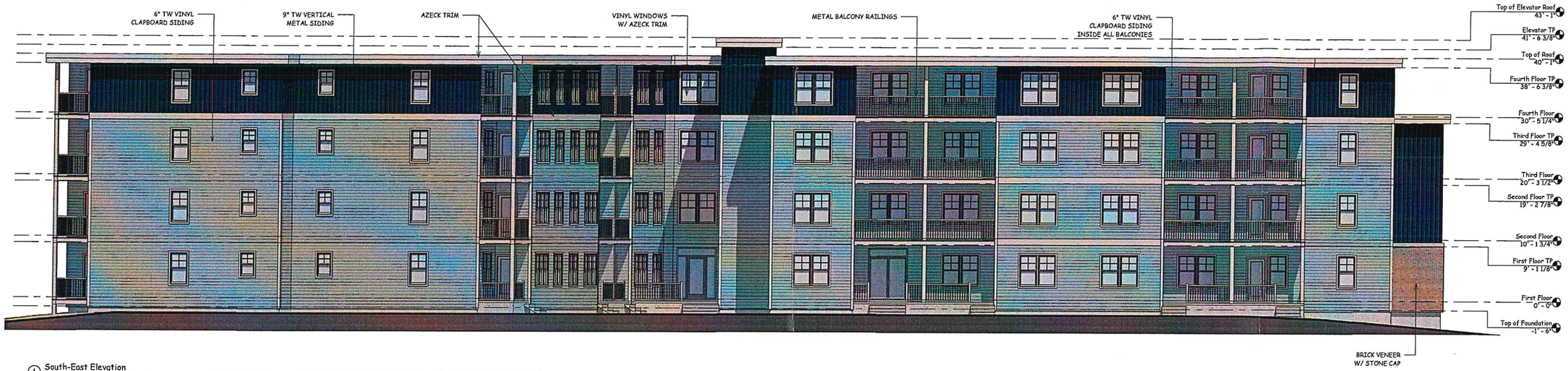
NO.	DATE:	REVISION

RIVERSIDE APARTMENTS
NEW APARTMENT BUILDING
BURLINGTON, VERMONT

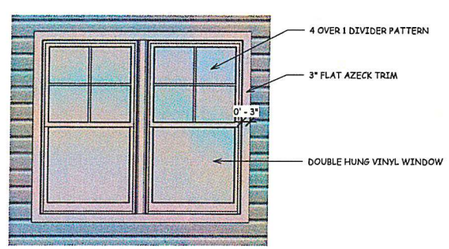
SCALE:	3/16" = 1'-0"
DATE:	–
DRAWN BY:	FRN
CHECKED BY:	SCG
PROJECT:	–

SHEET TITLE:
BUILDING SECTIONS

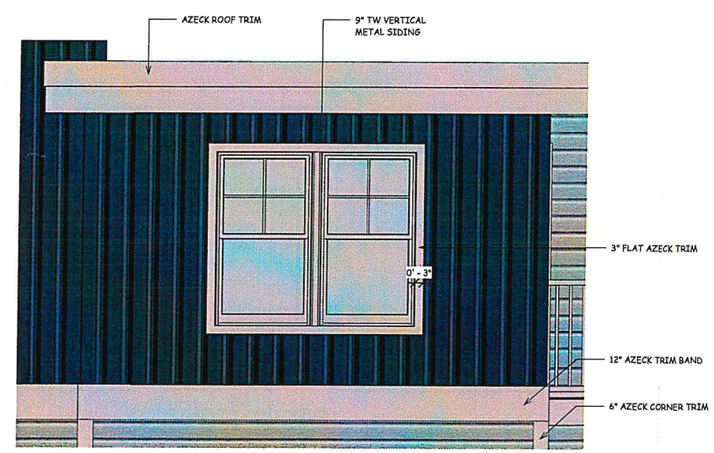
DRAWING NO.
A8



1 South-East Elevation
1/8" = 1'-0"



2 Window Trim Detail (Typ.)
1/2" = 1'-0"



3 Typical Trim Details
1/2" = 1'-0"

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G4 Design Studios
77 College Street, Ste. 2A Burlington, VT 05401
(P)802-437-0895 (F)802-861-3110 G4designStudios.com

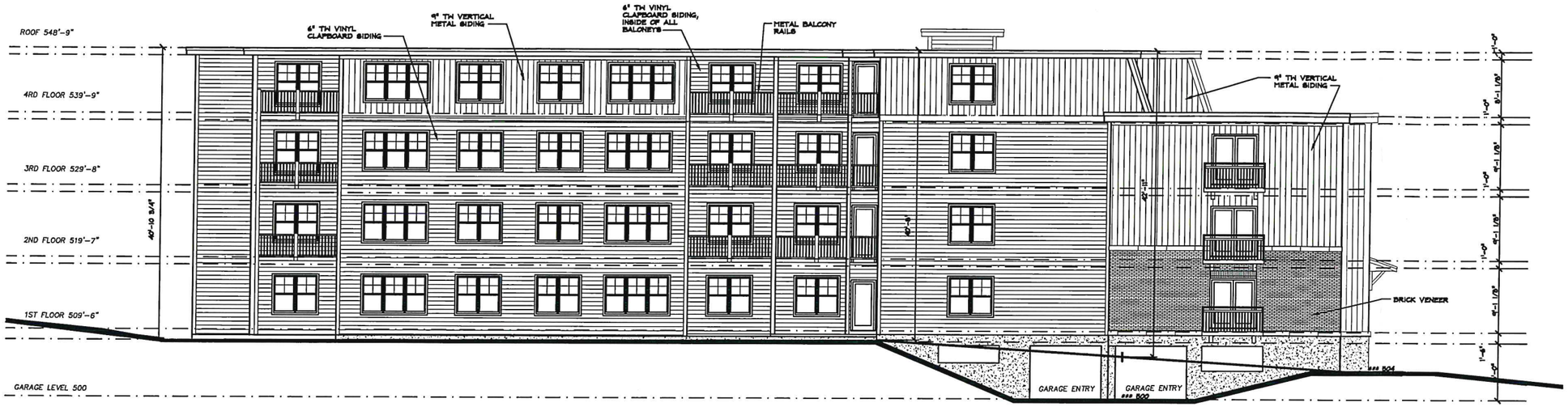
110 RIVERSIDE AVENUE
NEW APARTMENT BUILDING
BURLINGTON, VERMONT

SCALE: As indicated
DATE: 5/23/2017
DRAWN BY: WGI
CHECKED BY: SG
PROJECT: RIVERSIDE

SHEET TITLE: COLOR EXTERIOR ELEVATION

A-1

5/23/2017 12:12:25 PM



PROPOSED EAST ELEVATION

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NORTH ELEVATION

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NO.	DATE:	REVISION

RIVERSIDE APARTMENTS

NEW APARTMENT BUILDING
BURLINGTON, VERMONT

SCALE:	1/8" = 1'-0"
DATE:	01/16/2013
DRAWN BY:	FRN
CHECKED BY:	SCG
PROJECT:	–

SHEET TITLE:

EXTERIOR ELEVATIONS

DRAWING NO.

A6

SOUTH ELEVATION

WEST ELEVATION

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NO.	DATE:	REVISION

RIVERSIDE APARTMENTS

NEW APARTMENT BUILDING
BURLINGTON, VERMONT

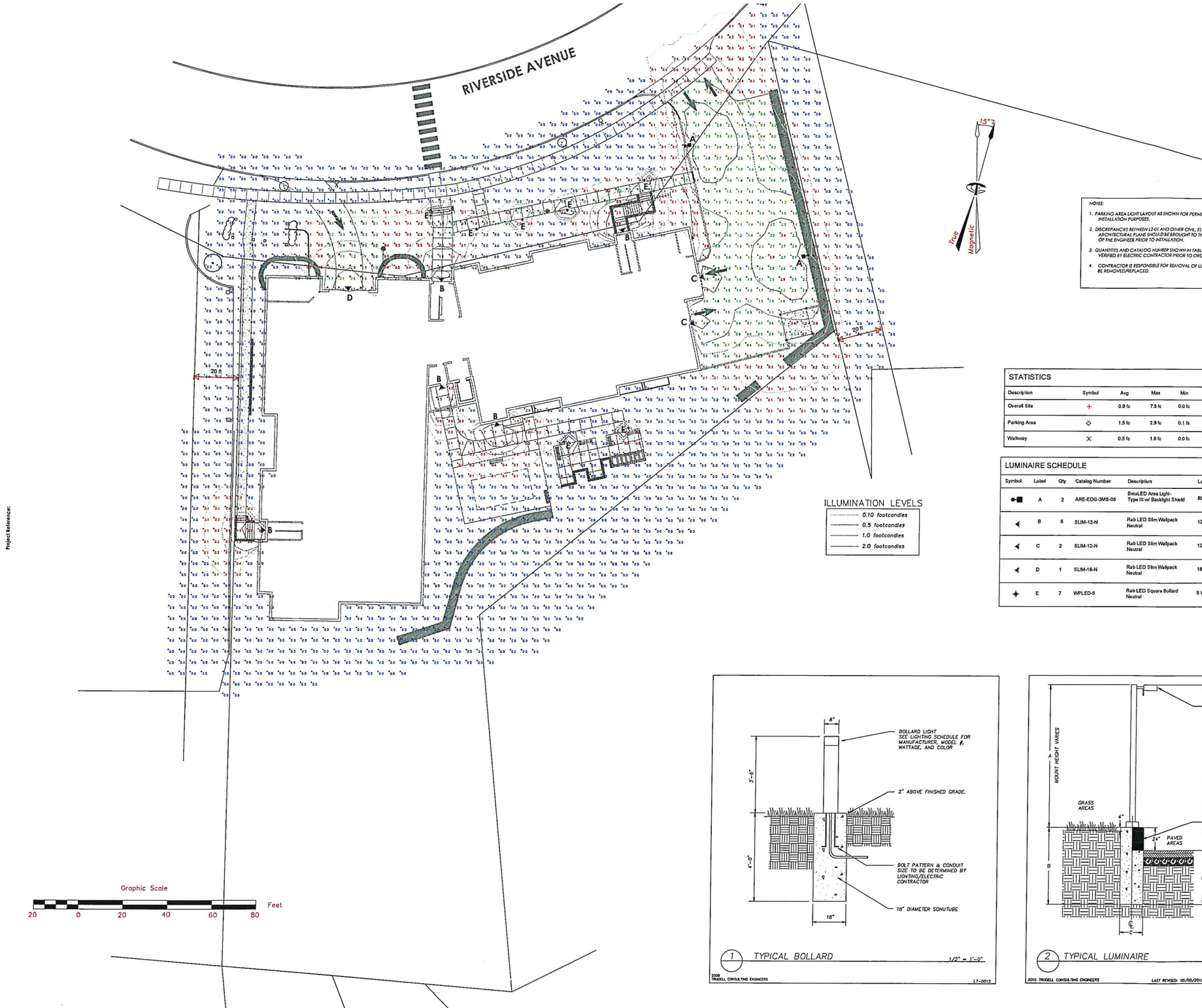
SCALE:	1/8" = 1'-0"
DATE:	01/16/2013
DRAWN BY:	FRN
CHECKED BY:	SCG
PROJECT:	–

SHEET TITLE:

EXTERIOR ELEVATIONS

DRAWING NO.

A7



Project Reference:

NOTES:

1. PARKING AREA LIGHT LAYOUT AS SHOWN FOR PERMITTING AND INSTALLATION PURPOSES.
2. DISCREPANCIES BETWEEN L2-01 AND OTHER CIVIL, ELECTRICAL, OR ARCHITECTURAL PLANS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO INSTALLATION.
3. QUANTITIES AND CATALOG NUMBER SHOWN IN TABLE SHOULD BE VERIFIED BY ELECTRIC CONTRACTOR PRIOR TO ORDERING.
4. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF LUMINAIRES TO BE REMOVED/REPLACED.

STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Overall Site	+	0.9 fc	7.5 fc	0.0 fc	N / A	N / A
Parking Area	◇	1.5 fc	2.9 fc	0.1 fc	29.0:1	15.0:1
Walkway	×	0.5 fc	1.9 fc	0.0 fc	N/A	N/A

LUMINAIRE SCHEDULE

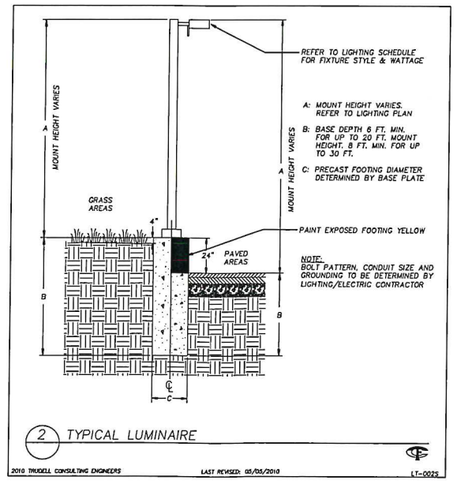
Symbol	Label	Qty	Catalog Number	Description	Lamp	Mount Height
	A	2	ARE-EDG-3MB-08	BetaLED Area Light- Type III w/ Backlight Shield	80 LEDs - 90 Watts	15 ft
	B	5	SLIM-12-N	Rab LED Slim Wallpack Neutral	12 Watt LED Array	10 ft
	C	2	SLIM-12-N	Rab LED Slim Wallpack Neutral	12 Watt LED Array	15 ft
	D	1	SLIM-18-N	Rab LED Slim Wallpack Neutral	18 Watt LED Array	15 ft
	E	7	WPLED-5	Rab LED Square Bollard Neutral	5 Watt LED Array	3.5 ft

ILLUMINATION LEVELS

- 0.10 footcandles
- 0.5 footcandles
- 1.0 footcandles
- 2.0 footcandles

1 TYPICAL BOLLARD 1/2" = 1'-0"

2008 TRUDELL CONSULTING ENGINEERS LT-0015



2 TYPICAL LUMINAIRE

2010 TRUDELL CONSULTING ENGINEERS LAST REVISED: 05/05/2010 LT-0025

tce

ENGINEERING • SURVE
PLANNING • ENVIRONMENTA
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 4333 | WWW.TCEVT.COM

Revisions

No.	Description	Date	By
1	CONDITIONS OF APPROVAL	6/16/17	xx

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TAX ID:

Use of These Drawings

1. Unless otherwise noted, these Drawings are intended preliminary planning, coordination with other discipline utilities, and/or approval from the regulatory authori They are not intended as construction drawings unless no as such or marked approved by a regulatory authority.

2. By use of these drawings for construction of the Proje the Owner represents that they have reviewed, approv and accepted the drawings, obtained all necessary perm and have met with all applicable parties/discipline Including but not limited to, the Engineer and the Archite to insure these plans are properly coordinated including, b not limited to, contract documents, specificatio owner/contractor agreements, building and mechani plans, private and public utilities, and other pertinent perm for construction.

3. Owner and Architect, are responsible for final design a location of buildings shown, including an area measure minimum five (5) feet around any building and coordinati final utility connections shown on these plans.

4. Prior to using these plans for construction layout, the u shall contact TCE to ensure the plan contains the m current revisions.

5. These Drawings are specific to the Project and are n transferable. As instruments of service, these drawings, o copies thereof, furnished by TCE are its exclusive proper Changes to the drawings may only be made by TCE. errors or omissions are discovered, they shall be brought the attention of TCE immediately.

6. It is the User's responsibility to ensure this copy contai the most current revisions. If unsure, please contact TCE.

STATE OF VERMONT
NICHOLAS A. DEAN
No. 9020
CIVIL
LICENSED PROFESSIONAL ENGINEER

Project Title

Sisters and Brothers Investment Group
110 Riverside Ave.
Burlington, Vermont

Sheet Title

Lighting Plan

Date:	11/21/2012
Scale:	1" = 20'
Project Number:	2010083
Drawn By:	RMP
Project Engineer:	AAL
Approved By:	
Field Book:	

L2-01

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Project Narrative

Trudell Consulting Engineers (TCE) is assisting Lewis Creek Company to submit a COA Level III Preliminary Plat application on behalf of the owners, Nancy Reid and Alison Segar, for a proposed 2-lot subdivision and the construction of a new single family home at 49 Fletcher Place in Burlington, Vermont. The project property is located within the Residential – Medium Density (RM) zoning district and is within the Design Review overlay district.

GENERAL INFORMATION

The existing property is 0.34 acres at the west end of Fletcher Place off Colchester Ave across from the University of Vermont Medical Center entrance. The existing property is developed with a 5-bedroom single family home, several small outbuildings and a driveway. This project proposes to subdivide the existing 0.34 ac parcel into a 0.18 ac Lot 1 around the existing home and a 0.16 ac Lot 2 to be developed with a new 3-bedroom single family home. The existing outbuildings will be relocated to the proposed Lot 1. This project is considered COA Level III as it proposes the subdivision of land.

EXISTING CONDITIONS

The topography varies across project property. While the development area is relatively flat, sloping from east to west at an approximately 0-5% grade, the site exhibits extremely steep slopes, in excess of 50%, along the western half of the property. This sloped area is part of a ravine which drains to an unnamed tributary of the Winooski River. Class II wetlands do exist at the base of the ravine and were delineated by TCE in 2016. The 2016 wetland delineation and 50 ft jurisdictional buffer are shown on the attached plans.

The property is predominantly forested while the developed area is mowed grass. Soils are mapped by the Natural Resource Conservation Service (NRCS) as primarily Adams and Windsor loamy sand, 5 to 12 percent slopes, with a section of Hartland very fine sandy loam, 25 to 60 percent slopes along the northern property boundary. The Adams and Windsor loamy sand is listed as Hydrologic Soil Group A, meaning the on-site soils are well drained, and is rates to have a slight erosion hazard. The Hartland very fine sandy loam is listed as Hydrologic Soil Group B with a very severe erosion hazard rating.

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Surrounding Uses

Fletcher Place is a primarily residential dead end road, however, the University of Vermont Transportation and Parking Office and the Trinity Children's center are located on Fletcher Place. While most of Fletcher Place is zoned Residential – Medium Density, the street is surrounded by the Institutional (I) zoning district. As the project parcel is located on the end of the dead end road, the property to the west and north are undeveloped and are primarily undevelopable due to the existing ravine.

PROPOSED PROJECT

District Information – Residential-Medium Density (RM) – Article 4 Section 4.4.5

The proposed single family home meets the intention of the zoning district as it proposes a permitted use, a single-family detached dwelling. The proposed subdivision and new residence meets all dimensional and density requirements of the district per Table 4.4.5-1, 4.4.5-2, and 4.4.5-3 of the Zoning Bylaw, see Table 1 below.

Table 1. Review of Required and Proposed Dimensional Standards per the Zoning Bylaw

	Required	Proposed Lot 1	Proposed Lot 2
Lot Size	No minimum	0.18 ac	0.16 ac
Frontage	30' min	79'	96'
Base Residential Density	20 units/acre	1 unit/0.18 ac	1 unit/0.16 ac
Lot Coverage	40% max	27.2%	24.4%
Front Setback	Min/max average of two adjacent lots on both sides +/- 5 feet (Average = 12')	6' (existing)	7'
Side Setback	Min 10% of lot width or average of side yard setback of 2 adjacent lots on both sides (Max 20')	8' (10% of lot width)	9' (10% of lot width
Rear Setback	Min 25% of lot depth but in no event less than 20' (Max 75')	30' (25% of lot width = 26')	30' (25% of lot width = 21')
Building Height	35' max	22'	30'

Both the existing and proposed driveways do encroach within the side setbacks, however, do not extend fully to the property boundary. For the purposes of lot coverage calculations, decks, patios, walkways, and proposed pervious pavers were included in the numbers represented in Table 1 above. The existing property does have several accessory structures including a garage, two small storage sheds, a chicken coop, and several play structures. All accessory structures except the garage are proposed to be relocated to proposed Lot 1 and all covered structures were included within the lot coverage calculations in Table 1 above.

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Citywide General Regulations – Article 5

This project meets all dimensional requirements of the applicable zoning district as described above, and does not propose and non-conformities or special uses. Additionally, the project does not propose any changes to outdoor lighting as a single family home is proposed.

Stormwater – This project is subject to the Residential (R1 & R2) Stormwater Management Plan. The existing property has approximately 2,667 SF of impervious surface between rooftop, porches, walkways, and the driveway. All of the existing impervious is disconnected to pervious grassed areas with an underlying soil that is well drained, however, the existing driveway and walkway do drain to the Fletcher Place municipal stormwater system which outlets to the nearby ravine.

The proposed single family home will increase on-site impervious surfaces by 1,293 SF, however, it will not increase connected impervious within the watershed. Rooftops are proposed to be guttered to rain barrels which will store water for on-site use and/or controlled release to pervious areas. Additionally, the proposed driveway and walkway will be constructed with a pervious paver allowing runoff to infiltrate directly.

Erosion Prevention and Sediment Control (EPSC) – This project is subject to Small Project EPSC review as more than 400 SF of land disturbance is proposed but less than 5,000 SF. In total, the project proposes to impact approximately 4,800 SF of the existing lot. All proposed impacts are within the flat portion of the property and will no encroach on any steep slopes. Barrier tape and silt fence will be installed at the top of the slope to prohibit sediment from leaving the site or entering any waters of the State.

Majority of the impact will be excavating for the foundation of the proposed home, however, the site is well above the water table and dewatering of the well-drained soils should not be necessary. Additional impacts include the installation of a permeable paver driveway and walkway, and utility trenching for water, sewer and electric. Minimal site grading will be necessary as the proposed house site is flat. Soil will be stockpiled on-site, stabilized, and eventually trucked off-site once excavation and grading are complete. All exposed soils will receive temporary and final stabilization and the Low Risk Site Handbook will be followed during construction.

Tree Removal – This project proposes the removal of one (1) 10" tree and one (1) 24" tree for the construction of the new single family home. There is no proposed landscaping plan for this development.

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Development Review Standards – Article 6

This minor subdivision and development of a single family home protects existing natural features and proposed minimal topographical alterations by proposing development within the flat portion of the property with no impact to extremely steep slopes or the Class II wetland buffer. Additionally this project proposes that all new impervious surfaces be disconnected to ensure no adverse or undue impact is made to the watershed. Proposed at the end of a small dead end street, this proposed new residence will be outside of public view and does not propose to impact any important cultural resources.

The proposed residence mirrors the existing residential development along Fletcher Place, with the home being proposed along the Fletcher Place frontage with side parking and a centered front walkway. The property is within the Neighborhood parking district and proposed development provides two (2) tandem parking spaces. The new single family home will connect to municipal sewer and wastewater.

Subdivision Standards – Article 10

As the proposed project is only a 2-lot subdivision, creating one (1) new lot, this application requests that preliminary and final plat review by the Development Review Board occur at a single public hearing. All information required for the Preliminary and Final plat applications have been included with this submittal.

CONCLUSION

This project proposes a 2-lot subdivision and the construction of a new single family home on Lot 2. Additionally, the project proposes to relocate several small outbuildings on the existing lot to Lot 1. All proposed impervious surfaces will be disconnected allowing stormwater runoff to infiltrate. As previously mentioned, this application requests that Preliminary and Final Plat review happen concurrently by the City of Burlington's Development Review Board.

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Ryan Morrison

From: Barry Simays
Sent: Monday, January 27, 2020 11:39 AM
To: Ryan Morrison
Subject: RE: Subdivision application - 49 Fletcher Place - 2 Lots

Ryan,

I have reviewed the application and plat provided for Fire Department Access and Water Supply in accordance with NFPA 1 (2015 ed.) Chapter 18, the Vermont Fire and Building Safety Code (2015 ed.) and Burlington Code of Ordinar Chapter 13.

I have no comments specific to the proposed subdivision. Fletcher Place meets the NFPA 1 Chapter 18 definition of a Department Access Road, and an existing fire hydrant is located in front of 34-36 Fletcher Place, approximately 285 linear distance from the proposed subdivision according to Google Earth.

All future construction shall comply with the codes, standards, and ordinances in effect at the time of design and construction.

Thank you,

BC Barry Simays, *CFPS, IAAI-CFI*
Fire Marshal
Burlington Fire Department
132 North Avenue
Burlington, VT 05401
(802) 864-5577 x1
(802) 658-7665 (Fax)
bsimays@burlingtonvt.gov

https://www.burlingtonvt.gov/Fire/Office-of-the-City-Fire-Marshal

Please note that this communication and any response to it will be maintained as a public record and may be subjec disclosure under the Vermont Public Records Act.

From: Ryan Morrison <rmorrison@burlingtonvt.gov>
Sent: Friday, January 24, 2020 4:20 PM
To: Norm Baldwin <nbaldwin@burlingtonvt.gov>; Barry Simays <BSimays@burlingtonvt.gov>; Burns, Chris <cburns@burlingtonelectric.com>; mspauldi@bsdvt.org; Cindi Wight <cwight@burlingtonvt.gov>
Subject: Subdivision application - 49 Fletcher Place - 2 Lots

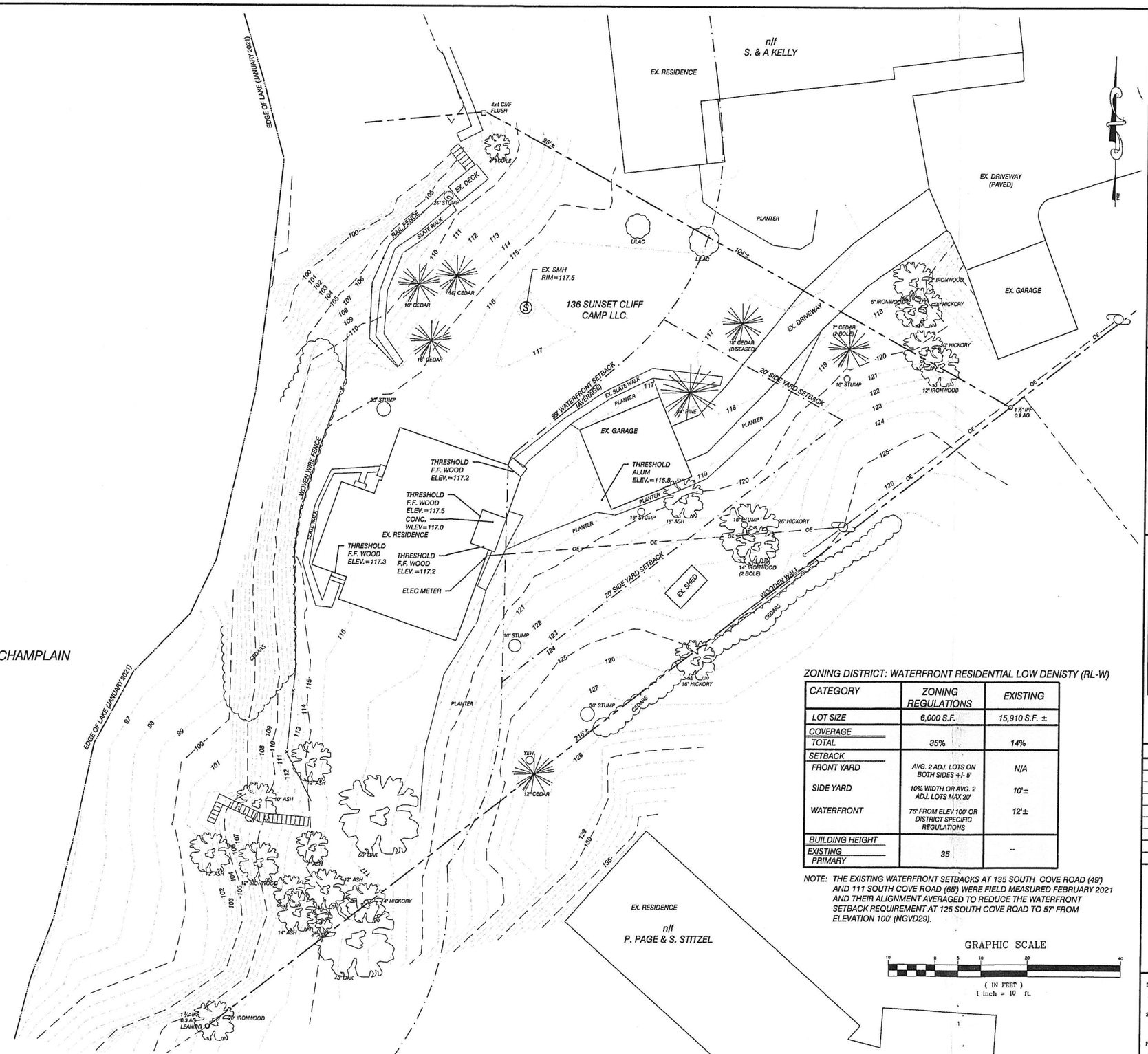
Good afternoon.

Attached is a subdivision/new single family residence application at 49 Fletcher Place for your review. The applicati scheduled for the February 19, 2020 DRB meeting. Please let me know if you have any questions or comments regarding this by Feb. 12th. Also, if you would like to see plans for the house, let me know. Thanks!

Ryan Morrison
Associate Planner
City of Burlington

LEGEND

- PROPERTY LINE
- APPROXIMATE SETBACK LINE
- 100 EXISTING CONTOUR
- EXISTING WOVEN WIRE FENCE
- EXISTING RAIL FENCE
- EXISTING GRAVEL
- EXISTING PAVEMENT
- OE EXISTING OVERHEAD ELECTRIC
- EDGE OF LAKE AT TIME OF SURVEY
- EXISTING SEWER MANHOLE
- EXISTING UTILITY POLE
- EXISTING GUY WIRE/POLE
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- EDGE OF BRUSH/WOODS
- IRON ROD/PIPE FOUND
- CONCRETE MONUMENT FOUND



NOTES

1. UTILITIES SHOWN DO NOT PURPORT TO CONSTITUTE OR REPRESENT ALL UTILITIES LOCATED UPON OR ADJACENT TO THE SURVEYED PREMISES. EXISTING UTILITY LOCATIONS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL UTILITY CONFLICTS. ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER. THE CONTRACTOR SHALL CONTACT DIG SAFE (888-344-7233) PRIOR TO ANY CONSTRUCTION.
2. PROPERTY LINE INFORMATION IS BASE ON A PLAT ENTITLED "PLAN OF SUNSET CLIFF BURLINGTON VT" DATED OCTOBER 1926 PREPARED BY J.H. SINCLAIR. RECORDED IN THE CITY OF BURLINGTON LAND RECORDS VOL. 88 PAGE 647. THIS PLAN IS NOT A BOUNDARY SURVEY AND IS NOT INTENDED TO BE USED AS ONE. MONUMENTATION RECOVERED IS CONSISTENT WITH RECORDED DOCUMENTS.
3. SITE INFORMATION IS BASED ON A FIELD SURVEY PERFORMED BY CIVIL ENGINEERING ASSOCIATES, INC JANUARY 2021. CIVIL ENGINEERING ASSOCIATES, INC. SURVEY ORIENTATION IS "GRID NORTH". VERMONT COORDINATE SYSTEM OF 1983 (HORIZONTAL) AND NAVD88 (VERTICAL) ESTABLISHED FROM GPS OBSERVATIONS ON SITE.
4. SUBJECT PROPERTY LIES WITHIN THE WATERFRONT RESIDENTIAL - LOW DENSITY (RL-W) ZONING DISTRICT AND THE FOLOWING OVERLAY DISTRICTS: DESIGN REVIEW OVERLAY DISTRICT, THE NATURAL RESOURCE PROTECTION DISTRICT AND , RL LARGER LOT OVERLAY DISTRICT.

ZONING DISTRICT: WATERFRONT RESIDENTIAL LOW DENISTY (RL-W)

CATEGORY	ZONING REGULATIONS	EXISTING
LOT SIZE	6,000 S.F.	15,910 S.F. ±
COVERAGE		
TOTAL	35%	14%
SETBACK		
FRONT YARD	AVG. 2 ADJ. LOTS ON BOTH SIDES +/- 5'	N/A
SIDE YARD	10% WIDTH OR AVG. 2 ADJ. LOTS MAX 20'	10'±
WATERFRONT	75' FROM ELEV 100' OR DISTRICT SPECIFIC REGULATIONS	12'±
BUILDING HEIGHT		
EXISTING PRIMARY	35	--

NOTE: THE EXISTING WATERFRONT SETBACKS AT 135 SOUTH COVE ROAD (49') AND 111 SOUTH COVE ROAD (65') WERE FIELD MEASURED FEBRUARY 2021 AND THEIR ALIGNMENT AVERAGED TO REDUCE THE WATERFRONT SETBACK REQUIREMENT AT 125 SOUTH COVE ROAD TO 57' FROM ELEVATION 100' (NGVD29).

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

SITE ENGINEER:

CIVIL ENGINEERING ASSOCIATES, INC.
10 MANSFIELD VIEW LANE, SOUTH BURLINGTON, VT 05403
P: 802-864-2223 FAX: 802-864-2271 web: www.cea-vt.com

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DRAWN
MAB

CHECKED
JLM

APPROVED
JLM

CLIENT:

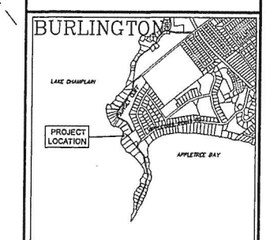
NORTHEAST CRAFTSMAN
TOM LEBOEUF

79 HYDE STREET
BURLINGTON, VERMONT
05401

PROJECT:

136 SUNSET CLIFF CAMP, LLC

136 SUNSET CLIFF ROAD
BURLINGTON VERMONT
05408



LOCATION MAP

1" = 2000'

DATE	CHECKED	REVISION

EXISTING CONDITIONS PLAN

DATE
04/27/2021

SCALE
1" = 10'

PROJ. NO.
21105

DRAWING NUMBER
C1.0

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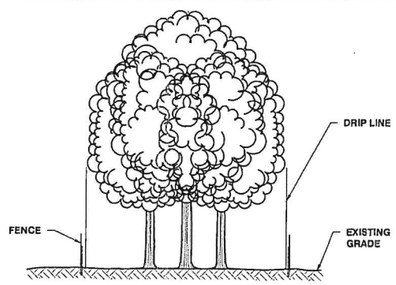
EROSION CONTROL LEGEND

- SILT FENCE
- LIMITS OF DISTURBANCE
- EROSION CONTROL MATTING
- STABILIZED CONSTRUCTION ENTRANCE

NOTES:

1. LOAM, SEED AND MULCH ALL DISTURBED AREAS (TYP.)
2. INSTALL TEMPORARY STABILIZATION OF DISTURBED SOILS THROUGH THE INSTALLATION OF 1" OF HAY MULCH NO MORE THAN 7 DAYS AFTER WORK HAS CEASED IN A PARTICULAR AREA.
3. SLOPES >3:1 SHALL RECEIVE EROSION CONTROL MATTING.
4. MAXIMUM AMOUNT OF DISTURBED SOILS TO BE LIMITED TO NO MORE THAN 2 ACRES.
5. SILT FENCE CONTRIBUTORY AREA TO BE LIMITED TO ¼ ACRE / 100 L.F.



NOTES:

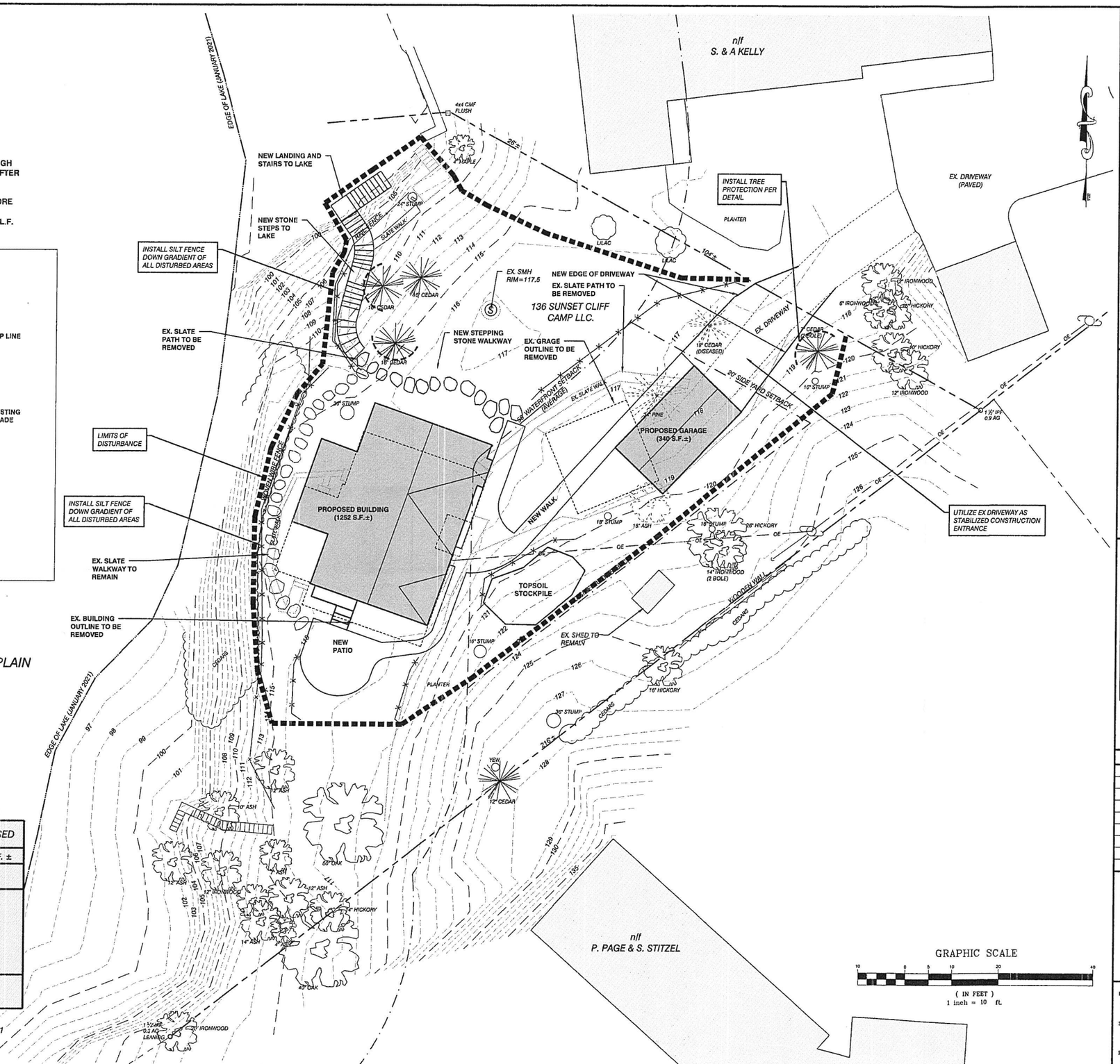
1. THIS FENCE SHALL BE LOCATED OUTSIDE THE DRIP LINE OF THE TREE TO BE SAVED AND IN NO CASE CLOSER THAN 5' TO THE TRUNK OF ANY TREE.
2. FENCE POST SHALL BE STANDARD STEEL POSTS OR WOOD POSTS WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQ. IN.
3. THE FENCE MAY BE EITHER 40" HIGH SNOW FENCE, 40" PLASTIC WEB FENCING OR ANY OTHER MATERIAL AS APPROVED BY THE ENGINEER..

TREE PROTECTION - FENCING

N.T.S.

L-006 REVISED 2/12/2015

L-006 Tree Protection



ZONING DISTRICT: WATERFRONT RESIDENTIAL LOW DENISTY (RL-W)

CATEGORY	ZONING REGULATIONS	EXISTING	PROPOSED
LOT SIZE	6,000 S.F.	15,910 S.F. ±	15,910 S.F. ±
COVERAGE TOTAL	35%	14%	16%
SETBACK FRONT YARD	AVG. 2 ADJ. LOTS ON BOTH SIDES +/- 5'	N/A	N/A
SIDE YARD	10% WIDTH OR AVG. 2 ADJ. LOTS MAX 20'	10'±	10'±
WATERFRONT	75' FROM ELEV 100' OR DISTRICT SPECIFIC REGULATIONS	12'±	12'±
BUILDING HEIGHT EXISTING PRIMARY	35	--	--

NOTE: THE EXISTING WATERFRONT SETBACKS AT 135 SOUTH COVE ROAD (49') AND 111 SOUTH COVE ROAD (65') WERE FIELD MEASURED FEBRUARY 2021 AND THEIR ALIGNMENT AVERAGED TO REDUCE THE WATERFRONT SETBACK REQUIREMENT AT 125 SOUTH COVE ROAD TO 57' FROM ELEVATION 100' (NGVD29).

GRAPHIC SCALE

(IN FEET)
1 inch = 10 ft.

SITE ENGINEER:

CIVIL ENGINEERING ASSOCIATES, INC.
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P: 802-864-2323 FAX: 802-864-2271 web: www.cea-vt.com

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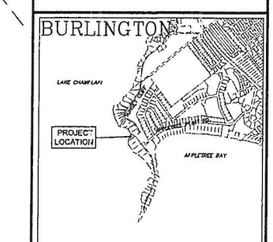

LOCATION MAP
1" = 2000'

DATE	CHECKED	REVISION

EPSC SITE PALN

DATE: 04/27/2021
SCALE: 1" = 10'
PROJ. NO.: 21105

DRAWING NUMBER: C2.0

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Introduction
This project is subject to the terms and conditions of the authorization from the State of Vermont to discharge construction related storm water runoff.

Coverage under the State Construction General Permit 3-9020 is required for any construction activity that disturbs 1 or more acres of land, or is part of a larger development plan that will disturb 1 or more acres.

This project has been deemed to qualify as a Low Risk Site which is subject to the erosion prevention and sediment control (EPSC) standards set for in the State of Vermont's **Low Risk Site Handbook for Erosion Prevention and Sediment Control**

The following narrative and implementation requirements represent the minimum standard for which this site is required to be maintained as regulated by the State of Vermont.

Any best management practices (BMP's) depicted on the project's EPSC Site plan which go beyond the Handbook requirements are considered to be integral to the management of the site and represent components of the municipal EPSC approval for the project which shall be implemented.

The EPSC plan depicts one snap shot in time of the site. All construction sites are fluid in their day to day exposures and risks as it relates to minimizing sediment loss from the site. **It is the responsibility of the Contractor to implement the necessary BMP's to comply with the Low Risk Handbook standards outlined on this sheet based on the interim site disturbance conditions which may or may not be shown on the EPSC Site Plan.**

Specific BMP's which are critical to allowing the project to be considered a Low Risk site include the items checked below:

- Limit the amount of disturbed earth to two acres or less at any one time.
- There shall be a maximum of 7 consecutive days of disturbed earth exposure in any location before temporary or final stabilization is implemented.

1. Demarcate Limits of Disturbance
Purpose:
Delineating the site will help to: limit the area of disturbance to only what is necessary for construction, prevent unauthorized disturbance, preserve existing vegetation, and limit erosion potential on the site.

Requirement:
You must physically mark the limits of construction activity using one of the methods described below.

How to comply:
Before initiating any earth disturbing activities, install a perimeter fence, orange barrier tape, or flagging on stakes or trees to physically demarcate the approved limits of earth disturbance.

2. Pollution Prevention
Purpose:
Many construction sites require storage of chemicals and materials that have detrimental effects if released into our waterways. A storage plan for these potential pollution sources as well as a spill prevention and clean up plan are required to mitigate these risks.

Requirement:
Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented and maintained in accordance with the following requirements.

How to comply:
1. Minimize the exposure of the following to precipitation and to stormwater: building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site.
2. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

3. Limit Concurrent Earth Disturbance
Purpose:
Limit the amount of soil exposed at one time to reduce the potential erosion on the construction site.

Requirement:
The maximum area of concurrent earth disturbance is specified on the site's written authorization to discharge. Earth disturbance at any one time cannot exceed the maximum concurrent disturbance identified in the authorization. Areas that are at final stabilization omitted have been temporarily stabilized in accordance with Section 4 of this handbook, are not counted toward the maximum concurrent disturbance area.

How to comply:
Plan ahead and phase the construction activities to ensure that no more than the permitted maximum concurrent acreage is disturbed and unstabilized at one time. Be sure to properly stabilize exposed soil using one of the methods introduced in Section 4 of this handbook before beginning work in a new section of the site.

4. Site Stabilization
Purpose:
Seeding and mulching, applying erosion control matting, and hydroseeding are all methods to temporarily stabilize exposed soil and prevent soil erosion prior to vegetative growth. Mulches and matting protect the soil surface while grass is establishing. Areas of earth disturbance may also be stabilized with stone, such as rip-rap or gravel, or other impervious surfaces such as pavement and concrete.

Requirements for Temporary Stabilization:
All areas of earth disturbance must have temporary or final stabilization within 14 days of initial disturbance, as stated in the project authorization. After this time, disturbed areas must be temporarily stabilized or permanently stabilized in advance of any runoff producing event. A runoff producing event is an event that produces runoff from the construction site.

The following exception applies:
Temporary stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches), provided any dewatering, if necessary, is conducted in accordance with Part 13.

How to comply:
As required by the authorization, temporary stabilization for areas of earth disturbance shall be completed utilizing one or more of the methods below:

Straw Mulch
Mulching Rates
April 16 - Oct. 14 – Straw: 1 inch deep (1-2 bales/1,000 s.f.)
Oct. 15 - April 15 – Straw: 2 inch deep (2-4 bales/1,000 s.f.)
*seed may also be incorporated

Wood Chip Mulch or Stump Grindings
Cover entire area with 2-7 inches or more of wood chip mulch or stump grindings.

Hydroseed
As per manufacturer's instructions. Must include mulch component. Not acceptable stabilization for winter construction period.

Requirements for Dust Control:
Construction roads, access points, and other disturbed areas subject to surface dust movement and dust blowing during dry periods where off-site damage may occur if dust is not controlled shall be sprayed with water to prevent dust mobilization. Chemical applications, including the use of chloride, shall not be applied without written approval from the VT DEC.

Requirements for Final Stabilization:
All areas of disturbance must have permanent stabilization within 48 hours of reaching final grade. Bring the site or sections of the site to final grade as soon as possible after construction is completed. This will reduce the need for additional sediment and erosion control measures and will reduce the total disturbed area. Prepare bare soil for seeding by grading the top 4 to 6 inches of soil and removing any large rocks or debris, and apply seed per suppliers specifications.

5. Stabilized Construction Access
Purpose:
A stabilized construction access helps remove mud and sediment from vehicles and equipment to prevent tracking onto streets.

Requirements:
If there will be any vehicle or equipment traffic off of the construction site, you must install a stabilized construction access at the start of construction.

How to Install:
Rock Size: Use a mix of 1 to 4 inch stone
Depth: 8 inches minimum
Width: 12 feet minimum, flared at road for vehicle turning
Length: 40 feet minimum (or length of driveway for residential projects, if shorter)
Geotextile: Place filter cloth under entire stone bed

Maintenance:
Redress with clean stone or scarify to open voids as required to keep sediment from tracking onto the street.
- Where sediment has been tracked-out from your site onto paved roads, sidewalks, or other paved areas outside of your site, remove the deposited sediment by the end of the same business day in which the track-out occurs or by the end of the next business day if track-out occurs on a non-business day.
- Remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal.
- You are prohibited from hosing or sweeping tracked out sediment into any stormwater conveyance, storm drain inlet, or water of the state.

6. Divert Upland Runoff
Purpose:
Diversion berms intercept stormwater runoff contributing from above the construction site and direct it around the disturbed area. This prevents offsite runoff from entering the construction site, thus reducing the potential for erosion and reducing the drainage area contributing to the site.

Requirements:
If stormwater runoff contributes to the construction site from upslope areas and the site meets the following two conditions, you are required to first install a diversion berm and stabilized swale before disturbing any additional soil.
1. One or more acres of soil will be disturbed at any one time.
2. Average slope of the disturbed area is 20% or steeper.*

Diversion Berm Installation:
1. Construct berm to the minimum specification above.
2. Compact the berm with a shovel or earth-moving equipment.
3. Seed and mulch berm or cover with erosion control matting immediately after installation.
4. Stabilize the flow channel with seed and mulch or erosion control matting. Line the channel with 4 inch stone if the channel slope is greater than 20%.
5. Ensure the berm drains to an outlet stabilized with riprap. Ensure that there is no erosion at the outlet.
6. The diversion berm shall remain in place until the disturbed areas are completely stabilized.

7. Install Perimeter Controls
Purpose:
Silt Fence and Erosion Control Berms intercept runoff and allow suspended sediment to settle or filter out. Filter Socks and Straw Wattles also filter construction runoff and are acceptable for use in specific situations. Silt Fence, Erosion Control Berms, Filter Socks and Straw Wattles are all acceptable perimeter controls based on site specific conditions. Permittee(s) must ensure the right practice is selected for erosion prevention and sediment control.

Requirements:
Perimeter controls must be installed:
- On the downhill side of the construction activities.
- Between any ditch, swale, storm drain, or surface water and the disturbed soil
- Perimeter controls not labeled as biodegradable shall be removed once the drainage area has reached final stabilization

How to Comply:
Select and install a perimeter control from the following options: Silt Fence, Erosion Control Berms, Filter Socks, or Straw Wattles.

Where to place:
- Place perimeter controls on the downhill side of disturbed soil. If space is available, place perimeter control 10 ft from the bottom of the slope, otherwise place along the contour at the bottom of the slope.
- Ensure the perimeter control catches all runoff from disturbed soil.
- Maximum drainage area is½ acre for 100 feet of silt fence and erosion control berm.
- Install perimeter controls across the slope (not up and down slope)
- Install multiplerows of perimeter control on long slopes to intercept flow.
- Do not install perimeter controls across ditches, channels, or streams.
- Maximum slope length (in feet) above a filter sock or straw wattle

Silt Fence
A temporary barrier of geotextile fabric installed on the contours across a project site to intercept sediment laden runoff from small drainage areas of disturbed soil.

Silt Fence Installation:
- Dig a trench 6 inches deep across the slope
- Unroll silt fence along the trench
- Ensure stakes are on the downhill side of the fence
- Join fencing by rolling the end stakes together
- Drive stakes in against downhill side of trench
- Drive stakes until 16 inches of fabric is in trench
- Push fabric into trench; spread along bottom
- Fill trench with soil and pack down
- Gravel can be used to create ground contact with filter fabric when bedrock, ledge, or nearby tree roots do not allow for trenching. (A secondary perimeter control can be effective in these locations as well)

Silt Fence Maintenance:
Remove accumulated sediment before it is halfway up the fence. Ensure that silt fence is trenched in ground and there are no gaps. Replace any silt fence that is torn, ripped, or otherwise damaged that

8. Storm Inlet Protection
Purpose:
Existing or new storm inlets on construction sites constitute a site perimeter and must be protected from sediment laden runoff. The practices below allow stormwater to settle and filter through the practice and not bypass the in let entirely.

Requirements:
Stormwater inlets shall be 4 inches above grade or an acceptable inlet control/protection should be installed.

Inlet Protection Installation:
Proprietary Inlet Protection:
Shall provide for storage and removal of sediment and be sized appropriately for the drainage area, while allowing stormwater to filter through. These may be used if installed and maintained in accordance with the manufacturer's specifications.

Stone and Block Inlet Protection:
Concrete blocks placed around an inlet with a circle of filtering stone sloped against the blocks.
Filter Fabric and Stone Inlet Protection:
Vertical filter fabric installed around drop inlet with stone around fabric for stormwater filtering and creating ground contact with filter fabric. Alternatively, fabric may be buried below ground.

9. Water Bars
Purpose:
Some sites may benefit from the use of water bars on the construction site. When installed these may capture and redirect runoff to a stable low gradient location. Water bars limit the erosive velocity of water by diverting surface runoff at pre-designed intervals.

Requirements:
These can be constructed per the following detail, with side slopes no steeper than 4:1 where vehicles cross with a minimum design height of 12 inches, measured from channel bottom to ridge top.

Water Bar Installation:
Water bars should have stable outlets, either natural or constructed. The spacing should follow Table 1:

Table 1 Water Bar Spacing

Slope (%)	Distance between structures (ft)
< 5	125
5 - 10	100
10 - 20	75
20 - 35	50
> 35	25

10. Slow Down Channelized Runoff
Purpose:
Stone check dams reduce erosion in drainage channels by slowing down the stormwater flow.

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

Check Dam Installation:
Height: No greater than 2 feet. Center of dam should be 9 inches lower than the side elevation
Side slopes: 2:1 or flatter (see p.93 for slope calculation)
Stone size: Use a mixture of 2 to 9 inch stone; the larger stone should act as armoring, while the smaller stone helps to filter the channelized runoff. The small stone should be placed primarily in the interior of the check dam and the large stone should be placed in an armoring layer on the outside.
Width: Dams should span the width of the channel and extend up the sides of the banks
Spacing: Space the dams so that the bottom (toe) of the upstream dam is at the elevation of the top (crest) of the downstream dam. This spacing is equal to the height of the check dam divided by the channel slope.

Check Dam Maintenance:
Correct all observed damage immediately after every ru noff event.
Remove all sediment accumulated behind the check dams and dispose of in an upland location. If significant erosion is observed between check dams, the channel shall be stone lined.

Rock Outlet Protection:
Waterways or outlets with concentrated stormwater runoff shall be stabilized with riprap, proprietary stabilization product or permanent material. This additional stabilization is applicable in areas where the channel slope and velocity or soil type require additional stabilization. All outlets from concentrated stormwater flows will require a stabilized bed. Stone shall be sized so it is not mobilized during high flows.

11. Slope Stabilization
Purpose:
Surface covering designed to protect and stabilize an area prone to erosion where seeding and mulching may be inadequate, generally slopes 3:1 or greater. The erosion potential may be due solely to slope angle; however,
a more gradual slope and poor soil structure can also require additional stabilization.

Requirements for Temporary Stabilization:
Use of one of the listed slope protection practices below on slopes 3:1 and greater or as needed on flatter slopes based on soil type.

Riprap: A layer of stone designed to protect and stabilize areas subject to erosion.Rolled Erosion Control Product:

A preformed protective blanket of straw or other plant residue, formed into a mat, with a supporting mesh framework on one or both sides. This mesh cannot be made of a material with welded joints.

Erosion Control Matting:
Install per manufacturer's instructions.

12. Winter Construction Requirements: October 15 - April 15
Purpose:
'Winter construction' as discussed here, describes the period from October 15 through April 15, when erosion prevention and sediment control is significantly more difficult. There are specific requirements for sites that conduct earth disturbance during the defined Winter Construction Period and for sites where disturbed areas have not reached final stabilization by October 15.

Rains in late fall, thaws throughout the winter, and spring melt and rains can produce significant flows over frozen and saturated ground, greatly increasing the potential
for erosion. A construction site can be managed to anticipate these conditions to prevent erosion and thus minimize the risk to water quality during this time period.

Requirements for Winter Shutdown:
For projects or areas of a site that will have completed earth disturbance activities prior to the winter construction period (October 15 through April 15), the following requirements must be adhered to:

1. For areas to be stabilized for the winter through the establishment of vegetation, seeding and mulching shall be completed no later than September 15 to ensure adequate growth and cover before the start of the winter period.

2. If seeding is not completed by September 15, additional non-vegetative protection must be used to stabilize the site for the winter period. Areas of disturbance not seeded and mulched by September 15 are required to temporarily stabilize by one of the following methods:

Implement Rolled Erosion Control Products (i.e. matting) over the areas of earth disturbance.

Apply a 2" mulch layer to areas of earth disturbance, equivalent to double the standard rate. Mulch should be tracked in open areas vulnerable to wind.

Seeding with winter rye is recommended to allow for early germination during wet spring conditions.

Requirements for Winter Construction
If construction activities involving earth disturbance continue into the winter construction period, the following requirements apply:

1. Enlarged access points, stabilized to provide for snow stockpiling.
2. Snow shall be managed with adequate storage and control of meltwater, requiring cleared snow to be stored down slope of all areas of disturbance and out of stormwater treatment structures.
3. For areas of disturbance within 100 ft of a waterbody, the following must be installed across the slope, down gradient of the earth disturbance: a combination of one practice from group A placed in front of a practice from group B, or two group B practices, or a single row of Reinforced Silt Fence

Group A	Group B
Filter Socks	Silt Fence
Straw Wattles	Erosion Control Berms

4. Drainage structures must be kept open and free of snow and ice dams.
5. Silt fence and other practices requiring earth disturbance must be installed ahead of frozen ground.
6. Mulch used for temporary stabilization must be applied at a minimum of 2 inches with an 80-90% cover.
7. To ensure cover of disturbed soil in advance of a precipitation or melt event, areas of disturbed soil must be stabilized prior to any runoff producing event.

Stabilization is not required if the work is occuring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches), provided any dewatering, if necessary, is conducted in accordance with Part 13.

8. Prior to stabilization, snow or ice must be removed to the extent practicable.
9. Use stone to stabilize areas such as the perimeter of buildings under construction or where construction vehicle traffic is anticipated. Stone paths should
be sufficient width to accommodate vehicle or equipment traffic.

13. Dewatering Activities
Purpose:
To minimize and prevent discharges of sediment as a result of dewatering activities.

Requirements:
Stormwater and groundwater from dewatering activities shall be uncontaminated and shall be filtered or passed through a sediment trapping device, or both, and routed in a manner that does not result in visually turbid discharges to waters. Pump intake for dewatering must be at or near the surface of the ponding area to prevent disturbance of the settled material. Visually turbid water must not be pumped directly to storm drains or other conveyance that leads to waters without implementing one or more of the practices described below.

How to comply:
Implement one or more of the following practices when dewatering:
Implement sock filters or sediment filter bags on dewatering pump discharge hoses or pipes.
Route dewatering pump into silt fence enclosures or into staked hay bale enclosures lined with fabric.
Route dewatering pump to vegetated area at least 50 feet from surface waters and at a slope no greater than 5%. Remove accumulated sediment after the water has dispersed or infiltrated and stabilize the area with seed and mulch as necessary. A sufficient area of vegetation greatly improves the efficacy of filtering/settling of turbid water discharged from a dewatering enclosure.

14. Concrete Washout
Purpose:
Concrete wash water often contains a slurry of heavy metals, can be caustic, and has a high pH. As a result, concrete washwater is not a permitted discharge.

Requirements:
Concrete washwater and excess washout concrete should go in a lined washout. This washout should be accessible to the cement truck and at least 50 feet away from stormwater inlets and surface water.

Concrete Washout Installation:
If cement washout is going to occur on site, a lined concrete washout as shown below shall be used onsite. Care should be given to assure that the washout does not overtop during a storm event. Proprietary lined and
contained concrete washout basins may also be utilized in accordance with manufacturer's specifications.

Concrete Washout Maintenance:
Concrete washout shall be pumped to a concrete truck as necessary, for disposal or reuse at a batch plant. Washout may also be allowed to evaporate/harden for disposal in accordance with all applicable local, state, and federal regulations.

15. Permanent Controls
Permanent stormwater treatment practices are constructed to maintain water quality, preserve existing water table elevations, prevent downstream flooding, and are often required for a project under a Vermont operational stormwater discharge permit applicable to the construction or redevelopment of impervious surfaces.*

Permanent Stormwater Treatment Practices (STPs) include infiltration and filtering practices as well as detention ponds and treatment wetlands. It is critical that infiltration practices do not receive runoff until the site area has reached final stabilization.

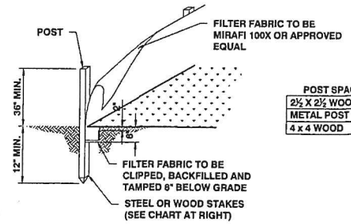
The outlet of permanent controls that are used as temporary storage and sediment basins during construction constitutes a potential discharge point and therefore must be managed to minimize and prevent sediment laden stormwater discharges. These practices will often need to be reshaped to meet the operational design criteria for volumes, grades and geometry once final grading and stabilization has occurred.

16. Inspection, Maintenance, and Discharge Reporting
Site inspections are required to ensure that all erosion prevention and sediment control practices are sufficient and functioning properly. Regular inspections and maintenance of practices will help to reduce costly repairs and minimize the risk to water quality from construction stormwater discharges.

Requirements:
Inspect the site at least once every 7 days and after every rainfall or snowmelt that results in stormwater runoff. Perform maintenance to ensure that practices are functioning according to the specifications outlined in this handbook. In the event of a visibly turbid discharge from the construction site, you must take immediate action to inspect and maintain existing erosion prevention and sediment control practices. Additional erosion prevention and sediment control measures must be installed as necessary, including temporary stabilization, to minimize and prevent the discharge of sediment laden stormwater runoff. If after maintaining and supplementing BMPs, a discharge of visibly discoloured stormwater from the construction site to surface waters continues, the permittee is required to notify DEC within 24 hours.

While documentation of a routine inspection is not required, example inspection forms and forms for required discharge reporting are available at the Stormwater Program website. Permittees shall review Construction General Permit 3-9020 for all discharge reporting requirements. A copy of the Low Risk Site Handbook shall be kept on-site. Daily inspections are required from October 15 through April 15.

E-003 Silt Fence



POST SPACING	
2½ X 2½ WOOD	2.5'
METAL POST	10'
4 x 4 WOOD	10'

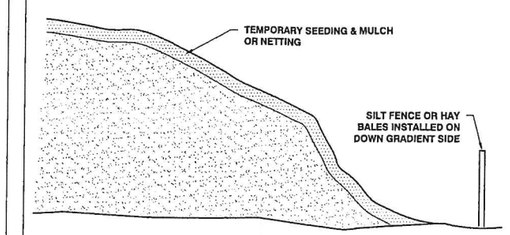
NOTES:

1. INSTALL MIRAFI ENVIROFENCE, OR APPROVED EQUAL OR AS DETAILED HEREIN.
2. INSTALL SILT FENCES AT TOES OF ALL UNPROTECTED SLOPES AND AS PARALLEL TO CONTOURS AS POSSIBLE. THIS INCLUDES ALL FILLED OR UNPROTECTED SLOPES CREATED DURING CONSTRUCTION, NOT NECESSARILY REFLECTED ON THE FINAL PLANS. CURVE THE ENDS OF THE FENCE UP INTO THE SLOPE. REMOVE SEDIMENT WHEN ACCUMULATED TO HALF THE HEIGHT OF THE FENCE. SILT FENCES ARE TO BE MAINTAINED UNTIL SLOPES ARE STABILIZED.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6", FOLDED AND STAPLED.

SILT FENCE DETAIL
N.T.S.

E-003 REVISED 08/01/2014

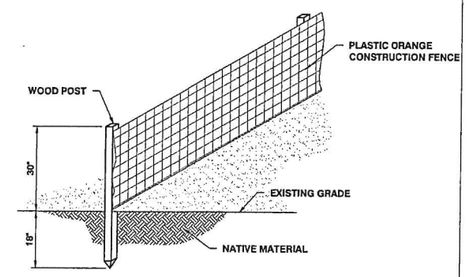
E-005 Stockpile



TEMPORARY STOCKPILE DETAIL
N.T.S.

E-005 REVISED 08/01/2014

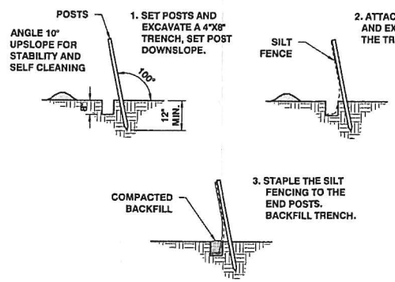
E-002 Constr Fence



CONSTRUCTION FENCE DETAIL
N.T.S.

E-002 REVISED 08/01/2014

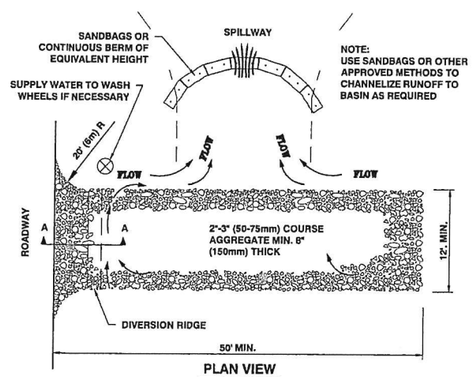
E-007 Infilt Sect



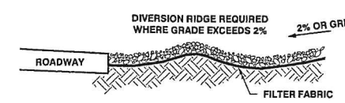
SILT FENCE CONSTRUCTION DETAIL
N.T.S.

E-007 REVISED 08/01/2014

E-004 Constr Ent



PLAN VIEW



SECTION A-A

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

STABILIZED CONSTRUCTION ENTRANCE
N.T.S.

E-004 REVISED 08/01/2014

E-001 EC Sheet

ADD Projects\2021\21105\1-CADD Files-21105\dwg\21105-site.dwg, 4/27/2021 10:06:03 AM, DWG To PDF.pc3

SITE ENGINEER:
CIVIL ENGINEERING ASSOCIATES, INC.
10 MANSFIELD VIEW LANE, SOUTH BURLINGTON, VT 05403
P: 802-864-2323 FAX: 802-864-2271 web: www.cea-vt.com

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DRAWN MAB
CHECKED JLM
APPROVED JLM

CLIENT:
NORTHEAST CRAFTSMAN
TOM LEBOEUF
79 HYDE STREET
BURLINGTON, VERMONT
05401

PROJECT:
136 SUNSET CLIFF CAMP, LLC
136 SUNSET CLIFF ROAD
BURLINGTON VERMONT
05408

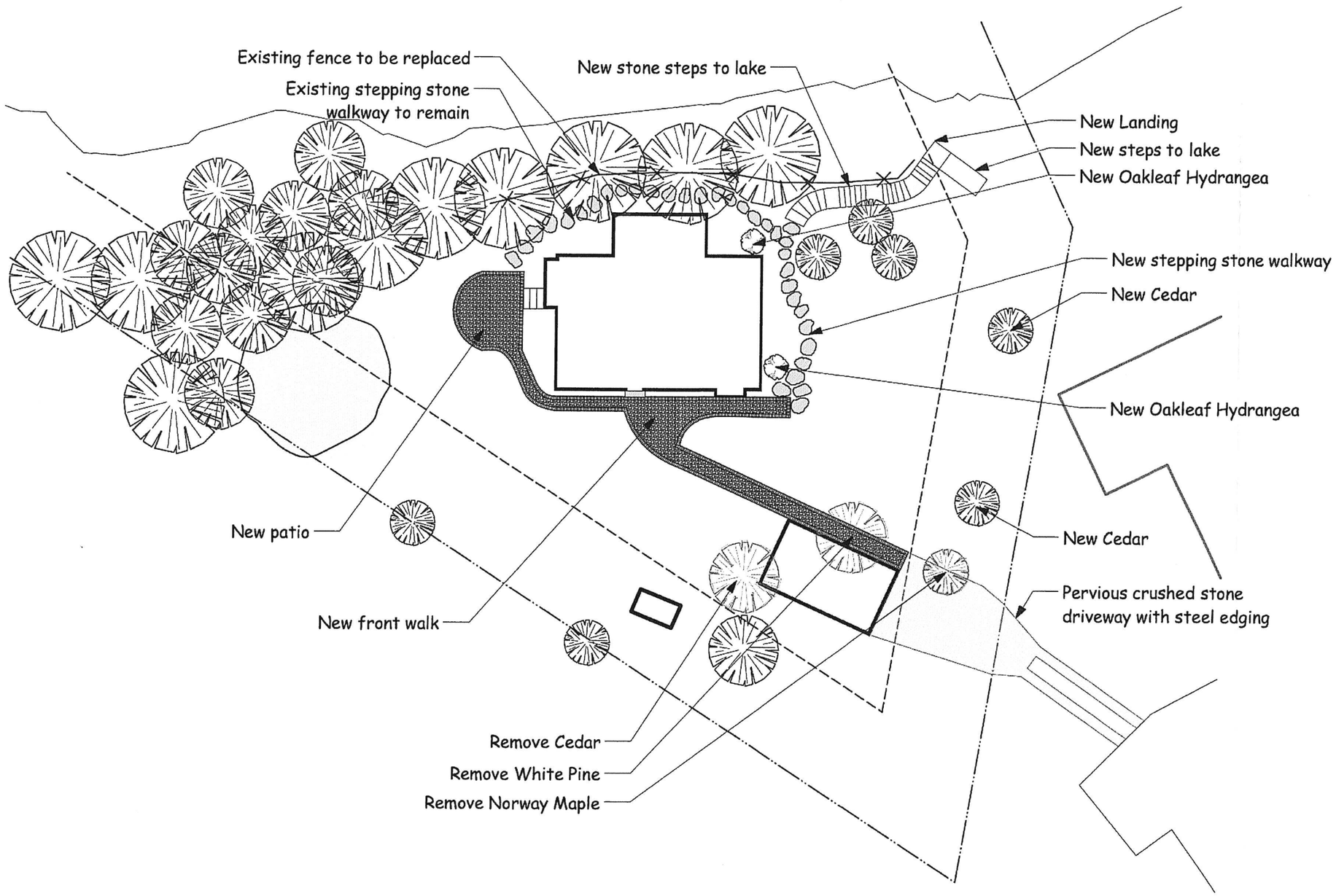
MULCH NOTE:
MULCH FOR PURPOSES OTHER THAN HYDROSEEDING WILL BE CLEAN STRAW, FREE FROM WEEDS. HAY MULCH WILL NOT BE ALLOWED TO AVOID THE SPREAD OF NOXIOUS WEEDS SUCH AS WILD PARSNIP.

1" = 2000'

DATE	CHECKED	REVISION

EPSC DETAILS AND SPECIFICATIONS

DATE 04/27/2021
SCALE 1" = 10'
PROJ. No. 21105
DRAWING NUMBER C2.1



Design David
Drawn David
Checked David

Scale: 1"=20'
Date: 4/26/21

Revision Description and Date:

Sheet Title Landscape Plan
Client / Project Sunset Cliff Camp

DISTEFANO LANDSCAPING
302 Colchester Road Essex Junction, VT
802-279-5900 www.distefanolandscaping.com

C:\Users\adam\Dropbox\agins dicb OFFICE\PROJECTS\2020 STEELE\REVIT\2020 STEELE.rvt

COVERAGE

1244 SQ.FT. EXISTING HOUSE
1224 SQ.FT. PROPOSED HOUSE
-20 SQ.FT. PROPOSED

340 SQ.FT. EXISTING GARAGE
336 SQ.FT. PROPOSED GARAGE
-4 SQ.FT. PROPOSED

EXISTING IMPERVIOUS TO BE REMOVED
555 SQ.FT.EXISTING DRIVEWAY AND PATH
110 SQ.FT EXISTING PATH AND LANDING TO BEACH
80 SQ.FT. EXISTING PATH AROUND HOUSE WEST
745 SQ.FT. TOTAL REMOVED

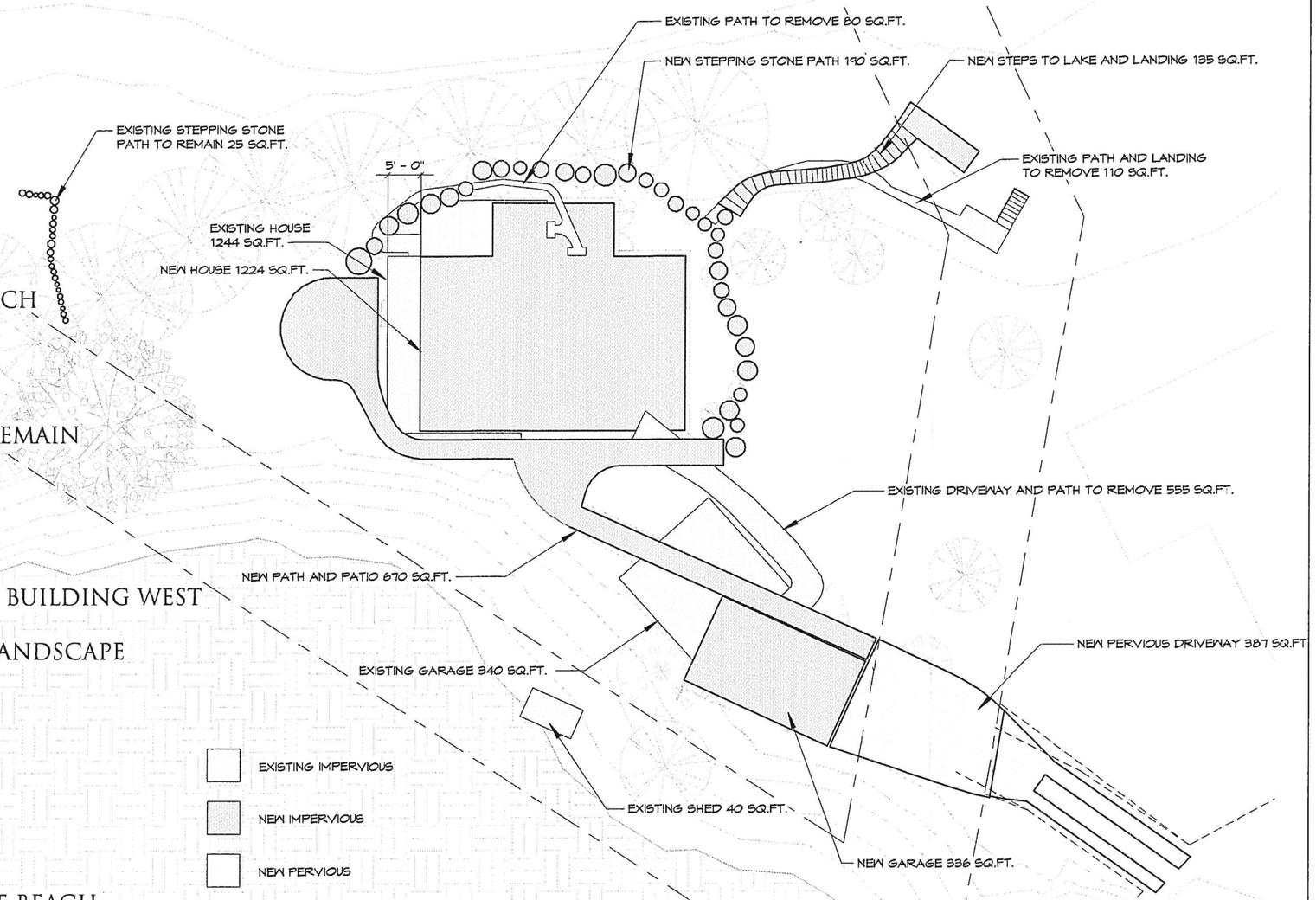
EXISTING IMPERVIOUS TO REMAIN
25 SQ.FT. EXISTING STONE STEPS TO BEACH TO REMAIN
40 SQ.FT. EXISTING SHED TO REMAIN
65 SQ.FT. TOTAL TO REMAIN

NEW PROPOSED IMPERVIOUS LANDSCAPE
670 SQ.FT. NEW PATH AND PATIO
190 SQ.FT. NEW STEPPING STONE PATH AROUND BUILDING WEST
135 SQ.FT. NEW PATH AND LANDING TO BEACH
995 SQ.FT. TOTAL PROPOSED NEW IMPERVIOUS LANDSCAPE

NEW PROPOSED PERVIOUS LANDSCAPE
387 SQ.FT. NEW PERVIOUS DRIVEWAY

EXISTING IMPERVIOUS SITE COVERAGE
1244 SQ.FT. EXISTING HOUSE
340 SQ.FT. EXISTING GARAGE
555 SQ.FT.EXISTING DRIVEWAY AND PATH
110 SQ.FT. EXISTING PATH AND LANDING TO THE BEACH
40 SQ.FT. EXISTING SHED TO REMAIN
25 SQ.FT. EXISTING STEPS TO BEACH
80 SQ.FT. EXISTING PATH AROUND HOUSE WEST
2394 SQ.FT. TOTAL

PROPOSED IMPERVIOUS SITE COVERAGE
1224 SQ.FT. PROPOSED HOUSE
336 SQ.FT. PROPOSED GARAGE
670 SQ.FT. PROPOSED PATH AND PATIO
190 SQ.FT. NEW STEPPING STONE PATH AROUND BUILDING WEST
135 SQ.FT. NEW PATH AND LANDING TO BEACH
40 SQ.FT. EXISTING SHED TO REMAIN
2595 SQ.FT. TOTAL



1 LOT COVERAGE & BUILDINGS SQ.FT. PLAN
1" = 20'-0"

EXISTING IMPERVIOUS COVERAGE = 2394 SQ.FT.
PROPOSED IMPERVIOUS COVERAGE = 2595 SQ.FT.
ALLOWABLE LOT COVERAGE = 35% OF 15910 SQ.FT. = 5568 SQ.FT.
PROPOSED IMPERVIOUS COVERAGE = 2595 SQ.FT. / 15910 SQ.FT. = 16.3%

4/7/2021 11:34:04 AM

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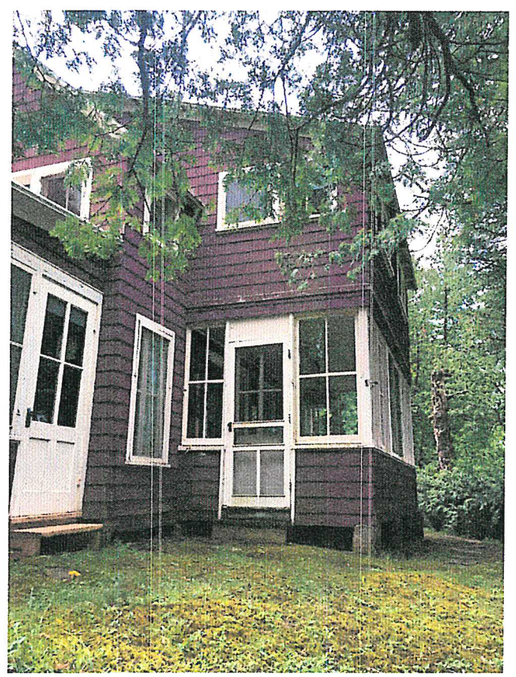
EXISTING HOUSE FROM NORTH

EXISTING HOUSE FROM EAST

EXISTING HOUSE FROM SOUTH



EXISTING HOUSE FROM NORTHWEST

EXISTING GARAGE FROM EAST
WITH HOUSE BEYOND

EXISTING HOUSE SHOWING PROXIMITY
TO CLIFF AND LAKE

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LEWIS CREEK

PROJECT NOTES:

THIS PLAN SET, COMBINED WITH THE CONTRACT, PROVIDES CONSTRUCTION DETAILS FOR THE BUILDING PROJECT. THE LEAD CARPENTER SHALL VERIFY THAT SITE CONDITIONS, AND DIMENSIONS ARE CONSISTENT WITH THESE PLANS BEFORE STARTING WORK. WORK NOT SPECIFICALLY DETAILED SHALL BE CONSTRUCTED TO THE SAME QUALITY AS SIMILAR WORK THAT IS DETAILED. ALL WORK SHALL BE DONE IN ACCORDANCE WITH INTERNATIONAL BUILDING AND LOCAL CODES.

WRITTEN DIMENSIONS AND SPECIFIC NOTES SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND GENERAL NOTES. THE SALE PERSON/DESIGNER SHALL BE CONSULTED FOR CLARIFICATION IF SITE CONDITIONS ARE ENCOUNTERED THAT ARE DIFFERENT THAN SHOWN, IF DISCREPANCIES ARE FOUND IN THE PLANS OR NOTES, OR IF A QUESTION ARISES OVER THE INTENT OF THE PLANS OR NOTES. CARPENTER OR SUB-CONTRACTOR SHALL VERIFY AND IS RESPONSIBLE FOR ALL DIMENSIONS (INCLUDING ROUGH OPENINGS).
ALL TRADES SHALL MAINTAIN A CLEAN WORK SITE AT THE END OF EACH WORK DAY.

INDEX OF DRAWINGS

TITLE	SHEET
PROJECT SUMMARY	1
FIRST FLOOR PLAN	2
SECOND FLOOR PLAN	3
BASEMENT PLAN	4
EAST ELEVATION	5
SOUTH ELEVATION	6
WEST ELEVATION	7
NORTH ELEVATION	8

Lewis Creek Company
18a Morse Drive, Essex Junction, VT 05452

49 Fletcher Place Burlington, VT 05401

PROJECT SUMMARY

REVISED:

SHEET # 1

EAST ELEVATION
SCALE: 1/4" = 1'

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Lewis Creek Company 18a Morse Drive, Essex Junction,VT 05452	49 Fletcher Place Burlington, VT 05401	EAST ELEVATION	REVISED:	SHEET #

SOUTH ELEVATION
SCALE: 1/4" = 1'

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BURLINGTON
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Lewis Creek Company 18a Morse Drive, Essex Junction,VT 05452	49 Fletcher Place Burlington, VT 05401	SOUTH ELEVATION	REVISED:	SHEET #

WEST ELEVATION
SCALE: 1/4" = 1'

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BURLINGTON
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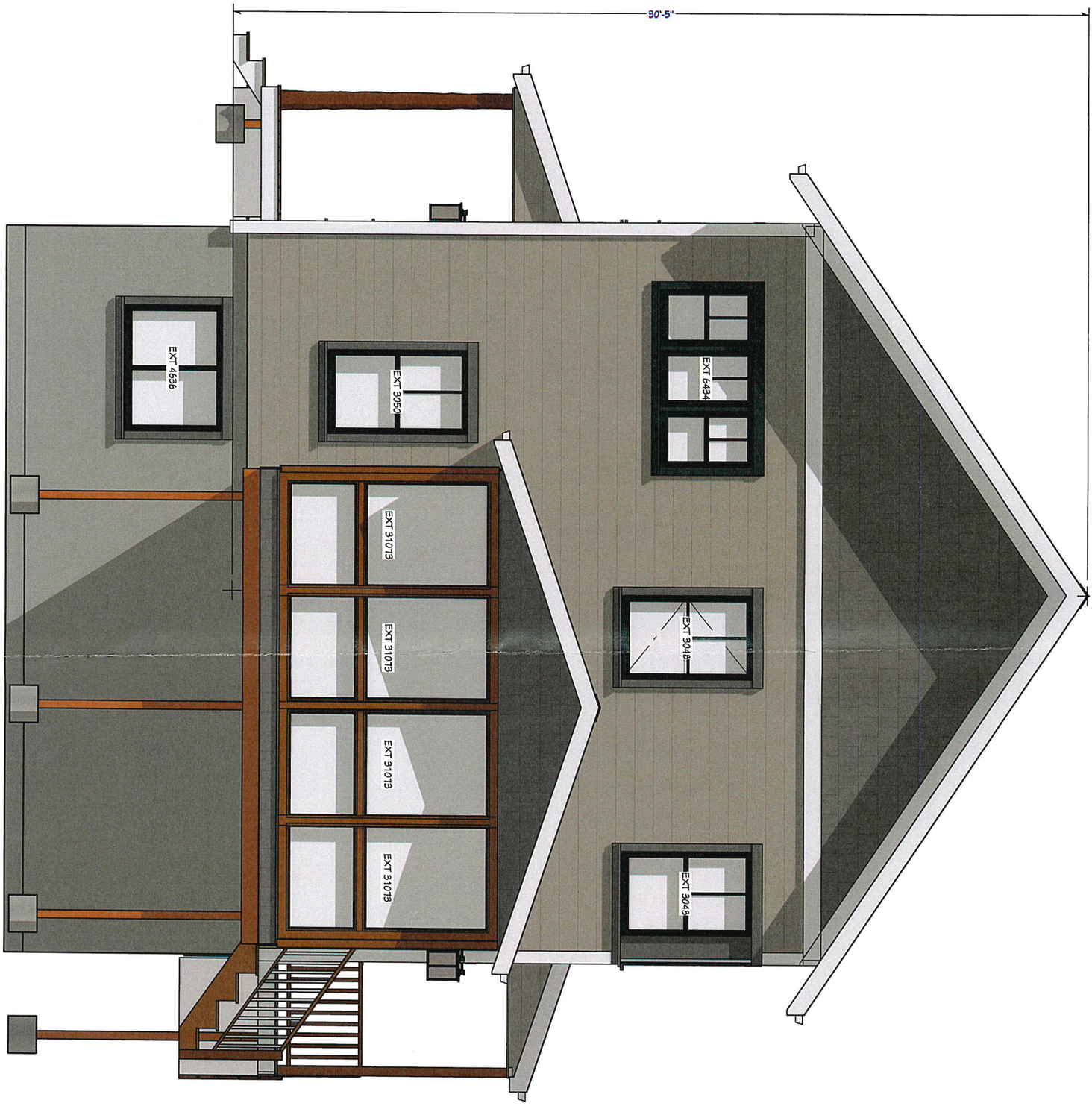
Lewis Creek Company 18a Morse Drive, Essex Junction,VT 05452	49 Fletcher Place Burlington, VT 05401	WEST ELEVATION	REVISED:	SHEET #



NORTH ELEVATION
SCALE: 1/4" = 1'

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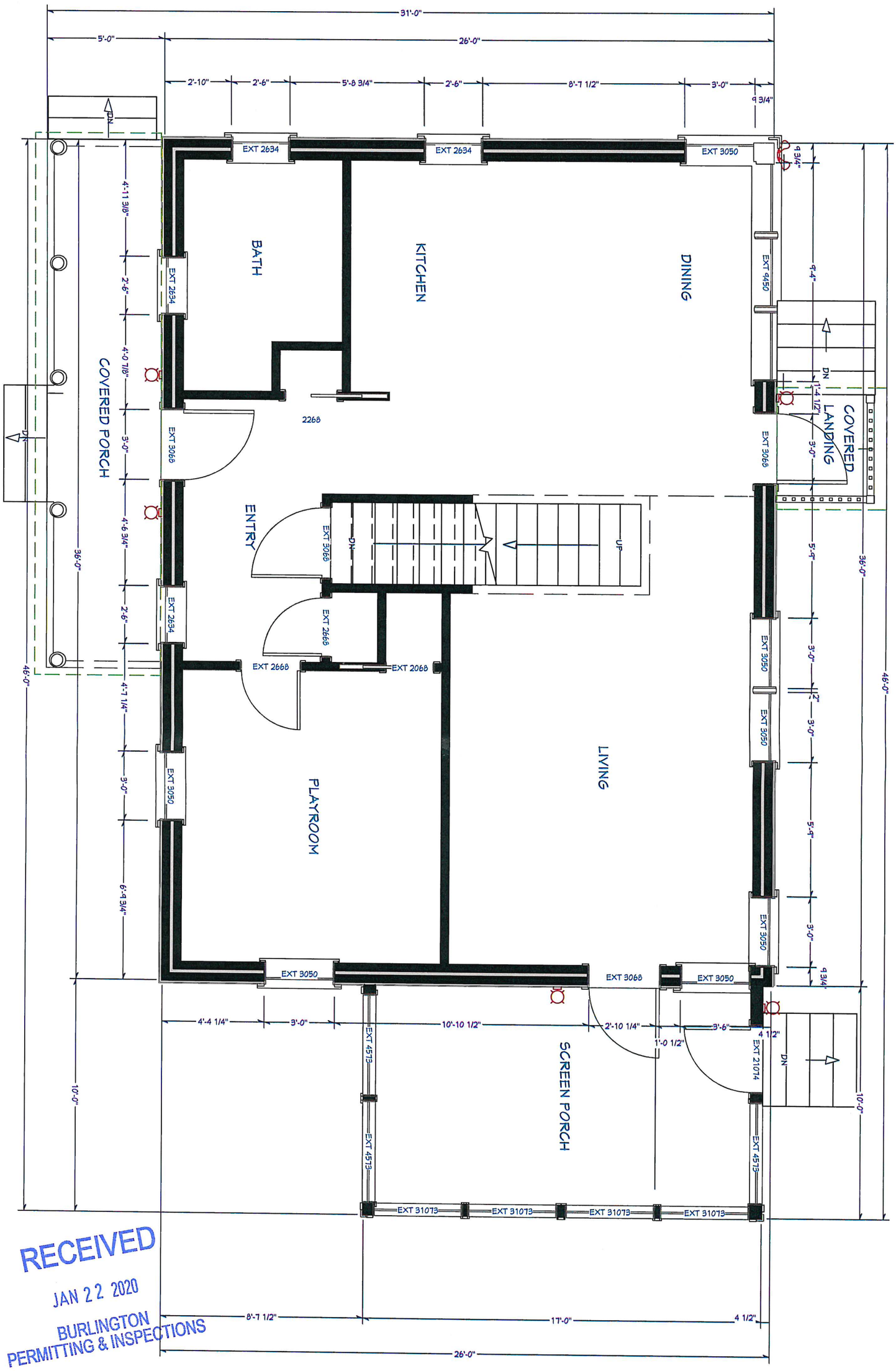
Lewis Creek Company 18a Morse Drive, Essex Junction,VT 05452	49 Fletcher Place Burlington, VT 05401	NORTH ELEVATION	REVISED:	SHEET #



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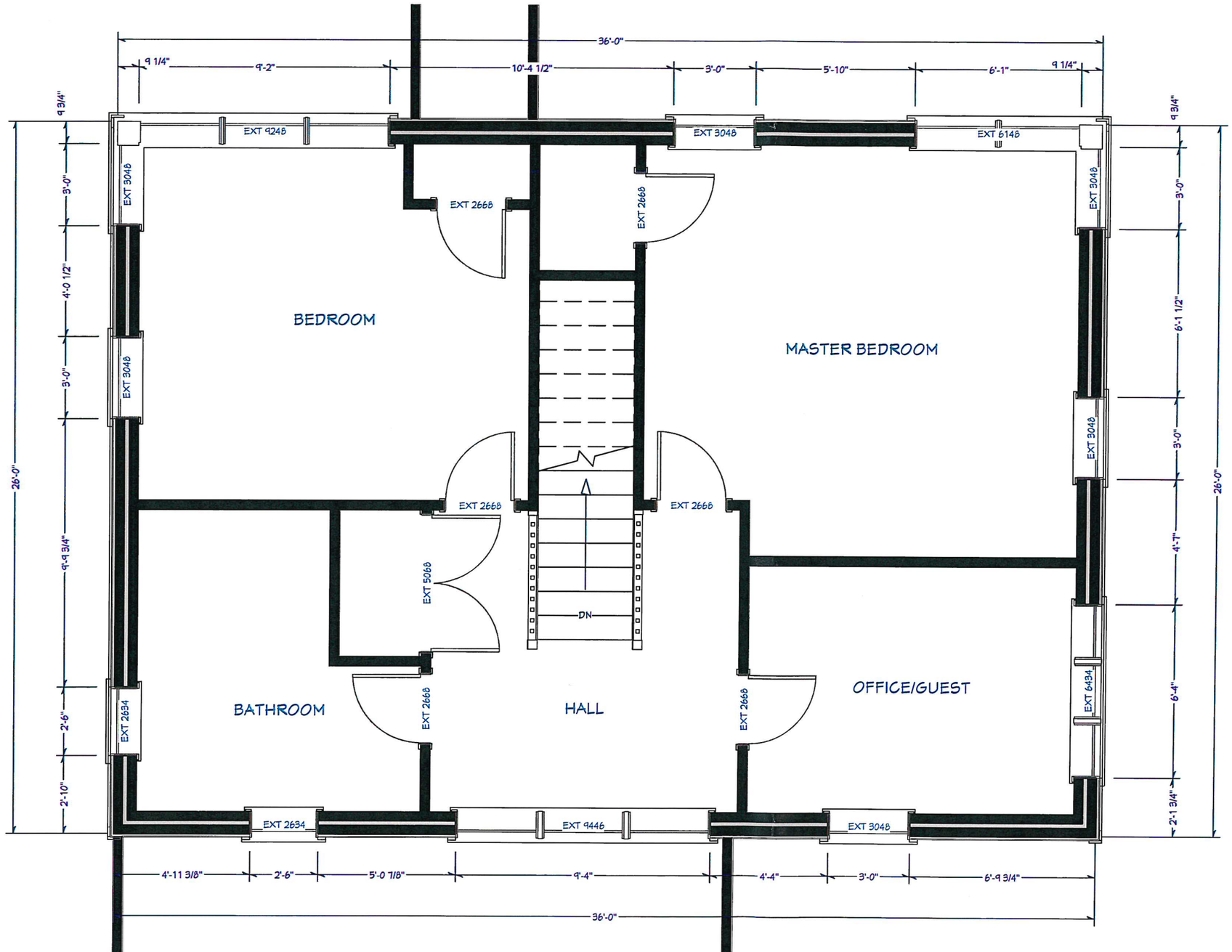
Lewis Creek Company
18a Morse Drive, Essex Junction,VT 05452

49 Fletcher Place Burlington, VT 05401

FIRST FLOOR PLAN

REVISED:

SHEET #



LIVING AREA
889 SQ FT

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PERMITTING & INSPECTIONS

SHEET #

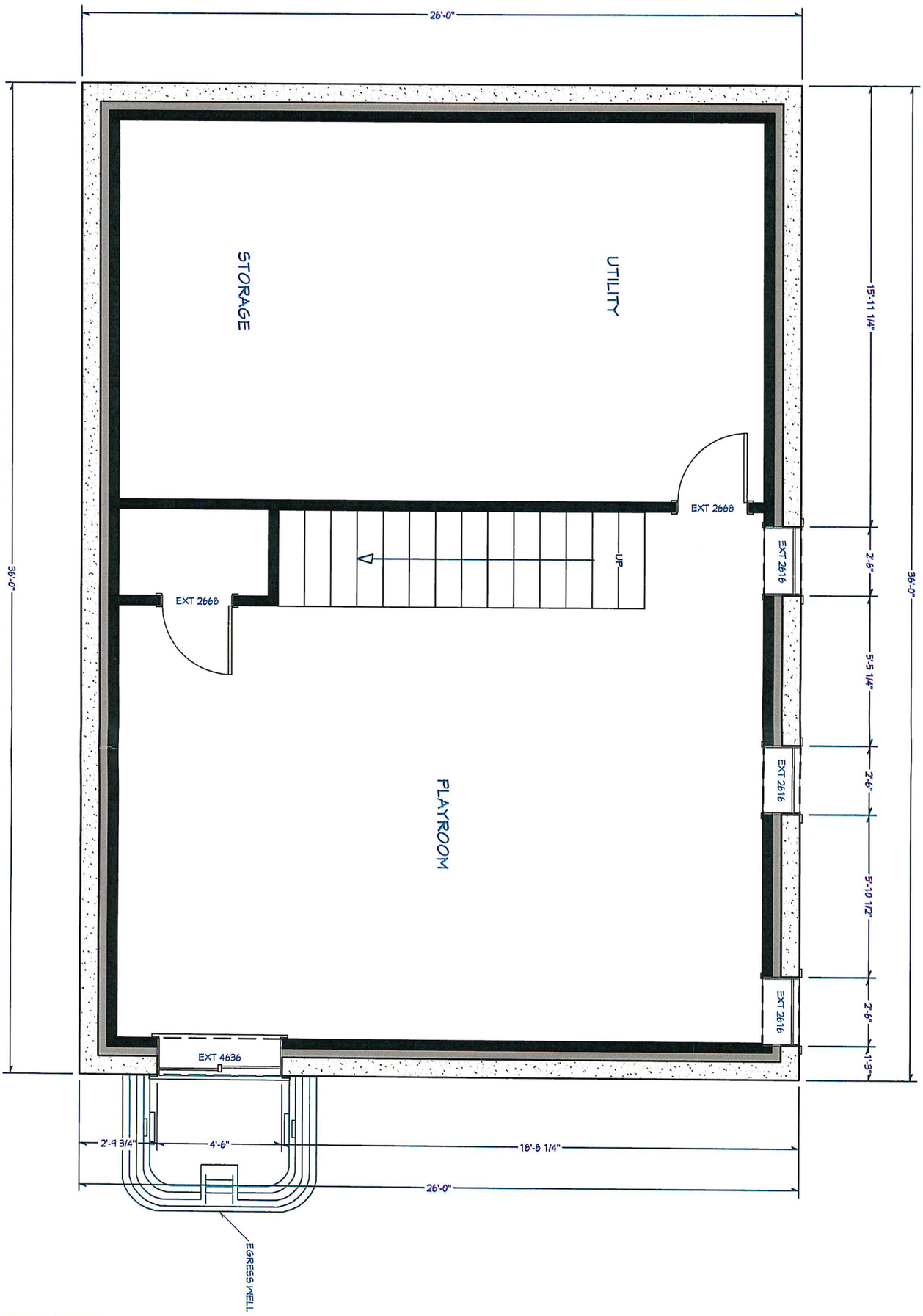
REVISED:

SECOND FLOOR PLAN

49 Fletcher Place Burlington, VT 05401

Lewis Creek Company
18a Morse Drive, Essex Junction,VT 05452

Elevation 2



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PERMITTING & INSPECTIONS

Lewis Creek Company 18a Morse Drive, Essex Junction,VT 05452	49 Fletcher Place Burlington, VT 05401	BASEMENT PLAN	REVISED:	SHEET #

Sea Gull Lighting®
Life Illuminated | Since 1919

Job Name:

Job Type:

Comments:

Quantity:

Product Number: 88881-51

88881-51 - One Light Outdoor Wall Lantern

Collection: Medford Lakes

Medium Outdoor Lantern in Statuary Bronze Finish with Etched Hammered with Light Amber Glass Shade

UPC #: 785652888816

Product Type: Outdoor Wall Lantern

Finish: Statuary Bronze (51)

Dimensions:

Length:	9"	**Extends:**	10"
Width:	9"	**Wire:**	6 1/2"
Height:	14"	**Switch Type:**	N/A
		Mounting Proc.:	Cap Nuts
		Outlet Box:	Mounted To Box

Bulbs:

1 - Medium A - Line 100w max 120v - Not included

Material List:

1 Body - Aluminum - Statuary Bronze

Saftey Listing:

ETL Listed for Wet Locations

Instruction Sheets

French (F-010)
English (HC-1507)

Shade / Diffuser

Part	Material	Finish	Quantity	Item Number	Length	Width	Height	Diameter	Fitter Diameter	Shade Top Length	Shade Top Width	Shade Top Diameter
Shade	Glass	Etched Hammered with Light Amber	1									

Backplate / Canopy

Type	Height/ Length	Width	Depth	Diameter	Outlet Box Up	Outlet Box Down
Back Plate	7	4 1/2	7/8		8 1/2	5 1/2

Shipping Information

Package Type	Quantity	UPC	Length	Width	Height	Cube	Weight	UPS Ship	Label
Individual	1	785652888816	12	11	16.5	1.26	7.5	Yes	A IP-1
NJ Pallet	56		48	40	77	85.556	420	No	
NV Pallet	56		48	40	77	85.556	420	No	

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Sea Gull Lighting reserves the right to revise the design of components of any product due to parts availability or change in safety listing standards without assuming any obligation or liability to modify any products previously manufactured and without notice. This literature depicts a product design that is the sole and exclusive property of Sea Gull Lighting. In compliance with U.S copyright and patent requirements, notification is hereby presented in this form that this literature,

DOUBLE SPOT Endurance

WP-LED430

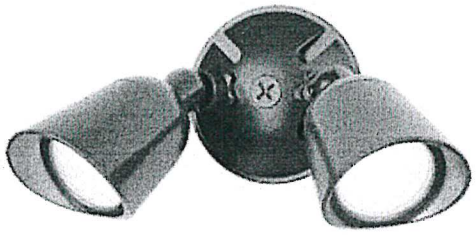
WAC LIGHTING

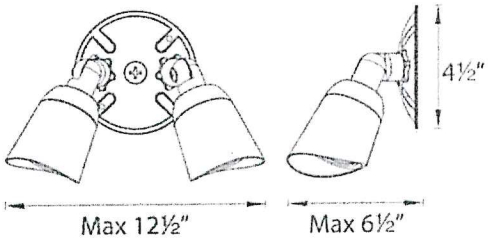
Fixture Type:

Catalog Number:

Project:

Location:





PRODUCT DESCRIPTION

Die cast aluminum factory sealed housings with patent pending design for a water and dust proof IP66 rated outdoor luminaire

FEATURES

- Factory-Sealed LED Light Engine
- Die-cast aluminum construction
- Photo/Motion Sensor Compatible (Sold Separately)
- 120V Direct Wire - No Driver Needed
- 85 CRI
- 39,000 hour rated life

SPECIFICATIONS

Construction: Die-cast aluminum

Power: Line Voltage input (120V)

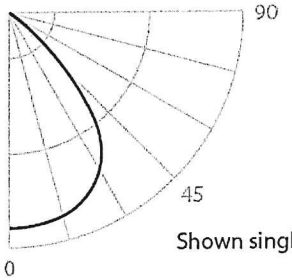
Dimming: 100% - 10% with Electronic Low Voltage (ELV) dimmer

Finish: Architectural Black, Bronze, White and Graphite

Standards: IP66, Wet Location, ETL & cETL Listed

Operating Temperature: -40°C (-40°F) to 40°C (104°F)

PHOTOMETRY



Shown single light

ORDER NUMBER

Model		Wattage	Comparable	Color temp		Delivered Lumens	Finish	
WP-LED430	*Double Spot*	*30W*	*2 x 75W*	**30**	*3000K*	*965 x 2*	**aBK**	*Architectural Black*
				50	*5000K*	*1030 x 2*	**aBZ**	*Architectural Bronze*
							aGH	*Architectural graphite*
							aWT	*Architectural White*

Example: **WP-LED430-50-aBK**

waclighting.com
Phone (800) 526.2588
Fax (800) 526.2585

Headquarters/Eastern Distribution Center
44 Harbor Park Drive
Port Washington, NY 11050

Central Distribution Center
1600 Distribution Ct
Lithia Springs, GA 30122

Western Distribution Center
1750 Archibald Avenue
Ontario, CA 91760

WAC LIGHTING retains the right to modify the design of our products at any time as part of the company's continuous improvement program. Feb 2018

PRODUCT DATA SHEET

H3 Double Hung

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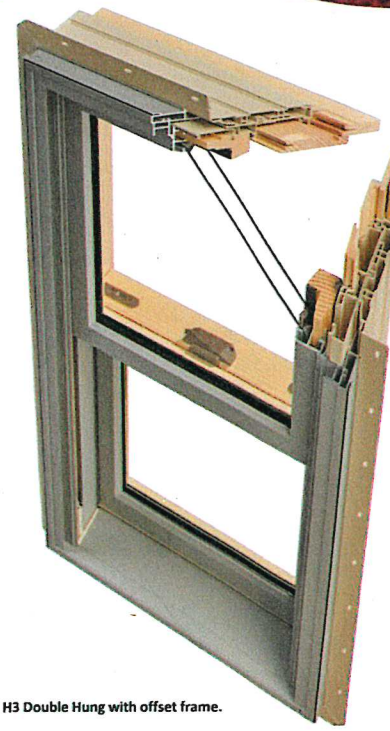
BURLINGTON
PERMITTING & INSPECTIONS

SIERRA PACIFIC WINDOWS

At the core of the H3 Double Hung is our patented Fusion Technology™. It integrates three materials—extruded aluminum, vinyl and solid wood—into one complete window. This unique fusion results in improved durability and performance, noticeably enhanced aesthetics, an extreme seal and easier installation.



Pictured: H3 Double Hung with offset frame.

Standard Construction:

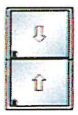
- 0.055" thick extruded aluminum exterior.
- Hidden, extra-strong 0.078" thick extruded vinyl main frame with integral nail fin, fully welded at four corners for air and water tight seal.
- 5-3/4" overall frame depth with standard solid 4-9/16" jamb depth.
- 1-3/4" sash thickness, with narrow 1-5/8" stile and rail and 1-1/8" architectural sash setback.
- Seamless factory mulling up to 5-wide (120") with continuous head and sill with mull post. Optional factory box (jamb-to-jamb) mulling up to 4-wide (132").
- Both sash operate and tilt in for easy cleaning.
- Concealed jamb liners with constant force balances.
- Innovative, narrow profile, removable Flexscreen.

MINIMUM / MAXIMUM FRAME SIZES

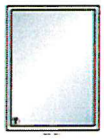
Custom sizing available in 1/16" increments. Additional sizes may be available upon approval.

H3 DOUBLE HUNG - OPERATING		H3 DOUBLE HUNG – PICTURE	
Minimum Frame Width	17.5"	Minimum Frame Width	13.5"
Minimum Frame Height	35.5"	Minimum Frame Height	35.5"
Maximum Frame Width	47.5"	Maximum Frame Width	84"
Maximum Frame Height	83.5"	Maximum Frame Height	84"
		Maximum Square Feet	42

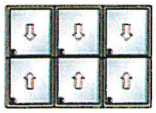
Performance Data:



H3 Double Hung: 47.5"x 83.5"
AIR INFILTRATION.....0.05/0.03/A3
WATER.....NO LEAKAGE @7.52 PSF
STRUCTURAL.....LC-PG50 (+50/-50)



H3 Double Hung Picture: 71.5" x 83.5"
AIR INFILTRATION...0.06/0.02/A3
WATER.....NO LEAKAGE @ 5.43PSF
STRUCTURAL.....CW-PG35 (+35/-35)**



H3 Double Hung: 119.5" x 83.5" (3-wide Unit)
AIR INFILTRATION.....0.06/0.06/A3
WATER.....NO LEAKAGE @ 5.43 PSF
STRUCTURAL.....LC-PG35 (+35/-35)*

*Unit size will meet LC-PG50 with installation straps.
**Unit size will meet CW-PG50 if quoted with performance upgrades.

For a comprehensive list of tested and rated sizes and configuration please refer to the H3 Double Hung Product Performance Guide (Structural) located in the Technical Resources Library on our websit

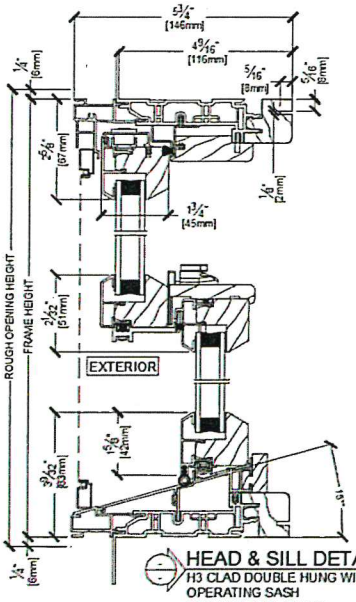
Thermal Performance (NFRC):

Air Filled			Argon Filled		
Low-E Clear	**Low-E 366**	**Triple IG LE/CL/LE**	**Low-E Clear**	**Low-E 366**	**Triple IG LE/CL/LE**
U-FACTOR.....0.33	U-FACTOR.....0.33	U-FACTOR.....0.27	U-FACTOR.....0.30	U-FACTOR.....0.30	U-FACTOR.....0.24
SHGC.....0.28	SHGC.....0.21	SHGC.....0.27	SHGC.....0.28	SHGC.....0.21	SHGC.....0.27
VT.....0.52	VT.....0.49	VT.....0.43	VT.....0.52	VT.....0.49	VT.....0.43
CR.....52	CR.....52	CR.....62	CR.....53	CR.....56	CR.....65

All values represent insulated glass units using standard black warm edge spacer. Additional glazing options available.

For a comprehensive list of glazing configurations, please refer to the H3 Double Hung Product Performance Guide (NFRC) located in the Technical Resources Library on our website.

Operating
FLUSH FRAME - 4 9/16" JAMB W/ Kerf



HEAD & SILL DETAIL
H3 CLAD DOUBLE HUNG WINDOW
OPERATING SASH
3/4" STD INSUL GLASS

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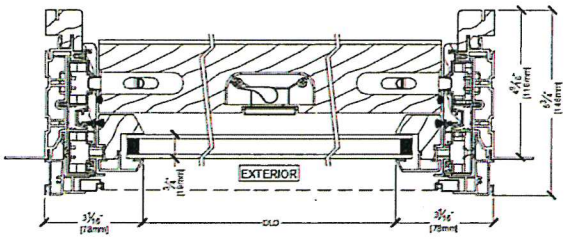
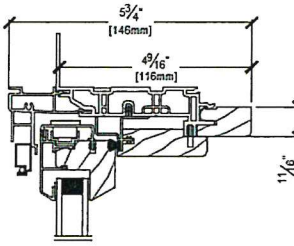
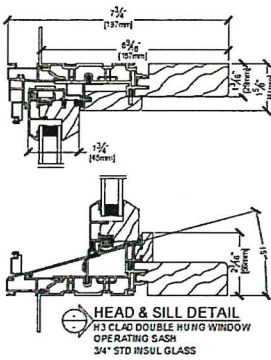


JAMB DETAIL AT CHECKRAIL
H3 CLAD DOUBLE HUNG WINDOW
OPERATING SASH

Operating
OFFSET FRAME - 4 9/16" JAMB

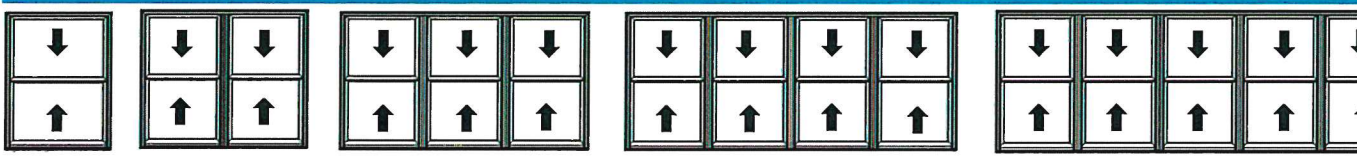


Operating
FLUSH FRAME - 6 9/16" JAMB (1 PIE



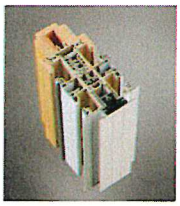
HEAD & SILL DETAIL
H3 CLAD DOUBLE HUNG WINDOW
OPERATING SASH
3/4" STD INSUL GLASS

Additional product details may be found on our website www.sierrapacificwindows.com/ProfessionalResources/TechnicalLibrary



Typical configurations shown. Contact us for additional options.

Factory mulling up to 5-wide (120") continuous head & sill with mull post. Up to 4-wide (132") as tight (jamb-to-jamb) box mulls.

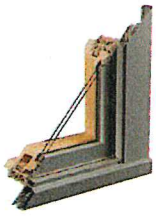


Continuous Head & Sill Mull Post

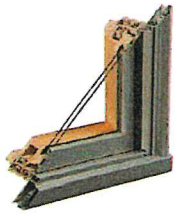
Tight Mull

¼" Plate Mull

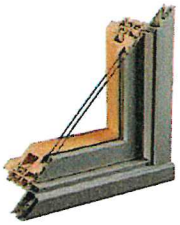
OPTIONAL EXTERIOR CASINGS



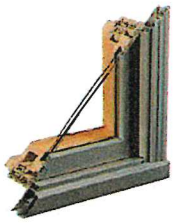
3.5" Flat Casing



2" Ovalo



2" Flat Casing



2" Brickmould

H3 Double Hung Additional Features

- Color Palette of 75 colors in powder coated AAMA 2604, optional AAMA 2605.
- Extensive offering of performance glass available in black warm edge or Cardinal spacer for optimum efficiency.
- Grille options including Simulated Divided Lites and Grilles-Between-Glass.
- Factory finished Ultra Coat Paint or Ultra Stain interior.

Please visit our website www.sierrapacificwindows.com for additional details or to contact your nearest Sierra Pacific Branch or Dealer location.

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SHORT FORM SPECIFICATIONS / PRODUCT SUMMARY
H3 DOUBLE HUNG WINDOWS

EXTERIOR FINISH: Pre-treated aluminum surface has a baked-on, electrostatically applied super durable polyester powder paint, zero-VOC finish. Exterior cladding is 0.055" (1.39mm) thick extruded aluminum. Conforms to the requirements of AAMA test procedures 2604 & 2605.

- Specify Standard Cladding Exterior, AAMA 2604 or AAMA 2605
  - ColorStay™ Collection (45 colors)
  - Weathered Collection (8 colors)
- Specify Standard Cladding Exterior, AAMA 2604 only
  - Textured Collection (5 colors)
- Specify Standard Cladding Exterior, AAMA 2605 only
  - Pearl Metallic Collection (5 colors)
  - Industrial Collection (2 colors)
  - Custom Special Color match
- Specify Standard Cladding Exterior, AAMA 611 Standard Anodized Finish

Clear	Dark Bronze	Medium Bronze
Black	Copper	

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INTERIOR FINISH: Exposed interior wood surfaces are natural pine wood (standard).

- Specify Interior Wood Species

Ponderosa Pine (Standard)	Alder	Cherry
Vertical Douglas Fir	Mahogany	Maple
Red Oak	Black Walnut	White Oak

*Other Species Upon Request and Availability

- Specify Interior Finish

Natural	Primed
Ultra Coat – White or Black	Ultra Coat – Custom Color Match Paint
Ultra Stain – Clear Coat	Ultra Stain – Espresso
Ultra Stain – Toffee	Ultra Stain – Custom Color Match

*Ultra Coat is an interior paint finish utilizing a specially formulated two-part catalyzed polyurethane paint finish.

* Ultra Stain is a water-based interior stain finish formulated to provide intense, rich color tones while maintaining uniformity of color and appearance.

FRAME:

- Overall frame thickness is 1-11/16" (43mm).
- Basic jamb depth is 4-9/16" (116mm) standard; additional jamb depths available include:

4-3/4" (121mm)	5" (127mm)	5-1/8" (130mm)
5-5/16" (135mm)	6-7/16" (164mm)	6-9/16" (167mm)
6-11/16" (170mm)	7" (178mm)	7-1/8" (181mm)
7-1/4" (184mm)	7-5/16" (186mm)	7-3/8" (187mm)
8-1/8" (206mm)		

- Overall frame depth is 5-3/4" (147mm).
- Frame is select pine as standard; solid or finger-jointed with veneer, kiln-dried to a moisture content of 6-12% at time of fabrication. Treated with CoreGuard™ water-repellent preservative treated in accordance with WDMA I.S. 4 standards. Additional wood species available as noted under INTERIOR FINISH above.
- Vinyl main frame wall thickness of .078" (1.98mm); welded corner joints.
- Frames completely assembled with sash installed.
- Frame head, sill and jambs are clad with 0.055" (1.39mm) extruded aluminum; mitered corners with screw boss construction.
- Integral installation nailing fins.
- 15 degree sloped sill.

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- Weep system.
- Common mull (continuous head and sill frame) standard – eliminates need for drip cap; reduces risk of water penetration. 5-wide maximum.
- Option for factory box mulls; jamb-to-jamb or reinforced with aluminum plate mull. 4-wide maximum.
- High performance mull straps available with common mull option.
- Extruded aluminum exterior tight and spread mull covers.
- Available in rectangular configurations.

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SASH:

- Sash thickness 1-3/4" (44mm).
- Sash options for standard 3/4" overall insulated glass and optional 1" overall insulated glass thickness.
- Wood sash profiles utilize mortise and tenon design.
- Aluminum sash profiles are miter cut and assembled with corner keys.
- Exterior sash is clad with 0.055" (1.4mm) extruded aluminum.
- Interlocking aluminum checkrail.
- Tilt operation for easy removal and cleaning.
- Select solid pine is standard; kiln-dried to 6-12% moisture content at time of fabrication.
- Treated with CoreGuard™ water-repellent preservative treated in accordance with WDMA I.S. 4 standards.
- Available in 50/50, 60/40 or 40/60 venting configuration.

GLAZING OPTIONS:

- Premium quality flat glass complying with ASTM C 1036.
- Sandwich-glazed with closed-cell foam glazing tape to interior and silicone sealant to the exterior.
- Factory glazed fabrication complies with requirements of Section 08810 and AAMA/WDMA/CSA 101/I.S.2/NAFS.
- Laminated and tempered glass complies with safety glazing requirements in accordance with 16 CFR 1201 for Category II materials.

Standard Glazing Options include: (90% Argon Gas Fill Unless Capillary Tubes and/or No Coatings are required)

Low-E (standard)	Clear (No Coatings)	Low-E 366
Low-E 366 w/i89 Surf #4 LE	Low-E 366 w/Preserve	Low-E 366 w/Neat & Preserve
Low-E 180 (Passive Solar)	Low-E 180 w/Preserve	Low-E 180 w/Neat & Preserve
Low-E 180 w/i89 Surf #4 LE	Triple IG (LE/Clear/Clear)	Triple IG (LE/Clear/LE)
Laminated Insul (No Coatings)	Low-E Laminated Insul	

Note: Warm Edge Spacer (Std), XL Edge Spacer (Optional), Neat and/or Preserve require XL Edge Spacer

Specialty Glazing Options include: (90% Argon Gas Fill Unless Capillary Tubes are required)

Bronze	Grey	Blue
Green	Blue Green	Azurelite
Evergreen	Solar Cool Bronze	Solar Cool Grey
Mirropane	Spandrel	

Obscure Glazing Options include: (90% Argon Gas Fill Unless Capillary Tubes are required)

Standard (Pattern 62)	Spraylite	Rain (Niagara Ann)
Narrow Reed (English Reed)	Satin Etched (Velour)	Glue Chip
White Laminated		

HARDWARE:

- Dual action cam sweep; Truth lock with Deco keeper.
- Spring loaded Deco tilt latches on top and bottom sash; comprised of zinc die-cast and high impact nylon.
- Available hardware finishes include:

Champagne	White (Standard)	Oil Rubbed Forever Bronze
Bronze	Matte Black	Bright Brass
Satin Nickel	Antique Brass	Brushed Chrome
Polished Chrome	Chestnut Bronze	

SIERRA PACIFIC WINDOWS

SHORT FORM SPECIFICATIONS / PRODUCT SUMMARY
H3 DOUBLE HUNG WINDOWS

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BALANCE SYSTEM:

- Fully concealed extruded vinyl jamb liner track; standard beige color; white optional.
- Constant force coil balance system.
- Balance capacity 60# standard with full travel up to 33".
- Concealed jamb liner utilizes aluminum and wood covers; wood cover matches interior wood species and aluminum center cover matches exterior finish color.

WEATHERSTRIP:

- T-slot PVC fin pile weatherstrip located at head parting stop and checkrail.
- Compressible bulb weatherstrip at bottom rail of bottom sash.
- T-slot PVC fin pile weatherstrip on lower center filler.
- Barbed PVC fin pile weatherstrip on top center filler.
- Adhesive backed pile weatherstrip at head of jamb liner.
- Closed cell PVC jamb liner sill gasket.

SCREEN:

- Roll form screen standard; extruded screen optional.
- Full screen standard; half screen optional.
- Pocketed screen channel for full engagement.
- Fiberglass mesh screen fabric standard; charcoal aluminum, bright aluminum or Better Vue screen fabric optional.
- Screen color to match exterior clad window color.

GRILLE / DIVIDER OPTIONS:

- Simulated Divided Lite (SDL) produced with interior wood grille to match interior wood species and exterior aluminum grille to match exterior clad color. SDL available as Interior/GIA/Exterior; Interior/Exterior; Interior Only, and Exterior Only. Standard bar widths include:

5/8" Traditional (16mm)	5/8" Putty (16mm)	5/8" Contemporary (16mm)
7/8" Traditional (22mm)	7/8" Putty (22mm)	7/8" Contemporary (22mm)
1" Traditional (25mm)	1" Putty (25mm)	1" Contemporary (25mm)
1-1/4" Traditional (32mm)	1-1/4" Putty (32mm)	
2" Traditional (51mm)	2" Putty (51mm)	

- Grille in Air Space (GIA) available in flat or contour profiles with two-tone grille options available:
  - Flat profile - 5/8"x3/16" (16mmx5mm)
  - Contour profile – 11/16"x5/16" (18mmx8mm)
  - Contour profile – 1"x5/16" (25mmx8mm)

Divider Patterns Include:

Equal	Prairie	Ladder
Craftsman	Cross	Cottage
Diamond	Special	

INTERIOR TRIM PROFILES:

Prairie: 3-1/2" (89mm)	Tradesman: 3-1/2" (89mm)	Craftsman: 3-1/2" (89mm)
Continental: 3-1/2" (89mm)	Tradesman II: 3-1/2" (89mm)	Colonial: 3-1/2" (89mm)
Regal: 3-1/2" (89mm)	Provincial: 3-1/2" (89mm)	Tudor: 3-1/2" (89mm)
Heritage: 2-3/4" (89mm)	Heritage II: 2-3/4" (70mm)	Traditional: 2-1/4" (57mm)
Contemporary: 2-1/4" (57mm)	Custom	

WARRANTY:

- Workmanship and materials: 10-year limited warranty.
- Insulating glass: 20 year limited warranty on dual insul glass; 10-year limited warranty on triple insul glass.
- Specialty glass: 5 years.

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Rev 6/18/19

- Exterior clad finish: (2604 finish) 10-year limited warranty; (2605 finish) 30/25/20 – year limited warranty.
- Interior finish: 2-year limited warranty.
- Warranty labor: 2-year limited warranty.

Please refer to the Sierra Pacific Windows Limited Warranty for wood/clad residential Products for details and exclusions.

MANUFACTURER:

- Sierra Pacific Windows, 575 S. Whelen Ave., Medford, WI 54451. Toll Free Telephone: (800)433-4873. Telephone: (715)748-2011. Web: www.sierrapacificwindows.com.

ADDITIONAL GLASS SPECIFICATIONS:

- Low-E Insul (Standard): Dual insulated glass consisting of one lite of dual layered Cardinal 272 Low-E or Guardian 70/36 silver sputter coated on surface #2 and one lite of clear glass; Argon filled unless produced with capillary tubes. Produced with warm edge spacer standard. Cardinal XL Edge spacer optional.
- Clear Insul: dual insulating glass consisting of two lites of clear glass. Produced with warm edge spacer standard. Cardinal XL Edge spacer optional.
- ¼" Laminated Insul: Dual insulated glass consisting of one lite of ¼" laminated glass produced with .030" PVB interlayer (exterior lite) and one lite of clear glass. Argon filled unless produced with capillary tubes. Produced with Cardinal XL Edge ™ spacer.
- ¼" Low-E Laminated Insul: Dual insulated glass consisting of one lite of ¼" laminated glass produced with .030" PVB interlayer (exterior lite) and one lite of dual layered Cardinal 272 Low-E on surface #5. Argon filled unless produced with capillary tubes. Produced with Cardinal XL Edge ™ spacer.
- 366 Low-E: Dual insulated glass consisting of one lite of triple layered Cardinal 366 silver sputter coated on surface #2 and one lite of clear glass. Argon filled unless produced with capillary tubes. Produced with warm edge spacer standard. Cardinal XL Edge spacer optional.
- 366 Low-E with i89: Dual insulated glass consisting of one lite of triple layered Cardinal 366 silver sputter coated on surface #2 and one lite of Cardinal i89 Low-E coating on surface #4. Argon filled unless produced with capillary tubes. Produced with warm edge spacer standard. Cardinal XL Edge spacer optional.
- Low-E 366 with Neat & Preserve ™: Dual insulated glass consisting of one lite of triple layered Cardinal 366 silver sputter coated on surface #2 and one lite of air-activated Neat™ coating applied to surface #1 & Preserve™ protective film applied to the #1 surface or #1 and #4 surface. Argon filled unless produced with capillary tubes. Produced with Cardinal XL Edge ™ spacer.
- Low-E 366 with Preserve ™: Dual insulated glass consisting of one lite of triple layered Cardinal 366 silver sputter coated on surface #2 and Preserve™ protective film applied to the #1 surface or #1 and #4 surface. Argon filled unless produced with capillary tubes. Produced with Cardinal XL Edge ™ spacer.
- Low-E 180 Passive Solar: Dual insulated glass consisting of one lite of single layer Cardinal 180 silver sputter coated on surface #3 and one lite of clear glass. Argon filled unless produced with capillary tubes. Produced with warm edge spacer standard. Cardinal XL Edge spacer optional.
- Low-E 180 Passive Solar w/i89: Dual insulated glass consisting of one lite of single layer Cardinal 180 silver sputter coated on surface #2 and one lite of Cardinal i89 Low-E coating on surface #4. Argon filled unless produced with capillary tubes. Produced with warm edge spacer standard. Cardinal XL Edge spacer optional.
- Low-E 340: Dual insulated glass consisting of one lite of triple layered Cardinal 340 silver sputter coated on surface #2. Argon filled unless produced with capillary tubes. Produced with Cardinal XL Edge ™ spacer.
- Triple Insul LE/CL/CL: Triple insulated glass consisting of one lite of Cardinal 272 Low-E on surface #2 and two lites of clear glass. Argon filled unless produced with capillary tubes. Produced with Cardinal XL Edge ™ spacer.
- Triple Insul LE/CL/LE: Triple insulated glass consisting of one lite of Cardinal 272 Low-E on surface #2; one lite of Cardinal 272 Low-E on surface #5 and one lite of clear glass. Argon filled unless produced with capillary tubes. Produced with Cardinal XL Edge ™ spacer.

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Specifications: LP® SmartSide® Lap Siding

CEDAR TEXTURE LAP

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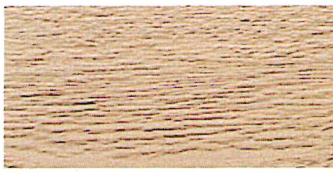
THE BOLD LOOK OF CEDAR WITHOUT MANY OF THE WORRIES

- One of the most durable lap siding options in the market today
- 16′ length can result in faster installation
- May create fewer seams than traditional 12′ siding
- Pre-primed for exceptional paint adhesion
- Self-aligning SmartLock™ option eliminates the need to measure and set lap reveal; eliminating this step in the process is likely to speed up the installation process
- APA-certified lap siding
- Treated engineered wood strand substrate

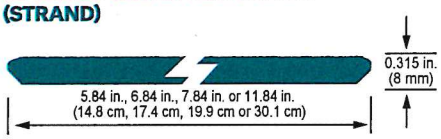


Cedar Texture

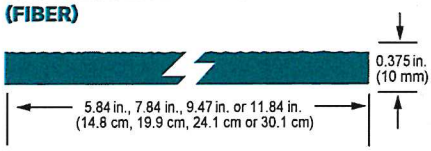
ALSO AVAILABLE IN FIBER SUBSTRATE

- CPA-certified lap siding
- Treated engineered wood fiber substrate

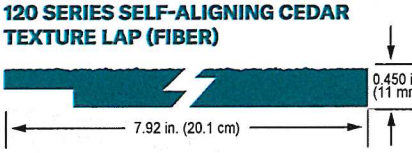
38 SERIES CEDAR TEXTURE LAP (STRAND)



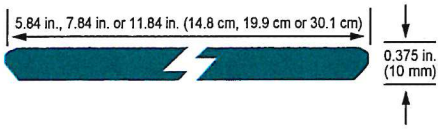
76 SERIES CEDAR TEXTURE LAP (FIBER)



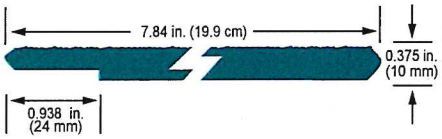
120 SERIES SELF-ALIGNING CEDAR TEXTURE LAP (FIBER)



76 SERIES CEDAR TEXTURE LAP (STRAND)



76 SERIES SMARTLOCK CEDAR TEXTURE LAP (STRAND)



DESCRIPTION	LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS	PID NUMBER	WEIGHT
38 Series Cedar Texture Lap (strand)	16 ft. (192 in.)(4.9 m)	5.84 in. (14.8 cm)	0.315 in. (8 mm)	25796	1.5 PSF
	16 ft. (192 in.)(4.9 m)	6.84 in. (17.4 cm)	0.315 in. (8 mm)	40610	1.5 PSF
	16 ft. (192 in.)(4.9 m)	7.84 in. (19.9 cm)	0.315 in. (8 mm)	25797	1.5 PSF
	16 ft. (192 in.)(4.9 m)	11.84 in. (30.1 cm)	0.315 in. (8 mm)	25799	1.5 PSF
76 Series Cedar Texture Lap (strand)	16 ft. (192 in.)(4.9 m)	5.84 in. (14.8 cm)	0.375 in. (10 mm)	25785	1.5 PSF
	16 ft. (192 in.)(4.9 m)	7.84 in. (19.9 cm)	0.375 in. (10 mm)	25786	1.5 PSF
	16 ft. (192 in.)(4.9 m)	11.84 in. (30.1 cm)	0.375 in. (10 mm)	25787	1.5 PSF
76 Series Cedar Texture Lap (fiber)	16 ft. (192 in.)(4.9 m)	5.84 in. (14.8 cm)	0.375 in. (10 mm)	25922	2 PSF
	16 ft. (192 in.)(4.9 m)	7.84 in. (19.9 cm)	0.375 in. (10 mm)	25923	2 PSF
	16 ft. (192 in.)(4.9 m)	9.47 in. (24.1 cm)	0.375 in. (10 mm)	25924	2 PSF
	16 ft. (192 in.)(4.9 m)	11.84 in. (30.1 cm)	0.375 in. (10 mm)	25925	2 PSF
76 Series SmartLock Cedar Texture Lap (strand)	16 ft. (192 in.)(4.9 m)	7.84 in. (19.9 cm)	0.375 in. (10 mm)	30317	1.5 PSF
120 Series Self-Aligning Cedar Texture Lap (fiber)	16 ft. (192 in.)(4.9 m)	7.92 in. (20.1 cm)	0.450 in. (11 mm)	25905	2 PSF

Fiber substrate products may have specific features and functional benefits. See LPSmartSide.com for product details.

Specifications: LP® SmartSide® Lap Siding

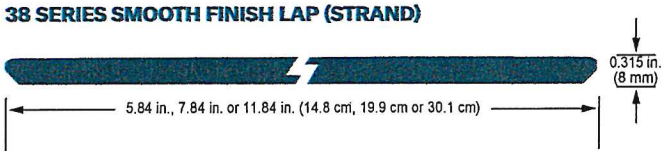
SMOOTH FINISH LAP (STRAND)

Smooth Finish

SMOOTH APPEARANCE, ADVANCED DURABILITY OF ENGINEERED WOOD

- Advanced Durability for Longer Lasting Beauty™
- Holds up in extreme weather including moisture, hail, freeze/thaw cycles, and up to 200 mph wind gusts
- Treated with the SmartGuard® process for superior protection against the weather, fungal decay and termites
- 16′ length can result in faster installation and fewer seams
- Pre-primed for exceptional paint adhesion
- Backed by an industry-leading 5/50-year limited warranty
- Treated engineered wood strand substrate

38 SERIES SMOOTH FINISH LAP (STRAND)



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DESCRIPTION	LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS	PID NUMBER	WEIGHT
38 Series Smooth Finish Lap (strand)	16 ft. (192 in.)(4.9 m)	5.84 in. (14.8 cm)	0.315 in. (8 mm)	41338	1.5 PSF
	16 ft. (192 in.)(4.9 m)	7.84 in. (19.9 cm)	0.315 in. (8 mm)	41339	1.5 PSF
	16 ft. (192 in.)(4.9 m)	11.84 in. (30.1 cm)	0.315 in. (8 mm)	41340	1.5 PSF

Specifications: LP® SmartSide® Trim

SMOOTH FINISH TRIM (STRAND)

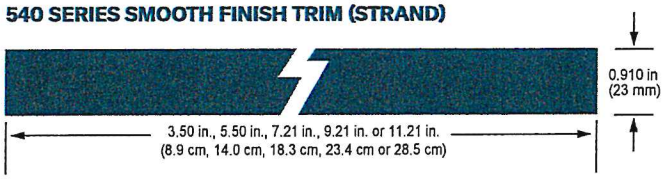
SMOOTH APPEARANCE, ADVANCED DURABILITY OF ENGINEERED WOOD

- Advanced Durability for Longer Lasting Beauty™
- Holds up in extreme weather including moisture, hail, freeze/thaw cycles, and up to 200 mph wind gusts
- Treated with the SmartGuard® process for superior protection against the weather, fungal decay and termites
- 16´ ft length can result in faster installation and fewer seams
- Pre-primed for exceptional paint adhesion
- Backed by an industry-leading 5/50-year limited warranty
- Treated engineered wood strand substrate

Smooth Finish

440 SERIES SMOOTH FINISH TRIM (STRAND)

540 SERIES SMOOTH FINISH TRIM (STRAND)



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DESCRIPTION	LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS	PID NUMBER	WEIGHT
440 Series Smooth Finish Trim (strand)	16 ft. (192 in.)(4.9 m)	1.50 in. (3.8 cm)	0.625 in. (16 mm)	41640	2 PSF
	16 ft (192 in.) (4.9 m)	2.50 in. (6.4 cm)	0.625 in. (16 mm)	41627	2 PSF
	16 ft. (192 in.)(4.9 m)	3.50 in. (8.9 cm)	0.625 in. (16 mm)	41420	2 PSF
	16 ft. (192 in.)(4.9 m)	5.50 in. (14.0 cm)	0.625 in. (16 mm)	41422	2 PSF
	16 ft. (192 in.)(4.9 m)	7.21 in. (18.3 cm)	0.625 in. (16 mm)	41423	2 PSF
	16 ft. (192 in.)(4.9 m)	9.21 in. (23.4 cm)	0.625 in. (16 mm)	41492	2 PSF
	16 ft. (192 in.)(4.9 m)	11.21 in. (28.5 cm)	0.625 in. (16 mm)	41490	2 PSF
540 Series Smooth Finish Trim (strand)	16 ft. (192 in.)(4.9 m)	1.50 in. (3.8 cm)	0.910 in. (23 mm)	41629	3 PSF
	16 ft. (192 in.)(4.9 m)	2.50 in. (6.4 cm)	0.910 in. (23 mm)	41628	3 PSF
	16 ft. (192 in.)(4.9 m)	3.50 in. (8.9 cm)	0.910 in. (23 mm)	41342	3 PSF
	16 ft. (192 in.)(4.9 m)	5.50 in. (14.0 cm)	0.910 in. (23 mm)	41343	3 PSF
	16 ft. (192 in.)(4.9 m)	7.21 in. (18.3 cm)	0.910 in. (23 mm)	41344	3 PSF
	16 ft. (192 in.)(4.9 m)	9.21 in. (23.4 cm)	0.910 in. (23 mm)	41345	3 PSF
	16 ft. (192 in.)(4.9 m)	11.21 in. (28.5 cm)	0.910 in. (23 mm)	41494	3 PSF

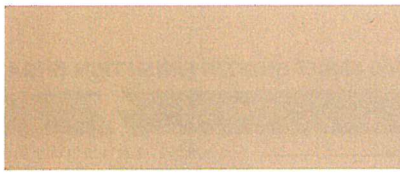
Specifications: LP® SmartSide® Trim

REVERSIBLE TRIM (FIBER)

TWO GREAT LOOKS IN ONE

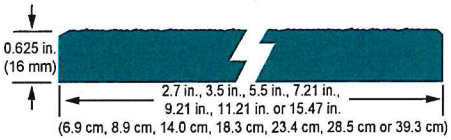
- The natural look of cedar texture on one side and smooth finish on the other
- Interior or exterior use, including corner boards, windows and doors
- Pre-primed for exceptional paint adhesion
- 16′ length can result in faster installation and fewer seams
- Reversible trim has a 1/8″ bevel cut on its cedar texture side and is square cut on the smooth finish side
- Treated engineered wood fiber substrate

Cedar Texture

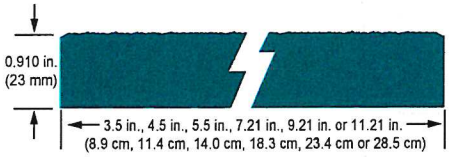


Smooth Finish

440 SERIES REVERSIBLE TRIM (FIBER)



540 SERIES REVERSIBLE TRIM (FIBER)



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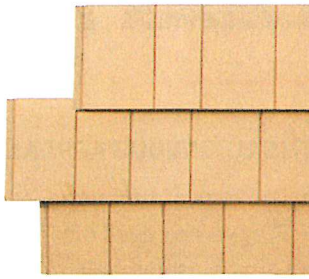
DESCRIPTION	LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS	PID NUMBER	WEIGHT
440 Series Reversible Trim (fiber)	16 ft. (192 in.)(4.9 m)	2.70 in. (6.9 cm)	0.625 in. (16 mm)	25940	2 PSF
	16 ft. (192 in.)(4.9 m)	3.50 in. (8.9 cm)	0.625 in. (16 mm)	25941	2 PSF
	16 ft. (192 in.)(4.9 m)	5.50 in. (14.0 cm)	0.625 in. (16 mm)	25942	2 PSF
	16 ft. (192 in.)(4.9 m)	7.21 in. (18.3 cm)	0.625 in. (16 mm)	25943	2 PSF
	16 ft. (192 in.)(4.9 m)	9.21 in. (23.4 cm)	0.625 in. (16 mm)	25944	2 PSF
	16 ft. (192 in.)(4.9 m)	11.21 in. (28.5 cm)	0.625 in. (16 mm)	25945	2 PSF
	16 ft. (192 in.)(4.9 m)	15.47 in. (39.3 cm)	0.625 in. (16 mm)	38445	2 PSF
540 Series Reversible Trim (fiber)	16 ft. (192 in.)(4.9 m)	3.50 in. (8.9 cm)	0.910 in. (23 mm)	25946	3 PSF
	16 ft. (192 in.)(4.9 m)	4.50 in. (11.4 cm)	0.910 in. (23 mm)	25947	3 PSF
	16 ft. (192 in.)(4.9 m)	5.50 in. (14.0 cm)	0.910 in. (23 mm)	25948	3 PSF
	16 ft. (192 in.)(4.9 m)	7.21 in. (18.3 cm)	0.910 in. (23 mm)	25949	3 PSF
	16 ft. (192 in.)(4.9 m)	9.21 in. (23.4 cm)	0.910 in. (23 mm)	25950	3 PSF
	16 ft. (192 in.)(4.9 m)	11.21 in. (28.5 cm)	0.910 in. (23 mm)	25951	3 PSF

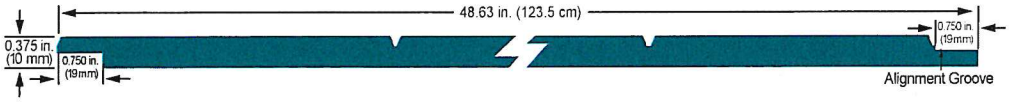
Specifications: LP® SmartSide® Shakes & Shingles

PERFECTION SHINGLE



A TRADITIONAL, SUBTLE LOOK

- Features fine sawn wood texture with no knots
- Balance of cedar like texture and the clean lines of shingles with a 5.5″ to 6.5″ reveal
- Beautiful aesthetic for accents, gables or siding walls
- Pre-primed for exceptional paint adhesion
- Perfect for a wide range of applications



DESCRIPTION	LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS	PID NUMBER	WEIGHT
Perfection Shingle Lap (fiber)	4 ft. (48.63 in.)(1.2 m)	7.88 in. (200.2 mm)	0.375 in. (10 mm)	40796	1.5 PSF

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Specifications: LP® SmartSide® Shakes & Shingles

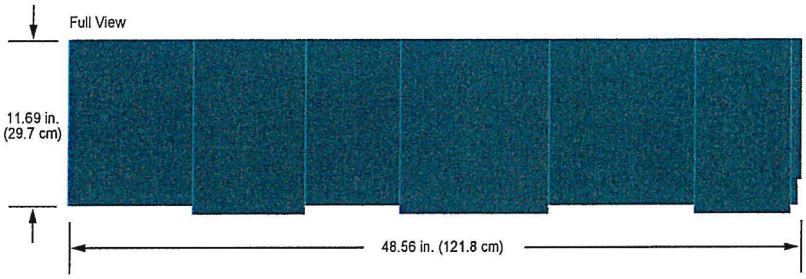
CEDAR TEXTURE SHAKES

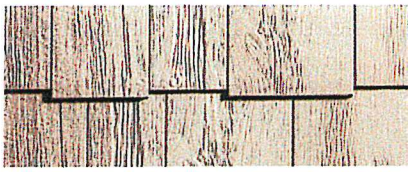
THE LUXURIOUS APPEAL OF CEDAR

- The look of traditional cedar with easier maintenance over time
- Staggered edges offer a lively, textured effect
- Can be used on all exterior walls or as a decorative accent
- Shiplap ends for seamless appearance
- Reversible staggered or straight edge offers exceptional design versatility
- Treated engineered wood fiber substrate

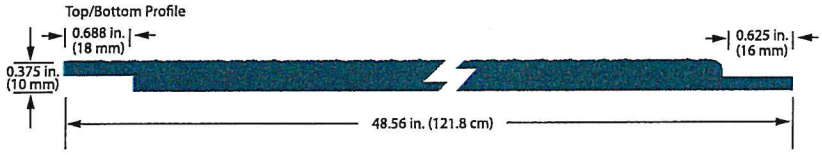
Cedar Texture

CEDAR TEXTURE SHAKES (FIBER)





Staggered



Straight

DESCRIPTION	LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS	PID NUMBER	WEIGHT
Cedar Texture Shakes (fiber)	4ft. (48.56 in.)(1.2 m)	11.69 in. (29.7 cm)	0.375 in. (10 mm)	28541	2 PSF

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Specifications: LP® SmartSide® Soffit

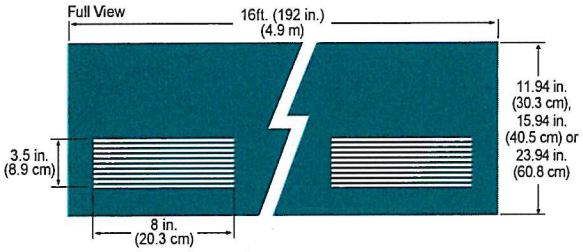
VENTED SOFFIT

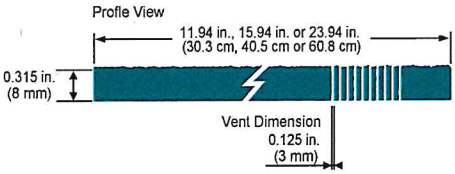
Cedar Texture

ENGINEERED TO CUT OUT PROBLEMS

- The perfect alternative to MDO, plywood or hand-installed metal vents
- Precisely cut vents offer 10 square inches of ventilation per linear foot, making it easier to meet code requirements while adding architectural beauty
- Designed to minimize paint buildup and promote continuous airflow
- 1/8″ vents to help keep hornets and bees out
- Eliminates time spent ripping full sheets
- Treated engineered wood strand substrate

38 SERIES VENTED CEDAR TEXTURE SOFFIT – CUT-TO-WIDTH (STRAND)





DESCRIPTION	LENGTH	ACTUAL WIDTH	MINIMUM THICKNESS	PID NUMBER	WEIGHT
38 Series Vented Cedar Texture Soffit - Cut-to-Width (strand)	16 ft. (192 in.)(4.9 m)	11.94 in. (30.3 cm)	0.315 in. (8 mm)	25822	-
	16 ft. (192 in.)(4.9 m)	15.94 in. (40.5 cm)	0.315 in. (8 mm)	25823	-
	16 ft. (192 in.)(4.9 m)	23.94 in. (60.8 cm)	0.315 in. (8 mm)	25824	-

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- NOTE -

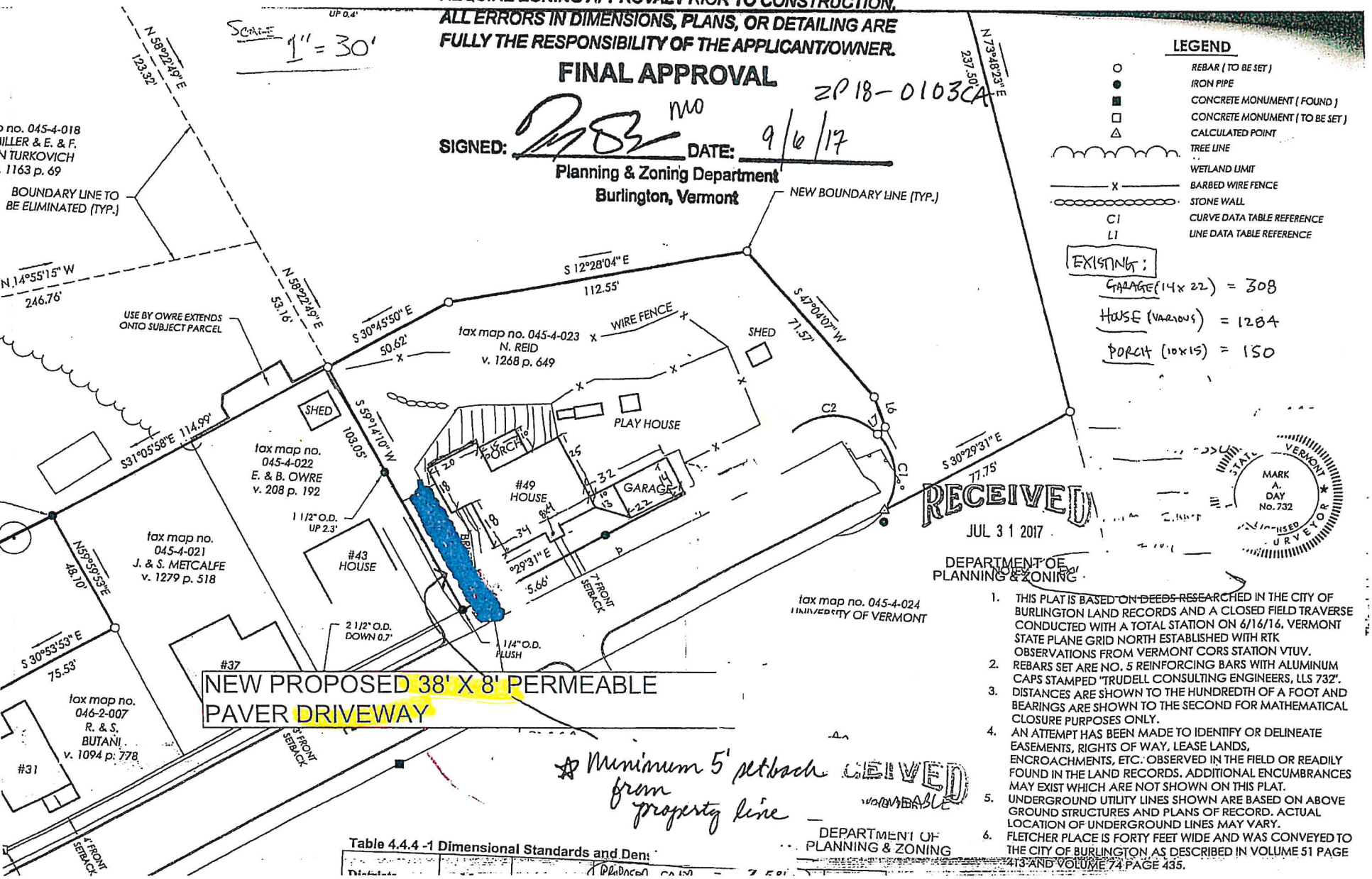
ANY MODIFICATION OR DEVIATIONS FROM THESE PLANS REQUIRE ZONING APPROVAL PRIOR TO CONSTRUCTION. ALL ERRORS IN DIMENSIONS, PLANS, OR DETAILING ARE FULLY THE RESPONSIBILITY OF THE APPLICANT/OWNER.

FINAL APPROVAL

ZP 18-0103CA

SIGNED: _____ DATE: 9/6/17

Planning & Zoning Department
Burlington, Vermont



LEGEND

- REBAR (TO BE SET)
- IRON PIPE
- CONCRETE MONUMENT (FOUND)
- CONCRETE MONUMENT (TO BE SET)
- CALCULATED POINT
- TREE LINE
- WETLAND LIMIT
- BARBED WIRE FENCE
- STONE WALL
- C1 — CURVE DATA TABLE REFERENCE
- L1 — LINE DATA TABLE REFERENCE

EXISTING:

GARAGE (14 x 22) = 308

HOUSE (VARIOUS) = 1284

PORCH (10 x 15) = 150

RECEIVED
JUL 31 2017
DEPARTMENT OF PLANNING & ZONING

RECEIVED
NOV 1 2017
DEPARTMENT OF PLANNING & ZONING

STATE OF VERMONT
MARK A. DAY
No. 732
LICENSED SURVEYOR

1. THIS PLAT IS BASED ON DEEDS RESEARCHED IN THE CITY OF BURLINGTON LAND RECORDS AND A CLOSED FIELD TRAVERSE CONDUCTED WITH A TOTAL STATION ON 6/16/16. VERMONT STATE PLANE GRID NORTH ESTABLISHED WITH RTK OBSERVATIONS FROM VERMONT CORS STATION VTUV.
2. REBARS SET ARE NO. 5 REINFORCING BARS WITH ALUMINUM CAPS STAMPED "TRUDELL CONSULTING ENGINEERS, LLS 732".
3. DISTANCES ARE SHOWN TO THE HUNDREDTH OF A FOOT AND BEARINGS ARE SHOWN TO THE SECOND FOR MATHEMATICAL CLOSURE PURPOSES ONLY.
4. AN ATTEMPT HAS BEEN MADE TO IDENTIFY OR DELINEATE EASEMENTS, RIGHTS OF WAY, LEASE LANDS, ENCROACHMENTS, ETC. OBSERVED IN THE FIELD OR READILY FOUND IN THE LAND RECORDS. ADDITIONAL ENCUMBRANCES MAY EXIST WHICH ARE NOT SHOWN ON THIS PLAT.
5. UNDERGROUND UTILITY LINES SHOWN ARE BASED ON ABOVE GROUND STRUCTURES AND PLANS OF RECORD. ACTUAL LOCATION OF UNDERGROUND LINES MAY VARY.
6. FLETCHER PLACE IS FORTY FEET WIDE AND WAS CONVEYED TO THE CITY OF BURLINGTON AS DESCRIBED IN VOLUME 51 PAGE 413 AND VOLUME 74 PAGE 435.

Table 4.4.4 -1 Dimensional Standards and Den

Department of Permitting & Inspections
Zoning Division
645 Pine Street
Burlington, VT 05401
Telephone:(802) 865-7188
(802) 865-7195 (FAX)
(802) 865-7142 (TTY)

William Ward, Director
Scott Gustin, AICP, CFM, Principal Planner
Mary O'Neil, AICP, Principal Planner
Ryan Morrison, Associate Planner
Layne Darfler, Planning Technician
Alison Davis, Planning & Zoning Clerk
Ted Miles, Zoning Specialist
Charlene Orton, Permitting & Inspections Administrator

MEMORANDUM

TO: Development Review Board
FROM: Ryan Morrison
DATE: February 19, 2020
RE: 20-0646SD/CA; 49 Fletcher Place

==========

Note: These are staff comments only; decisions on projects are made by the Development Review Board, which may approve, deny, table or modify any project. THE APPLICANT OR REPRESENTATIVE MUST ATTEND THE MEETING.

Zone: RM Ward: 1E

Owner/Representative: Nancy Reid / Lewis Creek Company

Request: Combined preliminary & final plat review to subdivide existing lot into two lots, and construct a new single family residence and associated site improvements on the new lot.

Applicable Regulations:
Article 2 (Administrative Mechanisms), Article 3 (Applications, Permits and Project Reviews), Article 4 (Zoning Maps & Districts), Article 5 (Citywide General Regulations), Article 6 (Development Review Standards), Article 8 (Parking), Article 10 (Subdivision Review)

Background Information:
The applicant is seeking combined preliminary and final plat approval to subdivide an existing lot into two lots. The 14,810 sq ft property contains a single family residence with an attached single-car garage, and several small outbuildings that will all relocate to the future Lot 1. Lot 1 will be 7,840.8 sf in size, and Lot 2 will be 6,969.6 sf in size. As part of this application, the applicant proposes a new, 2-story single family residence to be built on Lot 2. The home will also have a partially finished basement.

The proposal has been forwarded to the City Engineer's office, to the Burlington Fire Marshal, to the Director of the Parks & Recreation Department, to Burlington Electric, and to the Burlington School District as required. Comments from the Fire Marshal have been received.

The Fire Marshal provided the following comments:

- Fletcher Place meets the NFPA 1 Chapter 18 definition of a Fire Department Access Road, and an existing fire hydrant is located in front of 34-36 Fletcher Place, approximately 285 feet linear distance from the proposed subdivision according to Google Earth.
- Future construction shall comply with the codes, standards, and ordinances in effect at the time of design and construction.

Previous zoning actions for this property are noted below.

- **Zoning Permit 08-587CA**; replacement windows and siding. Approved March 27, 2008.
- **Zoning Permit 09-898CA**; replacement window. Approved June 10, 2009.
- **Zoning Permit 15-0736CA**; establish a home day care with up to 6 children. Approved January 23, 2015.
- **Zoning Permit 16-1399LL**; lot line adjustment for 49 Fletcher Place, 80 Colchester Ave, and 27 Fletcher Place. Approved September 23, 2016.
- **Zoning Permit 18-0103CA**; create new single lane driveway; install paver patio in rear; acknowledge shed, decks, and patio; and remove unpermitted parking areas. Approved September 6, 2017.

Recommendation: <u>Preliminary and Final Subdivision and Certificate of Appropriateness Approval</u> as per, and subject to, the findings and conditions below:

I. Findings

Article 2: Administrative Mechanisms
Section 2.7.8 Withhold Permit
Per this standard, the applicant is required to close out all zoning permits issued after July 13, 1989 prior to issuance of a Certificate of Occupancy for this permit. Immediate review indicates there is one zoning permit that hasn't received a Certificate of Occupancy. See attached list for guidance on the open permit. **Affirmative finding as conditioned**

Article 3: Applications, Permits and Project Reviews
Part 3, Impact Fees
Section 3.3.2 Applicability
Any new development or additions to existing buildings which result in new dwelling units or in new nonresidential buildings square footage are subject to impact fees as is any change of use which results in an added impact according to Section 3.3.4.
Impact fees shall apply. The fees will be based on the net new square footage of the building. The total living space of the proposed home is 2,392 sf. **Affirmative finding as conditioned**

Section 3.3.8 Time and Place of Payment
(a) *New Buildings: Impact fees must be paid at least seven (7) days prior to occupancy of a new building or any portion thereof.* **Affirmative finding as conditioned**

Article 4: Zoning Maps & Districts
Sec. 4.4.5, Residential Districts:
(a) Purpose
(2) Residential Medium Density (RM)
The RM district is intended primarily for medium density residential development in the form of single-family detached dwellings and attached multi-family apartments.
The property is located in the RM zone. The subdivision will result in the existing single family residence and its accessory structures situating on Lot 1, and a new single family residence situating on Lot 2. Lot 1 will total 7,840.8 sf in size (0.18 acres) and Lot 2 will total 6,969.6 sf in size (0.16 acres). Both lots will be large enough to accommodate the density requirement for a single dwelling unit. **Affirmative finding**

(b) Dimensional Standards & Density

The RM zone has a minimum frontage requirement of 30 ft, but no minimum lot size requirement. Frontage for Lot 1 will be 79 ft, and frontage for Lot 2 will be 96 ft. The maximum density for properties within the RM zone is 20 units per acre.

Lot 1:
7,840.8 / 43,560 (acre) = 0.18 acres
1 unit / 0.18 = 5.55 units; less than the 20 units/acre limitation

Lot 2:
6,969.6 / 43,560 (acre) = 0.16 acres
1 unit / 0.16 = 6.25 units; less than the 20 units/ acre limitation

Building setbacks of the RM zone require: a front yard setback to be the average of 2 adjacent lots on both sides, +/- 5 feet; a side yard setback of 10% of lot width; and a rear yard setback of 25% of lot depth. The average front yard setback for Lot 2, based on the neighboring 2 homes to the south (49 & 43 Fletcher Place) is 10'. This results in a front yard setback range of 5' – 15'. The front wall of the proposed home on Lot 2 will have a front yard setback of 13 ft. Also proposed is a 6 ft wide, covered front porch which will be setback 7 ft from the front property line. While there are special exceptions for unenclosed, single story front porches to extend a certain amount into a front yard setback, both the proposed home and front porch will comply with the 5'-15' front yard setback requirement. No changes are proposed to the existing home on Lot 1, which results in no concern for its front yard setback. Based on a lot width of 79 ft, Lot 1's side yard setbacks will be 7.9 ft. The existing home will comply with the side yard setback requirements. Lot 2's frontage totals 96 ft, meaning a minimum side yard setback of 9.6 ft; compliance here will be met as well. No change will occur with respect to Lot 1's rear yard setback. Lot 2 has a maximum depth of 93.90 ft, meaning a minimum rear yard setback of 23 ft; compliance with this rear yard setback will be met.

Lot coverage for Lot 1 will total 27.2%, and coverage for Lot 2 will total 24.4% - both less than the 40% maximum allowance. With the condition to extend the driveway on Lot 1 at least 7 ft to comply with the minimum parking standards of Article 8 (see below), lot coverage will go up slightly, but will still be below the maximum allowance.

The building height of the proposed residence on Lot 2 will be 30' to the peak of the gable roof, well below the 35 ft limit. **Affirmative finding**

(c) Permitted & Conditional Uses
Single family dwellings are permitted uses in the RM zone. **Affirmative finding**

(d) District Specific Regulations
1. Setbacks

A. Encroachment for Residential Driveways
Not applicable

B. Encroachment into the Waterfront Setback
Not applicable

2. Height

A. Exceptions in the Waterfront RM District
Not applicable

3. Lot Coverage
A. Exceptions for Accessory Residential Features
Not applicable

4. Accessory Residential Structures and Uses
An accessory structure and/or use as provided under Sec. 5.1.1 and 5.1.2 customarily incidental and subordinate to a principal residential use, including but not limited to private garages, carriage houses, barns, storage sheds…
Not applicable. No new accessory structures are proposed.

5. Residential Density
Not applicable

6. Uses
Not applicable

7. Residential Development Bonuses
Not applicable

Article 5: Citywide General Regulations
Sec. 5.2.2, Required Frontage of Access
The existing lot has 175 ft of frontage on Fletcher Place. After the subdivision, both lots will continue to have frontage on Fletcher Place, both far exceeding the 30 ft minimum requirement. Both lots will have direct driveway access off Fletcher Place. The applicant will have to obtain a curb cut permit from DPW for Lot 2's proposed access. **Affirmative finding as conditioned**

Sec. 5.2.3, Lot Coverage Requirements
See Sec. 4.4.5 (b) above.

Sec. 5.2.4, Buildable Area Calculation
Not applicable. The existing lot is 14,810 sq. ft. (less than 2 acres).

Sec. 5.2.5, Setbacks
See Sec. 4.4.5 (b) above.

Sec. 5.2.6, Building Height Limits
See Sec. 4.4.5 (b) above.

Sec. 5.2.7, Density and Intensity of Development Calculations
See Sec. 4.4.5 (b) above.

Sec. 5.5.1, Nuisance Regulations
Nothing in the proposal appears to constitute a nuisance under this criterion. **Affirmative finding**

Sec. 5.5.2, Outdoor Lighting

Lighting fixture spec sheets have been provided, and the elevation drawings show the location of the proposed fixtures. The fixtures comply with the lighting standards of this section. **Affirmative finding**

Sec. 5.5.3, Stormwater and Erosion Control
An Erosion Prevention and Sediment Control Plan was submitted to the Stormwater Program Manager. Prior to release of this permit, the plan must be approved. **Affirmative finding as conditioned**

Article 6: Development Review Standards:
Part 1, Land Division Design Standards
Sec. 6.1.2, Review Standards
(a) Protection of important natural features
The subdivision itself will have no impact on important natural features. **Affirmative finding**

(b) Block size and arrangement
Not applicable.

(c) Arrangement of Lots
The proposed subdivision will split the existing lot lengthwise into two lots. Both lots will front on Fletcher Place. Lot sizes along the street vary widely in size and shape. **Affirmative finding**

Interior lot lines extending from a street should be perpendicular or radial to the street right-of-way line to the greatest extent possible.
The new lot line extends perpendicularly from the street right-of-way line. **Affirmative finding**

(d) Connectivity of streets within the city street grid
Not applicable

(e) Connectivity of sidewalks, trails, and natural systems
A sidewalk exists on the same side of Fletcher Place as the subject property, however it ends at the driveway next door (43 Fletcher Place). Even though Fletcher Place is a dead-end street, development beyond it is extremely unlikely due to the presence of a ravine just several feet beyond Fletcher Place's end. **Not Applicable**

Part 2, Site Plan Design Standards
Sec. 6.2.2, Review Standards
(a) Protection of important natural features
The property is generally flat up front in the development area. A ravine exists in the back half where the elevation drops significantly. Although not documented on the City's Natural Resource Protection Overlay District map, the applicant notes that there are wetlands at the base of the ravine and the site plans show a 50 ft buffer from those wetlands. No development is proposed to occur within this state wetland buffer. The applicant notes that 2 trees will be removed to make way for the new home on Lot 2. **Affirmative finding**

(b) Topographical alterations
The property has a slope at the rear (elevation ranges from approx. 314 ft at the street level to approx. 290 ft in the back). The proposed development on Lot 2 will locate at the front of the lot,

in and around elevations of 312-314 ft. No significant topographical alteration is included in the project plans. **Affirmative finding**

(c) Protection of important public views
The subject property is not affected by any identified public view corridor. **Affirmative finding**

(d) Protection of important cultural resources
The property contains no archaeologically significant site points, nor is it located within an archaeologically sensitive area. The property is of no known archaeological significance. **Affirmative finding**

(e) Supporting the use of alternative energy
There is no indication that the proposed home will utilize alternative energy. Solar energy utilization is encouraged. In any event, the home will not adversely impact the actual or potential use of alternative energies by neighboring properties. **Affirmative finding**

(f) Brownfield sites
The subject property is not an identified brownfield. **Affirmative finding**

(g) Provide for nature's events
A residential stormwater plan has been provided. As noted above, the city's stormwater program manager is reviewing the proposed stormwater management.

The front and rear entries are sheltered, and ample room is available onsite for seasonal snow storage. **Affirmative finding**

(h) Building location and orientation
The proposed single family residence is appropriately oriented towards the street. The building will be situated on the lot similar to other homes in the neighborhood. Ample lawn and open space will surround the home. **Affirmative finding**

(i) Vehicular access
The driveway access to Lot 1 will remain as existing. The new driveway serving the proposed home on Lot 2 will be of a conforming size to accommodate the 2 required parking spaces, and will appropriately setback from the side property line (5' minimum). **Affirmative finding**

(j) Pedestrian access
While the sidewalk ends just to the south of proposed Lot 1 (at 43 Fletcher Place), the proposal includes a front walkway extending to Fletcher Place from the new home. An encumbrance permit through the Department of Public Works will likely be required to construct the portion of walkway that lies within the street right-of-way. **Affirmative finding as conditioned**

(k) Accessibility for the handicapped
No handicap accessibility is evident or required with this proposal. **Affirmative finding**

(l) Parking and circulation
See Article 8 below. For Lot 1, the existing driveway will need to be extended to adequately accommodate the 2 required onsite parking spaces. The site plan identifies a driveway serving Lot

2 that will be of an adequate dimension to accommodate the 2 required parking spaces. Circulation is simple with access provided to the surface parking spaces. **Affirmative finding**

(m) Landscaping and fences
Landscaping is not indicated on the plan but, in accordance with this section, it is required. The site plan will need to be updated to show landscaping for the new home on Lot 2. **Affirmative finding as conditioned**

(n) Public plazas and open space
Not applicable. No public plaza or open space is included or required in this proposal.

(o) Outdoor lighting
See Sec. 5.5.2.

(p) Integrate infrastructure into the design
Above ground power lines exist along the length of Fletcher Place and will provide power to the new home. While the elevation drawings do not show utility meters, they will need to locate in a manner so as not to be easily seen from the public street – ideally on the side of the home and screened from view. The site plan will need to be revised to show the location of the trash/recycling area. This area is required to be screened from view from the public street as well. **Affirmative finding as conditioned**

Part 3, Architectural Design Standards
Sec. 6.3.2, Review Standards

(a) Relate development to its environment

1. Massing, Height, and Scale

The massing, height, and scale of the proposed residence is consistent with that of existing homes along Fletcher Place. The homes come in a variety of typically suburban forms and styles. The proposed residence will have a covered front porch entry, which will provide for a clear distinction between the first and second floor. Building openings on the front façade will break up any possibility of a blank wall. The overall height of 30' is consistent with several homes in the neighborhood. **Affirmative finding**

2. Roofs and Rooflines

The new home will have a gable roof line, which is common in the neighborhood. **Affirmative finding**

3. Building Openings

The front door will be protected under the front porch roof. Fenestration is appropriately scaled and placed in consistent rhythm throughout the building. **Affirmative finding**

(b) Protection of important architectural resources

There are no historically significant structures on the subject property. **Affirmative finding**

(c) Protection of important public views

See 6.2.2 (c) above.

(d) Provide an active and inviting street edge

The front doorway is clearly articulated. There are no large blank walls or expanses of roof. Fenestration and roof variations work successfully to provide an active and inviting street elevation. **Affirmative finding**

(e) Quality of materials

The new home will be clad in cedar texture lap siding and trim. The gable ends will be sided with cedar texture shake siding. The proposed windows are crafted using a mix of aluminum, vinyl and wood materials. Metal standing seam will be installed for the roofing. **Affirmative finding**

(f) Reduce energy utilization

The proposed home must comply with the current energy efficiency standards of Burlington and the State of Vermont. **Affirmative finding as conditioned**

(g) Make advertising features complimentary to the site

Not applicable. No advertising is included in this proposal.

(h) Integrate infrastructure into the building design

Utility meters are not indicated on the plans and will need to be shown on revised plans. They will need to be screened. **Affirmative finding as conditioned**

(i) Make spaces safe and secure

The proposed building must comply with the city's current egress requirements. Building entries will be illuminated. **Affirmative finding**

Article 8: Parking

Table 8.1.8-1 requires 2 parking spaces per single family dwelling in the Neighborhood Parking District. The new development on Lot 2 will provide a driveway with a depth of 38 ft on site, enough to accommodate 2 tandem parking spaces. The existing driveway on Lot 1 was permitted in 2017 to be 38 ft in length, and that permit received its Certificate of Occupancy. However, the current plans show a driveway length of 29 ft on the property, an insufficient length to accommodate 2 onsite tandem parking spaces. This driveway will have to be extended 7 ft (min.) to adequately fit two 18 ft tandem parking spaces – a total of 36 ft.

Table 8.1.11-1 – Minimum Parking Dimensions – requires an 18 ft minimum parking space depth. Under the 2017 zoning permit (ZP18-0103CA), the approved site plan shows a driveway 38 ft in length, and the permit received its Certificate of Occupancy. However, the current site plan shows the onsite portion of the driveway with a depth of 29 ft, 7 ft short of the minimum depth requirement. As a result, parking for Lot 1 would be considered non-compliant, which would be reason enough to recommend denial. However, as there appears to be adequate space to extend the driveway in a compliant manner (with regard to both lot coverage and side yard setback concerns), it is feasible to recommend permit approval with a condition requiring the physical extension of the driveway before the zoning permit can be released. **Affirmative finding as conditioned**

Article 10: Subdivision Review

Sec. 10.1.7, Combined Preliminary and Final Plat

For subdivisions that will create fewer than five (5) lots or dwelling units, and are not otherwise subject to consideration under Major Impact Review pursuant to the provisions of Article 3, Part 5 or Planned Unit Development pursuant to the provisions of Article 11, the applicant may request,

and the DRB may authorize the hearings on preliminary and final subdivision plats to be combined into a single public hearing.

In such cases, the submission requirements for final subdivision plats pursuant to Sec. 10.1.9 shall be met at the time of application, and decisions by the DRB shall be based on the project's conformance with the review criteria for both preliminary (Sec. 10.1.8(d)) and final plats (Sec. 10.1.9(d)).
The proposed subdivision is for two lots and thus qualifies to be considered in a combined hearing. **Affirmative finding**

Sec. 10.1.9, Final Plat Review
(a) Final Plat and Construction Detail Submission Requirements
6. Final Plat Specifications
This criterion requires that the final plat plan be drawn at a scale of 1" = 40', and be on sheets sized 24" x 36" with one inch margins on three sides and a two inch margin on the side to be bound. The plan is scaled at 1" = 20' and will have to be changed. The final plat plan will need to meet the margin size requirements. **Affirmative finding as conditioned**

(d) Review Criteria
1. The requirements of the underlying zoning district(s) and all applicable overlay district(s) as set forth in Article 4
See Article 4 of these findings.

3. The requirements of Article 5 with regard to Special Uses and Performance Standards as applicable
See Article 5 of these findings.

4. The land division and site development principles and design standards in Article 6.
See Article 6 of these findings.

Sec. 10.1.11, Recording of Final Plats
(a) Certifications and Endorsement
Prior to recording the mylar plat plan, all of the required endorsement blocks listed in Sec. 10.1.11 must be depicted on the plan itself and signed by the appropriate individuals. The submitted plan has the endorsement block for a lot line adjustment – that block shall be removed. **Affirmative finding as conditioned**

II. Conditions of Approval

1. **Prior to the release of the zoning permit**, the site plan shall be revised to include:
   a. A driveway on Lot 1 being a minimum depth of 36 feet within the property.
   b. The location of trash and recycling storage.
   c. All landscaping proposed around the new home on Lot 2.
2. **Prior to the release of the zoning permit**, updated lot coverage calculations shall be provided to take into account the driveway extension on Lot 1.
3. **Prior to the release of the zoning permit**, the applicant shall obtain a curb cut permit from the Dept. of Public Works for the new driveway access serving Lot 2 off Fletcher Place.

4. **Prior to the release of the zoning permit**, the applicant shall secure a letter of adequate capacity from DPW for water and sewer services.
5. **Prior to the release of the zoning permit**, the EPSC plan shall be reviewed and approved by the Stormwater Program Manager.
6. **Within 180 days of the date of final approval**, the subdivision plat mylar, with all applicable endorsement signatures, shall be filed with the City Clerk per Sec. 10.1.11 of the Comprehensive Development Ordinance. Failure to do so shall render void the final plat approval.
7. **Prior to filing the mylar** in the city land records, the driveway on Lot 1 shall be physically extended so that the onsite portion of the driveway meets the minimum depth requirement of 36 ft to accommodate two tandem parking spaces.
8. **Prior to filing the mylar** in the city land records, the subdivision plat shall be revised to reflect the following:
    a. The scale on the subdivision shall be changed to 1" = 40'.
    b. Sheet size of 24" x 36" with one-inch margins on three sides and a two-inch margin on the side to be bound.
    c. Obtain signatures for all certifications and endorsements required under Sec. 10.1.11 (a) of the Comprehensive Development Ordinance. These signature blocks shall be included on the final plat plan.
    d. The lot line adjustment signature block shall be removed.
    e. Verify the first portion of Lot 2's frontage along Fletcher Place. 36.55 ft appears to be inaccurate.
    f. The driveway on Lot 1 being a minimum depth of 36 ft within the property.
9. **Prior to filing the mylar**, the garage spanning the proposed property line shall be removed from the site.
10. **Prior to the issuance of a certificate of occupancy**, the footprint of the removed garage shall be restored to a lawn or landscape area.
11. At least **7 days prior to the issuance of a certificate of occupancy**, the applicant shall pay to the Department of Permitting & Inspections impact fees as calculated by staff based on the net new square footage of the proposed development.
12. All permits issued after July 13, 1989 shall be closed out with issuance of Final Certificates of Occupancy prior to request for a FCO for this development. See attached list for guidance on the open permit.
13. It is the applicant's responsibility to obtain an encumbrance permit with the Dept. of Public Works for the portion of walkway serving the development on Lot 2 that lies within the street right-of-way, should one be required.
14. Construction hours shall be limited to Monday – Friday from 7:30 AM – 5:30 PM. Saturday construction may occur for interior work only. No construction activity on Sunday.
15. The occupancy of the new dwelling unit is limited to members of a family as defined in Article 13.
16. A state wastewater permit will be required, and is the responsibility of the applicant to secure.
17. Any additional physical alteration or change of use will require review and approval under regulations in effect at that time.
18. The Applicant/Property Owner is responsible for obtaining all necessary Zoning Permits and Building Permits through the Department of Public Works as well as other permit(s) as may be required.

19. Standard permit conditions 1-15.

Burlington Development Review Board
645 Pine Street, Burlington Permitting & Inspections
Burlington, VT 05401
www.burlingtonvt.gov/DPI/DRB
Telephone: (802) 865-7188
Fax (802) 863-0466

Brad Rabinowitz
AJ LaRosa
Springer Harris
Geoff Hand
Zoraya Hightower
Brooks McArthur
Kienan Christianson
Sean McKenzie, (Alternate)
Ravi Venkataraman, (Alternate)

BURLINGTON DEVELOPMENT REVIEW BOARD
Wednesday February 19th 2020, 5:00 PM
Conference Room, Department of Permitting & Inspections,
645 Pine Street, Burlington, VT
Agenda

I. Agenda
II. Communications
III. Minutes
IV. Consent
V. Public Hearing

1. **19-0980CA/MA; 110 Riverside Avenue (NAC-R, Ward 1E) Sisters & Brothers Investment Group, LLP**
   Re-open hearing to accept requested submission information; detailed shoring plan; confirmation of Stormwater approval, revision to site plan. Time extension request for 19-0980CA/MA, 57-unit apartment building with underground parking (Project Manager: Mary O'Neil)

2. **20-0646SD; 49 Fletcher Place (RM, Ward 1E) Nancy Reid**
   2-lot subdivision of an existing single-family residential lot. Construct new 2-story home with driveway and full foundation on new lot (Project Manager: Ryan Morrison)

VI. Adjournment

Plans may be viewed at the Department of Permitting & Inspections, (645 Pine Street, Burlington), between the hours of 8:00 a.m. and 4:30 p.m. Participation in the DRB proceeding is a prerequisite to the right to take any subsequent appeal. Please note that ANYTHING submitted to the Zoning office is considered public and cannot be kept confidential. This may not be the final order in which items will be heard. Please view final Agenda, at www.burlingtonvt.gov/pz/drb/agendas or the office notice board, one week before the hearing for the order in which items will be heard.

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Alison Davis

From: JASON STUFFLE <stuffle@comcast.net>
Sent: Tuesday, February 18, 2020 11:41 AM
To: Alison Davis
Subject: 110 Riverside Ave concerns for 2/19/20 DRB

[WARNING] External Message

Hi Ali,

I got an auto replay that Mary is out and Scott is her backup. I also got an auto reply from Scott saying he is out until 2/21 listing you as a contact. I wanted to file my public comment for the Development Review Board on 2/19/20. Thank you for your help.

Jason

---------- Original Message ----------
From: JASON STUFFLE <stuffle@comcast.net>
To: MCOneil@burlingtonvt.gov, SGustin@burlingtonvt.gov
Date: February 18, 2020 at 11:26 AM
Subject: 110 Riverside Ave concerns for 2/19/20 DRB

Hi Scott and Mary,

I wanted to pass along my concerns about the proposed development at 110 Riverside Ave for the 2/19/20 Development Review Board. I have owned and lived at 316 Colchester Ave for the past 15 years. I can see 110 Riverside from my property looking down the steep ravine. I have a natural spring/underground stream on my property that runs down directly into this area - documented in a late 1800s property sale - listed as a feature. Through my research I have found that 338 Colchester Ave (built 1970) which is next to my property and over the water source was built on fill. There are old pictures of Colchester Ave from the 1920 showing this - see link for pictures and video below. The road between 338/339 Colchester Ave has had constant sinkholes and failed a few times (likely due to this underground water) and contour lines of the area support this. The water runs off my property year round and is not just storm water. The entrance to Salmon Hole park was also heavily filled and old pictures support this. There is a picture included showing the Nash Place houses and 314 Colchester Ave with the almost treeless ravine running down right to that spot on Riverside Ave.

I took some pics and videos this fall of the area where they are proposing to build. It is very concerning to me because the natural spring on my property line runs downhill right into the parking lot/area they are suppose to put the building on. The area at the bottom is constantly wet, there are visible stream beds and its not just from run off. This is an underground water source was it still flows in the winter. There is always new "junk" coming out of the ravine from the fill that was placed there. At the very bottom there is a big bank of soil to block the water from going into the parking lot. This is called a soil stockpile in the plans.

In the pics/videos at the link below you can also see that there are 4 newly built houses and 1 massively renovated one directly above the building property. These were all built since the previous version of this development and should be accounted for. I have real concerns with banks being disturbed as you really don't know what is under them. This is a big concern for the current property owners along Colchester Ave as well as the safety of residents in the proposed building. Given the history of landslides along Riverside Ave I want to make sure that this is thoroughly investigated. From a conversation standpoint this seems like they are building on top of a water source/stream which is also concerning. I attend DRBs for the previous project stating similar concerns but it never advanced enough to investigate them.

https://drive.google.com/open?id=15X9RjWGkHtK_8vY72PsRQZParzX0QpoR

Jason Stuffle
316 Colchester Ave

Alison Davis

From: Don Welch <don@donwelcharchitecture.com>
Sent: Tuesday, February 18, 2020 1:08 PM
To: Scott Gustin
Cc: Mary O'Neil; Layne Darfler; Alison Davis
Subject: Re: Riverside Ave Housing Development
Attachments: 20200218_093039.jpg; 20200218_093109.jpg; 20200218_093118.jpg

WARNING! External Message

Hi Everyone,

I'm pretty sure I won't be able to attend the hearing tomorrow evening for this project. I'm not opposed to this development but I would ask that the owners remove trees on my property (408-410 Colchester Ave) within 20' of the proposed retaining wall. It appears the 'East Wall Cantilevered Sheeting' will run along my SW property line. I'm concerned that the installation of the retaining wall will disturb the root system of the trees on my property ultimately killing them. Many of the trees are large and removing them after the retaining wall is installed (if my understanding of the plans is correct) would be difficult. I've spoken to Steve Guild, the project architect and he said he'd convey my concerns to the owners. Attached are pictures of the existing vegetation along the property line and where I believe the retaining wall is proposed.
Thank you for your consideration.

Don Welch

On Fri, Feb 14, 2020 at 1:55 PM Scott Gustin <SGustin@burlingtonvt.gov> wrote:

> Hi Don,
>
> You may attend the DRB meeting and/or submit your comments in writing. If you'd like to go with written comment, please send them along to Layne or Ali (cc'd) for inclusion with the DRB packet.
>
> Scott
>
> Scott Gustin, AICP, CFM
>
> Principal Planner & Asst. Administrative Officer
>
> Dept. of Permitting & Inspections
>
> 645 Pine Street
>
> Burlington, VT 05401
>
> (802) 865-7189

From: Don Welch [mailto:don@donwelcharchitecture.com]
Sent: Friday, February 14, 2020 12:16 PM
To: Mary O'Neil <MCOneil@burlingtonvt.gov>; Scott Gustin <SGustin@burlingtonvt.gov>
Subject: Riverside Ave Housing Development

[WARNING] External Message

Hi Mary + Scott,

I'm an abutter to the 110(?) Riverside Ave development by Brothers and Sisters Development for 57 housing units. I'm OK with the development but concerned that when the (east) retaining wall is installed the roots of the trees on my land will be harmed, etc. I'd prefer that 'nice' trees were not harmed (probably mostly junk stuff) but I don't want to be responsible for harmed trees dying and landing on people's cars or worse onto Riverside Ave or I have to figure out how to remove them.

The DRB hearing is scheduled for next Wednesday and I'm supposed to be out of town.

Can I submit a letter to you stating my concern or would it be better for me to be there? I'd propose the owners clear all trees 15'-20' back from the retaining wall on my side of the property line to avoid any issues down the road.

Thanks and have a nice weekend!

Don

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

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Sean McKenzie, (Alternate)
Ravi Venkataraman, (Alternate)

BURLINGTON DEVELOPMENT REVIEW BOARD
Wednesday February 19th 2020, 5:00 PM
Conference Room, Department of Permitting & Inspections,
645 Pine Street, Burlington, VT Agenda

Board Members Present: Brad Rabinowitz, Geoff Hand, Brooks McArthur, Kienan Christianson, Zoraya Hightower
Board Members Absent: Springer Harris, AJ LaRosa, Sean McKenzie (Alt), Ravi Venkataraman (Alt)
Staff Present: Scott Gustin, Ryan Morrison, and Alison Davis

I. Agenda
B. Rabinowitz: No changes to agenda

II. Communications
B. Rabinowitz: Additional communications about 49 Fletcher Place, will review when we reach that item in agenda

III. Minutes
B. Rabinowitz: Will review minutes from February 4th during deliberation

IV. Consent

V. Public Hearing

1. **19-0980CA/MA; 110 Riverside Avenue (NAC-R, Ward 1E) Sisters & Brothers Investment Group, LLP**
   Re-open hearing to accept requested submission information; detailed shoring plan; confirmation of Stormwater approval, revision to site plan. Time extension request for 19-0980CA/MA, 57-unit apartment building with underground parking (Project Manager: Mary O'Neil)

Eric Goddard, Abby Dery, and Steve Guild appeared on behalf of project
Sharon Bushor, Robert Butani, Nancy Kirby, and Jason Stuffle provided public testimony

B. Rabinowitz: Re-opened public hearing to discuss shoring plans. Recommends beginning with the review of that
E. Goddard: Gives overview of shoring plans. Explains retaining wall system. Shows where swales are located
B. Rabinowitz: Asks to clarify grade related to retaining wall
E. Goddard: Explains grade changes on property
G. Hand: Asks about location in relation to traveled-way
B. Rabinowitz: Asks about design of wall and amount of embeddedness
E. Goddard: 60% of sheeting is embedded underground. Explains difference between cantilevered wall and anchored wall stabilization
B. Rabinowitz: Clarifies that there is an easement for construction
E. Goddard: Temporary easement for anchoring wall
B. Rabinowitz: Asks about tree removal where retaining walls and anchors are. Asks about concerns with stability of slope above the property on Colchester Avenue
E. Goddard: Sheeting will improve the stability. Making slope no worse than it is today. Cannot improve uphill

Z. Hightower: Asks if applicant has seen public comment about asking for tree removal for trees that are impacted by the walls
E. Goddard: For a stability standpoint, we do not want dead trees on the hillside that will fall down and make the slope more unstable
Z. Hightower: Asks about amount of tree removal and asks about concerns of future soil sliding towards project location

G. Hand: Asks about stormwater controls
K. Christianson: Asks about spring that flows and runs into property
A. Dery: Explains research done about spring. Explains slopes that need erosion control matting and what that matting consists of
B. Rabinowitz: Refers to plans 5.01
A. Dery: Explains plans for planting Boston Ivy at base of wall, and Virginia Creeper to help buffer the metal visual
K. Christianson: Asks about how proposed plants will impact integrity of the wall

S. Bushor: Explains concerns for wall stabilization anchors and tree root preservation. Concerns for tree removal and lack of tree roots for bank stabilization. Mentions stormwater review and questions when the stormwater plan was reviewed and approved by the City regarding storm event that happened in October which decreased stabilization of bank. Concerns regarding upper bank and mentions history with Salmon Run and the stabilization that they had to complete after project was done. Thanks plans for including secure bicycle storage

J. Stuffle: Backporch looks over 110 Riverside Avenue. Has natural spring on property that runs constantly, even during the winter. Visible streambank that runs into soil stockpile on 110 Riverside. Active wildlife corridor that runs between the Intervale and Centennial Woods. Large walls prevents animals' ability to move through there. Concerns for breaking that continuous habitat. Mentions previous buildings that have been removed on the upper slope due to concerns about bank stability. Concerns for tree removal and lack of roots for bank stability.

N. Kirby: Explains history and relation with surrounding project area. Concerns with the upper bank stability. Mentions ravine that runs through properties. Concerns with safety

R. Butani: Asks if a risk analysis for landslides have been done. Concerns with project on Fletcher Place that will also impact bank stabilization.

B. Rabinowitz: Asks if stabilization of upper bank has been assessed or reviewed
A. Dery: Explains City review of stormwater plans and when those were completed
E. Goddard: Explains review of topography of the whole property in slope analysis. Upper slope issues are beyond the scope of our project. Addresses the concerns about the wall structure and anchoring of wall and stability of slope

B. Rabinowitz: Asks about the differences between the bank at Salmon Run and this bank
E. Goddard: Explains differences. Explains what the solutions were for the Salmon Run bank and what measures are proposed for Riverside Ave project

G. Hand: Addresses concerns for spring that runs to Riverside Ave property
A. Dery: Explains current conditions and stormwater plans. Explains water travel path on property

B. Rabinowitz: Closes public hearing

2. **20-0646SD; 49 Fletcher Place (RM, Ward 1E) Nancy Reid**
   2-lot subdivision of an existing single-family residential lot. Construct new 2-story home with driveway and full foundation on new lot (Project Manager: Ryan Morrison)

Emily Morse and Chris Swayze appeared on behalf of project

B. Rabinowitz: Clarifies about elevation drawings. Recommends correcting the elevation drawing
E. Morse: Full foundation being done. Clarifies driveway and setback issues
B. Rabinowitz: Recommends updating site plan. Clarifies about moving accessory structures

R. Butani: Asks to clarify about space behind driveway. Concerns with slope and instability of bank

N. Kirby: Worried about parking on Fletcher Place with new units being built. Concerns with the ravine and erosion

B. Rabinowitz: Closes public hearing

V. Adjournment

Meeting adjourned at 7 pm

_____

Bradford L. Rabinowitz, Chair of Development Review Board Date

_____

Alison Davis, Zoning Clerk Date

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BURLINGTON DEVELOPMENT REVIEW BOARD
Wednesday February 19th 2020, 5:00 PM
Conference Room, Department of Permitting & Inspections,
645 Pine Street, Burlington, VT Agenda

Minutes

Board Members Present: Brad Rabinowitz, Geoff Hand, Brooks McArthur, Kienan Christianson, Zoraya Hightower
Board Members Absent: Springer Harris, AJ LaRosa, Sean McKenzie (Alt), Ravi Venkataraman (Alt)
Staff Present: Scott Gustin, Ryan Morrison, and Alison Davis

I. Agenda
B. Rabinowitz: No changes to agenda

II. Communications
B. Rabinowitz: Additional communications about 49 Fletcher Place, will review when we reach that item in agenda

III. Minutes
B. Rabinowitz: Will review minutes from February 4th during deliberation

IV. Consent

V. Public Hearing

1. **19-0980CA/MA; 110 Riverside Avenue (NAC-R, Ward 1E) Sisters & Brothers Investment Group, LLP**
Re-open hearing to accept requested submission information; detailed shoring plan; confirmation of Stormwater approval, revision to site plan. Time extension request for 19-0980CA/MA, 57-unit apartment building with underground parking (Project Manager: Mary O'Neil)

Eric Goddard, Abby Dery, and Steve Guild appeared on behalf of project
Sharon Bushor, Robert Butani, Nancy Kirby, and Jason Stuffle provided public testimony

B. Rabinowitz: Re-opened public hearing to discuss shoring plans. Recommends beginning with th review of that
E. Goddard: Gives overview of shoring plans. Explains retaining wall system. Shows where swales located
B. Rabinowitz: Asks to clarify grade related to retaining wall
E. Goddard: Explains grade changes on property
G. Hand: Asks about location in relation to traveled-way
B. Rabinowitz: Asks about design of wall and amount of embeddedness
E. Goddard: 60% of sheeting is embedded underground. Explains difference between cantilevered and anchored wall stabilization
B. Rabinowitz: Clarifies that there is an easement for construction
E. Goddard: Temporary easement for anchoring wall
B. Rabinowitz: Asks about tree removal where retaining walls and anchors are. Asks about concern

E. Goddard: Sheeting will improve the stability. Making slope no worse than it is today. Cannot imp uphill

Z. Hightower: Asks if applicant has seen public comment about asking for tree removal for trees th are impacted by the walls
E. Goddard: For a stability standpoint, we do not want dead trees on the hillside that will fall down make the slope more unstable
Z. Hightower: Asks about amount of tree removal and asks about concerns of future soil sliding towards project location

G. Hand: Asks about stormwater controls
K. Christianson: Asks about spring that flows and runs into property
A. Dery: Explains research done about spring. Explains slopes that need erosion control matting a what that matting consists of
B. Rabinowitz: Refers to plans 5.01
A. Dery: Explains plans for planting Boston Ivy at base of wall, and Virginia Creeper to help buffer metal visual
K. Christianson: Asks about how proposed plants will impact integrity of the wall

S. Bushor: Explains concerns for wall stabilization anchors and tree root preservation. Concerns fo tree removal and lack of tree roots for bank stabilization. Mentions stormwater review and questior when the stormwater plan was reviewed and approved by the City regarding storm event that happened in October which decreased stabilization of bank. Concerns regarding upper bank and mentions history with Salmon Run and the stabilization that they had to complete after project was done. Thanks plans for including secure bicycle storage

J. Stuffle: Backporch looks over 110 Riverside Avenue. Has natural spring on property that runs constantly, even during the winter. Visible streambank that runs into soil stockpile on 110 Riverside Active wildlife corridor that runs between the Intervale and Centennial Woods. Large walls prevents animals' ability to move through there. Concerns for breaking that continuous habitat. Mentions previous buildings that have been removed on the upper slope due to concerns about bank stabilit Concerns for tree removal and lack of roots for bank stability.

N. Kirby: Explains history and relation with surrounding project area. Concerns with the upper bank stability. Mentions ravine that runs through properties. Concerns with safety

R. Butani: Asks if a risk analysis for landslides have been done. Concerns with project on Fletcher Place that will also impact bank stabilization.

B. Rabinowitz: Asks if stabilization of upper bank has been assessed or reviewed
A. Dery: Explains City review of stormwater plans and when those were completed
E. Goddard: Explains review of topography of the whole property in slope analysis. Upper slope iss are beyond the scope of our project. Addresses the concerns about the wall structure and anchorin wall and stability of slope

B. Rabinowitz: Asks about the differences between the bank at Salmon Run and this bank
E. Goddard: Explains differences. Explains what the solutions were for the Salmon Run bank and measures are proposed for Riverside Ave project

G. Hand: Addresses concerns for spring that runs to Riverside Ave property
A. Dery: Explains current conditions and stormwater plans. Explains water travel path on property

B. Rabinowitz: Closes public hearing

2. 20-0646SD; 49 Fletcher Place (RM, Ward 1E) Nancy Reid

2-lot subdivision of an existing single-family residential lot. Construct new 2-story home with driveway and full foundation on new lot (Project Manager: Ryan Morrison)

Emily Morse and Chris Swayze appeared on behalf of project

B. Rabinowitz: Clarifies about elevation drawings. Recommends correcting the elevation drawing
E. Morse: Full foundation being done. Clarifies driveway and setback issues
B. Rabinowitz: Recommends updating site plan. Clarifies about moving accessory structures

R. Butani: Asks to clarify about space behind driveway. Concerns with slope and instability of bank

N. Kirby: Worried about parking on Fletcher Place with new units being built. Concerns with the ravine and erosion

B. Rabinowitz: Closes public hearing

V. Adjournment
Meeting adjourned at 7 pm

Bradford L. Rabinowitz, Chair of Development Review Board — Date

Alison Davis, Zoning Clerk — Date 7/20/2020

Plans may be viewed at the Department of Permitting & Inspections, (645 Pine Street, Burlington), between the hours of 8:00 a.m. and 4:30 p.m. Participation in the DRB proceeding is a prerequisite to the right to take any subsequent appeal. Please note that ANYTHING submitted to the Zoning office is considered public and cannot be kept confidential. This may not be the final order in which items will be heard. Please view final Agenda, at www.burlingtonvt.gov/pz/drb/agendas or the office notice board, one week before the hearing for the order in which items will be heard.

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