

Burlington Design Advisory Board

645 Pine Street
Burlington, VT 05401
www.burlingtonvt.gov/DPI/DAB
Phone: (802) 865-7188

Matthew Bushey
Ron Wanamaker
Eric Morrow
Karyn Norwood
Emily Morse
Jay White, Alt.
Kathleen Ryan, Alt.



DESIGN ADVISORY BOARD Tuesday January 12, 2021 3:00 PM REMOTE MEETING

Zoom: <https://us02web.zoom.us/j/84658411970?pwd=SEsvM2x2NURacWsizeDdBTFBJYWFOdz09>

Webinar ID: 846 5841 1970

Passcode: 923553

Or Telephone: +1 312 626 6799 or +1 929 205 6099 or +1 301 715 8592 or +1 346 248 7799 or +1 669
900 6833 or +1 253 215 8782

Agenda

Session I – 3:00 PM – 3:30 PM

- 1. 21-0583CA; 52 Institute Road (RCO, Ward 4N) Burlington School Dept.**
Expansion and renovation of Burlington High School and Technical Center.

Session II – 3:30 PM – 4:00 PM

- 2. Discussion of professional certifications required for plan review**

The programs and services of the City of Burlington are accessible to people with disabilities. Individuals who require special arrangements to participate are encouraged to contact the Department of Permitting & Inspections at least 72 hours in advance so that proper accommodations can be arranged. For information call 865-7188.

Non-Discrimination

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Department of Permitting and Inspections

Zoning Division
645 Pine Street
Burlington, VT 05401
www.burlingtonvt.gov/pz
Phone: (802) 865-7188
Fax: (802) 865-7195

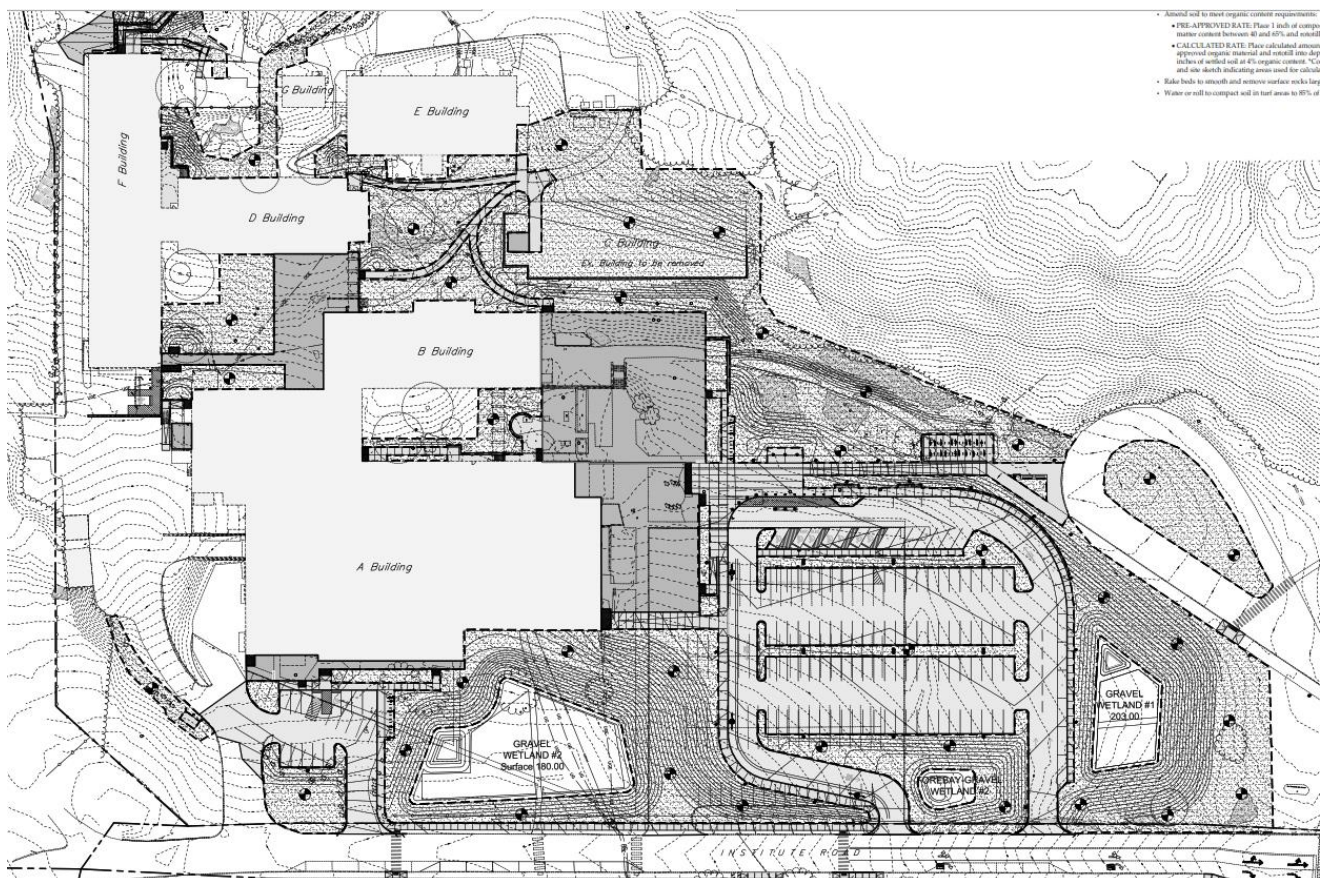
William Ward, Director
Scott Gustin, AICP, CFM, Principal Planner
Mary O'Neil, AICP, Principal Planner
Ryan Morrison, Associate Planner
Layne Darfler, Planning Technician
Alison Davis, Zoning Clerk
Theodore Miles, Zoning Specialist
Charlene Orton, DPI Administrator



MEMORANDUM

To: The Design Advisory Board
From: Mary O'Neil, AICP, Principal Planner
RE: ZP21-0583CA, 52 Institute Road (BHS)
Date: January 12, 2021

File: 21-0583CA
Location: 52 Institute Road
Zone: RCO-RG **Ward:** 4N
Parking District: Neighborhood
Date application accepted: December 23, 2020
Applicant/ Owner: Black River Design / Burlington School District
Request: Expansion and renovation of Burlington High School and Burlington Technical Center.



Burlington School District embarked on this project to address existing deficiencies including failure to meet current accessibility standards, deteriorating infrastructure, outdated plumbing, electrical heating and ventilation systems, and the school's "1960" era classrooms.



View from North Avenue

Three additions will be constructed to consolidate programs, improve accessibility and circulation, and enhance security.

The main addition is a three story structure at the main entrance to house administrative and support functions, provide a new secure entrance vestibule, replace the C Building classrooms, and provide for a modernized library more conveniently located for both student and public access. An auxiliary gym to be located near the main building entrance remains an option but is budget dependent. This application seeks approval for both the auxiliary gym and a greenhouse to be located on the existing C Building footprint.

A second three story addition will connect Buildings A, B, D, and F Buildings near the BHS cafeteria and house an elevator, the Intensive Special Needs (ISN) suite and multiple Science labs. It will provide a new direct connection between BHS and Burlington Technical Center (BTC).

A third addition is located south of the existing gymnasium and provides for a new four story elevator and egress stair connecting all four levels of A Building and an interior accessible route to the music rooms located at the ground level. The On Top program will continue to be located on the fourth floor of A Building.

Aging infrastructure will be replaced to decrease maintenance costs and improve energy efficiency. Primary upgrades to Buildings A, B and D include:

- Addition of automatic sprinkler system
- New addressable fire alarm system throughout
- New interior plumbing; piping and fixtures
- New LED lighting and low voltage controls
- Addition of cooling throughout
- New heating and ventilation throughout
- New interior finishes
- New operable windows
- New roofs

The scope of work for F Building (BTC) will be limited to ADA and Building Code required improvements.

Infrastructure and site circulation improvements will include:

- Regraded parking lot to improve accessibility and traffic flow
- Stormwater treatment to meet State and City Regulations
- Relocated electrical service with provisions to connect a portable generator for emergency power
- Improve traffic circulation routes able to support fire department vehicle access
- New underground utility (sewer, water, power, gas, and stormwater infrastructure)
- Additional ADA parking distributed across the site
- Additional and conveniently located bicycle parking
- Electric Vehicle charging stations

Building C is proposed to be demolished. Building E (24,870 sf gross area) will remain on site to be used for possible future BSD programming. No renovations are planned.

The project will address pre-existing asbestos, urban soils, and PCB contamination. No change is proposed to school population, staffing or event functions outside the normal year to year fluctuation. As a result, no increased impacts are forecast for trip ends, water supply and wastewater disposal.

Background:

- ✚ **Zoning Review 20-0194SP**; Sketch Plan review for renovations to BHS. September 1, 2020.
- ✚ **Zoning Permit 15-0982CA**; addition of storage shed. April 2015.
- ✚ **Zoning Permit 13-0291CA**; installation of rooftop condensing units on Buildings A and B. June 2013.
- ✚ **Zoning Permit 13-1037CA**; replace existing HVAC system with new heat pump system and condenser on roof of Building A. May 2013.
- ✚ **Zoning Permit 13-0053CA**; install new shed in north east portion of property. July 2012.
- ✚ **Non-Applicability of Zoning Permit Requirements 12-0558NA**; installation of photovoltaic system, Certificate of Public Good. November 2011.
- ✚ **Zoning Permit 11-1123CA**; install condensing unit on the side of F building at BHS. July 2011.
- ✚ **Zoning Permit 10-0850CA**; two new Energy Recovery Units on roof of A Building at Burlington High School. June 2010.
- ✚ **Zoning Permit 09-616CA**; Renovations to existing press box including new membrane roof covering, roof access hatch, ladder, and safety rail. March 2009.

- ✚ **Zoning Permit 09-321SN**; Electronic sign to be added to previously approved sign. October 2008.
- ✚ **Zoning Permit 09-241CA**; Relocate solar array from building side to flat roof of building with new rack mounting structure. September 2008.
- ✚ **Zoning Permit 09-137SN**; freestanding sign for Burlington High School. August 2008.
- ✚ **Zoning Permit 08-549SN**; one freestanding, internally lit, metal sign for Burlington High School. Application **denied**, February 2008.
- ✚ **Zoning Permit 06-457CA**; construction of 3,200 square foot building to house wood chip boiler system for existing high school. March 2006.
- ✚ **Zoning Permit 06-452CA**; redevelopment of high school athletic fields, parking, new service and entrance buildings and new sewage pump station. February 2006.
- ✚ **Zoning Permit 05-305CCA**; amended plan for building-mounted solar panels at BHS. Reduction from six panels to four. Child of permit 05-058CA. November 2004.
- ✚ **Zoning Permit 05-058CA**; Install 6 solar panels attaching to a pole located approximately 35 ft. off the SE corner of building A. July 2004.
- ✚ **Zoning Permit 04-723CA**; Remove old green house. Enclose with walls, new roof and windows. July 2004.
- ✚ **Zoning Permit 00-028**; Installation of two metal halide flood lights on existing poles to illuminate the existing press box for the high school athletic field. July 1999.
- ✚ **Zoning Permit 99-186**; Amend previously approved bleacher system at the Burlington High School track to include a press box. October 1998.
- ✚ **Zoning Permit 98-305**; Replace existing steel and wood bleachers with new on the east and west sides of the Burlington High School track. Proposal includes installation of a slab on the east side (Portable units on the west). January 1998.
- ✚ **Zoning Permit 98-074**; Installation of a handicapped access ramp on the front of the existing Burlington high school. Materials to be painted metal (Dark green and concrete). August 1997.
- ✚ **Zoning Permit 97-033**; Add nonilluminated message board section under the existing freestanding sign for Burlington High School. Location on North Avenue and height and overall size to remain the same. July 1996.
- ✚ **Zoning Permit 87-678 / COA 87-215**; building three bay one-story garage for storage of aircraft parts for school program. January 1988.
- ✚ **Zoning Permit 87-320**; change an existing window on west side to exterior door to provide gress to new classroom. June 1987.
- ✚ **Zoning Permit 82-435**; construct bus shelter on the site of a removed bus shelter. September 1982.

Overview:

Burlington School District proposes to reconfigure and modernize Burlington High School. Three additions are proposed to consolidate programs, improve accessibility, and enhance security. A fourth addition, for an auxiliary gymnasium, remains in the plan as budget allows.

In November 2018, voters approved a bond to complete the project, entitled “Revisioning BHS/BTC”. Sketch Plan Review was delayed while design modification occurred post preliminary bids. More information and updates can be viewed [here](#).

The project development is subject to limited municipal review per **VSA §4413**:

Limitations on municipal bylaws

- (a) *The following uses may be regulated only with respect to **location, size, height, building bulk, yards, courts, setbacks, density of buildings, off-street parking, loading facilities, traffic, noise, lighting, landscaping, and screening requirements**, and only to the extent that regulations do not have the effect of interfering with the intended function use:*
- (1) ***State or community owned and operated institutions and facilities.***
 - (2) ***Public and private schools and other educational institutions certified by the state department of education.***
 - (4) *Public and private hospitals.*

Part 1: Land Division Design Standards

No land division is proposed. Not applicable.

Part 2: Site Plan Design Standards

Sec. 6.2.2 Review Standards

(a)Protection of Important Natural Features:

A study was commissioned of Gilman and Briggs Environmental Consultants (p. 72-80 overall application). This analysis included a list of identified plant and tree species, with mapping to indicate both rare and endangered species. The ultimate examination resulted in a determination of no impact relative to the area of construction, a recommendation to limit tree clearing, and a return to a vegetative state within the outline of Building C. The Conservation Board reviewed the plan and study at their January 4, 2021 meeting, and found the natural resources assessment adequate. An official for Burlington School District has also added that the study anticipates greater impacts that are actually proposed, due to revisions to Building C.

Enhanced landscaping and tree removal is outlined in plan L100.

(b) Topographical Alterations:

Regrading is proposed at the location of the easterly parking lot (to facilitate accessibility) and at the site of Building C to facilitate a seating area and greenhouse. See Plan L103.

Overall, the introduction of stormwater features (gravel wetlands) will result in site modifications.

(c) Protection of Important Public Views:

There are no protected views from or through this site. Not applicable.

(d) Protection of Important Cultural Resources:

Not applicable.

(e) Supporting the Use of Renewable Energy Resources:

The redevelopment plan includes entirely new infrastructure, including:

- New LED lighting with low voltage controls;
- Addition of cooling throughout the complex;
- New heating and ventilation systems
- Electric Vehicle charging stations

There is existing solar on the multiple rooftops. The project has been subject to design challenge in order to qualify for certification under CHPS; *Collaborative High Performance School Standards*. When complete, BHS will be the first school in Vermont to achieve this certification. Similar to LEED, it specifically adopts additional standards particular to educational facilities, one of them acoustics.

No part of this application precludes the use of wind, water, solar, geothermal, or other renewable energy resources.

(f) Brownfield Sites:

The site is not listed on the Vermont DEC list of identified Brownfields. Recent site analysis has determined the presence of site contamination, which will be addressed within this project. See narrative, p. 2.

(g) Provide for nature's events:

Special attention shall be accorded to stormwater runoff so that neighboring properties and/or the public stormwater drainage system are not adversely affected. All development and site disturbance shall follow applicable city and state erosion and stormwater management guidelines in accordance with the requirements of Art 5, Sec 5.5.3.

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 shall also be incorporated.

The narrative defines the introduction of Stormwater Treatment to meet all City and State regulations. The project will be required to satisfy all Chapter 26 requirements, with written approval of the City Stormwater program. Gravel wetlands will be introduced as part of the Stormwater mitigation measures.

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 shall also be incorporated.

Improvements to building entrances will assure enhanced shelter for students and staff. Burlington School District maintains an active snow removal program for all their facilities.

(h) Building Location and Orientation:

The building will continue to front Institute Road, with additions to the east, north and at a southerly entrance. Redevelopment will continue to emphasize and enhance the existing orientation to the street.

(i) Vehicular Access:

Normal access will continue as existing off Institute Road, while the GMT bus loop off North Avenue will remain undisturbed. Modifications will be made to parking access to the south lot, and improvements to the circulation pattern on the north. See Civil drawing C1.0.

(j) Pedestrian Access:

Much greater circulation will be afforded with the plan, with the addition of interconnected pedestrian paths from the east/drop off access point; around the south to the newly designed accessible entry. A network of paths are proposed across the site, between differing building volumes and to the proposed greenhouse.

(k) Accessibility for the Handicapped:

A principal goal of this renovation is to achieve access throughout the complex and across the campus. The three story addition will connect A, B, D and F Buildings near the BHS cafeteria and house an elevator, providing a direct link between BHS and BTC. Another addition on the south of the existing gymnasium will provide a new four story elevator and egress stair connecting all four levels of A Building with an interior accessible route to the music rooms located on the ground level. Regrading the northerly parking lot will also improve access standards, as well as improved pedestrian paths throughout the site. HCParking is provided in all lots.

(l) Parking and Circulation:

Reference is made to Plan L100 ALT, which includes the attached parking table.

The Existing North Parking Lot (ENL) will be completely reconfigured to improve accessibility and traffic flow. This existing North Lot has 122 parking spaces and a curb side aisle used as approximately 30 temporary pickup and dropoff spaces. The proposed upper parking lot will include 7 accessible spaces, 92 designated staff parking spaces and 22 short term drop-off spaces. The lower parking lot will have a total of 12 spaces (see table, right.) The layout of the north lot will operate much as the existing lot. Buses will remain on a separate loop directly off North Avenue. The one-way pattern of circulation through the lot will remain.

PARKING CALCULATIONS		
	EXISTING SITE (TOTAL)	PROPOSED PLAN (TOTAL)
UPPER PARKING LOT (STAFF / VISITOR)	122	121
ADA-Accessible Spaces	4	7
Designated Staff Parking Spaces (DS)	103	92
Visitor / Short-Term Dropoff Spaces (V)	15	22
LOWER PARKING LOT (STAFF)	18	12
ADA-Accessible Designated Staff Parking Space	2	1
ADA-Accessible Designated Dropoff Space (On Top)	0	1*
Designated Staff Parking Spaces (DS)	16	11
SOUTH PARKING LOTS (STUDENT)	144	143
ADA-Accessible Spaces	0	2
Student Parking Spaces	144	141
NORTH-REAR PARKING (STAFF / VISITOR)	46	48
F-Bldg North ADA-Accessible Designated Space (DS)	0	1
F-Bldg North ADA-Accessible Dropoff Space (Daycare)	0	1*
F-Bldg North Visitor / Dropoff Spaces (V)	4	4
F-Bldg South ADA-Accessible Dropoff Spaces (ISN)	0	1*
Designated Staff Parking Spaces (DS)	22	23
Maintenance Spaces (M)	20	20
PARKING TOTALS	330	324
(NET COUNT)		-6
* designated dropoffs not included in parking counts		
ON-STREET PARKING (Institute Road)	11	10

Both the entrance and exit drives off Institute Road will be shifted to the east. With no change in traffic volumes, only the queue development is anticipated to change. RLG models provided for Sketch Plan review are based on the 10-15 minute congestion period at the close of school; otherwise, traffic volumes are lower and congestion is not anticipated to be a problem.

The forecasted decrease in parking spaces (-6) and discussion of required parking is addressed in an overall parking management plan. See p. 68-71 in overall submission packet.

(m) Landscaping and Fences:



Wagner Hodgson provided an illustrative site plan (L000) depicting the buildout on the site. With improve parking areas, defined pedestrian circulation paths, enhanced Stormwater features and landscape amenities like wider paths, benches, and bike racks the campus will enjoy renewed green space and functional circulation throughout the site.

See plans L001-L202.

(n) Public Plazas and Open Space:

There are several areas of existing and proposed gathering space; the enhanced entry courtyard on the east, the improved central access entry on the south, the courtyard (including an area within the partial foundation of Building C, as well as the bicycle corrals and wide paths. Enhanced landscaping surround the walkways and at the site of Building C will provide comfortable and attractive areas to gather.

(o) Outdoor Lighting:

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

New LED lighting is proposed throughout. Reference is made to fixture and illumination plans p. 99-131 (there are duplicate plan sets) and Plan L400 ALT for illumination levels. Information is lacking for max/min ratio, and reporting on max. footcandle measurements for the parking lot and walkways. A request has been made to the applicant for this information.

(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 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. On-site utilities shall be placed underground whenever practicable. Trash and recycling bins and dumpsters shall be located, within preferably, or behind buildings, enclosed on all four (4) sides to prevent blowing trash, and screened from public view.

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.

This very ambitious and comprehensive application intends to increase energy efficiency, improve accessibility, enhance security, and consolidate programming. New underground utility (sewer water power and stormwater infrastructure) is included.

Part 3: Architectural Design Standards

Sec. 6.3.2 Review Standards

State Statute §4413 Limits Municipal Review per the following:

§ 4413. Limitations on municipal bylaws

*(a) The following uses may be regulated only with respect to **location, size, height, building bulk, yards, courts, setbacks, density of buildings, off-street parking, loading facilities, traffic, noise, lighting, landscaping, and screening requirements**, and only to the extent that regulations do not have the effect of interfering with the intended functional use:*

(1) State- or community-owned and operated institutions and facilities.

*(2) **Public and private schools and other educational institutions certified by the state department of education.***

(3) Churches and other places of worship, convents, and parish houses.

(4) Public and private hospitals.

(5) Regional solid waste management facilities certified under 10 V.S.A. chapter 159.

(6) Hazardous waste management facilities for which a notice of intent to construct has been received under 10 V.S.A. § 6606a.

(a) Relate development to its environment:

1. Massing, Height and Scale:

The proposed additions are similar in scale, massing and height to the existing building(s) on site.

2. Roofs and Rooflines.

Not applicable per § 4413. *Limitations on municipal bylaws.*

3. Building Openings

Not applicable per § 4413. *Limitations on municipal bylaws.*

(b) Protection of Important Architectural Resources:

Not applicable.

(c) Protection of Important Public Views:

Not applicable.

(d) Provide an active and inviting street edge:

Not applicable per § 4413. *Limitations on municipal bylaws.*

(e) Quality of materials:

Not applicable per § 4413. *Limitations on municipal bylaws.*

(f) Reduce energy utilization:

A large part of this redevelopment is to improve energy efficiency. Energy modeling information was provided in Sketchplan review. Burlington School District is attempting to qualify for certification under CHPS; *Collaborative High Performance School Standards*. When complete, BHS will be the first school in Vermont to achieve this certification. Similar to LEED, it specifically adopts additional standards particular to educational facilities.

(g) Make advertising features complementary to the site:

Not applicable.

(h) Integrate infrastructure into the building design:

Not applicable per § 4413. *Limitations on municipal bylaws.*

(i) Make spaces secure and safe:

Improved staff and student safety is core to the project. The addition of automatic sprinkler system throughout the complex, a new addressable fire alarm system, new lighting, ventilation, and improved traffic circulation and parking are all identified as safety improvements. Additionally, circulation to allow emergency vehicle access as well as first responder entrances with a stretcher-sized elevator will significantly advance site safety.

Recommended motion: Recommend approval with additional information about lighting levels, and forward to the Development Review Board.



VIEW FROM TURF FIELD ELEVATION (ABOVE) AND IN PERSPECTIVE (BELOW)

Burlington High School
Burlington, VT December 23, 2120

Scale: 1/16" = 1'-0"



VIEW FROM NORTH AVENUE ELEVATION (ABOVE) AND IN PERSPECTIVE (BELOW)

**BLACK
RIVER
DESIGN**

73 MAIN STREET
MONTPELIER VERMONT 05602

REVISIONS	

WALL SECTIONS
SCALE As indicated
DATE 2020-12-14
DRAWN BY DT, CN
CHECKED BY Checker

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BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

BLACK
RIVER
DESIGN
TO MAKE STREET
RIGHTS VISIBLE

REVISIONS

WALL SECTIONS

SCALE

As indicated

DATE

2020-12-14

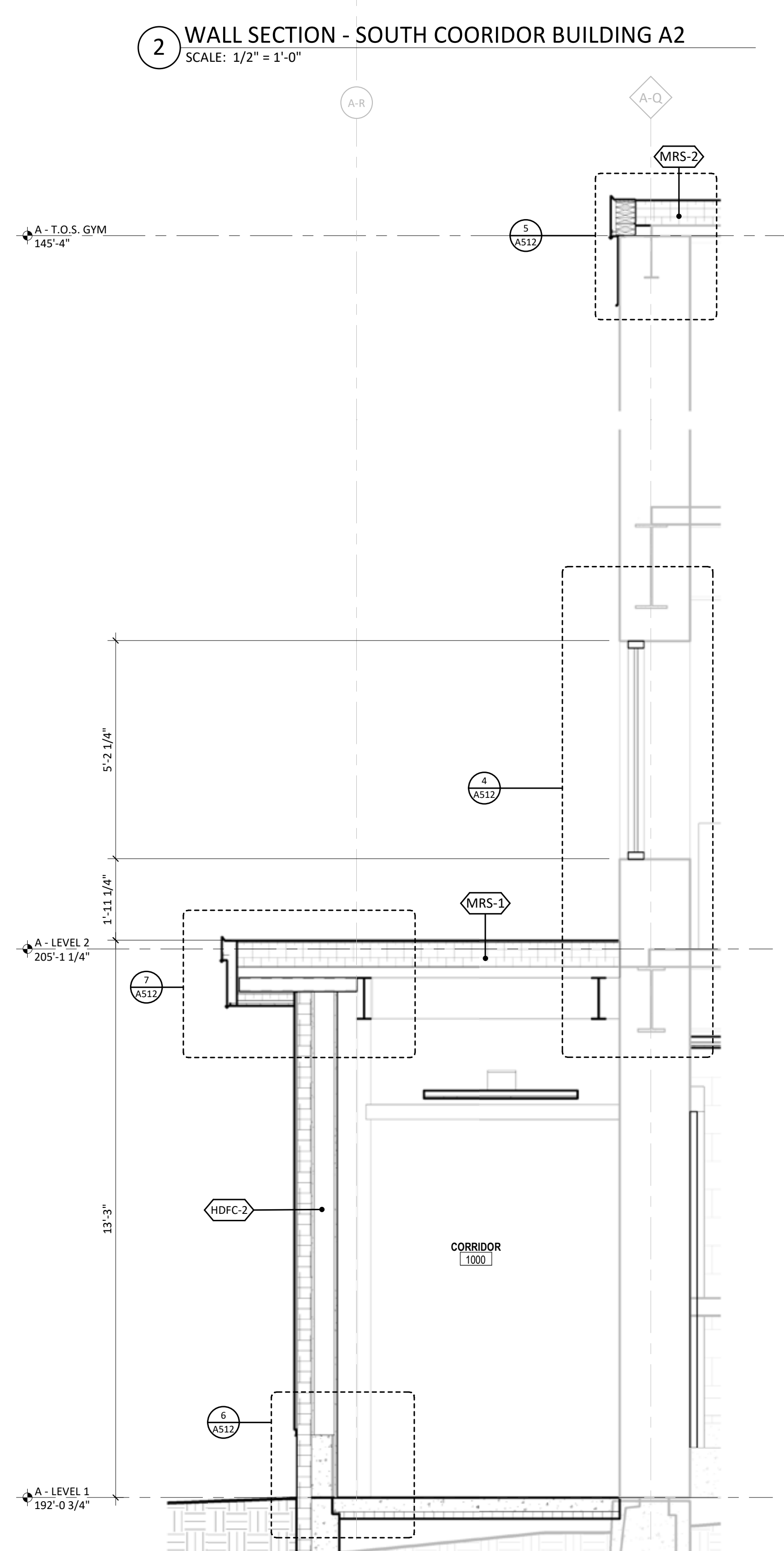
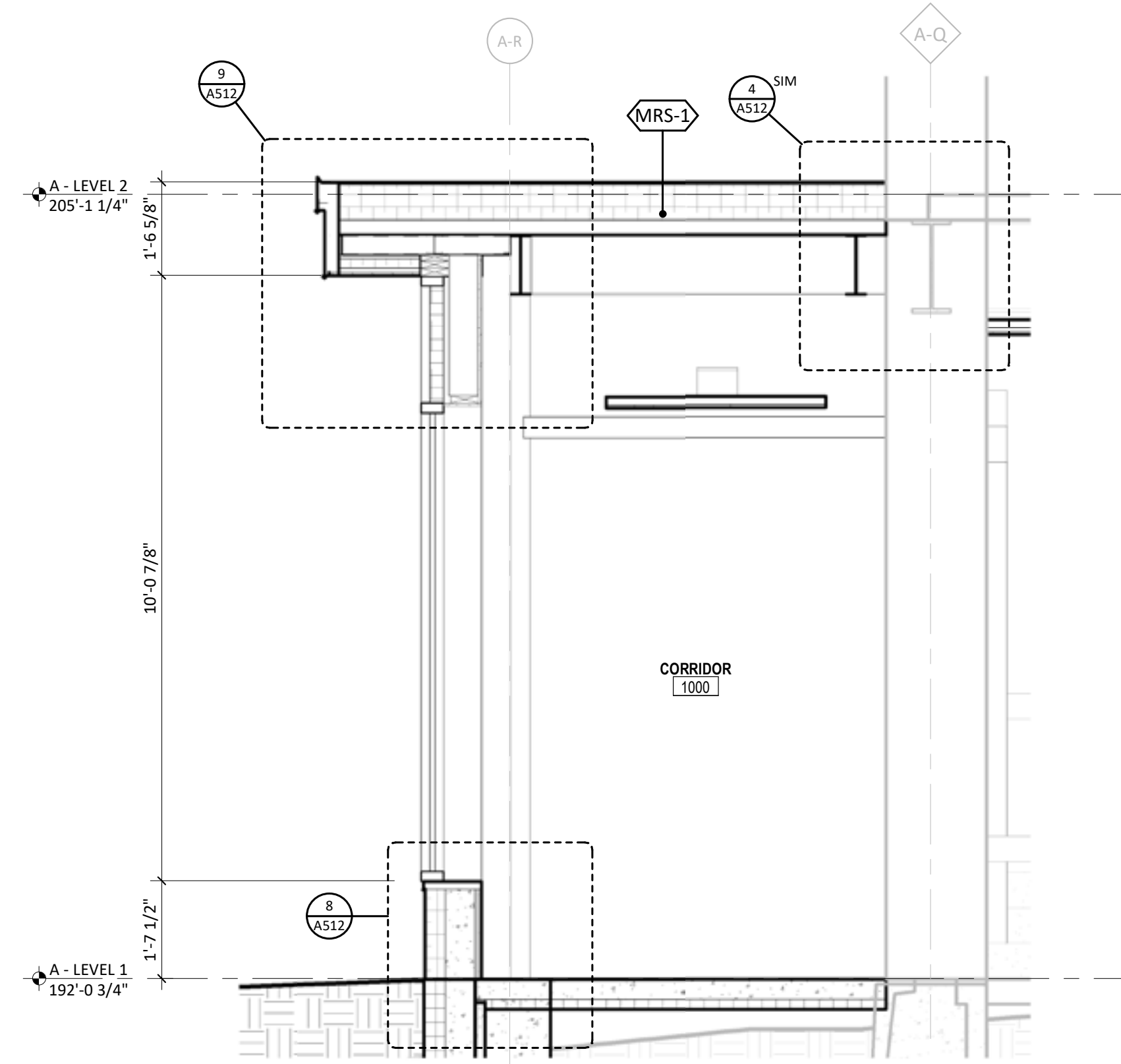
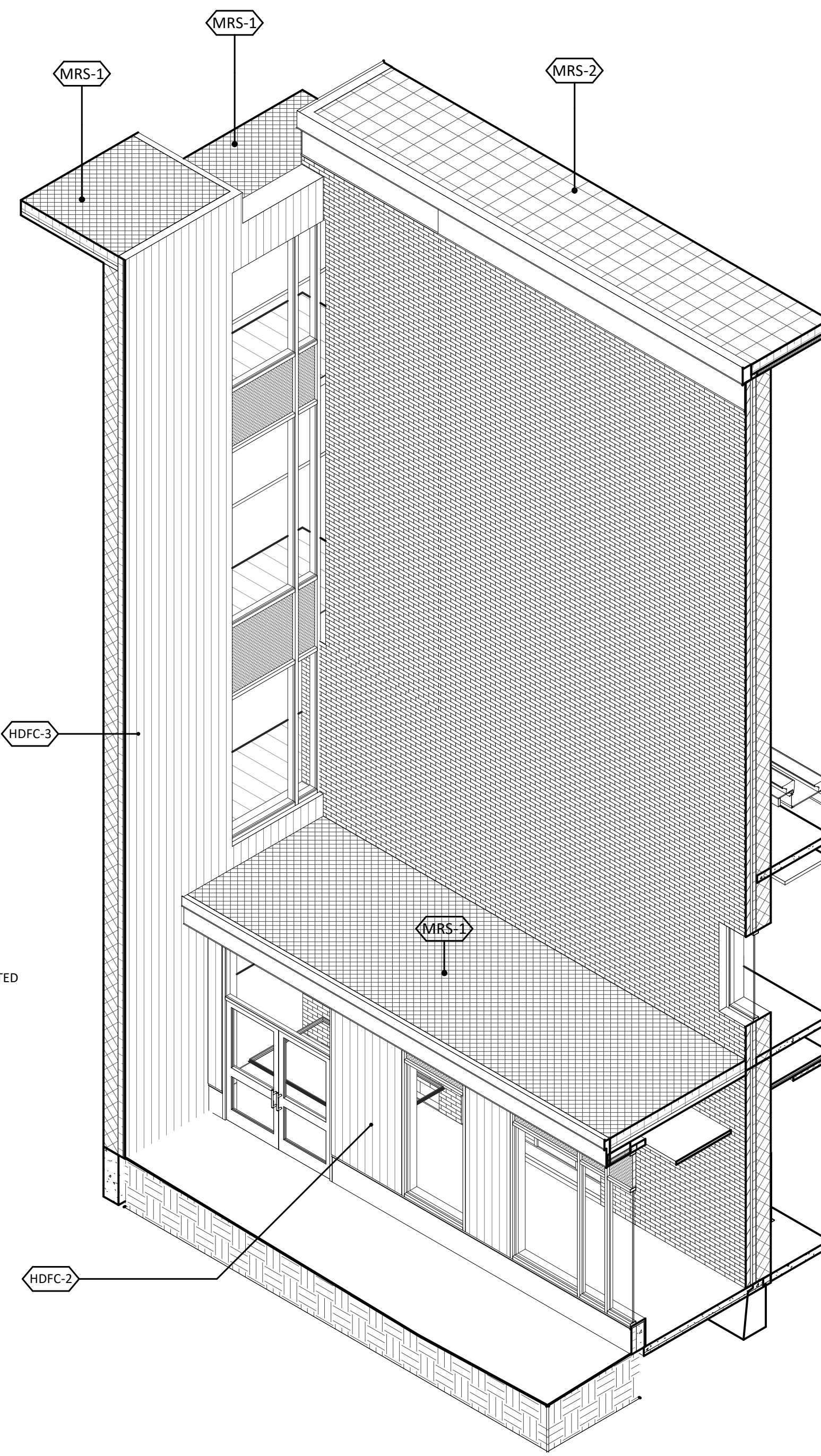
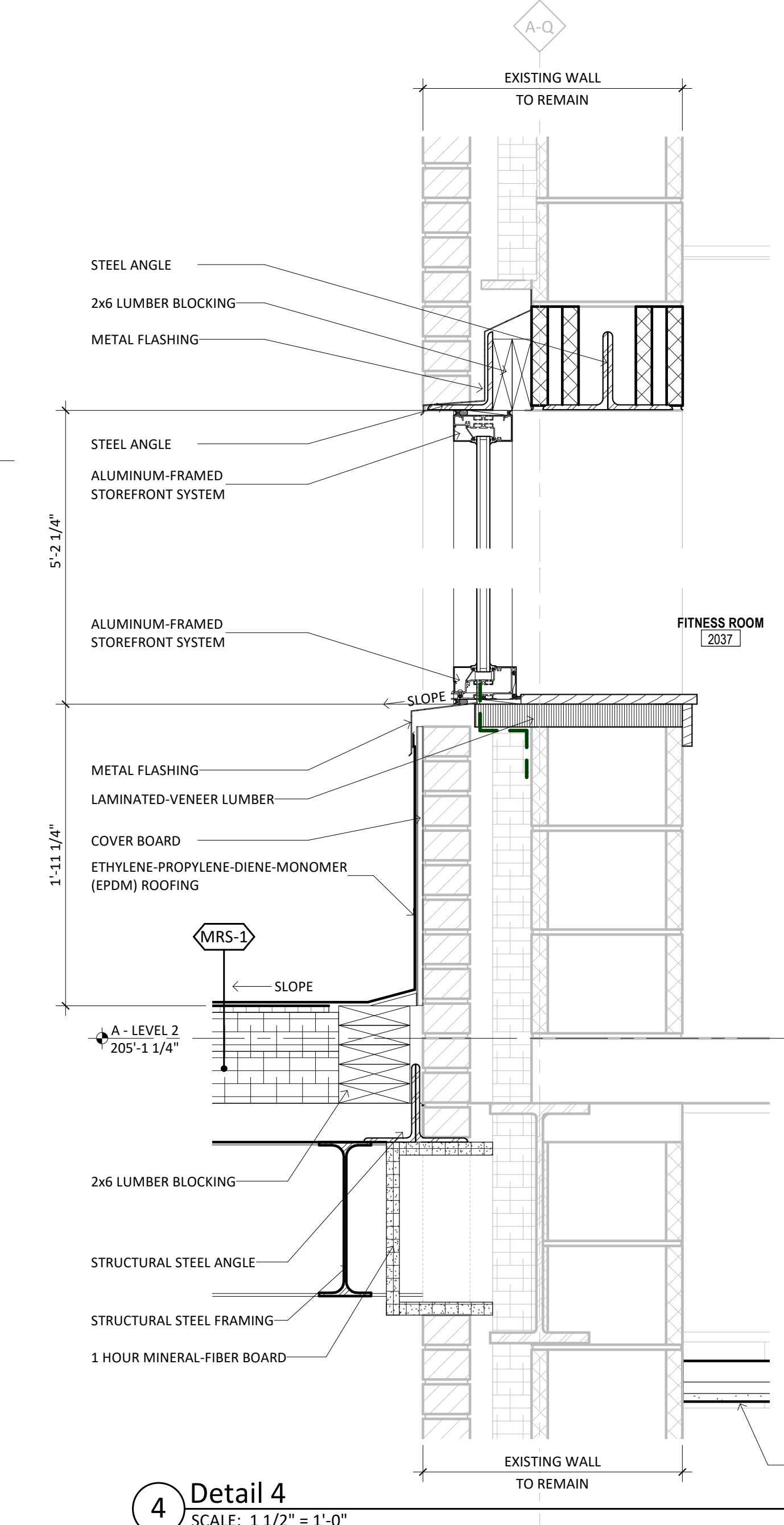
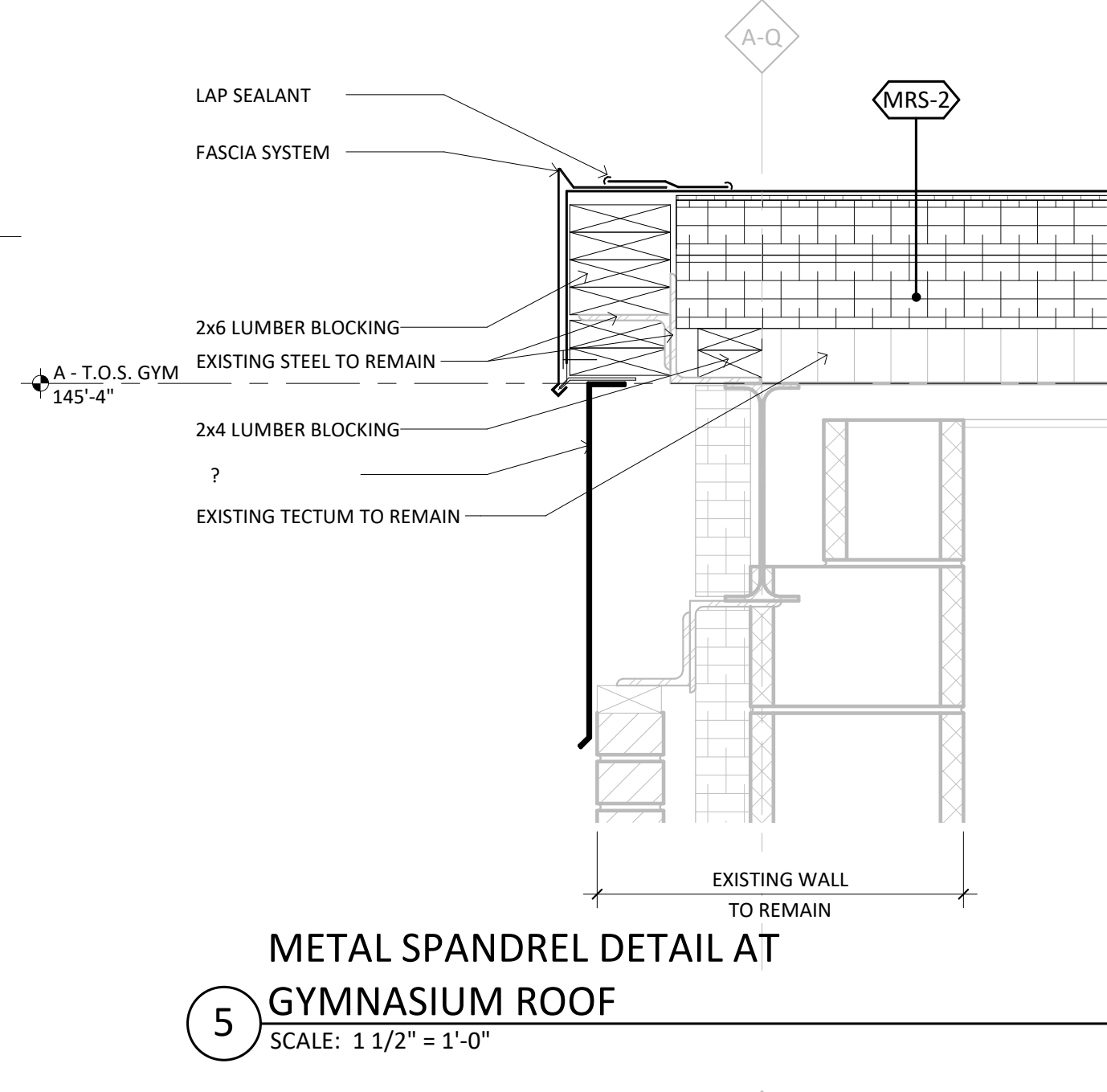
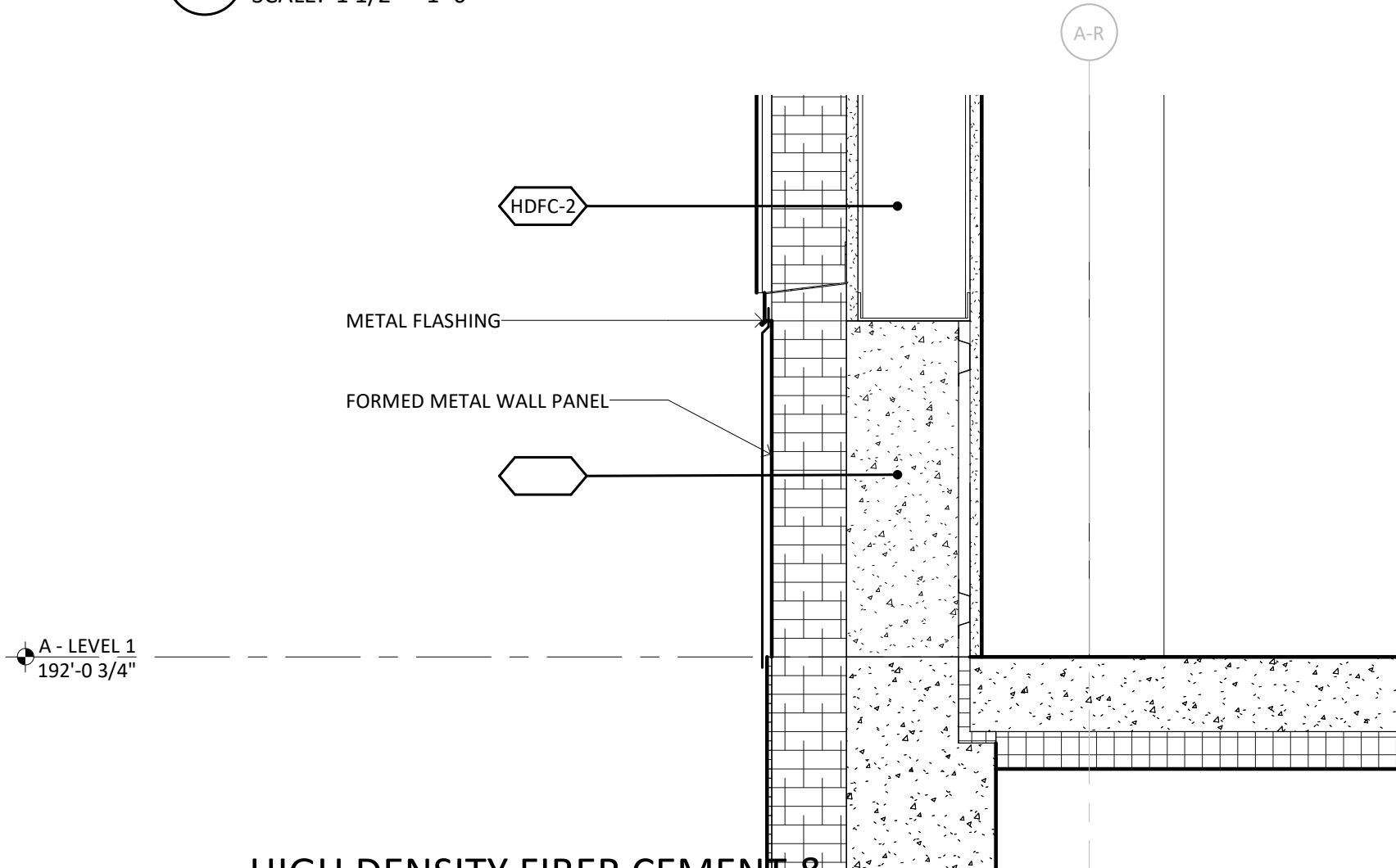
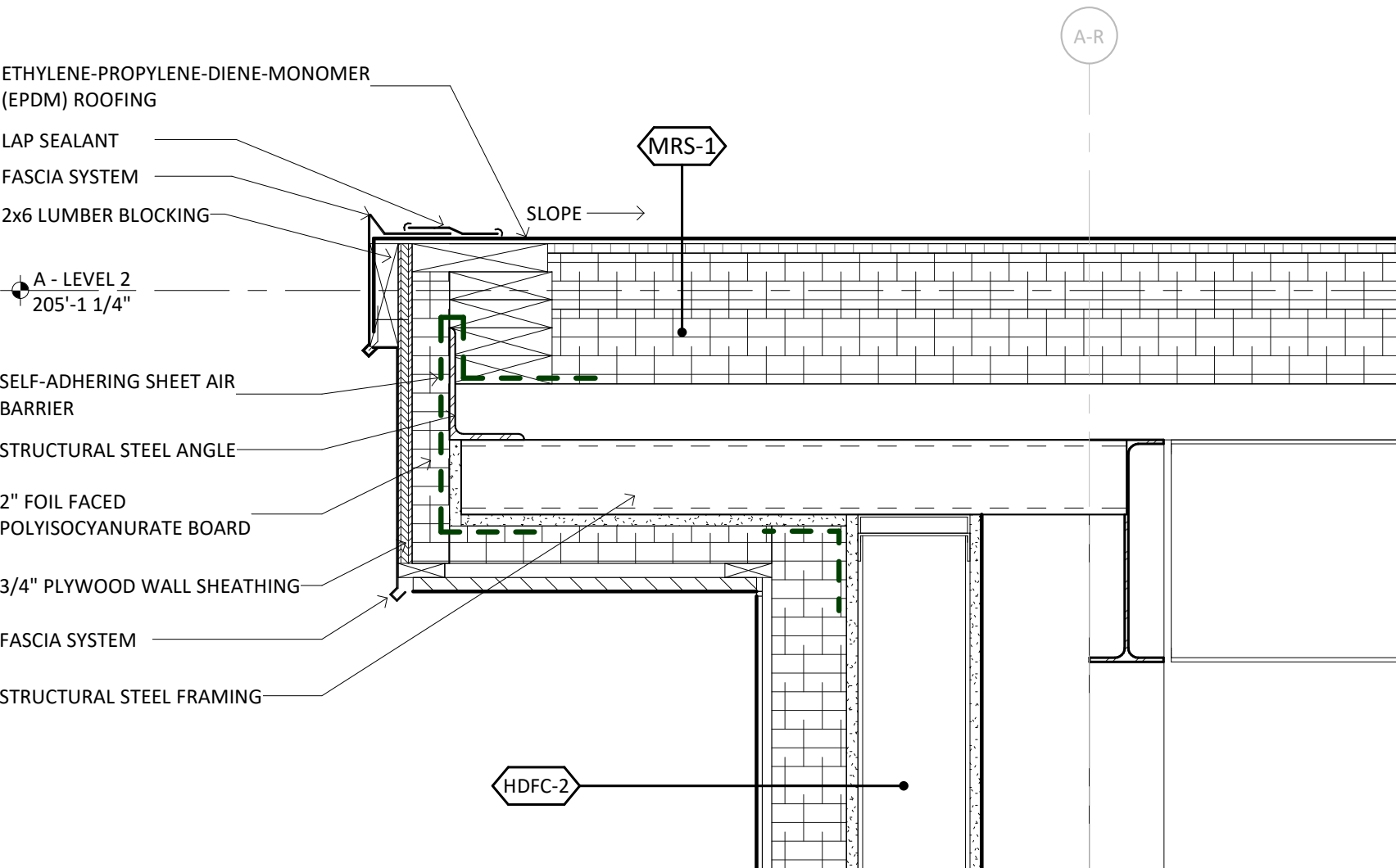
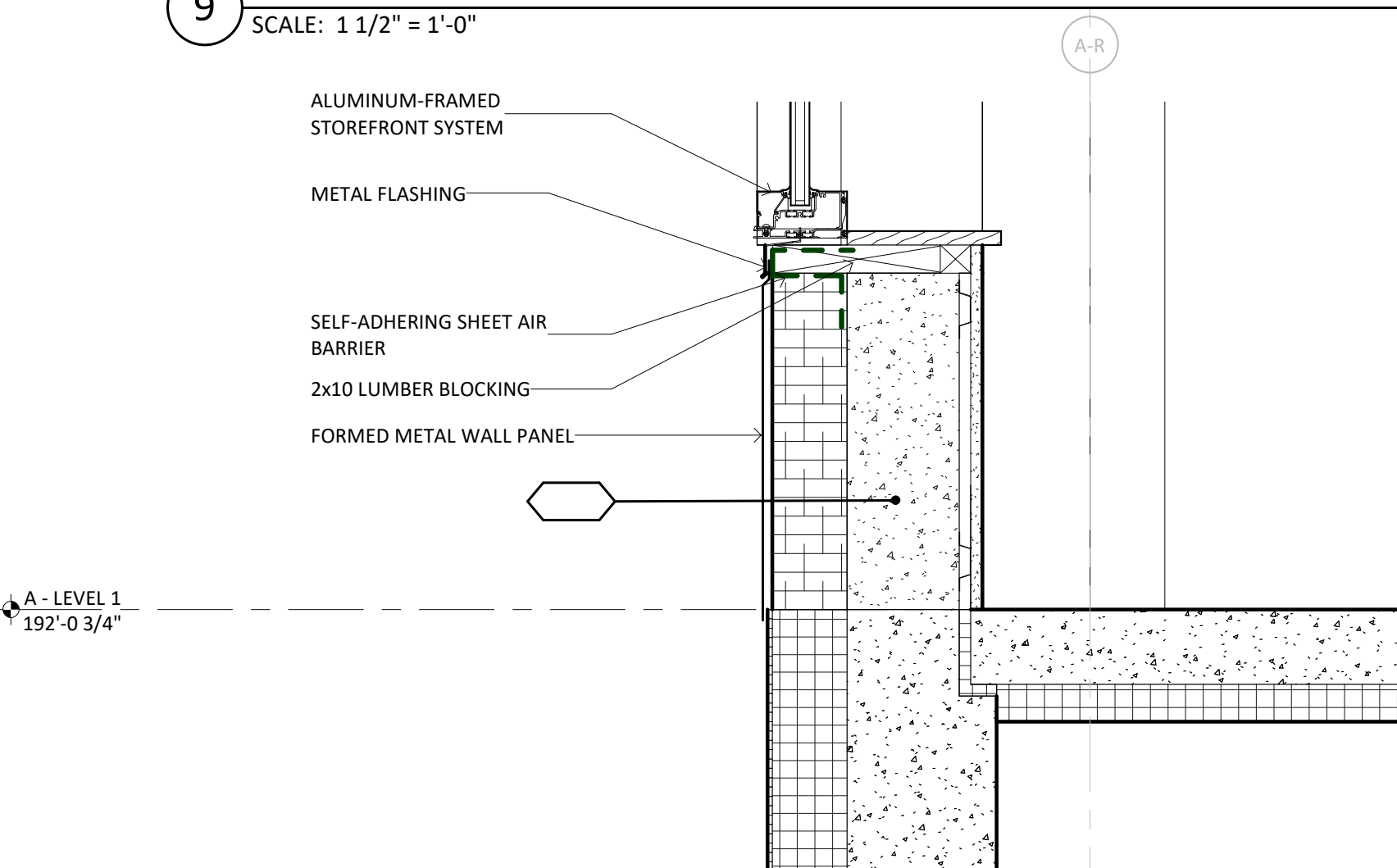
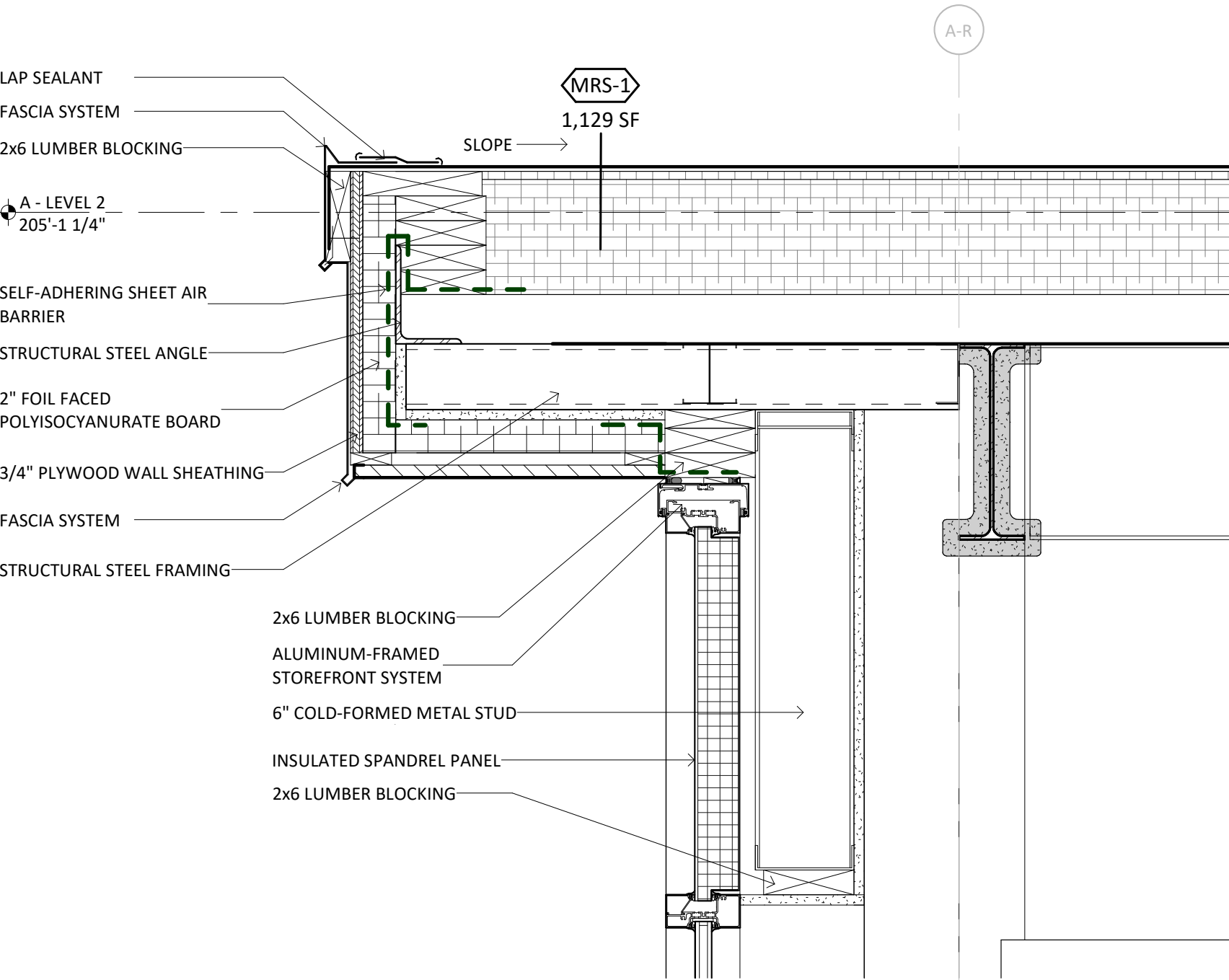
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10 LANDSCAPE PLAN SECTION CONTENTS

[L000- Perspective View](#)

[L001- Tree Protection and Removal Plan](#)

[L100- Overall Layout and Materials Plan](#)

[L101- Detailed Layout and Materials Plan-East](#)

[L102- Detailed Layout and Materials Plan-West](#)

[L103- Detailed Layout and Materials Plan-North](#)

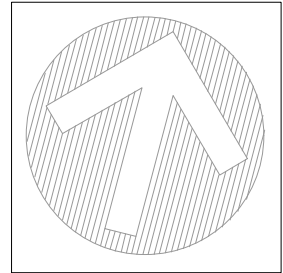
[L200- Landscape Planting Plan](#)

[L201- Landscape Planting Plan-Gravel Wetlands](#)

[L202- Shade Study](#)

[L400- Site Lighting Plan](#)

[Building Mounted Lighting Elevations](#)



BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

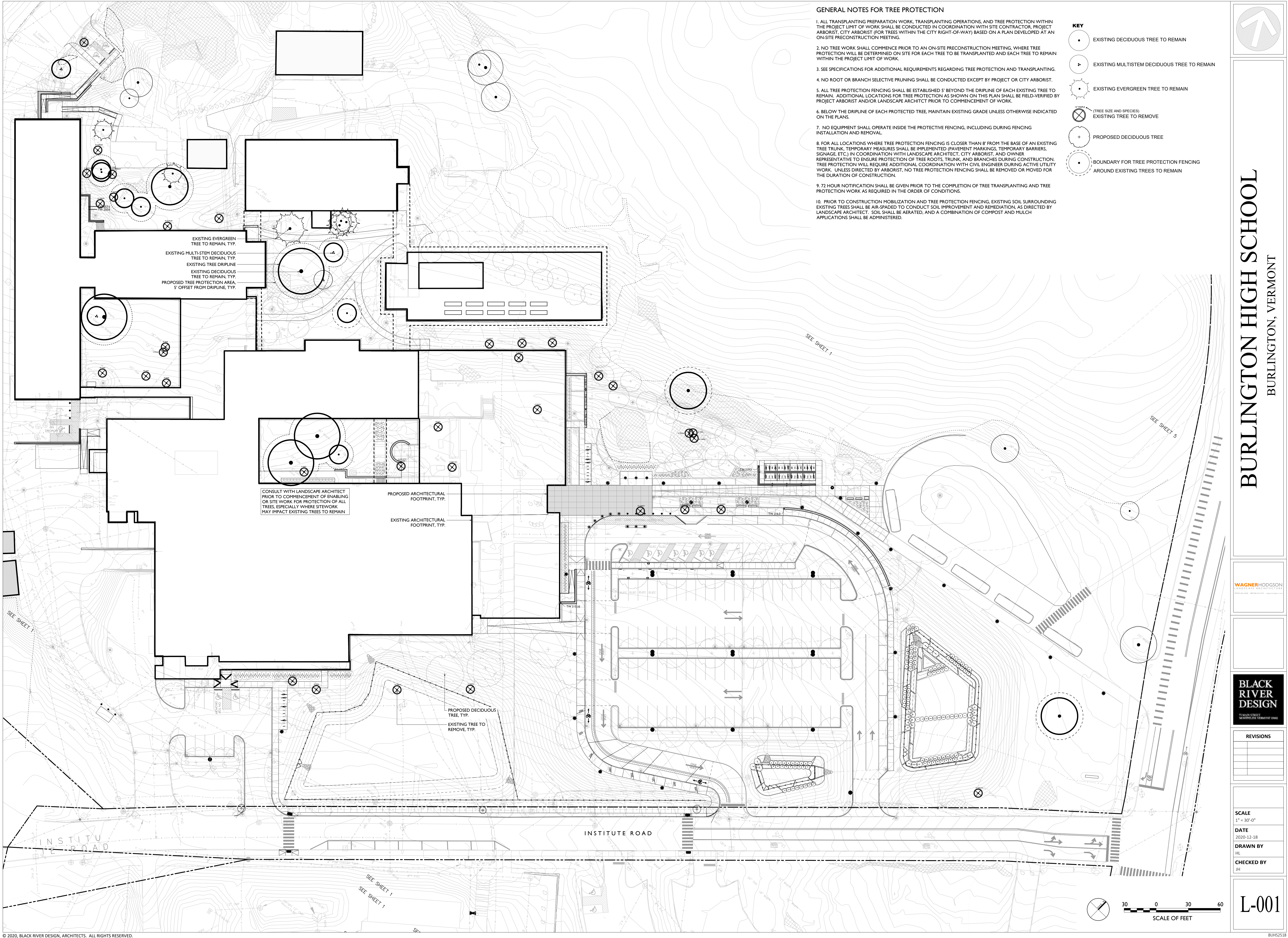
WAGNERHODGSON
LANDSCAPE ARCHITECTURE
VERMONT, MASSACHUSETTS, NEW HAMPSHIRE

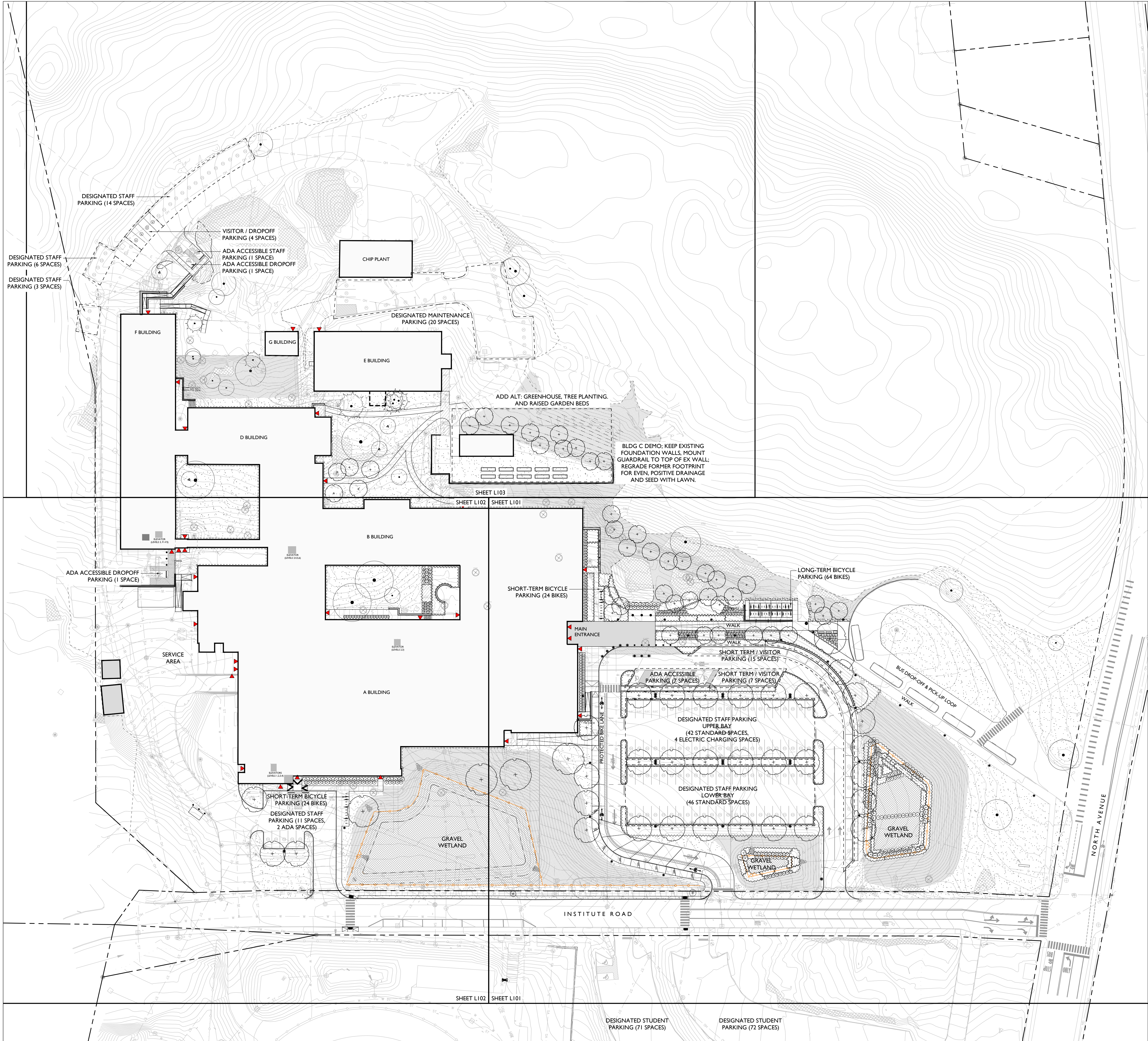
BLACK
RIVER
DESIGN
15 MAIN STREET
BURLINGTON, VERMONT 05401

REVISIONS

SCALE 1" = 30'-0"
DATE 2020-12-18
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CHECKED BY JH

L-000





PARKING CALCULATIONS		
	EXISTING SITE (TOTAL)	PROPOSED PLAN (TOTAL)
UPPER PARKING LOT (STAFF / VISITOR)		
ADA-Accessible Spaces	4	7
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ADA-Accessible Spaces	0	2
Student Parking Spaces	144	141
NORTH-REAR PARKING (STAFF / VISITOR)		
F-Bldg North ADA-Accessible Designated Space (DS)	0	1
F-Bldg North ADA-Accessible Dropoff Space (Daycare)	0	1*
F-Bldg North Visitor / Dropoff Spaces (V)	4	4
F-Bldg South ADA-Accessible Dropoff Spaces (SN)	0	1*
Designated Staff Parking Spaces (DS)	22	23
Maintenance Spaces (P)	20	20
PARKING TOTALS		
(NET COUNT)	330	324
* designated dropoffs not included in parking counts		
ON-STREET PARKING (Institute Road)		
	11	10

- Proposed Bicycle Parking:**
TOTAL: 120 Bikes
- MAIN ENTRY (Long-Term)**
32 Racks (64 bikes)
- MAIN ENTRY (Short-Term)**
16 Racks (32 bikes)
- ATHLETICS AREA (Short-Term)**
12 Racks (24 bikes)
- KEY**
- Pole Light, 16' Mounting Height, Single Fixture (Vehicular)
 - Pole Light, 16' Mounting Height, Double Fixture (Vehicular)
 - Pole Light, 12' Mounting Height, Single Fixture (Pedestrian)
 - Ground-Mounted Uplight, Single Fixture (Flagpole Illumination)
 - Recessed Wall Light, Integrated in Concrete Seating Elements
 - Removable Bollard
 - Fixed Bollard
 - Electric Car-Charging Station
 - Guardrail, 42" height from walking surface
 - Handrail, 36" height from walking surface
 - Fencing, 42" height along perimeter of gravel wetlands

BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

WAGNER HODGSON
LANDSCAPE ARCHITECTURE

BLACK RIVER DESIGN
TRAFFIC ENGINEERING
MOTORIST INFORMATION

REVISIONS

SCALE
1" = 40'-0"

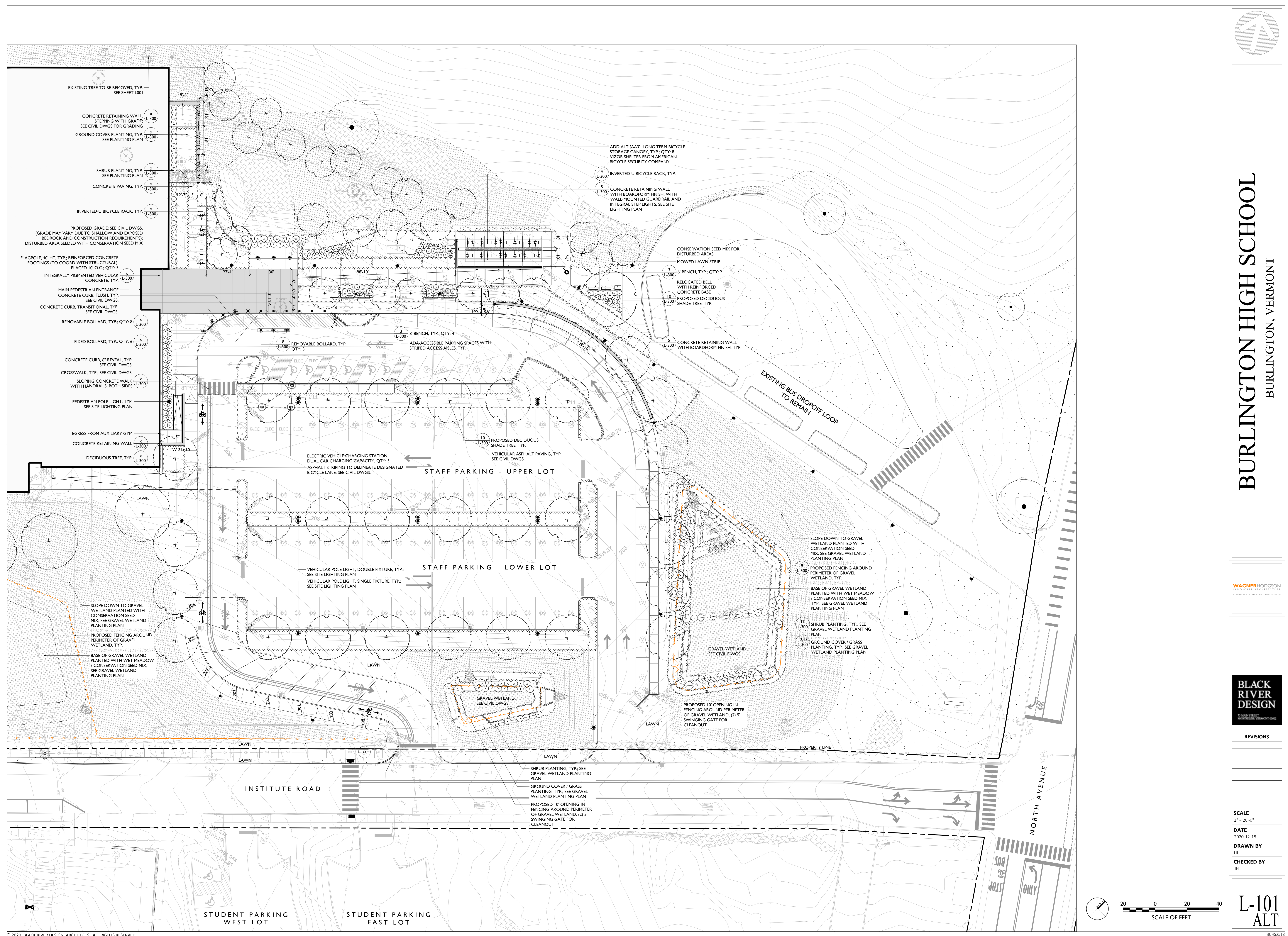
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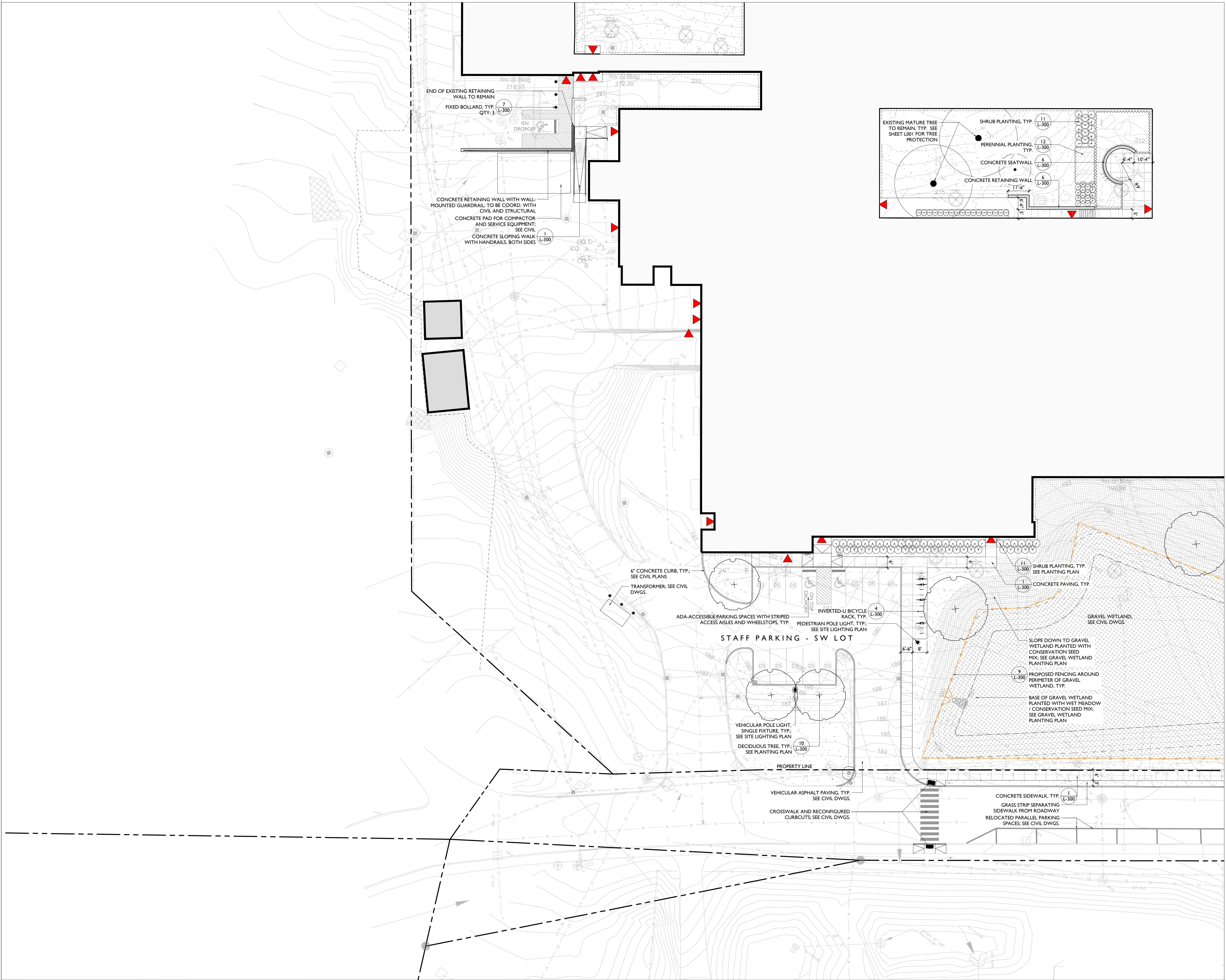
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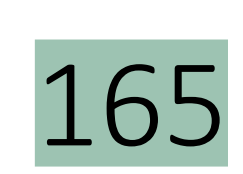
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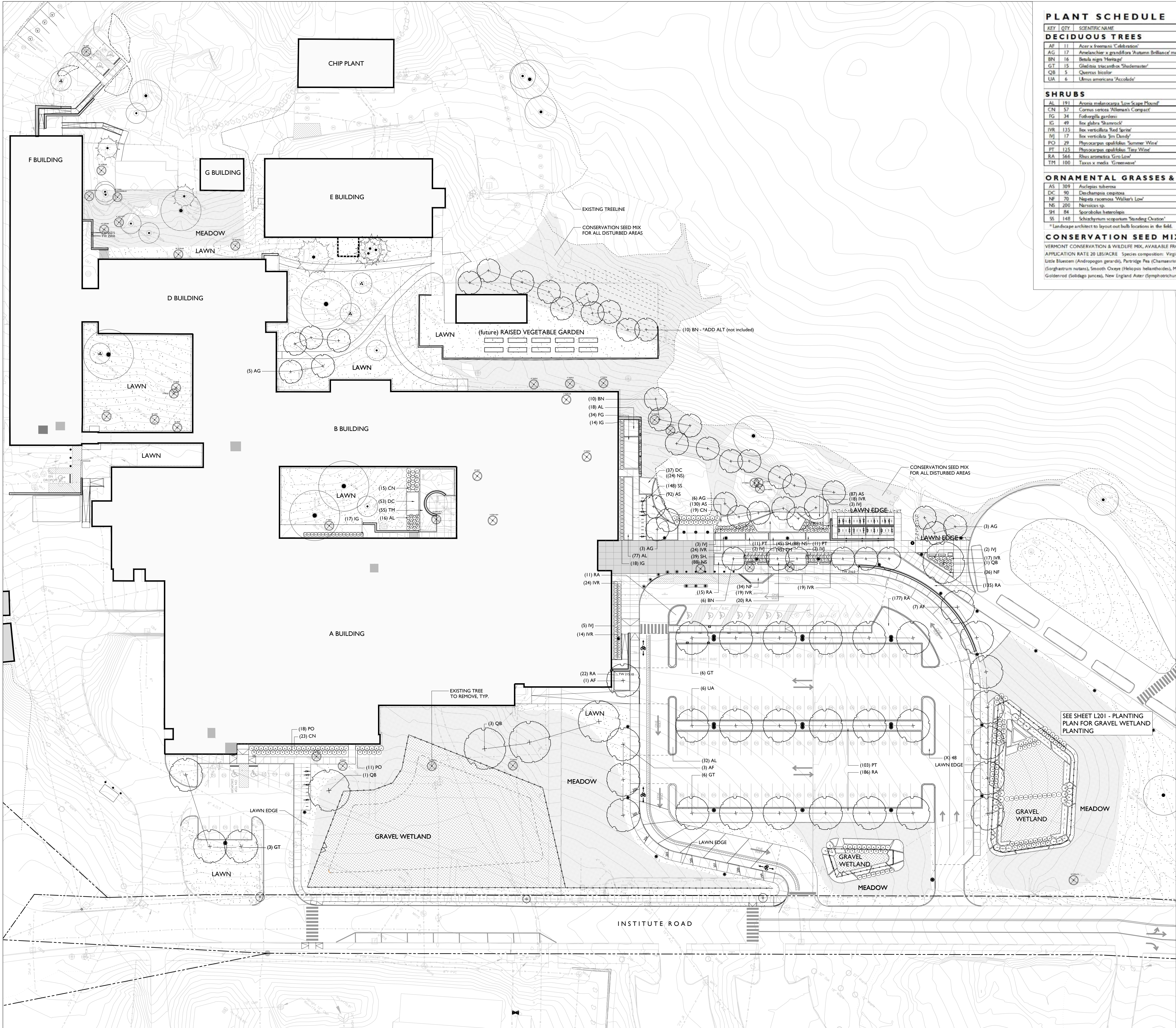
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ALT











KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING
DECIDUOUS TREES					
AL	11	<i>Acer x freemanii 'Sulcatum'</i>	CELEBRATION MAPLE	3"-3.5" CAL	AS SHOWN
AG	17	<i>Aronia arbuscula 'Autumn Brilliance'</i>	SERVICEBERRY (multistem)	2.5"-3" CAL	AS SHOWN
BN	16	<i>Betula nigra 'Heritage'</i>	HERITAGE RIVER BIRCH	2.5"-3" CAL	AS SHOWN
GT	15	<i>Gleditsia triacanthos 'Shademaster'</i>	SHADEMASTER HONEYLOCUST	3"-3.5" CAL	AS SHOWN
QB	5	<i>Quercus bicolor</i>	SWAMP WHITE OAK	3"-3.5" CAL	AS SHOWN
UA	6	<i>Ulmus americana 'Accolade'</i>	ACCOLADE AMERICAN ELM	3"-3.5" CAL	AS SHOWN
SHRUBS					
AL	191	<i>Aronia melanocarpa 'Low-Scape Pound'</i>	LOWSCAPE MOUND CHOKEBERRY	3 GAL	3' O.C.
CN	57	<i>Cornus sericea 'Allegan's Compact'</i>	RED TWIG DOGWOOD	3 GAL	4' O.C.
FG	34	<i>Fothergilla gardenii</i>	DWARF FOTHERGILLA	2 GAL	3' O.C.
IG	49	<i>Ilex glabra 'Shamrock'</i>	SHAMROCK INKBERY	2 GAL	3' O.C.
IVR	135	<i>Ilex verticillata 'Red Sprite'</i>	DWARF WINTERBERRY (Female)	3 GAL	3' O.C.
IV	17	<i>Ilex verticillata 'Jim Dandy'</i>	DWARF WINTERBERRY (Male)	3 GAL	3' O.C.
PO	29	<i>Physocarpus opulifolius 'Summer Wine'</i>	SUMMER WINE NINEBARK	3 GAL	4' O.C.
PT	125	<i>Physocarpus opulifolius 'Tiny Wine'</i>	TINY WINE NINEBARK	3 GAL	4' O.C.
RA	566	<i>Rhus aromatica 'Gros-Low'</i>	FRAGRANT GRO-LOW SUMAC	2 GAL	4' O.C.
TM	100	<i>Taxus x media 'Greenwave'</i>	GREENWAVE YEW	3 GAL	4' O.C.
ORNAMENTAL GRASSES & PERENNIALS					
AS	309	<i>Aucuplex tuberosa</i>	BUTTERFLYWEED	1 GAL	18" O.C.
DC	90	<i>Deschampsia cespitosa</i>	TUFTED HAIR GRASS	1 GAL	2' O.C.
NE	70	<i>Negundo racemosa 'Walker's Low'</i>	CATPAINT	1 GAL	2' O.C.
NS	200	<i>Neritoides sp.</i>	BULB	4" O.C.	+
SH	84	<i>Sporobolus heterostachys</i>	PRAIRIE DROPSEED	1 GAL	2' O.C.
SS	148	<i>Schizanthus scoparium 'Standing Ovation'</i>	LITTLE BLUE STEM	1 GAL	2' O.C.

CONSERVATION SEED MIX
 VERMONT CONSERVATION & WILDLIFE MIX, AVAILABLE FROM VERMONT WETLAND PLANT SUPPLY.
 APPLICATION RATE 20 LBS/ACRE Species composition: Virginia Wild Rye (*Elymus virginicus*), Red Fescue (*Festuca rubra*),
 Little Bluestem (*Andropogon gerardii*), Partridge Pea (*Chamaecrista fasciculata*), Deer Tongue (*Panicum clandestinum*), Indian Grass (*Sorghastrum nutans*), Smooth Choke (*Hesperis helodes*), Milkweed (*Asclepias syriaca*), Blue Yarrow (*Verbena hastata*), Early Goldenrod (*Solidago juncea*), New England Aster (*Symphoricarpos nova-angliae*), Joe-Pye Weed (*Eupatorium maculatum*)

- PLANTING NOTES**
- All plant material in the plant schedule shall be nursery grown in accordance with ANSI in accordance with Z.60.1 Standards for measurement of nursery stock.
 - All plants shall be guaranteed by the Contractor for a period of one year from date of receipt of Provisional Acceptance of the completed installation by the Owner.
 - Replacement plantings will be required prior to Final Acceptance for any plants which are missing, not true to specifications, have died or are unhealthy or uncharacteristic of the species (due to excessive pruning, dieback or other reasons).
 - All plant materials shall be selected and tagged at the nursery by Landscape Architect.
 - The Landscape Architect's approval is required for any plant material substitutions.
 - The Contractor is responsible for immediately notifying the Landscape Architect if any plant quantity discrepancies exist between the planting plan and the plant list.
 - All shrubs and trees will be sprayed with the anti-desiccant "Wilt-Pruf" (or approved equal) prior to the first Winter (no later than November 30).
 - The Landscape Contractor shall have the General Contractor locate all underground utilities in areas to be landscaped prior to commencing any excavation. Adjustments to tree locations will be allowed where utility conflicts are clearly a problem and with prior site approval by Landscape Architect.
 - All plant bed, shrub and tree location shall be staked in the field by Contractor for Landscape Architects approval prior to installation. Adjustments to plant beds shall be approved by Landscape Architect.
 - General Contractor is responsible for all erosion control measures during construction.
 - All disturbed areas are to be topsoiled and seeded or sodded, as indicated in the planting plan.
 - Mulch shall consist of double-shredded hardwood mulch or approved equal and Contractor is responsible for providing samples of mulch to Landscape Architect. Match plant materials as shown on plan and details.
 - It is the intent of this contract to avoid any disturbance to existing trees or shrubs on site other than those specifically designated for transplant or removal.
 - Liquidated damages for trees damaged by construction operation shall be \$500 per caliper inch. Shrubs shall be \$100 each.
 - During construction, and until the end of warranty period, existing trees that are showing signs of stress as determined by the Landscape Architect are to be deep root fertilized, two injections per caliper-inch per tree at 18" - 24" depth with Peter's 20/20/20 fertilizer or Landscape Architect approved equal.
 - Contractor is responsible for verifying and confirming all plant counts as supplied by the Landscape Architect with field conditions as constructed. Any discrepancies shall be reported to Landscape Architect for approval and direction.
 - Tree transplanting shall be performed by a suitable hydraulic tree spade, sized as necessary to perform the work.
 - Prior to commencement of any construction, all existing trees to remain shall receive tree protection fence at outer edge of dripline whenever possible.

BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

WAGNER HODGSON
LANDSCAPE ARCHITECTS

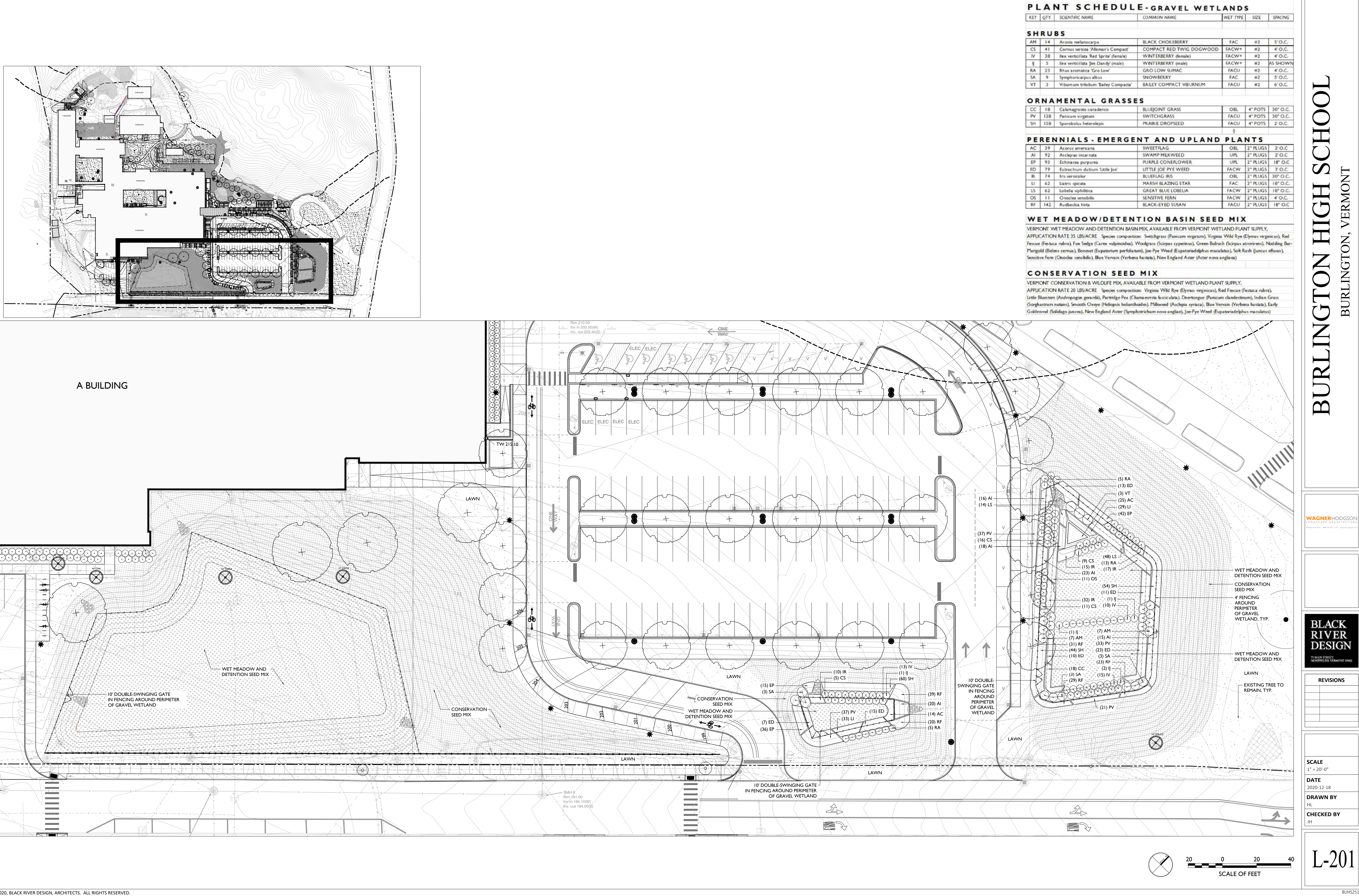
BLACK RIVER DESIGN
LANDSCAPE ARCHITECTS

REVISIONS

SCALE
1" = 30'-0"
DATE
2020-12-18
DRAWN BY
HL
CHECKED BY
JH

L-200
ALT





PLANT SCHEDULE- GRAVEL WETLANDS						
KEY	QTY	SCIENTIFIC NAME	COMMON NAME	WET TYPE	SIZE	SPACING
SHRUBS						
AM	14	<i>Arundo melanocarpa</i>	BLACK CHOKEBERRY	FAC	#2	5' O.C.
CS	41	<i>Cornus sericea</i> 'Allema's Compact'	COMPACT RED TWIG DOGWOOD	FACW+	#2	4' O.C.
IV	38	<i>Ilex verticillata</i> 'Red Sprite' (female)	WINTERBERRY (female)	FACW+	#2	4' O.C.
I	5	<i>Ilex verticillata</i> 'Jim Dandy' (male)	WINTERBERRY (male)	FACW+	#2	AS SHOWN
RA	23	<i>Rhus aromatica</i> 'Gro Low'	GRO LOW SUMAC	FACU	#2	4' O.C.
SA	9	<i>Symphoricarpos albus</i>	SNOWBERRY	FAC	#2	3' O.C.
VT	3	<i>Viburnum trilobum</i> 'Bailey Compact'	BAILEY COMPACT VIBURNUM	FACU	#2	6' O.C.
ORNAMENTAL GRASSES						
CC	18	<i>Calamagrostis canadensis</i>	BLUEJOINT GRASS	OBL	4" POTS	30" O.C.
PV	128	<i>Panicum virgatum</i>	SWITCHGRASS	FACU	4" POTS	30" O.C.
SH	158	<i>Sporobolus heterolepis</i>	PRAIRIE DROPSPEED	FACU	4" POTS	2' O.C.
PERENNIALS - EMERGENT AND UPLAND PLANTS						
AC	39	<i>Acorus americana</i>	SWEETFLAG	OBL	2" PLUGS	2' O.C.
AI	92	<i>Asclepias incarnata</i>	SWAMP MILKWEED	UPL	2" PLUGS	2' O.C.
EP	93	<i>Echinacea purpurea</i>	PURPLE CONEFLOWER	UPL	2" PLUGS	18" O.C.
ED	79	<i>Eutrochium dubium</i> 'Little Joe'	LITTLE JOE PYE WEEED	FACW	2" PLUGS	3' O.C.
IR	74	<i>Iris versicolor</i>	BLUEFLAG IRIS	OBL	2" PLUGS	30" O.C.
LI	62	<i>Liatris spicata</i>	MARSH BLAZING STAR	FAC	2" PLUGS	18" O.C.
LS	62	<i>Lobelia siphilitica</i>	GREAT BLUE LOBELIA	FACW	2" PLUGS	18" O.C.
OS	11	<i>Oxalis sensibilis</i>	SENSITIVE FERN	FACW	2" PLUGS	4' O.C.
RF	142	<i>Rudbeckia hirta</i>	BLACK-EYED SUSAN	FACU	2" PLUGS	18" O.C.
WET MEADOW/DETENTION BASIN SEED MIX						
VERMONT WET MEADOW AND DETENTION BASIN MIX, AVAILABLE FROM VERMONT WETLAND PLANT SUPPLY. APPLICATION RATE 35 LBS/ACRE. Species composition: Switchgrass (<i>Panicum virgatum</i>), Virginia Wild Rye (<i>Elymus virginicus</i>), Red Fescue (<i>Festuca rubra</i>), Fox Sedge (<i>Carex vulpinoidea</i>), Woodgrass (<i>Scirpus cypripetris</i>), Green Bulrush (<i>Scirpus atrovirens</i>), Nodding Bur-Marigold (<i>Bidens cernua</i>), Bonaset (<i>Eupatorium perfoliatum</i>), Joe-Pye Weed (<i>Eupatorium altissimum</i>), Soft Rush (<i>Juncus effusus</i>), Sensitive Fern (<i>Oxalis sensibilis</i>), Blue Vervain (<i>Verbena hastata</i>), New England Aster (<i>Aster novae-angliae</i>).						
CONSERVATION SEED MIX						
VERMONT CONSERVATION & WILDLIFE MIX, AVAILABLE FROM VERMONT WETLAND PLANT SUPPLY. APPLICATION RATE 20 LBS/ACRE. Species composition: Virginia Wild Rye (<i>Elymus virginicus</i>), Red Fescue (<i>Festuca rubra</i>), Little Bluestem (<i>Andropogon gerardii</i>), Partridge Pea (<i>Chamaecrista fasciculata</i>), Deertongue (<i>Panicum clandestinum</i>), Indian Grass (<i>Sorghastrum nutans</i>), Smooth Oxeye (<i>Heliopsis helianthoides</i>), Milkweed (<i>Asclepias syriaca</i>), Blue Vervain (<i>Verbena hastata</i>), Early Goldenrod (<i>Solidago juncea</i>), New England Aster (<i>Symphoricarpos nova-angliae</i>), Joe-Pye Weed (<i>Eupatorium altissimum</i>).						

BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

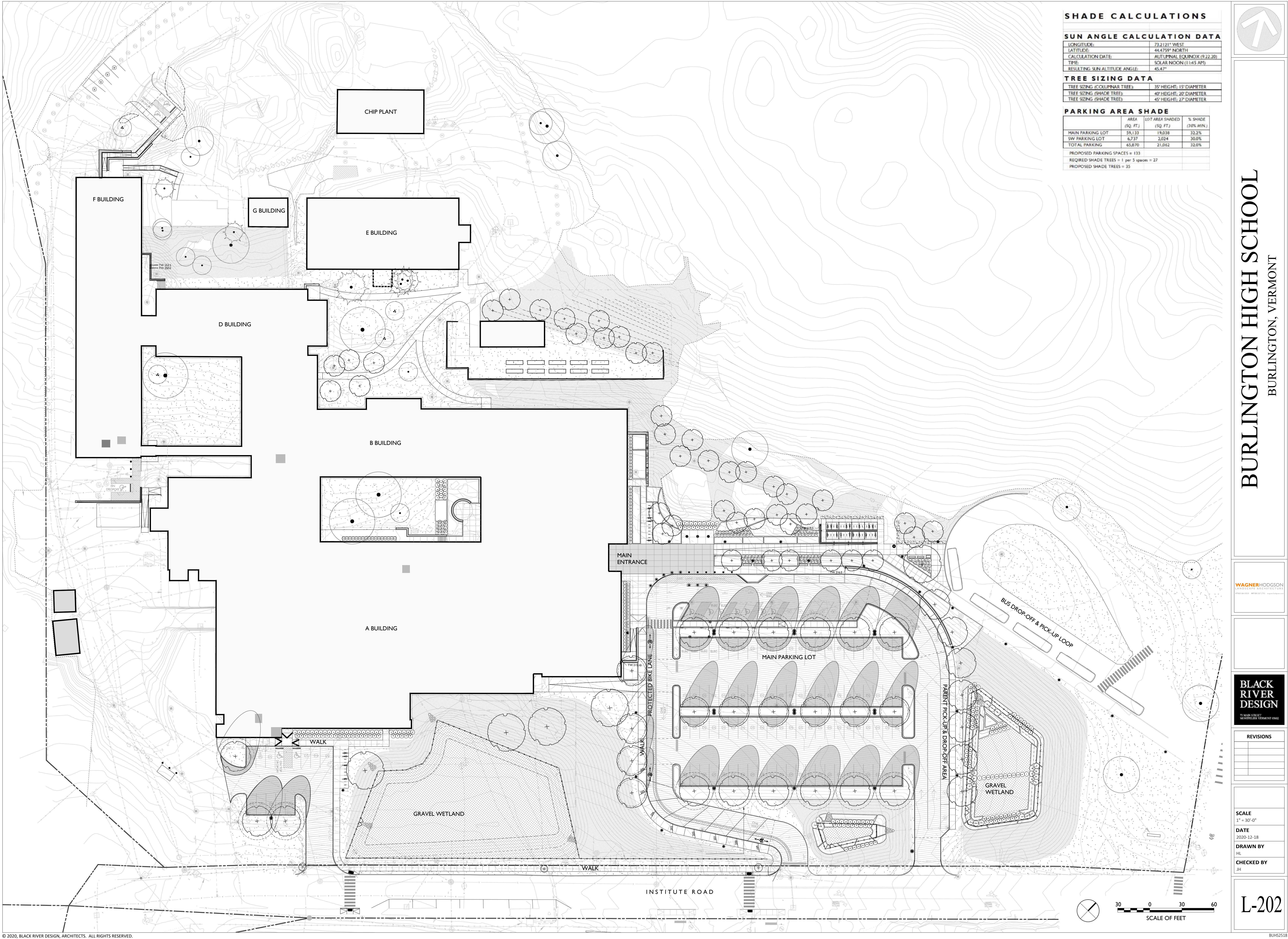
WAGNER HODGSON
ARCHITECTS

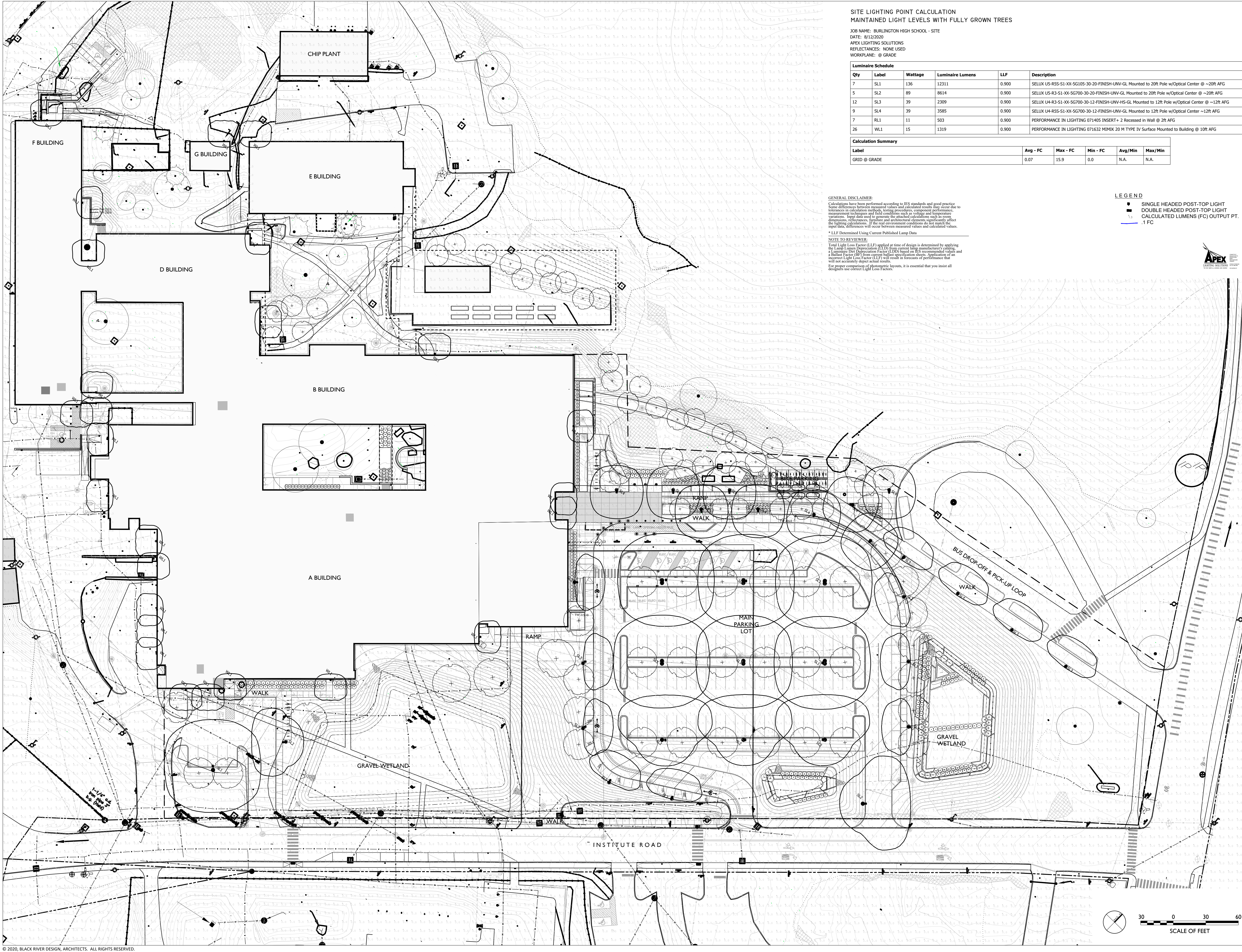
BLACK RIVER DESIGN
LANDSCAPE ARCHITECTS

REVISIONS

SCALE
1" = 20'-0"
DATE
2020-12-18
DRAWN BY
JHL
CHECKED BY
JHL

L-201





SITE LIGHTING POINT CALCULATION
MAINTAINED LIGHT LEVELS WITH FULLY GROWN TREES

JOB NAME: BURLINGTON HIGH SCHOOL - SITE
DATE: 8/12/2020
APEX LIGHTING SOLUTIONS
REFLECTANCES: NONE USED
WORKPLANE: @ GRADE

Luminaire Schedule					
Qty	Label	Wattage	Luminaire Lumens	LLF	Description
7	SL1	136	12311	0.900	SELUX US-RSS-51-XX-SG105-30-20-FINISH-UNV-GL Mounted to 20ft Pole w/Optical Center @ ~20ft AFG
5	SL2	89	8614	0.900	SELUX US-R3-51-XX-SG700-30-20-FINISH-UNV-GL Mounted to 20ft Pole w/Optical Center @ ~20ft AFG
12	SL3	39	2309	0.900	SELUX U4-R3-51-XX-SG700-30-12-FINISH-UNV-HS-GL Mounted to 12ft Pole w/Optical Center @ ~12ft AFG
9	SL4	39	3585	0.900	SELUX U4-RSS-51-XX-SG700-30-12-FINISH-UNV-GL Mounted to 12ft Pole w/Optical Center @ ~12ft AFG
7	RL1	11	503	0.900	PERFORMANCE IN LIGHTING 071405 INSERT + 2 Recessed in Wall @ 2ft AFG
26	WL1	15	1319	0.900	PERFORMANCE IN LIGHTING 071632 MIMIK 20 M TYPE IV Surface Mounted to Building @ 10ft AFG

Calculation Summary					
Label	Avg - FC	Max - FC	Min - FC	Avg/Min	Max/Min
GRID @ GRADE	0.07	15.9	0.0	N.A.	N.A.

GENERAL DISCLAIMER:
Calculations have been performed according to IES standards and good practice. Some differences between measured values and calculated results may occur due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and field conditions such as voltage and temperature variations. Input data used to generate the attached calculations such as room dimensions, reflectances, luminaire and architectural elements significantly affect the lighting calculations. If the real environmental conditions do not match the input data, differences will occur between measured values and calculated values.

* LLF Determined Using Current Published Lamp Data

NOTE TO REVIEWER:
Total Light Loss Factor (LLF) applied at time of design is determined by applying the Luminaire Depreciation (LD) from current lighting manufacturer's catalog, a Luminaire Dirt Depreciation Factor (LDD) based on IES recommended values and a Ballast Factor (BF) from current ballast specifications sheets. Application of an incorrect Light Loss Factor (LLF) will result in forecasts of performance that will not accurately depict actual results.

For proper comparison of photometric layouts, it is essential that you insist all designs use correct Light Loss Factors.

LEGEND

- SINGLE HEADED POST-TOP LIGHT
- DOUBLE HEADED POST-TOP LIGHT
- CALCULATED LUMENS (FC) OUTPUT PT.
- .1 FC



BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

WAGNER HODGSON
ARCHITECTS

BLACK RIVER DESIGN
7300 RIVER MOUNTAIN AVENUE SUITE 100
BURLINGTON, VERMONT 05403

REVISIONS

SCALE
1" = 30'-0"

DATE
2020-12-18

DRAWN BY
HL

CHECKED BY
JH

L-400
ALT

BURHS2518



SPECIFICATION SHEETS TABLE OF CONTENTS

[Windows and Glazing](#)

[Louvered Mechanical Equipment Screening](#)

[Cementitious Siding](#)

[Exterior Light Fixtures](#)

[Rooftop Mechanical Equipment](#)

[Greenhouse](#)

[Bollards](#)

[Outdoor Benches](#)

[Bicycle Racks](#)

[Bicycle Canopies](#)

TRIFAB® VG (VERSAGLAZE®)

TRIFAB® VG 450, 451 & 451T (THERMAL) FRAMING SYSTEMS &
TRIFAB® 451UT (ULTRA THERMAL) FRAMING SYSTEM



Design + Performance

Versatility with Unmatched Fabrication Flexibility



Geisinger Professional Building
Jenkins Township, Pennsylvania

ARCHITECT
Mericle Commercial Real Estate Services
Wilkes-Barre, Pennsylvania

GLAZING CONTRACTOR
Sterling Glass, Inc., Scranton, Pennsylvania

PHOTOGRAPHER
© Perzel Photography Group

Trifab® VersaGlaze® is built on the proven and successful Trifab® platform – with all the versatility its name implies. There are enough framing system choices, fabrication methods, design options and performance levels to please the most discerning building owner, architect and installer. The 4.5" depth Trifab® VersaGlaze® Framing System family is available with non-thermal, thermal and ultra-thermal performance levels. The ultra-thermal Trifab® 451UT Framing System, is designed for the most demanding thermal performance and employs a dual Isolock® thermal break.

AESTHETICS

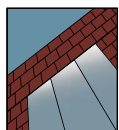
Trifab® VersaGlaze® Framing Systems offer designers a choice of front-, center-, back- or multi-plane glass applications. Structural silicone

glazing (SSG) and weatherseal glazing options further expand designers' choices, allowing for a greater range of possibilities for specific project requirements and architectural styles. All systems have a 4-1/2" frame depth; Trifab® VersaGlaze® 450 has 1-3/4" sightlines, while Trifab® VersaGlaze® 451/451T and Trifab® 451UT have 2" sightlines.

With seamless incorporation of Kawneer entrances or windows, including GLASSvent® visually frameless ventilators, Trifab® framing can be used on almost any project. These framing systems can also be packaged with Kawneer curtain walls and overhead glazing, thereby providing a full range of proven, and tested, quality products for the owner, architect and installer from a single-source supplier.

YES 45 TU

Thermally Broken, Center Set Storefront System



STOREFRONT SYSTEM

Product Description

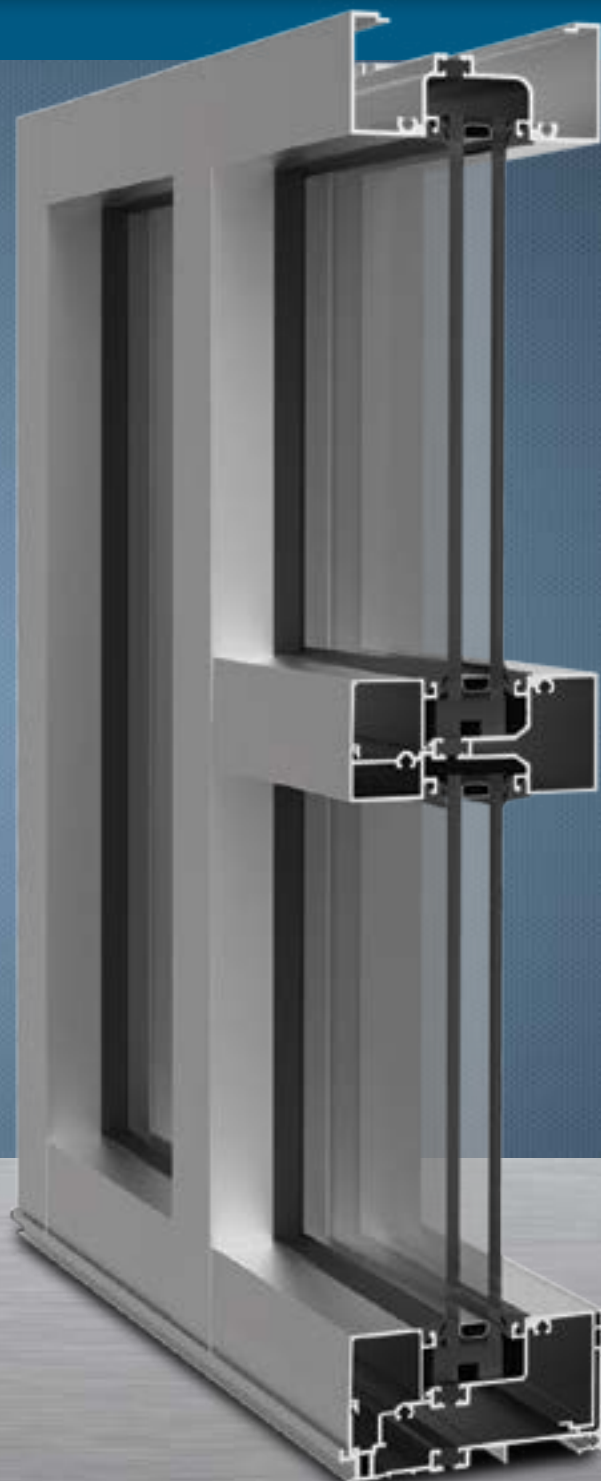
The YES 45 TU is a thermally broken, center set, flush glazed storefront system for insulating glass. The system is thermally broken by means of a poured and debridged pocket that employs a patented process, ThermaBond Plus®, to greatly improve adhesion of the polyurethane to the extruded aluminum. Combining science and technology, ThermaBond Plus® resolves the problem of adhesion and the resultant dry shrinkage associated with typical poured and debridged systems.

Product Options & Features

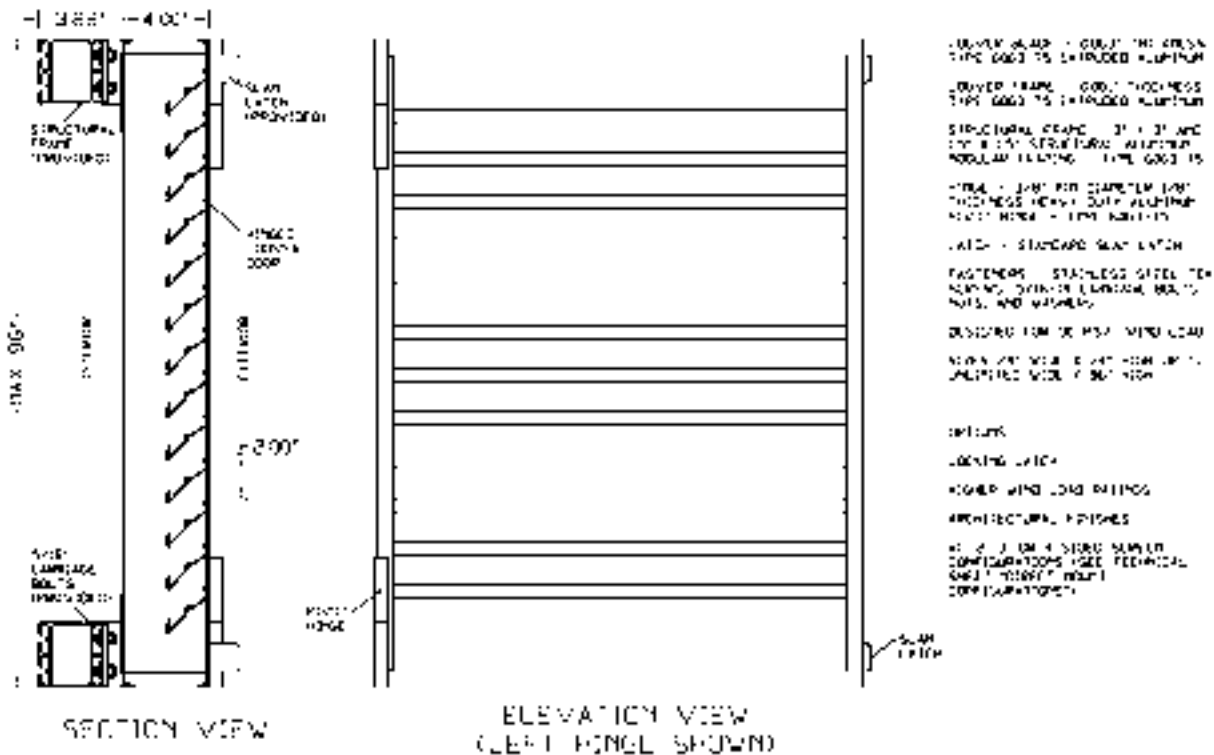
- Excellent thermal performance utilizing standard 1" insulating glass
- Patented ThermaBond Plus® thermal break
- High Performance Sill Flashing
 - ◆ No Blind Seals
 - ◆ Tall back leg for enhanced water resistance
 - ◆ Patented 3-point attachment of end dam
- Assembled with either our Screw Spline or Shear Block Technology
- Integrates with our Model 20D/35D/50D Doors



Quality
inspires®



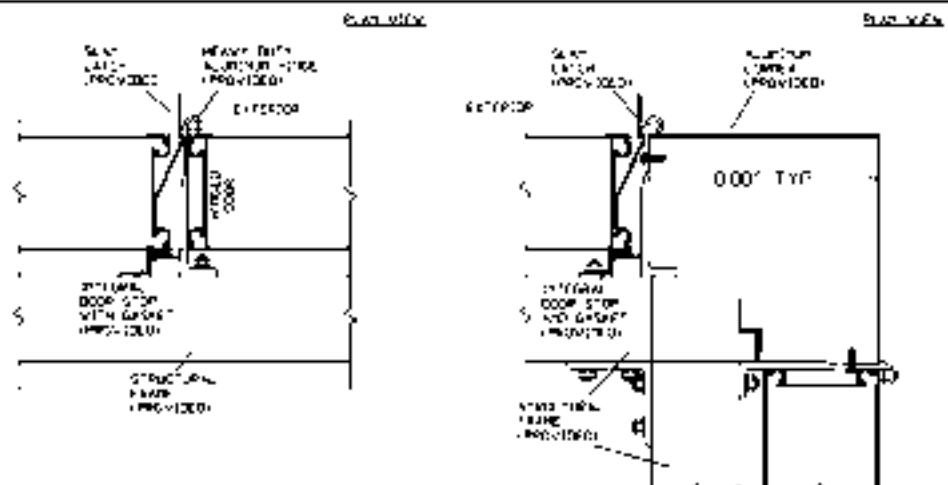
V2KSD - 2" DEEP 45 DEGREE STORM K BLADE EXTRUDED ALUMINUM LOUVERED EQUIPMENT SCREEN



DOOR SWING

VERTICAL HULLION
MULTIPLE PANELS WIDE

OUTSIDE CORNER



**ARCHITECTURAL
LOUVERS**

266 W Mitchell Ave - Cincinnati, OH 45232
PH: (888) 568 6371 Fax: (869) 568 8370

PROJECT
CONTRACTOR

ARCHITECT

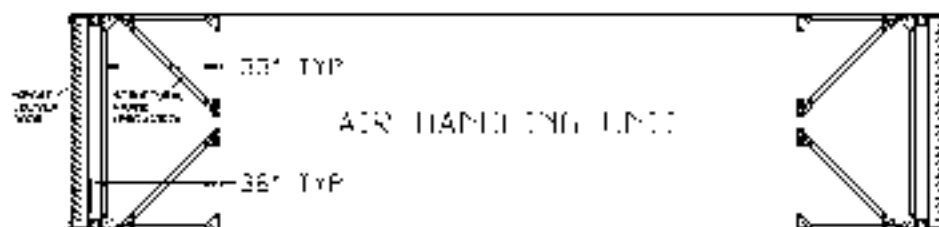
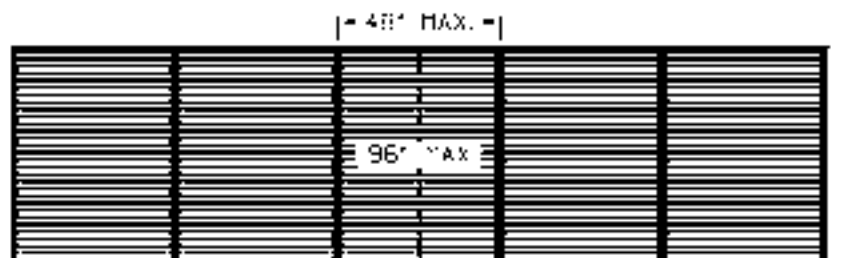
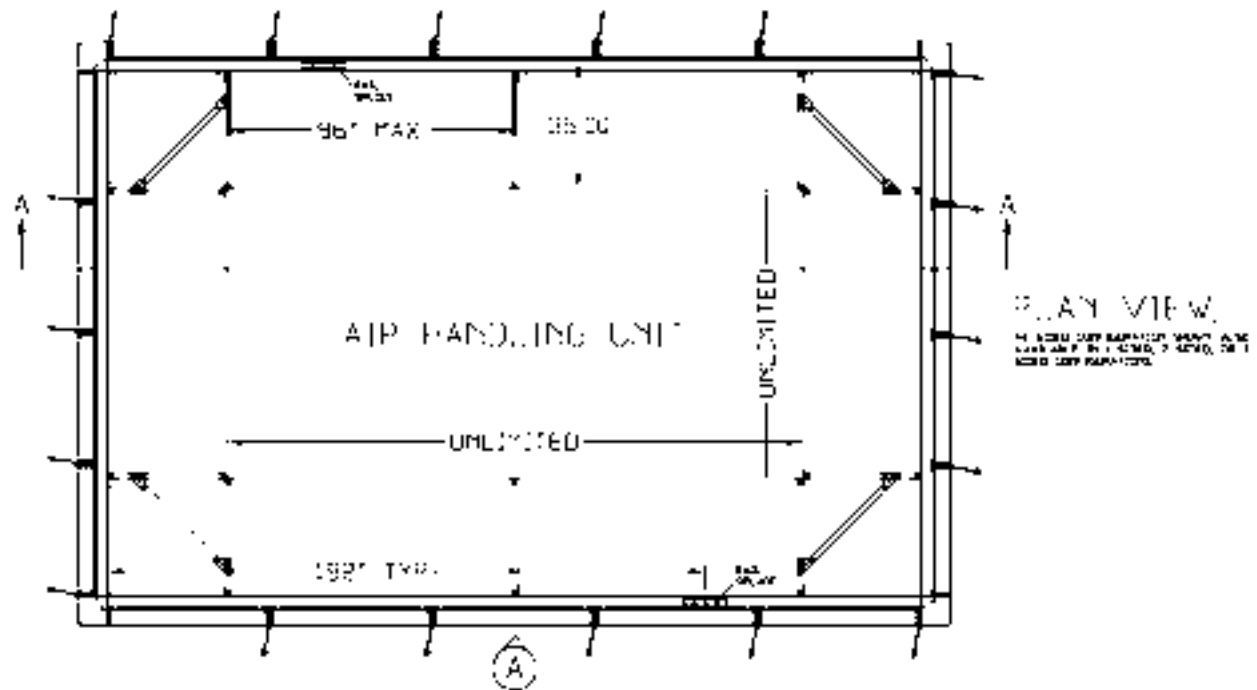
GROUP III
JRR

DATE
01/2013

REVISIONS
TECHNICAL SHEET

PROJECT TITLE
V2KSDT

V2KSD - 4" DEEP 45 DEGREE STANDARD J BLADE EXTRUDED ALUMINUM LOUVERED EQUIPMENT SCREEN



**ARCHITECTURAL
LOUVERS**

266 W Mitchell Ave - Cincinnati, OH 45232
PH: (888) 568 6371 Fax: (869) 568 8370

PROJECT
CONTRACTOR

ARCHITECT

DATE
JUN 2013

DATE
JUN 2013

DATE
JUN 2013

DATE
JUN 2013



SUSTAINABLE SOLUTIONS

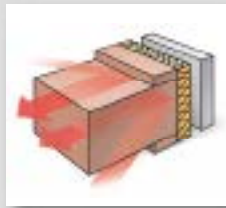


**American Fiber
Cement Corporation**



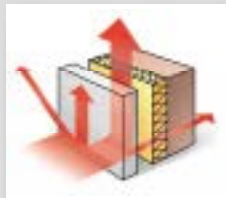
CENBRIT
Building Better Days

Rainscreen Cladding



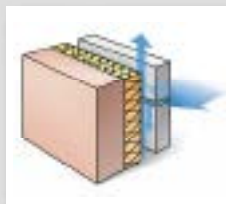
Preventing thermal bridges

As the insulating material is on the outside of the structural wall, it can easily be mounted without interruptions caused by floor slabs. In this way, any thermal bridges that occur at each floor slab can be prevented. These thermal bridges are also the cause of surface condensation that may result in fungus growth.



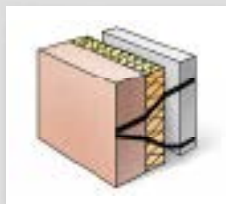
Dissipating heat from the sun

The ventilated rainscreen cladding system has a cooling effect when temperatures outside are high. Most of the sun's rays are reflected away from the building. Heat passing through the exterior wall panel is partially dissipated by the ventilating effect of the space between the exterior cladding panel and the structural wall. Any residual heat managing to penetrate buildings is very minor.



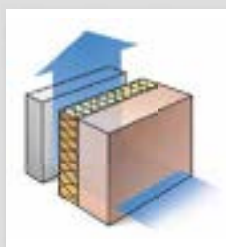
Rainscreen

Architectural wall-cladding panels act as a rainscreen on the outside of the building and keep the structural wall absolutely dry. The air space connected to the outside air evacuates water and humidity that might have penetrated behind the wall-cladding panels through its horizontal or vertical joints. This water will never reach the load bearing wall and/or the thermal insulation.



Protecting the basic structure and load-bearing wall against temperature variations

In view of the fact that the insulation material is applied to the outside of the building, changes in temperature are very minor compared with those found in conventional constructions where insulation is applied on the interior. This principle works in summer and winter in both hot and cold climates.



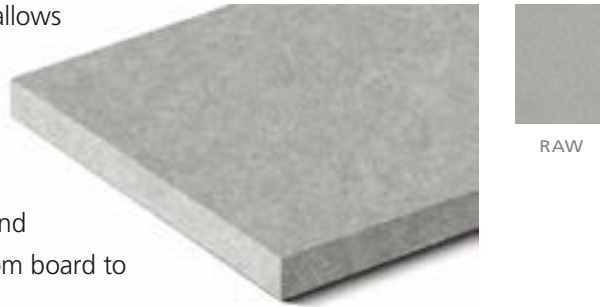
Prevention of internal condensation

Insulation material can be applied to the outside of the structural wall because it is protected effectively by the architectural exterior wall panel. Because of differences in vapor pressure and temperature passing through the wall, condensation has been shown to occur close to the ventilated area and not in the structural wall itself. As a result, the ventilating effect is easily sufficient to dry out the thermal insulating material.



Minerit **HD** (Raw)

Minerit HD is an uncoated fiber cement board that allows the authentic appearance of the fiber cement to stand out. In application, Minerit HD is a building board that can be installed for certain cladding purposes outlined below when a natural expression is desired. Minerit HD is an unpigmented material, and variations may occur in the individual boards and from board to board, adding a lively expression to your façade.



When using Minerit HD for cladding in a rainscreen system, the panels must be sealed, typically on all sides. They can be painted on-site with acrylic paint systems or transparent stains suitable for cement-based materials (specific instructions for painting / staining are available). After surface treatment, the board is virtually maintenance free. In industrial applications where the surface appearance of the board is of less importance, the panels do not need to be sealed but efflorescence will likely occur over time depending on the type of exposure and climate conditions.

Technical **Properties & Dimensions**

Cover, Patina, Transparent & Solid

	U.S. Trimmed sizes in. (mm)	Weight (lbs/ft ²)	
Thickness	8 mm	Patina	Cover, Transparent & Solid
Width	48 (1,220)	2.5	2.9
Length	96 (2,440) 120 (3,050)		

Minerit HD

	Trimmed sizes — in. nominal (mm)			Weight (lbs/ft ²)			
Thickness	4 mm, 6 mm or 8 mm			4 mm	6 mm	8 mm	10 mm
Width	48 (1,220)	48 (1,220)	48 (1,220)	1.6	2.3	3.1	3.9
Length	96 (2,440)	120 (3,050)	96 (2,440)				

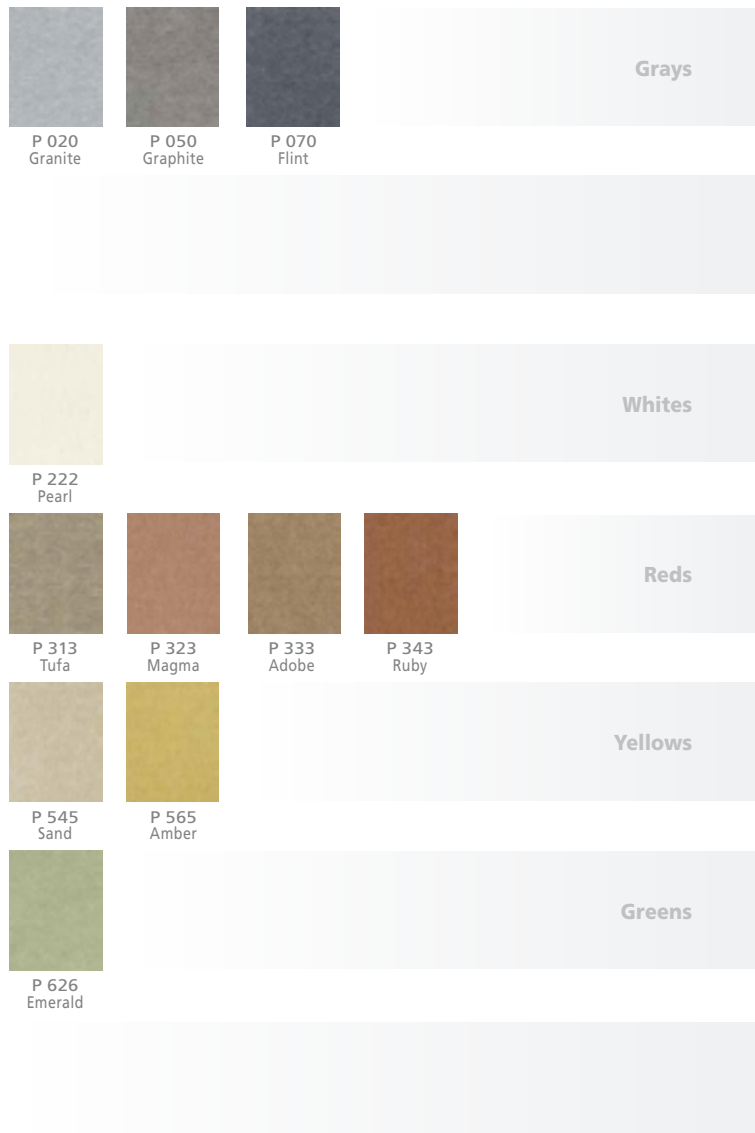
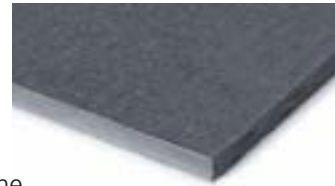
The recommended thickness for Minerit HD in a rainscreen application is 8mm.
Physical properties and dimensions are subject to nominal manufacturing tolerances.

Color Charts: The color charts give an impression of the available colors. Reproduction of the exact color is restricted by the printing process. For an exact color match, samples are available upon request.



Cembrit **Patina**

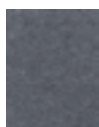
Cembrit Patina has a natural, textured surface. You can see the fiber and natural characteristics of the raw materials, and you can see and feel the sanding lines on the surface. As the seasons change and the years pass, the natural aging of the fiber cement leaves subtle traces on the surface, and the façade will gradually acquire a distinctive patina. (Also available in Rough and Inline.)



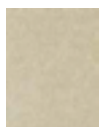


Cembrit **Patina Rough**

Patina Rough (pictured at left) has a tough textured surface and stone-like finish which adds character to any building. When combined with other products from the Patina design line, they create an interesting interplay. This material has an eroded, natural looking surface. It's virtually maintenance-free and is available in two timeless colors.



P 070
Flint



P 545
Sand

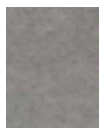
Grays

Yellows

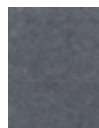


Cembrit **Patina Inline**

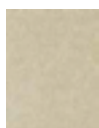
Patina Inline reflects strength and durability. Its milled linear grooves add a 3D effect to a building and make it possible to create custom squares or triangular patterns. When viewed in natural light, its featured lines offer a vibrant look that changes throughout the day. Over time, this material will patinate, enriching its natural look. This material is virtually maintenance-free and is available in three timeless colors.



P 050
Graphite



P 070
Flint



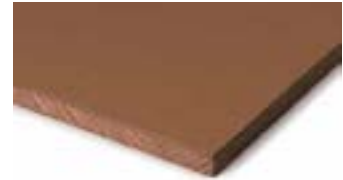
P 545
Sand

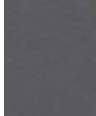
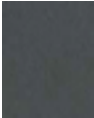
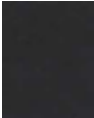
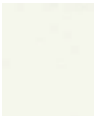
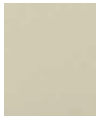
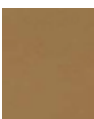
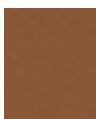
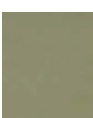
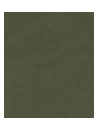
Grays

Yellows

Cembrit **Solid**

Cembrit Solid boards are the same color all the way through. Each core color is matched with a full-coverage painted surface in vibrant yet resilient colors. If you choose Cembrit Solid boards to provide a façade with a particular color, every board will feature that color on every surface and edge, and with the same color on the edges of any cut-outs or drilled holes. (Custom colors available, as pictured at left.)

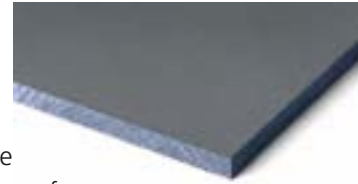


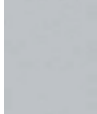
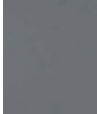
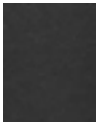
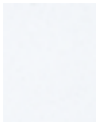
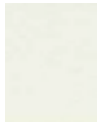
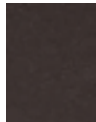
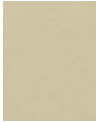
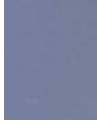
		Grays		
S 030 Mercury	S 071 Orcus			
				Blacks
S 101 Pluto	S 131 Juno	S 151 Pallas	S 191 Erebus	
		Whites		
S 212 Luna	S 282 Saturn			
		Reds		
S 334 Jupiter	S 353 Mars			
		Yellows		
S 515 Venus	S 525 Triton			
				Greens
S 606 Rhea	S 616 Ceres	S 656 Terra	S 676 Callisto	
		Blues		
S 747 Neptune	S 757 Mimas			



Cembrit **Cover**

Cembrit Cover is the ideal solution if you prefer the strongest colors and bolder design statements. The natural gray fiber-cement core is completely covered by a layer of water-based acrylic paint, with 26 standard Colors and more than 2,000 NCS® colors to choose from. (Custom colors available.)

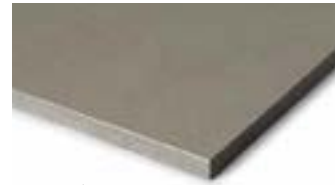


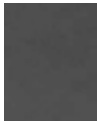
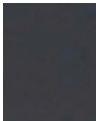
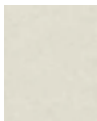
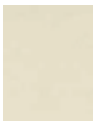
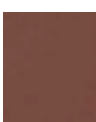
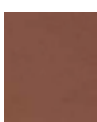
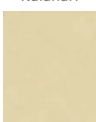
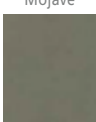
					Grays
C 010 Stockholm	C 020 Vilnius	C 040 Sofia	C 050 Berlin	C 060 Helsinki	
					Blacks
C 160 London	C 190 Munich				
					Whites
C 200 Gothenburg	C 210 Nuuk				
					Reds
C 350 Brussels	C 360 Copenhagen	C 370 Moscow	C 380 Lyon	C 390 Istanbul	
					Yellows
C 450 Amsterdam	C 530 Rome	C 540 Kiev	C 550 Athens	C 570 Barcelona	
					Greens
C 610 Lisbon	C 630 Geneva	C 640 Hamburg	C 650 Madrid	C 670 Dublin	
					Blues
C 730 Oslo	C 760 Naples	C 770 Riga			



Cembrit **Transparent**

Cembrit Transparent façade boards combine the textured nuances and natural characteristics of the base board with a long-lasting performance of the transparent top coat. The color added to the fiber cement reveals and highlights the fibers and other raw materials that provide its strength and character. The extremely durable transparent coating then protects the board and ensures a smooth surface with a long service life.



				Grays
T 020 Mediterranean	T 030 Olympus			
				Blacks
T 101 Arabian	T 111 Kilimanjaro	T 161 Denali	T 171 Etna	
			Whites	
T 242 Antarctic	T 252 Blanc	T 262 Sahara		
		Reds		
T 373 Kalahari	T 383 Vesuv			
		Yellows		
T 505 Mojave	T 515 Gobi			
	Greens			
T 626 Sonoran				
	Blues			
T 737 Caribbean				

AFC *cladding* Panels

Fiber Cement — **Distinct Properties**

Sound and Weather Resistant — Cembrit fiber cement boards deliver optimal sound and weather insulation. Noise as well as changing weather conditions such as freeze/thaw, heat and water pose no threat to fiber cement façades. The boards retain their shape at all times.

Low Maintenance — The ability of the boards to resist mold and algae attacks is equally impressive. The result is a long-lived façade that saves you time and effort on inconvenient and costly repairs and repaints.

Non-combustible — The boards are non-combustible, which is your guarantee for a safe building.

Easy Handling — Cembrit fiber cement boards are flexible and easy to handle. They can be delivered cut to size, ready for installation. All this makes for lower construction costs, shorter construction times, and lower installed costs.

Fiber Cement — **A Unique Composition**

Natural Ingredients — With the strong composition of cement, mineral fillers, cellulose and non-toxic, organic fibers— and not to forget a dash of water— Cembrit fiber cement boards are made up of purely natural and environmentally friendly raw materials. This makes for sustainable and fully reusable boards.

Strong Recipe — The secret behind the impressive strength and durability of Cembrit fiber cement boards resides in the manufacturing technology. Thin layers of fiber cement are added on top of each other, pressed firmly together under tremendous pressure before completing a slow air curing process. Reinforced by carefully selected fibers, the many thin layers give the fiber cement cladding a strength with few peers in the world of building materials.

Green Footprints — A comprehensive analysis of the environmental impact of the Cembrit boards can be made from Cembrit's EPDs in accordance with EN 15804 on the Sustainability of Construction Works. The EPDs provide a Life-Cycle Assessment, manufacturing process details, and information on the use of any dangerous materials. These EPDs are available online.

AFC *cladding*

Product **Sustainability**

AFC Cladding is committed to providing the highest quality high density compressed fiber cement panels to the U.S. building markets. In order to do this, we feel it necessary to provide not only high quality products, but sustainable products that can contribute to green (LEED) building projects, which in turn benefit the environment we all live in.

AFC Cladding products currently have a potential contribution to various LEED credits including but not limited to:

Direct Contribution

Materials and Resources:

- ◆ BPDO – Environmental Product Declarations

Indirect Contribution

Indoor Environmental Quality:

- ◆ Thermal Comfort

Energy and Atmosphere:

- ◆ Optimize Energy Performance

One of the most important sustainable attributes is the durability of AFC Cladding panels. With their long lifespan, virtually requiring no refurbishment, AFC Cladding panels can contribute to less replacement of materials and to drastically lower maintenance costs over the useful life of the building.

The Ventilated and Insulated Rainscreen Cladding (VIRSC) system, which is used to affix AFC Cladding panels to the exterior of a structure, offers many benefits and green attributes to the performance of the building envelope. Durability and resistance to moisture and mold build-up are noteworthy benefits. Equally important is its ability to accommodate external insulation.

In addition, AFC Cladding is dedicated to further research and analysis of our products to achieve additional LEED credits, and help further the cause of building sustainable and efficient buildings.

Warranty information available upon request.

Distributed exclusively by:



**American Fiber
Cement Corporation**

6901 South Pierce Street, Suite 180
Littleton, CO 80128 U.S.A.

Phone: 303-972-5107
800-688-8677

Fax: 303-978-0308

www.americanfibercement.com

CEMBRIT
Building Better Days

PERFORMANCE **in** LIGHTING

PRODUCT CODE 071405

PROJECT

TYPE

INSERT+ 2 [11.18"]



Part number	071405
Lampholder:	LED
Wattage:	11 W
Finish:	GR-94 / Aluminum metallic / Textured
Degree of protection:	IP65
CRI:	80
Kelvin:	3000
Optic:	Asymmetric wide reflector
Luminaire lumen output:	503 lm
L:	L80
B:	B10
Lifetime:	60000 h
cULus:	✓
Voltage:	120-277 V

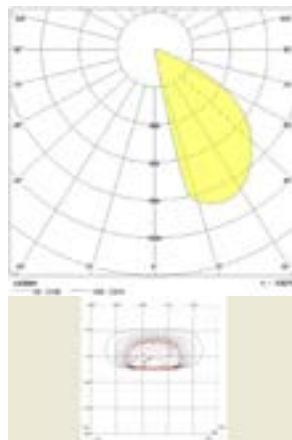


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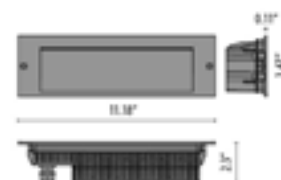
Recessed wall steplight series. Fixtures consist of:

- Multi-step powder-coat painting process, optimized against UV rays and corrosion.
- Copper-free precision die-cast aluminum housing and ring/faceplate.
- Frosted, flat, tempered silk-screened soda-lime glass diffuser.
- Custom molded, anti-aging gasket(s).
- Stainless steel external hardware.
- Custom MCPCB utilized to maximize heat dissipation and promote a long LED life.
- IESNA Type III light distribution.
- Input voltage: 120-277 V (50 / 60 Hz), integral driver.
- Pre-wired factory sealed cable for external electrical connection included.
- Stainless steel recessed rough-in kit to be ordered separately.
- Consult factory for dimming options, custom finishes (please specify RAL color), and non-cataloged CCT (Kelvin) options including static colors.
- Consult factory for custom pre-wired factory sealed cable length options.
- Product meets Buy American Act requirements within ARRA.
- 5-year warranty.

Photometric data

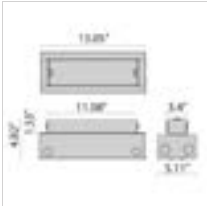


Technical drawings



REQUIRED FOR INSTALLATION

INSERT+ 2



310486
Rough-In kit Insert+ 2

Date: _____ Customer: _____

Project: _____

Type: _____ Qty: _____

selux

Ouray 500


Order Code: U5 - - - - -

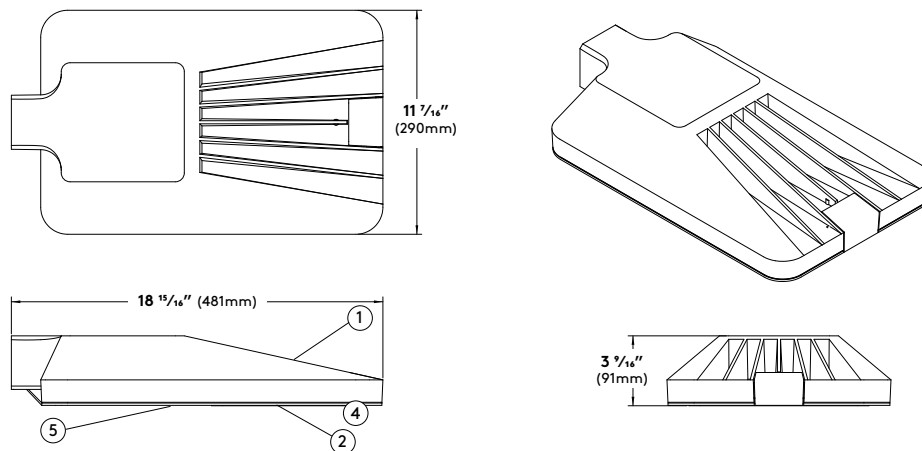
Pole Order Code:

U5	Series	U5	Series	Height	Finish	Options				
	Optics	R1 Type I	R2 Type II	R3 Type III	R3W Type III (Wide)	R4 Type IV	R5R Type V (Round)	R5S Type V (Square)	R5Q Type V (Rectangular)	PP Plane Projector
	Fixed Mounting	S 60mm Slip Fitter	SA Single Pole Adaptor	S1 Single Short Arm	S2 Double Short Arm	L1 Single Long Arm	L2 Double Long Arm	W Wall Mount	WD Decorative Wall Box	* May be combined with adjustable mounting
	Adjustable Mounting	AT ¹ Adjustable Tilt	AS Adjustable Swivel	XX None						¹ AT mounting not IDA approved.
	Light Engine	5G350 44W/4,931lm	5G530 68W/7,233lm	5G700 89W/9,083lm	5G105 136W/12,517lm	5G140 ² 183W/15,307lm				² 347/480V and HLXX options cannot be combined with 5G140 ³ Based on R1 distributions at 3000K CCT no glass.
	CCT	27 ³ 2700K	30 ³ 3000K	40 4000K						² 2700K and 3000K are IDA-Approved ⁴ For other CCT, please consult factory.
	Power Cord Length	8 8'	10 10'	12 12'	14 14'	16 16'	18 18'	XX XX'		* Add length of arm and height of pole to determine power cord length
	Finish	WH White	BK Black	BL Semi-Matte Black	BZ Bronze	SV Silver	SP Specify Premium Color			
	Voltage	UNV 120- 277	120 ⁴ 120V	240 ⁴ 240V	277 ⁴ 277V	347 347V	480 480V			⁴ Specify for HLXX option
	Options	DM ⁶ Dimming (0-10V)	HS ⁵ House Side Shield (180°)	HL30 ^{6,8} Hi-Lo Switching Low Output 30%	HL50 ^{6,8} Hi-Lo Switching Low Output 50%	CO ⁹ Comfort Optics (Not available with PP optics)	GL ⁹ Tempered Glass Lens	TLR ^{6,8} Twist Lock Receptacle 7-Pin with Shorting Cap		⁵ Type I, II, III, and IV only ⁶ DM, HLXX, TLR or IMS only. Cannot be combined. ⁷ 120V or 277V only ⁸ 120V, 240V or 277V only ⁹ Glass is included with CO and PP options and does not need to be specified separately
		TLRP ⁸ Twist Lock Receptacle 3-Pin with Photocell	IMS ^{6,7} Internal Motion Sensor	Pole Motion Sensor with optional photocell See page 11 for order code						

Ouray 500

selux

U5



Specifications

1. Fixture Housing - Die cast low copper marine grade aluminum body and door. Optional tempered glass lens.

2. Gasketing - Continuous molded silicone gasket provides weatherproofing, dust and insect control at all luminaire connections.

3. Access Door - Die cast low-copper marine grade aluminum door. Hinges open for toolless access to LED light engine and is retained in place with fixed hinge.

4. LED Array - High Flux LEDs mounted to metal core PCB and attached to external heat sink for maximum LED performance and life. CCT tolerance within a 3-step bin and provided with a minimum CRI of 80. LED array has a reported lumen maintenance of 93% at 50,000 hours. L70 calculated greater than 100,000 hours. Exposed face rated to IP65.

5. LED Optics - Technical Optics (R1, R2, R3, R3W, R4, R5S, R5Q and R5R) use Selux signature light pattern acrylic lens holder to secure proprietary silicone optics. Internal micro house side shield available for distributions types I, II, III & IV. Plane Projector (PP) optics available for uplighting. Comfort Optics (CO) option provided with fully diffuse glass.

6. LED Driver - LEDs are driven by RoHS compliant constant current programmable LED driver. Driver includes 0-10V dimming to 10%, meets the requirements of IP66. Driver assembly located inside the head and accessible through the hinged door.

7. Surge Protection - 3-Pole Surge Protection device safeguards electrical components from indirect lighting strikes and surges up to (20kA standard). RoHS compliant.

Exterior Luminaire Finish -

Selux utilizes a high quality Polyester Powder Coating. All Selux luminaires and poles are finished in our Tiger Drylac certified facility and undergo a five stage intensive pretreatment process where product is thoroughly cleaned, phosphated and sealed. Selux powder coated products provide excellent salt and humidity resistance as well as ultra violet resistance for color retention. All products are tested in accordance with test specifications for coatings from ASTM and PCI.

Standard exterior colors are White (WH), Black (BK), Semi-Matte Black (BL), Bronze (BZ), and Silver (SV). Selux premium colors (SP) are available, please specify from your Selux color selection guide. Hot Dip Galvanized finish (GV) on all steel parts also available.

5 Year Limited LED Luminaire Warranty - Selux offers a 5 Year Limited Warranty to the original purchaser that Ouray LED luminaire shall be free from defects in material and workmanship for up to five (5) years from date of shipment. This limited warranty covers the fixture, LED driver and LED light engine when installed and operated according to Selux instructions. Fixture suitable for ambient temperatures of 45°C (113°F). For details and exclusions, see "Selux Terms and Condition of Sale."

Listings and Ratings: Tested to IESNA LM-79-08 and LM-80 test standards at 25°C ambient temperature. Rated for wet location.

Visit selux.us for our LED End of Life recycling policy.

Ouray 500

Mounting



S1 - Single Short Arm

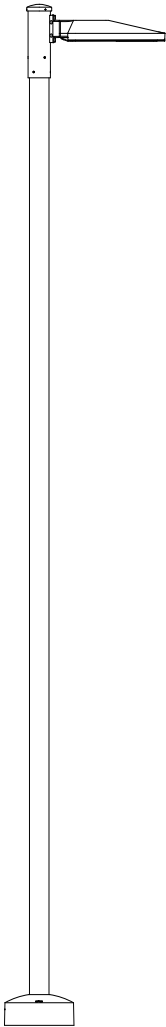
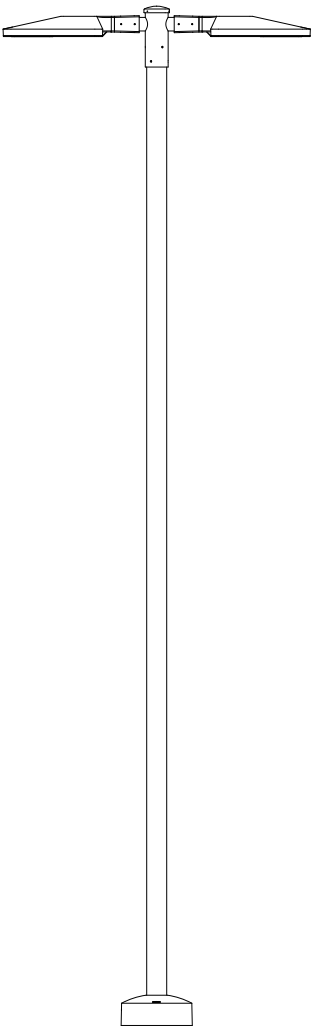
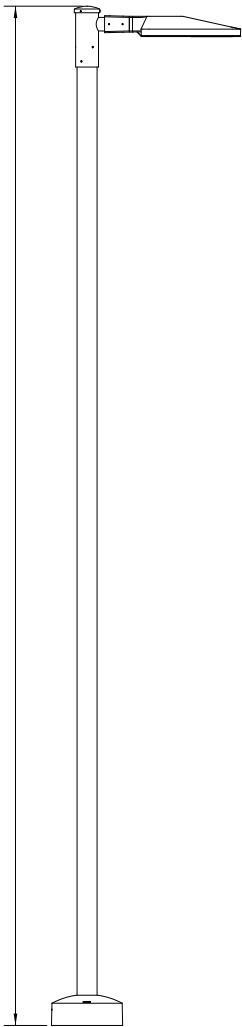
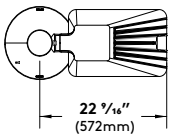
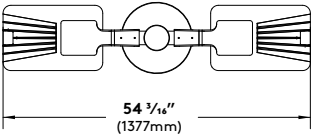
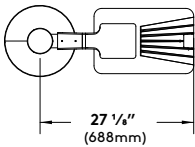
S2 - Double Short Arm

SA - Single Pole Adaptor

EPA = 0.8ft² (0.08m²)
Weight = 21lbs. (10kg)

EPA = 1.3ft² (0.13m²)
Weight = 40lbs. (18kg)

EPA = 0.5ft² (0.05m²)
Weight = 19lbs. (9kg)



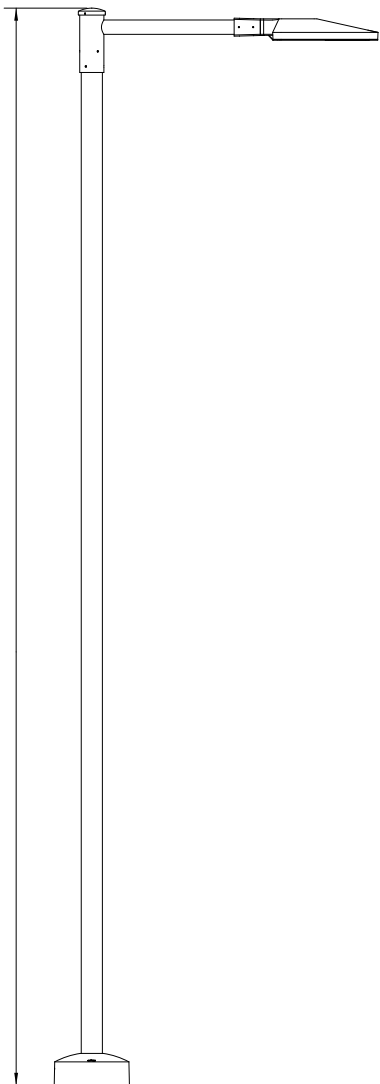
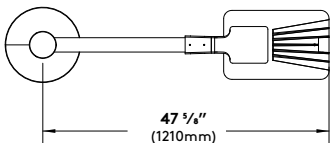
Ouray 500

Mounting

selux

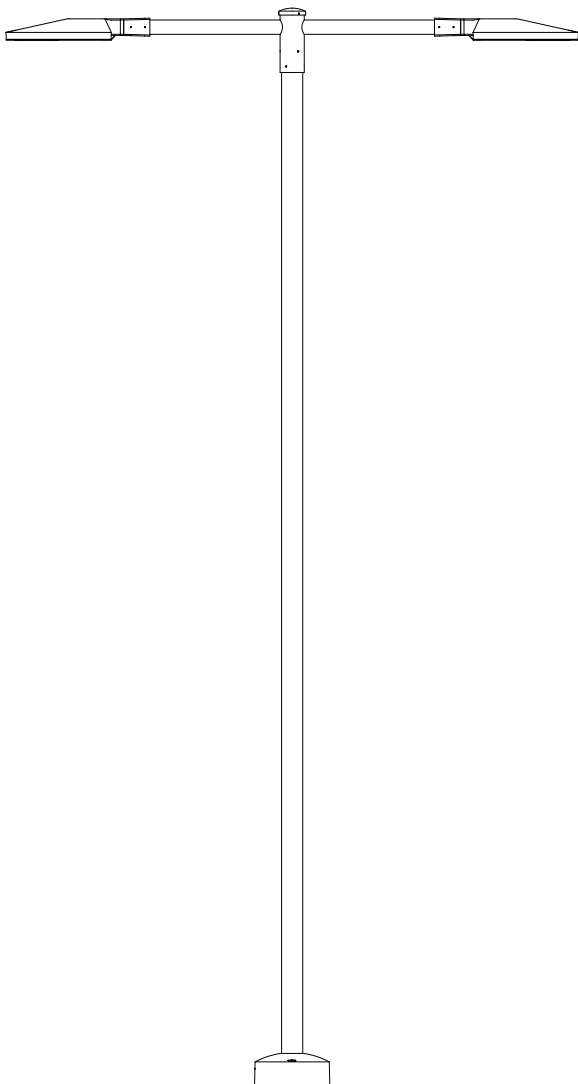
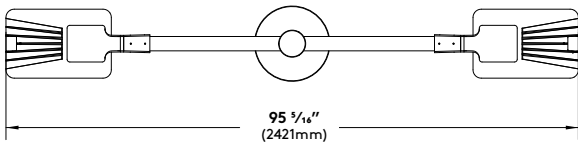
L1 - Single Long Arm

EPA = 1.1ft² (0.10m²)
Weight = 21lbs. (10kg)



L2 - Double Long Arm

EPA = 1.8ft² (0.157m²)
Weight = 40lbs. (18kg)

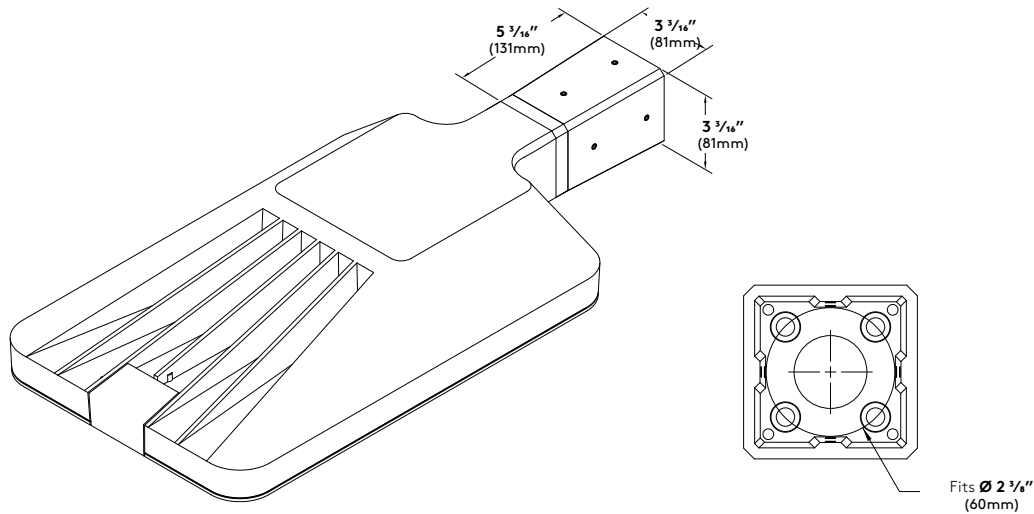


Ouray 500

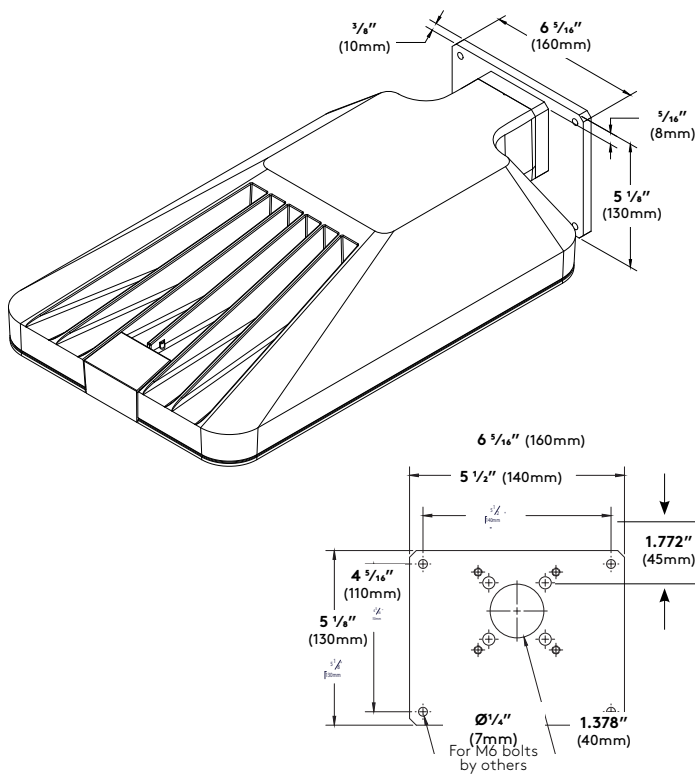
selux

Mounting Details

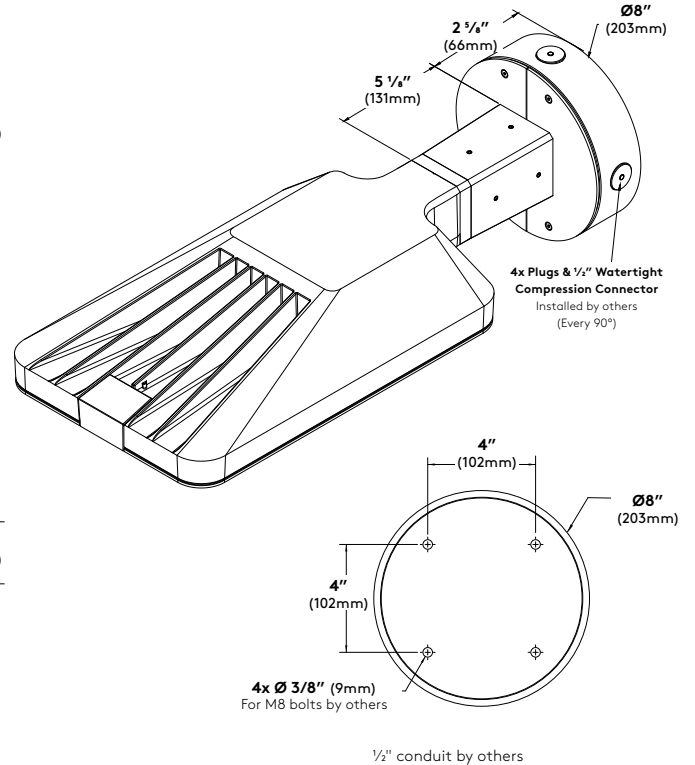
S
60 mm Slip Fitter



W
Wall Mount



WD
Decorative Wall Box



Ouray 500



Mounting Details

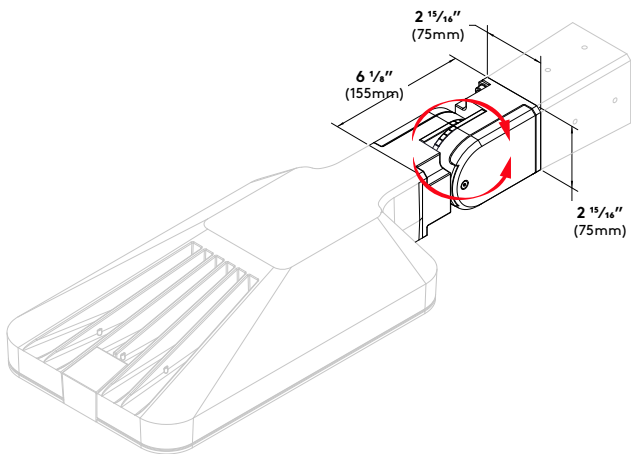
AT
Adjustable Tilt

EPA = 0.1ft² (0.01m²)
Weight = 2.5lbs. (1.1kg)
AT/AS mounting only - Add to primary mounting values.

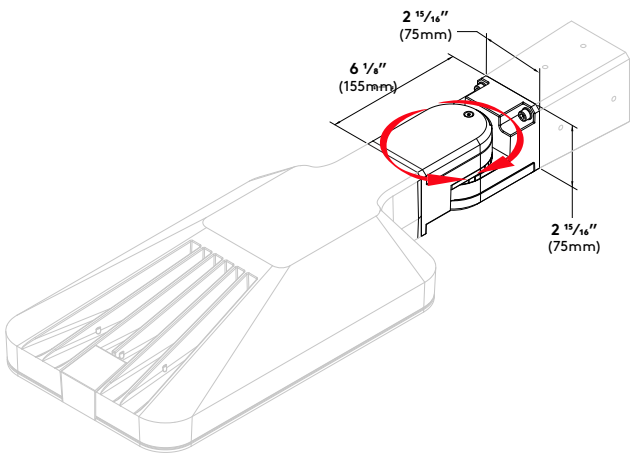
AS
Adjustable Swivel

EPA = 0.1ft² (0.01m²)
Weight = 2.5lbs. (1.1kg)
AT/AS mounting only - Add to primary mounting values.

Adjustable arm located between fixture head and fixed mounting.



Tilt +/- 90° in 2.5° increments



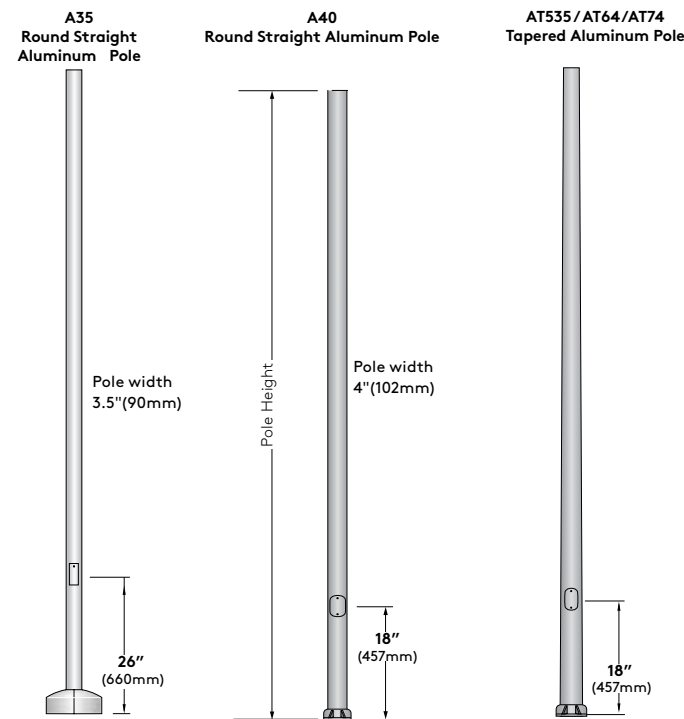
Swivel +/- 90° in 2.5° increments

Ouray 500

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Pole Information

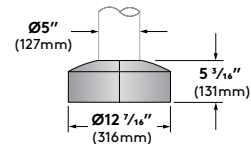
Refer to pole specification sheets for construction details, anchorage information and additional options.

**Optional Base Covers for Poles**

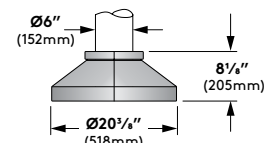
Die cast aluminum.

BC3 Optional Base Cover (AT535)

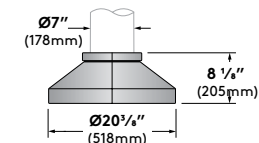
Die cast aluminum, two-piece field installable base cover.

**BC9 Optional Base Cover (AT64)**

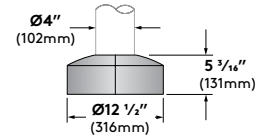
Die cast aluminum, two-piece field installable base cover.

**BC10 Optional Base Cover (AT74)**

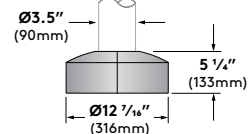
Die cast aluminum, two-piece field installable base cover.

**BC13 Optional Base Cover (A40)**

Die cast aluminum, two-piece field installable base cover.

**BC5 Decorative Cast Aluminum Base Cover (A35 Pole Only)**

Die cast aluminum, two-piece field installable base cover.

**Pole Data Chart**

Pole Series	Bolt Circle											Height	Finish	Options
		90 mph	100 mph	110 mph	120 mph	130 mph	140 mph	150 mph	160 mph	170 mph	180 mph			
U-35 3½" Round Straight Aluminum Pole	7¼"	4.8	3.5	2.6	1.8	1.3	0.9	0.7	0.6	-	-	12 12ft	WH White	BC3 Decorative Cast Aluminium Base Cover (AT535) BC9 Decorative Cast Aluminium Base Cover (AT64) BC10 Decorative Cast Aluminium Base Cover (AT74) BC13 Decorative Cast Aluminium Base Cover (A40) T35 Supplied with 3½" diameter tenon, 4½" high (use for A40, AT64, AT74 only) REC GFCI Receptacle with weather-proof cover REC2 GFCI Receptacle with padlockable in-use cover REC3 USB and Duplex Receptacle with weather proof cover REC4 USB and Duplex Receptacle with weatherproof padlockable in-use cover MS Motion Sensor w/ Optional Photocell
U-A40 4" Round Straight Aluminum Pole	7½"	9.3	7.2	5.6	4.5	3.7	3.1	2.7	2.3	2.0	1.7		BK Black	
U-AT535 5" to 3½" Round Tapered Aluminum Pole	8¾"	13.4	10.5	8.4	6.9	5.8	4.9	4.2	3.6	3.2	2.8		BL Semi-Matte Black	
U-AT64 6" to 4" Round Tapered Aluminum Pole	9½"	20.3	16.1	13.1	10.9	9.2	7.9	6.8	5.9	5.2	4.5		BZ Bronze	
U-A35 3½" Round Straight Aluminum Pole	7¼"	3.5	2.4	1.6	1.0	0.5	-	-	-	-	-	14 14ft	SV Silver	
U-A40 4" Round Straight Aluminum Pole	7½"	10.3	7.9	6.1	4.9	4.0	3.4	2.9	2.5	2.1	1.8		SP Specify Premium Color	
U-AT535 5" to 3½" Round Tapered Aluminum Pole	8¾"	11.2	8.7	6.9	5.5	4.6	3.8	3.3	2.8	2.4	2.1			
U-AT64 6" to 4" Round Tapered Aluminum Pole	9½"	17.2	13.6	11.0	9.1	7.6	6.5	5.6	4.8	4.2	3.7			
U-A35 3½" Round Straight Aluminum Pole	7¼"	2.1	1.2	0.6	-	-	-	-	-	-	-	16 16ft		
U-A40 4" Round Straight Aluminum Pole	7½"	8.3	6.2	4.7	3.6	3.0	2.5	2.1	1.7	1.5	1.2			
U-AT535 5" to 3½" Round Tapered Aluminum Pole	8¾"	9.1	6.9	5.4	4.3	3.4	2.9	2.4	2.0	1.7	1.5			
U-AT64 6" to 4" Round Tapered Aluminum Pole	9½"	14.3	11.2	9.0	7.4	6.2	5.2	4.4	3.8	3.3	2.9			
U-A40 4" Round Straight Aluminum Pole	7½"	6.6	4.8	3.5	2.6	2.1	1.7	1.4	1.1	0.9	0.7	18 18ft		
U-AT535 5" to 3½" Round Tapered Aluminum Pole	8¾"	9.2	7.0	5.4	4.2	3.4	2.8	2.3	2.0	1.7	1.4			
U-AT64 6" to 4" Round Tapered Aluminum Pole	9½"	11.9	9.2	7.3	6.0	4.9	4.2	3.5	3.0	2.6	2.2			
U-AT74 7" to 4" Round Tapered Aluminum Pole	10¾"	17.5	13.8	11.2	9.2	7.7	6.5	5.6	4.8	4.1	3.5			

Allowable EPA calculated according to AASHTO 1994 and include allowance for ½ gust factor. See Mounting Configuration pages for fixture arm weight and EPA values.

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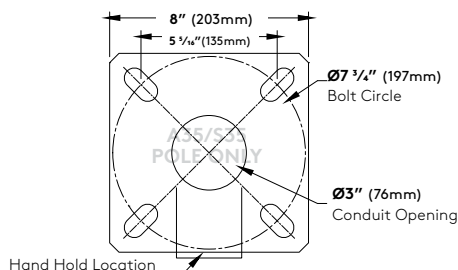
selux

Pole Information

Refer to pole specification sheets for construction details, anchorage information and additional options.

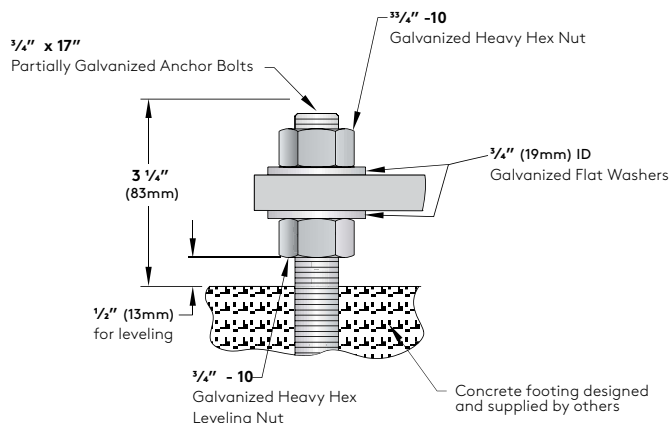
Bolt Circle for A35 & S35

Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown



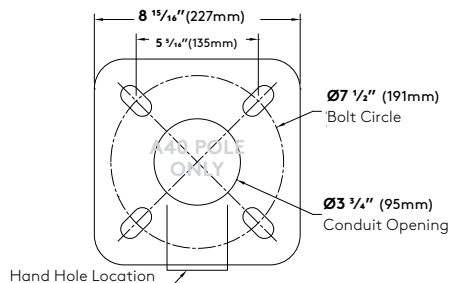
Note: Adequate drainage must be provided in concrete foundation.

Anchor Bolt Detail for A35 & S35



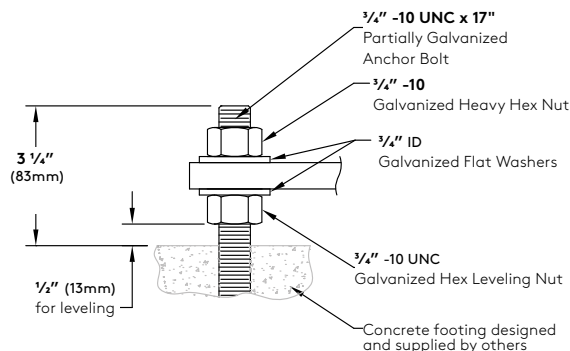
Bolt Circle for A40

Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown



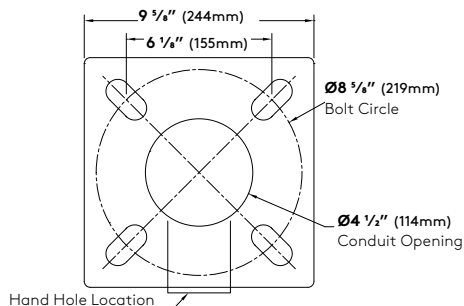
Note: Adequate drainage must be provided in concrete foundation.

Anchor Bolt Detail for A40

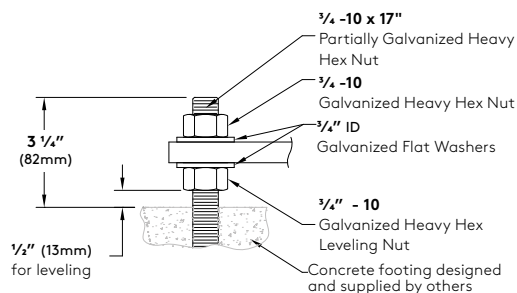


Bolt Circle for AT535

Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown



Anchor Bolt Detail for AT535



Ouray 500

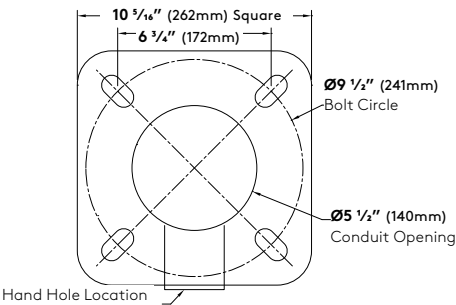


Pole Information

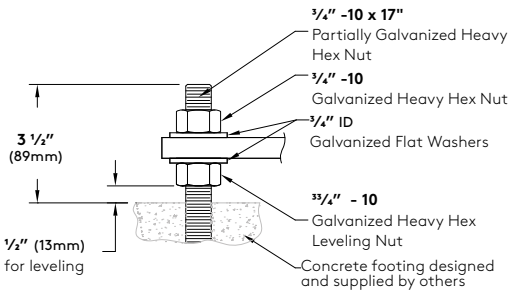
Refer to pole specification sheets for construction details, anchorage information and additional options.

Bolt Circle for AT64

Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown

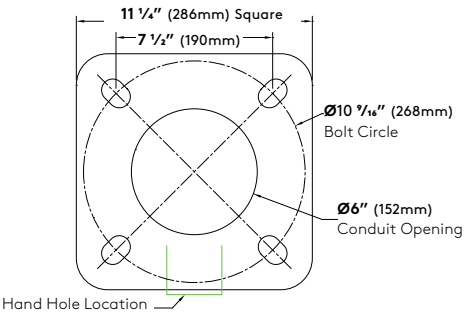


Anchor Bolt Detail for AT64

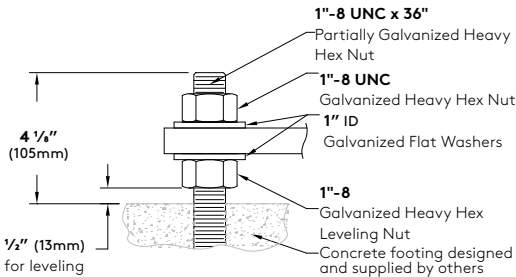


Bolt Circle for AT74

Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown



Anchor Bolt Detail for AT74

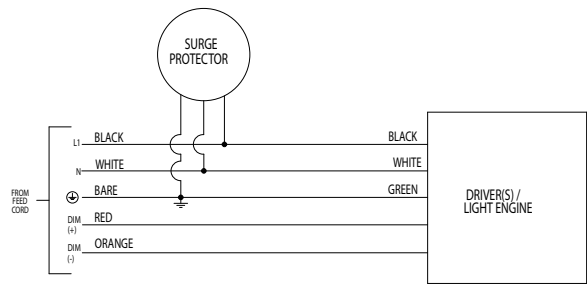


Ouray 500

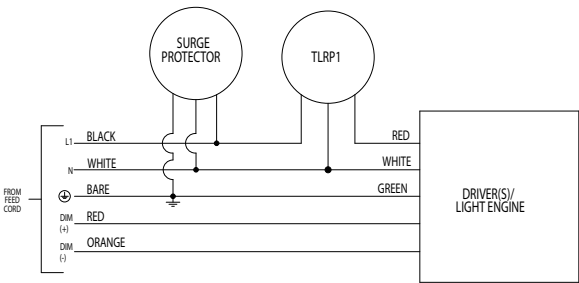


Wiring Diagrams

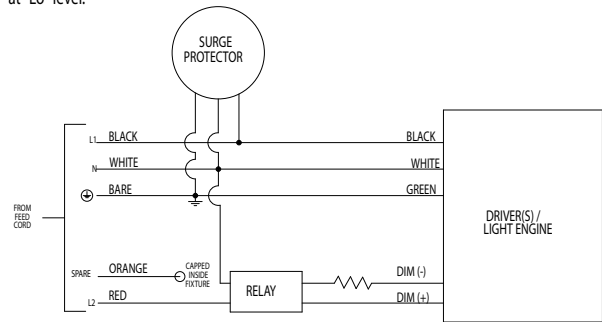
Standard Wiring (120V-480V)*



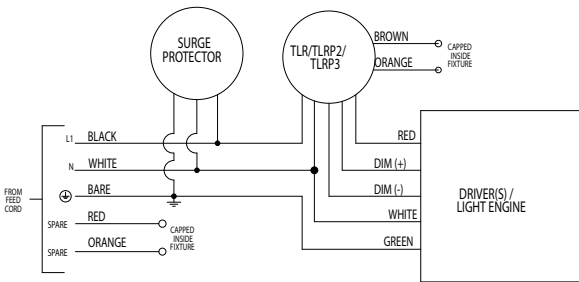
TLRP1 Wiring (120V/240V/277V)



Hi-Lo Switching Option (HL30/HL50) Wiring
120/240/277V. When red is energized, light output will be at "Lo" level.



TLR/TLRP2/TLRP3 Wiring (120V-480V)*



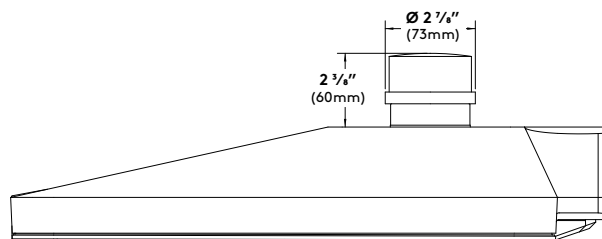
*(347/480V with 5G350 has a transformer - not shown)

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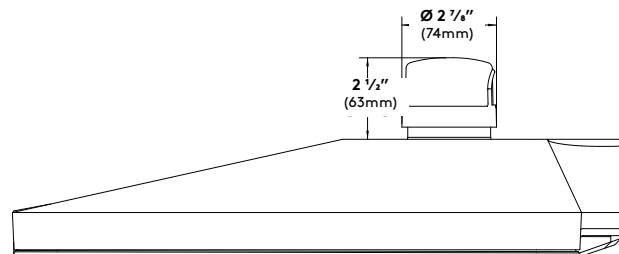
Optional Accessories

(TLR) 7-Pin Twist Lock Receptacle with shorting cap



TLR = 7-Pin Twist Lock Receptacle with Shorting Cap

(TLPC) 3-Pin Twist Lock Receptacle with Photocell



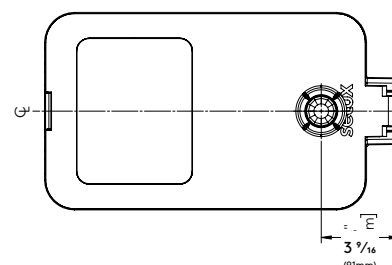
TLPC = TE Connectivity BF Series (BF-PV) 3-Pin

Internal Motion Sensor (IMS Option)

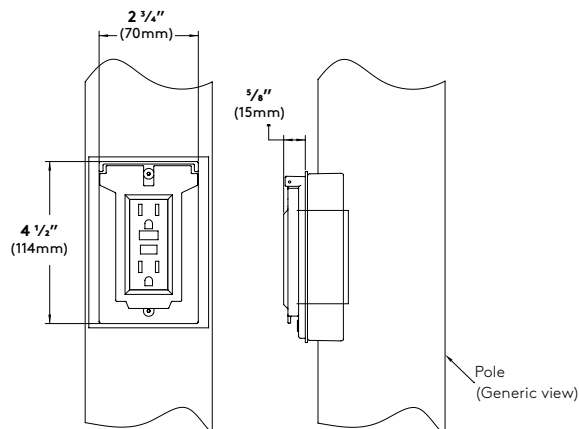
- WattStopper FSP-211
- WattStopper FSP-L3
- FSIR-100 Remote (supplied separately)



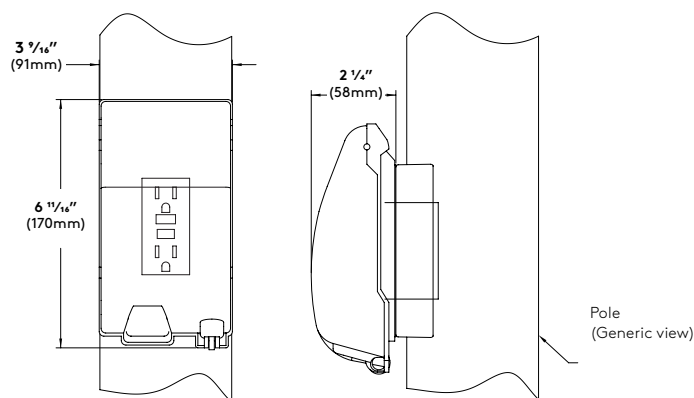
FSIR-100 Remote



GFCI Receptacle (REC) - 120V 15A GFCI duplex receptacle with weather-proof, self-closing, non-lockable cover; located 36" (915mm) from base of pole, inline with handhole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel. For use with 120V applications only. For use with luminaires with other than 120V rating, please consult factory for wire segregation.



GFCI Receptacle (REC2) - 120V 15A GFCI duplex receptacle with weather-proof, self-closing, padlockable in-use cover; located 36" (915mm) from base of pole, inline with handhole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel. For use with 120V applications only. For use with luminaires with other than 120V rating, please consult factory for wire segregation.



USB & Duplex Receptacle (REC3) (not shown) - 120V 15A duplex receptacle with USB combination ports. (1) type A and (1) type C high power 5 Amp, 5 Volt USB outlets. With weather-proof, self-closing cover; located 36" (915mm) from base of pole, inline with handhole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel.

Note: Must be used in conjunction with GFCI breaker by others

USB & Duplex Receptacle (REC4) (not shown) - 120V 15A duplex receptacle with USB combination ports. (1) type A and (1) type C high power 5 Amp, 5 Volt USB outlets. With weather-proof, self-closing padlockable in-use cover; located 36" (915mm) from base of pole, inline with handhole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel.

Note: Must be used in conjunction with GFCI breaker by others

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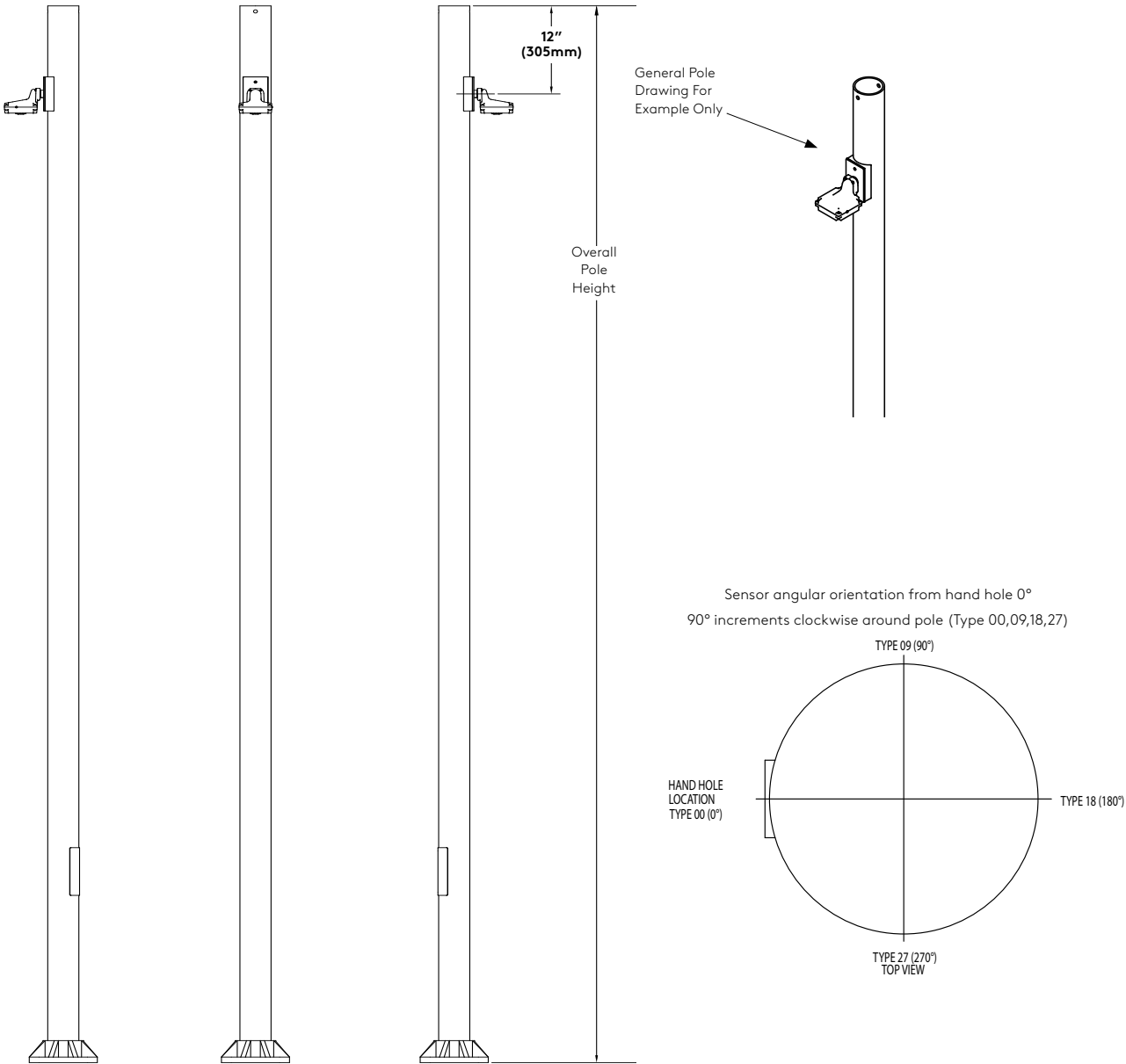


Pole Motion Sensor

The Selux outdoor rated sensor incorporates Passive Infrared (PIR) technology for motion sensing and also includes a built in photocell. Designed to mount directly through a 1/2" KO in a single gang faceplate on pole/column, the SBO utilizes 100% Digital Passive Infrared (PIR) technology that is tuned for walking size while preventing false tripping from the environment.

Series	Optics	Hand Hole Orientation	Program	Color	Photocell Feature	Voltage
MS Motion Sensor	1 270° coverage - Single Sensor	00	D0 (0V=0%)	WH White	Y Yes	UNV
		09	D1 (1V=10%)	BK Black	N No	347
		18	D3 (3V=30%)	BZ Bronze		480
		27	D5 (5V=50%)			

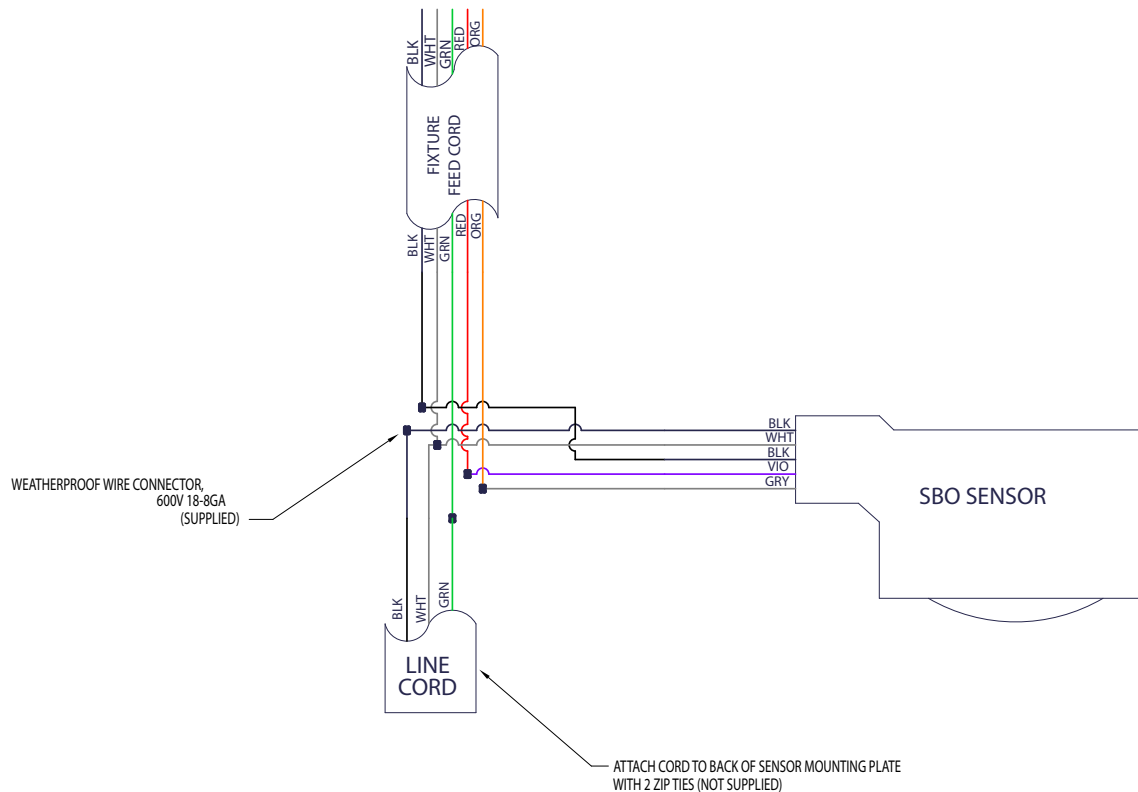
NOTE: Motion sensor comes programmed at 30% dimmed level with a 5 min. delay as default. All programming required after shipping by others.



Ouray 500

selux**Pole Motion Sensor**

- 100% Digital PIR Detection, excellent RF Immunity
- 270° coverage pattern
- Up to 30ft mounting
- IP66 Rated for outdoor applications
- Built-in 1kV surge protection
- No minimum load requirements
- Made for LED light source
- Interchangeable hot and load wires - impossible to wire backwards
- Adjustable time delays, max/min dim levels and ramp rates
- Programming button accessible without opening sensor or removing gaskets
- No field calibration or sensitivity adjustments required
- Non-volatile setting memory
- Convenient test mode
- Suitable for Title 24 applications

Motion Sensor Wiring Diagram

Ouray 500

Photometry**selux****R1 Optics / 43W LED / 3000K CCT**

Catalog #: U5-R1-XX-XX-5G350-30-XX-UNV

Delivered Lumens: 4931lm

Input Watts: 43W

Efficacy: 112 lm/W

CCT: 3000K

CRI (Ra): >80

Maximum candela of 2661 at 45° from vertical.

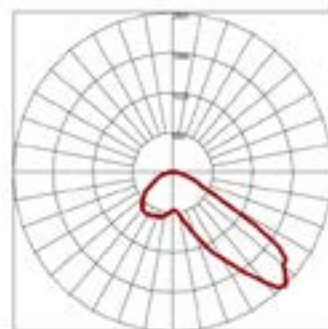
IES classification: Type II

Mounting Height: 16' (4.9 m)

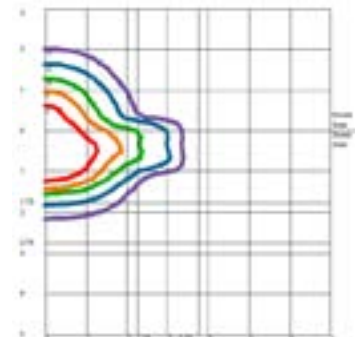
BUG Rating: B1-U0-G1

Power Factor: 0.990

Total Harmonic Distortion: 10.5%



Maximum Candela = 2661 (1) Located at Vertical Angle = 45.0, Vertical Angle = 45.0
4.1 - Vertical Plane Through Horizontal Angle 45.0 - 45.0 Through Max (1.0)



Maximum Candela = 2661 (1) Located at Vertical Angle = 45.0, Vertical Angle = 45.0
4.1 - Vertical Plane Through Horizontal Angle 45.0 - 45.0 Through Max (1.0)

R2 Optics / 43W LED / 3000K CCT

Catalog #: U5-R2-XX-XX-5G350-30-XX-UNV

Delivered Lumens: 4974lm

Input Watts: 43W

Efficacy: 113 lm/W

CCT: 3000K

CRI (Ra): >80

Maximum candela of 2603 at 62.5° from vertical.

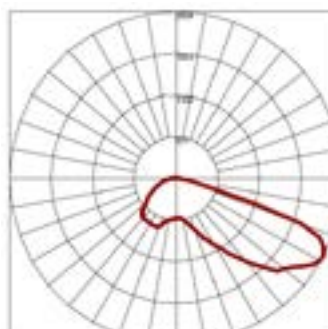
IES classification: Type III

Mounting Height: 16' (4.9 m)

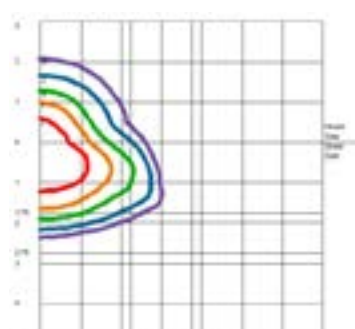
BUG Rating: B1-U0-G1

Power Factor: 0.990

Total Harmonic Distortion: 10.5%



Maximum Candela = 2603 (1) Located at Vertical Angle = 62.5, Vertical Angle = 62.5
4.1 - Vertical Plane Through Horizontal Angle 62.5 - 62.5 Through Max (1.0)



Maximum Candela = 2603 (1) Located at Vertical Angle = 62.5, Vertical Angle = 62.5
4.1 - Vertical Plane Through Horizontal Angle 62.5 - 62.5 Through Max (1.0)

R3 Optics / 43W LED / 3000K CCT

Catalog #: U5-R3-XX-XX-5G350-30-XX-UNV

Delivered Lumens: 4882lm

Input Watts: 43W

Efficacy: 111 lm/W

CCT: 3000K

CRI (Ra): >80

Maximum candela of 3120 at 60° from vertical.

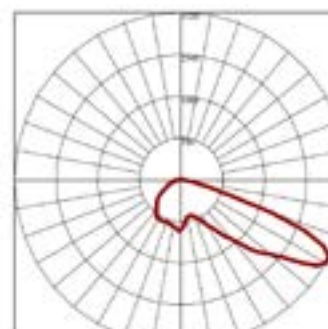
IES classification: Type III

Mounting Height: 16' (4.9 m)

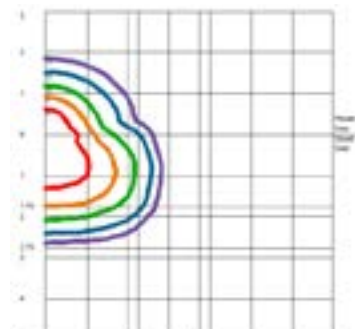
BUG Rating: B1-U0-G1

Power Factor: 0.990

Total Harmonic Distortion: 10.5%



Maximum Candela = 3120 (1) Located at Vertical Angle = 60.0, Vertical Angle = 60.0
4.1 - Vertical Plane Through Horizontal Angle 60.0 - 60.0 Through Max (1.0)



Maximum Candela = 3120 (1) Located at Vertical Angle = 60.0, Vertical Angle = 60.0
4.1 - Vertical Plane Through Horizontal Angle 60.0 - 60.0 Through Max (1.0)

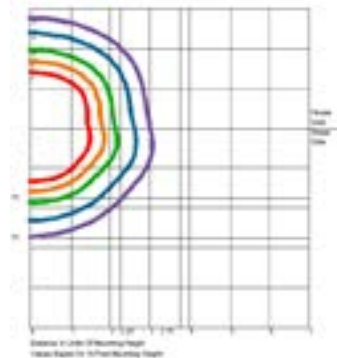
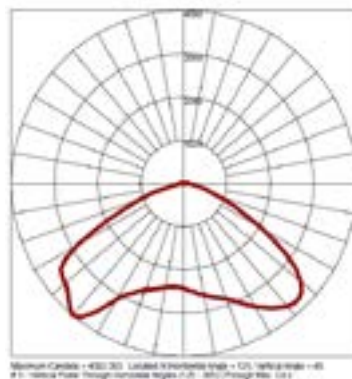
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Photometry

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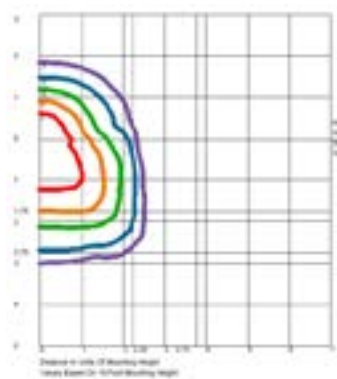
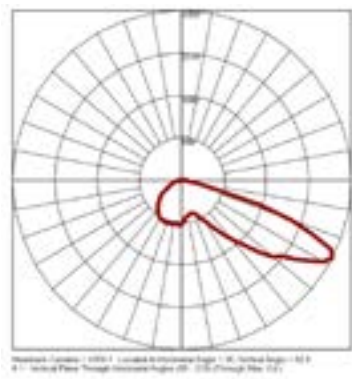
R3W Optics / 126W LED / 3000K CCT

Catalog #: U4-R3W-5G350-30-XX-UNV
 Delivered Lumens: 12036lm
 Input Watts: 126W
 Efficacy: 96 lm/W
 CCT: 3000K
 CRI (Ra): >80
 Maximum candela of 4092 at 40° from vertical.
 IES classification: Type VS
 Mounting Height: 16' (4.9 m)
 BUG Rating: B3-U0-G1
 Power Factor: 0.990
 Total Harmonic Distortion: 10.5%



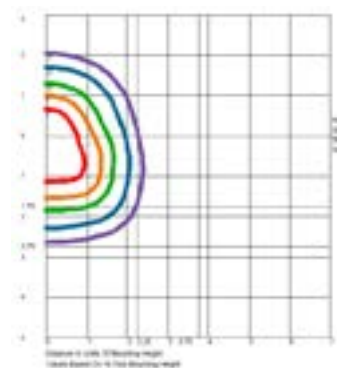
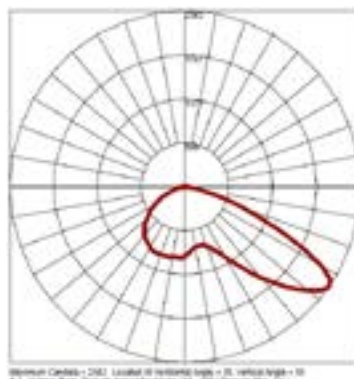
R4 Optics / 43W LED / 3000K CCT

Catalog #: U5-R4-XX-5G350-30-XX-UNV
 Delivered Lumens: 4848lm
 Input Watts: 43W
 Efficacy: 110 lm/W
 CCT: 3000K
 CRI (Ra): >80
 Maximum candela of 3359 at 62.5° from vertical.
 IES classification: Type III
 Mounting Height: 16' (4.9 m)
 BUG Rating: B1-U0-G1
 Power Factor: 0.990
 Total Harmonic Distortion: 10.5%



PP Optics / 43W LED / 3000K CCT

Catalog #: U5-PP-XX-5G350-30-XX-UNV
 Delivered Lumens: 4312lm
 Input Watts: 43W
 Efficacy: 98 lm/W
 CCT: 3000K
 CRI (Ra): >80
 Maximum candela of 2342 at 55° from vertical.
 IES classification: Type III
 Mounting Height: 16' (4.9 m)
 BUG Rating: B1-U0-G1
 Power Factor: 0.990
 Total Harmonic Distortion: 10.5%



Date: _____ Customer: _____
 Project: _____
 Type: _____ Qty: _____

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Ouray 400



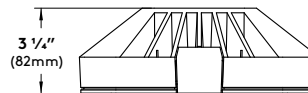
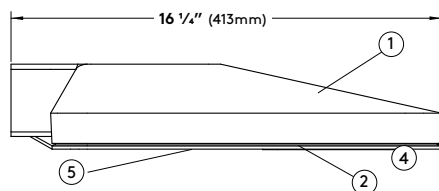
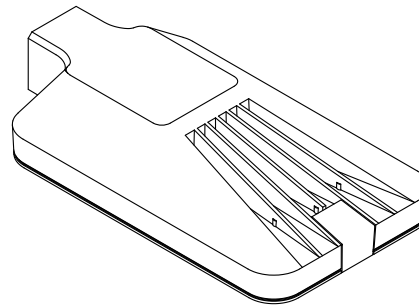
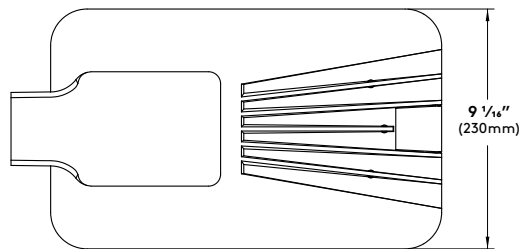
Order Code: U4 - - - - -

Pole Order Code:

Pole Order Code:										
U4	Series	U4 Ouray 400								
	Optics	R1 Type I	R2 Type II	R3 Type III	R3W Type III (Wide)	R4 Type IV	R5R Type V (Round)	R5S Type V (Square)	R5Q Type V (Rectangu- lar)	PP Plane Projector
	Fixed Mounting	S 60mm Slip Fitter	SA Single Pole Adaptor	S1 Single Short Arm	S2 Double Short Arm	L1 Single Long Arm	L2 Double Long Arm	W Wall Mount	WD Decorative Wall Box	* May be combined with adjustable mounting
	Adjustable Mounting	AT ¹ Adjustable Tilt	AS Adjustable Swivel	XX None						¹ AT mounting not IDA approved
	Light Engine	5G350 19W/2,012lm	5G530 28W/2,935lm	5G700 39W/3,722lm	5G105 58W/5,169lm	5G140 ² 75W/6,120lm				² 347/480V and HLXX options cannot be combined with 5G140 ³ Based on R1 distributions at 3000K CCT no glass
	CCT	27 ³ 2700K	30 ³ 3000K	40 4000K						² 700K and 3000K are IDA-Approved ⁴ For other CCT, please consult factory
	Power Cord Length	8 8'	10 10'	12 12'	14 14'	16 16'	18 18'	XX XX'		* Add length of arm and height of pole to determine power cord length
	Finish	WH White	BK Black	BL Semi-Matte Black	BZ Bronze	SV Silver	SP Specify Premium Color			
	Voltage	UNV 120 - 277	120 ⁴ 120V	240 ⁴ 240V	277 ⁴ 277V	347 347V	480 480V			⁴ Specify for HLXX option
	Options	DM ⁶ Dimming (0-10V)	HS ⁵ House Side Shield (180°)	HL30 ^{6,8} Hi-Lo Switching Low Output 30%	HL50 ^{6,8} Hi-Lo Switching Low Output 50%	CO ⁹ Comfort Optics (Not available with PP optics)	GL ⁹ Tempered Glass Lens	TLR ^{6,8} Twist Lock Receptacle 7-Pin with Shorting Cap		⁵ Type I, II, III, and IV only ⁶ DM, HLXX, TLR or IMS only. Cannot be combined. ⁷ 120V or 277V only ⁸ 120V, 240V or 277V only ⁹ Glass is included with CO and PP options and does not need to be specified separately
		TLRP ⁸ Twist Lock Receptacle 3-Pin with Photocell	IMS ^{6,7} Internal Motion Sensor	Pole Motion Sensor with optional photocell See page 11 for order code						

Ouray 400

U4

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Specifications

1. Fixture Housing - Die cast low copper marine grade aluminum body and door. Optional tempered glass lens.

2. Gasketing - Continuous molded silicone gasket provides weatherproofing, dust and insect control at all luminaire connections.

3. Access Door - Die cast low-copper marine grade aluminum door. Hinges open for toolless access to LED light engine and is retained in place with fixed hinge.

4. LED Array - High Flux LEDs mounted to metal core PCB and attached to external heat sink for maximum LED performance and life. CCT tolerance within a 3-step bin and provided with a minimum CRI of 80. LED array has a reported lumen maintenance of 93% at 50,000 hours. L70 calculated greater than 100,000 hours. Exposed face rated to IP65.

5. LED Optics - Technical Optics (R1, R2, R3, R3W, R4, R5S, R5Q, and R5R) use Selux signature light pattern acrylic lens holder to secure proprietary silicone optics. Internal micro house side shield available for distributions types I, II, III and IV. Plane Projector (PP) optics available for up lighting. Comfort Optics (CO) option provided with fully diffuse glass.

6. LED Driver - LEDs are driven by RoHS compliant constant current programmable LED drivers. Driver includes 0-10V dimming to 10% and meets the requirements of IP66. Driver assembly located inside the head and accessible through the hinged door.

7. Surge Protection - 3-Pole Surge Protection device safeguards electrical components from indirect lighting strikes and surges up to (20kA standard). RoHS compliant.

Exterior Luminaire Finish -

Selux utilizes a high quality Polyester Powder Coating. All Selux luminaires and poles are finished in our Tiger Drylac certified facility and undergo a five stage intensive pretreatment process where product is thoroughly cleaned, phosphated and sealed. Selux powder coated products provide excellent salt and humidity resistance as well as ultra violet resistance for color retention. All products are tested in accordance with test specifications for coatings from ASTM and PCI.

Standard exterior colors are White (WH), Black (BK), Semi-Matte Black (BL), Bronze (BZ), and Silver (SV). Selux premium colors (SP) are available, please specify from your Selux color selection guide. Hot Dip Galvanized finish (GV) on all steel parts also available.

5 Year Limited LED Luminaire Warranty -

Selux offers a 5 Year Limited Warranty to the original purchaser that Ouray LED luminaire shall be free from defects in material and workmanship for up to five (5) years from date of shipment. This limited warranty covers the fixture, LED driver and LED light engine when installed and operated according to Selux instructions. Fixture suitable for ambient temperatures of 45°C (113°F). For details and exclusions, see "Selux Terms and Condition of Sale."

Listings and Ratings: Tested to IESNA LM-79-08 and LM-80 test standards at 25°C ambient temperature. Rated for wet location.

Visit selux.us for our LED End of Life recycling policy.

Ouray 400



Mounting

S1 - Single Short Arm

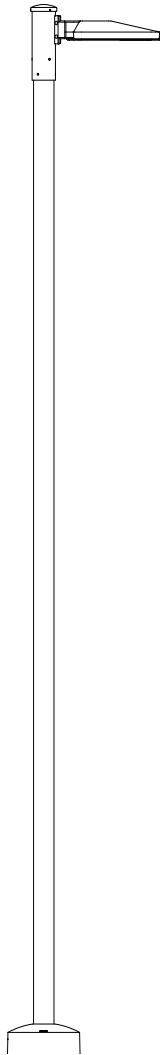
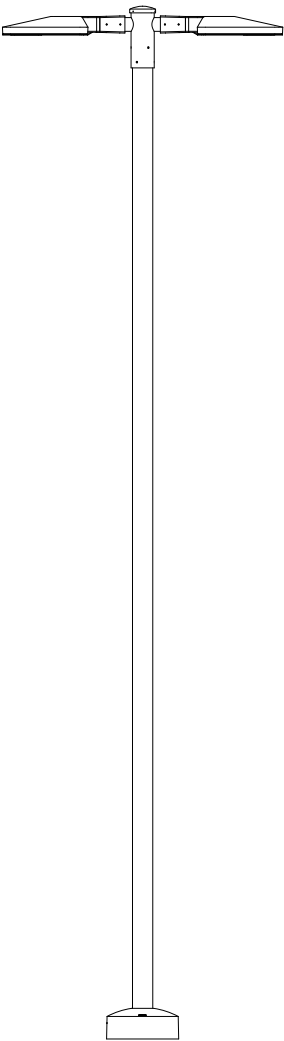
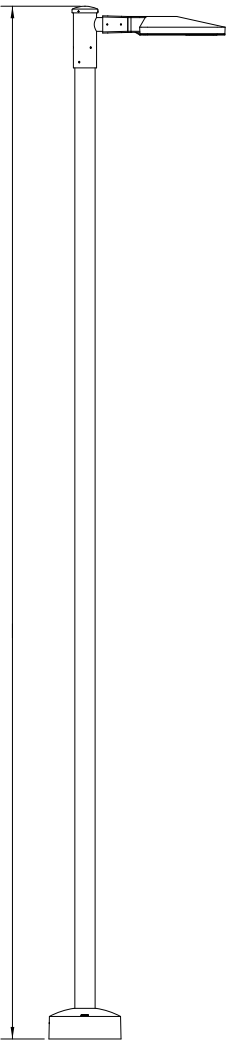
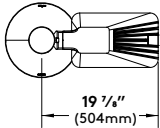
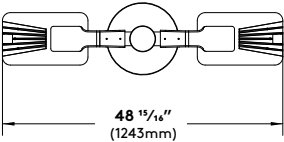
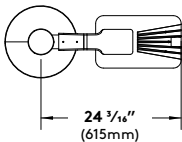
S2 - Double Short Arm

SA - Single Pole Adaptor

EPA = 0.7ft² (0.07m²)
Weight = 17lbs. (8kg)

EPA = 1.2ft² (0.11m²)
Weight = 31lbs. (14kg)

EPA = 0.4ft² (0.04m²)
Weight = 15lbs. (7kg)



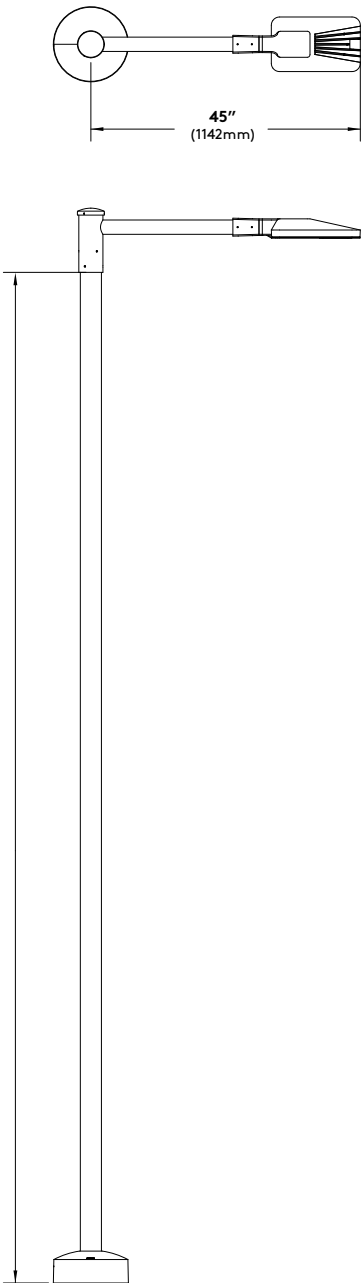
Ouray 400

Mounting

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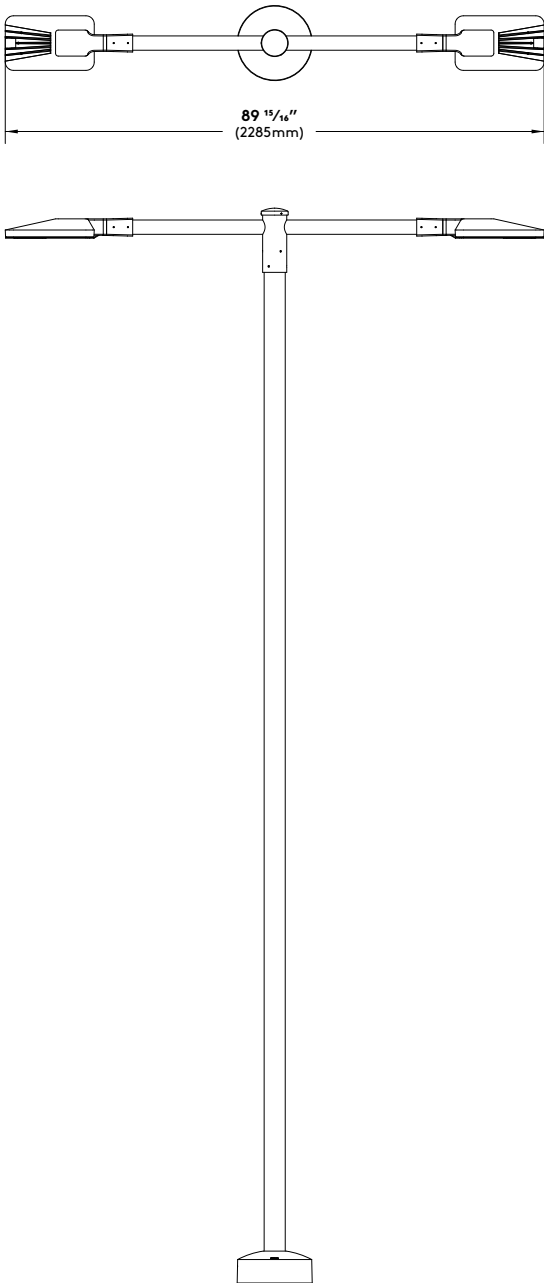
L1 - Single Long Arm

EPA = 1.0ft² (0.09m²)
Weight = 17lbs. (8kg)



L2 - Double Long Arm

EPA = 1.6ft² (0.15m²)
Weight = 31lbs. (14kg)

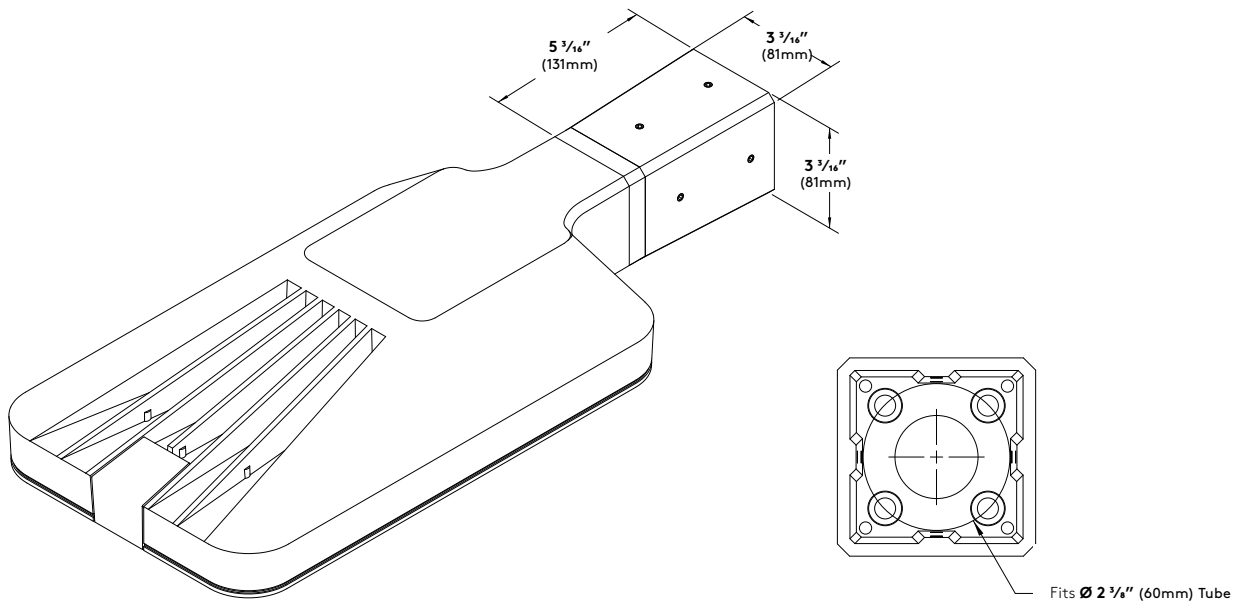


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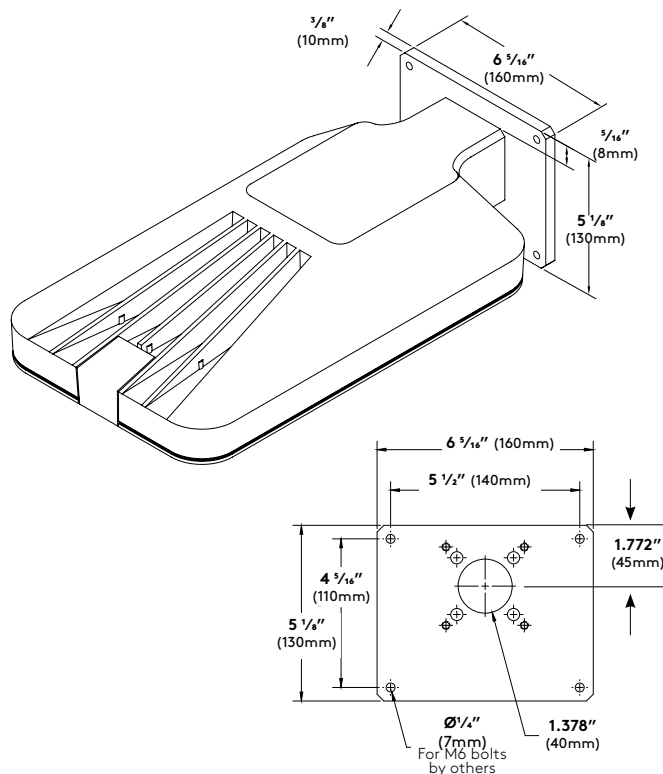
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Mounting Details

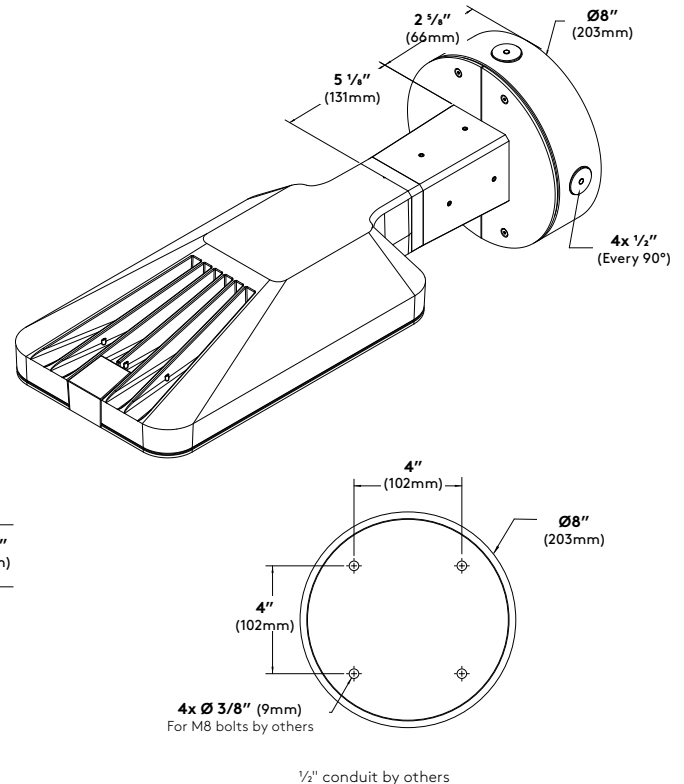
S
60 mm Slip Fitter



W
Wall Mount



WD
Decorative Wall Box



Ouray 400



Mounting Details

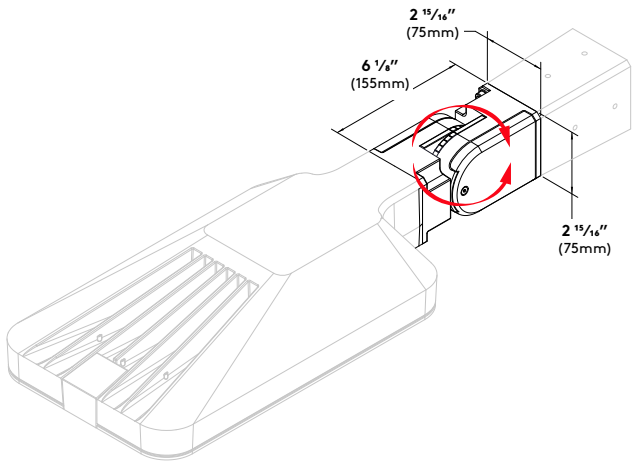
AT
Adjustable Tilt

EPA = 0.1ft² (0.01m²)
Weight = 2.5lbs. (1.1kg)
AT/AS mounting only - Add to primary mounting values.

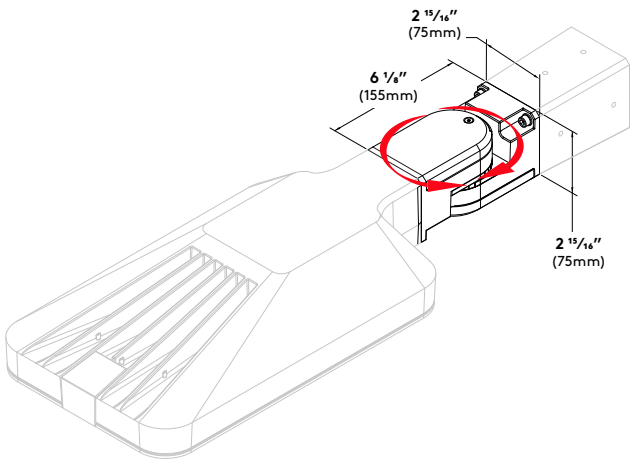
AS
Adjustable Swivel

EPA = 0.1ft² (0.01m²)
Weight = 2.5lbs. (1.1kg)
AT/AS mounting only - Add to primary mounting values.

Adjustable arm located between fixture head and fixed mounting.



Tilt +/- 90° in 2.5° increments



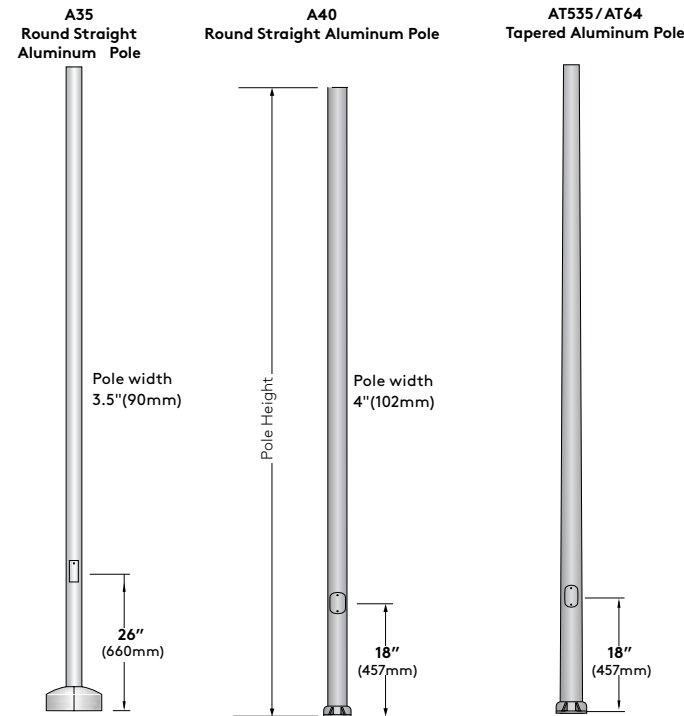
Swivel +/- 90° in 2.5° increments

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Pole Information

Refer to pole specification sheets for construction details, anchorage information and additional options.

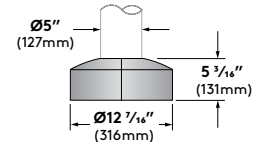


Optional Base Covers for Poles

Die cast aluminum.

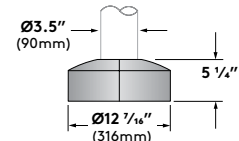
BC3 Optional Base Cover (AT535)

Die cast aluminum, two-piece field installable base cover.



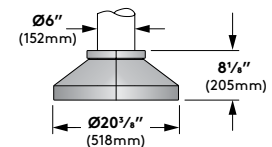
BC5 Decorative Cast Aluminum Base Cover (A35 Pole Only)

Die cast aluminum, two-piece field installable base cover.



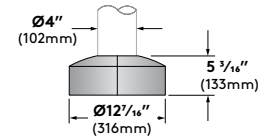
BC9 Optional Base Cover (AT64)

Die cast aluminum, two-piece field installable base cover.



BC13 Optional Base Cover (A40)

Die cast aluminum, two-piece field installable base cover.



Pole Data Chart

Pole Series	Bolt Circle											Height	Finish	Options
		90 mph	100 mph	110 mph	120 mph	130 mph	140 mph	150 mph	160 mph	170 mph	180 mph			
A35 3 1/2" Round Straight Aluminium Pole	7 3/4"	8.7	6.8	5.4	4.3	3.5	2.9	2.5	2.1	1.8	1.6	8 8ft	WH White	BC3 Decorative Cast Aluminium Base Cover (AT535) BC5 Decorative Cast Aluminium Base Cover (A35 Pole Only) BC9 Decorative Cast Aluminium Base Cover (AT64) BC13 Decorative Cast Aluminium Base Cover (A40) T35 Supplied with 3/2" diameter tenon, 4 1/2" high (use for A40, AT64, AT74 only) REC GFCI Receptacle with weather-proof cover REC2 GFCI Receptacle with padlockable in-use cover REC3 USB and Duplex Receptacle with weather proof cover REC4 USB & Duplex Receptacle with weatherproof padlockable in-use cover MS Motion Sensor w/ Optional Photocell
A35 3 1/2" Round Straight Aluminium Pole	7 3/4"	6.4	4.9	3.8	2.9	2.2	1.8	1.5	1.2	1.0	0.9	10 10ft	BK Black	
A35 3 1/2" Round Straight Aluminium Pole	7 3/4"	4.8	3.5	2.6	1.8	1.3	0.9	0.7	0.6	0.4	-	12 12ft	BL Semi-Matte Black	
A40 4" Round straight Aluminium Pole	7 1/2"	9.3	7.2	5.6	4.5	3.7	3.1	2.7	2.3	2.0	1.7			
AT535 5" to 3.5" Round tapered Aluminium Pole	8 3/4"	13.4	10.5	8.4	6.9	5.8	4.9	4.2	3.6	3.2	2.8			
AT64 6" to 4" Round tapered Aluminium Pole	9 1/2"	20.3	16.1	13.1	10.9	9.2	7.9	6.8	5.9	5.2	4.5		BZ Bronze	
A35 3 1/2" Round Straight Aluminium Pole	7 3/4"	3.5	2.4	1.6	1.0	0.5	-	-	-	-	-	14 14ft	SV Silver	
A40 4" Round straight Aluminium Pole	7 1/2"	10.3	7.9	6.1	4.9	4.0	3.4	2.9	2.5	2.1	1.8			
AT535 5" to 3.5" Round tapered Aluminium Pole	8 3/4"	11.2	8.7	6.9	5.5	4.6	3.8	3.3	2.8	2.4	2.1			
AT64 6" to 4" Round tapered Aluminium Pole	9 1/2"	17.2	13.6	11.0	9.1	7.6	6.5	5.6	4.8	4.2	3.7			
A35 3 1/2" Round Straight Aluminium Pole	7 3/4"	2.1	1.2	0.6	-	-	-	-	-	-	-	16 16ft	SP Specify Premium Color	
A40 4" Round straight Aluminium Pole	7 1/2"	8.3	6.2	4.7	3.6	3.0	2.5	2.1	1.7	1.5	1.2			
AT535 5" to 3.5" Round tapered Aluminium Pole	8 3/4"	9.1	6.9	5.4	4.3	3.4	2.9	2.4	2.0	1.7	1.5			
AT64 6" to 4" Round tapered Aluminium Pole	9 1/2"	14.3	11.2	9.0	7.4	6.2	5.2	4.4	3.8	3.3	2.9			

Allowable EPA calculated according to AASHTO 1994 and include allowance for 1/3 gust factor. See Mounting Configuration pages for fixture arm weight and EPA values.

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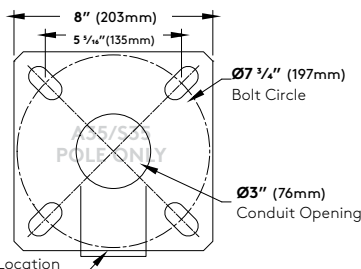
Ouray 400

Pole Information

Refer to pole specification sheets for construction details, anchorage information and additional options.

Bolt Circle for A35 & S35

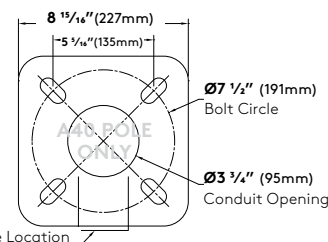
Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown



Note: Adequate drainage must be provided in concrete foundation.

Bolt Circle for A40

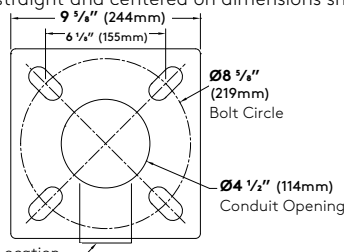
Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown



Note: Adequate drainage must be provided in concrete foundation.

Bolt Circle for AT535

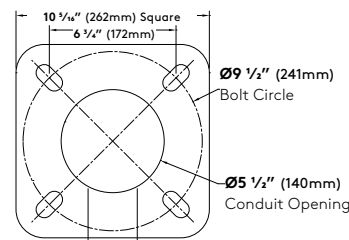
Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown



Hand Hold Location

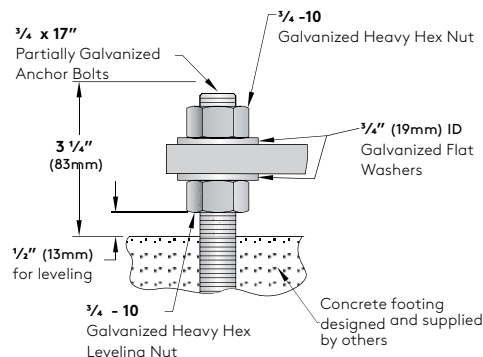
Bolt Circle for AT64

Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown

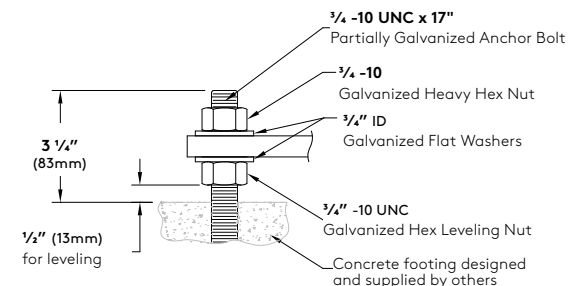


Hand Hold Location

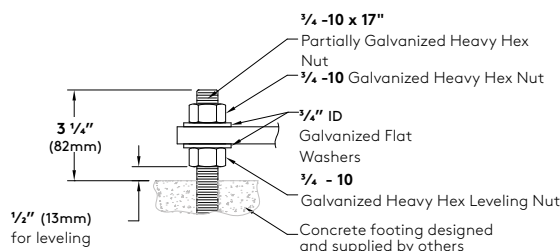
Anchor Bolt Detail for A35 & S35



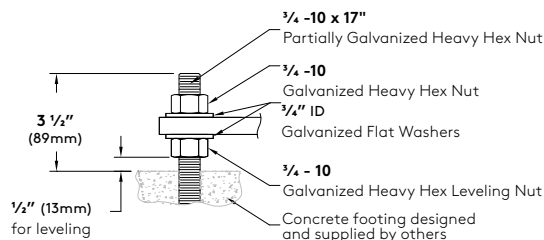
Anchor Bolt Detail for A40



Anchor Bolt Detail for AT535



Anchor Bolt Detail for AT64

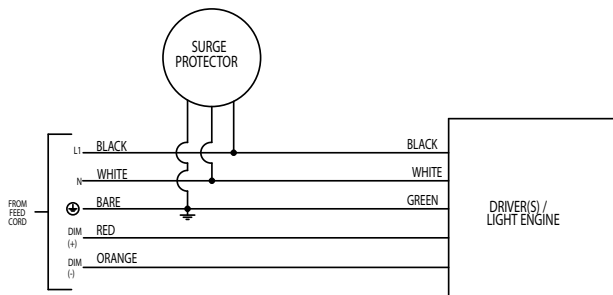


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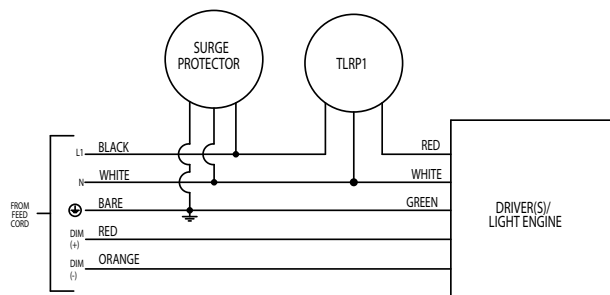
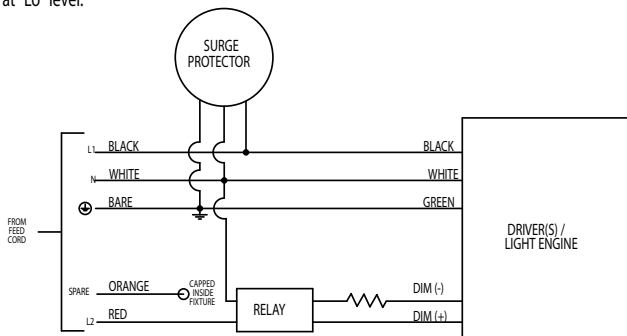
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Wiring Diagrams

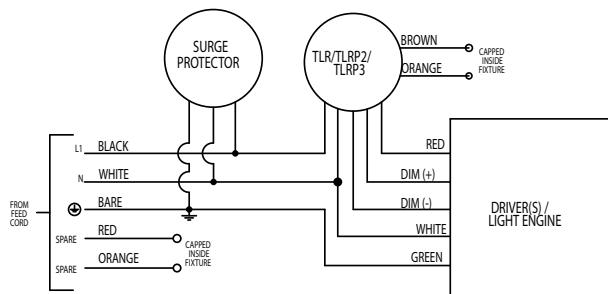
Standard Wiring (120V-480V)*



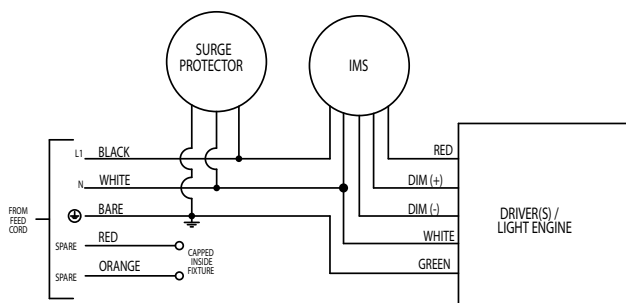
TLRP1 Wiring (120V/240V/277V)


Hi-Lo Switching Option (HL30/HL50) Wiring
120/240/277V. When red is energized, light output will be at "Lo" level.


TLR/TLRP2/TLRP3 Wiring (120V-480V)*



IMS Wiring (120V/277V)



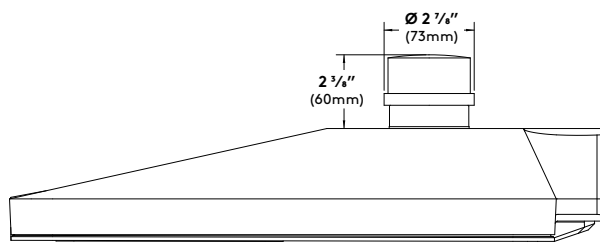
Ouray 400

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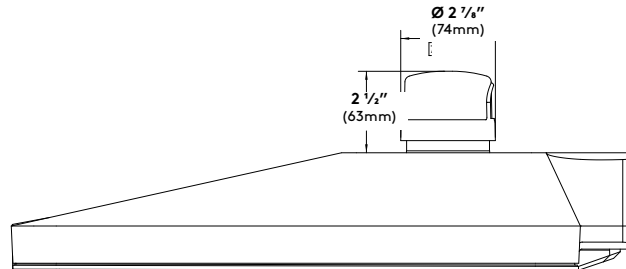
Optional Accessories

(TLR) 7-Pin Twist Lock Receptacle with shorting cap

(TLPC) 3-Pin Twist Lock Receptacle with Photocell



TLR = 7-Pin Twist Lock Receptacle with Shorting Cap



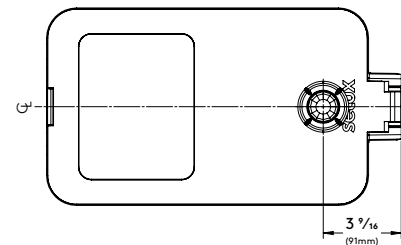
TLPC = TE Connectivity BF Series (BF-PV) 3-Pin

Internal Motion Sensor (IMS Option)

- WattStopper FSP-211
- WattStopper FSP-L3
- FSIR-100 Remote (supplied separately)

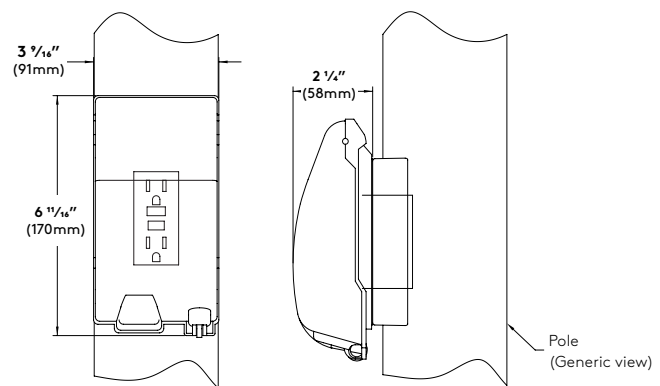
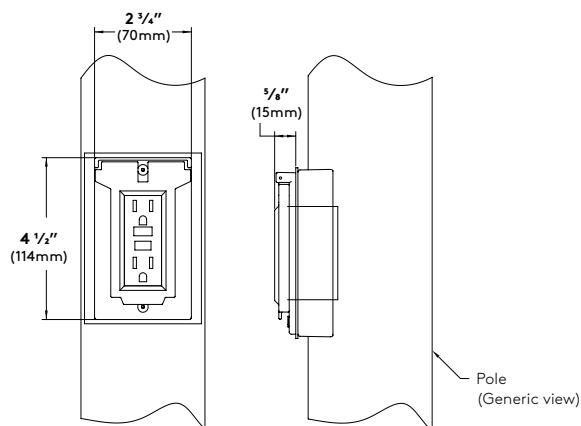


FSIR-100 Remote



GFCI Receptacle (REC) - 120V 15A GFCI duplex receptacle with weather-proof, self-closing, non-lockable cover; located 36" (915mm) from base of pole, inline with handhole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel. For use with 120V applications only. For use with luminaires with other than 120V rating, please consult factory for wire segregation.

GFCI Receptacle (REC2) - 120V 15A GFCI duplex receptacle with weather-proof, self-closing, padlockable in-use cover; located 36" (915mm) from base of pole, inline with handhole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel. For use with 120V applications only. For use with luminaires with other than 120V rating, please consult factory for wire segregation.



USB & Duplex Receptacle (REC3) (not shown) - 120V 15A duplex receptacle with USB combination ports. (1) type A and (1) type C high power 5 Amp, 5 Volt USB outlets. With weather-proof, self-closing cover; located 36" (915mm) from base of pole, inline with handhole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel.

USB & Duplex Receptacle (REC4) (not shown) - 120V 15A duplex receptacle with USB combination ports. (1) type A and (1) type C high power 5 Amp, 5 Volt USB outlets. With weather-proof, self-closing padlockable in-use cover; located 36" (915mm) from base of pole, inline with handhole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel.

Note: Must be used in conjunction with GFCI breaker by others

Note: Must be used in conjunction with GFCI breaker by others

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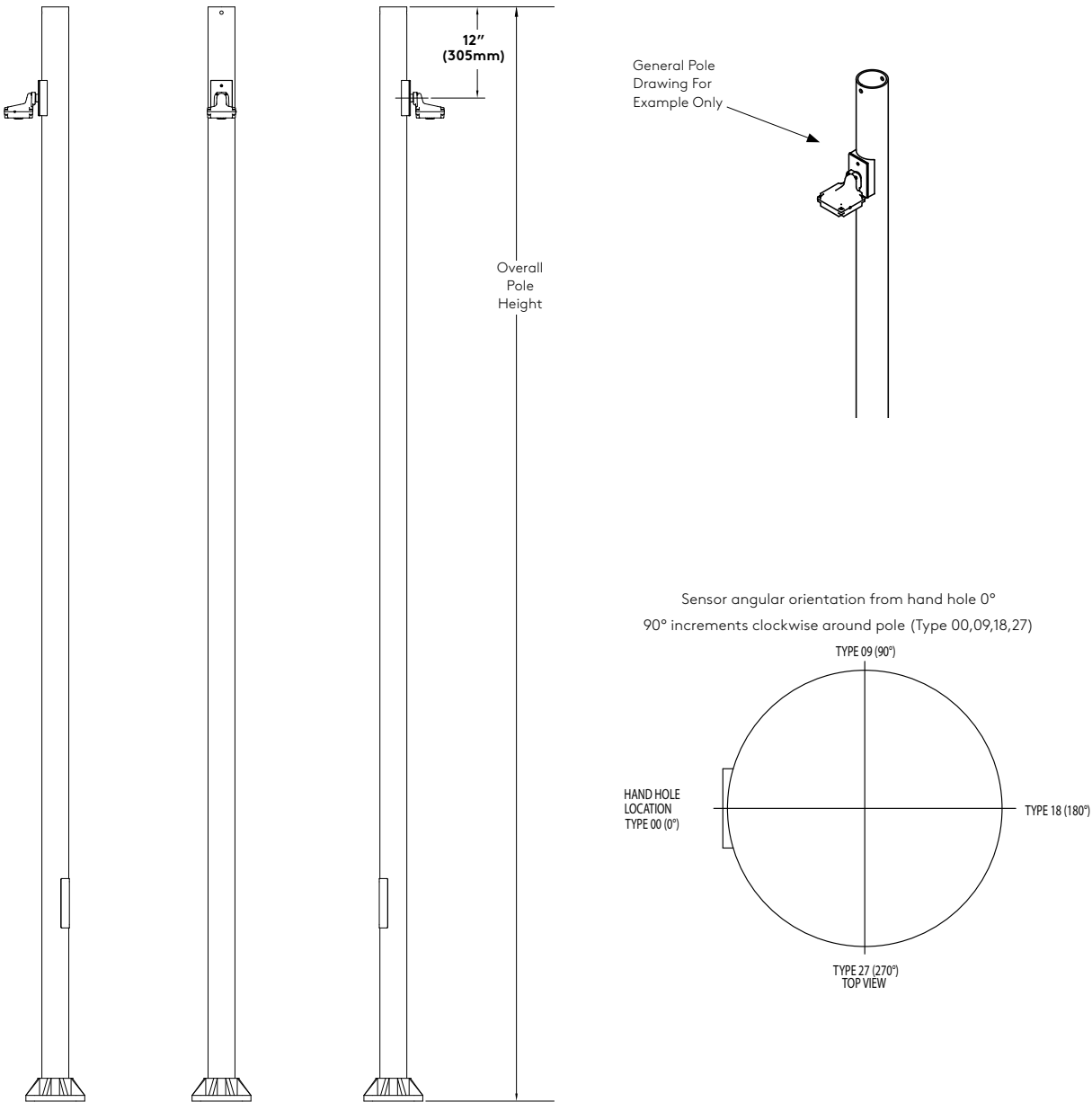


Pole Motion Sensor

The Selux outdoor rated sensor incorporates Passive Infrared (PIR) technology for motion sensing and also includes a built in photocell. Designed to mount directly through a 1/2" KO in a single gang faceplate on pole/column, the SBO utilizes 100% Digital Passive Infrared (PIR) technology that is tuned for walking size while preventing false tripping from the environment.

Series	Optics	Hand Hole Orientation	Program	Color	Photocell Feature	Voltage
MS Motion Sensor	1 270° coverage - Single Sensor	00	D0 (0V=0%)	WH White	Y Yes	UNV
		09	D1 (1V=10%)	BK Black	N No	347
		18	D3 (3V=30%)	BZ Bronze		480
		27	D5 (5V=50%)			

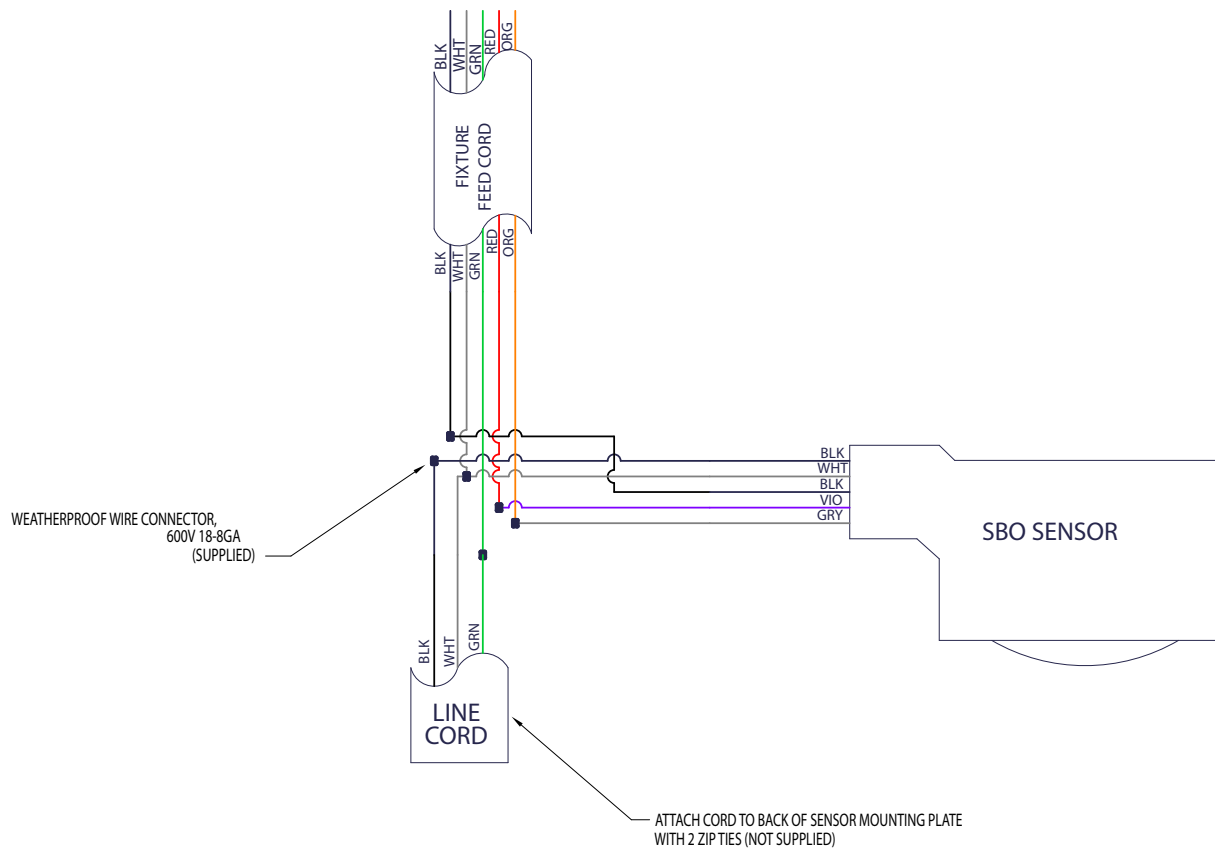
NOTE: Motion sensor comes programmed at 30% dimmed level with a 5 min. delay as default. All programming required after shipping by others.



Ouray 400

selux**Pole Motion Sensor**

- 100% Digital PIR Detection, excellent RF Immunity
- 270° coverage pattern
- Up to 30ft mounting
- IP66 Rated for outdoor applications
- Built-in 1kV surge protection
- No minimum load requirements
- Made for LED light source
- Interchangeable hot and load wires - impossible to wire backwards
- Adjustable time delays, max/min dim levels and ramp rates
- Programming button accessible without opening sensor or removing gaskets
- No field calibration or sensitivity adjustments required
- Non-volatile setting memory
- Convenient test mode
- Suitable for Title 24 applications

Motion Sensor Wiring Diagram

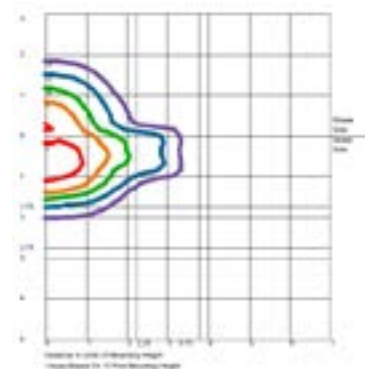
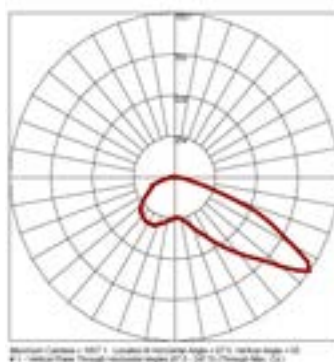
Ouray 400

Photometry

selux

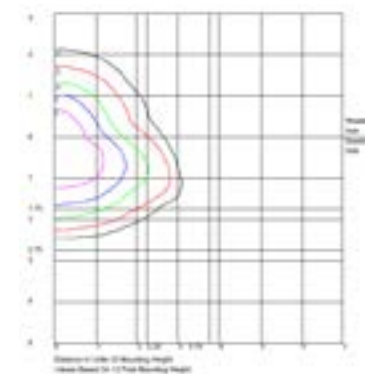
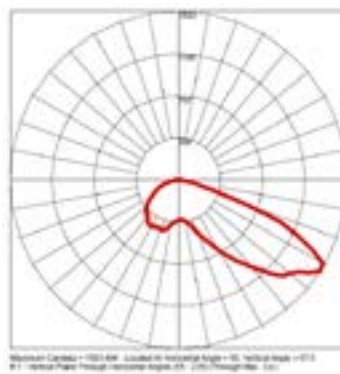
R1 Optics / 19W LED / 3000K CCT

Catalog #: U4-R1-XX-XX-5G350-30-XX-UNV
 Delivered Lumens: 2012lm
 Input Watts: 19W
 Efficacy: 107 lm/W
 CCT: 3000K
 CRI (Ra): >80
 Maximum candela of 1057 at 55° from vertical.
 IES classification: Type II
 Mounting Height: 12' (3.6 m)
 BUG Rating: B1-U0-G1
 Power Factor: 0.977
 Total Harmonic Distortion: 10.5%



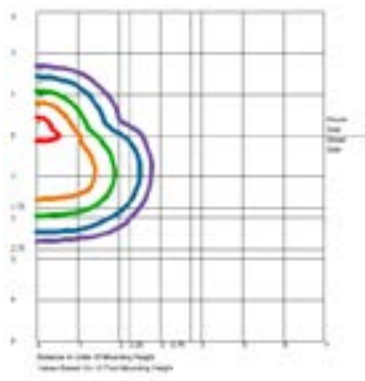
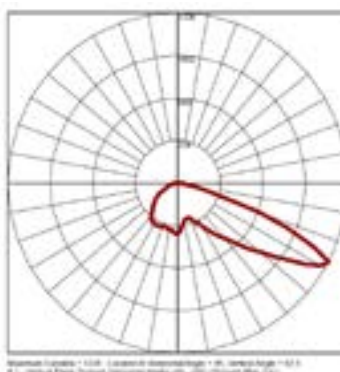
R2 Optics / 19W LED / 3000K CCT

Catalog #: U4-R2-XX-XX-5G350-30-XX-UNV
 Delivered Lumens: 2031lm
 Input Watts: 19W
 Efficacy: 108 lm/W
 CCT: 3000K
 CRI (Ra): >80
 Maximum candela of 1593 at 57.5° from vertical.
 IES classification: Type III
 Mounting Height: 12' (3.6 m)
 BUG Rating: B1-U0-G1
 Power Factor: 0.977
 Total Harmonic Distortion: 10.5%



R3 Optics / 19W LED / 3000K CCT

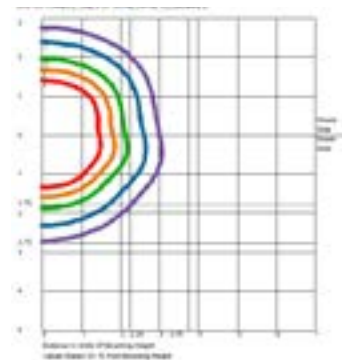
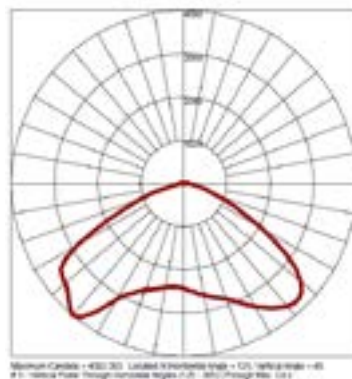
Catalog #: U4-R3-XX-XX-5G350-30-XX-UNV
 Delivered Lumens: 2002lm
 Input Watts: 19W
 Efficacy: 106 lm/W
 CCT: 3000K
 CRI (Ra): >80
 Maximum candela of 1336 at 62.5° from vertical.
 IES classification: Type III
 Mounting Height: 12' (3.6 m)
 BUG Rating: B1-U0-G1
 Power Factor: 0.977
 Total Harmonic Distortion: 10.5%



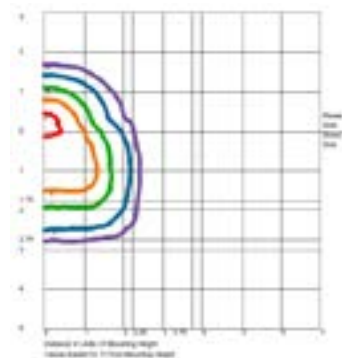
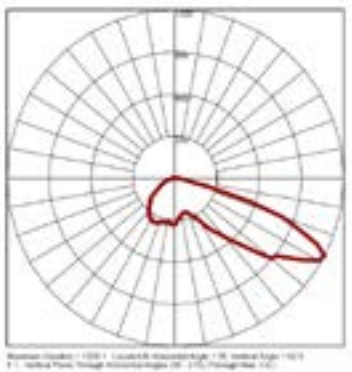
Ouray 400

Photometry**selux****R3W Optics / 126W LED / 3000K CCT**

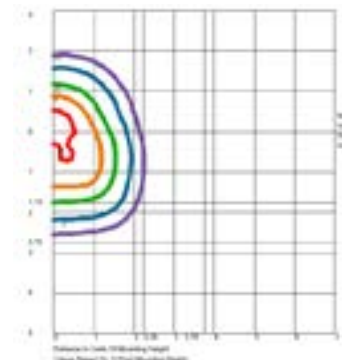
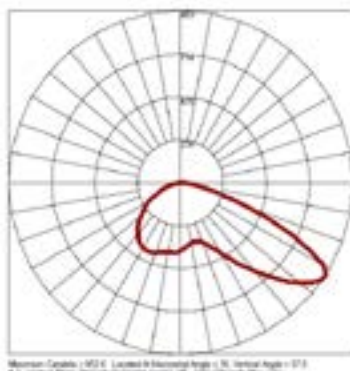
Catalog #: U4-R3W-5G350-30-XX-UNV
Delivered Lumens: 12036lm
Input Watts: 126W
Efficacy: 96 lm/W
CCT: 3000K
CRI (Ra): >80
Maximum candela of 4092 at 40° from vertical.
IES classification: Type VS
Mounting Height: 16' (4.9 m)
BUG Rating: B3-U0-G1
Power Factor: 0.990
Total Harmonic Distortion: 10.5%

**R4 Optics / 19W LED / 3000K CCT**

Catalog #: U4-R4-XX-XX-5G350-30-XX-UNV
Delivered Lumens: 1955lm
Input Watts: 19W
Efficacy: 104 lm/W
CCT: 3000K
CRI (Ra): >80
Maximum candela of 1320 at 62.5° from vertical.
IES classification: Type III
Mounting Height: 12' (3.6 m)
BUG Rating: B1-U0-G0
Power Factor: 0.977
Total Harmonic Distortion: 10.5%

**PP Optics / 19W LED / 3000K CCT**

Catalog #: U4-PP-XX-XX-5G350-30-XX-UNV
Delivered Lumens: 1835lm
Input Watts: 19W
Efficacy: 98 lm/W
CCT: 3000K
CRI (Ra): >80
Maximum candela of 952 at 57.5° from vertical.
IES classification: Type III
Mounting Height: 12' (3.6 m)
BUG Rating: B1-U0-G1
Power Factor: 0.978
Total Harmonic Distortion: 10.5%



***Complete photometric matrix is available for download from website along with all House Shield photometry.**

PERFORMANCE **iN** LIGHTING

PRODUCT CODE 071728

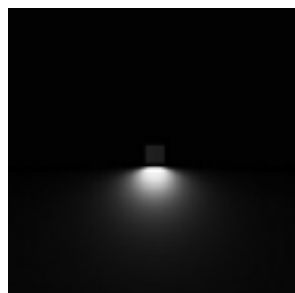
PROJECT

TYPE

MIMIK 10 M TYPE III

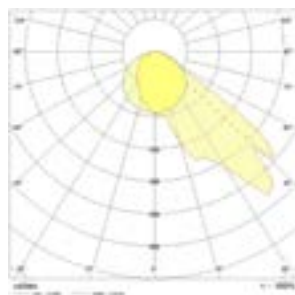


Part number	071728
Lampholder:	LED
Wattage:	10 W
Finish:	GR-94 / Textured
Degree of protection:	IP65
CRI:	70
Kelvin:	3000
Luminaire lumen output:	542 lm
L:	L80
B:	B10
Lifetime:	60000 h
cULus:	
Voltage:	120-277 V

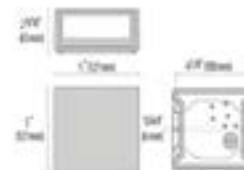


Description

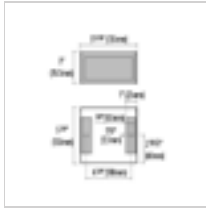
Photometric data



Technical drawings



MIMIK 10 M C/I - TYPE III



3106887

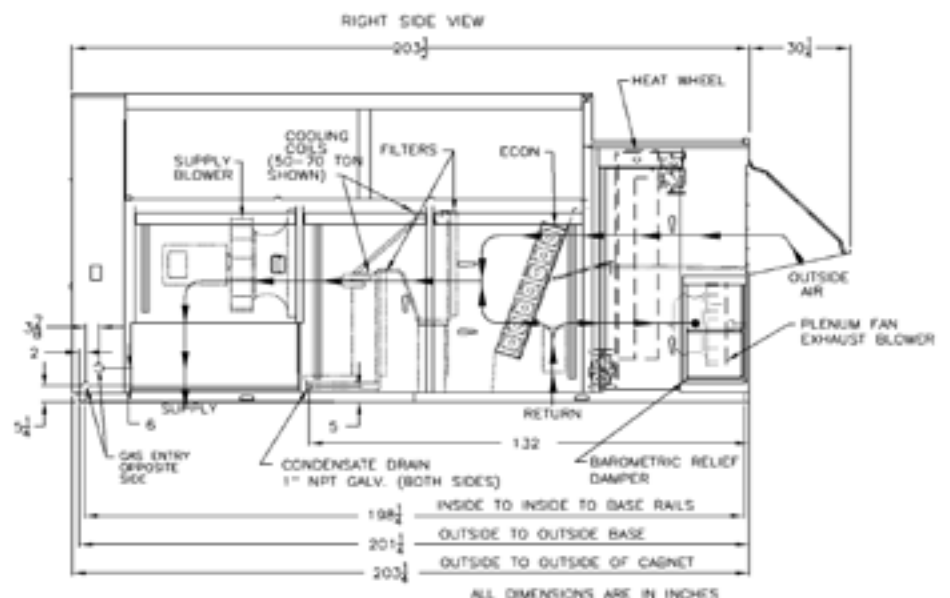
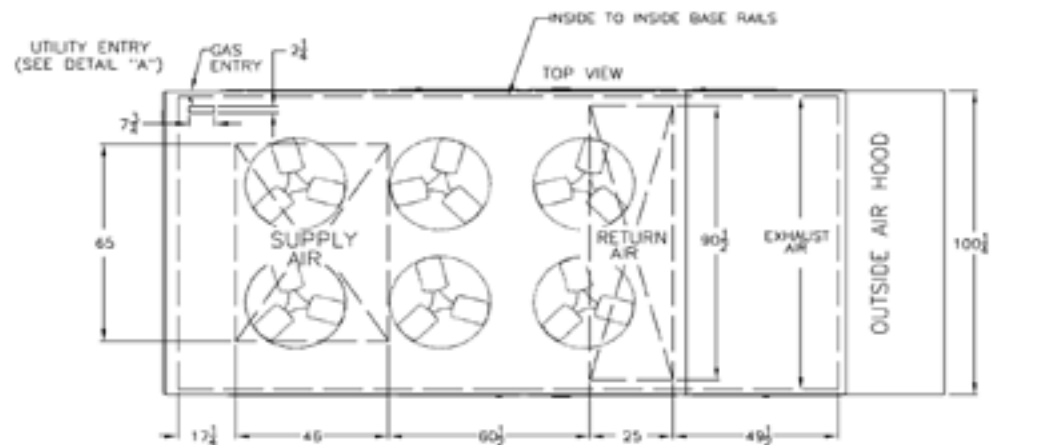
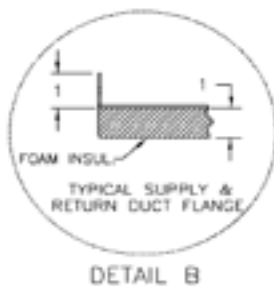
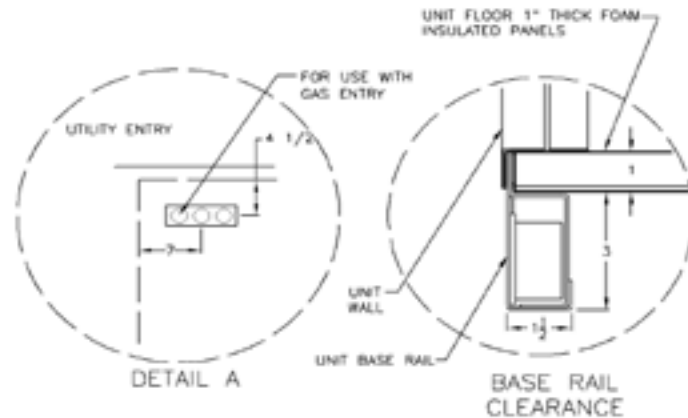
RN UNITS 26-70 TON AAON®

WITH ECONOMIZER AND HEAT WHEEL WITH POWER EXHAUST

CLEARANCES	
LOCATION	UNIT SIZE
	26-70 TON
RETURN AIR BACK	48
VENT SIDE FRONT	48
LEFT SIDE	48
RIGHT SIDE	70
TOP	UNOBSTRUCTED

NOTE: RIGHT AND LEFT SIDE UNIT CLEARANCES ARE INTERCHANGEABLE ON UNITS THAT DO NOT HAVE THE HYDRONIC HEATING OPTION. (UNITS WITH HYDRONIC HEAT MUST HAVE 70" RIGHT SIDE ACCESS FOR SERVICE.)

NOTE: 26-40 TON UNITS INCLUDES A SINGLE COOLING COIL. 50-70 TON UNIT INCLUDE TWO COOLING COILS.



RND-00036M NEW 02/14/14 JRL

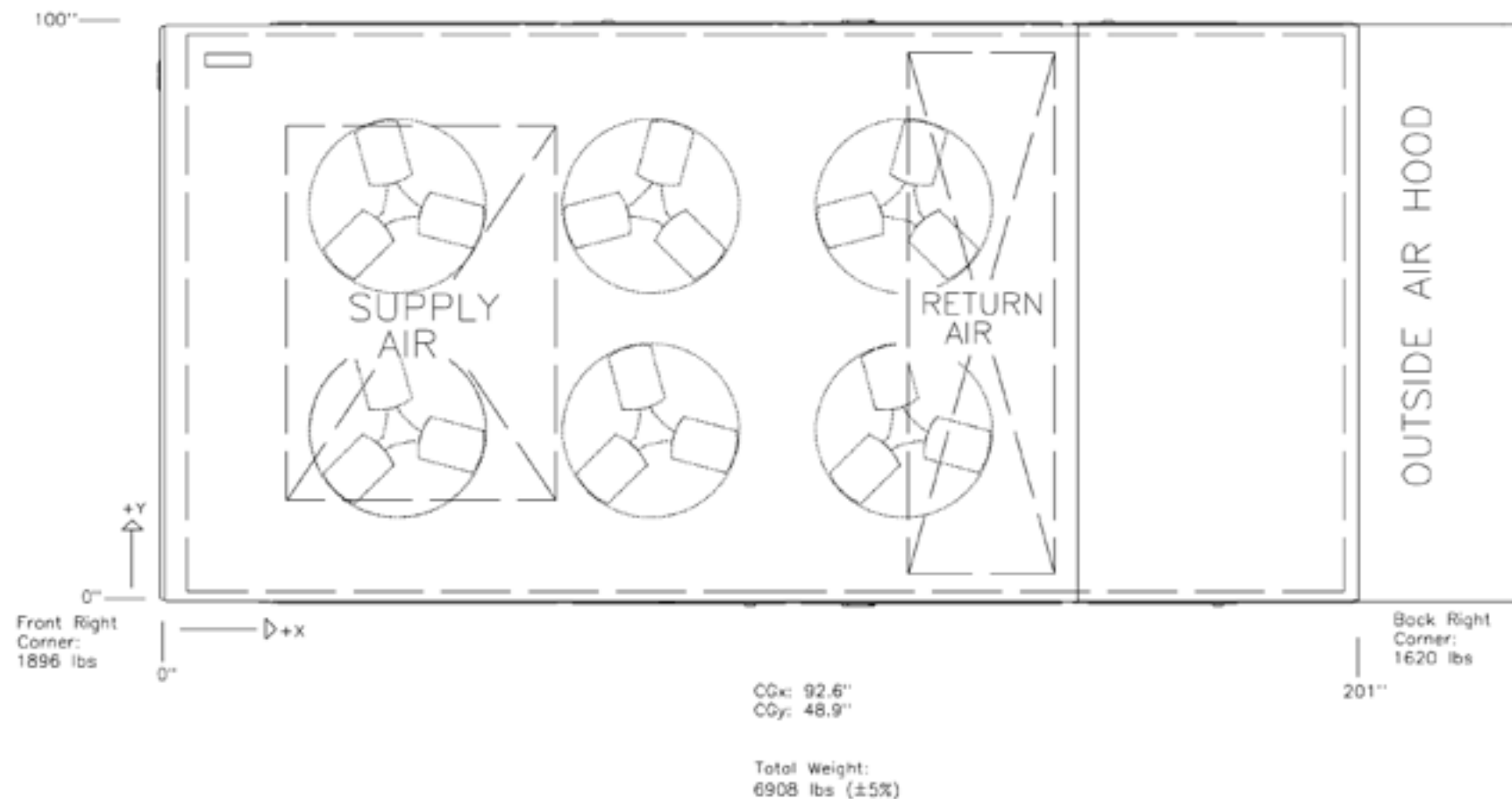
RND CABINET AIR COOLED CONDENSING UNIT ENERGY RECOVERY SECTION



RN-031-3-0-E60E-EHN:4GME-DOB-DFM-AGA-ODFBMOD-00-DL00000VB

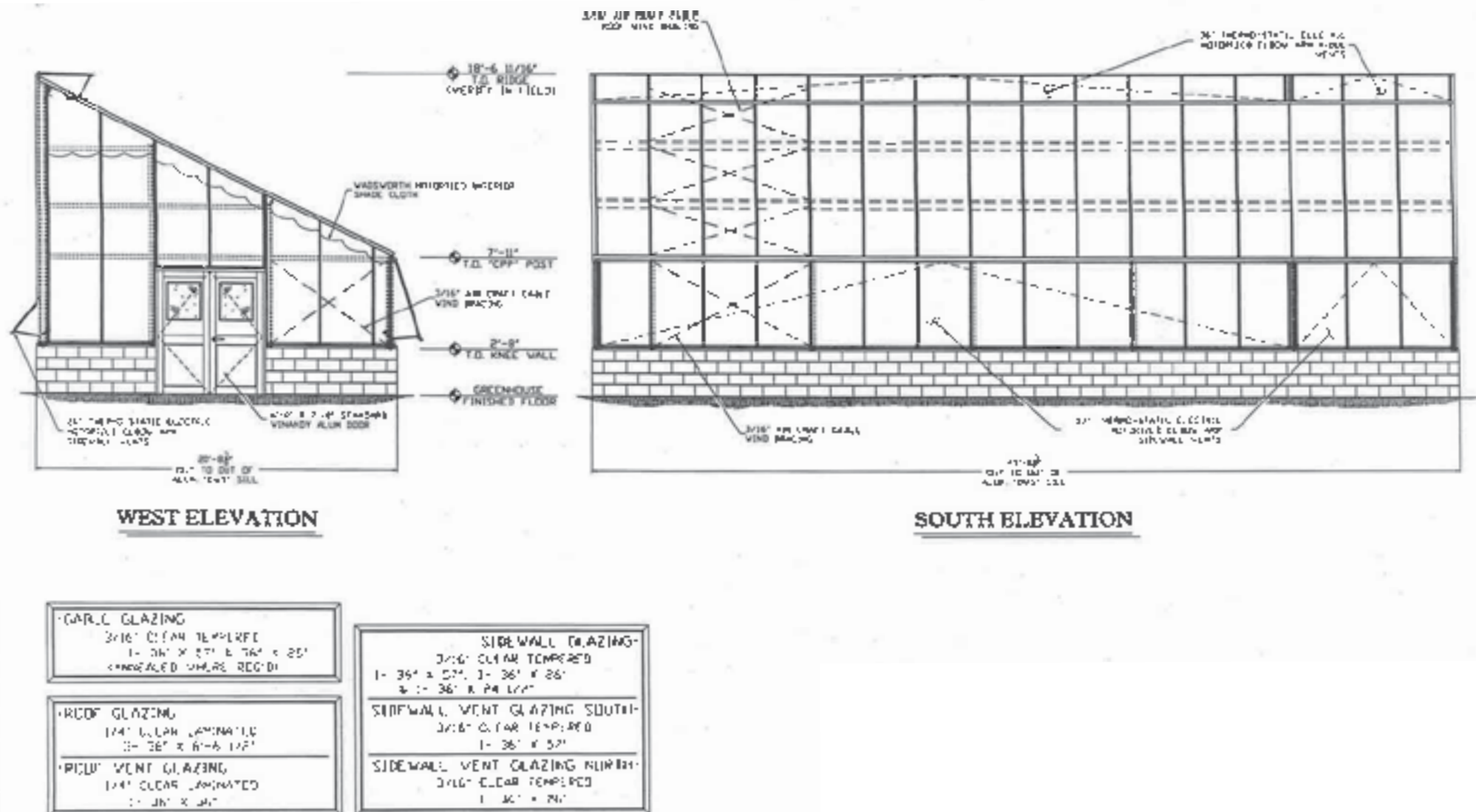
Front Left
Corner:
1829 lbs

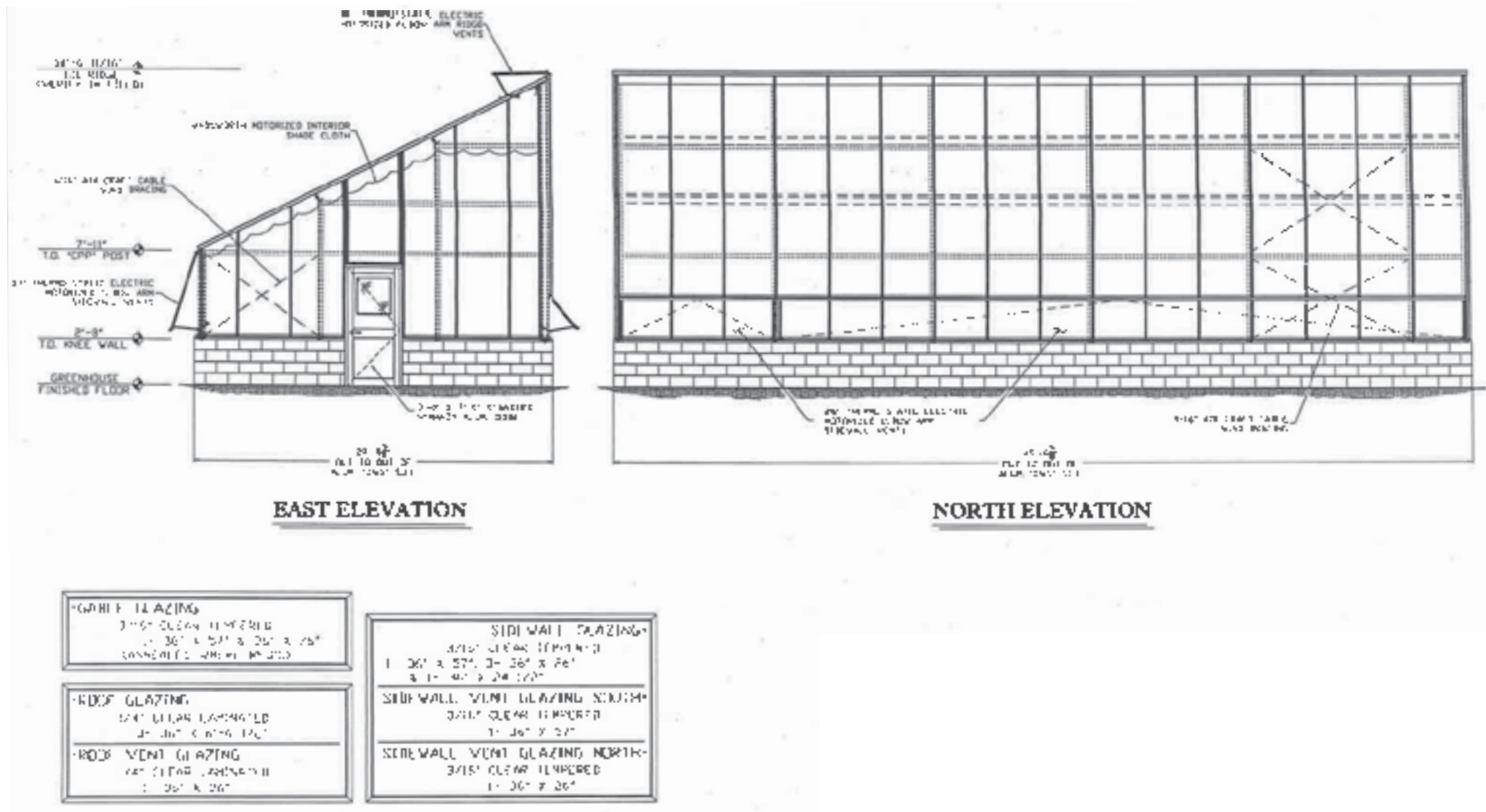
Back Left Corner:
1563 lbs

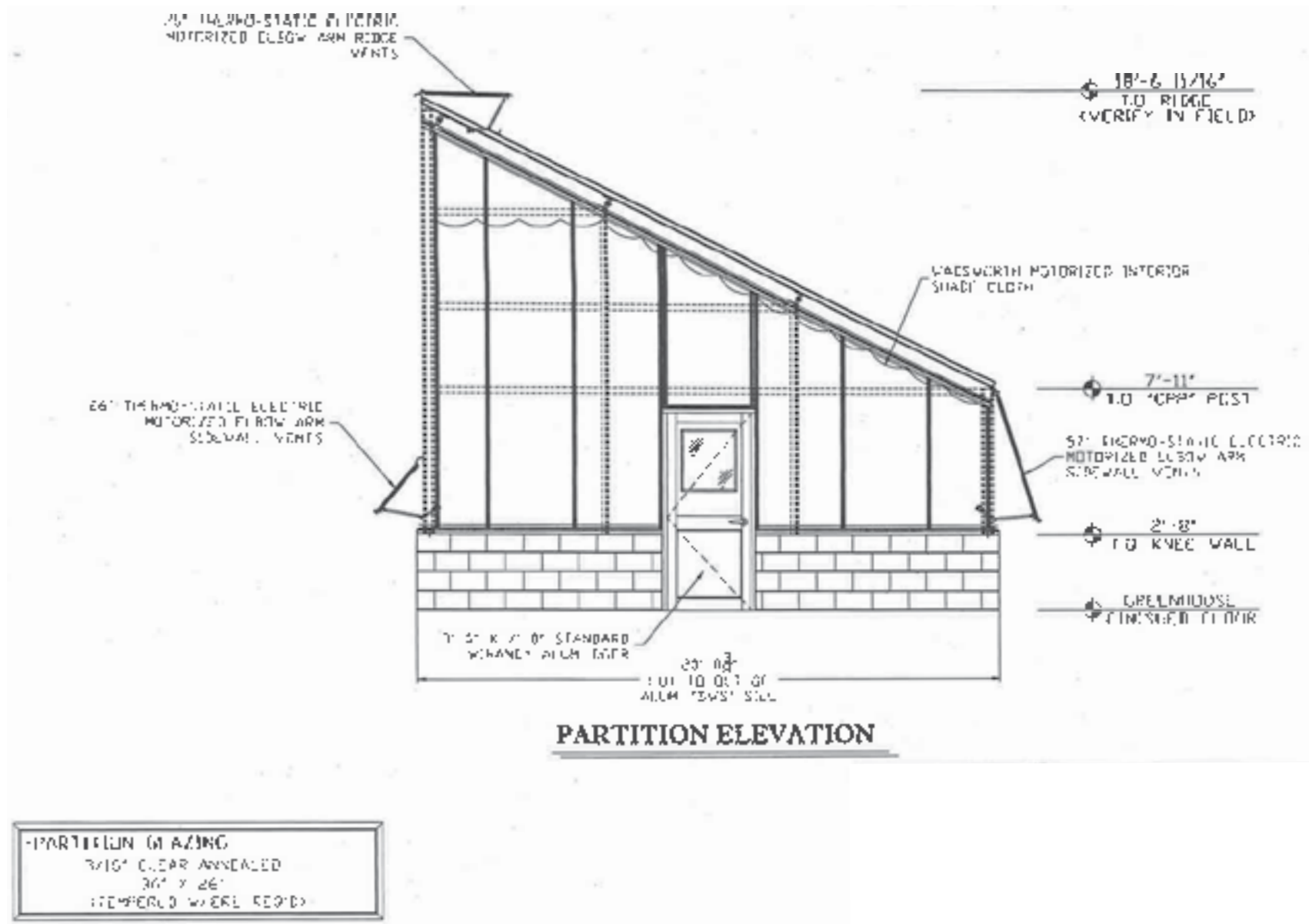


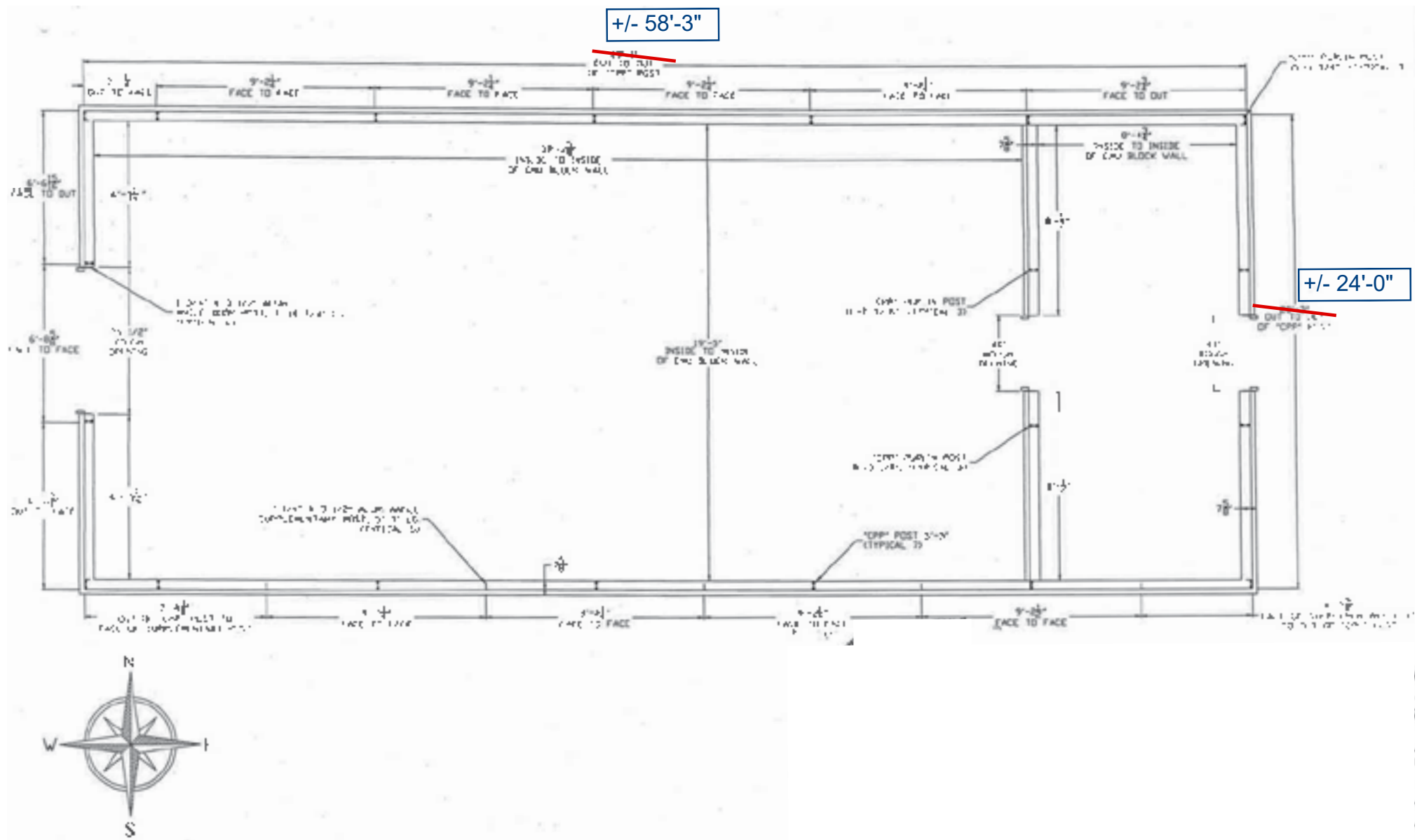
Disclaimer:
This weight estimate does not account for any SPAs.

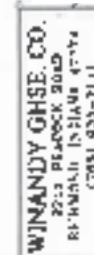












"A5"	CLIP BRACE	1 3/4" X 3 1/2" ALUM ANGLE X 3'-4"
"A5"	CLIP BRACE STRUT	2- 1 3/4" X 3 1/2" ALUM. ANGLE X 3'-8 1/2"
"CSP"	COMPRESSION STRUT	2- 1 3/4" X 3 1/2" ALUM. ANGLE X 7'-0 1/16"
"TS"	TENSION STRUT	2 1/2" X 3 1/16" ALUM. PLAT X 9'-3 7/8"
"TS2"	TENSION STRUT	2 1/2" X 3 1/16" ALUM. PLAT X 11'-1 1/2"

landscapeforms®

ANNAPOLIS

Product Data Sheet



The Annapolis™ Bollard is a handsome sentinel that performs multiple maneuvers with style. Standard Bollard, Smart Bollard and Security Bollard share basic design and construction characteristics, specialize in their features and functions. Annapolis offers distinctive solutions in scope and detail for path making and wayfinding, safety and security in outdoor environments.

Annapolis™ Standard Bollard

- Available in 6" and 12" diameter, with or without low-voltage LED lighting.
- A protective polyethylene sleeve is available in black or silver.
- Embedded, removable, or surface mount bollard styles.
- A keyed lock secures the bollard when in the socket.
- All 6" styles, including 6" removable bollard may be fitted with the Smart bollard top to provide solar powered lighting.
- Removable bollard not available in hardwired.

Annapolis™ Smart Bollard

- Embedded, removable, or surface mount bollard style.
- The monocrystalline solar panel collects energy from the sun and converts it to electrical current.
- Energy is stored in a sealed lead-acid rechargeable battery that delivers extremely reliable power output over a long period of time.
- The microprocessor-based charge controller turns lights on at dusk and off at dawn.
- 4 white LEDs with 3500K correlated color temperature (CCT).

Annapolis™ Security Bollard

- Available in 6" and 12" diameter. 6" dia. security bollard may be specified with Smart solar-powered LED light.
- Security bollard is designed to be permanently embedded with a reinforced footing and internal concrete/steel reinforcement. Details for an optional security footing available on our website at www.landscapeforms.com

TECHNICAL INFORMATION		
	HARDWIRED	SOLAR
Lamp	1 Cree LED	4 Nichia LEDs
Color Temp	3500k	3500K
LED Luminous Flux	~10 lumens	~10 lumens
LED Energy Consumption	approximately 3 watts	.43 watt max
Input Voltage	120-277 VAC	n/a
TM21 LED Lifespan	60,000 hours	Up to 60,000 hours
Solar Top	n/a	Tempered Borosilicate glass top with Mono-Crystalline PV cells
Diffused Lens	UV stable impact modified translucent acrylic	UV stable impact modified translucent acrylic
Protection Rating	IP66 for light assembly	IP66 for solar light assembly
Horizontal Output	360°	360°
Average Direct Sunlight Exposure to Maintain Function	n/a	4 hours
Latitude Range	n/a	50° S to 50° N
Battery	n/a	Valve regulated lead-acid
Nominal Battery Voltage	n/a	6 volts
Capacity	n/a	7.0 amp/hr at 20/hr discharge rate
Temperature Range	n/a	-40° F to 115° F
Maximum Operation	n/a	14 hours



ANNAPOLIS

Product Data Sheet



Finishes

- Metal is finished with Landscape Forms' proprietary Pangard II® polyester powdercoat, a hard yet flexible finish that resists rusting, chipping, peeling and fading.
- Call for standard color chart.

To Specify

- Choose 6" or 12" diameter embedded style, 6" surface mount style, or 6" removable style.
- Specify black or silver protective polyethylene sleeve or without sleeve.
- Specify with or without lighting based on the following guidelines:
- 6" embedded and surface mount, available with hard wired or solar powered lighting; 6" removable only offered with solar lighting; 12" embedded only offered with hard wired lighting.

EXAMPLE: 6" Surface Mount, Black Sleeve, Hard Wired LED Lighting

Warranty

Landscape Forms, Inc. warrants all products (other than noted exceptions) to be free from defects in material and/or workmanship for a period of three years from date of invoice. Noted exceptions: LED lighting products are warranted for six years.

Designed by Brian Kane, IDSA
Annapolis Smart Bollard is protected by U.S. Patent Nos. D6,573,659; D6,013,985

	STYLE	DIAMETER	HEIGHT	PRODUCT WEIGHT
	6"	6"	33"	Surface Mount: 47lbs Embedded: 80lbs Removable: 107lbs
	12"	12"	33"	Embedded: 200lbs
	6" removable bollard			
	protective sleeve			
	lighted bollard top			

Scharaf Pictures

US Patents D710,625 S; D710,139 S.

REVERIE COLLECTION

EVA BENCHES + TABLES

Spending lunch in Camelot since 1962.

For over 50 years, Victor Stanley has designed, engineered, and manufactured timeless site furnishings so you can bring communities to life. Using genuine IPE wood slats and solid steel with exceptionally high recycled content, our new Reverie collection is the perfect marriage of sleek design, longevity, and comfort.

VICTOR  STANLEY®

Create a timeless moment.®

The Reverie collection expresses simplicity, minimalism, and functionality. The Eva bench (patented) embodies the collection's attention to high quality design, craftsmanship, and comfort. Its slim profile, solid steel frame with exceptionally high recycled content, and use of genuine IPE wood slats, makes for sleek design, with longevity and comfort in mind. It's just one more way Victor Stanley helps you create the perfect setting for timeless moments.

EVA BENCH* **EVA BACKLESS BENCH**

2, 4, 6 or 8 ft (.61, 1.2, 1.8 or 2.4 m) length. Wood slats. 8 ft (2.4 m) length includes center arm/leg.

*US Patents D710,625 S; D710,139 S.

OPTIONS

Surface mount. In-ground mount. Intermediate armrests (bolt-on) for 4 or 6 ft (1.2 or 1.8 m) length.



EVA TABLE

18 in (457 mm) height. Wood slats.

Model EVAT-22: 2 x 2 ft (.61 x .61 m).

Model EVAT-32: 3 x 2 ft (.91 x .61 m).

Model EVAT-33: 3 x 3 ft (.91 x .91 m).

OPTIONS

Surface mount. In-ground mount.



EVAT-32

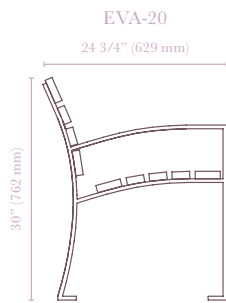
See product specifications for further details. Drawings are not to scale. Natural wood colors will vary. Weathering may occur on site which will alter the color of the wood over time. Our TGIC powder-coating averages 8-10 mils (200-250 microns) thick and is applied in-house to ensure the highest level of quality. Offered in 12 standard and metallic colors, plus a full range of RAL colors with available color matching. Additional cost may apply.



Patented.

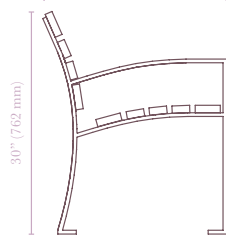


EVAT-22

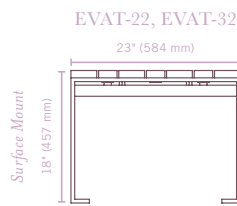


EVA-20

24 3/4" (629 mm)



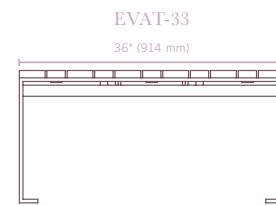
Patented.



EVAT-22, EVAT-32

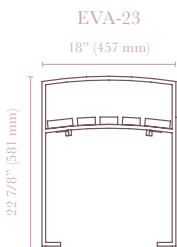
23" (584 mm)

Surface Mount
18" (457 mm)



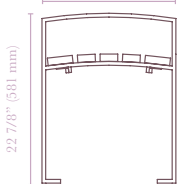
EVAT-33

36" (914 mm)

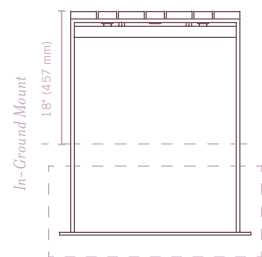


EVA-23

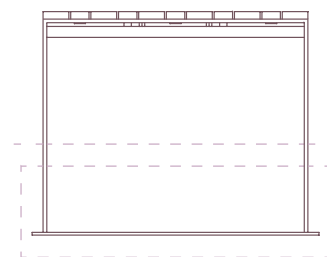
18" (457 mm)



22 7/8" (581 mm)



In-Ground Mount
18" (457 mm)



2 ft (.61 m) length. Patented.



EVAT-33



Victor Stanley, a leader in quality site furnishings, helps you bring your visions to life. From benches and litter receptacles to bike racks and planters, we meticulously design, engineer, and manufacture every detail to ensure our site furnishings will withstand the test of time. Founded over 50 years ago, we help create a place for people to gather, live life, and make timeless moments.



Create a timeless moment.®

In Ground #12707
Surface #12700

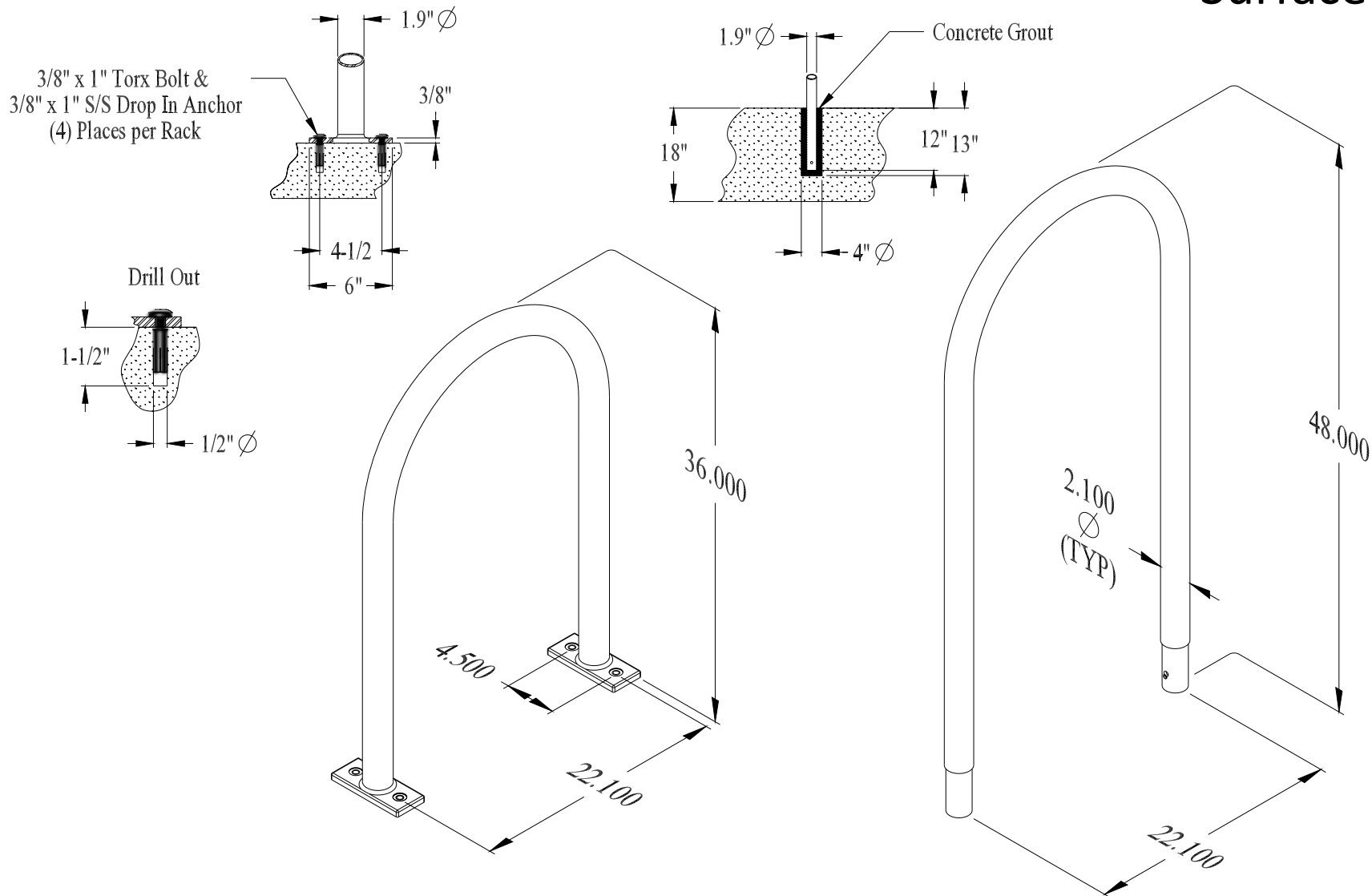


Plastisol {Classic} Racks
Surface Mount / In Ground Mount

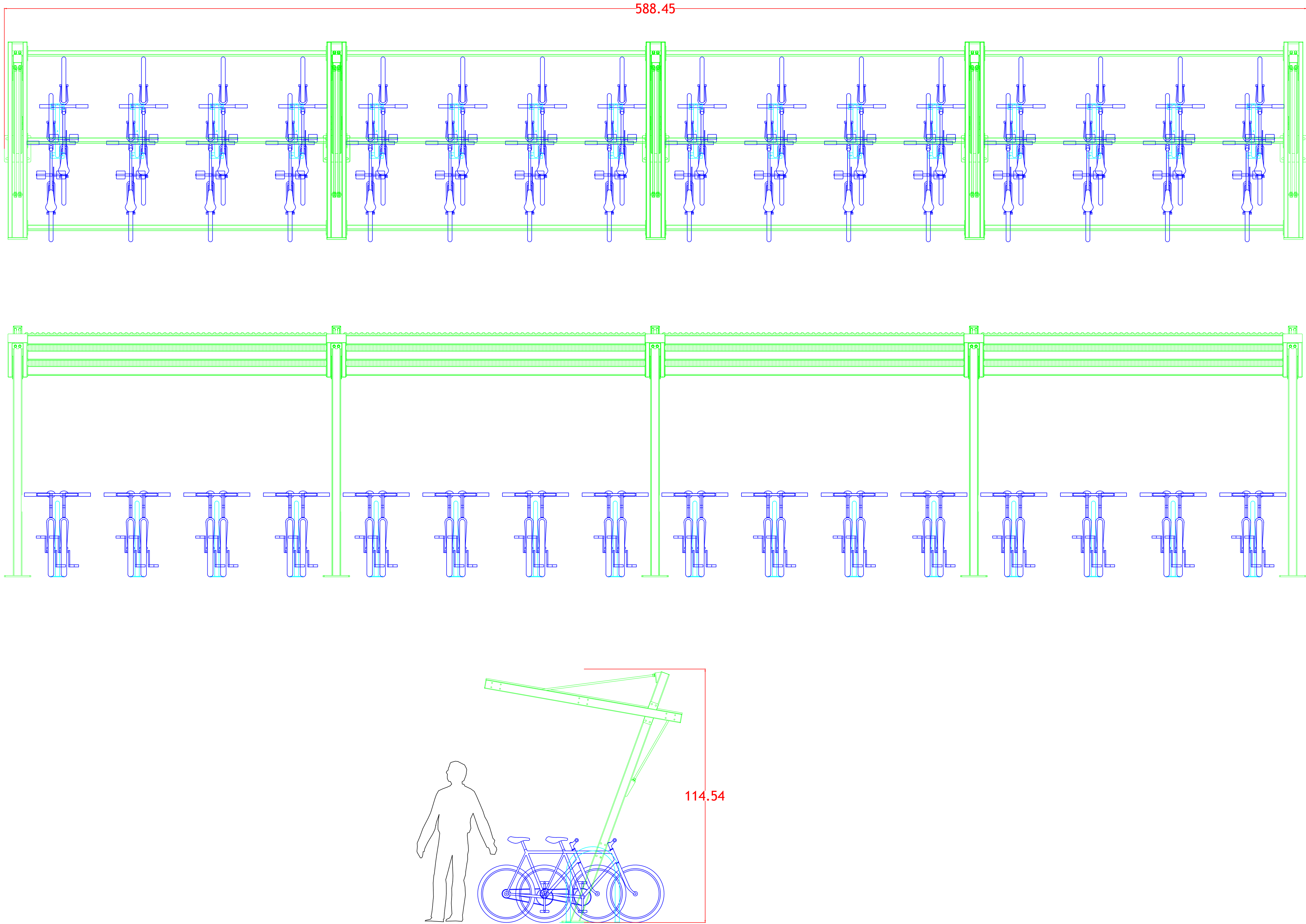
SURFACE MOUNT

IN GROUND MOUNT

In Ground #12707
Surface #12700



Plastisol {Classic} Racks
Surface Mount / In Ground Mount {Dims}



General Notes

Vizor Shelter

Rev. #1

VIZOR SHELTER
SURFACE MOUNT

Starter Unit Plus 3 Add Ons

PARKING FOR 32 BIKES

**FLOORS MUST BE
FREE FROM
POST-TENSION CABLE
OR SCANNED IN
ADVANCE

No.	Revision/Issue	Date
-----	----------------	------

Firm Name and Address


42 Northern Stacks Drive, Suite 100
Direct: 651-289-3289
trent@dero.com
www.dero.com

Project Name and Address

Project Name
Address

Project Project Name Date Scale NOT TO SCALE	Sheet 1
--	------------



Vizor Shelter



The Vizor™ is a beautiful cantilever designed shelter that is able to accommodate any bike rack system, including two-tiered models. This innovative, attractive, and functional bike shelter is a perfect addition to your facility, especially for smaller spaces.



American Bicycle Security Company

P.O. Box 7359
Ventura, CA 93006
Ph: (800) 245-3723 or (805) 933-3688
Fax: (805) 933-1865
www.ameribike.com
Email: turtle@ameribike.com

Vizor Shelter



With Hoop Racks
Capacity: 8 Bikes



With Ultra Space Savers
Capacity: 8 Bikes



With Campus Rack
Capacity: 6 Bikes



Product Vizor™ Shelter

Capacity See diagrams below and to left

Materials Uprights: 4"x5/16" square tube
Purlins: 4"x2"x3/16" rectangular tube
Feet: 5/8" plate
Rafters: 4"x2"x3/16" rectangular tube
Roof Panels: Type S deck, 26g galvanized steel

Finishes Standard options: Galvanized

Powder Coated

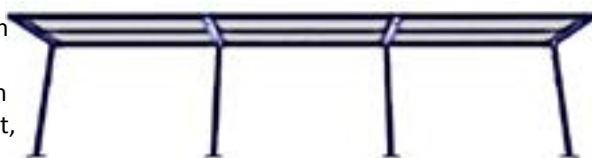
RAL 9005	Flat Black	RAL 9003	RAL 2004	RAL 1023	Bright Yellow
RAL 6016	RAL 6018	RAL 6005	RAL 5005	RAL 5015	Purple
RAL 7011	RAL 7042	RAL 9007	RAL 1001	RAL 8014	Bronze
RAL 3003	RAL 3005				

Installation Methods **Surface Mount.** It is the responsibility of the installer to ensure that all base materials into which the shelter will be installed can support the rack and will not be damaged by any required installation procedures. See structural drawings for details..

Space Use & Setbacks **Overall dimensions:**
L 90", W 144", H 114"

Load Data Dead load = self weight of structure
Live load = 40 psf
Wind load = 90 mph exposure B
Seismic load = Moderate
Footing: see page 4
Anchor bolt = .75" diameter x 14.625" Simpson Torq-Cut anchor

*The Vizor Shelter can be used in a modular fashion (shared uprights) however, when used in this manner, please call for layout, as the rack spacing and bike capacity can change!



Solar light available upon request.

American Bicycle Security Company

P.O. Box 7359
Ventura, CA 93006
Ph: (800) 245-3723 or (805) 933-3688
Fax: (805) 933-1865
www.ameribike.com
Email: turtle@ameribike.com

Vizor Shelter

Parts List



Tools needed for Installation:

Tape Measure
Marker or chalk
Level
Sledge Hammer
Rubber Mallet
Large Hammer Drill
Standard Drill
 $\frac{3}{8}$ " Socket with drill attachment

1.25" Diameter Masonry Bit
 $\frac{5}{8}$ " Diameter Masonry Bit
 $\frac{3}{4}$ " Wrench/Socket
 $\frac{15}{16}$ " Wrench/Socket (2)
1 $\frac{1}{8}$ " Wrench/Socket
1 $\frac{1}{4}$ " Wrench
Spud Wrench



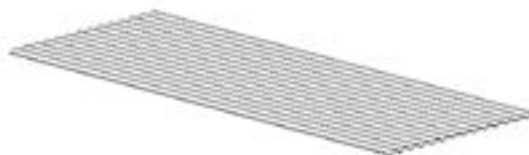
Truss



Tension Bar Upper



Tension Bar Lower



Type S Deck



Purlin



Upright



Nut 5'



Nut 625'



Washer 5' Split



Washer 625' Split



American Bicycle Security Company

P.O. Box 7359

Ventura, CA 93006

Ph: (800) 245-3723 or (805) 933-3688

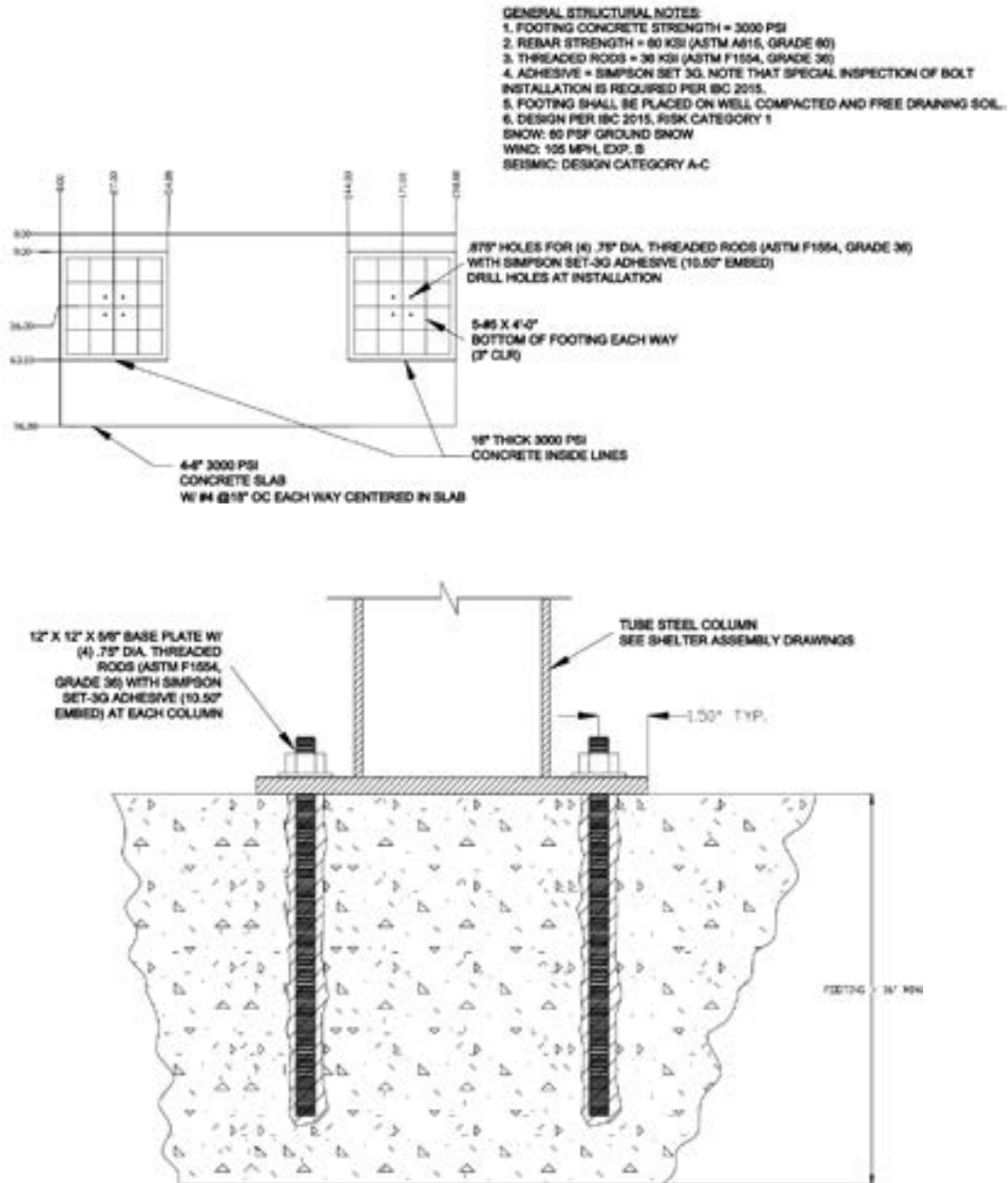
Fax: (805) 933-1865

www.ameribike.com

Email: turtle@ameribike.com

Vizor Shelter

Footing Details



American Bicycle Security Company

P.O. Box 7359

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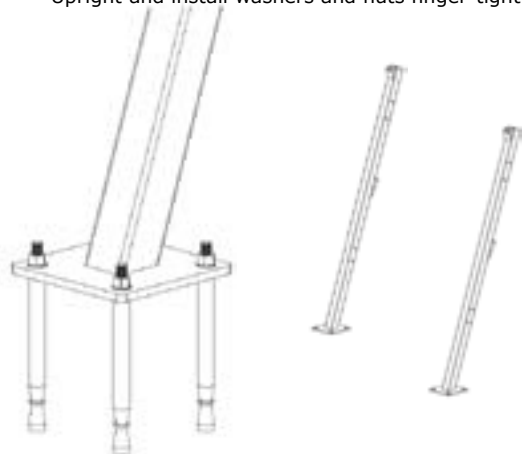


Vizor Shelter

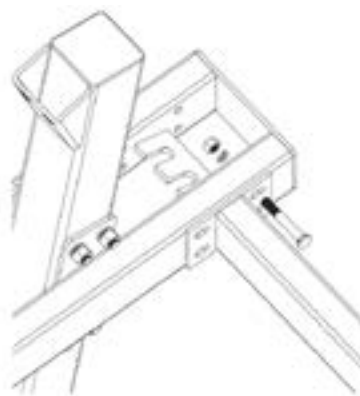
Installation Instructions



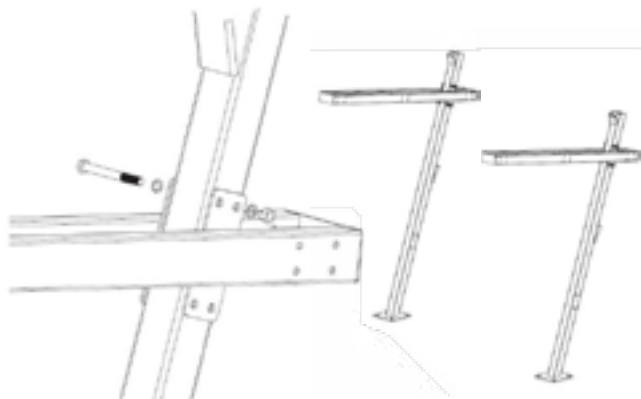
1. Place Uprights based on footing diagram and drill (4) $\frac{5}{8}$ " diameter pilot holes in concrete 14" deep for each Upright. Remove Upright and use pilot holes to drill 1.25" diameter holes 14" deep. Drive in Simpson Torq-Cut Anchor, place Upright and install washers and nuts finger-tight.



3. Place the first Truss and secure with (4) $\frac{1}{2}$ " x 3.5" carriage bolts, (4) $\frac{1}{2}$ " lock washers, and (4) $\frac{1}{2}$ " nuts on both sides.



2. Lift Truss over the Upright and secure with (4) $\frac{5}{8}$ " x 6" bolts, (8) $\frac{5}{8}$ " lock washers, and (4) $\frac{5}{8}$ " nuts.



4. Continue securing the remaining Purlins. Leave nuts finger tight if a Campus Rack will be added. Tighten if no Campus Rack will be added.

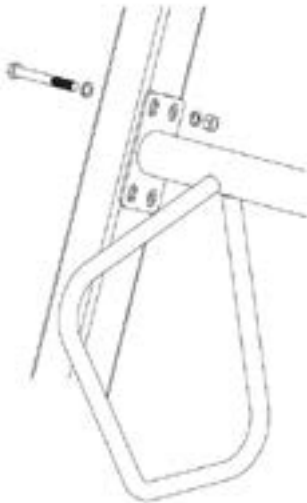


Vizor Shelter

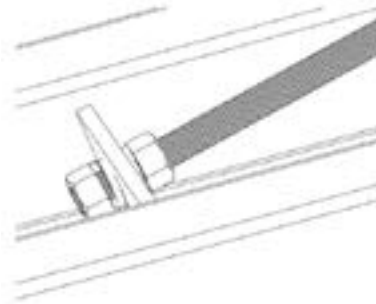
Installation Instructions



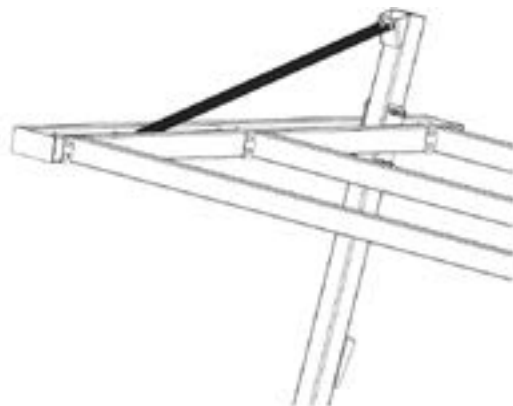
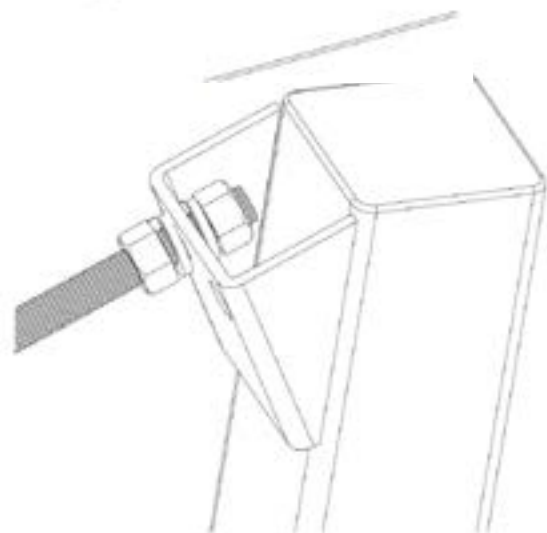
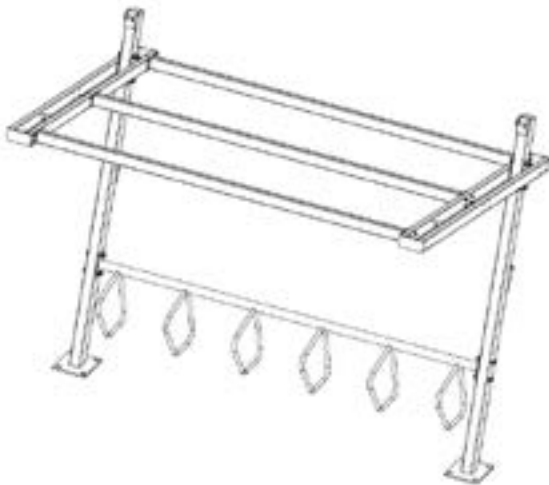
5. If using a Campus Rack, secure with (4) $\frac{5}{8}$ " x 5.5" bolts, (8) $\frac{5}{8}$ " lock washers, and (4) $\frac{5}{8}$ " nuts on both sides.



7. Secure the upper Tension Bars with (4) $\frac{3}{4}$ " nuts and (4) $\frac{3}{4}$ " lock washers each.



6. Completely tighten truss bolts and Campus Rack bolts if applicable. Completely tighten anchors to 240 ft-lbs.



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Vizor Shelter

Installation Instructions



8. Secure the lower Tension Bars with (4) $\frac{3}{4}$ " nuts and (4) $\frac{3}{4}$ " lock washers each.



9. Place the first section of Type S Deck and secure with (6) self-drilling screws.

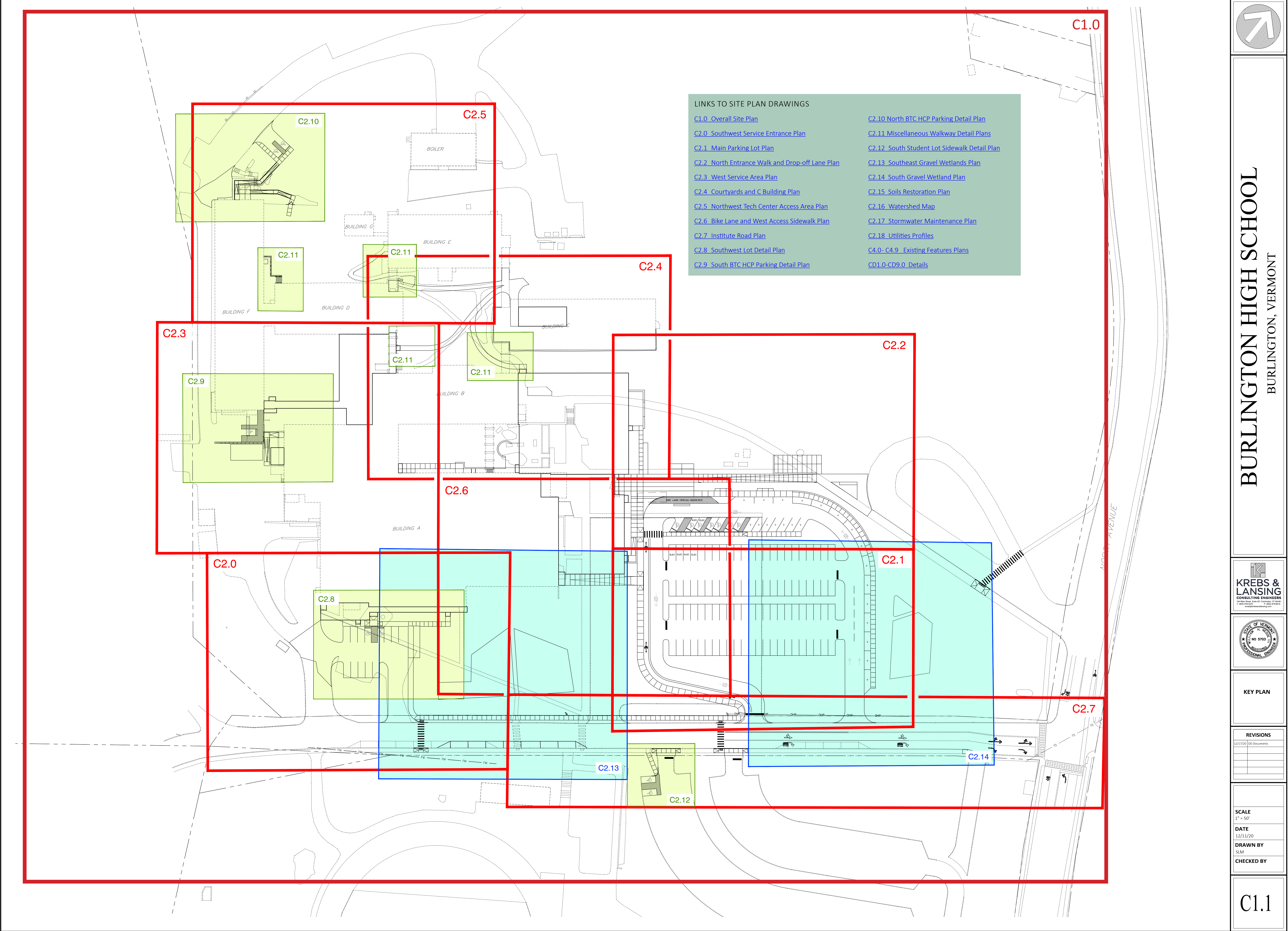


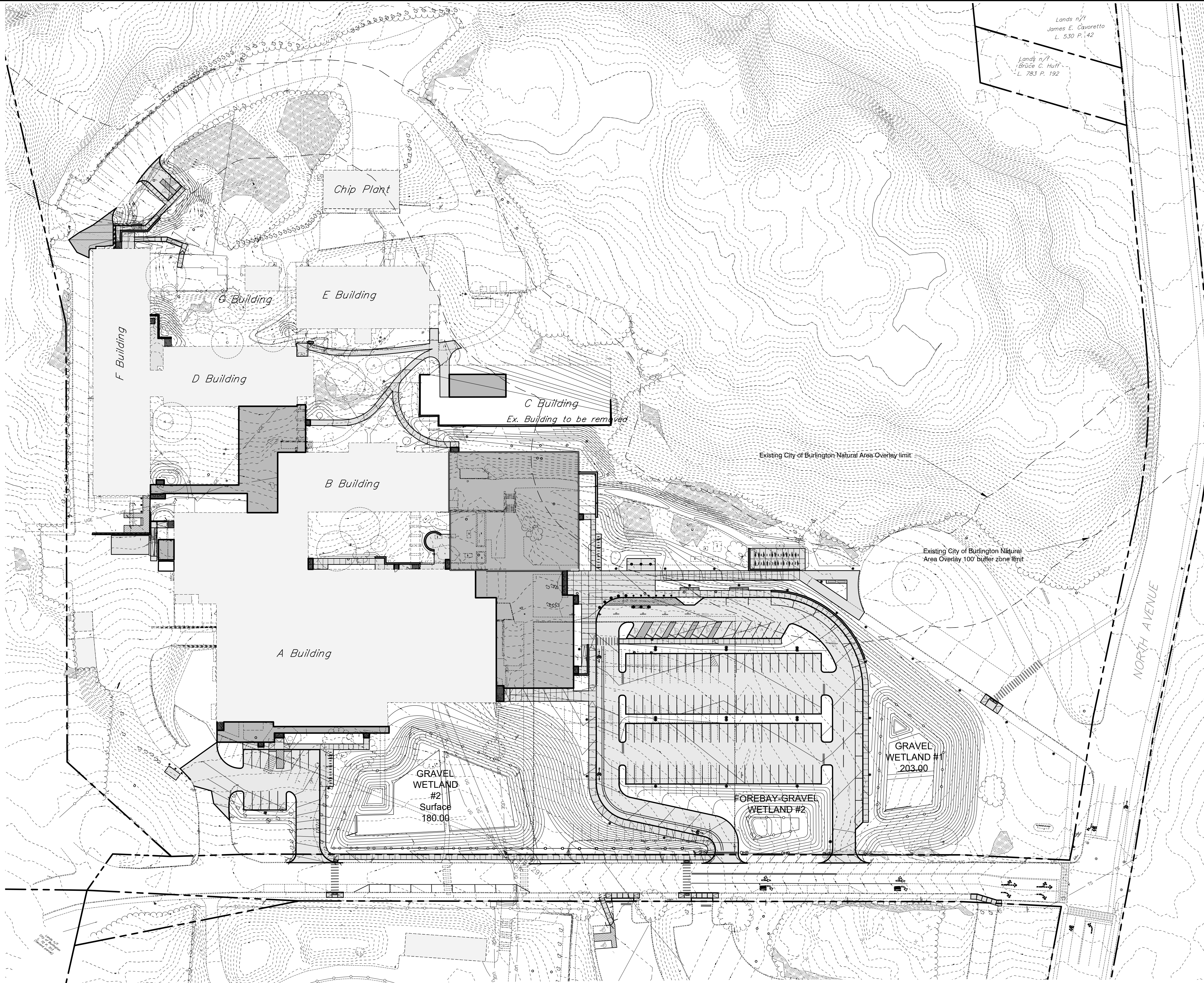
10. Place the next section of Type S Deck and secure with (6) self-drilling screws. The first (3) self-drilling screws will go through both Type S Deck sections. Continue securing the remaining (3) Type S Deck sections.



11. If building a modular run of shelters, continue adding shelters until complete.

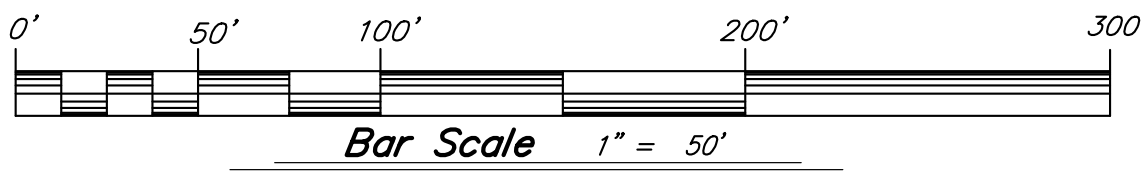






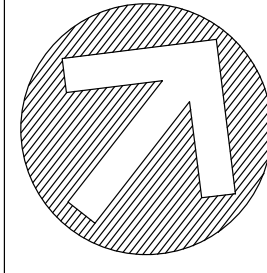
GENERAL NOTES

1. This plan is not a boundary survey. Boundary information shown was taken from a drawing entitled "Existing Conditions Survey of Burlington High School and Burlington Technical Center" by AES Northeast, dated 2014.
2. Project Horizontal Coordinates derived from GPS observation using reference frame NAD83 (2011) 2010.00 epoch. Project vertical datum based on NAVD 88 (Geoid 12A).
3. Utility information shown is based on an existing features survey conducted by AES Northeast (note #1).
4. Underground utilities are approximate and not warranted to be exact or complete. Contractor shall contact New England Dig Safe prior to any excavations.
5. The location of underground electrical lines which service the site lights are not shown on the Civil Plans. Other electrical lines may exist which are not shown on this plan.
6. All Civil Site and Civil Utility design extends from beyond 5 ft. outside the buildings. Contractor shall see Architectural, Structural, and Mechanical Plans for all design within 5 ft of the building.
7. Contractor responsible for all pavement markings shown or implied on the plans.
8. The Contractor shall be responsible for all erosion prevention and sediment control measures necessary to comply with the Low Risk Construction General Permit and as outlined in the Low Risk Site Handbook for Erosion Prevention and Sediment Control.
9. The pavement and restoration shown may not include all restoration necessary to complete the utility work. The Contractor shall be responsible for repairing all pavement and subbase necessary to complete the work.

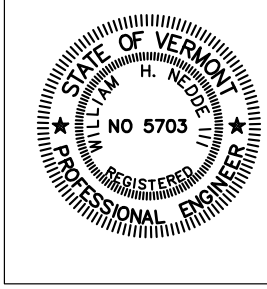


CONSTRUCTION NOTES

1. The methods and materials of construction shall conform to the latest standards of the local Municipality and the State of Vermont. All work shall be in conformance with all permits and approvals issued for the project. In case of conflict, the more stringent specification shall apply as directed by Engineer. All work shall be done in a workmanlike manner and completed in the time specified by Owner.
2. The Contractor shall be responsible for all work and materials shown and required to make the job complete. These drawings do not show every fitting or appurtenance. Materials shall be as specified on the drawings. Manufacturer's product specifications shall be submitted for all materials to the Engineer for approval prior to installation.
3. The location and size of existing underground utilities is not warranted to be exact or complete. The Contractor shall field locate all utilities and shall contact the affected utility company, the Engineer and the Municipality prior to making any hook ups. The Contractor shall be solely responsible for all existing utilities and their uninterrupted services. All off-site backfill, sheeting and shoring, dewatering, clearing and grubbing, erosion control, dust control, traffic control, grading, and all incidentals shall be included as part of the required work. Contractor shall anticipate 30 pre-construction excavations.
4. Repair of all disturbed areas, grading, seeding, mulching, repair of roads and curbs, paving, and other incidentals are included as part of the required work. All disturbed areas shall be loamed and mulched until permanent ground cover is established.
5. The Contractor shall verify all horizontal control and temporary bench marks before use.
6. The workmen and public shall be protected by the Contractor from any and all hazards connected with the construction work. Open trenches, materials, or equipment within the working limits are to be guarded by the use of adequate barricades or flag men. All barricades left in position overnight are to be properly lighted. Kerosene pots are not acceptable. When work narrows the usable pavement, flag men shall be employed to aid the flow of traffic so that there will be no undue delays. The Contractor shall be held responsible for the safety of all workmen and the general public and all damages to property occurring from or upon the work occasioned by negligence or shall be held responsible for the safety of all workmen and the general public and all damages to property occurring from or upon the work occasioned by negligence or day or night within the working area. All work shall be in conformance to OSHA regulations, Title 19, Parts 1926.651 and 1926.652, and applicable to VOSHA regulations.
7. Contractor shall contact Dig Safe and other non-member utilities prior to any excavation.
8. All new storm extending from catch basin structures shall be laid with a laser to elevation and slope as shown on the plans. All new storm piping outfalls to have flared ends and rip-rap.
9. The Contractor shall sawcut all existing pavement to be removed. The Contractor shall minimize the pavement area disturbance. Contractor shall be responsible for all pavement repair and restoration necessary to complete the work.
10. The Contractor shall be responsible for all construction layout.
11. Temporary silt fence shall be erected prior to any clearing or construction. Fencing may be erected in phases, but in no case shall construction of clearing proceed fencing. Special areas may be designated by the Owner for preservation of existing trees. These areas shall be the Contractor's responsibility to insure no damage is done to designated trees.
12. Existing plantings are located in general areas as shown on the plans. Contractor shall protect plantings scheduled to remain so as not to damage these or their root systems.
13. Contractor shall comply with all permits and approvals issued for this project.
14. Contractor shall sign on as the Co-Permittee for the State of Vermont Erosion Prevention and Sediment Control permit for the project.
15. Slope stability upon unsaturated soil conditions. If during construction saturated soils are encountered, contact the Engineer immediately.
16. The Contractor shall be responsible for repairing all disturbed areas back to original condition, including but not limited to curbing, sidewalks, road, parking areas, landscaping, site lighting, electrical, and etc. All asphalt shall be sawcut prior to paving.
17. All stumps, rock, and other non-approved trench backfill material discovered during construction is the exclusive property of the Contractor and shall be removed from UVM property and disposed of in a State approved disposal location.
18. All passing compaction and sieve testing expenses shall be paid by Owner. Testing coordination and expenses for failed tests shall be the Contractor's responsibility.
19. Contractor shall be responsible for importing topsoil as required to complete the project. Contractor shall test topsoil for approval by the Owner and Engineer. On-site topsoil may be reused but shall be modified and screened as necessary to meet soil specifications.
20. At least One Way traffic along Institute Road shall be maintained at all times during construction. Contractor shall be responsible for all temporary roads, signage, traffic control, flaggers, barricades, and fencing necessary to safely redirect vehicles and pedestrians through or around the site during construction.
21. The site contractor shall manage the parking lot and roadway construction so that subgrade soils are not contaminated or weakened by precipitation, construction vehicle travel, or other construction related activities. Any degradation of subgrade soils caused by construction management or construction activities shall be repaired at the contractor's expense.
22. Where plans indicate restore to vegetation, Contractor shall remove and dispose of impervious surface and subbase (assume 12" thick subbase). Fill to within 4" of finish grade, place 4" topsoil, and hydroseed (or seed and stabilize with rolled erosion matting).
23. Contractor shall be responsible for all pavement markings, including both new and replacement of existing. All striping to be durable in Institute Road.
24. Contractor shall comply with all City of Burlington noise ordinances.
25. All catch basin, storm manhole, and sewer manhole structures within the limits of the new project shall have the existing riser rings removed and replaced with new precast concrete grade rings. The rims shall be set to match the new finish grades.
26. Contractor shall be responsible for all "As-built" measurement and drafting requirements as outlined on the Detail Sheets. All trench excavations shall remain open until all as-built survey shots have been taken. Progress Record Drawings shall be submitted to the Engineer as indicated in the Record Drawing specifications.
27. See Plans by others for lighting design, gas design, electrical design and other miscellaneous utility design.
28. Contractor shall anticipate 30 directional and parking signs.
29. See Geotechnical specifications for all blasting design.
30. Abandoned AC pipe must be removed by a licensed Asbestos Abatement Entity. See VT Dept. of Health Title 18, Chapter 26 and US EPA documents 40CFR 61.145 and 61.150. This is not a complete list of pertinent documents. It is the Contractor's responsibility to ensure AC pipe is properly removed.



BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT



OVERALL SITE
PLAN

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12/17/20	00 Documents

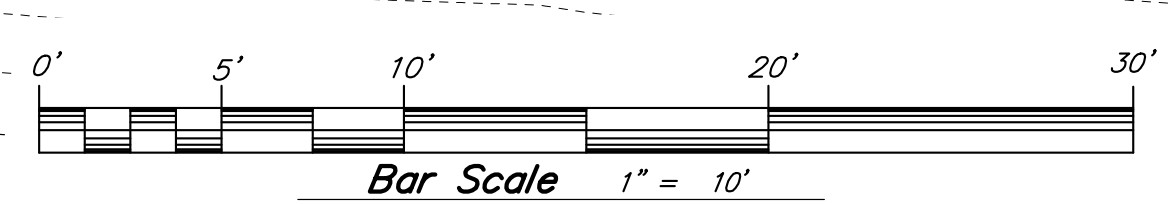
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KREBS & LANSING
CONSULTING ENGINEERS
354 Main Street, Suite 201 Colchester, VT 05608
T: (802) 478-0375 F: (802) 478-4814
email@krebbsandlansing.com

REVISIONS	
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BURLINGTON, VERMONT

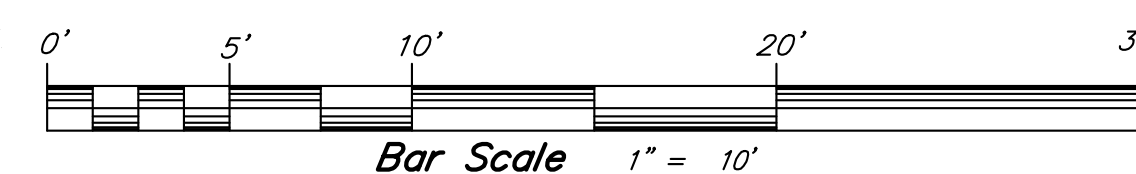
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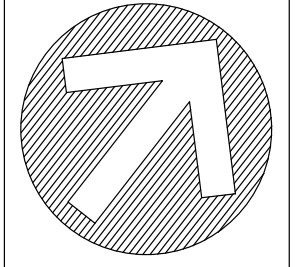
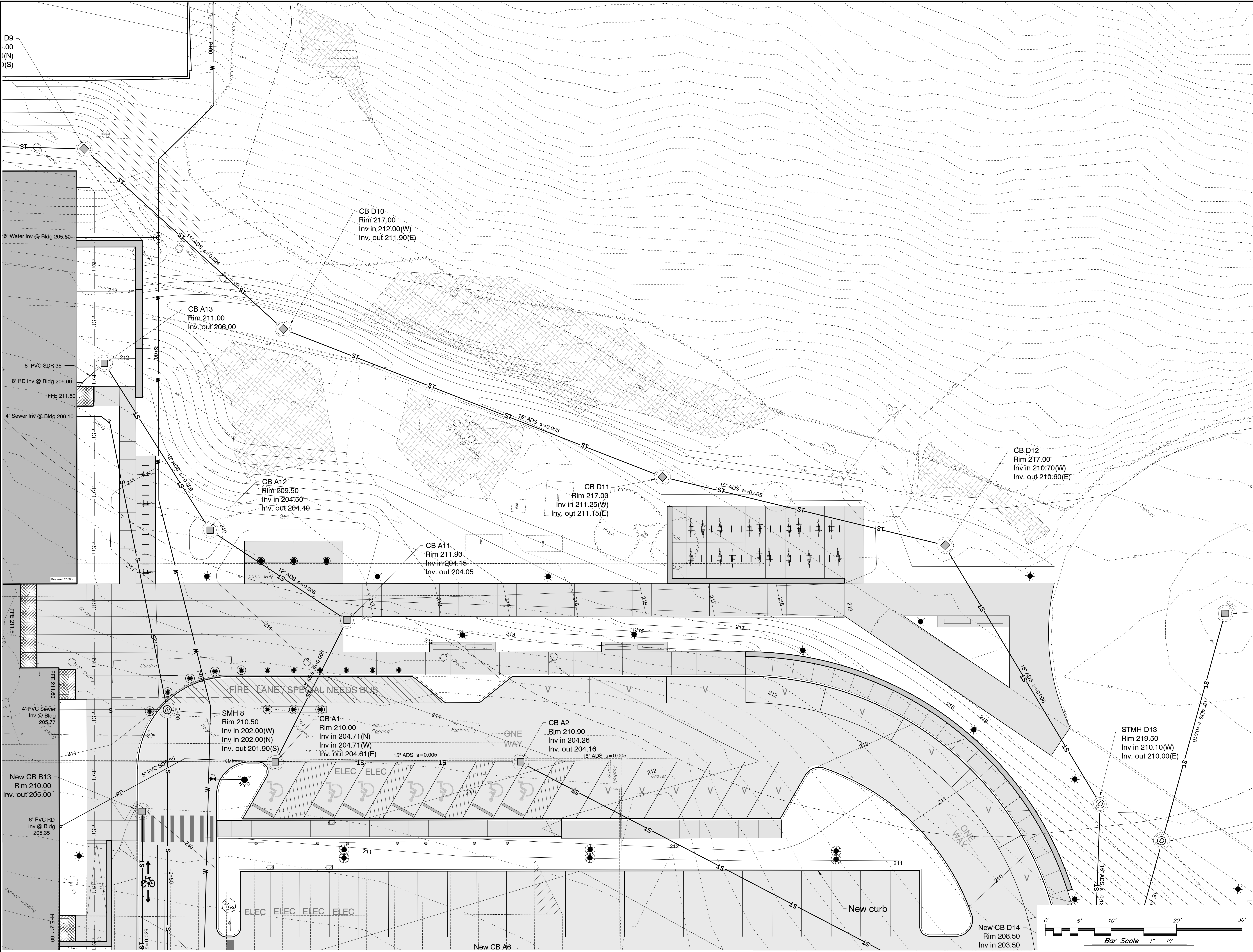
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BURLINGTON, VERMONT

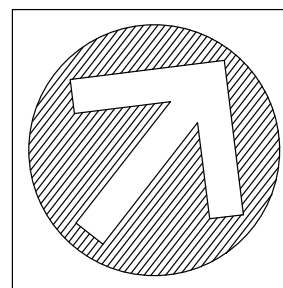
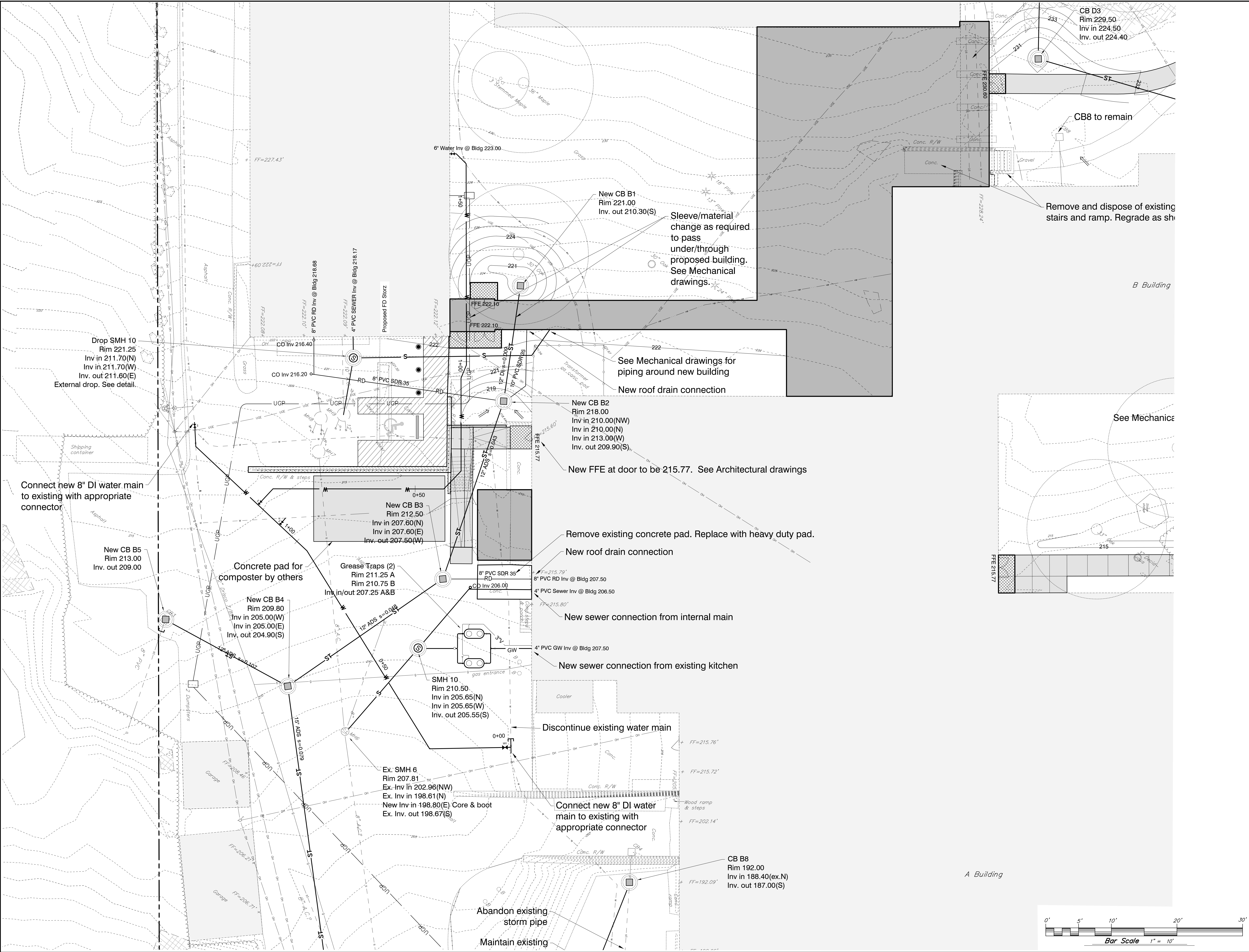


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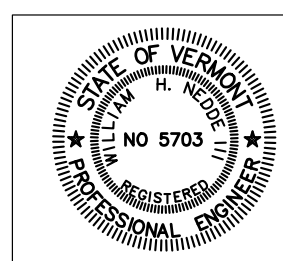
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BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

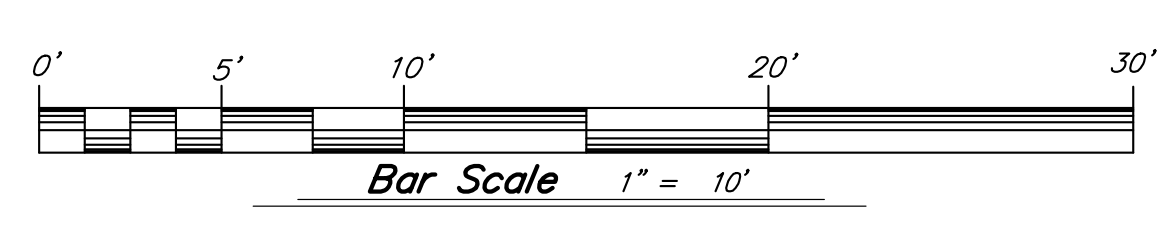


SITE PLAN

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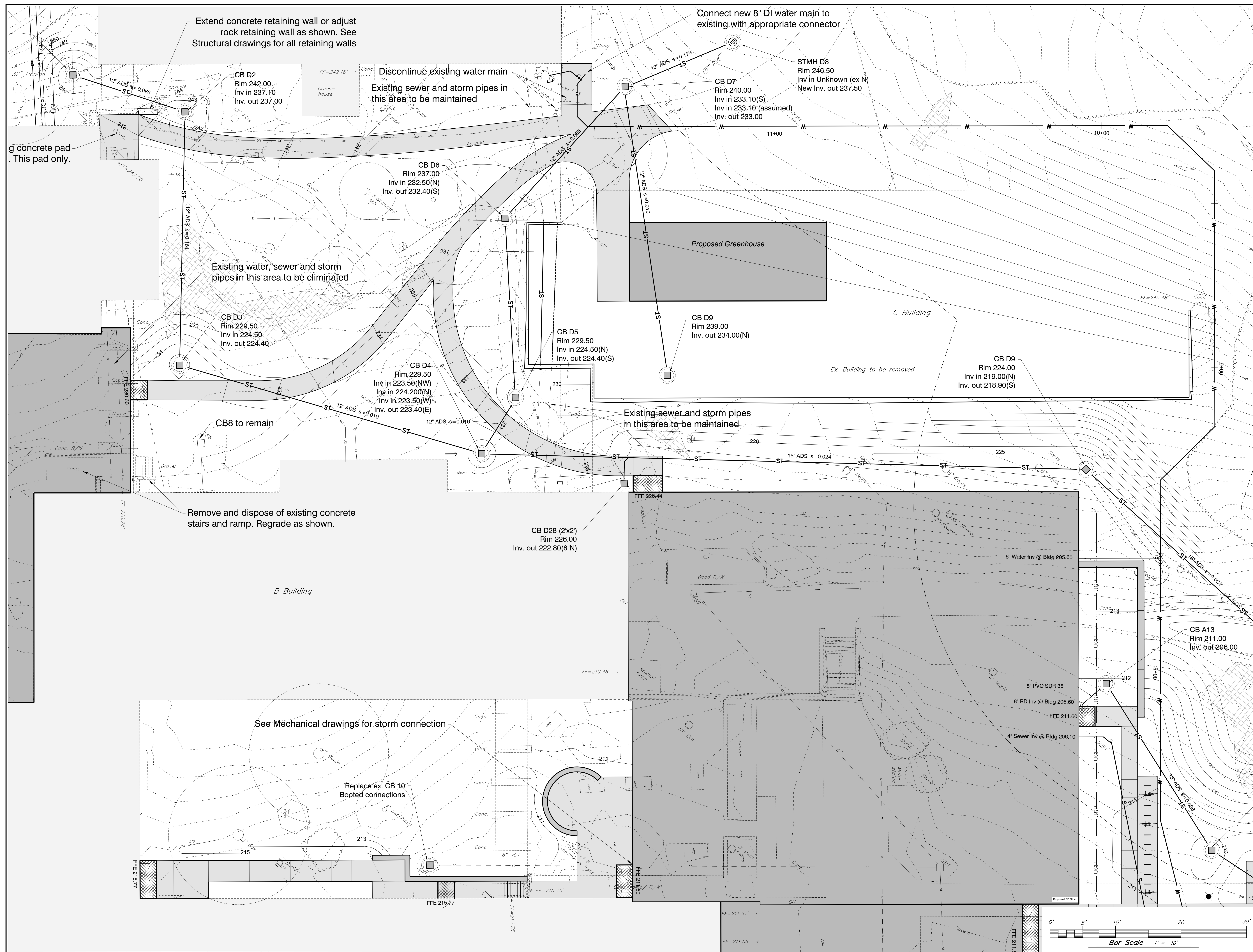
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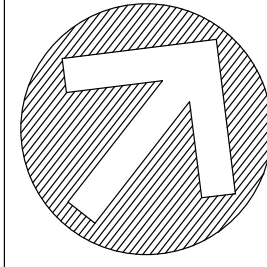
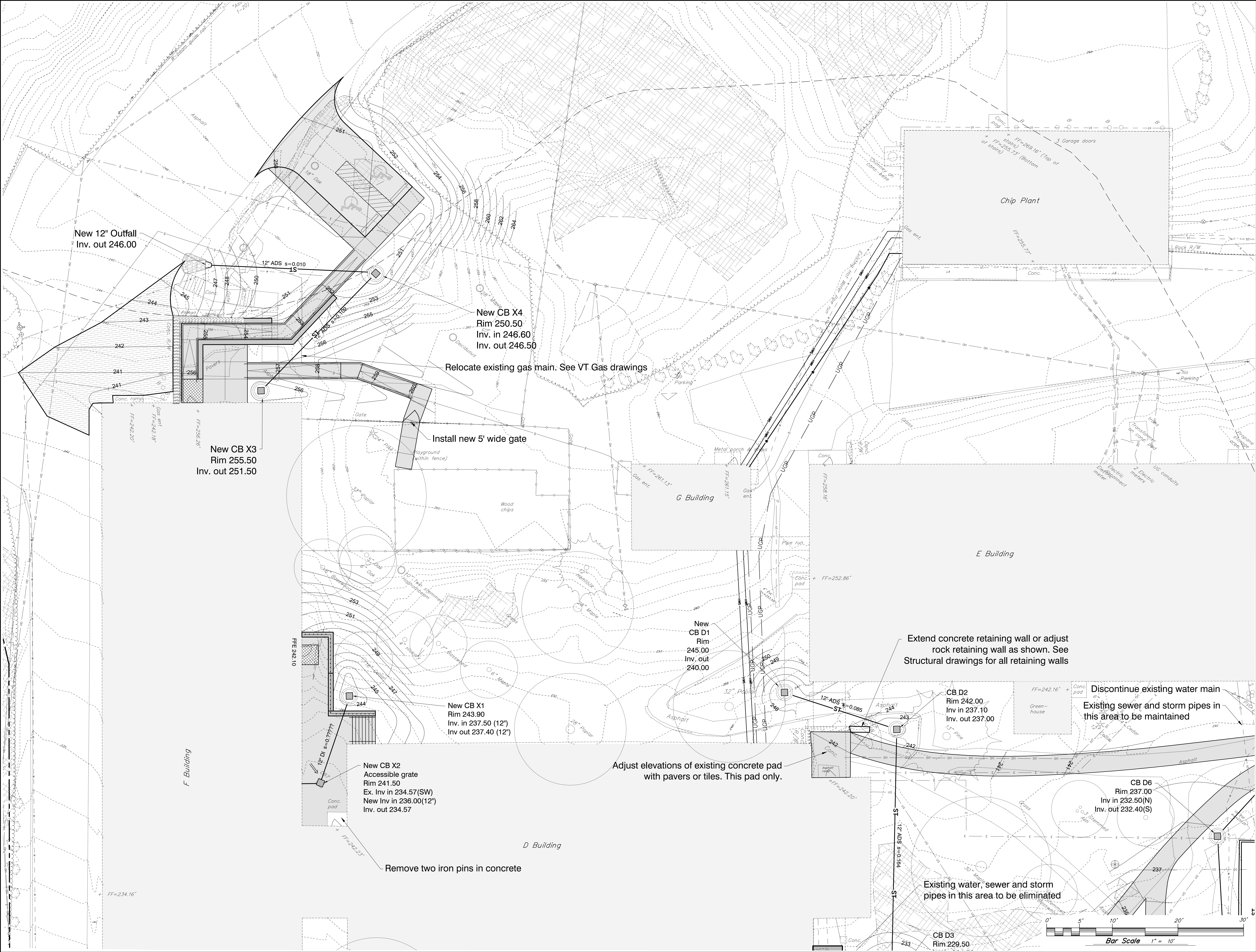
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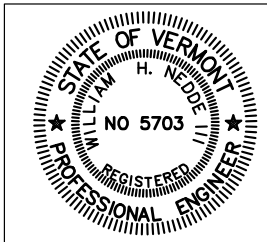
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BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

KREBS & LANSING
CONSULTING ENGINEERS



SITE PLAN

REVISIONS

NO.	DESCRIPTION	DATE
1	12/17/20	00 Documents

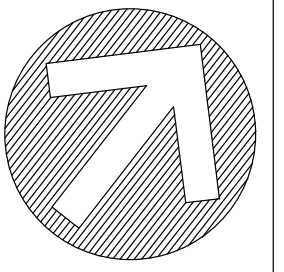
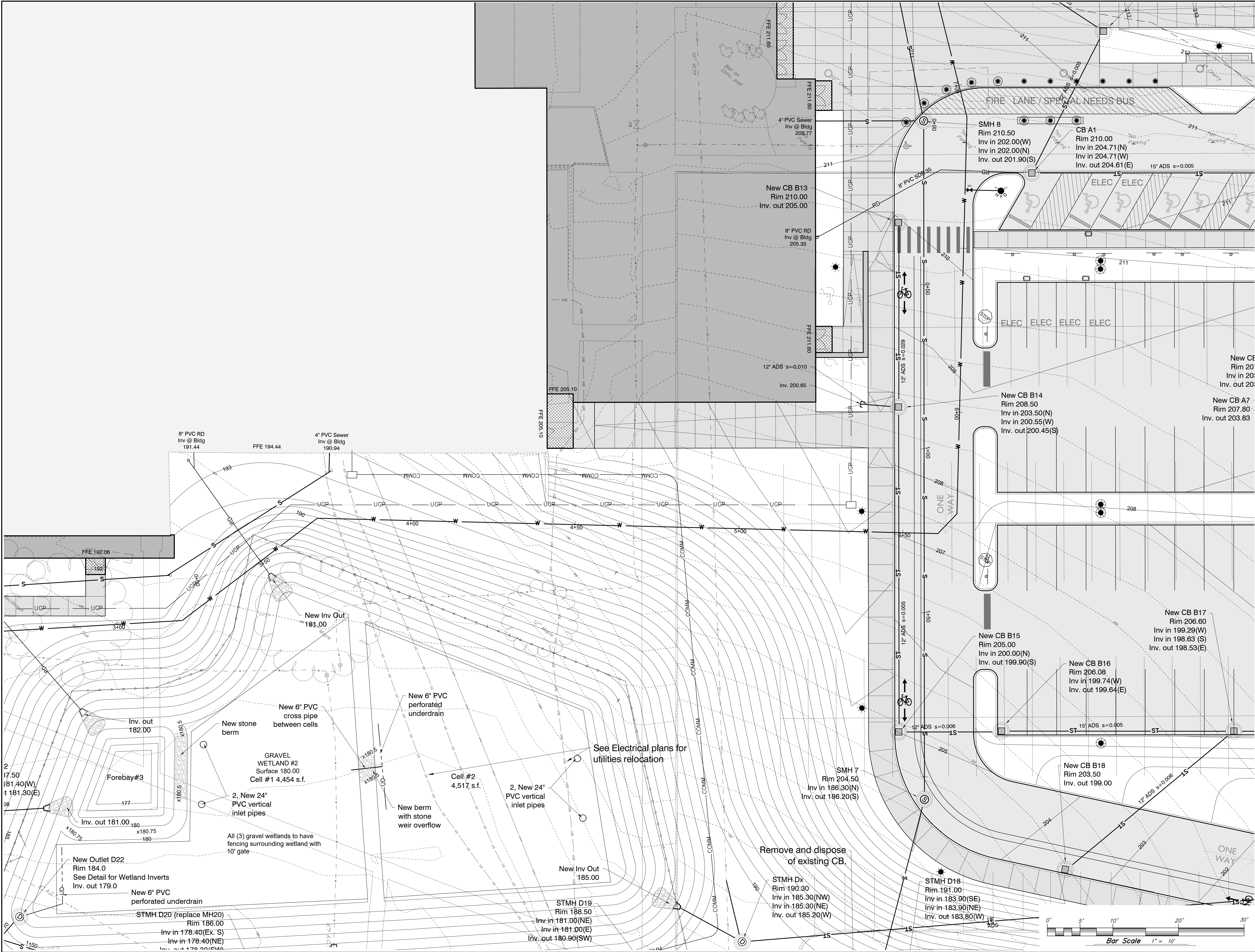
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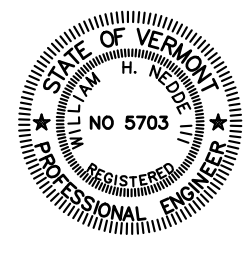
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BURLINGTON, VERMONT

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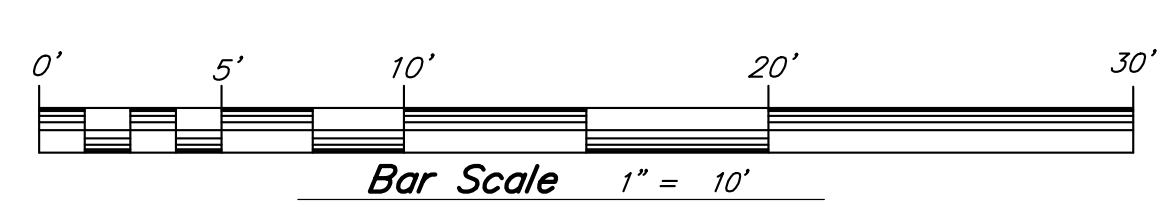


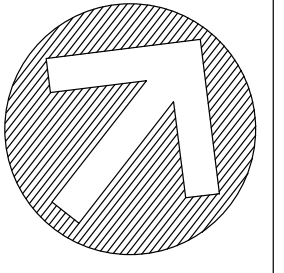
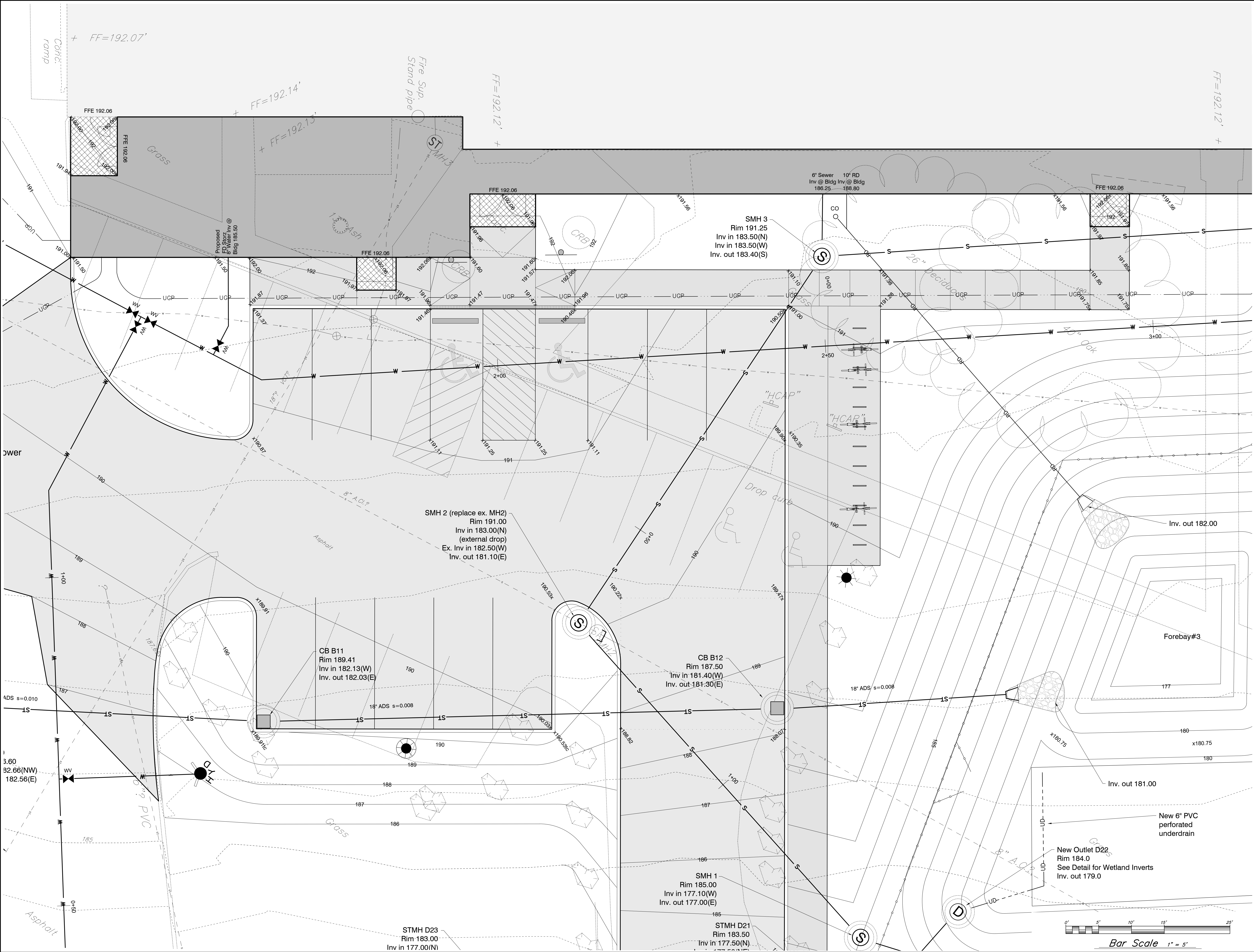
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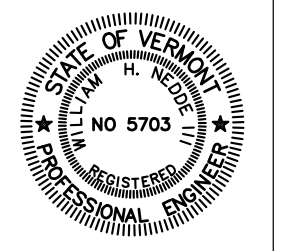
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BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

KREBS & LANSING
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SITE PLAN

REVISIONS	
12/17/2000	00 Documents

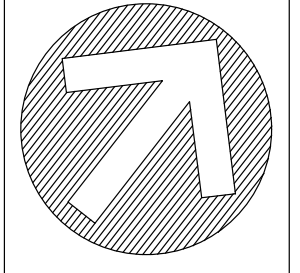
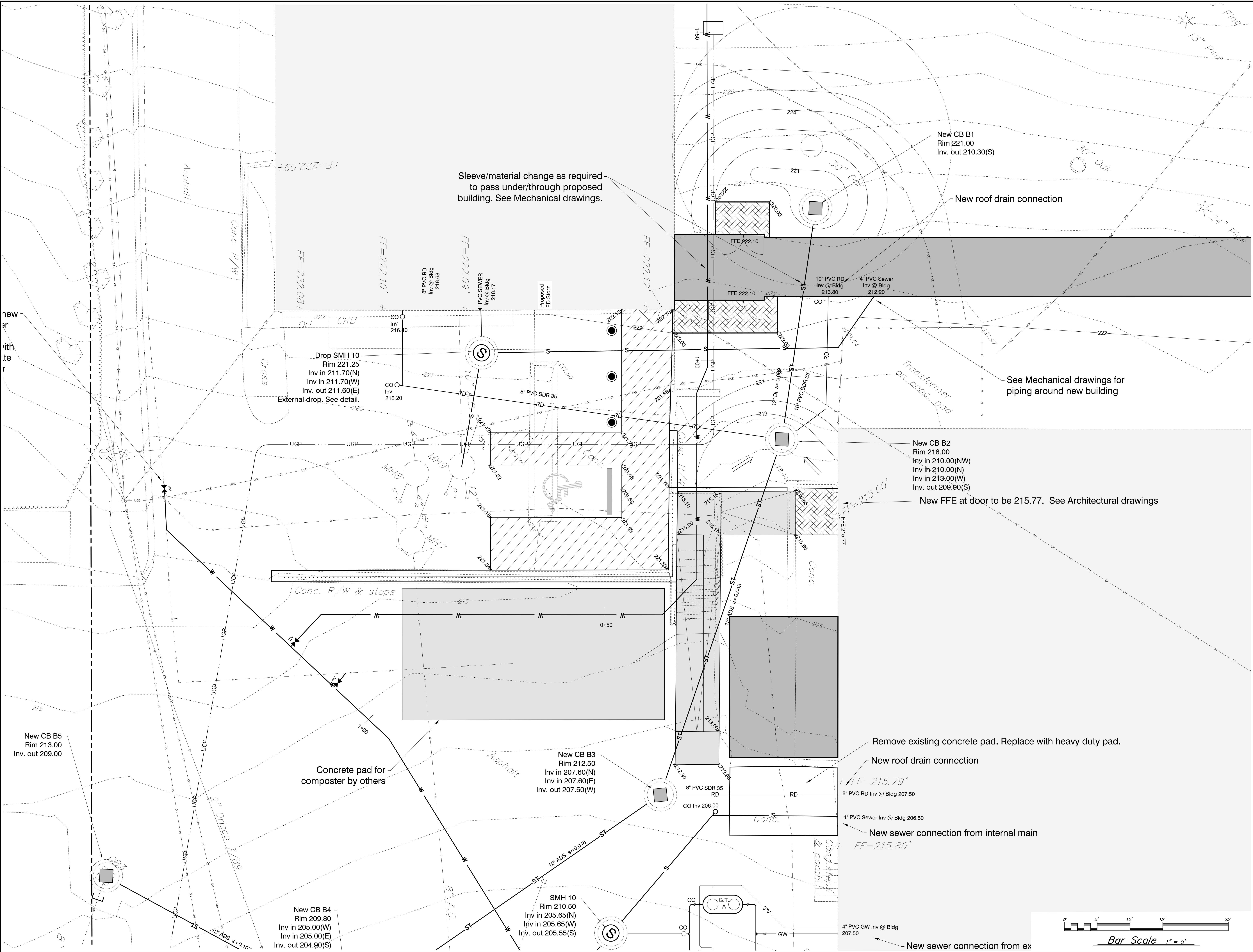
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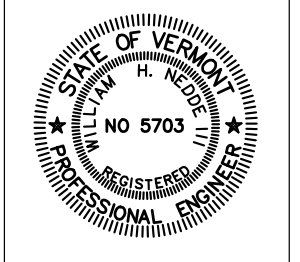
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BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

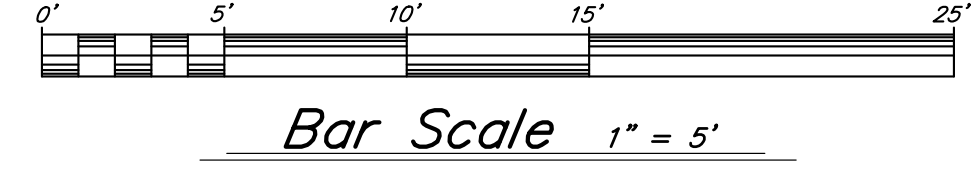


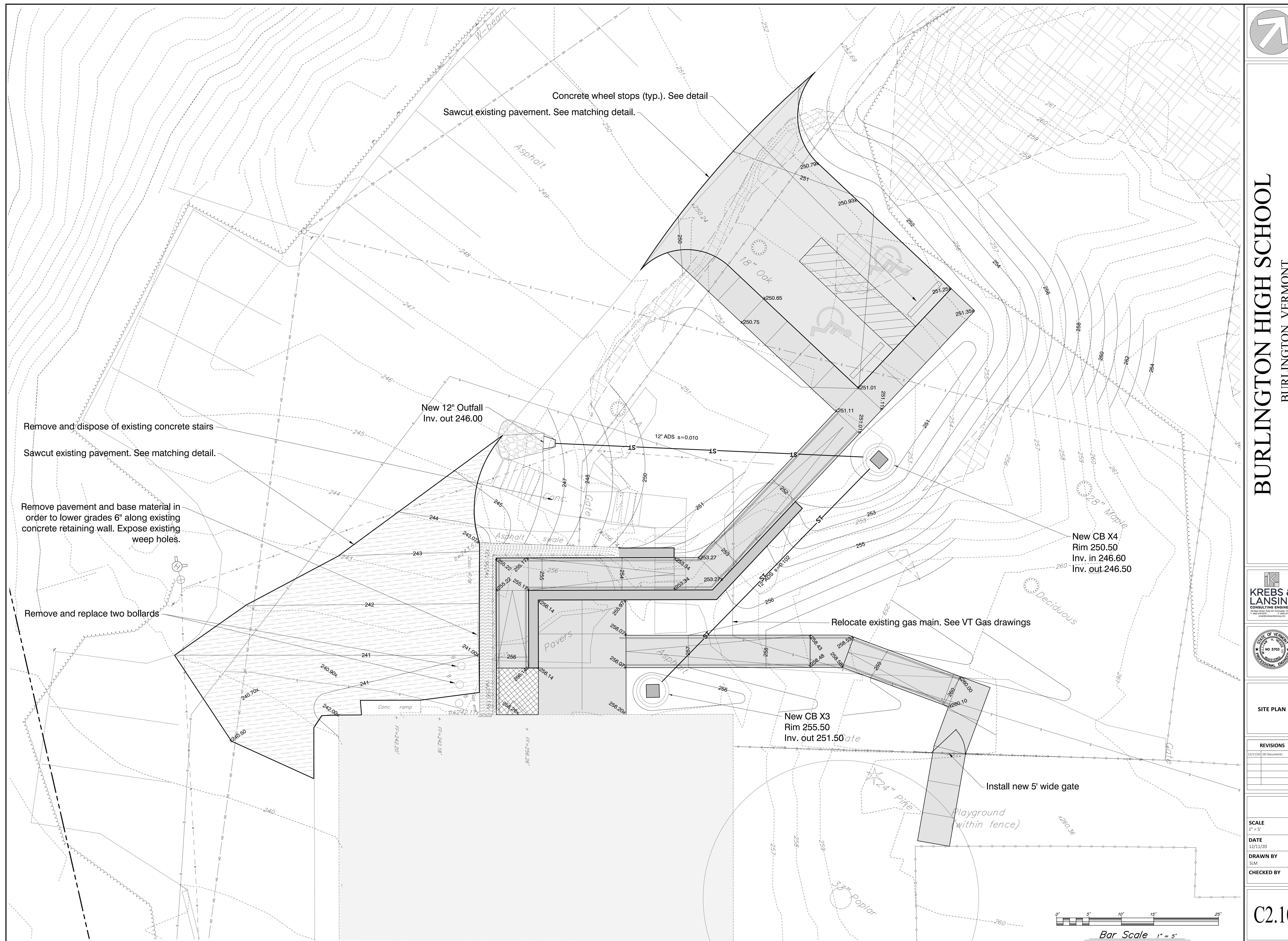
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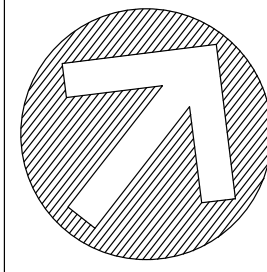
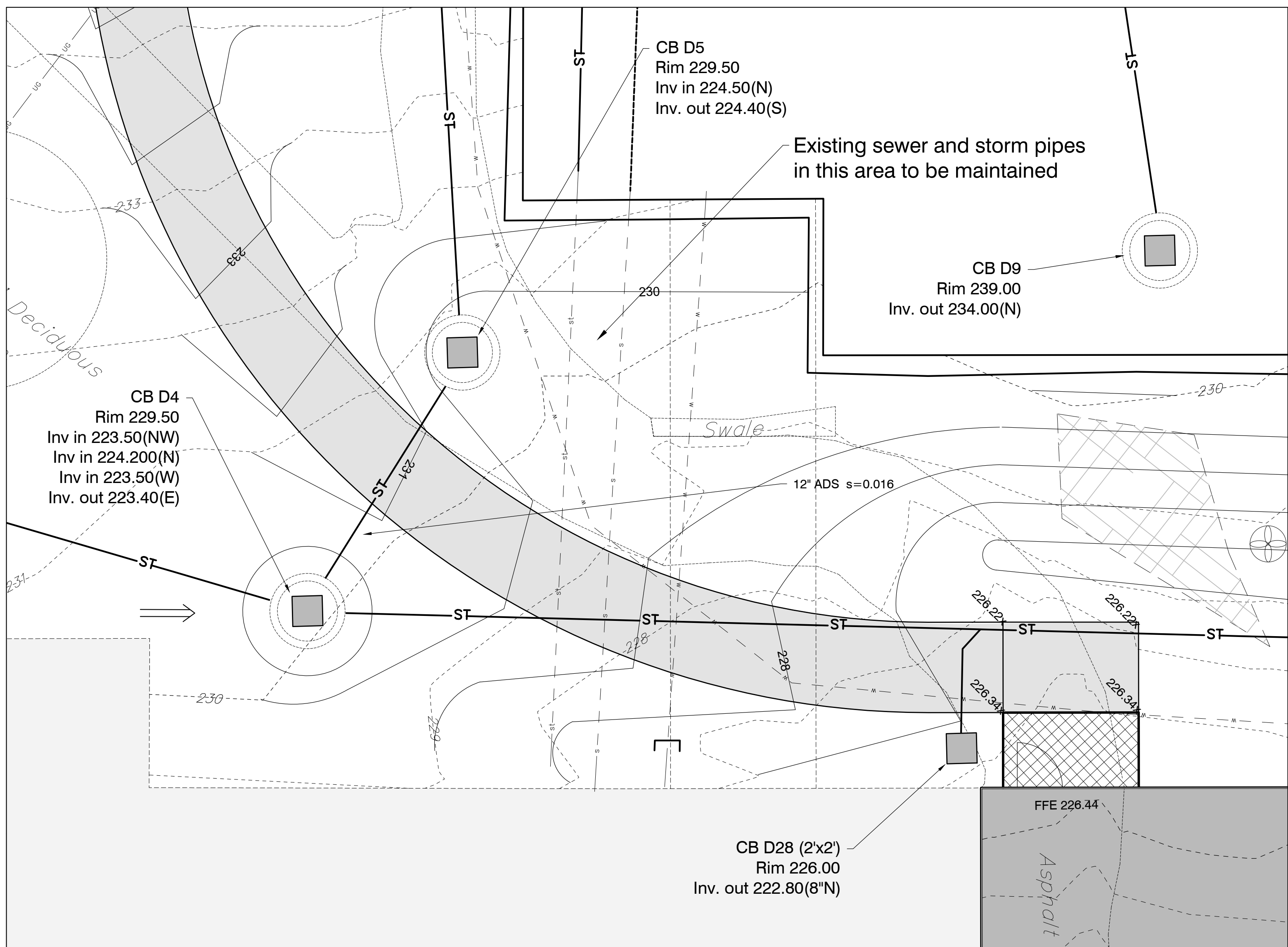
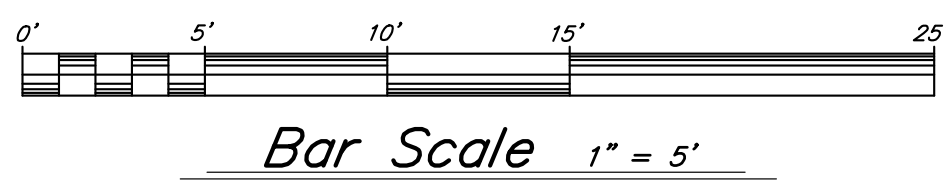
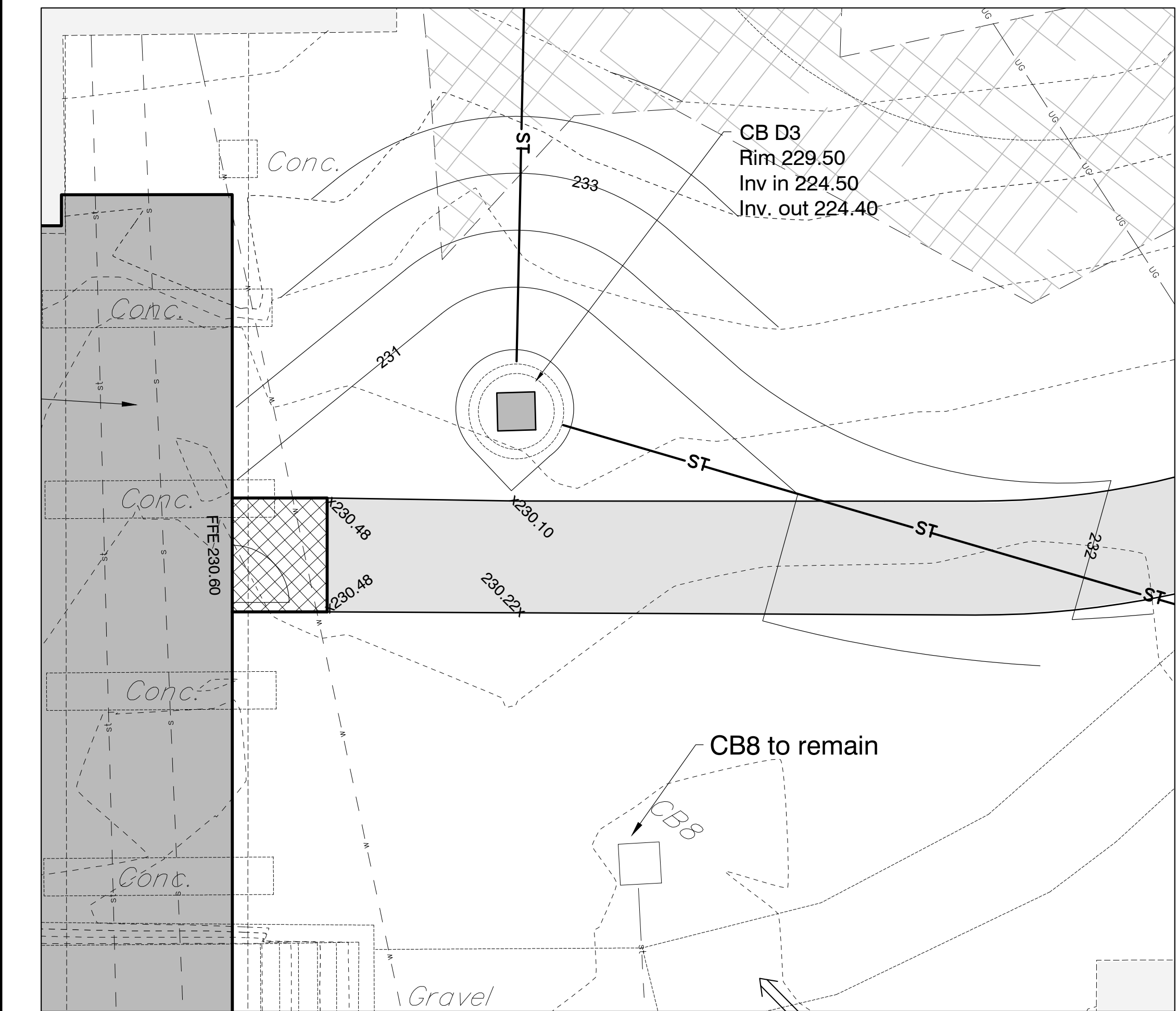
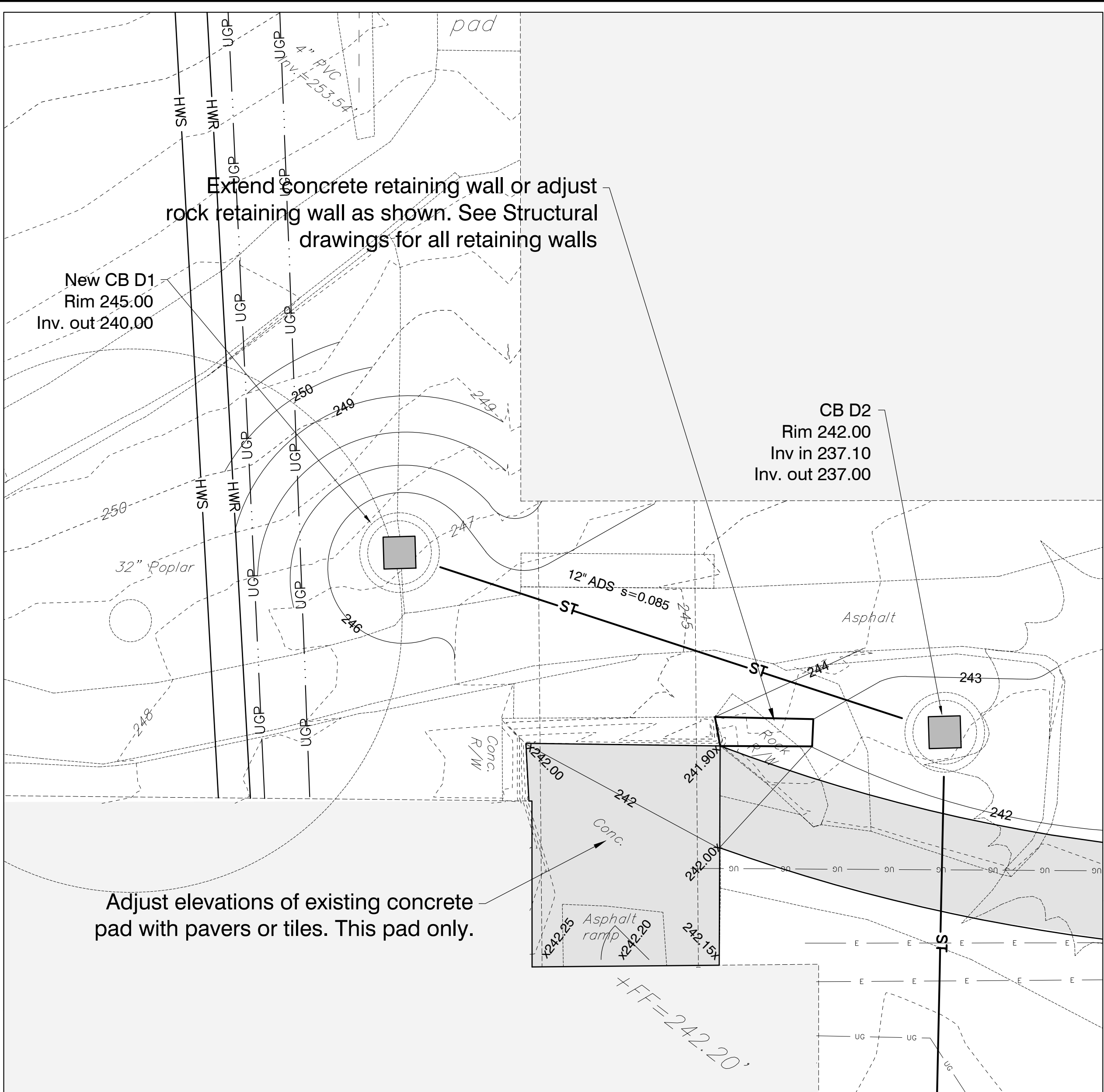
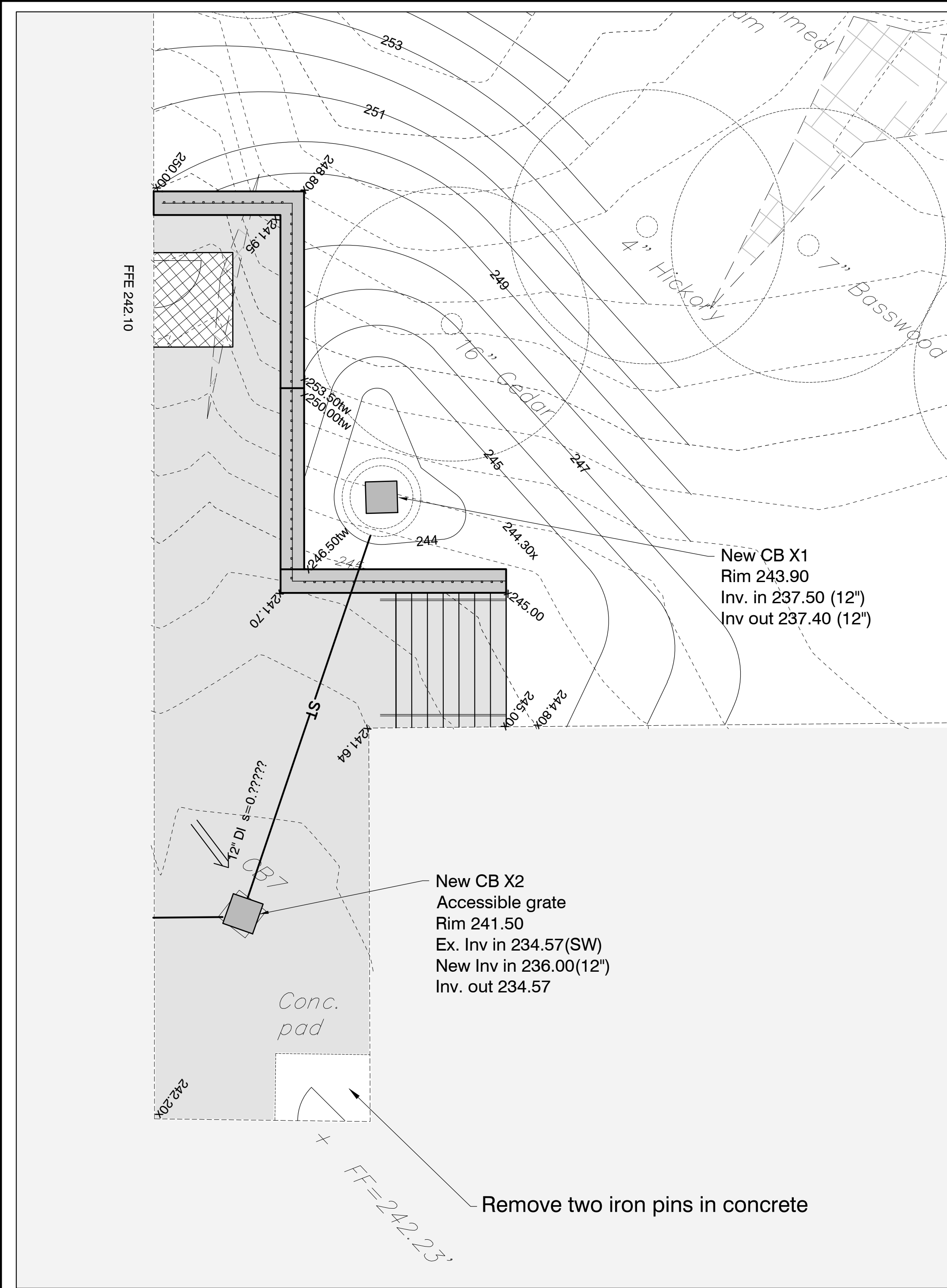
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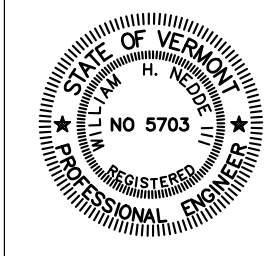
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BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT



SITE PLANS

REVISIONS

NO.	DESCRIPTION
1	12/11/20 00 Documents

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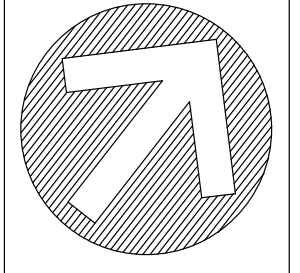
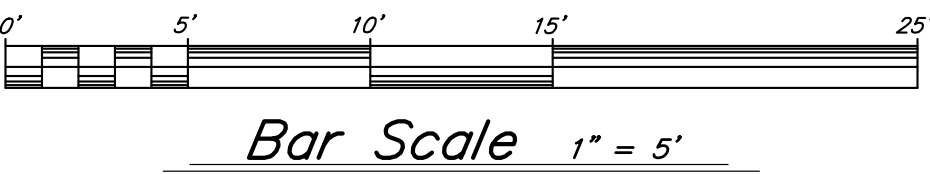
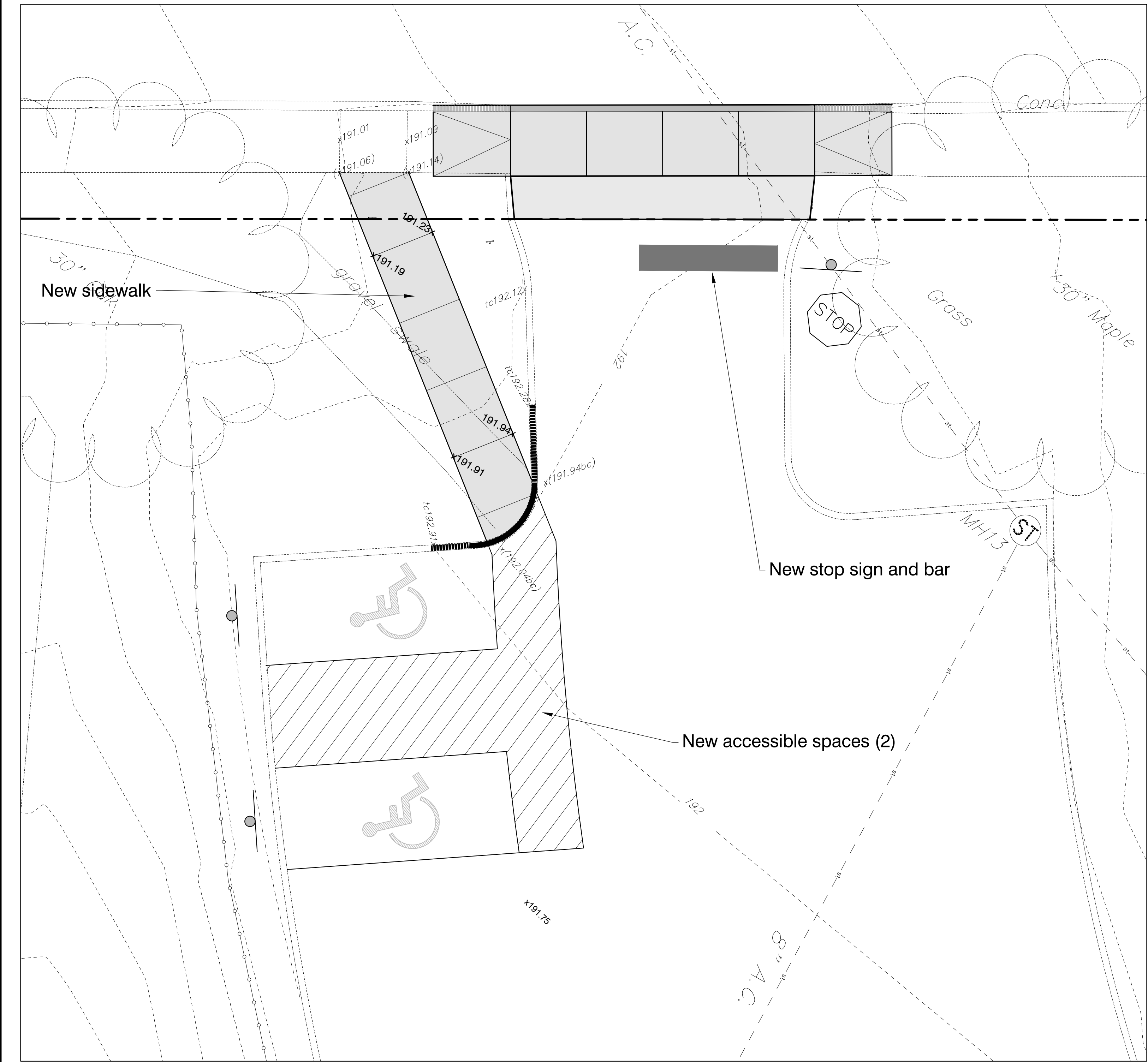
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SITE PLANS

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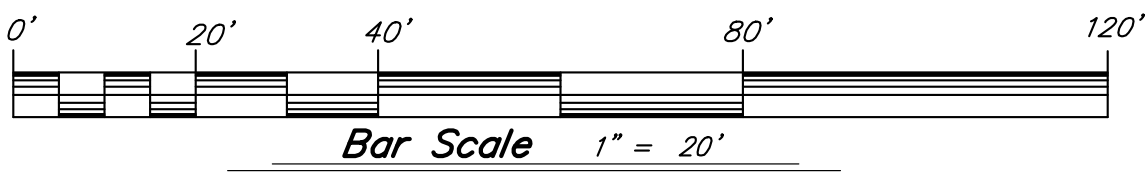
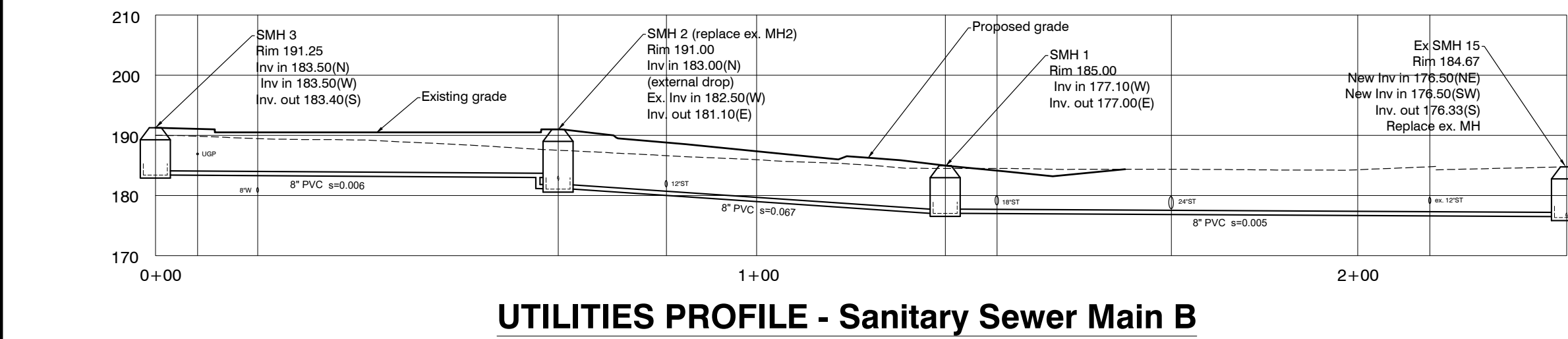
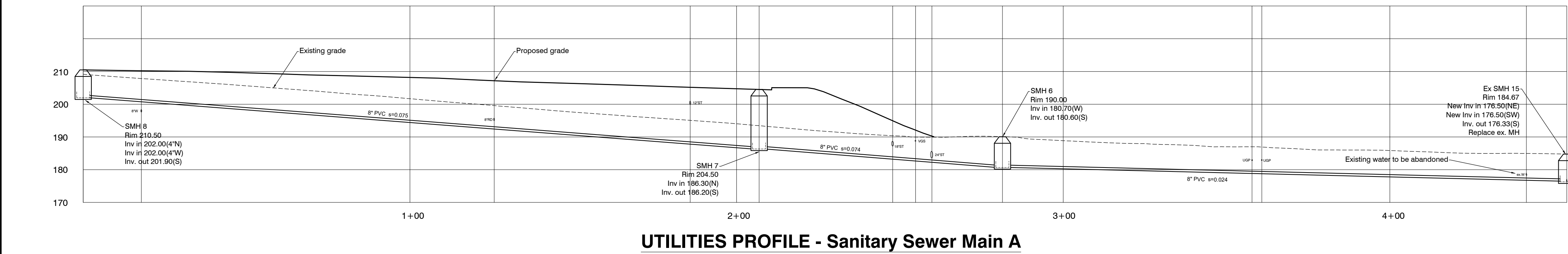
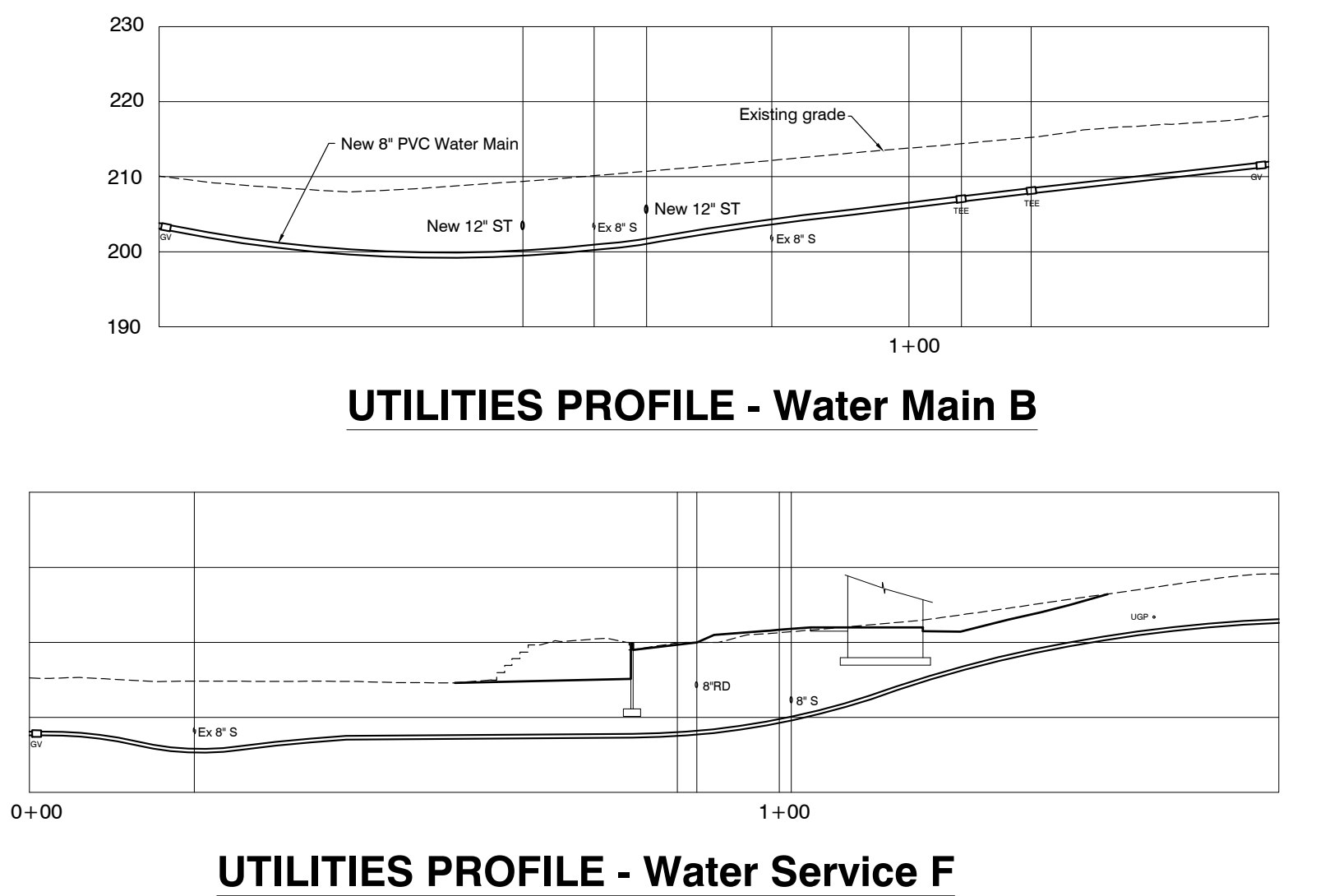
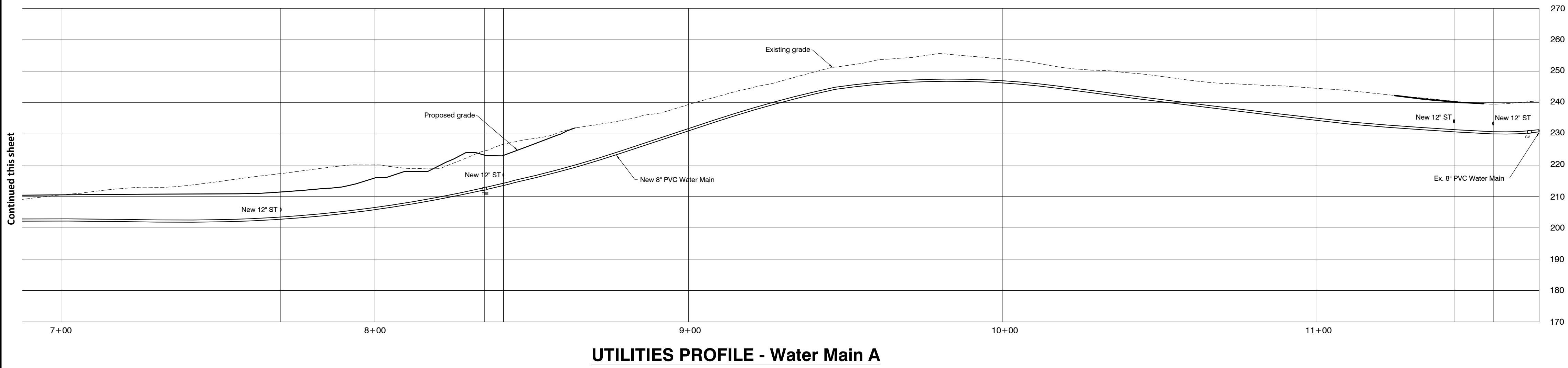
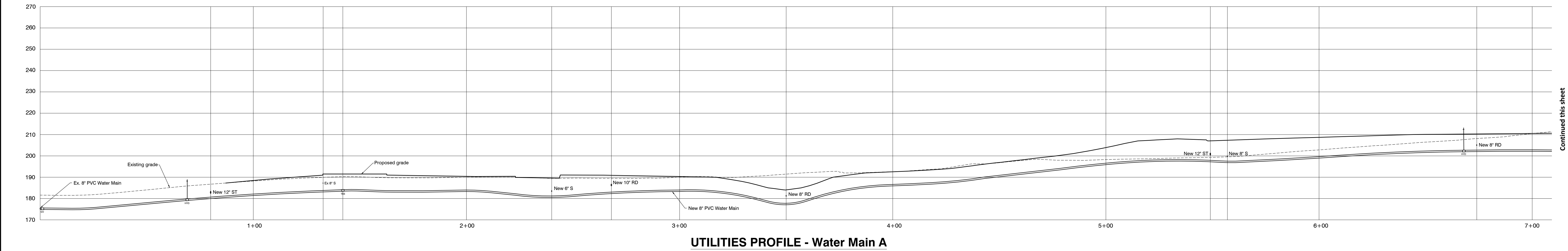
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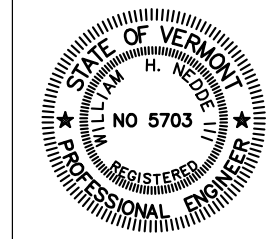
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SLM

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BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

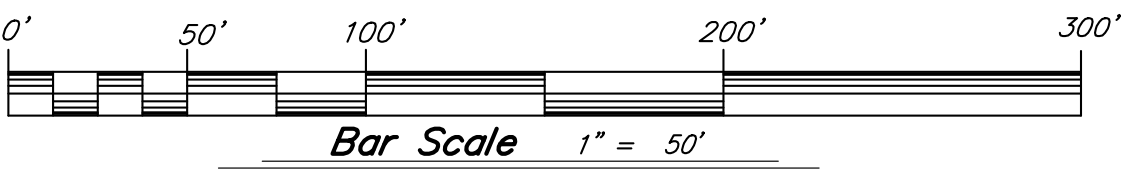
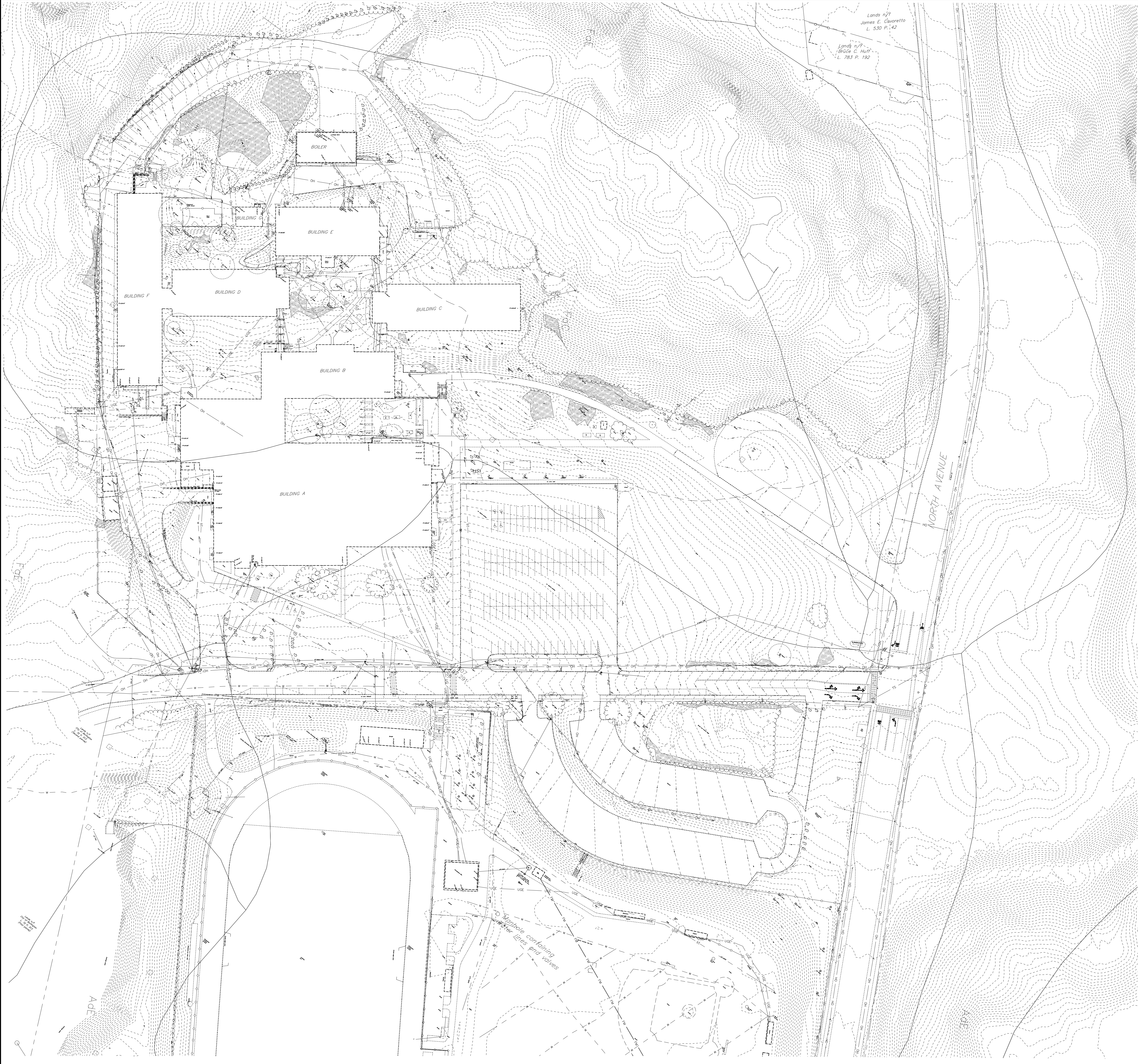


UTILITIES PROFILES

REVISIONS
12/11/20 00 Documents

SCALE 1" = 20' H&V
DATE 12/11/20
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C2.18



BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

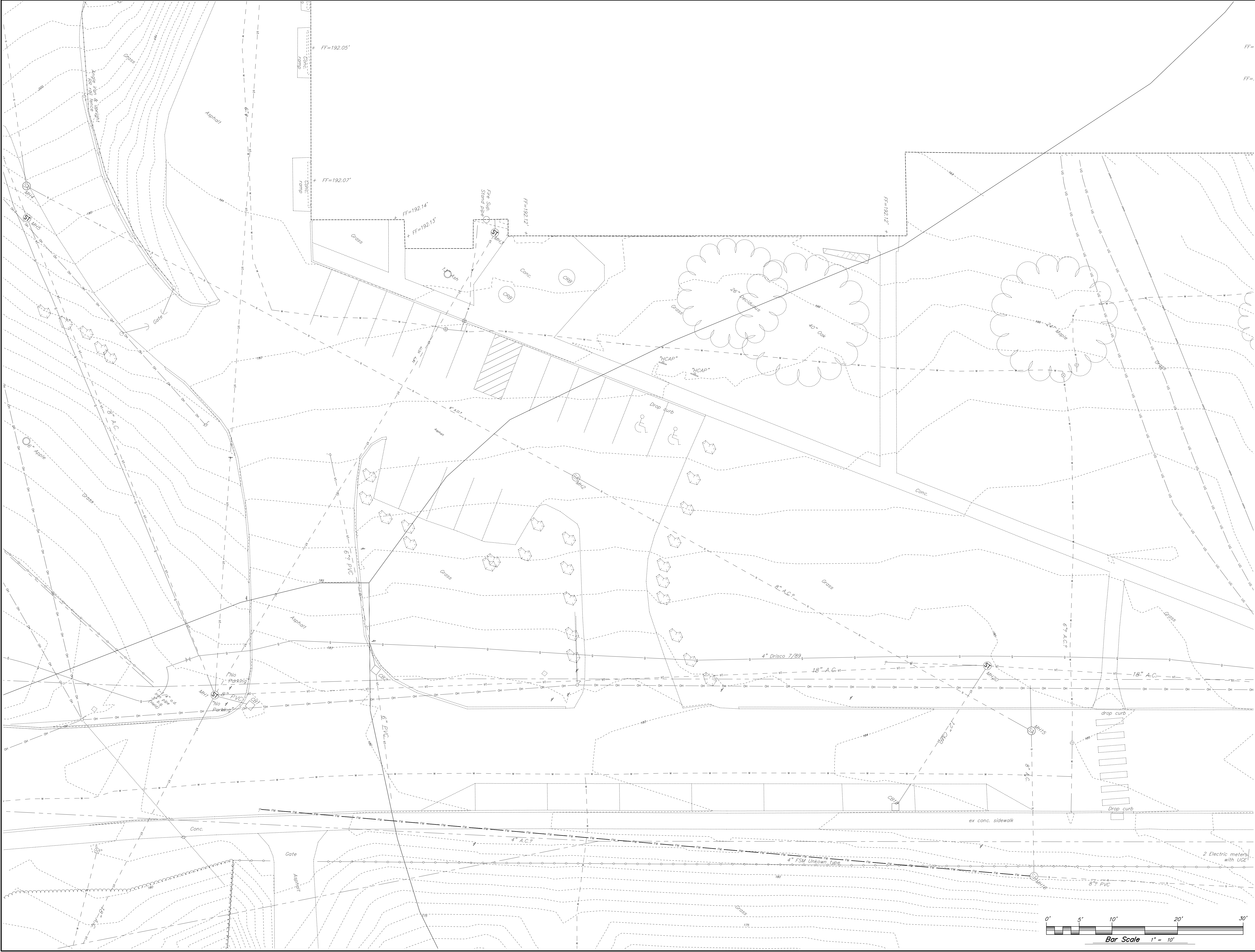
KREBS & LANSING
CONSULTING ENGINEERS

EXISTING
FEATURES PLAN

REVISIONS
12/17/20 00 Documents

SCALE
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DATE
12/17/20
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C4.0



BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

EXISTING FEATURES PLAN

REVISIONS	
12/17/20	30 Documents

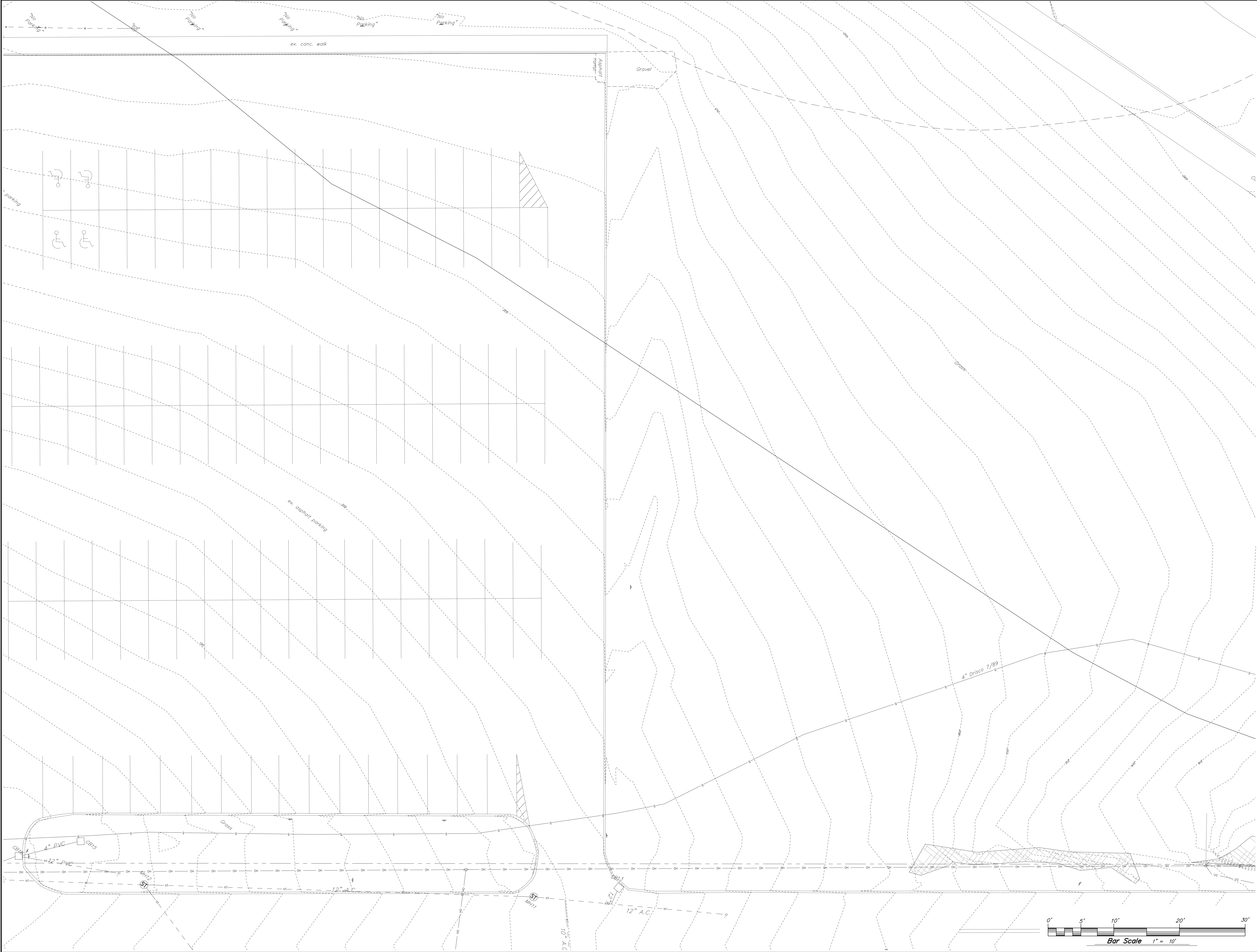
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DATE
12/11/20

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SLM

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BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

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CONSULTING ENGINEERS

EXISTING FEATURES PLAN

REVISIONS

NO.	DATE	DESCRIPTION
1	12/17/20	00 Documents

SCALE
1" = 10'

DATE
12/11/20

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SLM

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BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

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CONSULTING ENGINEERS
100 Main Street, Suite 201, Burlington, VT 05401
(802) 255-1111

EXISTING FEATURES PLAN

REVISIONS

NO	DATE	DESCRIPTION
1	12/11/20	00 Documents

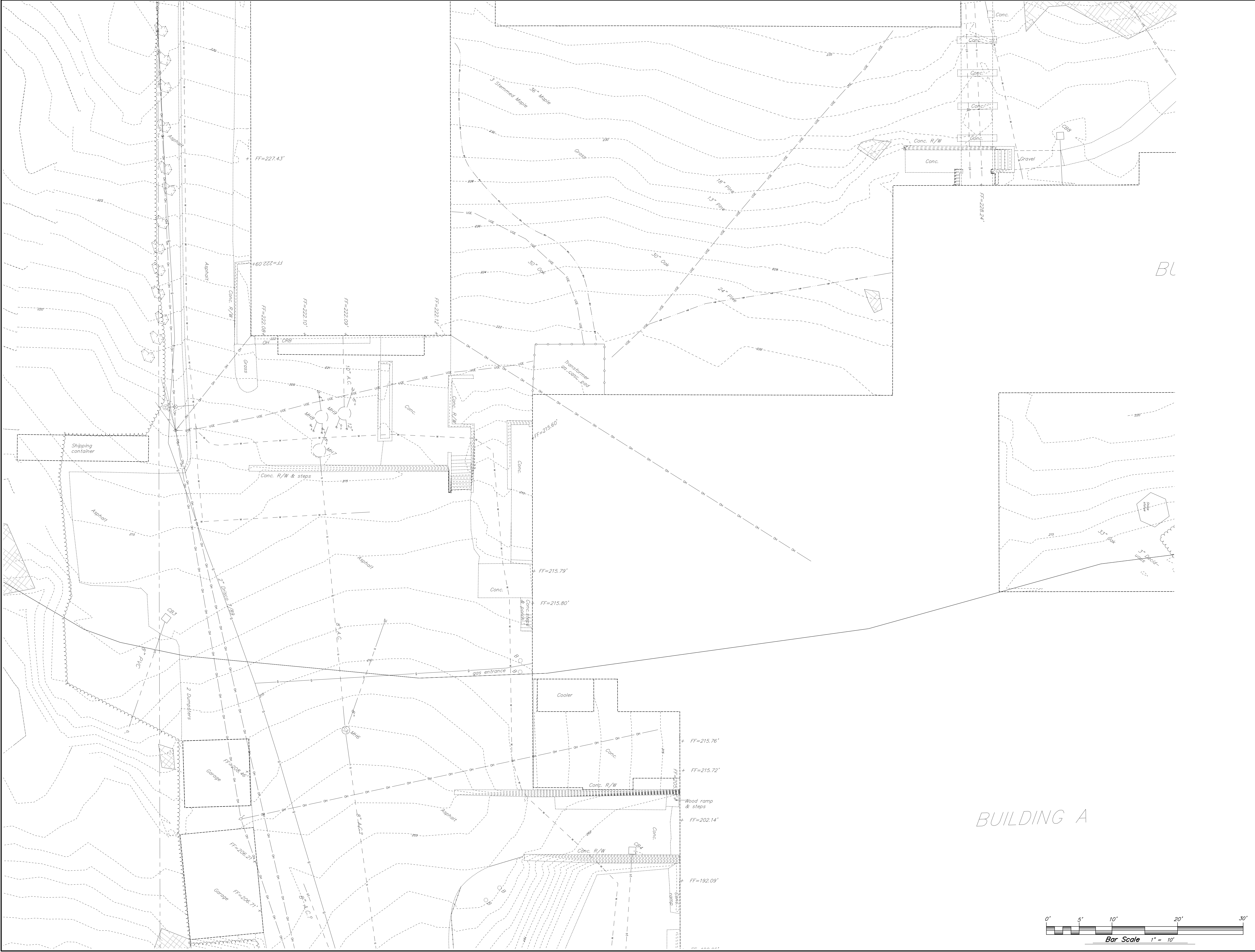
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DATE
12/11/20

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SLM

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C4.3



BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

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CONSULTING ENGINEERS
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(802) 255-1234
www.krebslansing.com

EXISTING FEATURES PLAN

REVISIONS	
12/17/20	50 Documents

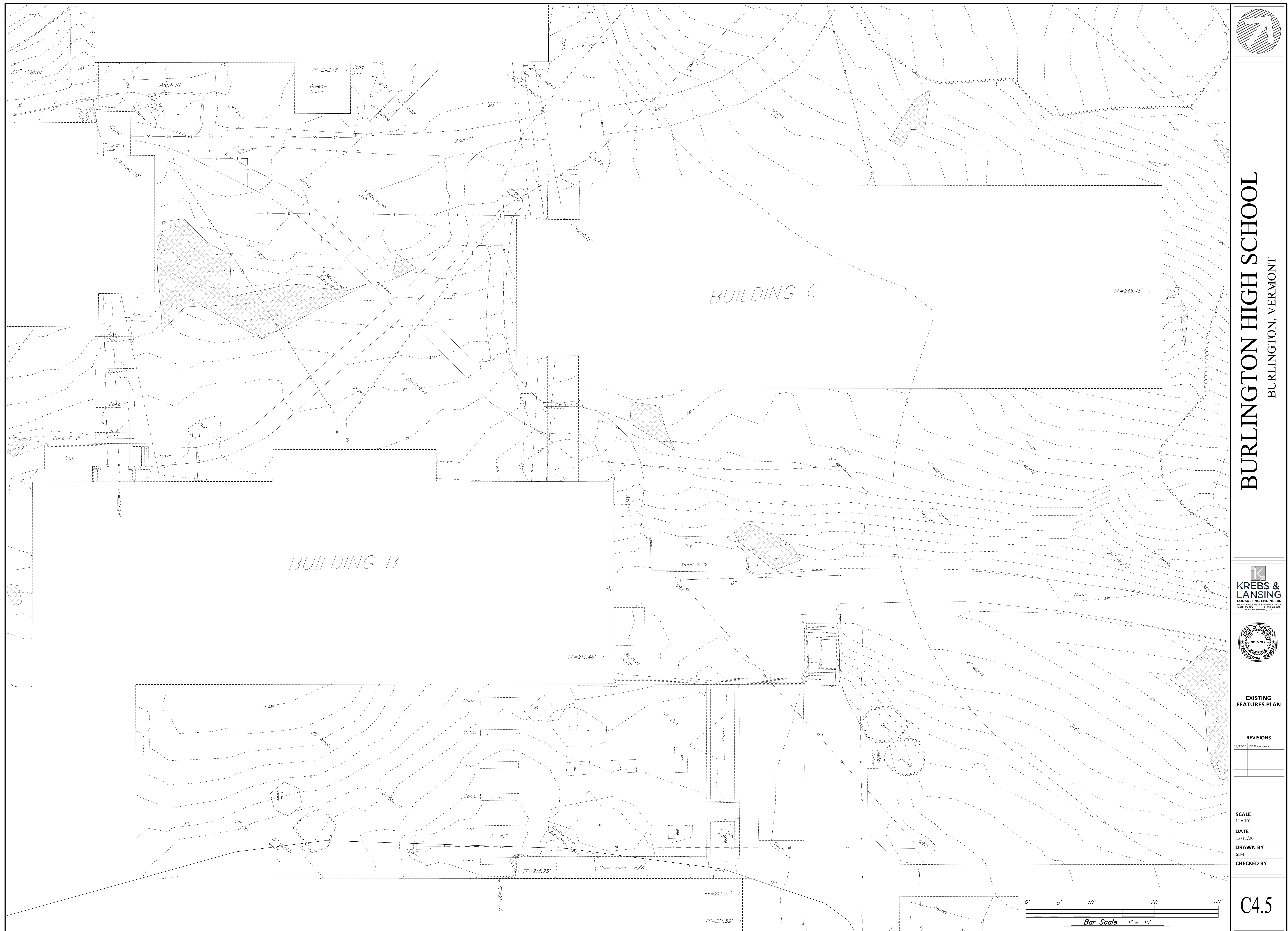
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12/11/20

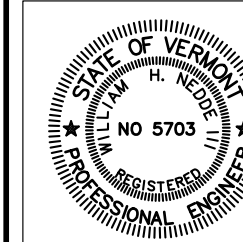
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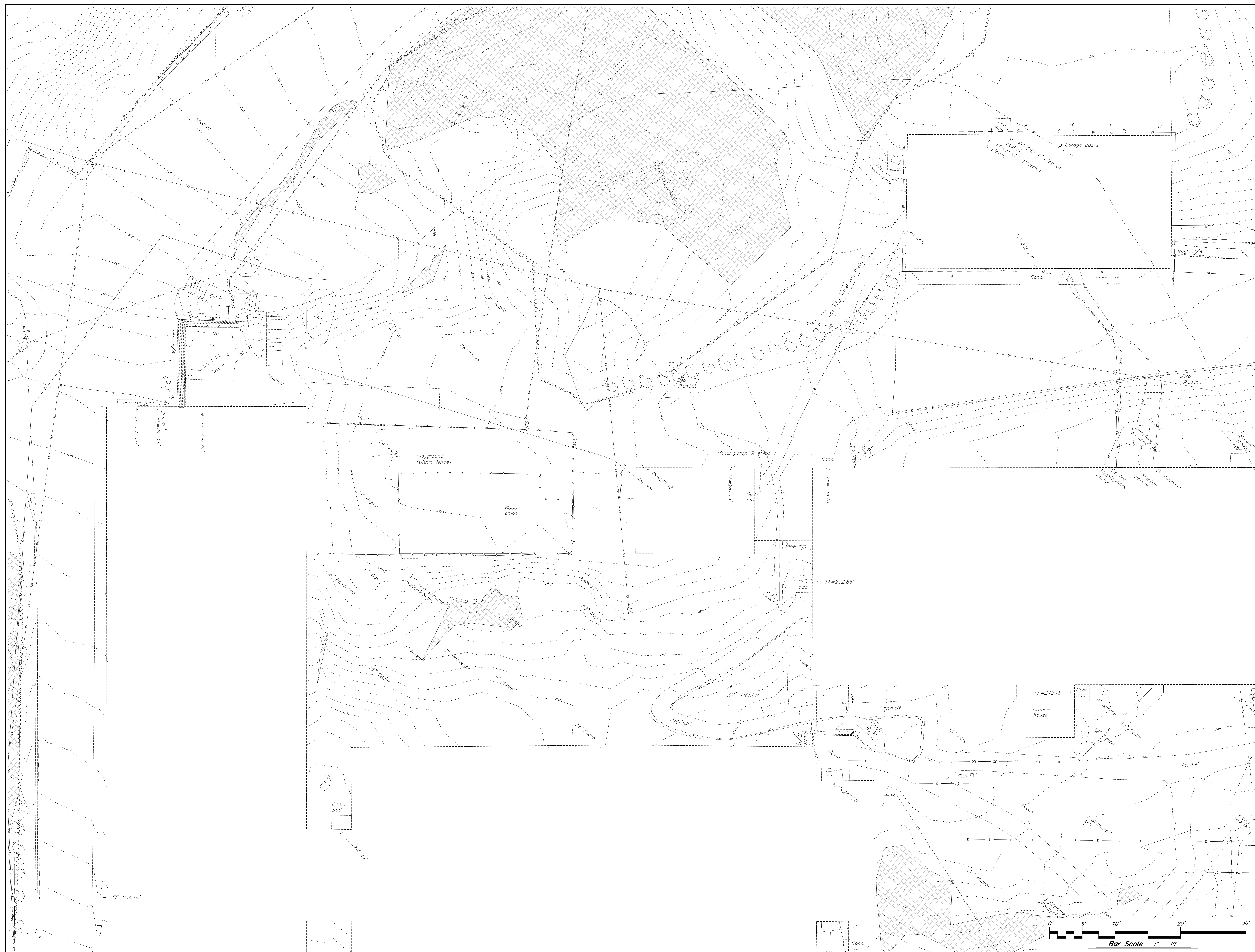
KREBS & LANSINGER
CONSULTING ENGINEERS
184 Main Street, Suite 201 Colchester, VT 05445
T: (802) 676-0375 F: (802) 676-0376

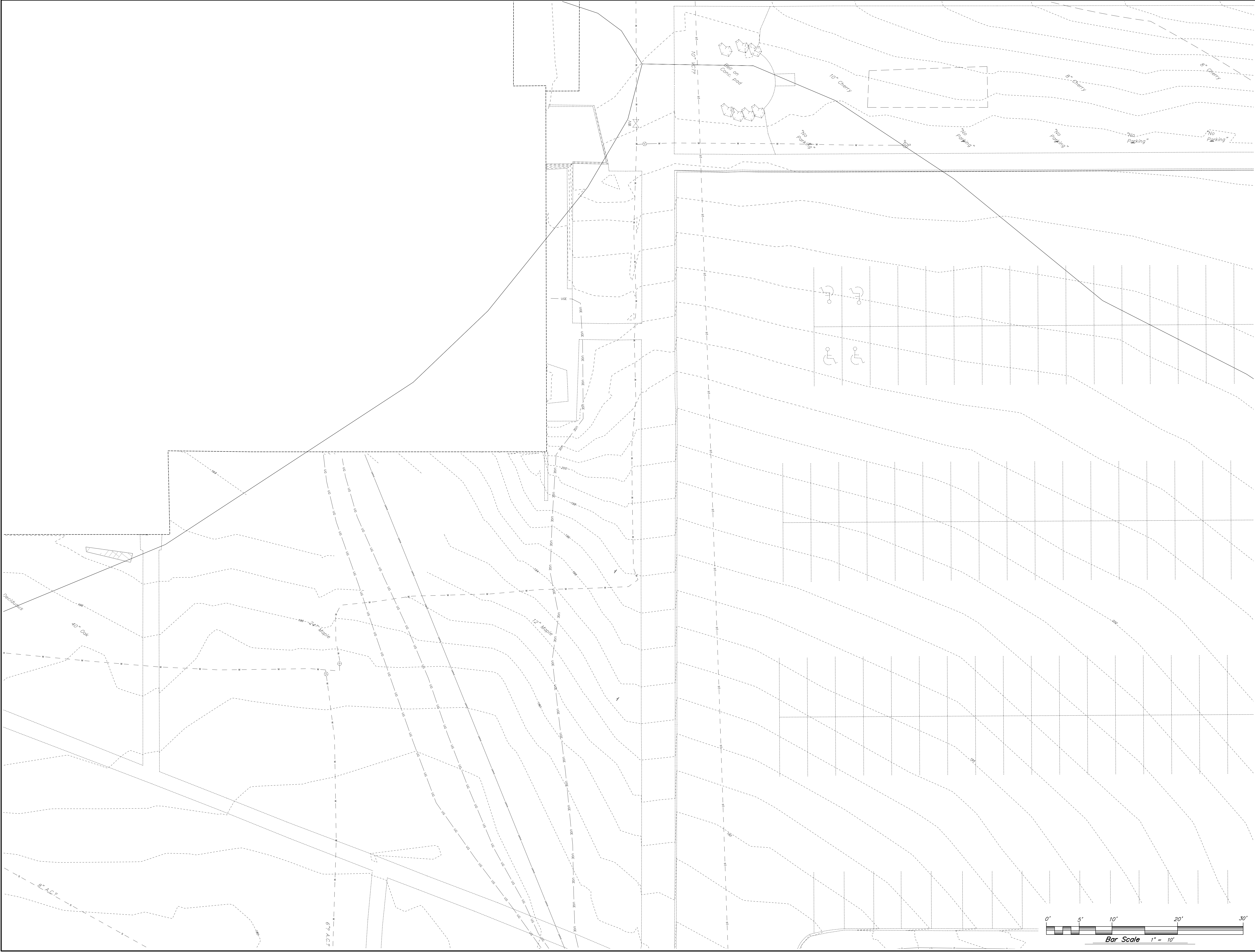


REVISIONS

12/17/20	DD Documents

C4.6





BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

EXISTING
FEATURES PLAN

REVISIONS

NO.	DATE	DESCRIPTION
1	12/17/20	30 Documents

SCALE
1" = 10'

DATE
12/11/20

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BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

EXISTING FEATURES PLAN

REVISIONS	
12/17/20	30 Documents

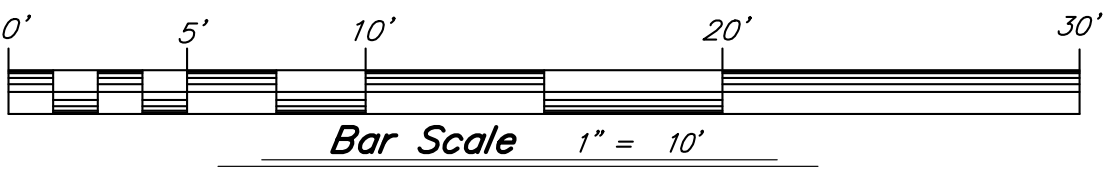
SCALE
1" = 10'

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LEGEND:

	Survey control point
	Utility pole with light
	Pole mounted stadium light
	Utility pole
	Guy wire
	Electric pull box
	Sanitary sewer manhole
	Sanitary clean out
	Storm sewer manhole
	Storm catch basin
	Gate valve
	Hydrant
	Deciduous tree
	Coniferous tree
	Ornamental bush or shrub
	Mail box
	Bollard
	Lighted bollard
	Sign
	Flag pole
	Natural gas valve
	Boulder
	Below grade
	Asbestos Concrete
	Raised planter (Concrete)
	Finished floor
	Force main
	Landscaping
	Retaining wall
	Structure
	Raised planter (wood)
	Enclosed overhead walkway
	Exposed ledge
	Wire fence
	Chain link fence
	W beam guide rail
	Sanitary sewer line
	Sanitary sewer force main
	Storm sewer line
	Storm sewer line with end section
	Water line
	Utility pole with overhead wire (electric)
	Underground electric line
	Underground communications line
	Natural gas line
	Overhead traffic signal wire
	Edge of gravel
	Edge of woods
	Contours based on field survey
	Contours based on Lidar

MANHOLE INFORMATION:

MH1 STORM SEWER 24" dia. round cover, Approx. 48" i.d. str Rim=181.42' Sump=173.18' Inv. NW=174.83' Inv. NNW=174.73' Inv. E=174.12' Inv. SE=174.4'± Inv. SW=173.07'	MH8 OIL/WATER SEPARATOR? 24" Round cover, Approx. 48" i.d. str Rim=219.27' Sump=205.07' Inv. N=209.87' (4" unknown type) Inv. S=213.62' (4" unknown type) Top of possible pipe running S=207.32'	26" Round cover, Approx. 48" i.d. str Rim=184.54' Inv. W=172.99' Inv. S=172.94'
MH2 SANITARY SEWER 24" dia. round cover, Approx. 42" i.d. str Rim=187.48' Inv. W=182.49' Inv. E=182.48'	MH9 SANITARY SEWER 24" Round cover, Approx. 48" i.d. str Rim=219.44' Inv. N=213.94' Inv. NNE=209.24' Inv. SSW=209.40' Inv. S=208.44'	MH15 SANITARY SEWER 23" Round cover, 48" i.d. str Rim=184.67' Inv. W=177.02' Inv. NW=176.71' Inv. S=176.33'
MH3 STORM SEWER 27" Round cover, Approx. 48" i.d. str Rim=191.35' Sump=185.90' Top of water=186.05' Inv. N=186.34' Inv. SW=186.02'	MH10 STORM SEWER Rim=248.78' Manhole cover is bolted shut.	MH16 SANITARY SEWER 26" Round cover, Approx. 48" i.d. str Rim=182.14' Inv. W=175.49' Inv. N=175.8'± Inv. E=174.91'
MH4 SANITARY SEWER Rim=195.82' Structure is partially under asphalt pavement and approx. 0.5'±' below grade.	MH11 STORM SEWER 24" Round cover, Approx. 36" i.d. str Rim=198.35' Sump=193.05' Inv. SW=193.32' Inv. NE=193.30'	MH17 SANITARY SEWER (Pump sta overflow tank) 26" Round cover, 48" i.d. of upper chamber of str Rim=177.37' Sump=164.47' Inv. N=169.72'
MH5 27" Round cover, Approx. 48" i.d. str Rim=194.16' Sump=185.11' Inv. NW=188.53' Inv. SE=185.16'	MH12 STORM SEWER 23" Round cover, 48" i.d. str Rim=190.75' Sump=184.15' Inv. SE=184.10'	MH18 SANITARY SEWER (Pump sta overflow tank) 26" Round cover, 48" i.d. of upper chamber of str Rim=177.44' Sump=163.84'
MH6 SANITARY SEWER 32" Round cover, Approx. 48" i.d. str Rim=207.81' Inv. N=202.96' Inv. N (lower pipe, recessed, unknown type/size)=198.61' Inv. S=198.67'	The bottom of this structure is almost entirely obstructed by plywood that appears to be part of the forms used to cast the walls of this structure.	MH19 STORM SEWER 24" Round cover, Approx. 60" i.d. str Rim=176.25' Sump=170.25' Inv. N=170.87' Inv. E=170.6'±
MH7 SANITARY SEWER 24" Round cover, Approx. 48" i.d. str Rim=219.27' Inv. N=214.09' Inv. S=208.43'	MH13 STORM SEWER 27" Round cover, Approx. 48" i.d. str Rim=192.57' Sump=186'± Inv. W=186.07' Inv. E=186.27' Inv. SE=186.17'	MH20 STORM SEWER 27" Round cover, Approx. 48" i.d. str Rim=184.68' Sump=178.2'± Inv. W (18")=178.43' Inv. W (6")=180.13' Inv. E=178.48' Inv. SW=178.53'
	MH14 SANITARY SEWER	MH21 SANITARY SEWER 26" Round cover, Approx. 48" i.d. str

NOTES

Property lines based on a boundary survey performed during September/October 2014. See reference map 1.

Underground utilities based on markout performed during July/August 2014 by Vermont Underground Locators unless otherwise noted.

Some underground utilities based on reference maps provided by Burlington School District or the City of Burlington.

The location of underground improvements or encroachments are not always known and often must be estimated. If any underground improvements or encroachments exist or are shown, the improvements or encroachments are not covered by surveyor's certification. Utility locations shown, if any, are approximate and subject to verification by the contractor.

Survey is referenced horizontally to Vermont Coordinate System 1983 and vertically to NAVD 88 based on OPUS processed GPS static observations taken on two intervisible survey traverse stations utilizing a Trimble 5700 GPS.

Contours for the wooded area north of the school were generated based on GIS shapefiles downloaded from the Vermont Center for Geographic information website on 9/17/2014. All other contours were generated based on an actual field survey.

Field survey completed July-September 2014 utilizing a Trimble S6 total station.

Possible water line; however, Richard Mulvaney of Vermont Underground locators stated that the tracing signal was either lost or uncertain.

CATCH BASIN INFORMATION:

CB1 24"x24" Square grate, Approx. 48" i.d. str Rim=180.66' Sump=176.56' (to top of debris) Top of Water=176.96' Inv. N=177.0'± (Inaccessible due to offset cover) Inv. S=176.91'	CB2 24"x24" Square grate, Approx. 48" i.d. str Rim=182.41' Sump=177.11' (to top of debris) Top of Water=178.06' Inv. W=178.03'	CB3 24"x24" Square grate Rim=213.08' Sump=209.43' Top of water=209.9 Inv. SW=209.60'	CB4 24"x24" Square grate, Approx. 42" i.d. str Rim=201.00' Top of Water=187.70' (to top of debris) Top of Water=189.90' Inv. S=188.6'± (Pipe below water level)	CB5 24"x24" Square grate, Large str-not measured Rim=248.72' Sump=242.02' Top of Water=244.07' No visible inverts. Storm line shown going south to sand filter based on reference map.	CB6 27"x27" Square grate, 24"x24" str Rim=239.39' Sump=236.99' Top of Water=237.39' Inv. W=237.39' Inv. E=237.52'	CB7 30" Round grate, Approx. 42" i.d. str Rim=241.07' Sump=234.82' (to top of debris) No visible inverts	CB8 24"x24" Square grate, Approx. 42" i.d. str Rim=230.69' Sump=224.49' No visible inverts	CB9 24"x24" Square grate, Approx. 36" i.d. str Rim=220.04' Sump=214.14' Inv. E=214.18'	CB10 Rectangular grade, Approx. 42" i.d. str Rim=208.72' Sump=205.20' Inv. E=205.20'	CB11 30"x30" Square grate, Approx. 42" i.d. str Rim=209.26' Sump=202.96' Inv. NW=203.69' Inv. S=203.05'	CB12 30" Round grate, Approx. 42" i.d. str Rim=216.98' Sump=213.38' Top of Water=214.83' No visible inverts	CB13 24"x24" Square grate, Approx. 18"x24" str Rim=199.86' Sump=194.76' Inv. S=194.68' (Inv. is recessed. Pipe size and type are approximate. This line appears to run south and tie directly into the storm line that runs east to west and passes just south of the catch basin.)	CB14 24"x24" Square grate, Approx. 24"x24" str Rim=198.96' Sump=195.26' Inv. N=195.36' (This line appears to run northwest and tie directly into the storm line that runs east to west and passes just north of the catch basin.)	CB15 30"x16" Rectangular grate Rim=189.30' Sump=183.90' (to debris) Top of water=184.90' Inv. SW=184.90'	CB16 24"x24" Square grate Rim=188.01' Sump=183.96' Top of water=184.33' Inv. NE=184.39'	CB17 24"x24" Square grate Rim=187.37' Sump=180.48' Top of water=181.52' Inv. SW=181.62' Inv. NW=183.67' Inv. N=183.42' Inv. NE=181.82'	CB18 24"x24" Square grate Rim=183.50' Sump=178.93' Inv. N=178.85'	Storm line is 8" PVC but appears to connect to the 12" CMP in MH23.	CB19 24"x24" Square grate Rim=179.14' Inv. NW=179.5'± Inv. SE=174.56'	CB20 Conc. drainage structure 24"x24" Square grate, 48"x48" i.d. str Rim=174.60' 36"x6" Weir inv.=172.86' 3" Orifice (inlet pipe below weir) Inv. =171.43' Sump=166.90' Inv. SW=167.00' Inv. E=167.1'±	CB21 24"x24" Square grate, Approx 60" i.d. str Rim=175.71' Sump=168.11' Top of Water=171.91' Inv. W=171.91' Inv. E=171.94'	CB22 32" Round grate Rim=175.61' Sump=171.44' Top of Water=172.41' Inv. N=173.59' Inv. E=172.48' Inv. SE=172.38' Inv. W=172.31'
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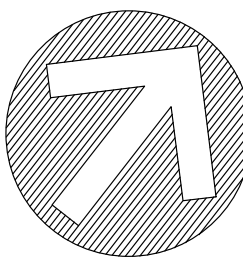
REFERENCE MAPS:

"BURLINGTON HIGH SCHOOL...ATHLETIC FIELD SITE GRADING & UTILITY PLAN..." prepared by Freeman-French-Freeman, and Severud-Elstad-Krueger Associates, dated July 6, 1962. Filed at Burlington High School.

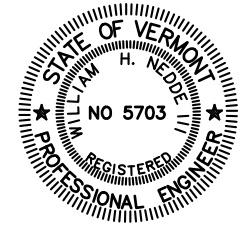
"WOOD CHIP CONVERSION..." Sheets C-1 & C-2, prepared by Grover Engineering, PLC, dated 3/8/2006. Filed at Burlington High School.

"BURLINGTON HIGH SCHOOL ATHLETIC FACILITIES RENOVATION..." Sheets L-1, C-1, C-4 PS-1 & PS-2, prepared by Gale Associates, Inc., dated 4/17/2006. Filed at Burlington High School.

"SURVEY PLAT SHOWING A PORTION OF CERTAIN LANDS OF CITY OF BURLINGTON KNOWN AS BURLINGTON HIGH SCHOOL..." prepared by Gregg M. Pawlowski, L.S., AES Northeast, PLLC, dated November __, 2014. Filed at AES Northeast, PLLC.



BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT



EXISTING
FEATURES
SPECIFICATIONS

REVISIONS

12/17/20	00 Documents

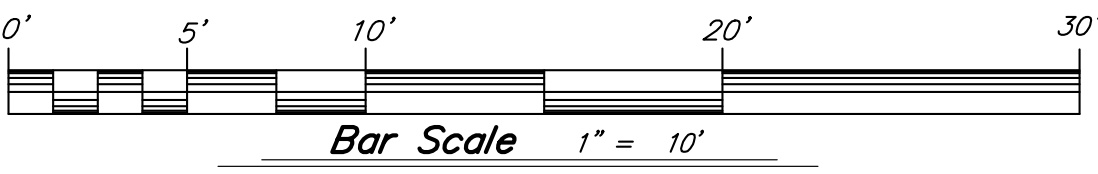
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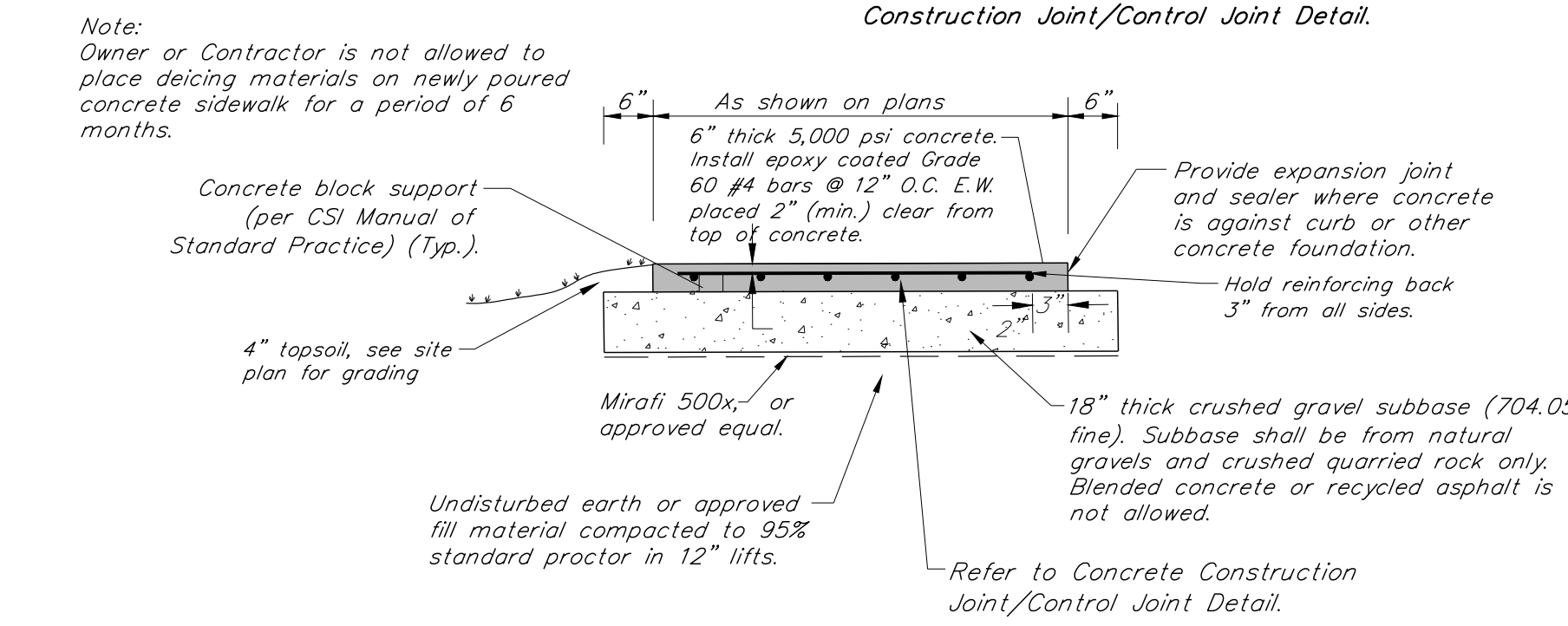
All concrete used in the construction of Multi-Use Concrete shall be made with Portland cement. The concrete shall meet section 541 of the State of Vermont Standard Specifications for Construction, have 28 day compressive strength of 5,000 psi, and meet the following mix design.

Max. water-cement ratio (lb./lb.)	0.44
Min. cement factor (lbs./cu. yd.)	705
Entrained air content (%)	5 - 7
Slump (inches, before adding HRWR)	2 - 4

Use air entrained agent conforming to ASTM C260 with 5-7% total air. Use high range water reducing agent conforming to ASTM C494 in all concrete.

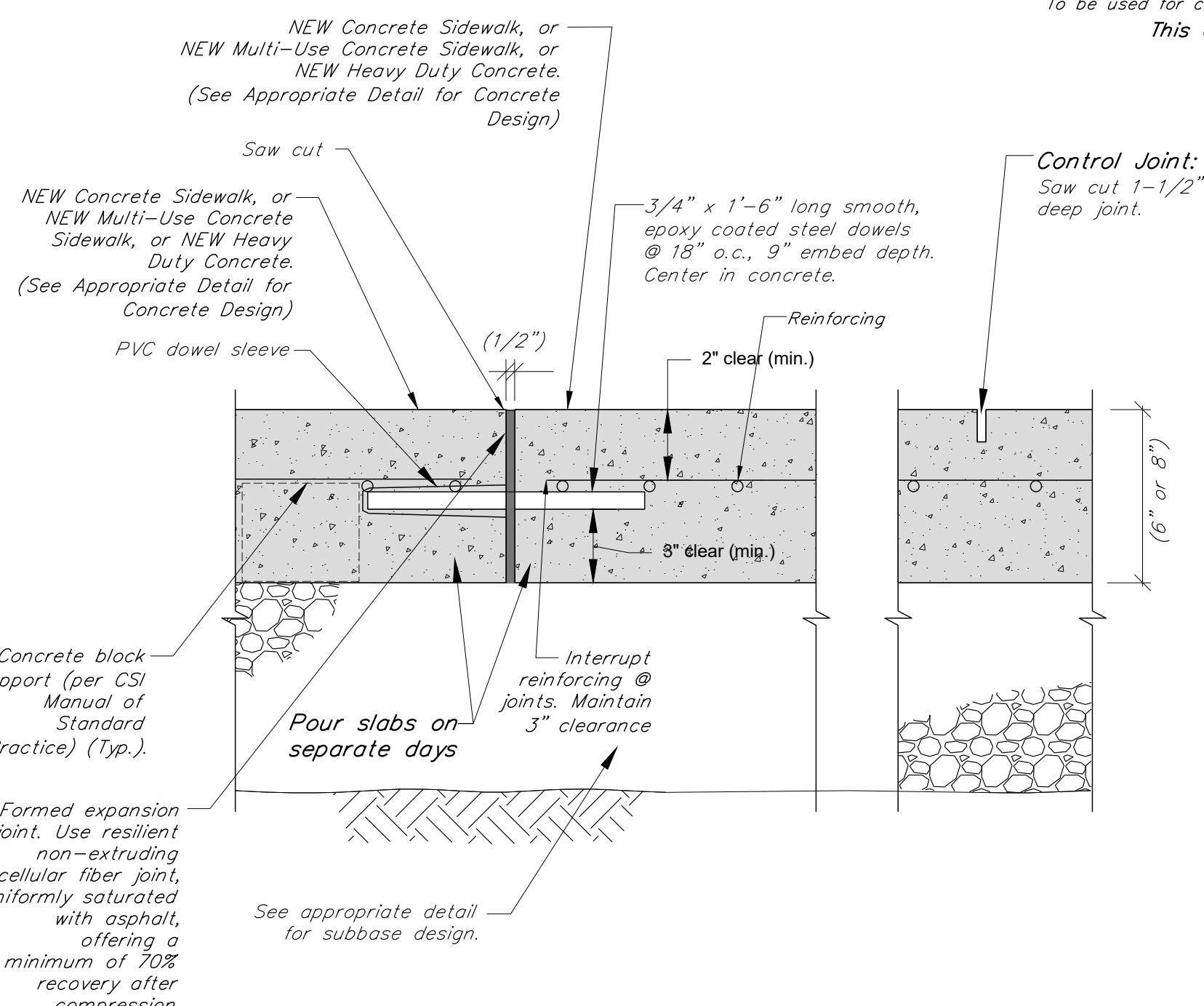
- Concrete Slab**
- Broom finish concrete
 - Construction joints shall be spaced max. 24' in all directions. See New Concrete Construction Joint Detail.
 - See Site Plan for construction joint layout.
 - Saw cut control joints 1-1/2" depth at intervals equal to width of sidewalk.
 - Apply SpecChem Cure Shield EX cure and seal product to all concrete surfaces, per the manufacturer's specifications.
 - Concrete may not be poured if frost is present or thawing in the subgrade, if the temperature is 40° F or less, or during unseasonable weather conditions.
 - Concrete construction and curing shall conform to section 618.03 of the current VDOT Standard Specifications for Construction

Concrete shall be installed in alternating pours at construction joints. Continuous pours through construction joints is not allowed. Refer to Concrete Construction Joint/Control Joint Detail.



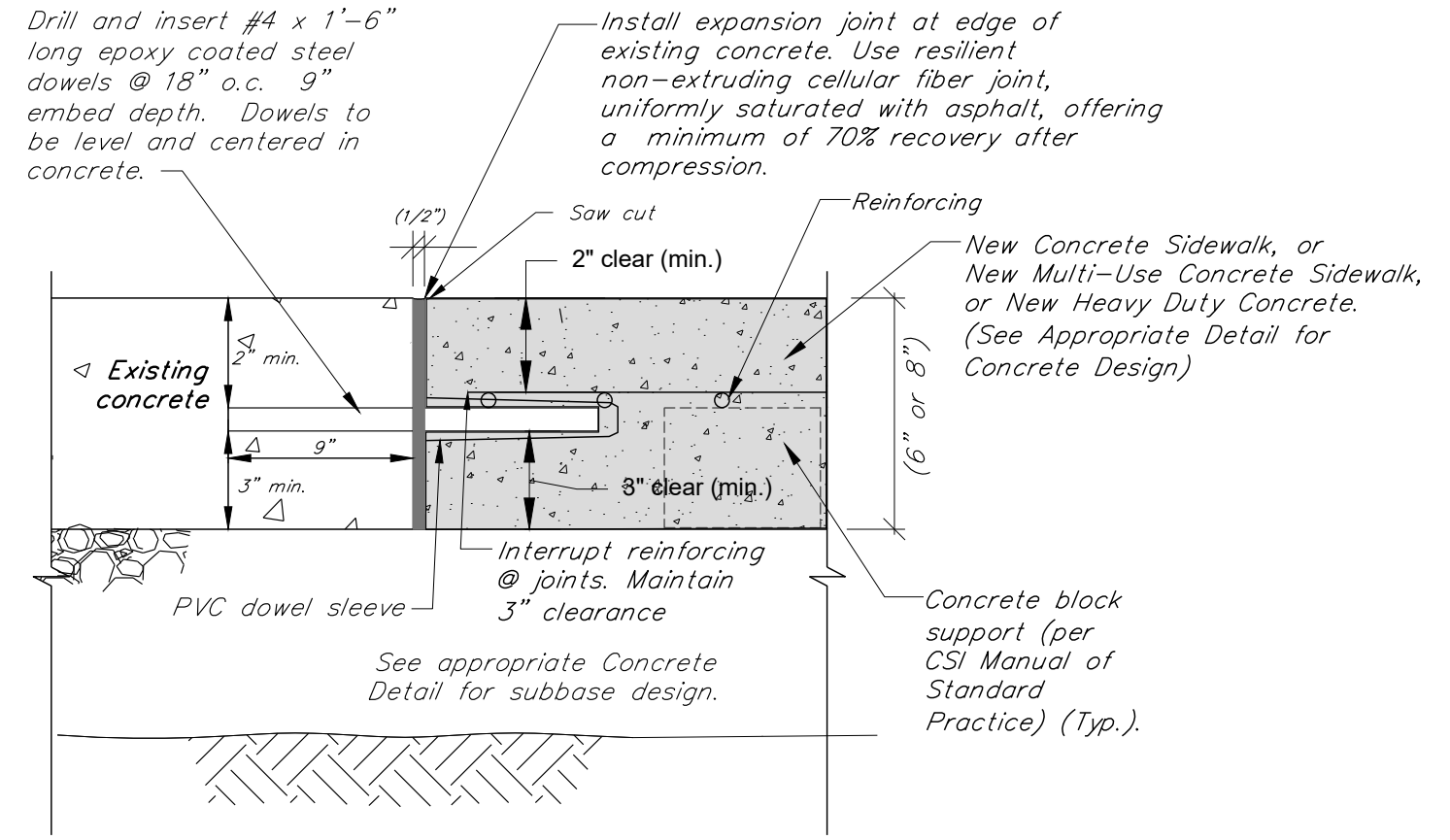
New Multi-Use Concrete Sidewalk Detail

To be used for concrete sidewalk that is not heavy duty and that is wider than 6'. This detail to also be used for Bike Rock Concrete N.T.S.



New Concrete Construction Joint/Control Joint Detail

Contractor to use this pinning detail to pin NEW concrete to NEW concrete (walk to walk, walk to buildings, walk to retaining walls, stairs, etc.) N.T.S.

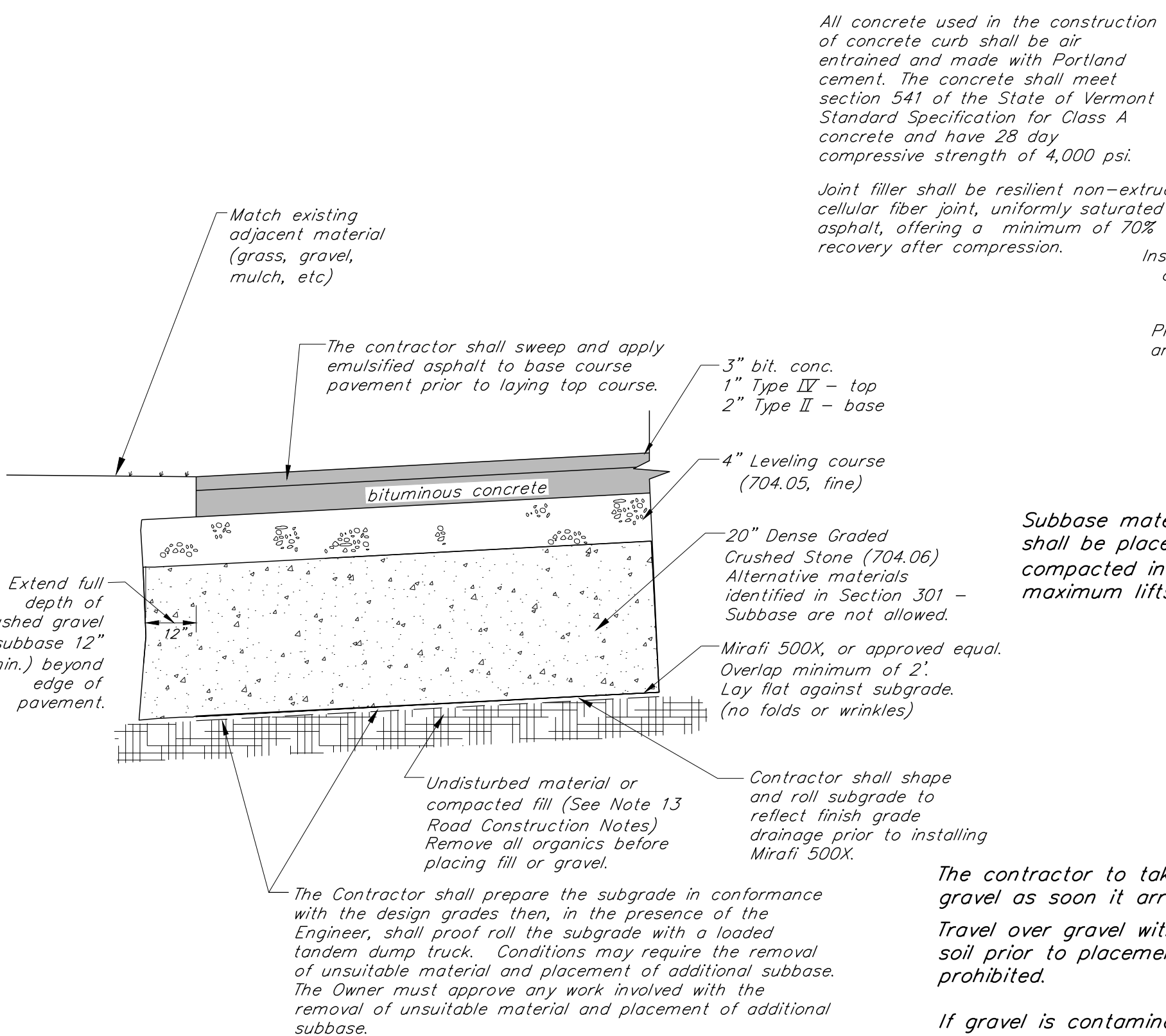


Construction Joint Detail for Connection to Existing Concrete

Contractor to use this pinning detail to pin NEW concrete to EXISTING concrete (walk to walk, walk to buildings, walk to retaining walls, stairs, etc.) N.T.S.

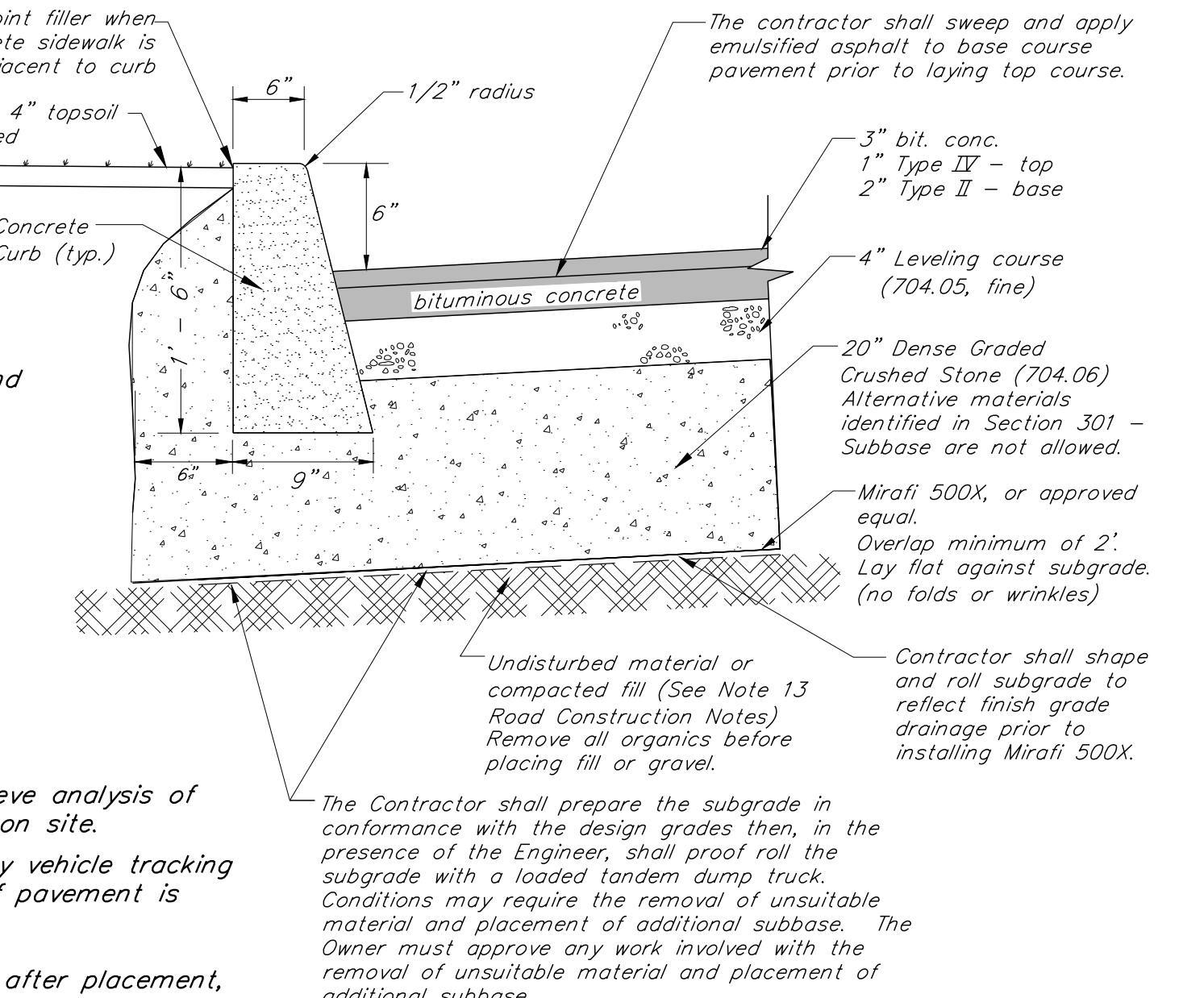
- Concrete Curb**
- Broom finish concrete
 - All joints to be saw cut
 - Expansion/contraction joints every 20' with 1/2" joint filler.
 - Score 1/3 total depth at 10' intervals
 - Apply SpecChem Cure Shield EX cure and seal product to all concrete surfaces, per the manufacturer's specifications.
 - Concrete may not be poured if frost is present or thawing in the subgrade, if the temperature is 40° F or less, or during unseasonable weather conditions.
 - Concrete curb radii less than 200 ft shall be formed with flexible forms

The Engineer shall be contacted at least 24 hours prior to forming concrete curb to review layout.



Without Concrete Curb

N.T.S.



With Concrete Curb

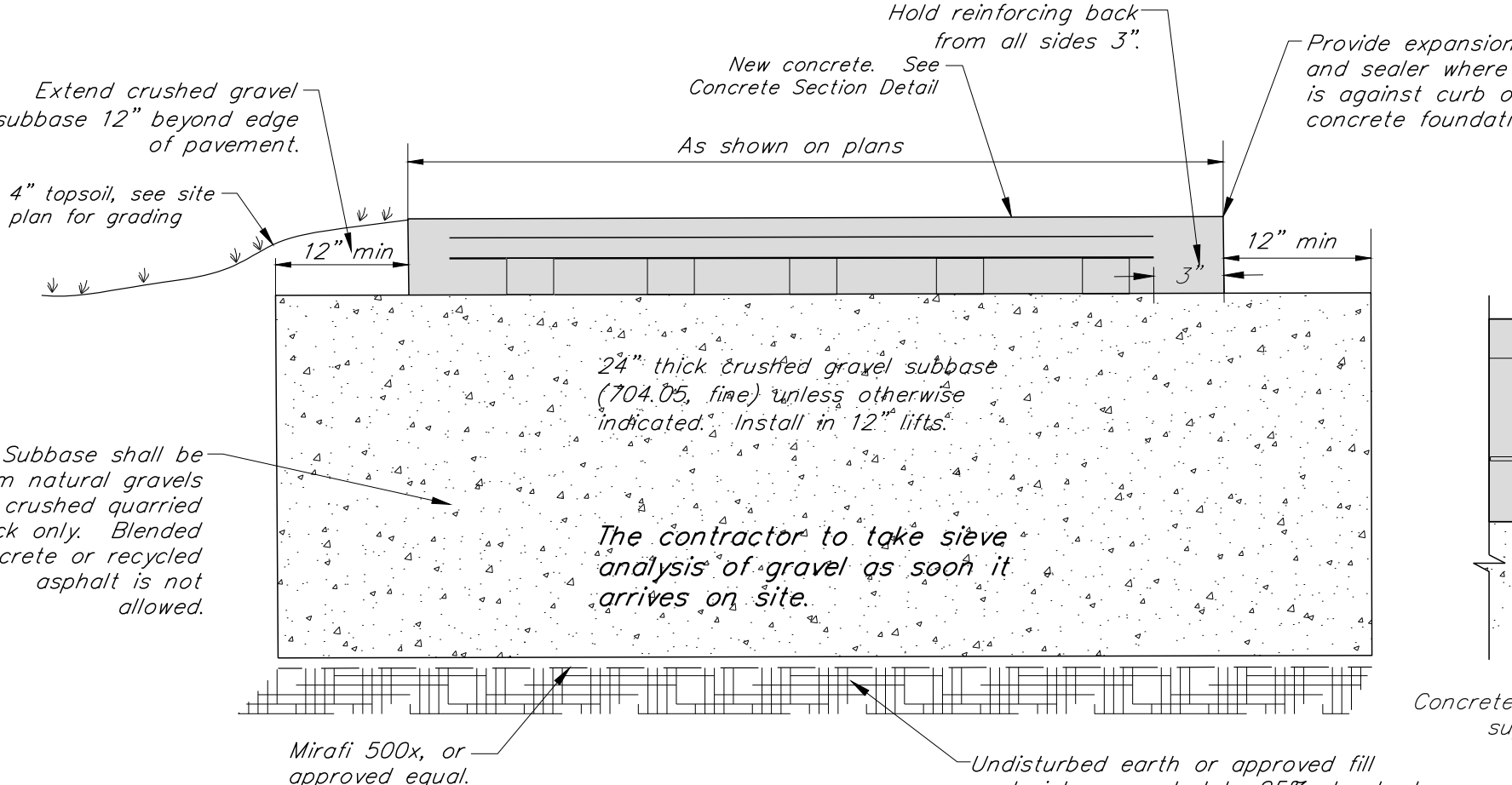
Typical Road Cross Section Detail

N.T.S.

Travel over gravel with any vehicle tracking soil prior to placement of pavement is prohibited.

If gravel is contaminated after placement, the Contractor shall be responsible removal of all contaminated gravel and paying for all recommended sieve analysis as determined by the Engineer.

Contractor shall pour and finish one Sample Panel for approval by Owner and Engineer. All concrete shall match the quality and appearance of the Sample Panel. Any concrete that does not meet the standard shall be removed and replaced at no cost to the Owner.

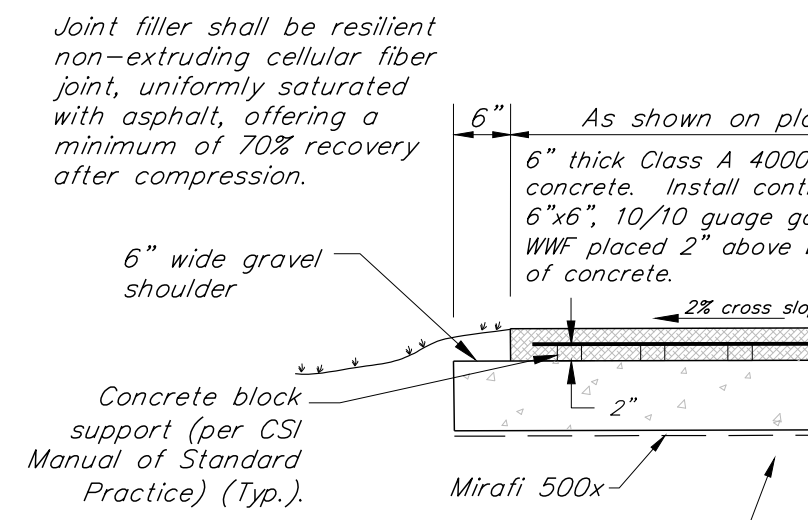


Subbase Section

New Heavy Duty Concrete Detail

N.T.S.

All concrete used in the construction of concrete sidewalk shall be air entrained and made with Portland cement. The concrete shall meet section 541 of the State of Vermont Standard Specification for Construction for Class A concrete and have 28 day compressive strength of 4,000 psi.



New Concrete Sidewalk Detail

(For Concrete Walks 6ft. Wide or Less) N.T.S.

All construction joints shall be doweled. Refer to Concrete Construction Joint/Control Joint Detail.

- Concrete Notes**
- Broom finish concrete
 - Construction joints shall be spaced max. 24' in all directions. See Concrete Construction Joint Detail.
 - Score control joints 1-1/2" depth at intervals equal to width of sidewalk. All joints shall be saw cut.
 - Apply SpecChem Cure Shield EX cure and seal product to all concrete surfaces, per the manufacturer's specifications.
 - Concrete construction and curing shall conform to section 618.03 of the current VDOT Standard Specifications for Construction

Note: Owner or Contractor is not allowed to place deicing materials on newly poured concrete sidewalk for a period of 6 months.

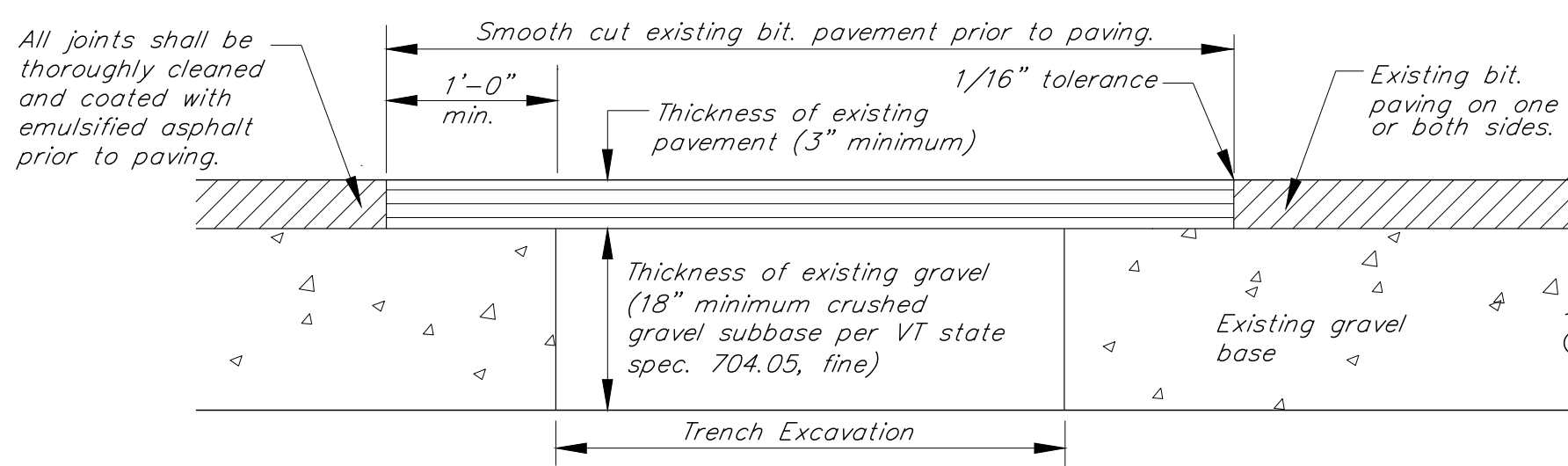
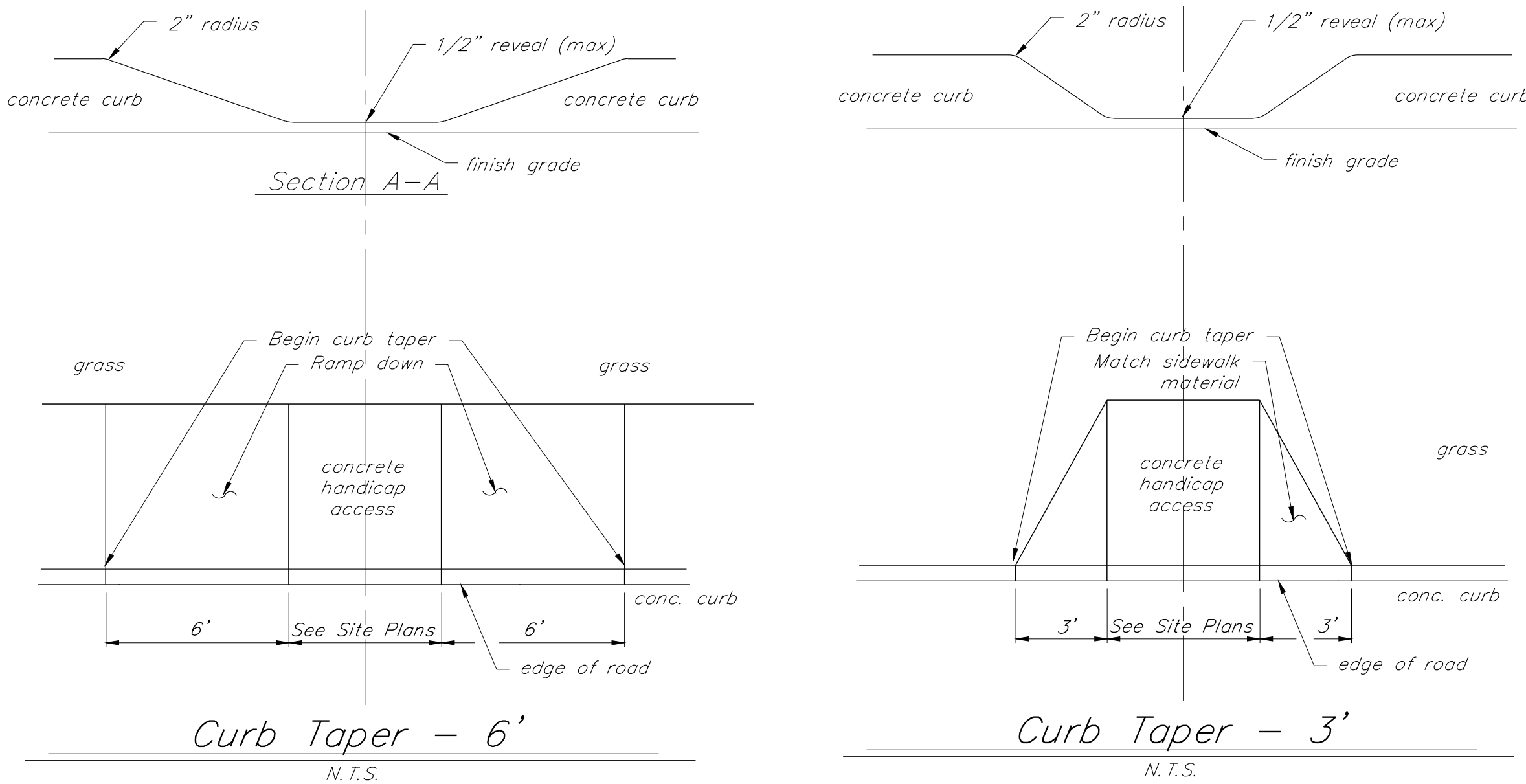
Road Construction Notes (All references to road shall apply to parking areas as well.)

- New road shall be constructed to the line and grade shown on the drawings. The road and utility locations shall be as typically detailed unless otherwise shown.
- All road and parking construction shall be completed in accordance with the Vermont Agency of Transportation "Standard Specifications for Construction" 2011, hereafter called Vermont Highway Specifications, specifications found on these plans, and project specifications. In case of conflict, the more stringent specification shall apply as determined by the Engineer.
- The Contractor shall follow Vermont Highway Specifications (2018) Section 203.11 for placing and spreading embankments.
- Fill material for road embankment shall meet Note #13 below and be approved by the Engineer. Fill shall be placed in 12" lifts, wetted and compacted with satisfactory compaction equipment to 95% of maximum density (Standard Proctor).
- Road in fill sections shall be placed and compacted a minimum of 3 feet above top of any utility to be installed before trench is excavated for pipe placement. In trenches and cut sections, the Contractor shall provide all necessary sheeting, shoring and bracing to maintain compliance with all OSHA/ANSI regulations.
- Methods for construction of subgrade shall conform to Vermont Highway Specifications (2018) 203.12 or as determined by the Engineer.
- Any subgrade or subbase disturbed by Contractor, or rendered unsuitable by construction machinery, shall be removed and replaced with approved granular backfill at the Contractor's expense. The subgrade shall be compacted to attain at least 95% of the maximum density (Standard Proctor) before placing road or embankment materials.
- The Owner will pay for on site soils testing (compaction, sieve, and proctor). The Contractor shall provide minimum 24 hour notice to testing agency prior to placement of any item to be tested.
- Sand borrow and cushion shall conform to Vermont Highway Specifications (2018) 703.03. Granular borrow shall conform to the Vermont Highway Specifications 703.04.
- Gravel subbase for pavement shall conform to Vermont Highway Specifications (2018) 704.05, course. Substitute materials identified in VDOT Specifications Section 301 - Subbase (PCA and RCA) are not allowed.
- Leveling course shall conform to Vermont Highway Specifications (2018) 704.05, fine grading. Shoulders shall conform to Section 704.12, Aggregate for Shoulders.
- Bituminous concrete pavement shall conform to Vermont Highway Specifications (2018) Section 404 and 406. Binder course shall be Type I + II, and finish wearing course shall be Type III, IV, or as detailed.
- Embankment fill for all impervious areas, EXCLUDING BUILDINGS, shall be a sieve specification as follows:

Sieve	% Finer
100	100
2"	85-100
#4	60-100
#200	30 maximum
- Dense graded crushed stone, crushed gravel and sand borrow shall not be contaminated by work. Construction traffic shall not travel over exposed areas of this material.
- Contractor is responsible for all pavement markings (e.g. parking striping, handicap markings, stop bars, etc.) shown or implied on the Plans. Refer to pavement marking requirements on CG-04.

Construction Notes

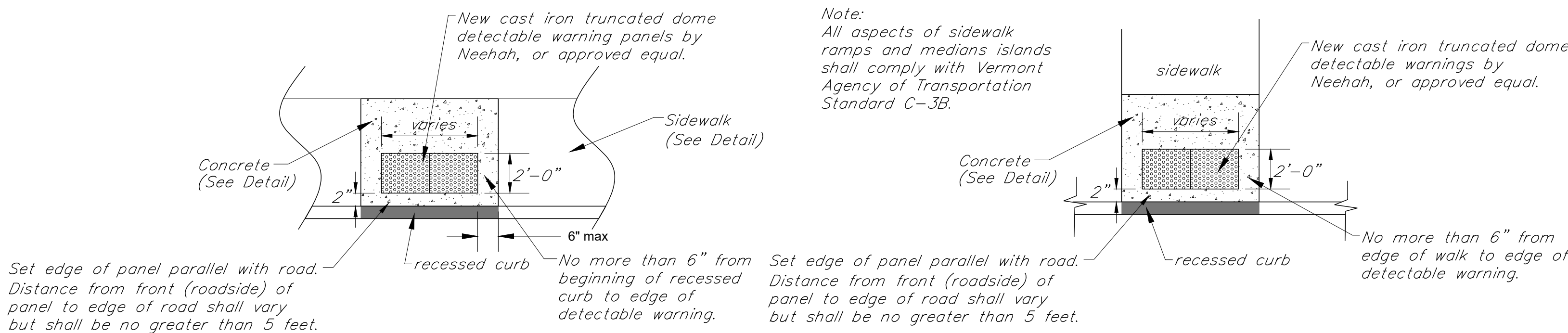
- The methods and materials of construction shall conform to the latest standards of the City of Burlington and the State of Vermont. All work shall be in conformance with all permits and approvals issued for the project. In case of conflict, the more stringent specification shall apply as directed by Engineer. All work shall be done in a workmanlike manner and completed in the time specified by Owner.
- The Contractor shall be responsible for all work and materials shown and required to make the job complete. These drawings do not show every fitting or appurtenance. Materials shall be as specified on the drawings. Manufacturer's product specifications shall be submitted for all materials to the Engineer for approval prior to installation.
- The location and size of existing underground utilities is not warranted to be exact or complete. The Contractor shall field locate all utilities and shall contact the affected utility company, the Engineer and the City of Burlington prior to making any hook ups. The Contractor shall be solely responsible for all existing utilities and their uninterrupted services. All off-site backfill, sheeting and shoring, dewatering, clearing and grubbing, erosion control, dust control, traffic control, grading, and all incidentals shall be included as part of the required work.
- Repair of all disturbed areas, grading, seeding, mulching, repair of roads and curbs, paving, and other incidentals are included as part of the required work. All disturbed areas shall be loamed and mulched until permanent ground cover is established.
- The Contractor shall verify all horizontal control and temporary bench marks before use.
- The workmen and public shall be protected by the Contractor from any and all hazards connected with the construction work. Open trenches, materials, or equipment within the working limits are to be guarded by the use of adequate barricades or flag men. All barricades left in position overnight are to be properly lighted. Kerosene pots are not acceptable. When work narrows the usable pavement, flag men shall be employed to aid the flow of traffic so that there will be no undue delays. The Contractor shall be held responsible for the safety of all workmen and the general public and all damages to property occurring from or upon the work occasioned by negligence or shall be held responsible for the safety of all workmen and the general public and all damages to property occurring from or upon the work occasioned by negligence or day or night within the working area. All work shall be in conformance to OSHA regulations, Title 19, Parts 1926.651 and 1926.652, and applicable to VOSHA regulations.
- Definition of "Preconstruction Excavation" for these contract documents shall be:
The site contractor shall expose utility and obtain all necessary information, including but not limited to, invert elevation, size, depth, pipe type, joint location, etc. Contractor shall transit survey the location and elevations of the utility. Contractor shall provide the engineer with sketches indicating horizontal and vertical information of pipe or conduit type and size, cross-section information, concrete encasement information (top and bottom elevations, width, etc.), joint location, etc. of each required existing underground utility. Accuracy of horizontal location is within 1 foot, and accuracy of vertical elevation is within 0.02 ft. (1/4"). Coordinate all excavation with City, Owner, and Engineer. Preconstruction excavations shall occur prior to ordering structures and prior to utility construction, to facilitate redesign if necessary.
- Contractor shall contact Dig Safe prior to any excavation.
- All new storm extending from catch basin structures shall be laid with a laser to elevation and slope as shown on the plans.
- The Contractor shall sawcut all existing pavement to be removed. The Contractor shall minimize the pavement area disturbance. Contractor shall be responsible for all pavement repair and restoration necessary to complete the work.
- The Contractor shall be responsible for all construction layout.
- Temporary silt fence shall be erected prior to any clearing or construction. Fencing may be erected in phases, but in no case shall construction of clearing proceed fencing. Special areas may be designated by the Owner for preservation of existing trees. These areas shall be the Contractor's responsibility to insure no damage is done to designated trees.
- Existing plantings are located in general areas as shown on the plans. Contractor shall protect plantings scheduled to remain so as not to damage these or their root systems.
- Contractor shall comply with all permits and approvals issued for this project.
- Contractor shall sign on as the Co-Permittee for the State of Vermont Erosion Prevention and Sediment Control permit for the project.
- Slope stability upon unsaturated soil conditions. If during construction saturated soils are encountered, contact the Engineer immediately.



- Set up and maintain signs and other safety control devices.
- Reshape hole and patch area by cutting with a concrete saw into square or rectangular shape and cut side faces vertically. Reshape downward solid material and around hole to sound pavement.
- Backfill trench in 6" lifts and compact each lift to 95% of maximum density of optimum moisture content as determined by ASTM D698 standard proctor.
- Remove all loose material and thoroughly sweep the hole area clean of mud and standing water.
- Apply liquid asphalt tack to vertical faces in a uniform manner. Do not puddle tack coat on bottom of hole.
- Fill top of hole with type II bituminous concrete and compact in lifts no more than 2" thick. Each lift should be thoroughly compacted with a vibratory plate compactor or a portable roller. Experience has shown that 15 to 20 passes with a vibratory roller and mix temperature above 250°F (121°C) are necessary to ensure good compaction. Hand tamp should only be used for small areas (less than 1 s.f.)
- Clean up area. Do not leave excess fill or excavated material on the pavement. Remove safety signs.

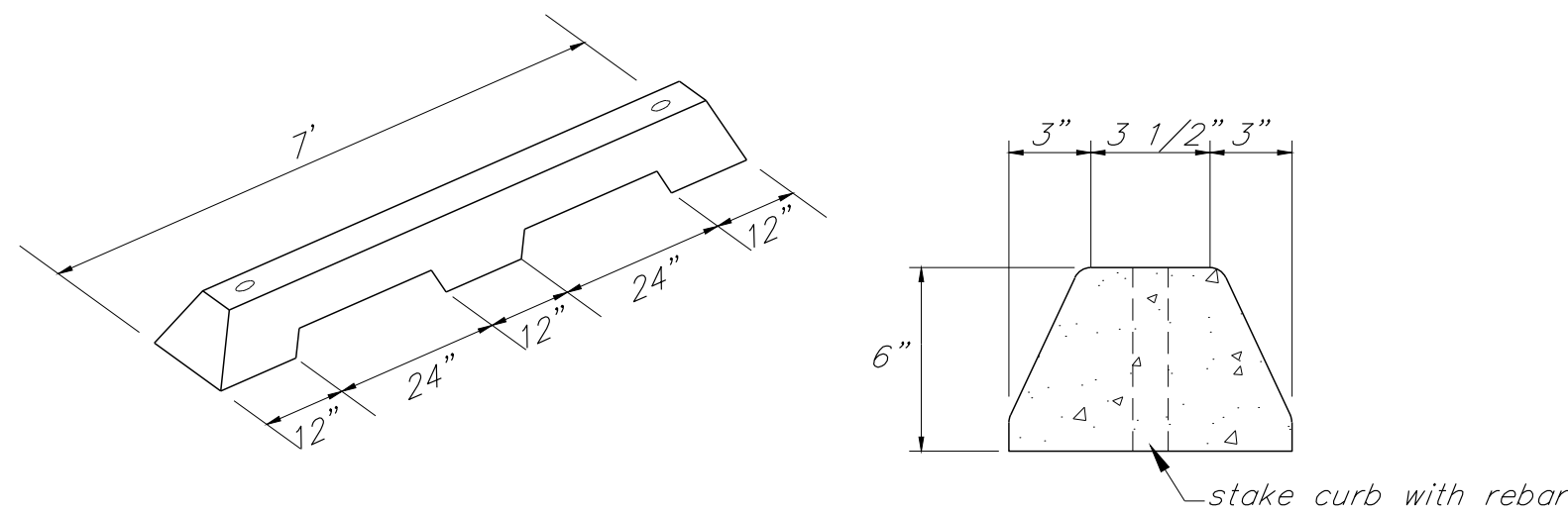
Replacement of Existing Road Subbase and Bituminous Pavement

N.T.S.



Detectable Warning Placement Detail

N.T.S.

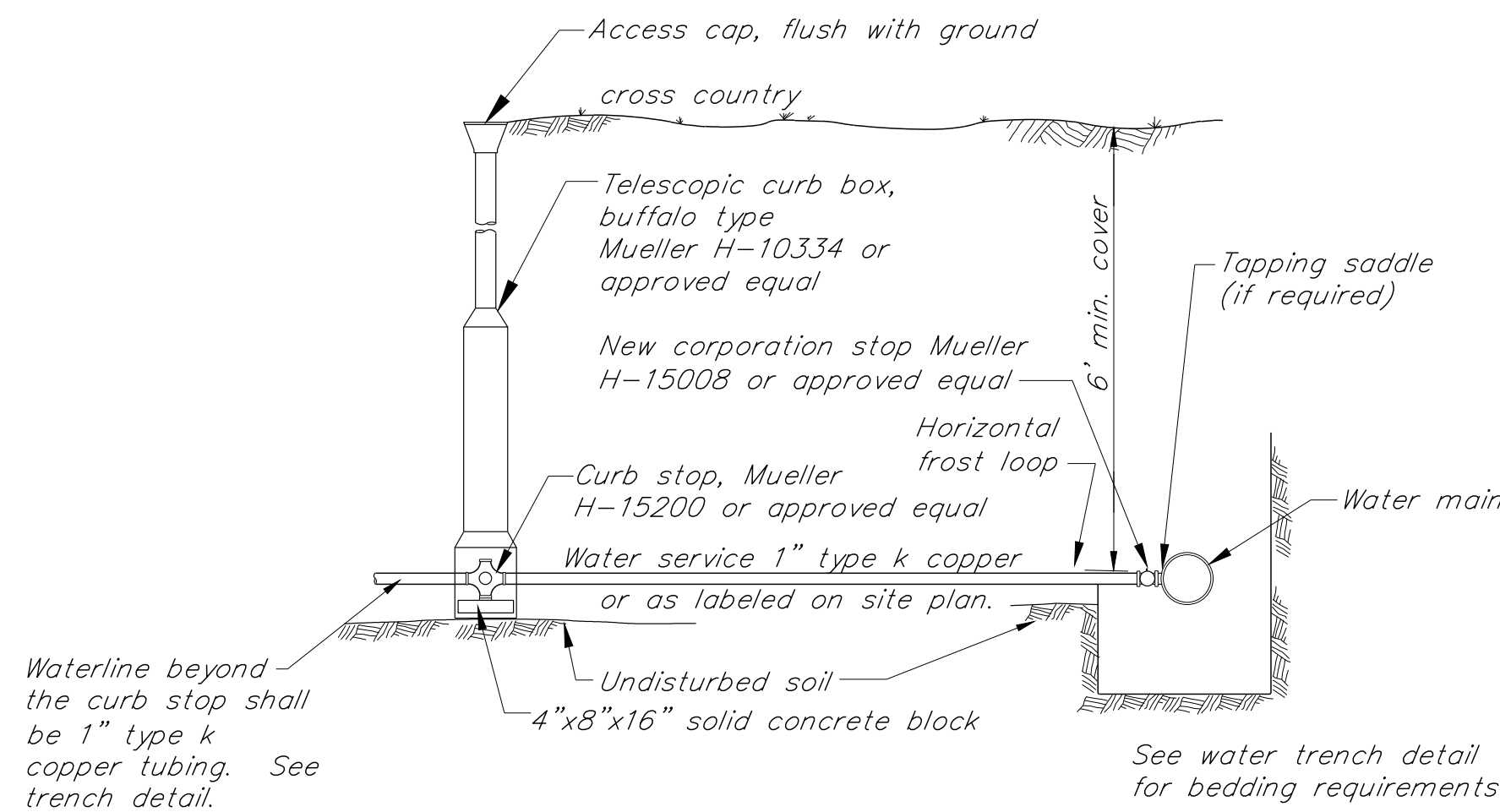


Typical Precast Wheel Stop

N.T.S.

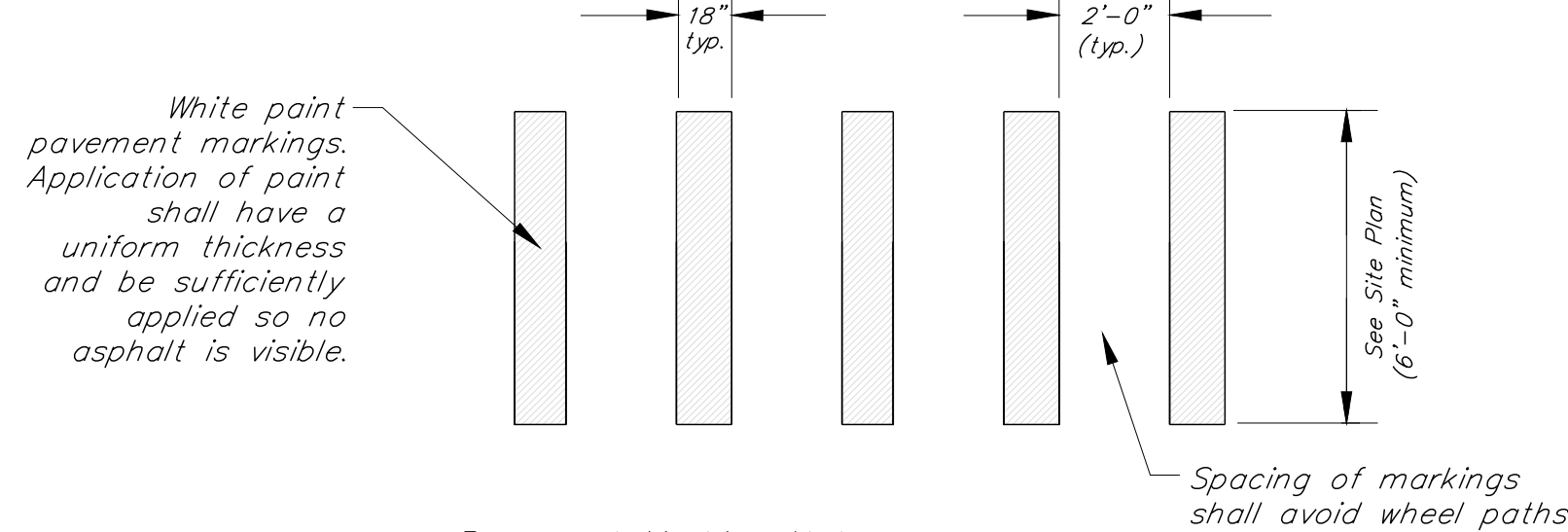
NOTE:

- Tap may be made directly to ductile iron pipe. With other pipes use either a coupling containing a factory-tapped brass bushing or use a double strap service clamp.
- All taps larger than 3/4" require the use of bronze saddles.
- All brass unions and adapters shall be Mueller, Cambridge or McDonald.
- Submit shop drawings to Engineer for all components of the water system.



Water Service Detail

N.T.S.



Pavement Marking Notes:

- All markings shall meet the requirements for the Manual of Uniform Traffic Control Devices (section 3B.17) and Vermont Pavement Marking Placing Guidelines.
- Painted crosswalk markings shall be Durable reflective white non-chlorinated water based paint (Hydrophast Waterborne Traffic Paint) by Franklin Paint Company, or approved equal.

Crosswalk Pavement Marking Detail

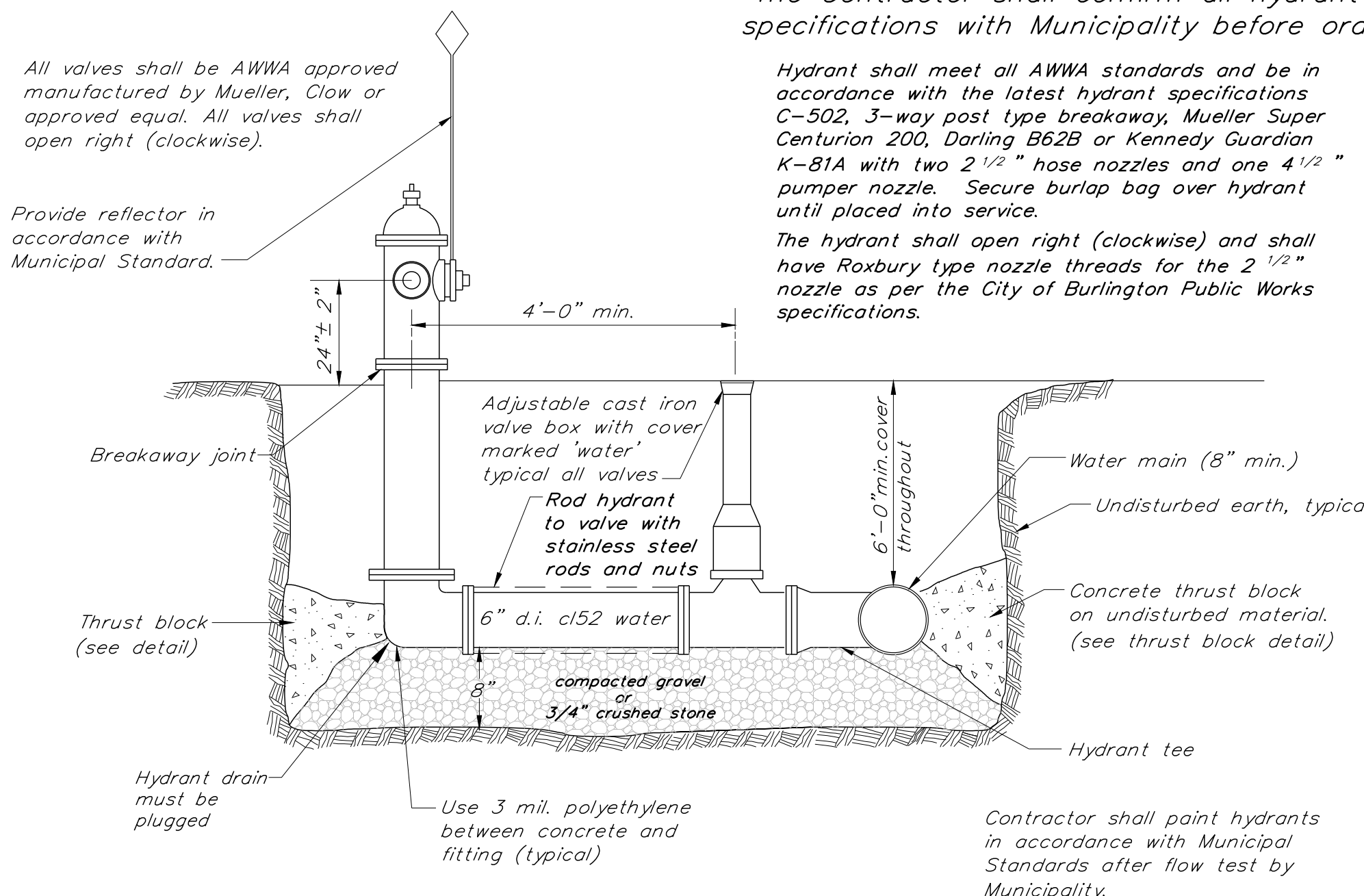
N.T.S.

General Water Main Notes:

- For Four-inch and six-inch ductile iron pipe shall have no less than 2 brass wedges installed at each joint. Eight-inch pipe shall have no less than 3 wedges installed at each joint.
- The Contractor shall coordinate the termination/shutdown of the existing water service with the Burlington Water Department and the Civil Engineer.
- These plans provide design and details of water main beyond 5 ft. outside the building.
- The Site Contractor shall be responsible for extending the waterline to the plumbing connection within the building. See Mechanical/Plumbing Engineers plans for scope, design and specifications within 5 ft. of the building.
- Contractor shall provide all necessary fittings and appurtenances to complete the waterline construction work. This includes temporary fittings and gauges necessary to safely complete the flushing activities required prior to making connections with building plumbing.

*The Contractor shall confirm all hydrant * specifications with Municipality before ordering.

Hydrant shall meet all AWWA standards and be in accordance with the latest hydrant specifications C-502, 3-way post type breakaway, Mueller Super Centurian 200, Darling B62B or Kennedy Guardian K-81A with two 2 1/2" hose nozzles and one 4 1/2" pumper nozzle. Secure burlap bag over hydrant until placed into service. The hydrant shall open right (clockwise) and shall have Roubury type nozzle threads for the 2 1/2" nozzle as per the City of Burlington Public Works specifications.



Typical Hydrant

(City of Burlington)
N.T.S.

BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

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100 North Main, Suite 200, Burlington, VT 05401
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www.krebslansing.com

STATE OF VERMONT
DEPARTMENT OF PUBLIC SAFETY
FIRE PREVENTION
PERMIT REVIEW ONLY

DETAILS

REVISIONS

NO	DATE	DESCRIPTION
1	12/17/20	00 Documents

SCALE

not to scale

DATE

12/11/2020

DRAWN BY

TJB/SLM

CHECKED BY

XXX

CD2.0

Construction Notes

The Contractor will be responsible for all construction of water main, storm and sanitary sewer systems as shown on the plans. The Contractor will be responsible for all necessary adapters, fittings, etc., to make connections to the existing and proposed units. The Contractor shall be responsible for all work shown or implied on the plans and/or referenced in the specifications and permits. The Contractor shall submit, for approval by the Engineer, all types of materials and products used.

General Water System Notes:

- The Contractor shall coordinate all work on the water supply system with the Owner, Burlington Water Department and the Civil Engineer. All water installation work and water distribution materials must comply with the current Burlington Water Department (BWD) specifications.
- These plans provide design and details of water main beyond 5 ft. outside the building. The Site Contractor shall be responsible for extending the waterline to the plumbing and/or fire system connection within the building. See Plumbing Engineer and/or Fire Protection plans for scope, design and specifications within 5 ft. of the building.
- Contractor shall provide all necessary fittings and appurtenances to complete the waterline construction work. This includes temporary fittings and gauges necessary to safely complete the flushing activities required prior to making connections with building plumbing.
- The project shall be constructed, completed, maintained, and operated in accordance with the approved plans. No changes shall be made in the project without the written approval of the appropriate BWD supervisor or Engineer. A copy of the final approved plans shall be submitted to the department prior to construction of the water system improvements.
- The BWD shall be notified in advance to inspect all mechanical joints fittings, main line taps, appurtenances, thrust blocks, water line crossings, and testing prior to occurrence or backfilling.
- All domestic services and fire sprinkler systems that are connected to the public water system shall be protected with a backflow prevention assembly, and an appropriate thermal expansion system. The Mechanical Contractor shall coordinate approved backflow prevention with the BWD.

Water Main (Applies to new domestic water mains and services)

- The pipe for water main shall conform to AWWA C-900-07, DR-14, ductile iron O.D. pressure pipe. Fittings shall conform to AWWA C10, 350 pounds working pressure. Valves shall be manufactured to meet all requirements of AWWA specification C509 or C515. Tracer wire shall be placed over the water line and shall extend from gate valve curb box to curb box or other approved above grade termination.
- All pipe shall be installed in accordance with AWWA C500. The pipe shall be kept free of foreign matter and debris during installation. When the process of pipe laying has stopped, any open ends of pipe shall be plugged. There shall be a minimum of 6'-0" (1.82 m.) cover over all pipe and service lines. Any pipe deflection shall not exceed fifty (50%) percent of recommended manufacturer's maximum deflection. Backfill materials and procedures shall be as detailed on the drawings. The Contractor shall be responsible for any and all sheeting and/or shoring necessary to comply with OSHA - VOSH regulations.
- The testing of the water main shall consist of the testing of all installed pipe, services and hydrants in accordance with AWWA C600. The testing shall consist of a pressure test and leakage test. All testing shall be done with potable water and in the presence of the Engineer, and representatives from the City of Burlington Water Department. The pressure test consists of maintaining a minimum internal pipe pressure of 200 psi for two (2) hours. The testing allowance shall be defined as the maximum quantity of makeup water that is added into a pipeline undergoing hydrostatic pressure testing, or any valved section thereof, in order to maintain pressure within +/- 5 psi of the specified test pressure (after the pipeline has been filled with water and the air has been expelled). No pipe installation will be accepted if the quantity of makeup water is greater than that determined by the following formula:
$$L = \frac{SD \sqrt{P}}{140,000}$$

L = testing allowance (makeup water), in gallons per hour
S = length of pipe tested, in feet
D = Nominal pipe diameter, in inches
P = average test pressure during the hydrostatic test, in pounds per square inch (gauge)

- Chlorinating of the system shall be accomplished after the water main has been successfully pressure tested and thoroughly flushed. Disinfecting shall be in accordance with AWWA C-651. The disinfecting process shall be deemed acceptable only after two consecutive sets of acceptable samples, taken from the flushed and disinfected main 24 hours apart, shows no evidence of bacteriological contamination. For proper disinfection use minimum 25 mg/l chlorine concentration for 24 hours. The concentration must remain above 10 mg/l. Tablet disinfecting is not acceptable.
- All taps larger than 1" require the use of bronze saddles. **SADDLES ARE REQUIRED FOR ALL TAPS ON PVC PIPE**
- All brass unions and adapters shall be low-lead by Cambridge. All corporations and curb stops shall be Cambridge with nitrile gaskets.
- AFTER TWO PASSING BACTERIOLOGICAL SAMPLES ARE OBTAINED, ALL TAPS FOR CHLORINATION AND TESTING SHALL BE CLOSED AND PLUGGED PRIOR TO BACKFILL.**
- The water main shall be thoroughly flushed to remove foreign materials from the new water system (minimum flow velocity of 2.5 ft/s required by AWWA). At least 48 hours prior to waterline flushing, Contractor shall notify the City of Burlington Water Dept., UVM Physical Plant Dept., UVM Medical Center and Engineer.

Fire Service Main

- The testing of the water main shall consist of the testing of all installed pipe, services and hydrants in accordance with NFPA 24. The testing shall consist of a pressure test and leakage test. All testing shall be done with potable water and in the presence of the Engineer. The pressure test consists of maintaining a minimum internal pipe pressure of 200 psi (140,620 kg/m²) for two (2) hours. The amount of leakage at the joints shall not exceed 2 qt/hr per 100 gaskets or joints, irrespective of pipe diameter. If the pressure drops more than 5 psi (3515 kg/m²) in the first hour, this constitutes failure of the test for the particular section of pipe. Failure of any test section will necessitate repair and/or replacement of the failed section.
- Chlorinating of the system shall be accomplished after the water main has been successfully pressure tested and thoroughly flushed. Disinfecting shall be in accordance with AWWA C-651. The disinfecting process shall be deemed acceptable only after two samples of water from the flushed disinfected main, taken 24 hours apart, shows no evidence of bacteriological contamination. Use minimum 25 mg/l chlorine concentration for 24 hours. The concentration must remain above 10 mg/l. Tablet disinfecting is not acceptable.
- Acceptable water main flushing requirements are provided below. Prior to flushing, the Contractor shall contact the Owner, Fire Department in the municipality, UVM Physical Plant Dept., the UVM Medical Center, and the Engineer.

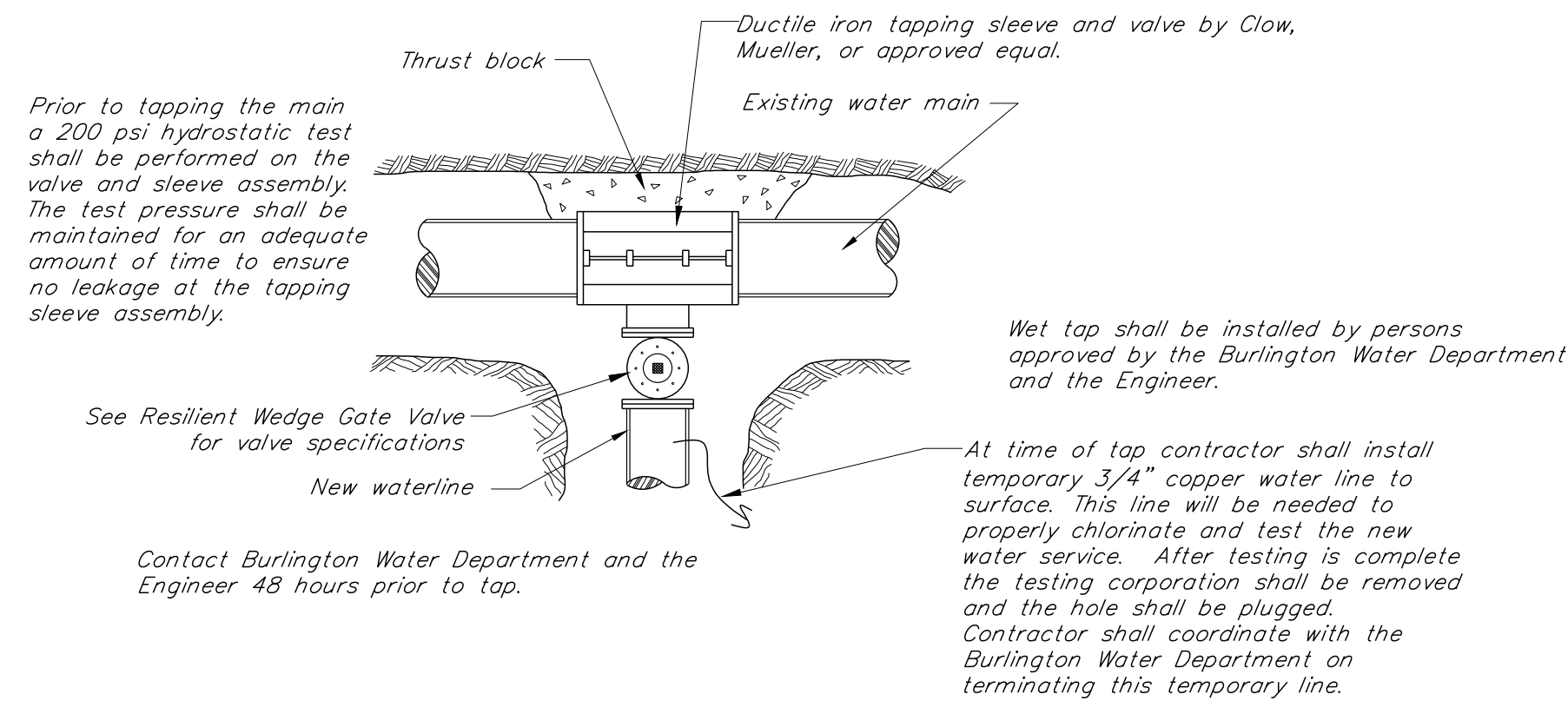
Underground piping, from the water supply to the system riser, and lead-in connections to the system riser shall be completely flushed before the connection is made to downstream fire protection system piping.

The flushing operation shall be continued for a sufficient time to ensure thorough cleaning.

The minimum rate of flow shall be not less than one of the following:

- Hydraulically calculated water demand flow rate of the system, including any hose requirements. (provided by the mechanical/sprinkler consultant)
- Flow necessary to provide a velocity of 10 ft/sec (3.1 m/sec) in accordance with the table.
- Maximum flow rate available to the system under fire conditions.

Flow Required to Produce a Velocity of 10 ft/sec in Pipes				
Pipe Size		Flow Rate		
in.	mm	gpm	L/min	
4	102	390	1,476	
6	152	880	3,331	
8	203	1,560	5,905	
10	254	2,440	9,235	
12	305	3,520	13,323	

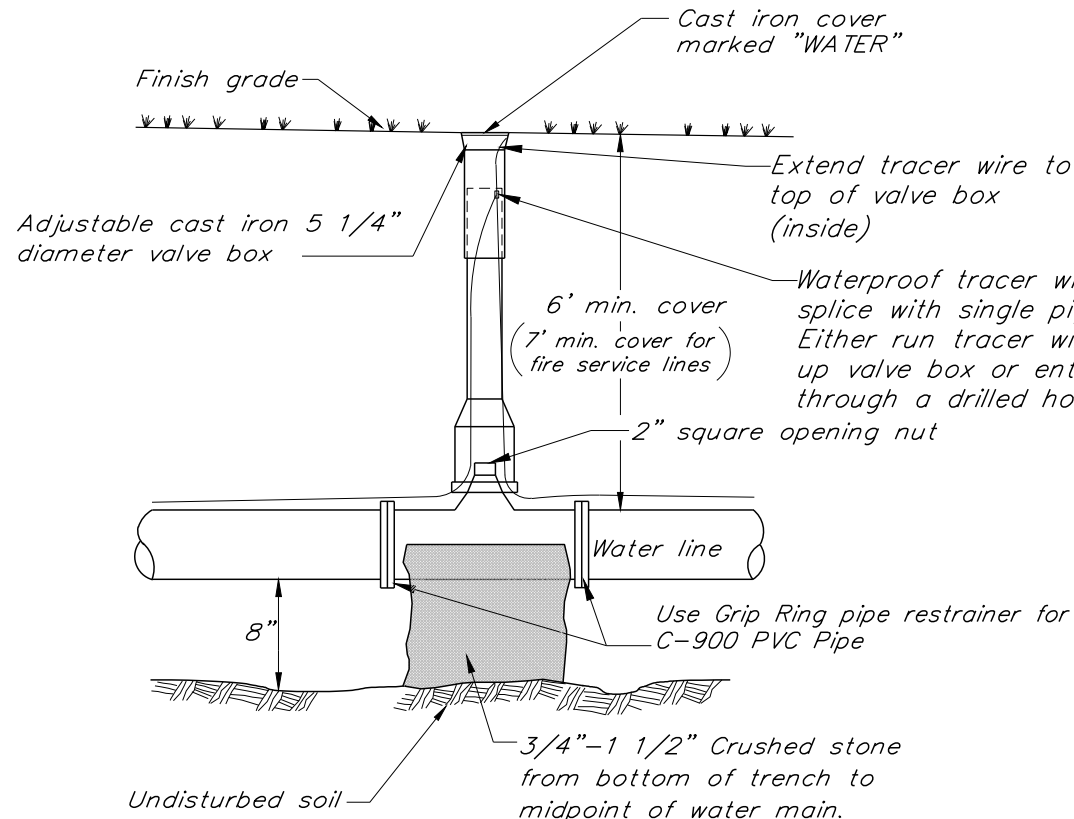


Typical Tapping Sleeve and Valve

N.T.S.

*The Contractor shall confirm all valve * specifications with Municipality before ordering.

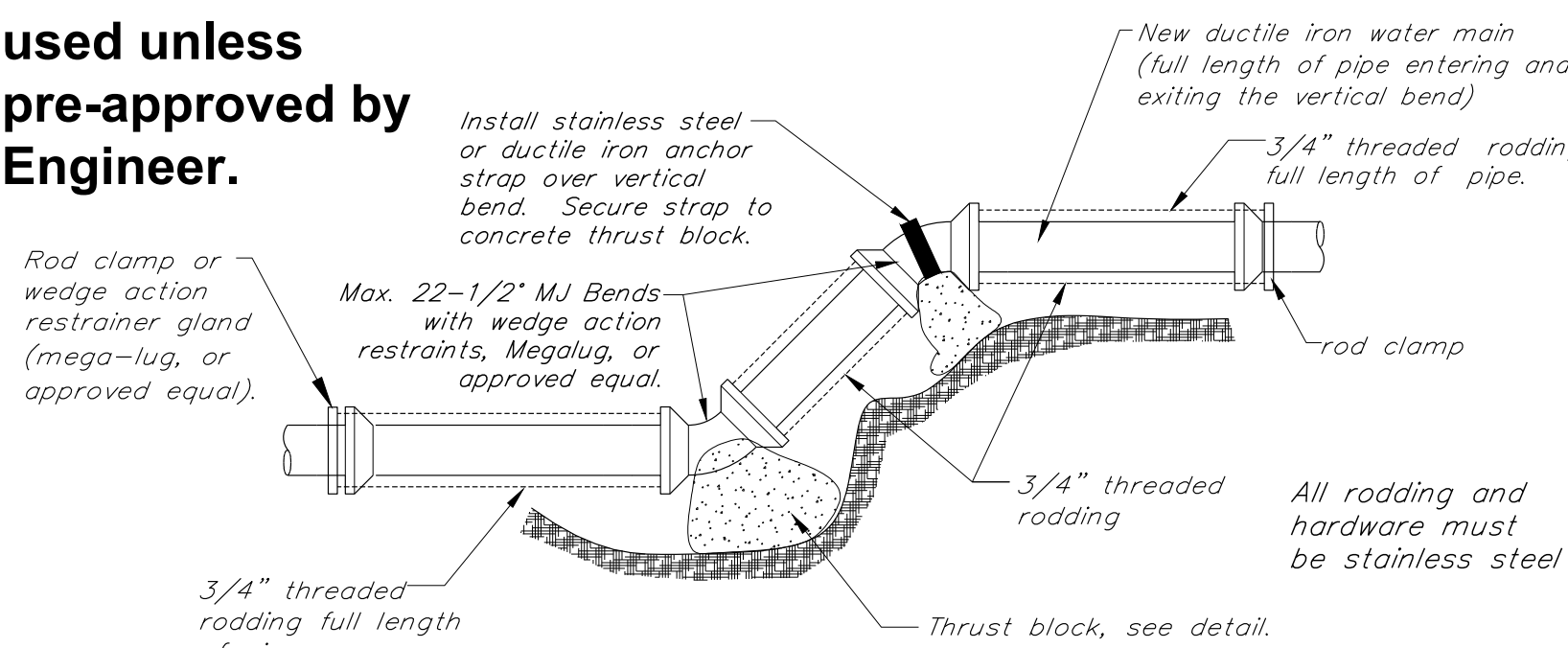
- Gate valves shall meet all requirements of A.W.W.A. C509 and C515 Standards (latest edition). Valves with mechanical joints of sizes as required on the plans.
- All valves shall be of cast or ductile iron body and shall be coated with fusion bonded epoxy complying with AWWA C-550 and be NSF 61 approved. Valve shall have manufacturer's name, pressure rating, and manufacture date cast on the body.
- All valves shall include non-rising stem, high strength bronze stem and nut, 100% coated wedge, "O" Ring Stem Seals above and below the thrust collar, a 2" square operating nut, mechanical joint ends, and corrosion resistant stainless steel body bolts and nuts.
- City of Burlington gate valves shall open clockwise (right) and be designed for a minimum working pressure of 200 psi.
- Valves shall be equipped with a two piece, sliding type cast iron valve box for a minimum 6 ft. of cover material.



Typical Resilient Wedge Gate Valve

N.T.S.

This detail shall not be used unless pre-approved by Engineer.



Notes:

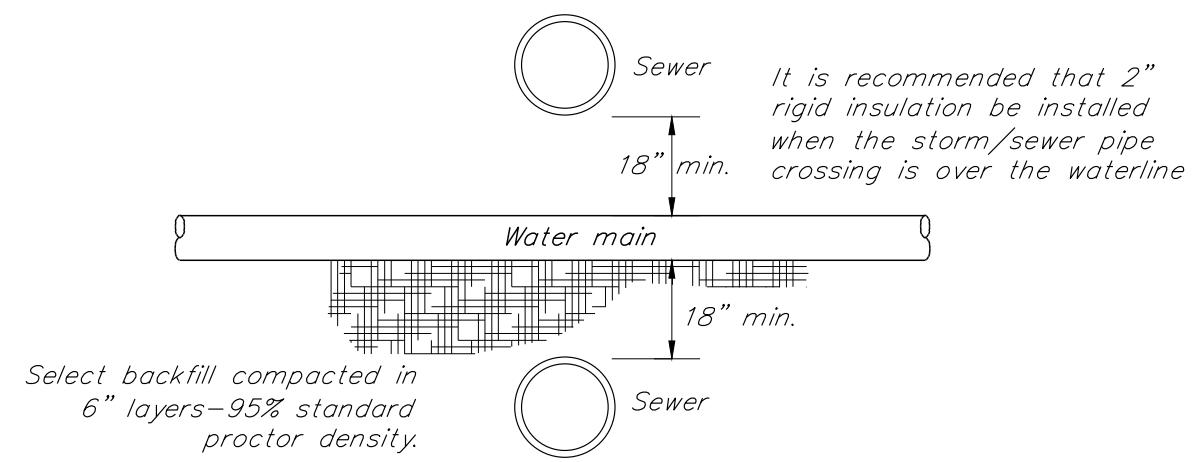
- See thrust block detail for additional information.
- Prior to pouring thrust blocks, all fittings are to be wrapped with 4 mil. polyethylene

Vertical Bend Thrust Block Restraint Detail

N.T.S.

NOTES:

- The location of sewer/storm mains in relation to water mains shall be in accordance with the Vermont Water Supply Rules.
- Sanitary sewers, manholes, force mains and storage tanks shall be at least 10 feet horizontally from any existing or proposed water main. Storm sewers and manholes shall be at least 5 ft horizontally from any existing or proposed water main. The distance shall be measured edge to edge. If this distance cannot be obtained variance shall be approved by the ANR Drinking Water & Groundwater Protection Division.
- 18" separation shall be maintained whether water is over or under sewer. If this distance cannot be obtained, then a solid 20 ft. long pipe sleeve may be installed centered on the crossing. This may only be done with approval from the Engineer and the ANR Drinking Water and Groundwater Protection Division.
- A minimum separation of 25 ft. shall be maintained between waterlines and underground storage tanks. 50 ft. separation is preferred, if possible.

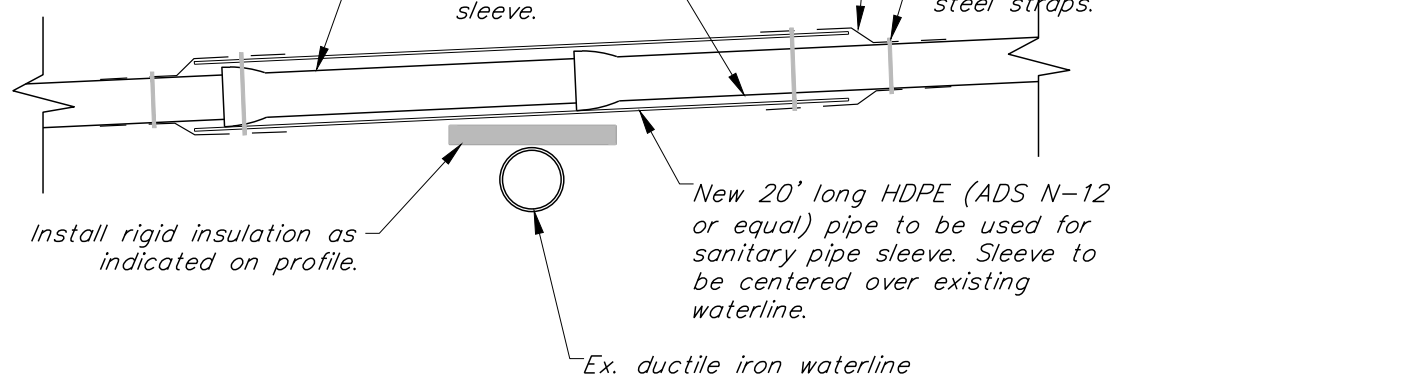


Sewer / Water Separation Detail

N.T.S.

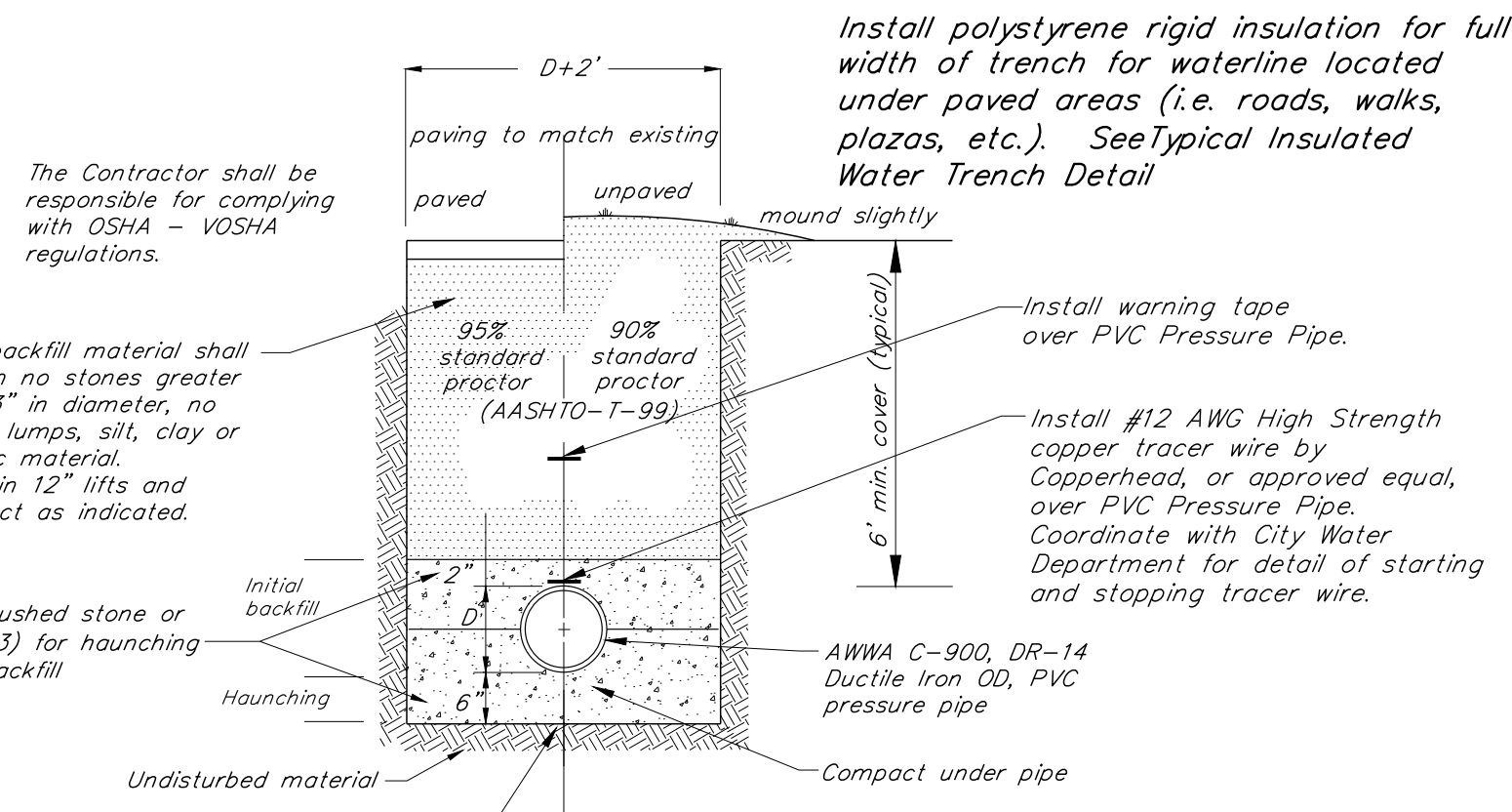
SEWER CROSSING NOTE

For all sanitary sewer and storm sewer pipes that cross the waterline within the required 18" vertical separation the pipe shall be installed in a continuous 20 ft. long sleeve pipe centered on the waterline. Contractor shall take extra precautions to ensure the design grades of the sewer pipe are maintained.



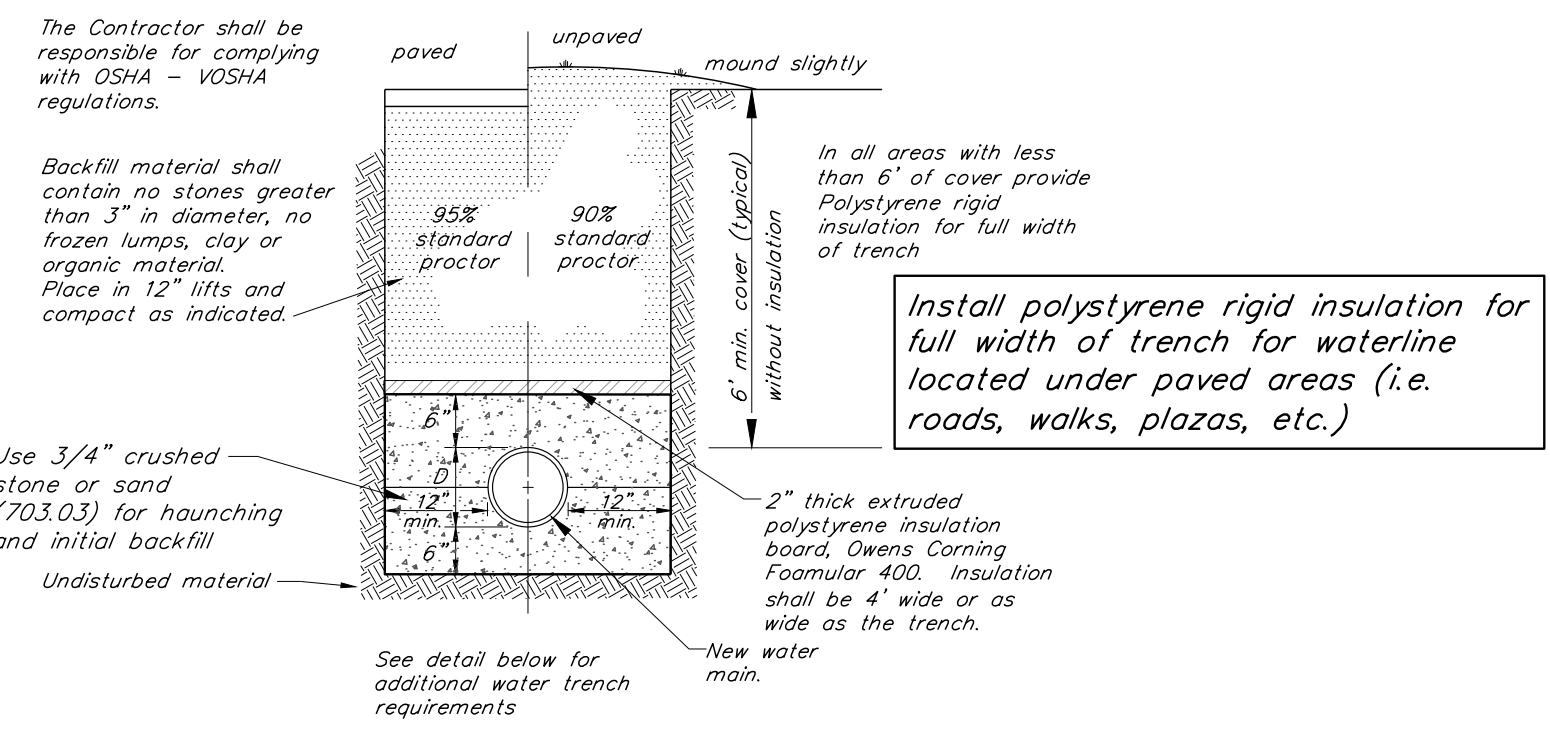
Sewer Pipe Sleeve Detail

n.t.s.



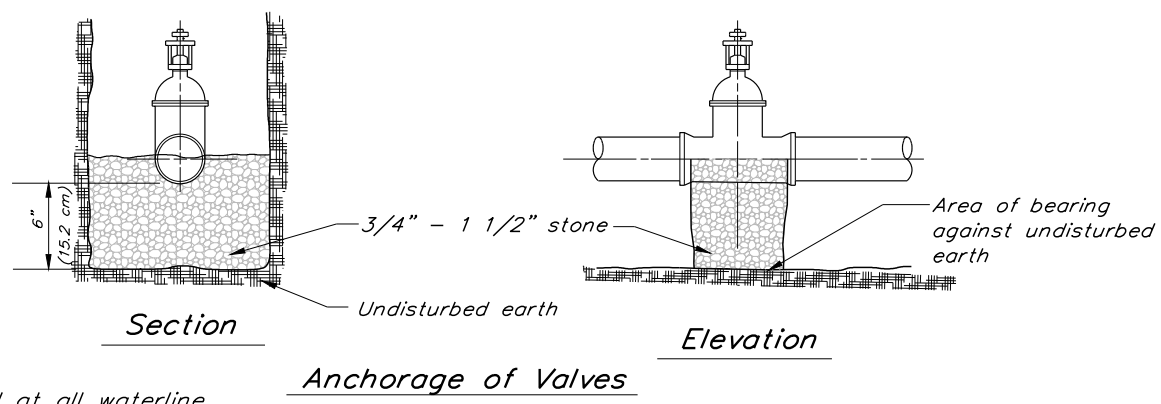
Typical Insulated Water Trench

N.T.S.



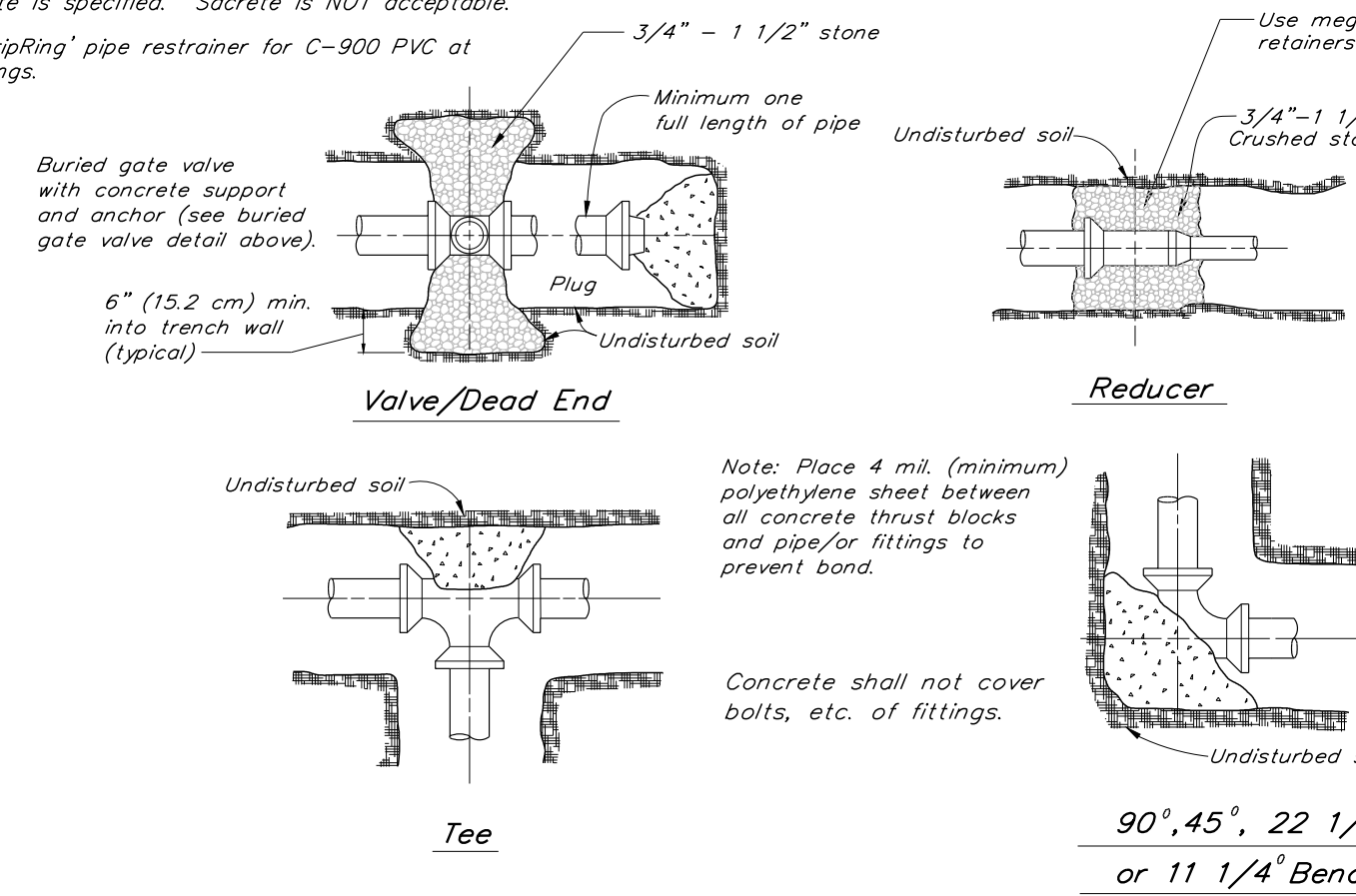
Typical Insulated Water Trench

N.T.S.



Note

- A thrust block shall be installed at all waterline bends, ends, and tees.
- Precast thrust blocks shall be used but concrete must be poured between back of concrete block and undisturbed soil.
- Red-mix concrete (2,500 psi min) must be used where concrete is specified. Screte is NOT acceptable.
- Use 'Grifting' pipe restrainer for C-900 PVC at all fittings.



Minimum Area of Bearing Surface of Concrete Thrust Block (in square feet)

3"				4"				6"				8"				12"				SOIL CONDITION	SAFE BEARING LOAD(PSF)
PAV	HALES	REDUC	TEES	PAV	HALES	REDUC	TEES	PAV	HALES	REDUC	TEES	PAV	HALES	REDUC	TEES	PAV	HALES	REDUC	TEES		
0.5	0.5	0.5	0.5	0.5	1.0	0.5	1.0	1.5	1.0	0.5	2.0	2.5	1.5	1.0	4.0	5.5	3.0	1.5	Sound shale	10,000	
1.0	1.0	1.0	1.5	2.0	1.0	0.5	3.0	4.0	2.0	1.0	4.5	6.5	3.5	2.0	10.0	14.0	7.5	4.0	Cemented gravel & sand	4,000	
1.0	1.0	1.0	0.5	2.0	0.5	1.5	1.0	3.5	5.0	3.0	1.5	6.0	8.5	5.0	2.5	13.0	18.5	10.0	5.0	Coarse & fine compact sand	3,000
1.5	2.5	1.5	1.0	2.5	3.5	2.0	1.0	5.5	7.5	4.0	2.0	8.0	13.0	7.0	3.5	20.0	27.5	15.0	8.0	Medium clay from the specified	2,000
3.0	4.5	2.5	1.5	5.0	7.0	4.0	2.0	10.5	15.0	8.0	4.0	18.0	25.0	14.0	7.0	39.0	55.0	30.0	15.0	Soft clay	1,000

Maximum water pressure = 200 PSD (148.60 kg/m²)

Maximum water pressure = 200 PSI (140,620 kg/m²)

Thrust Block Details

N.T.S.

BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

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100 North Main Street, Suite 200, Burlington, VT 05401
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www.krebsandsling.com

STATE OF VERMONT
DEPARTMENT OF CONSUMER AFFAIRS
REGISTRATION NO. 5703
EXPIRATION DATE 12/31/2020
PERMIT REVIEW ONLY

DETAILS

REVISIONS

DATE	DESCRIPTION
12/17/20	00 Documents

SCALE

not to scale

DATE

2020-11-12

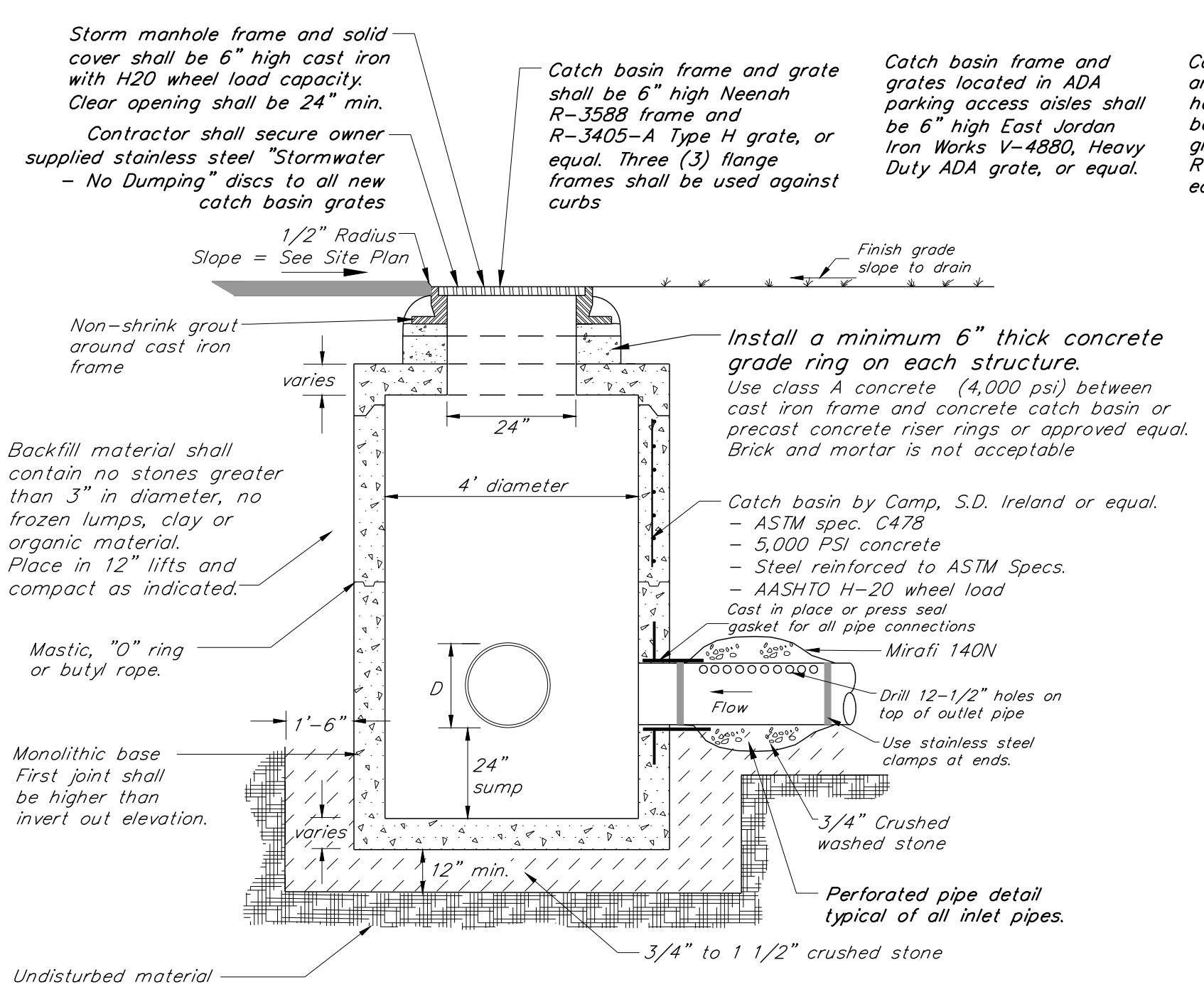
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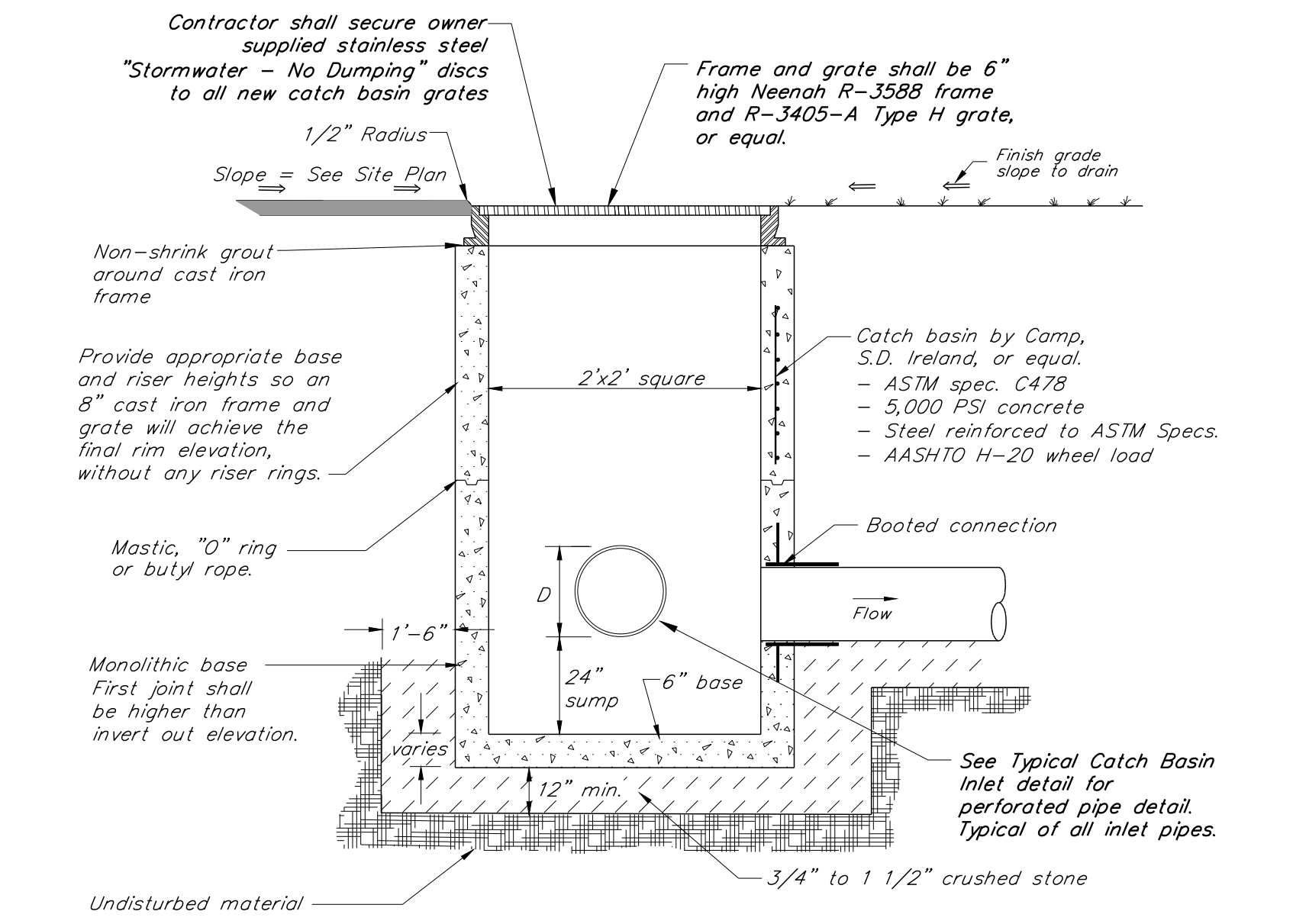
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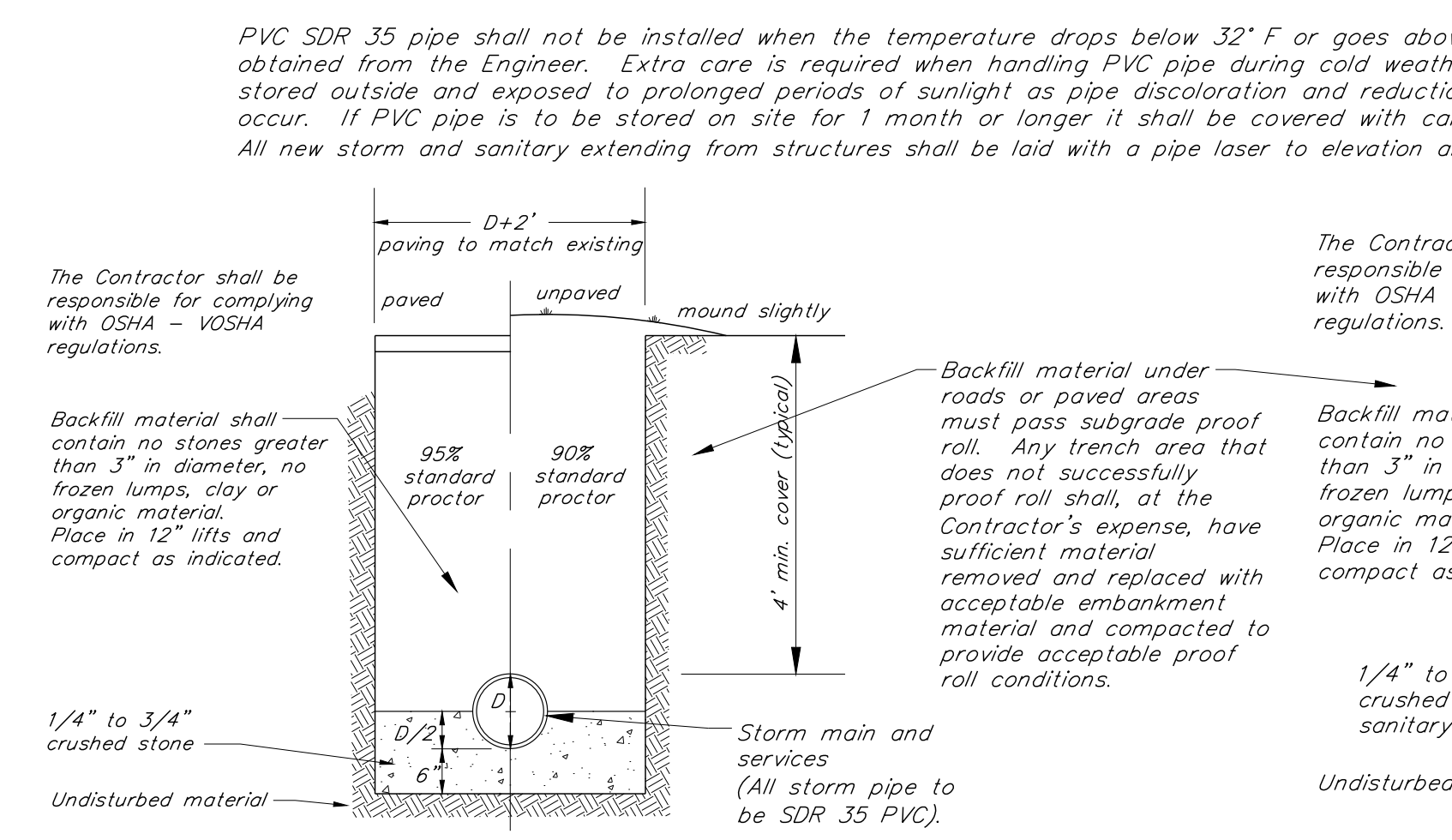
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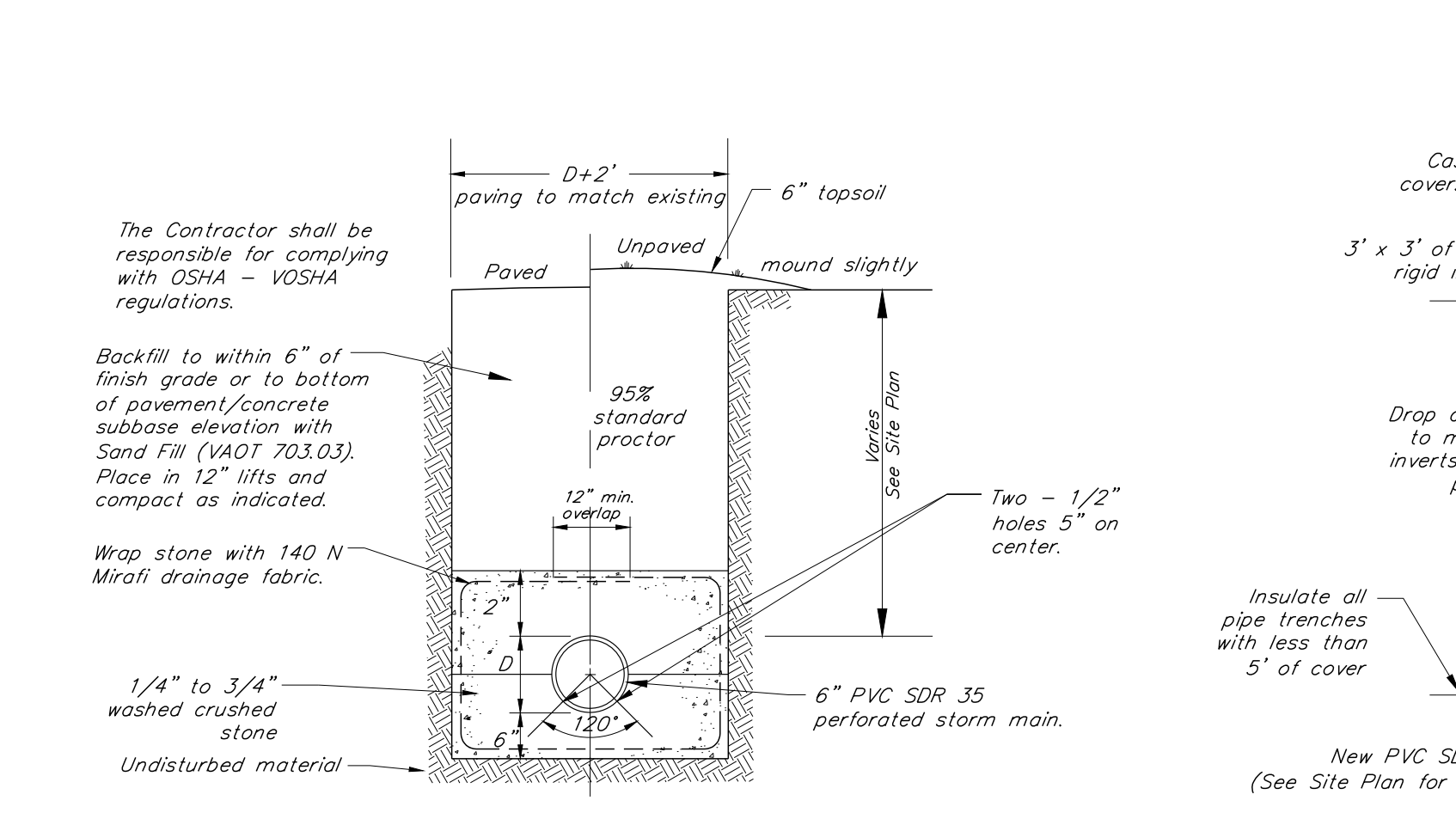
Typical Catch Basin/Storm Manhole Detail



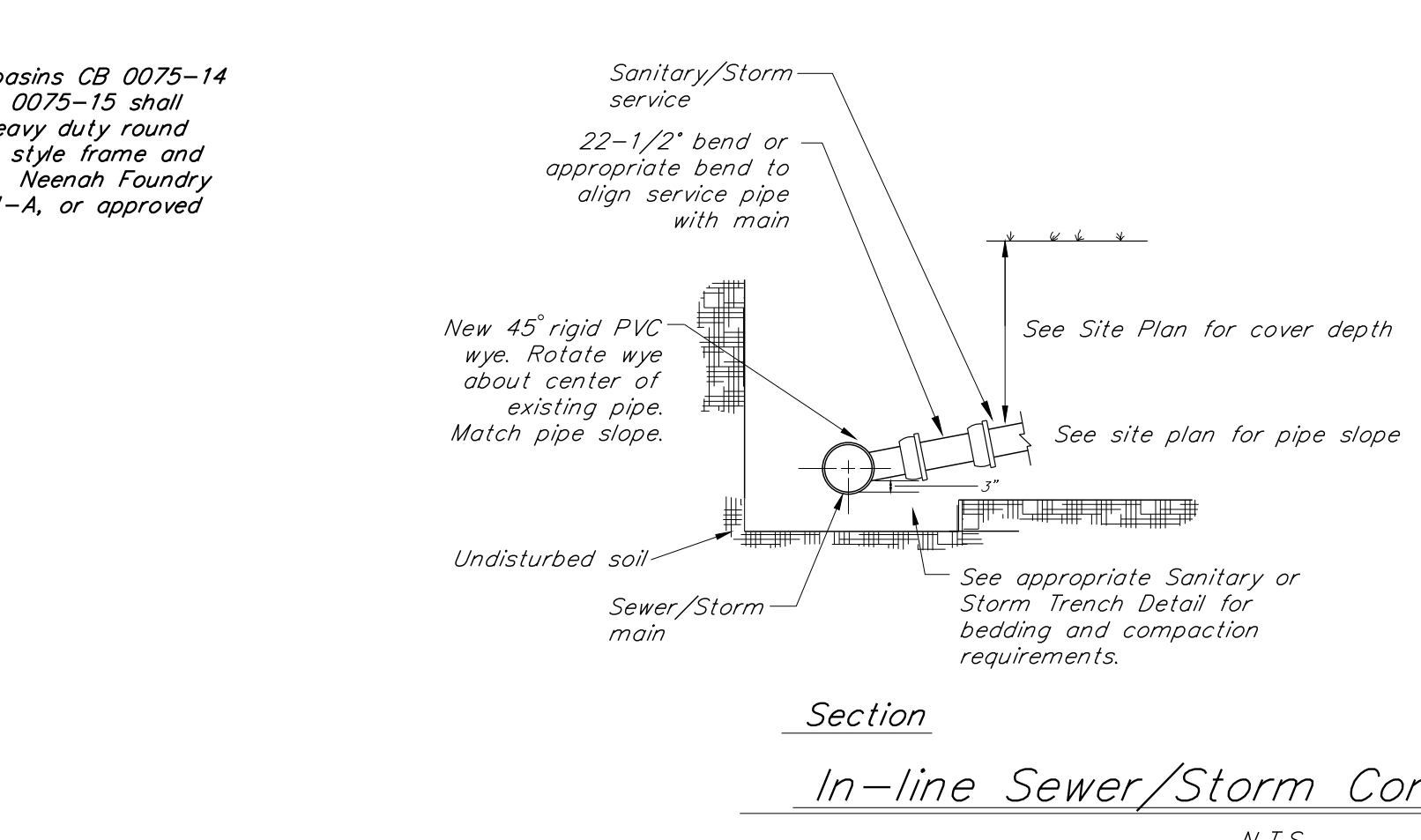
Typical Drop Inlet Detail



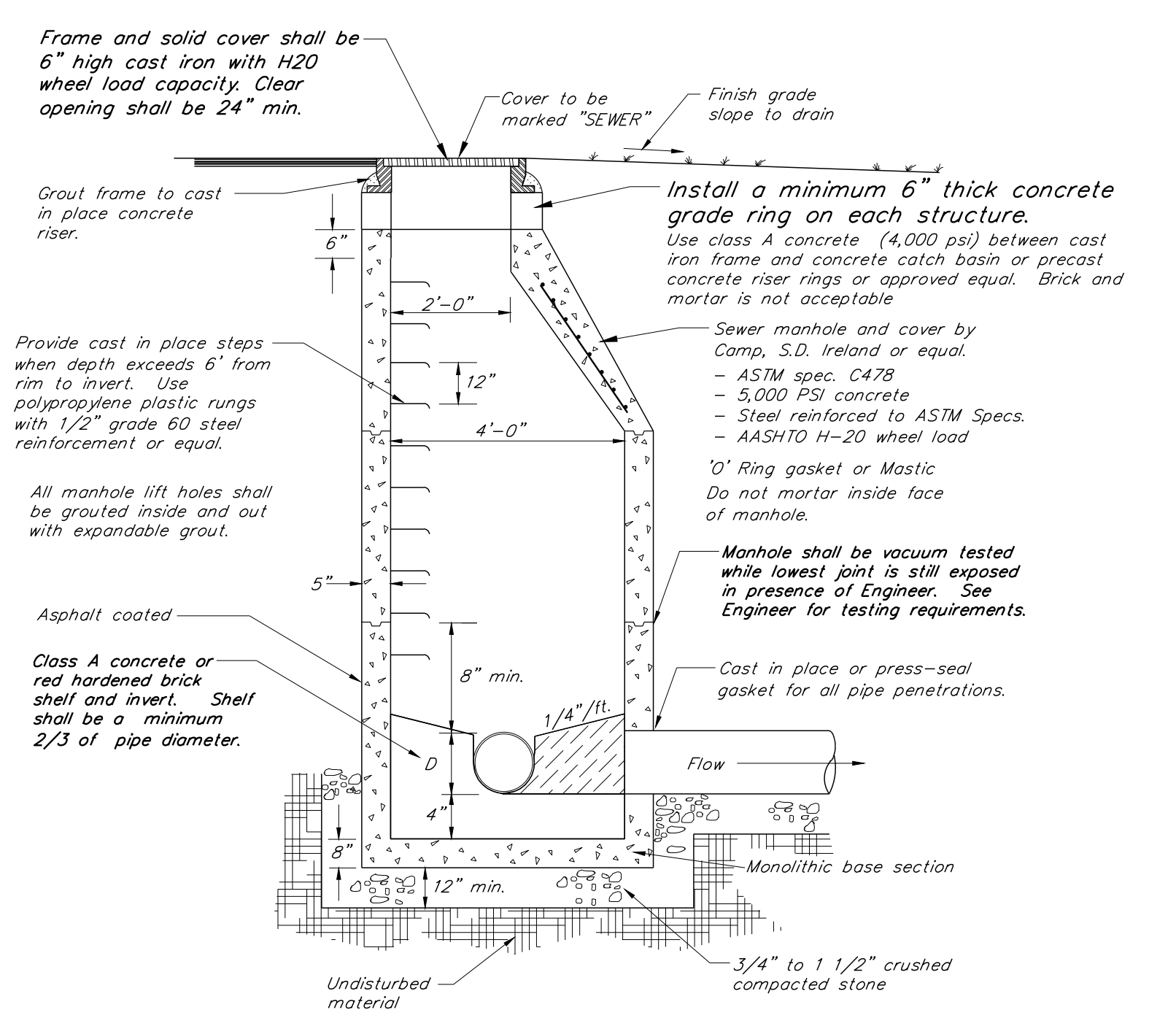
Typical Storm Trench Detail



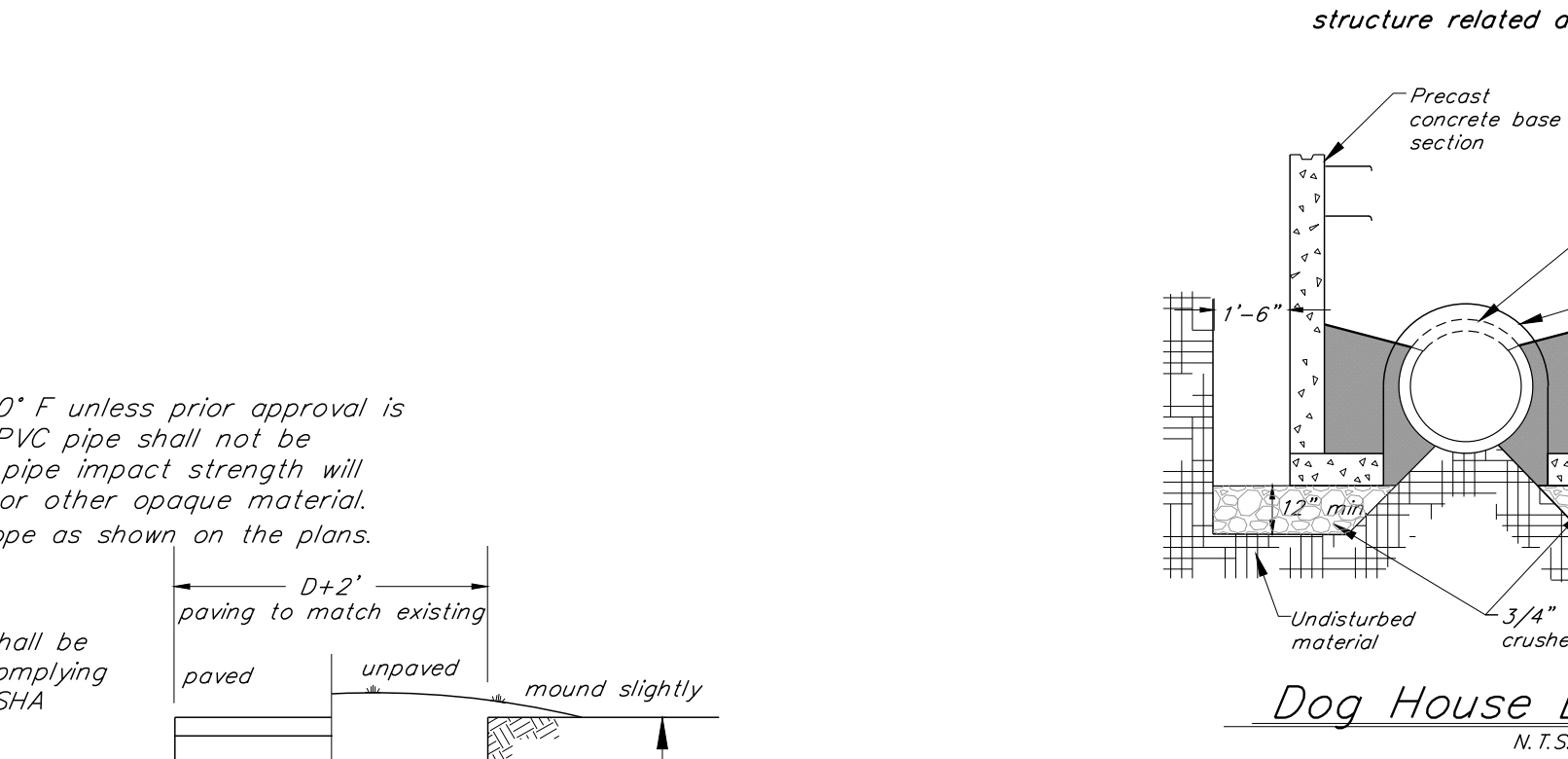
Typical Underdrain Trench Detail



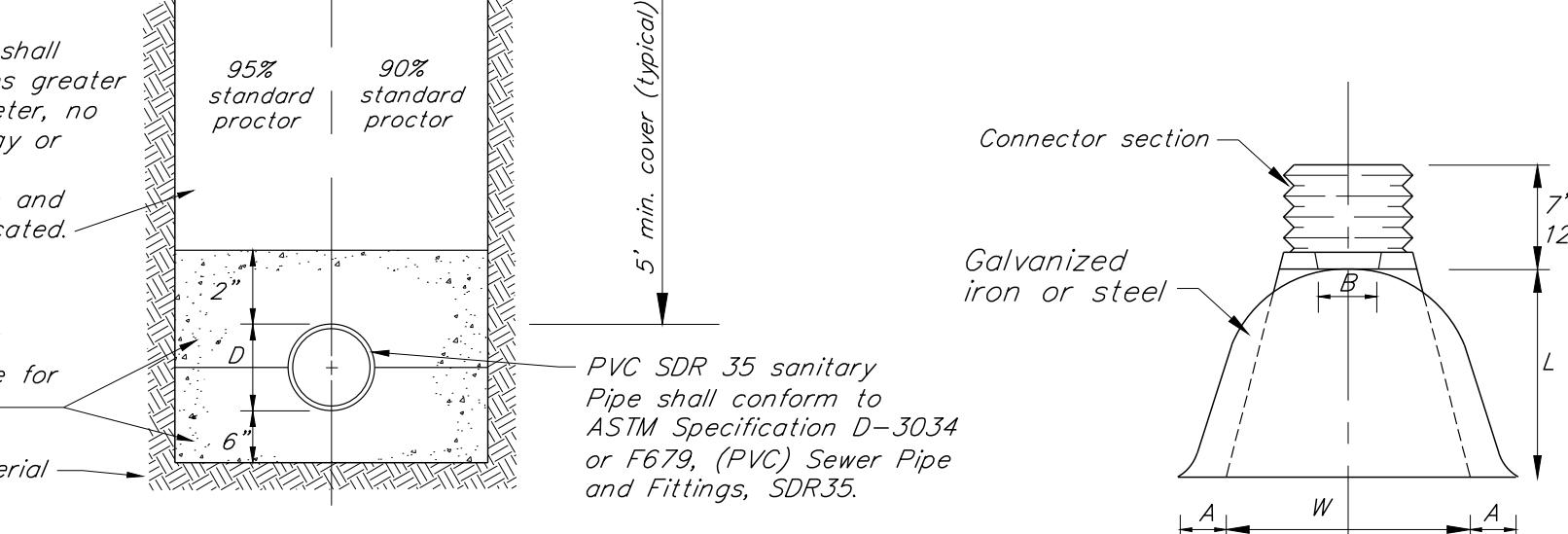
In-line Sewer/Storm Connection Detail



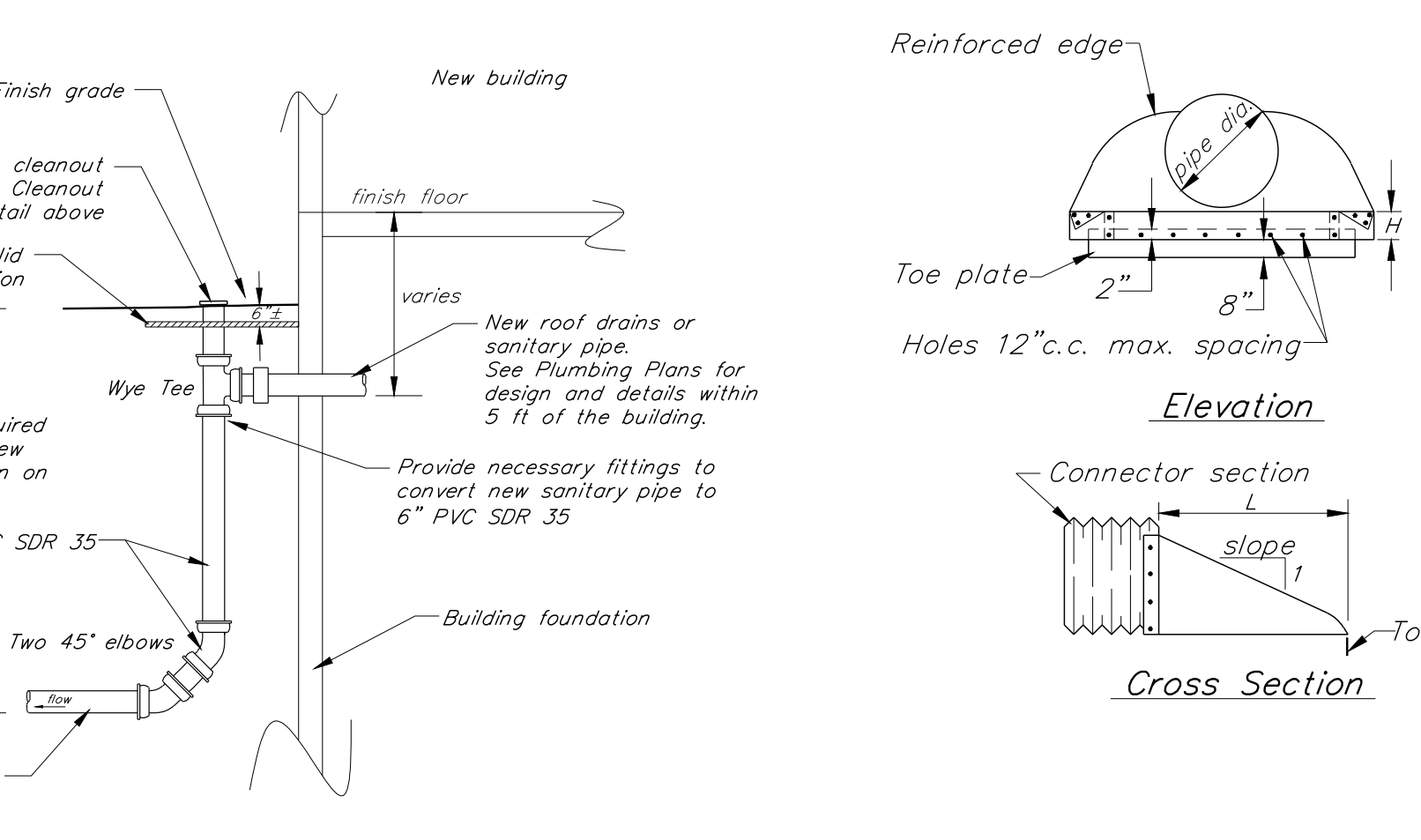
Typical Precast Sewer Manhole



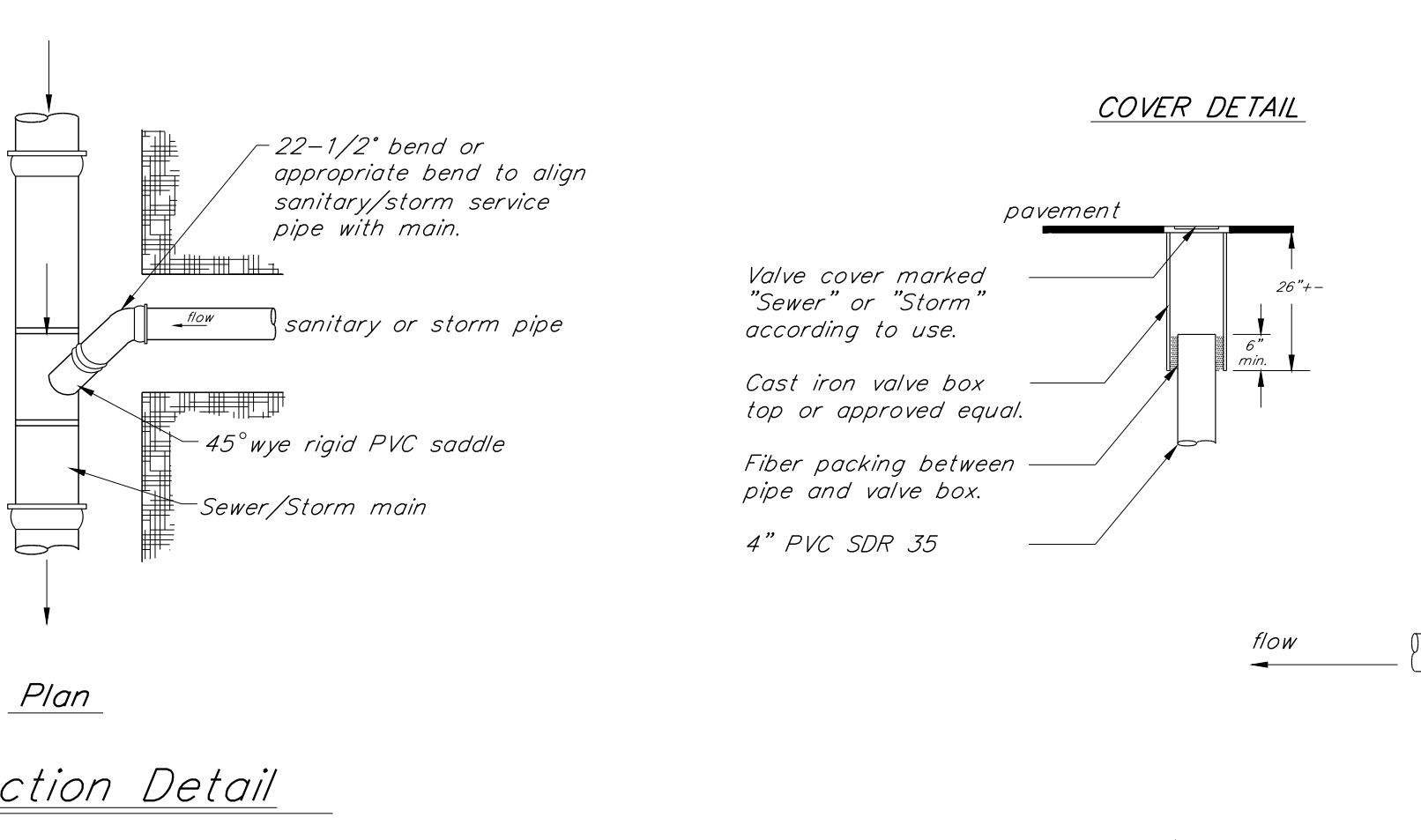
Dog House Base Detail



Typical Sanitary Trench Detail

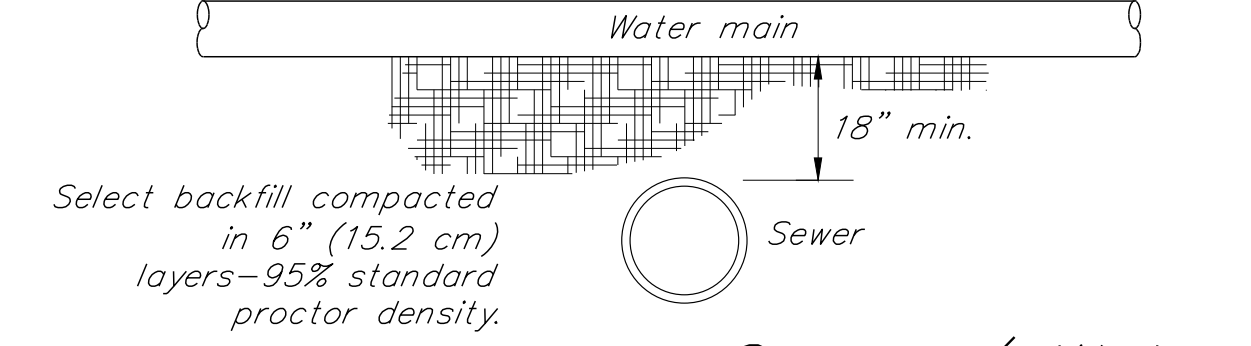


Drop Outlet Plumbing Connection Detail



Sewer / Water Separation Detail

- NOTES:
1. The location of sewer mains in relation to water mains shall be in accordance with the "Recommended Standards for Sewage Works" so-called Ten State Standards and Water Supply Rules.
 2. Sewers shall be laid at least 10 feet horizontally from any existing or proposed water main. The distance shall be measured edge to edge. If this distance cannot be obtained, then the pipes shall be installed according to EPR, Chapter 1, Appendix 1-A-03(1)(1)a or b.
 3. 18" separation shall be maintained whether water is over or under sewer. If this distance cannot be obtained, then the pipes shall be installed according to EPR Chapter 1, 11b.

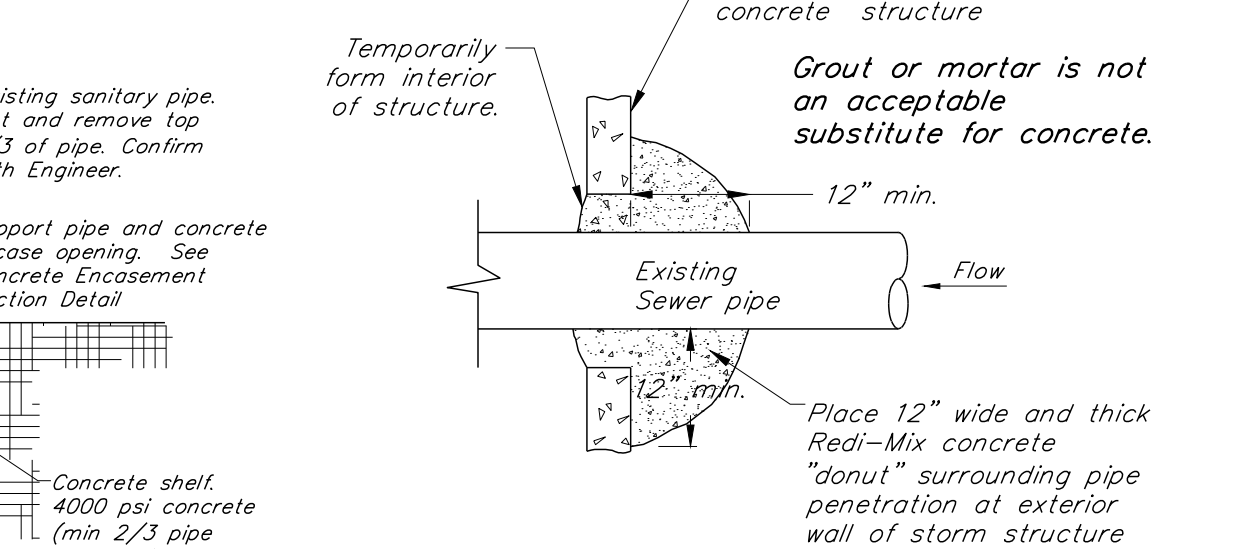


Sewer / Water Separation Detail

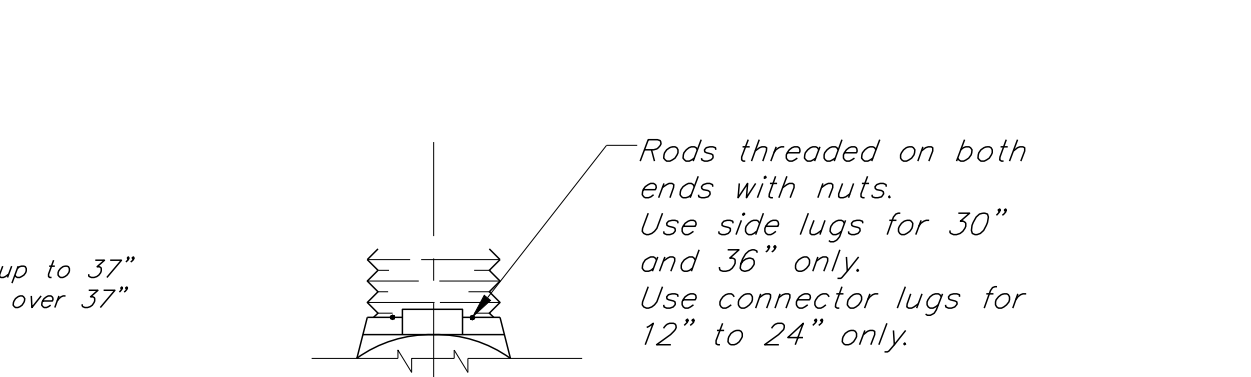
Select backfill compacted in 6" (15.2 cm) layers-95% standard proctor density.

N.T.S.

See Typical Precast Sewer Manhole detail for all additional structure related details.

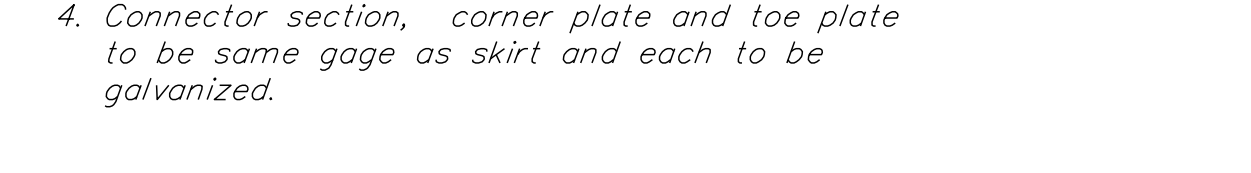


Concrete Encasement Section Detail



Alternate Connections

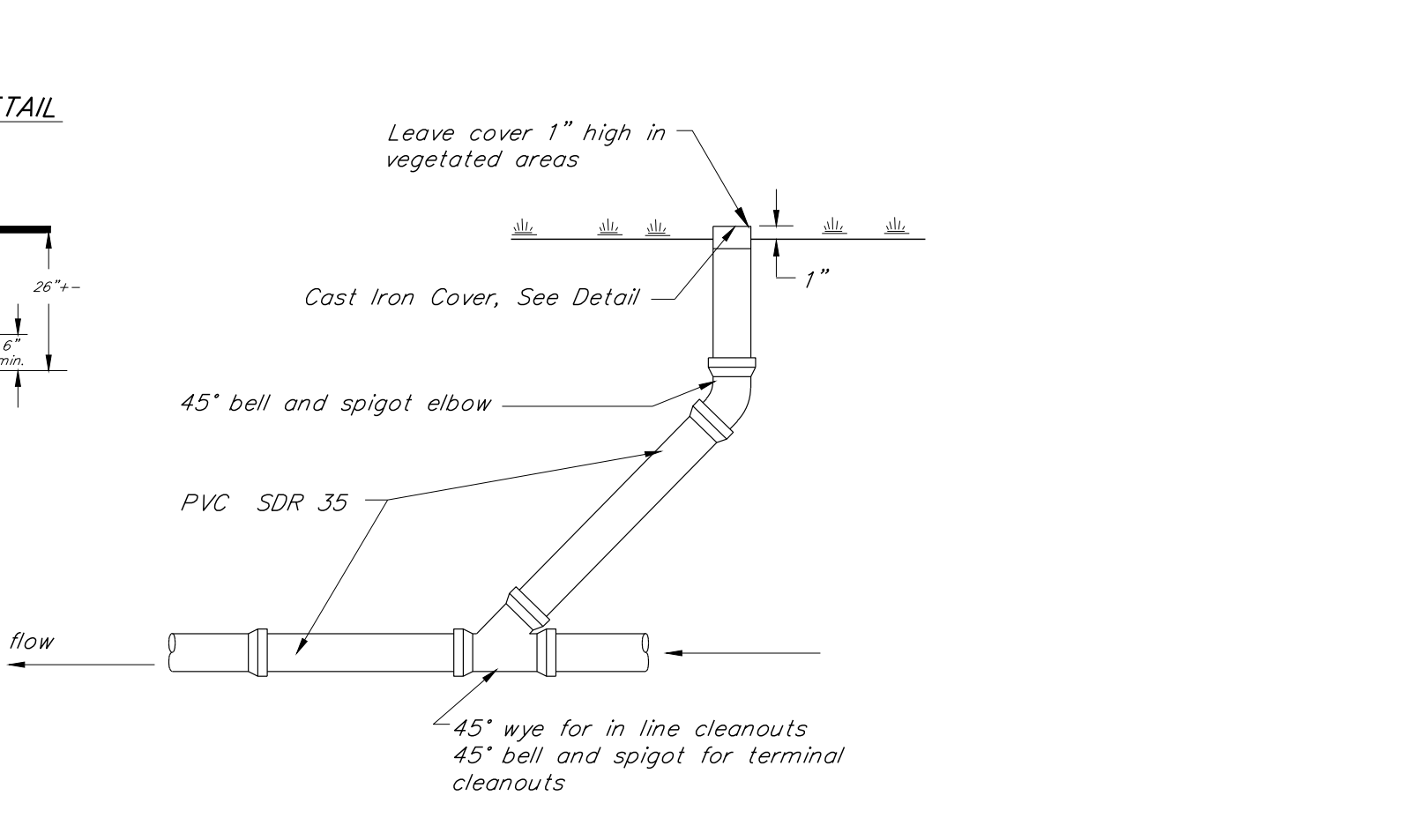
- Notes:
1. Toe plate to be punched to match holes in skirt lip. 3/8" galvanized bolts to be furnished. Length of toe plate is W + 10" for 12" to 30" diameter pipe inclusive and W + 22" for 36" to 48" diameter pipe inclusive.
 2. Skirt section for 12" to 24" diameter pipe inclusive to be made in one piece.
 3. Skirt section for 30" to 48" diameter pipe inclusive may be made from two sheets joined by riveting or bolting on center line with 3/8" galvanized rivets or bolts.
 4. Connector section, corner plate and toe plate to be same gage as skirt and each to be galvanized.



End Section Detail

Pipe Diameter	Thick	Dimensions				Slope	Body
		A	B	H	L		
12	.064	6	6	6	21	24	2 1/2
15	.064	7	9	6	26	30	2 1/2
18	.064	8	10	6	31	36	2 1/2
21	.064	9	12	6	36	42	2 1/2
24	.064	10	13	6	41	48	2 1/2
30	.079	12	16	8	51	60	2 1/2
36	.079	14	19	9	60	72	2 1/2
42	.109	16	22	11	69	84	2 1/2
48	.109	18	27	12	78	90	2 1/4

End Section Detail



Storm/Sanitary Sewer Cleanout Detail

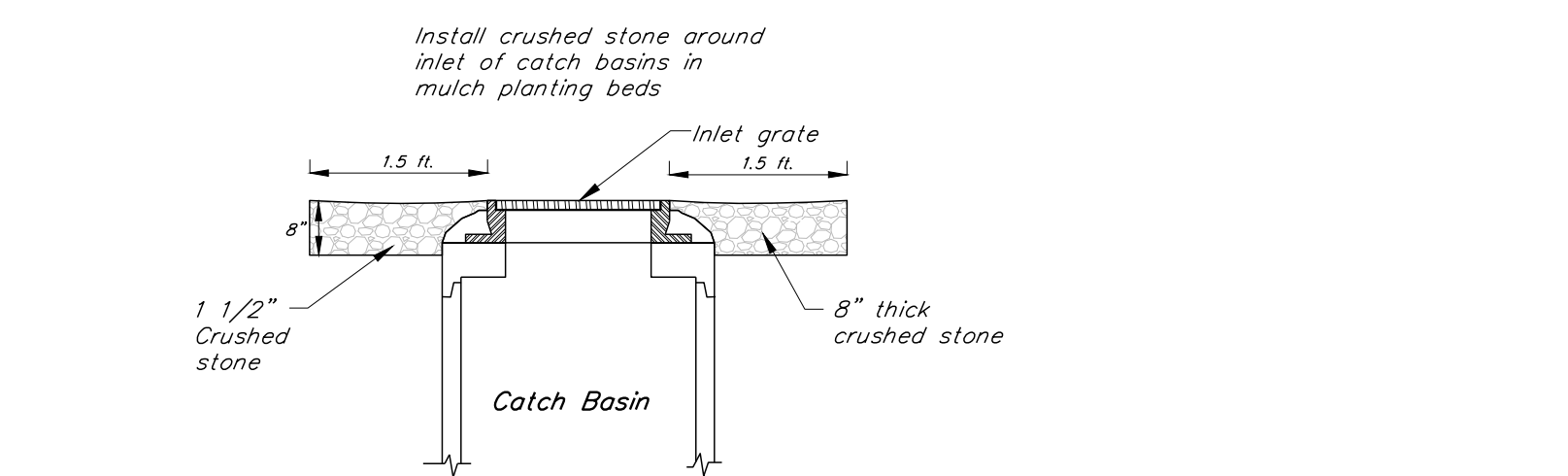
- Crossings:
- Sewers crossing water mains shall be laid beneath the water main with at least 18 inches vertical clearance between the outside of the sewer and the outside of the water main. When it is possible to maintain the 18" vertical separation:
- 1.) the crossing shall be arranged so that one 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 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.

Testing and Contractor Coordination Requirements (applies to water and sanitary sewer)

1. All water lines and sewer lines shall be thoroughly tested by the Contractor in accordance with the Environmental Protection Rules (09/29/07), and the Chapter 21 Water Supply Rules (the more stringent rule shall apply).
2. All private or municipal waterlines shall be tested by the Contractor in accordance with the procedures outlined in AWWA C600 and/or NFPA 24.
3. No water main shall be closer than ten (10) feet to any sanitary sewer or sanitary manhole and five (5) feet to any catch basin or storm sewer line. Provide minimum of 18" vertical separation between water main and storm/sanitary sewer crossing.
4. The Contractor shall be responsible for construction as-builts to service locations, and any water main fittings. As-builts shall be recorded in accordance with the outlined procedures.
5. The Contractor shall be responsible for contacting Engineer at least 24 hours prior to starting construction on any portion of the exterior water or sanitary systems. This notification requirement shall continue to the completion of the water and sanitary systems.
6. Utility Testing. The Contractor shall be responsible for scheduling water and sanitary testing, with the Engineer and the Municipality Public Works Department, at a minimum of 24 hours prior to the test. Based on availability of Engineer's staff, the Engineer shall accommodate the testing schedule within 24 hours of the Contractor requested test date/time.
7. The Contractor shall pre-test water for 2 hours. The Contractor shall notify Engineer immediately if pre-test failed.
8. The Contractor shall immediately contact the Engineer if pre-scheduled testing and/or water/sewer construction is canceled. If Contractor does not contact Engineer and Engineer visits the site, the Contractor shall be responsible for Engineer's fees/mileage for site visit.
9. The Contractor shall coordinate water construction with the City of Burlington. The Contractor shall leave thrust blocks and other required sections of new line exposed until City has inspected and approved it.

Sanitary Testing Requirements

1. All sewer lines and manholes shall be thoroughly tested by the Contractor in accordance with the Environmental Protection Rules (04/12/19).
2. All sanitary manholes shall be vacuum tested in the presence of the Engineer. The structure shall be tested prior to backfill with the lowest seam exposed. Test procedures and pressure shall be determined jointly by the local approval agency and the Engineer. Failure of any vacuum test shall necessitate repair and/or replacement of the structure and retest. Water testing manholes is not acceptable.
3. All sanitary mains shall be air tested in the presence of the Engineer. At a minimum, the test pressure shall be 4 pounds per square inch at the highest point along the test for 4 minutes.
4. Utility Testing. The Contractor shall be responsible for scheduling sanitary testing at a minimum of 24 hours prior to the test. Based on availability of Engineer's staff, the Engineer shall accommodate the testing schedule within 24 hours of the Contractor requested test date/time.
5. The Contractor shall immediately contact the Engineer if pre-scheduled testing and/or water/sewer construction is canceled. If Contractor does not contact Engineer and Engineer visits the site, the Contractor shall be responsible for Engineer's fees/mileage for site visit.



Catch Basin Inlet in Mulch Planting Area

PERMEABLE CLAY PAVERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Permeable clay paver units
B. Open graded setting bed (ASTM #8)
C. Open-graded base aggregate (ASTM #57)
D. Open-graded sub-base aggregate (ASTM #2)
E. Bedding and joint/opening filler materials
F. Edge restraints

1.02 RELATED SECTIONS

- A. Earthwork and sub-grade preparation
B. Bases, ballasts, pavements and appurtenances
C. Cast-in place concrete

1.03 REFERENCES

- A. American Society of Testing Materials (ASTM):
1. C902 Standard Specification for Pedestrian And Light Traffic Paving Brick
2. C1272 Standard Specification for Heavy Vehicular Paving Brick
3. C136 Method for Sieve Analysis for Fine and Coarse Aggregate
4. C67 Method of Sampling and Testing Brick and Structural Clay Tile
5. D448 Standard Classification for Sizes of Aggregates for Road and Bridge
- B. Definitions:

1. **Special Provision Choker Course:** Layer of open-graded aggregate beneath the bedding course comprised of small to medium particle-sized washed crushed stone (1/2" to 1" typ.).
2. **Bedding Course:** Commonly called the setting bed is the layer of open-graded washed aggregate directly beneath the clay paver units comprised of small particle-sized crushed stone chips (1/4" to 3/8" typ.).
3. **Laying Face:** The working edge of the pavement where the laying of the pavers is occurring.
4. **Method Statement:** The paver installer's and manufacturer's plan for construction and quality control of the pavers.
5. **Spacer Bars:** Small protrusions on the sides of pavers which are used to create uniform joint spacing between pavers and minimize chipping.
6. **Sub-base Course:** Layer of open-graded washed aggregate beneath the base course comprised of large particle-sized crushed stone (2-1/2" to 3" typ.).
7. **Void Filler:** Open-graded aggregate used to fill the joints between pavers. The bedding course aggregate may be used as the void filler.
8. **Wearing Course:** The top surface of the paver.

1.04 QUALITY ASSURANCE

- A. Paver Installation Subcontractor Qualifications:
1. Installer shall have successfully completed 5 brick paver installation projects similar in design, material and extent indicated on this project. Provide Shop submittal.
2. Installer shall have installed at least 100,000 square feet of brick pavers within the last 10 years.
B. At least one week prior to paver installation a pre-construction meeting shall be held with representatives from the manufacturer, paver installer, general contractor, engineer and owners representative.

1.05 SUBMITTALS

- A. Submit shop or product drawings and
B. Submit permeable clay paver product data.
1. Manufacturer's (Pine Hall Brick Company, Inc.) product catalog sheets with specifications.
2. Three representative full-size samples of each paver type, thickness, and color. Submit samples indicating the range of color expected in the finished installation.
3. Accepted samples become the standard of acceptance for the work of this Section.
4. Laboratory test reports certifying compliance of the clay pavers with ASTM C 902 or C1272.
5. Manufacturer's material safety data sheets for the safe handling of the specified materials and products.
C. Submit test results for compliance of paving unit requirements to ASTM C 902 or ASTM C 1272 from an independent testing laboratory.
D. Submit installer qualifications: provide satisfactory evidence that the installer complies with the qualifications set out in section 1.04.
1. The installer shall provide installation history, including references from projects of a similar size and complexity in writing with contact information (including phone numbers), demonstrating to the owner's satisfaction their ability to perform the paver installation and related work indicated in the plans and specifications.
2. The installer shall have experienced personnel and a management capability to execute the work detailed in the project drawings and specifications. The installer's foreman should have a minimum of 5 years experience in the installation of unit pavers including clay pavers.
E. **Schedule & Work Plan:** submit a detailed schedule and work plan

1.06 MOCK UPS

- A. Install a 10 ft. x 10 ft. paver area. This area will be used to determine surcharge of the bedding layer, joint sizes, lines, laying pattern(s), color(s), and texture of the job. This area shall be the standard from which the work will be judged.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver brick pavers to the site in steel banded, plastic banded, or plastic wrapped cubes or on pallets capable of transfer by fork lift or clamp lift. Unload pavers of job site in such a manner that no damage occurs to the product.

1.08 ENVIRONMENTAL CONDITIONS

- A. Do not install bedding or pavers during heavy rain or snowfall.
B. Do not install frozen bedding.

PART 2 PRODUCTS

2.01 MANUFACTURED UNITS

Permeable clay brick pavers have spacer bars on each unit. These insure a minimum joint width between each unit in which the aggregate is placed. Spacer bars help prevent contact of the edges with adjacent pavers and subsequent chipping.

- A. Permeable clay brick pavers shall be A Grade pavers manufactured/supplied by a member of the Brick Institute of America (BIA). The BIA manufacturer/supplier shall be:
Name: PINE HALL BRICK
Address: P. O. Box 11044
2701 Shorefair Drive
Winston-Salem, NC 27116-1044 Phone: (800) 334-8689
or as directed by Owner
B. Product name/Shape, overall dimensions, and thickness of the permeable clay paver units shall be:
1. Paver Type: StormPave (2-3/4")
a. Material Standard: Comply with ASTM C 902 or C1272.
b. Color: Red
c. Size: 4 inches x 8 inches x 2-3/4 inches thick, or as directed by Owner.
C. Pavers shall meet the following requirements set forth in C 1272 Specification for Heavy Vehicular Paving Brick and shall conform to the PX standard.

1. Minimum average compressive strength of 10,000 psi.
2. The average cold water absorption shall not be greater than 6% with no individual unit testing greater than 7%. Absorption test results may not be achieved through the use of sealers or other products applied to the clay paver. (Sealer protection degrades over time requiring re-application after several years.)
3. Resistance of 50 freeze/thaw cycles, when tested in accordance with ASTM C67. In addition the clay paver must pass CSA-A231.2 freeze thaw test in saline solution without the use of sealers or other products applied to the paver. A test report must be submitted by the manufacturer. (Salt is the most common substance used for de-icing during the winter months.)
4. Dimensional tolerances should meet the PX standard. In addition, the dimensional tolerances around the mean values for length, width, and depth shall be 1/16". (Studies show that dimensional tolerances are directly linked to joint width size and proper interlock.)
5. The pavers should be solid units without core holes or other perforations.

2.02 AGGREGATE MATERIALS

- A. Bedding Course and Void Filler Aggregate
The bedding course and void filler aggregate shall be washed, crusher run, free of fines, organics and soluble salts or other contaminants likely to cause efflorescence. The grading requirement shall comply with the following table.

Table 1 - ASTM No. 8 Grading Requirements for Bedding Course Aggregates		
ASTM Sieve Size	1/2 in.	Percent Passing (by weight)
100	100	
3/8 in.	85 to 100	
No. 4	10 to 30	
No. 10	0 to 10	
No. 18	0 to 5	

Void Filler Aggregate may be 1/8" to 1/4" clean washed crushed stone if available.

2.03 EDGE RESTRAINTS

- A. Edge restraints are required on all installations. Edge restraints are to be as specified in the drawings. Install as per manufacturer's specifications for Heavy Duty Vehicles.

PART 3 EXECUTION

3.01 SUBGRADE

- A. The site engineer shall verify that the sub-grade has been shaped and compacted in conformance to the lines, grades and cross-sections shown on the plans.

3.02 SUB-BASE COURSE

- A. The sub-base course shall be installed to the elevation and cross section per the plan documents.

3.03 EDGE RESTRAINTS

- A. All edge restraints shall be constructed as shown on the detail and in place prior to the installation of the bedding course and pavers.

3.04 CHOKER COURSE

- A. The base course shall consist of a thickness of four inches of aggregate placed in one lift and compacted using a vibratory smooth-drum roller until there is no visible movement of aggregate under static rolling. The base course shall be installed to the elevation and cross section per the plan documents.

3.05 BEDDING COURSE

- A. The bedding course shall be spread loose in a uniform layer to give a depth after compaction of the pavers of two inches, plus or minus 1/8". The contractor shall screed the bedding course using either a mechanical screed beam apparatus or by the use of screed guides and boards.

- B. The screeded bedding aggregate shall not be subjected to any traffic by either mechanical equipment or pedestrian use prior to the installation of the pavers. The voids left after the removal of the screed rails shall be filled with loose aggregate as the paver bedding course proceeds.

3.06 PERMEABLE CLAY PAVERS

- A. The pavers should be installed according to the information on the cube tag. The pavers should be laid from several cubes throughout the installation.

- B. Lay pavers in the pattern as shown on the drawings. Lay pavers away from the existing laying face or edge restraint in such a manner as to ensure that the pattern remains square. Chalk lines (use a heavier chalk cord) shall be used upon the bedding course to maintain straight lines. Joint spacing between pavers shall be between 1/8" and 1/4", however the joint width may need to be increased to 3/8" to maintain straight lines. Lines and grades shown on the plans shall be established and maintained during the installation of the pavers.

- C. Pavers should be cut according to the instructions on the cube tag. Pavers shall be cut using a table mounted masonry wet saw.

- D. Once the pavers have been placed upon the bedding course and all cut pavers have been inserted to provide the complete surface, inspect the pavers for damaged units and remove and replace those units. Once all pattern lines have been straightened, the void filler shall then be placed into the paver openings to the top of the chamfer on the pavers and the surface swept broom clean.

- E. The pavement surface shall be compacted to achieve consolidation of the bedding course and pavers and brought to design levels and profiles by two passes of a suitable plate compactor. Compaction of the pavers shall be accomplished by the use of a vibratory plate compactor capable of a minimum of 4,500 pounds of compaction force. No compaction shall be permitted within three feet of unrestrained edges of the pavement. After compaction, inspect the pavers for damaged units and remove and replace those units.

- F. After completing compaction, the surface tolerances shall be plus or minus 1/8" from finished grades. The pavers shall be flush to 1/8" above edge restraints. Additional void filler material shall be swept into the joints as required, to within 1/8" from the bottom of the chamfer on the paver. Upon completion, the pavement surface shall be swept clean of all excess materials. Remove from the site all surplus materials, equipment and debris resulting from these operations.

PART 4 MAINTENANCE

4.01 INSPECTION

1. At least twice a year immediately after a rain event the Owner shall inspect the permeable brick paver to ensure proper infiltration of stormwater. An inspection log shall be kept indicating date and time of inspection, condition of brick, evidence of or visible ponding, any visible sediment in the spacing between bricks, and published rainfall amount.

4.02 MAINTENANCE

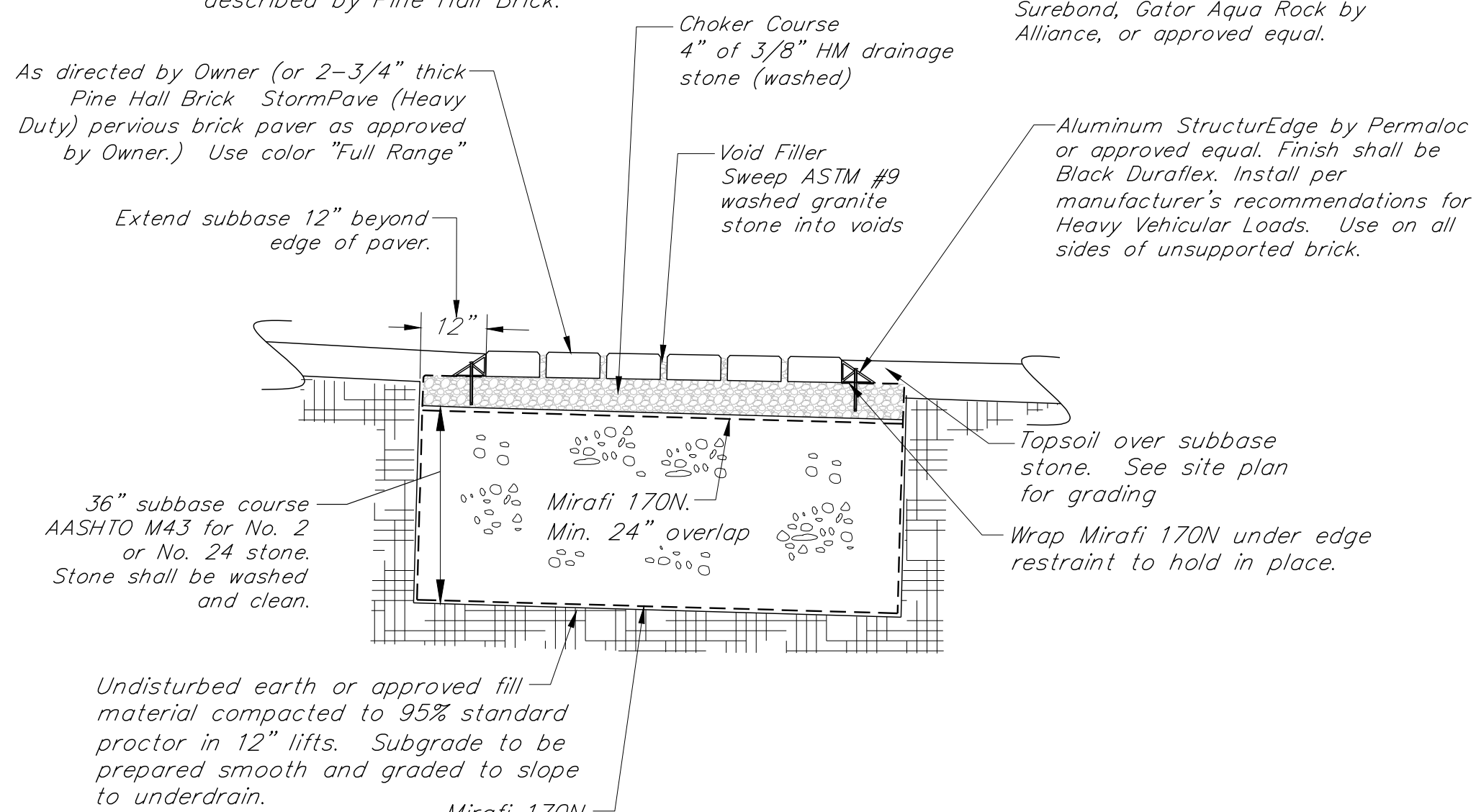
1. Care shall be taken by the Owner to prevent topsoil, landscaping materials, dirt, and other materials that could plug or clog the stones between the brick from being placed on the pervious brick surface.
2. If during inspections, bricks are found broken, or have heaved or settled, the bricks shall be removed and replaced.

4.03 CLEANING

1. At a minimum, once every two years, the pervious brick walks will require the removal of dirt and sediment trapped by the small sized crushed stone in the voids between the brick. Dirt is typically removed by a vacuum-sweeping street cleaning machine. Cleaning is done when the pavement surface and dry/seedbed are dry and can be loosened by sweeping and vacuuming. After vacuum-sweeping the surface, additional clean small stones will be needed to replace the vacuumed stone.
2. During bi-annual inspections, prior to the scheduled cleaning, it is determined the infiltration rates of the pervious pavement is declining or the voids are full of dirt and sediment, the cleaning schedule should be changed to annually.
3. The inspection log shall indicate dates of all cleanings and methods used.

End of Section

Brick shall bed laid in the "Herringbone" pattern as described by Pine Hall Brick.



Pervious Brick Pavers Detail

N.T.S.

AASHTO M43 No. 2 stone shall meet the following gradation requirements:

Sieve	% Finer
100	100
2-1/2"	90-100
2"	35-70
1-1/2"	0-15
3/4"	0-5

AASHTO M43 No. 24 stone shall meet the following gradation requirements:

Sieve	% Finer
100	100
2-1/2"	90-100
1-1/2"	25-65
0-10	
3/4"	0-5

System Maintenance Notes

- All permeable surfaces shall be annually inspected in the spring. Review and note any clogging of permeable materials, any degradation of permeable pavers/concrete, any tracking of materials on pervious surface, and any adjacent exposed soil that would tracked or eroded on to pervious surface.
- All permeable surfaces cannot be sanded.
- Do not over salt permeable surfaces.
- Depending on salt application and heavy duty use, Stormcrete panels may have to be replaced as soon as 5 years.
- Stormcrete panels should be cleaned with high efficiency vacuum when ever needed but at least once a year.
- The permeable stone between the brick pavers should be cleaned (shop vacuumed) and replaced with new filler stone (3/8" HM).
- Surfaces should be kept clean of organic material i.e., leaves and grass clippings.

PRECAST POROUS CONCRETE PAVING SLABS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
1.1. Precast Porous Concrete Paving Slab
1.2. Edge Restraint
1.3. Compacted Storage Reservoir (Subbase) and Screed Choker (Base)

1.02 SUBMITTALS

- A. Shop drawings; installation plan showing edge restraint detail(s).
B. Test results performed by an independent testing laboratory of the following:
1.1. Particle-size analysis in accordance with ASTM C 136 for the crushed stone storage reservoir (subbase) and crushed stone choker (base) with source(s) of supply noted. Visual examination of washed stone.

1.04 QUALITY ASSURANCE

- A. Installation Contractor Qualifications
1.1. Installation shall include planning the work, horizontal and vertical layout, fine grading of subgrades, installing geotextile in accordance with the respective manufacturer's recommendations, placing and compacting crushed stone storage reservoir (subbase), place and screed crushed stone choker (base), installation of edge restraint, and placing precast porous concrete paving slabs.
1.2. The installation contractor shall use adequate forces including equipment and skilled workers. Workers shall be trained and experienced in the necessary crafts and completely familiar with the specified methods needed for proper performance of this Specification.
1.3. All materials, methods of installation and workmanship shall conform to requirements of ASTM, Vermont Agency of Transportation, and/or other applicable Standards.
1.4. Precast porous concrete paving slabs shall be visually inspected by the manufacturer for completeness, texture and consistency with installation drawings. A small amount of "skinning", not to exceed 1% of the top or bottom of slab surface areas, will be allowed.
2. Review the contractor's installation plan in a pre-construction meeting with manufacturer's representative, paving slab installation contractor, general contractor, project design professional and owner's representative.

1.05 WEATHER CONSIDERATIONS

- A. Do not place and/or compact crushed stone subbase in rain or snow, or on saturated or frozen subgrade.
B. Do not place and/or screed crushed stone base in rain or snow, or on saturated or frozen subbase.
C. Do not install precast porous concrete slabs in rain or snow, or on saturated or frozen base.

1.06 DELIVERY, HANDLING AND STORAGE

- A. Coordinate delivery to not interfere with other construction and avoid delays.
B. Slabs shall be off-loaded one-at-a-time by forklift operated by a trained and experienced operator. Forklift must be equipped with 6-ft. long forks to safely off-load slabs.
C. Verify safe load capacity of forklift in accordance with Occupational Safety & Health Administration (OSHA) recommended practices. Only use forklifts with adequate safe load capacity.
D. Store slabs on level ground and propped with 4-in. by 4-in., minimum, timbers placed parallel to one another located directly beneath imbedded lifting points. Place timbers between each slab.
E. Slabs shall be stored in stacks not more than 4 slabs high.
F. Store slabs such that they are kept free from mud, dirt, grass cuttings, accumulation of foliage and debris.

PART 2 MATERIALS

2.01 CRUSHED STONE STORAGE RESERVOIR (SUBBASE) AND CHOKER (BASE)

- A. Crushed Stone with 90% fractured faces, LA Abrasion less than 40 per ASTM C 131, minimum CBR of 80% per ASTM D 1883.
B. Use of screened rounded gravel is prohibited.
C. All crushed stone shall be double-washed and clean and free of all fines and debris.
D. Compacted crushed stone for storage reservoir (subbase) shall conform to ASTM C 33 Size Number 57 Grading Requirements for Coarse Aggregates. Minimum thickness of compacted storage reservoir (subbase) shall be as shown in cross section detail.
E. Un-compacted/screed crushed stone for choker (base) shall conform to ASTM C 33 Size Number 8 Grading Requirements for Coarse Aggregates. Minimum thickness of un-compacted/screed choker (base) layer shall be as shown in cross section detail.
F. Product Substitutions: Substitutions may be allowed for gradations of crushed stone storage reservoir (subbase) and choker (base). Compacted crushed stone for storage reservoir (subbase) shall have a minimum porosity of 0.40. All substitutions shall be approved by the project design professional and the precast porous concrete paving slab manufacturer.

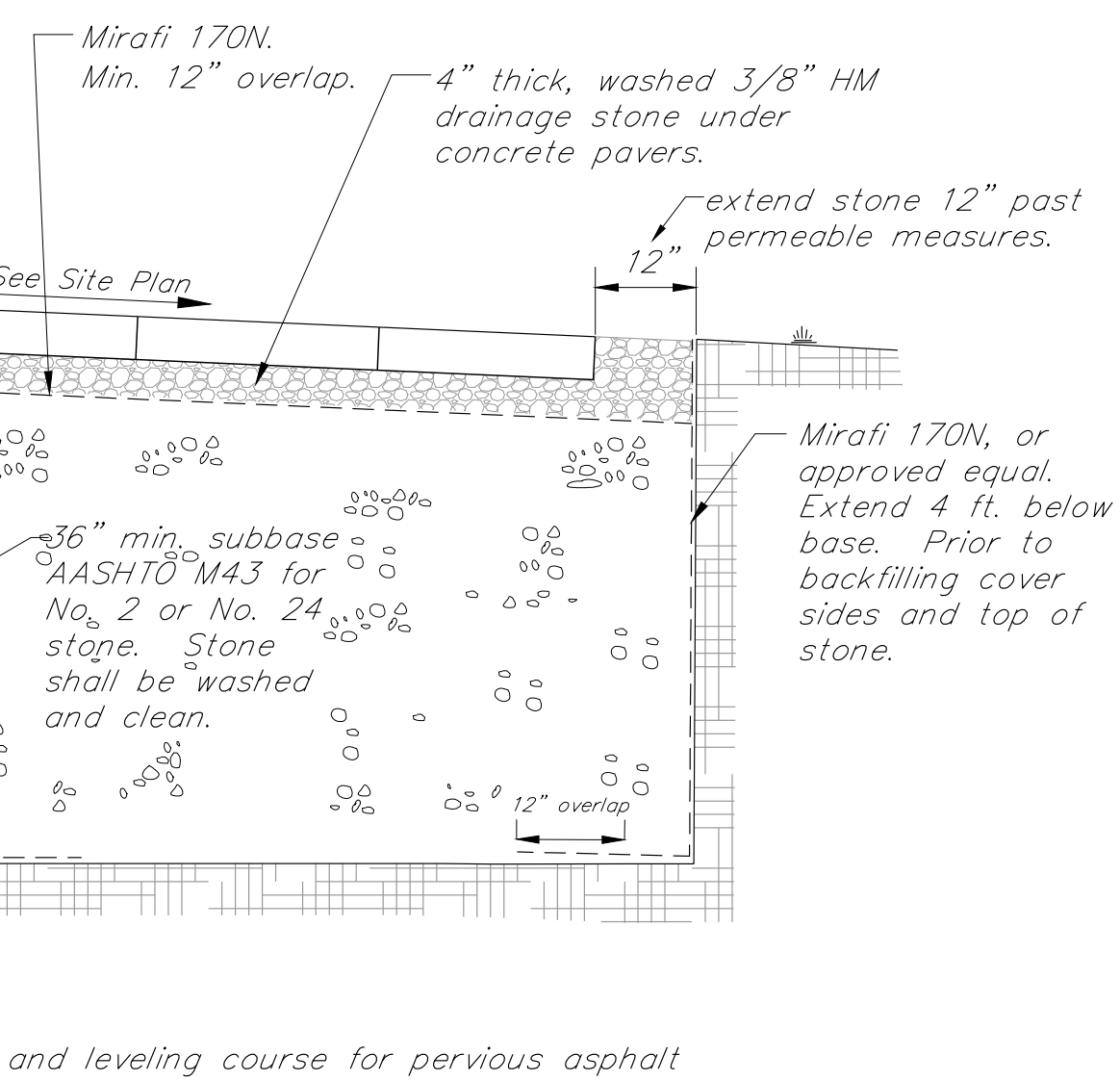
2.02 GEOTEXTILE

- A. Geotextile between subgrade and around perimeter of choker (base) and storage reservoir (subbase) layers, as detailed, shall be as follows:
1. Material Type: Geotextile shall be an Mirafi 170 N, or approved equal, Non-Woven geotextile.

PART 3 - EXECUTION

3.01 INFILTRATION SYSTEM SUBGRADE PREPARATION

- A. The subgrade under all infiltration [bed] areas shall not be compacted or permanently covered with impermeable geotextile unless approved by the Engineer.
B. Prepared subgrades shall not be subject to construction equipment traffic.
C. Only light equipment shall be used to build the precast porous concrete pavement system.
D. Contamination or damage to the subgrade during construction shall be repaired to the satisfaction of the Engineer. This may include additional excavation and placement of subbase material at no expense to the Owner.
E. Do not proceed with installation of subbase and precast porous concrete paving system until subgrade has been reviewed by the Engineer.



Typical Pervious Concrete Access Drive Detail

N.T.S.

3.02 INSTALLATION

A. General

- Any excess thickness of soil placed over the soil subgrade to trap sediment transported by runoff from adjacent construction areas shall be removed before placement of geotextile and storage reservoir layer.
2. Keep area where precast porous concrete paving slabs are to be installed free of sediment during the entire construction period. Storage reservoir crushed stone contaminated with sediment shall be removed and replaced with clean material at no cost to the Owner.
3. Do not damage drainpipes, underdrains, roadway boxes, manholes or any other utilities during installation. Report any damage immediately to the Engineer.
B. Compacted Reservoir Storage Layer (Subbase).
1. Geotextile and porous media bed aggregate shall be placed immediately after approval of subgrade preparation. Any accumulation of debris or sediment which has taken place after approval of subgrade shall be removed prior to installation of geotextile at no extra cost to the Owner.
2. Place AASHTO M43 No. 2 or No. 24 crushed stone over the prepared subgrade and spread and level evenly by raking to minimum thickness specified on the plans. Do not disturb prepared subgrade or shift, wrinkle or fold the geotextile. Place crushed stone to protect geotextile from tearing under equipment tires and tracks.
3. Place coarse aggregate in (12 inch) maximum lift thickness. The aggregate material shall be distributed evenly over the subgrade in lifts of specified depth to achieve the proposed grades without significant alteration of the gradation supplied. Care shall be taken to limit the disturbance of the subgrade materials.
4. Compact layer with a minimum of two complete coverages, one pass each in mutually perpendicular directions, with a 3 to 5 ton smooth, double or single, drum roller operated in vibratory mode. Following vibratory compaction, apply two complete coverages, one pass each in mutually perpendicular directions, with the roller operated in static mode. Continue static rolling until there is no visible movement, weaving or deflection in the surface of the storage reservoir layer.
5. The surface tolerance of the compacted storage reservoir layer shall be ±3/8 in. under a 10 ft. straightedge and the surface shall be suitable for the placement of a choker course of aggregate.
6. Following placement of bed aggregate, the geotextile shall be folded back along all bed edges to protect from crushing stone washout along bed edges.

- C. Un-compacted/Screed Crushed Stone Choker (Base) Layer
1. Place and spread VAOT 704.02 for 3/8" washed crushed stone evenly over the Compacted Reservoir Storage Layer and screed rails to the thickness detailed. Level surface of crushed stone with screed.
2. Do not compact choker or spread screed choker layer.
3. The surface tolerance of the screed choker layer shall be ± 1/4 in. under a 10 ft. straightedge.
4. Screed choker layer placed shall not substantially exceed that which is covered by paving slabs by the end-of-day.

3.03 SLAB PLACEMENT

A. Slab Placement

- Lay slabs in pattern(s) shown on approved drawings.
2. Slabs shall only be lifted and placed using swivels and spreader chains. Chains, cables or slings should never be wrapped around slabs for lifting under any circumstances. Swivels shall be banded securely but not over-tightened.
3. Place units hand tight without using metal hammers, pry bars or drift pins. Make horizontal adjustments to placement of laid slabs with wood wedges and levers, and rubber mallets as needed.
4. Provide joints between slabs of 1/16 in. - 3/16 in. wide. No joints shall exceed 3/16" width.
5. Joint lines shall not deviate more than ±1/8 in. over 50 ft. from string lines.
6. Fill gaps at the edges of the paved area with properly-sized and slabs.
7. Cut and slabs to be placed along the edge or corners with a masonry saw. The masonry saw blade shall be kept wet during cutting. Cut units shall be no shorter than 1/4 of a whole slab.
8. Adjust bond pattern on pavement edges such that cutting of edge slabs is minimized.
9. Do not expose cut slabs to vehicular traffic. Cut slabs at edges as indicated on the drawings.
10. Keep skid steer and forklift equipment off unrestrained paving slabs.
11. After an area is completely prepared, set the precast porous concrete slabs into the screed crushed stone choker (base) layer by trafficking with light rubber-tired equipment.
12. Remove and replace any slabs cracked or damaged during installation with new ones. Reset slabs not in conformance with specified installation tolerances. Slabs damaged during improper construction shall be replaced at no cost to the Owner.
13. Check final surface elevations of set slabs for conformance to design drawings. The final surface tolerance from grade elevations shall not deviate more than ± 3/8 in. under a 10 ft. straightedge.
14. The surface elevation of set slabs shall be flush with manholes or the top of utility structures.
15. Slabs shall be sawcut to accommodate utility structures. Void between concrete panels and utility structure shall be filled with high strength, non-shrink grout (2" gap or less) or 3,500 psi concrete for gaps greater than 2" thick.

- After installation of concrete slabs fill all 1/2" diameter lifting holes with small amount Sika-flex joint sealer.

3.05 PROTECTION

- A. After work in this section complete, the general contractor shall be responsible for protecting the precast porous paving slab system from damage and/or contamination with mud, dirt, grass cuttings, accumulation of foliage and debris.

DETAILS

REVISIONS

12/17/2020 00 Documents

SCALE

Not to Scale

DATE

12/17/2020

DRAWN BY

TIB/SLM

CHECKED BY

XXX

Signage & Pavement Markings

All signage and pavement marking include all necessary items to make product complete. All labor, materials, equipment and construction for signage and markings shall comply with AOT specifications. The location of each sign is shown on the plan or will be identified by the Owner or Engineer.

ROAD/PARKING SIGNS

Description	Specification	Size
Handicap 24 Hour Towing Enforced	Custom	12" x 18"
Van Accessible	R7-8P	18" x 9"
Stop	R1-1	30" x 30"

Provide 2" square galvanized steel sign posts posts. Bottom of all signs to be 7 feet above nearest adjacent curb or pavement elevation.

SIGN MATERIALS:
THE SIGN BASE MATERIALS USED FOR REGULATORY SIGNS MAY BE ANY OF THE FOLLOWING OF THE MINIMUM THICKNESS NOTED.

	24" X 12"		
	24" X 24"		
	24" X 30"		
12" X 18"	24" X 36"	36" X 48"	
18" X 24"	30" X 24"	48" X 60"	
FLAT SHEET ALUMINUM	0.060"	0.080"	0.100"

ALL PANELS SHALL HAVE RETROREFLECTIVE BACKGROUNDS

ALL SIGN POSTS SHALL BE SQUARE TUBE GALVANIZED STEEL PLACED IN GALVANIZED STEEL ANCHOR SLEEVES.

GENERAL NOTES:

- All square tube steel posts and anchors shall be formed into a size and shape in such a manner that neither flash nor weld shall interfere with the telescoping properties, nor damage the galvanizing.
- Anchors may be driven or set into a dug hole and backfilled. If driven, a driving cap shall be used. The dug hole installation method shall be utilized in areas with poor soil conditions or as directed by the engineer. Backfill shall be compacted as directed by the engineer.
- The tops of sign posts shall be at or near the top of sign. The post shall not extend above the top of sign.
- Sign posts shall be installed a minimum of one foot below ground, inside the anchor. The length of anchor exposed above ground shall not exceed four inches.
- All dimensions shown in inches.

POST AND ANCHOR SELECTION CHART

POST SIZE (IN.)	POST THICKNESS (IN.)	POST WEIGHT (LBS./FT.)	POST GAGE	SECTION MODULUS (IN. ³)	ONE POST SV	TWO POST SV	THREE POST SV	POSTS PERMITTED IN 8' PATH	ANCHOR SIZE (IN.)	ANCHOR GAGE	MINIMUM ANCHOR LENGTH
1.75	.083	1.88	14	0.222	45	90	135	TWO	2.00	12	30
2.00	.109	2.42	12	0.393	80	160	240	TWO	2.25	12	48
2.50	.109	3.35	12	0.673	137	274	411	ONE	3.00	7	48

NOTES:

- All sign posts shall have 7/16 inch holes every one inch on center (all four sides).
- The number of sign posts permitted within an eight foot path assumes that the sign assembly is not protected by guardrail or is located within a guardrail's deflection distance determined per the current "American Association of State Highway and Transportation Officials" (AASHTO) roadside design guide. additional posts may be installed using slip bases that meet "national cooperative highway research program" (NCHRP) report 350 or the AASHTO "Manual For Assessing Safety Hardware" (mash). The appropriate resource shall be determined as described in the mash publication.
- To use the selection value (SV) columns in the table above, multiply a sign's surface area in square feet (H X L) by the sign's height in feet measured from the ground to the centroid of the sign assembly (H). This result must be less than or equal to the corresponding selection value. Note, that for signs with multiple posts, the largest height dimension shall be used to calculate the post selection value.
- The design criteria utilized in sign post and anchor selection is as follows: wind speed of 70 mph (10 year mean recurrence interval), wind pressure of 19 psf, steel minimum yield of 55,000 psi, and an allowable stress of 1.4 (0.60 fy).

Roadway Sign and Post Details

AS-BUILT (RECORD) DRAWINGS FOR SITE UTILITIES

Refer to Specifications for additional requirements.

At the completion of the project the Contractor shall be responsible for providing the Owner with a complete Utility Record Drawing in AutoCAD and PDF format. The Record Drawing shall meet the specifications below:

Utility

Water

- All pipe sizes and types shall be provided.
- All water gate valves and shut-off valves shall be horizontally located with three (3) swing ties.
- All bends and fittings shall be horizontally located with three (3) swing ties and the top of pipe elevation shall be provided accurate to 0.1 ft.

Sanitary

- All rims, inverts, pipe sizes, and types shall be provided.
- Cleanouts shall be horizontally located with three (3) swing ties and the pipe invert elevation shall be provided accurate to 0.1 ft.
- Service pipe inverts shall be provided at the building with a horizontal measurement from a building corner.

Storm

- All manhole/CB/DI - rims, inverts, pipe sizes, and types shall be provided.
- Inverts of all yard drains shall be provided.
- Cleanouts and fittings (wye, reducers, etc.) shall be horizontally located with three (3) swing ties and the pipe invert elevation shall be provided accurate to 0.1 ft.
- Service pipe inverts shall be provided at the building with a horizontal measurement from a building corner.

Electric

- Horizontal alignment shall be accurately sketched on a Site Plan. The Site Plan shall be specific to electric and communication utilities only.
- Trench x-section (number and type conduit, encasement detail, conduit length, run direction) shall be provided for each run of conduit. If the cross-section changes mid run the location of the change must be indicated with a new cross section detail.

VT Gas

- Contractor shall be responsible for providing Owner with a complete "mark-up" plan showing the layout of VT Gas piping.

Site Lighting

- Contractor shall be responsible for providing to the Owner a complete "mark-up" plan showing the layout of the site lighting conduit from light pole to light pole.

Other

- Contractor shall be responsible for locating and identifying all existing utilities that are exposed in the process of installing new utilities.

Swing ties may be substituted with survey shots taken with survey equipment able to locate infrastructure with a horizontal accuracy of 1 ft and a vertical accuracy of 0.1 ft.

RECTANGULAR RAPID FLASHING BEACON: RRF8-XL2

LIGHT BAR HOUSING Black powder coated aluminum

VEHICLE LED MODULES 7" x 21" arrays of 8 amber LEDs spaced 7" apart, SAE J595 class 1 certified

PEDESTRIAN LED MODULES 11 1/2" x 17", side-viewable, flash simultaneously with vehicle LED (optional, one or both sides)

FLASH PATTERN WW + S (combination wig-wag and simultaneous flash)

DIMMABLE Automatically controlled via included photocell sensor

MOUNTING HARDWARE Various options available

WIND LOAD RATING Up to 120mph*

OPERATING TEMPERATURE RANGE -40°F to 122°F

*Dependent upon pole size and system arrangement

22 in

4 in

Top View

Side View

BLINKERBEAM® WIRELESS COMMUNICATION

FREQUENCY 900 MHz FHSS (Frequency Hopping Spread Spectrum)

RANGE 900 feet (radio site survey recommended)

CONNECTIVITY Crosswalk and optional advanced warning LEDs activate concurrently

ACTIVATIONS

PUSH BUTTON ACTIVATION ADA push button, typical (<120 milliseconds)

USER-ACTUATED PUSH BUTTON XAV2-LED on Bulldog

PASSIVE DETECTION Wireless beacons

OPTIONAL PROGRAMMING BlinkLink™ Optional cloud software with cellular modem**

**Dependent upon system configuration

TAPCO (800) 236-0112 TAPCOnet.com

© 2018 Traffic & Parking Control Co., Inc. 1101 West Brown Deer Rd., Brown Deer WI 53223 Phone 800 236-0112 FAX 800-944-0331 www.tapconet.com

TAPCO Safe travels.

SOLAR-POWERED RECTANGULAR RAPID FLASHING BEACON

Top-of-pole self-contained control cabinet

TOP-OF-POLE CONTROL CABINET

HOUSING NEMA 38 type aluminum

SOLAR PANEL 20 watt

BATTERY 12V, up to 44Ah

BATTERY LIFESPAN 3 to 5 years, field replaceable

MOUNTING OPTIONS Round poles: 2 1/2" up to 4 1/2" Square poles: 1 1/2" up to 2 1/2"

MOUNTING HARDWARE Stainless steel hardware

WARRANTY 3-year limited battery warranty
5-year limited system warranty
10-year limited solar panel warranty

22 in

2 1/2 in

12 1/2 in

32 in

Front View

Side View

Back View

SOLAR RECTANGULAR RAPID FLASHING BEACON DETAIL

NTS

PROJECT DATE: [REDACTED]

FRONT VIEW

SIDE VIEW

30" X 30" PVS WITH 6 PEDESTRIAN CROSSING SIGNS (R-9)

65 DIRECTIONAL RECTANGULAR RAPID FLASHING BEACONS

18" X 30" PVS WITH 1/2" ANCHOR PLUGS (R-4)

2 1/2" SQUARE TUBE, 12 GAUGE STEEL SIGN POST

PUSH BUTTON ASSEMBLY & 1/2" X 12" STD-45 PEDESTRIAN SIGN

SEE VENUES STD-45 FOR POST RELIEVE AND ANCHOR REQUIREMENTS

NOTES

1. THE RECTANGULAR RAPID FLASHING BEACON SHALL BE CARMAHAW MODEL R920 WITH THE CONFIGURATION SHOWN ABOVE.

2. THE LOCATION OF THE RECTANGULAR RAPID FLASHING BEACONS SHALL BE STAKED IN THE FIELD AND APPROVED BY THE TOWN OF ESEBIX PUBLIC WORKS DEPARTMENT PRIOR TO INSTALLATION.

Pavement Marking Notes

- Typical parking space is 8'-6" center of line to center of line marked with 4" wide Yellow Paint.
- ADA space is blue box, yellow stencil, yellow trim.
- Paint for pavement markings shall be durable Hydrophast Waterborne Traffic Paint by Franklin Paint Company. It shall be reflective, VOC compliant fast drying, 100% acrylic waterborne traffic paint. Paint for stop bars and crosswalks shall be white all other line striping shall be yellow.
- Traffic paint shall be applied with a uniform thickness and at a rate such that no pavement is visible after drying. Additional paint application will be required if underlying pavement is visible.

Grounds Restoration

1.0 GENERAL

- All renovation and new construction must repair any damaged grass or landscaped areas to pre-construction conditions.
- Damage caused to grounds due to contractor negligence or due to construction traffic shall be restored at the cost of the contractor. Damage shall be reported to the Owner and Landscape Architect immediately after event.
- Topsoil shall have a minimum of 4 inches of depth unless additional depth is specified on the plans. See Soil & Seeding Notes.
- Seed: See Soil & Seeding Notes.
- Fertilizer: See Soil & Seeding Notes.
- Grade evenly with walkways, curbs and lamppost bases.

IF SUFFICIENT CLEARANCE IS NOT AVAILABLE BETWEEN CURB AND SIDEWALK MOUNT SIGN, BEHIND SIDEWALK AS SHOWN AT TOP, CHECK FOR ADEQUATE R.O.W.

IF A SECONDARY SIGN IS MOUNTED BELOW ANOTHER SIGN, THE MINIMUM CLEARANCE MAY BE REDUCED BY ONE FOOT.

Roadway Sign Height Details

N.T.S.

carmanah we put solar to work

R920 SERIES

Pedestrian-actuated warning system for uncontrolled marked crosswalks

R920s have been found to provide vehicle yielding rates between 72 and 80 percent for crosswalk applications, including 4-lane roadways with average daily traffic (ADT) exceeding 12,000*.

Superior Design and Technology

The R920 offers a self-contained solar design integrating the energy management system with an on-board solar battery, housed in a compact enclosure together with the halftone and solar panel. In low light conditions, the red-actuator signal system provides superior lighting protection and system efficiency.

Easy Installation

With its highly efficient and compact design, installation is quick and uncomplicated, dramatically reducing installation costs. Retro-fitting can be done where existing signs are used to enhance existing marked crosswalks in minutes, and new installations can be completed without the cost of major poles and bases.

Advanced Weatherproofing

The R920 is the first R920 with an on-board user interface and display for rapid configuration and maintenance. It allows for simple in-the-field set-up adjustment to flash duration, enabled settings, and right turn only. Settings are broadcasted automatically to all units in the system.

Reliable

Designed with Carmanah's industry leading solar monitoring tools to provide dependable year after year operation.

Trusted

With thousands of installations in the field, Carmanah solar become and solar LED light have become the benchmark in traffic applications and other transportation applications worldwide.

Connect to Carmanah's available network of distribution partners. To find a representative by your region:

- visit us at www.carmanah.com
- or call 1-800-333-0000 (toll-free US & Canada) 1-877-732-8877

REPRESENTED IN YOUR REGION BY:

Attachment H
Cross Walk Detail

Concrete rounded smooth

6" Sch 40 galvanized steel pipe bollard, concrete filled

Install Safety yellow PVC cover, BOL-49 by Pawling Corp., or equal, over steel pipe

Finish grade

1/2" joint filler when located in concrete

Fill with concrete

42"

54"

6" 6"

Bollard Detail

N.T.S.

BURLINGTON HIGH SCHOOL

BURLINGTON, VERMONT

KREBS & LANSING
CONSULTING ENGINEERS

100 North Main, 4th Fl. Burlington, VT 05401
Tel: 802-249-1111 Fax: 802-249-1112
www.krebslansing.com

STATE OF VERMONT

DESIGN REVIEW ONLY

DETAILS

REVISIONS

NO	DATE	DESCRIPTION
1	12/17/20	00 Documents

SCALE
not to scale

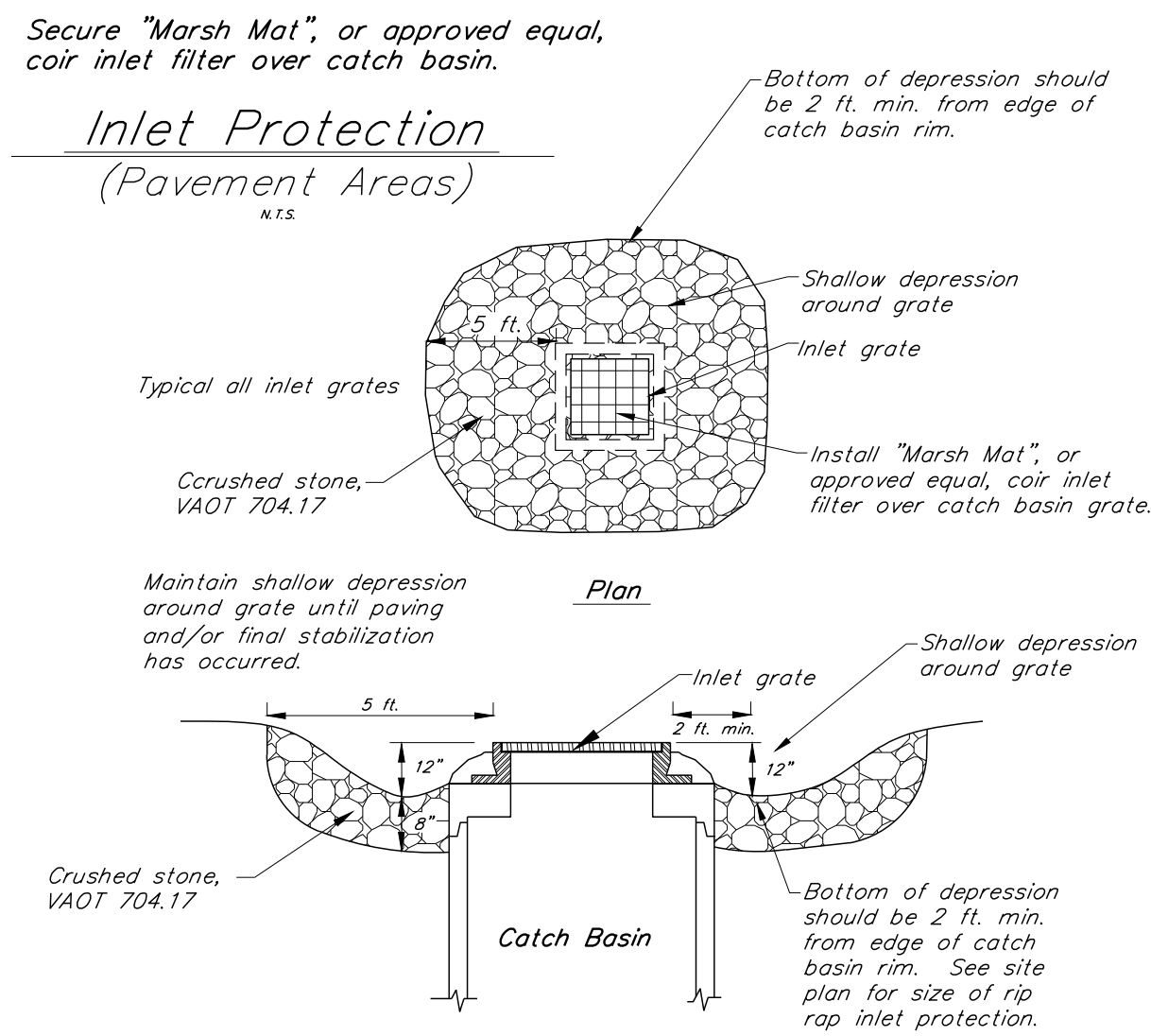
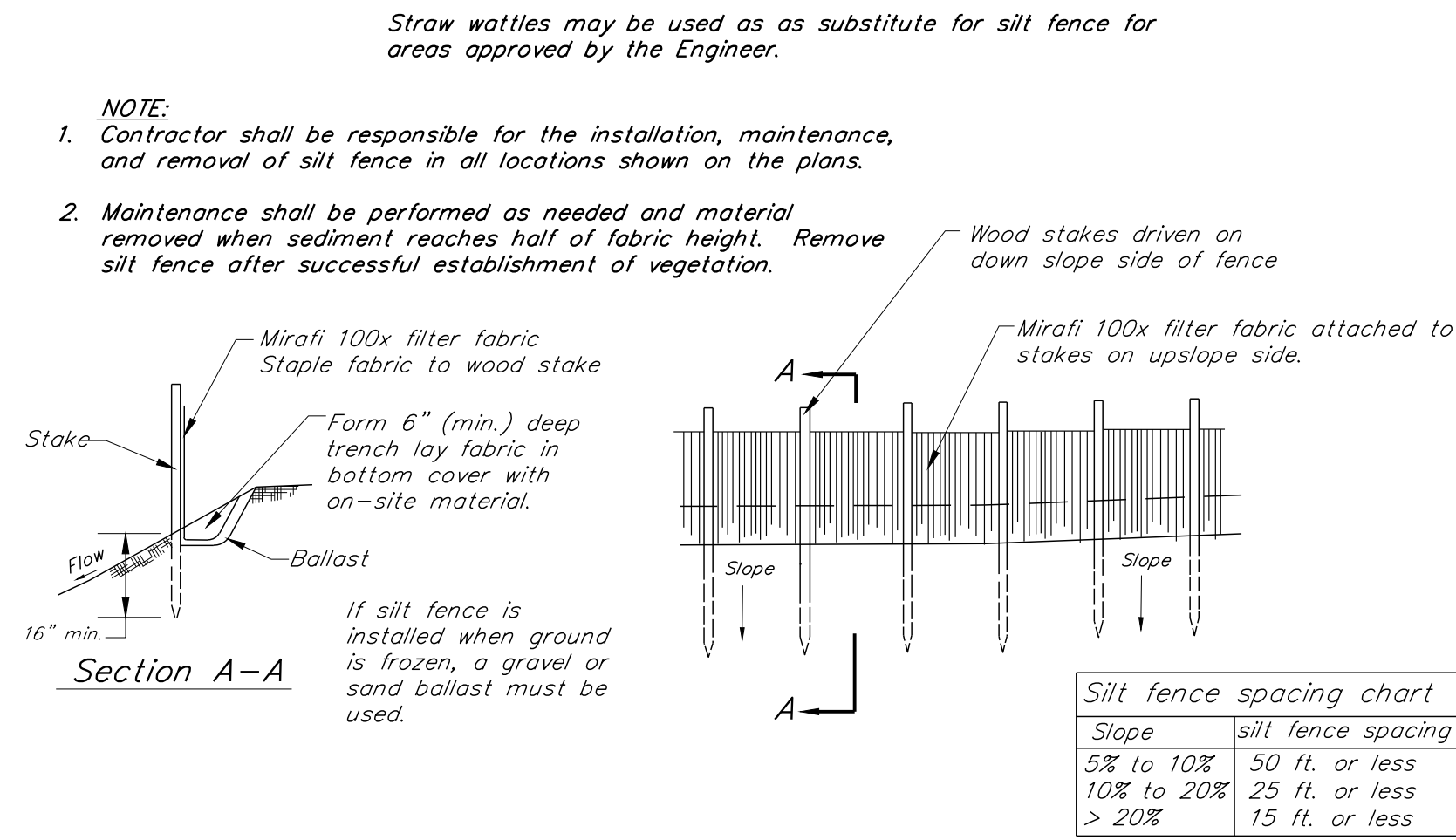
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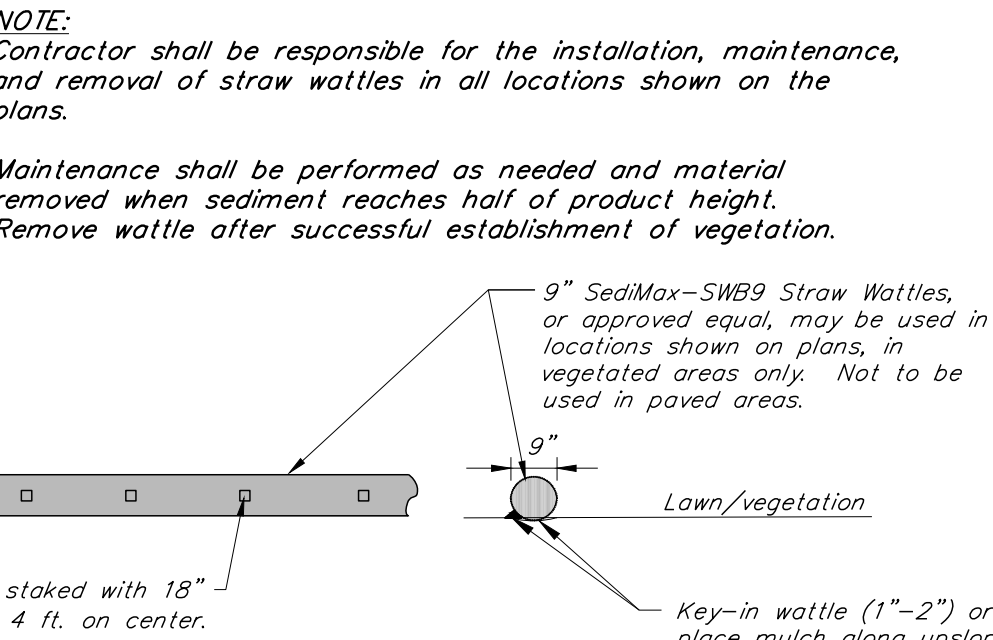
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Stone Lined Sump Inlet Protection



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

- For areas to be stabilized by vegetation, seeding shall be completed no later than September 15th to ensure adequate growth and cover.
- If seeding is not completed by September 15th, additional non-vegetative protection must be used to stabilize the site for the winter period. This includes the use of Erosion Control Matting or netting of a heavy mulch layer.
- Where mulch is used for temporary stabilization it must be applied at double the standard rate, or a minimum of 3 inches with an 80%-90% cover.
- Stabilized Construction Entrances shall be enlarged to provide for snow stockpiling.
- Limits of disturbance shall be moved or replaced to reflect any revised boundaries of winter work.
- A snow management plan shall be prepared 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.
- A minimum 25 foot buffer shall be maintained from perimeter controls such as silt fence.
- Drainage structures must be kept open and free of snow and ice dams.
- Silt fence and other practices requiring earth disturbance must be installed ahead of frozen ground.
- To ensure cover of disturbed soil in advance of a melt event, areas of disturbed soil must be stabilized at the end of each work day with the following exceptions:
 - If no precipitation within 24 hours is forecast and work will resume in the same disturbed area within 24 hours, daily stabilization is not necessary.
 - Disturbed areas that collect and retain runoff, such as house foundation or open utility trenches.
- Prior to stabilization, snow or ice must be removed to less than 1 inch thickness.
- Use stone to stabilize areas such as the perimeter of buildings under construction or where construction vehicle traffic is anticipated. Stone paths should be 10-20 feet wide to accommodate vehicular traffic.

North American Green S150BN
Straw erosion control blanket shall be S150BN as manufactured by North American Green, Inc. or equivalent and shall have the following properties:

Material Content

Straw: 100% (.50 lbs/sq.yd.) (.27 kg/m²)

Netting: TOP - Leno woven 100% biodegradable organic jute
BOTTOM - 100% biodegradable organic jute

Weight: TOP - approx. 9.35 lb/1000 s.f.
BOTTOM - approx. 7.7 lb/1000 s.f.

Thread: Biodegradable

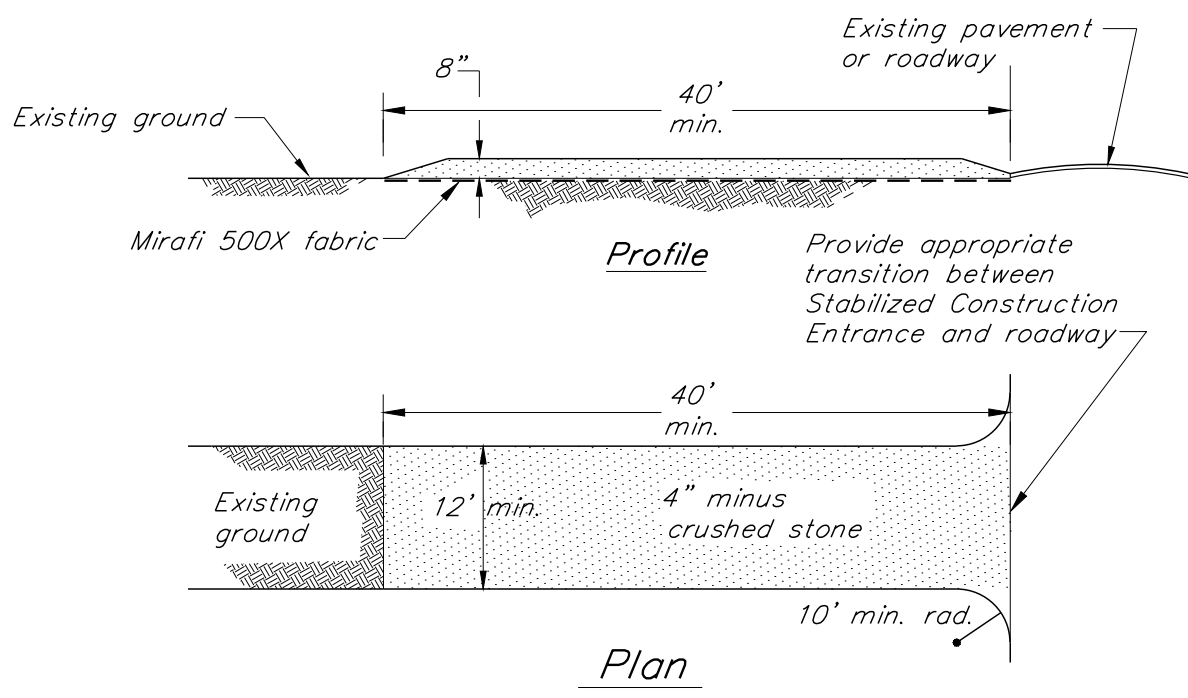
Material Specifications

Erosion control blanket shall be a machine-produced mat of 100% agricultural straw.

The blanket shall be of consistent thickness with the straw evenly distributed over the entire area of the mat. The blanket shall be covered on the top and bottom sides with a 100% biodegradable woven natural fiber netting having an approximate 0.5" X 1.0" mesh and be sewn together on 1.5" centers with degradable thread.

Installed as per manufacturer's specifications.

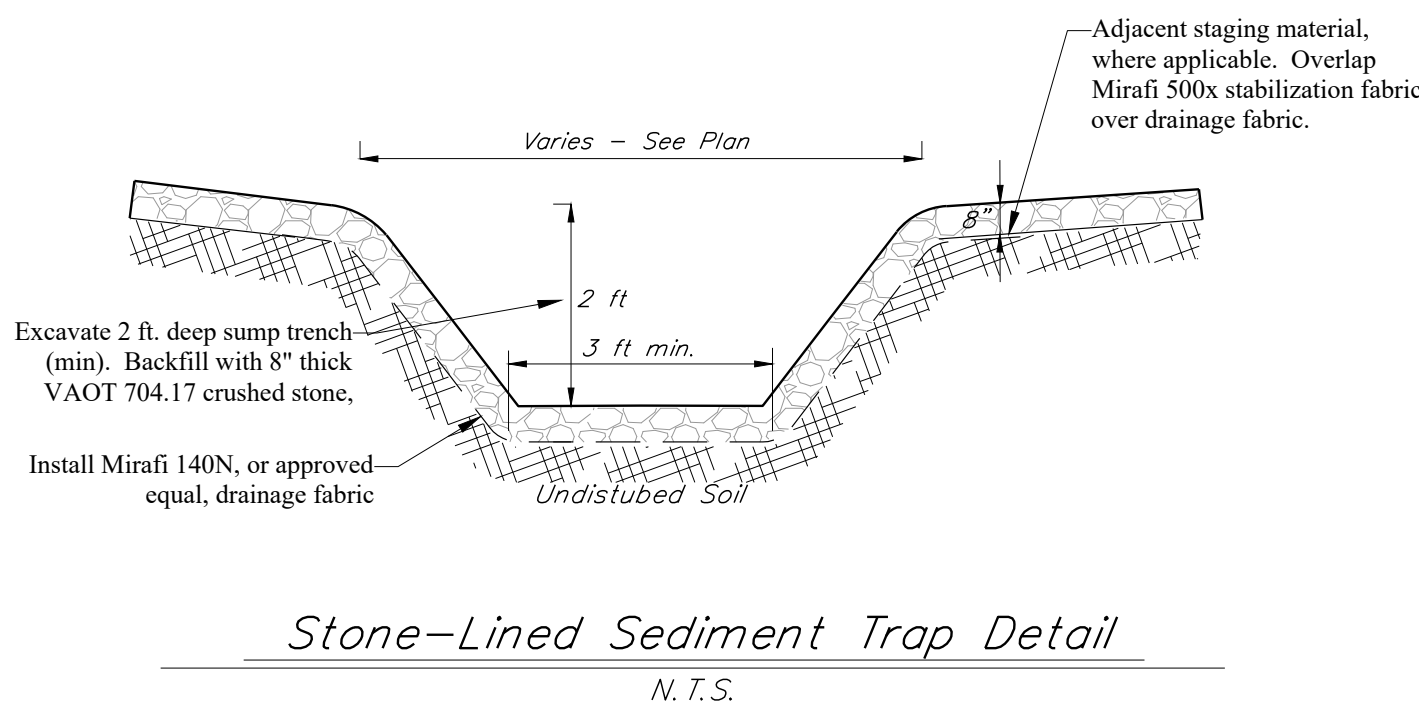
Erosion Control Matting



- Note:**
- Contractor shall be responsible for the installation, maintenance, and removal of a stabilized construction entrance at each construction entrance for the project. The Construction Stabilized Entrance and its continued maintenance shall be a minimum measure to prevent tracking of sediment off-site.
 - Contractor to use Mirafi 500x under stone for temporary construction roads.
 - Stabilized construction entrances shall be repaired when voids are 80% filled with sediment. Repair shall include adding additional 4" minus crushed stone and/or removal of contaminated stone.

THIS DETAIL TO BE USED FOR ALL TEMPORARY STONE STABILIZATION AREAS IDENTIFIED ON THE PLANS

Temporary Stabilized Construction Entrance & Staging Areas



General Grading and Site Work Notes

- All area disturbed and all areas within the clearing limits shall be graded and covered with a minimum of 4" of compacted loam topsoil. The areas to be loamed shall be free and clear of roots, waste material and other deleterious material. Topsoil shall be spread and lightly compacted to a depth of 4". Topsoil shall be approved by the Engineer.
- All cut slopes shall be no steeper than 3h on 1v. All fill slopes shall be no steeper than 2.5h on 1v.
- Temporary silt fence shall be erected prior to any clearing or construction. Fencing may be erected in phases, but in no case shall construction or clearing proceed fencing. Special areas may be designated by the Owner for preservation of existing trees. These areas shall be the Contractor's responsibility to insure no damage is done to designated trees.
- Existing plantings are located in general areas as shown on this plan. Contractor shall protect plantings so as not to damage these or their root systems.
- Slope stability based upon unsaturated soil conditions. If during construction saturated soils are encountered, contact the Engineer immediately

Construction Limit Barriers

- Temporary chain-linked construction fence shall be used to delineate construction limits where practical or where directed in the Contract Documents.
- Orange construction fence or snow fence shall be used to demarcate short-term construction activities.
- 3" thick orange polyester mesh webbing may be used to demarcate pedestrian barricades for new topsoil and seeded areas

Erosion Prevention and Sediment Control Notes

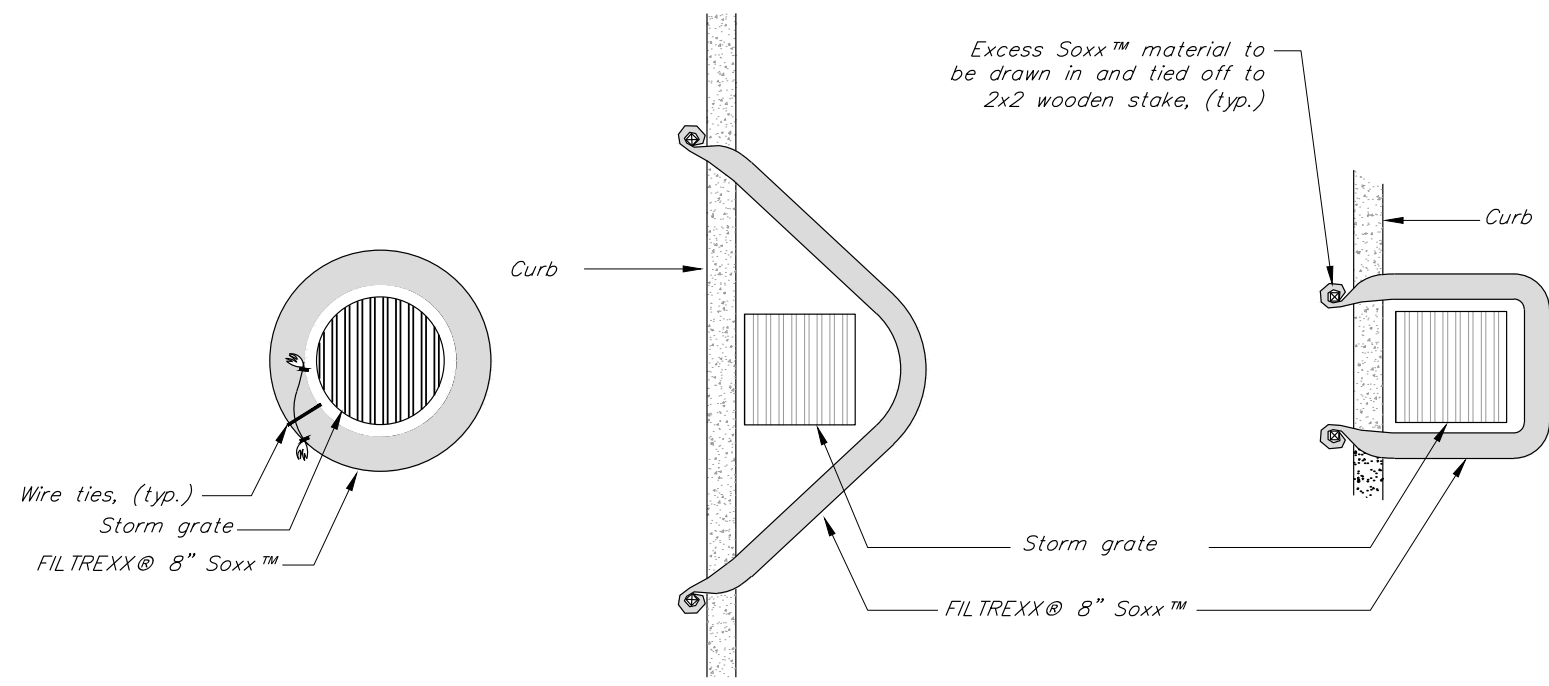
- Contractor shall be responsible for complying with all State and Local erosion prevention and sediment control standards and permit requirements during construction.
- The limit of disturbance shall be clearly defined by Contractor's surveyor prior to clearing. Erosion and sediment control devices shall be established to trap sediment on site.
- All erosion control shall be placed as shown on the drawings or as ordered by the Engineer. The Contractor shall maintain the erosion control measures until the Engineer is satisfied that permanent ground cover is established and that further measures are not required. It shall be the responsibility of the Contractor to employ appropriate erosion control as shown on these drawings and any other measures as necessary to trap sediment on site.
- All areas of disturbance shall be permanently or temporarily stabilized as soon as possible and within 48 hours of final grading. All areas of disturbance shall be at least temporarily stabilized within 7 days of initial disturbance. Any disturbance after 7 consecutive days of exposed soil shall be stabilized daily unless the following exceptions apply:
 - Stabilization is not required if earthwork is to continue in the area in the next 24 hours and there is no precipitation forecast in the next 24 hours.
 - Stabilization is not required if a self-contained excavation (i.e. no outlet) with a depth of 2 ft. or greater (e.g. house foundation excavation, utility trenches). Stabilization measures shall include mulch and netting, erosion control matting, crushed stone, gravel, or pavement.
- Refer to the Low Risk Site Handbook for Erosion Prevention and Sediment Control for acceptable methods of stabilization.
- The Contractor shall use water for dust control. **There will be a ZERO tolerance for dust**
- The Contractor shall provide inlet protection around all catch basins (existing or new) that collect construction site stormwater runoff. Crushed stone inlet protection may be used in non-paved areas.
- A stabilized construction entrance (See Detail) shall be installed and maintained at all construction access locations.
- All paved roads used by construction vehicles shall be swept daily during periods of active construction, or at a greater frequency, if dirt or gravel is tracked from the site. The swept debris shall be immediately removed from the curb face if applicable.
- All temporary erosion and sediment control measures shall be removed within 30 days after final stabilization or after the measures are no longer needed, unless otherwise authorized.
- All sediment removed from sediment control practices shall be placed in an approved soil disposal area.
- All areas that do not have established vegetation by October 15th must be stabilized in accordance with the Winter Construction Requirements listed on this sheet.
- After permanent seeding the Contractor shall be responsible for watering, if necessary, to ensure adequate vegetative growth.
- Water from dewatering activities that flows off site must be clear. Water must not be pumped into storms sewers, lakes, or wetlands unless the water is clear.
- The Contractor shall be responsible for all inspection and maintenance of the erosion prevention and sediment control practices for the project. Inspections and corresponding reports shall be performed at a minimum, once a week and after every precipitation event that results in a discharge from the site.

Contractor shall call 540-1748 or email Megan Moir (mmoir@ciburlington.vt.us) at least 24 hours prior to initiating earth disturbance and submit name, cell phone number, and email contact information of the erosion control coordinator for the project.

The perimeter of the site and all BMPs will be inspected at the end of each workday to ensure that sediment will not leave the site. If sediment has traveled beyond the site boundary, it shall be swept up or otherwise removed and deposited on-site in an upgradient area at the end of each workday.

Tree Protection & Landscape Clearing

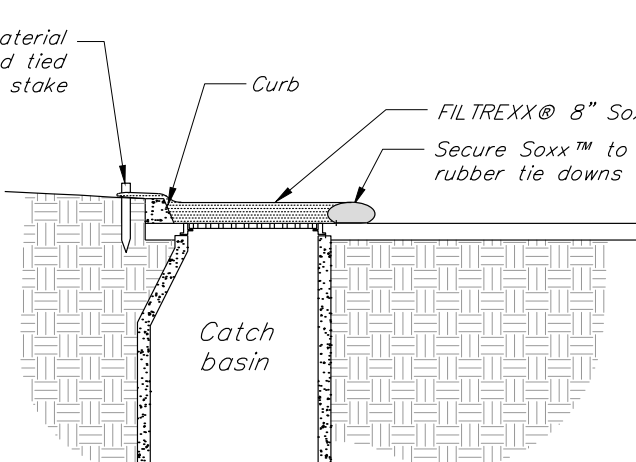
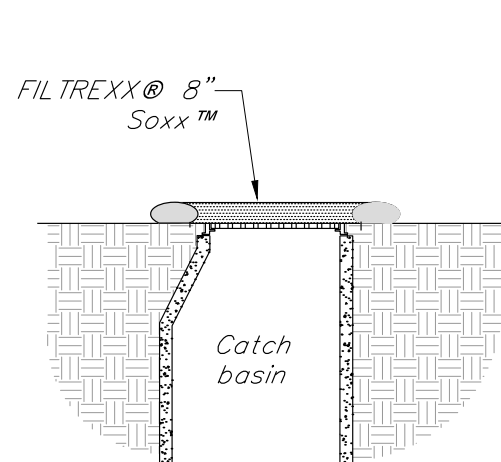
- All renovation and new construction must address tree protection and selective clearing. The procedures shall be discussed, diagrammed, and implemented by the appropriate committee. The Ground Manager shall have final say on a program's acceptance.
- Prior to any construction activity the General Contractor shall meet with the Grounds Manager to review the staging and protection plan for the adjacent landscaping.
- Damage caused to specimens due to contractor negligence shall be replaced at the cost of the contractor. Replacement value and condition of each specimen is to be determined by the Grounds Manager.
- All trees within the designated construction zone shall be protected by no less than 4' high chain-link fencing at the drip line completely encompassing the tree. No storage of building materials shall be allowed within tree protection fencing.
- All trees within 30' of the construction zone shall be protected by no less than 4' high plastic fencing at the drip line.
- If equipment is allowed by the Grounds Manager to pass over a tree's root zone, then a minimum of 8" of wood chips shall be laid and maintained by the contractor.
- If tree pruning is necessary, the Contractor shall contact the Grounds Manager to perform the necessary pruning.
- During excavation, if root impact is unavoidable and therefore approved by the Grounds Manager, any root system encountered which is 1" in diameter or larger will be pruned by authorized personnel only. ANSI standards for root pruning shall be followed.
- Where an existing tree meets new landscaping, grade topsoil at a depth of 6" (six inches) from the drip line to 0" (zero inches) at the base of the tree.



Drain Inlet Plan

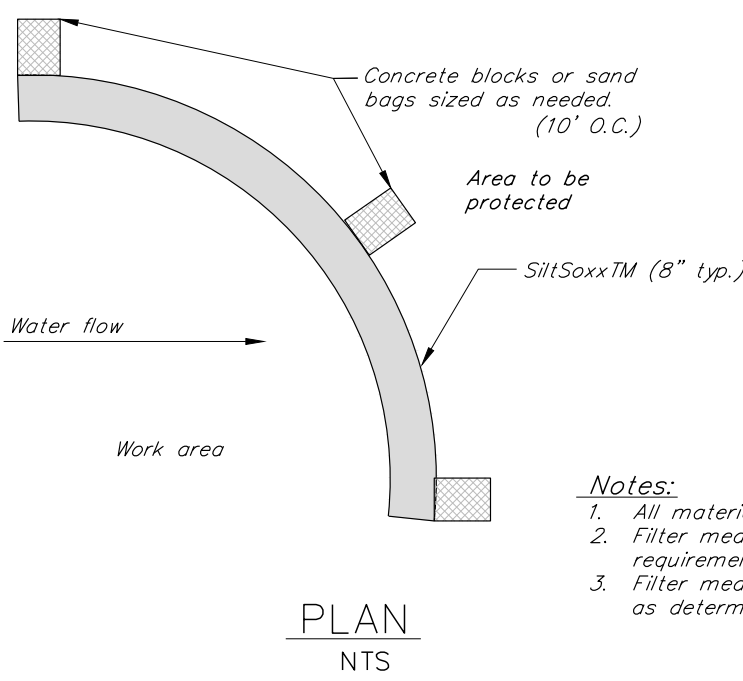
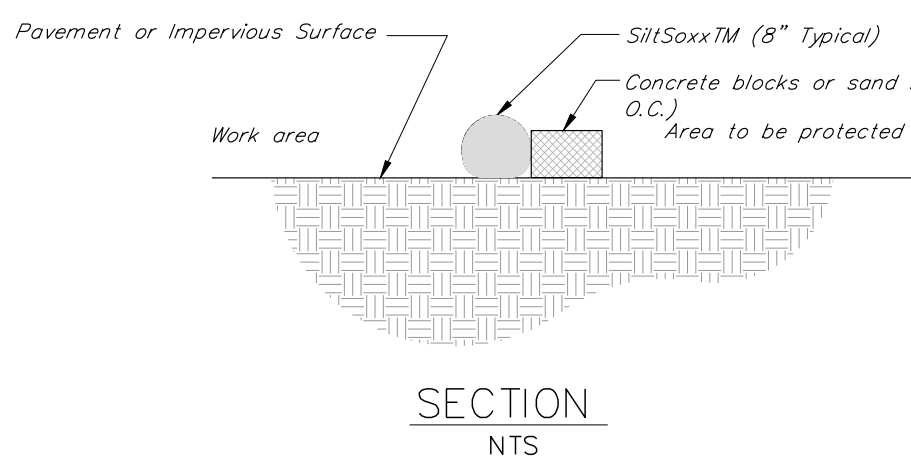
Curbside Option "A" Plan

Curbside Option "B" Plan



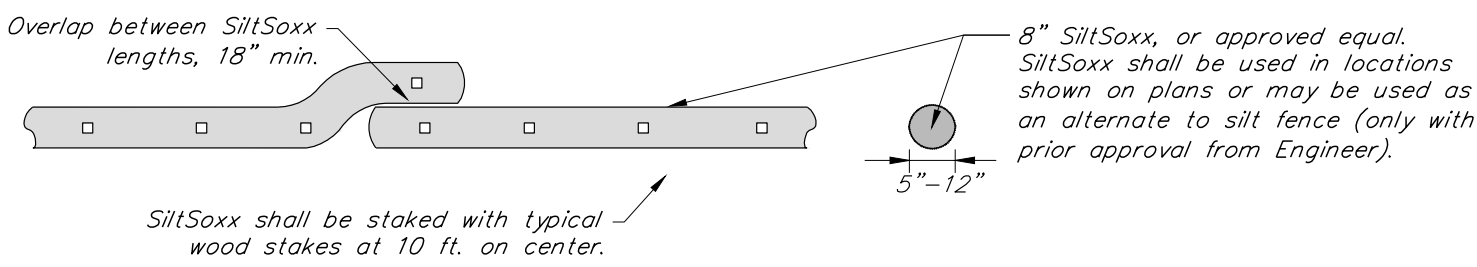
- NOTES:**
- All material to meet FILTREXX® specifications.
 - Filter Media™ fill to meet application requirements.
 - Compost material to be dispersed on site, as determined by engineer.

FILTREXX SiltSoxx Inlet Protection

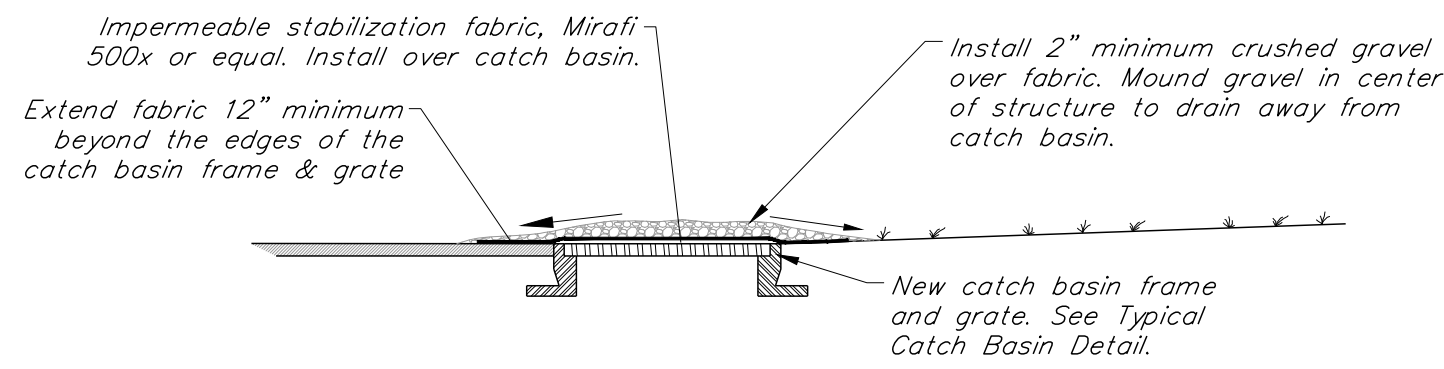


Installation on Pavement

- Contractor shall be responsible for the installation, maintenance, and removal of SiltSoxx in all locations shown on the plans. SiltSoxx may be left in place if the contractor seeds and mulches over SiltSoxx for growth post construction.
- Maintenance shall be performed as needed and additional SiltSoxx will be added when sediment reaches half of product height.
- When installing lengths of SiltSoxx, lengths will overlap by minimum 18" when transitioning to a new length of SiltSoxx.
- Contractor shall refer to all manufacturers specifications and details.
- SiltSoxx is a product from a specific manufacturer (Filtrexx), other manufacturers with equal products may be used if approved by Engineer.



NOTE: This detail to be used only when inlet protection is not practical and only with prior approval from the Engineer.



BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

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STATE OF VERMONT
DESIGN PROFESSIONAL
NO. 5703
EXPIRATION DATE 12/31/2025
PERMIT REVIEW ONLY

DETAILS

REVISIONS

NO.	DATE	DESCRIPTION
1	12/11/2020	00 Documents

SCALE

not to scale

DATE

12/11/2020

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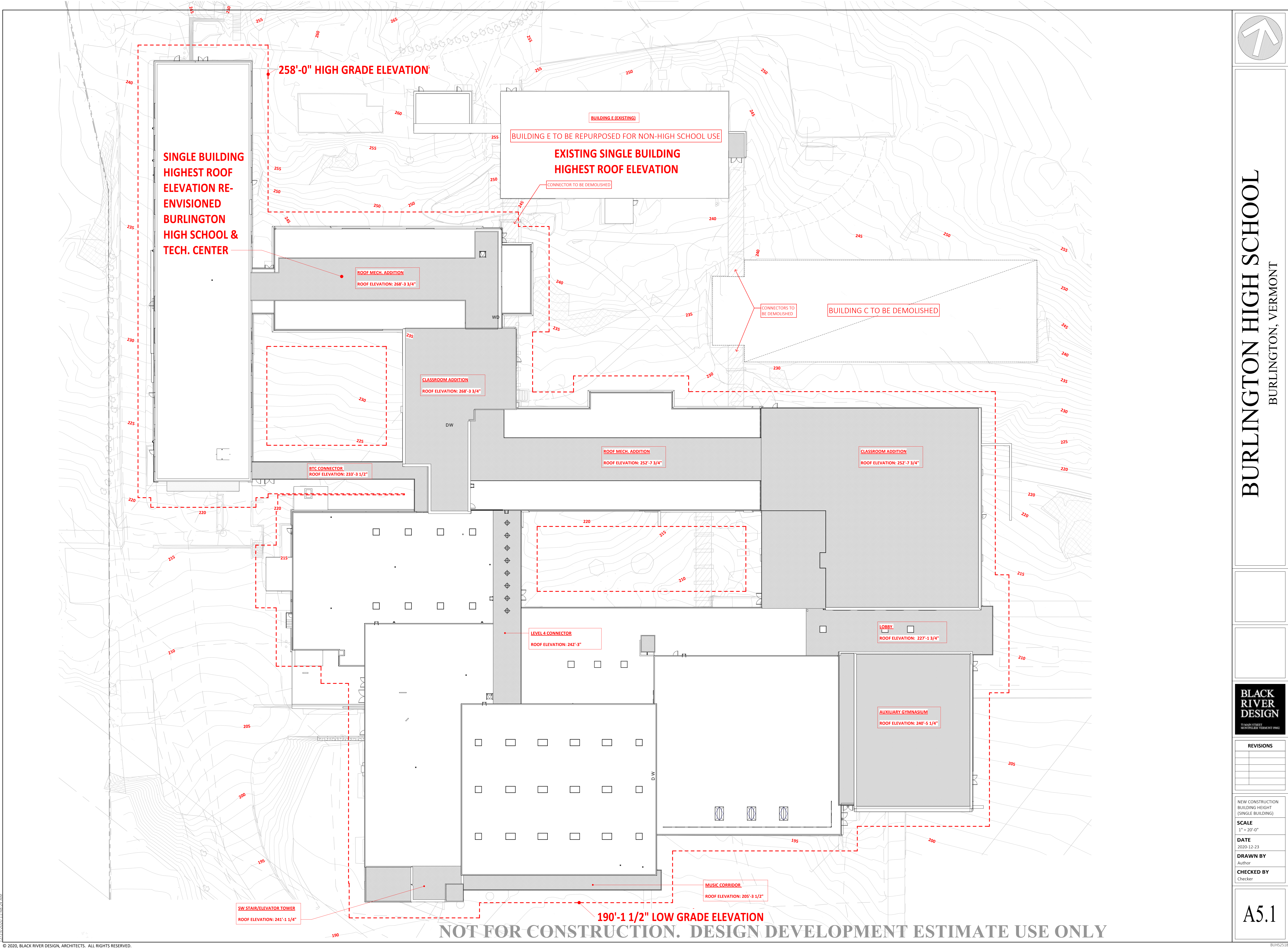
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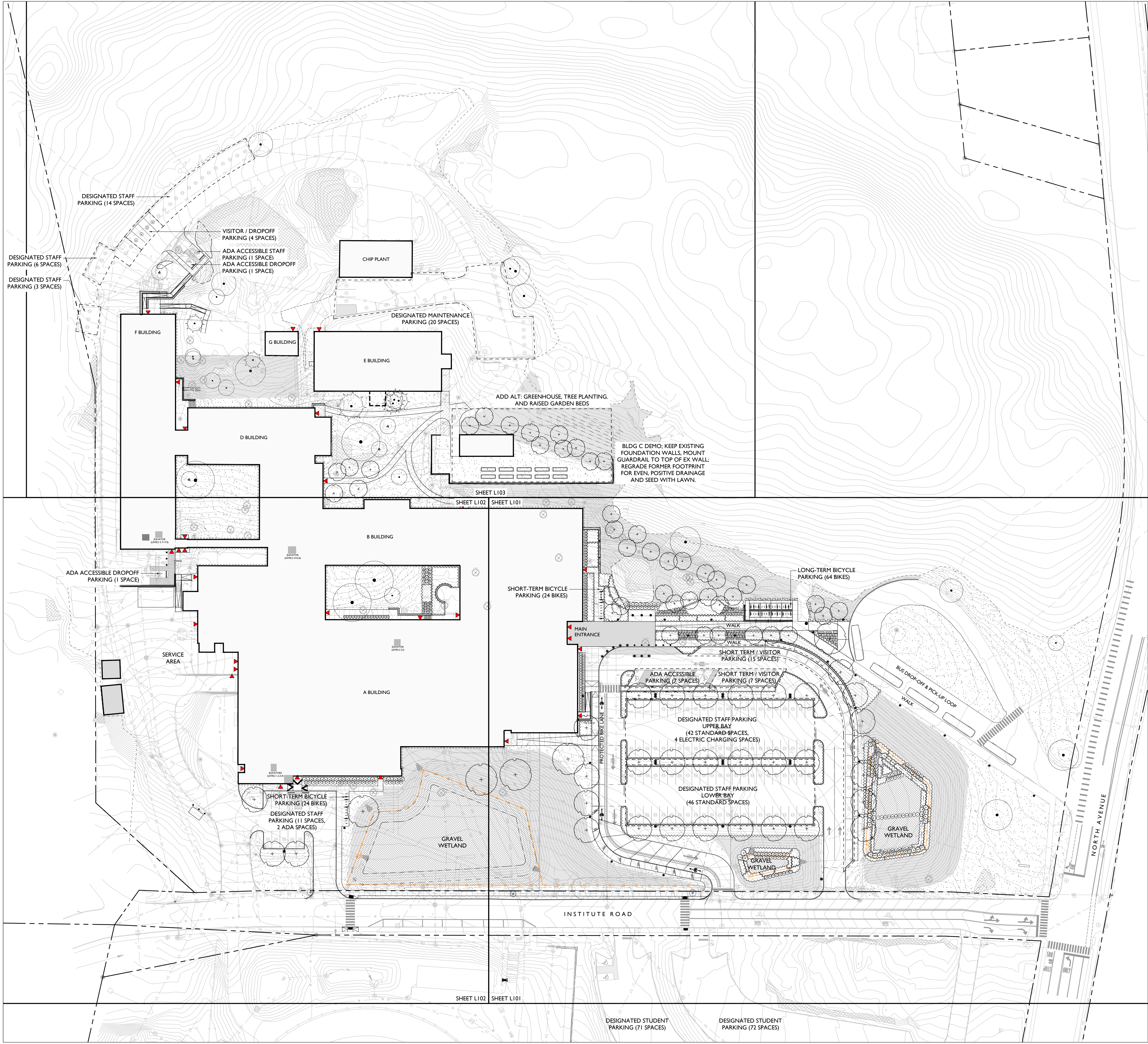
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Contractor shall employ as many of these best management practices to prevent soil from leaving the construction site. If evidence is found of eroded soil leaving the construction site, the Engineer may direct Site Contractor to implement additional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





PARKING CALCULATIONS		
	EXISTING SITE (TOTAL)	PROPOSED PLAN (TOTAL)
UPPER PARKING LOT (STAFF / VISITOR)		
ADA Accessible Spaces	4	7
Designated Staff Parking Spaces (DS)	103	92
Visitor / Short-Term Dropoff Spaces (V)	15	23
LOWER PARKING LOT (STAFF)		
ADA Accessible Designated Staff Parking Space	2	1
ADA Accessible Designated Dropoff Space (On Top)	0	1*
Designated Staff Parking Spaces (DS)	16	11
SOUTH PARKING LOTS (STUDENT)		
ADA Accessible Spaces	0	2
Student Parking Spaces	144	141
NORTH-REAR PARKING (STAFF / VISITOR)		
F-Bldg North ADA Accessible Designated Space (DS)	0	1
F-Bldg North ADA Accessible Dropoff Space (Daycare)	0	1*
F-Bldg North Visitor / Dropoff Spaces (V)	4	4
F-Bldg South ADA Accessible Dropoff Spaces (SN)	0	1*
Designated Staff Parking Spaces (DS)	22	23
Maintenance Spaces (P)	20	20
PARKING TOTALS		
(NET COUNT)	330	324
* designated dropoffs not included in parking counts		
ON-STREET PARKING (Institute Road)		
	11	10

- Proposed Bicycle Parking:**
TOTAL: 120 Bikes

MAIN ENTRY (Long-Term)
32 Racks (64 bikes)

MAIN ENTRY (Short-Term)
16 Racks (32 bikes)

ATHLETICS AREA (Short-Term)
12 Racks (24 bikes)
- KEY**

 - Pole Light, 16' Mounting Height, Single Fixture (Vehicular)
 - Pole Light, 16' Mounting Height, Double Fixture (Vehicular)
 - ★ Pole Light, 12' Mounting Height, Single Fixture (Pedestrian)
 - Ground-Mounted Uplight, Single Fixture (Flagpole Illumination)
 - ▢ Recessed Wall Light, Integrated in Concrete Seating Elements
 - Removable Bollard
 - Fixed Bollard
 - ⚡ Electric Car-Charging Station
 - Guardrail, 42" height from walking surface
 - Handrail, 36" height from walking surface
 - Fencing, 42" height along perimeter of gravel wetlands

BURLINGTON HIGH SCHOOL
BURLINGTON, VERMONT

WAGNER HODGSON
LANDSCAPE ARCHITECTURE

BLACK RIVER DESIGN
TRAFFIC ENGINEERING
MOTORIST INFORMATION

REVISIONS

SCALE
1" = 40'-0"

DATE
2020-12-18

DRAWN BY
HL

CHECKED BY
JH

L-100
ALT



Gilman & Briggs Environmental

1 Conti Circle, Suite 5, Barre VT 05641

Ph: (802) 479-7480; FAX: (802) 476-7018

team@gebvt.com**MEMORANDUM**

To: Marty Spaulding
From: Art Gilman
Date: 11 December 2020
Re: Natural Resources investigations at the Burlington High School, Burlington, VT

In connection with the proposed rehabilitation of the Burlington High School campus, I have inspected the environs of the existing facilities north of the already developed area to the approximate BHS property line, to determine presence or absence of rare plants, and significant natural communities.

Two plant species are mapped on immediately adjacent properties: harsh sunflower and squarrose goldenrod. Harsh Sunflower (*Helianthus strumosus*) is listed in Vermont as Threatened, and has a rarity rank, assigned by the Vermont Natural Heritage Inventory of S2/S3, i.e., rare to uncommon. Squarrose goldenrod (*Solidago squarrosa*) has the same rarity rank (S2/S3) but is not listed as threatened or endangered. Additional rare species are mapped east of North Avenue, in habitats dissimilar to those on the BHS.

Two natural community types are mapped in the forest on the northern edge of the BHS property, these being “Dry Oak-Maple-Limestone Forest” and “Mesic Maple-Ash-Hickory-Oak Forest.” These several resources—rare plants and significant natural communities) are shown on the attached Figure 1, constructed using the Vermont Natural Resources Atlas online (note, species on parcels other than BHS are not discussed here).

With these considerations in mind, I visited the site on 31 August 2019. Weather was sunny, warm, and dry. This date would be optimal for observing Harsh Sunflower and Squarrose Goldenrod, both late summer bloomers. I started along the forest edge just west of North Avenue, and searched the entire parcel north of the existing facilities, noting all the plant species (Table 1) and the composition of the communities.

The site is characterized by a low limestone outcrops, and thin, stony soils. As such, the plant communities reflect dry, calcareous conditions and the native species that are present are mostly those found in similar situations throughout the Champlain Valley. I observed no rare or protected plants—in particular, neither Harsh Sunflower nor Squarrose Goldenrod were noted. A single plant of Large Yellow Lady’s-slipper (*Cypripedium parviflorum* var. *pubescens*), was located on the north-facing slope beyond the crest of the knoll. This an uncommon species (rank S3) in Vermont, where it occurs in several types of habitats, often swampy but also rich forests and limestone ledges. Because of its location, remote from the proposed redevelopment; there will be no impact to it.

The natural community “Dry Oak-Maple-Limestone Forest” is present, especially on the south-facing side of the knoll but is in a relatively degraded condition. There are a number of large trees, 16”–36” in diameter at breast height, including basswood, sugar maple, red oak, white oak, and white pine, as well as many smaller trees. It appears that the site was relatively open with only these large trees growing for some time, while the land surrounding them was invaded by common buckthorn. The buckthorn is now aged and is dying out after dominating the understory. The ground level flora is only moderately diverse and is relatively sparse, likely a consequence of several factors: the dryness, the site history (natural forest to open, back to shade, and heavy shading from the buckthorn), and the small size of the area (which limits plant movement into the area). Certain plants, e.g. Herb Robert (*Geranium robertianum*), which is known to be lime-loving, are found on the outcrops themselves. The forest is also somewhat impacted by formal and informal trails, associated with the school and the neighborhood. Thus, the community composition today does not reflect truly natural conditions which, given its small size, markedly reduces its significance. It is, in effect, a remnant patch.

The forest on the north side of the knoll, away from the proposed development, has a different composition, with many hemlock trees, and more rugged ledge outcrops. It has a limited understory and the ground layer is particularly sparsely occupied, in consequence of the shade cast by the hemlocks, which is too deep for most plants.

The proposed project, which has been modified from the plan of August 2019, will impact none of the Dry Oak-Maple-Limestone Forest except an extremely small area at the east end of the proposed Building B and the existing Building C, for installation of a water line. This area is shown on Site Plan Sheet C2.4, where the water line location is shown in blue near the right edge of the Plan. I recommend that the forest edge be avoided as much as possible, and that tree-cutting be minimized. The area of the existing Building C, which will be removed, will be regraded and returned to a vegetated condition. With these considerations, I believe the Project will not have an undue adverse impact on the natural community and its composition through the rest of the site.



Forest composition: a few large trees (white pine on left), and many small ones.



Interior: trails and end-stage buckthorn.



Herb Robert, a calciphile herb, restricted to limestone outcrops.



Trail leading North from the site; weedy vegetation along trail.



North-facing slope beyond crest; more rugged outcrops and very shaded conditions.

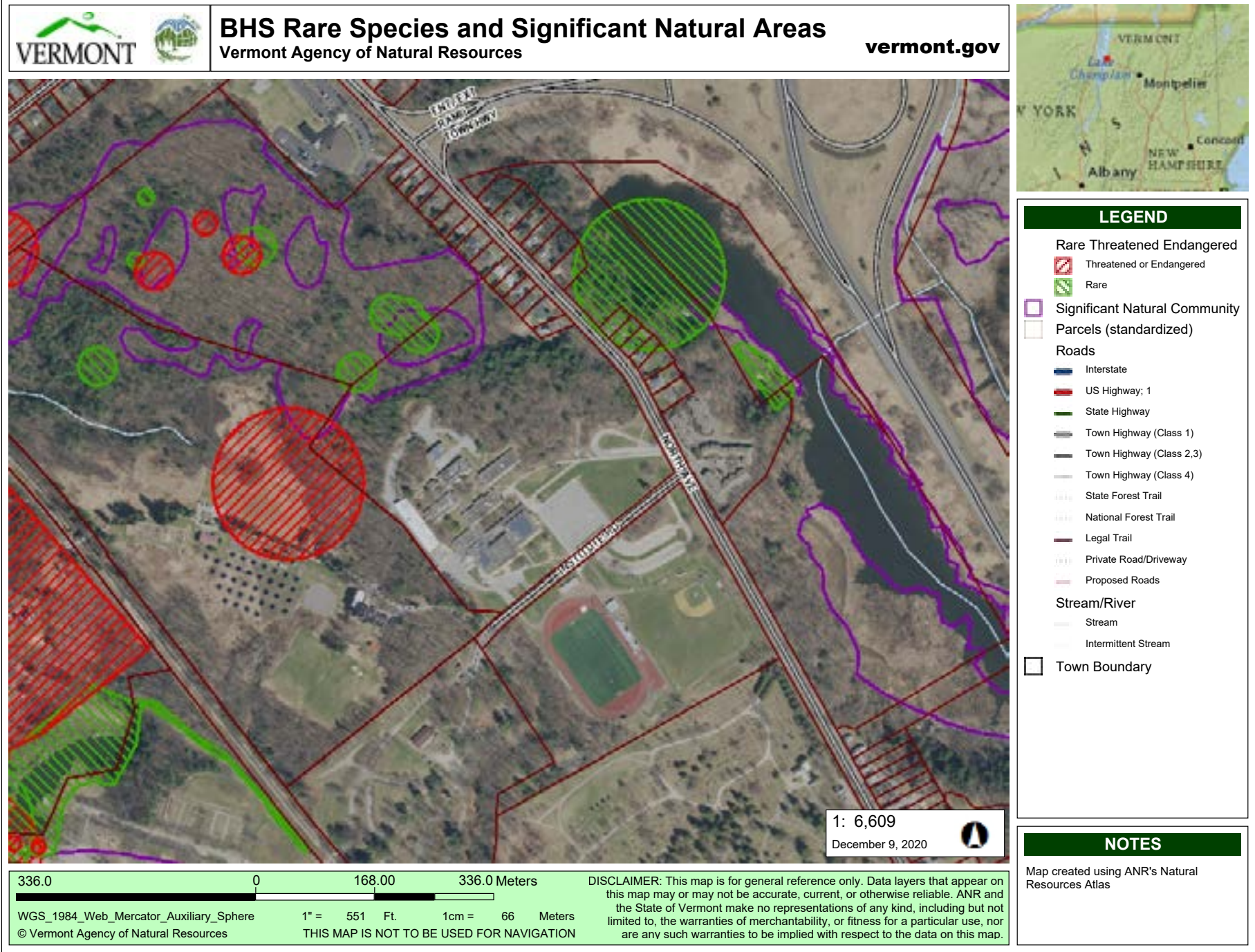
Table 1. Plants observed, north of the existing entrance, the lawns, and the buildings; to the approximate north property line; includes species around the parking lot north of the buildings. Date of observations, 31 Aug 2019.

Note: species listed in SMALL CAPS are non-native
 NNIS = Non-native Invasive Species

	Common Name	Notes
TREES, SHRUBS & WOODY VINES		
<i>Acer negundo</i>	Box-elder	Weed tree, edge of parking
<i>Acer saccharum</i>	Sugar maple	
<i>BERBERIS VULGARIS</i>	Common barberry	NNIS shrub
<i>Betula papyrifera</i>	Paper birch	
<i>Carpinus caroliniana</i>	Blue beech	
<i>Carya cordiformis</i>	Bitternut hickory	
<i>Celastrus americana</i>	Bittersweet	The NNIS Oriental bittersweet may occur
<i>Celtis occidentalis</i>	Hackberry	Grove of 11 trees to 12" dbh, knoll near North Avenue
<i>Fraxinus americana</i>	White ash	
<i>MALUS DOMESTICA</i>	Common apple	One tree
<i>MORUS ALBA</i>	White mulberry	One tree
<i>Ostrya virginiana</i>	Hop hornbeam	One tree, 13: dbh
<i>Parthenocissus quinquefolia</i>	Woodbine	
<i>Pinus resinosa</i>	Red pine	
<i>Pinus strobus</i>	White pine	Several large, to 18" dbh
<i>Populus deltoides</i>	Cottonwood	Weed trees, near parking
<i>Populus grandidentata</i>	Large-toothed aspen	Weed trees, near parking
<i>Prunus pensylvanica</i>	Pin cherry	
<i>Prunus virginica</i>	Choke cherry	
<i>Quercus alba</i>	White oak	Several large, 3 at 16" dbh, 1 at 36"
<i>Quercus rubra</i>	Red oak	
<i>RHAMNUS CATHARTICA</i>	Common buckthorn	NNIS shrub
<i>Rhus typhina</i>	Staghorn sumac	
<i>ROSA MULTIFLORA</i>	Multiflora rose	Somewhat invasive
<i>Rubus occidentalis</i>	Black raspberry	
<i>Sambucus nigra</i>	Elderberry	
<i>Tilia americana</i>	Basswood	
<i>Toxicodendron radicans</i>	Climbing poison ivy	
<i>Toxicodendron rydbergii</i>	Creeping poison ivy	
<i>Tsuga canadensis</i>	Hemlock	All hemlocks N side of hill
<i>Ulmus americana</i>	American elm	
<i>Viburnum trilobum</i>	Highbush cranberry	

<i>Vitis riparia</i>	Riverbank grape	
FERNS & ALLIES		
<i>Athyrium angustum</i>	Lady-fern	
<i>Dryopteris intermedia</i>	Intermediate woodfern	Shaded forest N of crest
<i>Dryopteris marginalis</i>	Marginal woodfern	Shaded forest N of crest
<i>Onoclea sensibilis</i>	Sensitive fern	Damp area, trail N of crest
<i>Matteuccia struthiopteris</i>	Ostrich fern	Damp area, trail N of crest
GRASSES/SEDGES		
<i>BROMUS INERMIS</i>	Hungarian brome	
<i>Carex eburnea</i>	Ivory sedge	Notably lime-loving, on outcrop
<i>Carex laxiflora</i>	Loose-flowered sedge	
<i>Carex rosea</i>	Rosy sedge	
<i>DACTYLIS GLOMERATA</i>	Orchard grass	
<i>DIGITARIA ISCHAMEUM</i>	Crabgrass	Weed of parking area
<i>Leersia virginica</i>	White grass	
<i>Muhlenbergia frondosa</i>	Muhly	
<i>Patis racemosa</i>	Black-seeded mountain rice	Notably a rich woods grass
<i>PHLEUM PRATENSE</i>	Timothy	
<i>SCHEDONORUS PRATENSIS</i>	Meadow fescue	
<i>SETARIA PUMILA</i>	Yellow foxtail	Weed of parking area
<i>Sporobolus vaginæflorus</i>	Dropseed	Weed of parking area
HERBS		
<i>Actaea pachypoda</i>	Doll's-eyes	
<i>ALLIARIA PETIOLATA</i>	Garlic mustard	NNIS herb
<i>Ambrosia artemisiifolia</i>	Ragweed	
<i>Amphicarpaea bracteata</i>	Hog-peanut	
<i>Anemone virginiana</i>	Thimbleweed	
<i>ARENARIA SERPYLLIFOLIA</i>	Sandwort	
<i>Artemisia vulgaris</i>	Mugwort	Weed of parking area
<i>Asclepias syriaca</i>	Milkweed	
<i>BERTEROA INCANA</i>	Hoary alyssum	Weed of parking area
<i>CENTAUREA JACEA</i>	Brown knapweed	Weed of parking area
<i>CENTARIUM PULCHELLUM</i>	Centaury	Weed of parking area
<i>Chenopodium album</i>	Lamb's-quarter	
<i>CICHORIUM INTYBUS</i>	Chicory	Weed of parking area
<i>Circaea canadense</i>	Enchanter's nightshade	
<i>CONVALLARIA MAJALIS</i>	Lily-of-the-valley	In forest, but a horticultural introduction
<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	Yellow lady's-slipper	Uncommon species, ledge outcrop, north of crest; one plant
<i>DAUCUS CAROTA</i>	Queen Anne's lace	Weed of parking area
<i>Erigeron pulchellus</i>	Robin's plantain	
<i>Erigeron strigosus</i>	Daisy fleabane	
<i>Eurybia macrophylla</i>	Large-leaved wood aster	
<i>Galium circaezans</i>	Wild licorice	Limestone outcrop species
<i>GALIUM MOLLUGO</i>	Bedstraw	

<i>Geranium robertianum</i>	Herb Robert	Lime-loving species
<i>Hackelia virginiana</i>	Virginia stickseed	
<i>Hylodesmum glutinosum</i>	Woodland tick-trefoil	
<i>HYPERICUM PERFORATUM</i>	Common St. John's-wort	
<i>LINARIA VULGARIS</i>	Butter-and-eggs	
<i>Maianthemum canadense</i>	False lily-of-the-valley	
<i>Maianthemum racemosum</i>	False Solomon's seal	
<i>MELILOTUS ALBUS</i>	TALL WHITE CLOVER	
<i>Nabalus altissimus</i>	Tall white lettuce	
<i>Oenothera biennis</i>	Biennial evening primrose	
<i>Oxalis stricta</i>	Yellow wood-sorrel	
<i>Persicaria virginiana</i>	Jumpseed	
<i>Phryma racemosa</i>	Lopseed	
<i>Polygonatum pubescens</i>	Solomon's-seal	
<i>RANUNCULUS ACRIS</i>	TALL BUTTERCUP	
<i>RUMEX CRISPUS</i>	CURLY DOCK	
<i>SAPONARIA OFFICINALIS</i>	SOAPWORT	
<i>SILENE LATIFOLIA</i>	WHITE CAMPION	
<i>SILENE VULGARIS</i>	BLADDER CAMPION	
<i>Solidago altissima</i>	Tall goldenrod	
<i>Solidago caesia</i>	Blue-stem goldenrod	
<i>Solidago canadensis</i>	Canada goldenrod	
<i>Solidago flexicaulis</i>	Zig-zag goldenrod	
<i>Solidago gigantea</i>	Giant goldenrod	
<i>Solidago juncea</i>	Early goldenrod	
<i>Symphyotrichum cordifolium</i>	Heart-leaved aster	
<i>Symphyotrichum lanceolatum</i>	Lance-leaved aster	
<i>Thalictrum dioicum</i>	Early meadow-rue	
<i>TRIFOLIUM PRATENSE</i>	RED CLOVER	
<i>TRIFOLIUM REPENS</i>	WHITE CLOVER	
<i>Urtica dioica</i> var. <i>gracilis</i>	Common nettle	
<i>Verbascum thapsus</i>	Mullein	
<i>Verbena urticifolia</i>	White vervain	
<i>VERONICA OFFICINALIS</i>	SPEEDWELL	
<i>VICIA CRACCA</i>	COW VETCH	
<i>Viola pubescens</i>	Downy yellow violet	



February 24, 2022

Ryan Morrison
Department of Planning and Inspections
645 Pine Street
Burlington, VT 05401

Re: Zoning Permit #ZP-21-857 and Parking Waiver Request

Dear Ryan,

I am writing in support of our Bed and Breakfast (BnB) permit application and one-space parking waiver request for 11 Germain Street.

Background

11 Germain is one unit in our side-by-side duplex. We reside on the other side at 9 Germain. We have lived at 9 Germain Street continuously since 1977. We've rented 11 Germain, both short and long-term, for 35 years.

We bought the 9-11 Germain Street property with friends in 1977. They lived at 11 Germain. Our friends moved in 1987 and we purchased their half. We had long term tenants in 11 Germain for approximately 30 years. We charged well below market rent. During this time, we rented to three families. They stayed for approximately thirteen, eight and nine years respectively.

For the past five years we have been renting 11 Germain as both a short and long-term rental through Airbnb. We rent 11 Germain as one three-bedroom unit. We do not rent individual bedrooms. In general, we rent to small families or groups of friends. Very often guests are visiting family, attending graduations, weddings or reunions in Burlington.

At this point in our lives, we want to continue renting 11 Germain on a short-term basis. This option gives us privacy, flexibility and income that lets us maintain and remain in our home of forty-five years.

BnB Permit Application

A BnB permit allows us to continue providing living space for guests on a short-term basis. We do not plan on making any physical changes to the unit or to the

site. Almost all the houses on Germain Street are either rental properties or owner-occupied properties with one rental unit. A short-term rental, like a BnB is consistent with the character of the neighborhood.

A BnB would not have a significant impact on neighborhood traffic or on public utilities and services. Our guests arrive between 4:00pm -8:00pm, unless there are extenuating circumstances that delay their arrival. Guests check out at 11:00.

Based on our conversations with guests and our Airbnb reviews, many choose 11 Germain because it is within walking distance to nearby restaurants and downtown. Some guests use their cars infrequently or not at all during their stay. Over time, we have observed that our short-term rental generates less traffic than other residences on the street.

Our short-term guests place no additional demands on public utilities because they are often here for only several days at a time and the unit is vacant the rest of the week. Guests are given information about recycling and composting requirements. We provide separate bins for compost, trash and recycling. We also provide a weekly compost pick up. Trash is deposited and collected off site in a neighborhood dumpster.

Guests know that they must comply with Burlington's noise ordinance and understand that violating the ordinance is a violation of house rules. This can result in a negative Airbnb review and a notification to Airbnb that we would not rent to them again. All guests are provided with a copy of the ordinance. We will continue to use Airbnb to rent the BnB. We have never received noise complaints about any of our guests.

Parking Waiver Request

We are requesting a parking waiver for 11 Germain Street. The driveways next to 9 and 11 Germain each accommodate two cars. (See the site plan that we previously filed.) Pursuant to Burlington Zoning Regulations, Article 8, Se.8.1.8, a three-bedroom BnB must have one parking space for each bedroom.

During the past five years, we have not kept a record of the number of vehicles for each Airbnb visit. However, based upon our experience, we have found that short-term guests bring a maximum of two cars. Most often, guests bring only one vehicle. Usually, our guests are friends or family members traveling together. Some guests fly to Burlington and then Uber to our place or another guest picks them up at the airport. As I noted earlier, many guests choose our location because

of its walkable location. (I should point out that we currently have three long term guests. At 11 Germain. They are here for over three months. Each has a car. They are nurses and they each need a car to accommodate their schedules at the hospital. This is the only time we can recall any guests having more than two vehicles.)

A BnB would not place any additional parking demands on 11 Germain. We have no employees. We do our own cleaning and maintenance. Because it is a short-term rental, there are few, if any, deliveries. In addition, there is a bus stop 600 feet from 11 Germain, about a three-minute walk. A Carshare site is located .3 miles or less than a ten-minute walk from the unit.

Please let us know if you have questions or need additional information.

Best,

Jackie Majoros
9 Germain Street
Burlington, VT
802.233.7020
Majoros.jackie@gmail.com



SOUTH AND EAST ELEVATION SHOWING BUILDING MOUNTED LIGHT FIXTURE LOCATIONS

Burlington High School
Burlington, VT

December 23, 2120

Scale: 1/16" = 1'-0"

RECEIVED

JUL 21 2020

BURLINGTON
PERMITTING & INSPECTIONS



RECEIVED

JUL 21 2020

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JAN 05 2021

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Variance Application

To: Planning and Zoning
Regarding: 110 Summit Street
Date: 01/05/21

Proposal to replace existing garage (in poor condition) with 2-car garage / Accessory Dwelling Unit (ADU)

Application for Zoning Variance

Zoning Permit Application and Fee: completed and submitted

Property Description

110 Summit St is a single-family dwelling with a small, detached two-car garage. The lot is irregular in shape and equals 15,239 SQ FT with the greatest depth equaling 181.3' and greatest width equaling 85.5'. The dwelling has 2,872 SQ FT of gross living area above grade with a footprint of 1,317 SQ FT. The driveway is located on the north edge of the property and lies substantially on the neighboring property (102/104 Summit) and historically has been shared both in access and maintenance. The north edge of the existing garage is within 1 FT of the north side property line and 23'-4" from the rear (east) property line.

Applicable Regulatory Provision:

4.4.5-3: Residential District Dimensional Standards states that for RL a rear yard setback is 25% of Lot depth, no less than 20'-0" which would require a setback distance of 45'-11 1/4" for our Garage/ADU structure. Side yard setback is Min: 10% of lot width (8'-6") Or ave. of side yard setback of 2 adjacent lots on both sides. (approx. 18' is the average)

Relief of rear yard setback requested:

1. One of the intentions and purpose of the City's Ordinance is stated as such "to facilitate the growth of Burlington and its neighborhoods so as to create an optimum environment, with good urban and civic design" We think that the placement as shown is in-line with this intention as laid out in more detailed criteria below:
 - a. Neighboring properties / character of Street
 - b. Driveway hardship
 - c. Preservation of open space / usable space
 - d. Less visual impact on neighbors and from the Street

Neighboring properties / character of Street

Both our adjacent neighbors to the North (102/104 Summit) and South (122 Summit) have existing accessory structures that are located beyond the rear property line.

- 102/104 Summit has an accessory dwelling structure comparable in size (864 SF) that is both a 2 car garage and livable unit on the 2nd level, this structure is located approximately 2'-0" from the rear property line.
- 122 Summit Street has a 2 car garage with a habitable 2nd level that is approximately 34'-0" from their rear property line.

HINGE

A historical precedent exists for locating an accessory structures beyond the required ordinance setback of 25% of lot depth as delineated by the two adjacent properties with similar structures. By placing our structure within the setback would be in defiance of the existing / adjacent character of the Street.

Driveway Hardship

The existing 2 car garage is located in such a way that parking is available on the driveway in front of the garage allowing for cars to park in front of the garage entirely on our property as the driveway is shared. The new structure intends to mimic the placement of the garage allowing for both parking of the main house and the ADU with allowance for backing up entirely within our property lines. The Garage/ADU structure is 43'-7" in length and if it were placed at the rear property line there would be a remaining 6'-9 ½" from the garage door to the existing walkway.

Preservation of open space / usable space

We have placed the Garage/ADU in such a manner that respects the existing character of the Street and meets the expectations of the intention of the ordinance by siting it to create an "optimum environment". This placement allows for the driveway to remain the same size, while providing parking for both units. Also to note the usable portion of the yard that currently exists will remain approximately the same size and will only get smaller in width by 8'-3". This placement and variance request allows for maximizing the open space that will be shared by the structures, which also allows for the maximum preservation of existing daylight for all existing structures, while minimizing the increase of non-permeable surfaces.

Less visual impact on neighbors and the Street

The structure placement allows for the view corridors to remain similar to what exists – the rear portion of the existing garage has scrub trees that have seeded themselves over the years.

This location will also push the structure away from the 102/104 Summit and tucking it further behind the main home which minimizes the visual impact from the Street.

Summary

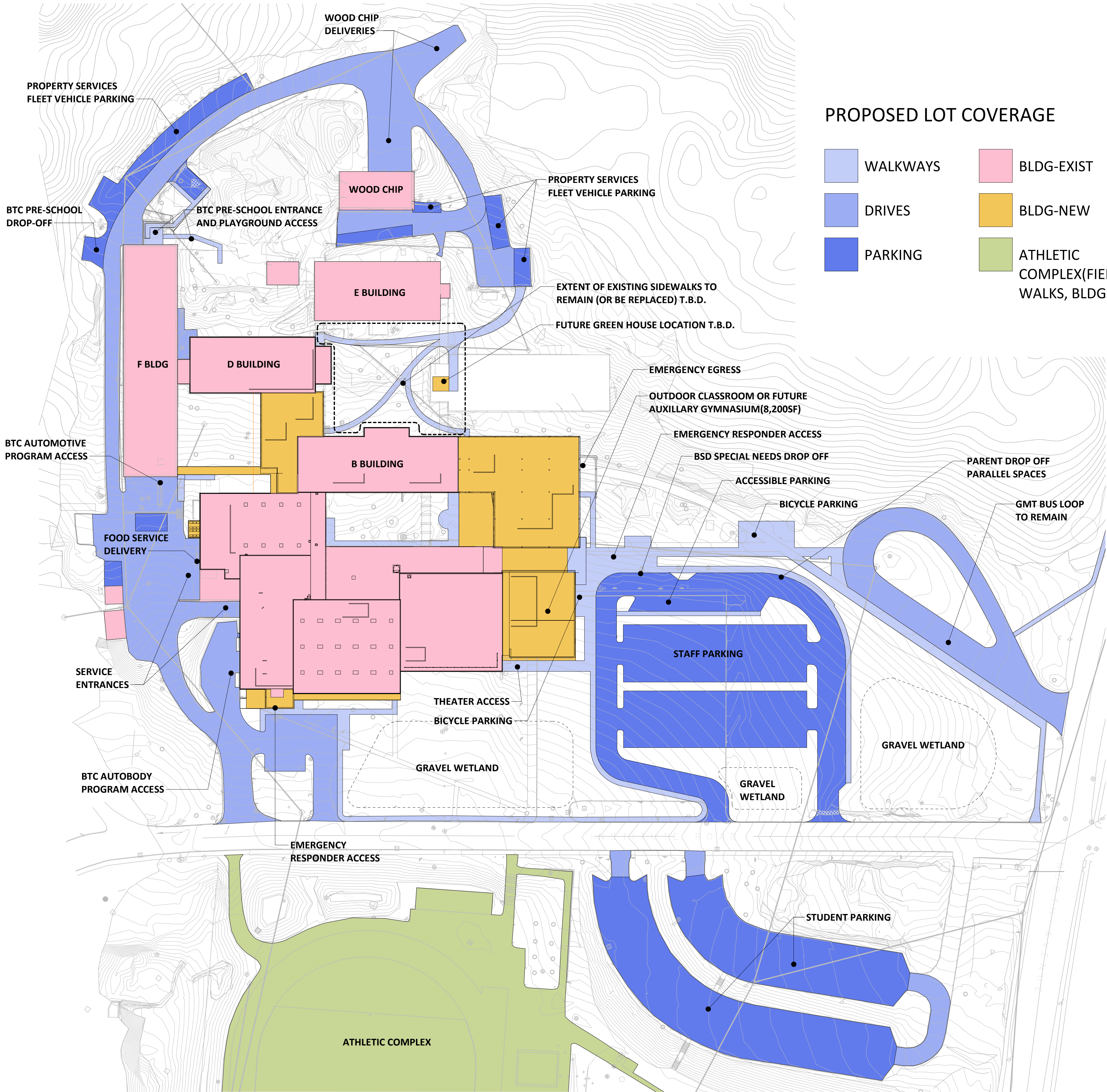
We are seeking to the greatest degree possible for the ADU to overlay the footprint of the existing garage while, maintaining building code regulations which require a minimum 5'-0" setback for openings. We know that this maximum overlay would be possible if we maintained a 15'-0" height to the mid-point of the roof and stayed within the confines of the footprint. This variance allows for an additional 518 SF to be constructed within the setbacks compared to what exists today. This development provides in-fill housing within an already established vernacular of site. To position the Garage /ADU, to the greatest extent possible, in the northeast corner of the lot will compare with the current garage position and with the condition of the neighboring ADU structures while, preserving to the greatest degree possible, the open space of the backyard.

END OF APPLICATION

RECEIVED

JAN 05 2021

**BURLINGTON
PERMITTING & INSPECTIONS**



PROPOSED LOT COVERAGE AREA

DESCRIPTION	PROPOSED LOT COVERAGE
ATHLETIC FIELDS, ASPHALT WALKS, BUILDINGS	211,367 SF
BUILDINGS NEW	36,419 SF
EXISTING BUILDINGS AND STRUCTURES TO REMAIN	111,179 SF
WALKWAYS	34,842 SF
DRIVES	87,887 SF
PARKING	106,130 SF
	587,823 SF

TOTAL BUILDABLE SITE AREA = 1,670,789 SF

PROPOSED LOT COVERAGE = 587,824 SF
LOT COVERAGE AREA(EXISTING) = (567,812 SF)

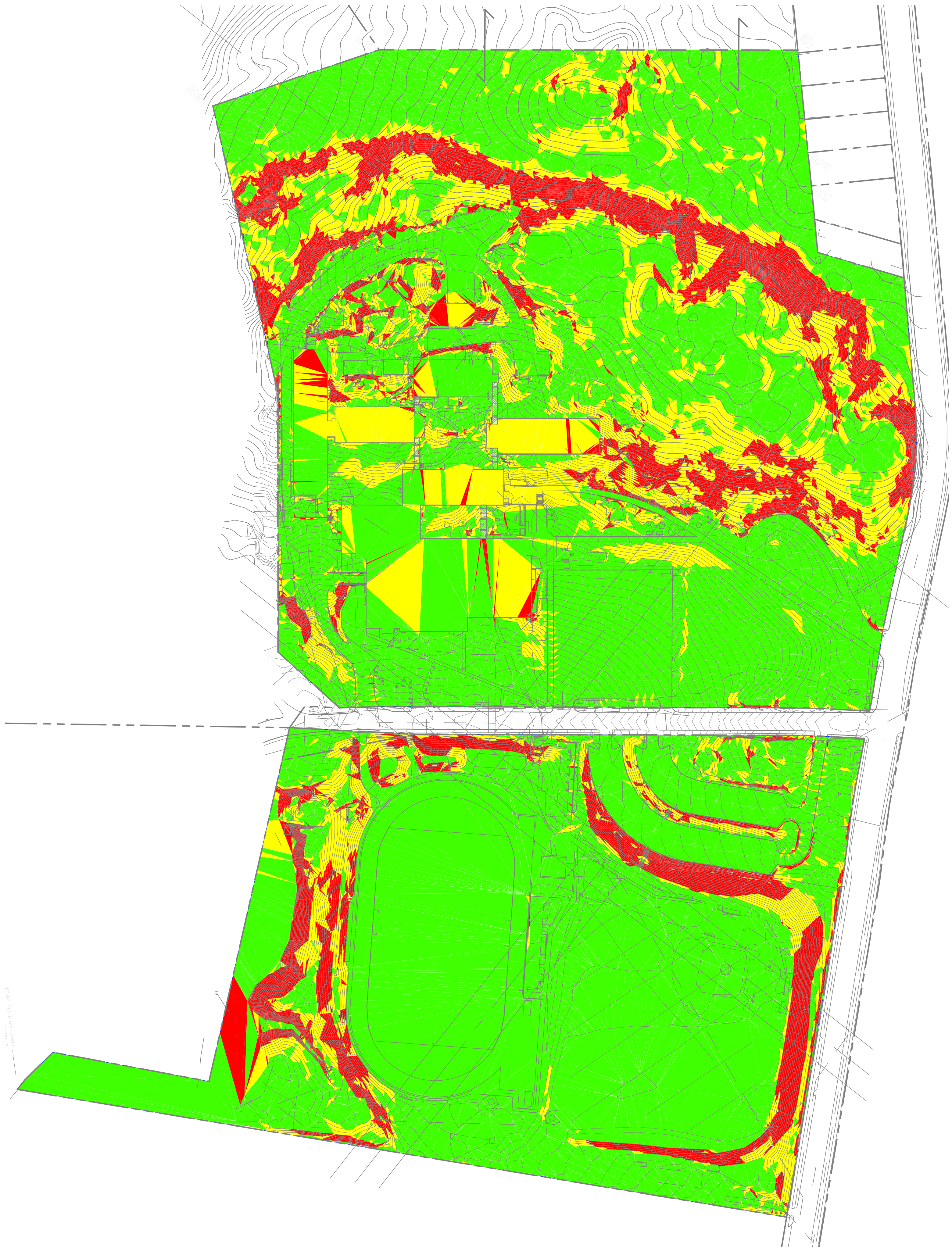
% OF PROPOSED LOT COVERAGE = 35.18%
% OF LOT COVERAGE(EXISTING) = (33.98%)

PROPOSED LOT COVERAGE SUMMARY(with E-Bldg)

	Existing Area	Proposed Area	Existing Lot Coverage %	Proposed Lot Coverage %	% Change
Total Site	2,128,158 SF	2,128,158 SF			
50% of Slopes 15-30	-194,078 SF				
100% of Slopes >30%	-263,292 SF				
100% Bodies of water	.0 SF				
Total buildable site	1,670,789 SF				
Athletic Complex	211,365 SF	211,367 SF	12.65%	12.65%	0.00%
Bldg footprint	128,348 SF	147,598 SF	7.68%	8.83%	1.15%
Paving					
Walkways	31,753 SF	34,842 SF	1.90%	2.09%	0.18%
Drives	88,837 SF	87,887 SF	5.32%	5.26%	-0.06%
Parking	107,509 SF	106,130 SF	6.43%	6.35%	-0.08%
	567,812 SF	587,824 SF	33.98%	35.18%	1.20%



Burlington High School Slope Analysis				
Key	Slope	North	South	Total
	0-15	803,010	673,701	1,476,711
	15-30	310,451	77,704	388,155
	30+	164,411	98,881	263,292
	Total	1,277,872	850,286	2,128,158



EXISTING SLOPE ANALYSIS

2020-10-14 scale: As indicated

BURLINGTON HIGH SCHOOL RE-ENVISIONING

Burlington Design Advisory Board

Department of Permitting and Inspections

645 Pine Street

Burlington, VT 05401

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

Telephone: (802) 865-7188

Eric Morrow, Chair
Matt Bushey, Vice Chair
Ron Wanamaker
Karyn Norwood
Emily Morse
Jay White, Alternate
Kathleen Ryan, Alternate



DESIGN ADVISORY BOARD

Tuesday January 12, 2021

Remote Meeting via Zoom

Present: Matt Bushey, Ron Wanamaker, Karyn Norwood, Emily Morse, Jay White (alternate).

Absent: Eric Morrow (chair), Kathleen Ryan (alternate)

Staff present: Mary O'Neil

Applicants and guests present: John Hemmelgarn, Jim Drummond, Jesse Remick (Black River Design), Hannah Loope, Tom Peterson (Peterson Consulting), Mark M., Marty Spaulding (BSD).

Session I – 3:00 PM – 4:00 PM

1. 21-0583CA; 52 Institute Road (RCO, Ward 4N) Black River Design / Burlington School Dept.

Expansion and renovation of Burlington High School and Technical Center.

Motion by Jay White: I move we approve the application and forward to the DRB with the following recommendations:

1. Consider revising horizontal ramp at auxiliary gym;
2. Curbing changed to granite for long term durability; and
3. DAB fully supports the parking waiver request.

2nd: Ron Wanamaker

Vote 5-0

Motion carries.