

**ROBERT J. ANNESE**  
ATTORNEY AT LAW

February 22, 2022

VIA HAND DELIVERED and E-MAIL: [jraitt@town.arlington.ma.us](mailto:jraitt@town.arlington.ma.us)

Jennifer Raitt, Director  
Planning & Community development  
730 Mass Ave Annex  
Arlington, MA 02476

RE: 34 Dudley Street, LLC  
Property Address: 34 Dudley Street, Arlington, MA

Dear Ms. Raitt:

I am sending along an application filed under Environmental Design Review for real estate located at 34 Dudley Street.

I am also sending along my client's filing fee in the amount of \$19,641.20.

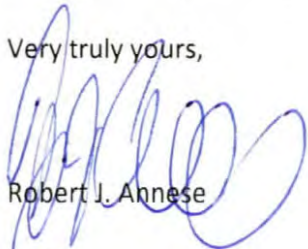
I will have the original documents delivered to your office with the filing fee this morning.

I am given to understand based upon my last conversation with you that the ARB hearing in connection with this matter will occur on March 28, 2022.

If you have any questions or matters that you believe have not been addressed in the filing, would you please let me know.

Thank you for your cooperation.

Very truly yours,



Robert J. Annese

RJA:lm

Enclosures



TOWN OF ARLINGTON  
REDEVELOPMENT BOARD

Application for Special Permit In Accordance with Environmental Design  
Review Procedures (Section 3.4 of the Zoning Bylaw)

TOWN CLERK'S PLANNING & COMMUNITY  
ARLINGTON, MA 02476 DEVELOPMENT

2022 MAR -2 AM 11:28 2022 FEB 23 A 10:52

RECEIVED

Docket No.

3690

1. Property Address 34 Dudley Street  
Name of Record Owner(s) 34 Dudley Street, LLC Phone c/o Robert Annese 781-646-4911  
Address of Owner 34 Dudley Street, Arlington, MA 02476  
Street City, State, Zip
2. Name of Applicant(s) (if different than above) PSI Atlantic Holdings VII, LLC  
Address 530 Oak Court Drive, Memphis, TN 38177 Phone c/o Robert Annese 781-646-4911  
Status Relative to Property (occupant, purchaser, etc.) Purchaser under agreement
3. Location of Property 34 Dudley Street - 055.0 0002 0039B  
Assessor's Block Plan, Block, Lot No.
4. Deed recorded in the Registry of deeds, Book 68658, Page 160; and  
~~XX~~ registered in Land Registration Office, Cert. No. 264026, in Book 1502, Page 160.
5. Present Use of Property (include # of dwelling units, if any) Automobile Repair
6. Proposed Use of Property (include # of dwelling units, if any) Self-storage facility containing between  
740 and 780 storage units
7. Permit applied for in accordance with the following Zoning Bylaw section(s)

Sec. 3.4	<u>Environmental design review</u>
Sec. 6.1.5	<u>Parking reduction</u>
Sec. 6.1.12	<u>Bicycle parking reduction</u>
8. Please attach a statement that describes your project and provide any additional information that may aid the ARB in understanding the permits you request. Include any reasons that you feel you should be granted the requested permission.

(In the statement below, strike out the words that do not apply)

The applicant states that PSI Atlantic Holdings VII, LLC is the ~~owner~~ ~~or~~ ~~occupant~~ ~~or~~ purchaser under agreement of the property in Arlington located at 34 Dudley Street which is the subject of this application; and that unfavorable action ~~or~~ no unfavorable action has been taken by the Zoning Board of Appeals on a similar application regarding this property within the last two years. The applicant expressly agrees to comply with any and all conditions and qualifications imposed upon this permission, either by the Zoning Bylaw or by the Redevelopment Board, should the permit be granted.

PSI Atlantic Holdings VII, LLC  
by its attorney,

Signature of Applicant(s)

Robert J. Annese, Esquire

1171 Massachusetts Avenue, Arlington, MA 02476

Address

781-646-4911

Phone



Town of Arlington Redevelopment Board  
Application for Special Permit in accordance with  
Environmental Design Review (Section 3.4)

Required Submittals Checklist

Two full sets of materials and one electronic copy are required. A model may be requested. Review the ARB's Rules and Regulations, which can be found at [arlingtonma.gov/arb](http://arlingtonma.gov/arb), for the full list of required submittals.

- ☒ Dimensional and Parking Information Form (see attached)
- ☒ Site plan of proposal
- ☐ Model, if required
- ☒ Drawing of existing conditions
- ☒ Drawing of proposed structure
- ☒ Proposed landscaping. May be incorporated into site plan
- ☒ Photographs
- ☒ Impact statement
- ☒ Application and plans for sign permits
- ☒ Stormwater management plan (for stormwater management during construction for projects with new construction)

FOR OFFICE USE ONLY

- ☐ Special Permit Granted Date: \_\_\_\_\_
- ☐ Received evidence of filing with Registry of Deeds Date: \_\_\_\_\_
- ☐ Notified Building Inspector of Special Permit filing Date: \_\_\_\_\_

34 Dudley Street  
Arlington, MA

**Environmental Impact Statement**

The Applicant, PSI Atlantic Holdings VII, LLC proposes to construct a self-storage facility at 34 Dudley Street.

The property which is in the Industrial Zone has been used as an automobile repair and related automobile facility for many years.

The existing property contains 10,921 square feet and 1,152 square feet of detached garage space for a total of 12,073 square feet.

The project involves the construction of a five story, 95,706 square feet self-storage warehouse building along with eleven (11) surface parking spaces (one of which will be accessible) on the site and four (4) loading bays for a total of fifteen (15) spaces for the facility.

The exterior building materials will be comprised of metal paneling, brick, and glass. (See LEED Considerations dated February 15, 2022, of Michael Parker Studios.)

Access to the site would be provided by a single curb cut on Dudley Street on the east side of the site and the existing curb cut on the west side of the site will be closed.

The office hours for the self-storage facility would be 8:30 a.m. to 6:00 p.m. Monday through Friday and customer access hours would be 6:00 a.m. to 10:00 p.m. each day of the week.

There would be one full-time employee and one part-time employee.

The traffic report of VHB dated February 10, 2022, submitted as part of the Applicant's proposal indicates on Page 1 that the existing use of the property would be classed as an Automobile Care Center and that the proposed use would be classified as a mini warehouse.

Table 1 of the traffic study indicates that the proposed self-storage facility is expected to generate fewer peak hour trips to and from the site when compared to the current automotive use at the site. For example, daytime, weekday traffic to the site currently would consist of a total of 27 vehicle trips while the proposed self-storage use



would generate 9. Weekday p.m. vehicle trips currently to and from the site total 38 vehicle trips and the proposed self-storage use would total 15.

Similar self-storage facilities exist at 490 Eastern Avenue and 650 Eastern Avenue in Malden and 171 Bear Hill Road in Waltham, and as Table 2 shows the traffic volumes counted at those three comparable sites are substantially lower than the traffic volume generated by the present automotive use at the 34 Dudley Street property.

With respect to parking, the project includes eleven (11) parking spaces and four (4) loading bays for a total of fifteen (15) spaces.

The Zoning Bylaw provides for one parking space per 1,000 square feet of building area. The Applicant will not be able to satisfy that provision of the Bylaw as the property will contain 95,694 square feet of building space which would equate to approximately ninety-six (96) required parking spaces, however both the limited number of employees on site and the traffic study report indicate that there will not be significant traffic at the site with the proposed project.

Consequently, the Applicant will be seeking zoning relief from Section 6.1.5 i.e., the Parking and Loading Space Standards required by the Bylaw with respect to its proposal.

In connection with the requested relief the Applicant would propose the following plan containing at least 3 TDM strategies:

1. Pay a stipend to workers without cars;
2. Provide preferential for carpooling vehicles; and
3. Provide cover bicycle parking and storage.

The property is in the inland wetland district and as a result the Applicant has also filed a Notice of Intent with the Conservation Commission and will proceed with a hearing before the Conservation Commission in connection with the Notice of Intent on March 3, 2022.

The proposal provides for 740-780 storage units within the five-story building.

The construction will comply with the dimensional and zoning provisions of the Zoning Bylaw as follows:

<u>Zoning Regulation Requirements</u>	<u>Required</u>	<u>Provided</u>
Maximum Front Yard Setback	10 Feet	10.0 Feet
Minimum Front Yard Setback	10 Feet	10.0 Feet

Side Yard Setback	10 Feet	10.0 Feet
Rear Yard Setback	10 Feet	12.5 Feet
Maximum Floor area Ratio	3.0	2.81
Maximum Building Height	5 Stories	58 Feet, 5 Stores
(See Dimensional form submitted as part of the Applicant's proposal)		

The proposal also provides bicycle parking with short term spaces totaling fifty-seven (57) spaces and long-term spaces totaling seventy-seven (77). The VHB plan depicts covered bicycle racks at the rear of the building and shows interior bicycle parking in the front portion of the building behind the sales office.

There are also interior wall mounted bicycle racks depicted VHB plan and referred in the arch plans.

The Applicant will be seeking relief from the bicycle parking requirements contained within the provisions of Section 6.1.12 of the Zoning Bylaw as part of its application.

The building sign and summary shown on the VHB plan shows five (5) proposed signs, four (4) of which will be wall signs and one (1) a free-standing sign.

The building sign summary is as follows:

ID Number	Sign Type	Width	Specification		Desc.
			Height	Area	
1	Wall Sign	288"	90"	180 SF	CUBESMART Self-Storage
2	Wall Sign	288"	90"	180 SF	CUBESMART Self-Storage
3	Wall Sign	29.25"	6"	1.22 SF	OFFICE
4	Wall Sign	52"	11"	3.97 SF	LOADING
5	Freestanding sign	78"	44"	23.8 SF	CUBESMART Self-Storage

The Applicant has also prepared and submitted as part of its proposal, a Stormwater Report of VHB dated February 2022, the substance of which indicates that with respect to the existing conditions at the property the site is predominantly impervious with generally flat topography, except that just to the south of the southerly property boundary there is a steep slope down to Millbrook. (See Page 4 i.e., drainage conditions)

The proposed drainage conditions as depicted in Figure 3 of the Stormwater Report indicates that Low Impact Development (LID) techniques and stormwater Best Management Practices (BMPs) implemented into the site design include reduction of impervious areas, minimized disturbance to existing trees and vegetation and a bioretention basin. The bioretention basin has been incorporated to collect stormwater from the parking area. The Stormwater Report indicates that in general stormwater from the proposed impervious surfaces is collected in a bioretention basin or deep sump hooded catch basins, prior to being discharged into a subsurface infiltration basin with an isolator row. The deep sump hooded catch basin and isolator row provide pretreatment prior to final treatment by the infiltration basin.

The report further indicates that the subsurface infiltration basin has an outlet control structure to control the rates of flow and ensure proper water quality volume, prior to discharging to the existing pipe discharge to the south of the property towards Mill Brook.

There is an anticipated net reduction of approximately 975 gpd of waste water generation and 1,070 gpd of water demand (-81%) with the proposed project according to the sewer and water calculations of the Applicant's team as follows:

**Table 1.1 Wastewater Generation**

	Use	Unit Flow <sup>1</sup>	Total Units	Estimated Wastewater Generation	Estimated Water Demand
Existing	Autobody (Service Station)	150 gpd/bay	8 bays	1,200 gpd	1,300 gpd
Proposed	Dry Storage (Self-Storage Facility)	15 gpd/person	15 persons	225 gpd	248 gpd

1. Sewer design Unit Flow rates and Use categories are taken from MassDEP 310 CMR 15.00 section 203.

The Applicant suggests to the Members of Board that their proposal is in conformity with provisions of Section 3.3 of the Zoning Bylaw with respect to the decision criteria for the Board to grant a Special Permit.

It is suggested that the Board can make the following findings in granting a Special Permit for the Project:

1. The use requested is listed as a special permit in the use regulations for the applicable district or is so designated elsewhere in the Bylaw.

**The property is in an I Zone, and the proposed use is an allowed use in the I Zone.**

2. The requested use is essential or desirable to the public convenience or welfare.

**Arlington does not have a comparable storage facility and residents who wish to store property, particularly residents who may be living in smaller apartments or condominiums with no access to extra space would be served well by having access to a storage facility.**

3. The requested use will not create undue traffic congestion or unduly impair pedestrian safety.

**The requested use will not create undue traffic congestion or unduly impair pedestrian safety. The traffic report of VHB demonstrates that there will not be any undue traffic congestion or any adverse impairment of pedestrian safety with respect to the proposed project.**

4. The requested use will not overload any public water, drainage or sewer system or any other municipal systems to such an extent that the requested use or any developed use in the immediate area or in any other area of the Town will be unduly subjected to hazards affecting health, safety, or the general welfare.

**The requested use will not overload any public water, drainage or sewer system or any other municipal systems.**

5. Any special regulations for the use as may be provided in this Bylaw are fulfilled.

**Any such regulations will be fulfilled.**

6. The requested use will not impair the integrity or character of the district or adjoining districts, nor be detrimental to the health, morals, or welfare.

**The proposed storage facility will be located in the industrial zone and the industrial zone has been created for uses such as the proposed storage facility. The proposed construction will be attractive and will be integrated nicely into the neighborhood.**

7. The requested use will not, by its addition to a neighborhood, cause an excess of the particular use that could be detrimental to the character of said neighborhood.

**The Applicant is unaware of any similar facility in the Town and the requested use will not by its addition to the industrial neighborhood cause an excess of the use that would be detrimental to the character of the neighborhood.**

For all of the above reasons the Applicant respectfully requests that the Arlington Redevelopment Board grant the requested zoning relief under Environmental Design Review filed by PSI Atlantic Holdings VII, LLC.

PSI Atlantic Holdings VII, LLC  
By its attorney,



---

Robert J. Annese, Esquire  
BBO#: 019880  
1171 Massachusetts Avenue  
Arlington, MA 02476  
781-646-4911  
781-646-4910 – facsimile  
[law@robertannese.com](mailto:law@robertannese.com)

DATED: February 22, 2022



**TOWN OF ARLINGTON**

Dimensional and Parking Information  
for Application to  
The Arlington Redevelopment Board

Docket No. \_\_\_\_\_

Property Location 34 Dudley Street

Zoning District Industrial (I)

Owner: 34 Dudley Street LLC

Address: 34 Dudley Street, Arlington, MA 02476

Present Use/Occupancy: No. of Dwelling Units:

AutoBody Shop / 0 Dwelling Units

Uses and their gross square feet:

AutoBody / 10,921 SF

Proposed Use/Occupancy: No. of Dwelling Units:

Self-Storage / 0 Dwelling Units

Uses and their gross square feet:

Self-Storage / 95,706 SF

	<u>Present Conditions</u>	<u>Proposed Conditions</u>	<u>Min. or Max. Required by Zoning for Proposed Use</u>
Lot Size	0.783-Ac	0.783-Ac	min. N/A
Frontage	129.01 Ft	129.01 Ft	min. N/A
Floor Area Ratio	0.32	2.81	max. 3.0
Lot Coverage (%), where applicable	92.1%	76.8%	max. N/A
Lot Area per Dwelling Unit (square feet)	N/A	N/A	min. N/A
Front Yard Depth (feet)	57.0 Ft	10 Ft	min. 10 Ft
Side Yard Width (feet) right side	10.5 Ft	10 Ft	min. 10 Ft
left side	0.0 Ft	10 Ft	min. 10 Ft
Rear Yard Depth (feet)	6.1 Ft	12.5 Ft	min. 10 Ft
Height			max. 65 Ft / 39 Ft
Stories	1	5	stories 5 / 3
Feet	23.8 Ft	58 Ft	feet 65 Ft / 39 Ft
Open Space (% of G.F.A.)	23.1%	8.2%	min. N/A
Landscaped (square feet)	2,527 SF	7,127 SF	(s.f.) N/A
Usable (square feet)	0 SF	765 SF	(s.f.) N/A
Parking Spaces (No.)	23	11	min. 96
Parking Area Setbacks (feet), where applicable	0 Ft	5.3 Ft	min. 5 / 10
Loading Spaces (No.)	UNK	4	min. 3
Type of Construction			
Distance to Nearest Building	4'+/-	14'+/-	min.



M DUDLEY

BY IT  
BODY































# Site Plans

Issued for	Local Approvals
Date Issued	February 9, 2022
Latest Issue	February 9, 2022

## Proposed Self Storage Facility

34 Dudley Street  
Arlington, Massachusetts



### Owner

34 Dudley Street LLC  
34 Dudley Street  
Arlington, MA 02476

### Applicant

PSI Atlantic Arlington MA, LLC  
530 Oak Court Drive  
Suite 155  
Memphis, TN 38117

**Assessor's Map: 55**  
**Lot: 2-39.B**

Sheet Index		
No.	Drawing Title	Latest Issue
C1.01	Legend and General Notes	2/9/2022
C2.01	Site Preparation Plan	2/9/2022
C3.01	Layout and Materials Plan	2/9/2022
C4.01	Grading, Drainage, and Erosion Control Plan	2/9/2022
C5.01	Utility Plan	2/9/2022
C6.01-C6.03	Site Details	2/9/2022
L1.01	Planting Plan	2/9/2022
L2.01	Planting Details	2/9/2022

Reference Drawings		
No.	Drawing Title	Latest Issue
Sv-1	Existing Conditions Plan of Land	11/5/2021
SL-1	Site Lighting Plan	2/9/2022
A-101 to A-106	Floor Plans	2/9/2022
A-201 to A-202	Exterior Elevations	2/9/2022



2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900

### Architect:

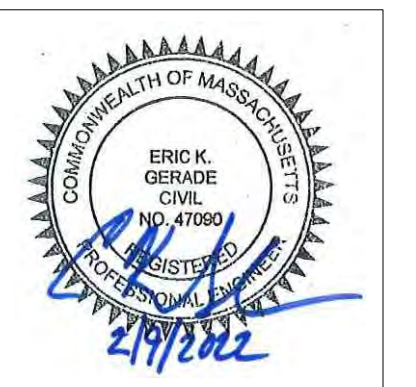
Michael Parker Studios, PLLC  
13755 Thompson Place Drive  
Mint Hill, NC 28227  
704.578.2851

### Surveyor:

VHB  
101 Walnut Street  
PO Box 9151  
Watertown, MA 02471  
617.924.1770

### Geotechnical:

GeoEngineers, Inc.  
239 Causeway Street  
Boston, MA 02114  
617.749.9227





Legend

Exist.	Prop.		Exist.	Prop.	
		PROPERTY LINE			CONCRETE
		PROJECT LIMIT LINE			HEAVY DUTY PAVEMENT
		RIGHT-OF-WAY/PROPERTY LINE			BUILDINGS
		EASEMENT			RIPRAP
		BUILDING SETBACK			CONSTRUCTION EXIT
		PARKING SETBACK			
		BASELINE	27.35 TC x	27.35 TC x	TOP OF CURB ELEVATION
		CONSTRUCTION LAYOUT	26.85 BC x	26.85 BC x	BOTTOM OF CURB ELEVATION
		ZONING LINE	132.75 x	132.75 x	SPOT ELEVATION
		TOWN LINE	45.0 TW x	45.0 TW x	TOP & BOTTOM OF WALL ELEVATION
			38.5 BW x	38.5 BW x	
		LIMIT OF DISTURBANCE			BORING LOCATION
		WETLAND LINE WITH FLAG			TEST PIT LOCATION
		FLOODPLAIN			MONITORING WELL
					UNDERDRAIN
		BORDERING LAND SUBJECT TO FLOODING			DRAIN
		WETLAND BUFFER ZONE			ROOF DRAIN
		NO DISTURB ZONE			SEWER
		200' RIVERFRONT AREA			FORCE MAIN
					OVERHEAD WIRE
					WATER
					FIRE PROTECTION
					DOMESTIC WATER
					GAS
					ELECTRIC
					STEAM
					TELEPHONE
					FIRE ALARM
					CABLE TV



Document Use:

THIS BASE PLAN ILLUSTRATES THE MINIMUM PERIMETER EROSION & SEDIMENTATION CONTROLS. THE CONTRACTOR SHALL UPDATE THIS PLAN THROUGHOUT THE DURATION OF CONSTRUCTION TO SHOW THE LOCATIONS OF PROPOSED/CONSTRUCTED E&S CONTROLS DEEMED NECESSARY TO MEET THE REQUIREMENTS OF THE ORDER OF CONDITIONS.

PROJECT E&S NARRATIVE:  
THE PROPOSED PROJECT CONSISTS OF A 95,700+ SQUARE-FOOT SELF STORAGE FACILITY WITH ANCILLARY LANDSCAPE IMPROVEMENTS, PARKING SPACES, AND UTILITY IMPROVEMENTS TO SUPPORT THIS USE. THE APPROXIMATELY 0.78 ACRE SITE WILL BE DEVELOPED AS A SINGLE-PHASE PROJECT.

EROSION AND SEDIMENTATION CONTROL TECHNIQUES  
THE EROSION AND SEDIMENTATION CONTROLS SHOWN HEREON ARE PERIMETER MEASURES ONLY. THE CONTRACTOR IS REQUIRED TO PROVIDE ADDITIONAL INTERIM EROSION AND SEDIMENTATION CONTROLS, INCLUDING BUT NOT LIMITED TO THOSE LISTED BELOW. THE CONTRACTOR SHALL MANAGE EROSION AND SEDIMENTATION DURING CONSTRUCTION TO PREVENT IMPACTS TO RESOURCE AREAS, ROADWAYS, AND ABUTTING PROPERTIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN THE EROSION AND SEDIMENTATION CONTROLS THROUGHOUT THE DURATION OF CONSTRUCTION.

CATCH BASIN PROTECTION  
NEWLY CONSTRUCTED AND EXISTING CATCH BASINS WILL BE PROTECTED WITH SILT SACKS THROUGHOUT CONSTRUCTION.

GRAVEL AND CONSTRUCTION ENTRANCE/EXIT  
A TEMPORARY CRUSHED-STONE CONSTRUCTION ENTRANCE/EXIT WILL BE CONSTRUCTED. A CROSS SLOPE WILL BE PLACED IN THE ENTRANCE TO DIRECT RUNOFF TO THE SEDIMENT TRAP.

VEGETATIVE SLOPE STABILIZATION  
STABILIZATION OF OPEN SOIL SURFACES WILL BE IMPLEMENTED WITHIN 14 DAYS AFTER GRADING OR CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, UNLESS THERE IS SUFFICIENT SNOW COVER TO PROHIBIT IMPLEMENTATION. VEGETATIVE SLOPE STABILIZATION WILL BE USED TO MINIMIZE EROSION ON SLOPES OF 3:1 OR FLATTER. ANNUAL GRASSES, SUCH AS ANNUAL RYE, WILL BE USED TO ENSURE RAPID GERMINATION AND PRODUCTION OF ROOTMASS. PERMANENT STABILIZATION WILL BE COMPLETED WITH THE PLANTING OF PERENNIAL GRASSES OR LEGUMES. ESTABLISHMENT OF TEMPORARY AND PERMANENT VEGETATIVE COVER MAY BE ESTABLISHED BY HYDRO-SEEDING OR SODDING. A SUITABLE TOPSOIL, GOOD SEEDBED PREPARATION, AND ADEQUATE LIME, FERTILIZER AND WATER WILL BE PROVIDED FOR EFFECTIVE ESTABLISHMENT OF THESE VEGETATIVE STABILIZATION METHODS. MULCH WILL ALSO BE USED AFTER PERMANENT SEEDING TO PROTECT SOIL FROM THE IMPACT OF FALLING RAIN AND TO INCREASE THE CAPACITY OF THE SOIL TO ABSORB WATER.

TEMPORARY SEDIMENT BASINS  
TEMPORARY SEDIMENT BASINS WILL BE DESIGNED EITHER AS EXCAVATIONS OR BERMED STORMWATER DETENTION STRUCTURES (DEPENDING ON GRADING) THAT WILL RETAIN RUNOFF FOR A SUFFICIENT PERIOD OF TIME TO ALLOW SUSPENDED SOIL PARTICLES TO SETTLE OUT PRIOR TO DISCHARGE. THESE TEMPORARY BASINS WILL BE LOCATED BASED ON CONSTRUCTION NEEDS AS DETERMINED BY THE CONTRACTOR AND OUTLET DEVICES WILL BE DESIGNED TO CONTROL VELOCITY AND SEDIMENT. POINTS OF DISCHARGE FROM SEDIMENT BASINS WILL BE STABILIZED TO MINIMIZE EROSION. AT A MINIMUM, SEDIMENTATION BASINS SHALL BE DESIGNED AND CONSTRUCTED TO PROVIDE STORAGE FOR THE VOLUME OF RUNOFF GENERATED FROM A 2-YR, 24-HR DESIGN STORM, OR AT LEAST 3,600 CUBIC FEET OF STORAGE PER ACRE DRAINING TO THE BASIN.

STOCKPILE MANAGEMENT  
SIDESLOPES OF STOCKPILED MATERIAL SHALL BE NO STEEPER THAN 2:1. STOCKPILES NOT USED WITHIN 30 DAYS NEED TO BE SEEDD AND MULCHED IMMEDIATELY AFTER FORMATION OF THE STOCKPILE. STRAW BALES AND SILT FENCE ARE TO BE PLACED AROUND THE STOCKPILE AREA APPROXIMATELY 10 FEET FROM THE TOE OF SLOPE.

DUST CONTROL  
PERIODICALLY MOISTEN EXPOSED SURFACES ON UNPAVED TRAVELWAYS TO KEEP THE TRAVELWAY DAMP AND REDUCE DUST.

TEMPORARY EROSION AND SEDIMENTATION CONTROL MAINTENANCE (THROUGHOUT CONSTRUCTION)

THE SITE CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES ON A WEEKLY BASIS (MINIMUM) OR AS REQUIRED PER ORDER OF CONDITIONS. THE CONTRACTOR SHALL ADDRESS DEFICIENCIES AND MAINTENANCE ITEMS WITHIN TWENTY-FOUR HOURS OF INSPECTION. CONTRACTOR SHALL PROPERLY DISPOSE OF SEDIMENT SUCH THAT IT DOES NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS. RECORDS OF THE INSPECTIONS WILL BE PREPARED AND MAINTAINED ON-SITE BY THE CONTRACTOR.

SILT SHALL BE REMOVED FROM BEHIND BARRIERS IF GREATER THAN 6-INCHES DEEP OR AS NEEDED.

DAMAGED OR DETERIORATED ITEMS WILL BE REPAIRED IMMEDIATELY AFTER IDENTIFICATION.

SEDIMENT THAT IS COLLECTED IN STRUCTURES SHALL BE DISPOSED OF PROPERLY AND COVERED IF STORED ON-SITE.

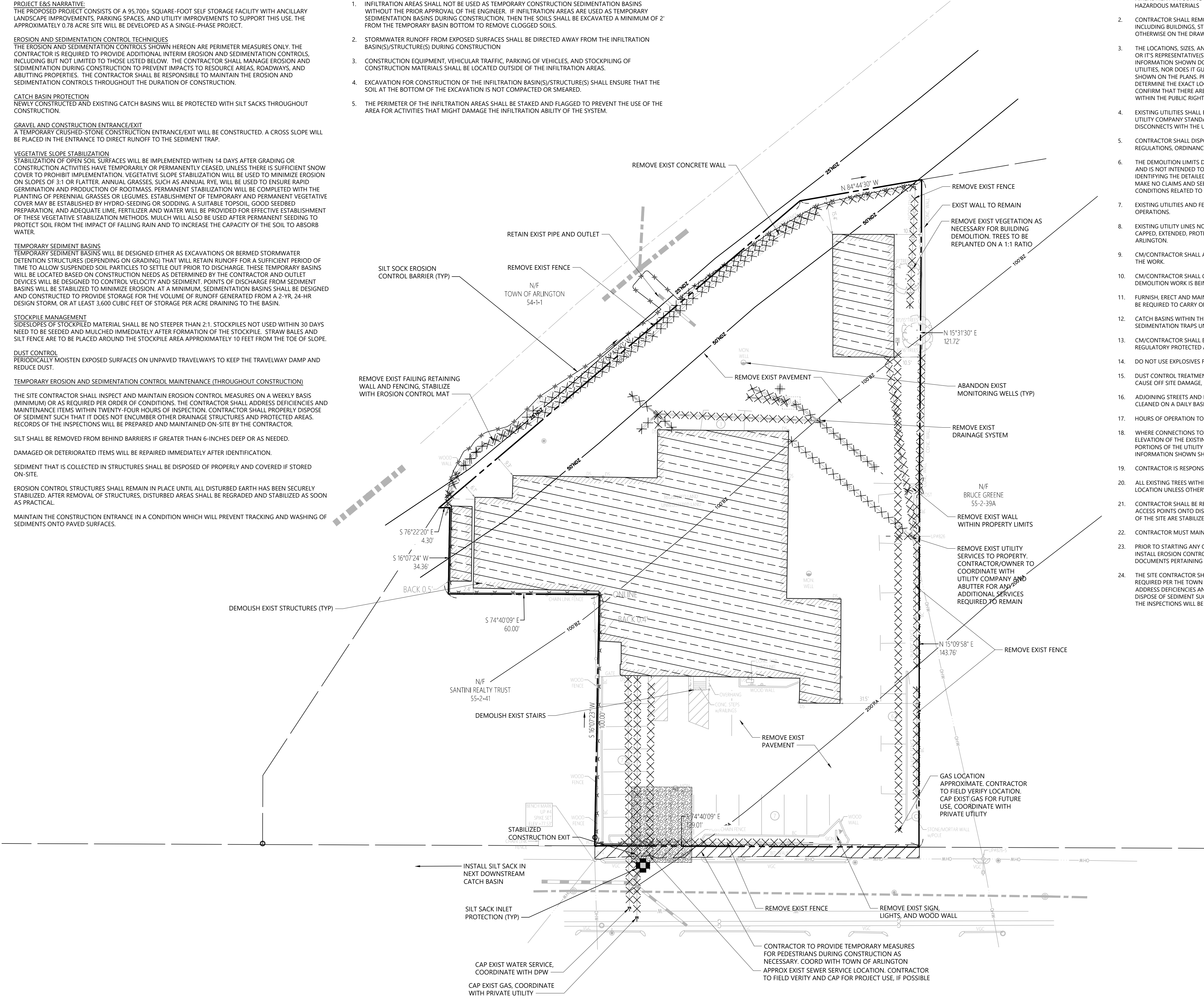
EROSION CONTROL STRUCTURES SHALL REMAIN IN PLACE UNTIL ALL DISTURBED EARTH HAS BEEN SECURELY STABILIZED. AFTER REMOVAL OF STRUCTURES, DISTURBED AREAS SHALL BE REGRADED AND STABILIZED AS SOON AS PRACTICAL.

MAINTAIN THE CONSTRUCTION ENTRANCE IN A CONDITION WHICH WILL PREVENT TRACKING AND WASHING OF SEDIMENTS ONTO PAVED SURFACES.

INFILTRATION AREA PROTECTION DURING CONSTRUCTION

FOR THE LONG-TERM FUNCTION OF THE INFILTRATION BASIN(S)/STRUCTURE(S), CARE SHALL BE TAKEN IN THE INFILTRATION AREAS DURING CONSTRUCTION. THE CONTRACTOR SHALL EMPLOY THE FOLLOWING MINIMUM BEST MANAGEMENT PRACTICES (BMPs):

1. INFILTRATION AREAS SHALL NOT BE USED AS TEMPORARY CONSTRUCTION SEDIMENTATION BASINS WITHOUT THE PRIOR APPROVAL OF THE ENGINEER. IF INFILTRATION AREAS ARE USED AS TEMPORARY SEDIMENTATION BASINS DURING CONSTRUCTION, THEN THE SOILS SHALL BE EXCAVATED A MINIMUM OF 2' FROM THE TEMPORARY BASIN BOTTOM TO REMOVE CLOGGED SOILS.
2. STORMWATER RUNOFF FROM EXPOSED SURFACES SHALL BE DIRECTED AWAY FROM THE INFILTRATION BASIN(S)/STRUCTURE(S) DURING CONSTRUCTION
3. CONSTRUCTION EQUIPMENT, VEHICULAR TRAFFIC, PARKING OF VEHICLES, AND STOCKPILING OF CONSTRUCTION MATERIALS SHALL BE LOCATED OUTSIDE OF THE INFILTRATION AREAS.
4. EXCAVATION FOR CONSTRUCTION OF THE INFILTRATION BASIN(S)/STRUCTURE(S) SHALL ENSURE THAT THE SOIL AT THE BOTTOM OF THE EXCAVATION IS NOT COMPACTED OR SMEARED.
5. THE PERIMETER OF THE INFILTRATION AREAS SHALL BE STAKED AND FLAGGED TO PREVENT THE USE OF THE AREA FOR ACTIVITIES THAT MIGHT DAMAGE THE INFILTRATION ABILITY OF THE SYSTEM.

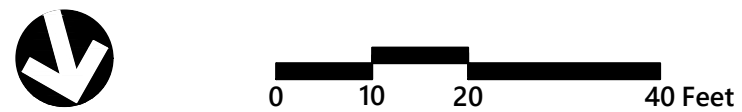


Site Preparation Notes:

1. UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH. MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AMENDMENT INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS
2. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF DEMOLITION INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
3. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR IT'S REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES. NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
4. EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
5. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
6. THE DEMOLITION LIMITS DEPICTED IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL TO PERFORM THE WORK AND SHALL MAKE NO CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.
7. EXISTING UTILITIES AND FEATURES TO REMAIN SHALL BE MAINTAINED AND PROTECTED AGAINST DAMAGE DURING DEMOLITION OPERATIONS.
8. EXISTING UTILITY LINES NOT SPECIFICALLY NOTED OR SHOWN WHICH ARE ENCOUNTERED DURING CONSTRUCTION SHALL BE CAPPED, EXTENDED, PROTECTED, REMOVED, OR REWORKED AS DIRECTED OR REQUIRED BY THE OWNER OR THE TOWN OF ARLINGTON.
9. CM/CONTRACTOR SHALL APPLY FOR AND OBTAIN ALL NECESSARY PERMITS FROM LOCAL AND STATE AUTHORITIES TO COMPLETE THE WORK.
10. CM/CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL SAFETY REGULATIONS TO PROTECT THE PUBLIC WHILE DEMOLITION WORK IS BEING PERFORMED.
11. FURNISH, ERECT AND MAINTAIN ALL TEMPORARY BARRICADES, FENCES, COVERINGS, ENCLOSURES, SIGNS AND LIGHTING AS MAY BE REQUIRED TO CARRY ON DEMOLITION WORK IN A SAFE AND LEGAL MANNER.
12. CATCH BASINS WITHIN THE LIMIT OF WORK AND IN THE IMMEDIATE VICINITY OF THE LIMIT OF WORK SHALL BE FITTED WITH SEDIMENTATION TRAPS UNTIL THE SITE IS PERMANENTLY STABILIZED.
13. CM/CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
14. DO NOT USE EXPLOSIVES FOR BUILDING DEMOLITION.
15. DUST CONTROL TREATMENTS SHALL BE APPLIED AS NECESSARY TO CONTROL AND REDUCE THE AMOUNT OF DUST WHICH MAY CAUSE OFF SITE DAMAGE, BE A HEALTH HAZARD TO HUMANS, WILDLIFE AND PLANT LIFE, OR POSE A HAZARD TO TRAFFIC SAFETY.
16. ADJOINING STREETS AND PROPERTIES SHALL BE KEPT FREE OF DEBRIS RESULTING FROM THE DEMOLITION AND SHALL BE BROOM CLEANED ON A DAILY BASIS.
17. HOURS OF OPERATION TO BE AS PER LOCAL ORDINANCE. CM/CONTRACTOR TO VERIFY PRIOR TO STARTING ON SITE OPERATIONS.
18. WHERE CONNECTIONS TO EXISTING UTILITIES ARE PROPOSED, THE CM/CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF THE EXISTING UTILITY AT THE CONNECTION POINT PRIOR TO ORDERING MATERIALS OR DEMOLISHING ANY UNUSED PORTIONS OF THE UTILITY AS SPECIFICALLY CALLED OUT ON THIS PLAN. DISCREPANCIES WITH THE EXISTING CONDITIONS INFORMATION SHOWN SHALL BE REPORTED TO THE ENGINEER FOR DIRECTION.
19. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SITE ACCESS AND SITE SECURITY AT ALL TIMES DURING CONSTRUCTION.
20. ALL EXISTING TREES WITHIN THE LIMIT OF DEMOLITION SHALL BE REMOVED AND DISPOSED OF OFF SITE AT A SAFE, APPROVED LOCATION UNLESS OTHERWISE NOTED.
21. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING CONSTRUCTION EXITS AT ALL CONSTRUCTION VEHICLE ACCESS POINTS ONTO DISTURBED AREAS OF THE SITE. CONSTRUCTION EXITS SHALL BE MAINTAINED UNTIL DISTURBED PORTIONS OF THE SITE ARE STABILIZED AS DETERMINED BY THE ENGINEER
22. CONTRACTOR MUST MAINTAIN ALL EXISTING SERVICES TO THE ABUTTING PROPERTY.
23. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
24. THE SITE CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES ON A WEEKLY BASIS (MINIMUM) OR AS REQUIRED PER THE TOWN OF ARLINGTON CONSERVATION COMMISSION ORDER OF CONDITIONS. THE CONTRACTOR SHALL ADDRESS DEFICIENCIES AND MAINTENANCE ITEMS WITHIN TWENTY-FOUR HOURS OF INSPECTION. CONTRACTOR SHALL PROPERLY DISPOSE OF SEDIMENT SUCH THAT IT DOES NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS. RECORDS OF THE INSPECTIONS WILL BE PREPARED AND MAINTAINED ON-SITE BY THE CONTRACTOR.

LEGEND

- XXXXXX - - TO BE REMOVED
- //////// - - UTILITIES TO BE ABANDONED IN PLACE
- [Hatched Box] - CONCRETE TO BE REMOVED
- [Dashed Box] - STRUCTURE TO BE REMOVED



Proposed Self-Storage Facility

34 Dudley St  
Arlington, Massachusetts 02476

No.	Revision	Date	Appr'd

Designed by SJH	Checked by EKG
--------------------	-------------------

Issued for  
Local Approvals

Date  
February 9, 2022

Not Approved for Construction

Drawing Title  
**Site Preparation Plan**

Drawing Number  
**C2.01**



Sheet  
2  
of  
10

Project Number  
52816.00



### Zoning Summary Chart

Zoning District:	Industrial (I)	
Overlay District:	Inland Wetland District	
Zoning Regulation Requirements	Required*	Provided
MAXIMUM FRONT YARD SETBACK	10 Feet	10.0 Feet
MINIMUM FRONT YARD SETBACK	10 Feet	10.0 Feet
SIDE YARD SETBACK	10 Feet	10.0 Feet
REAR YARD SETBACK	10 Feet	12.5 Feet
MAXIMUM FLOOR AREA RATIO	3.0	2.81
MAXIMUM BUILDING HEIGHT	5 Stories	58 Feet, 5 Stories **

\* Zoning regulation requirements as specified in the Town of Arlington Zoning Bylaw, Amended on April 26, 2021, Section 5.6.2

\*\* 58' Top of Parapet, 54' 10" to top of roof

### Inland Wetland District Performance Standards

	Existing	Proposed	Improvement
IMPERVIOUS AREA (50' SETBACK)	3790 SF	1461 SF	2329 SF (61.5%)
IMPERVIOUS SETBACK	25.9 Feet	34.1 Feet	+8.2 Feet

### Sign Summary

M.U.T.C.D. Number	Specification Width	Height	Desc.
R1-1	30"	30"	STOP
R7-8	12"	18"	RESERVED PARKING
R7-8P	12"	6"	VAN ACCESSIBLE
SP-1	12"	18"	RESERVED FOR CARPOOL PARKING

### Building Sign Summary

ID Number	Sign Type	Specification			Desc.
		Width	Height	Area	
1	Wall Sign	288"	90"	180 SF	CUBESMART Self Storage
2	Wall Sign	288"	90"	180 SF	CUBESMART Self Storage
3	Wall Sign	29.25"	6"	1.22 SF	OFFICE
4	Wall Sign	52"	11"	3.97 SF	LOADING
5	Freestanding Sign	78"	44"	23.8 SF	CUBESMART Self Storage

#### NOTE

- SIGNS FROM SIGN PACKAGE PREPARED BY ELRO SIGNS FOR CUBESMART SELF STORAGE, 34 DUDLEY STREET, ARLINGTON, MA, DATED JANUARY 10, 2022. REFER TO SIGN PACKAGE FOR SIGN DETAILS AND RENDERINGS.

### Parking Summary Chart

Description	Size		Spaces	
	Required	Provided	Required	Provided
STANDARD SPACES	8.5 x 18	8.5 x 18	96	7
PARALLEL SPACES	8 x 22	8 x 22	0	3
ACCESSIBLE SPACES*	8 x 18	8.5 x 18	-	1
TOTAL SPACES			96	11
LOADING BAYS**			3	4
BICYCLE SPACES***			134	11

\* ADA/STATE/LOCAL REQUIREMENTS. (1 ACCESSIBLE SPACE PER 1-25 TOTAL PARKING SPACES) PER § 208.2 OF 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

\*\* LOADING BAYS: THREE BAYS FOR BETWEEN 40,001 SF AND 120,000 SF

\*\*\* BICYCLE PARKING REQUIRED BASED ON 0.8/1,000 SF LONG TERM AND 0.6/1,000 SF SHORT TERM PARKING. 4 BICYCLE SPACES ARE PROVIDED BY TWO RACKS UNDER THE BUILDING OVERHANG. 6 BICYCLE SPACES ARE PROVIDED WITHIN THE COVERED LOADING AREA. EMPLOYEE BICYCLE STORAGE WILL BE PROVIDED WITHIN A TENANT STORAGE UNIT THE BUILDING (1 SPACE MINIMUM).

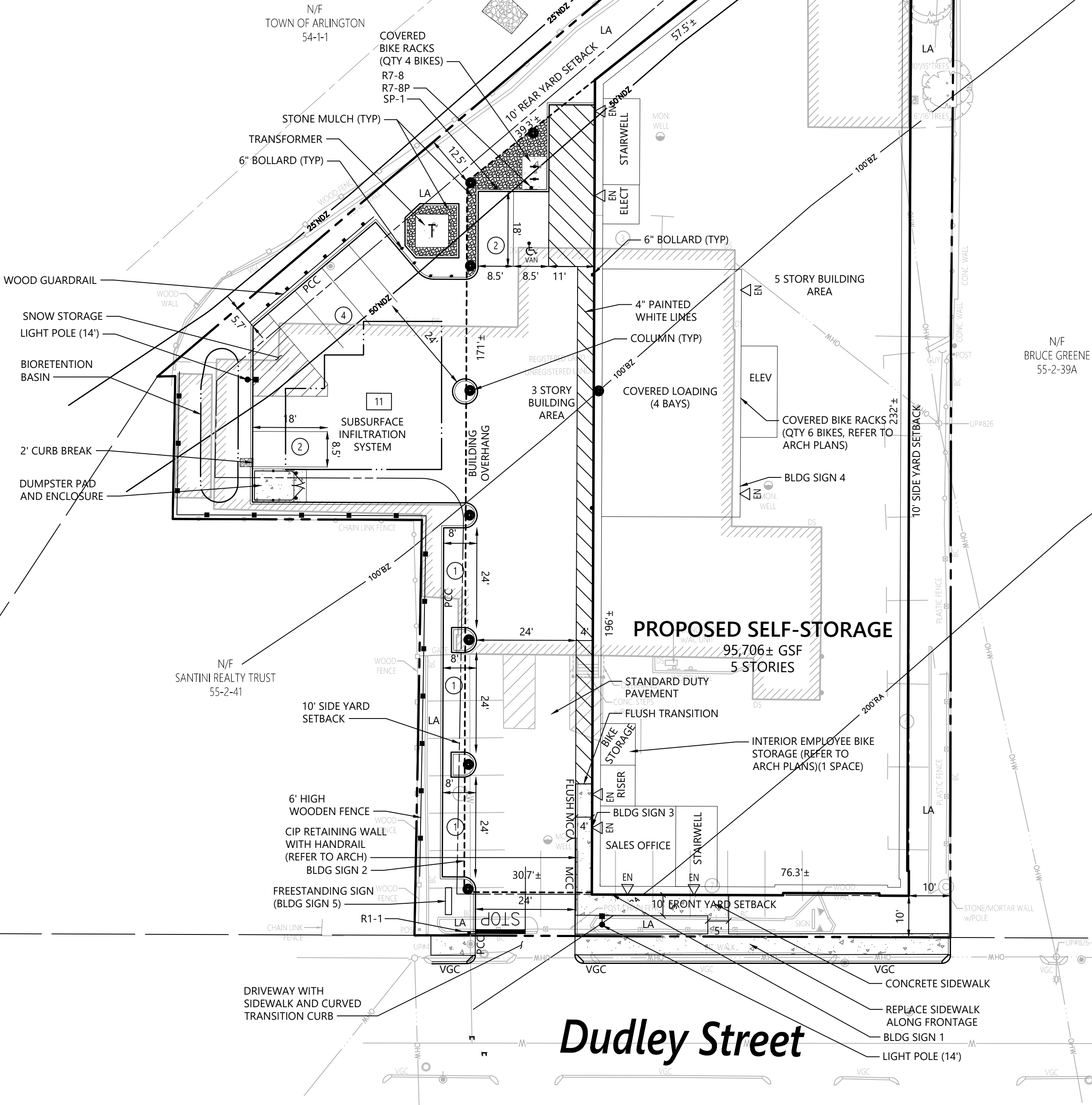
WAIVERS REQUESTED FOR REDUCTION IN REQUIRED PARKING SPACES AND REDUCTION IN REQUIRED BICYCLE SPACES.

#### Parking Requirements:

STORAGE	95,706 SF	x	1 SPACES	/	1,000 SF	=	96 SPACES
TOTAL PARKING REQUIRED							= 96 SPACES

#### Bicycle Parking Requirements:

SHORT TERM	95,706 SF	x	0.60 SPACES	/	1,000 SF	=	57 SPACES
LONG TERM	95,706 SF	x	0.80 SPACES	/	1,000 SF	=	77 SPACES
TOTAL BICYCLE PARKING REQUIRED							= 134 SPACES



### Proposed Self-Storage Facility

34 Dudley St  
Arlington, Massachusetts 02476

No.	Revision	Date	Appr'd.

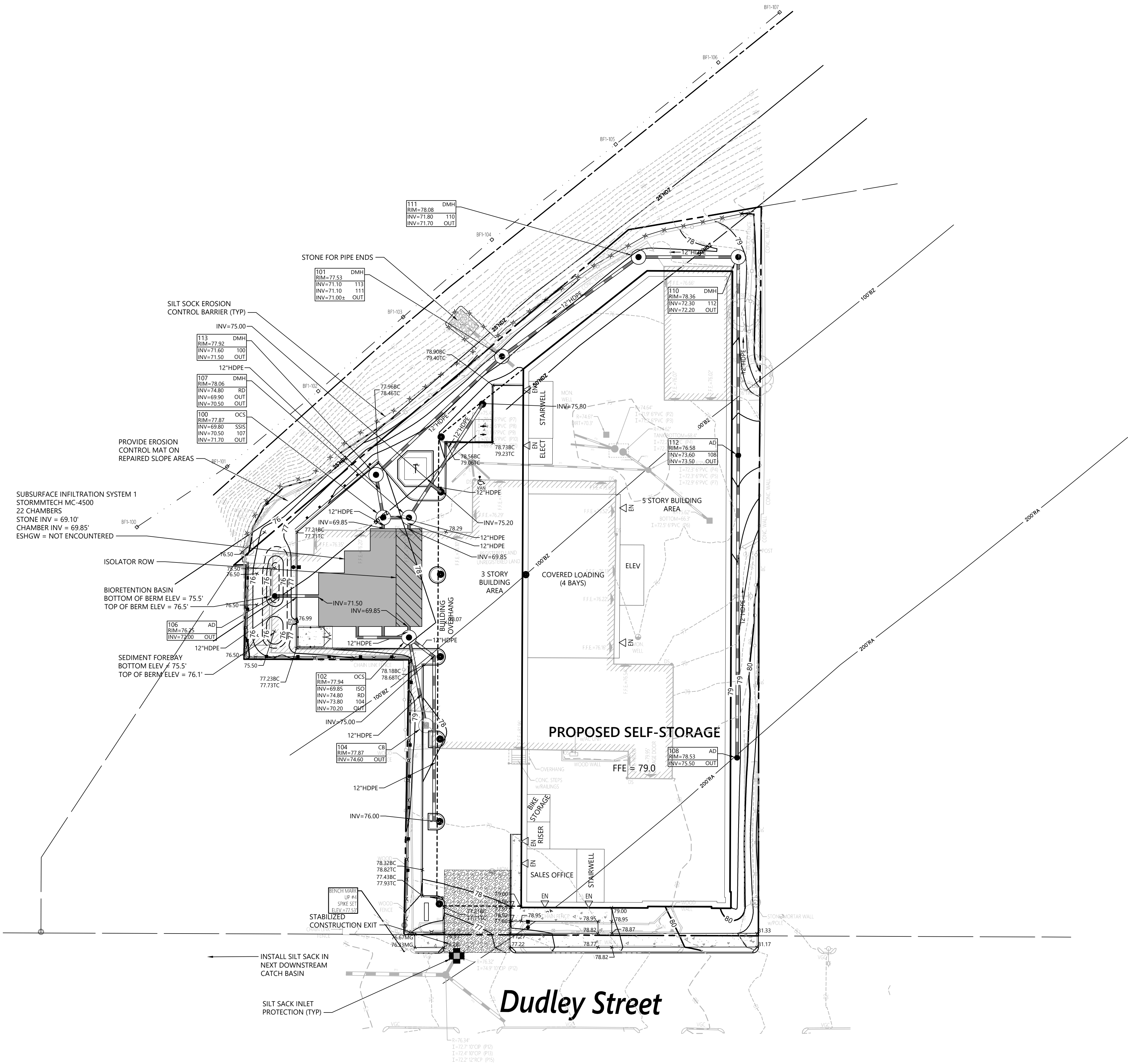
Designed by	Checked by
SJH	EKG

Issued for  
Local Approvals

Not Approved for Construction

### Layout and Materials Plan





**Proposed Self-Storage Facility**

34 Dudley St  
Arlington, Massachusetts 02476

No.	Revision	Date	Appr.

Designed by **SJH** Checked by **EKG**

Issued for **Local Approvals** Date **February 9, 2022**

Not Approved for Construction

Drawing Title

**Grading, Drainage, and Erosion Control Plan**



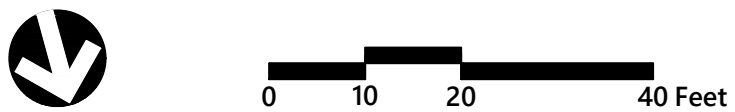
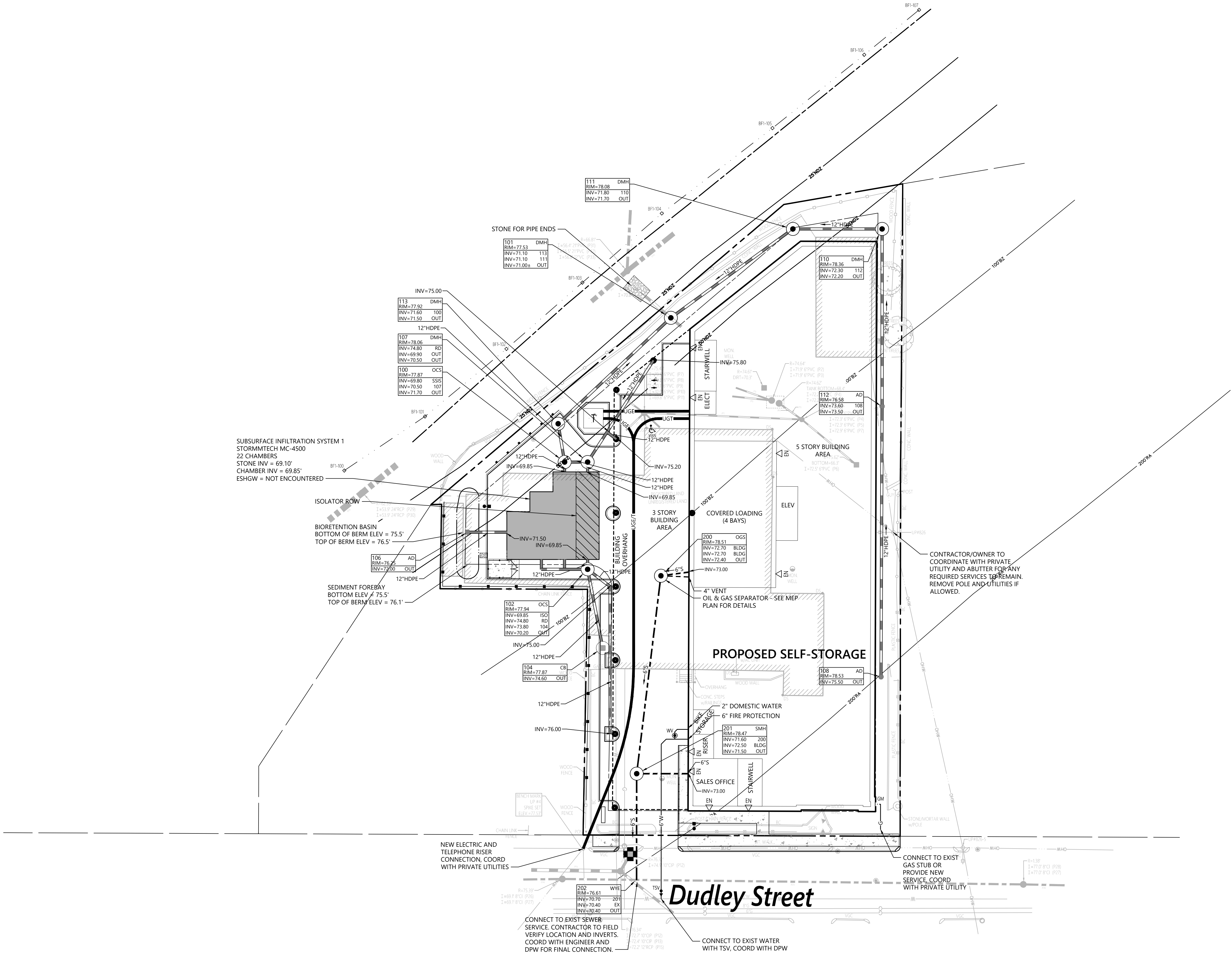
Drawing Number

**C4.01**

Sheet **4** of **10**

Project Number  
**52816.00**





**Proposed Self-Storage Facility**

34 Dudley St  
Arlington, Massachusetts 02476

No.	Revision	Date	Appr'd.

Designed by	Checked by
SJH	EKG

Issued for  
**Local Approvals**

Date  
February 9, 2022

Not Approved for Construction

Drawing Title  
**Utility Plan**

Commonwealth of Massachusetts  
ERIC V. GERADE  
CIVIL  
NO. 47000  
REGISTERED PROFESSIONAL ENGINEER  
2/9/2022

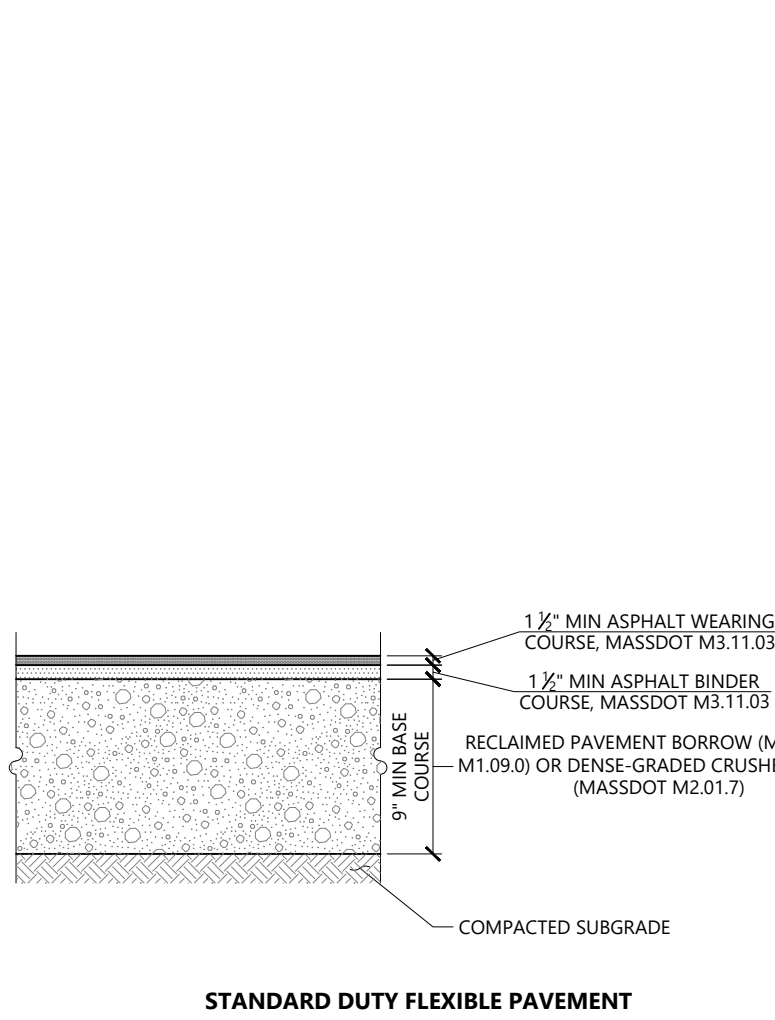
Drawing Number  
**C5.01**

Sheet 5 of 10



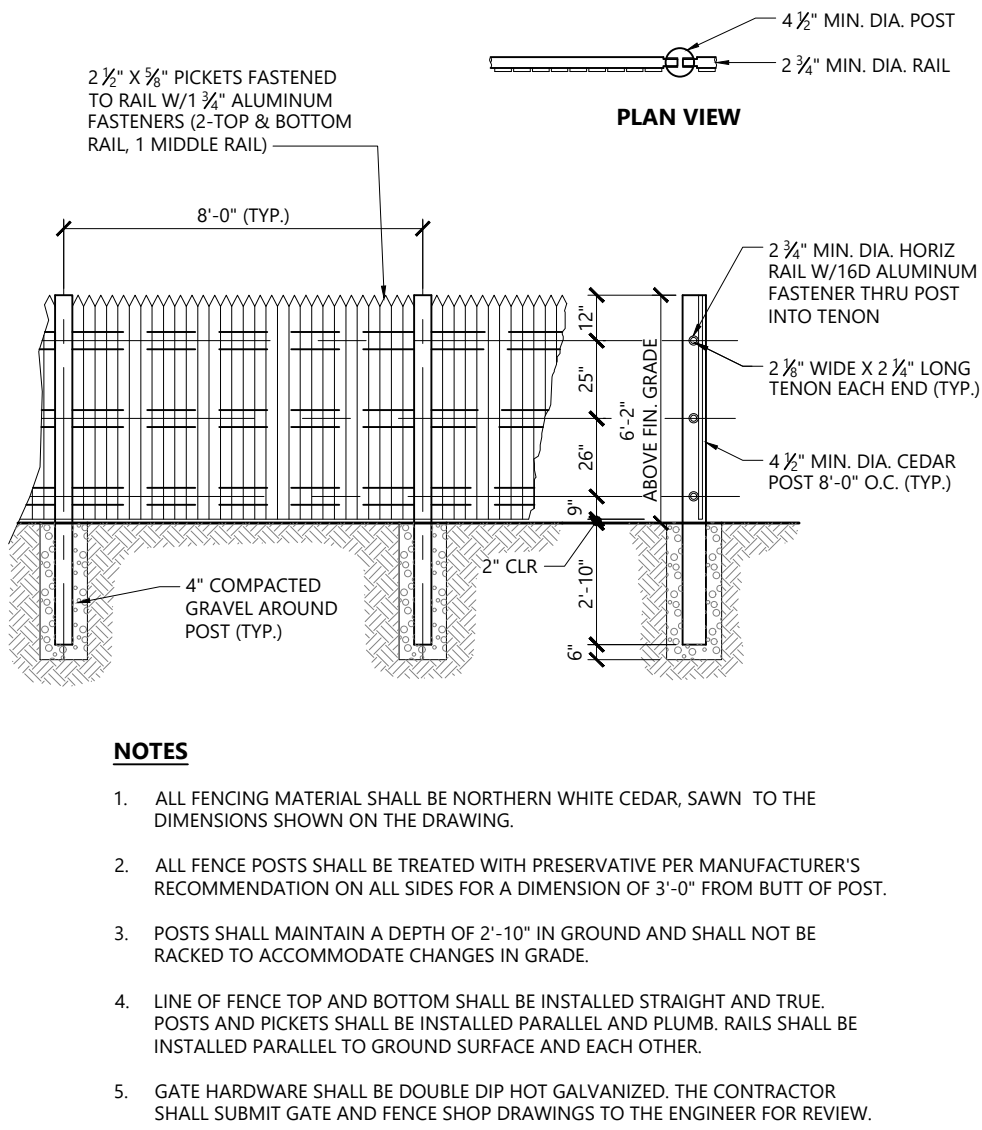


101 Walnut Street  
PO Box 9151  
Watertown, MA 02471  
617.924.1770



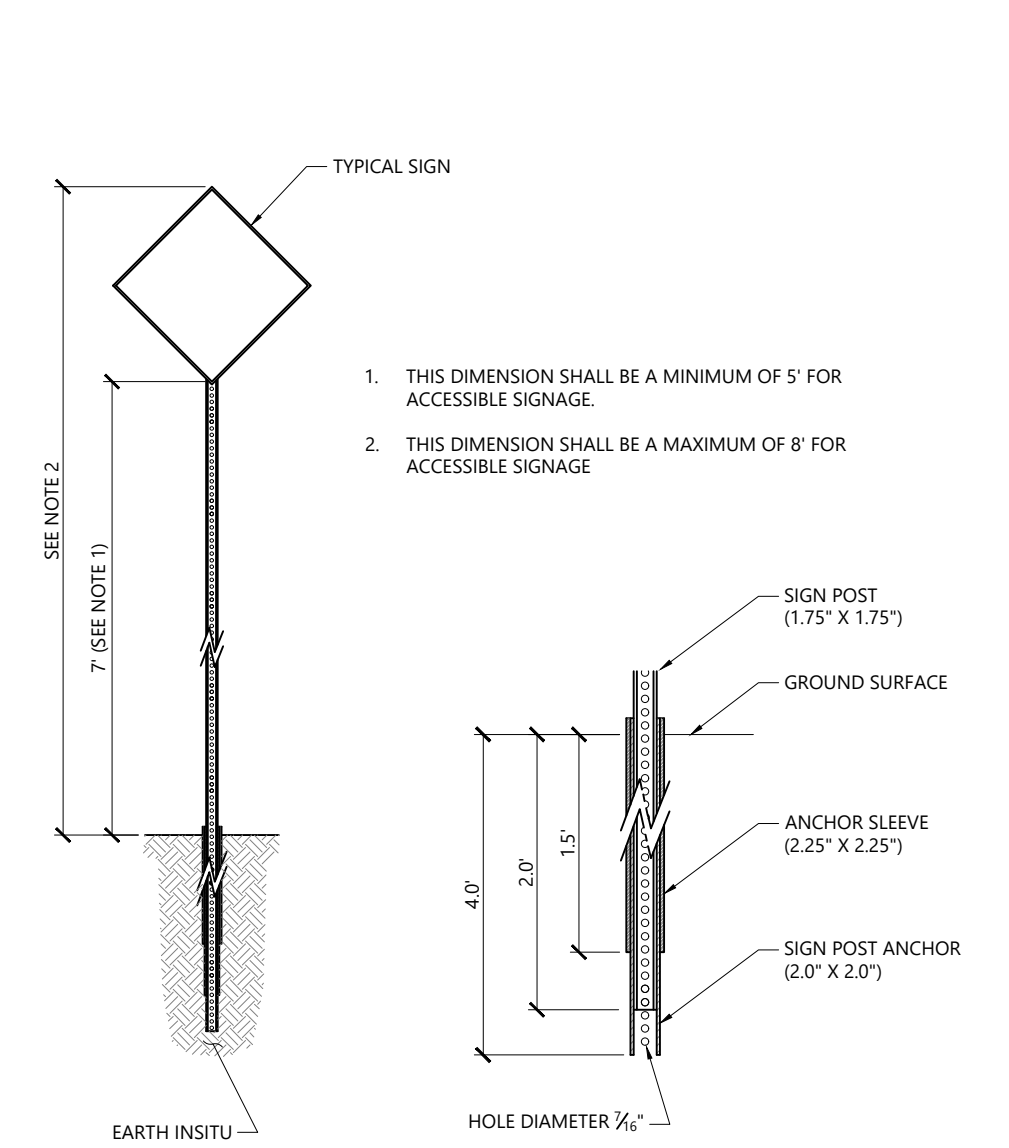
**NOTE**  
BASE COURSE FOR PAVEMENT SHOULD BE PLACED IN 12" THICK LOOSE LIFTS AND COMPACTED TO AT LEAST 95 PERCENT OF ITS MAXIMUM DRY DENSITY (MDD) AS DETERMINED BY ASTM D1557 METHOD C (MODIFIED PROTRACTOR).

**Bituminous Concrete Pavement Section**  
N.T.S. Source: GeoEngineers, Inc.

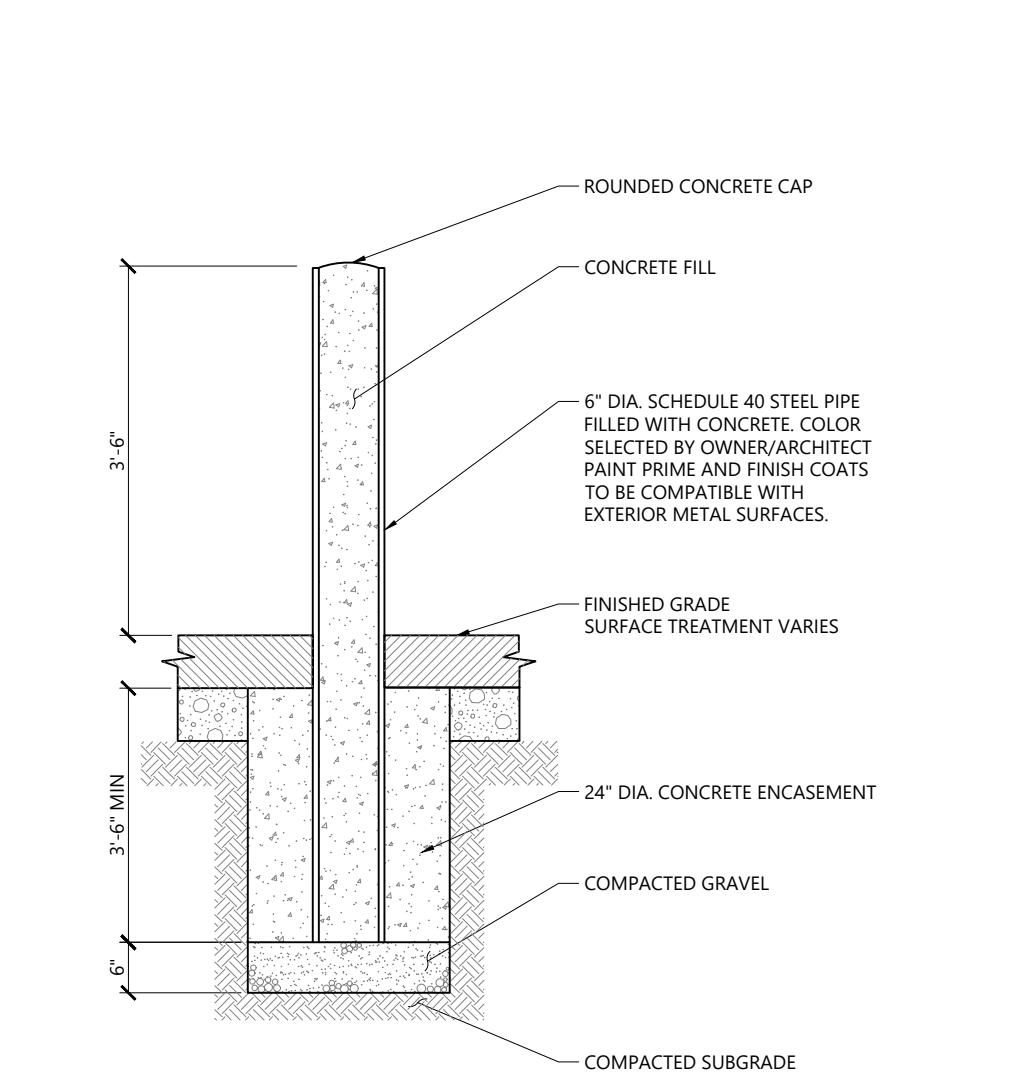


**NOTES**  
1. ALL FENCING MATERIAL SHALL BE NORTHERN WHITE CEDAR, SAWN TO THE DIMENSIONS SHOWN ON THE DRAWING.  
2. ALL FENCE POSTS SHALL BE TREATED WITH PRESERVATIVE PER MANUFACTURER'S RECOMMENDATION ON ALL SIDES FOR A DIMENSION OF 3'-0" FROM BUTT OF POST.  
3. POSTS SHALL MAINTAIN A DEPTH OF 2'-10" IN GROUND AND SHALL NOT BE RACKED TO ACCOMMODATE CHANGES IN GRADE.  
4. LINE OF FENCE TOP AND BOTTOM SHALL BE INSTALLED STRAIGHT AND TRUE. POSTS AND PICKETS SHALL BE INSTALLED PARALLEL, AND PLUMB. RAILS SHALL BE INSTALLED PARALLEL TO GROUND SURFACE AND EACH OTHER.  
5. GATE HARDWARE SHALL BE DOUBLE DIP HOT GALVANIZED. THE CONTRACTOR SHALL SUBMIT GATE AND FENCE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW.

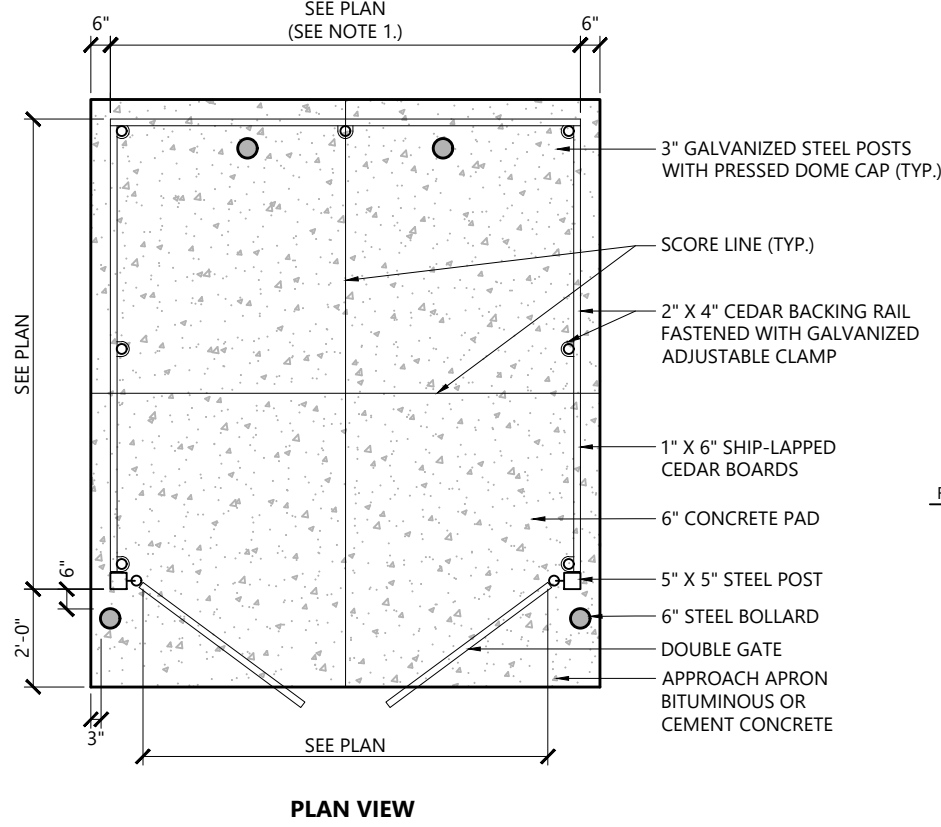
**6' Single Sided Stockade Fence**  
N.T.S. Source: VHB LD\_470



**Sign Post - Type 'B'**  
N.T.S. Source: VHB LD\_702

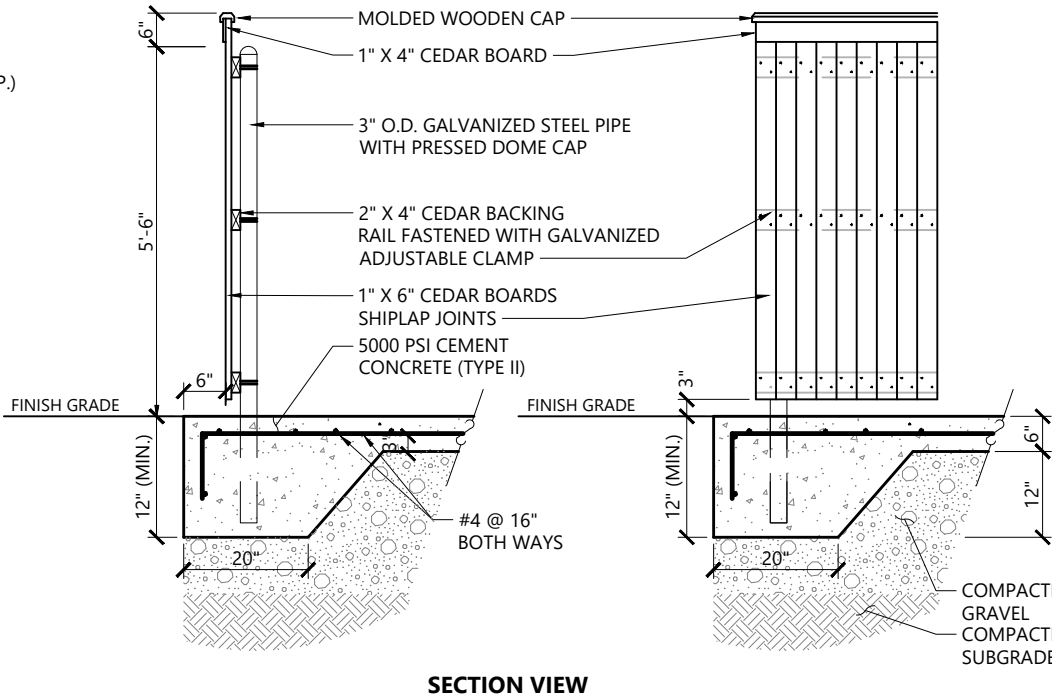


**Bollard**  
N.T.S. Source: VHB LD\_700

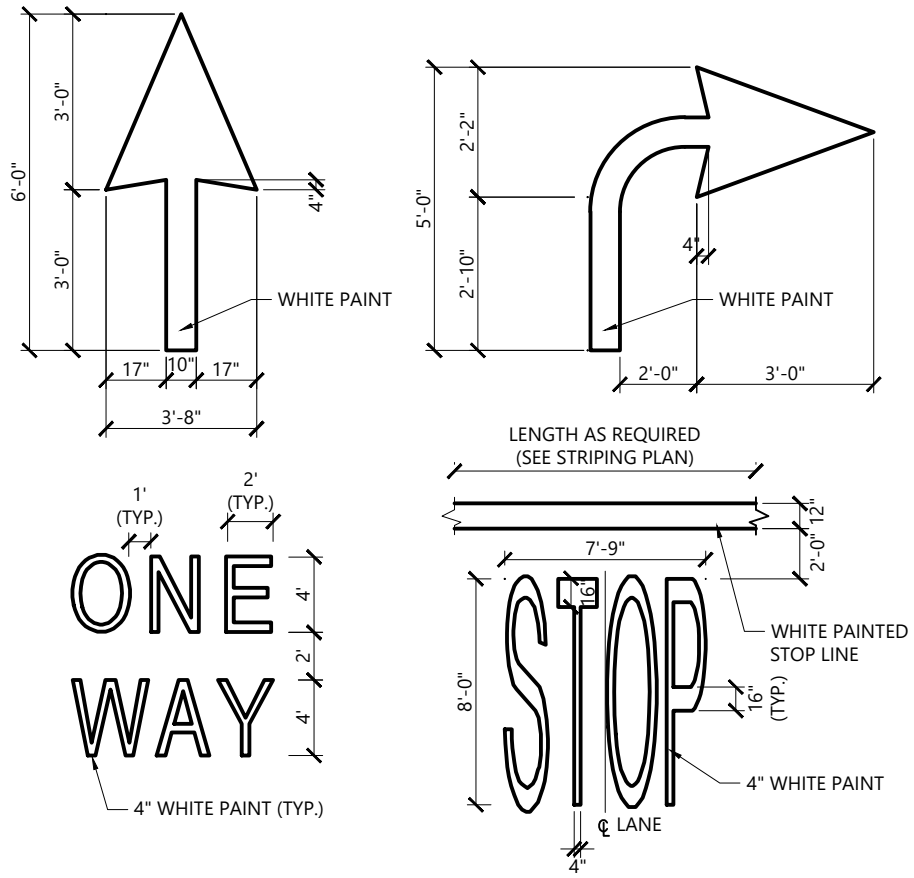


**NOTES**  
1. DUMPSTER PAD DIMENSIONS SHOWN AS MINIMUM. REFER TO PLAN FOR ACTUAL DIMENSION.  
2. PAD DESIGNED FOR 6 YARD DUMPSTER.

**Dumpster Pad w/ Enclosure**  
N.T.S. Source: VHB LD\_713

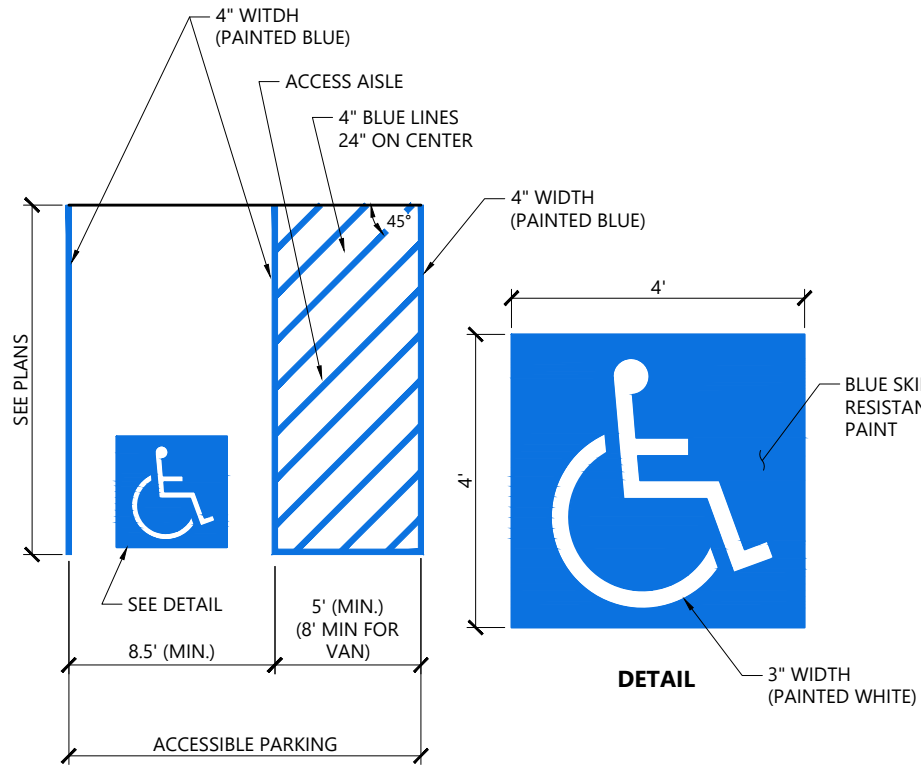


SECTION VIEW



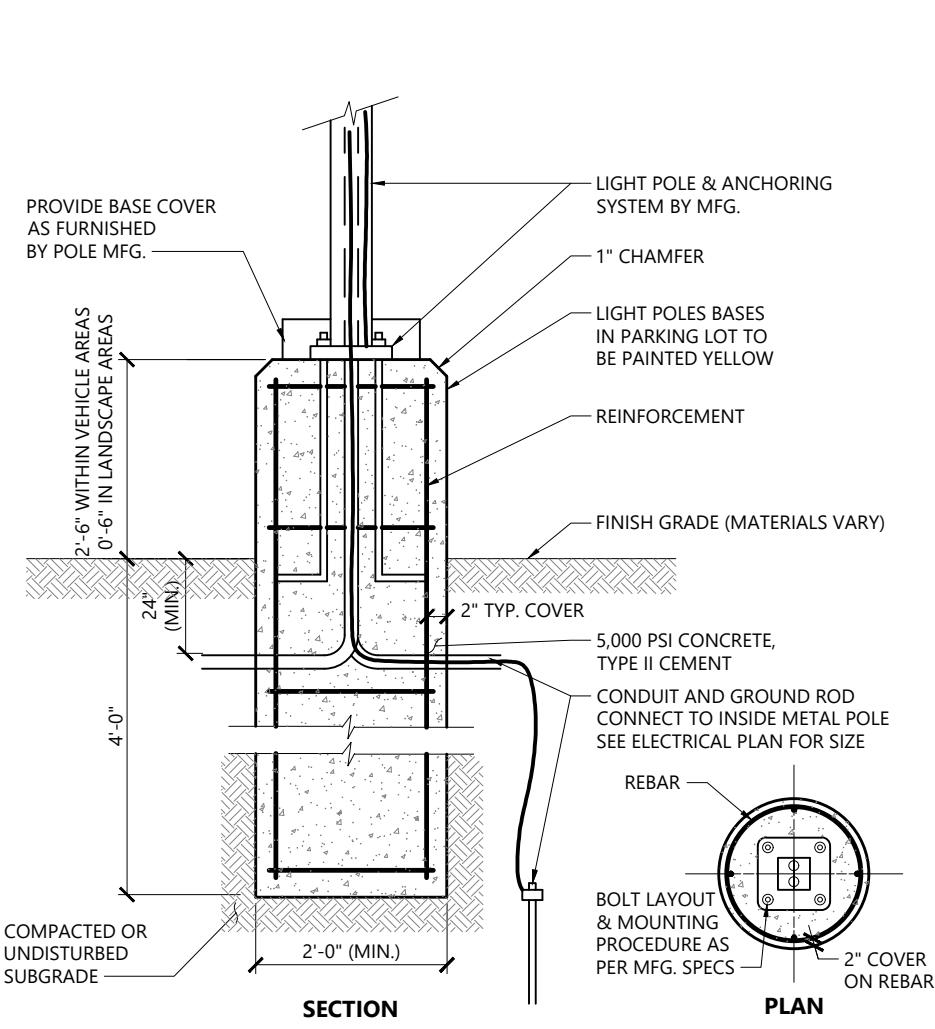
**NOTES**  
1. PAVEMENT MARKINGS TO BE INSTALLED FOR ON SITE WORK IN LOCATIONS SHOWN.

**Painted Pavement Markings - On Site**  
N.T.S. Source: VHB LD\_554



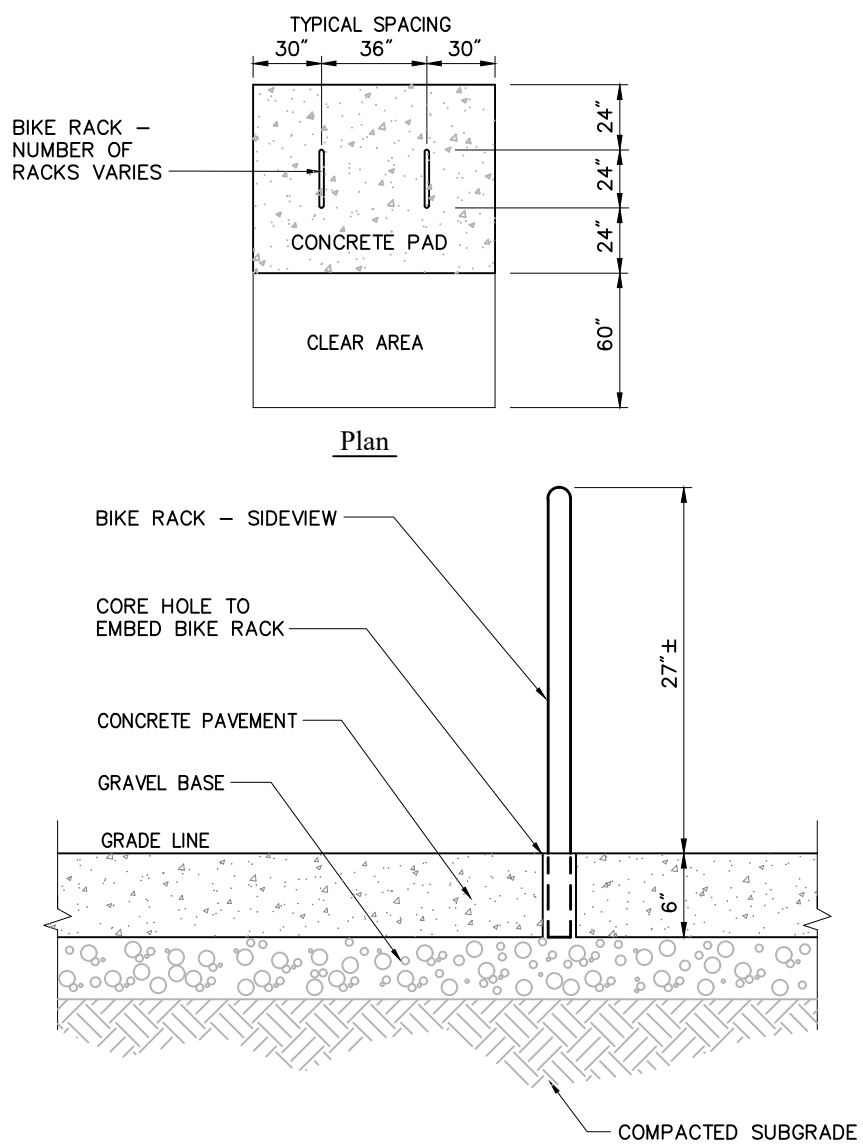
**NOTES**  
1. ALL DIMENSIONS TO CENTER OF 4" PAVEMENT STRIPING.  
2. ALL SLOPES THROUGHOUT THE ACCESSIBLE PARKING AND AISLE AREAS SHALL NOT EXCEED 1.5%.

**Accessible Parking Space**  
N.T.S. Source: VHB LD\_552B



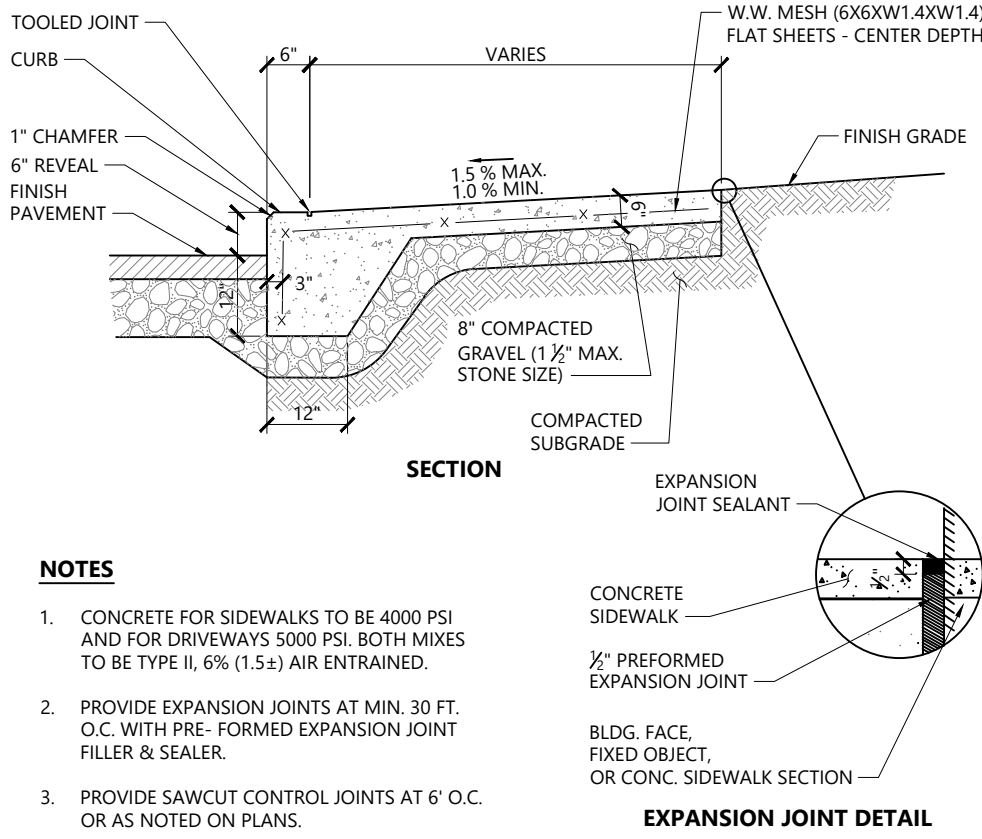
**NOTES**  
DETAIL PROVIDED FOR GENERAL INFORMATION ONLY. CONTRACTOR TO PROVIDE STAMPED FINAL DESIGN OF LIGHT POLE FOUNDATION BASED ON RECOMMENDATIONS FROM THE GEOTECHNICAL ENGINEER.

**Light Pole Foundation Detail (Up to 15' Pole)**  
N.T.S. Source: VHB LD\_310A



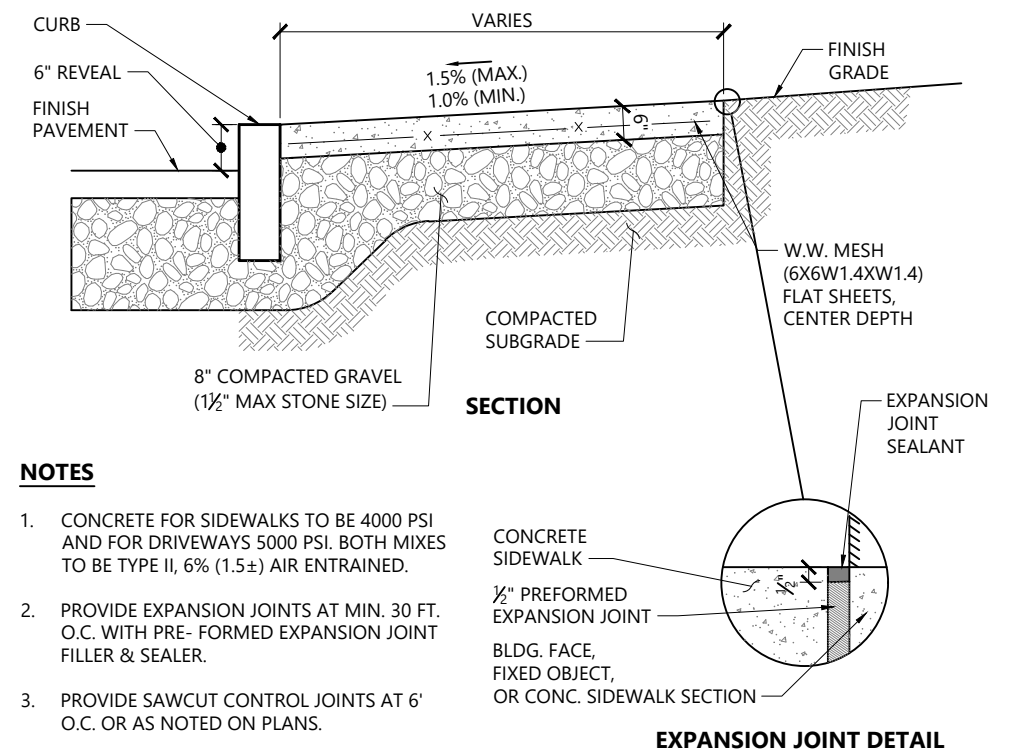
**NOTES**  
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.  
2. FINAL BIKE RACK MAKE, MODEL AND MANUFACTURER TO BE FINALIZED PRIOR TO CONSTRUCTION.

**Bicycle Rack - Embedded**  
N.T.S. Source: VHB



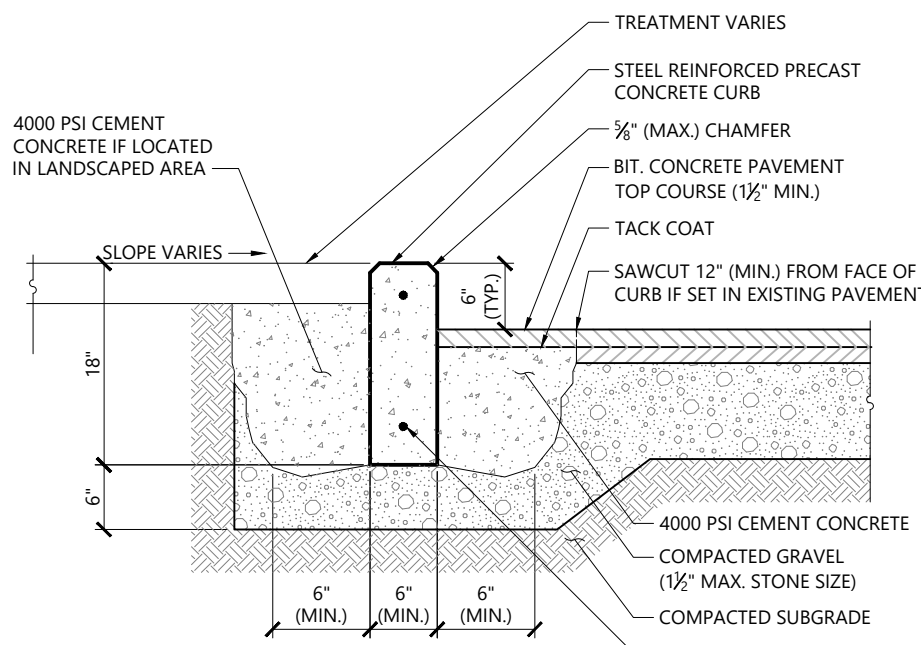
**NOTES**  
1. CONCRETE FOR SIDEWALKS TO BE 4000 PSI AND FOR DRIVEWAYS 5000 PSI. BOTH MIXES TO BE TYPE II, 6% (1.5±) AIR ENTRAINED.  
2. PROVIDE EXPANSION JOINTS AT MIN. 30 FT. O.C. WITH PRE-FORMED EXPANSION JOINT FILLER & SEALER.  
3. PROVIDE SAWCUT CONTROL JOINTS AT 6' O.C. OR AS NOTED ON PLANS.  
4. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.  
5. ALL EXPOSED CONCRETE SURFACES SHALL BE SEALED WITH A SILANE-SILOXANE PRODUCT.

**Monolithic Concrete Curb (MCC) & Sidewalk**  
N.T.S. Source: VHB LD\_421



**NOTES**  
1. CONCRETE FOR SIDEWALKS TO BE 4000 PSI AND FOR DRIVEWAYS 5000 PSI. BOTH MIXES TO BE TYPE II, 6% (1.5±) AIR ENTRAINED.  
2. PROVIDE EXPANSION JOINTS AT MIN. 30 FT. O.C. WITH PRE-FORMED EXPANSION JOINT FILLER & SEALER.  
3. PROVIDE SAWCUT CONTROL JOINTS AT 6' O.C. OR AS NOTED ON PLANS.  
4. PROVIDE MEDIUM BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.  
5. ALL EXPOSED CONCRETE SURFACES SHALL BE SEALED WITH A SILANE-SILOXANE PRODUCT.

**Concrete Sidewalk**  
N.T.S. Source: VHB LD\_420



**Precast Concrete Curb (PCC)**  
N.T.S. Source: VHB LD\_404

**Proposed Self-Storage Facility**

34 Dudley St  
Arlington, Massachusetts 02476

No.	Revision	Date	Appr.

Designed by	MEA	Checked by	EKG
Issued for		Date	February 9, 2022

Local Approvals

Not Approved for Construction

Site Details 1

Drawing Number  
**C6.01**  
Sheet 6 of 10



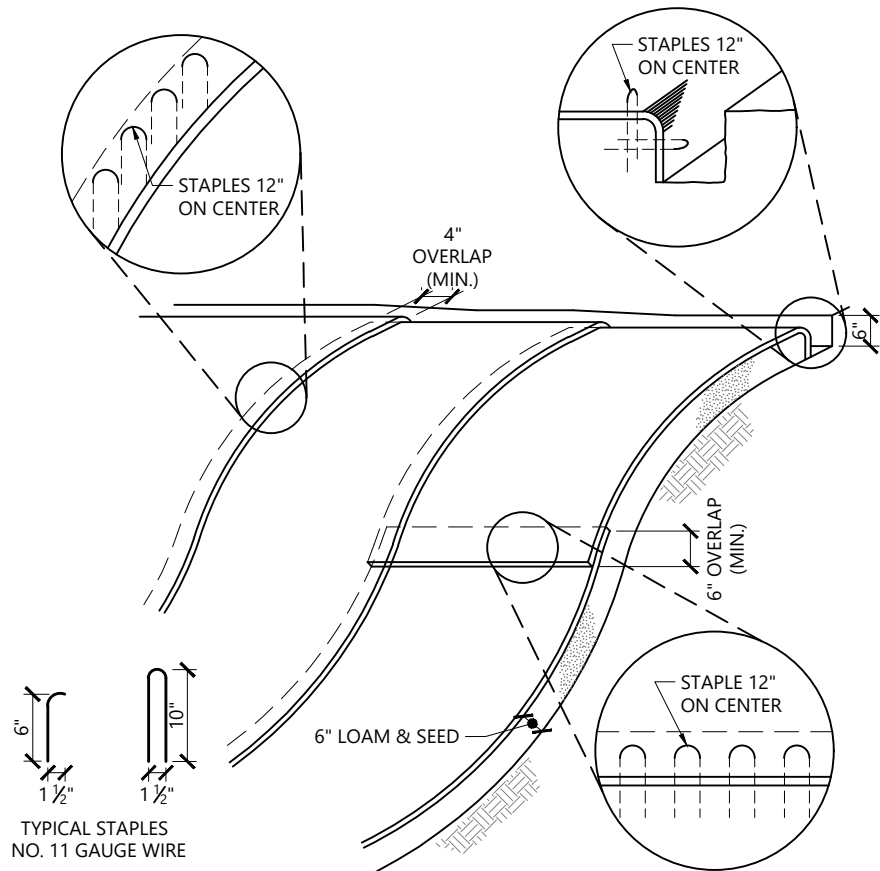








101 Walnut Street  
PO Box 9151  
Watertown, MA 02471  
617.924.1770

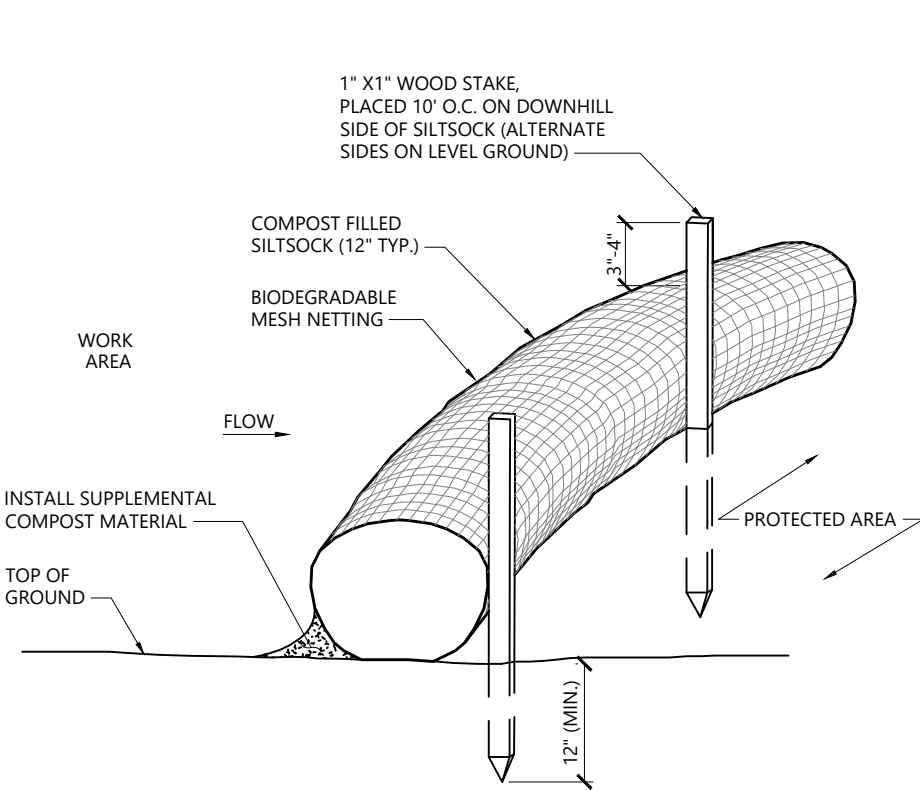


NOTES

- BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH BACKFILL AND COMPACT TRENCH AFTER STAPLING.
- ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
- THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
- WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE UPPER BLANKET END OVER LOWER END WITH 6 INCH (MIN) OVERLAP AND STAPLE BOTH TOGETHER.
- METHOD OF INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.
- EROSION CONTROL BLANKETS SHALL BE USED IN ALL AREAS WHERE SLOPES EXCEED 3:1.

Erosion Control Blanket Slope Installation

N.T.S. Source: VHB 10/20 LD\_680

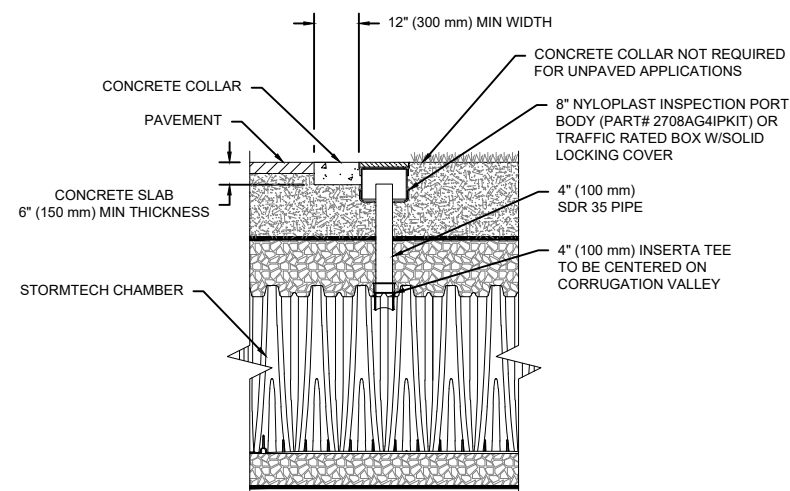


NOTES

- SILTSOCK SHALL BE FILTREXX SILTSOCK, OR APPROVED EQUAL.
- SILTSOCKS SHALL OVERLAP A MINIMUM OF 12 INCHES.
- SILTSOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
- UPON SITE STABILIZATION, COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
- IF NON BIODEGRADABLE NETTING IS USED THE NETTING SHALL BE COLLECTED AND DISPOSED OF OFFSITE.

Siltsack - Erosion Control Barrier

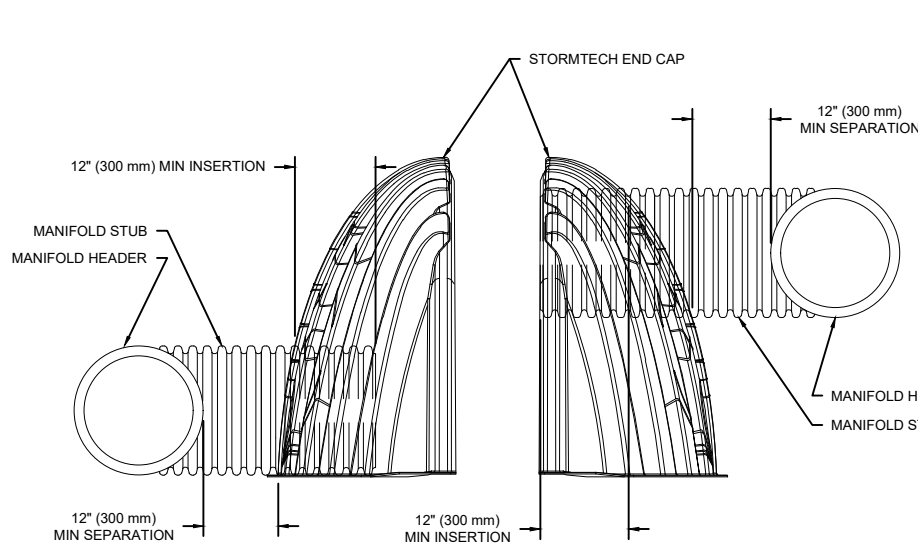
N.T.S. Source: VHB 10/20 LD\_658



NOTE: INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

Stormtech Inspection Port

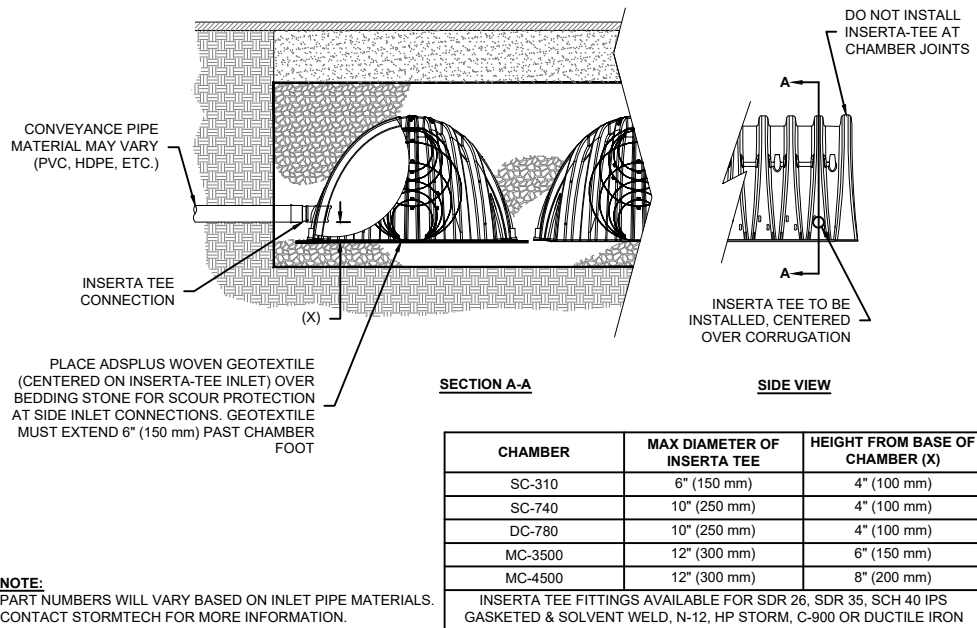
N.T.S. Source: Stormtech



NOTE: MANFOLD STUB MUST BE Laid HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

Stormtech End Cap Insertion

N.T.S. Source: Stormtech



NOTE: PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

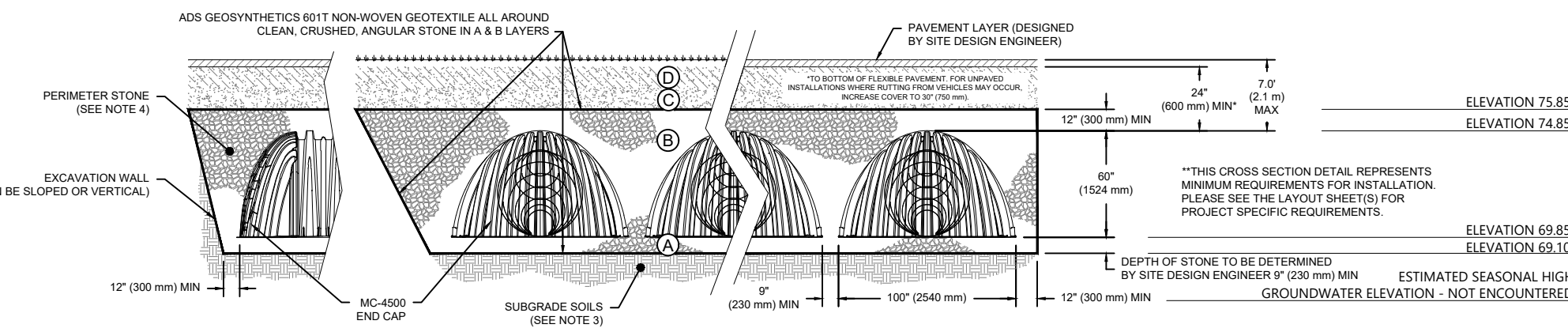
Stormtech Inserta-Tee Side Inlet

N.T.S. Source: Stormtech

ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOIL, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE (E LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	ASHTO M44 <sup>1</sup> A-1, A-2, A-3 OR ASHTO M43 <sup>1</sup> 3, 3S1, 4, 4S1, 5, 5S1, 5S2, 5S3, 7, 7S, 8, 8S, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBER IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL, AND 98% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A LAYER) TO THE 'C' LAYER ABOVE.	ASHTO M43 <sup>1</sup> 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	ASHTO M43 <sup>1</sup> 3, 4	PLATE COMPACTION OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRAVATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
  - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR R/L LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) MAX LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
  - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
  - ONCE LAYER 'C' IS PLACED, ANY SOLMATERIAL, CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOLS CAN BE USED TO REPLACE THE MATERIAL. REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

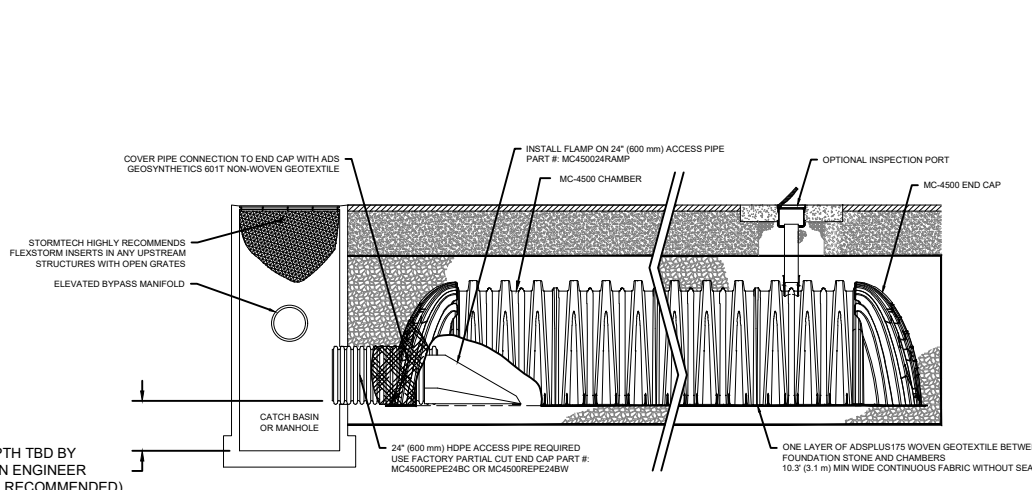


NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2416-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
- MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2719 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL/MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.2 OF ASTM F2416 SHALL BE GREATER THAN OR EQUAL TO 300 LBS/INCH.
  - AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 22° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

Subsurface Detention/Infiltration System (StormTech MC-4500)

N.T.S. Source: StormTech



INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT).
  - REMOVE TOP COVER (IF PRESENT) AND REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED.
  - USING A FLASHLIGHT AND STADIOMETER, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG.
  - LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL).
  - IF SEDIMENT IS AT OR ABOVE 3" (75 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
  - ALL ISOLATOR PLUS ROW PLUS.
  - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS USING A FLASHLIGHT. INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE.
  - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY.
  - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE.
  - IF SEDIMENT IS AT OR ABOVE 3" (75 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A FINE JETVAC CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED.
  - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLOSH WATER IS CLEAN.
  - VACUUM STRUCTURE SUMP AS REQUIRED.
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LOGS, RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

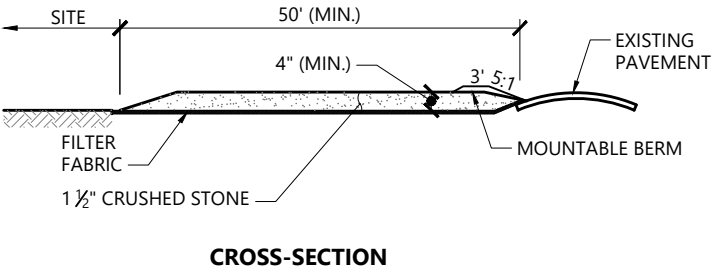
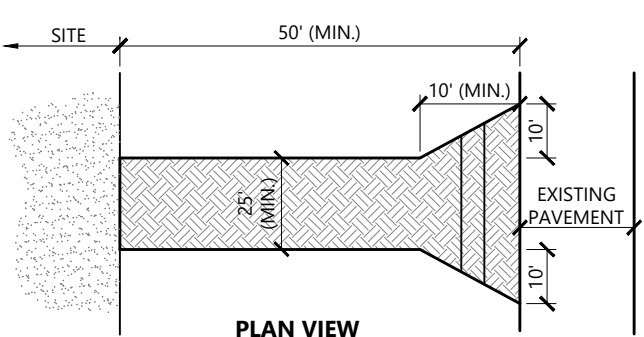
- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACUUMING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

StormTech MC-4500 Isolator Row Profile

N.T.S. Source: StormTech

Siltsack Sediment Trap

N.T.S. Source: VHB 1/20 LD\_674



NOTES

- EXIT WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.
- STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

Proposed Self-Storage Facility

34 Dudley St  
Arlington, Massachusetts 02476

No. Revision Date Appr.

Designed by MEA Checked by EKG  
Issued for Date

Local Approvals

February 9, 2022

Not Approved for Construction

Site Details 3

Drawing Title  
Drawing Number



C6.03

Sheet 8 of 10

Project Number  
52816.00

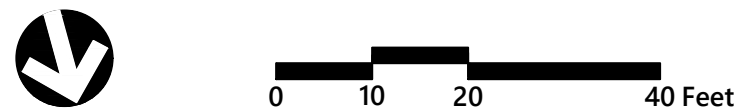


1. ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL BELOW GRADE AND ABOVE GROUND UTILITIES AND NOTIFY OWNERS REPRESENTATIVE OF CONFLICTS.
3. NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE OF ANY CONFLICT.
4. A 3-INCH DEEP MULCH PER SPECIFICATION SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, UNLESS OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
5. ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR SPECIFICATION, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
6. FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS GRAPHICALLY SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLANT LIST AND PLANT LABELS PRIOR TO BIDDING.

1. CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE OF THE LAWNS AND PLANTINGS. NO IRRIGATION IS PROPOSED FOR THIS SITE. THE CONTRACTOR SHALL SUPPLY SUPPLEMENTAL WATERING FOR NEW LAWNS AND PLANTINGS DURING THE ONE YEAR PLANT GUARANTEE PERIOD.
2. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR THE COMPLETE LANDSCAPE MAINTENANCE WORK. WATER SHALL BE PROVIDED BY THE CONTRACTOR.
3. WATERING SHALL BE REQUIRED DURING THE GROWING SEASON, WHEN NATURAL RAINFALL IS BELOW ONE INCH PER WEEK.
4. WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLANT.
5. CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE END OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER MAINTENANCE TO THE FACILITY MAINTENANCE STAFF AT THAT TIME.

<u>DECIDUOUS TREES</u>		<u>QTY</u>	<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>SIZE</u>	
AR	5		Acer rubrum	Red Maple	2 1/2 - 3" CAL.	
CB	6		Carpinus betulus 'Fastigiata'	Pyramidal European Hornbeam	2 1/2 - 3" CAL.	
<u>EVERGREEN TREES</u>		<u>QTY</u>	<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>SIZE</u>	
JV	21		Juniperus virginiana	Eastern Redcedar	6 - 7' HT.	
TO	12		Thuja occidentalis 'Nigra'	Dark American Arborvitae	5 - 6' HT.	
<u>SHRUBS</u>		<u>QTY</u>	<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>SIZE</u>	
JB	45		Juniperus horizontalis 'Bar Harbor'	Bar Harbor Creeping Juniper	18 - 24" SPD	
LA	16		Leucothoe axillaris	Coastal Leucothoe	18 - 24" SPD	
RG	7		Rhus aromatica 'Gro-Low'	Gro-Low Fragrant Sumac	18 - 24" SPD	
<u>ORNAMENTAL GRASSES</u>		<u>QTY</u>	<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>SIZE</u>	<u>SPACING</u>
SSB	58		Schizachyrium scoparium	Little Bluestem Grass	2 GAL.	24" o.c.
SH	58		Sporobolus heterolepis	Prairie Dropseed	2 GAL.	24" o.c.

1. AREAS INDICATED AS "BIOTRENTATION BASIN" ARE TO BE SEEDED WITH NEW ENGLAND EROSION CONTROL / RESTORATION MIX FOR DETENTION PONDS AND MOIST AREAS, AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA (413) 548-8000, [www.NEWP.com](http://www.NEWP.com), OR AN APPROVED EQUAL, APPLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. AREAS INDICATED AS "EROSION CONTROL SEED MIX" ARE TO BE SEEDED WITH NEW ENGLAND CONSERVATION EROSION CONTROL/RESTORATION MIX FOR DRY SITES, AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA (413) 548-8000, [www.NEWP.com](http://www.NEWP.com), OR AN APPROVED EQUAL, APPLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



34 Dudley St  
Arlington, Massachusetts 02476

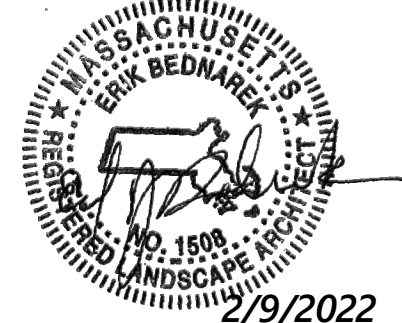
No.	Revision	Date	Appr'd.

Designed by	SJH	Checked by	EKG
-------------	-----	------------	-----

Local Approvals February 9, 2022

Not Approved for Construction

## Planting Plan

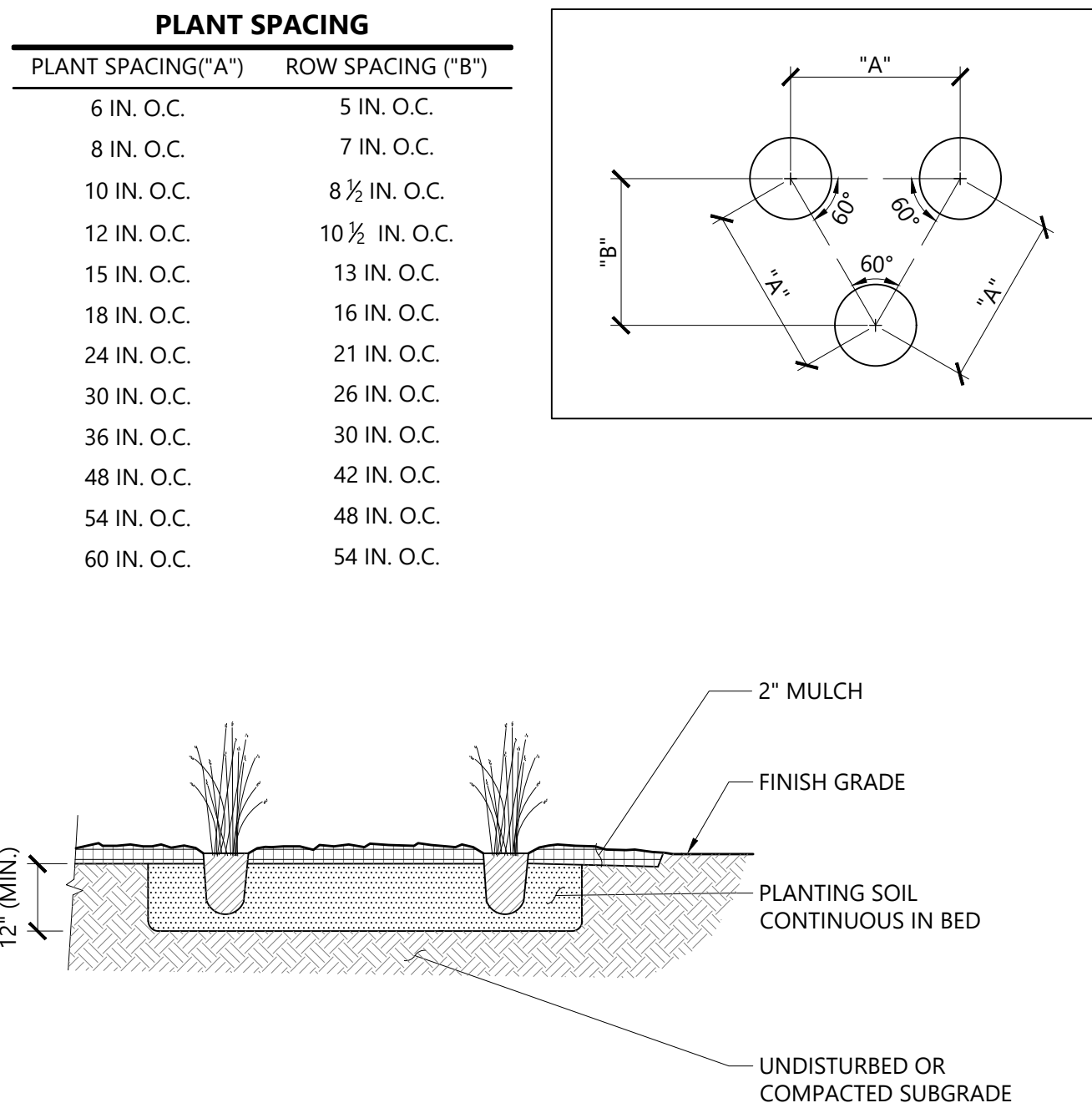


# L1.01

9 of 10

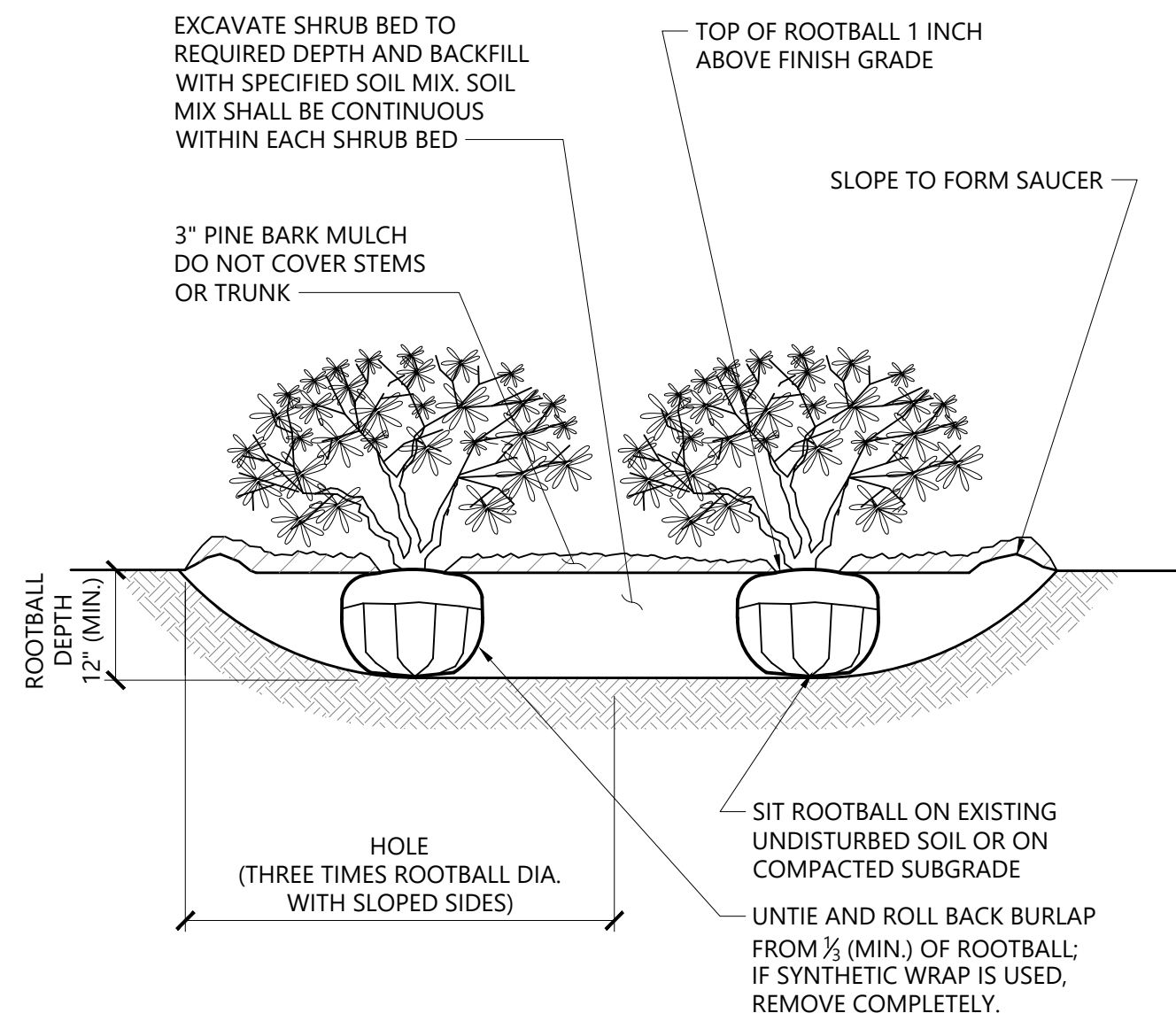
Project Number  
816.00





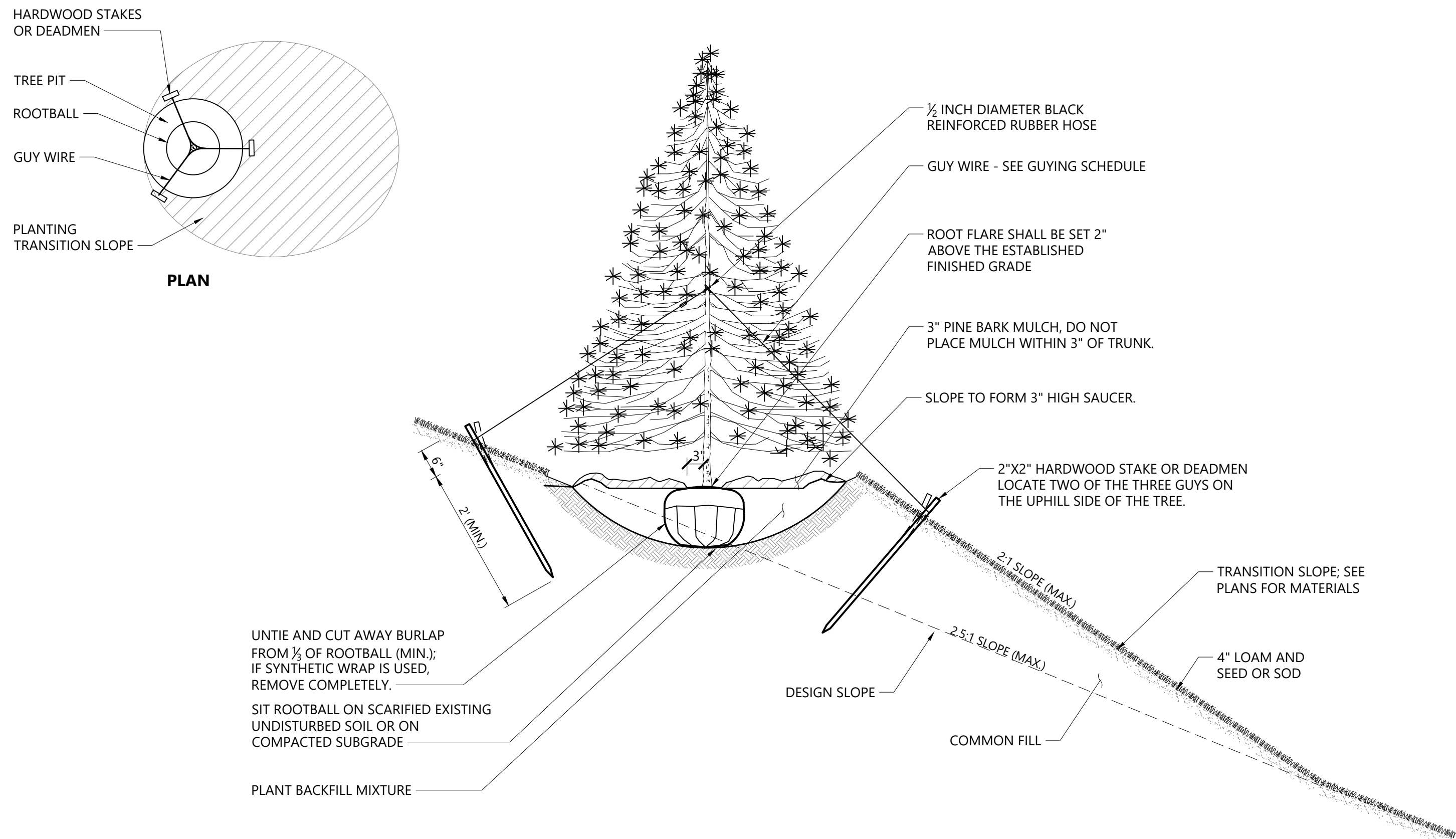
1. EDGE CONDITIONS VARIES. WHERE STONE MUCH DOES NOT ABUT CURB OR BUILDING FACE PROVIDE 12" LONG STEEL EDGING

N.T.S. Source: VHB LD\_

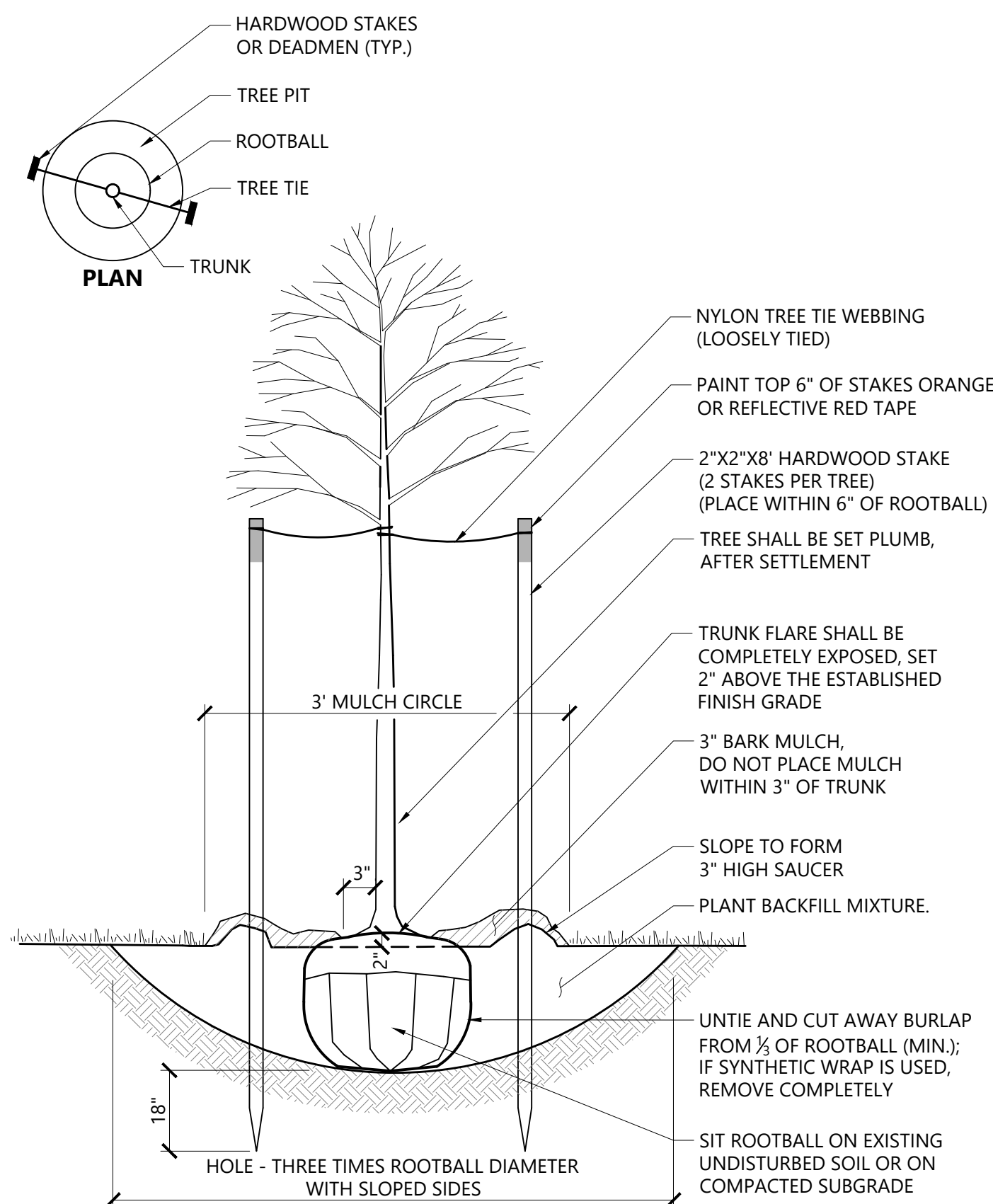


1. LOOSEN ROOTS AT THE OUTER EDGE OF ROOTBALL OF CONTAINER GROWN SHRUBS.

N.T.S. Source: VHB LD\_601



N.T.S. Source: VHB LD 605



N.T.S. Source: VHB LD 602

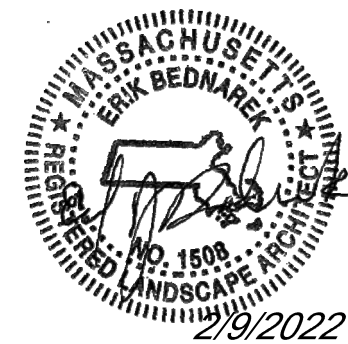
34 Dudley St  
Arlington, Massachusetts 02476

Designed by	SJH	Checked by	EKG
-------------	-----	------------	-----

Local Approvals February 9, 2022

Not Approved for Construction

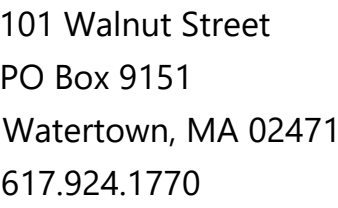
# Planting Details



## L2.01

10 of 10

Project Number  
**2816.00**



- ① DRAIN MANHOLE
- ② CATCH BASIN
- ③ SEWER MANHOLE
- ④ ELECTRIC MANHOLE
- ⑤ TELEPHONE MANHOLE
- ⑥ MANHOLE
- HH □ HAND HOLE
- WATER GATE
- FIRE HYDRANT
- GAS GATE
- BOLLARD w/LIGHT
- STREET SIGN
- ☆ LIGHT POLE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- MONITORING WELL
- FLOOD LIGHT
- WELL
- ( )

	FIN FEE -45.27'
	PENETRATED FLOOR ELEVATION
	COULD NOT OPEN
	NO PIPES VISIBLE
	DOUBLE YELLOW LINE
	DASHED WHITE LINE
	SINGLE YELLOW LINE
	LANDSCAPED AREA - AREA OF PAVEMENT
	CONCRETE CURB
	VERTICAL GRANITE CURB
	SLOPED GRANITE BERM
	BITUMINOUS BERM
	BITUMINOUS CURB
	GRAVEL RAIL
	CHAIN LINK FENCE
	DRAINAGE LINE
	SEWER LINE
	OVERHEAD WIRE
	UNDERGROUND ELECTRIC
	TELEPHONE LINE
	GAS LINE
	WATER LINE
	STONE WALL
	TREE LINE
	100-FT RIVER FLOOD ZONE
	100-FT RIVER FLOOD ZONE
	20-FT RIVER FLOOD ZONE
	LIMIT MEAN ANNUAL HIGH WATER
	LIMIT OF BANK
	VEGETATED WETLAND BOUNDARY

34 Dudley Street  
Arlington, Massachusetts

[illegible]

October 28, 2021

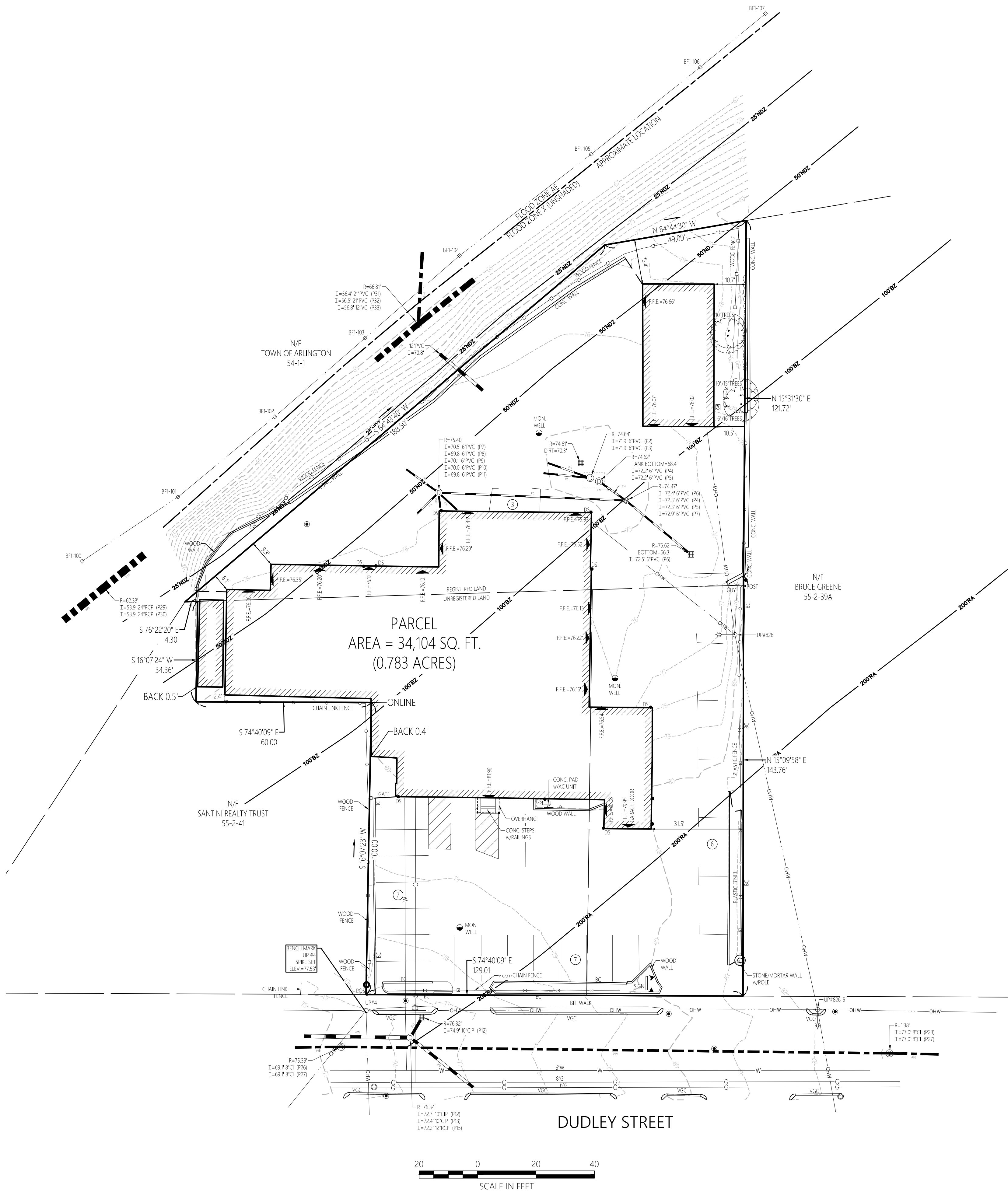
## Drawing Number



# Sv-1

Sheet \_\_\_\_\_ of \_\_\_\_\_

Project Number  
**52816.00**



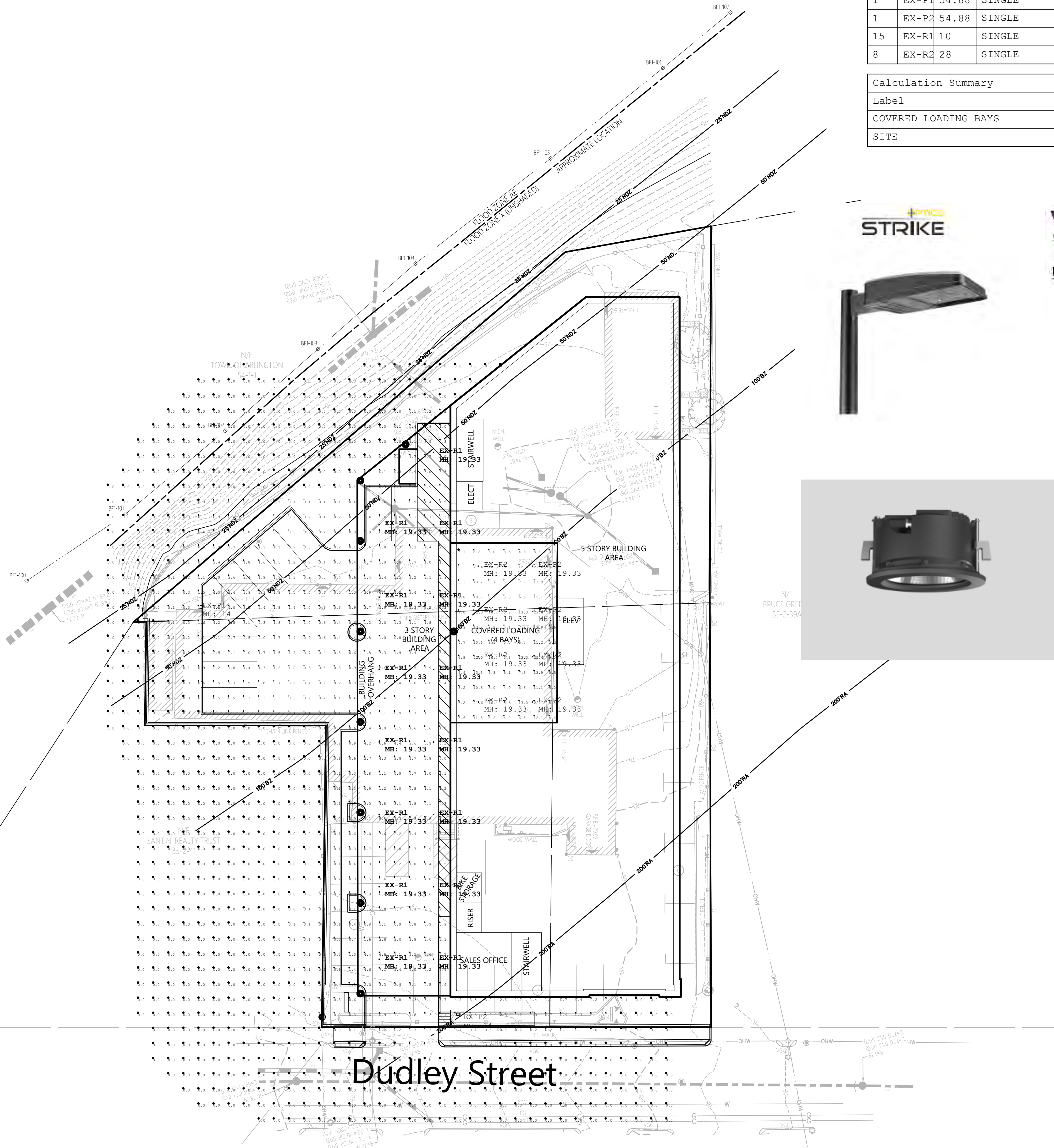
- 1) THE PROPERTY LINES SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL FIELD SURVEY CONDUCTED BY VHB, INC. IN OCTOBER, 2021 AND FROM DEEDS AND PLANS OF RECORD.
- 2) THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VHB, INC. IN OCTOBER, 2021.
- 3) THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN.
- 4) HORIZONTAL DATUM IS BASED ON MASS. GRID SYSTEM, NAD 1983. ELEVATIONS SHOWN ON THIS PLAN REFER TO NAVD OF 1988.
- 5) THE WETLANDS SHOWN ON THIS PLAN WERE FLAGGED BY VHB ENVIRONMENTAL DEPARTMENT AND FIELD SURVEYED BY VHB IN OCTOBER, 2021.
- 6) THE TREE SYMBOL OUTLINE SHOWN ON THIS PLAN DOES NOT REPRESENT THE ACTUAL TREE CANOPY.
- 7) THE LOT LIES ENTIRELY WITHIN ZONE X (UNSHADED) AREAS TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR MIDDLESEX COUNTY, MASSACHUSETTS, MAP NUMBER 2507C0416E, EFFECTIVE DATE JUNE 4, 2010.

THE LOT LIES ENTIRELY WITHIN THE INDUSTRIAL DISTRICT (I) AS SHOWN ON GIS MAPPING FOR THE TOWN OF ARLINGTON MASSACHUSETTS" AND THE INLAND WETLAND OVERLAY DISTRICT. DIMENSIONAL REQUIREMENTS FOR A (I) AT THE TIME OF THIS SURVEY ARE:

	REQUIRED	EXISTING
MINIMUM LOT AREA	N/A	34,104 S.F.
MINIMUM FRONTAGE	N/A	129.01 FEET
MINIMUM FRONT YARD SETBACK	10 FEET	57.0 FEET
MINIMUM SIDE YARD SETBACK	10 FEET	0.0 FEET
MINIMUM REAR YARD SETBACK	10 FEET	6.1 FEET
MAXIMUM BUILDING HEIGHT	65'/39 FEET	23.8 FEET

\*SUBJECT TO AMENITY REQUIREMENTS IN SECTION 5.6.2 D(7)





Luminaire Schedule					
Qty	Label	Lum. Watts	Arrangement	LLF	Description
1	EX-P1	54.88	SINGLE	0.900	VP-S-24L-55-4K7-4-BC
1	EX-P2	54.88	SINGLE	0.900	VP-S-24L-55-4K7-3-BC
15	EX-R1	10	SINGLE	0.900	24823_BEGA_IES
8	EX-R2	28	SINGLE	0.900	24827_BEGA

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
COVERED LOADING BAYS	Fc	9.58	22.4	3.1	3.09	7.23
SITE	Fc	0.71	7.2	0.0	N.A.	N.A.

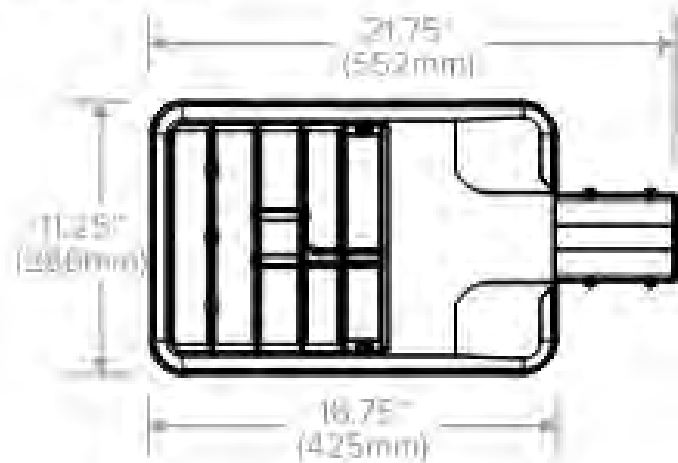


### VIPER S

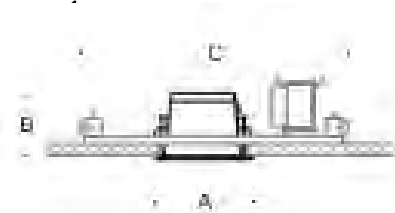
SMALL VIPER LUMINAIRE

CATALOG #

#### DIMENSIONS



Weight	15.0 lbs (6.8 kg)
EPA	.67 (l)



#### LED recessed ceiling downlights - wide beam

	LED	h	A	B	C
24827	24.5W	29"	8 7/8"	5"	18"

h = Beam angle

Dudley Street

DUDLEY STREET

Project:  
Arlington Self Storage - 34 Dudley  
Street - Site

Contact:  
Paul Abdella  
Specification Sales  
(781) 272-2300 X208  
pabdella@omnilite.com

Detail: Photometric Calculation  
Date: 02/09/2022  
Revision: 2  
Scale: 1" = 20'-0"  
Drawn By: SHJ

**illuminate**  
44 Sixth Road  
Woburn, MA 01801  
(781) 935-8500  
333 Pleasant Valley Road  
South Windsor, CT 06074  
(860) 282-0597

Drawing Number:

SL-1

Sheet 1 of 1



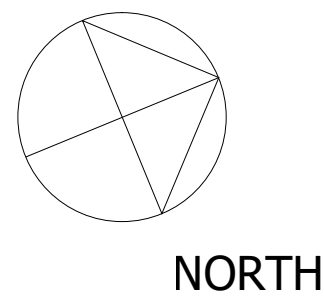


## PREMIER STORAGE INVESTORS

[illegible]

# A-101

Copyright 2021 Michael Parker Studios PLLC





13755 thompson place drive  
mint hill, nc 28227  
704-578-2851



ARLINGTON, MASSACHUSETTS  
Project No. 21-033



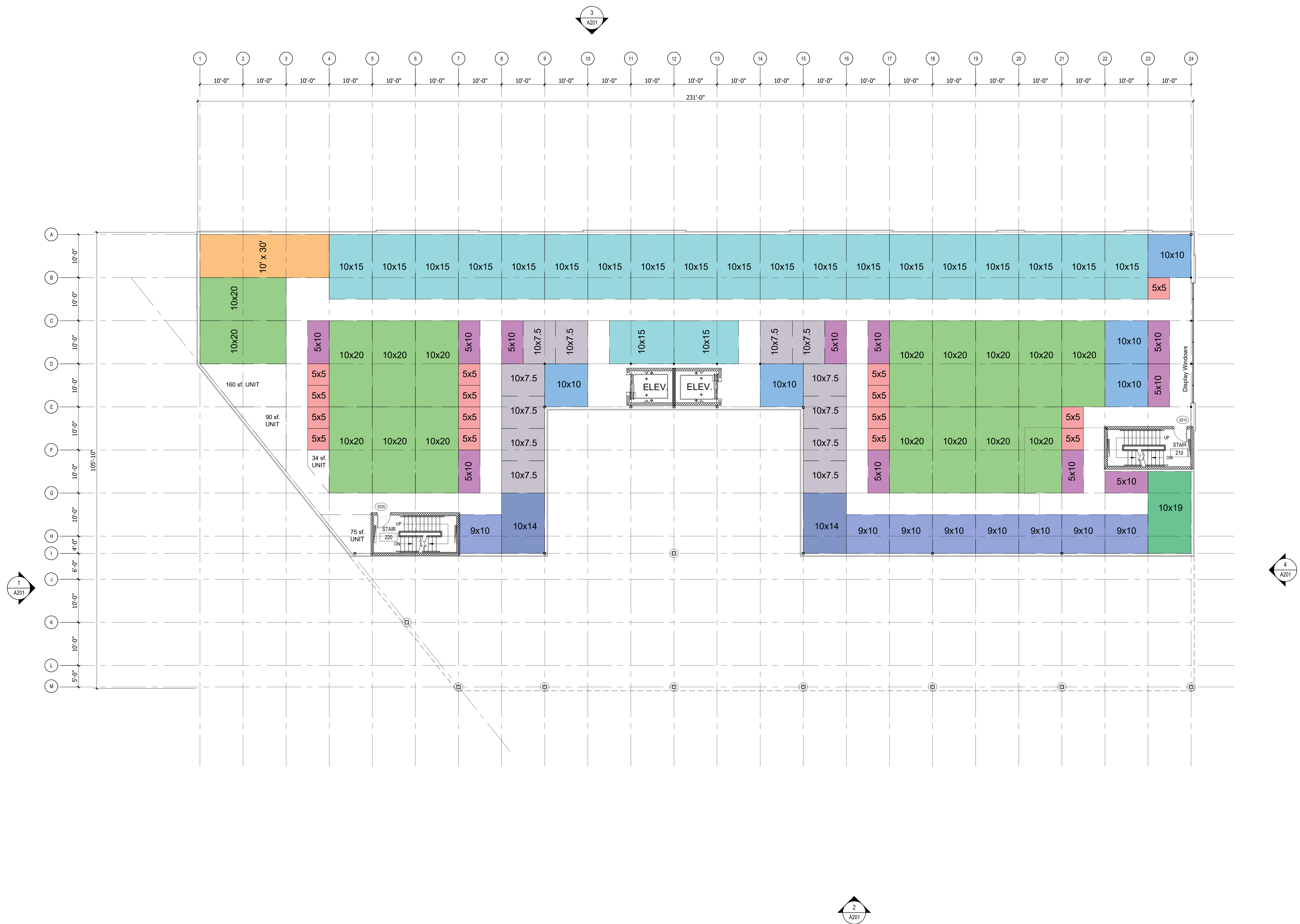
Local Approvals Submission  
February 09, 2022

[illegible]

## 2nd. FLOOR PLAN

A-102

Copyright 2021 Michael Parker Studios PLLC

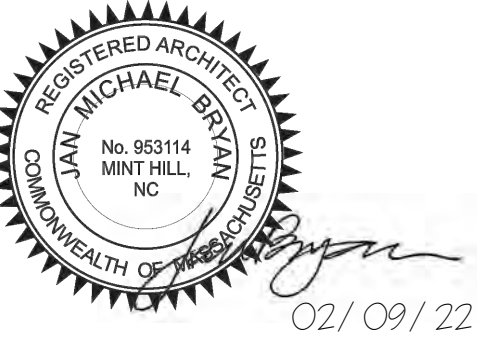






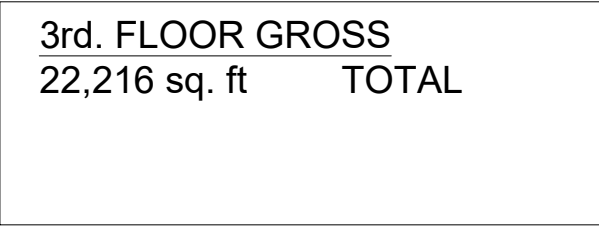
## PREMIER STORAGE INVESTORS

ARLINGTON, MASSACHUSETTS  
Project No. 21-033

[illegible]

# A-103

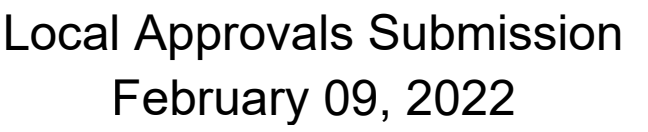
Copyright 2021 Michael Parker Studios PLLC





## PREMIER STORAGE INVESTORS

ARLINGTON, MASSACHUSETTS  
Project No. 21-033

[illegible]

# A-104

Copyright 2021 Michael Parker Studios PLLC







13755 thompson place drive  
mint hill, nc 28227  
704-578-2851



ARLINGTON, MASSACHUSETTS  
Project No. 21-033



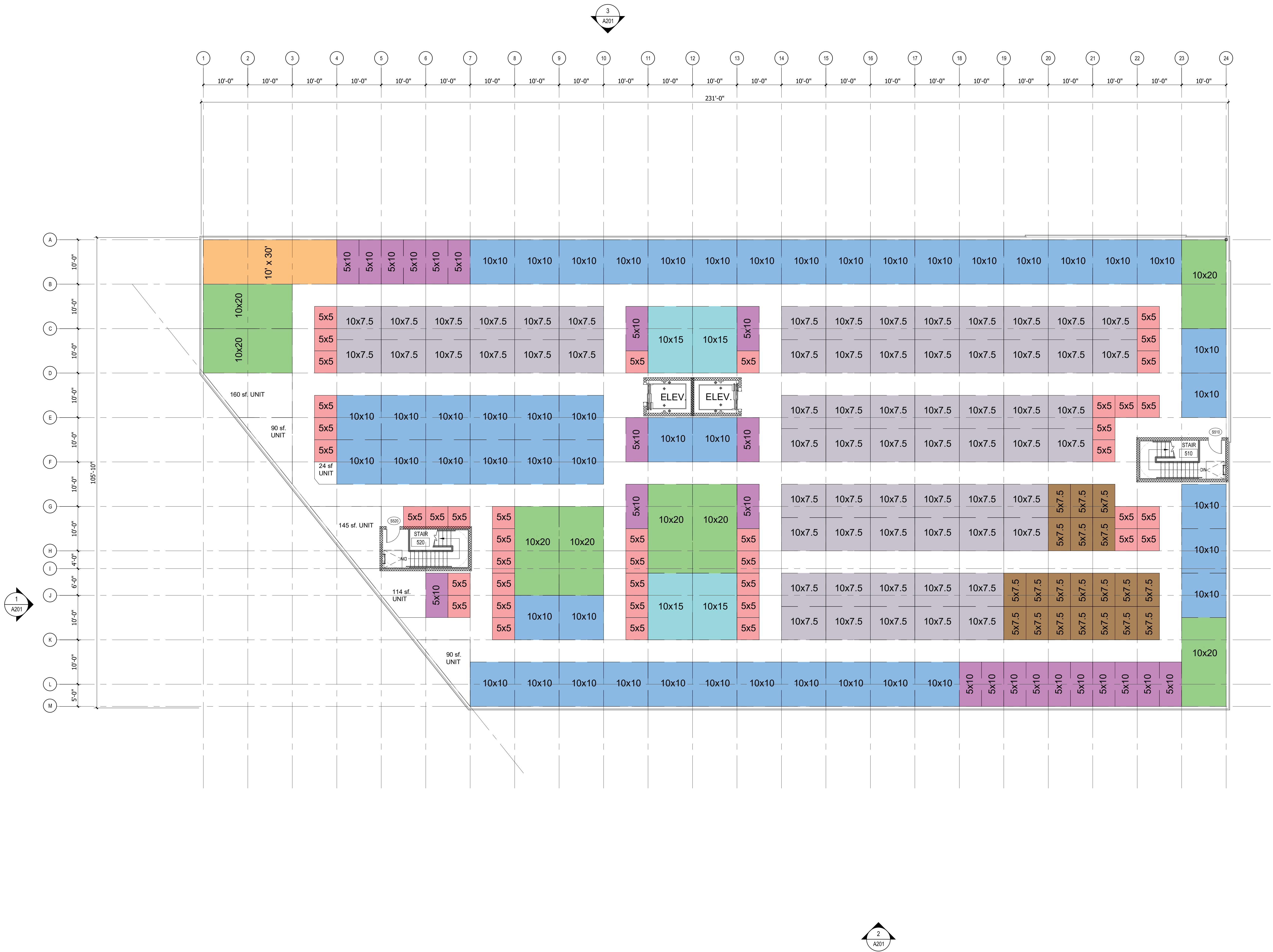
Local Approvals Submission  
February 09, 2022

[illegible]

## 5th. FLOOR PLAN

# A-105

Copyright 2021 Michael Parker Studios PLLC





13755 thompson place drive  
mint hill, nc 28227  
704-578-2851



ARLINGTON, MASSACHUSETTS  
Project No. 21-033



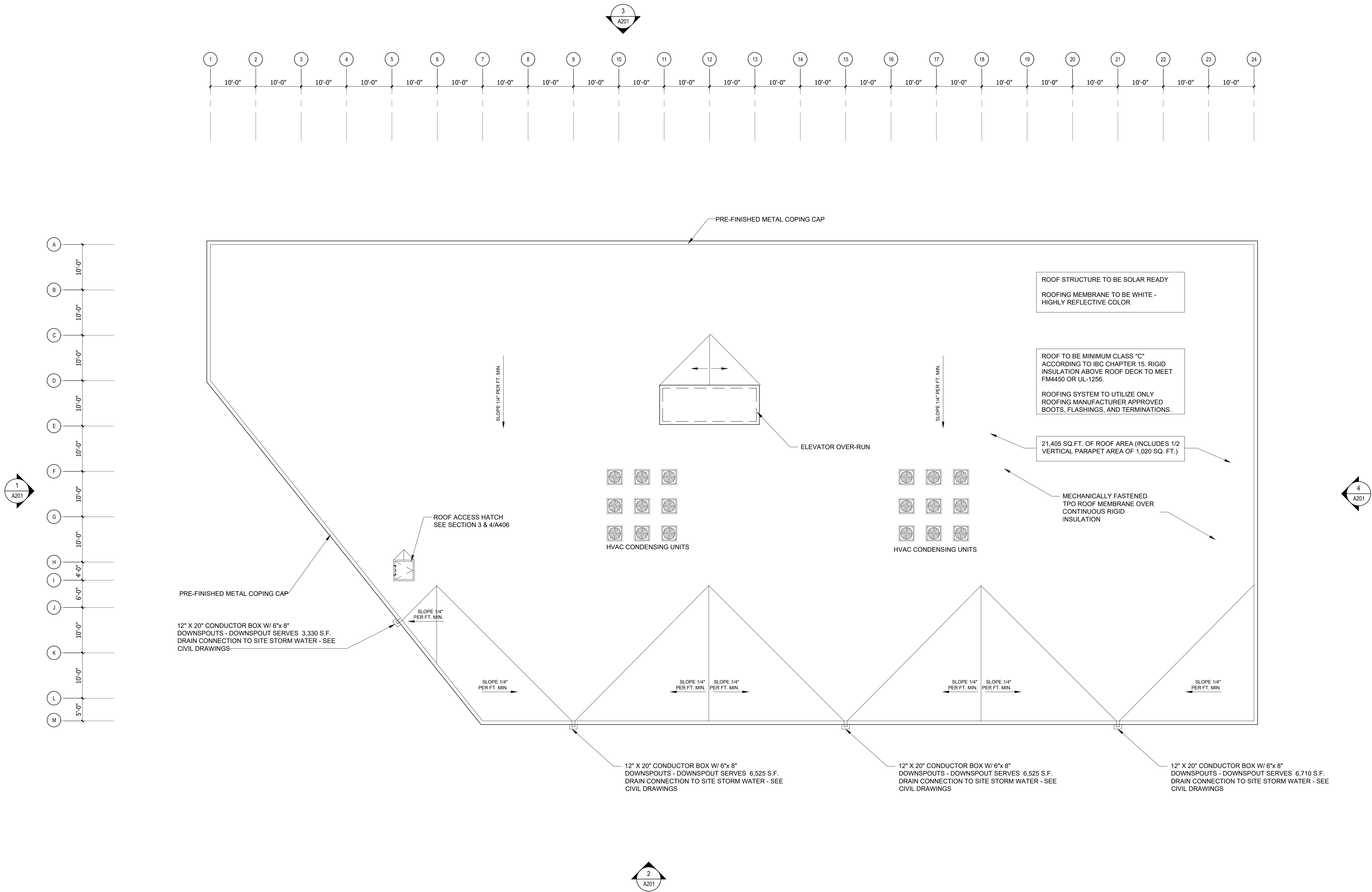
Local Approvals Submission  
February 09, 2022

[illegible]

## ROOF PLAN

# A-106

Copyright 2021 Michael Parker Studios PLLC







3755 thompson place drive  
mint hill, nc 28227  
704-578-2851



ARLINGTON, MASSACHUSETTS  
Project No. 21-033



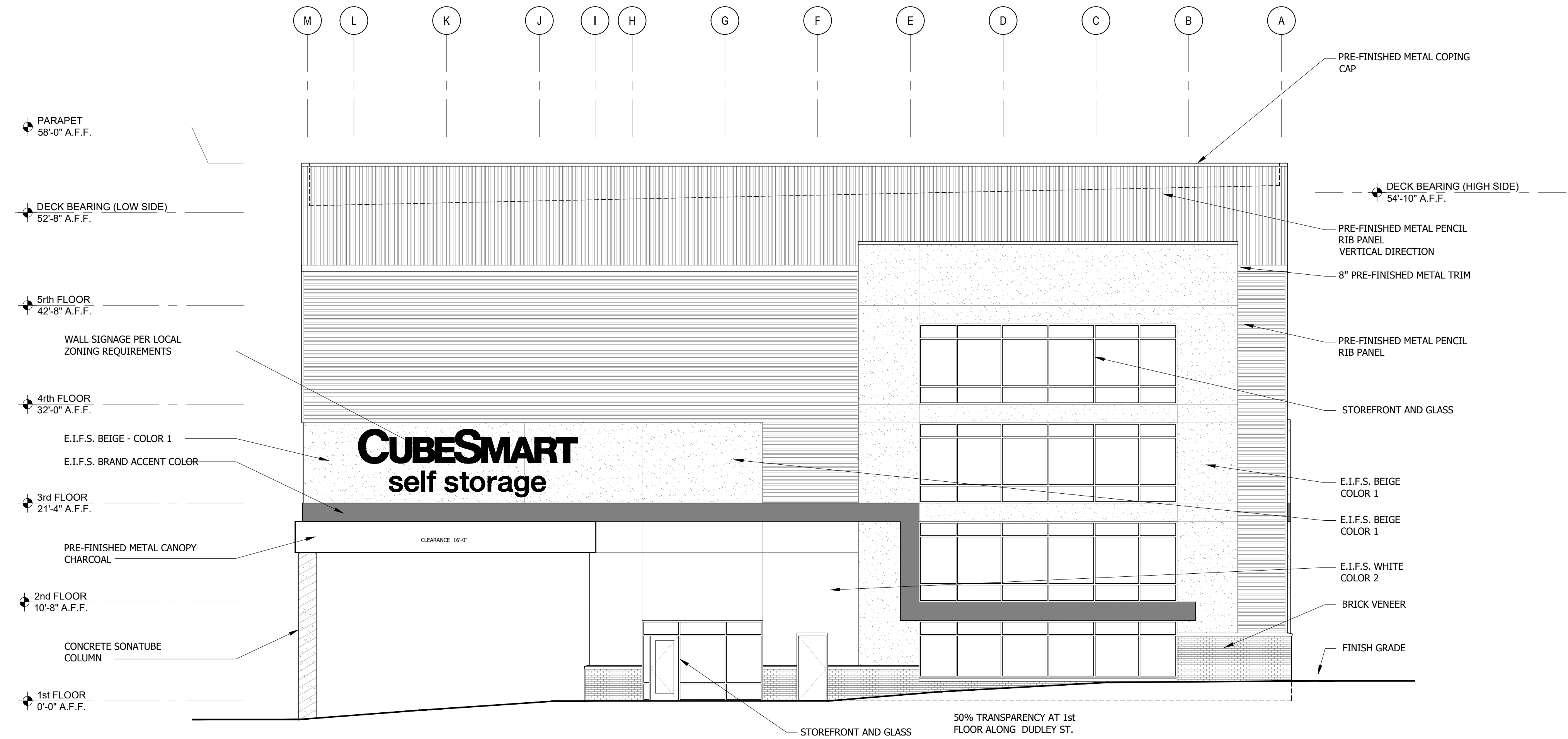
Local Approvals Submission  
February 09, 2022

[illegible]

## EXTERIOR ELEVATIONS

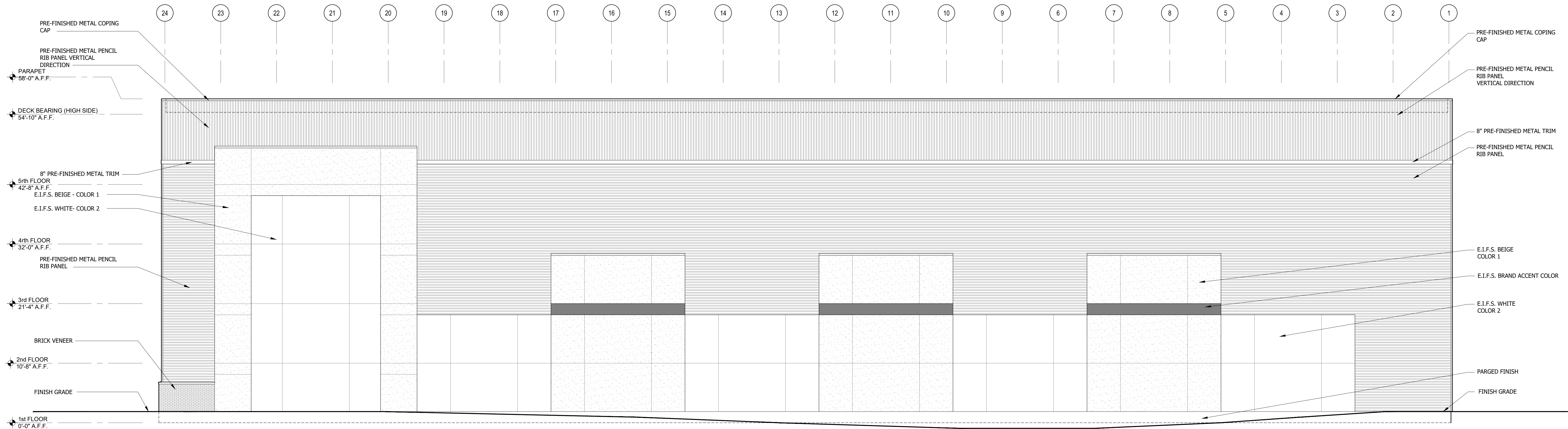
# A-201

Copyright 2021 Michael Parker Studios PLLC



<b>2</b>	<b>ELEVATION - NORTH</b>
----------	--------------------------

scale: 1/8"=1'-0"



<b>1</b>	ELEVATION - WEST
----------	------------------

scale: 1/8"=1'-0"



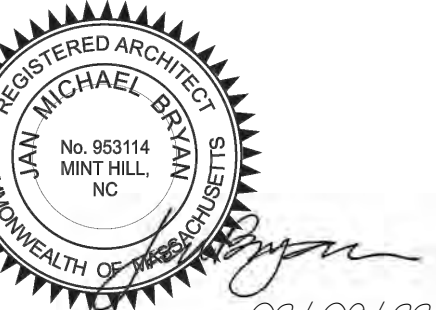


3755 thompson place drive  
mint hill, nc 28227  
704-578-2851



SELF STORAGE

ARLINGTON, MASSACHUSETTS  
Project No. 21-033



2/09/22

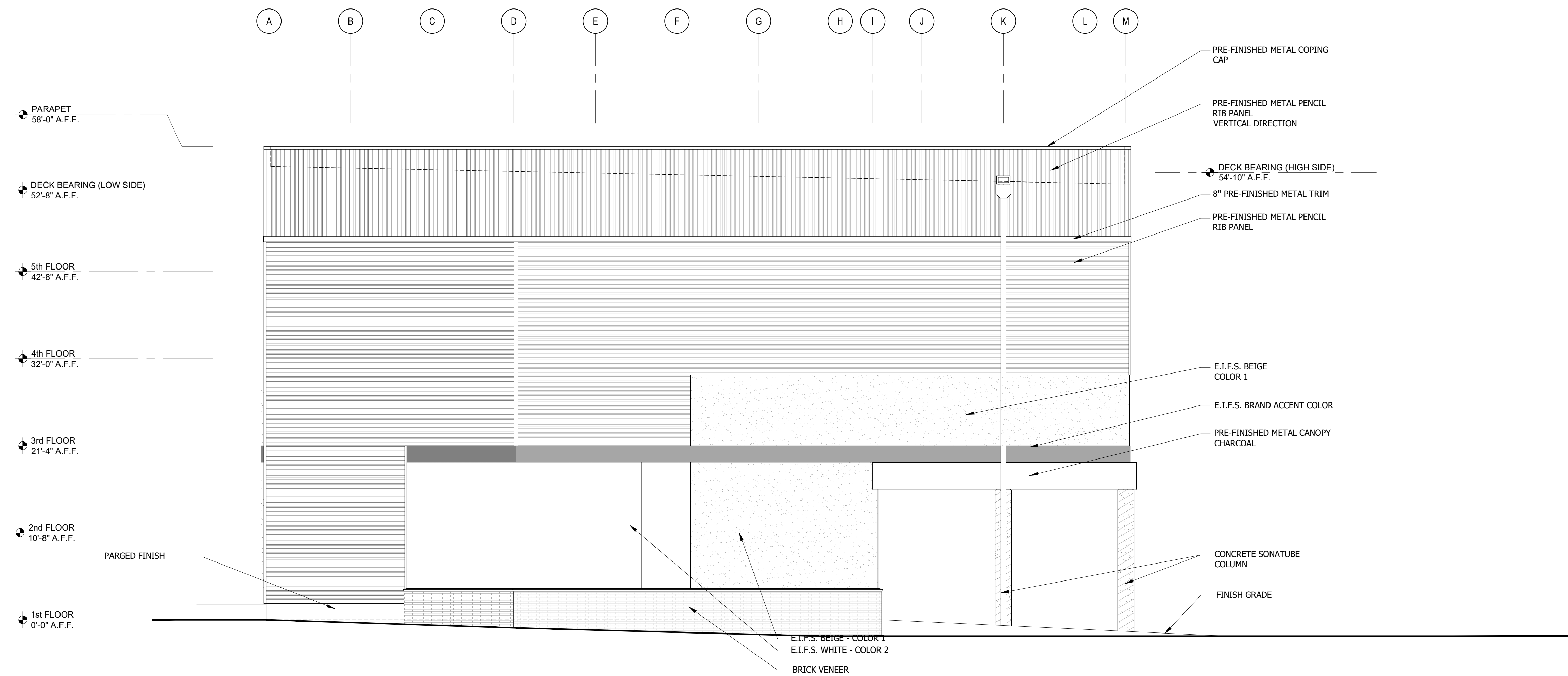
Local Approvals Submission  
February 09, 2022

[illegible]

## EXTERIOR ELEVATIONS

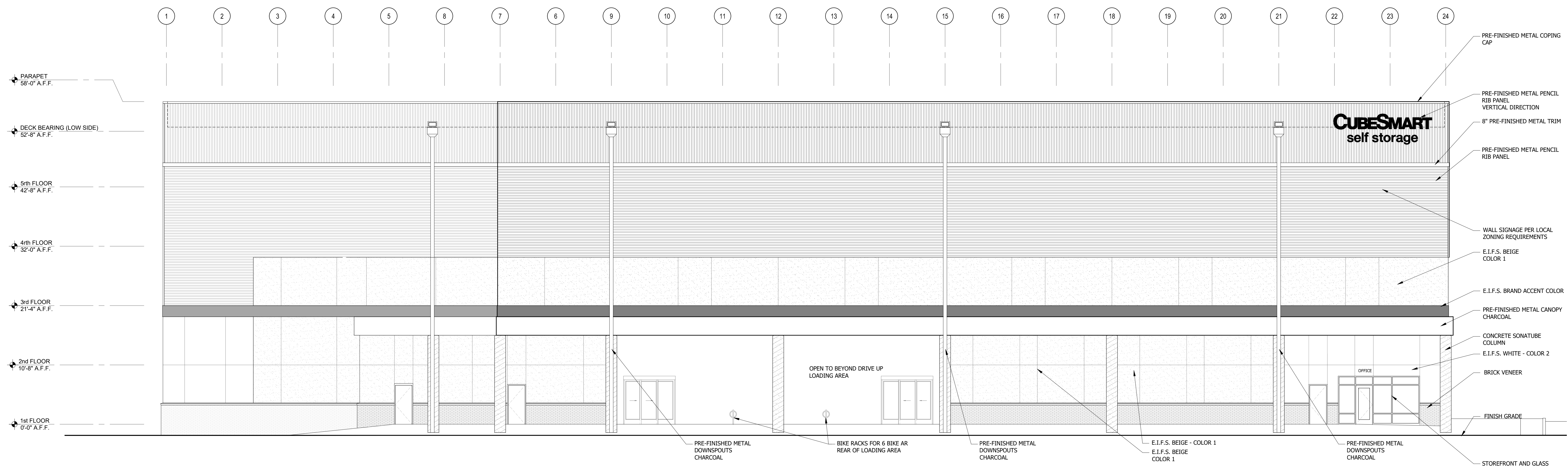
# A-202

Copyright 2021 Michael Parker Studios PLLC



<b>2</b>	ELEVATION - SOUTH
----------	-------------------

scale: 1/8"=1'-0"

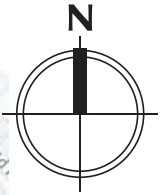
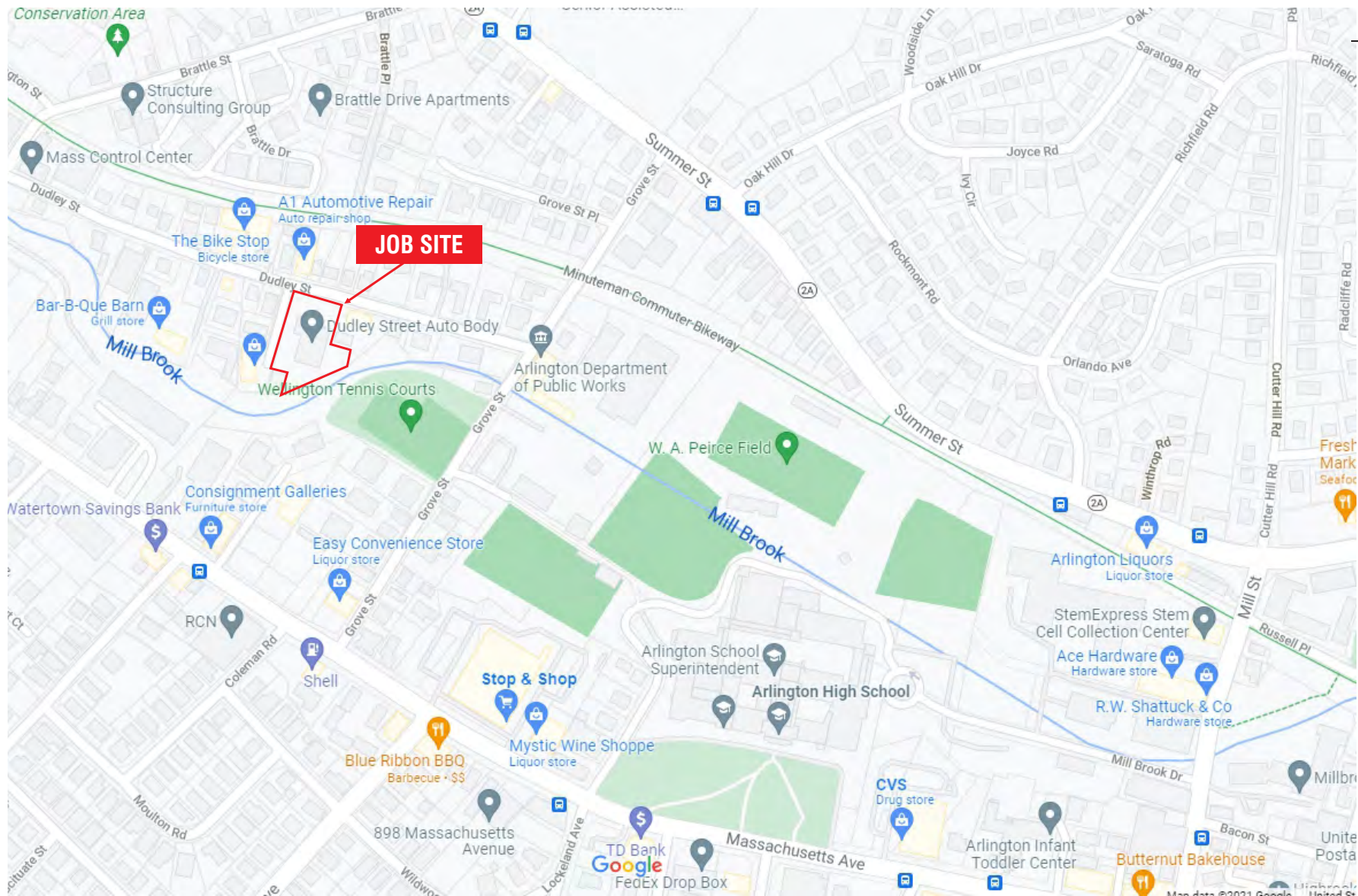


<b>1</b>	ELEVATION - EAST
----------	------------------

scale: 1/8"=1'-0"



# Aerial View



This is an original unpublished drawing created by Elro Signs. It is submitted for your personal use in conjunction with a project being planned for you. It is not to be shown to anyone outside your organization nor is it to be used, reproduced, copied or exhibited in any fashion without the express written consent of Elro Signs.



**CALIFORNIA**  
400 West Walnut Street, Gardena, CA 90248  
(800) 927-4555 • Fax (310) 380-7451

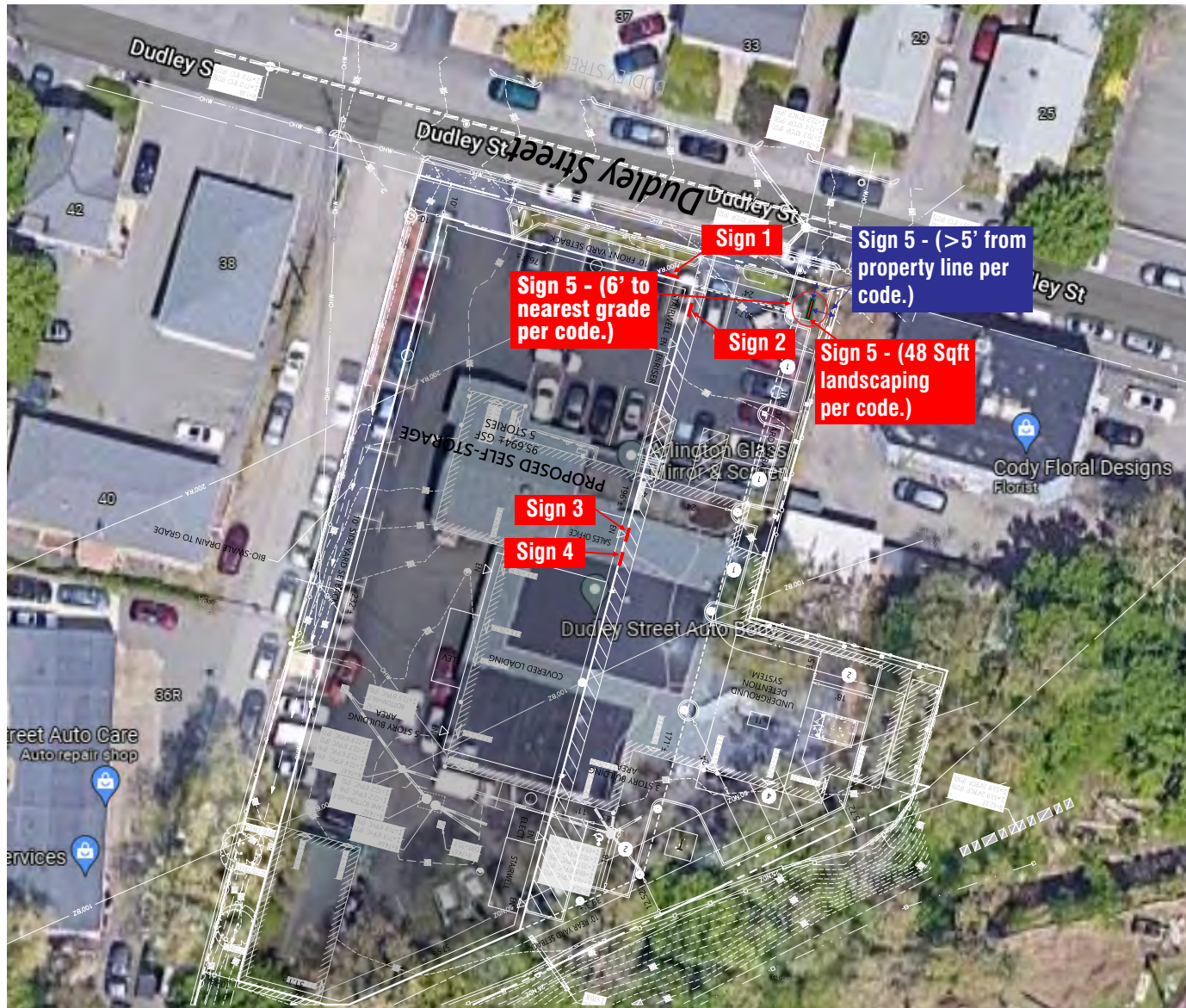
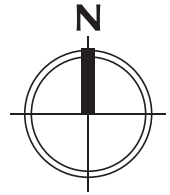
**GEORGIA**  
1640 Sands Place SE Suite A / Marietta, GA 30067  
Toll Free: (877) 367-3576 • Fax (770) 952-4710

REVISIONS		
NO.	COMMENTS	DATE
A	Changed Sign 1 & 2 size and Sign 2 position-dw	01/10/22

Client **CubeSmart Self Storage**  
Address **34 Dudley St, Arlington, MA 02476**  
Design No. **66665** Store No. \_\_\_\_\_  
Scale: **AS NOTED** Sheet **1** of **11**  
Drawn By: **DW** Date **12/20/2021**  
Approved By: \_\_\_\_\_ Date \_\_\_\_\_



# Aerial View/Site View



This is an original unpublished drawing created by Elro Signs. It is submitted for your personal use in conjunction with a project being planned for you. It is not to be shown to anyone outside your organization nor is it to be used, reproduced, copied or exhibited in any fashion without the express written consent of Elro Signs.



**CALIFORNIA**  
400 West Walnut Street, Gardena, CA 90248  
(800) 927-4555 • Fax (310) 380-7451

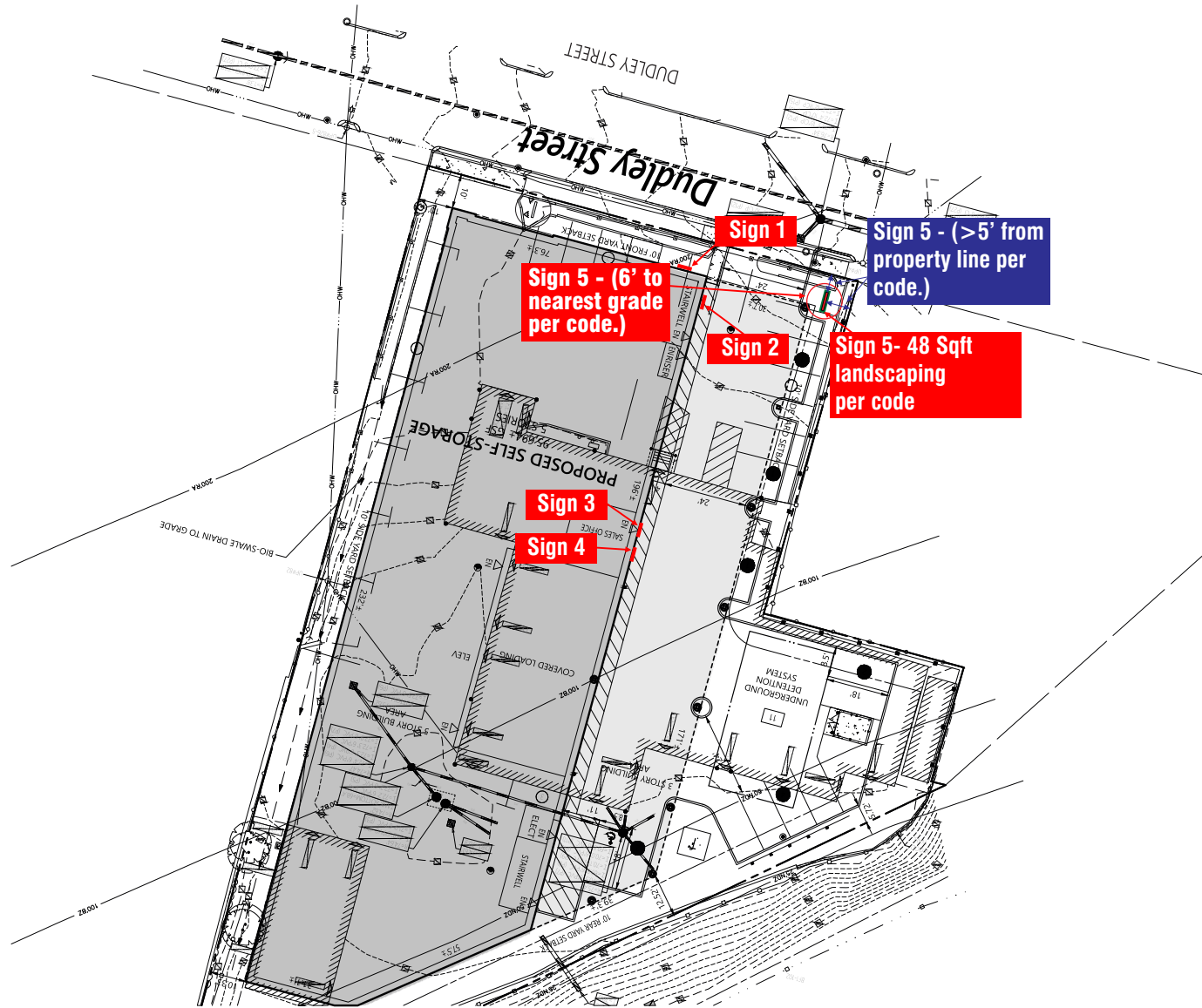
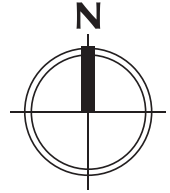
**GEORGIA**  
1640 Sands Place SE Suite A / Marietta, GA 30067  
Toll Free: (877) 367-3576 • Fax (770) 952-4710

REVISIONS		
NO.	COMMENTS	DATE
A	Changed Sign 1 & 2 size and Sign 2 position-dw	01/10/22

Client **CubeSmart Self Storage**  
Address **34 Dudley St, Arlington, MA 02476**  
Design No. **66665** Store No. \_\_\_\_\_  
Scale: **AS NOTED** Sheet **2** of **11**  
Drawn By: **DW** Date **12/20/2021**  
Approved By: \_\_\_\_\_ Date \_\_\_\_\_



# Site View



This is an original unpublished drawing created by Elro Signs. It is submitted for your personal use in conjunction with a project being planned for you. It is not to be shown to anyone outside your organization nor is it to be used, reproduced, copied or exhibited in any fashion without the express written consent of Elro Signs.



**CALIFORNIA**  
400 West Walnut Street, Gardena, CA 90248  
(800) 927-4555 • Fax (310) 380-7451

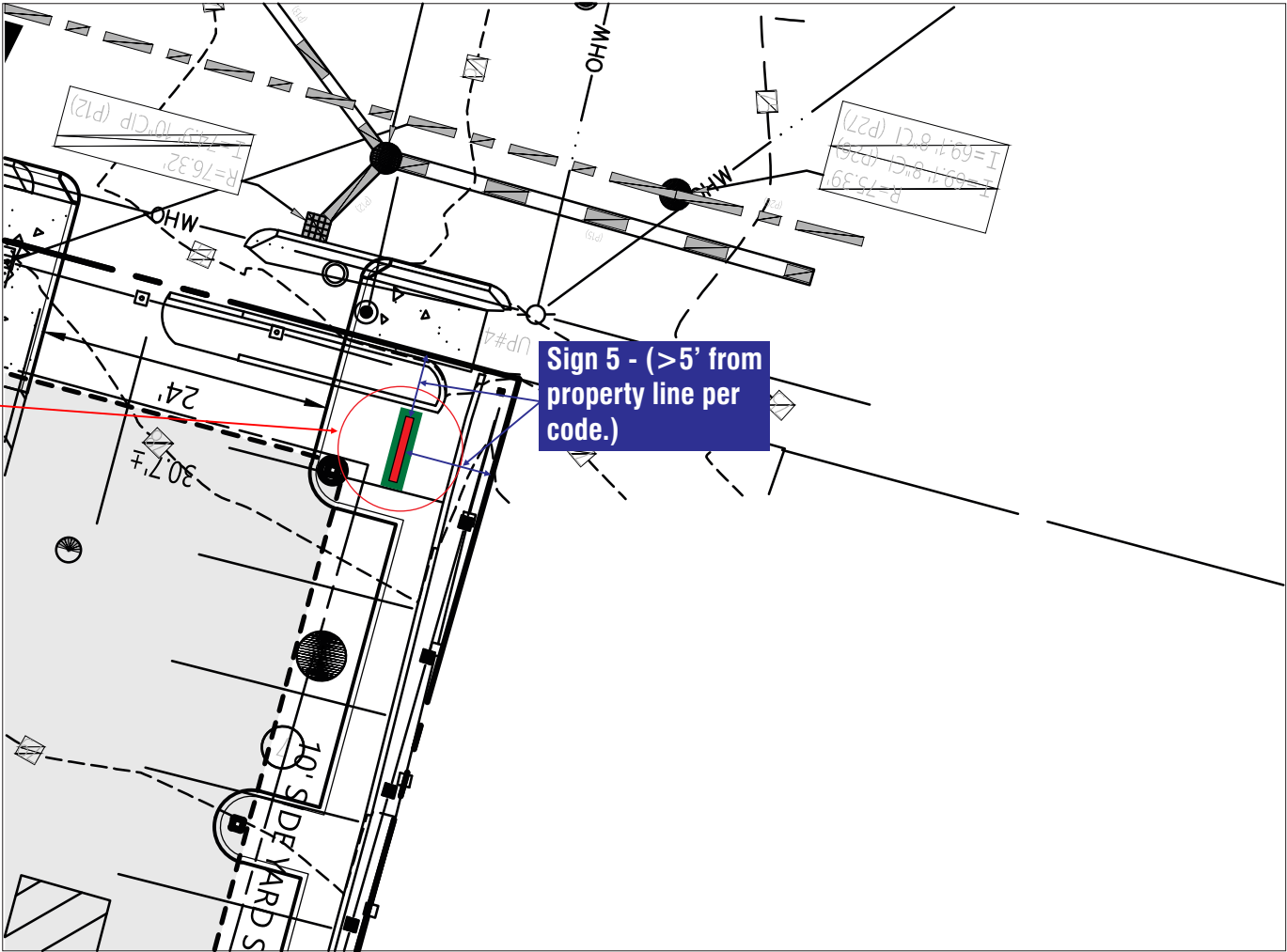
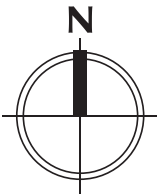
**GEORGIA**  
1640 Sands Place SE Suite A / Marietta, GA 30067  
Toll Free: (877) 367-3576 • Fax (770) 952-4710

REVISIONS		
NO.	COMMENTS	DATE
A	Changed Sign 1 & 2 size and Sign 2 position-dw	01/10/22

Client **CubeSmart Self Storage**  
Address **34 Dudley St, Arlington, MA 02476**  
Design No. **66665** Store No. \_\_\_\_\_  
Scale: **AS NOTED** Sheet **3** of **11**  
Drawn By: **DW** Date **12/20/2021**  
Approved By: \_\_\_\_\_ Date \_\_\_\_\_



Enlarged Site Detail - Landscaping



Sign 5 - (6' to nearest grade per code.)

Sign 5 - (>5' from property line per code.)

This is an original unpublished drawing created by Elro Signs. It is submitted for your personal use in conjunction with a project being planned for you. It is not to be shown to anyone outside your organization nor is it to be used, reproduced, copied or exhibited in any fashion without the express written consent of Elro Signs.



**CALIFORNIA**  
400 West Walnut Street, Gardena, CA 90248  
(800) 927-4555 • Fax (310) 380-7451

**GEORGIA**  
1640 Sands Place SE Suite A / Marietta, GA 30067  
Toll Free: (877) 367-3576 • Fax (770) 952-4710

REVISIONS		
NO.	COMMENTS	DATE
A	Changed Sign 1 & 2 size and Sign 2 position-dw	01/10/22

Client **CubeSmart Self Storage**

Address **34 Dudley St, Arlington, MA 02476**

Design No. **66665** Store No. \_\_\_\_\_

Scale: **AS NOTED** Sheet **4** of **11**

Drawn By: **DW** Date **12/20/2021**

Approved By: \_\_\_\_\_ Date \_\_\_\_\_



# Sign 1 - North Elevation

New channel letters, raceway mounted.

LED illuminated channel letters with CS red acrylic faces.

Raceways to match wall color.

Qty-1.

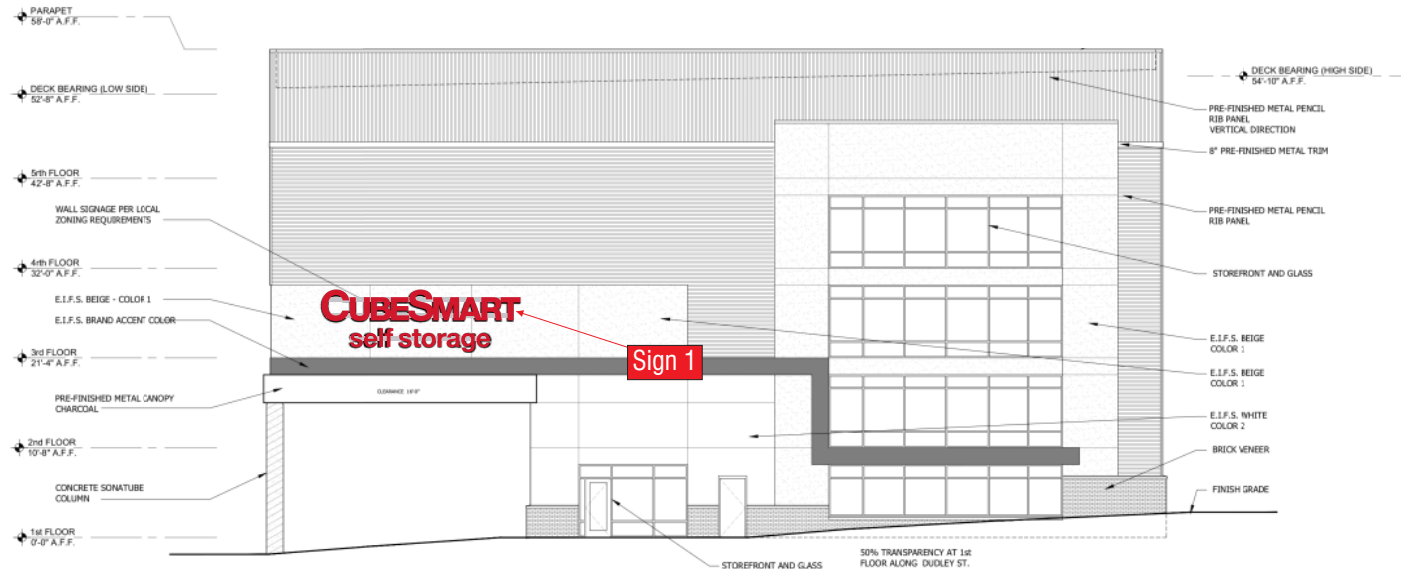
Scale: 3/16"

Sq Ft: 180

## COLOR SPECIFICATIONS:



Field Verify Sign Area & Dimensions.



This is an original unpublished drawing created by Elro Signs. It is submitted for your personal use in conjunction with a project being planned for you. It is not to be shown to anyone outside your organization nor is it to be used, reproduced, copied or exhibited in any fashion without the express written consent of Elro Signs.

**Elro signs**

CALIFORNIA  
400 West Walnut Street, Gardena, CA 90248  
(800) 927-4555 • Fax (310) 380-7451

GEORGIA  
1640 Sands Place SE Suite A / Marietta, GA 30067  
Toll Free: (877) 367-3576 • Fax (770) 952-4710

REVISIONS		
NO.	COMMENTS	DATE
A	Changed Sign 1 & 2 size and Sign 2 position-dw	01/10/22

Client **CubeSmart Self Storage**

Address **34 Dudley St, Arlington, MA 02476**

Design No. **66665** Store No. \_\_\_\_\_

Scale: **AS NOTED** Sheet **5** of **11**

Drawn By: **DW** Date **12/20/2021**

Approved By: \_\_\_\_\_ Date \_\_\_\_\_



## Sign 2 - East Elevation

New channel letters, raceway mounted.

LED illuminated channel letters with CS red acrylic faces.

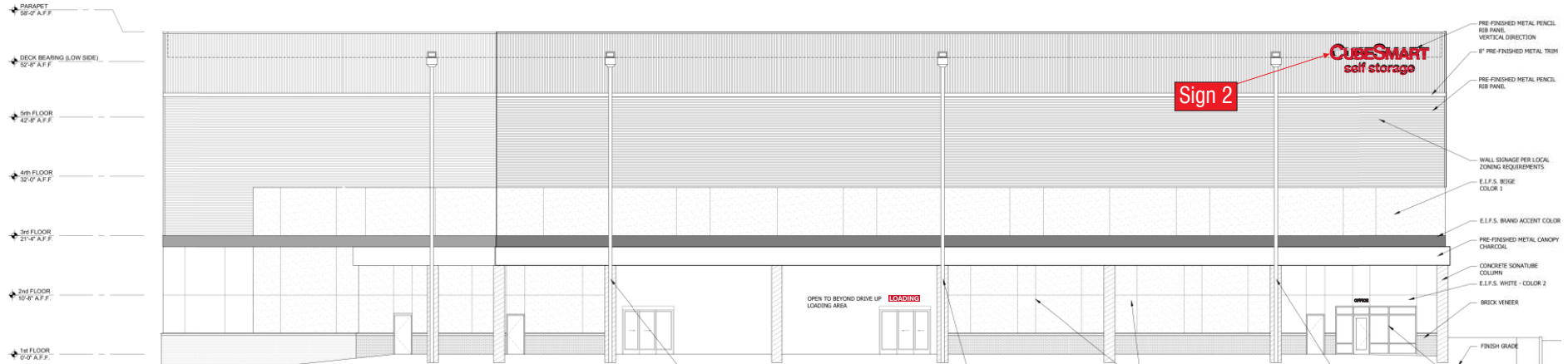
Raceways to match wall color.

Qty-1.

Scale: 3/16"

Sq Ft: 180

### COLOR SPECIFICATIONS:



This is an original unpublished drawing created by Elro Signs. It is submitted for your personal use in conjunction with a project being planned for you. It is not to be shown to anyone outside your organization nor is it to be used, reproduced, copied or exhibited in any fashion without the express written consent of Elro Signs.



CALIFORNIA  
400 West Walnut Street, Gardena, CA 90248  
(800) 927-4555 • Fax (310) 380-7451

GEORGIA  
1640 Sands Place SE Suite A / Marietta, GA 30067  
Toll Free: (877) 367-3576 • Fax (770) 952-4710

### REVISIONS

NO.	COMMENTS	DATE
A	Changed Sign 1 & 2 size and Sign 2 position-dw	01/10/22

Client **CubeSmart Self Storage**  
Address **34 Dudley St, Arlington, MA 02476**  
Design No. **66665** Store No. \_\_\_\_\_  
Scale: **AS NOTED** Sheet **6** of **11**  
Drawn By: **DW** Date **12/20/2021**  
Approved By: \_\_\_\_\_ Date \_\_\_\_\_



## Sign 3 - North Elevation

New non-lit secondary FCO letters pin-mounted.

Individual routed FCO letters painted CS white.

Qty-1.

Scale: 3/4"

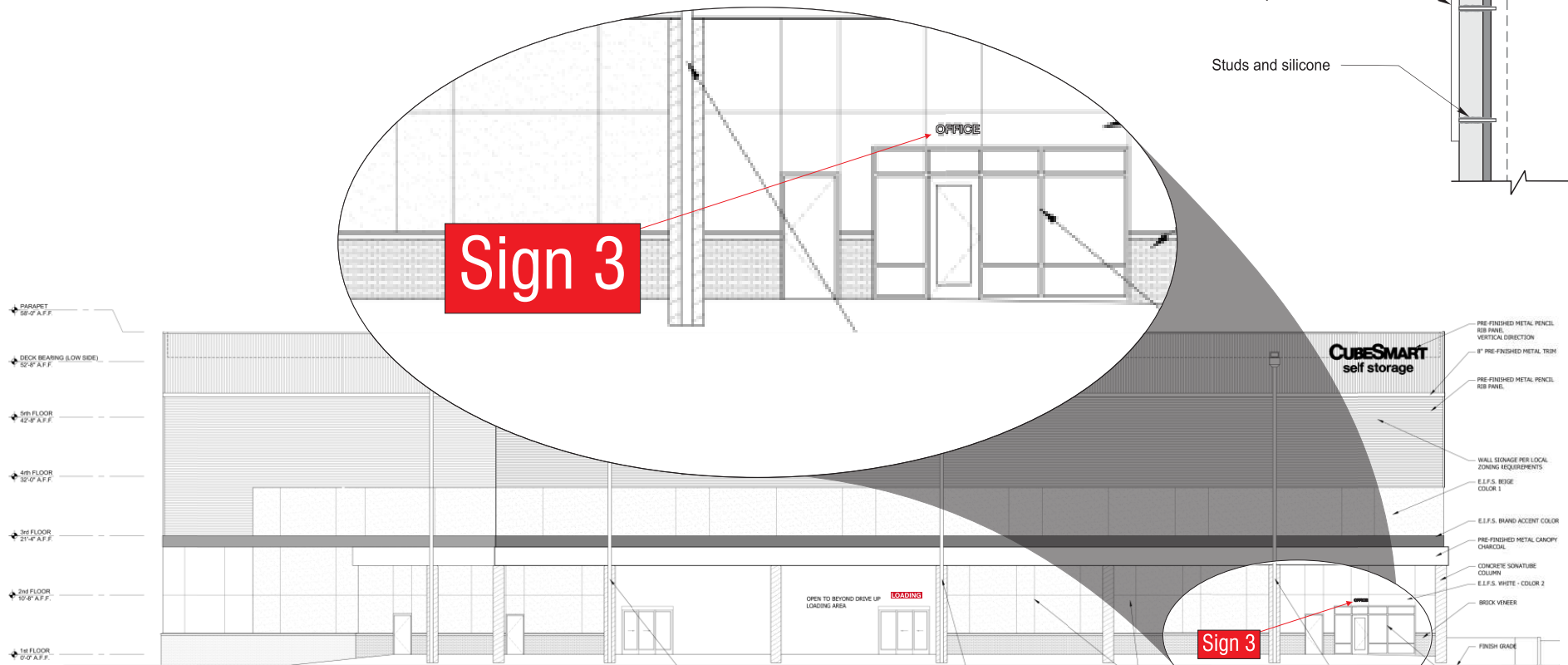
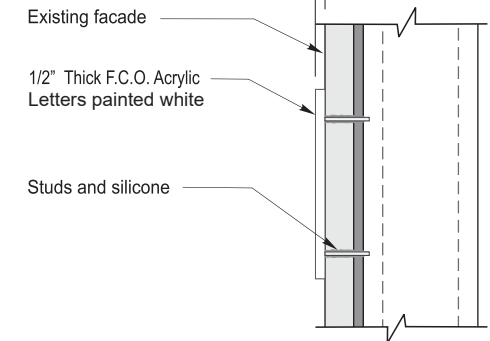
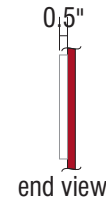
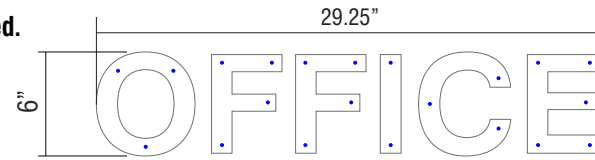
Sq Ft: 1.22

**Note: Building ID Signs not exceeding 4sqft in area for nonresidential buildings do not require permits.**

Note: blue dots represent mounting points

## Field Verify Sign Area & Dimensions.

### COLOR SPECIFICATIONS:



This is an original unpublished drawing created by Elro Signs. It is submitted for your personal use in conjunction with a project being planned for you. It is not to be shown to anyone outside your organization nor is it to be used, reproduced, copied or exhibited in any fashion without the express written consent of Elro Signs.



CALIFORNIA  
400 West Walnut Street, Gardena, CA 90248  
(800) 927-4555 • Fax (310) 380-7451

GEORGIA  
1640 Sands Place SE Suite A / Marietta, GA 30067  
Toll Free: (877) 367-3576 • Fax (770) 952-4710

### REVISIONS

NO.	COMMENTS	DATE
A	Changed Sign 1 & 2 size and Sign 2 position-dw	01/10/22

Client **CubeSmart Self Storage**

Address **34 Dudley St, Arlington, MA 02476**

Design No. **66665**

Store No. \_\_\_\_\_

Scale: **AS NOTED**

Sheet **7** of **11**

Drawn By: **DW** Date **12/20/2021**

Approved By: \_\_\_\_\_ Date \_\_\_\_\_



## Sign 4 - East Elevation

New non-illuminated wall plaque.

ACM panel with printed graphics applied.

Qty-1.

Scale: 3/4" = 1'

Sq Ft: 3.97

Note: Building ID Signs not exceeding 4sqft in area for nonresidential buildings do not require permits.

### COLOR SPECIFICATIONS:

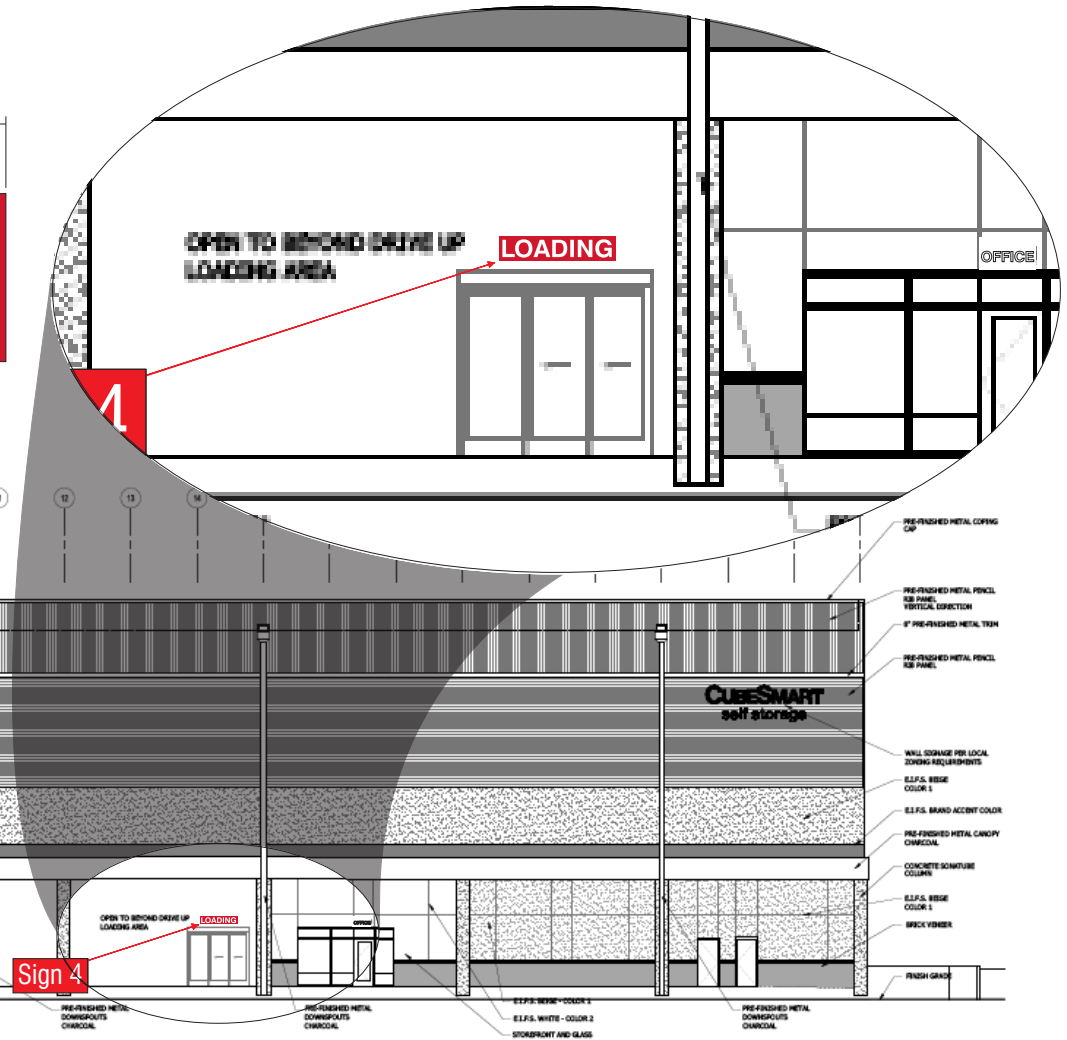
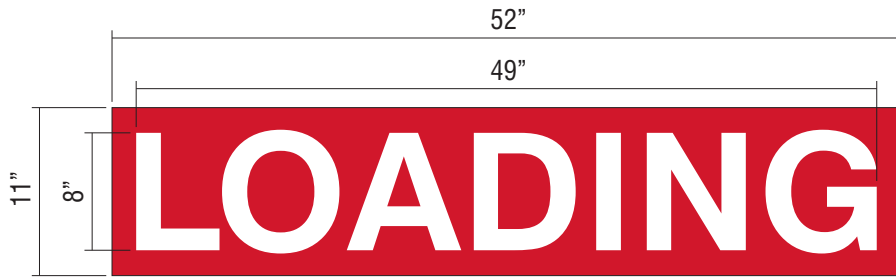


CS Red  
PMS 186C



White  
printed copy

## Field Verify Sign Area & Dimensions.



This is an original unpublished drawing created by Elro Signs. It is submitted for your personal use in conjunction with a project being planned for you. It is not to be shown to anyone outside your organization nor is it to be used, reproduced, copied or exhibited in any fashion without the express written consent of Elro Signs.



CALIFORNIA  
400 West Walnut Street, Gardena, CA 90248  
(800) 927-4555 • Fax (310) 380-7451

GEORGIA  
1640 Sands Place SE Suite A / Marietta, GA 30067  
Toll Free: (877) 367-3576 • Fax (770) 952-4710

### REVISIONS

NO.	COMMENTS	DATE
A	Changed Sign 1 & 2 size and Sign 2 position-dw	01/10/22

Client **CubeSmart Self Storage**  
Address **34 Dudley St, Arlington, MA 02476**  
Design No. **66665** Store No. \_\_\_\_\_  
Scale: **AS NOTED** Sheet **8** of **11**  
Drawn By: **DW** Date **12/20/2021**  
Approved By: \_\_\_\_\_ Date \_\_\_\_\_



## Sign 5 - Freestanding Sign

### New D/F illuminated monument sign.

Seamless white polycarbonate faces with CS vinyls applied.

Qty-1.

Scale: 1/4"=1'

Sq Ft: 23.8

**Note: Max. 24 sq. ft.**

**Max. 6 ft. to the nearest grade.**

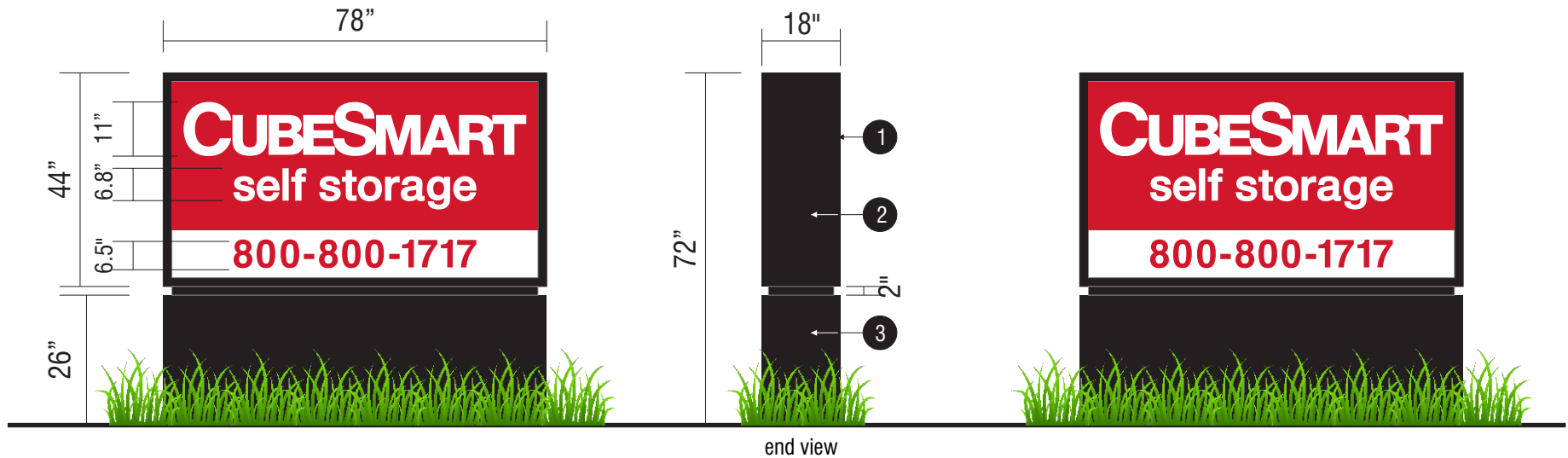
**Min. 5 ft. setback from property line. Landscape area must be a min. of 2 sq. ft. for each 1 sq. ft. of sign area.**

**Height must be no more than 6' from grade.**

## Field Verify Sign Area & Dimensions.

### Manufacturing Specs:

- 1 white seamless polycarbonate panel with CS exterior grade vinyls applied first surface.
- 2 aluminum extruded D/F cabinet with H.O. lamping and ballasts, painted black.  
Note: depth of cabinet TBD by pole size per engineering calcs.
- 3 aluminum base and reveal, painted black.  
Note: depth of base TBD by pole size per engineering calcs.



**Note: placement & angle of sign subject to flagging and detailed field survey.**

### COLOR SPECIFICATIONS:



This is an original unpublished drawing created by Elro Signs. It is submitted for your personal use in conjunction with a project being planned for you. It is not to be shown to anyone outside your organization nor is it to be used, reproduced, copied or exhibited in any fashion without the express written consent of Elro Signs.



**CALIFORNIA**  
400 West Walnut Street, Gardena, CA 90248  
(800) 927-4555 • Fax (310) 380-7451

**GEORGIA**  
1640 Sands Place SE Suite A / Marietta, GA 30067  
Toll Free: (877) 367-3576 • Fax (770) 952-4710

### REVISIONS

NO.	COMMENTS	DATE
A	Changed Sign 1 & 2 size and Sign 2 position-dw	01/10/22

Client **CubeSmart Self Storage**  
Address **34 Dudley St, Arlington, MA 02476**  
Design No. **66665** Store No. \_\_\_\_\_  
Scale: **AS NOTED** Sheet **9** of **11**  
Drawn By: **DW** Date **12/20/2021**  
Approved By: \_\_\_\_\_ Date \_\_\_\_\_



Current Conditions



This is an original unpublished drawing created by Elro Signs. It is submitted for your personal use in conjunction with a project being planned for you. It is not to be shown to anyone outside your organization nor is it to be used, reproduced, copied or exhibited in any fashion without the express written consent of Elro Signs.

**elro signs**  
CALIFORNIA  
400 West Walnut Street, Gardena, CA 90248  
(800) 927-4555 • Fax (310) 380-7451  
GEORGIA  
1640 Sands Place SE Suite A / Marietta, GA 30067  
Toll Free: (877) 367-3576 • Fax (770) 952-4710

REVISIONS		
NO.	COMMENTS	DATE
A	Changed Sign 1 & 2 size and Sign 2 position-dw	01/10/22

Client **CubeSmart Self Storage**  
Address **34 Dudley St, Arlington, MA 02476**  
Design No. **66665** Store No. \_\_\_\_\_  
Scale: **AS NOTED** Sheet **10** of **11**  
Drawn By: **DW** Date **12/20/2021**  
Approved By: \_\_\_\_\_ Date \_\_\_\_\_



## PERMIT SUMMARY

County: Middlesex County

Zoning: I - Industrial

Reface work does not require a permit. If you are not removing the sign or poles but replacing same for same there is no permit required.

Building identification signs not exceeding four square feet in area for nonresidential and mixed use buildings do not require permits. Non-illuminated signs which provide incidental information including, but not limited to credit card acceptance, business hours, open/closed, no soliciting, directions to services and facilities, or menus, provided these signs do not exceed an aggregate of six square feet in sign area;

### Monument Sign

Industrial Sign District: Max. 1 per frontage; Max. 24 sq. ft. Max. 6 ft. to the nearest grade

Business, Industrial, Multi-Use and Open Space Sign District: Min. 5 ft. setback from property line.

Landscaping: A landscaped area consisting of shrubs, and/or perennial ground cover plants with a max. spacing of 3 ft. on center is required around the base of the signs. The landscape area must be a min. of 2 sq. ft. for each 1 sq. ft. of sign area.

### Wall sign

Max. 1 per frontage; Max. 40 sq. ft per business Max. 25 ft. Height Signs with Individual Letters. Sign copy mounted as individual letters or graphics against a wall, fascia, mansard, or parapet of a building or surface of another structure, that has not been painted, textured or otherwise altered to provide a distinctive background for the sign copy, is measured as a sum of the smallest rectangle(s) that will enclose each word and each graphic in the total sign.

Raceway cabinets shall only be used in building mounted signs when access to the wall behind the sign is not feasible, shall not extend in width and height beyond the area of the sign, and shall match the color of the building to which it is attached. Where a raceway cabinet provides a contrast background to sign copy, the colored area is counted in the total allowable sign area allowed for the site or business. A raceway cabinet is not a cabinet sign.

### Directional/driveway Signs

Number of Signs Max. 3 per lot. Max. 1 at each driveway or drive-through lane.

Sign Area Max. 3 sq. ft. per sign face.

Mounting Height Max. 6 ft. from nearest grade; except, max. 3 ft. at each driveway or drive-through lane.

Illumination Non-illuminated or internal illumination only. See Section 6.2.4(C).

Permitting Sign permit required. See Section 6.2.

This is an original unpublished drawing created by Elro Signs. It is submitted for your personal use in conjunction with a project being planned for you. It is not to be shown to anyone outside your organization nor is it to be used, reproduced, copied or exhibited in any fashion without the express written consent of Elro Signs.



CALIFORNIA  
400 West Walnut Street, Gardena, CA 90248  
(800) 927-4555 • Fax (310) 380-7451

GEORGIA  
1640 Sands Place SE Suite A / Marietta, GA 30067  
Toll Free: (877) 367-3576 • Fax (770) 952-4710

#### REVISIONS

NO.	COMMENTS	DATE
A	Changed Sign 1 & 2 size and Sign 2 position-dw	01/10/22

Client **CubeSmart Self Storage**  
Address **34 Dudley St, Arlington, MA 02476**  
Design No. **66665** Store No. \_\_\_\_\_  
Scale: **AS NOTED** Sheet **11** of **11**  
Drawn By: **DW** Date **12/20/2021**  
Approved By: \_\_\_\_\_ Date \_\_\_\_\_



# Proposed Self-Storage Facility

34 Dudley Street, Arlington, MA

---

PREPARED FOR

PSI Atlantic Arlington MA, LLC  
530 Oak Court Drive  
Suite 155  
Memphis, TN 38117

---

PREPARED BY



2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900

February 2022







# Table of Contents

<b>Checklist for Stormwater Report.....</b>	<b>3</b>
<b>Stormwater Report Narrative.....</b>	<b>3</b>
Project Description.....	3
Site Description .....	3
Existing Drainage Conditions.....	4
Proposed Drainage Conditions .....	5
Environmentally Sensitive and Low Impact Development (LID) Techniques.....	5
<b>Regulatory Compliance.....</b>	<b>11</b>
Massachusetts Department of Environmental Protection (DEP) – Stormwater Management Standards .....	11
Standard 1: No New Untreated Discharges or Erosion to Wetlands.....	11
Standard 2: Peak Rate Attenuation .....	11
Standard 3: Stormwater Recharge.....	12
Standard 4: Water Quality.....	12
Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs) .....	13
Standard 6: Critical Areas .....	13
Standard 7: Redevelopments and Other Projects Subject to the Standards only to the Maximum Extent Practicable.....	13
Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Controls .....	13
Standard 9: Operation and Maintenance Plan.....	13
Standard 10: Prohibition of Illicit Discharges .....	13
Local Municipal Rules and Regulations .....	13
<b>Appendices</b>	
Appendix A: Standard 1 Computations and Supporting Information .....	A-1
Appendix B: Standard 2 Computations and Supporting Information .....	B-1
Appendix C: Standard 3 Computations and Supporting Documentation.....	C-1
Appendix D: Standard 4 Computations and Supporting Information .....	D-1
Appendix E: Standard 7 Supporting Information .....	E-1
Appendix F: Standard 8 Supporting Information .....	F-1

## List of Tables

Table No.	Description	Page
Table 1	Existing Conditions Hydrologic Data.....	4
Table 2	Existing Conditions Hydrologic Data.....	5
Table 3	Proposed Conditions Hydrologic Data.....	5
Table 4	Peak Discharge Rates (cfs*).....	12
Table 4	Stormwater Volume Analysis (cfs*) ..... <b>Error! Bookmark not defined.</b>	
Table 5	Summary of Recharge Calculations .....	12





# Project Benefits



## Enhance Water Quality

- Exceeds treatment standards set forth in MS4, TMDL, and Massachusetts Stormwater Standards
  - **60%** Phosphorous removal
  - **>80%** TSS removal
- Improvement of water quality for human health and ecological function
- LID features such as bioretention and an reduction of impervious areas



## Peak Rate (and Volume) Attenuation

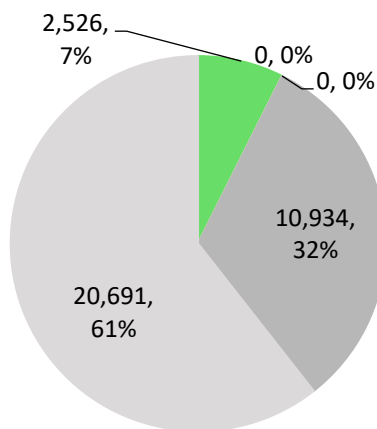
- Proposed 10 year storm flow rates are less than existing 2 year storm flow rates
- **312%** increase in pervious area on site
- Reduction in stormwater volume by incorporating a bioretention basin and subsurface infiltration basin



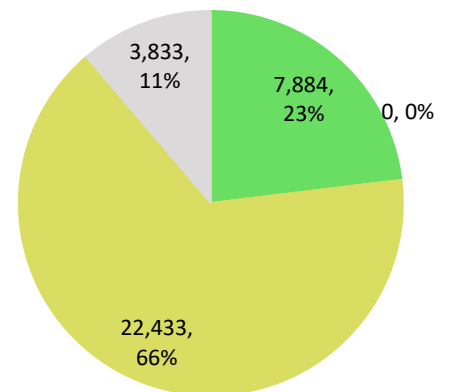
## Protect Natural Resources

- Reduction of impervious surface in Riverfront Area
- Stabilization of existing, unstable slope
- Enhancement of upland vegetated transitions
- Enhance wildlife habitat
- Landscaping to include native species promoted by the Conservation Commission

### LEGEND



Existing Conditions Areas (SF)



Proposed Conditions Areas (SF)



# Checklist for Stormwater Report

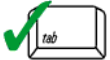




# Checklist for Stormwater Report

## A. Introduction

**Important:** When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.<sup>1</sup> This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8<sup>2</sup>
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

<sup>1</sup> The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

<sup>2</sup> For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



# Checklist for Stormwater Report

## B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

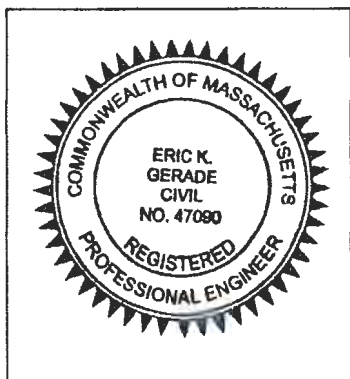
*Note:* Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

### Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



*Eric K. Gerade* 2/9/2022

Signature and Date

## Checklist

**Project Type:** Is the application for new development, redevelopment, or a mix of new and redevelopment?

- ☐ New development
- ☒ Redevelopment
- ☐ Mix of New Development and Redevelopment





# Checklist for Stormwater Report

---

## Checklist (continued)

**LID Measures:** Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☐ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☒ Reduced Impervious Area (Redevelopment Only)
- ☐ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☐ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☒ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☐ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): \_\_\_\_\_

### Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☒ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



# Checklist for Stormwater Report

---

## Checklist (continued)

### Standard 2: Peak Rate Attenuation

- ☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- ☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- ☒ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

### Standard 3: Recharge

- ☒ Soil Analysis provided.
- ☒ Required Recharge Volume calculation provided.
- ☐ Required Recharge volume reduced through use of the LID site Design Credits.
- ☒ Sizing the infiltration, BMPs is based on the following method: Check the method used.
  - ☒ Static
  - ☐ Simple Dynamic
  - ☐ Dynamic Field<sup>1</sup>
- ☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.
- ☒ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- ☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- ☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
  - ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
  - ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
  - ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
  - ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- ☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- ☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

---

<sup>1</sup> 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.





# Checklist for Stormwater Report

---

## Checklist (continued)

### Standard 3: Recharge (continued)

- ☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- ☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

### Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
  - Provisions for storing materials and waste products inside or under cover;
  - Vehicle washing controls;
  - Requirements for routine inspections and maintenance of stormwater BMPs;
  - Spill prevention and response plans;
  - Provisions for maintenance of lawns, gardens, and other landscaped areas;
  - Requirements for storage and use of fertilizers, herbicides, and pesticides;
  - Pet waste management provisions;
  - Provisions for operation and management of septic systems;
  - Provisions for solid waste management;
  - Snow disposal and plowing plans relative to Wetland Resource Areas;
  - Winter Road Salt and/or Sand Use and Storage restrictions;
  - Street sweeping schedules;
  - Provisions for prevention of illicit discharges to the stormwater management system;
  - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
  - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
  - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- ☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
- ☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
- ☐ is within the Zone II or Interim Wellhead Protection Area
  - ☐ is near or to other critical areas
  - ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
  - ☐ involves runoff from land uses with higher potential pollutant loads.
- ☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.
- ☒ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



# Checklist for Stormwater Report

---

## Checklist (continued)

### Standard 4: Water Quality (continued)

- ☒ The BMP is sized (and calculations provided) based on:
  - ☒ The ½" or 1" Water Quality Volume or
  - ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- ☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- ☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

### Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- ☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- ☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- ☒ The NPDES Multi-Sector General Permit does **not** cover the land use.
- ☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- ☐ All exposure has been eliminated.
- ☐ All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- ☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

### Standard 6: Critical Areas

- ☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- ☐ Critical areas and BMPs are identified in the Stormwater Report.





# Checklist for Stormwater Report

---

## Checklist (continued)

### Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- ☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
  - ☐ Limited Project
  - ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
  - ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
  - ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
  - ☐ Bike Path and/or Foot Path
- ☒ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.
- ☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- ☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

### Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
  - Construction Period Operation and Maintenance Plan;
  - Names of Persons or Entity Responsible for Plan Compliance;
  - Construction Period Pollution Prevention Measures;
  - Erosion and Sedimentation Control Plan Drawings;
  - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
  - Vegetation Planning;
  - Site Development Plan;
  - Construction Sequencing Plan;
  - Sequencing of Erosion and Sedimentation Controls;
  - Operation and Maintenance of Erosion and Sedimentation Controls;
  - Inspection Schedule;
  - Maintenance Schedule;
  - Inspection and Maintenance Log Form.
- ☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



# Checklist for Stormwater Report

---

## Checklist (continued)

### Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- ☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- ☒ The project is **not** covered by a NPDES Construction General Permit.
- ☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- ☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

### Standard 9: Operation and Maintenance Plan

- ☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
  - ☒ Name of the stormwater management system owners;
  - ☐ Party responsible for operation and maintenance;
  - ☒ Schedule for implementation of routine and non-routine maintenance tasks;
  - ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
  - ☐ Description and delineation of public safety features;
  - ☐ Estimated operation and maintenance budget; and
  - ☒ Operation and Maintenance Log Form.
- ☐ The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
  - ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
  - ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

### Standard 10: Prohibition of Illicit Discharges

- ☒ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- ☐ An Illicit Discharge Compliance Statement is attached;
- ☐ NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.





# Stormwater Report Narrative

This Stormwater Report has been prepared to demonstrate compliance with the Massachusetts Stormwater Management Standards in accordance with the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00) and Water Quality Certification Regulations (314 CMR 9.00). This report also demonstrates compliance with the Town of Arlington Stormwater Management Standards.

## Project Description

The Applicant, PSI Atlantic Arlington MA, LLC, is proposing to construct a Self-Storage redevelopment (the Project). As proposed, the Project consists of 95,706 square feet of building space, ancillary landscape improvements, parking spaces (11), and stormwater management and utility improvements to support this use.

The Project will entail the construction of a five story self-storage facility with associated parking and is not considered a Land Use with Higher Potential Pollutant Loads (LUHPPL).

## Site Description

The Project Site is a 0.78-acre parcel of land (the Site) located within the Industrial zoning district at 34 Dudley Street in Arlington, Massachusetts (see Figure 1). The Site lies within the surface watershed of Mill Brook and is bounded by Dudley Street to the north, Mill Brook to the south, and commercial and residential uses to the east and west. See Figure 1, Site Locus Map.

Wetland Resource Areas on the Site include the following:

The resource areas identified on or near the Project Site subject to state regulations under the WPA include Bank and Riverfront Area. The resource areas are defined under the WPA (310 CMR 10.00) as follows:

- › **Bank:** As defined at 310 CMR 10.54 (2), *"a Bank is the portion of the land surface which normally abuts and confines a water body ... The upper boundary of Bank is the first observable break in slope or the mean annual flood level, whichever is lower."*
- › **RA:** As defined by 310 CMR 10.58 (2)(a)(3), Riverfront Area is *"the area of land between a river's mean annual high-water line measured horizontally outward from the river and a parallel line located 200 feet away..."*

An additional resource area established under the Bylaw is the 100-foot adjacent upland resource area. For the purposes of this NOI, the URA has been broken down into separate buffer zones. These areas are defined as follows:

- › 25-foot No Disturb Zone (NDZ) – the innermost 25 feet of the 100-foot URA
- › 50-foot No Build Zone (NBZ) – the inner 50 feet of the 100-foot URA
- › 100-foot URA – land within 100 feet of a resource area

Wetlands and their buffer zones on/adjacent to the property are described in more detail in the Notice of Intent narrative, bound separately.

**Table 1 Existing Conditions Hydrologic Data**

Name	Critical Area (yes/no)	Zone 1 or Zone A (yes/no)	ORW or SRW (yes/no)	Zone II or IWPA (yes/no)	Other
Mill Brook	No	No	No	No	Impaired Waterbody (MA71-07) Benthic Macroinvertebrates Escherichia Coli (E. Coli)N/A

According to the National Resources Conservation Service (NRCS), surface soils on the Site include Merrimac-Urban land complex and Udorthents. On-site soils are classified as Hydrologic Soil Groups (HSG D) . To support the redevelopment and in accordance with the Town of Arlington Inland Wetland District, a subsurface geotechnical investigation was performed by GeoEngineers, Inc, Boston, MA, and advanced borings in monitoring wells in December 2021 and January 2022. The results of the soil boring analysis, the soils on the site are classified as HSG A soils with an infiltration rate of 2.4 inches per hour. The Geotechnical Report is included in Appendix C, the Site is not considered to be within an area of rapid infiltration (soils with a saturated hydraulic conductivity greater than 2.4 inches per hour).

## Existing Drainage Conditions

Under existing conditions, the Site is developed and predominately impervious with generally flat topography. Just to the south of the southerly property boundary, there is a steep slope down to Mill Brook. Figure 2 illustrates the existing drainage patterns on the Site. Currently, the Site is divided into two drainage areas as stormwater runoff flows to two Design Points, which have been identified as Dudley Street (DP-1) and Mill Brook (DP-2). Table 2 below provides a summary of the existing conditions hydrologic data.



**Table 2 Existing Conditions Hydrologic Data**

Drainage Area	Discharge Location	Design Point	Area (Acres)	Curve Number	Time of Concentration (min)
EX-1	Dudley Street	DP-1	0.325	97	5.0
EX-2	Mill Brook	DP-2	0.459	96	5.0

## Proposed Drainage Conditions

Figure 3 illustrates the proposed “post construction” drainage conditions for the project. As shown, the Site will be divided into 5 drainage areas that discharge treated stormwater to the 2 existing Design Points. Table 3 below provides a summary of the proposed conditions hydrologic data.

**Table 3 Proposed Conditions Hydrologic Data**

Drainage Area	Discharge Location	Design Point	Area (Acres)	Curve Number	Time of Concentration (min)
PR-1	Mill Brook	DP-2	0.515	98	5.0
PR-2	Mill Brook	DP-2	0.157	80	5.0
PR-3	Mill Brook	DP-2	0.009	96	5.0
PR-4	Mill Brook	DP-2	0.066	98	5.0
PR-5	Dudley Street	DP-1	0.036	87	5.0

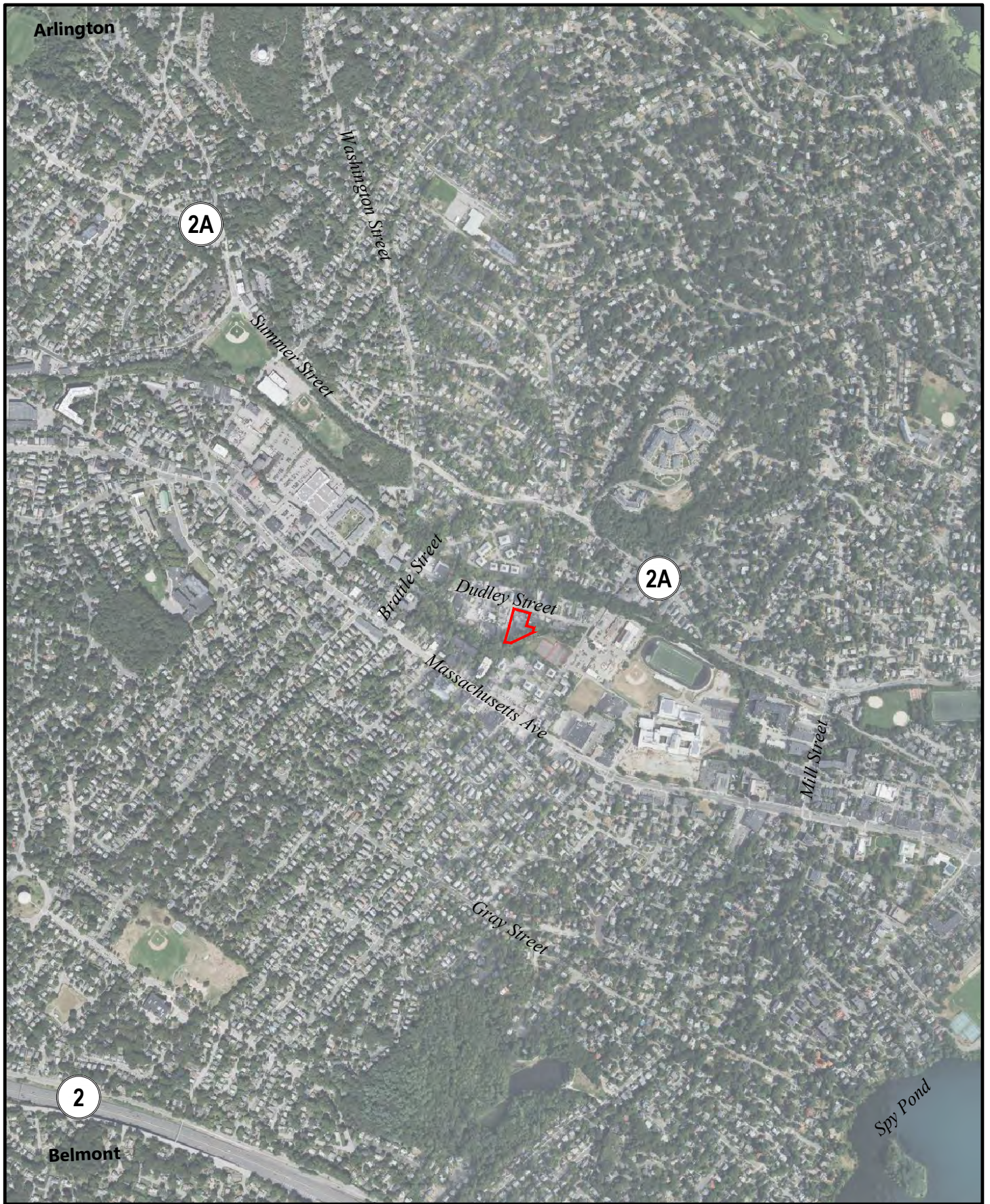
The site design integrates a comprehensive stormwater management system that has been developed in accordance with the Massachusetts Stormwater Handbook. The proposed stormwater management system has been designed to treat the half inch Water Quality Volume.

## Environmentally Sensitive and Low Impact Development (LID) Techniques

Low Impact Development (LID) techniques and stormwater Best Management Practices (BMPs) implemented into the site design include reduction of impervious area, minimized disturbance to existing trees and vegetation, a bioretention basin, . The bioretention basin has been incorporated, as recommended by the Zoning Bylaws, to collect stormwater from the parking area. In general, stormwater from the proposed impervious surfaces is collected in a bioretention basin or deep sump hooded catch basins, prior to being discharged into a subsurface infiltration basin with an isolator row. The deep sump hooded catch basin and isolator row provide pretreatment prior to final treatment by the infiltration basin. Additionally,

the bioretention basin has a sediment forebay for pretreatment prior to final treatment by the bioretention basin soil media. The overflow from the bioretention basin is connected to the larger subsurface infiltration basin to control larger storm events and provide additional water quality benefits. The subsurface infiltration basin has an outlet control structure to control the rates of flow and ensure proper water quality volume, prior to discharging to the existing pipe discharge to the south of the property towards Mill Brook.

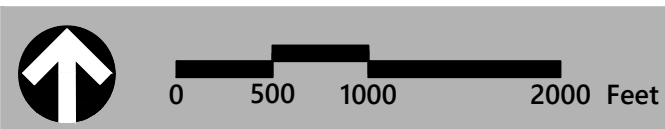




Site Location Map  
DEP Permitting  
Arlington Self Storage Facility  
Arlington, MA

**Figure 1**

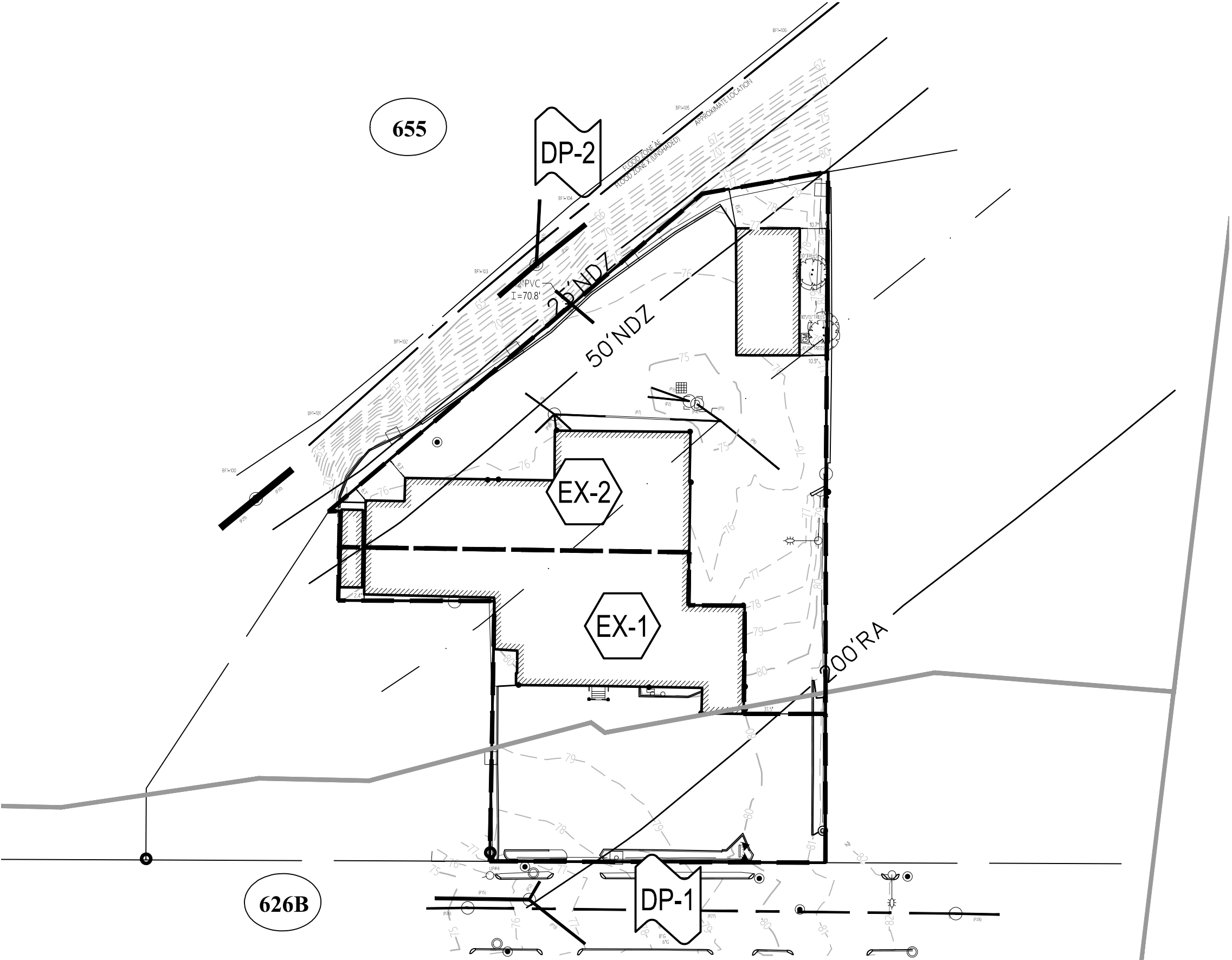
02/09/2022











# Legend

**SYMBOLS**

DESIGN POINT

DRAINAGE AREA DESIGNATION

POND

**LINETYPES**

DRAINAGE AREA BOUNDARY

TIME OF CONCENTRATION FLOW LINE

SOIL TYPE BOUNDARY

100' BUFFER ZONE

WETLAND BOUNDARY

**SCS SOIL CLASSIFICATIONS**

MERRIMAC-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES, HSG A

UDORTHENTS, WET SUBSTRATUM

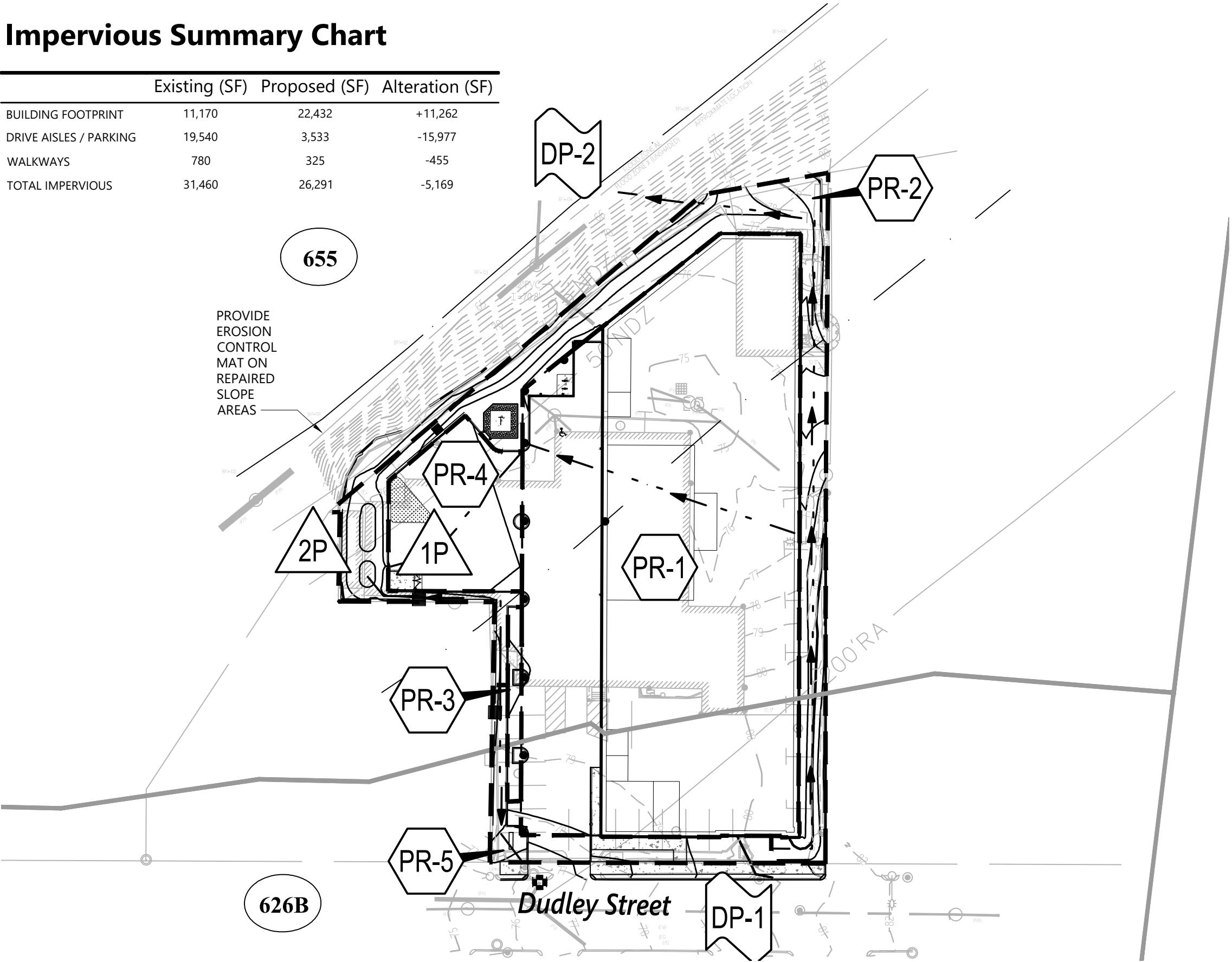






# Impervious Summary Chart

	Existing (SF)	Proposed (SF)	Alteration (SF)
BUILDING FOOTPRINT	11,170	22,432	+11,262
DRIVE AISLES / PARKING	19,540	3,533	-15,977
WALKWAYS	780	325	-455
TOTAL IMPERVIOUS	31,460	26,291	-5,169



## Legend

### SYMBOLS



DESIGN POINT



DRAINAGE AREA DESIGNATION

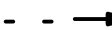


POND

### LINETYPES



DRAINAGE AREA BOUNDARY



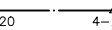
TIME OF CONCENTRATION FLOW LINE



SOIL TYPE BOUNDARY



100' BUFFER ZONE



WETLAND BOUNDARY

### SCS SOIL CLASSIFICATIONS



MERRIMAC-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES, HSG A



UDORTHENTS, WET SUBSTRATUM



Proposed Drainage Conditions

Proposed Self Storage Facility  
Arlington, Massachusetts

Figure 3

02/09/2022

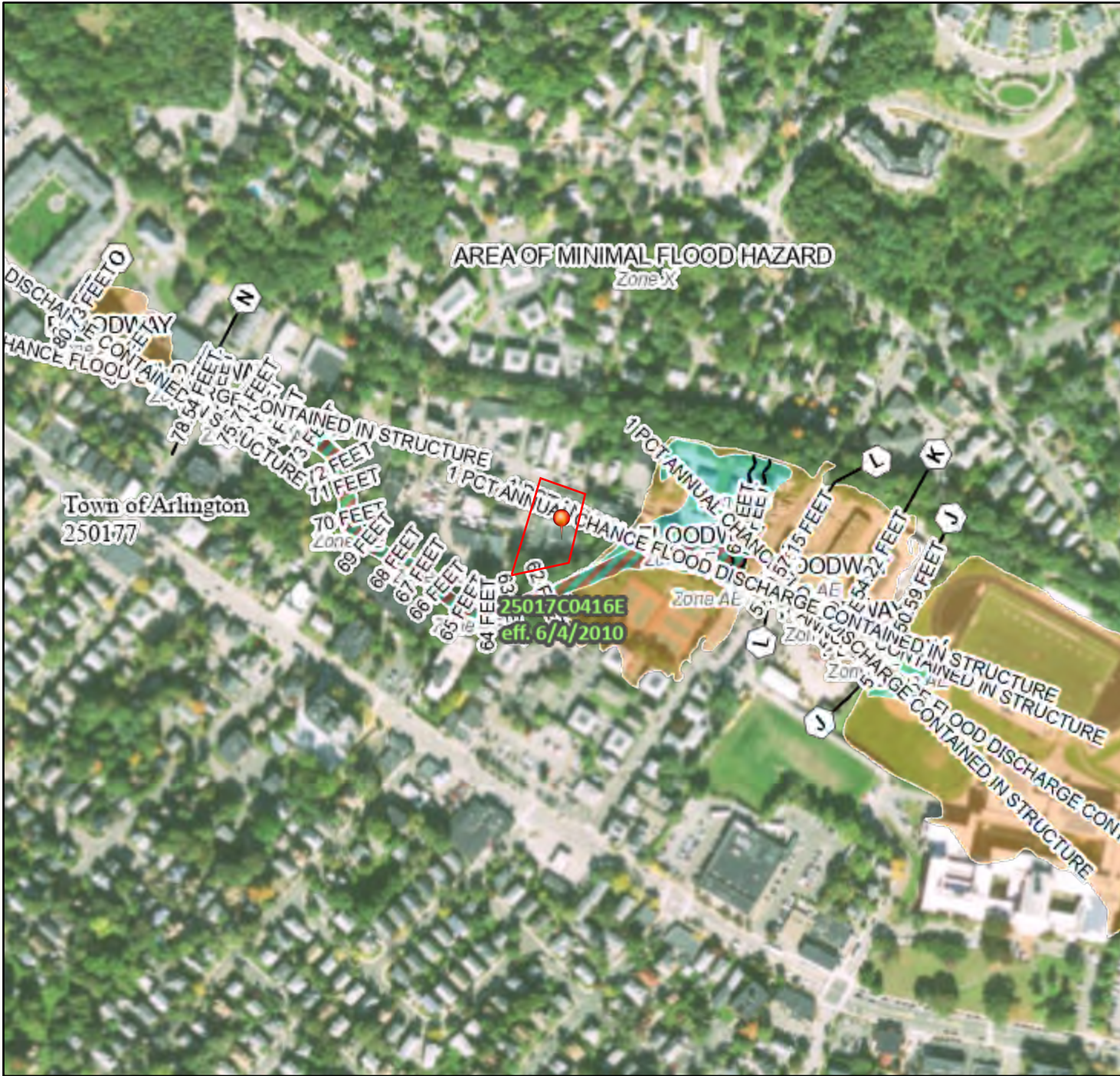




# National Flood Hazard Layer FIRMMette



71°10'17"W 42°25'27"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
MAP PANELS		Coastal Transect
		Base Flood Elevation Line (BFE)
OTHER FEATURES		Limit of Study
		Jurisdiction Boundary
OTHER FEATURES		Coastal Transect Baseline
		Profile Baseline
OTHER FEATURES		Hydrographic Feature
		Digital Data Available
MAP PANELS		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **2/9/2022 at 10:06 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

FIGURE 4

This page intentionally left blank.





# Regulatory Compliance

## Massachusetts Department of Environmental Protection (DEP) – Stormwater Management Standards

As demonstrated below, the proposed Project fully complies with the DEP Stormwater Management Standards.

### Standard 1: No New Untreated Discharges or Erosion to Wetlands

The Project has been designed to comply with Standard 1.

The Best Management Practices (BMPs) included in the proposed stormwater management system have been designed in accordance with the Massachusetts Stormwater Handbook. Supporting information and computations demonstrating that no new untreated discharges will result from the Project are presented through compliance with Standards 4 through 6.

All proposed Project stormwater outlets and conveyances have been designed to not cause erosion or scour to wetlands or receiving waters. Outlets from closed drainage systems have been designed with flared end sections and stone protection to dissipate discharge velocities.

Computations and supporting information for the sizing and selection of materials used to protect from scour and erosion are included in Appendix A.

### Standard 2: Peak Rate Attenuation

The Project has been designed to comply with Standard 2.

The rainfall-runoff response of the Site under existing and proposed conditions was analyzed for storm events with recurrence intervals of 2, 10, 25 and 100 years. The results of the analysis, as summarized in Table 4 below, indicate that there is no increase in peak discharge rates between the existing and proposed conditions.

Computations and supporting information regarding the hydrologic modeling are included in Appendix B.

**Table 4 Peak Discharge Rates (cfs\*)**

Design Point	2-year	10-year	25-year	100-year
<b>Design Point: Dudley Street (DP-1)</b>				
Existing	1.05	1.68	2.08	2.68
Proposed	0.08	0.15	0.20	0.27
<b>Design Point: Mill Brook (DP-2)</b>				
Existing	1.46	2.36	2.93	3.78
Proposed	0.56	1.45	2.46	3.67

### Standard 3: Stormwater Recharge

The Project has been designed to comply with Standard 3.

In accordance with the Stormwater Handbook, the Required Recharge Volume for the Project is 1,315 cubic feet.

Recharge of stormwater has been provided through the use of a bioretention basin and subsurface infiltration basin, which have been sized using the Static method. Each infiltration BMP has been designed to drain completely within 72 hours. Table 5 below provides a summary of the proposed infiltration BMPs utilized for the Project.

**Table 5 Summary of Recharge Calculations**

Infiltration BMP	Provided Recharge Volume (cubic feet)
Subsurface Infiltration Basin	1,954
<b>Total Provided Recharge</b>	<b>1,954</b>
<b>Total Required Recharge</b>	<b>1,315</b>

Geotechnical Engineering Report, computations, and supporting information are included in Appendix C.

### Standard 4: Water Quality

The Project has been designed to comply with Standard 4.

The proposed stormwater management system implements a treatment train of BMPs that has been designed to provide 80% TSS removal of stormwater runoff from all proposed impervious surfaces.

Computations and supporting information, including the Long-Term Pollution Prevention Plan, are included in Appendix D.



## Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs)

The Project is not considered a LUHPPL.

## Standard 6: Critical Areas

The Project will not discharge stormwater near or to a critical area.

## Standard 7: Redevelopments and Other Projects Subject to the Standards only to the Maximum Extent Practicable

The Project has been designed to comply with all ten of the Stormwater Management Standards.

## Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Controls

The Project will disturb approximately 0.8 acres of land and is not required to obtain coverage under the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit. In lieu of the Stormwater Pollution Prevention Plan (SWPPP) required under NPDES, a Construction Period Pollution Prevention and Erosion Sedimentation Control Plan has been included in Appendix F.

## Standard 9: Operation and Maintenance Plan

In compliance with Standard 9, a Post Construction Stormwater Operation and Maintenance (O&M) Plan has been developed for the Project. The O&M Plan is included in Appendix D as part of the Long Term Pollution Prevention Plan.

## Standard 10: Prohibition of Illicit Discharges

Sanitary sewer and storm drainage structures which were part of the previous development on this site are to be completely removed during the site redevelopment. The design plans submitted with this report have been designed in full compliance with current standards. The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges.

## Local Municipal Rules and Regulations

*The following document intended to assist applicants and their consultants by providing Stormwater Management/Mitigation design guidelines, submission requirements, and review procedures in accordance with The Town of Arlington By-Law Title V, Article 15, Section 4.*

*The design and function of the stormwater drainage system shall conform to the following requirements, which may be modified by the Town of Arlington in a case-by-case situation to better suit the problems and specific needs of a particular site:*

1. *All projects subject to this By-Law must meet the standards of the most current Massachusetts Department of Environmental Protection (DEP) Stormwater Management Policy and any applicable By-Laws and/or Rules and Regulations of the Town of Arlington.*

The Project, as currently designed and demonstrated by this stormwater management plan and report, fully complies with the DEP Stormwater management Policy and Town of Arlington regulations.

2. *No project shall result in an increase in the peak rate of stormwater runoff or volume over natural and existing conditions for the 2-, 10-, and 25-Year 24-hour duration storm events.*

Project complies, refer to Table 4.

3. *Technical design and construction standards for detention/retention/infiltration structures, including, but not limited to, groundwater separation, outlet control structures, sediment forebays, spillways, splashpads, as well as sizing for any basins, outlets, and spillways shall be consistent with DEP Stormwater Management Standards.*

Project complies, refer to the Site Plans for the design and details for the stormwater management structures, which are consistent with the DEP Stormwater Management Standards.

4. *The design for the capacity of all stormwater system pipes and inlet grates shall be based on a Rational Method Analysis (or acceptable equivalent) for a 25-Year Storm intensity.*

The closed drainage system has been designed to adequately convey the 25-year storm event. Refer to Appendix G for the hydraulic capacity spreadsheet for the pipe network.

5. *Existing lot grading shall be retained wherever possible to maintain predevelopment drainage patterns to the greatest extent possible. Where grading must be altered, the proposed grading shall not convey additional overland flows across lot lines or cause ponding on any adjacent property.*

The project has been designed to mimic existing hydrologic drainage patterns. Stormwater management best management practices have been incorporated to provide water quality treatment and water quality control to ensure additional stormwater is not conveyed across lot lines or cause ponding on adjacent properties.

*All projects to which the above referenced Town by-law applies, shall submit to the Engineering Division a Grading & Drainage Report and/or Plan at a minimum scale of 1"=40'. The Plans and/or Report shall consist of and include the following information (if applicable):*

1. *The Name, Mailing Address, Phone Number, and Email of the Property Owner, Land Developer, and the Engineer or Consultant working on the Project.*
2. *Delineation of:*
  - a. *Federal, State, and/or Local Wetlands.*
  - b. *The National Flood Insurance Program 100-Year Flood Zone and/or other Risk Areas.*
  - c. *Any Streams and/or Drainage Ways on or abutting the Site.*
  - d. *Any Easements or Right-of-Ways on or abutting the Site.*
  - e. *Extents of the Project or a Limit of Work/Disturbance Area.*



3. *Existing and proposed contours on the site to indicate general topography. The contour interval shall be at a two- foot interval. Spot elevations shall be included in areas with grades of 2% or less. If permanent benchmarks are required for the proposed activities, those shall also be shown on the Plan.*
  - a. *Approximate existing contour lines that are appropriate for use in certain small-scale projects can be found on the Town of Arlington website at <http://209.6.3.218/GISMaps//index1.htm>.*
4. *Existing and proposed impervious surfaces shall be clearly delineated and labeled on the plan. Include a summary table of all features, both existing and proposed. An example summary table is shown below:*

	<b>Existing (SF)</b>	<b>Proposed (SF)</b>	<b>Alteratio n</b>
<b>Building Footprint</b>	1,250	1,500	+ 250 SF
<b>Bituminous Driveway</b>	500	650	+ 150 SF
<b>Concrete Walkway</b>	40	30	- 10 SF
<b>Total Impervious</b>	<b>1,790</b>	<b>2,180</b>	<b>+ 390 SF</b>

5. *Existing and Proposed locations of all drainage structures, including foundation and roof drains, with rim and invert elevations. Profile and/or Cross Section drawings shall be provided for all proposed infiltration/retention/detention systems.*
6. *Where stormwater recharge or infiltration is proposed, the plans shall include observed and estimated maximum groundwater elevations at the location of each proposed infiltration/retention/detention area.*
  - a. *Soil percolation testing or other acceptable soil absorption rate testing should be conducted in the vicinity of any proposed infiltration/retention/detention area.*
7. *Location and detail of proposed erosion & sediment control measures to be installed and maintained during construction activities.*
8. *Hydrologic calculations and a summary table showing the pre- and post-development runoff conditions for comparative purposes. Runoff calculations shall be prepared for the 2-, 10-, 25-, and 100-Year storm events for both the Existing and Proposed Conditions. These drainage calculations shall be prepared by utilizing the NRCS TR55 or TR20 Method.*
  - a. *With a written request from the applicant, and at the full discretion of the Town of Arlington Engineering Division, certain small-scale projects may adequately demonstrate through simple runoff/storage calculations that the proposed stormwater mitigation is appropriate.*
9. *The project has incorporated the requirements of the stormwater management plans and drainage report, as demonstrated by the technical analysis included in this report and Site Plans*

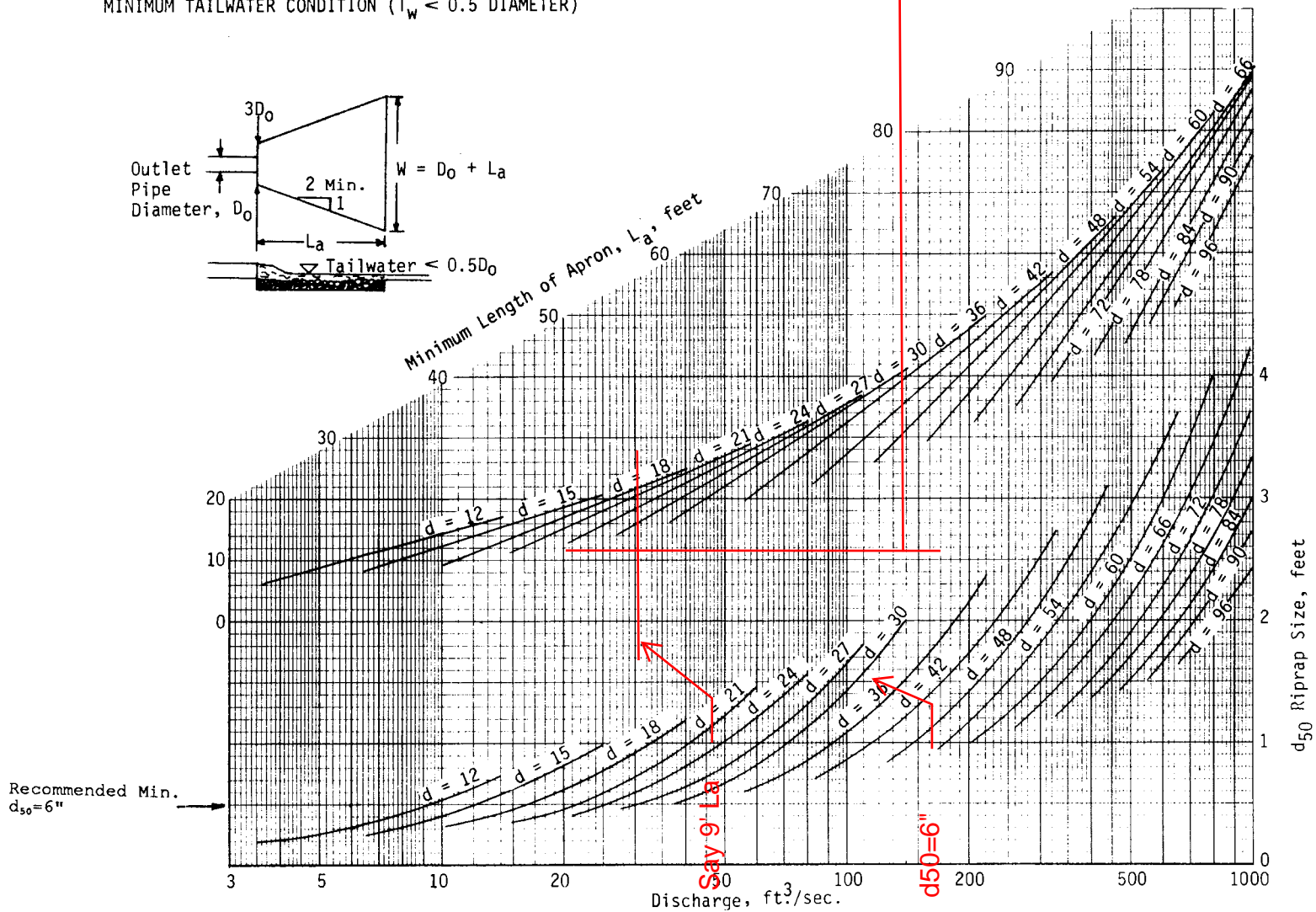
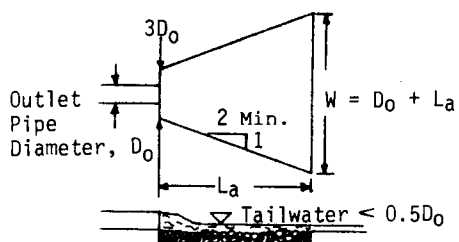
---

## Appendix A: Standard 1 Computations and Supporting Information

- › Outlet Protection Sizing Calculation
- › Pipe Sizing Calculations



DESIGN OF OUTLET PROTECTION FROM A ROUND PIPE FLOWING FULL  
MINIMUM TAILWATER CONDITION ( $T_w < 0.5$  DIAMETER)



## Pipe Sizing Calculations

The closed drainage system was designed for the 25-year storm event, in accordance with the Town's by-laws.

Drainage pipes were sized using Manning's Equation for full-flow capacity and the Rational Method. Additionally, the performance of the system was analyzed using StormCAD, a HEC-22 based program.





## Pipe Sizing Calculations

Project	Proposed Self Storage Facility	Project #	52816.00
	Arlington, MA		
Calculated by	MEA	Date	2/9/2022
Checked by		Date	

[illegible]





---

## Appendix B: Standard 2 Computations and Supporting Information

The rainfall-runoff response of the Site under existing and proposed conditions was evaluated for storm events with recurrence intervals of 2, 10, 25 and 100-years. Rainfall volumes used for this analysis were based on the Natural Resources Conservation Service (NRCS) Type III, 24-hour storm and NOAA Atlas 14 precipitation depths for the site: 3.27, 5.16, 6.35, and 8.16 inches, respectively. Runoff coefficients for the pre- and post-development conditions, as previously shown in Tables 2 and 3 respectively, were determined using NRCS Technical Release 55 (TR-55) methodology as provided in HydroCAD. Drainage areas used in the analyses were described in previous sections and shown on Figures 2 and 3. The HydroCAD model is based on the NRCS Technical Release 20 (TR-20) Model for Project Formulation Hydrology.

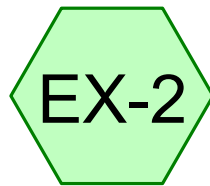
## HydroCAD Analysis: Existing Conditions



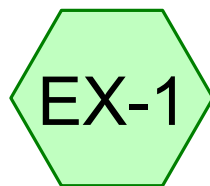
## 2-Year Storm Event – Existing



Mill Brook



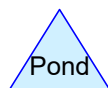
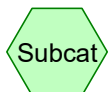
Back of Site



Front of Site



Dudley Street



**Routing Diagram for 52816.00 - Existing**

Prepared by VHB, Printed 2/4/2022

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC



**52816.00 - Existing**

Prepared by VHB

Printed 2/4/2022

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

Page 2

**Rainfall Events Listing**

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	Type III 24-hr		Default	24.00	1	3.27	2
2	10-year	Type III 24-hr		Default	24.00	1	5.16	2
3	25-year	Type III 24-hr		Default	24.00	1	6.35	2
4	100-year	Type III 24-hr		Default	24.00	1	8.16	2

**52816.00 - Existing**

Prepared by VHB

Printed 2/4/2022

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

Page 3

**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
0.017	89	<50% Grass cover, Poor, HSG D (EX-1, EX-2)
0.003	80	>75% Grass cover, Good, HSG D (EX-1)
0.475	98	Paved parking, HSG D (EX-1, EX-2)
0.251	98	Roofs, HSG D (EX-1, EX-2)
0.038	79	Woods, Fair, HSG D (EX-2)
<b>0.783</b>	<b>97</b>	<b>TOTAL AREA</b>



**52816.00 - Existing**

Prepared by VHB

Printed 2/4/2022

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

Page 4

**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.017	0.000	0.017	<50% Grass cover, Poor	EX-1, EX-2
0.000	0.000	0.000	0.003	0.000	0.003	>75% Grass cover, Good	EX-1
0.000	0.000	0.000	0.475	0.000	0.475	Paved parking	EX-1, EX-2
0.000	0.000	0.000	0.251	0.000	0.251	Roofs	EX-1, EX-2
0.000	0.000	0.000	0.038	0.000	0.038	Woods, Fair	EX-2
<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.783</b>	<b>0.000</b>	<b>0.783</b>	<b>TOTAL AREA</b>	

## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 5

### Summary for Subcatchment EX-1: Front of Site

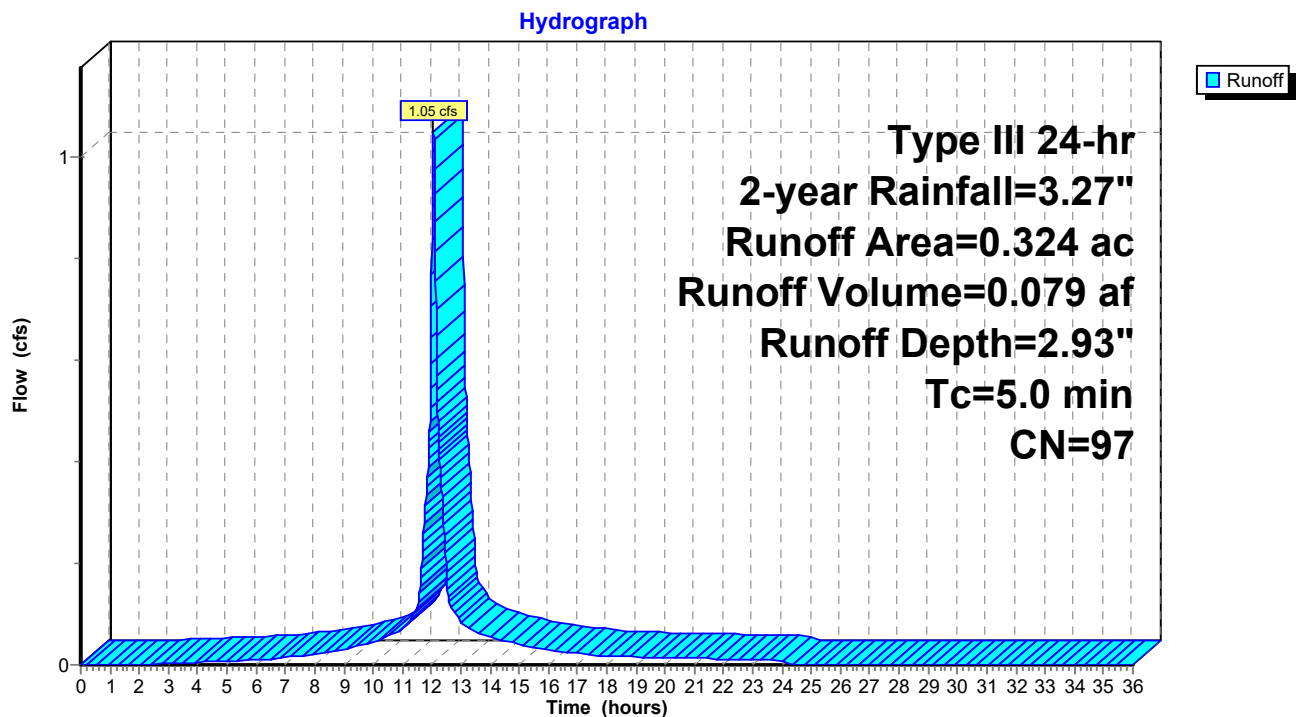
Runoff = 1.05 cfs @ 12.07 hrs, Volume= 0.079 af, Depth= 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.27"

Area (ac)	CN	Description
0.016	89	<50% Grass cover, Poor, HSG D
0.003	80	>75% Grass cover, Good, HSG D
0.179	98	Paved parking, HSG D
0.127	98	Roofs, HSG D
0.324	97	Weighted Average
0.019		5.74% Pervious Area
0.305		94.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment EX-1: Front of Site



## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 6

### Summary for Subcatchment EX-2: Back of Site

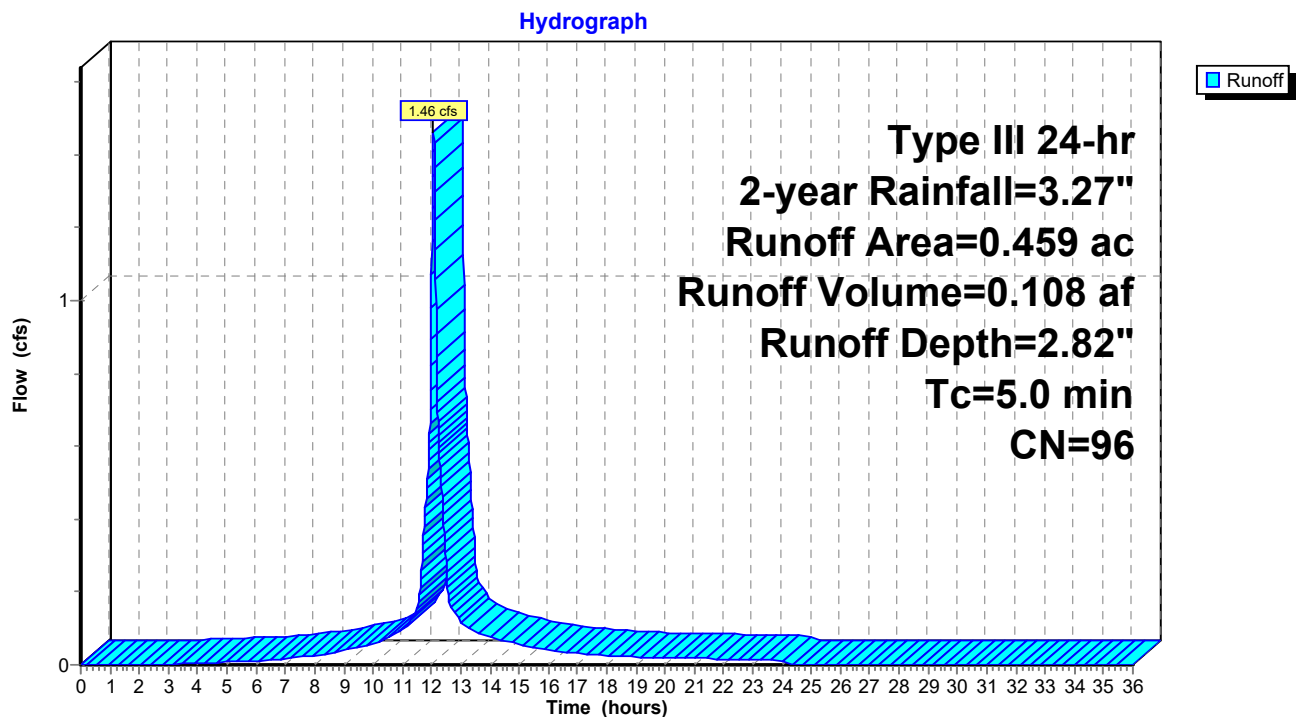
Runoff = 1.46 cfs @ 12.07 hrs, Volume= 0.108 af, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.27"

Area (ac)	CN	Description
0.001	89	<50% Grass cover, Poor, HSG D
0.296	98	Paved parking, HSG D
0.124	98	Roofs, HSG D
0.038	79	Woods, Fair, HSG D
0.459	96	Weighted Average
0.039		8.53% Pervious Area
0.420		91.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment EX-2: Back of Site





## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

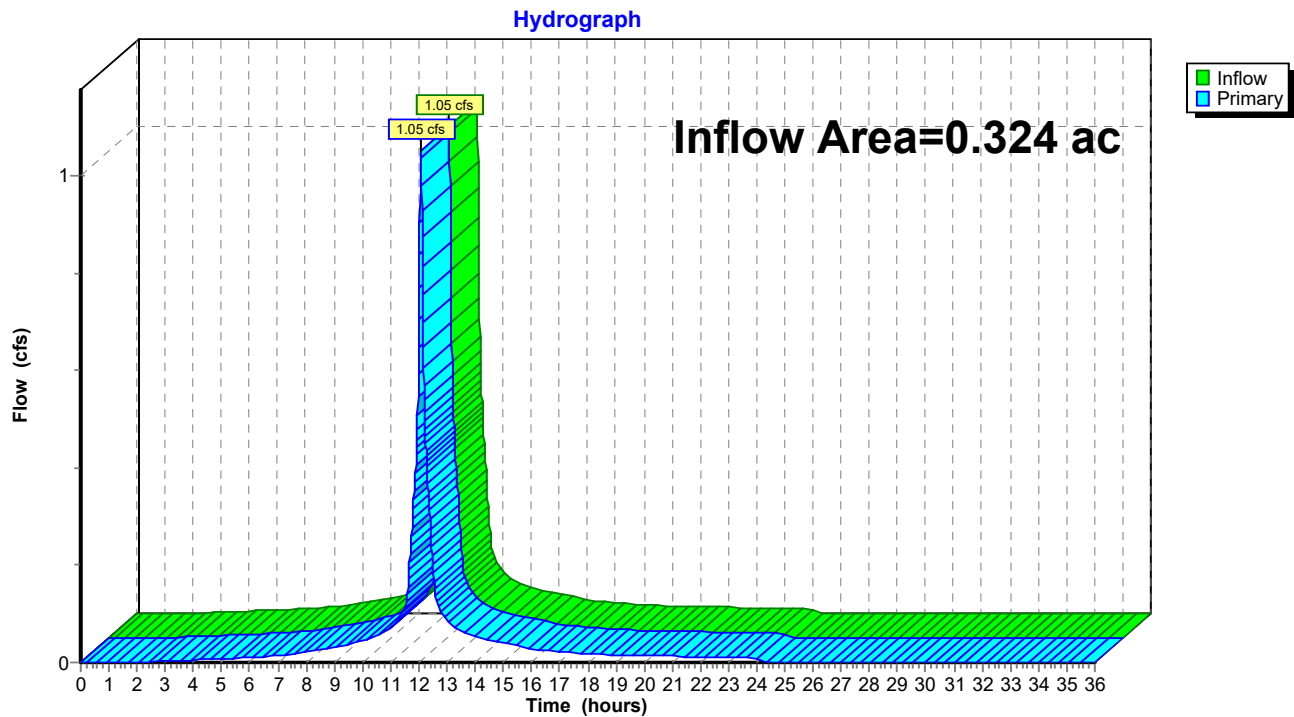
Page 7

### Summary for Link DP-1: Dudley Street

Inflow Area = 0.324 ac, 94.26% Impervious, Inflow Depth = 2.93" for 2-year event  
Inflow = 1.05 cfs @ 12.07 hrs, Volume= 0.079 af  
Primary = 1.05 cfs @ 12.07 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-1: Dudley Street



## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

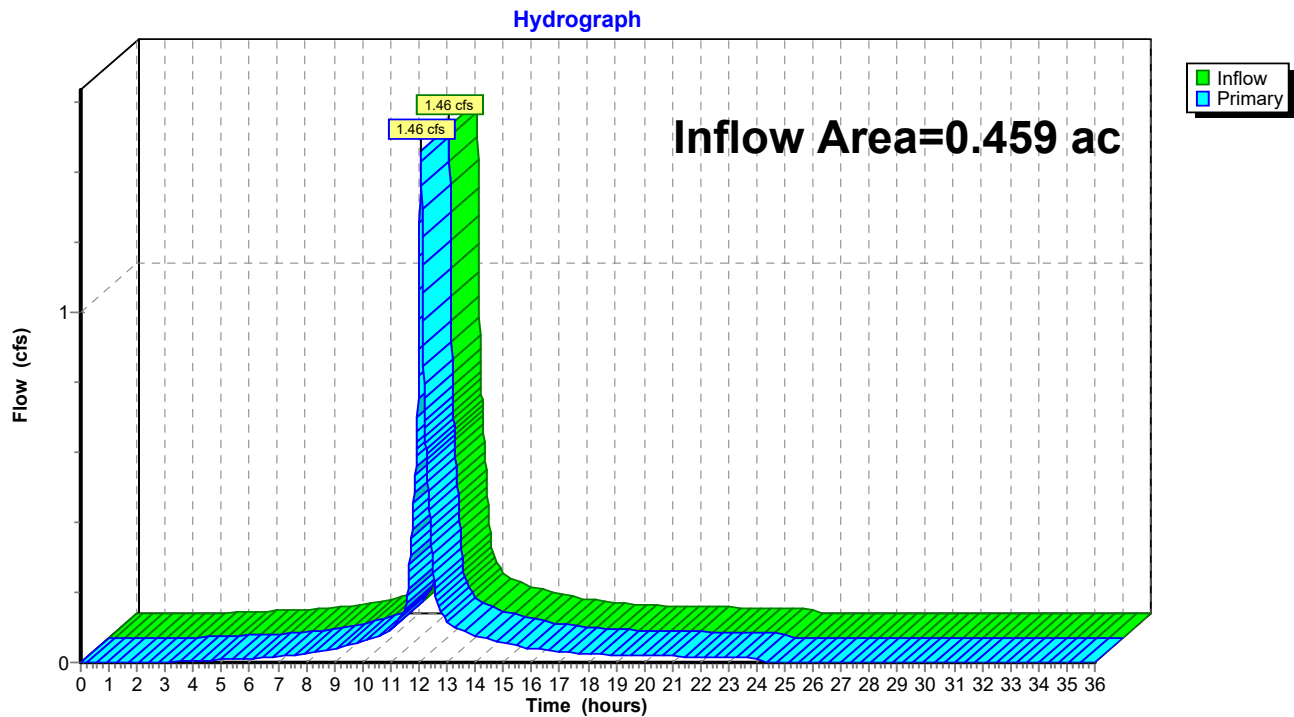
Page 8

### Summary for Link DP-2: Mill Brook

Inflow Area = 0.459 ac, 91.47% Impervious, Inflow Depth = 2.82" for 2-year event  
Inflow = 1.46 cfs @ 12.07 hrs, Volume= 0.108 af  
Primary = 1.46 cfs @ 12.07 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-2: Mill Brook



## 10-Year Storm Event – Existing



## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions  
Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

Page 9

### Summary for Subcatchment EX-1: Front of Site

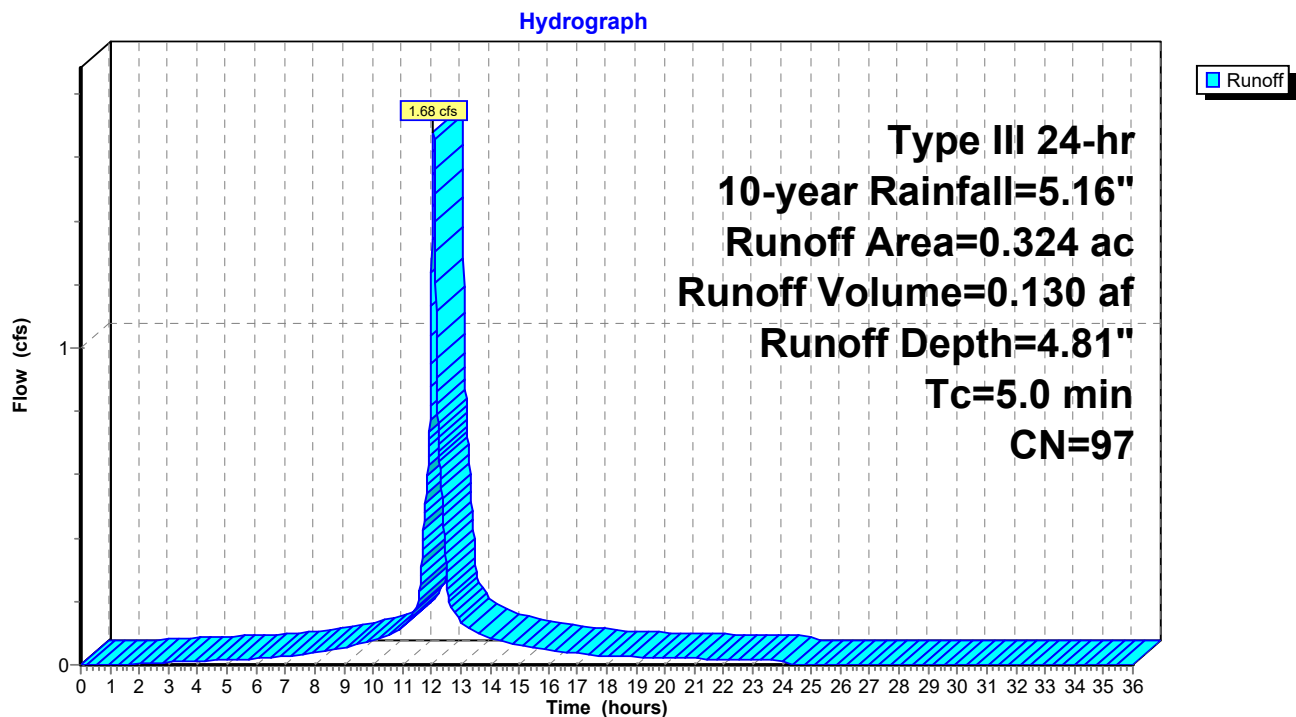
Runoff = 1.68 cfs @ 12.07 hrs, Volume= 0.130 af, Depth= 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=5.16"

Area (ac)	CN	Description
0.016	89	<50% Grass cover, Poor, HSG D
0.003	80	>75% Grass cover, Good, HSG D
0.179	98	Paved parking, HSG D
0.127	98	Roofs, HSG D
0.324	97	Weighted Average
0.019		5.74% Pervious Area
0.305		94.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment EX-1: Front of Site



**52816.00 - Existing**

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions  
Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

Page 10

**Summary for Subcatchment EX-2: Back of Site**

Runoff = 2.36 cfs @ 12.07 hrs, Volume= 0.179 af, Depth= 4.69"

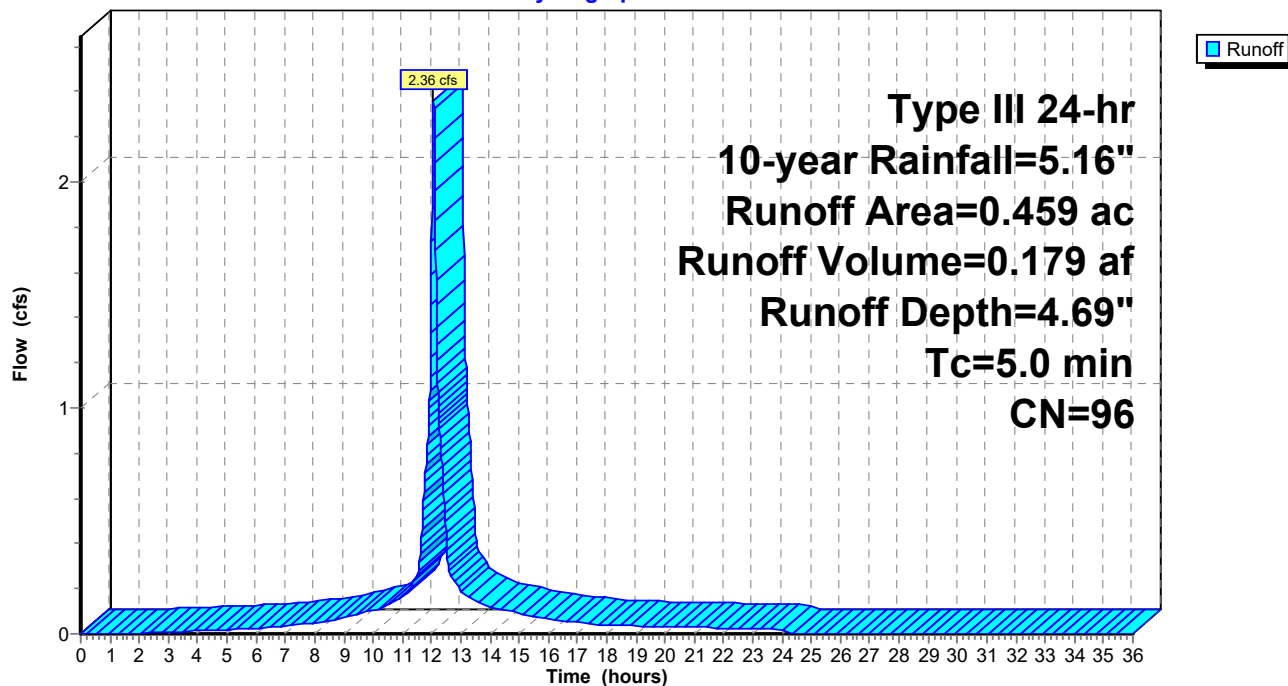
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=5.16"

Area (ac)	CN	Description
0.001	89	<50% Grass cover, Poor, HSG D
0.296	98	Paved parking, HSG D
0.124	98	Roofs, HSG D
0.038	79	Woods, Fair, HSG D
0.459	96	Weighted Average
0.039		8.53% Pervious Area
0.420		91.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment EX-2: Back of Site**

Hydrograph



## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions  
Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

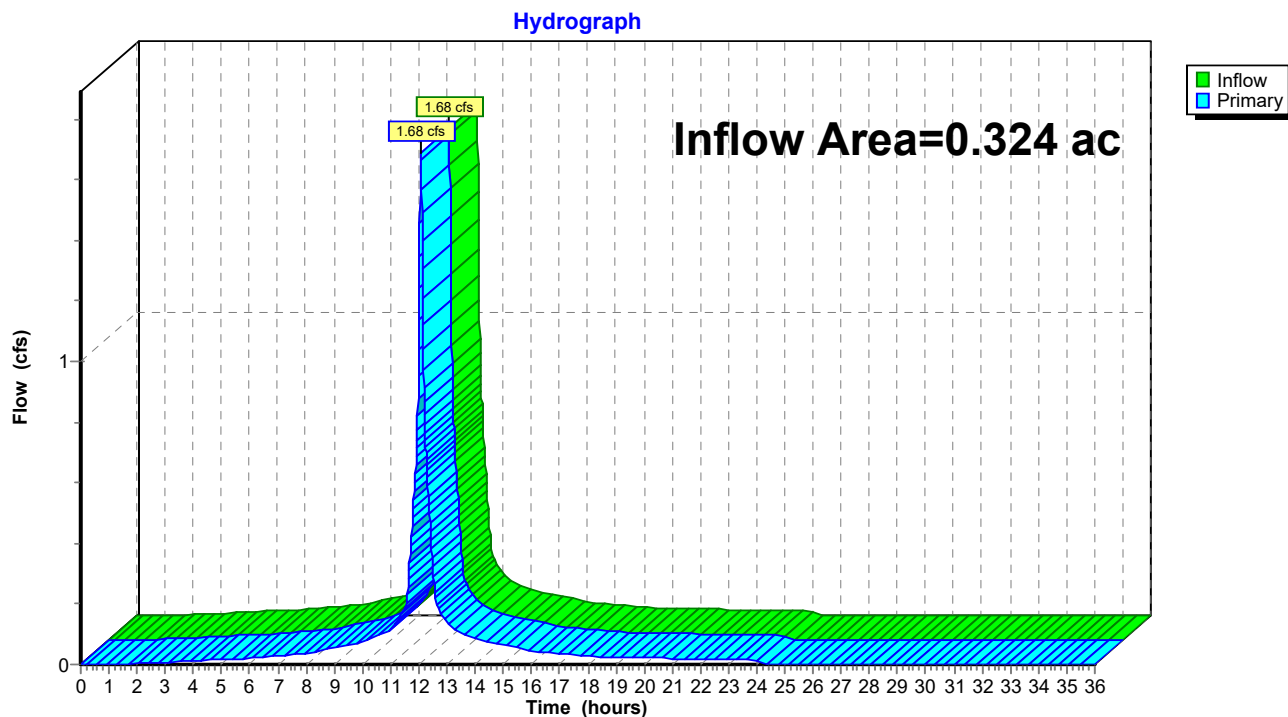
Page 11

### Summary for Link DP-1: Dudley Street

Inflow Area = 0.324 ac, 94.26% Impervious, Inflow Depth = 4.81" for 10-year event  
Inflow = 1.68 cfs @ 12.07 hrs, Volume= 0.130 af  
Primary = 1.68 cfs @ 12.07 hrs, Volume= 0.130 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-1: Dudley Street





## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions  
Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

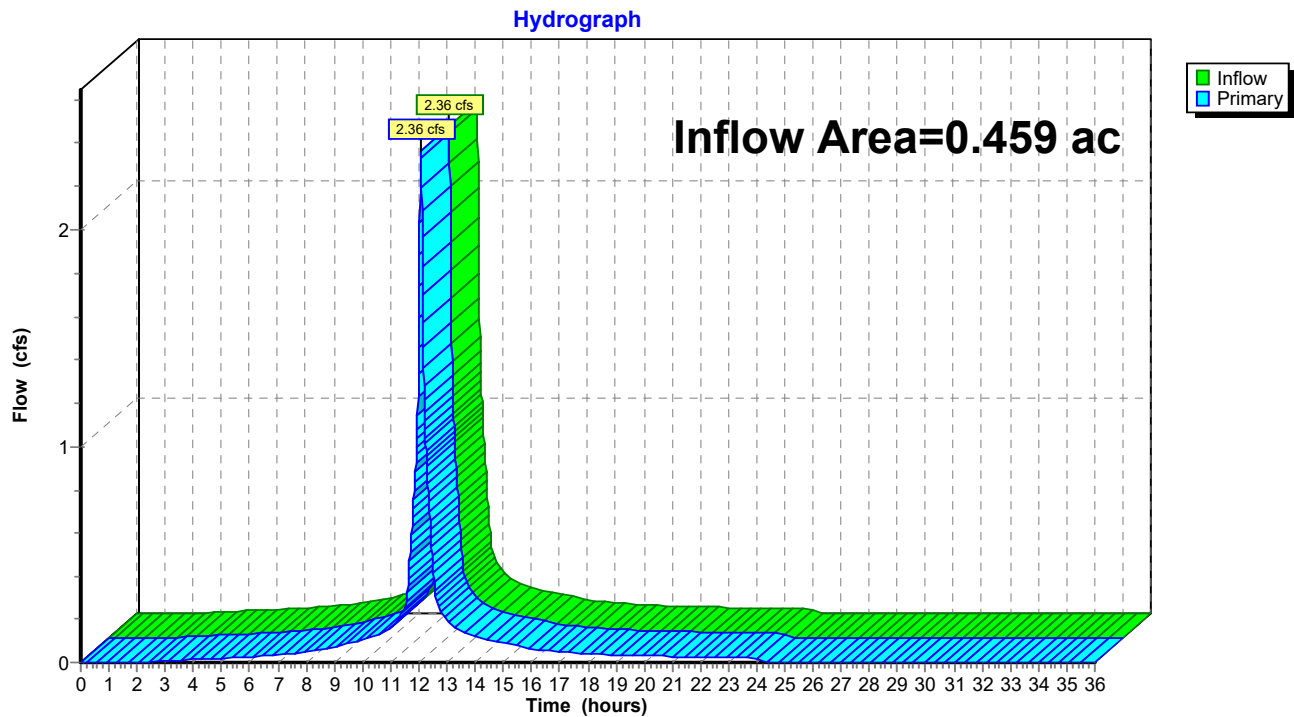
Page 12

### Summary for Link DP-2: Mill Brook

Inflow Area = 0.459 ac, 91.47% Impervious, Inflow Depth = 4.69" for 10-year event  
Inflow = 2.36 cfs @ 12.07 hrs, Volume= 0.179 af  
Primary = 2.36 cfs @ 12.07 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-2: Mill Brook



## 25-Year Storm Event – Existing

## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

Page 13

### Summary for Subcatchment EX-1: Front of Site

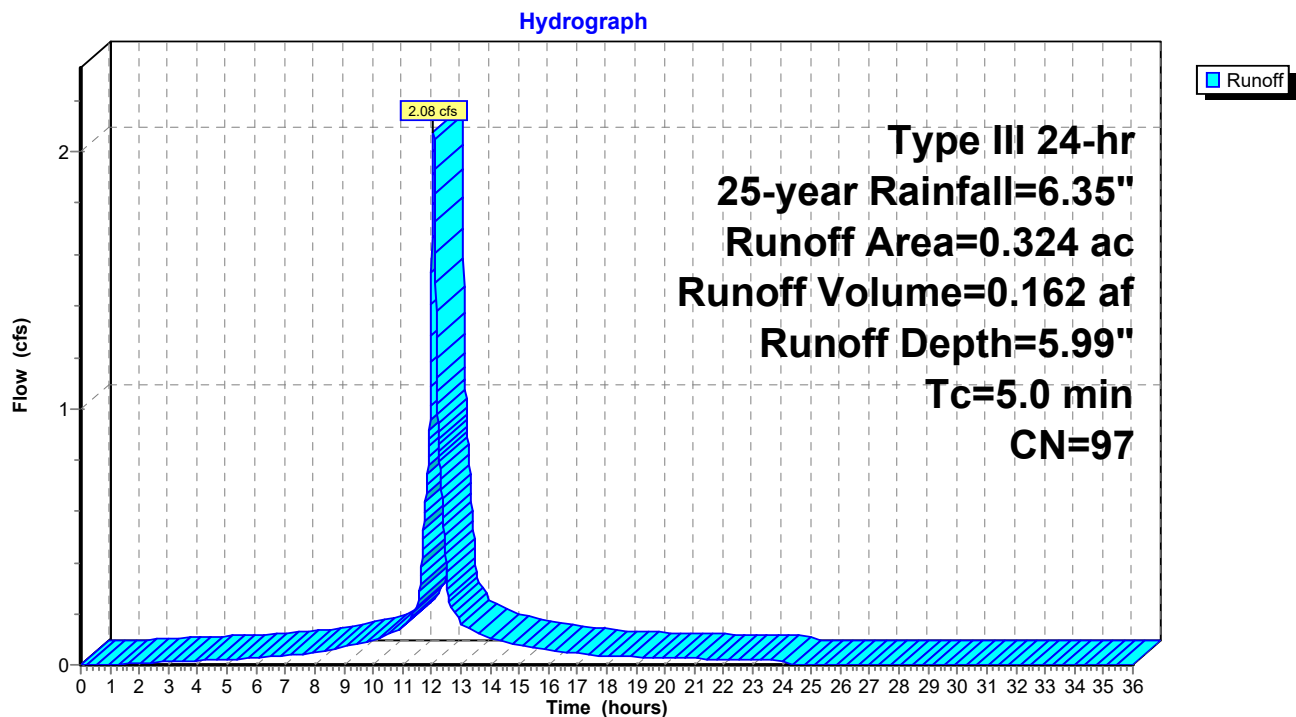
Runoff = 2.08 cfs @ 12.07 hrs, Volume= 0.162 af, Depth= 5.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=6.35"

Area (ac)	CN	Description
0.016	89	<50% Grass cover, Poor, HSG D
0.003	80	>75% Grass cover, Good, HSG D
0.179	98	Paved parking, HSG D
0.127	98	Roofs, HSG D
0.324	97	Weighted Average
0.019		5.74% Pervious Area
0.305		94.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment EX-1: Front of Site





## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

Page 14

### Summary for Subcatchment EX-2: Back of Site

Runoff = 2.93 cfs @ 12.07 hrs, Volume= 0.225 af, Depth= 5.88"

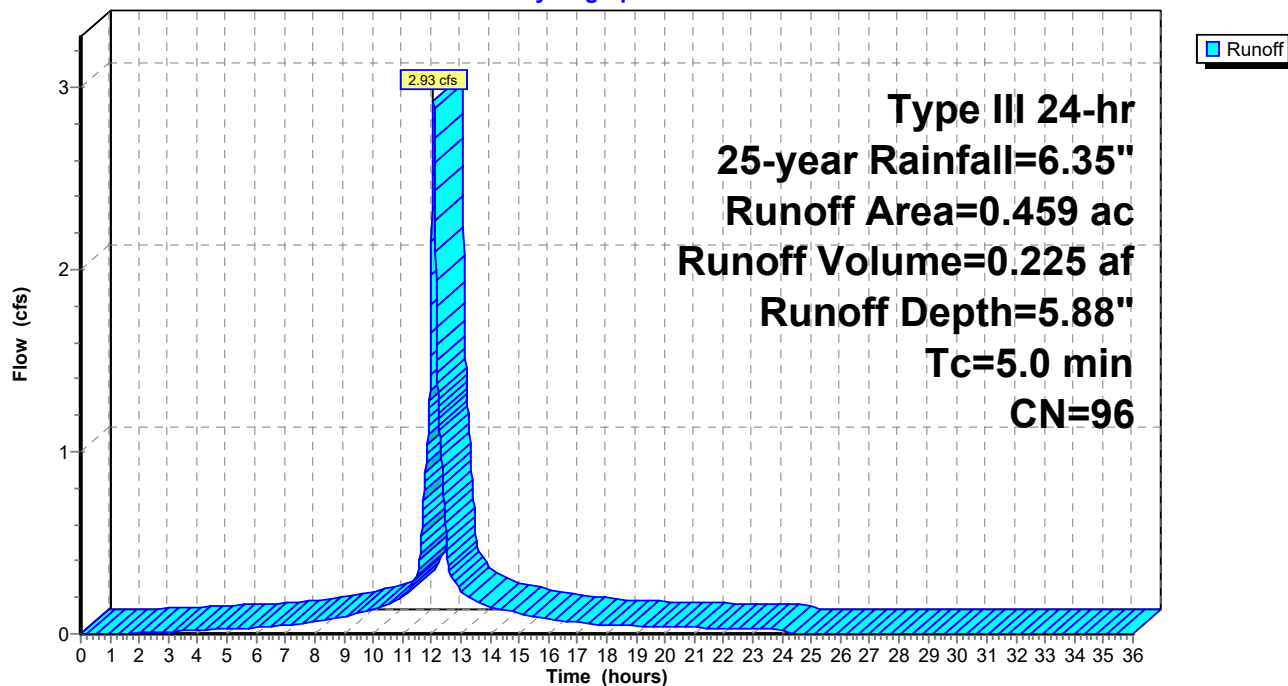
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=6.35"

Area (ac)	CN	Description
0.001	89	<50% Grass cover, Poor, HSG D
0.296	98	Paved parking, HSG D
0.124	98	Roofs, HSG D
0.038	79	Woods, Fair, HSG D
0.459	96	Weighted Average
0.039		8.53% Pervious Area
0.420		91.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment EX-2: Back of Site

Hydrograph



## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

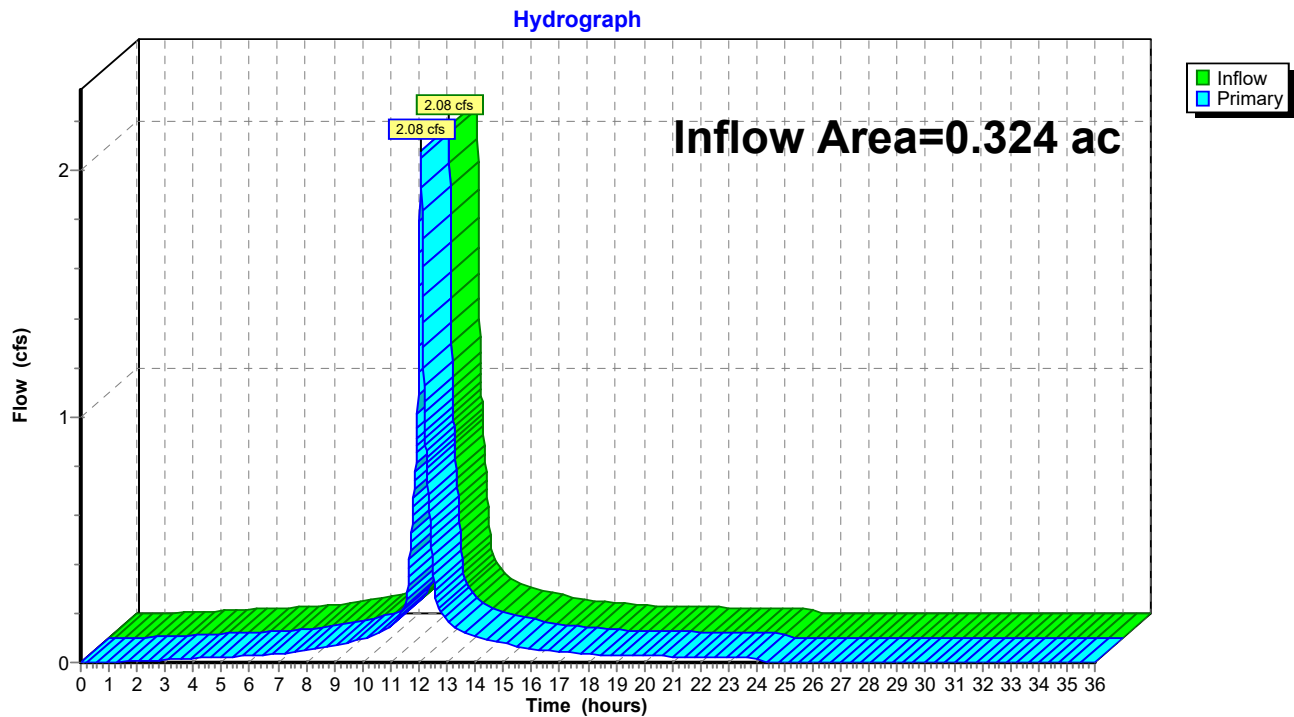
Page 15

### Summary for Link DP-1: Dudley Street

Inflow Area = 0.324 ac, 94.26% Impervious, Inflow Depth = 5.99" for 25-year event  
Inflow = 2.08 cfs @ 12.07 hrs, Volume= 0.162 af  
Primary = 2.08 cfs @ 12.07 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-1: Dudley Street



## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

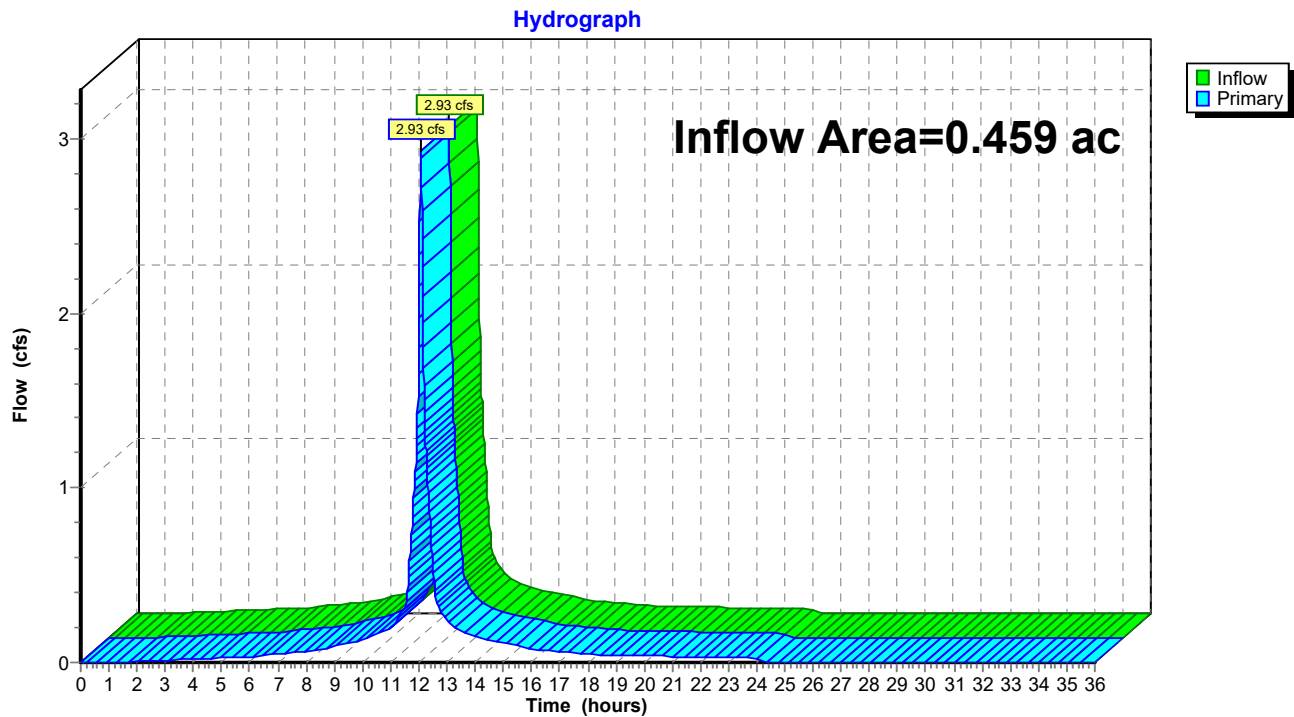
Page 16

### Summary for Link DP-2: Mill Brook

Inflow Area = 0.459 ac, 91.47% Impervious, Inflow Depth = 5.88" for 25-year event  
Inflow = 2.93 cfs @ 12.07 hrs, Volume= 0.225 af  
Primary = 2.93 cfs @ 12.07 hrs, Volume= 0.225 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-2: Mill Brook





## 100-Year Storm Event – Existing

## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions

Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

Page 17

### Summary for Subcatchment EX-1: Front of Site

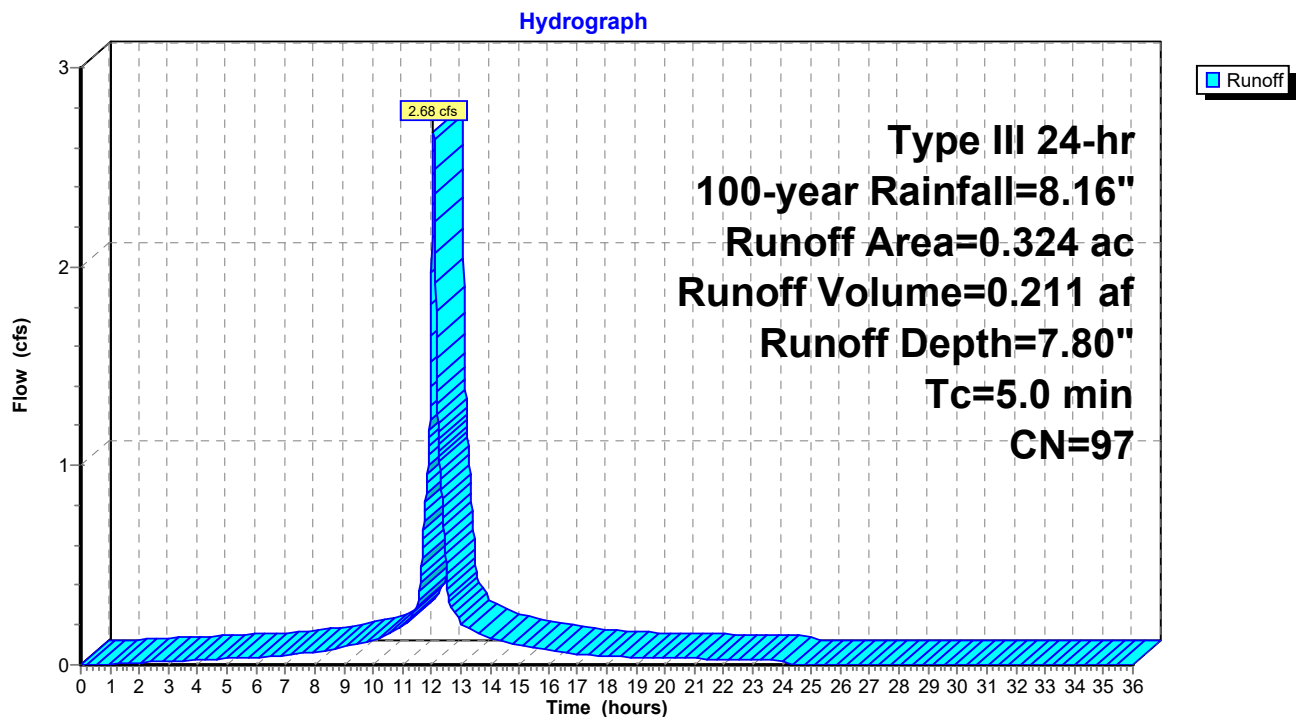
Runoff = 2.68 cfs @ 12.07 hrs, Volume= 0.211 af, Depth= 7.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-year Rainfall=8.16"

Area (ac)	CN	Description
0.016	89	<50% Grass cover, Poor, HSG D
0.003	80	>75% Grass cover, Good, HSG D
0.179	98	Paved parking, HSG D
0.127	98	Roofs, HSG D
0.324	97	Weighted Average
0.019		5.74% Pervious Area
0.305		94.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment EX-1: Front of Site



## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions

Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

Page 18

### Summary for Subcatchment EX-2: Back of Site

Runoff = 3.78 cfs @ 12.07 hrs, Volume= 0.294 af, Depth= 7.68"

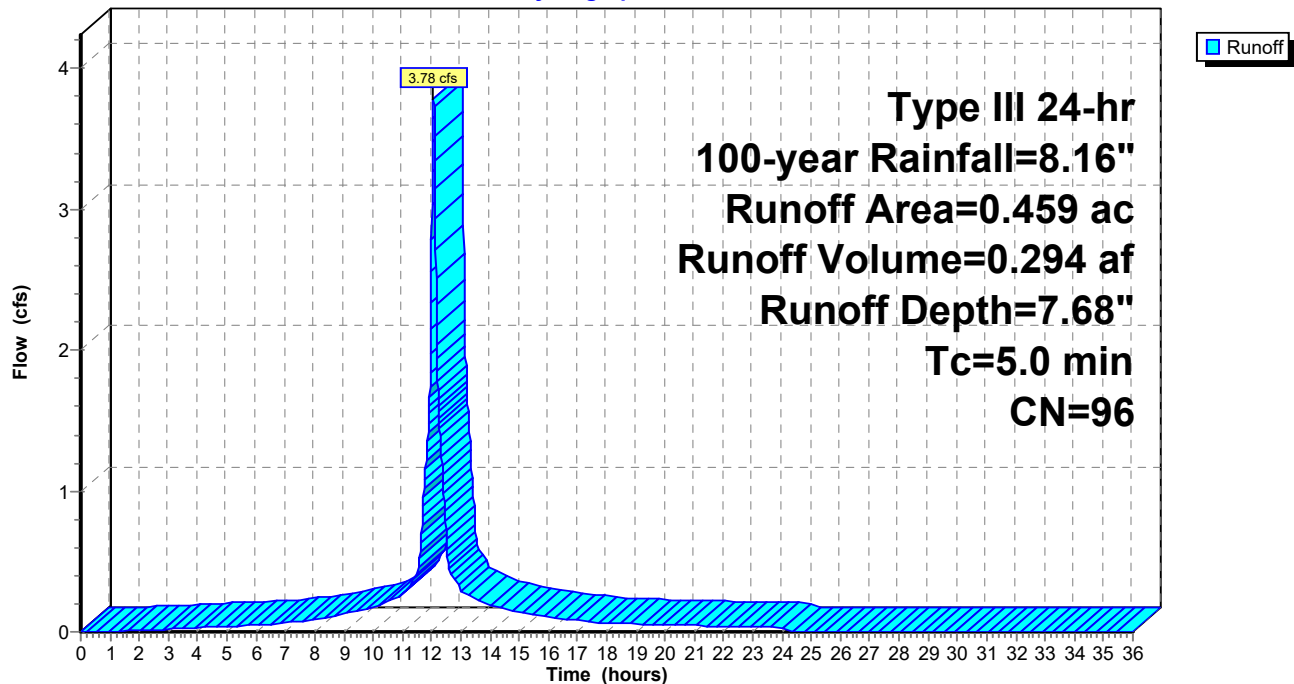
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-year Rainfall=8.16"

Area (ac)	CN	Description
0.001	89	<50% Grass cover, Poor, HSG D
0.296	98	Paved parking, HSG D
0.124	98	Roofs, HSG D
0.038	79	Woods, Fair, HSG D
0.459	96	Weighted Average
0.039		8.53% Pervious Area
0.420		91.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment EX-2: Back of Site

Hydrograph





## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions

Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

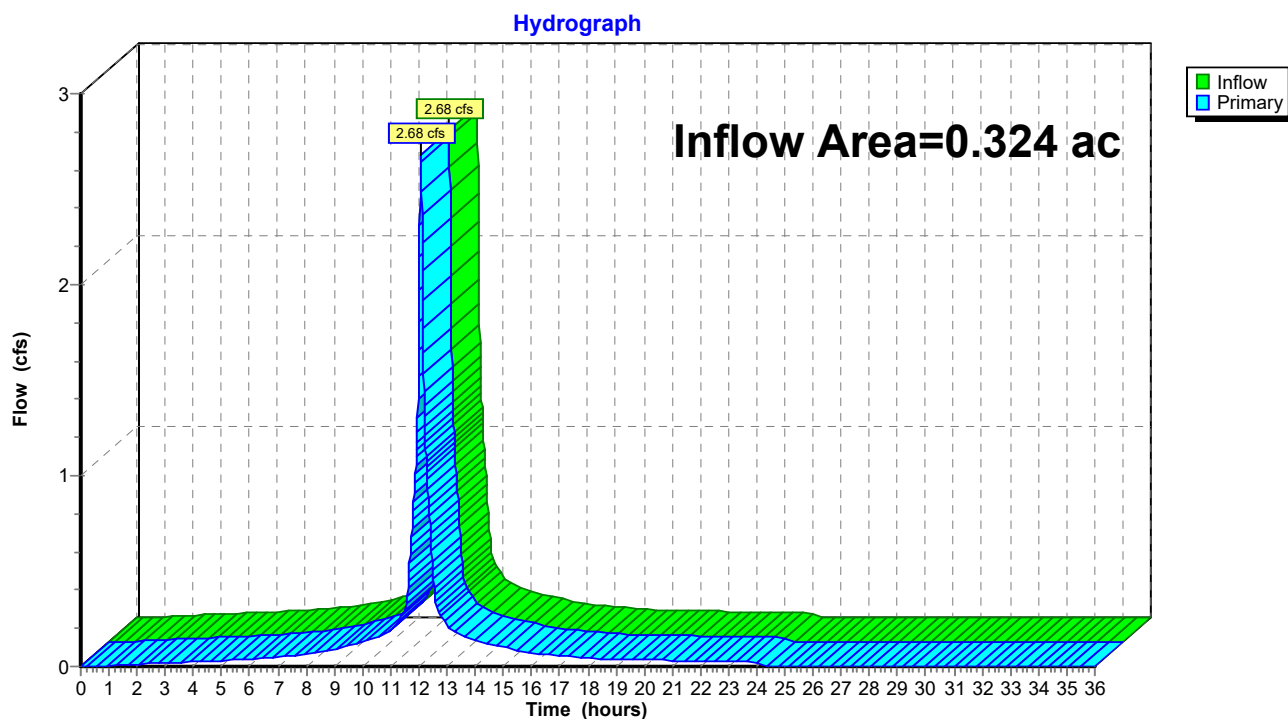
Page 19

### Summary for Link DP-1: Dudley Street

Inflow Area = 0.324 ac, 94.26% Impervious, Inflow Depth = 7.80" for 100-year event  
Inflow = 2.68 cfs @ 12.07 hrs, Volume= 0.211 af  
Primary = 2.68 cfs @ 12.07 hrs, Volume= 0.211 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-1: Dudley Street



## 52816.00 - Existing

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Existing Conditions

Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

Page 20

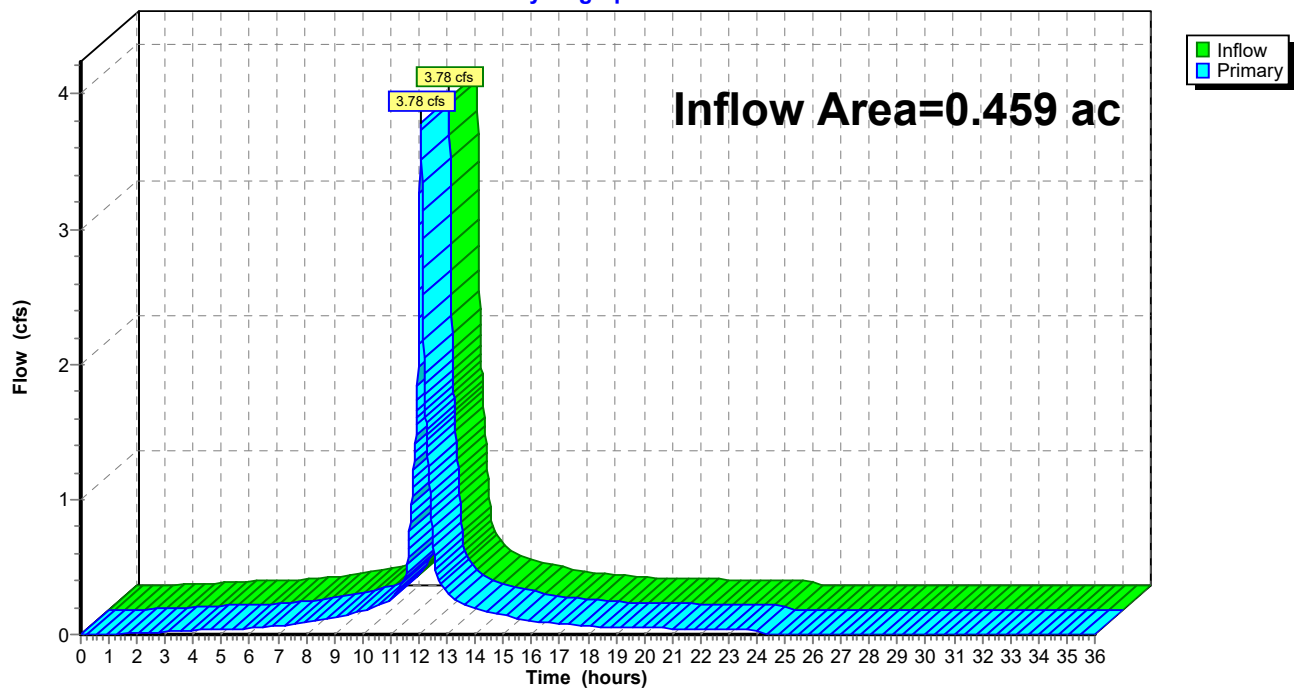
### Summary for Link DP-2: Mill Brook

Inflow Area = 0.459 ac, 91.47% Impervious, Inflow Depth = 7.68" for 100-year event  
Inflow = 3.78 cfs @ 12.07 hrs, Volume= 0.294 af  
Primary = 3.78 cfs @ 12.07 hrs, Volume= 0.294 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-2: Mill Brook

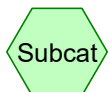
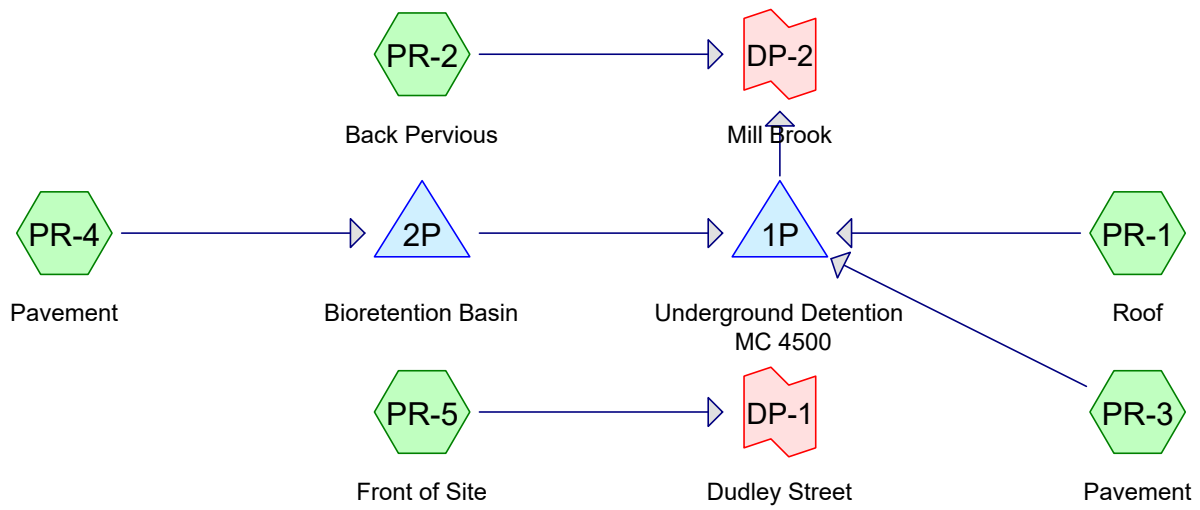
Hydrograph



## HydroCAD Analysis: Proposed Conditions



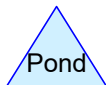
## 2-Year Storm Event – Proposed



Subcat



Reach



Pond



Link

**Routing Diagram for 52816.00 - Proposed**

Prepared by VHB, Printed 2/4/2022

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

**52816.00 - Proposed**

Prepared by VHB

Printed 2/4/2022

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

Page 2

**Rainfall Events Listing**

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	Type III 24-hr		Default	24.00	1	3.27	2
2	10-year	Type III 24-hr		Default	24.00	1	5.16	2
3	25-year	Type III 24-hr		Default	24.00	1	6.35	2
4	100-year	Type III 24-hr		Default	24.00	1	8.16	2



**52816.00 - Proposed**

Prepared by VHB

Printed 2/4/2022

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

Page 3

**Area Listing (selected nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
0.179	80	>75% Grass cover, Good, HSG D (PR-2, PR-3, PR-5)
0.088	98	Paved parking, HSG D (PR-2, PR-3, PR-4, PR-5)
0.515	98	Roofs, HSG D (PR-1)
<b>0.783</b>	<b>94</b>	<b>TOTAL AREA</b>

**52816.00 - Proposed**

Prepared by VHB

Printed 2/4/2022

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

Page 4

**Ground Covers (selected nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.179	0.000	0.179	>75% Grass cover, Good	PR-2, PR-3, PR-5
0.000	0.000	0.000	0.088	0.000	0.088	Paved parking	PR-2, PR-3, PR-4, PR-5
0.000	0.000	0.000	0.515	0.000	0.515	Roofs	PR-1
<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.783</b>	<b>0.000</b>	<b>0.783</b>	<b>TOTAL AREA</b>	

## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 5

### Summary for Subcatchment PR-1: Roof

Runoff = 1.69 cfs @ 12.07 hrs, Volume= 0.130 af, Depth= 3.04"

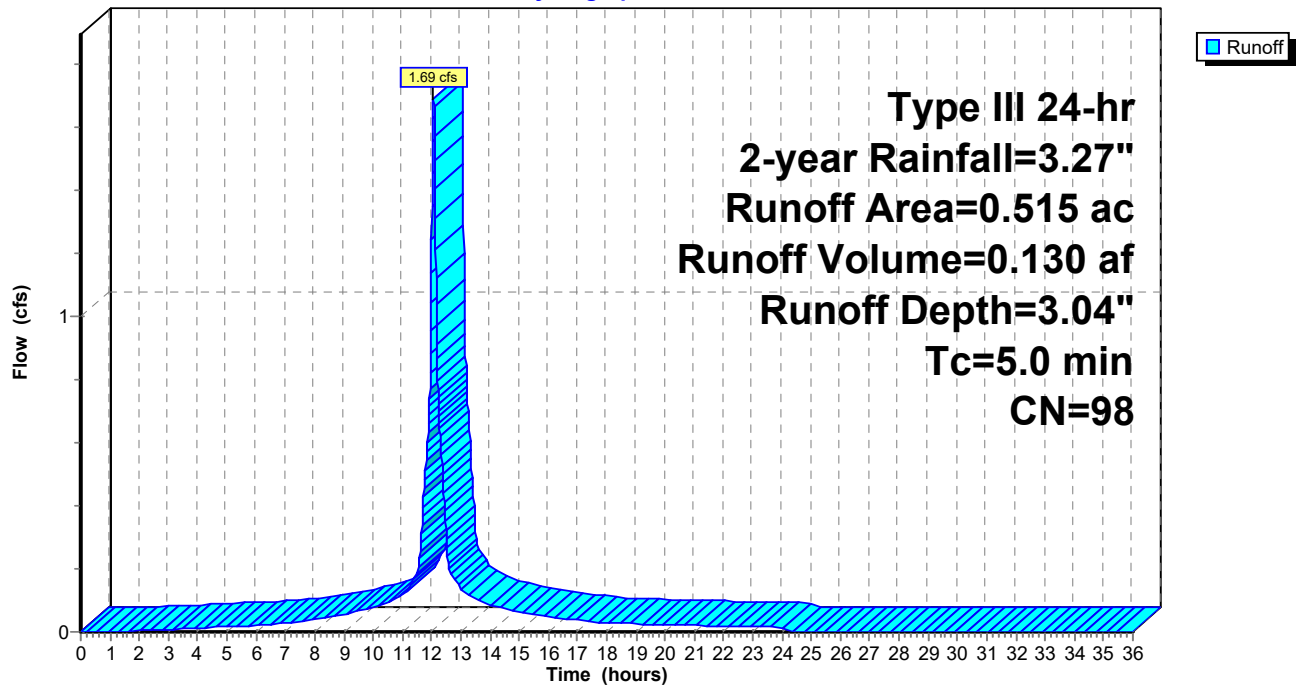
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.27"

Area (ac)	CN	Description
0.515	98	Roofs, HSG D
0.515		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-1: Roof

Hydrograph





## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 6

### Summary for Subcatchment PR-2: Back Pervious

Runoff = 0.28 cfs @ 12.08 hrs, Volume= 0.019 af, Depth= 1.46"

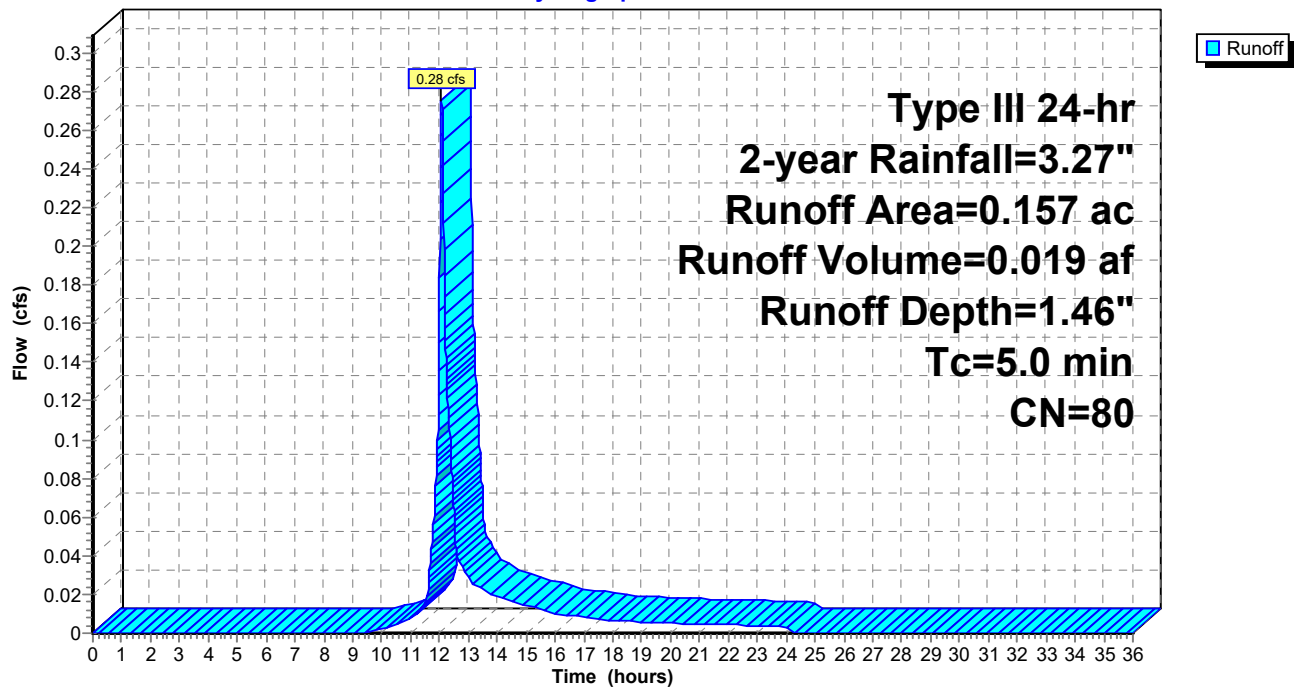
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.27"

Area (ac)	CN	Description
0.156	80	>75% Grass cover, Good, HSG D
0.001	98	Paved parking, HSG D
0.157	80	Weighted Average
0.156		99.07% Pervious Area
0.001		0.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-2: Back Pervious

Hydrograph



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 7

### Summary for Subcatchment PR-3: Pavement

Runoff = 0.03 cfs @ 12.07 hrs, Volume= 0.002 af, Depth= 2.82"

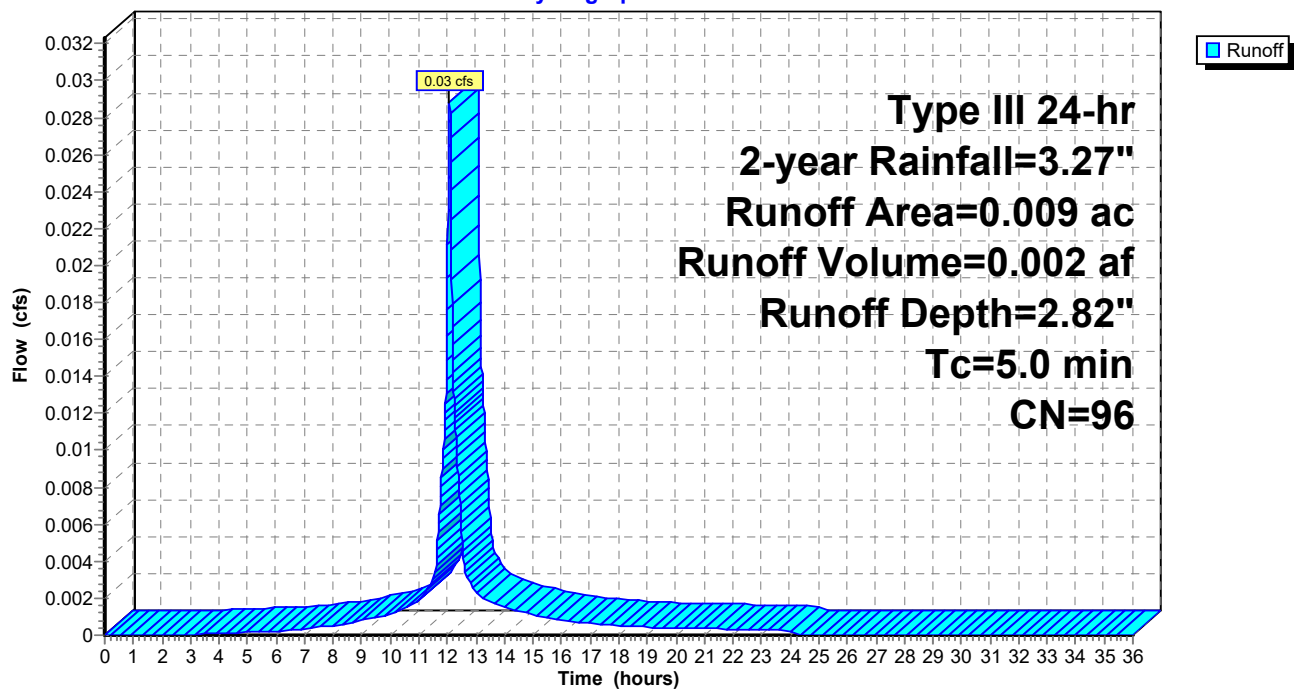
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.27"

Area (ac)	CN	Description
0.001	80	>75% Grass cover, Good, HSG D
0.008	98	Paved parking, HSG D
0.009	96	Weighted Average
0.001		10.00% Pervious Area
0.008		90.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-3: Pavement

Hydrograph



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 8

### Summary for Subcatchment PR-4: Pavement

Runoff = 0.22 cfs @ 12.07 hrs, Volume= 0.017 af, Depth= 3.04"

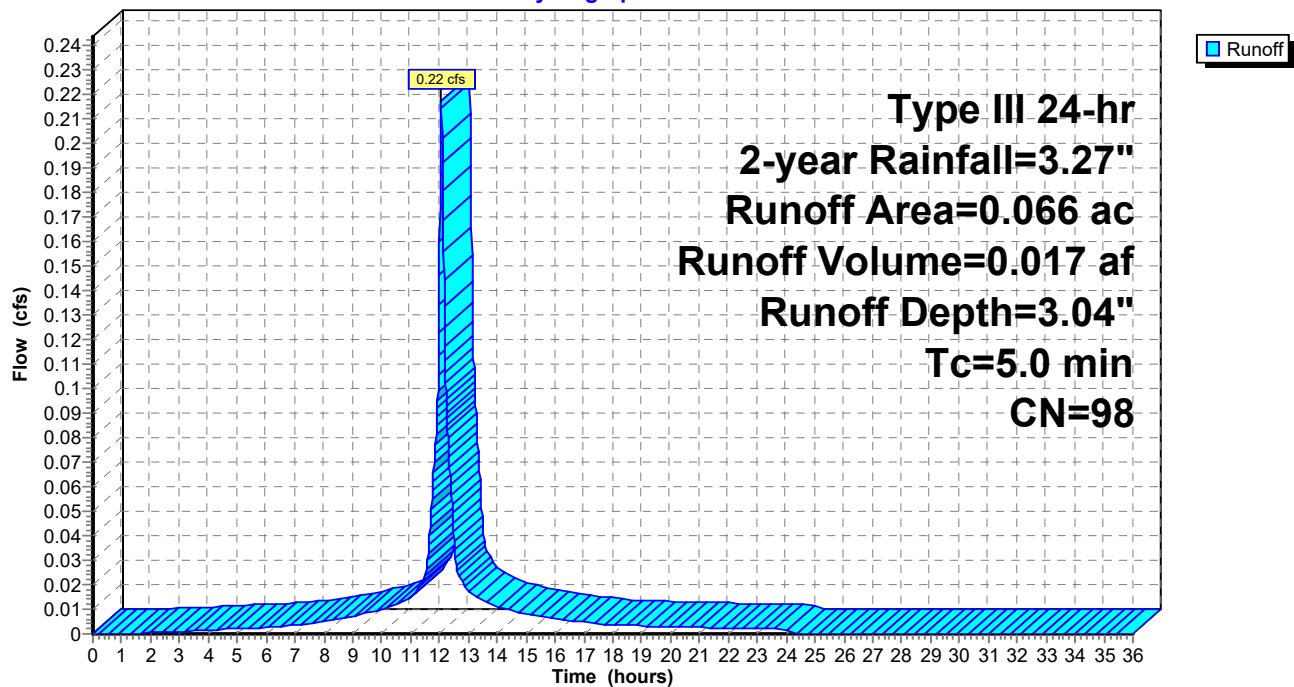
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.27"

Area (ac)	CN	Description
0.066	98	Paved parking, HSG D
0.066		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-4: Pavement

Hydrograph





## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 9

### Summary for Subcatchment PR-5: Front of Site

Runoff = 0.08 cfs @ 12.07 hrs, Volume= 0.006 af, Depth= 1.90"

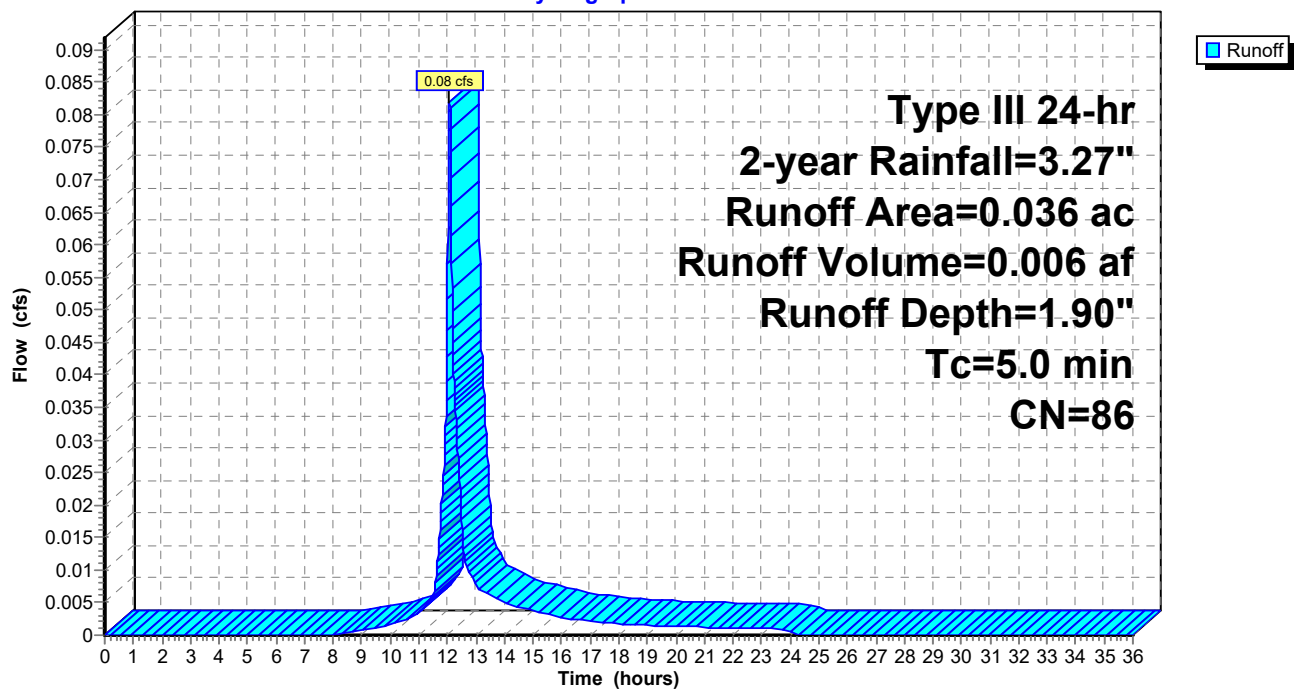
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.27"

Area (ac)	CN	Description
0.023	80	>75% Grass cover, Good, HSG D
0.013	98	Paved parking, HSG D
0.036	86	Weighted Average
0.023		64.04% Pervious Area
0.013		35.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-5: Front of Site

Hydrograph



**52816.00 - Proposed**

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 10

**Summary for Pond 1P: Underground Detention MC 4500**

Inflow Area = 0.590 ac, 99.85% Impervious, Inflow Depth = 2.84" for 2-year event  
 Inflow = 1.92 cfs @ 12.07 hrs, Volume= 0.140 af  
 Outflow = 0.52 cfs @ 12.40 hrs, Volume= 0.140 af, Atten= 73%, Lag= 19.8 min  
 Discarded = 0.06 cfs @ 9.40 hrs, Volume= 0.109 af  
 Primary = 0.46 cfs @ 12.40 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Peak Elev= 72.20' @ 12.40 hrs Surf.Area= 1,112 sf Storage= 2,371 cf

Plug-Flow detention time= 223.8 min calculated for 0.140 af (100% of inflow)  
 Center-of-Mass det. time= 223.8 min ( 977.9 - 754.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	69.10'	1,939 cf	<b>Custom Stage Data (Irregular)</b> Listed below 7,506 cf Overall - 2,659 cf Embedded = 4,847 cf x 40.0% Voids
#2	69.85'	824 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 7 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
#3	69.85'	824 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 7 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
#4	69.85'	611 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 5 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
#5	69.85'	398 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 3 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
		4,598 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
69.10	1,112	146.5	0	0	1,112
75.85	1,112	146.5	7,506	7,506	2,101

Device	Routing	Invert	Outlet Devices
#1	Primary	71.70'	<b>12.0" Round Culvert</b> L= 15.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 71.70' / 71.60' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	71.70'	<b>6.0" W x 4.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	73.70'	<b>6.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Device 1	75.80'	<b>4.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)
#5	Discarded	69.10'	<b>2.400 in/hr Exfiltration over Surface area</b>

## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 11

**Discarded OutFlow** Max=0.06 cfs @ 9.40 hrs HW=69.17' (Free Discharge)

↑ **5=Exfiltration** (Exfiltration Controls 0.06 cfs)

**Primary OutFlow** Max=0.46 cfs @ 12.40 hrs HW=72.20' (Free Discharge)

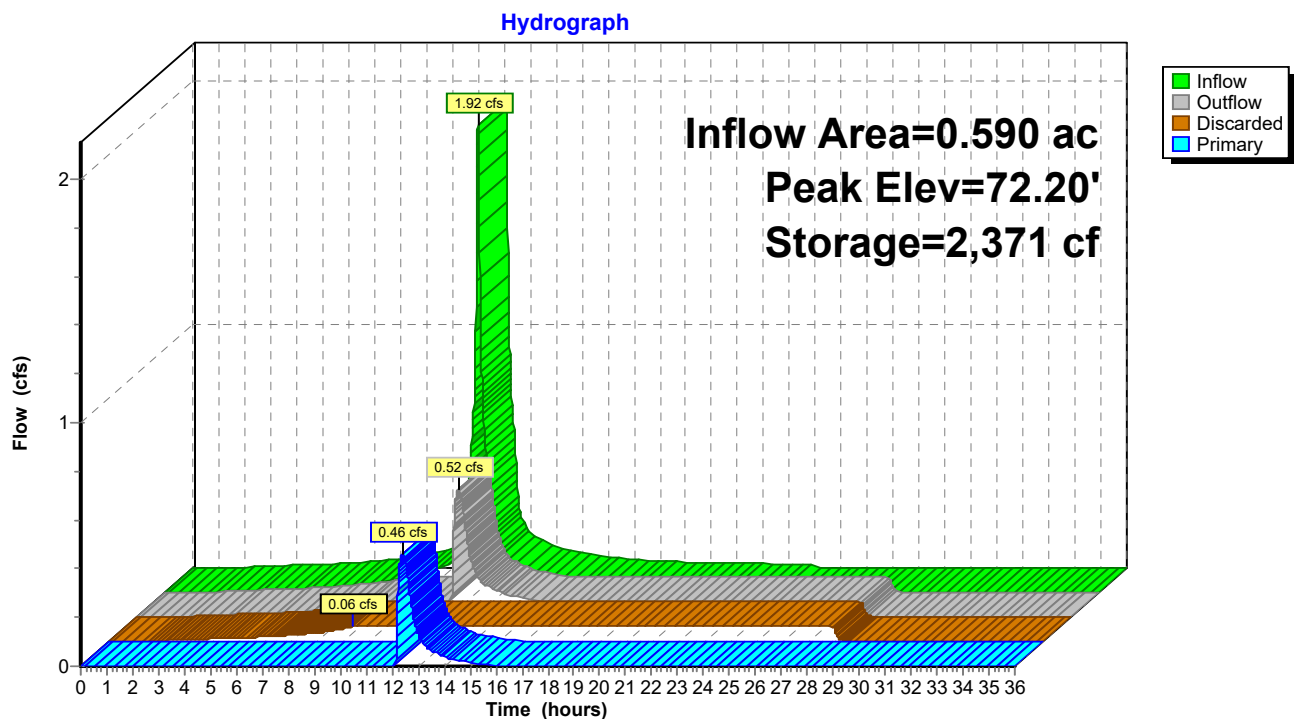
↑ **1=Culvert** (Passes 0.46 cfs of 0.71 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.46 cfs @ 2.76 fps)

↑ **3=Orifice/Grate** (Controls 0.00 cfs)

↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

### Pond 1P: Underground Detention MC 4500





**52816.00 - Proposed**

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 12

**Summary for Pond 2P: Bioretention Basin**

Inflow Area = 0.066 ac, 100.00% Impervious, Inflow Depth = 3.04" for 2-year event  
 Inflow = 0.22 cfs @ 12.07 hrs, Volume= 0.017 af  
 Outflow = 0.21 cfs @ 12.08 hrs, Volume= 0.017 af, Atten= 2%, Lag= 0.8 min  
 Discarded = 0.01 cfs @ 12.08 hrs, Volume= 0.010 af  
 Primary = 0.20 cfs @ 12.08 hrs, Volume= 0.007 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 76.32' @ 12.08 hrs Surf.Area= 213 sf Storage= 81 cf

Plug-Flow detention time= 51.9 min calculated for 0.017 af (100% of inflow)

Center-of-Mass det. time= 51.9 min ( 806.9 - 755.0 )

Volume	Invert	Avail.Storage	Storage Description		
#1	75.50'	127 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.50	41	32.2	0	0	41
76.10	115	45.3	45	45	125
76.50	312	83.9	82	127	523

Device	Routing	Invert	Outlet Devices
#1	Primary	72.00'	<b>12.0" Round Culvert</b> L= 15.9' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 72.00' / 71.50' S= 0.0314 ' S= 0.0314 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	76.25'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 in 12.0" Grate (100% open area) Limited to weir flow at low heads
#3	Discarded	75.50'	<b>2.400 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.01 cfs @ 12.08 hrs HW=76.32' (Free Discharge)↑ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)**Primary OutFlow** Max=0.20 cfs @ 12.08 hrs HW=76.32' TW=75.72' (Fixed TW Elev= 75.72')↑ **1=Culvert** (Passes 0.20 cfs of 2.94 cfs potential flow)↑ **2=Orifice/Grate** (Weir Controls 0.20 cfs @ 0.88 fps)

## 52816.00 - Proposed

Prepared by VHB

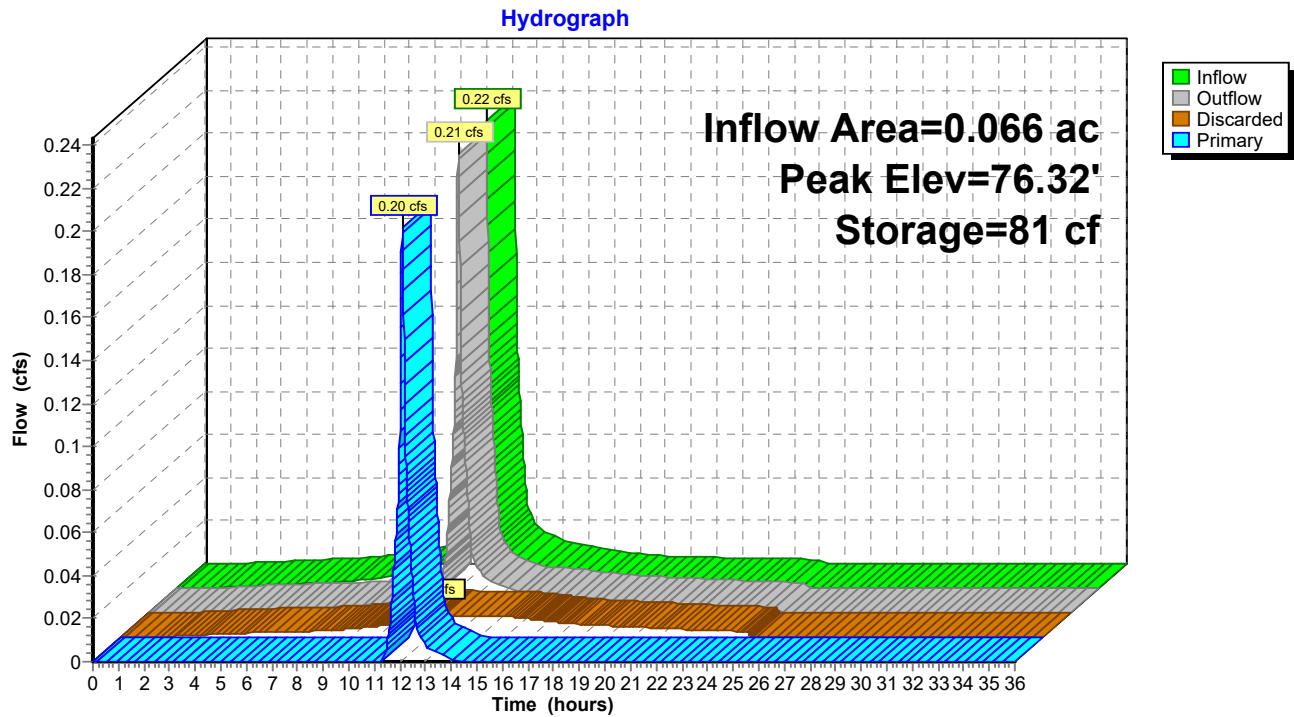
HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 13

### Pond 2P: Bioretention Basin



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 14

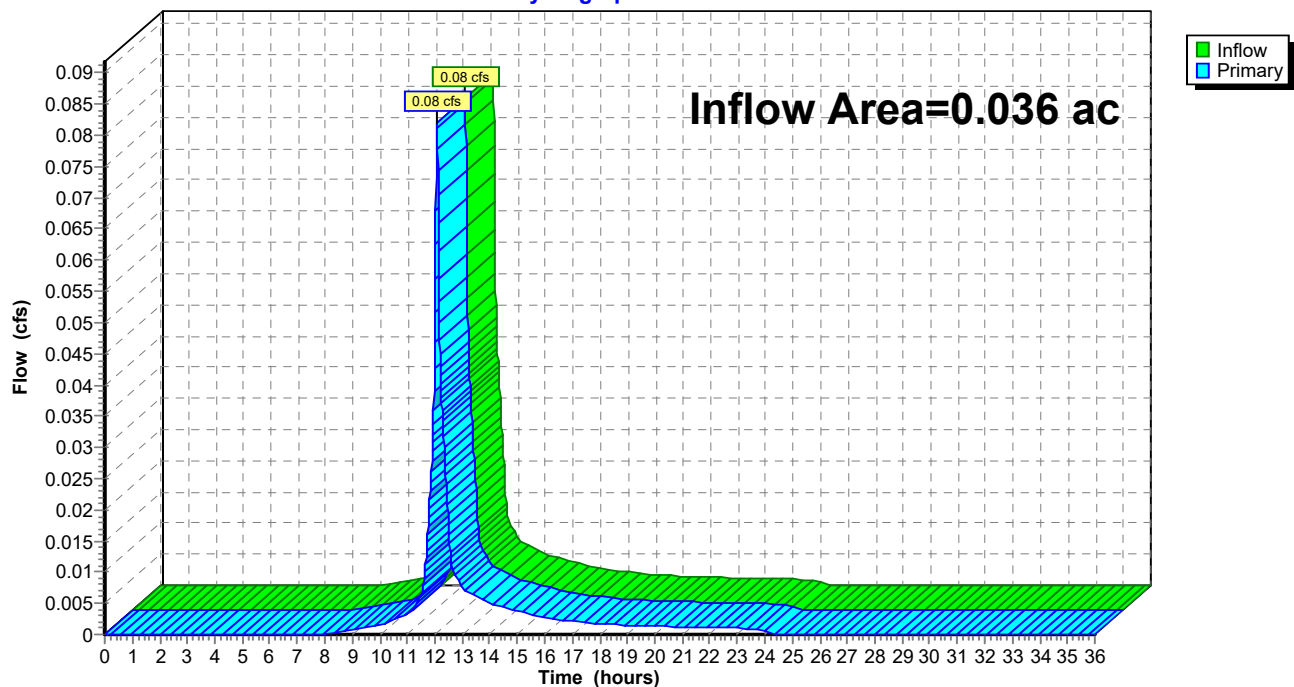
### Summary for Link DP-1: Dudley Street

Inflow Area = 0.036 ac, 35.96% Impervious, Inflow Depth = 1.90" for 2-year event  
Inflow = 0.08 cfs @ 12.07 hrs, Volume= 0.006 af  
Primary = 0.08 cfs @ 12.07 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-1: Dudley Street

Hydrograph





## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 2-year Rainfall=3.27"

Printed 2/4/2022

Page 15

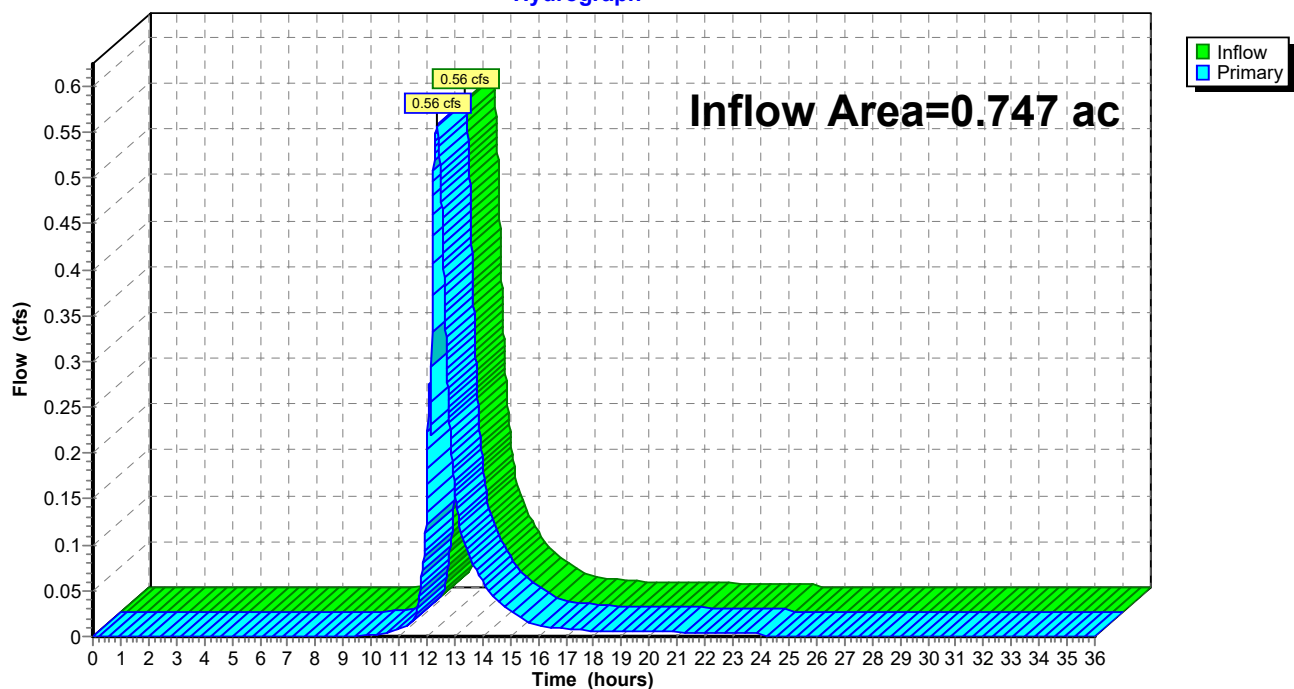
### Summary for Link DP-2: Mill Brook

Inflow Area = 0.747 ac, 79.04% Impervious, Inflow Depth = 0.80" for 2-year event  
Inflow = 0.56 cfs @ 12.36 hrs, Volume= 0.050 af  
Primary = 0.56 cfs @ 12.36 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-2: Mill Brook

Hydrograph



## 10-Year Storm Event – Proposed

## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions

Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

Page 16

### Summary for Subcatchment PR-1: Roof

Runoff = 2.69 cfs @ 12.07 hrs, Volume= 0.211 af, Depth= 4.92"

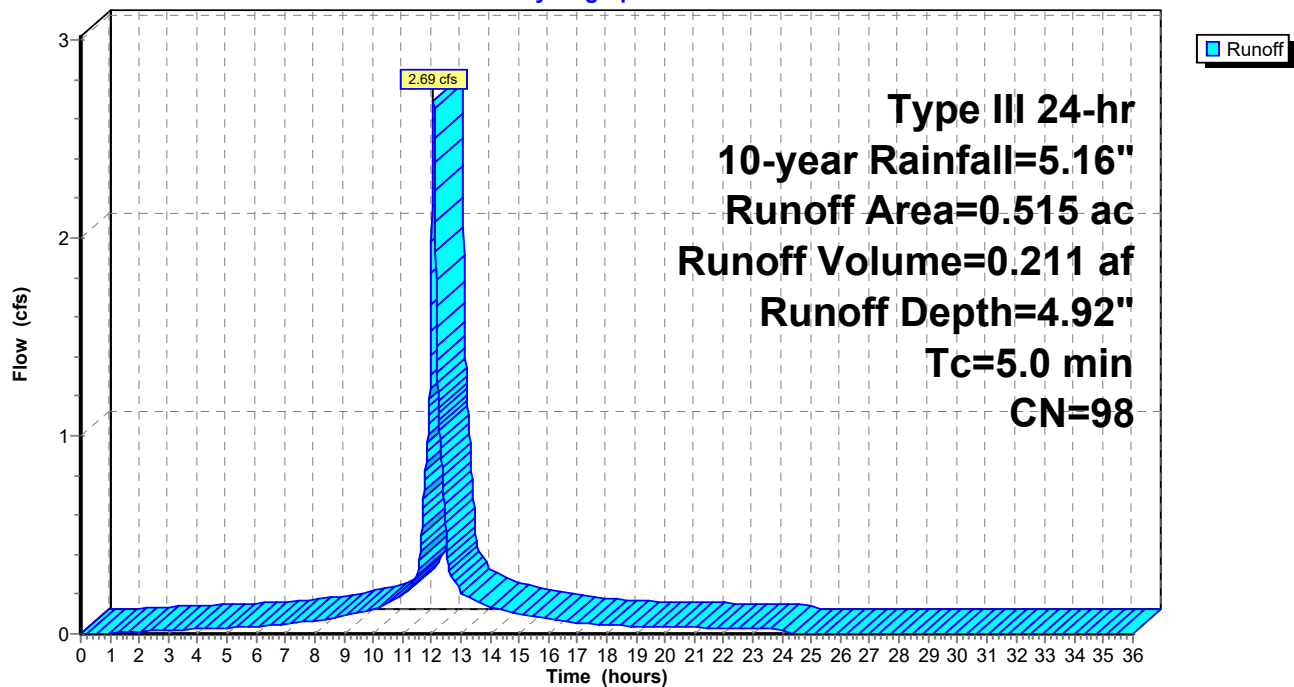
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=5.16"

Area (ac)	CN	Description
0.515	98	Roofs, HSG D
0.515		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-1: Roof

Hydrograph





## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

Page 17

### Summary for Subcatchment PR-2: Back Pervious

Runoff = 0.58 cfs @ 12.07 hrs, Volume= 0.040 af, Depth= 3.03"

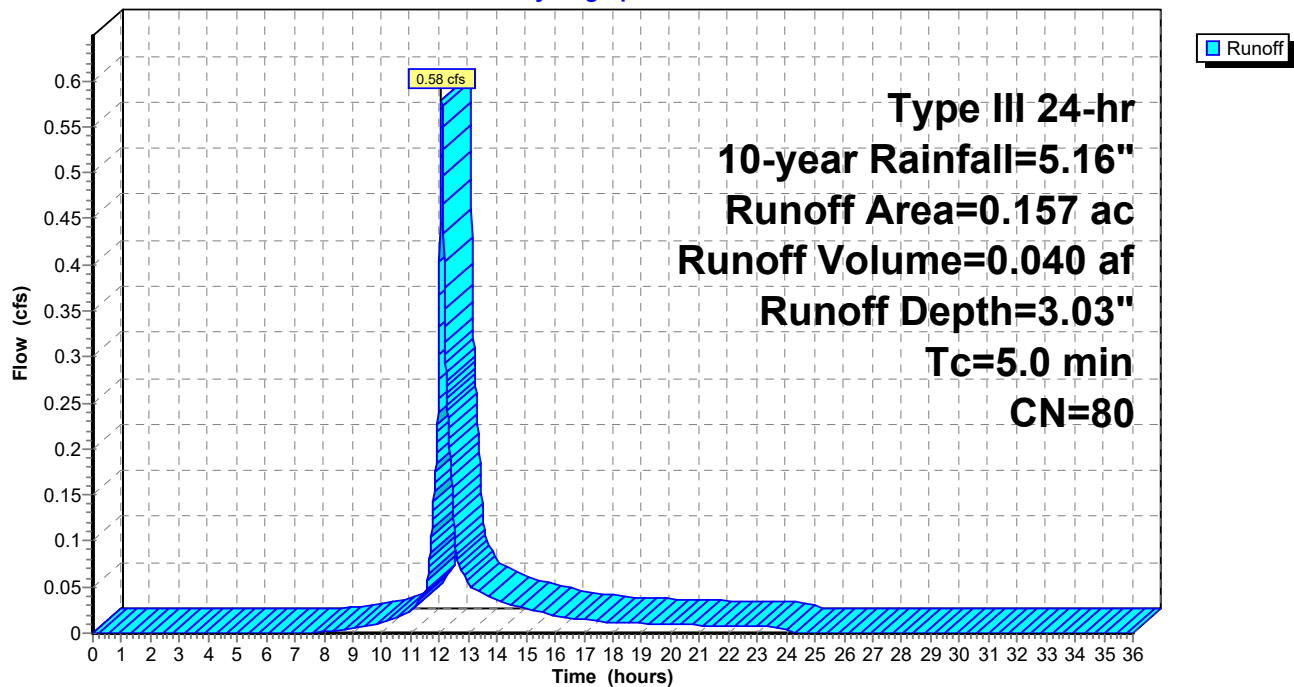
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=5.16"

Area (ac)	CN	Description
0.156	80	>75% Grass cover, Good, HSG D
0.001	98	Paved parking, HSG D
0.157	80	Weighted Average
0.156		99.07% Pervious Area
0.001		0.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-2: Back Pervious

Hydrograph



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

Page 18

### Summary for Subcatchment PR-3: Pavement

Runoff = 0.05 cfs @ 12.07 hrs, Volume= 0.004 af, Depth= 4.69"

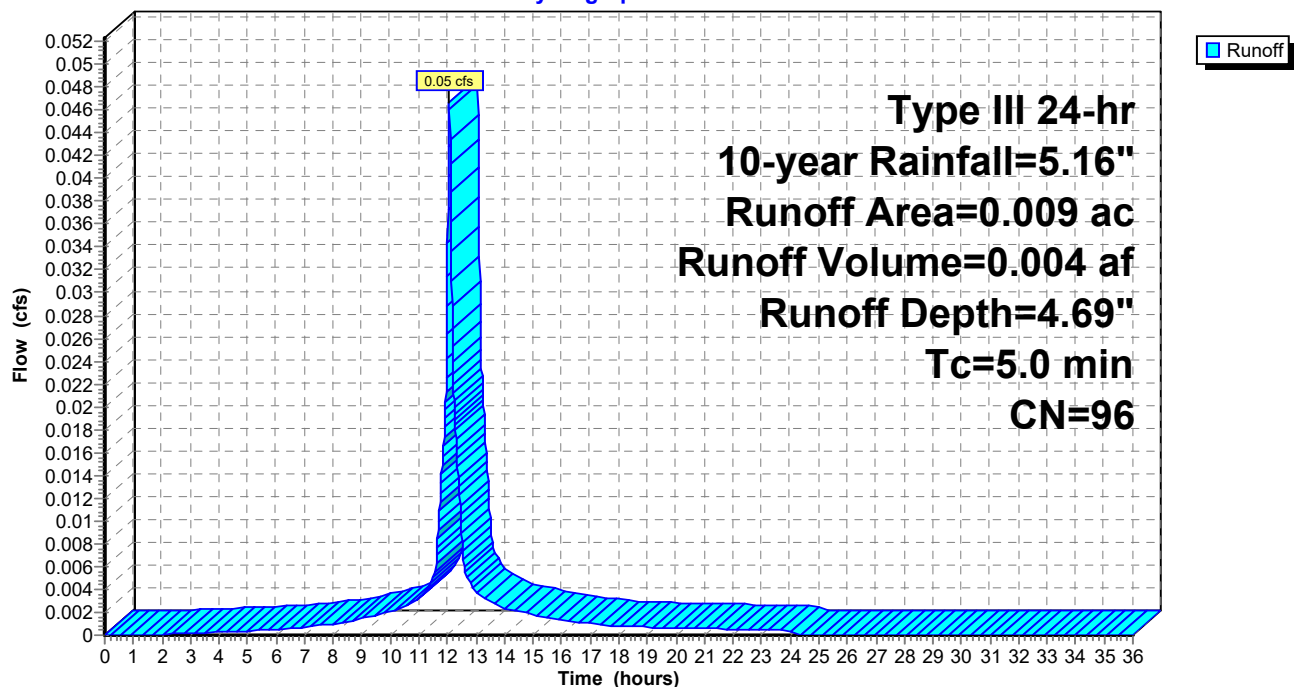
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=5.16"

Area (ac)	CN	Description
0.001	80	>75% Grass cover, Good, HSG D
0.008	98	Paved parking, HSG D
0.009	96	Weighted Average
0.001		10.00% Pervious Area
0.008		90.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-3: Pavement

Hydrograph



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

Page 19

### Summary for Subcatchment PR-4: Pavement

Runoff = 0.35 cfs @ 12.07 hrs, Volume= 0.027 af, Depth= 4.92"

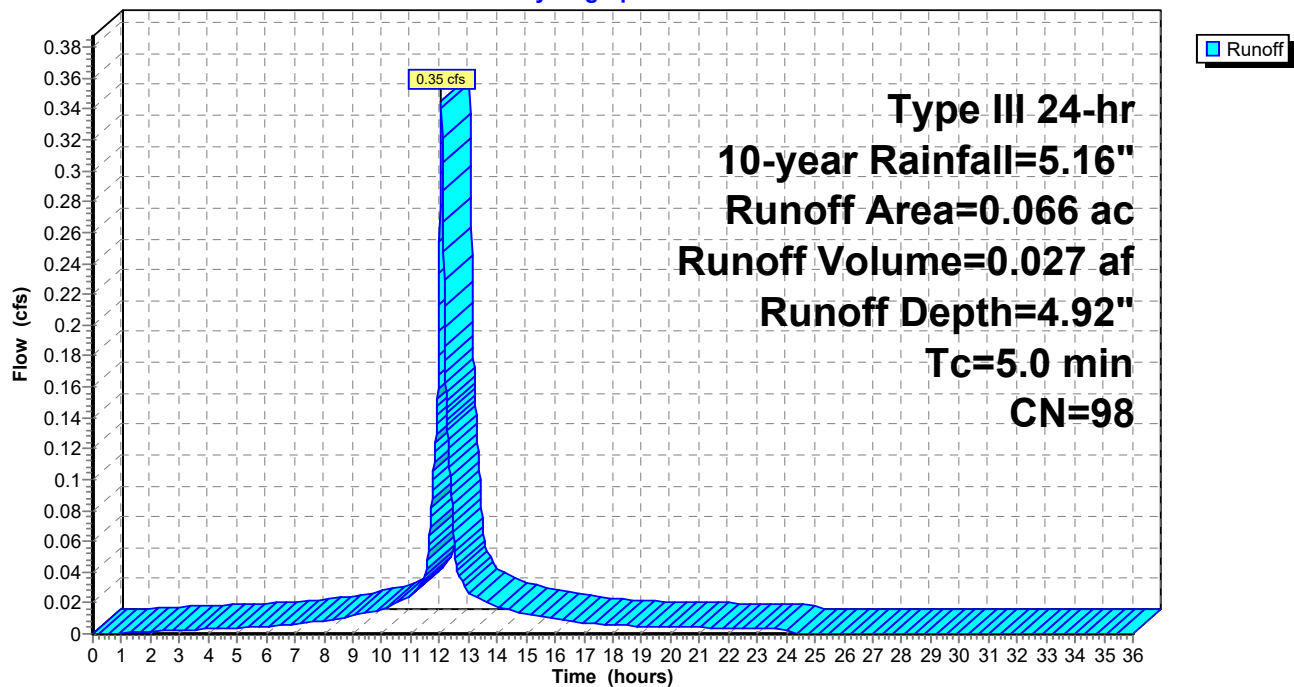
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=5.16"

Area (ac)	CN	Description
0.066	98	Paved parking, HSG D
0.066		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-4: Pavement

Hydrograph





## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

Page 20

### Summary for Subcatchment PR-5: Front of Site

Runoff = 0.15 cfs @ 12.07 hrs, Volume= 0.011 af, Depth= 3.62"

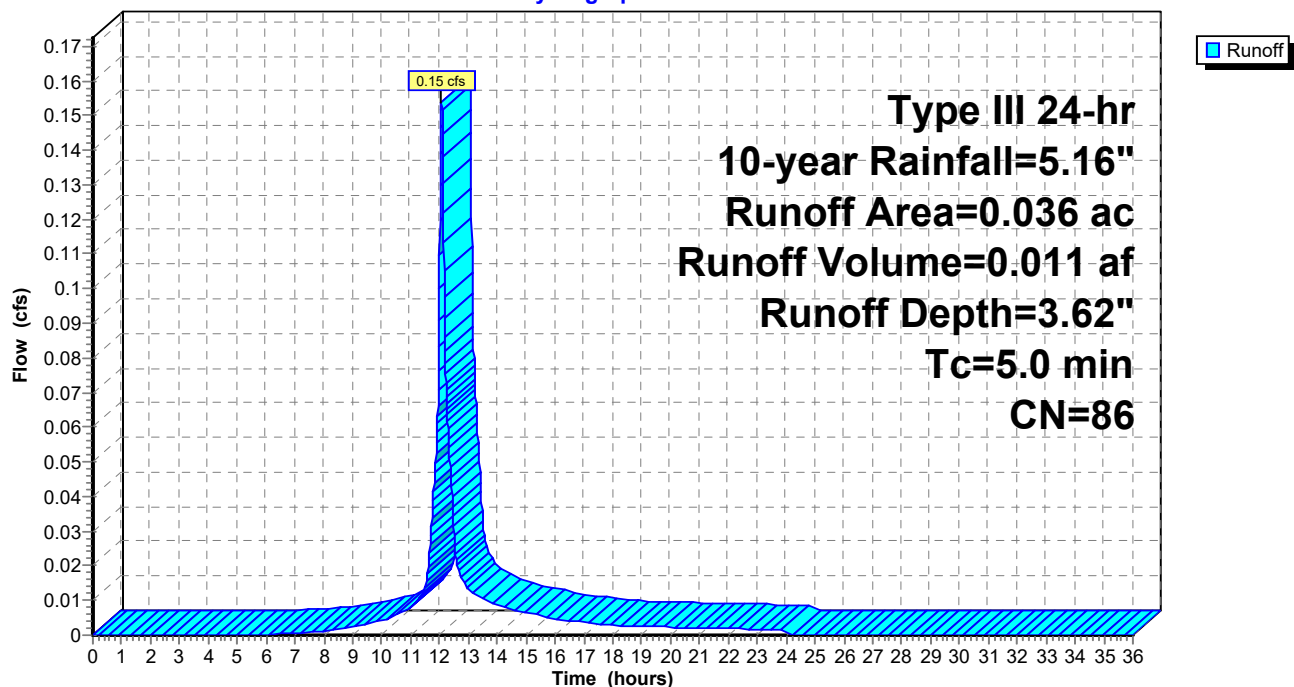
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=5.16"

Area (ac)	CN	Description
0.023	80	>75% Grass cover, Good, HSG D
0.013	98	Paved parking, HSG D
0.036	86	Weighted Average
0.023		64.04% Pervious Area
0.013		35.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-5: Front of Site

Hydrograph



**52816.00 - Proposed**

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

Page 21

**Summary for Pond 1P: Underground Detention MC 4500**

Inflow Area = 0.590 ac, 99.85% Impervious, Inflow Depth = 4.66" for 10-year event  
 Inflow = 3.06 cfs @ 12.07 hrs, Volume= 0.229 af  
 Outflow = 1.15 cfs @ 12.29 hrs, Volume= 0.229 af, Atten= 62%, Lag= 12.9 min  
 Discarded = 0.06 cfs @ 7.96 hrs, Volume= 0.128 af  
 Primary = 1.09 cfs @ 12.29 hrs, Volume= 0.101 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Peak Elev= 73.71' @ 12.29 hrs Surf.Area= 1,112 sf Storage= 3,510 cf

Plug-Flow detention time= 175.4 min calculated for 0.229 af (100% of inflow)  
 Center-of-Mass det. time= 175.5 min ( 921.3 - 745.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	69.10'	1,939 cf	<b>Custom Stage Data (Irregular)</b> Listed below 7,506 cf Overall - 2,659 cf Embedded = 4,847 cf x 40.0% Voids
#2	69.85'	824 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 7 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
#3	69.85'	824 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 7 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
#4	69.85'	611 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 5 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
#5	69.85'	398 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 3 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
		4,598 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
69.10	1,112	146.5	0	0	1,112
75.85	1,112	146.5	7,506	7,506	2,101

Device	Routing	Invert	Outlet Devices
#1	Primary	71.70'	<b>12.0" Round Culvert</b> L= 15.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 71.70' / 71.60' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	71.70'	<b>6.0" W x 4.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	73.70'	<b>6.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Device 1	75.80'	<b>4.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)
#5	Discarded	69.10'	<b>2.400 in/hr Exfiltration over Surface area</b>

## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 10-year Rainfall=5.16"

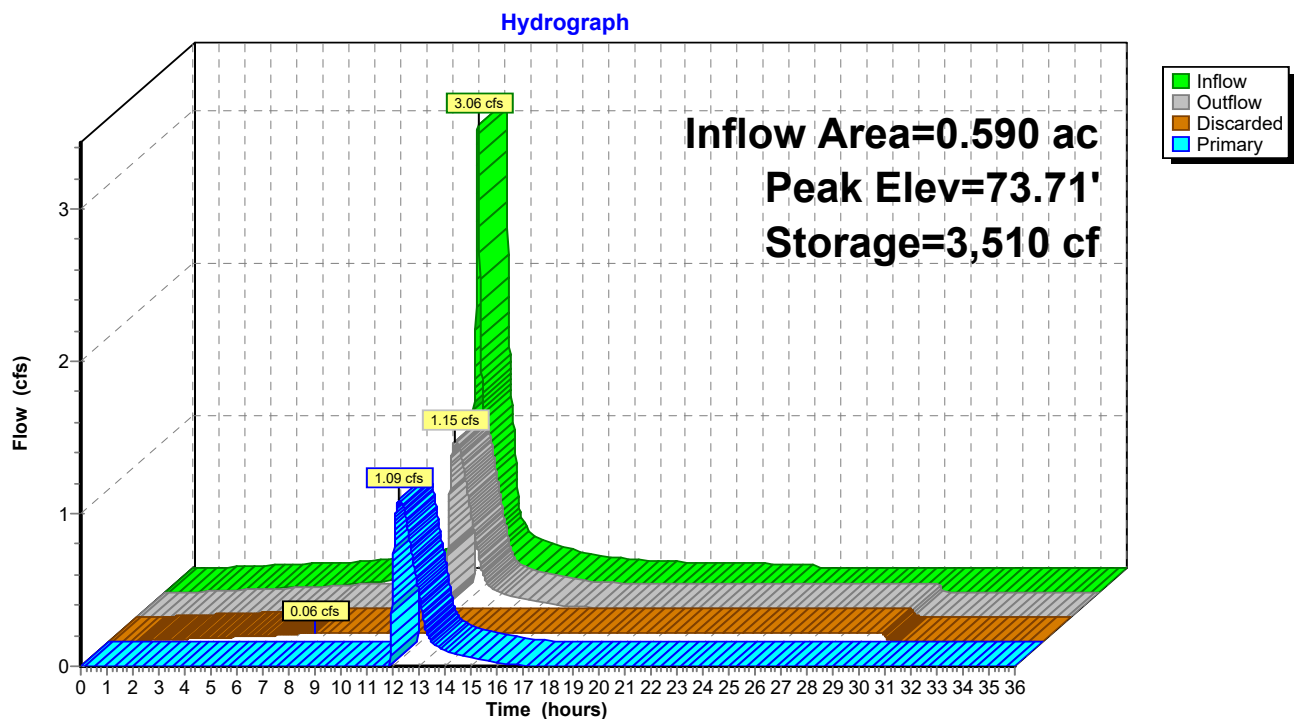
Printed 2/4/2022

Page 22

**Discarded OutFlow** Max=0.06 cfs @ 7.96 hrs HW=69.17' (Free Discharge)  
↑ **5=Exfiltration** (Exfiltration Controls 0.06 cfs)

**Primary OutFlow** Max=1.09 cfs @ 12.29 hrs HW=73.71' (Free Discharge)  
↑ **1=Culvert** (Passes 1.09 cfs of 4.64 cfs potential flow)  
↑ **2=Orifice/Grate** (Orifice Controls 1.09 cfs @ 6.53 fps)  
↑ **3=Orifice/Grate** (Orifice Controls 0.00 cfs @ 0.30 fps)  
↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

### Pond 1P: Underground Detention MC 4500



**52816.00 - Proposed**

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

Page 23

**Summary for Pond 2P: Bioretention Basin**

Inflow Area = 0.066 ac, 100.00% Impervious, Inflow Depth = 4.92" for 10-year event  
 Inflow = 0.35 cfs @ 12.07 hrs, Volume= 0.027 af  
 Outflow = 0.34 cfs @ 12.08 hrs, Volume= 0.027 af, Atten= 1%, Lag= 0.8 min  
 Discarded = 0.01 cfs @ 12.08 hrs, Volume= 0.013 af  
 Primary = 0.33 cfs @ 12.08 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Peak Elev= 76.35' @ 12.08 hrs Surf.Area= 227 sf Storage= 87 cf

Plug-Flow detention time= 45.8 min calculated for 0.027 af (100% of inflow)  
 Center-of-Mass det. time= 45.8 min ( 792.4 - 746.6 )

Volume	Invert	Avail.Storage	Storage Description		
#1	75.50'	127 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.50	41	32.2	0	0	41
76.10	115	45.3	45	45	125
76.50	312	83.9	82	127	523

Device	Routing	Invert	Outlet Devices
#1	Primary	72.00'	<b>12.0" Round Culvert</b> L= 15.9' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 72.00' / 71.50' S= 0.0314 ' S= 0.0314 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	76.25'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 in 12.0" Grate (100% open area) Limited to weir flow at low heads
#3	Discarded	75.50'	<b>2.400 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.01 cfs @ 12.08 hrs HW=76.35' (Free Discharge)  
 ↑ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.33 cfs @ 12.08 hrs HW=76.35' TW=75.72' (Fixed TW Elev= 75.72')  
 ↑ **1=Culvert** (Passes 0.33 cfs of 3.00 cfs potential flow)  
 ↑ **2=Orifice/Grate** (Weir Controls 0.33 cfs @ 1.04 fps)



## 52816.00 - Proposed

Prepared by VHB

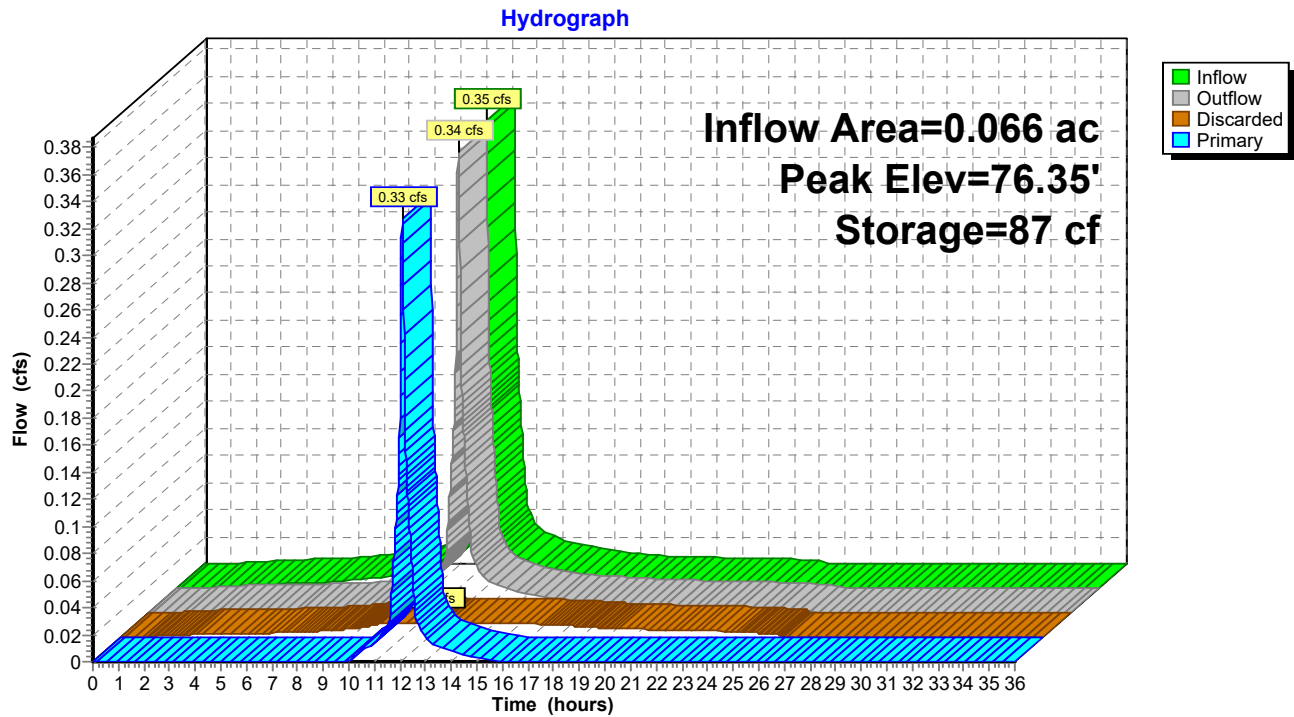
HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

Page 24

### Pond 2P: Bioretention Basin



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

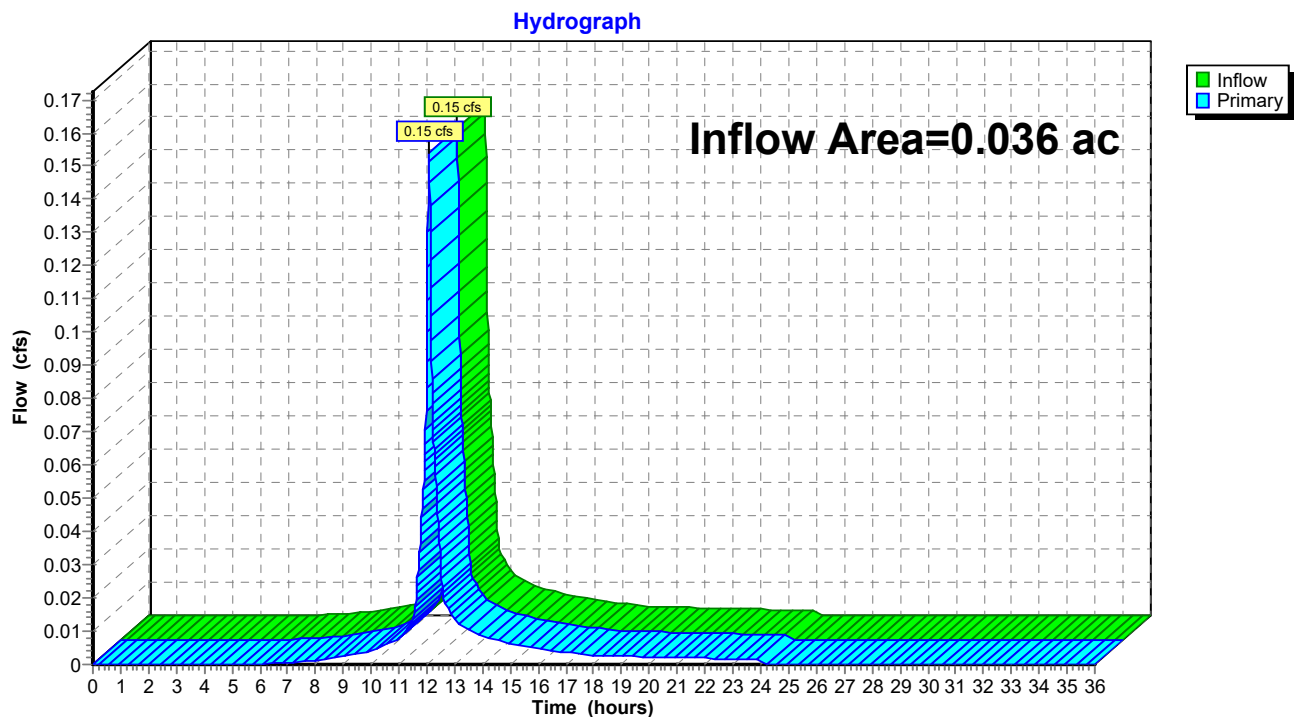
Page 25

### Summary for Link DP-1: Dudley Street

Inflow Area = 0.036 ac, 35.96% Impervious, Inflow Depth = 3.62" for 10-year event  
Inflow = 0.15 cfs @ 12.07 hrs, Volume= 0.011 af  
Primary = 0.15 cfs @ 12.07 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-1: Dudley Street



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions

Type III 24-hr 10-year Rainfall=5.16"

Printed 2/4/2022

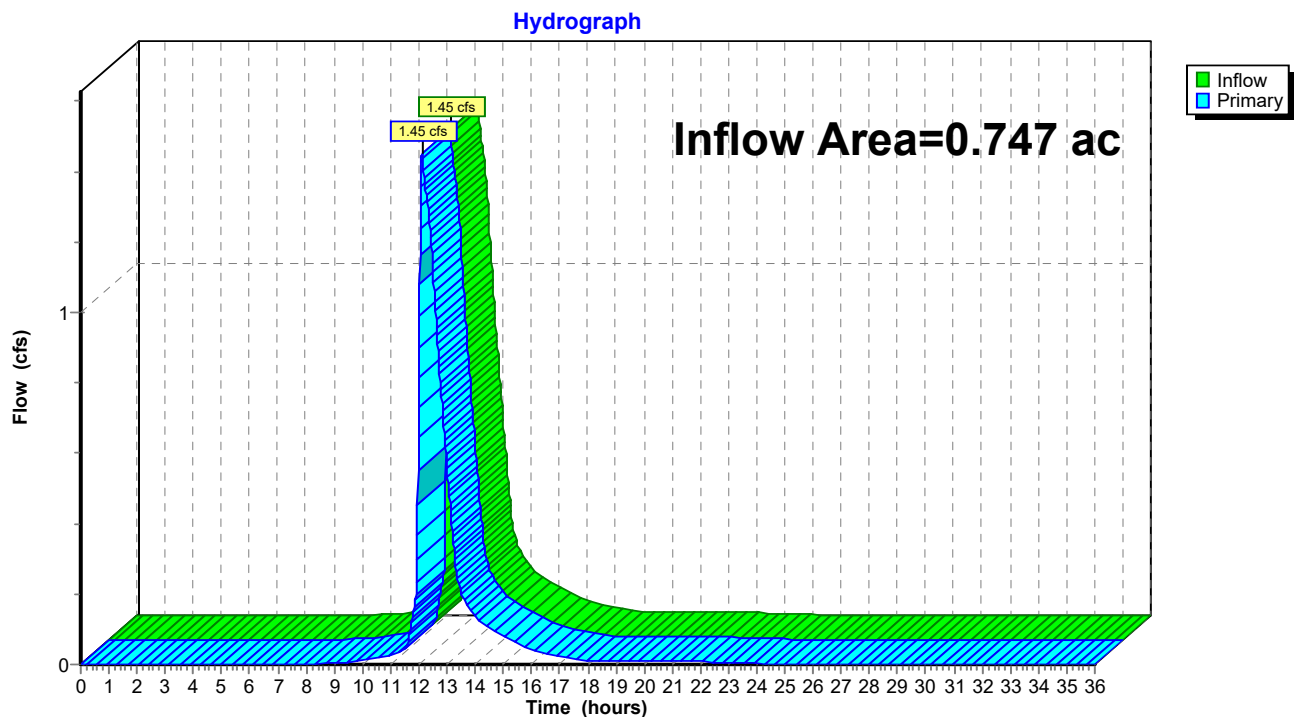
Page 26

### Summary for Link DP-2: Mill Brook

Inflow Area = 0.747 ac, 79.04% Impervious, Inflow Depth = 2.26" for 10-year event  
Inflow = 1.45 cfs @ 12.11 hrs, Volume= 0.141 af  
Primary = 1.45 cfs @ 12.11 hrs, Volume= 0.141 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-2: Mill Brook



## 25-Year Storm Event – Proposed



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions

Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

Page 27

### Summary for Subcatchment PR-1: Roof

Runoff = 3.32 cfs @ 12.07 hrs, Volume= 0.262 af, Depth= 6.11"

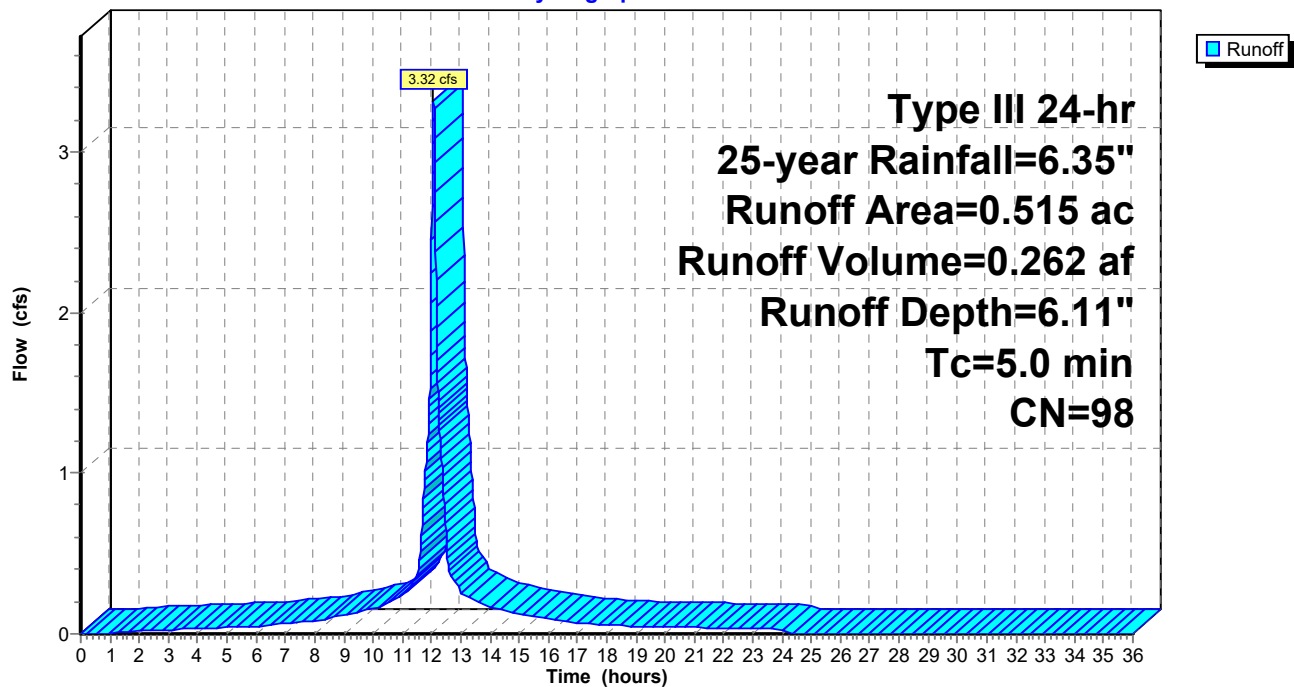
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=6.35"

Area (ac)	CN	Description
0.515	98	Roofs, HSG D
0.515		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-1: Roof

Hydrograph



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

Page 28

### Summary for Subcatchment PR-2: Back Pervious

Runoff = 0.78 cfs @ 12.07 hrs, Volume= 0.054 af, Depth= 4.10"

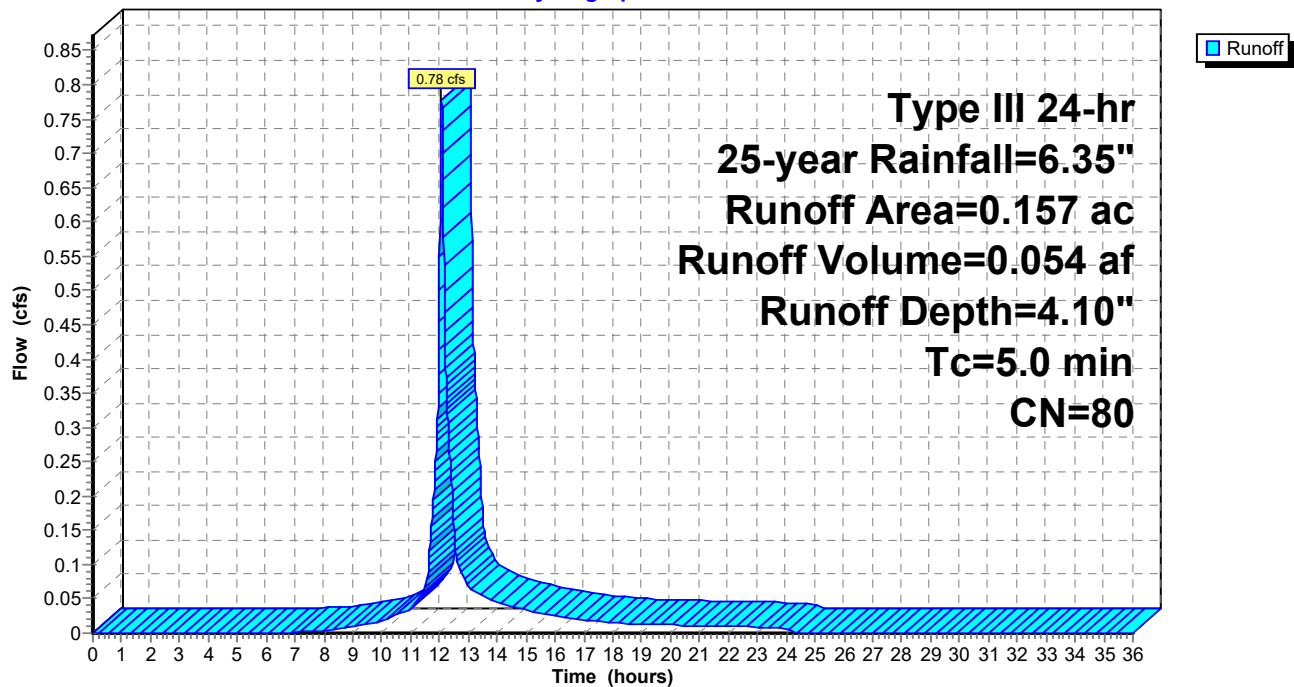
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=6.35"

Area (ac)	CN	Description
0.156	80	>75% Grass cover, Good, HSG D
0.001	98	Paved parking, HSG D
0.157	80	Weighted Average
0.156		99.07% Pervious Area
0.001		0.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-2: Back Pervious

Hydrograph



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

Page 29

### Summary for Subcatchment PR-3: Pavement

Runoff = 0.06 cfs @ 12.07 hrs, Volume= 0.004 af, Depth= 5.88"

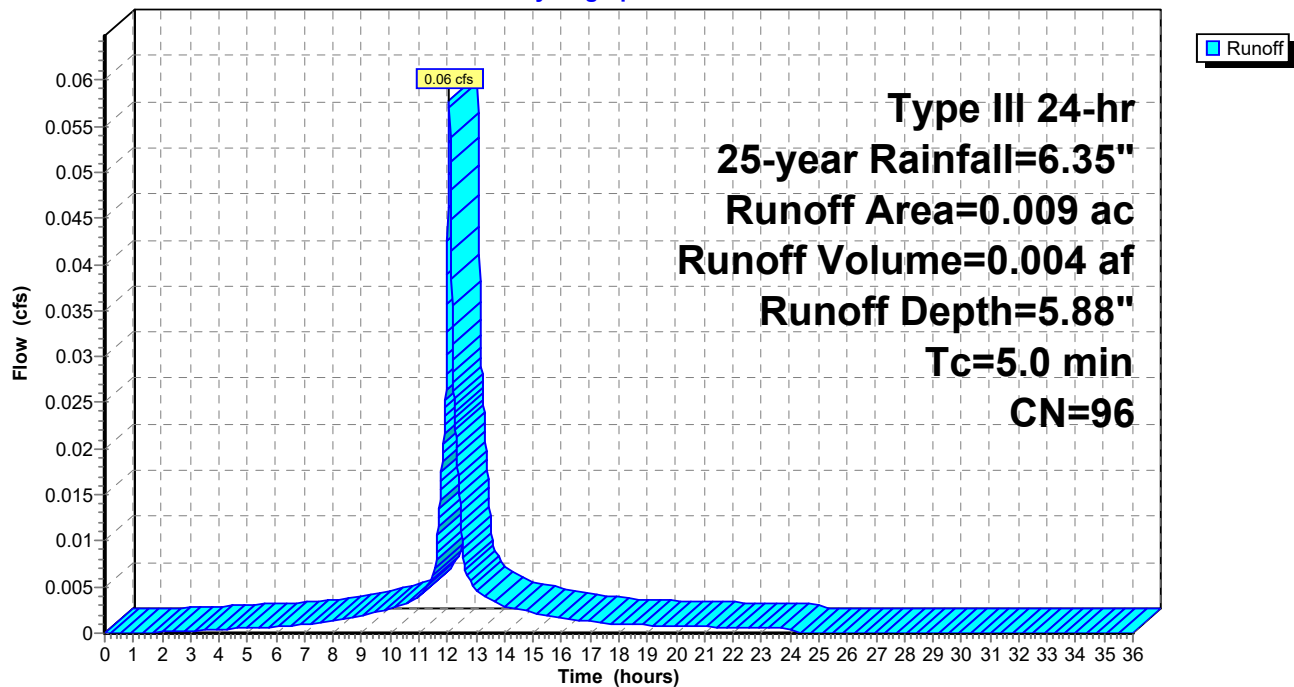
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=6.35"

Area (ac)	CN	Description
0.001	80	>75% Grass cover, Good, HSG D
0.008	98	Paved parking, HSG D
0.009	96	Weighted Average
0.001		10.00% Pervious Area
0.008		90.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-3: Pavement

Hydrograph



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

Page 30

### Summary for Subcatchment PR-4: Pavement

Runoff = 0.43 cfs @ 12.07 hrs, Volume= 0.034 af, Depth= 6.11"

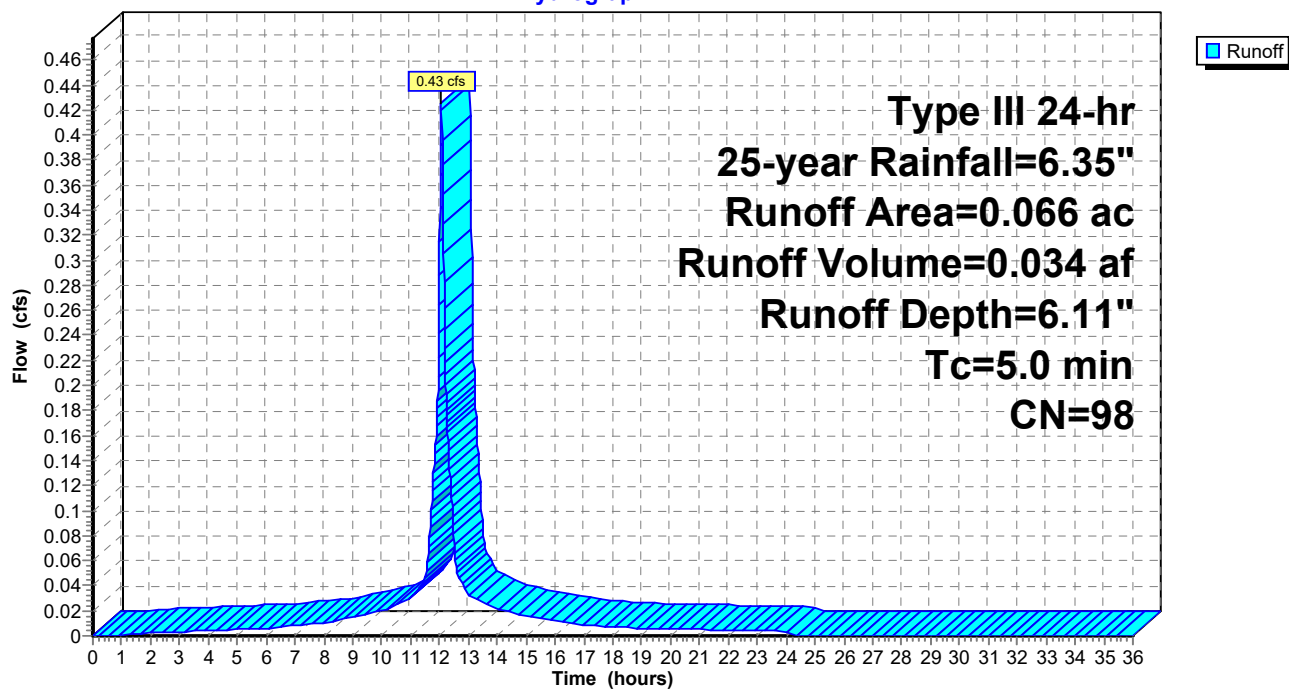
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=6.35"

Area (ac)	CN	Description
0.066	98	Paved parking, HSG D
0.066		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-4: Pavement

Hydrograph





## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

Page 31

### Summary for Subcatchment PR-5: Front of Site

Runoff = 0.20 cfs @ 12.07 hrs, Volume= 0.014 af, Depth= 4.74"

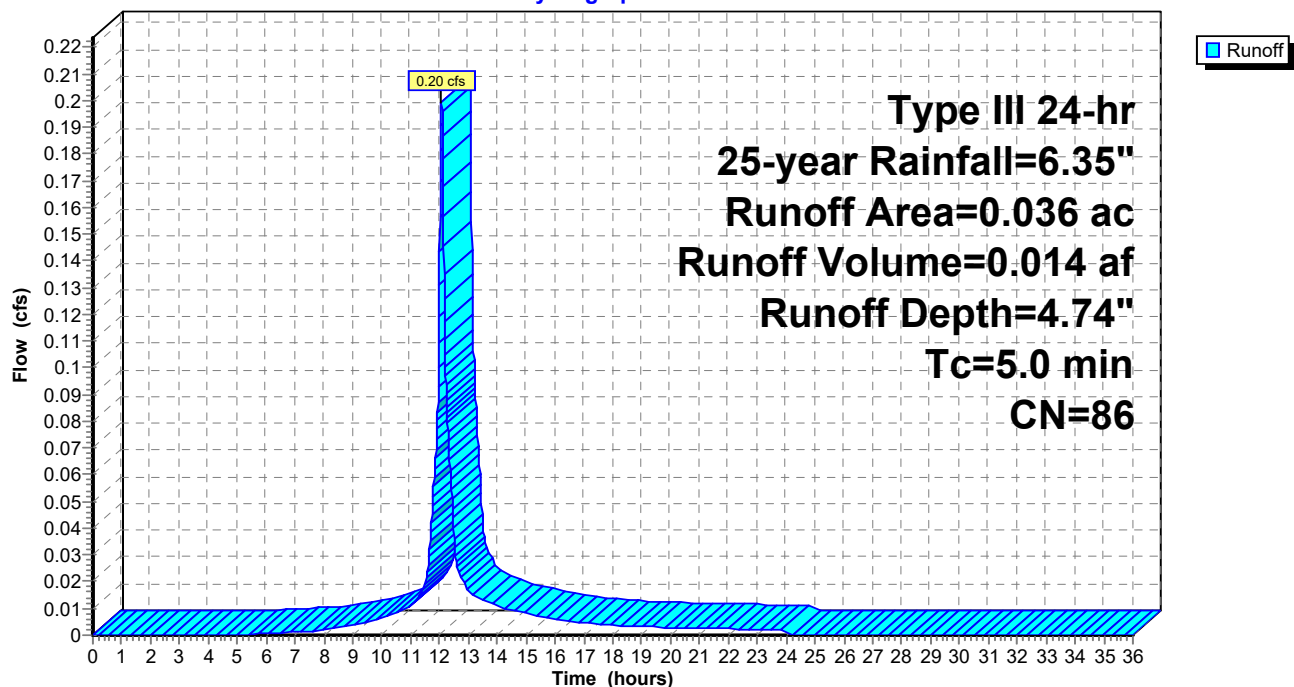
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=6.35"

Area (ac)	CN	Description
0.023	80	>75% Grass cover, Good, HSG D
0.013	98	Paved parking, HSG D
0.036	86	Weighted Average
0.023		64.04% Pervious Area
0.013		35.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-5: Front of Site

Hydrograph



**52816.00 - Proposed**

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

Page 32

**Summary for Pond 1P: Underground Detention MC 4500**

Inflow Area = 0.590 ac, 99.85% Impervious, Inflow Depth = 5.82" for 25-year event  
 Inflow = 3.78 cfs @ 12.07 hrs, Volume= 0.286 af  
 Outflow = 2.04 cfs @ 12.18 hrs, Volume= 0.286 af, Atten= 46%, Lag= 6.7 min  
 Discarded = 0.06 cfs @ 7.04 hrs, Volume= 0.138 af  
 Primary = 1.97 cfs @ 12.18 hrs, Volume= 0.149 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Peak Elev= 74.47' @ 12.18 hrs Surf.Area= 1,112 sf Storage= 3,973 cf

Plug-Flow detention time= 157.9 min calculated for 0.286 af (100% of inflow)  
 Center-of-Mass det. time= 157.9 min ( 900.6 - 742.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	69.10'	1,939 cf	<b>Custom Stage Data (Irregular)</b> Listed below 7,506 cf Overall - 2,659 cf Embedded = 4,847 cf x 40.0% Voids
#2	69.85'	824 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 7 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
#3	69.85'	824 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 7 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
#4	69.85'	611 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 5 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
#5	69.85'	398 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 3 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
		4,598 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
69.10	1,112	146.5	0	0	1,112
75.85	1,112	146.5	7,506	7,506	2,101

Device	Routing	Invert	Outlet Devices
#1	Primary	71.70'	<b>12.0" Round Culvert</b> L= 15.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 71.70' / 71.60' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	71.70'	<b>6.0" W x 4.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	73.70'	<b>6.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Device 1	75.80'	<b>4.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)
#5	Discarded	69.10'	<b>2.400 in/hr Exfiltration over Surface area</b>

## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 25-year Rainfall=6.35"

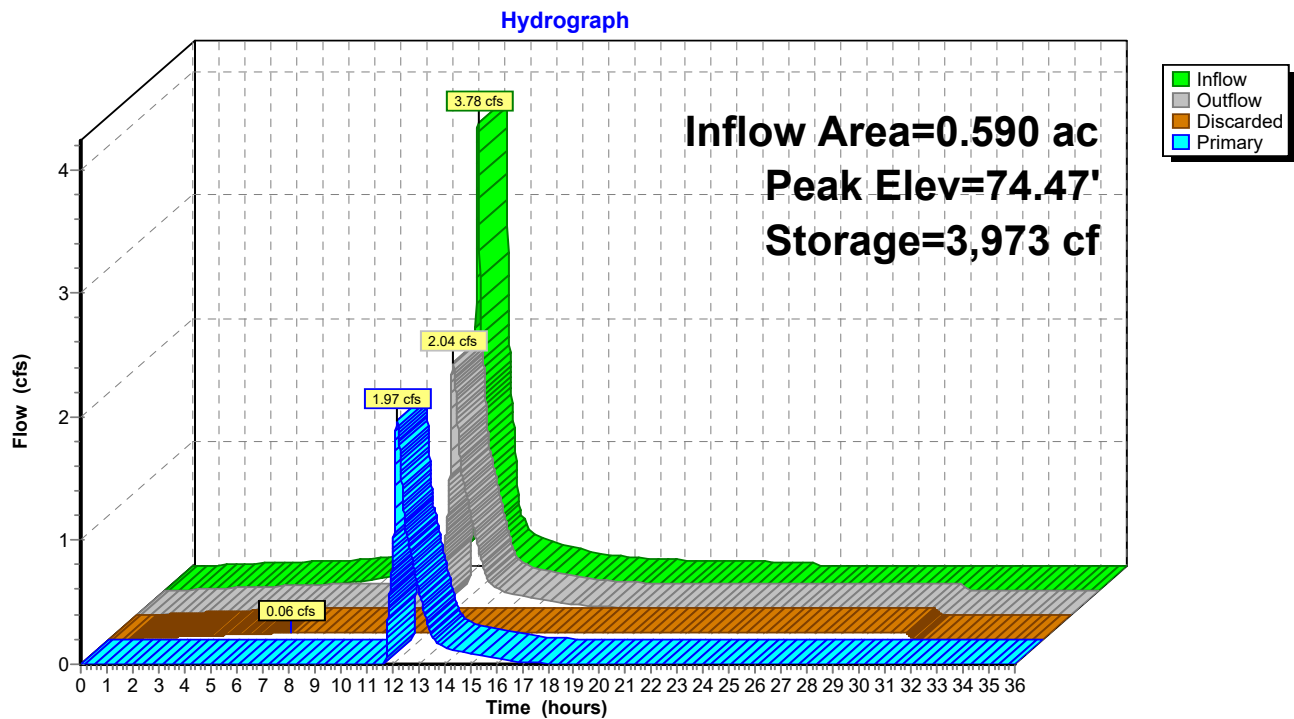
Printed 2/4/2022

Page 33

**Discarded OutFlow** Max=0.06 cfs @ 7.04 hrs HW=69.17' (Free Discharge)  
↑ **5=Exfiltration** (Exfiltration Controls 0.06 cfs)

**Primary OutFlow** Max=1.97 cfs @ 12.18 hrs HW=74.47' (Free Discharge)  
↑ **1=Culvert** (Passes 1.97 cfs of 5.70 cfs potential flow)  
↑ **2=Orifice/Grate** (Orifice Controls 1.29 cfs @ 7.76 fps)  
↑ **3=Orifice/Grate** (Orifice Controls 0.68 cfs @ 3.47 fps)  
↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

### Pond 1P: Underground Detention MC 4500



**52816.00 - Proposed**

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

Page 34

**Summary for Pond 2P: Bioretention Basin**

Inflow Area = 0.066 ac, 100.00% Impervious, Inflow Depth = 6.11" for 25-year event  
 Inflow = 0.43 cfs @ 12.07 hrs, Volume= 0.034 af  
 Outflow = 0.42 cfs @ 12.08 hrs, Volume= 0.034 af, Atten= 1%, Lag= 0.7 min  
 Discarded = 0.01 cfs @ 12.08 hrs, Volume= 0.014 af  
 Primary = 0.41 cfs @ 12.08 hrs, Volume= 0.020 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Peak Elev= 76.37' @ 12.08 hrs Surf.Area= 235 sf Storage= 91 cf

Plug-Flow detention time= 42.5 min calculated for 0.034 af (100% of inflow)  
 Center-of-Mass det. time= 42.6 min ( 786.0 - 743.4 )

Volume	Invert	Avail.Storage	Storage Description		
#1	75.50'	127 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.50	41	32.2	0	0	41
76.10	115	45.3	45	45	125
76.50	312	83.9	82	127	523

Device	Routing	Invert	Outlet Devices
#1	Primary	72.00'	<b>12.0" Round Culvert</b> L= 15.9' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 72.00' / 71.50' S= 0.0314 ' S= 0.0314 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	76.25'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 in 12.0" Grate (100% open area) Limited to weir flow at low heads
#3	Discarded	75.50'	<b>2.400 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.01 cfs @ 12.08 hrs HW=76.37' (Free Discharge)  
 ↑ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.41 cfs @ 12.08 hrs HW=76.37' TW=75.72' (Fixed TW Elev= 75.72')  
 ↑ **1=Culvert** (Passes 0.41 cfs of 3.04 cfs potential flow)  
 ↑ **2=Orifice/Grate** (Weir Controls 0.41 cfs @ 1.11 fps)



## 52816.00 - Proposed

Prepared by VHB

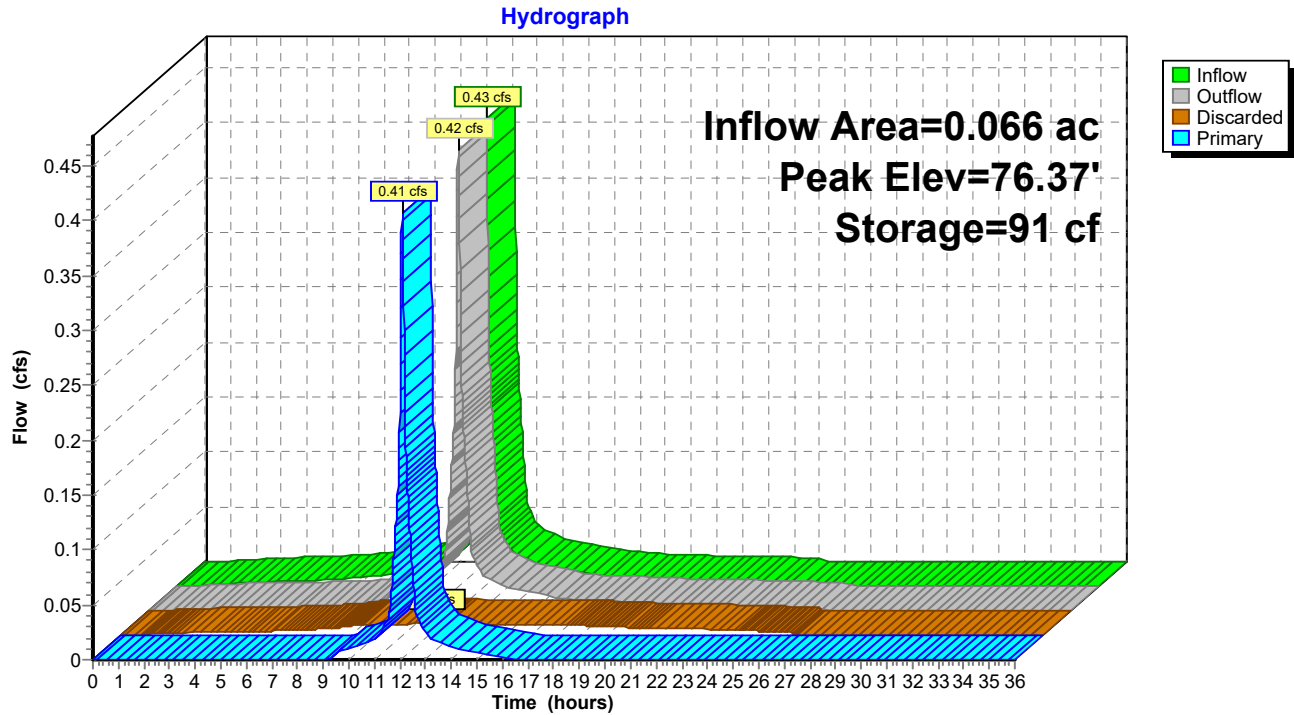
HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

Page 35

### Pond 2P: Bioretention Basin



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

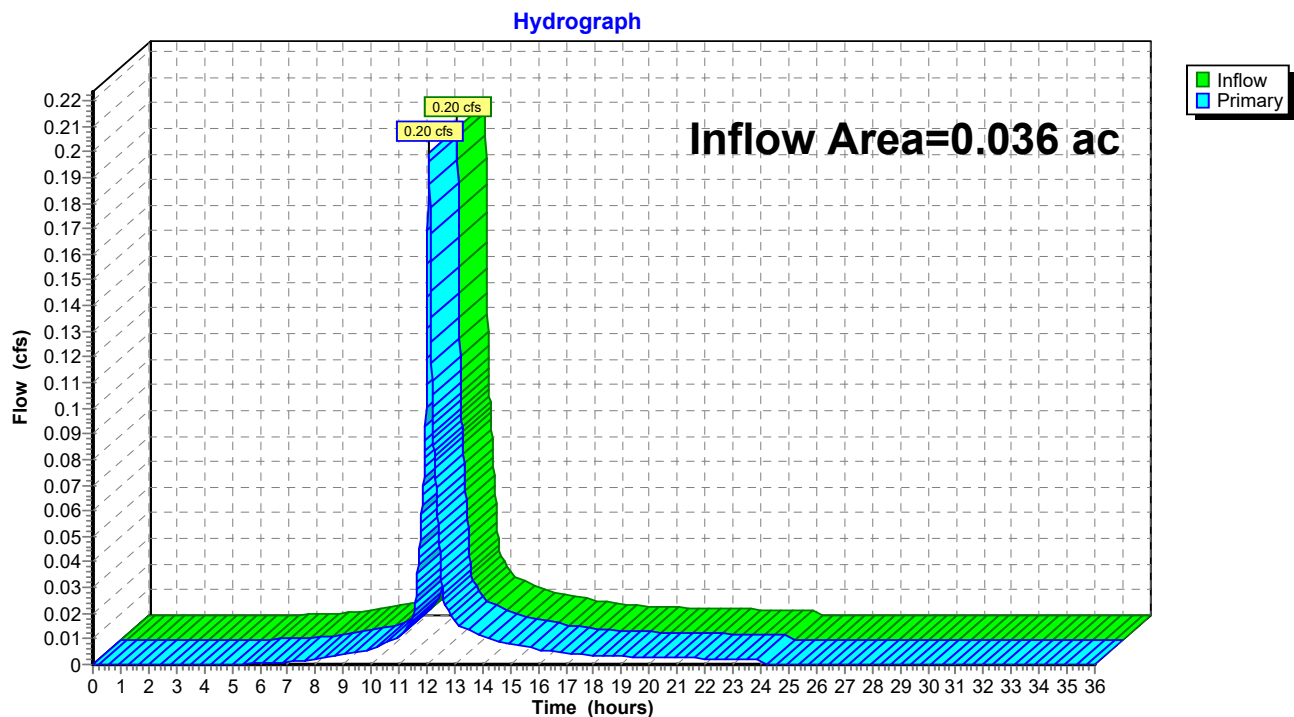
Page 36

### Summary for Link DP-1: Dudley Street

Inflow Area = 0.036 ac, 35.96% Impervious, Inflow Depth = 4.74" for 25-year event  
Inflow = 0.20 cfs @ 12.07 hrs, Volume= 0.014 af  
Primary = 0.20 cfs @ 12.07 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-1: Dudley Street



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 25-year Rainfall=6.35"

Printed 2/4/2022

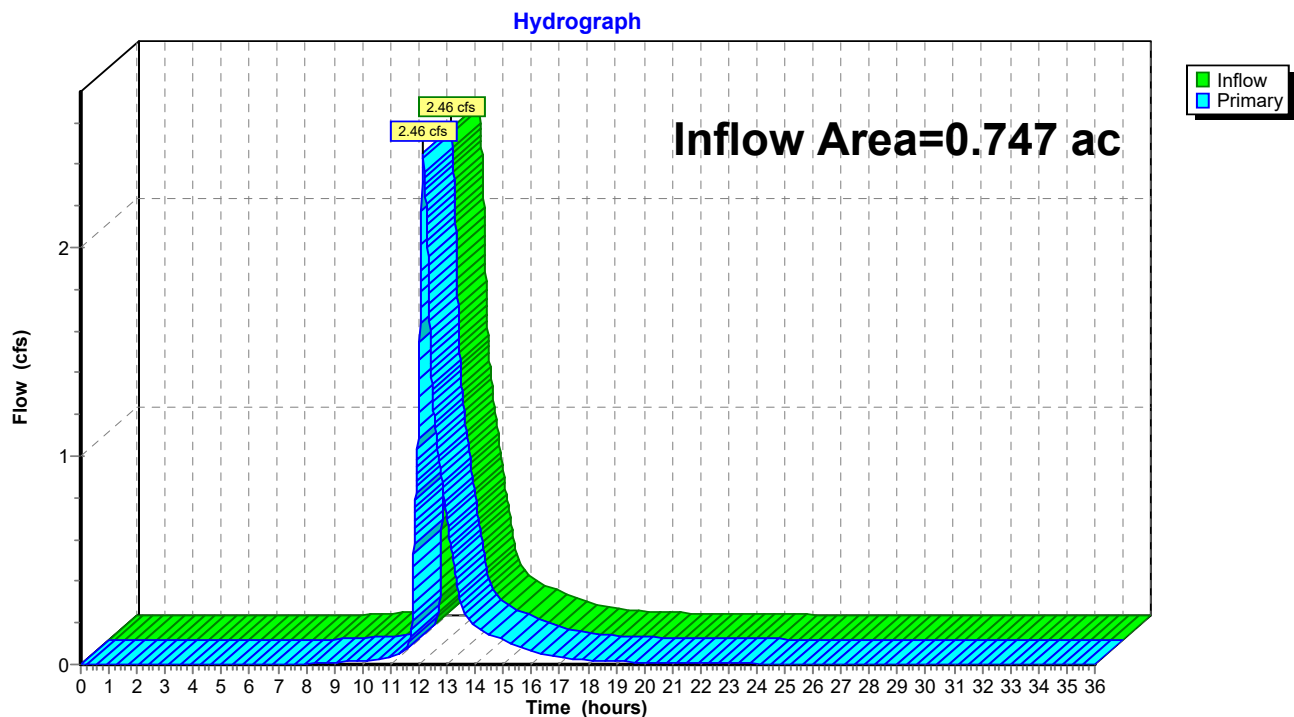
Page 37

### Summary for Link DP-2: Mill Brook

Inflow Area = 0.747 ac, 79.04% Impervious, Inflow Depth = 3.25" for 25-year event  
Inflow = 2.46 cfs @ 12.15 hrs, Volume= 0.202 af  
Primary = 2.46 cfs @ 12.15 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-2: Mill Brook



## 100-Year Storm Event – Proposed



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

Page 38

### Summary for Subcatchment PR-1: Roof

Runoff = 4.27 cfs @ 12.07 hrs, Volume= 0.340 af, Depth= 7.92"

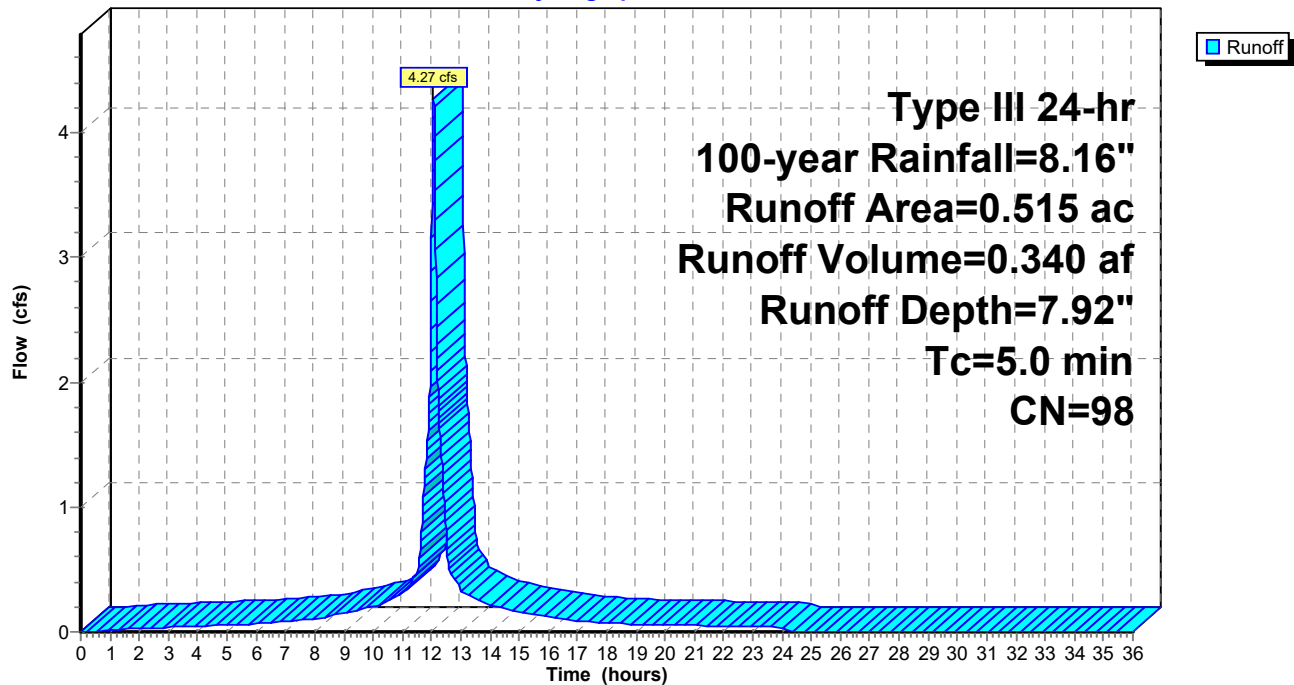
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-year Rainfall=8.16"

Area (ac)	CN	Description
0.515	98	Roofs, HSG D
0.515		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-1: Roof

Hydrograph



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

Page 39

### Summary for Subcatchment PR-2: Back Pervious

Runoff = 1.08 cfs @ 12.07 hrs, Volume= 0.076 af, Depth= 5.78"

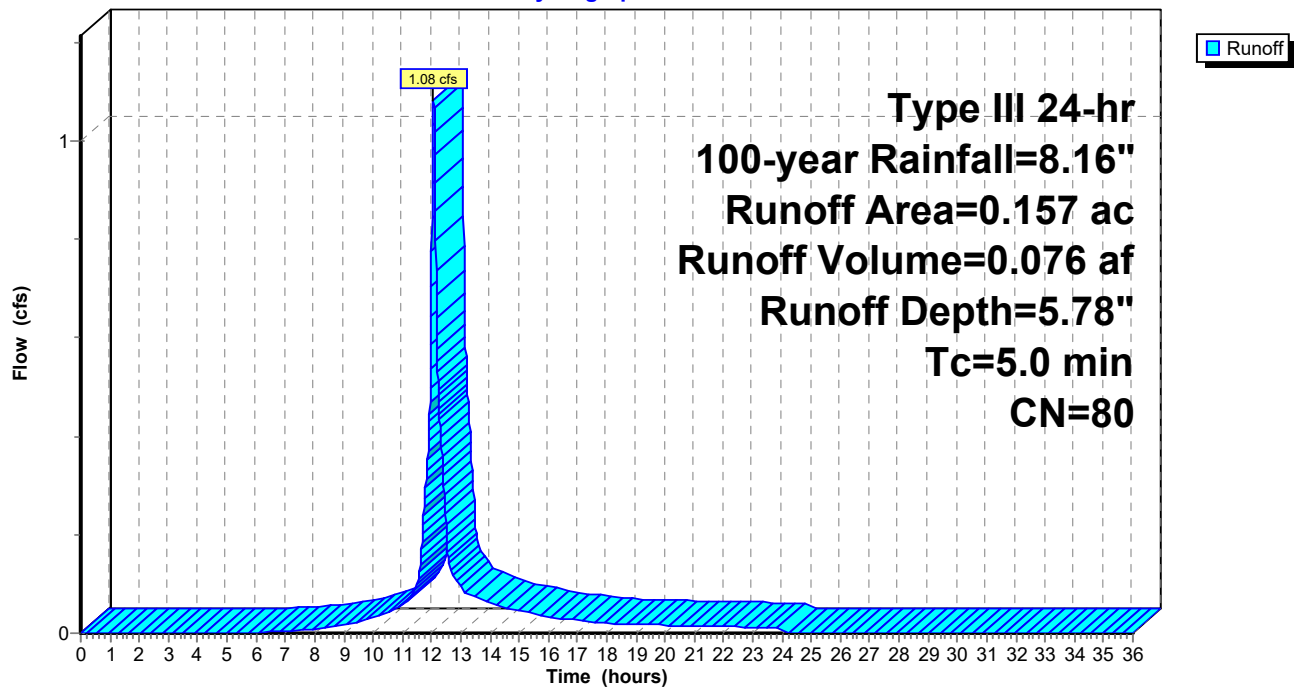
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-year Rainfall=8.16"

Area (ac)	CN	Description
0.156	80	>75% Grass cover, Good, HSG D
0.001	98	Paved parking, HSG D
0.157	80	Weighted Average
0.156		99.07% Pervious Area
0.001		0.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-2: Back Pervious

Hydrograph



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

Page 40

### Summary for Subcatchment PR-3: Pavement

Runoff = 0.07 cfs @ 12.07 hrs, Volume= 0.006 af, Depth= 7.68"

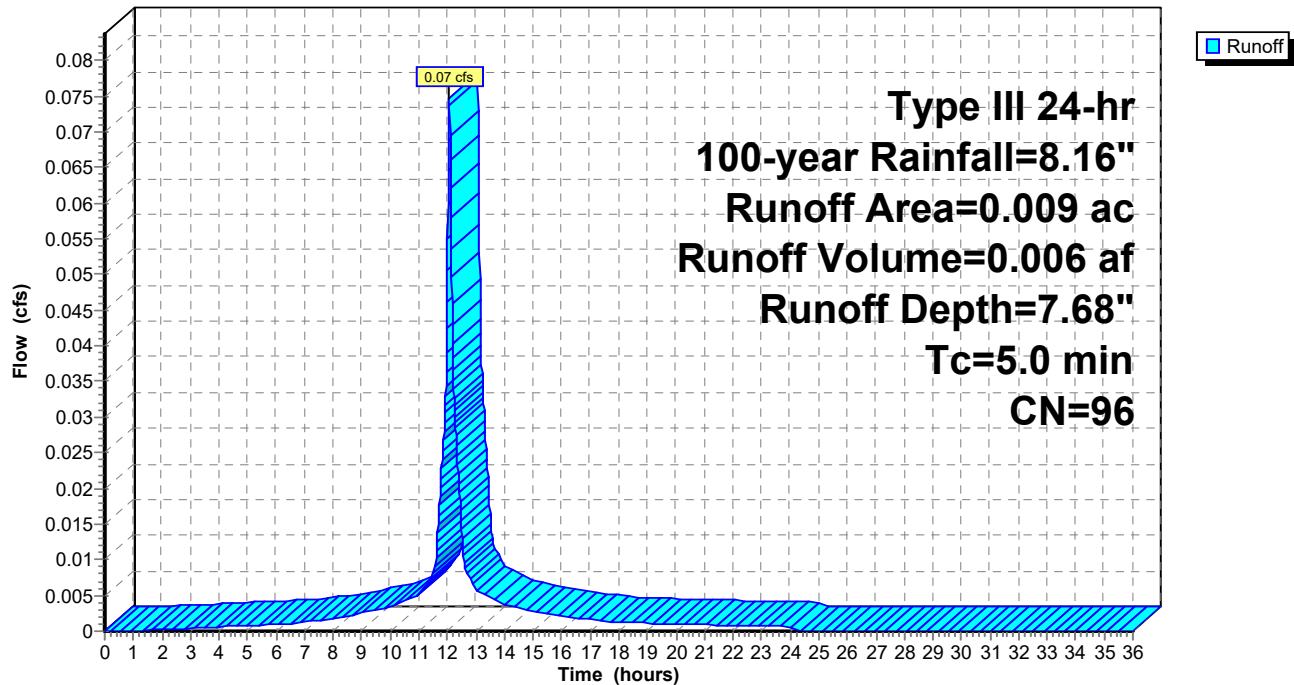
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-year Rainfall=8.16"

Area (ac)	CN	Description
0.001	80	>75% Grass cover, Good, HSG D
0.008	98	Paved parking, HSG D
0.009	96	Weighted Average
0.001		10.00% Pervious Area
0.008		90.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-3: Pavement

Hydrograph



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

Page 41

### Summary for Subcatchment PR-4: Pavement

Runoff = 0.55 cfs @ 12.07 hrs, Volume= 0.044 af, Depth= 7.92"

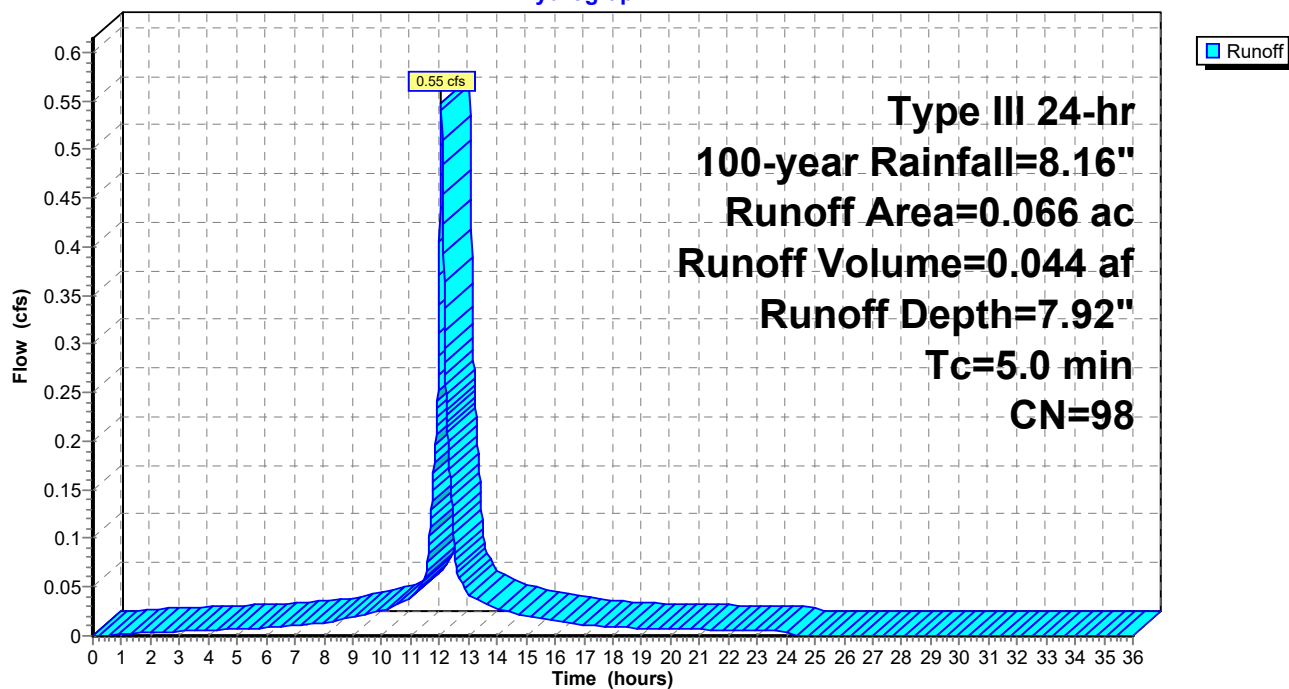
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-year Rainfall=8.16"

Area (ac)	CN	Description
0.066	98	Paved parking, HSG D
0.066		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-4: Pavement

Hydrograph





## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

Page 42

### Summary for Subcatchment PR-5: Front of Site

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.019 af, Depth= 6.49"

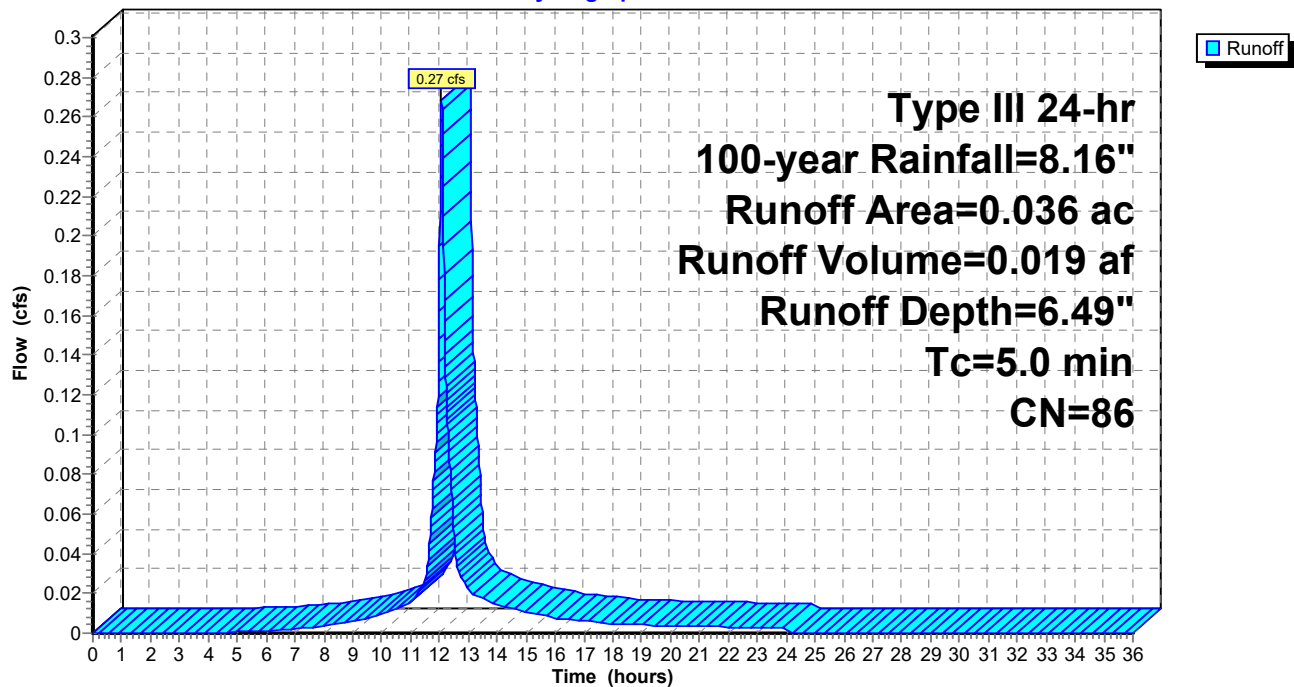
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-year Rainfall=8.16"

Area (ac)	CN	Description
0.023	80	>75% Grass cover, Good, HSG D
0.013	98	Paved parking, HSG D
0.036	86	Weighted Average
0.023		64.04% Pervious Area
0.013		35.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

### Subcatchment PR-5: Front of Site

Hydrograph



**52816.00 - Proposed**

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

Page 43

**Summary for Pond 1P: Underground Detention MC 4500**

Inflow Area = 0.590 ac, 99.85% Impervious, Inflow Depth = 7.59" for 100-year event  
 Inflow = 4.87 cfs @ 12.07 hrs, Volume= 0.373 af  
 Outflow = 2.93 cfs @ 12.16 hrs, Volume= 0.373 af, Atten= 40%, Lag= 5.6 min  
 Discarded = 0.06 cfs @ 5.97 hrs, Volume= 0.149 af  
 Primary = 2.87 cfs @ 12.16 hrs, Volume= 0.225 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Peak Elev= 75.79' @ 12.16 hrs Surf.Area= 1,112 sf Storage= 4,570 cf

Plug-Flow detention time= 139.0 min calculated for 0.373 af (100% of inflow)  
 Center-of-Mass det. time= 138.9 min ( 878.4 - 739.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	69.10'	1,939 cf	<b>Custom Stage Data (Irregular)</b> Listed below 7,506 cf Overall - 2,659 cf Embedded = 4,847 cf x 40.0% Voids
#2	69.85'	824 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 7 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
#3	69.85'	824 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 7 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
#4	69.85'	611 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 5 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
#5	69.85'	398 cf	<b>ADS_StormTech MC-4500 b +Cap</b> x 3 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +39.5 cf x 2 x 1 rows = 79.0 cf
		4,598 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
69.10	1,112	146.5	0	0	1,112
75.85	1,112	146.5	7,506	7,506	2,101

Device	Routing	Invert	Outlet Devices
#1	Primary	71.70'	<b>12.0" Round Culvert</b> L= 15.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 71.70' / 71.60' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	71.70'	<b>6.0" W x 4.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	73.70'	<b>6.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Device 1	75.80'	<b>4.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)
#5	Discarded	69.10'	<b>2.400 in/hr Exfiltration over Surface area</b>

## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 100-year Rainfall=8.16"

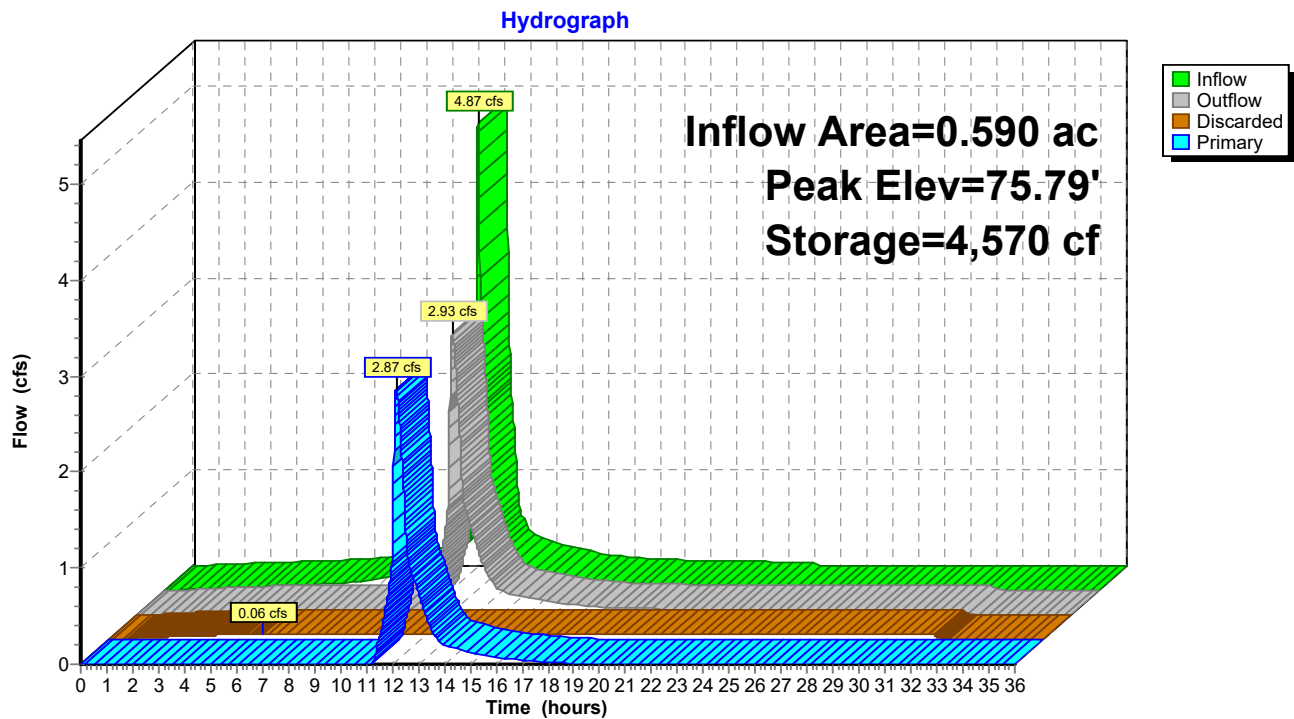
Printed 2/4/2022

Page 44

**Discarded OutFlow** Max=0.06 cfs @ 5.97 hrs HW=69.17' (Free Discharge)  
↑ **5=Exfiltration** (Exfiltration Controls 0.06 cfs)

**Primary OutFlow** Max=2.87 cfs @ 12.16 hrs HW=75.78' (Free Discharge)  
↑ **1=Culvert** (Passes 2.87 cfs of 7.16 cfs potential flow)  
↑ **2=Orifice/Grate** (Orifice Controls 1.59 cfs @ 9.53 fps)  
↑ **3=Orifice/Grate** (Orifice Controls 1.28 cfs @ 6.52 fps)  
↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

### Pond 1P: Underground Detention MC 4500



**52816.00 - Proposed**

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

Page 45

**Summary for Pond 2P: Bioretention Basin**

Inflow Area = 0.066 ac, 100.00% Impervious, Inflow Depth = 7.92" for 100-year event  
 Inflow = 0.55 cfs @ 12.07 hrs, Volume= 0.044 af  
 Outflow = 0.54 cfs @ 12.08 hrs, Volume= 0.044 af, Atten= 1%, Lag= 0.7 min  
 Discarded = 0.01 cfs @ 12.08 hrs, Volume= 0.016 af  
 Primary = 0.53 cfs @ 12.08 hrs, Volume= 0.028 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs  
 Peak Elev= 76.39' @ 12.08 hrs Surf.Area= 247 sf Storage= 96 cf

Plug-Flow detention time= 38.2 min calculated for 0.044 af (100% of inflow)  
 Center-of-Mass det. time= 38.2 min ( 778.2 - 740.0 )

Volume	Invert	Avail.Storage	Storage Description		
#1	75.50'	127 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.50	41	32.2	0	0	41
76.10	115	45.3	45	45	125
76.50	312	83.9	82	127	523

Device	Routing	Invert	Outlet Devices
#1	Primary	72.00'	<b>12.0" Round Culvert</b> L= 15.9' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 72.00' / 71.50' S= 0.0314 ' S= 0.0314 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	76.25'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 in 12.0" Grate (100% open area) Limited to weir flow at low heads
#3	Discarded	75.50'	<b>2.400 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.01 cfs @ 12.08 hrs HW=76.39' (Free Discharge)  
 ↑ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.53 cfs @ 12.08 hrs HW=76.39' TW=75.72' (Fixed TW Elev= 75.72')  
 ↑ **1=Culvert** (Passes 0.53 cfs of 3.09 cfs potential flow)  
 ↑ **2=Orifice/Grate** (Weir Controls 0.53 cfs @ 1.21 fps)



## 52816.00 - Proposed

Prepared by VHB

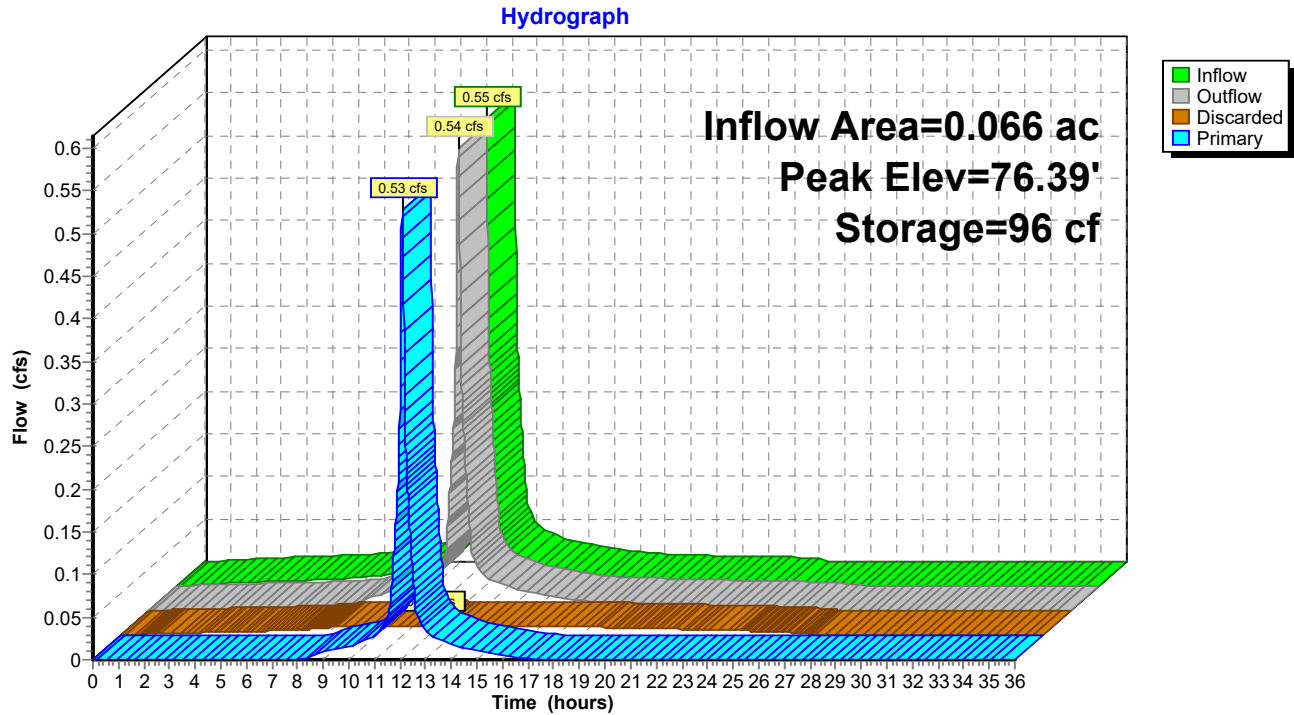
HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

Page 46

### Pond 2P: Bioretention Basin



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

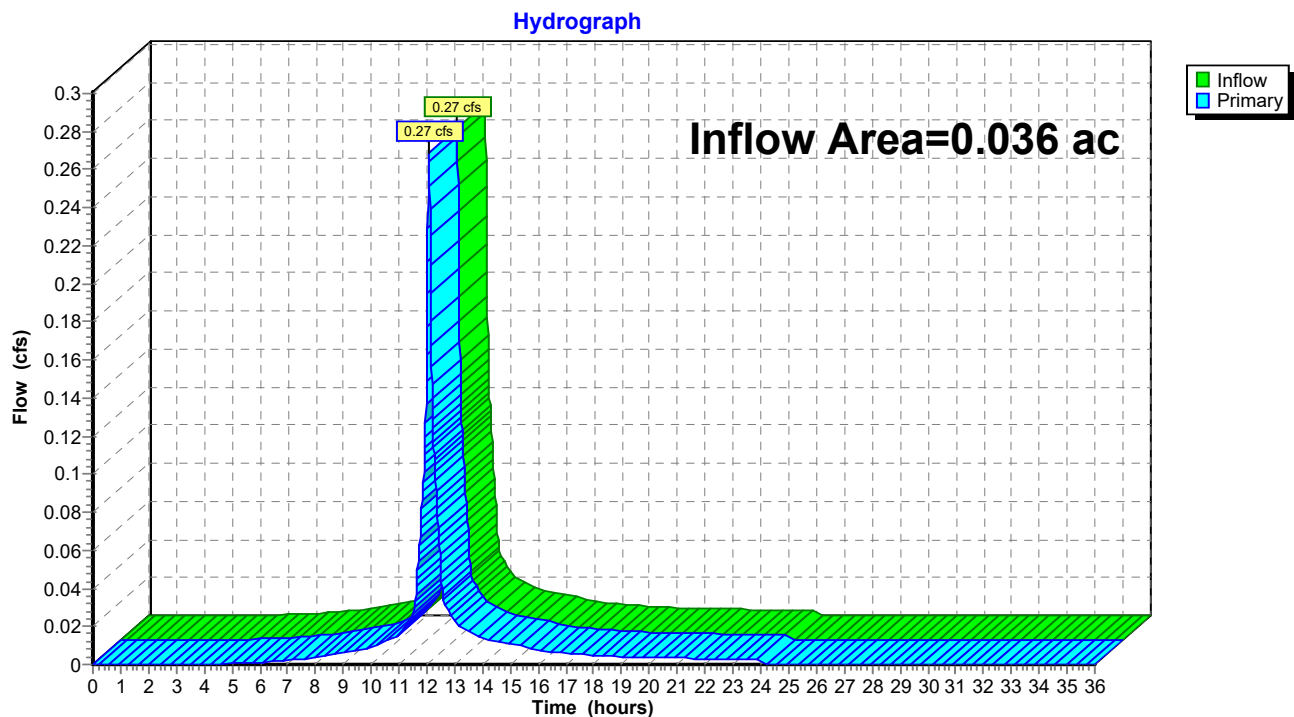
Page 47

### Summary for Link DP-1: Dudley Street

Inflow Area = 0.036 ac, 35.96% Impervious, Inflow Depth = 6.49" for 100-year event  
Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.019 af  
Primary = 0.27 cfs @ 12.07 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-1: Dudley Street



## 52816.00 - Proposed

Prepared by VHB

HydroCAD® 10.10-5a s/n 01038 © 2020 HydroCAD Software Solutions LLC

52816.00 Proposed Conditions  
Type III 24-hr 100-year Rainfall=8.16"

Printed 2/4/2022

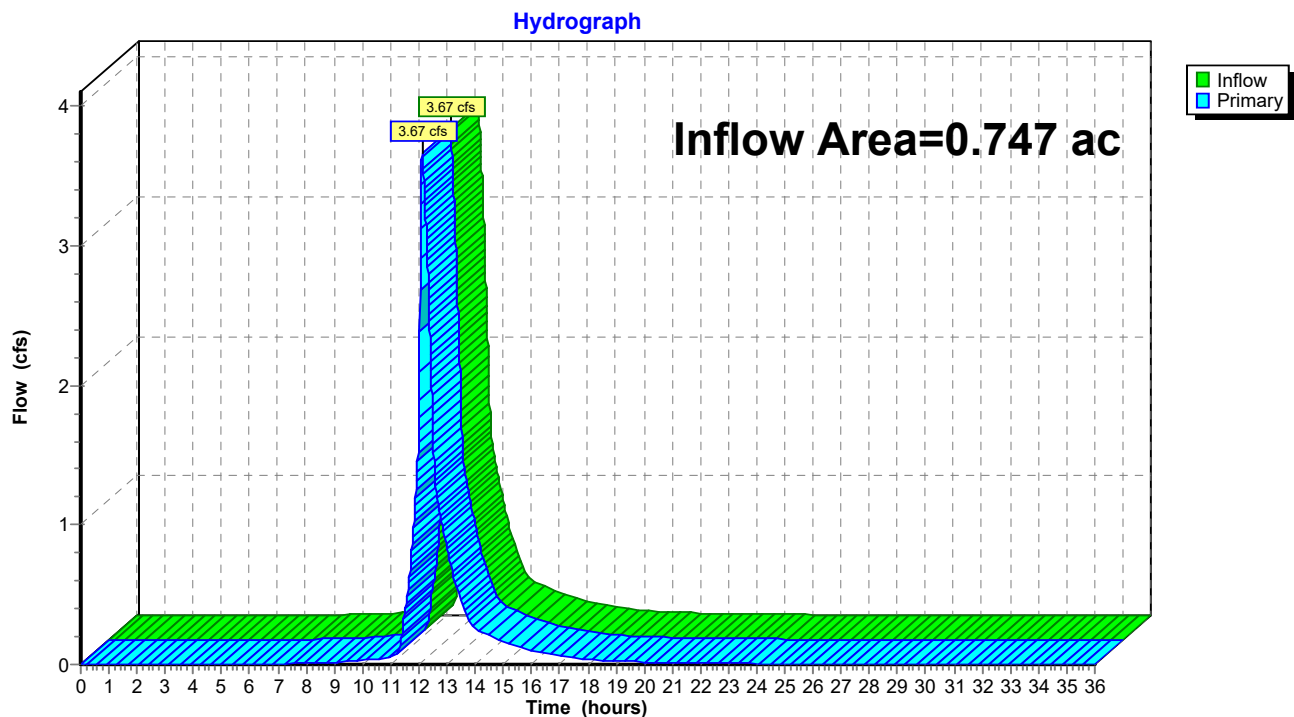
Page 48

### Summary for Link DP-2: Mill Brook

Inflow Area = 0.747 ac, 79.04% Impervious, Inflow Depth = 4.83" for 100-year event  
Inflow = 3.67 cfs @ 12.12 hrs, Volume= 0.301 af  
Primary = 3.67 cfs @ 12.12 hrs, Volume= 0.301 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

### Link DP-2: Mill Brook



This page intentionally left blank.



---

## Appendix C: Standard 3 Computations and Supporting Documentation

- › Geotechnical Report (GeoEngineers Inc., dated January 28, 2022)
- › Recharge Volume Calculations
- › 72 hour drawdown analysis

## Geotechnical Report

January 28, 2022

PSI Atlantic Arlington Massachusetts LLC  
530 Oak Court Drive, Suite 155  
Memphis, Tennessee 38117

Attention: Jay Tillman and Jesse Morgan

Subject: Geotechnical Engineering Letter Report  
34 Dudley Street  
Arlington, Massachusetts  
File No. 25754-001-00

GeoEngineers USA, PC (GeoEngineers) is pleased to provide this geotechnical engineering letter report to PSI Atlantic Arlington MA, LLC (PSI) for the proposed redevelopment for the property located at 34 Dudley Street in Arlington, Massachusetts (Site), as shown on Figure 1, Site Locus Map. This letter report is subject to the limitations attached herein.

## **SITE AND PROJECT DESCRIPTION**

The existing site is comprised of a one to two story autobody shop and glass repair shop with a one-story garage located in the southwestern portion of the site and associated paved parking areas. As shown on Figure 2, Exploration Location Plan, the southern portion of the site slopes down to Mill Brook. GeoEngineers observed that portions of the slope have failed or are in poor condition.

Based on our conversations with you and the concept plans provided by VHB, Inc. (VHB), dated November 3, 2021, we understand the project consists of razing the existing structure to allow for the construction of a 5-story self-storage facility with a footprint of approximately 20,000 square feet and associated parking areas and drive aisles. Based on the grading plan we received on January 25, 2022, we understand the building will have a proposed finished floor elevation (FFE) of elevation (El.) 79 feet and will be constructed at-grade without a basement. The site plans indicate that the upper portion of the slope along Mill Brook will be re-graded as part of the redevelopment. A stormwater infiltration system with a bottom of stone invert of El. 69.1 feet is also proposed in the northwestern portion of the Site, as shown on Figure 2.

Existing grades at the site vary between approximately El. 76 feet at the crest of the southern slope by Mill Brook and approximately El. 81 feet in the upper parking lot in the northern portion of the Site. Ground surface elevations in this memorandum are referenced to the North American Vertical Datum of 1988 (NAVD) and elevations are based on interpreting the existing conditions plans by VHB dated October 28, 2021.

## SUBSURFACE EXPLORATION PROGRAM

The subsurface exploration program consisted of advancing six borings to depths between approximately 7 to 25 feet below existing ground surface (bgs). The boring program was completed between December 9, 2021, and January 8, 2022. The boring program was designed to meet the intent of the Town of Arlington zoning bylaw for redevelopments residing in the Inland Wetland District (Section 5.8.6 Development Conditions – subsection A.1). In addition, explorations were coordinated with the project environmental consultant, The Vertex Companies (Vertex) of Boston, Massachusetts as part of their Phase I Environmental Site Assessment (ESA). The approximate locations of the explorations are shown on Figure 2 and logs are provided in Attachment A.

Borings were advanced by Crawford Drilling Services, LLC (CDS) of Westminster, Massachusetts on December 18, 2021 using a truck-mounted drill rig equipped with hollow-stem augers and by G&M Subsurface on December 9, 2021 and January 8, 2022 using direct-push drilling methods. The boring programs were continuously observed by a representative from GeoEngineers who examined and classified the soils encountered, obtained representative soil samples, observed groundwater conditions (if present) and prepared a detailed log of each exploration. Soil samples were collected at 5-foot intervals with a 2-inch outside-diameter split-barrel standard penetration test (SPT) sampler. The blow counts are shown on the boring logs at the respective sample depths.

Soils encountered in the borings were visually classified in general accordance with the classification system described in Figure A-1. A key to the boring log symbols is also presented in Figure A-1. The logs of the borings are presented in Figures A-2 through A-7. The boring logs are based on our interpretation of the field and laboratory data and indicate the various types of soils encountered. The logs also indicate the depths at which these soils or their characteristics change, although the changes may actually be gradual. If the change occurred between samples, it was interpreted. The densities noted on the boring logs are based on the blow count data obtained in the borings and judgment based on the conditions encountered.

### Geotechnical Laboratory Analysis

Three soil samples, from borings designated GEO-3, GEO-5, and GEO-6, were submitted to Thielsch Engineering of Braintree, Massachusetts by GeoEngineers for geotechnical laboratory testing to obtain index properties. Analyses included grain-size with hydrometer testing to confirm United States Department of Agriculture (USDA) textural classification for Rawls Rate correlations to support preliminary stormwater management design. The samples were selected to represent potential receiving layers within areas of the Site that are anticipated to receive stormwater. Results of the laboratory analysis are provided in Attachment B.

## SUBSURFACE CONDITIONS

In general, the soil conditions observed at the Site consist of surface treatments (asphalt) underlain by fill overlying natural granular soils.

The existing fill consists of fine to coarse sand with varying gravel and silt content. Various non-soil constituents, consistent with historic (urban) fill, such as brick, asphalt, glass, and ash particles were observed within the fill layer.

The natural soil deposit is a glacial outwash deposit, consisting of dense to very dense sand with varying amounts of coarse gravel and silt. Coarse gravel and frequent cobbles were persistent throughout the outwash deposit and resulted in frequent auger and direct push refusal between 7 and 25 feet bgs. Cobbles and/or boulders should be expected during excavation of the materials during construction.



## Groundwater

Groundwater was observed to be between approximately 15 and 24 feet bgs in the existing wells installed by others, designated MW-1 through MW-3, as indicated in Figure 2. The depths to groundwater shown on Figure 2 are based on measurements by Vertex on December 18, 2021. Installation logs and records of these monitoring wells were not available to us at the time of this letter report.

Groundwater is anticipated to flow southwards, from Dudley Street towards Mill Brook to the south of the Site. It should be noted that groundwater levels will vary depending on seasonal variations in temperature and precipitation and can also be influenced by subsurface utilities, construction development and other factors.

## ENVIRONMENTAL CONSIDERATIONS

Please refer to the environmental reports prepared by Vertex regarding any provisions for soil and/or groundwater management during demolition and construction.

## GEOTECHNICAL ENGINEERING RECOMMENDATIONS

The paragraphs below provide our geotechnical recommendations for building foundations and site work.

## STORMWATER MANAGEMENT DESIGN RECOMMENDATIONS

Based on the subsurface conditions observed in the test borings at the Site, we anticipate the subsurface conditions below the proposed stormwater management to be generally consistent with subsurface conditions encountered in borings GEO-3 and GEO-5, with the exception that there may be a thicker fill layer as the existing building currently resides over the future stormwater management area. We recommend that the future stormwater management area be constructed such that the existing fill material is removed and the natural sand be used as the receiving layer for stormwater infiltration.

Based on grain-size analysis results, we recommend the receiving layer soil be classified as sand and loamy sand based on the USDA soil classification system. These soils are classified by the Hydrologic Soil Group (HSG) A and correlate to Rawls Rates between 2.41 and 8.27 inches per hour. The laboratory results are in the table below. We recommend VHB select the appropriate design value based on the depth of the stormwater management area and their engineering judgement.

Boring ID	Sample Depth (ft)	USDA Classification	Rawls Rate (in/hr)
GEO-3W	5-12	Loamy Sand	2.41
GEO-5W	9-10.8	Loamy Sand	2.41
GEO-6W	5.3-6	Sand	8.27

Note:

Rawls Rates taken from Table 2.3.3 "1982 Rawls Rates" from the Massachusetts Stormwater Handbook Volume 3 Chapter 1.

Evidence of Estimated Seasonal High Groundwater (ESHGW) was not observed during drilling. Based on observations during test borings and measured groundwater data, it is our opinion that ESHGW for the site is greater than 10 feet below ground surface and is not located within 4 feet of the bottom of the proposed stormwater infiltration system.

## GEOTECHNICAL DESIGN RECOMMENDATIONS

Below is a summary of the primary geotechnical considerations associated with design and redevelopment of the Site:

- The proposed buildings can be supported by conventional shallow, spread footings and a slab-on-grade.
- The spread footings should bear directly on natural, inorganic, granular soils or on compacted structural fill bearing directly on natural, inorganic, granular soils. Footings should not bear directly on fill material. As such, over-excavation and replacement of the existing fill material will be necessary as specified herein. Over-excavation could extend from approximately 2 to 8 feet below existing grade.
- The top two (2) feet of fill below the slab should be excavated and replaced and recompact prior to placing base course. The fill that is present and extends more than 2 feet below finished grade may remain in place provided is compacted as specified herein.
- Fill material below future pavement areas may remain in place provided it is proof-compacted as specified herein. Existing foundations, slabs, concrete, asphalt, utilities, and any remnants of the existing development should be removed in their entirety below building areas.
- We anticipate the inorganic, granular, on-site fill can be re-used as backfill outside of building areas provided it is placed and compacted in accordance with project specifications.
- The proximity of the southern building footings to the existing slope have the potential to create slope instability. As such, regrading of that slope to a minimum 2H:1V slope angle should be incorporated into the design considerations. Alternatively, the foundations along the slope edge should be installed deeper than the minimum frost depth.

### Foundation Design Criteria

We recommend that the building be supported on shallow spread footings bearing on natural soils or on structural fill placed directly over natural soils. Some over-excavation of the existing fill material will be necessary to expose the top of the natural soils suitable for footing bearing. Fill should be over-excavated from within the zone of influence (ZOI) of the footings to expose the top of the natural soil. The ZOI is defined as a one horizontal to one vertical (1H:1V) line projecting outward and downward from the outside edge of the foundation element.

### Allowable Bearing Pressure

For foundations constructed as recommended in this memorandum, we recommend using a net allowable bearing pressure of 2 tons per square foot (TSF) for footings bearing on natural, granular soil, or compacted structural fill bearing on natural soil deposits. The allowable soil bearing pressure applies to the total of dead and long-term live loads.

### Foundation Dimensions

The minimum recommended lateral dimension for isolated spread footings is 36 inches, while continuous wall footings should be at least 18 inches wide. Footings in areas exposed to freezing temperatures should be founded at least 4 feet below exterior finished grade for frost protection. Interior footings, in areas not exposed to freezing temperatures, should be at least 24 inches below finished floor grade, or depth that provides at least 12 inches between top of footing and finished floor elevation, whichever is deeper.

Please note that the depth of the footings adjacent to the existing slope may need to be extended deeper to limit the potential for slope instability. Further analysis of this requirement is needed pending final grading and final design of the footing dimensions based on the net allowable bearing capacity provided herein.

### **Settlement**

Provided the footing subgrade is prepared as recommended herein, we estimate that the total post-construction settlement will be less than 1 inch. Differential settlements are estimated to be less than 0.5 inches between adjacent columns but will vary based on live load distribution and column spacing.

### **Slab on Grade Design Criteria**

As stated herein, the top 2 feet of fill material should be excavated, replaced and recompact prior to placing the base course material. The slab should consist of a soil supported slab-on-grade. The base course layer directly below the slab should consist of 6 inches of MassDOT Item M2.01.7 Dense-graded Crushed Stone. Provided the subgrade soils are prepared as recommended herein, the slab should be designed as a beam on an elastic foundation with modulus of subgrade reaction of 150 pounds per cubic inch (pci).

### **Existing Fill Material**

Based on observations and soil classification, we anticipate that the existing granular fill may be suitable for reuse below pavement areas provided it can be placed and compacted as specified herein.

### **Slope Rehabilitation Considerations**

Given the poor condition of the existing slope, we recommend that the south-facing slope along Mill Brook be regraded to a minimum 2H:1V slope angle as part of reconstruction. Rehabilitated slopes should incorporate vegetative development and erosion control barriers to limit runoff and improve slope stability. Once structural column loads and footing sizes are available, we recommend that the slope stability be evaluated.

### **Earthwork Procedures for Preparation of Building Pad Areas**

The following paragraphs describe the recommended earthwork procedures for preparation of the building areas.

- Foundations, utilities, existing concrete, topsoil and pavement, should be removed from the proposed building areas in their entirety.
- The existing fill material should be removed from the zone of influence (ZOI) of the footings in its entirety (to natural soil subgrade). For construction purposes, the ZOI is defined as the area within a line projecting outward and downward from the outside edge of the proposed footing at a 1H:1V (horizontal to vertical) slope. Fill material present in the buildings outside the ZOI may remain in place provided it is prepared as specified below.
- Fill below the proposed slab-on-grade should be excavated by 2 feet, replaced and recompact as specified herein, provided the onsite fill meets the specifications herein for Structural Fill.
- The excavated site soil may be re-used as backfill provided it meets the requirements for Structural Fill provided herein. The fill should be placed in 12-inch-thick loose lifts and compacted to at least 95 percent of its maximum dry density (MDD) as determined by ASTM International (ASTM) D1557 Method C (modified proctor).

- After removing the existing fill as described above, the surface of the inorganic soils within the building footprint and 5 feet beyond the exterior walls should be proof compacted with at least six passes of a 10-ton vibratory roller (or equivalent effort) under the observation of a qualified geotechnical engineer, or his/her representative. Any soft or loose zones identified by proof compaction should be evaluated by excavation and replaced with compacted Structural Fill as specified herein.
- Temporary cut slopes for the over-excavation of fill material below proposed footings for building foundations should be conducted at a 2H:1V slope to maintain a safe excavation. The footing subgrade (at the bottom of the over-excavation) should be proof compacted, prior to the placement of raise-in-grade fill, with at least six passes of a 1,000-pound vibratory plate compactor.
- For the slab-on-grade, the subgrade should be proof-compacted with at least six passes of a 10,000-pound vibratory roller. Any soft or loose areas identified during proof-compaction should be over-excavated and replaced with Structural Fill as specified herein. The top 6 inches of fill directly below the slab should consist of base course material as specified herein. The fill should be placed in maximum 12-inch-thick loose lifts and compacted to at least 95 percent of its maximum dry density (MDD) as determined by ASTM International (ASTM) D1557 Method C (modified proctor).

### Structural Fill

Fill placed to directly below and within the ZOI of foundations, within 5 feet of the bottom of slab elevation, within 5 feet of utilities (bottom and sides), and within 5 feet of finished grade for pavements and sidewalks should consist of Structural Fill as described below:

- Structural Fill used as base course for the building slab should meet the requirements of Dense-Graded Crushed Stone (1½-inch minus crushed stone) or Gravel Borrow – Type B, MASSDOT, Items M2.01.7-1 or M1.03.0 Type B, respectively.
- Structural fill placed as base course below pavements and sidewalks should meet the requirements of Dense-Graded Crushed Stone (1½-inch minus crushed stone - Type B, MASSDOT, Items M2.01.7-1), Gravel Borrow (M1.03.0 - Type B), or Reclaimed Pavement Borrow (M1.09.0-1) in pavement areas only. Reclaimed Pavement Borrow should not be placed within the building footprint.
- Structural Fill placed as backfill of over-excavation below footings and within the ZOI of footings, and as general raise-in-grade fill in non-building areas (below base course) should consist of the following:

Sieve Size	Percent Passing By Weight
4-inch	100
1-inch	70-100
No. 4	30-60
No. 200	0-15

- Structural fill placed within irregularly shaped utility trenches or trenches not accessible to compaction equipment should consist of Controlled Density Fill (CDF) consisting of high slump Portland cement concrete with a compressive strength less than 150 pci at 28 days, otherwise the trench should be backfilled in accordance with the project specifications.
- Structural fill placed to stabilize footing subgrades, if needed, and for the proposed infiltration gallery crushed stone layer should meet the requirements of Crushed Stone (¾-inch crushed gravel), MASSDOT, Item M2.01.4.



Crushed Stone should be compacted with at least six passes of a 1,000-pound vibratory plate compactor, or until visibly firm and stable, as determined by the Geotechnical Engineer, or his/her qualified representative.

#### Earthwork Procedures for Preparation of Pavement Areas

- In proposed pavement areas, the existing asphalt, topsoil, foundations, slabs, and site utilities should be removed in their entirety. Where existing, deep utilities (>6 feet bgs) are present in proposed parking areas, it is acceptable to completely fill the utility with flowable fill and abandon the utility in-place.
- The exposed subgrade for future parking areas should be proof-compacted with at least six passes of a 10 ton vibratory roller (or equivalent effort) under the observation of a qualified geotechnical engineer, or his/her representative is recommended. Any soft or loose areas identified by the proof-compaction should be removed in their entirety and replaced with Structural Fill as specified herein.
- General raise-in-grade fill in parking areas should consist of Structural Fill and placed and compacted as specified herein.
- Base course for pavement should be placed in 12-inch-thick loose lifts and compacted to at least 95 percent of its maximum dry density (MDD) as determined by ASTM International (ASTM) D1557 Method C (modified proctor).

#### Recommended Pavement Design

Parking area and access drive pavement subgrades should be prepared as specified herein. If soft or loose soils are encountered, such unsuitable subgrade soils should be over-excavated in their entirety and replaced with Structural Fill as specified herein.

#### Asphalt Concrete Pavement for Parking Areas

The pavement design is intended to strike a balance between performance and cost in consideration of the soil available at the Site and anticipated traffic loads (passenger vehicles). We recommend the following (minimum) flexible pavement cross-sections for both standard and heavy-duty applications.

Layer	Standard Duty	Heavy Duty
	Thickness	
Asphalt Wearing Course (MassDOT Item M3.11.03)	1.5 inches	1.5 inches
Asphalt Binder Course (MassDOT Item M3.11.03)	1.5 inches	2.5 inches
Pavement Base Course (Reclaimed Pavement Borrow, MassDOT Item M1.09.0, or Dense-Graded Crushed Stone, MassDOT Item M2.01.7)	9 inches	9 inches

## LIMITATIONS


We have prepared this preliminary design memorandum for the exclusive use of PSI Atlantic Arlington MA, LLC and their authorized agents for 34 Dudley Street in Arlington, Massachusetts.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this memorandum was prepared. No warranty or other conditions, express or implied, should be understood.

Please refer to Appendix C, "Design Memorandum Limitations and Guidelines for Use" for additional information pertaining to use of this memorandum.

Sincerely,  
GeoEngineers, Inc.

  
Mark N. Ruberti, PE  
Geotechnical Engineer (MA)

  
Stan S. Sadkowski, PE  
Principal Geotechnical Engineer (MA)

MNR:SSS:kab

### Attachments:

Figure 1. Site Locus Map

Figure 2. Exploration Location Plan

### Appendices:

#### Appendix A. Boring Logs

Figure A-1. Key to Exploration Logs

Figures A-2 through A-7. Logs of Borings

#### Appendix B. Laboratory Testing Data Sheet

Figure 21-S-B478 through 21-S-B480 - Particle Size Distribution Report

Figure S-B478-B480 – USDA Soil Classification

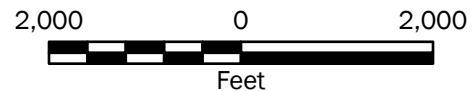
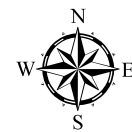
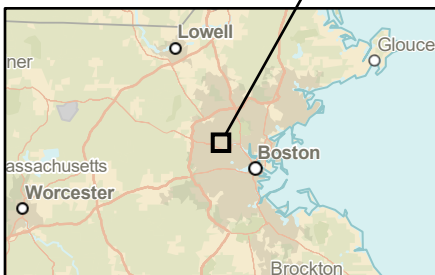
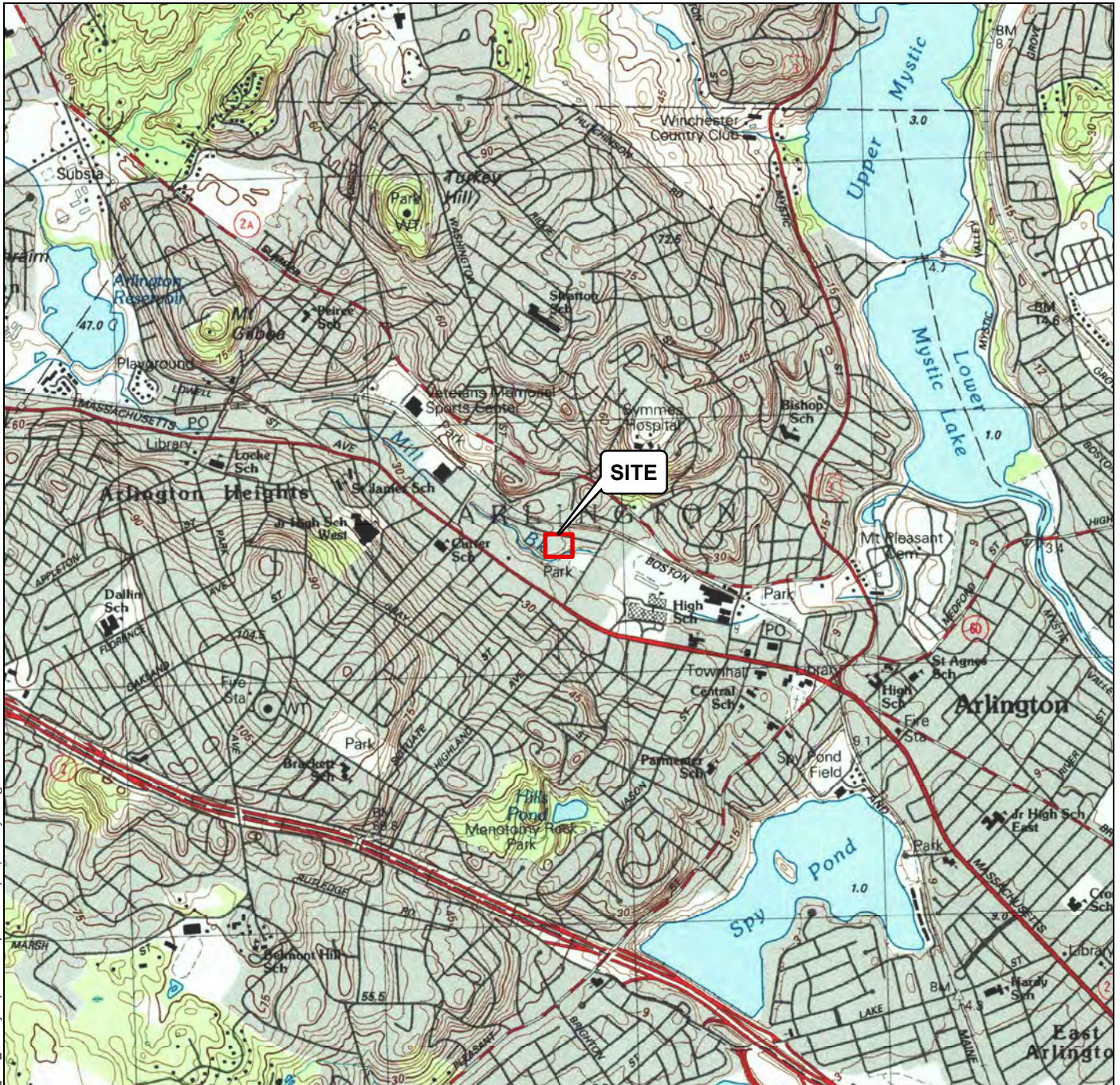
#### Appendix C. Design Memorandum Limitations and Guidelines for Use

One copy submitted electronically

Disclaimer: Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record



P:\25\25754001\GIS\25754001\_Project\aprx\2575400100\_F01\_VicinityMap Date Exported: 01/20/22 by maugust



### Site Locus Map

34 Dudley Street  
Arlington, Massachusetts

GeoEngineers 

Figure 1

#### Notes:

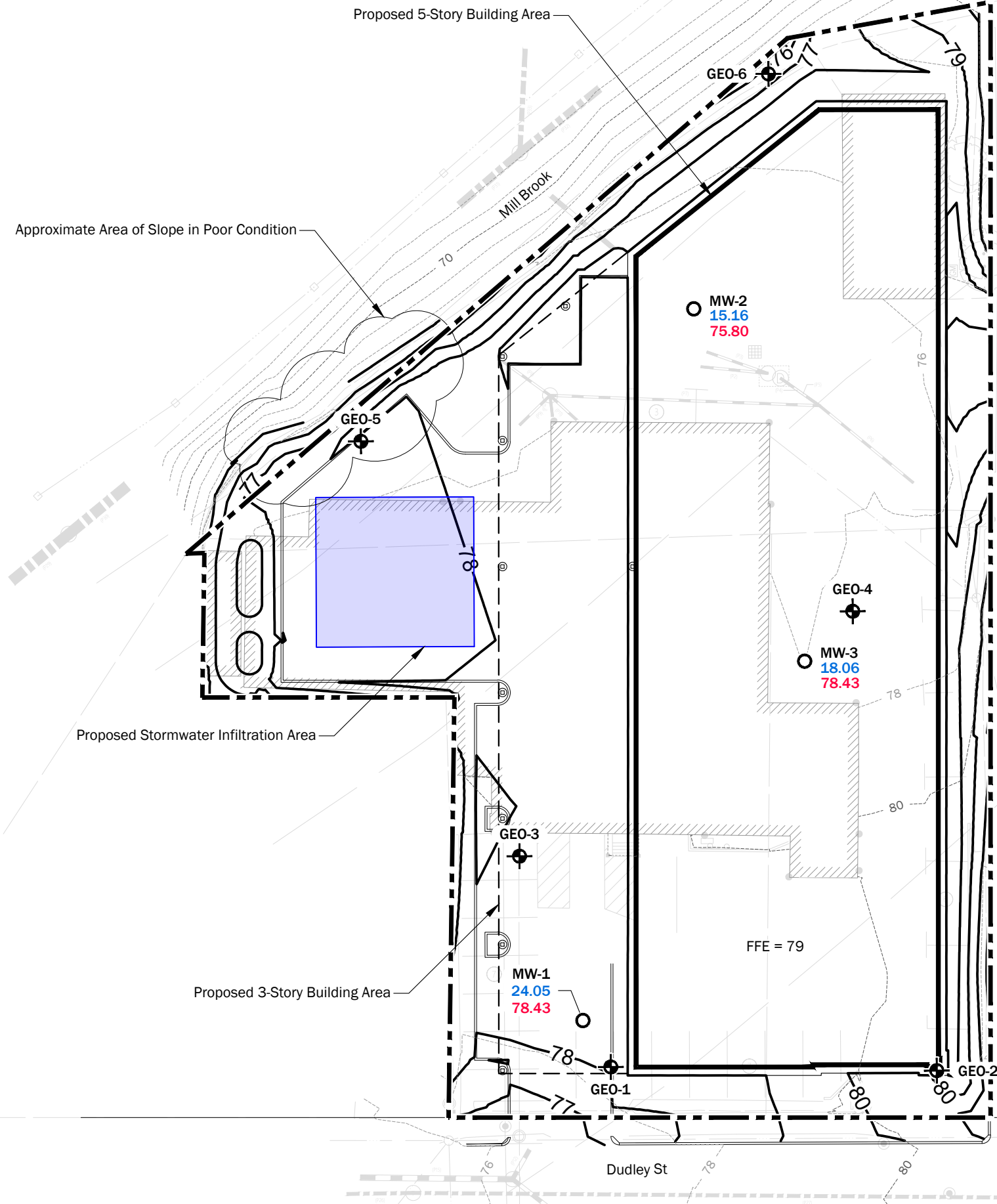
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: ESRI, USGS 24K Quadrangle Boston North, 1985.

Projection: NAD 1983 StatePlane Massachusetts Mainland FIPS 2001 Feet



P:\25\25754001\CAD\00\SW and GT Design Memo\2575400100\_F02\_Exploration Location Plan.dwg TAB:F02 Date Exported: 01/28/22 - 9:45 by register



#### Legend

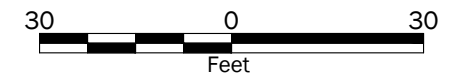
- Property Boundary
- Existing Building
- Proposed 5-Story Building Area
- Proposed 3-Story Building Area
- Proposed Grading
- Proposed Stormwater Infiltration Area
- GEO-1 Boring by GeoEngineers, Inc., 2021 and 2022
- MW-1 Monitoring Well by Others
- 24.05 Depth to Groundwater (Feet bgs) Based on Measurements Collected on December 18, 2021
- 78.43 Well Elevation (Feet)

#### Notes:

- The locations of all features shown are approximate.
- This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers USA, P.C. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers USA, P.C. and will serve as the official record of this communication.

Source(s): Background from VHB dated 10-28-2021.

Projection: MA State Plane, Mainland Zone, NAD83, US Foot



#### Exploration Location Plan

34 Dudley St  
Arlington, Massachusetts


















Figure 2



## **APPENDIX A**

### **Boring Logs**

## SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS  (LITTLE OR NO FINES)		<b>GW</b>	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
		GRAVELS WITH FINES  (APPRECIABLE AMOUNT OF FINES)		<b>GP</b>	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				<b>GM</b>	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
			<b>GC</b>	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES	
	SAND AND SANDY SOILS	CLEAN SANDS  (LITTLE OR NO FINES)		<b>SW</b>	WELL-GRADED SANDS, GRAVELLY SANDS
		SANDS WITH FINES  (APPRECIABLE AMOUNT OF FINES)		<b>SP</b>	POORLY-GRADED SANDS, GRAVELLY SAND
			<b>SM</b>	SILTY SANDS, SAND - SILT MIXTURES	
			<b>SC</b>	CLAYEY SANDS, SAND - CLAY MIXTURES	
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		<b>ML</b>	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				<b>CL</b>	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				<b>OL</b>	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		<b>MH</b>	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				<b>CH</b>	INORGANIC CLAYS OF HIGH PLASTICITY
				<b>OH</b>	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				<b>PT</b>	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

### Sampler Symbol Descriptions

	2.4-inch I.D. split barrel
	Standard Penetration Test (SPT)
	Shelby tube
	Piston
	Direct-Push
	Bulk or grab
	Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

"P" indicates sampler pushed using the weight of the drill rig.

"WOH" indicates sampler pushed using the weight of the hammer.

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

## ADDITIONAL MATERIAL SYMBOLS

SYMBOLS		TYPICAL DESCRIPTIONS
GRAPH	LETTER	
	<b>AC</b>	Asphalt Concrete
	<b>CC</b>	Cement Concrete
	<b>CR</b>	Crushed Rock/ Quarry Spalls
	<b>SOD</b>	Sod/Forest Duff
	<b>TS</b>	Topsoil

### Groundwater Contact



Measured groundwater level in exploration, well, or piezometer



Measured free product in well or piezometer

### Graphic Log Contact



Distinct contact between soil strata



Approximate contact between soil strata

### Material Description Contact



Contact between geologic units



Contact between soil of the same geologic unit

### Laboratory / Field Tests

%F	Percent fines
%G	Percent gravel
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DD	Dry density
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
Mohs	Mohs hardness scale
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PL	Point lead test
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
UU	Unconsolidated undrained triaxial compression
VS	Vane shear

### Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen

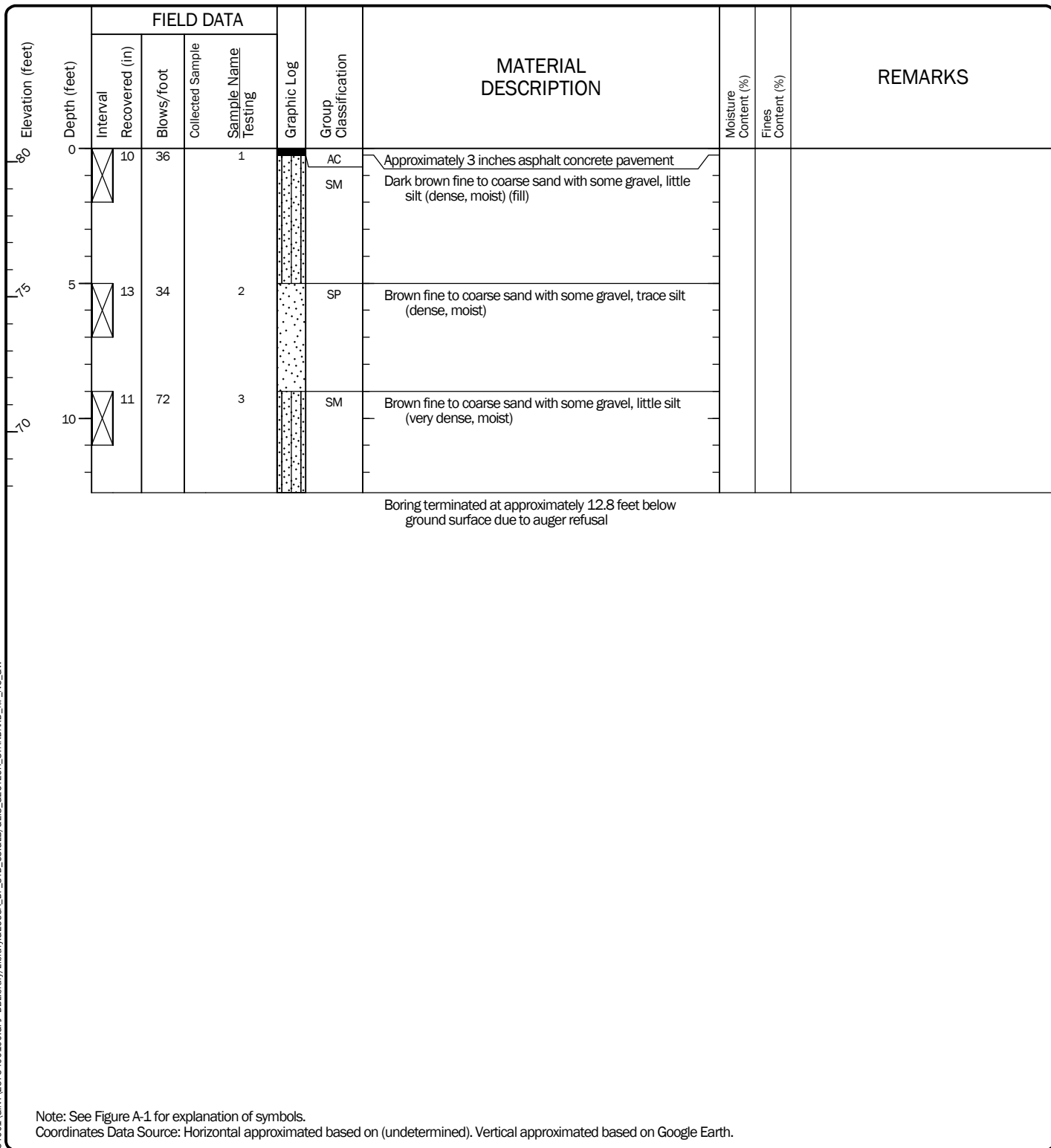
## Key to Exploration Logs

GeoEngineers


Figure A-1



Start Drilled 12/18/2021	End 12/18/2021	Total Depth (ft) 12.75	Logged By Checked By	SR/MR	Driller Crawford Drilling Service	Drilling Method	Hollow-stem Auger
Surface Elevation (ft) Vertical Datum		80.5 NAVD88		Hammer Data		Autohammer 140 (lbs) / 30 (in) Drop	
Easting (X) Northing (Y)		System Datum		Drilling Equipment			
				B52 Turck Rig			
				Groundwater not observed at time of exploration			
Notes:							



Date: 1/28/22 Path: P:\25754001\GINT\2575400100.gpj DBLibrary\Library\GEOUSA\_DF STD\_US.GLB\GEB8\_GEOTECH\_STANDARD\_SF\_NO.GW

Log of Boring GEO-2	
	Project: 34 Dudley Street
	Project Location: Arlington, Massachussetts
	Project Number: 25754-001-00
Figure A-3 Sheet 1 of 1	



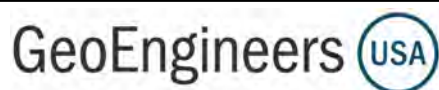
Drilled	Start 12/9/2021	End 12/9/2021	Total Depth (ft)	25	Logged By Checked By	VT	Driller	G&M Subsurface	Drilling Method	Direct Push
Surface Elevation (ft) Vertical Datum			79.5 NAVD88		Hammer Data		Autohammer 140 (lbs) / 30 (in) Drop		Drilling Equipment GeoProbe 7822DT	
Easting (X) Northing (Y)					System Datum				Groundwater not observed at time of exploration	
Notes:										

Elevation (feet)	FIELD DATA					Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing						
0	14	10			1		AC	Approximately 4 inches asphalt concrete pavement			
							SM	Brown fine to coarse sand and gravel with some silt, very few brick fragments and slag pieces (medium dense, moist) (fill)			
	50						SP	Light brown fine to coarse sand and gravel, with trace silt (dense, moist)			
5	52	36			2						
	15										
10	36	71			3		SP	Light brown-tan fine to coarse sand and gravel, with trace silt (very dense, moist)			
	16				4						
15					5						
	42										
20					6						
25											

Boring terminated at approximately 25 feet below ground surface due to direct-push refusal

Note: See Figure A-1 for explanation of symbols.  
Coordinates Data Source: Horizontal approximated based on (undetermined). Vertical approximated based on Google Earth.

### Log of Boring GEO-3



Project: 34 Dudley Street  
Project Location: Arlington, Massachusetts  
Project Number: 25754-001-00

Figure A-4  
Sheet 1 of 1

Date: 1/28/22 Path: P:\25\_25754\001\GINT\25754\001\GINT\US.GLB\GEB\_GEO TECH\_STANDARD\_SF\_NO.GW DBLibrary\Library\GEOUSA\_DF STD\_US.GLB\GEB\_GEO TECH\_STANDARD\_SF\_NO.GW

Drilled	Start 1/8/2022	End 1/8/2022	Total Depth (ft)	7	Logged By Checked By	PS/MR	Driller	G&M Subsurface	Drilling Method	Direct Push
Surface Elevation (ft) Vertical Datum			76 NAVD88		Hammer Data		Autohammer 140 (lbs) / 30 (in) Drop		Drilling Equipment GeoProbe 7822DT	
Easting (X) Northing (Y)					System Datum				Groundwater not observed at time of exploration	
Notes:										

Elevation (feet)	FIELD DATA					MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing				
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									
51									
52									
53									
54									
55									
56									
57									
58									
59									
60									
61									
62									
63									
64									
65									
66									
67									
68									
69									
70									
71									
72									
73									
74									
75									
76									
77									
78									
79									
80									
81									
82									
83									
84									
85									
86									
87									
88									
89									
90									
91									
92									
93									
94									
95									
96									
97									
98									
99									
100									

Boring terminated at approximately 7 feet below ground surface due to direct push refusal

Note: See Figure A-1 for explanation of symbols.  
Coordinates Data Source: Horizontal approximated based on (undetermined). Vertical approximated based on Google Earth.

### Log of Boring GEO-4



Project: 34 Dudley Street  
Project Location: Arlington, Massachussetts  
Project Number: 25754-001-00


Figure A-5  
Sheet 1 of 1

Start Drilled 12/18/2021	End 12/18/2021	Total Depth (ft) 16.25	Logged By Checked By SR/MR	Driller Crawford Drilling Service	Drilling Method Hollow-stem Auger
Surface Elevation (ft) Vertical Datum 75.5 NAVD88		Hammer Data Autohammer 140 (lbs) / 30 (in) Drop		Drilling Equipment B52 Turck Rig	
Easting (X) Northing (Y)		System Datum		Groundwater not observed at time of exploration	
Notes:					

Elevation (feet)	FIELD DATA					Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	Depth (feet)	Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing						
75	0	12	12		1		AC	Approximately 3 inches asphalt concrete pavement			
							SM	Dark brown fine to coarse sand with some gravel, little silt, very few asphalt pieces, very few glass particles (medium dense, moist) (fill)			
70	5	6	9		2		SP	Brown fine to coarse sand with some gravel, trace silt, very few asphalt pieces (loose, moist) (fill)			
65	10	10	71		3		GP	Gray gravel with some sand, trace silt (very dense, moist)			
60	15	0	50/5"		4		NR	No recovery (very dense)			
		4	50/4"		5		SP	Gray fine to coarse sand and gravel, with trace silt (very dense, moist)			
Boring terminated at approximately 16.3 feet below ground surface due to auger refusal											

Note: See Figure A-1 for explanation of symbols.  
Coordinates Data Source: Horizontal approximated based on (undetermined). Vertical approximated based on Google Earth.

Date: 1/28/22 Path: P:\25\_25754001\GINT\2575400100.gpj DBLibrary\Library\GEOUSA\_DF STD\_US.GLB\GEB8\_GEOTECH\_STANDARD\_SF\_NO.GW

Log of Boring GEO-5		
	Project: 34 Dudley Street	
	Project Location: Arlington, Massachusetts	
	Project Number: 25754-001-00	
		Figure A-6 Sheet 1 of 1

Start Drilled 12/18/2021	End 12/18/2021	Total Depth (ft) 10.5	Logged By Checked By	SR/MR	Driller Crawford Drilling Service	Drilling Method Hollow-stem Auger
Surface Elevation (ft) Vertical Datum		74.5 NAVD88	Hammer Data Autohammer 140 (lbs) / 30 (in) Drop		Drilling Equipment B52 Turck Rig	
Easting (X) Northing (Y)			System Datum		Groundwater not observed at time of exploration	
Notes:						

Elevation (feet)	FIELD DATA					MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing				
0									
	8	36			1	AC SM			
						Approximately 3 inches asphalt concrete pavement			
						Dark brown fine to coarse sand with some gravel, little silt, few wood pieces, very few brick particles (dense, moist) (fill)			
5	12	42			2	SM SP			
						Dark brown fine to coarse sand with little gravel and little silt (dense, moist) (fill)			
						Brown fine to coarse sand with some gravel, trace silt (dense, moist)			
10	11	88/11"			3				

Boring terminated at approximately 10.5 feet below ground surface due to auger refusal

Note: See Figure A-1 for explanation of symbols.  
Coordinates Data Source: Horizontal approximated based on (undetermined). Vertical approximated based on Google Earth.

### Log of Boring GEO-6




Project: 34 Dudley Street  
Project Location: Arlington, Massachussetts  
Project Number: 25754-001-00

Figure A-7  
Sheet 1 of 1



## **APPENDIX B**

### **Laboratory Testing Data Sheet**

	195 Frances Avenue Cranston RI, 02910 Phone: (401)-467-6454 Fax: (401)-467-2398 <a href="http://thielsch.com">thielsch.com</a> <i>Let's Build a Solid Foundation</i>	Client Information: GeoEngineers, Inc. 239 Causeway Street, Boston, MA 02114 PM: Mark Ruberti Assigned By: Mark Ruberti Collected By: Client	Project Information: <b>34 Dudley Street</b> <b>Arlington, MA</b> GeoEngineers Project Number: 25754-001-00 Summary Page: 1 of 1 Report Date: 01.03.2022
--	---	---	---

LABORATORY TESTING DATA SHEET, Report No.: 7421-M-B010

Material Source	Sample No.	Depth (Ft)	Laboratory No.	Identification Tests								Proctor / CBR / Permeability Tests								Laboratory Log and Soil Description
				As Received Water Content %	LL %	PL %	Gravel %	Sand %	Fines %	Org. %	G <sub>s</sub>	Dry unit wt. pcf	Test Water Content %	$\gamma_d$ MAX (pcf) W <sub>opt</sub> (%)	$\gamma_d$ MAX (pcf) W <sub>opt</sub> (%) (Corr.)	Target Test Setup as % of Proctor	CBR @ 0.1"	CBR @ 0.2"	Permeability cm/sec	
				D2216	D4318		D6913			D2974	D854			D1557						
Boring	GEO-3 (S2 & S3)	5-12	21-S-B478				63.7	30.1	6.2											Light Brown loamy sand
Boring	GEO-5 (S1)	9-10.8	21-S-B479				68.3	23.9	7.8											Grey loamy sand
Boring	GEO-6 (S-1B)	5.3-6	21-S-B480				53.0	40.8	6.2											Light Brown sand

Date Received:
 

12.21.21

Reviewed By:
 

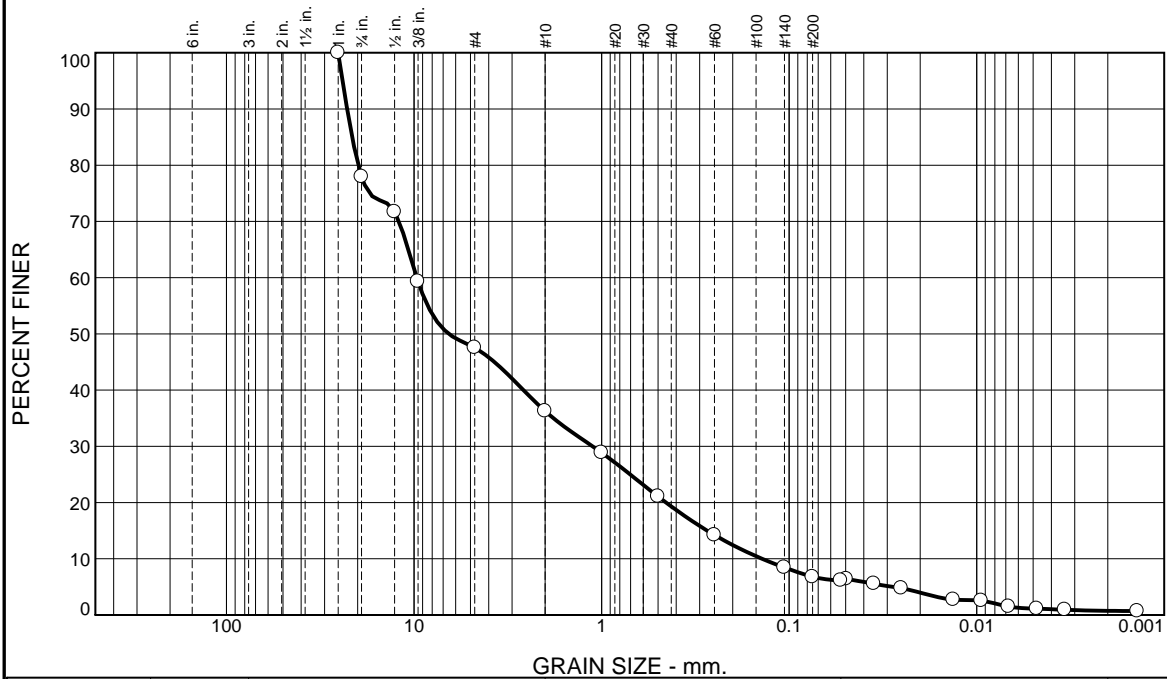


Date Reviewed:
 

01.03.22

This report only relates to items inspect and/or tested. No warranty, expressed or implied, is made.  
This report shall not be reproduced, except in full, without prior written approval from the Agency, as defined in ASTM E329.

# Particle Size Distribution Report



% Stones	% +3"	% Gravel			% Sand					% Silt		% Clay
		Coarse	Medium	Fine	V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Fine	
0.0	0.0	22.1	30.4	11.2	7.4	7.8	6.9	6.1	1.9	2.2	3.3	0.7

Test Results (D6913 & ASTM D 1140)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1"	100.0		
3/4"	77.9		
1/2"	71.7		
3/8"	59.3		
#4	47.5		
#10	36.3		
#18	28.9		
#35	21.1		
#60	14.2		
#140	8.4		
#200	6.8		
#270	6.2		
0.0494 mm.	6.4		
0.0353 mm.	5.6		
0.0252 mm.	4.8		
0.0133 mm.	2.7		
0.0094 mm.	2.5		
0.0068 mm.	1.5		
0.0048 mm.	1.1		
0.0034 mm.	0.9		
0.0014 mm.	0.7		

\* (no specification provided)

## Material Description

Light Brown loamy sand

## Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

## Classification

USCS (D 2487)= GP-GM AASHTO (M 145)= A-1-a

## Coefficients

D<sub>90</sub>= 22.7414 D<sub>85</sub>= 21.3790 D<sub>60</sub>= 9.6783  
D<sub>50</sub>= 6.5171 D<sub>30</sub>= 1.1164 D<sub>15</sub>= 0.2733  
D<sub>10</sub>= 0.1393 C<sub>u</sub>= 69.50 C<sub>c</sub>= 0.92

## Remarks

Date Received: 12/21/21 Date Tested: 12/28/21

Tested By: DN / CC

Checked By: Christina Colman

Title: Laboratory Supervisor

Source of Sample: Boring Depth: 5-12'  
Sample Number: GEO-3 (S2 & S3)

Date Sampled:

**Thielsch Engineering Inc.**

**Cranston, RI**

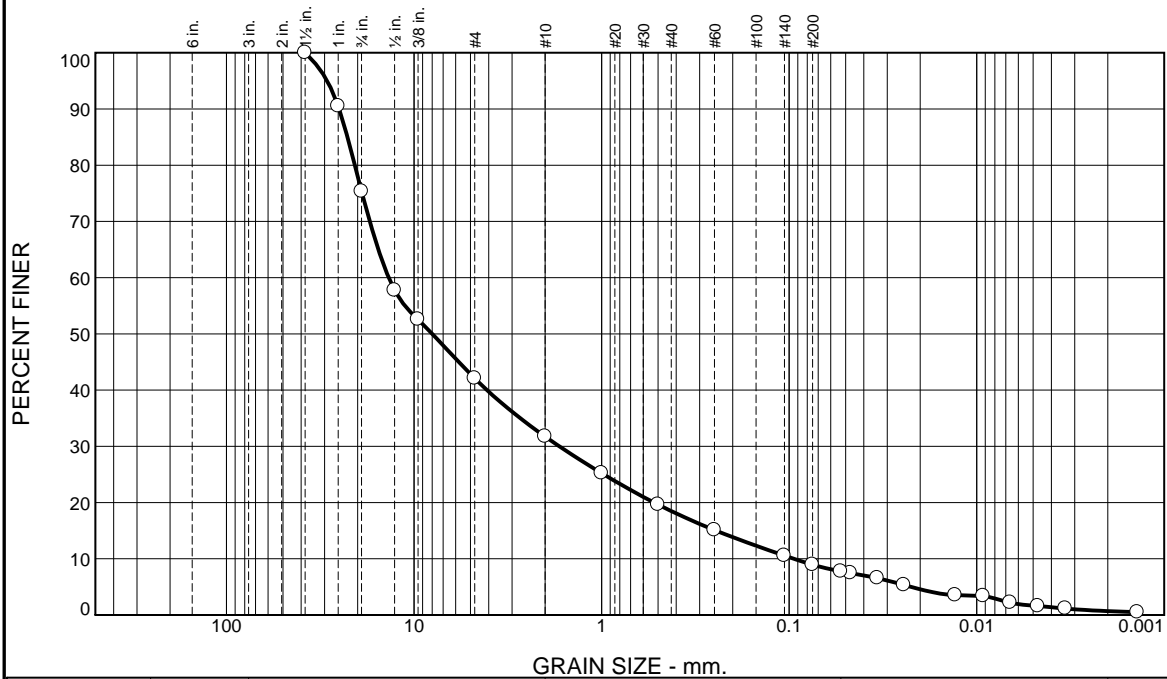
Client: GeoEngineers, Inc.

Project: 34 Dudley Street  
Arlington, MA

Project No: 25754-001-00

Figure 21-S-B478

# Particle Size Distribution Report



% Stones	% +3"	% Gravel			% Sand					% Silt		% Clay
		Coarse	Medium	Fine	V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Fine	
0.0	0.0	24.6	33.3	10.4	6.5	5.6	4.5	4.8	2.5	3.2	3.9	0.7

Test Results (D6913 & ASTM D 1140)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1 1/2"	100.0		
1"	90.5		
3/4"	75.4		
1/2"	57.8		
3/8"	52.6		
#4	42.1		
#10	31.7		
#18	25.2		
#35	19.6		
#60	15.1		
#140	10.6		
#200	8.9		
#270	7.8		
0.0471 mm.	7.5		
0.0338 mm.	6.6		
0.0244 mm.	5.3		
0.0130 mm.	3.5		
0.0092 mm.	3.4		
0.0066 mm.	2.2		
0.0047 mm.	1.6		
0.0034 mm.	1.1		
0.0014 mm.	0.5		

\* (no specification provided)

## Material Description

Grey loamy sand

## Atterberg Limits (ASTM D 4318)

PL= NP

LL=

PI=

## Classification

USCS (D 2487)=

AASHTO (M 145)=

## Coefficients

D<sub>90</sub>= 25.0933

D<sub>85</sub>= 22.6442

D<sub>60</sub>= 13.6565

D<sub>50</sub>= 7.9942

D<sub>30</sub>= 1.6791

D<sub>15</sub>= 0.2453

D<sub>10</sub>= 0.0945

C<sub>u</sub>= 144.54

C<sub>c</sub>= 2.18

Remarks

Date Received: 12/21/21 Date Tested: 12/28/21

Tested By: DN / CC

Checked By: Christina Colman

Title: Laboratory Supervisor

Source of Sample: Boring Depth: 9-10.8'  
Sample Number: GEO-5 (S1)

Date Sampled:

**Thielsch Engineering Inc.**

**Cranston, RI**

Client: GeoEngineers, Inc.

Project: 34 Dudley Street  
Arlington, MA

Project No: 25754-001-00

Figure 21-S-B479



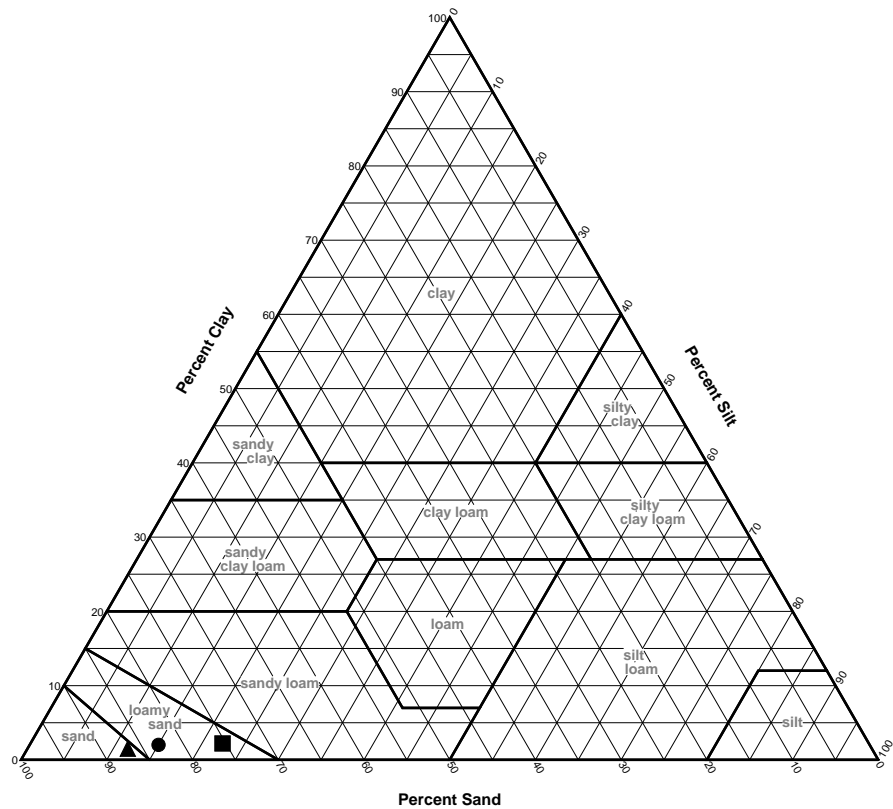
The graph illustrates the grain size distribution of a soil sample. The y-axis represents the percentage of soil finer than a given grain size, ranging from 0 to 100. The x-axis represents the grain size in millimeters on a logarithmic scale, ranging from 100 mm to 0.001 mm. The curve shows that approximately 100% of the soil is finer than 60 mm, and the percentage finer decreases as the grain size decreases, reaching 0% finer at 0.075 mm.

Grain Size (mm)	Percent Finer (%)
60	100
47.5	85
37.5	77
30	71
25	59
20	47
15	31
12.5	20
10	13
7.5	8
6	7
4.75	6
3.75	5
3	4
2.5	3
2	2
1.5	1
1.25	1
1	0

Test Results (D6913 & ASTM D 1140)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1"	100.0		
3/4"	85.1		
1/2"	76.8		
3/8"	70.9		
#4	59.0		
#10	47.0		
#18	30.3		
#35	19.0		
#60	13.0		
#140	8.1		
#200	7.2		
#270	6.2		
0.0502 mm.	6.0		
0.0356 mm.	5.8		
0.0256 mm.	3.8		
0.0134 mm.	2.8		
0.0095 mm.	1.8		
0.0068 mm.	1.4		
0.0048 mm.	0.9		
0.0034 mm.	0.9		
0.0014 mm.	0.4		

**Figure 21-S-B480**

# USDA Soil Classification



## SOIL DATA

	Source	Sample No.	Depth	Percentages From Material Passing a #10 Sieve			Classification
				Sand	Silt	Clay	
●	Boring	GEO-3 (S2 & S3)	5-12'	82.9	15.2	1.9	Loamy sand
■	Boring	GEO-5 (S1)	9-10.8'	75.4	22.4	2.2	Loamy sand
▲	Boring	GEO-6 (S-1B)	5.3-6'	86.8	11.7	1.5	Sand

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** GeoEngineers, Inc.

**Project:** 34 Dudley Street  
Arlington, MA

**Project No.:** 25754-001-00

**Figure** S-B478-B480

## **APPENDIX C**

### **Design Memorandum Limitations and Guidelines for Use**

## **APPENDIX C**

### **DESIGN MEMORANDUM LIMITATIONS AND GUIDELINES FOR USE<sup>1</sup>**

This appendix provides information to help you manage your risks with respect to the use of this memorandum.

#### **Read These Provisions Closely**

It is important to recognize that the geoscience practices (geotechnical engineering, geology and environmental science) rely on professional judgment and opinion to a greater extent than other engineering and natural science disciplines, where more precise and/or readily observable data may exist. To help clients better understand how this difference pertains to our services, GeoEngineers includes the following explanatory “limitations” provisions in its memorandums. Please confer with GeoEngineers if you need to know more how these “Stormwater Evaluation Memorandum Limitations and Guidelines for Use” apply to your project or site.

#### **Geotechnical Services are Performed for Specific Purposes, Persons and Projects**

This memorandum has been prepared for PSI Atlantic Arlington MA, LLC and for the Project(s) specifically identified in the memorandum. The information contained herein is not applicable to other sites or projects.

GeoEngineers structures its services to meet the specific needs of its clients. No party other than the party to whom this memorandum is addressed may rely on the product of our services unless we agree to such reliance in advance and in writing. Within the limitations of the agreed scope of services for the Project, and its schedule and budget, our services have been executed in accordance with our Agreement with PSI Atlantic Arlington MA, LLC dated December 29, 2021 and generally accepted geotechnical practices in this area at the time this memorandum was prepared. We do not authorize, and will not be responsible for, the use of this memorandum for any purposes or projects other than those identified in the memorandum.

#### **A Geotechnical and Stormwater Evaluation Memorandum is based on a Unique Set of Project-Specific Factors**

This memorandum has been prepared for schematic design for the proposed development concept located at 34 Dudley Street in Arlington, Massachusetts. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and memorandum. Unless GeoEngineers specifically indicates otherwise, it is important not to rely on this memorandum if it was:

- Not prepared for you,
- Not prepared for your project,
- Not prepared for the specific site explored, or
- Completed before important project changes were made.

For example, changes that can affect the applicability of this memorandum include those that affect:

- The function of the proposed structure;
- Elevation, configuration, location, orientation or weight of the proposed structure;

---

<sup>1</sup> Developed based on material provided by GBA, GeoProfessional Business Association; [www.geoprofessional.org](http://www.geoprofessional.org).



- Composition of the design team; or
- Project ownership.

If changes occur after the date of this memorandum, GeoEngineers cannot be responsible for any consequences of such changes in relation to this memorandum unless we have been given the opportunity to review our interpretations and recommendations. Based on that review, we can provide written modifications or confirmation, as appropriate.

### **Subsurface Conditions Can Change**

This stormwater evaluation memorandum is based on conditions that existed at the time the study was performed. The findings and conclusions of this memorandum may be affected by the passage of time, by man-made events such as construction on or adjacent to the site, new information or technology that becomes available subsequent to the memorandum date, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. If more than a few months have passed since issuance of our memorandum or work product, or if any of the described events may have occurred, please contact GeoEngineers before applying this memorandum for its intended purpose so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

### **Geotechnical and Geologic Findings are Professional Opinions**

Our interpretations of subsurface conditions are based on field observations from widely spaced sampling locations at the site. Site exploration identifies the specific subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied its professional judgment to render an informed opinion about subsurface conditions at other locations. Actual subsurface conditions may differ, sometimes significantly, from the opinions presented in this memorandum. Our memorandum, conclusions and interpretations are not a warranty of the actual subsurface conditions.

### **Stormwater Evaluation Memorandum Recommendations are Not Final**

We have developed the following recommendations based on data gathered from subsurface investigation(s). These investigations sample just a small percentage of a site to create a snapshot of the subsurface conditions elsewhere on the site. Such sampling on its own cannot provide a complete and accurate view of subsurface conditions for the entire site. Therefore, the recommendations included in this memorandum are preliminary and should not be considered final. GeoEngineers' recommendations can be finalized only by observing actual subsurface conditions revealed during construction. GeoEngineers cannot assume responsibility or liability for the recommendations in this memorandum if we do not perform construction observation.

We recommend that you allow sufficient monitoring, testing and consultation during construction by GeoEngineers to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes if the conditions revealed during the work differ from those anticipated, and to evaluate whether earthwork activities are completed in accordance with our recommendations. Retaining GeoEngineers for construction observation for this project is the most effective means of managing the risks associated with unanticipated conditions. If another party performs field observation and confirms our expectations, the other party must take full responsibility for both the observations and recommendations. Please note, however, that another party would lack our project-specific knowledge and resources.

**A Stormwater Evaluation Memorandum Could Be Subject to Misinterpretation**

Misinterpretation of this memorandum by members of the design team or by contractors can result in costly problems. GeoEngineers can help reduce the risks of misinterpretation by conferring with appropriate members of the design team after submitting the memorandum, reviewing pertinent elements of the design team's plans and specifications, participating in pre-bid and preconstruction conferences, and providing construction observation.

**Do Not Redraw the Exploration Logs**

Geotechnical engineers and geologists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. The logs included in a geotechnical engineering memorandum should never be redrawn for inclusion in architectural or other design drawings. Photographic or electronic reproduction is acceptable, but separating logs from the memorandum can create a risk of misinterpretation.

**Give Contractors a Complete Memorandum and Guidance**

Some owners and design professionals believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering memorandum, but preface it with a clearly written letter of transmittal. In that letter, advise contractors that the memorandum was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with GeoEngineers and/or to conduct additional study to obtain the specific types of information they need or prefer. A pre-bid conference can also be valuable. Be sure contractors have sufficient time to perform additional study. Only then might an owner be in a position to give contractors the best information available, while requiring them to at least share the financial responsibilities stemming from unanticipated conditions. Further, a contingency for unanticipated conditions should be included in your project budget and schedule.

**Contractors are Responsible for Site Safety on Their Own Construction Projects**

Our geotechnical recommendations are not intended to direct the contractor's procedures, methods, schedule or management of the work site. The contractor is solely responsible for job site safety and for managing construction operations to minimize risks to on-site personnel and adjacent properties.

**Geotechnical, Geologic and Environmental Memoranda Should Not Be Interchanged**

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic memorandum does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental memoranda are not used to address geotechnical or geologic concerns regarding a specific project.

**Biological Pollutants**

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this memorandum does not include any interpretations, recommendations, findings or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria and viruses, and/or any of their byproducts.

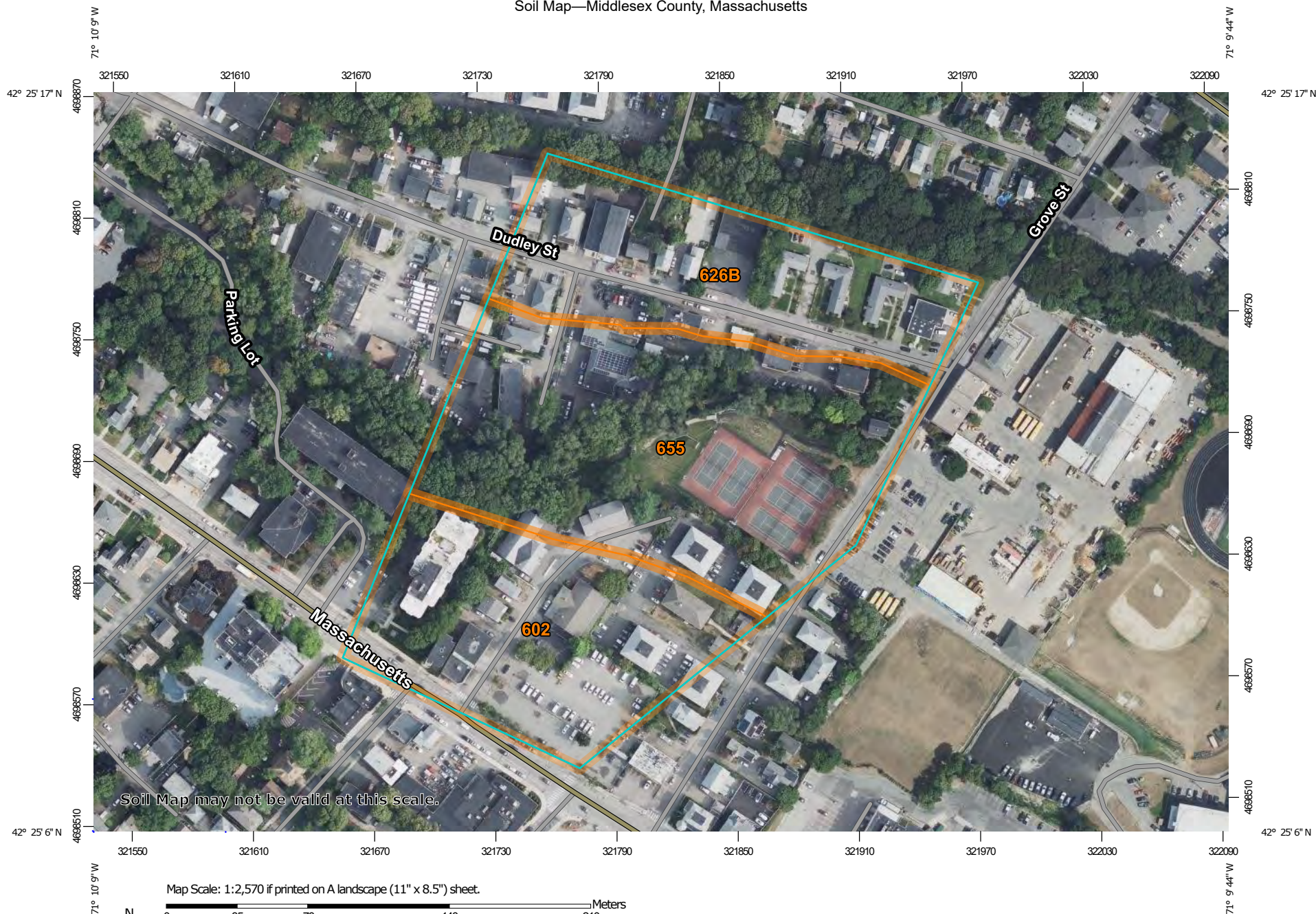
A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.

**Information Provided by Others**

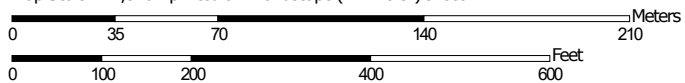
GeoEngineers has relied upon certain data or information provided or compiled by others in the performance of our services. Although we use sources that we reasonably believe to be trustworthy, GeoEngineers cannot warrant or guarantee the accuracy or completeness of information provided or compiled by others.



# Soil Map—Middlesex County, Massachusetts



Map Scale: 1:2,570 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84



**Natural Resources  
Conservation Service**

Web Soil Survey  
National Cooperative Soil Survey

10/28/2021  
Page 1 of 3



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts

Survey Area Data: Version 21, Sep 2, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 13, 2020—Sep 15, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
602	Urban land	3.9	28.6%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	3.5	26.1%
655	Udorthents, wet substratum	6.1	45.3%
<b>Totals for Area of Interest</b>		<b>13.6</b>	<b>100.0%</b>

## Required and Provided Recharge Volumes



## Recharge Calculations

Project	Arlington Self Storage	Project #	52816.00
Calculated by	SJH	Date	2/3/2022
Checked by	EKG	Date	2/7/2022

### REQUIRED RECHARGE VOLUME

Hydrologic Soil Group (HSG)	Area (ft <sup>2</sup> )	Inches of Runoff (in)	Volume (ft <sup>3</sup> )
A	26,001	0.60	1,300
B	0	0.35	0
C	0	0.25	0
D	0	0.10	0
<b>TOTAL</b>			<b>1,300</b>

### CAPTURE AREA ADJUSTMENT

Required Recharge Volume (ft <sup>3</sup> )	1,300
Total Site Net Impervious Area (ft <sup>2</sup> )	26,001
Total Site Impervious Area Draining to Recharge Facilities (ft <sup>2</sup> )	25,700
Capture Area Adjustment Factor	1.01
Adjusted Required Recharge Volume (ft <sup>3</sup> )	<b>1,315</b>

### PROVIDED RECHARGE VOLUME

#### SUBSURFACE INFILTRATION SYSTEM #1:

MC-4500

Volumes provided below the lowest outlet at elevation: 71.7

Provided Volume:	Bottom Area (ft <sup>2</sup> )	Volume (ft <sup>3</sup> )
	1,112	<b>1,954</b>
Drawdown:	$(V_{\text{Infiltration}}/A_{\text{Bottom}})/\text{Rawl's Rate}$	
	Rawls Recharge Rate:	2.4 (in/hr)
	Drawdown Time:	8.75 (hours)

### RECHARGE VOLUME SUMMARY

Required Recharge Volume:	<b>1,300</b>	(ft <sup>3</sup> )
Total Recharge Volume Provided:	<b>1,954</b>	(ft <sup>3</sup> )



---

## Appendix D: Standard 4 Computations and Supporting Information

- › Operation and Maintenance Plan
- › Water Quality Volume Calculations
- › TSS Removal Worksheets

## Operations and Maintenance Plan

# Proposed Self-Storage Facility

34 Dudley Street  
Arlington, Massachusetts

---

PREPARED FOR

PSI Atlantic Arlington MA, LLC  
530 Oak Court Drive, Suite 155  
Memphis, TN 38117

---

PREPARED BY



2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900

February 2022





# Table of Contents

<b>Project Informtion .....</b>	<b>iii</b>
<b>Section A: Source Control .....</b>	<b>A-1</b>
<b>Section B: Spill Prevention .....</b>	<b>B-1</b>
B.1 Initial Notification .....	B-1
B.2 Further Notification.....	B-1
B.3 Assessment – Initial Containment.....	B-4
<b>Section C: Snow Management .....</b>	<b>C-1</b>
<b>Section D: Maintenance of Stormwater Management Systems .....</b>	<b>D-1</b>
D.1 Pavement Systems.....	D-1
D.1.1 Standard Asphalt Pavement.....	D-1
D.1.2 Permeable Asphalt Pavement.....	D-1
D.1.3 Permeable Pavers .....	D-1
D.2 Structural Stormwater Management Devices.....	D-1
D.2.1 Catch Basins.....	D-1
D.2.2 Structural Water Quality Devices .....	D-2
D.2.3 Subsurface Infiltration Basins.....	D-2
D.2.4 Stormwater Outfalls.....	D-3
D.2.5 Roof Drain Leader .....	D-3
D.3 Vegetated Stormwater Management Devices .....	D-3
D.3.1 Rain Gardens / Bioretention Basins.....	D-3
D.3.2 Biofiltration Swales.....	D-5
D.3.3 Surface Infiltration/Detention Basins.....	D-5
D.3.4 Vegetated Areas Maintenance .....	D-5
<b>Section E: Operations and Maintenanc Plan Summary .....</b>	<b>E-1</b>
E.1 Routine Maintenance Checklists.....	E-1
E.2 Reporting and Documentation.....	E-1
E.3 Construction Practices Maintenance/ Evaluation Checklist .....	E-2
E.4 Long-term Maintenance/Evaluation Checklist .....	E-3
E.5 Maintenance Checklists and Device Location Maps.....	E-4
<b>Section F: Product Literature .....</b>	<b>F-13</b>

This page intentionally left blank.

# Project Informtion

## Site

Proposed Self-Storage Facility  
34 Dudley Street  
Arlington, Massachusetts, 02476

## Developer

PSI Atlantic Arlington MA, LLC.  
530 Oak Court Drive, Suite 155  
Memphis, TN 38117  
Phone Number: \_\_\_\_\_

## Site Supervisor

Site Manager Name\_\_\_\_\_

Site Manager Address\_\_\_\_\_

Site Manager City, State Zip\_\_\_\_\_

Site Manager Phone Number\_\_\_\_\_

## Site Contact

Name: \_\_\_\_\_

Telephone: \_\_\_\_\_

Cell phone: \_\_\_\_\_

Email: \_\_\_\_\_

This page intentionally left blank.

---

## Section A: Source Control



This page intentionally left blank.



## A Source Control

A comprehensive source control program will be implemented at the Proposed Self-Storage Facility, which includes the following components:

- › Regular pavement sweeping on the asphalt surfaces
- › Catch basin cleaning
- › Clearing litter from the parking area, islands, and perimeter landscape areas
- › Enclosure and regular maintenance of all dumpsters
- › Spill Prevention training

This page intentionally left blank.

---

## Section B: Spill Prevention

This page intentionally left blank.





## B Spill Prevention

Spill prevention equipment and training will be provided by the Owner or property management company.

### B.1 Initial Notification

In the event of a spill the facility and/or construction manager or supervisor will be notified immediately.

Facility Manager (name): \_\_\_\_\_

Facility Manager (phone): \_\_\_\_\_

Construction Manager (name) : \_\_\_\_\_

Construction Manager (phone): \_\_\_\_\_

The supervisor will first contact the Fire Department and then notify the Police Department, the Public Health Commission and the Conservation Commission. The Fire Department is ultimately responsible for matters of public health and safety and should be notified immediately.

### B.2 Further Notification

Based on the assessment from the Fire Chief, additional notification to a cleanup contractor may be made. The Massachusetts Department of Environmental Protection (DEP) and the EPA may be notified depending upon the nature and severity of the spill. The Fire Chief will be responsible for determining the level of cleanup and notification required. The attached list of emergency phone numbers shall be posted in the main construction/facility office and readily accessible to all employees. A hazardous waste spill report shall be completed as necessary using the attached form.

## Emergency Notification Phone Numbers

### 1. FACILITY MANAGER

Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Beeper/Cell: \_\_\_\_\_

Home Phone: \_\_\_\_\_

Alternate Contact: \_\_\_\_\_

Phone: \_\_\_\_\_

Beeper/Cell: \_\_\_\_\_

Home Phone: \_\_\_\_\_

### 2. FIRE & POLICE DEPARTMENT

Emergency: 911

### 3. CLEANUP CONTRACTOR

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

### 4. STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)

Emergency: 978-694-3200

### 5. NATIONAL RESPONSE CENTER

Alternate: U.S. Environmental Protection Agency

Phone: (800) 424-8802

Emergency: \_\_\_\_\_

Business: \_\_\_\_\_

### 6. MUNICIPAL HEALTH DEPARTMENT

Municipal Conservation Commission:

Phone: (781) 316-3170

Phone: (781) 316-3090

## Hazardous Waste & Oil Spill Report

Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM / PM

Exact location  
(Transformer #): \_\_\_\_\_

Type of equipment: \_\_\_\_\_ Make: \_\_\_\_\_ Size: \_\_\_\_\_

S / N: \_\_\_\_\_ Weather Conditions: \_\_\_\_\_

On or near water? ☐ Yes  
☐ No If yes, name of body of water: \_\_\_\_\_

Type of chemical / oil spilled: \_\_\_\_\_

Amount of chemical / oil spilled: \_\_\_\_\_

Cause of spill: \_\_\_\_\_

Measures taken to  
contain or clean up spill: \_\_\_\_\_

Amount of chemical / oil recovered: \_\_\_\_\_ Method: \_\_\_\_\_

Material collected as a result of cleanup:

\_\_\_\_\_ drums containing \_\_\_\_\_

\_\_\_\_\_ drums containing \_\_\_\_\_

\_\_\_\_\_ drums containing \_\_\_\_\_

Location and method of debris disposal: \_\_\_\_\_

Name and address of any person, firm,  
or corporation suffering charges: \_\_\_\_\_

Procedures, method, and precautions  
instituted to prevent a similar occurrence  
from recurring: \_\_\_\_\_

Spill reported by General Office by: \_\_\_\_\_ Time: \_\_\_\_\_ AM / PM

Spill reported to DEP / National Response Center by: \_\_\_\_\_

DEP Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM / PM Inspector: \_\_\_\_\_

NRC Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM / PM Inspector: \_\_\_\_\_

Additional comments: \_\_\_\_\_

### B.3 Assessment – Initial Containment

The supervisor or manager will assess the incident and initiate containment control measures with the appropriate spill containment equipment included in the spill kit kept on-site. A list of recommended spill equipment to be kept on site is included on the following page.

Fire / Police Department:	911
Municipality Health Department	(781) 316-3170
Municipality Conservation Commission:	(781) 316-3090

#### Emergency Response Equipment

The following equipment and materials shall be maintained at all times and stored in a secure area for long-term emergency response need.

Supplies	Quantity	Recommended Suppliers
› Sorbent Pillows/"Pigs"	2	<a href="http://www.newpig.com">http://www.newpig.com</a> Item # KIT276 — mobile container with two pigs
› Sorbent Boom/Sock	25 feet	<a href="http://www.forestry-suppliers.com">http://www.forestry-suppliers.com</a>
› Sorbent Pads	50	
› Lite-Dri® Absorbent	5 pounds	
› Shovel	1	Item # 33934 — Shovel (or equivalent)
› Pry Bar	1	Item # 43210 — Manhole cover pick (or equivalent)
› Goggles	1 pair	Item # 23334 — Goggles (or equivalent)
› Gloves – Heavy	1 pair	Item # 90926 — Gloves (or equivalent)

---

## Section C: Snow Management



This page intentionally left blank.



## C Snow Management

Snow storage areas are shown on the attached Map.

- › Snow storage areas will be managed to prevent blockage of storm drain catch basins and stormwater drainage swales. Snow combined with sand and debris may block a storm drainage system, diminishing the infiltration capacity of the system and causing localized flooding.
- › Sand and debris deposited on vegetated or paved areas shall be cleared from the site and properly disposed of at the end of the snow season, no later than May 15.
- › Snow shall not be dumped into any waterbody, pond, or wetland resource area.

This page intentionally left blank.

---

## Section D: Maintenance of Stormwater Management Systems

This page intentionally left blank.





## D Maintenance of Stormwater Management Systems

### D.1 Pavement Systems

#### D.1.1 Standard Asphalt Pavement

- › Sweep or vacuum standard asphalt pavement areas at least four times per year with a rotary brush sweeper or vacuum sweeper and properly dispose of removed material.
- › Recommended sweeping schedule:
  - › Oct/Nov
  - › Feb/Mar
  - › Apr/May
  - › Aug/Sep
- › More frequent sweeping of paved surfaces will result in less accumulation in catch basins, less cleaning of subsurface structures, and less disposal costs.
- › Check loading docks and dumpster areas frequently for spillage and/or pavement staining and clean as necessary.

### D.2 Structural Stormwater Management Devices

#### D.2.1 Catch Basins and Area Drains

The proper removal of sediments and associated pollutants and trash occurs only when catch basin inlets and sumps are cleaned out regularly. The more frequent the cleaning, the less likely sediments will be re-suspended and subsequently discharged. In addition, frequent cleaning also results in more volume available for future deposition and enhances the overall performance. As noted in the pavement Operation and Maintenance (O&M) section, more frequent sweeping of paved surfaces will result in less accumulation in catch basins, less cleaning of subsurface structures, and less disposal costs.

There is one (1) catch basin and two (2) area drains at the Self-Storage Facility. These catch basins are constructed with sumps (minimum 4 feet) and hooded outlets to trap debris,

sediments, and floating contaminants. Disposal of all sediments must be in accordance with applicable local, state, and federal guidelines. A map of the catch basin locations is included in Section E.5 Maintenance Checklists and Device Location Maps.

### **Inspections and Cleaning**

- › All catch basins shall be inspected at least four times per year and cleaned a minimum of at least once per year.
- › Sediment (if more than six inches deep) and/or floatable pollutants shall be pumped from the basin and disposed of at an approved offsite facility in accordance with all applicable regulations.
- › Any structural damage or other indication of malfunction will be reported to the site manager and repaired as necessary
- › During colder periods, the catch basin grates must be kept free of snow and ice.
- › During warmer periods, the catch basin grates must be kept free of leaves, litter, sand, and debris.

## **D.2.2 Subsurface Infiltration Basins**

The subsurface infiltration/detention basins are used to detain and infiltrate roadway and rooftop runoff. There is one (1) subsurface infiltration basin at the Self-Storage Facility. Each of these basins has a water quality pre-treatment device in the form of a subsurface sediment removal row to protect the infiltration bed from clogging. The sediment removal row is an integral part of the underground infiltration system and is comprised of a perforated pipe, wrapped in a filter fabric and surrounded with gravel. To maintain pre-treatment functionality, this sediment removal row requires regular inspection and cleaning. A map of the infiltration basin locations is included in Section E.5 Maintenance Checklists and Device Location Maps.

### **Inspections and Cleaning**

- › The subsurface infiltration systems will be inspected at least once each year by removing the manhole/access port covers and determining the thickness of sediment that has accumulated in the sediment removal row.
- › If sediment is more than six inches deep, it must be suspended via flushing with clean water and removed using a vactor truck.
- › Manufacturer's specifications and instructions for cleaning the sediment removal row are provided as an attachment to this section.
- › Emergency overflow pipes will be examined at least once each year and verified that no blockage has occurred.
- › System will be observed after rainfalls to see if it is properly draining.

### D.2.3 Stormwater Outfalls

The stormwater drainage system at the Self-Storage Facility has one (1) outfall location where treated stormwater is discharged towards Mill Brook. A map of this location is included in Section E.5 Maintenance Checklists and Device Location Maps.

- › Inspect outfall locations monthly for the first three months after construction to ensure proper functioning and correct any areas that have settled or experienced washouts.
- › Inspect outfalls annually after initial three month period.
- › Annual inspections should be supplemented after large storms, when washouts may occur.
- › Maintain vegetation around outfalls to prevent blockages at the outfall.
- › Maintain rip rap pad below each outfall and replace any washouts.
- › Remove and dispose of any trash or debris at the outfall.

### D.2.4 Roof Drain Leader

Roof runoff from buildings and parking areas at the Self-Storage Facility are directed to the bioretention basin and to the subsurface infiltration units.

- › Perform routine roof inspections quarterly.
- › Keep roofs clean and free of debris.
- › Keep roof drainage systems clear.
- › Keep roof access limited to authorized personnel.
- › Clean inlets twice per year or as necessary.

## D.3 Vegetated Stormwater Management Devices

### D.3.1 Rain Gardens / Bioretention Basins

The rain gardens at the Self-Storage Facility are excavated shallow surface depressions planted with specially-selected native vegetation to treat and capture runoff. The rain garden also has an overflow structure leading to the subsurface infiltration system to handle larger storm volumes. A location map for the rain garden can be found in Section E.5 Maintenance Checklists and Device Location Maps.

The vegetation in the rain gardens serves to filter runoff — improving water quality and reducing runoff quantity — and the root systems can enhance infiltration. The soil medium filters out pollutants and allows storage and infiltration of stormwater runoff; and the infiltration bed provides additional volume control. Properly designed rain gardens may mimic natural forest ecosystems through species diversity, density and distribution of vegetation, and the use of native species, resulting in a system that is resistant to insects, disease, pollution, and climatic stresses.

Rain gardens require routine maintenance (similar to conventional landscaping maintenance) to ensure that the system both functions well as a stormwater management practice while also maintaining an aesthetic quality compatible with the surrounding land uses.

Replacement of mulch is an important part of rain garden maintenance. Mulch keeps the soil moist, allowing for easy infiltration of rain water. Un-mulched surfaces may develop into a hardpan, a condition in which the soil surface becomes cemented together, forming a hard, impervious layer. Mulching also protects plants and reduces weed growth.

### **Initial Post-Construction Inspection**

- › During the initial period of vegetation establishment pruning and weeding are required twice in first year by contractor.
- › Any dead vegetation found after the first year must be replaced.
- › Proper mulching is mandatory and regular watering may be required initially to ensure proper establishment of new vegetation.

### **Long-Term Maintenance**

- › Weeds and invasive plant species shall be removed by hand.
- › Leaf litter and other detritus shall be removed twice per year.
- › If needed to maintain aesthetic appearance, perennial plantings may be trimmed at the end of the growing season.
- › Trees and shrubs should be inspected twice per year to evaluate health and attended to as necessary.
- › Re-mulch rain gardens with well aged hardwood mulch to a depth of 3 inches each spring or whenever erosion is evident. The entire area may require mulch replacement once every two to three years. Mulch depth shall not exceed 3 inches and the depth of the depression shall not be compromised by the accumulation of vegetation or old mulch.
- › Seeded ground cover or grass areas shall not receive mulching.
- › Fertilizers should not be used in the rain garden as excessive nutrients in the rain garden may migrate to the underdrain and be discharged to adjacent surface waters.
- › Test pH of the soils in the planting bed annually. If the pH is below 5.2, limestone should be applied to increase it. If the pH is above 8.0, iron sulfate plus sulfur should be added to reduce it.
- › Rain gardens may require watering during periods of extended drought.

### **Inspections and Cleaning**

- › Rain gardens shall be inspected twice during for the first year and annually thereafter for sediment buildup, erosion, vegetative conditions, etc. If sediment build-up is found, sediment removal and core aeration or cultivating of un-vegetated areas may be required to ensure adequate filtration.

- › The inflow location should be inspected annually for clogging. Sediment build up is a common problem where runoff leaves an impervious surface and enters a vegetative or earthen surface. Any built-up sediment should be removed to prevent runoff from bypassing the facility. Sources of sediment should be prevented.
- › The overflow structure and underdrain standpipes should be inspected annually to ensure that they are functioning.
- › Inspect rain gardens after a large storm event to ensure that proper drainage is occurring. Water that remains ponded on the surface of the rain garden after 48 hours of dry weather could indicate a problem with the subsurface drainage system or clogging of the underdrain. While the plants selected for the rain garden are tolerant of wet soils, they are not wetland species that can survive long periods of inundation. Immediate attention is required to prevent the loss of plant materials.

### **D.3.2 Vegetated Areas Maintenance**

Although not a structural component of the drainage system, the maintenance of vegetated areas may affect the functioning of the stormwater management system. This includes the health/density of vegetative cover and activities such as the application and disposal of lawn and garden care products, disposal of leaves and yard trimmings and proper aeration of soils.

- › Inspect planted areas on a semi-annual basis and remove any litter.
- › Maintain planted areas adjacent to pavement to prevent soil washout.
- › Immediately clean any soil deposited on pavement.
- › Re-seed bare areas; install appropriate erosion control measures when native soil is exposed or erosion channels are forming.
- › Plant alternative mixture of grass species in the event of unsuccessful establishment.
- › The grass vegetation should be cut to a height between three and four inches.
- › Pesticide/Herbicide Usage – No pesticides are to be used unless a single spot treatment is required for a specific control application.
- › Fertilizer usage should be avoided. If deemed necessary, slow release fertilizer should be used. Fertilizer may be used to begin the establishment of vegetation in bare or damaged areas, but should not be applied on a regular basis unless necessary.
- › Annual application of compost amendments and aeration are recommended.



This page intentionally left blank.

---

## Section E: Operations and Maintenance Plan Summary

This page intentionally left blank.



## E Operations and Maintenance Plan Summary

This Operation and Maintenance Plan has been prepared in accordance with the Stormwater Management Policy developed by the DEP and CZM and local regulations as applicable. It specifies operational practices and drainage system maintenance requirements for the the Self-Storage Facility redevelopment. Requirements should be adjusted by the site manager as necessary to ensure successful functioning of system components.

### E.1 Routine Maintenance Checklists

Routine required maintenance is described in Sections A – D. The following checklists are to be used by the property manager to implement and document the required maintenance and inspection tasks.

### E.2 Reporting and Documentation

The site supervisor shall be responsible for ensuring that the scheduled tasks as described in this plan are appropriately completed and recorded in the Maintenance Log. Accurate records of all inspections, routine maintenance and repairs shall be documented and these records shall be available for inspection by members of the Town of Arlington Conservation Commission or other designated body, or their designated agent, upon request.

The Maintenance Log shall:

- › Document the completion of required maintenance tasks.
- › Identify the person responsible for the completion of tasks.
- › Identify any outstanding problems, malfunctions or inconsistencies identified during the course of routine maintenance.
- › Document specific repairs or replacements.

### E.3 Construction Practices Maintenance/ Evaluation Checklist

**Project Name – City, State**

Best Management Practice	Inspection Frequency	Date Inspected	Inspector Initials	Minimum Maintenance and Key Items to Check	Cleaning or Repair Needed <input type="checkbox"/> Yes/No (List Items)	Date of Cleaning or Repair	Performed by:
Compost Filter Tube/Hay Bales/ Silt Fencing	Weekly and after any rainfall			Sediment build up, broken or damaged tubes, bales or stakes			
Gravel Construction Entrance	Weekly and after any rainfall			Filled voids, runoff/sediments into street			
Catch Basin Protection	Weekly and after any rainfall			Clogged or sediment build-up at surface or in basin			
Diversion Channels	Weekly and after any rainfall			Maintained, moved as necessary to correct locations, Check for erosion or breakout			
Temporary Sedimentation Basins	Weekly and after any rainfall			Cracking, erosion, breakout, sediment buildup, contaminants			

Stormwater Control Manager: \_\_\_\_\_



## E.4 Long-term Maintenance/Evaluation Checklist

### Project Name – City, State

Best Management Practice	Minimum Maintenance and Key Items to Check	Inspection Frequency	Date Inspected	Inspector Initials	Cleaning Frequency	Cleaning or Repair Needed <input type="checkbox"/> Yes/No	Date of Cleaning or Repair	Performed by:
Street Sweeping	Vacuum sweeper	4X per year			4X per year* minimum			
Outfall Structures	Remove debris and excess vegetation, replace any dislodged riprap	1X per year			1X per year			
Deep Sump and Hooded Catch basins	Remove sediment 1X per year or if >6 inches	4X per year			1X per year or as necessary			
Subsurface Infiltration Basins	Remove sediment 1X per year or if >6 inches	1X per year			1X per year			
Rain Gardens/ Bioretention Basins	Inspect inlets, vegetation, overflow discharge pipes, drain time less than 4 days	2X per year first year, annually thereafter			2X per year first year, annually thereafter			
Roof Drains	Remove debris, clean inlets draining to subsurface bed	4x per year roof inspection			2x per year inlet cleaning, roof debris as necessary			

\* Recommend sweeping Oct/Nov, Feb/Mar, Apr/May Jul/Aug with late winter most important

Stormwater Control Manager: \_\_\_\_\_

## **E.5 Maintenance Checklists and Device Location Maps**

These checklists are provided for the maintenance crew to photocopy and use when conducting inspections and cleaning activities to the stormwater management systems.

# Maintenance Checklists

---

**Catchbasins – Inspect 4 times per year, clean when sediment depth >6 inches or at least once per year.**

Catch Basin / Area	Inspected (Y/N)	Sediment Depth (inches)	Cleaning needed (Y/N)	Date Cleaned	Comments (Trash, Oil, Pet waste, Lawn Debris, Damage)
Drains					
CB 1				/ /	
AD 1				/ /	
AD-2					

**Outfalls – Inspect 4 times per year, replace any dislodged rip-rap, remove excess vegetation, remove any debris.**

Outfall	Inspected (Y/N)	Sediment Depth (inches)	Cleaning needed (Y/N)	Date Cleaned	Comments (Trash, Oil, Pet waste, Lawn Debris, Damage)
OF 1				/ /	

**Infiltration Basins – Inspect once per year, remove sediment if more than 6 inches has accumulated in sediment forebay or sediment collection row.**

Basin	Inspected (Y/N)	Sediment Depth (inches)	Cleaning needed (Y/N)	Date Cleaned	Comments (Trash, Oil, Pet waste, Lawn Debris, Damage)
IB 1				/ /	

**Rain Gardens/Bioretention Basins – Inspect twice during first year and annually thereafter for sediment buildup, erosion, vegetative conditions, etc. If sediment build-up is found, core aeration or cultivating of unvegetated areas may be required to ensure adequate filtration. The overflow should be inspected annually to ensure that it is functioning.**

Rain Garden	Inspected (Y/N)	Sediment Depth (inches)	Cleaning needed (Y/N)	Date Cleaned	Comments (Trash, Oil, Pet waste, Lawn Debris, Damage)
RG 1				/ /	

**Roof Runoff Downspouts – Inspect roof drains monthly, clean inlets draining to the subsurface bed twice per year.**

Bldg #	Inspected (Y/N)	Sediment Depth (inches)	Cleaning needed (Y/N)	Date Cleaned	Comments (Trash, Oil, Pet waste, Lawn Debris, Damage)
Bldg 1				/ /	



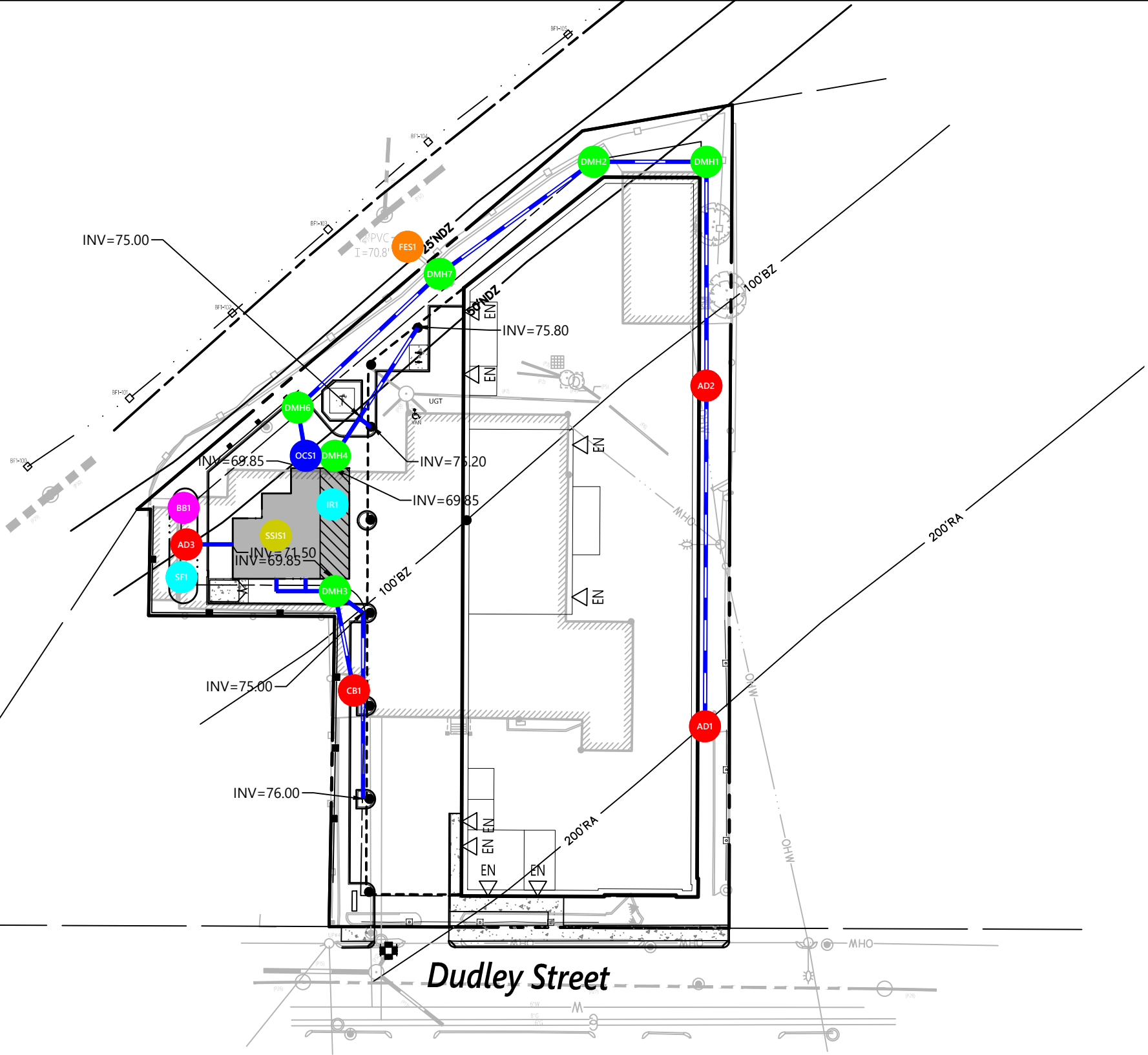
## Device Location Map

---

ed Friday, February 4, 2022 3:52:12 PM MADAMS Plotted Wednesday, February 9, 2022 1:11:04 PM Muriel Adams



0 50 100 Feet



Legend

CB = CATCH BASIN  
AD = AREA DRAIN

OCS

OUTLET CONTROL STRUCTURE

SSIS

SUBSURFACE INFILTRATION  
SYSTEM

DMH

DRAINAGE MANHOLES

FES

FLARED END SECTION / OUTFALL

BB

BIORETENTION BASIN

IR = ISOLATOR ROW  
SF = SEDIMENT FOREBAY

DRAINAGE PIPES



Proposed Self Storage Facility  
34 Dudley Street  
Arlington, MA  
Project #: 52816.00

Figure 1  
02/09/2022



This page intentionally left blank.

## Snow Storage Areas Map

---

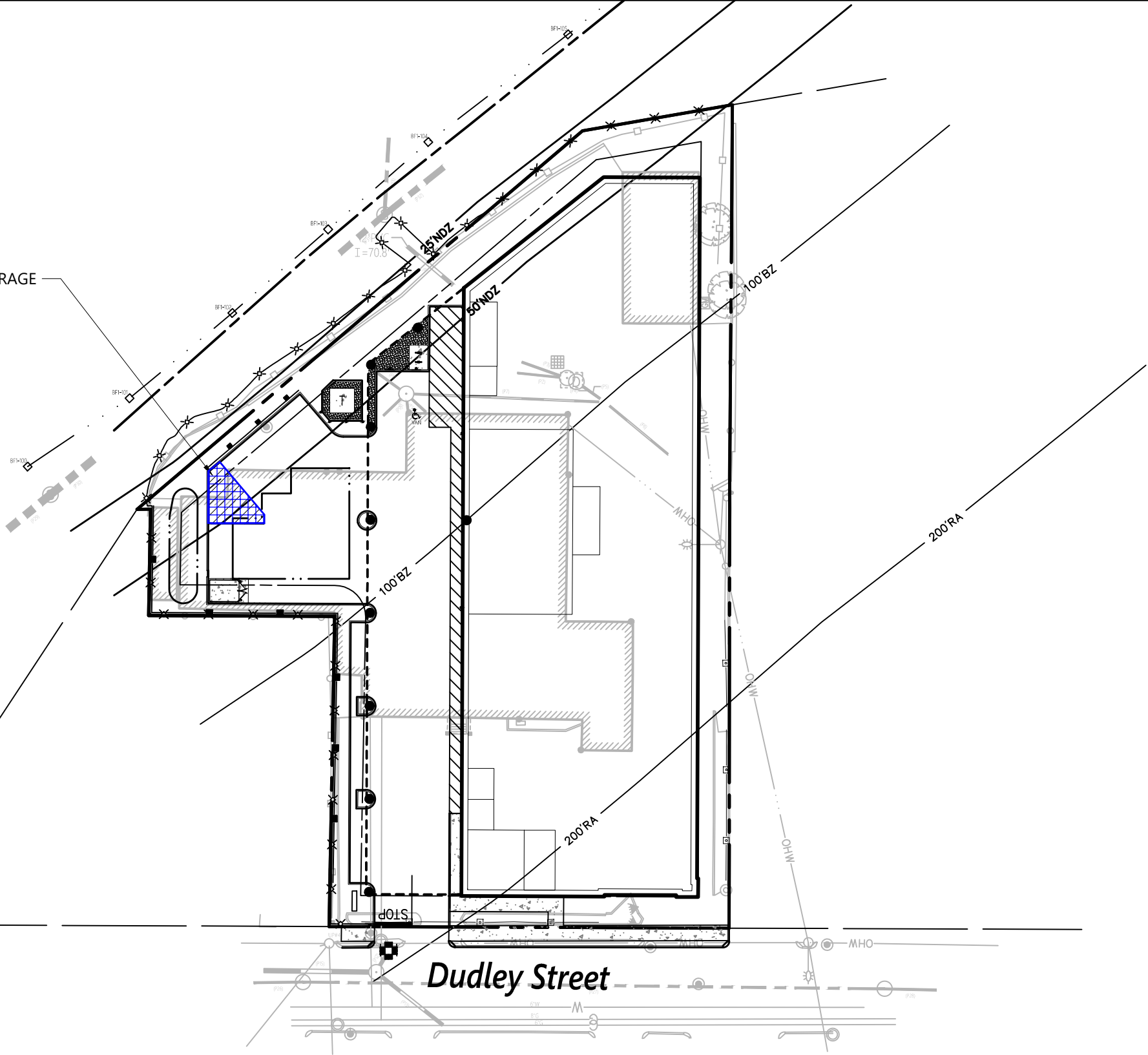


ed Wednesday, February 9, 2022 1:13:54 PM MADAMS Plotted Wednesday, February 9, 2022 2:11:44 PM Muriel Adams

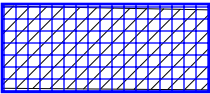


0 50 100 Feet

SNOW STORAGE



Legend



SNOW STORAGE AREA



Proposed Self Storage Facility  
34 Dudley Street  
Arlington, MA  
Project #: 52816.00

Figure 2

02/09/2022



---

## Section F: Product Literature

This page intentionally left blank.

## StormTech MC-4500 Chamber

MC-4500 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for commercial and municipal applications.



### StormTech MC-4500 Chamber (not to scale)

#### Nominal Chamber Specifications

Size (L x W x H)	32" (813 mm) x 100" (2540 mm) x 60" (1524 mm)
Chamber Storage	100.5 ft <sup>3</sup> (2.81 m <sup>3</sup> )
Min. Installed Storage*	189.8 ft <sup>3</sup> (5.40 m <sup>3</sup> )
Weight	120 lbs (54.4 kg)

\*This assumes a reduction of 12" (305 mm) of storm above, 6" (152 mm) of storm below chamber, 6" (152 mm) between storm lateral caps and 40% storm porosity.

### StormTech MC-4500 End Cap (not to scale)

#### Nominal Chamber Specifications

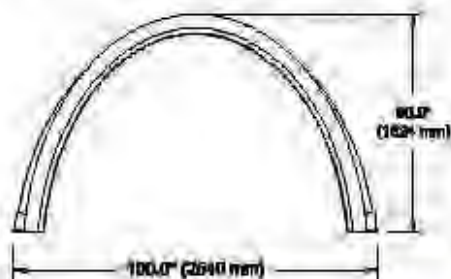
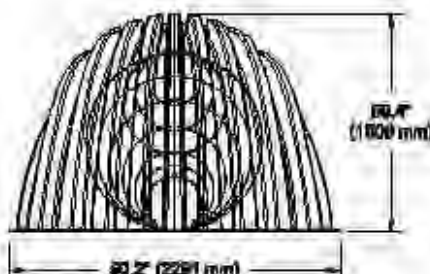
Size (L x W x H)	35.1" (891 mm) x 30.2" (767 mm) x 58.4" (1480 mm)
Chamber Storage	55.7 ft <sup>3</sup> (1.57 m <sup>3</sup> )
Min. Installed Storage*	104.7 ft <sup>3</sup> (2.98 m <sup>3</sup> )
Weight	120 lbs (54.4 kg)

\*This assumes a reduction of 12" (305 mm) of storm above, 6" (152 mm) of storm below, 6" (152 mm) of storm perimeter, 6" (152 mm) between storm lateral caps and 40% storm porosity.

### Shipping

7 chambers/pallet

11 pallets/truck





# StormTech MC-4500 Chamber

**Storage Volume Per Chamber/End Cap ft<sup>3</sup> (m<sup>3</sup>)**

	Bare Unit Storage ft <sup>3</sup> (m <sup>3</sup> )	Chamber/End Cap and Stone Volume — Stone Foundation Depth in. (mm)			
		9 (230)	12 (300)	15 (375)	18 (450)
<b>MC-4500 Chamber</b>	106.5 (3.02)	162.6 (4.60)	166.3 (4.71)	169.9 (4.81)	173.6 (4.91)
<b>MC-4500 End Cap</b>	35.7 (1.01)	108.7 (3.08)	111.9 (3.17)	115.2 (3.26)	118.4 (3.35)

NOTE: Assumes 9" (230 mm) row spacing, 40% stone porosity, 12" (300 mm) stone above and includes the bare chamber/end cap volume. End cap volume assumes 12" (300 mm) stone perimeter.

**Amount of Stone Per Chamber**

ENGLISH tons (yd <sup>3</sup> )	Stone Foundation Depth			
	9"	12"	15"	18"
<b>MC-4500</b>	7.4 (5.2)	7.8 (5.5)	8.3 (5.9)	8.8 (6.2)
<b>End Cap</b>	9.6 (6.8)	10.0 (7.1)	10.4 (7.4)	10.9 (7.7)
METRIC kg (m <sup>3</sup> )	230 mm	300 mm	375 mm	450 mm
<b>MC-4500</b>	6681 (4.0)	7117 (4.2)	7552 (4.5)	7987 (4.7)
<b>End Cap</b>	8691 (5.2)	9075 (5.4)	9460 (5.6)	9845 (5.9)

NOTE: Assumes 12" (300 mm) of stone above, and 9" (230 mm) row spacing, and 12" (300 mm) of perimeter stone in front of end caps.

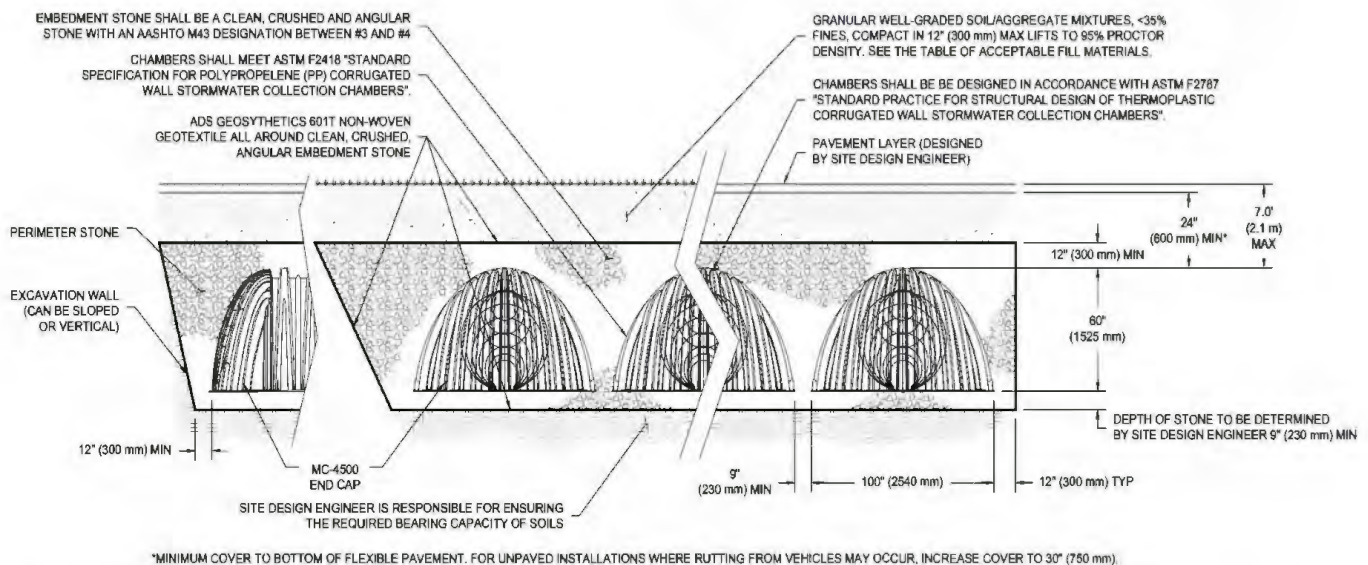
**Volume of Excavation Per Chamber/End Cap yd<sup>3</sup> (m<sup>3</sup>)**

	Stone Foundation Depth			
	9" (230 mm)	12" (300 mm)	15" (375 mm)	18" (450 mm)
<b>MC-4500</b>	10.5 (8.0)	10.8 (8.3)	11.2 (8.5)	11.5 (8.8)
<b>End Cap</b>	9.3 (7.1)	9.6 (7.3)	9.9 (7.6)	10.2 (7.8)

NOTE: Assumes 9" (230 mm) separation between chamber rows, 12" (300 mm) of perimeter in front of end caps, and 24" (600 mm) of cover. The volume of excavation will vary as the depth of cover increases.



## General Cross Section



Special applications will be considered on a project by project basis. Please contact our application department should you have a unique application for our team to evaluate.



## 2.0 Foundations for Chambers

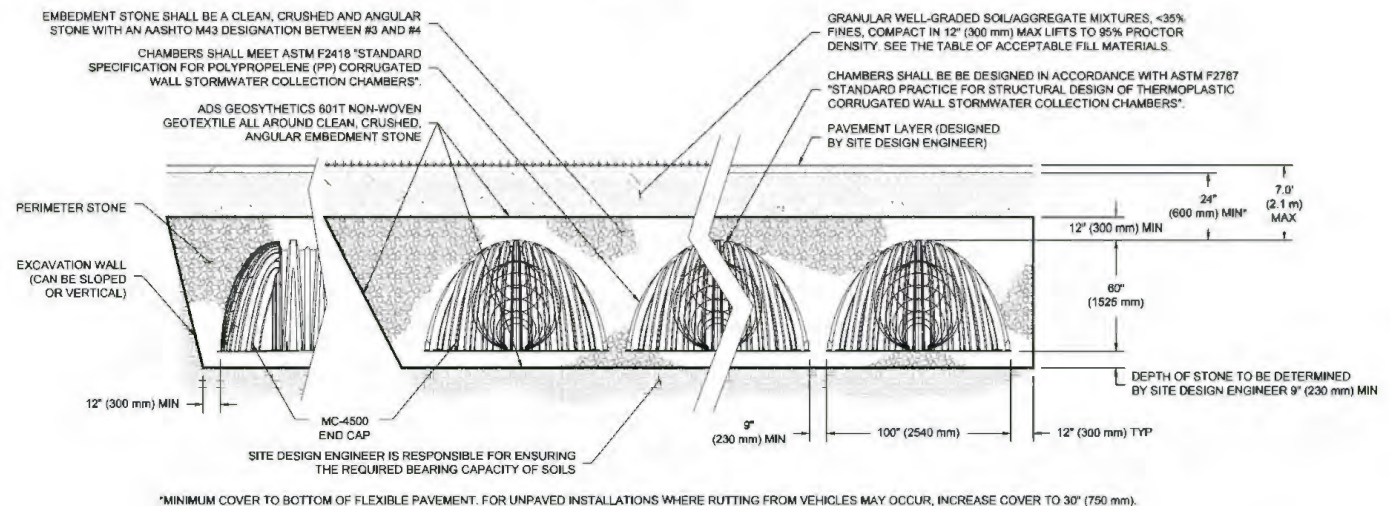
**TABLE 2—MC-4500 Minimum Required Foundation Depth in inches (millimeters)**

Assumes 9" (230 mm) row spacing.

Cover Hgt. ft. (m)	Minimum Bearing Resistance for Service Loads ksf (kPa)																			
	4.4 (211)	4.3 (206)	4.2 (201)	4.1 (196)	4.0 (192)	3.9 (187)	3.8 (182)	3.7 (177)	3.6 (172)	3.5 (168)	3.4 (163)	3.3 (158)	3.2 (153)	3.1 (148)	3.0 (144)	2.9 (139)	2.8 (134)	2.7 (129)	2.6 (124)	2.5 (120)
2.0 (0.61)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	12 (300)	12 (300)
2.5 (0.76)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	12 (300)	12 (300)
3.0 (0.91)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	12 (300)	12 (300)	12 (300)	15 (375)	15 (375)
3.5 (1.07)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	12 (300)	12 (300)	12 (300)	15 (375)	15 (375)	15 (375)	18 (450)
4.0 (1.22)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	12 (300)	12 (300)	12 (300)	15 (375)	15 (375)	15 (375)	18 (450)	18 (450)	24 (600)
4.5 (1.37)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	12 (300)	12 (300)	12 (300)	15 (375)	15 (375)	15 (375)	18 (450)	18 (450)	24 (600)	24 (600)	30 (750)
5.0 (1.52)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	9 (230)	12 (300)	12 (300)	12 (300)	12 (300)	15 (375)	15 (375)	15 (375)	18 (450)	18 (450)	18 (450)	24 (600)	24 (600)	24 (600)	30 (750)
5.5 (1.68)	9 (230)	9 (230)	9 (230)	9 (230)	12 (300)	12 (300)	12 (300)	12 (300)	15 (375)	15 (375)	15 (375)	18 (450)	18 (450)	18 (450)	24 (600)	24 (600)	24 (600)	24 (600)	30 (750)	30 (750)
6.0 (1.83)	9 (230)	9 (230)	12 (300)	12 (300)	12 (300)	12 (300)	15 (375)	15 (375)	15 (375)	15 (375)	18 (450)	18 (450)	18 (450)	24 (600)	24 (600)	24 (600)	24 (600)	30 (750)	30 (750)	36 (900)
6.5 (1.98)	9 (230)	12 (300)	12 (300)	12 (300)	15 (375)	15 (375)	15 (375)	15 (375)	18 (450)	18 (450)	18 (450)	24 (600)	24 (600)	24 (600)	24 (600)	24 (600)	30 (750)	30 (750)	36 (900)	36 (900)
7.0 (2.13)	12 (300)	12 (300)	12 (300)	15 (375)	15 (375)	15 (375)	15 (375)	18 (450)	18 (450)	18 (450)	24 (600)	24 (600)	24 (600)	24 (600)	24 (600)	30 (750)	30 (750)	30 (750)	36 (900)	42 (1050)

**NOTE:** The design engineer is solely responsible for assessing the bearing resistance (allowable bearing capacity) of the subgrade soils and determining the depth of foundation stone. Subgrade bearing resistance should be assessed with consideration for the range of soil moisture conditions expected under a stormwater system.

**FIGURE 10B—MC-4500 Structural Cross Section Detail (Not to Scale)**



Special applications will be considered on a project by project basis. Please contact our applications department should you have a unique application for our team to evaluate.

## 3.1 Foundation and Embedment Stone

The stone surrounding the chambers consists of the foundation stone below the chambers and embedment stone surrounding the chambers. The foundation stone and embedment stone are important components of the structural system and also provide open void space for stormwater storage. **Table 3** provides the stone specifications that achieve both structural requirements and a porosity of 40% for stormwater storage. **Figure 11** specifies the extents of each backfill stone location.

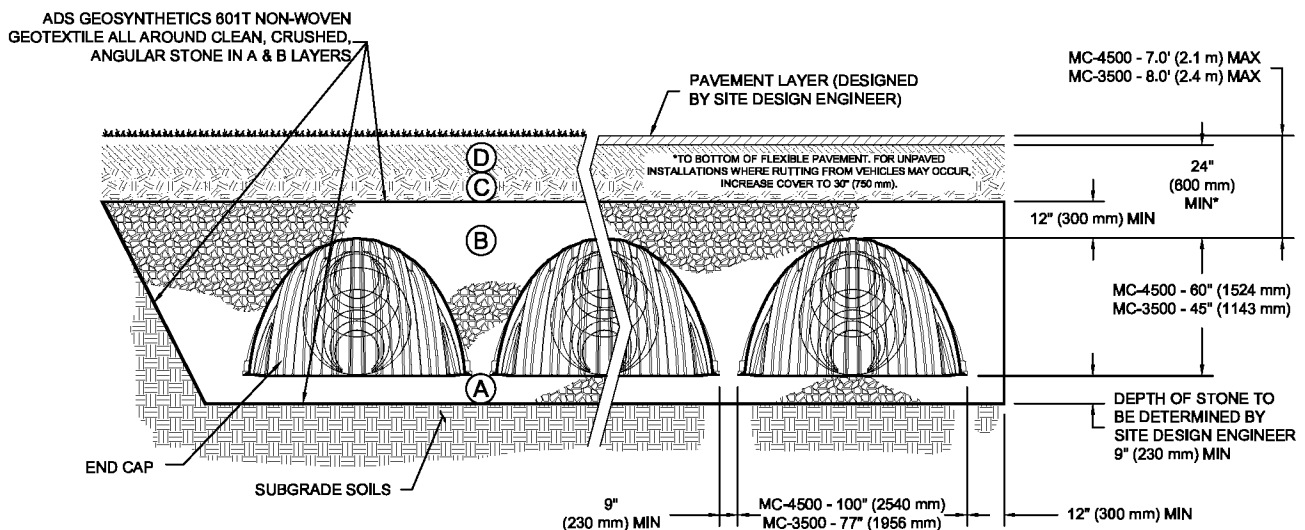
**TABLE 3—Acceptable Fill Materials**

MATERIAL LOCATION		DESCRIPTION	AASHTO DESIGNATION	COMPACTION/DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2, A-3 OR AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 88, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL-GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FORM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 4	NO COMPACTION REQUIRED
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>

**PLEASE NOTE:**

1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.

**FIGURE 11—Fill Material Locations**



Once layer 'C' is placed, any soil/material can be placed in layer 'D' up to the finished grade. Most pavement subbase soils can be used to replace the materials of layer 'C' or 'D' at the design engineer's discretion.



### 4.1 GENERAL

StormTech subsurface chamber systems offer the flexibility for a variety of inlet and outlet configurations. Contact the StormTech Technical Services Department or your local StormTech representative for assistance configuring inlet and outlet connections.

The open graded stone around and under the chambers provides a significant conveyance capacity ranging from approximately 0.8 cfs (23 l/s) to 13 cfs (368 l/s) per MC-3500 chamber and 0.54 cfs (15 l/s) to 8.5 cfs (240 l/s) for the MC-4500 chamber. The actual conveyance capacity is dependent upon stone size, depth of foundation stone and head of water. Although the high conveyance capacity of the open graded stone is an important component of the flow network, StormTech recommends that a system of inlet and outlet manifolds be designed to distribute and convey the peak flow through the chamber system.

It is the responsibility of the design engineer to provide the design flow rates and storage volumes for the stormwater system and to ensure that the final design meets all conveyance and storage requirements. However, StormTech will work with the design engineer to assist with manifold and chamber layouts that meet the design objectives.

### 4.2 THE ISOLATOR® ROW

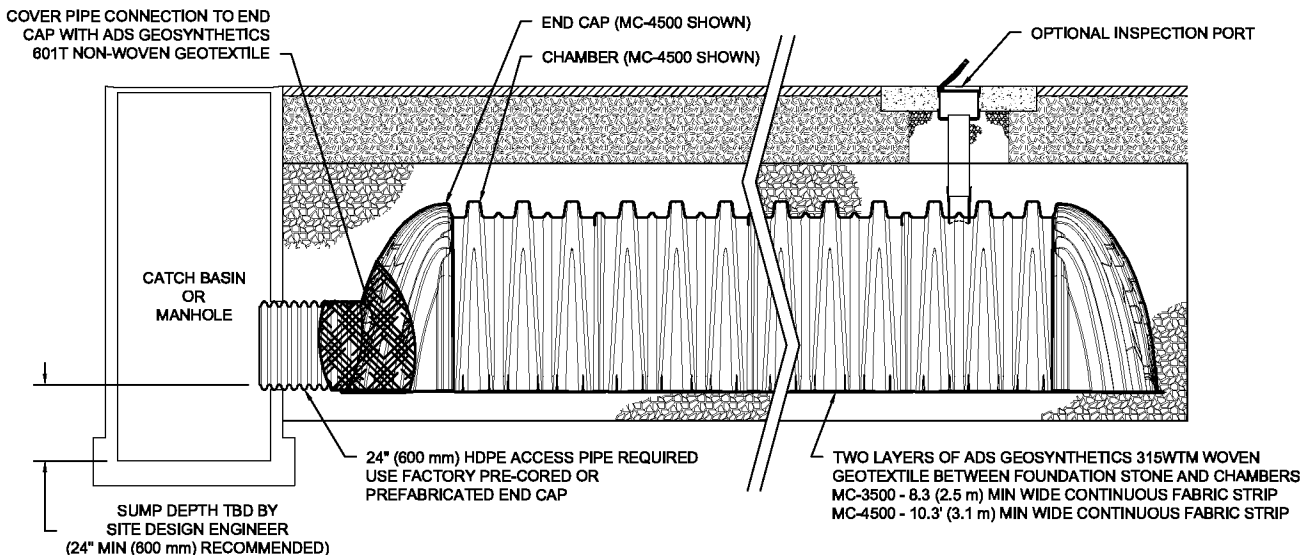
The Isolator Row is a patented system that inexpensively captures total suspended solids (TSS) and debris and provides easy access for inspection and maintenance. A double layer of woven geotextile between the bottom of the chambers and the foundation stone provides the filter media that satisfies most contaminant removal objectives. Each installed MC-3500 chamber and MC-3500 end cap provides 42.9 ft<sup>2</sup> (4.0 m<sup>2</sup>) and 7.5 ft<sup>2</sup> (0.7 m<sup>2</sup>) of bottom filter area respectively. Each installed MC-4500 chamber and MC-4500 end cap provides 30.1 ft<sup>2</sup> (2.80 m<sup>2</sup>) and 12.8 ft<sup>2</sup> (1.19 m<sup>2</sup>) of bottom filter area respectively.

The Isolator Row can be configured for maintenance objectives or, in some regulatory jurisdictions, for water quality objectives. For water quality applications, Isolator Rows can be sized based on water quality volume or flow rate.

All Isolator Rows require: 1) a manhole for maintenance access, 2) a means of diversion of flows to the Isolator Row and 3) a high flow bypass. Flow diversion can be accomplished by either a weir in the upstream access manhole or simply by feeding the Isolator Row at a lower elevation than the high flow bypass. Contact StormTech for assistance sizing Isolator Rows.

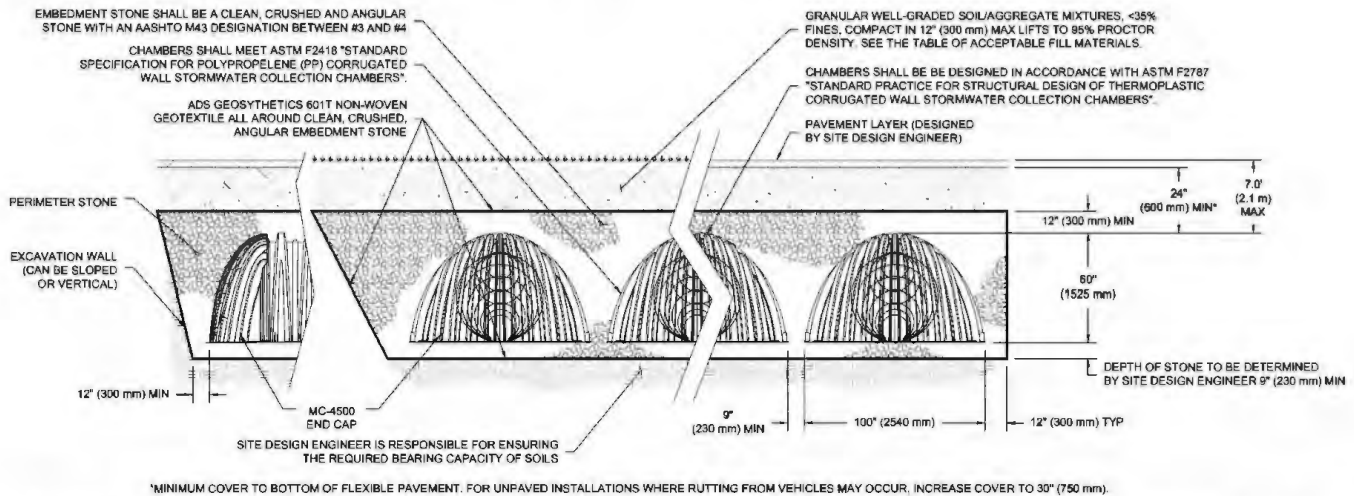
When additional stormwater treatment is required, StormTech systems can be configured using a treatment train approach where other stormwater BMPs are located in series.

**FIGURE 12—StormTech Isolator Row Detail**



## 7.0 Structural Cross Sections and Specifications

**FIGURE 16—MC-4500 Structural Cross Section Detail (Not to Scale)**



*Special applications will be considered on a project by project basis. Please contact our application department should you have a unique application for our team to evaluate.*

### MC-4500 STORMWATER CHAMBER SPECIFICATIONS

- Chambers shall be StormTech MC-4500 or approved equal.
- Chambers shall be made from virgin, impact-modified polypropylene copolymers.
- Chamber rows shall provide continuous, unobstructed internal space with no internal panels that would impede flow.
- The structural design of the chambers, the structural backfill and the installation requirements shall ensure that the load factors specified in the AASHTO LRFD Bridge Design Specifications, Section 12.12 are met for: 1) long-duration dead loads and 2) short-duration live loads, based on the AASHTO Design Truck with consideration for impact and multiple vehicle presences.
- Chambers shall meet the requirements of ASTM F 2418, "Standard Specification for Polypropylene (PP) Corrugated Wall Stormwater Collection Chambers."
- Chambers shall conform to the requirements of ASTM F 2787, "Standard Practice for Structural Design of Thermoplastic Corrugated Wall Stormwater Collection Chambers."
- Only chambers that are approved by the engineer will be allowed. The contractor shall submit (3 sets) of the following to the engineer for approval before delivering chambers to the project site:
  - A structural evaluation by a registered structural engineer that demonstrates that the load factors specified in the AASHTO LRFD Bridge Design Specifications, Section 12.12 are met. The 50-year creep modulus data specified in ASTM F 2418 must be used as part of the AASHTO structural evaluation to verify long-term performance.
  - Structural cross section detail on which the structural cross section is based.
- The installation of chambers shall be in accordance with the manufacturer's latest Construction Guide.

*Detail drawings available in Cad Rev. 2000 format at [www.stormtech.com](http://www.stormtech.com)*



This page intentionally left blank.

## Water Quality Volume Calculations



## Water Quality Volume Calculations

Project	Arlington Self Storage	Project #	52816.00
Calculated by	SJH	Date	2/3/2022
Checked by	EKG	Date	2/7/2022

### BASIN #1

Runoff from subcatchment areas PR-1, PR-3, PR-4

Water Quality Storm Runoff Depth	(in)	0.5
Total Impervious Area	(ft <sup>2</sup> )	25,700

### BASIN WQV:

Required Volume:	Runoff Depth to be Treated		Required Volume
	(in)		(ft <sup>3</sup> )
	0.5		<b>1,071</b>
Provided Volume:	Elevation	Area	Cumulative Volume
		(ft <sup>2</sup> )	(ft <sup>3</sup> )
	69.1	1,112	0
	71.7	1,112	<b>1,954</b>

\* Per MassDEP Treatment Requirement

## TSS Removal Worksheets



101 Walnut Street  
Post Office Box 9151  
Watertown, MA 02471  
P 617.924.1770

## TSS Removal Calculation Worksheet

Project Name: **Arlington Self Storage**  
Project Number: **52816.00**  
Location: **Arlington, MA**  
Discharge Point: **DP-2**  
Drainage Area(s): **PR-1, PR-3**

Sheet: **1 of 2**  
Date: **Janaury 4, 2022**  
Computed by: **SJH**  
Checked by: \_\_\_\_\_

### 1. Pre-Treatment prior to Infiltration

BMP*	TSS Removal Rate*	Starting TSS Load**	Amount Removed (C*D)	Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	25%	100%	25%	75%
Isolator Row	25%	75%	19%	56%
	0%	56%	0%	56%
Pre-Treatment TSS Removal =				44%

### 2. Total TSS Removal including Pretreatment 1.

BMP*	TSS Removal Rate*	Starting TSS Load**	Amount Removed (C*D)	Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	25%	100%	25%	75%
Subsurface Infiltration Structure	80%	75%	60%	15%
	0%	15%	0%	15%
	0%	15%	0%	15%

\* BMP and TSS Removal Rate Values from the MassDEP Stormwater Handbook Vol. 1. Removal rates for proprietary devices are from approved studies and/or manufacturer data (attach study or data source, or remove this sentence if not applicable).

\*\* Equals remaining load from previous BMP (E)

\*\*\* Stormceptor sizing calculation gives a TSS removal rate of 87%. To be conservative, 80% removal is used for this calculation (Change name of device and the claimed removal rate shown on the calc. sheet. Remove this sentence if

**Treatment Train  
TSS Removal =**

**85%**





101 Walnut Street  
Post Office Box 9151  
Watertown, MA 02471  
P 617.924.1770

## TSS Removal Calculation Worksheet

Project Name: **Arlington Self Storage**  
Project Number: **52816.00**  
Location: **Arlington, MA**  
Discharge Point: **DP-2**  
Drainage Area(s): **PR-4**

Sheet: **2 of 2**  
Date: **February 9, 2022**  
Computed by: **MEA**  
Checked by: \_\_\_\_\_

### 1. Pre-Treatment prior to Infiltration

BMP*	TSS Removal Rate*	Starting TSS Load**	Amount Removed (C*D)	Remaining Load (D-E)
Sediment Forebay	25%	100%	25%	75%
	0%	75%	0%	75%
	0%	75%	0%	75%
Pre-Treatment TSS Removal =				25%

### 2. Total TSS Removal including Pretreatment 1.

BMP*	TSS Removal Rate*	Starting TSS Load**	Amount Removed (C*D)	Remaining Load (D-E)
Bioretention Area	90%	100%	90%	10%
	0%	10%	0%	10%
	0%	10%	0%	10%
	0%	10%	0%	10%

\* BMP and TSS Removal Rate Values from the MassDEP Stormwater Handbook Vol. 1. Removal rates for proprietary devices are from approved studies and/or manufacturer data (attach study or data source, or remove this sentence if not applicable).

\*\* Equals remaining load from previous BMP (E)

\*\*\* Stormceptor sizing calculation gives a TSS removal rate of 87%. To be conservative, 80% removal is used for this calculation (Change name of device and the claimed removal rate shown on the calc. sheet. Remove this sentence if not applicable).

**Treatment Train  
TSS Removal =**

**90%**

---

## Appendix E: Standard 7 Supporting Information

This page intentionally left blank.

The Project has been designed to comply with all ten of the Stormwater Management Standards. There is no required Standard 7 Supporting Information. This page intentionally left blank.





---

## Appendix F: Standard 8 Supporting Information

## Recommended Construction Period Pollution Prevention and Erosion and Sedimentation Controls

# Proposed Self Storage Facility Project

34 Dudley Street

Arlington, Massachusetts, 02476

PREPARED FOR

PSI Atlantic Arlington MA, LLC  
530 Oak Court Drive, Suite 155  
Memphis, TN 38117

PREPARED BY

---



2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900

February 2022



# Table of Contents

1     **Erosion and Sedimentation Control Plan ..... 1**

     Erosion and Sedimentation Control Measures ..... 1

         Hay Bale Barriers ..... 2

         Silt Fencing ..... 2

         Compost Berms ..... 2

         Catch Basin Protection..... 3

         Gravel and Construction Entrance/Exit ..... 3

         Diversion Channels..... 3

         Temporary Sediment Basins..... 3

         Vegetative Slope Stabilization ..... 3

         Maintenance ..... 3

     Spill Prevention and Response Plan..... 4

         Initial Notification ..... 4

         Further Notification..... 4

         Emergency Notification Phone Numbers ..... 5

         Hazardous Waste / Oil Spill Report..... 6

         Assessment – Initial Containment..... 7

         Emergency Response Equipment..... 7

         Photo Groupings..... **Error! Bookmark not defined.**

**Appendices .....**

     Divider..... **Error! Bookmark not defined.**



## List of Tables

Table No.	Description	Page
Table 1	Table_Title.....	<b>Error! Bookmark not defined.</b>
Table 2	Table_Title_Wide .....	<b>Error! Bookmark not defined.</b>

## List of Figures

Figure No.	Description	Page
Figure 1	Figure Title.....	<b>Error! Bookmark not defined.</b>
Figure 2	Figure Title_Wide .....	<b>Error! Bookmark not defined.</b>



# 1

## Erosion and Sedimentation Control Plan

As part of the Site Plan Review and Notice of Intent process, an erosion and sedimentation control plan will be developed, and will include measures such as those described below.

### Erosion and Sedimentation Control Measures

An Erosion and Sediment Control Plan has been designed to ensure compliance with the MassDEP Stormwater Management Policy and Town of Arlington Bylaws and Regulations. The Project will disturb less than 1-acre of land and not subject to the NPDES General Permit for Stormwater Discharges from Construction Activities. The following minimum performance standards have been included in the Erosion and Sediment Control Plan attached to this report.

1. Erosion control structures will be located at the edge of land disturbances and will be designed so as not to create point discharges onto abutting properties.
2. Dust from all earthmoving activities shall be controlled.
3. Earth materials shall not be deposited onto any roadways.
4. The amount of disturbed area shall be minimized. Natural resources shall protected.
5. Vegetative stabilization measures shall be employed during the Regulated Activity and construction activity as required by the approving authority. All perimeter dikes and slopes, basin or trap embankments shall be stabilized with sod, seed, anchored mulch within seven (7) days of disturbance. All other disturbed areas shall be stabilized with sod, seed and anchored mulch within fourteen (14) days after disturbing activities are ceased.
6. Topsoil shall be stripped from disturbed areas and stockpiled in an approved area and stabilized with a temporary vegetative cover if left more than fifteen (15) calendar days. Perimeter sediment controls shall be installed around stockpiled topsoil.

7. During cold weather months, when seeding and sodding may be impractical, anchored mulch shall be applied as approved.
8. All storm drain inlets shall be protected, and all newly constructed outlets shall be armored in accordance with the above-mentioned guidelines.
9. Perimeter controls shall be used at the site.
10. All construction site entrances and exits shall be stabilized to prevent off-site tracking.
11. Stormwater controls shall be inspected at consistent intervals, including during or immediately after a storm.
12. Construction site operators shall control all construction and waste materials.

The following erosion and sedimentation controls are for use during the earthwork and construction phases of the project. The following controls are provided as recommendations for the site contractor and do not constitute or replace the final Stormwater Pollution Prevention Plan that must be fully implemented by the Contractor and owner in Compliance with EPA NPDES regulations.

### **Compost Filter Tube (Perimeter Control)**

Siltsock shall be installed around the project work limits as perimeter controls. Siltsocks shall be as manufactured by *Filtrex* or approved equivalent. Approved siltsocks shall be composed of 12 inch diameter biodegradable mesh netting and filled with a compostable material. When installing multiple sections of siltsock, each individual section shall overlap a minimum of 12 inches. Since siltsocks shall be installed on top of the ground, without being trenched in, the Contractor shall install a supplemental compostable material on the up-slope side of the siltsock, in order to prevent the flow of stormwater runoff beneath it.

Siltsocks will be inspected in compliance with the inspection schedule and maintained routinely throughout the duration of the project. The contractor must remove sediment before it accumulates to one-half of the above-ground height of any perimeter control. Additionally, sections of siltsock that appear to be damaged, removed, or of which the stakes have been removed, shall be repaired immediately upon observation.

### **Hay Bale Barriers**

Hay bale barriers will be placed to trap sediment transported by runoff before it reaches the drainage system or leaves the construction site. Bales will be set at least four inches into the existing ground to minimize undercutting by runoff.

### **Silt Fencing**

In areas where high runoff velocities or high sediment loads are expected, hay bale barriers will be backed up with silt fencing. This semi permeable barrier made of a synthetic porous fabric will provide additional protection. The silt fences and hay bale barrier will be replaced as determined by periodic field inspections.

### **Catch Basin Protection**

Newly constructed and existing catch basins will be protected with hay bale barriers (where appropriate) or silt sacks throughout construction.

### **Gravel and Construction Entrance/Exit**

A temporary crushed-stone construction entrance/exit will be constructed. A cross slope will be placed in the entrance to direct runoff to a protected catch basin inlet or settling area. If deemed necessary after construction begins, a wash pad may be included to wash off vehicle wheels before leaving the project site.

### **Diversion Channels**

Diversion channels will be used to collect runoff from construction areas and discharge to either sedimentation basins or protected catch basin inlets.

### **Temporary Sediment Basins**

Temporary sediment basins will be designed either as excavations or bermed stormwater detention structures (depending on grading) that will retain runoff for a sufficient period of time to allow suspended soil particles to settle out prior to discharge. These temporary basins will be located based on construction needs as determined by the contractor and outlet devices will be designed to control velocity and sediment. Points of discharge from sediment basins will be stabilized to minimize erosion.

### **Vegetative Slope Stabilization**

Stabilization of open soil surfaces will be implemented within 14 days after grading or construction activities have temporarily or permanently ceased, unless there is sufficient snow cover to prohibit implementation. Vegetative slope stabilization will be used to minimize erosion on slopes of 3:1 or flatter. Annual grasses, such as annual rye, will be used to ensure rapid germination and production of root mass. Permanent stabilization will be completed with the planting of perennial grasses or legumes. Establishment of temporary and permanent vegetative cover may be established by hydro seeding or sodding. A suitable topsoil, good seedbed preparation, and adequate lime, fertilizer and water will be provided for effective establishment of these vegetative stabilization methods. Mulch will also be used after permanent seeding to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

### **Maintenance**

- › The contractor or subcontractor will be responsible for implementing each control shown on the Sedimentation and Erosion Control Plan. In accordance with EPA regulations, the contractor must sign a copy of a certification to verify that a plan has been prepared and that permit regulations are understood.

- › The on site contractor will inspect all sediment and erosion control structures periodically and after each rainfall event. Records of the inspections will be prepared and maintained on site by the contractor.
- › Silt shall be removed from behind barriers if greater than 6 inches deep or as needed.
- › Damaged or deteriorated items will be repaired immediately after identification.
- › The underside of hay bales should be kept in close contact with the earth and reset as necessary.
- › Sediment that is collected in structures shall be disposed of properly and covered if stored on site.
- › Erosion control structures shall remain in place until all disturbed earth has been securely stabilized. After removal of structures, disturbed areas shall be regraded and stabilized as necessary

The sedimentation and erosion control plan is included in project plan set; a reduced version and Erosion Control Maintenance checklist is included here for quick reference.

## Spill Prevention and Response Plan

Spill prevention equipment and training will be provided by the Contractor.

### Initial Notification

In the event of a spill the facility and/or construction manager or supervisor will be notified immediately.

#### Facility Manager

Name:	_____	Home Phone:	_____
Phone:	_____	E-mail:	_____

#### Construction Manager

Name:	_____	Home Phone:	_____
Phone:	_____	E-mail:	_____

The supervisor will first contact the Fire Department and then notify the Police Department, the Public Health Commission and the Conservation Commission. The Fire Department is ultimately responsible for matters of public health and safety and should be notified immediately.

### Further Notification

Based on the assessment from the Fire Chief, additional notification to a cleanup contractor may be made. The Massachusetts Department of Environmental Protection (DEP) and the



EPA may be notified depending upon the nature and severity of the spill. The Fire Chief will be responsible for determining the level of cleanup and notification required. The attached list of emergency phone numbers shall be posted in the main construction/facility office and readily accessible to all employees. A hazardous waste spill report shall be completed as necessary using the attached form.

### Emergency Notification Phone Numbers

1. Facility Manager

Name:	_____	Home Phone:	_____
Phone:	_____	E-mail:	_____

Alternate

Name:	_____	Home Phone:	_____
Phone:	_____	E-mail:	_____

2. Fire Department

Emergency: 911

Business: \_\_\_\_\_

Police Department

Emergency: 911

Business: \_\_\_\_\_

3. Cleanup Contractor

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

4. Massachusetts Department of Environmental Protection

Emergency: \_\_\_\_\_

Northeast Region: \_\_\_\_\_

5. National Response Center

Phone: (800) 424-8802

Alternate U.S. Environmental Protection Agency

Emergency: (800) 424-8802

Business: \_\_\_\_\_

6. Arlington Conservation Commission

Contact: \_\_\_\_\_

Phone: (781) 316-3090

7. Arlington Health Department

Contact: Natasha Waden (Director)

Phone: (781) 316-3170

## Hazardous Waste / Oil Spill Report

Date		Time		AM / PM
Exact Location (Transformer #)				
Type of Equipment		Make		Size
S/N		Weather Conditions		
On or near water	<input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, name of body of water		
Type of chemical/oil spilled				
Amount of chemical/oil spilled				
Cause of spill				
Measures taken to contain or clean up spill				
Amount of chemical/oil recovered		Method		
Material collected as a result of cleanup:				
	Drums containing			
	Drums containing			
	Drums containing			
Location and method of debris disposal:				
Name and address of any person, firm, or corporation suffering damages:				
Procedures, method, and precautions instituted to prevent a similar occurrence from recurring:				
Spill reported to General Office by		Time		AM/PM
Spill reported to DEP / National Response Center by				
DEP Date		Time		AM/PM
NRC Date		Time		AM/PM
Inspector				
Inspector				
Additional comments:				

## Assessment – Initial Containment

The supervisor or manager will assess the incident and initiate containment control measures with the appropriate spill containment equipment included in the spill kit kept on-site. A list of recommended spill equipment to be kept on site is included on the following page.

Fire / Police Department:	911
Arlington Health Department:	(781) 316-3170
Arlington Conservation Commission:	(781) 316-3090

## Emergency Response Equipment

The following equipment and materials shall be maintained at all times and stored in a secure area for long-term emergency response need.

Supplies		Recommended Suppliers
SORBENT PILLOWS/"PIGS"	2	<a href="http://www.newpig.com">http://www.newpig.com</a>
SORBENT BOOM/SOCK	25 FEET	Item # KIT276 — mobile container with two pigs, 26 feet of sock, 50 pads, and five pounds of absorbent (or equivalent) <a href="http://www.forestry-suppliers.com">http://www.forestry-suppliers.com</a>
SORBENT PADS	50	
LITE-DRI® ABSORBENT	5 POUNDS	
SHOVEL	1	Item # 33934 — Shovel (or equivalent)
PRY BAR	1	Item # 43210 — Manhole cover pick (or equivalent)
GOGGLES	1 PAIR	Item # 23334 — Goggles (or equivalent)
GLOVES – HEAVY	1 PAIR	Item # 90926 — Gloves (or equivalent)

Attached is the zoning form from the application.

Also, some text below to highlight the water and sewer reduction.

## Sewer & Water

### Existing Conditions

The existing facility is comprised of a 10,921 square foot (SF) Autobody shop, containing approximately 8 service bays. Utilizing the Unit Flow rates and Use categories are taken from MassDEP 310 CMR 15.00 section 203, a service station (without gas) is calculated as 150 gallons per day (gpd) per service bay. The existing use at the site generates approximately 1,200 gpd of sewer. Typically, water consumption is estimated at 110% of the wastewater generation rates, therefore, the water demand for the existing site is 1,320 gpd.

### Proposed Conditions

The Project consists of a 95,706 square foot self-storage building. Utilizing the Unit Flow rates and Use categories are taken from MassDEP 310 CMR 15.00 section 203, for a Factory, Industrial Plant, Warehouse, or Dry Storage without Cafeteria, the unit flow is 15 gpd per person. A conservative estimate of 15 persons will occupy the building at a given time, generating 225 gpd. Refer to Table 1.1 for a summary of the existing and proposed wastewater generation and water demand rates.

There is an anticipated net reduction of approximately 975 gpd of wastewater generation and 1,070 gpd of water demand (-81%) with the proposed project.

**Table 1.1 Wastewater Generation**

	Use	Unit Flow <sup>1</sup>	Total Units	Estimated Wastewater Generation	Estimated Water Demand
Existing	Autobody (Service Station)	150 gpd/bay	8 bays	1,200 gpd	1,300 gpd
Proposed	Dry Storage (Self-Storage Facility)	15 gpd/person	15 persons	225 gpd	248 gpd

1. Sewer design Unit Flow rates and Use categories are taken from MassDEP 310 CMR 15.00 section 203.

**Eric Gerade**

Project Manager

Upcoming Vacation: Feb 21-23

P 603.391.3972

www.vhb.com

**From:** Eric Gerade

**Sent:** Wednesday, February 16, 2022 4:52 PM

**To:** Robert Annese <[law@robertannese.com](mailto:law@robertannese.com)>; Jesse Morgan <[jesse@pssinvestors.com](mailto:jesse@pssinvestors.com)>

**Cc:** Jay Tillman <[jay@pssinvestors.com](mailto:jay@pssinvestors.com)>; Jan Bryan <[jbryan@mparkstudios.com](mailto:jbryan@mparkstudios.com)>; Eric Lowder <[elowder@mparkstudios.com](mailto:elowder@mparkstudios.com)>

**Subject:** RE: [External] RE: Arlington, MA

February 15, 2022

### **34 Dudley Street - LEED CONSIDERATIONS**

The improvements at 34 Dudley Street will attempt to incorporate the items below per 'LEED v4 Warehouses and Distribution Centers' to support the sustainable building practices goal in Arlington, MA.

#### **LOW EMITTING MATERIALS**

These materials are to be integrated to reduce concentrations of chemical contaminants that can damage air quality, human health, productivity, and the environment. Some of these building materials are as follows:

##### **Paints and Coatings**

At least 75% of all paints and coatings, by volume or surface area, are to meet the VOC emissions evaluation AND 100% meet the VOC content evaluation.

##### **Adhesives and Sealants**

At least 75% of all adhesives and sealants, by volume or surface area, are to meet the VOC emissions evaluation AND 100% meet the VOC content evaluation.

##### **Flooring**

At least 90% of all flooring materials (carpet, ceramic, vinyl, rubber, engineered, solid wood, laminates), by cost or surface area, is to meet the VOC emissions evaluation OR inherently non emitting sources criteria, OR salvaged and reused materials criteria.

#### **PRODUCTS**

At least 70% of each new compliant building component (floor covering, insulation, framing/structural systems, drywall, doors, cabinets, countertops and/or interior trim), by weight or volume, will aim to meet one of the requirements below:

The product contains at least 25% reclaimed material, including salvaged, refurbished, or reused materials. For renovation projects, existing components are considered reclaimed. Wood by-products can be counted as reclaimed material. These include items from secondary manufacturers; felled, diseased, or dead trees from urban or suburban areas; orchard trees that are unproductive and cut for replacement; and wood recovered from landfills or water bodies.

Wood products must be Forest Stewardship Council (FSC) Certified, or USGBC-approved equivalent.

Bio-based materials. Bio-based products must meet the Sustainable Agriculture Network's Sustainable Agriculture Standard. Bio-based raw materials must be tested using ASTM Test Method D6866 and be legally harvested, as defined by the exporting and receiving country. Exclude hide products, such as leather and other animal skin material.

Concrete that consists of at least 30% fly ash or slag used as a cement substitute.

Extended producer responsibility. Products purchased from a manufacturer (producer) that participates in an extended producer responsibility program or is directly responsible for extended producer responsibility.



**WATER USE REDUCTION**

The project will seek to reduce aggregate water consumption by 20% from the baseline for each new fixture (toilets, hand sinks, etc.)

**MINIMUM ENERGY PERFORMANCE**

For climate-controlled storage areas, heating and cooling systems will look to meet the following equipment selection sizing guidelines, or next nominal size:

Cooling Equipment:

Single-Speed Compressor: 90-130% of total heat gain

Two-Speed Compressor: 90-140% of total heat gain

Variable-Speed Compressor: 90-160% of total heat gain

Heating Equipment:

100-140% of total heat loss AND energy performance compliance.



## LEED v4 for BD+C: Warehouses and Distribution Centers Project Checklist

Y ? N

      Credit Integrative Process

1

### 5 0 4 Location and Transportation 16

<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	LEED for Neighborhood Development Location	16
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">1</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Credit	Sensitive Land Protection	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	High Priority Site	2
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">2</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Credit	Surrounding Density and Diverse Uses	5
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">1</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Credit	Access to Quality Transit	5
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">1</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Credit	Bicycle Facilities	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Reduced Parking Footprint	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Green Vehicles	1

### 3 1 3 Sustainable Sites 10

<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Y</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Prereq	Construction Activity Pollution Prevention	Required
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Site Assessment	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Site Development - Protect or Restore Habitat	2
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Open Space	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Rainwater Management	3
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">2</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Credit	Heat Island Reduction	2
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">1</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Credit	Light Pollution Reduction	1

### 0 2 2 Water Efficiency 11

<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Y</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Prereq	Outdoor Water Use Reduction	Required
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Y</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Prereq	Indoor Water Use Reduction	Required
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Y</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Prereq	Building-Level Water Metering	Required
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Outdoor Water Use Reduction	2
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Indoor Water Use Reduction	6
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Cooling Tower Water Use	2
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Water Metering	1

### 0 1 6 Energy and Atmosphere 33

<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Y</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Prereq	Fundamental Commissioning and Verification	Required
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Y</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Prereq	Minimum Energy Performance	Required
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Y</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Prereq	Building-Level Energy Metering	Required
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Y</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Prereq	Fundamental Refrigerant Management	Required
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Enhanced Commissioning	6
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Optimize Energy Performance	18
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Advanced Energy Metering	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Demand Response	2
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Renewable Energy Production	3
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Enhanced Refrigerant Management	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Green Power and Carbon Offsets	2

Project Name: PSI Atlantic Arlington MA, LLC

Date: 15-Feb-22

### 0 4 1 Materials and Resources 13

<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Y</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Prereq	Storage and Collection of Recyclables	Required
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Y</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Prereq	Construction and Demolition Waste Management Planning	Required
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Building Life-Cycle Impact Reduction	5
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Building Product Disclosure and Optimization - Material Ingredients	2
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Construction and Demolition Waste Management	2

### 0 7 5 Indoor Environmental Quality 16

<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Y</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Prereq	Minimum Indoor Air Quality Performance	Required
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Y</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Prereq	Environmental Tobacco Smoke Control	Required
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Enhanced Indoor Air Quality Strategies	2
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">3</span>	Credit	Low-Emitting Materials	3
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Construction Indoor Air Quality Management Plan	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Indoor Air Quality Assessment	2
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Thermal Comfort	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">2</span>	Credit	Interior Lighting	2
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Daylight	3
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Quality Views	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Acoustic Performance	1

### 1 0 1 Innovation 6

<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Innovation	5
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">1</span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span>	Credit	LEED Accredited Professional	1

### 0 0 4 Regional Priority 4

<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Regional Priority: Specific Credit	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Regional Priority: Specific Credit	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Regional Priority: Specific Credit	1
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span>	<span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">1</span>	Credit	Regional Priority: Specific Credit	1

### 9 15 26 TOTALS Possible Points: 110

**Certified:** 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110



## Memorandum

To: Jesse Morgan  
Premier Storage Investors, LLC  
530 Oak Court Drive, Suite 155  
Memphis, TN 38117

Date: February 10, 2022

Project #: 52816.00

From: Matt Kealey, PE, PTOE  
Senior Project Manager

Re: 34 Dudley Street  
Arlington, Massachusetts  
Traffic Memorandum

VHB has been retained by Premier Storage Investors, LLC (the "Proponent") to provide consulting services for a proposed self-storage/warehouse facility (the "Project") located at 34 Dudley Street in Arlington, Massachusetts. As part of the Project, VHB evaluated the following transportation-related elements of the Project:

- Trip Generation (as compared to the most recent use on the site);
- Trip Generation (as compared to comparable sites);
- Proposed parking supply (as compared to comparable sites);

The traffic evaluation has been conducted based on typical guidelines for the development of a traffic impact assessment, using trip generation estimates provided by the Institute of Transportation Engineers, and empirical traffic and parking data collected at other storage facilities.

### Project Description

The Project site is located at 34 Dudley Street in Arlington, Massachusetts. The proposed self-storage facility involves the redevelopment of the existing 10,921 square foot (sf) auto repair building and 1,152 sf detached garage space (12,073 sf total). The Project involves the construction of a five-story, 95,706 sf self-storage warehouse building along with 11 surface parking spaces (one of which is accessible) on the site and 4 loading bays, for a total of 15 spaces for the facility. Access to the Site will be provided by a single curb cut on Dudley Street on the east side of the site. The existing curb cut on the west side of the site will be closed as part of the Project.

### Trip Generation

As noted previously, the Site is currently occupied by an auto repair building and detached garage totaling 12,073 sf, which will be replaced by the proposed 95,706 sf self-storage warehouse building. In reviewing the appropriate Land Use Codes (LUC) offered by the Institute of Transportation Engineers (ITE) in the [Trip Generation Manual](#), VHB considered that the current use of the site is best classified as Automobile Care Center (LUC 942) and that the self-storage facility is best classified as a Mini-Warehouse (LUC 151).

Table 1 provides for a comparison of the uses based on the ITE projections.

101 Walnut Street  
PO Box 9151  
Watertown, MA 02472-4026  
P 617.924.1770

**Table 1 : Trip Generation Comparison**

		Vehicle Trips		
		Current Use <sup>1</sup>	Self-storage Use <sup>2</sup>	Difference
<b>Weekday AM</b>				
	Enter	18	5	-13
	Exit	<u>9</u>	<u>4</u>	<u>-5</u>
	<b>Total</b>	<b>27</b>	<b>9</b>	<b>-18</b>
<b>Weekday PM</b>				
	Enter	18	7	-11
	Exit	<u>20</u>	<u>8</u>	<u>-12</u>
	<b>Total</b>	<b>38</b>	<b>15</b>	<b>-23</b>

<sup>1</sup> Institute of Transportation Engineers (ITE) Trip Generation, Land Use Code 942 (Automobile Care Center) for 12,073 sf

<sup>2</sup> Institute of Transportation Engineers (ITE) Trip Generation, Land Use Code 151 (Mini-Warehouse) for 95,706 sf

As shown in Table 1, the proposed self-storage facility is expected to generate fewer peak hour trips to and from the site when compared to the current use.

Also, as part of this evaluation, VHB evaluated empirical data at three self-storage facilities. Weekday morning and weekday evening counts for two of the facilities, located at 490 Eastern Avenue and 650 Eastern Avenue in Malden, respectively, were done in May 2021. Daily data for the third facility, a CubeSmart located at 171 Bear Hill Road in Waltham, was collected from April 2020 to March 2021. Table 2 provides a comparison of trip generation for these existing facilities to the proposed Project.

**Table 2 : Trip Generation Comparison – ITE vs. Empirical Data**

		Vehicle Trips			
		490 Eastern Avenue (Malden) 125,388 sf <sup>1</sup>	650 Eastern Avenue (Malden) 99,440 sf <sup>1</sup>	171 Bear Hill Road (Waltham) 111,921 sf <sup>2</sup>	Proposed Project (Arlington) 95,694 sf <sup>3</sup>
<b>Weekday AM</b>					
	Enter	4	2	1	5
	Exit	<u>1</u>	<u>2</u>	<u>1</u>	<u>4</u>
	<b>Total</b>	<b>5</b>	<b>9</b>	<b>2</b>	<b>9</b>
<b>Trip Generation Rate<sup>4</sup></b>		<b>0.04</b>	<b>0.09</b>	<b>0.02</b>	<b>0.09</b>
<b>Weekday PM</b>					
	Enter	2	2	1	7
	Exit	<u>9</u>	<u>4</u>	<u>1</u>	<u>8</u>
	<b>Total</b>	<b>11</b>	<b>6</b>	<b>2</b>	<b>15</b>
<b>Trip Generation Rate</b>		<b>0.09</b>	<b>0.06</b>	<b>0.02</b>	<b>0.16</b>

<sup>1</sup> Based on counts conducted in May 2021

<sup>2</sup> Based on avg daily counts conducted from April 2020 to March 2021 with peak hour volumes calculated using ITE LUC 151 ratios between peak hour volumes and daily volume.

<sup>3</sup> Institute of Transportation Engineers (ITE) Trip Generation, Land Use Code 151 (Mini-Warehouse) for 95,706 sf

<sup>4</sup> Trip Generation Rate expressed in the number of trips per 1,000 sf.

As shown in Table 2, based on the traffic volumes counted at three comparable sites, the empirical trip generation rates are substantially lower than the ITE rates during the weekday evening peak period and equal or lower than the ITE rates during the weekday morning peak period. As such, it is likely that the ITE trip generation rates provide conservative projections of future traffic at the site.

## Parking

As noted previously, the proposed project includes 11 parking spaces and 4 loading bays, for a total of 15 spaces on the site. Under the Zoning Ordinance, the parking requirement for the proposed use is 1 parking space per 1,000 SF of building area. In this case, the 95,694 sf of building space would translate to approximately 96 parking spaces on the site. Given the nature of the proposed self-storage facility use, the Proponent will be requesting a waiver from the parking requirement of the Zoning Bylaw as there are typically only one or two employees located at the site at any one time and the proposed use requires substantially less parking than the Zoning Ordinance requires for an industrial use.

To provide a comparison with empirical data, VHB reviewed parking demand counts collected in May 2021 at the same two comparable self-storage facilities located at 490 Eastern Avenue and 650 Eastern Avenue, respectively. These counts were conducted during the weekday morning peak period (7:00 AM to 9:00 AM) and the weekday

evening peak period (4:00 PM to 6:00 PM). Parking demand was documented in 15-minute intervals over the course of the two-hour count. The results of the parking counts are summarized in Table 3.

**Table 3 : Parking Comparison**

	<b>490 Eastern Avenue</b> <b>125,388 sf <sup>1</sup></b>	<b>650 Eastern Avenue</b> <b>99,440 sf <sup>1</sup></b>
<b>Weekday AM</b>		
<b>Maximum Observed Demand</b>	5	2
<b>Weekday PM</b>		
<b>Maximum Observed Demand</b>	8	4

<sup>1</sup> Based on counts conducted in May 2021

As shown in Table 3, the peak parking demand was 5 vehicles during the weekday morning peak hour and 8 vehicles during the weekday evening peak hour. It is also important to note that both of these sites are larger than the proposed site, with 490 Eastern Avenue being substantially larger. The observed parking demand suggests that the proposed parking supply, which can accommodate 15 vehicles, should be more than adequate to accommodate the parking demand for the Project.

### Transportation Demand Management (TDM)

Due to the nature of the proposed self-storage facility use, and the data supporting a low parking demand, the Proponent will be requesting a waiver from the parking requirement of the Zoning Bylaw. As stated in the Zoning Bylaw, *"Any request for parking reduction must include a plan to reduce demand for parking..All projects requesting a parking reduction must employ at least three TDM strategies."* Accordingly, the Proponent is proposing to implement the following TDM measures:

- Pay a stipend to workers without cars
- Provide preferential parking for carpooling vehicles
- Provide covered bicycle parking and storage

### Conclusion

Based on the traffic and parking information outlined above, the Project is not expected to have a significant impact on the surrounding area roadways. The trip generation calculated for the Project based on ITE data shows a total of 9 trips (5 entering/4 exiting) during the weekday morning peak hour and 15 trips (7 entering/8 exiting) during the weekday evening peak hour. The trip generation for the Project is lower than the trip generation associated with the site's use as an auto repair facility. Further, empirical trip generation data collected at three similar self-storage



facilities was lower than the ITE projections, which suggests that ITE data results in conservative projections. Lastly, parking counts conducted at comparable facilities showed a maximum parking demand of 5 vehicles during the weekday morning peak hour and 8 vehicles during the weekday evening peak hour, which suggests that the proposed parking supply of 15 spaces should be more than adequate to accommodate the parking demand for the Project.

# Attachments

- Traffic Count Data
- Parking Count Data
- Trip Generation





PRECISION  
DATA  
INDUSTRIES, LLC

## Location Map: 217935 Malden, MA

Precision Data Industries, LLC 157 Washington Street, Suite 2, Hudson, MA 01749 ph: 508-875-0100 email: datarequests@pdillc.com

(3) 7-9am/ 4-6pm TMCs  
(3) Lot Studies



Client:  
VHB

Engineer:  
M. Kealey

Site Code:  
52739

Date:  
Thursday 5/6/2021

PDI Job #  
217935

City, State:  
Malden, MA

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Cars and Heavy Vehicles (Combined)

	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	21	1	0	22	0	0	0	0	0	0	0	0	22
7:15 AM	46	0	0	46	0	1	0	1	0	0	0	0	47
7:30 AM	38	0	0	38	0	0	0	0	0	0	0	0	38
7:45 AM	59	0	0	59	0	0	0	0	0	0	0	0	59
Total	164	1	0	165	0	1	0	1	0	0	0	0	166
8:00 AM	46	0	0	46	0	0	0	0	0	0	0	0	46
8:15 AM	57	0	0	57	0	1	0	1	0	0	0	0	58
8:30 AM	27	0	0	27	0	1	0	1	0	1	0	1	29
8:45 AM	30	0	0	30	0	1	0	1	0	1	0	1	32
Total	160	0	0	160	0	3	0	3	0	2	0	2	165
Grand Total	324	1	0	325	0	4	0	4	0	2	0	2	331
Approach %	99.7	0.3	0.0		0.0	100.0	0.0		0.0	100.0	0.0		
Total %	97.9	0.3	0.0	98.2	0.0	1.2	0.0	1.2	0.0	0.6	0.0	0.6	
Exiting Leg Total	2				1				328				331
Cars	312	1	0	313	0	4	0	4	0	2	0	2	319
% Cars	96.3	100.0	0.0	96.3	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	96.4
Exiting Leg Total	2				1				316				319
Heavy Vehicles	12	0	0	12	0	0	0	0	0	0	0	0	12
% Heavy Vehicles	3.7	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6
Exiting Leg Total	0				0				12				12

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	38	0	0	38	0	0	0	0	0	0	0	0	38
7:45 AM	59	0	0	59	0	0	0	0	0	0	0	0	59
8:00 AM	46	0	0	46	0	0	0	0	0	0	0	0	46
8:15 AM	57	0	0	57	0	1	0	1	0	0	0	0	58
Total Volume	200	0	0	200	0	1	0	1	0	0	0	0	201
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		0.0	0.0	0.0		
PHF	0.847	0.000	0.000	0.847	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.852
Cars	191	0	0	191	0	1	0	1	0	0	0	0	192
Cars %	95.5	0.0	0.0	95.5	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	95.5
Heavy Vehicles	9	0	0	9	0	0	0	0	0	0	0	0	9
Heavy Vehicles %	4.5	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
Cars Enter Leg	191	0	0	191	0	1	0	1	0	0	0	0	192
Heavy Enter Leg	9	0	0	9	0	0	0	0	0	0	0	0	9
Total Entering Leg	200	0	0	200	0	1	0	1	0	0	0	0	201
Cars Exiting Leg				0				0				192	192
Heavy Exiting Leg				0				0				9	9
Total Exiting Leg				0				0				201	201

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Cars

	Bryant Street					Public Storage Driveway					Bryant Street					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
7:00 AM	21	1	0	22		0	0	0	0		0	0	0	0		22
7:15 AM	45	0	0	45		0	1	0	1		0	0	0	0		46
7:30 AM	37	0	0	37		0	0	0	0		0	0	0	0		37
7:45 AM	58	0	0	58		0	0	0	0		0	0	0	0		58
Total	161	1	0	162		0	1	0	1		0	0	0	0		163
8:00 AM	44	0	0	44		0	0	0	0		0	0	0	0		44
8:15 AM	52	0	0	52		0	1	0	1		0	0	0	0		53
8:30 AM	27	0	0	27		0	1	0	1		0	1	0	1		29
8:45 AM	28	0	0	28		0	1	0	1		0	1	0	1		30
Total	151	0	0	151		0	3	0	3		0	2	0	2		156
Grand Total	312	1	0	313		0	4	0	4		0	2	0	2		319
Approach %	99.7	0.3	0.0			0.0	100.0	0.0			0.0	100.0	0.0			
Total %	97.8	0.3	0.0	98.1		0.0	1.3	0.0	1.3		0.0	0.6	0.0	0.6		
Exiting Leg Total	2					1					316					319

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	37	0	0	37	0	0	0	0	0	0	0	0	37
7:45 AM	58	0	0	58	0	0	0	0	0	0	0	0	58
8:00 AM	44	0	0	44	0	0	0	0	0	0	0	0	44
8:15 AM	52	0	0	52	0	1	0	1	0	0	0	0	53
Total Volume	191	0	0	191	0	1	0	1	0	0	0	0	192
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		0.0	0.0	0.0		
PHF	0.823	0.000	0.000	0.823	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.828
Entering Leg	191	0	0	191	0	1	0	1	0	0	0	0	192
Exiting Leg				0				0				192	192
Total				191				1				192	384



PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class:

### Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	3	0	0	3	0	0	0	0	0	0	0	0	3
8:00 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
8:15 AM	5	0	0	5	0	0	0	0	0	0	0	0	5
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
Total	9	0	0	9	0	0	0	0	0	0	0	0	9
Grand Total	12	0	0	12	0	0	0	0	0	0	0	0	12
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				12				12
Buses	8	0	0	8	0	0	0	0	0	0	0	0	8
% Buses	66.7	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7
Exiting Leg Total	0				0				8				8
Single-Unit Trucks	4	0	0	4	0	0	0	0	0	0	0	0	4
% Single-Unit	33.3	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3
Exiting Leg Total	0				0				4				4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
8:00 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
8:15 AM	5	0	0	5	0	0	0	0	0	0	0	0	5
Total Volume	9	0	0	9	0	0	0	0	0	0	0	0	9
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.450	0.000	0.000	0.450	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.450
Buses	6	0	0	6	0	0	0	0	0	0	0	0	6
Buses %	66.7	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7
Single-Unit Trucks	3	0	0	3	0	0	0	0	0	0	0	0	3
Single-Unit %	33.3	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	6	0	0	6	0	0	0	0	0	0	0	0	6
Single-Unit Trucks	3	0	0	3	0	0	0	0	0	0	0	0	3
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	9	0	0	9	0	0	0	0	0	0	0	0	9
Buses				0				0				6	6
Single-Unit Trucks				0				0				3	3
Articulated Trucks				0				0				0	0
Total Exiting Leg				0				0				9	9

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Buses

	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	2	0	0	2	0	0	0	0	0	0	0	0	2
8:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
8:15 AM	3	0	0	3	0	0	0	0	0	0	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
Total	6	0	0	6	0	0	0	0	0	0	0	0	6
Grand Total	8	0	0	8	0	0	0	0	0	0	0	0	8
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				8				8

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
8:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
8:15 AM	3	0	0	3	0	0	0	0	0	0	0	0	3
Total Volume	6	0	0	6	0	0	0	0	0	0	0	0	6
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	6	0	0	6	0	0	0	0	0	0	0	0	6
Exiting Leg				0				0				6	6
Total				6				0				6	12

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Single-Unit Trucks

	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	0	0	0	1
8:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
8:15 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	0	0	3	0	0	0	0	0	0	0	0	3
Grand Total	4	0	0	4	0	0	0	0	0	0	0	0	4
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				4				4

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
8:15 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
Total Volume	3	0	0	3	0	0	0	0	0	0	0	0	3
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.375	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375
Entering Leg	3	0	0	3	0	0	0	0	0	0	0	0	3
Exiting Leg				0				0				3	3
Total				3				0				3	6

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Articulated Trucks

	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	0

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



### Bicycles (on Roadway and Crosswalks)

	Bryant Street						Public Storage Driveway						Bryant Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	1	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	1	2
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	0.0	50.0	0.0	0.0	0.0	50.0	
Exiting Leg Total	1						1						0						2

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Bryant Street						Public Storage Driveway						Bryant Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	1	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.250	0.500
Entering Leg	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	1	2
Exiting Leg	1						1						0						2
Total	1						2						1						4

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Pedestrians

	Bryant Street						Public Storage Driveway						Bryant Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	3	4	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	1	6	7	0	0	0	0	0	0
Approach %	0	0	0	0	0	0	0	0	0	0	14.286	85.714		0	0	0	0	0	
Total %	0	0	0	0	0	0	0	0	0	0	14.286	85.714	100	0	0	0	0	0	
Exiting Leg Total	0						7						0						7

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Bryant Street						Public Storage Driveway						Bryant Street						Total	
	from North						from East						from South							
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	5
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.625		0.000	0.000	0.000	0.000	0.000	0.000	0.625
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	5
Exiting Leg	0						5						0						5	
Total	0						10						0						10	



PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Cars and Heavy Vehicles (Combined)

	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	47	0	0	47	0	0	0	0	0	1	0	1	48
4:15 PM	32	1	0	33	0	1	0	1	0	0	0	0	34
4:30 PM	35	0	0	35	0	0	0	0	0	1	0	1	36
4:45 PM	31	0	0	31	0	0	0	0	0	0	0	0	31
Total	145	1	0	146	0	1	0	1	0	2	0	2	149
5:00 PM	33	0	0	33	0	4	0	4	0	0	0	0	37
5:15 PM	46	0	0	46	0	0	0	0	0	0	0	0	46
5:30 PM	32	0	0	32	0	0	0	0	0	0	0	0	32
5:45 PM	36	0	0	36	0	0	0	0	0	0	0	0	36
Total	147	0	0	147	0	4	0	4	0	0	0	0	151
Grand Total	292	1	0	293	0	5	0	5	0	2	0	2	300
Approach %	99.7	0.3	0.0		0.0	100.0	0.0		0.0	100.0	0.0		
Total %	97.3	0.3	0.0	97.7	0.0	1.7	0.0	1.7	0.0	0.7	0.0	0.7	
Exiting Leg Total	2				1				297				300
Cars	286	1	0	287	0	5	0	5	0	2	0	2	294
% Cars	97.9	100.0	0.0	98.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	98.0
Exiting Leg Total	2				1				291				294
Heavy Vehicles	6	0	0	6	0	0	0	0	0	0	0	0	6
% Heavy Vehicles	2.1	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
Exiting Leg Total	0				0				6				6

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
5:00 PM	33	0	0	33	0	4	0	4	0	0	0	0	37
5:15 PM	46	0	0	46	0	0	0	0	0	0	0	0	46
5:30 PM	32	0	0	32	0	0	0	0	0	0	0	0	32
5:45 PM	36	0	0	36	0	0	0	0	0	0	0	0	36
Total Volume	147	0	0	147	0	4	0	4	0	0	0	0	151
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		0.0	0.0	0.0		
PHF	0.799	0.000	0.000	0.799	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.821
Cars	146	0	0	146	0	4	0	4	0	0	0	0	150
Cars %	99.3	0.0	0.0	99.3	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	99.3
Heavy Vehicles	1	0	0	1	0	0	0	0	0	0	0	0	1
Heavy Vehicles %	0.7	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Cars Enter Leg	146	0	0	146	0	4	0	4	0	0	0	0	150
Heavy Enter Leg	1	0	0	1	0	0	0	0	0	0	0	0	1
Total Entering Leg	147	0	0	147	0	4	0	4	0	0	0	0	151
Cars Exiting Leg	0				0				150				150
Heavy Exiting Leg	0				0				1				1
Total Exiting Leg	0				0				151				151

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Cars

	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	45	0	0	45	0	0	0	0	0	1	0	1	46
4:15 PM	31	1	0	32	0	1	0	1	0	0	0	0	33
4:30 PM	34	0	0	34	0	0	0	0	0	1	0	1	35
4:45 PM	30	0	0	30	0	0	0	0	0	0	0	0	30
Total	140	1	0	141	0	1	0	1	0	2	0	2	144
5:00 PM	32	0	0	32	0	4	0	4	0	0	0	0	36
5:15 PM	46	0	0	46	0	0	0	0	0	0	0	0	46
5:30 PM	32	0	0	32	0	0	0	0	0	0	0	0	32
5:45 PM	36	0	0	36	0	0	0	0	0	0	0	0	36
Total	146	0	0	146	0	4	0	4	0	0	0	0	150
Grand Total	286	1	0	287	0	5	0	5	0	2	0	2	294
Approach %	99.7	0.3	0.0		0.0	100.0	0.0		0.0	100.0	0.0		
Total %	97.3	0.3	0.0	97.6	0.0	1.7	0.0	1.7	0.0	0.7	0.0	0.7	
Exiting Leg Total	2				1				291				294

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
5:00 PM	32	0	0	32	0	4	0	4	0	0	0	0	36
5:15 PM	46	0	0	46	0	0	0	0	0	0	0	0	46
5:30 PM	32	0	0	32	0	0	0	0	0	0	0	0	32
5:45 PM	36	0	0	36	0	0	0	0	0	0	0	0	36
Total Volume	146	0	0	146	0	4	0	4	0	0	0	0	150
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		0.0	0.0	0.0		
PHF	0.793	0.000	0.000	0.793	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.815
Entering Leg	146	0	0	146	0	4	0	4	0	0	0	0	150
Exiting Leg				0				0				150	150
Total				146				4				150	300

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Bryant Street				Public Storage Driveway				Bryant Street				Total	
	from North				from East				from South					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
4:00 PM	2	0	0	2	0	0	0	0	0	0	0	0	0	2
4:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	1
4:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	1
4:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	5	0	0	5	0	0	0	0	0	0	0	0	0	5
5:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Grand Total	6	0	0	6	0	0	0	0	0	0	0	0	0	6
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0			
Total %	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Exiting Leg Total	0				0				6				6	
Buses	2	0	0	2	0	0	0	0	0	0	0	0	0	2
% Buses	33.3	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3
Exiting Leg Total	0				0				2				2	
Single-Unit Trucks	4	0	0	4	0	0	0	0	0	0	0	0	0	4
% Single-Unit	66.7	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7
Exiting Leg Total	0				0				4				4	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0	

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Bryant Street				Public Storage Driveway				Bryant Street				Total	
	from North				from East				from South					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
4:00 PM	2	0	0	2	0	0	0	0	0	0	0	0	0	2
4:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	1
4:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	1
4:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Total Volume	5	0	0	5	0	0	0	0	0	0	0	0	0	5
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.625	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625
Buses	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Buses %	20.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0
Single-Unit Trucks	4	0	0	4	0	0	0	0	0	0	0	0	0	4
Single-Unit %	80.0	0.0	0.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Single-Unit Trucks	4	0	0	4	0	0	0	0	0	0	0	0	0	4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	5	0	0	5	0	0	0	0	0	0	0	0	0	5
Buses				0				0				1		1
Single-Unit Trucks				0				0				4		4
Articulated Trucks				0				0				0		0
Total Exiting Leg				0				0				5		5

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Buses

	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	0	0	0	1
5:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	2	0	0	2	0	0	0	0	0	0	0	0	2
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				2				2

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total Volume	2	0	0	2	0	0	0	0	0	0	0	0	2
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	2	0	0	2	0	0	0	0	0	0	0	0	2
Exiting Leg				0				0				2	2
Total				2				0				2	4

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Single-Unit Trucks

	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	2	0	0	2	0	0	0	0	0	0	0	0	2
4:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	4	0	0	4	0	0	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	4	0	0	4	0	0	0	0	0	0	0	0	4
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				4				4

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	2	0	0	2	0	0	0	0	0	0	0	0	2
4:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total Volume	4	0	0	4	0	0	0	0	0	0	0	0	4
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	4	0	0	4	0	0	0	0	0	0	0	0	4
Exiting Leg				0				0				4	4
Total				4				0				4	8

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Articulated Trucks

	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Bryant Street				Public Storage Driveway				Bryant Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	0



PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



### Bicycles (on Roadway and Crosswalks)

	Bryant Street						Public Storage Driveway						Bryant Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0						2						0						2

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:30 PM	Bryant Street						Public Storage Driveway						Bryant Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
Exiting Leg	0						2						0						2
Total	0						4						0						4

PDI File #: **217935 A**  
 Location: **N: Bryant Street S: Bryant Street**  
 Location: **E: Public Storage Driveway**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Pedestrians

	Bryant Street						Public Storage Driveway						Bryant Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	2	0	2	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	3	2	5	0	0	0	2	0	2	7
Grand Total	0	0	0	0	0	0	0	0	0	5	3	8	0	0	0	2	0	2	10
Approach %	0	0	0	0	0	0	0	0	0	62.5	37.5		0	0	0	100	0		
Total %	0	0	0	0	0	0	0	0	0	50	30	80	0	0	0	20	0	20	
Exiting Leg Total	0						8						2						10

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Bryant Street						Public Storage Driveway						Bryant Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	2	0	2	4
Total Volume	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	2	0	2	7
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.0	20.0		0.0	0.0	0.0	100.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.625	0.000	0.000	0.000	0.250	0.000	0.250	0.438
Entering Leg	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	2	0	2	7
Exiting Leg	0						5						2						7
Total	0						10						4						14

PDI File #: **217935 B**  
 Location: **N: Faulkner Street S: Faulkner Street**  
 Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Cars and Heavy Vehicles (Combined)

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	28	2	0	0	30	0	0	0	0	0	0	0	1	0	1	31
7:15 AM	0	0	0	0	0	26	0	0	0	26	0	0	0	0	0	0	0	0	0	0	26
7:30 AM	0	0	1	0	1	47	0	0	0	47	0	0	0	0	0	0	0	0	0	0	48
7:45 AM	0	0	0	0	0	74	0	0	0	74	0	0	0	0	0	0	0	0	0	0	74
Total	0	0	1	0	1	175	2	0	0	177	0	0	0	0	0	0	0	1	0	1	179
8:00 AM	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	0	0	0	58
8:15 AM	0	0	0	0	0	34	2	2	0	38	0	0	0	0	0	0	0	0	0	0	38
8:30 AM	0	0	0	0	0	36	0	1	0	37	0	0	0	0	0	0	0	0	0	0	37
8:45 AM	0	0	0	0	0	19	1	0	0	20	0	0	0	0	0	0	0	0	0	0	20
Total	0	0	0	0	0	147	3	3	0	153	0	0	0	0	0	0	0	0	0	0	153
Grand Total	0	0	1	0	1	322	5	3	0	330	0	0	0	0	0	0	0	1	0	1	332
Approach %	0.0	0.0	100.0	0.0		97.6	1.5	0.9	0.0		0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0	0.0	0.3	0.0	0.3	97.0	1.5	0.9	0.0	99.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	
Exiting Leg Total	323					1					3					5					332
Cars	0	0	1	0	1	311	5	3	0	319	0	0	0	0	0	0	0	1	0	1	321
% Cars	0.0	0.0	100.0	0.0	100.0	96.6	100.0	100.0	0.0	96.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	96.7
Exiting Leg Total	312					1					3					5					321
Heavy Vehicles	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	0	0	0	0	0	11
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3
Exiting Leg Total	11					0					0					0					11

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
7:30 AM	0	0	1	0	1	47	0	0	0	47	0	0	0	0	0	0	0	0	0	0	48
7:45 AM	0	0	0	0	0	74	0	0	0	74	0	0	0	0	0	0	0	0	0	0	74
8:00 AM	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	0	0	0	58
8:15 AM	0	0	0	0	0	34	2	2	0	38	0	0	0	0	0	0	0	0	0	0	38
Total Volume	0	0	1	0	1	213	2	2	0	217	0	0	0	0	0	0	0	0	0	0	218
% Approach Total	0.0	0.0	100.0	0.0		98.2	0.9	0.9	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.250	0.000	0.250	0.720	0.250	0.250	0.000	0.733	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.736
Cars	0	0	1	0	1	208	2	2	0	212	0	0	0	0	0	0	0	0	0	0	213
Cars %	0.0	0.0	100.0	0.0	100.0	97.7	100.0	100.0	0.0	97.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.7
Heavy Vehicles	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
Cars Enter Leg	0	0	1	0	1	208	2	2	0	212	0	0	0	0	0	0	0	0	0	0	213
Heavy Enter Leg	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
Total Entering Leg	0	0	1	0	1	213	2	2	0	217	0	0	0	0	0	0	0	0	0	0	218
Cars Exiting Leg	208					1					2					2					213
Heavy Exiting Leg	5					0					0					0					5
Total Exiting Leg	213					1					2					2					218



PRECISION  
D A T A  
INDUSTRIES, LLC

157 Washington Street, Suite 2  
Hudson, MA 01749  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdilic.com

PDI File #: **217935 B**

Location: **N: Faulkner Street S: Faulkner Street**

Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**

City, State: **Malden, MA**

Client: **VHB/ M. Kealey**

Site Code: **52739**

Count Date: **Thursday, May 6, 2021**

Start Time: **7:00 AM**

End Time: **9:00 AM**

Class:

### Cars

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	28	2	0	0	30	0	0	0	0	0	0	0	1	0	1	31
7:15 AM	0	0	0	0	0	23	0	0	0	23	0	0	0	0	0	0	0	0	0	0	23
7:30 AM	0	0	1	0	1	46	0	0	0	46	0	0	0	0	0	0	0	0	0	0	47
7:45 AM	0	0	0	0	0	71	0	0	0	71	0	0	0	0	0	0	0	0	0	0	71
Total	0	0	1	0	1	168	2	0	0	170	0	0	0	0	0	0	0	1	0	1	172
8:00 AM	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	0	0	0	58
8:15 AM	0	0	0	0	0	33	2	2	0	37	0	0	0	0	0	0	0	0	0	0	37
8:30 AM	0	0	0	0	0	35	0	1	0	36	0	0	0	0	0	0	0	0	0	0	36
8:45 AM	0	0	0	0	0	17	1	0	0	18	0	0	0	0	0	0	0	0	0	0	18
Total	0	0	0	0	0	143	3	3	0	149	0	0	0	0	0	0	0	0	0	0	149
Grand Total	0	0	1	0	1	311	5	3	0	319	0	0	0	0	0	0	0	1	0	1	321
Approach %	0.0	0.0	100.0	0.0		97.5	1.6	0.9	0.0		0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0	0.0	0.3	0.0	0.3	96.9	1.6	0.9	0.0	99.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	
Exiting Leg Total	312					1					3					5					321

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
7:30 AM	0	0	1	0	1	46	0	0	0	46	0	0	0	0	0	0	0	0	0	0	47
7:45 AM	0	0	0	0	0	71	0	0	0	71	0	0	0	0	0	0	0	0	0	0	71
8:00 AM	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	0	0	0	58
8:15 AM	0	0	0	0	0	33	2	2	0	37	0	0	0	0	0	0	0	0	0	0	37
Total Volume	0	0	1	0	1	208	2	2	0	212	0	0	0	0	0	0	0	0	0	0	213
% Approach Total	0.0	0.0	100.0	0.0		98.1	0.9	0.9	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.250	0.000	0.250	0.732	0.250	0.250	0.000	0.746	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750
Entering Leg	0	0	1	0	1	208	2	2	0	212	0	0	0	0	0	0	0	0	0	0	213
Exiting Leg					208					1					2					2	213
Total					209					213					2					2	426

PDI File #: 217935 B

Location: N: Faulkner Street S: Faulkner Street

Location: W: Public Storage Parking Area SW: Public Storage Front Lot

City, State: Malden, MA

Client: VHB/ M. Kealey

Site Code: 52739

Count Date: Thursday, May 6, 2021

Start Time: 7:00 AM

End Time: 9:00 AM

Class:



PRECISION  
D A T A  
INDUSTRIES, LLC  
157 Washington Street, Suite 2  
Hudson, MA 01749  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdilic.com

Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	7
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
Grand Total	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	0	0	0	0	0	11
Approach %	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	11					0					0					0					11
Buses	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
% Buses	0.0	0.0	0.0	0.0	0.0	18.2	0.0	0.0	0.0	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.2
Exiting Leg Total	2					0					0					0					2
Single-Unit Trucks	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	9
% Single-Unit	0.0	0.0	0.0	0.0	0.0	81.8	0.0	0.0	0.0	81.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	81.8
Exiting Leg Total	9					0					0					0					9
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0					0					0					0					0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	7
% Approach Total	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.583	0.000	0.000	0.000	0.583	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583
Buses	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Buses %	0.0	0.0	0.0	0.0	0.0	28.6	0.0	0.0	0.0	28.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.6
Single-Unit Trucks	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
Single-Unit %	0.0	0.0	0.0	0.0	0.0	71.4	0.0	0.0	0.0	71.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	71.4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Single-Unit Trucks	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	7
Buses	2					0					0					0					2

PDI File #: 217935 B  
Location: N: Faulkner Street S: Faulkner Street  
Location: W: Public Storage Parking Area SW: Public Storage Front Lot  
City, State: Malden, MA  
Client: VHB/ M. Kealey  
Site Code: 52739  
Count Date: Thursday, May 6, 2021  
Start Time: 7:00 AM  
End Time: 9:00 AM



PRECISION  
DATA  
INDUSTRIES, LLC

157 Washington Street, Suite 2  
Hudson, MA 01749  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdilic.com

Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
	Single-Unit Trucks	5					0					0					0				
Articulated Trucks	0					0					0					0					0
Total Exiting Leg	7					0					0					0					7



PDI File #: 217935 B  
Location: N: Faulkner Street S: Faulkner Street  
Location: W: Public Storage Parking Area SW: Public Storage Front Lot  
City, State: Malden, MA  
Client: VHB/ M. Kealey  
Site Code: 52739  
Count Date: Thursday, May 6, 2021  
Start Time: 7:00 AM  
End Time: 9:00 AM  
Class:



Buses

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Approach %	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	2					0					0					0					2

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Exiting Leg	2					0					0					0					2
Total	2					2					0					0					4

PDI File #: **217935 B**  
 Location: **N: Faulkner Street S: Faulkner Street**  
 Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Single-Unit Trucks

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
Grand Total	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	9
Approach %	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	9					0					0					0					9

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total					
	from North					from South					from Southwest					from West										
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
7:15 AM	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2					
7:30 AM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1					
7:45 AM	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2					
Total Volume	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5					
% Approach Total	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0						
PHF	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.000	0.625		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625					
Entering Leg	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5					
Exiting Leg						5						0						0						5		
Total	5					5					0					0					0					10

PDI File #: 217935 B  
Location: N: Faulkner Street S: Faulkner Street  
Location: W: Public Storage Parking Area SW: Public Storage Front Lot  
City, State: Malden, MA  
Client: VHB/ M. Kealey  
Site Code: 52739  
Count Date: Thursday, May 6, 2021  
Start Time: 7:00 AM  
End Time: 9:00 AM  
Class:



Articulated Trucks

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0					0					0					0					

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0					0					0					0					0
Total	0					0					0					0					0

PDI File #: **217935 B**  
 Location: **N: Faulkner Street S: Faulkner Street**  
 Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



**Bicycles (on Roadway and Crosswalks)**

	Faulkner Street						Faulkner Street						Public Storage Parking Area						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Faulkner Street						Faulkner Street						Public Storage Parking Area						
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **217935 B**  
 Location: **N: Faulkner Street S: Faulkner Street**  
 Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Pedestrians

	Faulkner Street						Faulkner Street						Public Storage Parking Area						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	8	8
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	6	14	14
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	7	10	10
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	8	15	15
8:45 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	5	4	9	10
Total	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	23	25	48	49
Grand Total	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	27	29	56	57
Approach %	0	0	0	0	100		0	0	0	0	0		0	0	0	48.214	51.786		
Total %	0	0	0	0	1.7544	1.7544	0	0	0	0	0	0	0	0	0	47.368	50.877	98.246	
Exiting Leg Total	1						0						56						57

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Faulkner Street						Faulkner Street						Public Storage Parking Area						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	6	14	14
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	7	10	10
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	8	15	15
8:45 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	5	4	9	10
Total Volume	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	23	25	48	49
% Approach Total	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.9	52.1		
PHF	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.719	0.781	0.800	0.817
Entering Leg	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	23	25	48	49
Exiting Leg						1						0						48	49
Total						2						0						96	98

PDI File #: **217935 B**  
 Location: **N: Faulkner Street S: Faulkner Street**  
 Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Cars and Heavy Vehicles (Combined)

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	54	2	1	0	57	0	0	0	0	0	0	0	1	0	1	58
4:15 PM	0	0	1	0	1	44	2	0	0	46	0	0	0	0	0	0	0	1	0	1	48
4:30 PM	0	0	0	0	0	57	0	0	0	57	0	1	0	0	1	0	0	0	0	0	58
4:45 PM	0	0	0	0	0	58	0	1	0	59	0	1	0	0	1	0	0	1	0	1	61
Total	0	0	1	0	1	213	4	2	0	219	0	2	0	0	2	0	0	3	0	3	225
5:00 PM	0	0	0	0	0	63	0	1	0	64	1	0	0	0	1	0	1	0	0	1	66
5:15 PM	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	0	0	0	58
5:30 PM	0	0	0	0	0	33	0	0	0	33	0	0	0	0	0	0	0	0	0	0	33
5:45 PM	0	0	0	0	0	57	0	1	0	58	0	0	0	0	0	0	0	0	0	0	58
Total	0	0	0	0	0	211	0	2	0	213	1	0	0	0	1	0	1	0	0	1	215
Grand Total	0	0	1	0	1	424	4	4	0	432	1	2	0	0	3	0	1	3	0	4	440
Approach %	0.0	0.0	100.0	0.0		98.1	0.9	0.9	0.0		33.3	66.7	0.0	0.0		0.0	25.0	75.0	0.0		
Total %	0.0	0.0	0.2	0.0	0.2	96.4	0.9	0.9	0.0	98.2	0.2	0.5	0.0	0.0	0.7	0.0	0.2	0.7	0.0	0.9	
Exiting Leg Total	429					3					4					4					440
Cars	0	0	1	0	1	420	4	4	0	428	0	2	0	0	2	0	0	3	0	3	434
% Cars	0.0	0.0	100.0	0.0	100.0	99.1	100.0	100.0	0.0	99.1	0.0	100.0	0.0	0.0	66.7	0.0	0.0	100.0	0.0	75.0	98.6
Exiting Leg Total	425					1					4					4					434
Heavy Vehicles	0	0	0	0	0	4	0	0	0	4	1	0	0	0	1	0	1	0	0	1	6
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.9	100.0	0.0	0.0	0.0	33.3	0.0	100.0	0.0	0.0	25.0	1.4
Exiting Leg Total	4					2					0					0					6

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:30 PM	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
4:30 PM	0	0	0	0	0	57	0	0	0	57	0	1	0	0	1	0	0	0	0	0	58
4:45 PM	0	0	0	0	0	58	0	1	0	59	0	1	0	0	1	0	0	1	0	1	61
5:00 PM	0	0	0	0	0	63	0	1	0	64	1	0	0	0	1	0	1	0	0	1	66
5:15 PM	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	0	0	0	58
Total Volume	0	0	0	0	0	236	0	2	0	238	1	2	0	0	3	0	1	1	0	2	243
% Approach Total	0.0	0.0	0.0	0.0		99.2	0.0	0.8	0.0		33.3	66.7	0.0	0.0		0.0	50.0	50.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.937	0.000	0.500	0.000	0.930	0.250	0.500	0.000	0.000	0.750	0.000	0.250	0.250	0.000	0.500	0.920
Cars	0	0	0	0	0	234	0	2	0	236	0	2	0	0	2	0	0	1	0	1	239
Cars %	0.0	0.0	0.0	0.0	0.0	99.2	0.0	100.0	0.0	99.2	0.0	100.0	0.0	0.0	66.7	0.0	0.0	100.0	0.0	50.0	98.4
Heavy Vehicles	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	0	1	0	0	1	4
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.8	100.0	0.0	0.0	33.3		0.0	100.0	0.0	0.0	50.0	1.6
Cars Enter Leg	0	0	0	0	0	234	0	2	0	236	0	2	0	0	2	0	0	1	0	1	239
Heavy Enter Leg	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	0	1	0	0	1	4
Total Entering Leg	0	0	0	0	0	236	0	2	0	238	1	2	0	0	3	0	1	1	0	2	243
Cars Exiting Leg	237					0					2					0					239
Heavy Exiting Leg	2					2					0					0					4
Total Exiting Leg	239					2					2					0					243



PDI File #: **217935 B**  
 Location: **N: Faulkner Street S: Faulkner Street**  
 Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



**Cars**

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	54	2	1	0	57	0	0	0	0	0	0	0	1	0	1	58
4:15 PM	0	0	1	0	1	43	2	0	0	45	0	0	0	0	0	0	0	1	0	1	47
4:30 PM	0	0	0	0	0	57	0	0	0	57	0	1	0	0	1	0	0	0	0	0	58
4:45 PM	0	0	0	0	0	57	0	1	0	58	0	1	0	0	1	0	0	1	0	1	60
Total	0	0	1	0	1	211	4	2	0	217	0	2	0	0	2	0	0	3	0	3	223
5:00 PM	0	0	0	0	0	62	0	1	0	63	0	0	0	0	0	0	0	0	0	0	63
5:15 PM	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	0	0	0	58
5:30 PM	0	0	0	0	0	33	0	0	0	33	0	0	0	0	0	0	0	0	0	0	33
5:45 PM	0	0	0	0	0	56	0	1	0	57	0	0	0	0	0	0	0	0	0	0	57
Total	0	0	0	0	0	209	0	2	0	211	0	0	0	0	0	0	0	0	0	0	211
Grand Total	0	0	1	0	1	420	4	4	0	428	0	2	0	0	2	0	0	3	0	3	434
Approach %	0.0	0.0	100.0	0.0		98.1	0.9	0.9	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0	0.0	0.2	0.0	0.2	96.8	0.9	0.9	0.0	98.6	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.7	0.0	0.7	
Exiting Leg Total	425					1					4					4					434

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:30 PM	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
4:30 PM	0	0	0	0	0	57	0	0	0	57	0	1	0	0	1	0	0	0	0	0	58
4:45 PM	0	0	0	0	0	57	0	1	0	58	0	1	0	0	1	0	0	1	0	1	60
5:00 PM	0	0	0	0	0	62	0	1	0	63	0	0	0	0	0	0	0	0	0	0	63
5:15 PM	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	0	0	0	58
Total Volume	0	0	0	0	0	234	0	2	0	236	0	2	0	0	2	0	0	1	0	1	239
% Approach Total	0.0	0.0	0.0	0.0		99.2	0.0	0.8	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.944	0.000	0.500	0.000	0.937	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.250	0.000	0.250	0.948
Entering Leg	0	0	0	0	0	234	0	2	0	236	0	2	0	0	2	0	0	1	0	1	239
Exiting Leg					237					0					2					0	239
Total					237					236					4					1	478

PDI File #: **217935 B**  
 Location: **N: Faulkner Street S: Faulkner Street**  
 Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



### Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	1	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	0	1	0	0	1	4
Grand Total	0	0	0	0	0	4	0	0	0	4	1	0	0	0	1	0	1	0	0	1	6
Approach %	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	66.7	0.0	0.0	0.0	66.7	16.7	0.0	0.0	0.0	16.7	0.0	16.7	0.0	0.0	16.7	
Exiting Leg Total	4					2					0					0					6
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0					0					0					0					0
Single-Unit Trucks	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	1	0	0	1	5
% Single-Unit	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	83.3
Exiting Leg Total	4					1					0					0					5
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	16.7
Exiting Leg Total	0					1					0					0					1

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
4:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	1	0	0	1	3
Total Volume	0	0	0	0	0	3	0	0	0	3	1	0	0	0	1	0	1	0	0	1	5
% Approach Total	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.750	0.250	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.417
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	1	0	0	1	4
Single-Unit %	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	80.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	20.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	1	0	0	1	4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total Entering Leg	0	0	0	0	0	3	0	0	0	3	1	0	0	0	1	0	1	0	0	1	5



PRECISION  
D A T A  
INDUSTRIES, LLC

157 Washington Street, Suite 2  
Hudson, MA 01749  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdilic.com

PDI File #: **217935 B**

Location: **N: Faulkner Street S: Faulkner Street**

Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**

City, State: **Malden, MA**

Client: **VHB/ M. Kealey**

Site Code: **52739**

Count Date: **Thursday, May 6, 2021**

Start Time: **4:00 PM**

End Time: **6:00 PM**

Class:

**Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
Buses	0					0					0					0					0
Single-Unit Trucks	3					1					0					0					4
Articulated Trucks	0					1					0					0					1
Total Exiting Leg	3					2					0					0					5

PDI File #: **217935 B**  
 Location: **N: Faulkner Street S: Faulkner Street**  
 Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



**Buses**

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0					0					0					0					

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0					0					0					0					0
Total	0					0					0					0					0

PDI File #: **217935 B**  
 Location: **N: Faulkner Street S: Faulkner Street**  
 Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Single-Unit Trucks

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Grand Total	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	1	0	0	1	5
Approach %	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	80.0	0.0	0.0	0.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	20.0	
Exiting Leg Total	4					1					0					0					5

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
4:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Total Volume	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	1	0	0	1	4
% Approach Total	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.500
Entering Leg	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	1	0	0	1	4
Exiting Leg	3					1					0					0					4
Total	3					4					0					1					8

PDI File #: **217935 B**  
 Location: **N: Faulkner Street S: Faulkner Street**  
 Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Articulated Trucks

	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0					1					0					0					1

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Faulkner Street					Faulkner Street					Public Storage Front Lot					Public Storage Parking Area					Total
	from North					from South					from Southwest					from West					
	Right	Bear Right	Thru	U-Turn	Total	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Left	U-Turn	Total	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Exiting Leg	0					1					0					0					1
Total	0					1					1					0					2



PDI File #: **217935 B**  
 Location: **N: Faulkner Street S: Faulkner Street**  
 Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



**Bicycles (on Roadway and Crosswalks)**

	Faulkner Street						Faulkner Street						Public Storage Parking Area						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Faulkner Street						Faulkner Street						Public Storage Parking Area						
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **217935 B**  
 Location: **N: Faulkner Street S: Faulkner Street**  
 Location: **W: Public Storage Parking Area SW: Public Storage Front Lot**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Pedestrians

	Faulkner Street						Faulkner Street						Public Storage Parking Area						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	4
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	8	8
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	3
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	4
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	4	12	12
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66.667	33.333		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66.667	33.333	100	
Exiting Leg Total	0						0						12						12

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Faulkner Street						Faulkner Street						Public Storage Parking Area						
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	4
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	8	8
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	62.5	37.5		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.313	0.250	0.500	0.500
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	8	8
Exiting Leg	0						0						8						8
Total	0						0						16						16

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Cars and Heavy Vehicles (Combined)

	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	144	0	144	111	0	0	111	255
7:15 AM	0	0	0	0	0	184	0	184	124	1	0	125	309
7:30 AM	0	0	0	0	0	163	0	163	145	1	0	146	309
7:45 AM	1	1	0	2	0	198	0	198	173	0	0	173	373
Total	1	1	0	2	0	689	0	689	553	2	0	555	1246
8:00 AM	0	0	0	0	0	148	0	148	158	0	0	158	306
8:15 AM	0	0	0	0	0	151	0	151	130	0	0	130	281
8:30 AM	0	0	0	0	1	140	0	141	127	1	0	128	269
8:45 AM	0	0	0	0	0	130	0	130	98	0	0	98	228
Total	0	0	0	0	1	569	0	570	513	1	0	514	1084
Grand Total	1	1	0	2	1	1258	0	1259	1066	3	0	1069	2330
Approach %	50.0	50.0	0.0		0.1	99.9	0.0		99.7	0.3	0.0		
Total %	0.0	0.0	0.0	0.1	0.0	54.0	0.0	54.0	45.8	0.1	0.0	45.9	
Exiting Leg Total	4				1067				1259				2330
Cars	1	1	0	2	1	1216	0	1217	993	2	0	995	2214
% Cars	100.0	100.0	0.0	100.0	100.0	96.7	0.0	96.7	93.2	66.7	0.0	93.1	95.0
Exiting Leg Total	3				994				1217				2214
Heavy Vehicles	0	0	0	0	0	42	0	42	73	1	0	74	116
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	3.3	0.0	3.3	6.8	33.3	0.0	6.9	5.0
Exiting Leg Total	1				73				42				116

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:15 AM	0	0	0	0	0	184	0	184	124	1	0	125	309
7:30 AM	0	0	0	0	0	163	0	163	145	1	0	146	309
7:45 AM	1	1	0	2	0	198	0	198	173	0	0	173	373
8:00 AM	0	0	0	0	0	148	0	148	158	0	0	158	306
Total Volume	1	1	0	2	0	693	0	693	600	2	0	602	1297
% Approach Total	50.0	50.0	0.0		0.0	100.0	0.0		99.7	0.3	0.0		
PHF	0.250	0.250	0.000	0.250	0.000	0.875	0.000	0.875	0.867	0.500	0.000	0.870	0.869
Cars	1	1	0	2	0	671	0	671	562	1	0	563	1236
Cars %	100.0	100.0	0.0	100.0	0.0	96.8	0.0	96.8	93.7	50.0	0.0	93.5	95.3
Heavy Vehicles	0	0	0	0	0	22	0	22	38	1	0	39	61
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	3.2	0.0	3.2	6.3	50.0	0.0	6.5	4.7
Cars Enter Leg	1	1	0	2	0	671	0	671	562	1	0	563	1236
Heavy Enter Leg	0	0	0	0	0	22	0	22	38	1	0	39	61
Total Entering Leg	1	1	0	2	0	693	0	693	600	2	0	602	1297
Cars Exiting Leg	1				563				672				1236
Heavy Exiting Leg	1				38				22				61
Total Exiting Leg	2				601				694				1297

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Cars

	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	140	0	140	104	0	0	104	244
7:15 AM	0	0	0	0	0	180	0	180	117	1	0	118	298
7:30 AM	0	0	0	0	0	159	0	159	132	0	0	132	291
7:45 AM	1	1	0	2	0	190	0	190	165	0	0	165	357
Total	1	1	0	2	0	669	0	669	518	1	0	519	1190
8:00 AM	0	0	0	0	0	142	0	142	148	0	0	148	290
8:15 AM	0	0	0	0	0	147	0	147	117	0	0	117	264
8:30 AM	0	0	0	0	1	132	0	133	116	1	0	117	250
8:45 AM	0	0	0	0	0	126	0	126	94	0	0	94	220
Total	0	0	0	0	1	547	0	548	475	1	0	476	1024
Grand Total	1	1	0	2	1	1216	0	1217	993	2	0	995	2214
Approach %	50.0	50.0	0.0		0.1	99.9	0.0		99.8	0.2	0.0		
Total %	0.0	0.0	0.0	0.1	0.0	54.9	0.0	55.0	44.9	0.1	0.0	44.9	
Exiting Leg Total	3				994				1217				2214

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:15 AM	0	0	0	0	0	180	0	180	117	1	0	118	298
7:30 AM	0	0	0	0	0	159	0	159	132	0	0	132	291
7:45 AM	1	1	0	2	0	190	0	190	165	0	0	165	357
8:00 AM	0	0	0	0	0	142	0	142	148	0	0	148	290
Total Volume	1	1	0	2	0	671	0	671	562	1	0	563	1236
% Approach Total	50.0	50.0	0.0		0.0	100.0	0.0		99.8	0.2	0.0		
PHF	0.250	0.250	0.000	0.250	0.000	0.883	0.000	0.883	0.852	0.250	0.000	0.853	0.866
Entering Leg	1	1	0	2	0	671	0	671	562	1	0	563	1236
Exiting Leg				1				563				672	1236
Total				3				1234				1235	2472

PDI File #: 217935 C

Location: N: #650 Public Storage Driveway

Location: E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)

City, State: Malden, MA

Client: VHB/ M. Kealey

Site Code: 52739

Count Date: Thursday, May 6, 2021

Start Time: 7:00 AM

End Time: 9:00 AM

Class:



## Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	4	0	4	7	0	0	7	11
7:15 AM	0	0	0	0	0	4	0	4	7	0	0	7	11
7:30 AM	0	0	0	0	0	4	0	4	13	1	0	14	18
7:45 AM	0	0	0	0	0	8	0	8	8	0	0	8	16
Total	0	0	0	0	0	20	0	20	35	1	0	36	56
8:00 AM	0	0	0	0	0	6	0	6	10	0	0	10	16
8:15 AM	0	0	0	0	0	4	0	4	13	0	0	13	17
8:30 AM	0	0	0	0	0	8	0	8	11	0	0	11	19
8:45 AM	0	0	0	0	0	4	0	4	4	0	0	4	8
Total	0	0	0	0	0	22	0	22	38	0	0	38	60
Grand Total	0	0	0	0	0	42	0	42	73	1	0	74	116
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		98.6	1.4	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	36.2	0.0	36.2	62.9	0.9	0.0	63.8	
Exiting Leg Total	1				73				42				116
Buses	0	0	0	0	0	9	0	9	21	0	0	21	30
% Buses	0.0	0.0	0.0	0.0	0.0	21.4	0.0	21.4	28.8	0.0	0.0	28.4	25.9
Exiting Leg Total	0				21				9				30
Single-Unit Trucks	0	0	0	0	0	24	0	24	43	1	0	44	68
% Single-Unit	0.0	0.0	0.0	0.0	0.0	57.1	0.0	57.1	58.9	100.0	0.0	59.5	58.6
Exiting Leg Total	1				43				24				68
Articulated Trucks	0	0	0	0	0	9	0	9	9	0	0	9	18
% Articulated	0.0	0.0	0.0	0.0	0.0	21.4	0.0	21.4	12.3	0.0	0.0	12.2	15.5
Exiting Leg Total	0				9				9				18

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:45 AM	0	0	0	0	0	8	0	8	8	0	0	8	16
8:00 AM	0	0	0	0	0	6	0	6	10	0	0	10	16
8:15 AM	0	0	0	0	0	4	0	4	13	0	0	13	17
8:30 AM	0	0	0	0	0	8	0	8	11	0	0	11	19
Total Volume	0	0	0	0	0	26	0	26	42	0	0	42	68
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.813	0.000	0.813	0.808	0.000	0.000	0.808	0.895
Buses	0	0	0	0	0	5	0	5	15	0	0	15	20
Buses %	0.0	0.0	0.0	0.0	0.0	19.2	0.0	19.2	35.7	0.0	0.0	35.7	29.4
Single-Unit Trucks	0	0	0	0	0	17	0	17	19	0	0	19	36
Single-Unit %	0.0	0.0	0.0	0.0	0.0	65.4	0.0	65.4	45.2	0.0	0.0	45.2	52.9
Articulated Trucks	0	0	0	0	0	4	0	4	8	0	0	8	12
Articulated %	0.0	0.0	0.0	0.0	0.0	15.4	0.0	15.4	19.0	0.0	0.0	19.0	17.6
Buses	0	0	0	0	0	5	0	5	15	0	0	15	20
Single-Unit Trucks	0	0	0	0	0	17	0	17	19	0	0	19	36
Articulated Trucks	0	0	0	0	0	4	0	4	8	0	0	8	12
Total Entering Leg	0	0	0	0	0	26	0	26	42	0	0	42	68
Buses				0				15				5	20
Single-Unit Trucks				0				19				17	36
Articulated Trucks				0				8				4	12
Total Exiting Leg				0				42				26	68

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Buses

	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	2	0	2	3	0	0	3	5
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
7:30 AM	0	0	0	0	0	2	0	2	2	0	0	2	4
7:45 AM	0	0	0	0	0	2	0	2	4	0	0	4	6
Total	0	0	0	0	0	6	0	6	10	0	0	10	16
8:00 AM	0	0	0	0	0	1	0	1	6	0	0	6	7
8:15 AM	0	0	0	0	0	1	0	1	3	0	0	3	4
8:30 AM	0	0	0	0	0	1	0	1	2	0	0	2	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	3	0	3	11	0	0	11	14
Grand Total	0	0	0	0	0	9	0	9	21	0	0	21	30
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	30.0	0.0	30.0	70.0	0.0	0.0	70.0	
Exiting Leg Total	0				21				9				30

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:30 AM	0	0	0	0	0	2	0	2	2	0	0	2	4
7:45 AM	0	0	0	0	0	2	0	2	4	0	0	4	6
8:00 AM	0	0	0	0	0	1	0	1	6	0	0	6	7
8:15 AM	0	0	0	0	0	1	0	1	3	0	0	3	4
Total Volume	0	0	0	0	0	6	0	6	15	0	0	15	21
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.750	0.625	0.000	0.000	0.625	0.750
Entering Leg	0	0	0	0	0	6	0	6	15	0	0	15	21
Exiting Leg				0				15				6	21
Total				0				21				21	42



PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Single-Unit Trucks

	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	3	0	0	3	3
7:15 AM	0	0	0	0	0	2	0	2	6	0	0	6	8
7:30 AM	0	0	0	0	0	2	0	2	11	1	0	12	14
7:45 AM	0	0	0	0	0	5	0	5	2	0	0	2	7
Total	0	0	0	0	0	9	0	9	22	1	0	23	32
8:00 AM	0	0	0	0	0	5	0	5	2	0	0	2	7
8:15 AM	0	0	0	0	0	3	0	3	7	0	0	7	10
8:30 AM	0	0	0	0	0	4	0	4	8	0	0	8	12
8:45 AM	0	0	0	0	0	3	0	3	4	0	0	4	7
Total	0	0	0	0	0	15	0	15	21	0	0	21	36
Grand Total	0	0	0	0	0	24	0	24	43	1	0	44	68
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		97.7	2.3	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	35.3	0.0	35.3	63.2	1.5	0.0	64.7	
Exiting Leg Total	1				43				24				68

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:30 AM	0	0	0	0	0	2	0	2	11	1	0	12	14
7:45 AM	0	0	0	0	0	5	0	5	2	0	0	2	7
8:00 AM	0	0	0	0	0	5	0	5	2	0	0	2	7
8:15 AM	0	0	0	0	0	3	0	3	7	0	0	7	10
Total Volume	0	0	0	0	0	15	0	15	22	1	0	23	38
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		95.7	4.3	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.750	0.500	0.250	0.000	0.479	0.679
Entering Leg	0	0	0	0	0	15	0	15	22	1	0	23	38
Exiting Leg				1				22				15	38
Total				1				37				38	76

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Articulated Trucks

	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	2	0	2	1	0	0	1	3
7:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	1	2	0	0	2	3
Total	0	0	0	0	0	5	0	5	3	0	0	3	8
8:00 AM	0	0	0	0	0	0	0	0	2	0	0	2	2
8:15 AM	0	0	0	0	0	0	0	0	3	0	0	3	3
8:30 AM	0	0	0	0	0	3	0	3	1	0	0	1	4
8:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	4	0	4	6	0	0	6	10
Grand Total	0	0	0	0	0	9	0	9	9	0	0	9	18
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	50.0	0.0	0.0	50.0	
Exiting Leg Total	0				9				9				18

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:45 AM	0	0	0	0	0	1	0	1	2	0	0	2	3
8:00 AM	0	0	0	0	0	0	0	0	2	0	0	2	2
8:15 AM	0	0	0	0	0	0	0	0	3	0	0	3	3
8:30 AM	0	0	0	0	0	3	0	3	1	0	0	1	4
Total Volume	0	0	0	0	0	4	0	4	8	0	0	8	12
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.333	0.000	0.333	0.667	0.000	0.000	0.667	0.750
Entering Leg	0	0	0	0	0	4	0	4	8	0	0	8	12
Exiting Leg				0				8				4	12
Total				0				12				12	24

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



### Bicycles (on Roadway and Crosswalks)

	#650 Public Storage Driveway						Eastern Avenue (Route 60)						Eastern Avenue (Route 60)						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	2
7:45 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0	1	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0	1	3
Approach %	0.0	0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0		
Total %	0.0	0.0	0.0	33.3	0.0	33.3	0.0	33.3	0.0	0.0	0.0	33.3	0.0	0.0	0.0	33.3	0.0	33.3	
Exiting Leg Total	1						0						2						3

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	#650 Public Storage Driveway						Eastern Avenue (Route 60)						Eastern Avenue (Route 60)						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	2
7:45 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0	1	3
% Approach Total	0.0	0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0		
PHF	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.250	0.375
Entering Leg	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0	1	3
Exiting Leg	1						0						2						3
Total	2						1						3						6

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Pedestrians

	#650 Public Storage Driveway						Eastern Avenue (Route 60)						Eastern Avenue (Route 60)						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	5	0	5	6
7:15 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	2
7:30 AM	0	0	0	1	2	3	0	0	0	0	2	2	0	0	0	4	1	5	10
7:45 AM	0	0	0	2	0	2	0	0	0	0	5	5	0	0	0	13	1	14	21
Total	0	0	0	3	3	6	0	0	0	0	8	8	0	0	0	22	3	25	39
8:00 AM	0	0	0	0	10	10	0	0	0	0	11	11	0	0	0	10	3	13	34
8:15 AM	0	0	0	3	0	3	0	0	0	2	1	3	0	0	0	8	6	14	20
8:30 AM	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	2	1	3	5
8:45 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	2	3
Total	0	0	0	5	11	16	0	0	0	2	12	14	0	0	0	21	11	32	62
Grand Total	0	0	0	8	14	22	0	0	0	2	20	22	0	0	0	43	14	57	101
Approach %	0	0	0	36.364	63.636		0	0	0	9.0909	90.909		0	0	0	75.439	24.561		
Total %	0	0	0	7.9208	13.861	21.782	0	0	0	1.9802	19.802	21.782	0	0	0	42.574	13.861	56.436	
Exiting Leg Total	22						22						57						101

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	#650 Public Storage Driveway						Eastern Avenue (Route 60)						Eastern Avenue (Route 60)						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:30 AM	0	0	0	1	2	3	0	0	0	0	2	2	0	0	0	4	1	5	10
7:45 AM	0	0	0	2	0	2	0	0	0	0	5	5	0	0	0	13	1	14	21
8:00 AM	0	0	0	0	10	10	0	0	0	0	11	11	0	0	0	10	3	13	34
8:15 AM	0	0	0	3	0	3	0	0	0	2	1	3	0	0	0	8	6	14	20
Total Volume	0	0	0	6	12	18	0	0	0	2	19	21	0	0	0	35	11	46	85
% Approach Total	0.0	0.0	0.0	33.3	66.7		0.0	0.0	0.0	9.5	90.5		0.0	0.0	0.0	76.1	23.9		
PHF	0.000	0.000	0.000	0.500	0.300	0.450	0.000	0.000	0.000	0.250	0.432	0.477	0.000	0.000	0.000	0.673	0.458	0.821	0.625
Entering Leg	0	0	0	6	12	18	0	0	0	2	19	21	0	0	0	35	11	46	85
Exiting Leg	18						21						46						85
Total	36						42						92						170

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Cars and Heavy Vehicles (Combined)

	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	2	0	0	2	1	136	1	138	192	1	0	193	333
4:15 PM	0	0	0	0	0	150	0	150	187	0	0	187	337
4:30 PM	3	0	0	3	0	141	0	141	199	0	0	199	343
4:45 PM	0	0	0	0	1	168	0	169	197	0	0	197	366
Total	5	0	0	5	2	595	1	598	775	1	0	776	1379
5:00 PM	0	0	0	0	0	150	0	150	200	0	0	200	350
5:15 PM	0	1	0	1	0	126	0	126	222	1	0	223	350
5:30 PM	0	0	0	0	1	115	0	116	176	0	0	176	292
5:45 PM	0	0	0	0	0	126	0	126	187	1	0	188	314
Total	0	1	0	1	1	517	0	518	785	2	0	787	1306
Grand Total	5	1	0	6	3	1112	1	1116	1560	3	0	1563	2685
Approach %	83.3	16.7	0.0		0.3	99.6	0.1		99.8	0.2	0.0		
Total %	0.2	0.0	0.0	0.2	0.1	41.4	0.0	41.6	58.1	0.1	0.0	58.2	
Exiting Leg Total	6				1562				1117				2685
Cars	5	1	0	6	3	1095	1	1099	1529	3	0	1532	2637
% Cars	100.0	100.0	0.0	100.0	100.0	98.5	100.0	98.5	98.0	100.0	0.0	98.0	98.2
Exiting Leg Total	6				1531				1100				2637
Heavy Vehicles	0	0	0	0	0	17	0	17	31	0	0	31	48
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	1.5	0.0	1.5	2.0	0.0	0.0	2.0	1.8
Exiting Leg Total	0				31				17				48

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:30 PM	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:30 PM	3	0	0	3	0	141	0	141	199	0	0	199	343
4:45 PM	0	0	0	0	1	168	0	169	197	0	0	197	366
5:00 PM	0	0	0	0	0	150	0	150	200	0	0	200	350
5:15 PM	0	1	0	1	0	126	0	126	222	1	0	223	350
Total Volume	3	1	0	4	1	585	0	586	818	1	0	819	1409
% Approach Total	75.0	25.0	0.0		0.2	99.8	0.0		99.9	0.1	0.0		
PHF	0.250	0.250	0.000	0.333	0.250	0.871	0.000	0.867	0.921	0.250	0.000	0.918	0.962
Cars	3	1	0	4	1	575	0	576	804	1	0	805	1385
Cars %	100.0	100.0	0.0	100.0	100.0	98.3	0.0	98.3	98.3	100.0	0.0	98.3	98.3
Heavy Vehicles	0	0	0	0	0	10	0	10	14	0	0	14	24
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	1.7	0.0	1.7	1.7	0.0	0.0	1.7	1.7
Cars Enter Leg	3	1	0	4	1	575	0	576	804	1	0	805	1385
Heavy Enter Leg	0	0	0	0	0	10	0	10	14	0	0	14	24
Total Entering Leg	3	1	0	4	1	585	0	586	818	1	0	819	1409
Cars Exiting Leg	2				805				578				1385
Heavy Exiting Leg	0				14				10				24
Total Exiting Leg	2				819				588				1409

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Cars

	#650 Public Storage Driveway					Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North					from East				from West				
	Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	2	0	0	2		1	135	1	137	191	1	0	192	331
4:15 PM	0	0	0	0		0	146	0	146	179	0	0	179	325
4:30 PM	3	0	0	3		0	139	0	139	195	0	0	195	337
4:45 PM	0	0	0	0		1	162	0	163	190	0	0	190	353
Total	5	0	0	5		2	582	1	585	755	1	0	756	1346
5:00 PM	0	0	0	0		0	148	0	148	199	0	0	199	347
5:15 PM	0	1	0	1		0	126	0	126	220	1	0	221	348
5:30 PM	0	0	0	0		1	115	0	116	172	0	0	172	288
5:45 PM	0	0	0	0		0	124	0	124	183	1	0	184	308
Total	0	1	0	1		1	513	0	514	774	2	0	776	1291
Grand Total	5	1	0	6		3	1095	1	1099	1529	3	0	1532	2637
Approach %	83.3	16.7	0.0			0.3	99.6	0.1		99.8	0.2	0.0		
Total %	0.2	0.0	0.0	0.2		0.1	41.5	0.0	41.7	58.0	0.1	0.0	58.1	
Exiting Leg Total	6					1531				1100				2637

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:30 PM	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:30 PM	3	0	0	3	0	139	0	139	195	0	0	195	337
4:45 PM	0	0	0	0	1	162	0	163	190	0	0	190	353
5:00 PM	0	0	0	0	0	148	0	148	199	0	0	199	347
5:15 PM	0	1	0	1	0	126	0	126	220	1	0	221	348
Total Volume	3	1	0	4	1	575	0	576	804	1	0	805	1385
% Approach Total	75.0	25.0	0.0		0.2	99.8	0.0		99.9	0.1	0.0		
PHF	0.250	0.250	0.000	0.333	0.250	0.887	0.000	0.883	0.914	0.250	0.000	0.911	0.981
Entering Leg	3	1	0	4	1	575	0	576	804	1	0	805	1385
Exiting Leg				2				805				578	1385
Total				6				1381				1383	2770



PDI File #: 217935 C

Location: N: #650 Public Storage Driveway

Location: E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)

City, State: Malden, MA

Client: VHB/ M. Kealey

Site Code: 52739

Count Date: Thursday, May 6, 2021

Start Time: 4:00 PM

End Time: 6:00 PM

Class:

PRECISION  
D A T A  
INDUSTRIES, LLC157 Washington Street, Suite 2  
Hudson, MA 01749  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdilic.com

## Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
4:15 PM	0	0	0	0	0	4	0	4	8	0	0	8	12
4:30 PM	0	0	0	0	0	2	0	2	4	0	0	4	6
4:45 PM	0	0	0	0	0	6	0	6	7	0	0	7	13
Total	0	0	0	0	0	13	0	13	20	0	0	20	33
5:00 PM	0	0	0	0	0	2	0	2	1	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
5:30 PM	0	0	0	0	0	0	0	0	4	0	0	4	4
5:45 PM	0	0	0	0	0	2	0	2	4	0	0	4	6
Total	0	0	0	0	0	4	0	4	11	0	0	11	15
Grand Total	0	0	0	0	0	17	0	17	31	0	0	31	48
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	35.4	0.0	35.4	64.6	0.0	0.0	64.6	
Exiting Leg Total	0				31				17				48
Buses	0	0	0	0	0	1	0	1	3	0	0	3	4
% Buses	0.0	0.0	0.0	0.0	0.0	5.9	0.0	5.9	9.7	0.0	0.0	9.7	8.3
Exiting Leg Total	0				3				1				4
Single-Unit Trucks	0	0	0	0	0	13	0	13	21	0	0	21	34
% Single-Unit	0.0	0.0	0.0	0.0	0.0	76.5	0.0	76.5	67.7	0.0	0.0	67.7	70.8
Exiting Leg Total	0				21				13				34
Articulated Trucks	0	0	0	0	0	3	0	3	7	0	0	7	10
% Articulated	0.0	0.0	0.0	0.0	0.0	17.6	0.0	17.6	22.6	0.0	0.0	22.6	20.8
Exiting Leg Total	0				7				3				10

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:15 PM	0	0	0	0	0	4	0	4	8	0	0	8	12
4:30 PM	0	0	0	0	0	2	0	2	4	0	0	4	6
4:45 PM	0	0	0	0	0	6	0	6	7	0	0	7	13
5:00 PM	0	0	0	0	0	2	0	2	1	0	0	1	3
Total Volume	0	0	0	0	0	14	0	14	20	0	0	20	34
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.583	0.000	0.583	0.625	0.000	0.000	0.625	0.654
Buses	0	0	0	0	0	0	0	0	1	0	0	1	1
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	2.9
Single-Unit Trucks	0	0	0	0	0	12	0	12	14	0	0	14	26
Single-Unit %	0.0	0.0	0.0	0.0	0.0	85.7	0.0	85.7	70.0	0.0	0.0	70.0	76.5
Articulated Trucks	0	0	0	0	0	2	0	2	5	0	0	5	7
Articulated %	0.0	0.0	0.0	0.0	0.0	14.3	0.0	14.3	25.0	0.0	0.0	25.0	20.6
Buses	0	0	0	0	0	0	0	0	1	0	0	1	1
Single-Unit Trucks	0	0	0	0	0	12	0	12	14	0	0	14	26
Articulated Trucks	0	0	0	0	0	2	0	2	5	0	0	5	7
Total Entering Leg	0	0	0	0	0	14	0	14	20	0	0	20	34
Buses				0				1				0	1
Single-Unit Trucks				0				14				12	26
Articulated Trucks				0				5				2	7
Total Exiting Leg				0				20				14	34

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Buses

	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	1	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
Total	0	0	0	0	0	1	0	1	2	0	0	2	3
Grand Total	0	0	0	0	0	1	0	1	3	0	0	3	4
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	25.0	0.0	25.0	75.0	0.0	0.0	75.0	
Exiting Leg Total	0				3				1				4

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
Total Volume	0	0	0	0	0	1	0	1	2	0	0	2	3
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.500	0.000	0.000	0.500	0.375
Entering Leg	0	0	0	0	0	1	0	1	2	0	0	2	3
Exiting Leg				0				2				1	3
Total				0				3				3	6

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Single-Unit Trucks

	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
4:15 PM	0	0	0	0	0	3	0	3	6	0	0	6	9
4:30 PM	0	0	0	0	0	2	0	2	3	0	0	3	5
4:45 PM	0	0	0	0	0	5	0	5	5	0	0	5	10
Total	0	0	0	0	0	11	0	11	15	0	0	15	26
5:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
5:45 PM	0	0	0	0	0	0	0	0	3	0	0	3	3
Total	0	0	0	0	0	2	0	2	6	0	0	6	8
Grand Total	0	0	0	0	0	13	0	13	21	0	0	21	34
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	38.2	0.0	38.2	61.8	0.0	0.0	61.8	
Exiting Leg Total	0				21				13				34

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
4:15 PM	0	0	0	0	0	3	0	3	6	0	0	6	9
4:30 PM	0	0	0	0	0	2	0	2	3	0	0	3	5
4:45 PM	0	0	0	0	0	5	0	5	5	0	0	5	10
Total Volume	0	0	0	0	0	11	0	11	15	0	0	15	26
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.550	0.000	0.550	0.625	0.000	0.000	0.625	0.650
Entering Leg	0	0	0	0	0	11	0	11	15	0	0	15	26
Exiting Leg				0				15				11	26
Total				0				26				26	52

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Articulated Trucks

	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
4:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
4:45 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
Total	0	0	0	0	0	2	0	2	4	0	0	4	6
5:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
5:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	1	0	1	3	0	0	3	4
Grand Total	0	0	0	0	0	3	0	3	7	0	0	7	10
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	30.0	0.0	30.0	70.0	0.0	0.0	70.0	
Exiting Leg Total	0				7				3				10

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	#650 Public Storage Driveway				Eastern Avenue (Route 60)				Eastern Avenue (Route 60)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:15 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
4:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
4:45 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
5:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	0	0	0	0	2	0	2	5	0	0	5	7
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.625	0.000	0.000	0.625	0.583
Entering Leg	0	0	0	0	0	2	0	2	5	0	0	5	7
Exiting Leg				0				5				2	7
Total				0				7				7	14

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



### Bicycles (on Roadway and Crosswalks)

	#650 Public Storage Driveway						Eastern Avenue (Route 60)						Eastern Avenue (Route 60)						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	3
5:00 PM	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
5:30 PM	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	0	0	2	3
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
Total	0	0	0	1	1	2	0	2	0	0	0	2	2	0	0	0	1	3	7
Grand Total	0	0	0	1	1	2	0	2	0	0	0	2	2	0	0	2	2	6	10
Approach %	0.0	0.0	0.0	50.0	50.0		0.0	100.0	0.0	0.0	0.0		33.3	0.0	0.0	33.3	33.3		
Total %	0.0	0.0	0.0	10.0	10.0	20.0	0.0	20.0	0.0	0.0	0.0	20.0	20.0	0.0	0.0	20.0	20.0	60.0	
Exiting Leg Total	2						2						6						10

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	#650 Public Storage Driveway						Eastern Avenue (Route 60)						Eastern Avenue (Route 60)						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
5:00 PM	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
5:30 PM	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
Total Volume	0	0	0	1	1	2	0	2	0	0	0	2	2	0	0	0	1	3	7
% Approach Total	0.0	0.0	0.0	50.0	50.0		0.0	100.0	0.0	0.0	0.0		66.7	0.0	0.0	0.0	33.3		
PHF	0.000	0.000	0.000	0.250	0.250	0.500	0.000	0.500	0.000	0.000	0.000	0.500	0.250	0.000	0.000	0.000	0.250	0.375	0.583
Entering Leg	0	0	0	1	1	2	0	2	0	0	0	2	2	0	0	0	1	3	7
Exiting Leg	2						2						3						7
Total	4						4						6						14

PDI File #: **217935 C**  
 Location: **N: #650 Public Storage Driveway**  
 Location: **E: Eastern Avenue (Route 60) W: Eastern Avenue (Route 60)**  
 City, State: **Malden, MA**  
 Client: **VHB/ M. Kealey**  
 Site Code: **52739**  
 Count Date: **Thursday, May 6, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Pedestrians

	#650 Public Storage Driveway						Eastern Avenue (Route 60)						Eastern Avenue (Route 60)						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	8	2	10	11
4:15 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	2	3
4:30 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	11	11	12	
4:45 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	2	3	4
Total	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	9	17	26	30
5:00 PM	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	5	0	5	9
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
5:30 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	6	8	14	15
5:45 PM	0	0	0	1	3	4	0	0	0	0	0	0	0	0	0	2	0	2	6
Total	0	0	0	1	8	9	0	0	0	0	0	0	0	0	0	13	11	24	33
Grand Total	0	0	0	1	12	13	0	0	0	0	0	0	0	0	0	22	28	50	63
Approach %	0	0	0	7.6923	92.308		0	0	0	0	0	0	0	0	0	44	56		
Total %	0	0	0	1.5873	19.048	20.635	0	0	0	0	0	0	0	0	0	34.921	44.444	79.365	
Exiting Leg Total	13						0						50						63

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	#650 Public Storage Driveway						Eastern Avenue (Route 60)						Eastern Avenue (Route 60)						Total	
	from North						from East						from West							
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
5:00 PM	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	5	0	5	9	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	
5:30 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	6	8	14	15	
5:45 PM	0	0	0	1	3	4	0	0	0	0	0	0	0	0	0	2	0	2	6	
Total Volume	0	0	0	1	8	9	0	0	0	0	0	0	0	0	0	13	11	24	33	
% Approach Total	0.0	0.0	0.0	11.1	88.9		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	54.2	45.8		
PHF	0.000	0.000	0.000	0.250	0.500	0.563	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.542	0.344	0.429	0.550
Entering Leg	0	0	0	1	8	9	0	0	0	0	0	0		0	0	0	13	11	24	33
Exiting Leg	9						0						24						33	
Total	18						0						48						66	



---

## Parking Count Data

Parking Occupancy Counts (5/6/21)			
	<u>Storage Facility #490</u>	<u>Storage Facility #650</u>	<u>Proposed Facility</u>
7:00 AM	1	0	
7:15 AM	3	0	
7:30 AM	2	1	
7:45 AM	2	2	
8:00 AM	2	0	
8:15 AM	2	0	
8:30 AM	5	0	
8:45 AM	5	2	
9:00 AM	4	2	
<b>MAX</b>	<b>5</b>	<b>2</b>	
4:00 PM	5	4	
4:15 PM	7	4	
4:30 PM	8	4	
4:45 PM	7	1	
5:00 PM	6	2	
5:15 PM	1	2	
5:30 PM	1	2	
5:45 PM	1	3	
6:00 PM	2	4	
<b>MAX</b>	<b>8</b>	<b>4</b>	15

Area	125,388	99,440	89,690
Rate	0.064	0.040	0.167



**ITE TRIP GENERATION WORKSHEET**  
**(11th Edition, Updated 2021)**

**LANDUSE:** Automobile Parts and Service Center  
**LANDUSE CODE:** 942 Independent Variable ---  
**SETTING/LOCATION:** General Urban/Suburban  
**JOB NAME:** Arlington  
**FLOOR AREA (KSF):** 12.073  
**JOB NUMBER:** 52816.00

**WEEKDAY**

RATES:		# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
				Average	Low	High	Average	Low	High	Enter	Exit
	DAILY	0	--	0.00	0.00	0.00	0	0.00	0	0%	0%
	AM PEAK OF GENERATOR	6	0.65	2.83	1.93	5.74	17	7.19	40	56%	44%
	PM PEAK OF GENERATOR	6	0.71	3.51	2.75	7.15	17	7.19	40	49%	51%
	AM PEAK (ADJACENT ST)	6	--	2.25	1.20	5.30	17	7.19	40	66%	34%
	PM PEAK (ADJACENT ST)	6	0.83	3.11	1.87	5.65	17	7.19	40	48%	52%

**TRIPS:**

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	n/a	n/a	n/a	n/a	n/a	n/a
AM PEAK OF GENERATOR	34	19	15	40	22	17
PM PEAK OF GENERATOR	42	21	22	49	24	25
AM PEAK (ADJACENT ST)	27	18	9	n/a	n/a	n/a
PM PEAK (ADJACENT ST)	38	18	20	41	20	21

**SATURDAY**

RATES:		# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
				Average	Low	High	Average	Low	High	Enter	Exit
	DAILY	2	--	23.72	15.87	28.20	31	23	40	50%	50%
	PEAK OF GENERATOR	--	--	--	--	--	--	--	--	--	--

**TRIPS:**

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	286	143	143	n/a	n/a	n/a
PEAK OF GENERATOR	n/a	n/a	n/a	n/a	n/a	n/a

**SUNDAY**

RATES:		# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
				Average	Low	High	Average	Low	High	Enter	Exit
	DAILY	2	--	11.88	2.59	17.18	31	23	40	50%	50%
	PEAK OF GENERATOR	--	--	--	--	--	--	--	--	--	--

**TRIPS:**

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	143	72	72	n/a	n/a	n/a
PEAK OF GENERATOR	n/a	n/a	n/a	n/a	n/a	n/a

**ITE TRIP GENERATION WORKSHEET**

(11th Edition, Updated 2021)

**LANDUSE:** Mini Warehouse

**LANDUSE CODE:** 151

**LOCATION:** General Urban / Suburban

**JOB NAME:**

**JOB NUMBER:**

Independent Variable --- 1,000 Sq. Feet Gross Floor Area

**FLOOR AREA (KSF):** 95.706

**WEEKDAY**

**RATES:**

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	16	--	1.45	0.38	3.25	55	7.5	101	50%	50%
AM PEAK OF GENERATOR	11	--	0.18	0.07	0.79	66	7.5	114	51%	49%
PM PEAK OF GENERATOR	16	--	0.18	0.06	1.05	56	7.5	114	51%	49%
AM PEAK (ADJACENT ST)	13	--	0.09	0.04	0.17	70	27	114	59%	41%
PM PEAK (ADJACENT ST)	18	--	0.15	0.02	0.64	59	7.5	114	47%	53%

**TRIPS:**

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	139	69	69	N/A	N/A	N/A
AM PEAK OF GENERATOR	17	9	8	N/A	N/A	N/A
PM PEAK OF GENERATOR	17	9	8	N/A	N/A	N/A
AM PEAK (ADJACENT ST)	9	5	4	N/A	N/A	N/A
PM PEAK (ADJACENT ST)	14	7	8	N/A	N/A	N/A

**SATURDAY**

**RATES:**

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	6	0.57	1.77	1.21	3.29	43	20	87	50%	50%
PEAK OF GENERATOR	3	--	0.17	0.04	0.31	90	71	114	62%	38%

**TRIPS:**

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	169	85	85	129	64	64
PEAK OF GENERATOR	16	10	6	N/A	N/A	N/A

**SUNDAY**

**RATES:**

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	5	--	1.50	0.69	3.70	40	20	87	50%	50%
PEAK OF GENERATOR	2	--	0.20	0.16	0.23	79	71	87	45%	55%

**TRIPS:**

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	144	72	72	N/A	N/A	N/A
PEAK OF GENERATOR	19	9	11	N/A	N/A	N/A

## Customer Visits - CubeSmart

171 Bear Hill Road, Waltham, MA

111,921 Square Feet

Total Number of Customers per Month (Broken Down by Day)													
Day	April 2020	May 2020	June 2020	July 2020	August 2020	September 2020	October 2020	November 2020	December 2020	January 2021	February 2021	March 2021	Total
Sunday	20	46	67	71	144	95	70	114	76	108	53	76	940
Monday	8	40	74	71	113	76	61	64	72	53	53	75	760
Tuesday	17	36	85	69	95	117	56	68	94	55	41	79	812
Wednesday	23	40	50	94	83	97	59	69	87	53	59	67	781
Thursday	16	44	60	94	74	85	93	46	56	51	65	66	750
Friday	11	42	57	97	122	75	80	60	61	67	51	64	787
Saturday	29	58	68	91	168	98	118	89	70	124	60	90	1063
<b>Total</b>	<b>124</b>	<b>306</b>	<b>461</b>	<b>587</b>	<b>799</b>	<b>643</b>	<b>537</b>	<b>510</b>	<b>516</b>	<b>511</b>	<b>382</b>	<b>517</b>	<b>5,893</b>

Average Number of Customers per Day													
Day	April 2020	May 2020	June 2020	July 2020	August 2020	September 2020	October 2020	November 2020	December 2020	January 2021	February 2021	March 2021	Total
Sunday	5.0	9.2	16.8	17.8	28.8	23.8	17.5	22.8	19.0	21.6	13.3	19.0	18.1
Monday	2.0	10.0	14.8	17.8	22.6	19.0	15.3	12.8	18.0	13.3	13.3	15.0	14.6
Tuesday	4.3	9.0	17.0	17.3	23.8	23.4	14.0	17.0	18.8	13.8	10.3	15.8	15.6
Wednesday	4.6	10.0	12.5	18.8	20.8	19.4	14.8	17.3	17.4	13.3	14.8	13.4	14.7
Thursday	3.2	11.0	15.0	18.8	18.5	21.3	18.6	11.5	11.2	12.8	16.3	16.5	14.4
Friday	2.8	8.4	14.3	19.4	30.5	18.8	16.0	15.0	15.3	13.4	12.8	16.0	15.1
Saturday	7.3	11.6	17.0	22.8	33.6	24.5	23.6	22.3	17.5	24.8	15.0	22.5	20.4
<b>Total (Per Day)</b>	<b>4.1</b>	<b>9.9</b>	<b>15.4</b>	<b>18.9</b>	<b>25.8</b>	<b>21.4</b>	<b>17.3</b>	<b>17.0</b>	<b>16.6</b>	<b>16.5</b>	<b>13.6</b>	<b>16.7</b>	<b>16.1</b>