Town of Arlington, MA
Redevelopment Board

Agenda & Meeting Notice
June 7, 2021

Per Board Rules and Regulations, public comments will be accepted during the public comment periods designated on the agenda. Written comments may be provided by email to jraitt@town.arlington.ma.us by June 7, 2021 at 4:00 p.m. The Board requests that correspondence that includes visual information should be provided by June 4, 2021 at 12:00 p.m.

The Arlington Redevelopment Board will meet Monday, June 7, 2021 at 7:00 PM in the **Join Zoom Meeting with audio and video by connecting using this link and Meeting ID: https://zoom.us/j/98678599139 Enter Meeting ID: 986 7859 9139 or join by phone by calling: 1-646-876-9923 and enter Meeting ID 986 7859 9139 followed by #**

1. Docket #3650 190 & 192-200 Massachusetts Avenue Continued Public Hearing

7:00 p.m. Board will open a public hearing to review an application filed February 8, 2021 by 190-200 Massachusetts Ave, LLC, 455 Massachusetts Avenue, Suite 1, Arlington, MA, in accordance with the provisions of MGL Chapter 40A § 11, and the Town of Arlington Zoning Bylaw Section 3.4, Environmental Design Review. The applicant proposes to construct a mixed-use building containing retail and 37 residential units, including 8 affordable units, at 190 & 192-200 Massachusetts Avenue, Arlington, MA in the B3 Village Business District. The opening of the Special Permit is to allow the Board to review and approve the development under Section 3.4, Environmental Design Review.

- Applicant will be provided 5 minutes for a presentation.
- DPCD staff will be provided 3 minutes to discuss public hearing memo.
- Members of the public will be provided time to comment.
- Board members will discuss each docket and may vote.

2. Committee Appointment

8:00 p.m. Jagat Adhiya, Envision Arlington Standing Committee

Board will vote to approve appointment by the Director of Planning and Community Development for a three-year term

3. Town Meeting recap

8:15 p.m. Staff will provide a recap and share the outcome of votes on Zoning Warrant Articles at 2021 Annual Town Meeting.

Staff and Board update and discussion

4. ARB Meeting Schedule July through December 2021

8:30 p.m. Board will confirm meeting schedule.

5. Meeting Minutes (for 4/8/21, 4/26/21, 5/3/21, and 5/17/21)

8:35 p.m. Board will review and approve meeting minutes

6. Open Forum

8:45 p.m. Except in unusual circumstances, any matter presented for consideration of the Board shall neither be acted upon, nor a decision made the night of the presentation. There is a three minute time limit to present a concern or request.

7. Adjourn

9:05 p.m. Estimated Time for Adjournment

8. Correspondence received

Correspondence received from:
D. Seltzer 06-04-21 and 06-06-21
L. Curtis 06-06-21
C. Pedersen 06-07-21
E. Maynard 06-07-21
R. Freeman 06-07-21
R. Roth 06-07-21
K. Doherty 06-07-21
A. Shrestha 06-07-21

Town of Arlington, Massachusetts

Docket #3650 190 & 192-200 Massachusetts Avenue Continued Public Hearing

Summary:

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ATTACHMENTS:

	Type	File Name	Description
	Reference Material	Agenda_Item_1a_Updated_Memo_to_ARB_re_Docket_#3650_06-03-21.pdf	06-03-21 Updated Memo to ARB re Docket #3650
	Reference Material	06-04-2021_2020051_200_Mass_Ave_SD_Chandler_St_render.pdf	06-04-21 2020051 200 Mass Ave SD Chandler St. Render
	Reference Material	190-200_Application_Review.pdf	06-03-21 190-200 Application Review
	Reference Material	Arlington_Transportation_Slides_.pdf	06-03-21 Arlington Transportation Slides
	Reference Material	2021-05-25_Plan_Set_Issued_For_ARB_Review.pdf	05-25-21 Plan Set Issued for ARB Review
	Reference Material	2021-05-25_Drainage_Summary.pdf	05-25-21 Drainage Summary
	Reference Material	2021-05-25_ARB_Form.pdf	05-21-21 Application
	Reference Material	2020051_200_Mass_Ave_SD_ARB_SUBMISSION_051821.pdf	05-18-21 20200051 200 Mass Ave SD ARB Submission
	Reference Material	Changes_to_Civil_Plans.pdf	NEW - Changes to Civil Plans
	Reference Material	FIG-01_-_Garage_Turning.pdf	NEW - Fig-01 Garage Turning
	Reference Material	FIG-02_-_Parking_Figure.pdf	NEW - Fig-02 Parking Figure
	Reference Material	FIG-03_-_Parking_Figure.pdf	NEW - Fig-03 Parking Figure

🗋	Reference Material	NEW_Continuation_request_re_Docket_3650_-_190_192-200_Mass_Ave_from_R._Annese_04262021.pdf	04-26-21 Continuation request re Docket 3650 190 192-200 Mass. Ave. from R. Annese
🗋	Reference Material	Arlington_Market_Analytics.pdf	04-06-21 Arlington Market Analytics
🗋	Reference Material	EDR_Public_Hearing_Memo_Docket_3650_190-200_Mass_Ave.pdf	EDR Public Hearing Memo Docket #3650 190-200 Mass Ave
🗋	Reference Material	Docket_3650_Combined_Application_Materials-_compressed.pdf	Docket #3650 Combined Application Materials
🗋	Reference Material	Docket_3650_Updated_Solar_Studies_dated_March_18_2021.pdf	03-18-21 Docket #3650 Updated Solar Studies

Town of Arlington, Massachusetts

Department of Planning & Community Development

730 Massachusetts Avenue, Arlington, Massachusetts 02476

Public Hearing Memorandum - Update

The purpose of this memorandum is to provide the Arlington Redevelopment Board and public with technical information and a planning analysis to assist with the regulatory decision-making process.

To: Arlington Redevelopment Board

From: Jennifer Raitt, Secretary Ex Officio

Subject: Environmental Design Review, 190, 192-200 Massachusetts Avenue, Arlington, MA
Docket #3650

Date: June 3, 2021

This memo is provided as an update to the last memo provided on March 31, 2021. The following items have been updated pursuant to this application:

- Updated Plan Set, May 25, 2021
- Amended drainage summary letter, May 25, 2021
- Amended Dimensional and Parking Information form, May 25, 2021
- Update Submission Comment, June 7, 2021
- Garage turning, figures 1, 2, 3
- Explanation of changes to Civil Plan
- Traffic Impact Assessment, update June 7, 2021

The Board requested that the applicant address the following issues in this next plan iteration:

- Lower floor-area-ratio;
- Add back commercial space;
- Provide greater detail about parking options;
- Provide details regarding the third-floor terrace amenities;
- Incorporate an exhaust system to accommodate a potential future restaurant use;
- Address mismatch between façade of the bank building and upper level façade;
- Reorient the proposed first floor space to make better use of the windows and the large, vaulted windows on the side of the first floor;

- Incorporate other uses besides residential, such as offices, on the second floor; and
- Incorporate solar ready elements onto the building roof.

Department staff reviewed the updated materials and provided the following comments:

- The revised proposal provides a more suitable relationship between the ground floor storefront and the upper floors. The six windows on the front third of the building at the second and third floors on the front lack detail and could be revisited. In general, however, the new design treatment makes the windows appear larger, providing improved balance between the transparency of the ground floor with the upper stories.
- The applicant improved the blank façades on both Chandler Street and Lake Street from the last iteration. They would be further improved if wall areas on both of those side streets were dedicated to public art. This building is in the center of the Arlington Cultural District and public art, such as murals, would improve the structure's visual contribution to the district.
- The upper floor facade is a mix of brick and painted fiber cement panel or clapboard, with matching cornice/trim details. In this iteration of the design, the applicant has selected materials and colors that complement the existing bank building.
- The applicant is proposing a floor area ratio (FAR) of 3.2 (-.9 from the prior proposal) and has reduced the total proposed height and stories from 60 feet/five stories to 50 feet/four stories. As a result of this reduction, the applicant is no longer seeking relief from the rear height buffer.
- The revised proposal shows a slight increase in commercial space from 2,084 to 2,436 square feet (+352 square feet). While the applicant added 352 square feet of commercial space to the proposed development, there is still an overall loss of commercial space in the building is 8,981 square feet.
- The revised proposal also shows a reduction in residential units from 37 to 24 units (-13 units). The number of affordable units has decreased from eight to five units (-3 units), although the proportion of affordable units has been maintained at 21%. Further, a 24-unit building requires four units that are a representative mix of the units available in the building available to eligible households earning up to 70% of the area median income. Affordable units are a mix of studios (2) and one-bedroom units (3) distributed across all floors. None of the three two-bedroom units are designated as affordable.
- The building materials on the upper stories are now more complimentary to the materials on the original ground floor façade and the elements that will be retained.
- The parking garage has been improved with less static space. Moving the short-term bike parking inside the garage is an improvement. Adding another electric vehicle charging spot is also an improvement. The width reductions to the drive aisle are sufficient. While the number of proposed parking spaces has been reduced, further

reductions could also be proposed given the proposed number of units and location of and access to the property.

- The revised proposal provides a more thoughtful approach to the residents' experience of accessing the building, providing a primary entrance through the bank building, a modest awning over the entry on Chandler Street, and a second means of egress on Lake Street.
- While we are pleased to see that the same number of indoor bicycle parking spaces has been retained, the applicant should clarify if the elevator can accommodate bicycles adequately, including larger-then-usual bicycles such as cargo bikes.
- The applicant should confirm how much of the existing structure will be demolished and the approximate construction area surrounding the site. The applicant will be required to completely reconstruct the sidewalk as currently designed and repair any damaged public amenities. The applicant will be required to maintain the existing transit and pedestrian access to the Mass Ave side of this property during construction. Pedestrian access should be fully maintained along Mass Ave because using the signal here to cross Mass Ave is safer than trying to cross at Marathon Street to get to the businesses between Chandler Street and Egerton Road.

Title: CHANDLER STREET RENDERING	Scale:	Revisions: # Description Date	200 MASS AVE MIXED USE	NOT FOR CONSTRUCTION	MARKET SQUARE ARCHITECTS
A9.07	Drawn By: Author		190-200 MASSACHUSETTS AVE ARLINGTON, MA		104 Congress St., STE 203 Portsmouth, NH 03801 PH: 603.501.0202
	Checked By: Checker				
	Project No.: 2020051				
	Date: 06/04/21				

* 2020 Market Square Architects 6/4/2021 4:11:15 PM

8 of 321

June 7th, 2021 Updated Submission Comments

190 & 190-200 Massachusetts Avenue Arlington, MA

Overall Project Change:

The building has gone from 5 stories down to 4 stories and the overall unit count now is 24 units. After hearing all the feedback from the ARB as well as the community we feel this new layout is much less impactful on the neighborhood. We no longer will be requesting relief from the rear height buffer. Knowing that affordable housing is important to the Town we are still going to maintain our 20% affordable rate, which is what we were offering when we had 37 units. We are also decreasing our parking down to 14 total as well as incorporating one more electric changing station.

Net Zero:

The plan for this building is similar to 882-892 Mass Ave where the units will utilize electric. The roof will be “solar ready” and able to handle those loads structurally. We support Arlington’s agenda of net zero and have proactively worked with Ken Pruitt, the Town Energy Manager on 882-892 Mass Ave. The building at 882-892 Mass Ave is serving as a case study on how this kind of design can be done. We plan on executing the same way for this project.

Commercial Space:

We have done our best to reshape and reorganize the commercial space to make it more functional and usable. We are extending/squaring off the space on Lake Street, which adds to the appearance of the building on that side. We also moved the entrance to the residential units to the former bank entrance as we had to slide the parking down towards Chandler Street in order to add to the commercial space making it more robust. In this process we also included the location up through the building for ventilating a hood. We believe this size commercial space can do well at this location and hopefully whatever tenant ends up moving into it can be a staple in the building for a long time. These changes have increased the commercial space from 2,084 SF to 2,430 SF.

At the end of the day, a building is a business, and we have to make decisions with that in mind. Just like with any business if you don’t ever adapt and change you go out of business. We believe this is a situation where quality over quantity is important. We also believe that this size space is what the market supports post COVID. The inquiries we have received as of late (and

prior to Covid) have been for 1000-2000+/- SF. In the roughly 20 months prior to COVID, two restaurants declared bankruptcy where the tenant owed substantial rent to the landlord. This building is not a “destination” location compared to what you might think when you see a traditional shopping plaza. The commercial space is going to largely survive off of local foot traffic/walk-in traffic. Commercial/Retail has been experiencing a slow negative trend before the pandemic this past year accelerated that trend, which is why when you drive through many different towns, not just Arlington, there are many vacant storefronts. Therefore, we think that a single user or two smaller users would benefit from local foot traffic as well as the residential units located in the building. Other local businesses would consider the residential units a benefit to their businesses.

For informational purposes I had a brokerage firm put together an update on the rental market in Arlington which shows a current rate of 17.3%. However, this doesn't include any spaces that haven’t been reported as vacant, spaces that have tenants who haven’t officially moved out yet that are maybe out of business, as well as tenants who aren’t currently paying rent and their situation isn’t necessarily clear. This structure, as proposed, with a large portion being residential will make it so the building will never be in the situation it is now, which is run down. The residential units will be able to support the commercial space if it changes over time, repair damage, or complete different buildouts over time. The way the current commercial space is structured can make it very difficult in some cases if two tenants go out of business in a row, or multiple tenants leave at one time to keep things maintained. As a landlord, in that case, you could have invested money into the build out and never gotten that back, which could be on top of still being owed money from the lease. We believe our proposal is a balanced approach that is going to create a long-lasting successful building that can help bring people to Arlington and be a building the town can find pride in.

Traffic:

Our traffic consultant from MDM is fully prepared to discuss the study he performed for this project. His overall findings, in summary, is that this new development, compared to what has historically been at this location, will derive less trips per day and be less impactful on the neighborhood. This mainly stems from the fact all the previous businesses generate a lot of in and out traffic all day long seven days a week. Fourteen parking spaces on average are going to generate a few trips a day. Every car will not be coming and going every single day. Some renters may have a car because they want one but not use it very often. We are also attaching an enlarged site plan showing all the parking in the area that is available both for a retail user as well as visitors. I would also add the entrance we are using for the parking garage has always been a curb cut. Currently, there are 3 spaces behind the bank building as well as 2 dumpsters. We are adding 11 more cars that will not be in and out all day long multiple times. Surrounding neighbors are worried about the traffic, but since we do in fact have less commercial space than what has been traditionally there over the last ten+ years, we are

eliminating many deliveries for a few businesses multiple times a day. Those deliveries would include larger trucks with back-up noises.

Underground Parking:

In previous iterations we had already explored underground parking prior to the submission of our application. We had a fully engineered plan done by our engineers and even with an increased grade to the upper limits we found that the real issue is the building does not have a large enough footprint to support adequate parking below the building. Therefore, the fact that we are only able to get 5 spaces combined with the economic infeasibility for those five, we cannot move forward with underground parking.

Exterior Design:

Best efforts combined with feedback led us to make changes to the exterior of the building to tie everything together and create more flow between the commercial and residential portion of the building. A small change to note is that by moving the interior staircase exit out onto Lake Street, more green space was gained in the rear of the building. The building seems to tie together with Capitol Square along with improvements along both Chandler and Lake Street. Specifically, on Lake Street where the commercial space has expanded down the street around the corner creates more life to that side of the building.

Second Floor Office Space:

We explored the option of office space on the second floor with our design team as well as our code consultants. The main insurmountable issue was we most likely would have to add another elevator and a third staircase in order to keep access separate as there is a security and peaceful enjoyment of residential tenants to consider as a priority. In addition, those alterations would disrupt the current commercial space as laid out. Due to those reasons, we find that option to not be economically viable or desirable.

Traffic Impact Assessment

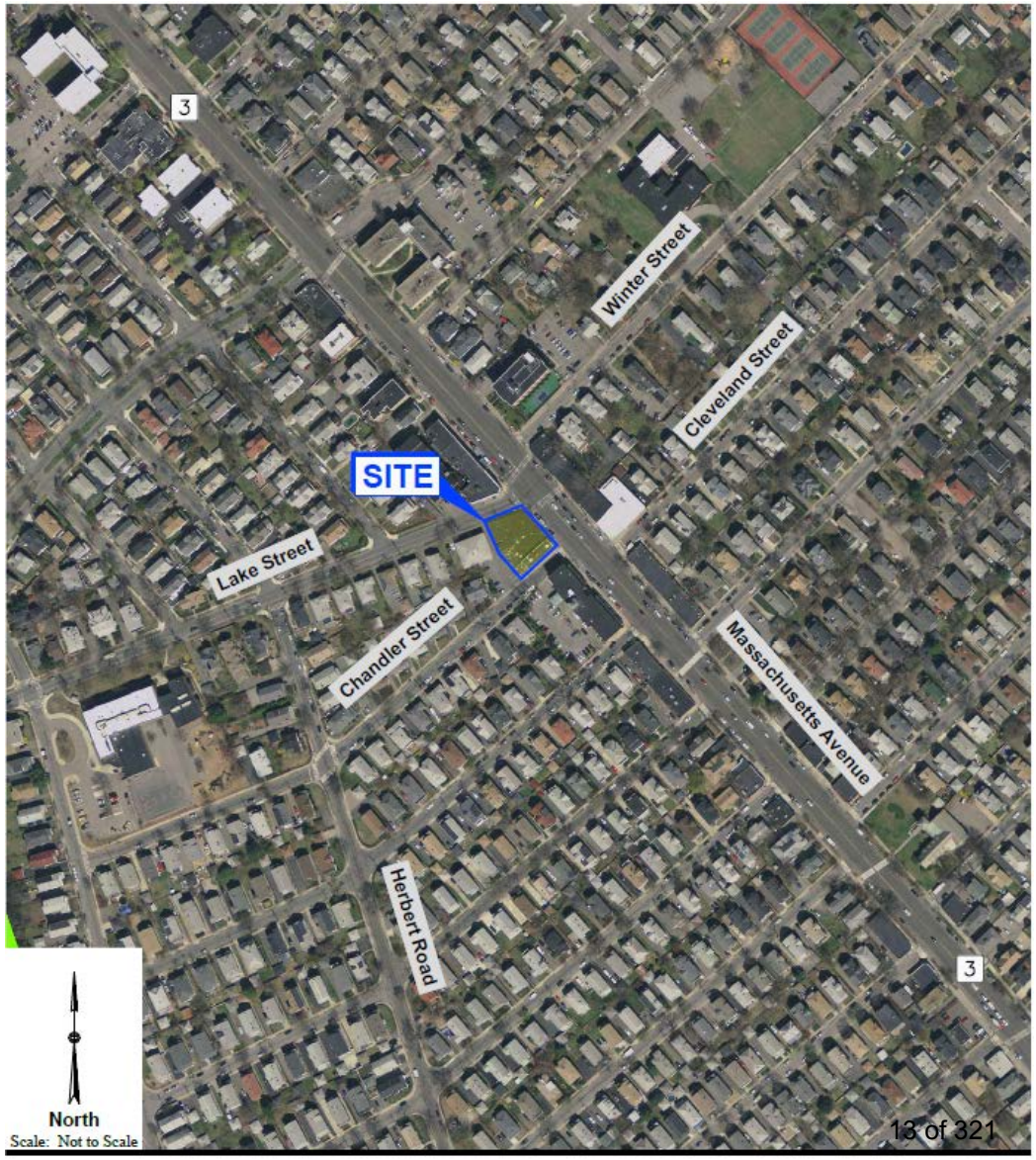
Proposed Mixed-Use Development

Robert J. Michaud, P.E., Managing Principal
Daniel A. Dumais, P.E. Sr. Project Manager

June 7, 2021

MDM

Site Location



MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Alternative Transportation Facilities

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Trip Generation Summary

Period	Residential[1]	Retail Use[2]	Total Trips
Weekday Morning Peak-Hour:			
Enter	2	1	**3**
Exit	5	1	**6**
Total	7	2	**9**
Weekday Evening Peak-Hour:			
Enter	5	3	**8**
Exit	3	4	**7**
Total	8	7	**15**
Daily	102	66	**168**

[1]Based on ITE LUC 221 (Multifamily Housing (Mid-Rise)) applied to 37 Units adjusted to reflect 50% non-auto mode share per US Census tract data.

[2]Based on ITE LUC 820 (Shopping Center) applied to 1,735 sf.

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Trip Generation Comparison

Period	Existing Uses[1]	Proposed Use[2]	Net New Trips
Weekday Morning Peak-Hour:			
Enter	6	**3**	**-3**
Exit	4	**6**	**+2**
Total	10	**9**	**-1**
Weekday Evening Peak-Hour:			
Enter	19	**8**	**-11**
Exit	21	**7**	**-14**
Total	40	**15**	**-25**
Daily	396	**168**	**-228**

[1] Based on ITE LUC 820 (Shopping Center) applied to 10,500 sf.

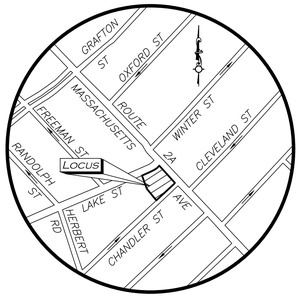
[2] Based on ITE LUC 221 (Multifamily Housing (Mid-Rise)) applied to 37 Units adjusted to reflect 50% non-auto mode share per US Census tract data and ITE LUC 820 (Shopping Center) applied to 1,735 sf.

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

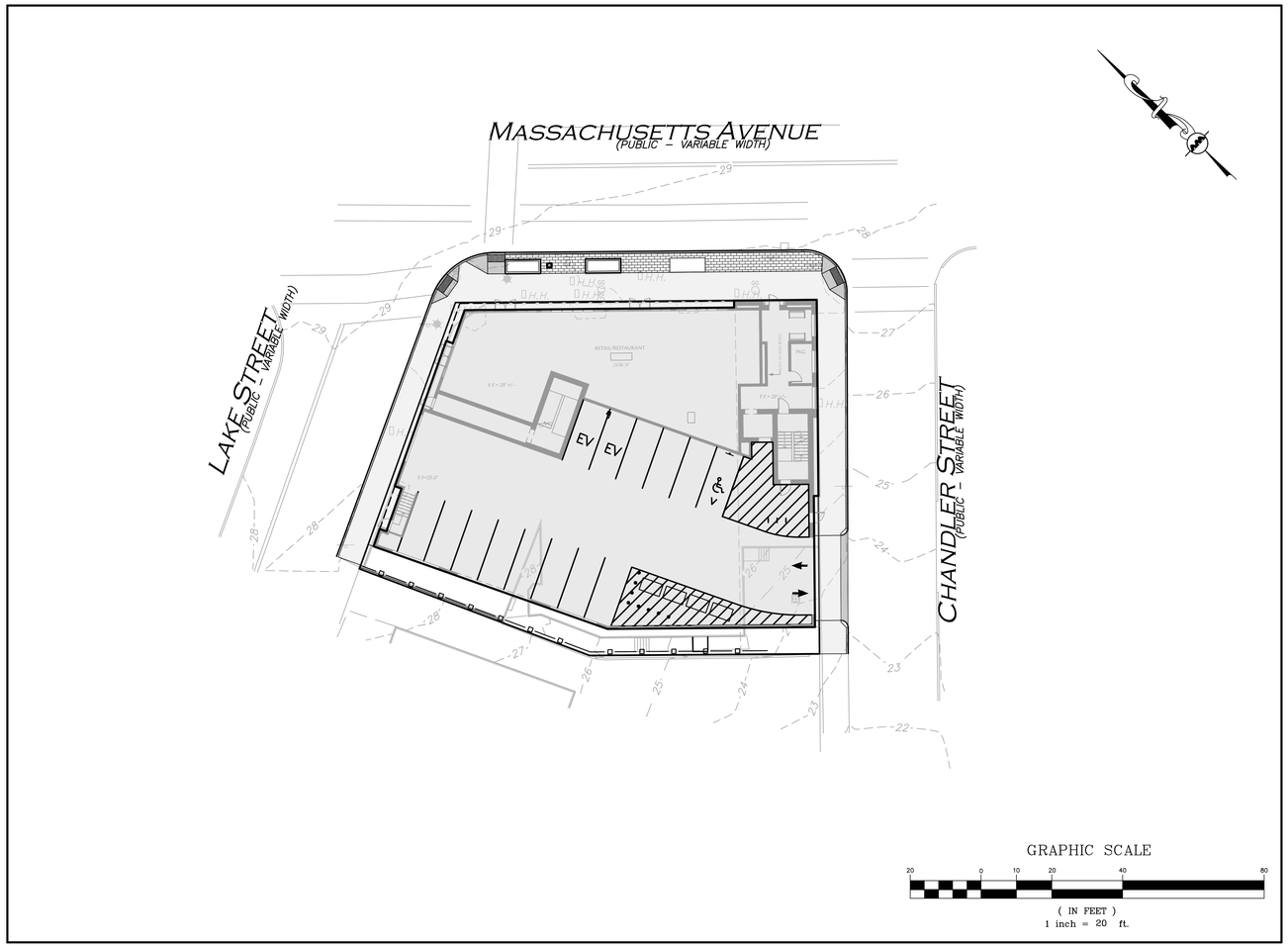
SITE DEVELOPMENT PLAN SET

190 & 192-200 MASSACHUSETTS AVE

ARLINGTON, MA 02476



LOCUS MAP
NOT TO SCALE



APPLICANT:
192-200 MASSACHUSETTS AVE, LLC
452 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

ARCHITECT:
MARKET SQUARE ARCHITECTS
104 CONGRESS STREET, STE 203
PORTSMOUTH, NH 03801
(603) 501-0202

CIVIL ENGINEER, LANDSCAPE ARCHITECT & LAND SURVEYOR:
ALLEN & MAJOR ASSOCIATES, INC.
100 COMMERCE WAY, SUITE 5
WOBURN, MA 01801
(781) 985-6889

LIST OF DRAWINGS

DRAWING TITLE	SHEET	ISSUED	REVISED
EXISTING CONDITIONS	V-101	10/23/2020	-
SITE PREPARATION PLAN	C-101	03/10/2021	-
LAYOUT & MATERIALS PLAN	C-102	03/10/2021	05/25/2021
GRADING & DRAINAGE PLAN	C-103	03/10/2021	05/25/2021
UTILITIES PLAN	C-104	03/10/2021	05/25/2021
DETAILS	C-501	03/10/2021	-
DETAILS	C-502	03/10/2021	-
DETAILS	C-503	03/10/2021	-
LANDSCAPE PLAN	L-101	03/10/2021	05/25/2021
LANDSCAPE DETAILS	L-501	03/10/2021	-

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49212
REGISTERED PROFESSIONAL ENGINEER

05.25.21

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
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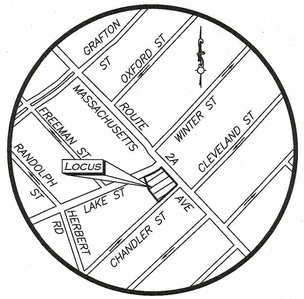
FAX: (781) 935-2896

WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

ISSUED FOR ARB REVIEW: MARCH 10, 2021

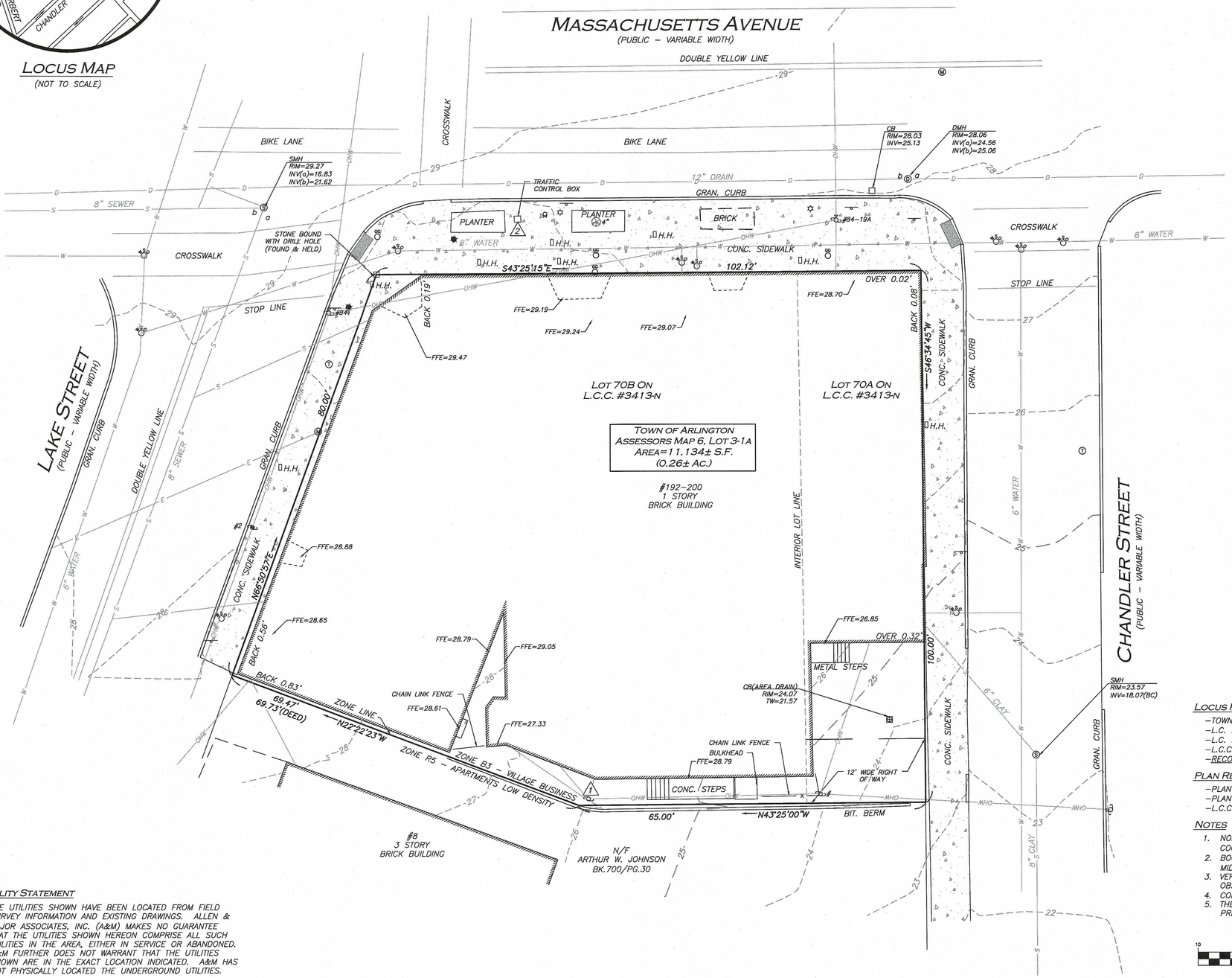
REVISED FOR ARB REVIEW: MAY 25, 2021

R:\PROJECTS\2729-02\CIVIL\DRAWINGS\CURRENT\C-2729-02_COVER.DWG



LOCUS MAP
(NOT TO SCALE)

BENCHMARK SUMMARY		
TBM #	DESCRIPTION	ELEV.
1	COTTON GIN SPINDLE SET IN UTILITY POLE	26.96
2	CHISEL SQUARE ON CONCRETE BASE	29.24



LEGEND

STONE BOUND (SB)	
DRAIN MANHOLE (DMH)	D
SEWER MANHOLE (SMH)	S
MISC. MANHOLE (MH)	M
TELEPHONE MANHOLE (TMH)	T
ROUND CATCH BASIN (RCB)	
UTILITY POLE	
UTILITY POLE W/LIGHT	
UTILITY POLE W/RISER	
WATER GATE	
GAS GATE	
HAND HOLE	H.H.
TRAFFIC SIGNAL	
LIGHT	
TREE	
SIGN	
CONCRETE	
BUILDING	
BUILDING OVERHANG	
PROPERTY LINE	
CURB	
CHAIN LINK FENCE	x
WATER LINE	W
SEWER LINE	S
DRAIN LINE	D
GAS LINE	G
ELECTRIC LINE	E
TELEPHONE LINE	T
OVERHEAD WIRES	OHW
FINISHED FLOOR ELEVATION	FFE
BITUMINOUS	BIT.
CONCRETE	CONC.
GRANITE	GRAN.
BOTTOM CENTER	(BC)
REINFORCED CONCRETE PIPE	RCP
POLYVINYL CHLORIDE PIPE	PVC
NOW OR FORMERLY	N/F
BOOK	BK.
PAGE	PG.
LAND COURT	L.C.
LAND COURT CASE	L.C.C.

UTILITY STATEMENT

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. ALLEN & MAJOR ASSOCIATES, INC. (A&M) MAKES NO GUARANTEE THAT THE UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. A&M FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. A&M HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

LOCUS REFERENCES

- –TOWN OF ARLINGTON ASSESSORS MAP 6, LOT 3–1A
- –L.C. BOOK 1362, PAGE 16
- –L.C. BOOK 1376, PAGE 27
- –L.C.C. NO. 3413N
- –RECORD OWNER: FRAMINA LLC.

PLAN REFERENCES

- –PLAN 542 OF 1986
- –PLAN 320 OF 2012
- –L.C.C. NO. 3413

NOTES

1. NORTH ARROW IS BASED ON MASSACHUSETTS GRID COORDINATE SYSTEM (MAINLAND ZONE) (NAD 83).
2. BOOK/PAGE AND PLAN REFERENCES ARE TAKEN FROM MIDDLESEX (SOUTH) REGISTRY OF DEEDS IN CAMBRIDGE, MA.
3. VERTICAL DATUM IS NAVD 88 ESTABLISHED USING RTK GPS OBSERVATION.
4. CONTOUR INTERVAL IS ONE FOOT (1').
5. THERE ARE NO STRIPED PARKING STALLS ON THE SUBJECT PREMISES.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

N:\PROJECTS\2729-02\SURVEY\DRAWINGS\CURRENT\S-2729-02-EC.DWG

WE HEREBY CERTIFY THAT THIS PLAN IS THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED ON AUGUST 4, 2020.

Oct 23, 2020

PROFESSIONAL LAND SURVEYOR FOR ALLEN & MAJOR ASSOCIATES, INC.

COMMONWEALTH OF MASSACHUSETTS
NORMAN I. LIPSITZ
NO. 28446
PROFESSIONAL LAND SURVEYOR

10/23/20

REV	DATE	DESCRIPTION

APPLICANT\OWNER:
192-200 MASSACHUSETTS AVE LLC
455 MASSACHUSETTS AVENUE
SUITE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVENUE
ARLINGTON, MA

PROJECT NO.	2729-02	DATE:	10/22/20
SCALE:	1" = 10'	DWG. NAME:	S-2729-02-EC
DRAFTED BY:	AJR	CHECKED BY:	NIL

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY
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TEL: (781) 935-6889
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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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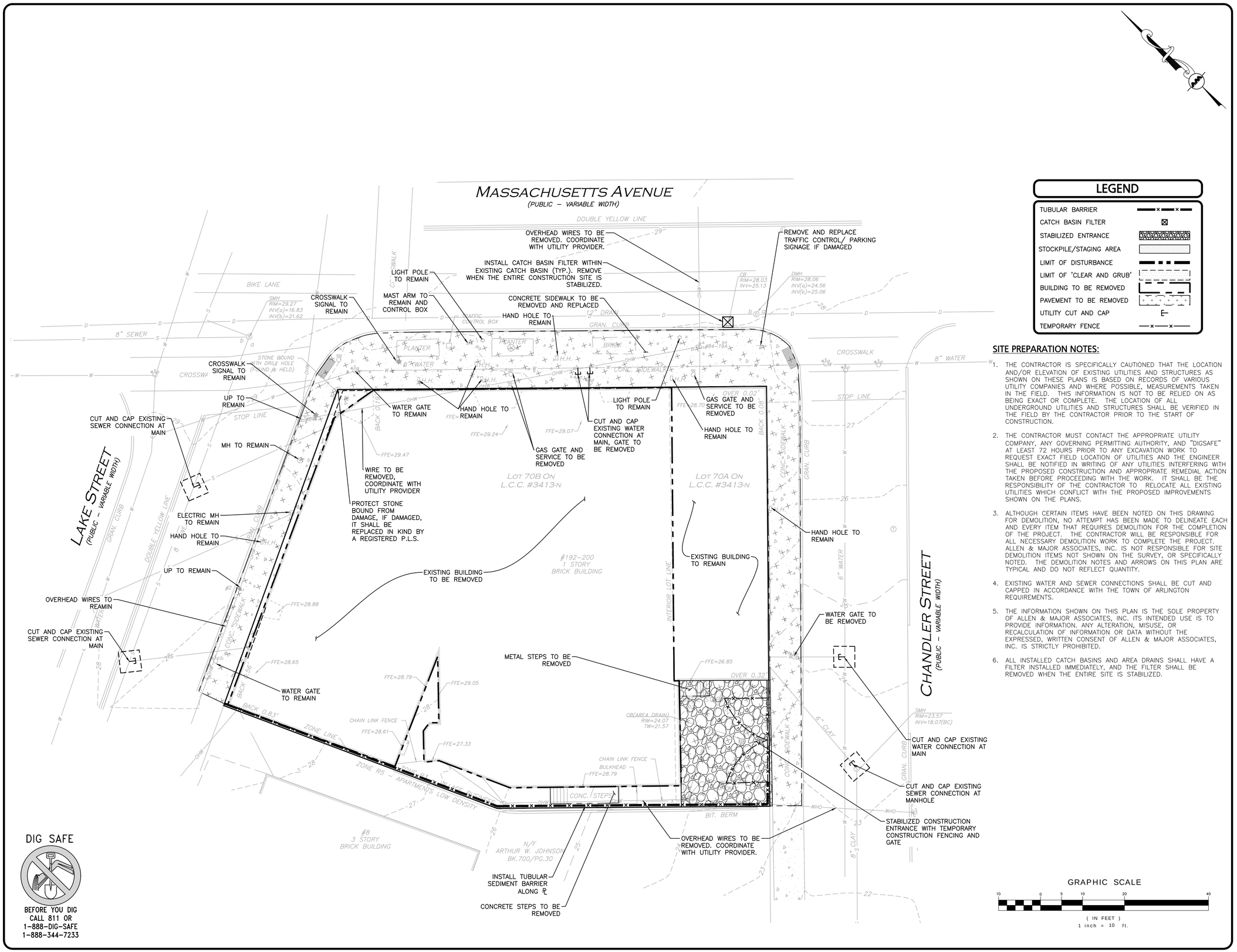

LEGEND

TUBULAR BARRIER	
CATCH BASIN FILTER	
STABILIZED ENTRANCE	
STOCKPILE/STAGING AREA	
LIMIT OF DISTURBANCE	
LIMIT OF 'CLEAR AND GRUB'	
BUILDING TO BE REMOVED	
PAVEMENT TO BE REMOVED	
UTILITY CUT AND CAP	E
TEMPORARY FENCE	

SITE PREPARATION NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
3. ALTHOUGH CERTAIN ITEMS HAVE BEEN NOTED ON THIS DRAWING FOR DEMOLITION, NO ATTEMPT HAS BEEN MADE TO DELINEATE EACH AND EVERY ITEM THAT REQUIRES DEMOLITION FOR THE COMPLETION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL NECESSARY DEMOLITION WORK TO COMPLETE THE PROJECT. ALLEN & MAJOR ASSOCIATES, INC. IS NOT RESPONSIBLE FOR SITE DEMOLITION ITEMS NOT SHOWN ON THE SURVEY, OR SPECIFICALLY NOTED. THE DEMOLITION NOTES AND ARROWS ON THIS PLAN ARE TYPICAL AND DO NOT REFLECT QUANTITY.
4. EXISTING WATER AND SEWER CONNECTIONS SHALL BE CUT AND CAPPED IN ACCORDANCE WITH THE TOWN OF ARLINGTON REQUIREMENTS.
5. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.
6. ALL INSTALLED CATCH BASINS AND AREA DRAINS SHALL HAVE A FILTER INSTALLED IMMEDIATELY, AND THE FILTER SHALL BE REMOVED WHEN THE ENTIRE SITE IS STABILIZED.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49212
REGISTERED PROFESSIONAL ENGINEER

05·25·21

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
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455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	1" = 10'	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

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DRAWING TITLE: SITE PREPARATION PLAN

SHEET No. C-101

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PARKING SUMMARY TABLE

USE	CALCULATION	MIN. REQUIRED	TOTAL PROPOSED
APARTMENT BUILDING	1 SPACES PER EFFICIENCY UNIT	5	5
	1 X 5 = 5 REQUIRED		
	1.15 SPACES PER 1 BED UNIT	18.4	7
	16 X 1.15 = 18.4 REQUIRED		
	1.5 SPACES PER 2 BED UNIT	6	2
	3 X 2 = 6 REQUIRED		
GENERAL RETAIL/RESTAURANT	1 PER 300 SF	N/A	N/A
	2,436 SF (UNDER 3,000 SF PARKING N/A)		
		29.4	14 *

ADA SPACES REQUIRED:
(15–25) TOTAL PARKING SPACES PROVIDED, 1 SHALL BE THE MINIMUM ADA PARKING PROVIDED, 1 SPACES BEING VAN ACCESSIBLE.

PROVIDED 1 SPACES, 1 BEING VAN ACCESSIBLE.

PARKING TABLE NOTES:
1. SECTION 6.1.10, C. FOR A MIXED–USE DEVELOPMENT THE FIRST 3,000 SF OF NON–RESIDENTIAL SPACE IS EXEMPT FROM THE PARKING REQUIREMENTS OF THIS SECTION 6.1.
2. SECTION 6.1.11, STANDARD PARKING STALLS SHALL BE 8.5'X18', AND DRIVE AISLE WIDTH SHALL BE 24' FOR TWO–WAY TRAFFIC.

* RELIEF REQUESTED FROM THE ARB FOR THE REQUIRED NUMBER AND SIZE OF PARKING STALLS. ALSO, RELIEF IS REQUESTED FOR THE WIDTH OF THE DRIVE AISLE REDUCED FROM 24' TO 22'.

BICYCLE PARKING SUMMARY TABLE

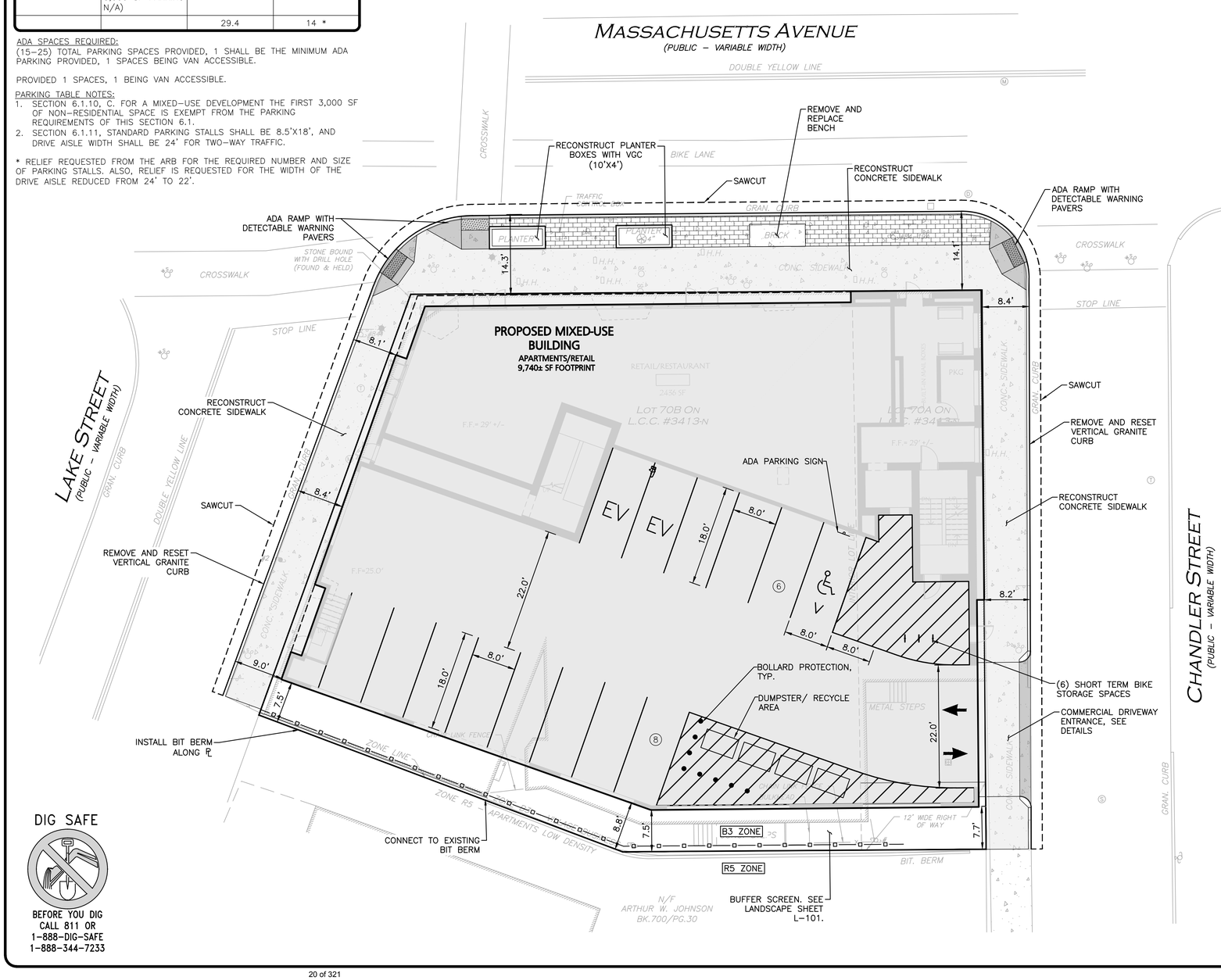
SHORT TERM BICYCLE PARKING (EXTERIOR)

USE	CALCULATION	MIN. REQUIRED	TOTAL PROPOSED
APARTMENT BUILDING	0.1 PER UNIT	2.4	4
	24 X 0.1 = 2.4 REQUIRED		
RETAIL SERVICE	0.6 PER 1,000 SF	1.4	2
	2.4 X 0.6 = 1.4 REQUIRED		
	TOTAL	3.8	6

LONG TERM BICYCLE PARKING (INTERIOR)

USE	CALCULATION	MIN. REQUIRED	TOTAL PROPOSED
APARTMENT BUILDING	1.5 PER UNIT	36	59
	24 X 1.5 = 36 REQUIRED		
RETAIL SERVICE	0.1 PER 1,000 SF	0.2	1
	2.4 X 0.1 = 0.2 REQUIRED		
	TOTAL	36.2	60

BICYCLE PARKING TABLE NOTES:
1. REQUIRED NUMBER OF SPACES ARE FROM BICYCLE PARKING GUIDELINES, APPENDIX A BIKE PARKING BY–LAW.



ZONING SUMMARY TABLE
B3-VILLAGE BUSINESS (MIXED-USE <=20,000SF)

ITEM	REQUIRED/ ALLOWED	EXISTING	PROPOSED
MINIMUM LOT AREA	N/A	11,134± SF	11,134± SF
MINIMUM LOT AREA PER UNIT	N/A	N/A	301± SF
MINIMUM FRONTAGE	50 FT	102.1± FT MASS AVE	102.1± FT MASS AVE
MINIMUM FRONT YARD SETBACK	0 FT	0 FT	0 FT
MINIMUM SIDE YARD SETBACK	0 FT	0.6 FT	7.5 FT
MINIMUM REAR YARD SETBACK	(H+L)/6	NO REAR	NO REAR
SCREENING BUFFER	7.5 FT (3)	0.6 FT	7.5 (3)
LANDSCAPED OPEN SPACE	10% (2)	0.9%	6.6%*
USABLE OPEN SPACE	20% (2)	0%	11.5%*
MAXIMUM HEIGHT	60 FT	20± FT	<50
MAXIMUM HEIGHT STORIES	5	1	4(1)
FLOOR AREA RATIO	1.50	0.89	3.2*

ZONING TABLE NOTES:
1. SECTION 5.3.17, FOR BUILDING MORE THAN 3 STORIES IN HEIGHT, AN ADDITIONAL 7.5 FT STEP–BACK SHALL BE PROVIDED BEGINNING AT THE THIRD STORY LEVEL OR 30 FT ABOVE GRADE, WHICHEVER IS LESS. THE UPPER STORY STEP–BACK SHALL BE PROVIDED ALONG ALL BUILDING ELEVATIONS WITH STREET FRONTAGE.
2. SECTION 5.3.21. SUPPLEMENTAL REQUIREMENTS IN THE BUSINESS AND INDUSTRIAL DISTRICTS, D. FOR MIXED USES AND ANY PERMITTED RESIDENTIAL USE NOT SPECIFICALLY IDENTIFIED IN THE TABLES IN SECTION 5.5.2, THE MINIMUM OPEN SPACE REQUIREMENTS (COMPUTED FROM THE RESIDENTIAL FLOOR AREA ONLY) SHALL BE 10% LANDSCAPED AND 20% USABLE IN THE B1, B2, B2A, B3, AND B4 DISTRICTS, AND 15 PERCENT USABLE IN THE B5 DISTRICT.
3. SECTION 5.3.21. SUPPLEMENTAL REQUIREMENTS IN THE BUSINESS AND INDUSTRIAL DISTRICTS, B3 ABUTTING R5 15 FT MINIMUM BUFFER. A SOLID WALL OR WOODEN FENCE MAY BE SUBSTITUTED FOR ON–HALF THE WIDTH OF THE LANDSCAPED BUFFER.
4. SECTION 5.3.19, REDUCED HEIGHT BUFFER. RELIEF REQUESTED FROM THE ARB TO PERMIT THE HIGHER PERMITTED HEIGHT OF 60 FT AND 5 STORIES.

* RELIEF REQUESTED FROM ARB.

LEGEND

- PROP. PROPERTY LINE
- SIGN
- BOLLARD
- BUILDING
- BUILDING ARCHITECTURE
- BUILDING INTERIOR WALLS
- CURB
- PARKING STRIPING
- ROADWAY STRIPING
- SIDEWALK
- ADA ACCESSIBLE RAMP
- ADA DET. WARNING SURFACE
- SNOW STORAGE
- SAW–CUT LINE
- PARKING COUNT
- VINYL FENCE

NOTES
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2. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.

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DRAWING TITLE: LAYOUT & MATERIALS PLAN
SHEET No. C-102

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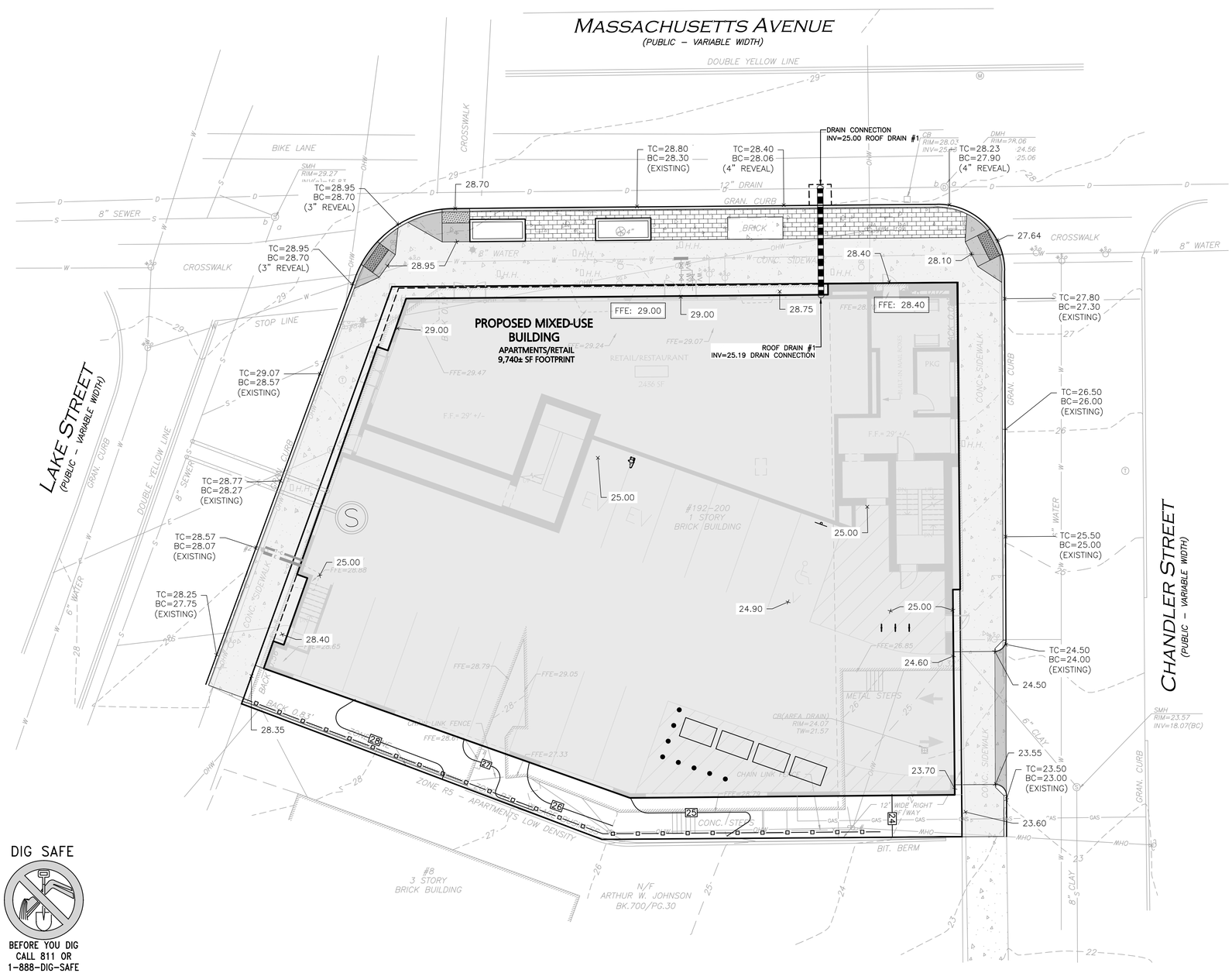

LEGEND

DRAIN MANHOLE	
CATCH BASIN	
DRAIN LINE	
10' CONTOUR	100
2' CONTOUR	102
SPOT GRADE	79.50

PLAN NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR IT'S REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING STRUCTURES INCLUDING REMOVAL OF ANY EXISTING UTILITIES SERVING THE STRUCTURE. UTILITY CONNECTIONS SHOULD BE COORDINATED WITH THE MEP PRIOR TO CONSTRUCTION.
3. EXISTING DRAINAGE STRUCTURES TO REMAIN ARE TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
4. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
5. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ENSURE A SMOOTH FIT AND CONTINUOUS GRADE.
6. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
7. THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT FOR THE FINAL LOCATIONS OF PROPOSED ROOF DRAINS. LOCATIONS ARE SHOWN HEREON FOR COORDINATION PURPOSES ONLY.
8. WRITTEN DIMENSIONS ON THIS PLAN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND/OR SPECIFICATIONS OR CONDITIONS, THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR.
9. ANY DAMAGE TO PRIVATE OR PUBLIC PROPERTIES DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AND RESTORED BY THE CONTRACTOR AT THEIR OWN EXPENSE.
10. ALL PROPERTY MARKERS AND STREET LINE MONUMENTS SHALL BE PROPERLY PROTECTED DURING CONSTRUCTION. ANY DAMAGE TO THESE ITEMS SHALL BE REPAIRED AND RESTORED BY A LAND SURVEYOR LICENSED IN THE COMMONWEALTH OF MASSACHUSETTS AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ADDITIONAL BENCHMARK INFORMATION IF REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING BENCHMARKS. IF IT IS NECESSARY TO RELOCATE A BENCHMARK, IT SHALL BE RELOCATED BY A MASSACHUSETTS LAND SURVEYOR AND DONE SO AT THE CONTRACTOR'S EXPENSE.
12. ALL PERMITS AND APPROVALS NECESSARY FROM AGENCIES GOVERNING THE WORK SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORK.
13. CONSTRUCTION DURING WET WEATHER OR WINTER CONDITIONS IS TO BE ANTICIPATED AND PROVISIONS TO ADEQUATELY ADDRESS THESE CONDITIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS INCLUDING THE TOWN OF ARLINGTON, MADOT, MADEP, MWRA, MUTCD, AND AASHTO.
15. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY ALLEN & MAJOR ASSOCIATES DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK, OR THE OWNER'S EMPLOYEES, CUSTOMERS, OR THE GENERAL PUBLIC. THE SEAL OF THE ENGINEER AS INCLUDED IN THE PLAN SET DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PROVIDE THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), STATE, AND LOCAL REGULATIONS.
16. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.

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DRAWING TITLE:

GRADING & DRAINAGE PLAN

SHEET No.

C-103

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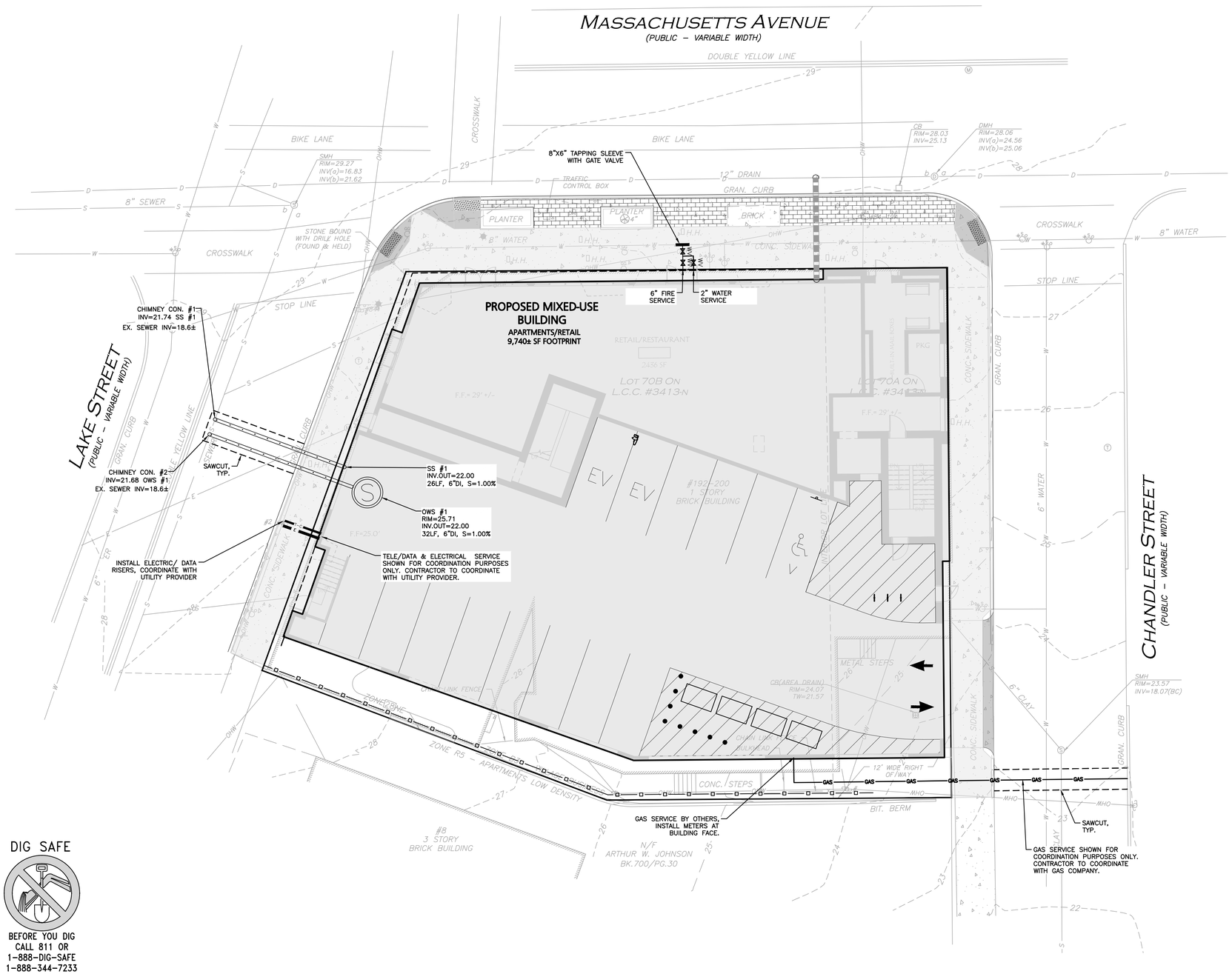

LEGEND

SEWER MANHOLE	Ⓢ
SEWER CLEANOUT	©
SEWER VENT	Ⓥ
SEWER LINE	
WATER LINE	—W—
WATER (FIRE SERVICE)	—W-F—
WATER (DOMESTIC SERVICE)	—W-D—
WATER VALVE	WV
GAS LINE	—GAS—
GAS VALVE	GV
ELECTRICAL CONDUIT	—E— E—
TELE/CABLE CONDUIT	—T-C— T-C—

UTILITY NOTES:

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2. A MINIMUM OF 18" VERTICAL CLEARANCE SHALL BE MAINTAINED WHERE WATER SERVICES CROSS STORM DRAIN AND SEWER LINES. WATER SERVICES SHALL BE ENCASED IN CONCRETE REGARDLESS OF CLEARANCE WHEN PASSING BELOW STORM DRAIN AND SEWER LINES. ENCASEMENT SHALL EXTEND ALONG WATER SERVICE A MINIMUM DISTANCE OF EIGHT FEET CENTERED ON THE CROSSING POINT OF THE OTHER PIPE AS MEASURED NORMALLY FROM ALL POINTS ALONG THE PIPE.

3. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

4. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

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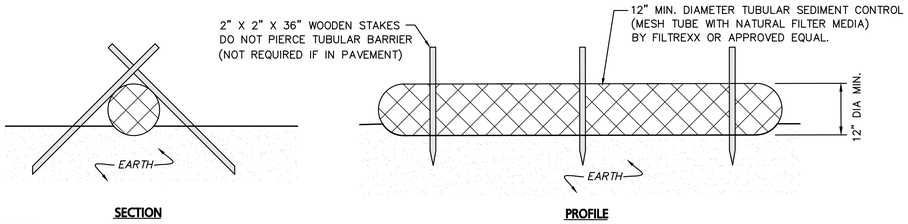
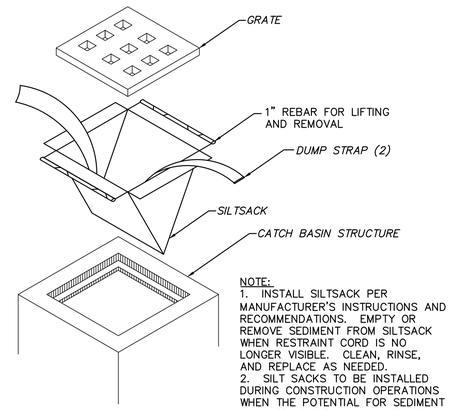


NOTES:

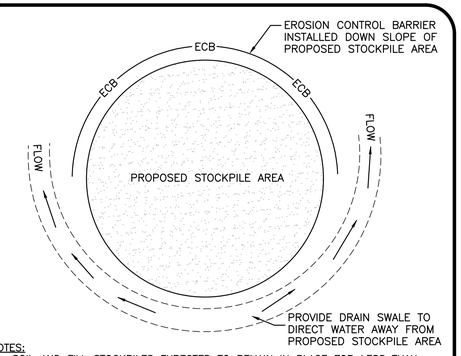
1. ALL MATERIALS TO MEET MANUFACTURERS SPECIFICATIONS.
2. INSTALL WOODEN STAKES IN A CRISS-CROSS PATTERN EVERY 8' ON CENTER.
2. OVERLAP TUBULAR BARRIER SEGMENTS A MINIMUM OF 12".
3. THE CONTRACTOR SHALL MAINTAIN THE TUBULAR BARRIERS IN A FUNCTIONAL CONDITION AT ALL TIMES. THE CONTROLS SHALL BE ROUTINELY INSPECTED BY THE CONTRACTOR.
4. WHERE THE TUBULAR BARRIERS REQUIRE REPAIR OR SEDIMENT REMOVAL, IT WILL BE COMPLETED BY THE CONTRACTOR AT NO ADDITIONAL COST.
5. AT A MINIMUM, THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE WHEN THEY REACH 1/3 THE EXPOSED HEIGHT OF THE BARRIER.

TUBULAR SEDIMENT BARRIER (1)
NOT TO SCALE



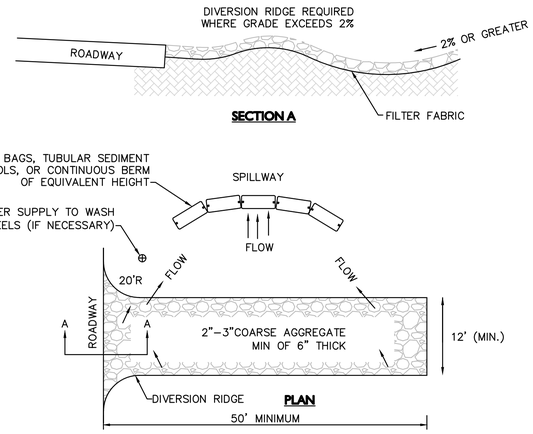
NOTE:
1. INSTALL SILTSACK PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. EMPTY OR REMOVE SEDIMENT FROM SILTSACK WHEN RESTRAINT CORD IS NO LONGER VISIBLE. CLEAN, RINSE, AND REPLACE AS NEEDED.
2. SILT SACKS TO BE INSTALLED DURING CONSTRUCTION OPERATIONS WHEN THE POTENTIAL FOR SEDIMENT TO ENTER EXISTING & PROPOSED BASINS EXISTS.

SILTSACK INLET DETAIL (2)
NOT TO SCALE



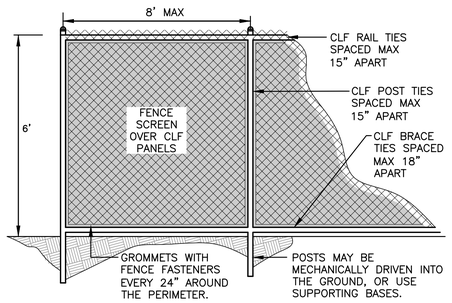
NOTES:
1. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH STRAW AND MULCH (AT 100LBS/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
2. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDED WITH WINTER RYE (FOR FALL SEEDING AT 1LB/1,000 SF) OR OATS (FOR SUMMER SEEDING AT 2LB/1,000 SF) AND THEN COVERED WITH STRAW MULCH (AT 100LB/1,000 SF) OR AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

STOCKPILE PROTECTION DETAIL (3)
NOT TO SCALE



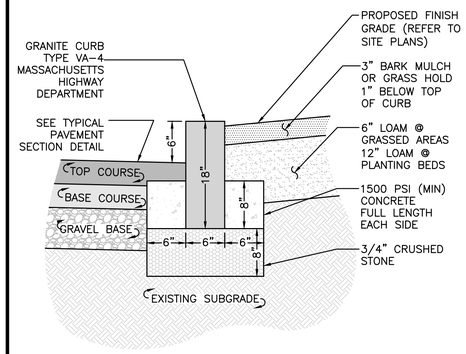
NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTERING THE PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. USE SANDBAGS, TUBULAR SEDIMENT CONTROLS, OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED.

TEMPORARY CONSTRUCTION ENTRANCE/EXIT (4)
NOT TO SCALE

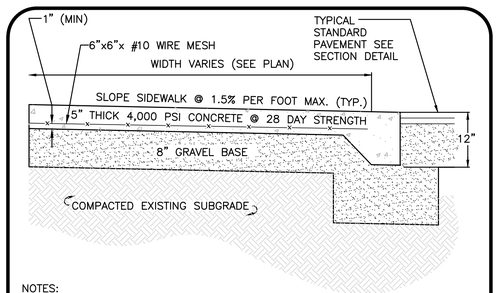


NOTES:
1. SCREEN MATERIAL SHALL BE MADE FROM KNITTED HIGH DENSITY POLYETHYLENE WITH UV ADDITIVES.
2. SCREEN FILAMENT STRENGTH SHALL BE A MINIMUM OF 50LBS/FT.
3. SCREEN MATERIAL BREAK STRENGTH SHALL BE A MINIMUM OF 500 LBS/FT.
4. SCREEN SHADE / WIND BLOCKAGE SHALL BE A MINIMUM OF 85%.
5. SCREEN COLOR SHALL BE GREEN OR BLACK.

TEMPORARY CONSTRUCTION FENCE w/ SCREEN (5)
NOT TO SCALE

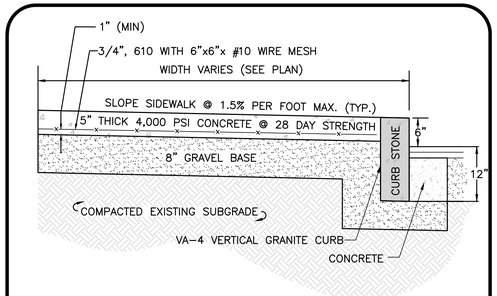


VERTICAL GRANITE CURB (6)
NOT TO SCALE



NOTES:
1. SIDEWALK TO HAVE TOOLED JOINTS IN A 5' x 5' (TYP.) GRID WITH EXPANSION JOINTS 15' ON CENTER WITH PREMOLDED FILLER.
2. SEE PLAN FOR ELEVATIONS
3. SIDEWALK CROSS SLOPE TO BE 1.5% MAX & SIDEWALK LONGITUDINAL RUNNING SLOPE TO BE 4.5% MAX, TYP.
4. APPLY BRUSH MARKS PERPENDICULAR TO TRAVEL PATH.

CONCRETE SIDEWALK (7)
NOT TO SCALE

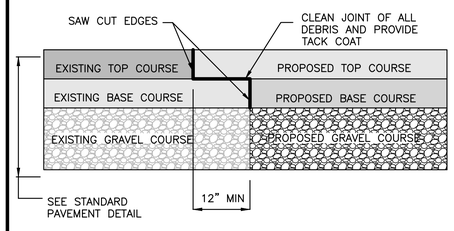


NOTES:
1. SIDEWALK TO HAVE TOOLED JOINTS IN A 5' x 5' (TYP.) GRID WITH EXPANSION JOINTS 15' ON CENTER AND PREMOLDED FILLER.
2. SEE PLAN VIEW FOR ELEVATIONS AT CURB
3. SIDEWALK CROSS SLOPE TO BE 1.5% MAX & SIDEWALK LONGITUDINAL RUNNING SLOPE TO BE 4.5% MAX, TYP.

CONCRETE SIDEWALK WITH VGC CURBSTONE (8)
NOT TO SCALE

NOT USED (9)
NOT TO SCALE

NOTE:
TACK COAT – PROVIDE EMULSIFIED ASPHALT WHICH CONFORMS TO THE REQUIREMENTS OF THE STATE SPECIFICATIONS, DILUTED WITH ONE PART WATER TO ONE ONE PART ASPHALT FOLLOWING AASHTO M140/ASTM D997, OR AASHTO M208/ASTM D2397, SS-1H, CSS-1, OR CSS-1H.



PAVEMENT KEY CUT DETAIL (10)
NOT TO SCALE

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49212
REGISTERED PROFESSIONAL ENGINEER
05·25·21

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	05/25/2021	REVISED FOR ARB REVIEW
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT\OWNER:
192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	AS SHOWN	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

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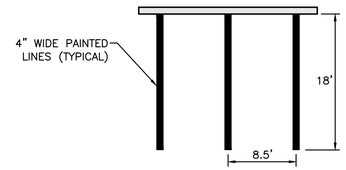
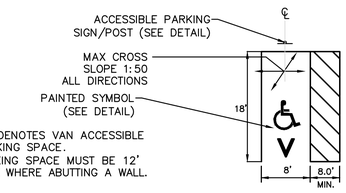
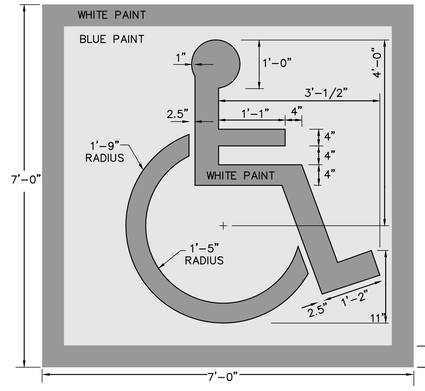


STANDARD STALL



NOTE:
1. "V" DENOTES VAN ACCESSIBLE PARKING SPACE.
2. PARKING SPACE MUST BE 12' WIDE WHERE ABUTTING A WALL.

ADA AND STANDARD PARKING STRIPING (1)
NOT TO SCALE



SYMBOL TO BE CENTERED ON WIDTH OF PARKING STALL. SYMBOL IS REQUIRED TO CONTRAST WITH BACKGROUND. USE WHITE ON BLUE (COLOR #105090 IN FEDERAL STANDARD 5952) DOUBLE COAT.

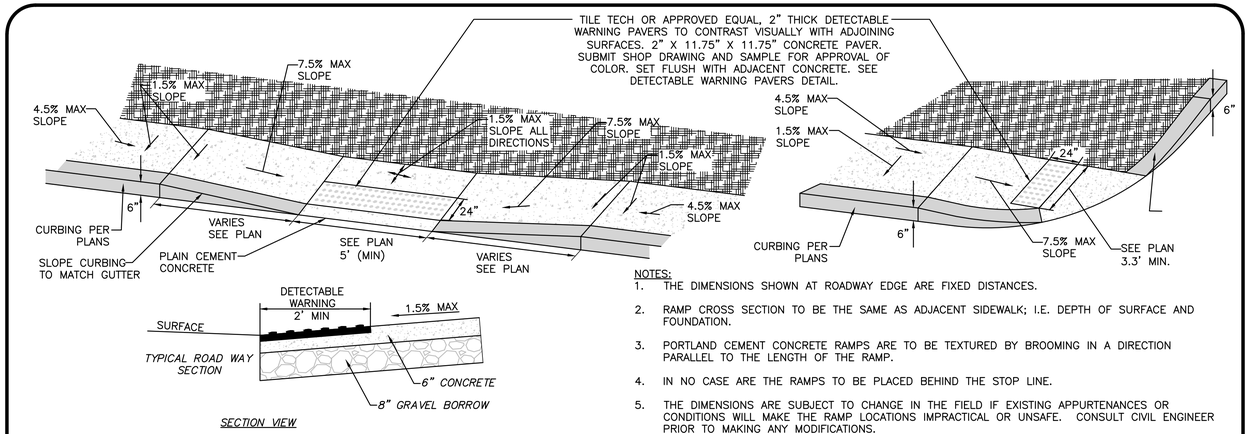
ACCESSIBLE PARKING STALL PAVEMENT MARKING (2)
NOT TO SCALE

NOT USED (3)
NOT TO SCALE

DESC.	SIGN	SIZE	MOUNTING HEIGHT	DESCRIPTION	REFLEC-TORIZED
R7-8M (MODIFIED)	HANDICAPPED PARKING SPECIAL PLATE REQUIRED UNAUTHORIZED VEHICLES MAY BE TOWED AT THE OWNERS EXPENSE VAN ACCESSIBLE	12" x 26"	7' - 0"	WHITE TEXT ON BLUE FIELD WITH WHITE BORDER	YES

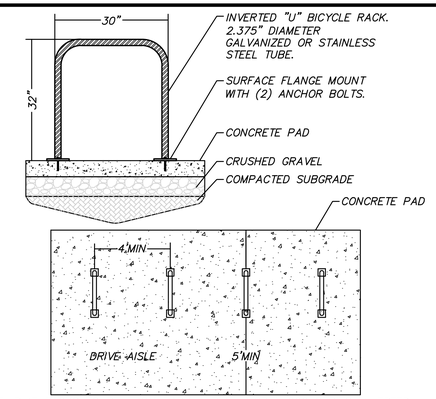
1. TRAFFIC AND SAFETY SIGNAGE SHALL COMPLY WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) STANDARDS.
2. MOUNTING HEIGHT IS DEFINED AS THE DISTANCE FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE PAVEMENT.

SIGN TABLE (4)
NOT TO SCALE



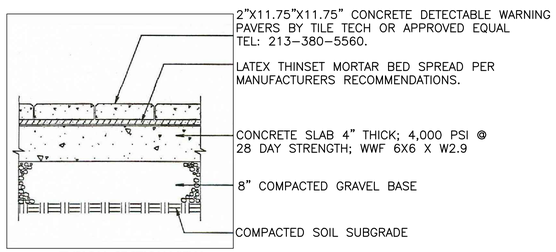
NOTES:
1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE THE SAME AS ADJACENT SIDEWALK; I.E. DEPTH OF SURFACE AND FOUNDATION.
3. PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
4. IN NO CASE ARE THE RAMPS TO BE PLACED BEHIND THE STOP LINE.
5. THE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE. CONSULT CIVIL ENGINEER PRIOR TO MAKING ANY MODIFICATIONS.

HANDICAP CURB CUT & CURB TRANSITION (5)
NOT TO SCALE

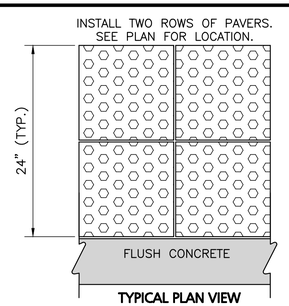


NOTE: BIKE RACKS TO BE FROM PARK A BIKE: MODEL 200 SERIES-INVERTED U BIKE RACKS HR202 30"X2.38"X32" SURFACE MOUNTED. SURFACE MOUNT PER MANUFACTURER'S RECOMMENDATIONS. FINISH SELECTED BY OWNER. PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO ORDERING.

BICYCLE RACK DETAIL (6)
NOT TO SCALE



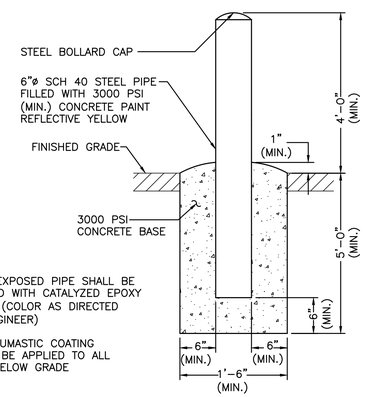
TYPICAL SECTION VIEW



TYPICAL PLAN VIEW

NOTES:
1. CONCRETE SLAB SHALL BE SLOPED 1.5% CROSS PITCH MAX TO PROVIDE COMPLETE SURFACE DRAINAGE. SEE GRADING PLAN & HANDICAP CURB CUT / CURB TRANSITION DETAIL.
2. SLAB TO HAVE STEEL TROWEL AND FINE BROOM FINISH. DO NOT USE CURING COMPOUNDS. CONTRACTOR TO ADD EXPANSION JOINTS AND PREMOLDED FILLER AT EDGE OF TILES AND ADJACENT MATERIAL.
3. SET TILES FLUSH WITH ADJACENT MATERIALS.
4. SUBMIT SHOP DRAWINGS OF TILES AND SAMPLE FOR APPROVAL OF COLOR TO OWNER / ARCH.
5. INSTALL DETECTABLE WARNING PAVERS PER MANUFACTURER'S RECOMMENDATIONS.

TACTILE WARNING PAVERS (7)
NOT TO SCALE



NOTES:
-ALL EXPOSED PIPE SHALL BE PAINTED WITH CATALYZED EPOXY PAINT. (COLOR AS DIRECTED BY ENGINEER)

-A BITUMASTIC COATING SHALL BE APPLIED TO ALL PIPE BELOW GRADE

FIXED PIPE BOLLARD DETAIL (8)
NOT TO SCALE

NOT USED (9)
NOT TO SCALE

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49212
REGISTERED PROFESSIONAL ENGINEER
05.25.21

PROFESSIONAL ENGINEER FOR
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455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	AS SHOWN	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

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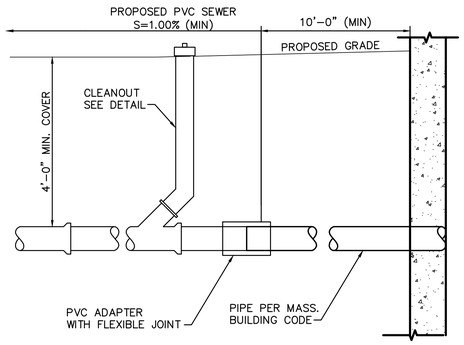
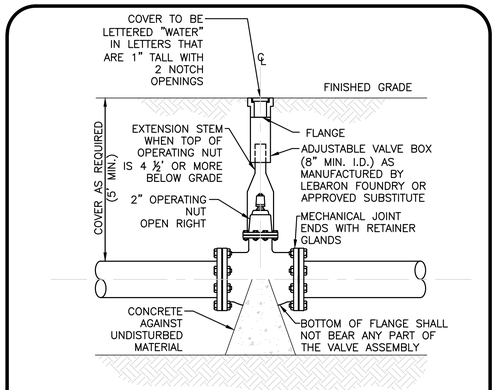


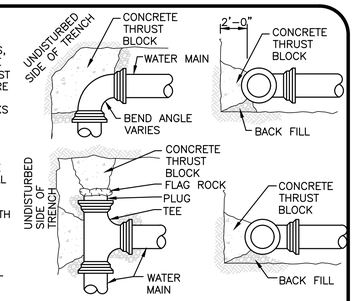
BUILDING SEWER SERVICE (1)
NOT TO SCALE



NOTES:
1.) CONTRACTOR MAY USE ANCHOR TEES AT HIS OPTION.
2.) HYDRANTS AND VALVES SHALL BE RIGHT TURN OPEN (OPEN RIGHT).

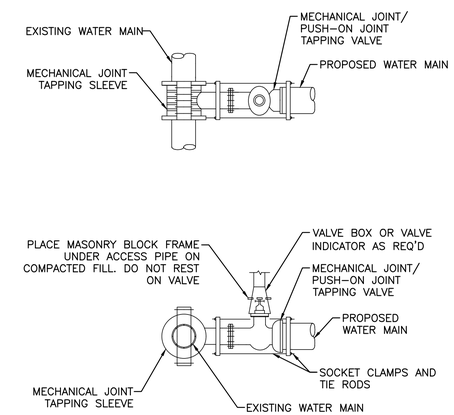
GATE VALVE (2)
NOT TO SCALE

NOTES:
1. ALL WATER MAIN FITTINGS, BENDS, TEES, PLUGS ETC. SHALL BE RESTRAINED W/ THRUST BLOCKS EXCEPT WHERE NOTED.
2. ALL THRUST BLOCKS & COLLARS SHALL BE INSTALLED SO THAT THEY BEAR AGAINST UNDISTURBED EARTH.
3. SIZE OF CONCRETE THRUST BLOCKS SHALL BE AS NOTED BELOW.
4. MINIMUM COMPRESSIVE STRENGTH OF THRUST BLOCK CONCRETE SHALL BE 3,000 P.S.I.
5. KEEP CONCRETE CLEAR OF MECHANICAL JOINTS.
6. THE BELOW PREDICATED ON A WATER PRESSURE OF 225 PSI AND A SOIL RESISTANCE OF 2000 PSF (TILL). FOR OTHER SOILS THE VALUES IN THE ABOVE TABLE SHALL BE MULTIPLIED BY:

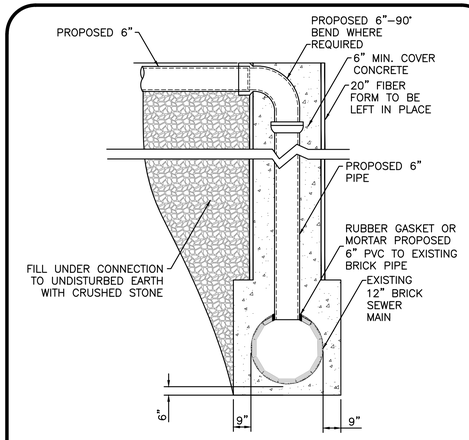


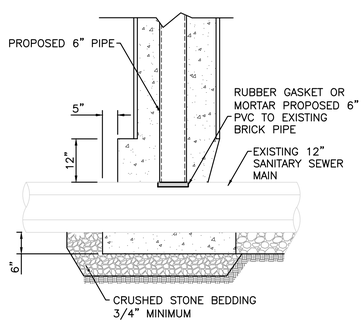
MINIMUM THRUST BLOCK BEARING AREAS				
PIPE ø	90° BEND (SQ. FT.)	45° BEND (SQ. FT.)	22.5° BEND (SQ. FT.)	TEES, PLUGS, CAPS & HYD. (SQ.FT.)
6"	5	3	3	4
8"	9	6	3	9
10"	13	7	4	12
12"	20	10	5	16

THRUST BLOCK DETAILS (3)
NOT TO SCALE



TAPPING SLEEVE AND VALVE (4)
NOT TO SCALE

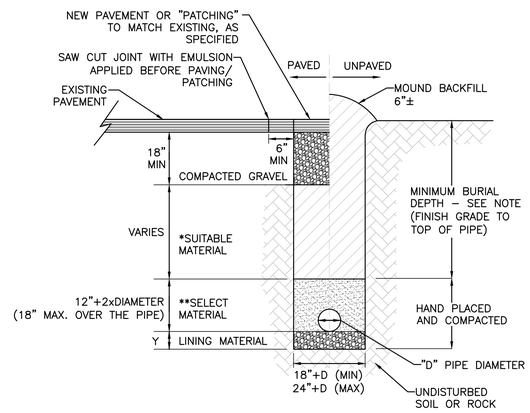




SANITARY SEWER CHIMNEY CONNECTION DETAIL (5)
NOT TO SCALE

NOTES:

1. MINIMUM BURIAL DEPTH (FINISH GRADE TO TOP OF PIPE)
   GRAVITY PIPE – SEE PLAN OR PROFILE
   PRESSURE PIPE UNDER PAVING – 4'
   PRESSURE PIPE BENEATH UNPAVED – 3'
2. WHERE BACKFILL IS DESIGNATED AS COMPACTED, THIS MEANS 90 TO 95% STANDARD PROCTOR. AASHTO T–99. ALL FILL PLACED BELOW PIPES AND STRUCTURES MUST MEET THIS REQUIREMENT.
3. FOR ALL TRENCHES WITH A GRADE GREATER THAN 4% AND/OR WHERE GROUNDWATER IS APPARENT, INSTALL CLAY DAMS AROUND THE PIPE AT 100' INTERVALS.



TRENCH DETAIL (6)
NOT TO SCALE

CONDITION & PIPE	**SELECT MATERIAL	LINING MATERIAL	Y–DIMENSION
DUCTILE IRON "ORDINARY SOIL"	TYPE I, II, OR III	SAND OR TYPE III	3"
RCP "ORDINARY SOIL"	TYPE II OR III	SAND OR TYPE III	3"
ALL PIPE OVER BEDROCK OR LEDGE	TYPE II OR III	SAND OR TYPE III	8"
DUCTILE IRON IN CLAY OR MUCK	TYPE II OR III	SAND	4"
RCP IN CLAY	TYPE II OR III	SAND	8"
ALL PLASTICS	TYPE III	SAND OR TYPE III	6"

* SUITABLE MATERIAL SHALL CONTAIN NO STONE GREATER THAN 4" IN DIAMETER, NO FROZEN LUMPS, AND ONLY MINOR AMOUNTS OF CLAY OR ORGANIC MATERIAL. ALL MATERIAL TO BE PLACED IN MAX 12" LIFTS AND COMPACTED BEFORE PLACING NEXT LIFT.

**TYPE I MATERIAL SHALL BE EITHER GRAVEL OR EXCAVATED MATERIAL CONTAINING NO STONES GREATER THAN 1.5" DIAMETER, NO FROZEN LUMPS, CLAY OR ORGANIC MATERIAL.

**TYPE II MATERIAL SHALL BE CLEAN, HARD, CRUSHED OR NATURAL STONE WITH A GRADATION BY WEIGHT OF 100% PASSING A 1.5" SQUARE OPENING, NOT MORE THAN 25% PASSING A ¾" OPENING, AND NOT MORE THAN 5% PASSING A ¼" SQUARE OPENING.

**TYPE III MATERIAL SHALL BE CLEAN, HARD, CRUSHED STONE FREE FROM COATINGS AND THOROUGHLY WASHED WITH A GRADATION BY WEIGHT OF 100% PASSING A 1" SQUARE OPENING, AND 0 TO 5% PASSING A ¼" SQUARE OPENING.

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49212
REGISTERED PROFESSIONAL ENGINEER
05·25·21

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	05/25/2021	REVISED FOR ARB REVIEW
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT\OWNER:
192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	AS SHOWN	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY, SUITE 5
WOBURN MA 01801
TEL: (781) 935-6889
FAX: (781) 935-2896
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE: DETAILS
SHEET No. C-503

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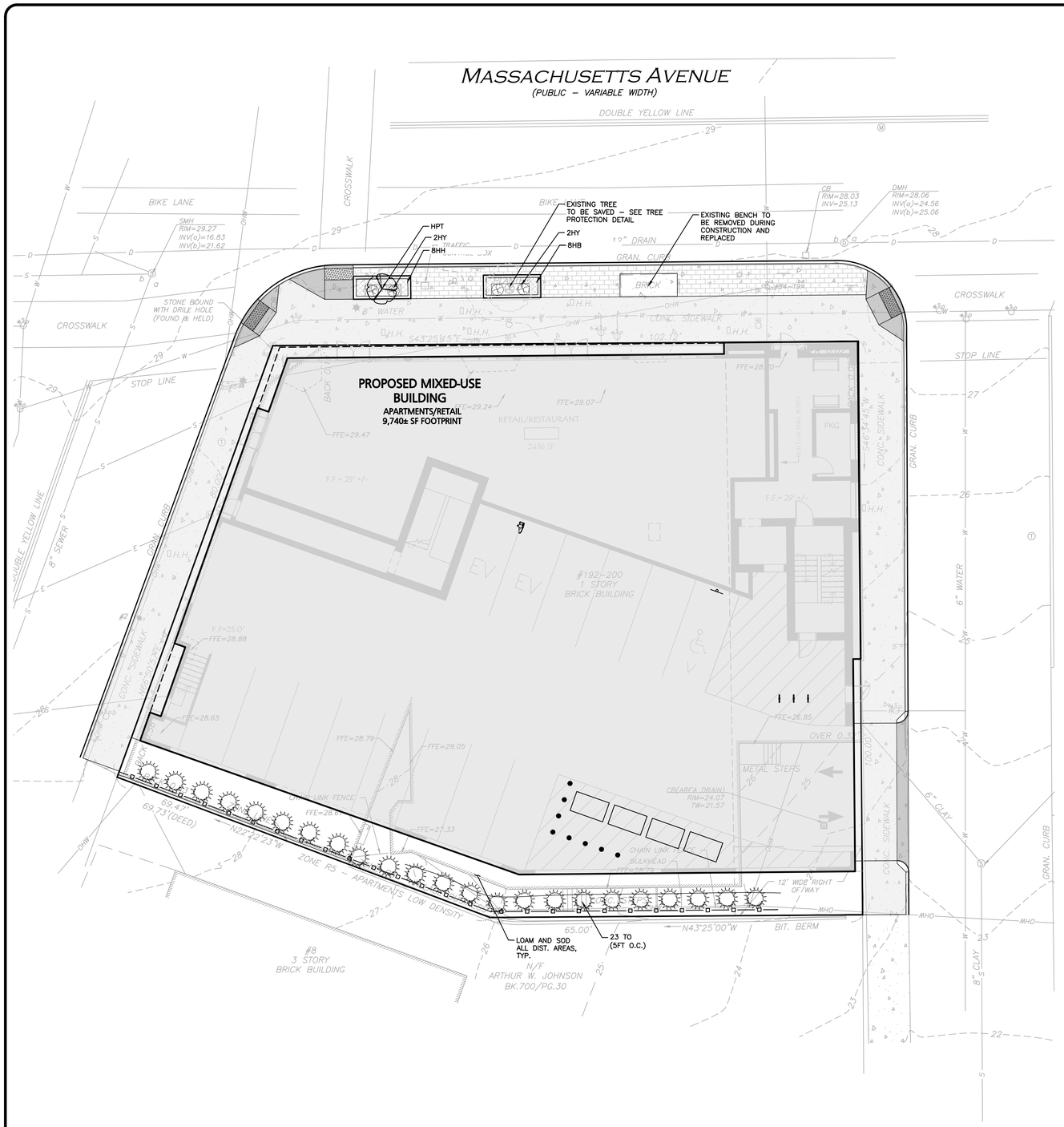

LEGEND

- DECIDUOUS TREE
- EVERGREEN TREE
- FLOWERING TREE
- SHRUBS
- MULCH BED
- PERENNIALS/GROUNDCOVER

PLANTING SCHEDULE-TREES, SHRUBS, GROUNDCOVERS & PERENNIALS

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	MIN. SIZE	SPACING	COMMENTS
EVERGREEN TREES						
TO	26	THUJA O. 'WINTERGREEN'	WINTERGREEN ARBORVITAE	6–7' HT	AS SHOWN	B&B
TREES/SHRUBS						
HPT	1	HYDRANGEA PANICULATA 'LIMELIGHT' TREE FORM	TREE FORM LIMELIGHT HYDRANGEA	5–6' HT. TREEFORM	AS SHOWN	B&B
HY	4	HYDRANGEA ARBORESCENS "INVINCEBELLE WEE WHITE"	INVINCIBELLE WEE WHITE HYDRANGEA	#3	AS SHOWN	POT
PERENNIALS						
HH	8	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILLY	#1	24" O.C	STAGGERED
HB	8	HOSTA 'HADSPEN BLUE'	HADSPEN BLUE HOSTA	#1	24" O.C	STAGGERED

NOTES:

1. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. IT'S INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.

2. ALL LANDSCAPED AREAS WITH SHRUBS, TREES, AND PERENNIALS TO HAVE 18" MINIMUM DEPTH OF TOPSOIL. EIGHTEEN INCHES OF TOPSOIL AROUND TREES AND SHRUBS DOES NOT INCLUDE AMENDED PLANTING SOIL WITHIN TREE / SHRUB PIT FOR FULL DEPTH OF ROOTBALLS. SEE PLANTING DETAILS FOR PLANTING DEPTH AT SHRUBS AND TREES. ALL AREAS OF LOAM AND SEED OR LOAM & SOD TO HAVE 6" MINIMUM DEPTH OF TOPSOIL. TOPSOIL TO BE TESTED BY CONTRACTOR, AND APPROVED BY A&M PRIOR TO PURCHASE AND OR PLACEMENT. GENERAL CONTRACTOR, DEMOLITION CONTRACTOR, AND LANDSCAPE CONTRACTOR TO COORDINATE PROPER DEPTH OF EXISTING MATERIAL REMOVAL ACROSS SITE SO THAT 18" MINIMUM AND 6" MINIMUM DEPTHS OF PROPOSED TOPSOIL NOTED ABOVE ARE MET AT NO ADDITIONAL COST TO OWNER. SEE TOPSOIL DETAIL.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

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1-888-344-7233

MASSACHUSETTS BETHANY C. DERMODY DOSTIS REGISTERED LANDSCAPE ARCHITECT No. 4071

5.25.21

REGISTERED LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
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455 MASSACHUSETTS AVE, STE 1
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PROJECT:

190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	1" = 10'	DWG. NAME:	C2729-02
DESIGNED BY:	BCD	CHECKED BY:	BDJ

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
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environmental consulting ◆ landscape architecture
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DRAWING TITLE: LANDSCAPE PLAN

SHEET No. L-101

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LOAM AND SODDING NOTES

CONTRACTOR SHALL SOD AREAS NOTED ON THE PLANS.

SOD IS TO BE A BLEND OF FOUR TO FIVE CURRENT AND IMPROVED HYBRID BLUEGRASS AND FESCUE MIXES APPROPRIATE FOR BOTH SEMI-SHADED AND AREAS OF SUN.

HYBRIDS MAY INCLUDE: BLACKSTONE KENTUCKY BLUEGRASS, AWARD KENTUCKY BLUEGRASS, CHALLENGER KENTUCKY BLUEGRASS, BLACKBURG II KENTUCKY BLUEGRASS OR COMPARABLE AND EQUAL BLUEGRASS HYBRIDS.

1. SOD SHALL BE HIGH QUALITY, NURSERY GROWN ON CULTIVATED MINERAL AGRICULTURAL SOILS. SOD SHALL BE MOIST, AND MACHINE CUT AT A UNIFORM SOIL THICKNESS OF AT LEAST ⅝" AT TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL INCLUDE TOP GROWTH AND THATCH. SOD SHALL BE FREE OF DISEASES, WEEDS, BARE SPOTS, OR INSECTS.

2. SODDING TO BE COMPLETED "IN SEASON" BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 1, EXCEPT FOR RE-SODDING OF BARE SPOTS. IF UNABLE TO SOD WITHIN THESE TIMEFRAMES, CONTRACTOR TO INSTALL EROSION CONTROL MATS ON ALL SLOPES 3:1 AND OVER, HYDROSEED ALL EXPOSED AREAS, ADD SOIL STABILIZER "FLUX TERRA HP-FGM SOIL STABILIZER" AS MANUFACTURED BY "PROFILE" TO HYDROSEED (AT RATE OF 3,000 LBS PER ACRE), AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR TO COMPLETE ALL ABOVE "OUT OF SEASON" REQUIREMENTS AND THEN ALSO BE RESPONSIBLE FOR RE-GRADING AND RE-SODDING ALL DISTURBED, ERODED, OR BARE SPOTS WITHIN NEXT CLOSEST PLANTING SEASON IN FALL OR SPRING AT NO ADDITIONAL COST TO OWNER. CONTRACTOR RESPONSIBLE FOR ALL MAINTENANCE UNTIL FINAL ACCEPTANCE OF LAWN AREAS INCLUDING: WATERING, ADDING FERTILIZERS AND LIME AND MOWING AT NO ADDITIONAL COST TO OWNER.

3. COMMERCIAL FERTILIZER SHALL BE APPLIED AT THE RATE OF 25 POUNDS PER 1000 SQ. FT. OR AS RECOMMENDED BY THE TESTING AGENCY. LIME TO BE SPREAD AT THE RATE OF 100 POUNDS PER 1000 SQ. FT OR AS RECOMMENDED BY THE TESTING AGENCY. COMMERCIAL FERTILIZER SHALL BE A COMPLETE FERTILIZER CONTAINING AT LEAST 50% OF THE NITROGEN OF WHICH IS DERIVED FROM NATURAL ORGANIZE SOURCES OF UREAFORM. IT SHALL CONTAIN THE FOLLOWING PERCENTAGES BY WEIGHT: NITROGEN (N) 10%, PHOSPHORUS (P) 6%, POTASH (K) 4%. LIME SHALL BE AN APPROVED AGRICULTURAL LIMESTONE CONTAINING NOT LESS THAN 85% OF TOTAL CARBONATES. LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT 50% WILL PASS A 100 MESH SIEVE AND 90% WILL PASS THROUGH A 20 MESH SIEVE.

4. CONTRACTOR RESPONSIBLE FOR WATERING, MOWING, AND RE-SODDING OF LAWN BARE SPOTS UNTIL A UNIFORM, HEALTHY STAND OF GRASS IS ESTABLISHED AND ACCEPTED.

LANDSCAPE NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF ARLINGTON, MA.
2. PLANTING PLAN IS DIAGRAMMATIC IN NATURE. FINAL PLACEMENT OF PLANTS TO BE APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES, ANY PERMITTING AGENCIES, AND "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS IN ADVANCE OF ANY WORK THAT WILL REQUIRE EXCAVATION. CONTRACTOR SHALL NOTIFY THE OWNERS REPRESENTATIVE OF NAY CONFLICTS IN WRITING.
4. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA, ANY TREES NOTED AS "SEAL OR SELECTED SPECIMEN" SHALL BE TAGGED AND SEALED BY THE LANDSCAPE ARCHITECT.
5. ALL TREES SHALL BE BALLED AND BURLAPPED (B&B) UNLESS OTHERWISE NOTED OR APPROVED BY THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
6. CONTRACTOR SHALL VERIFY QUANTITIES SHOWN ON PLANT LIST. QUANTITIES SHOWN ON PLANS SHALL GOVERN OVER PLANT LIST.
7. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
8. ALL PLANT MATERIALS INSTALLED SHALL MEET THE GUIDELINES ESTABLISHED BY THE STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
9. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE.

DIG SAFE

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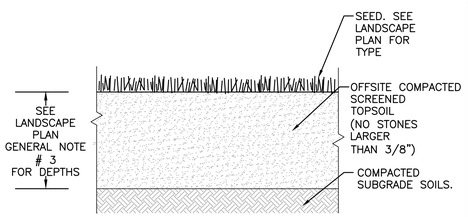
1-888-DIG-SAFE
1-888-344-7233

LANDSCAPE NOTES CONT.

10. ALL DISTURBED AREAS NOT OTHERWISE NOTED SHALL RECEIVE 6" OF SUITABLE LOAM & SEED LAWNS WITH 3:1 OR GREATER SLOPES SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET.
11. ANY FALL TRANSPLANTING HAZARD PLANTS SHALL BE DUG IN THE SPRING AND STORED FOR FALL PLANTING.
12. TREES SHALL HAVE A MINIMUM CALIPER AS INDICATED ON THE PLANTING SCHEDULE TAKEN ONE FOOT ABOVE THE ROOT CROWN.
13. ALL PLANT BEDS AND TREE SAUCERS TO RECEIVE 3" OF PINE BARK MULCH. GROUND COVER AREAS SHALL RECEIVE 1" OF PINE BARK MULCH
14. ALL DECIDUOUS TREES ADJACENT TO WALKWAYS AND ROADWAYS SHALL HAVE A BRANCHING PATTERN TO ALLOW FOR A MINIMUM OF 7' OF CLEARANCE BETWEEN THE GROUND AND THE LOWEST BRANCH.
15. ALL TREE STAKES SHALL BE STAINED DARK BROWN.
16. CONTRACTOR RESPONSIBLE FOR WATERING, AND RESEEDING OF BARE SPOTS UNTIL A UNIFORM STAND OF VEGETATION IS ESTABLISHED AND ACCEPTED.
17. ALL PARKING ISLANDS PLANTED WITH SHRUBS SHALL HAVE 24" OF TOP SOIL. FINISH GRADE SHALL BE EQUAL TO THE TOP OF CURB.
18. SOIL SAMPLES, TESTS, AND SHOP DRAWINGS SHALL BE PROVIDED TO THE LANDSCAPE ARCHITECT OR THE OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
19. AN MINIMUM 18" WIDE BARRIER OF 1" GRAY OR TAN PEASTONE SHALL BE INSTALLED IN ALL PLANT BEDS WHICH ABUT THE BUILDINGS. NO MULCH IS ALLOWED WITHIN 18" OF ALL BUILDINGS PER THE LATEST EXECUTIVE OFFICE OF PUBLIC SAFETY AND SECURITY DEPARTMENT OF FIRE SERVICES REGULATION (527 CMR 17.00). INSTALL 6" DEEP OF PEASTONE WITH MIRAFI WEED FABRIC BENEATH AND STEEL EDGING BETWEEN THE PEASTONE AND ADJACENT MULCH BED.
20. ALL PROPOSED LANDSCAPE AREAS INCLUDING MOWED LAWNS, TREES, SHRUB BEDS, AND PERENNIALS SHALL BE PROVIDED WITH WATER EFFICIENT UNDERGROUND IRRIGATION. DESIGN AND INSTALLATION OF IRRIGATION SYSTEM TO BE PERFORMED BY AN APPROVED IRRIGATION DESIGN BUILD CONTRACTOR OR BY AN APPROVED EQUAL, TO BE DETERMINED BY THE OWNERS REPRESENTATIVE AND LANDSCAPE ARCHITECT. IRRIGATION SYSTEM IS TO BE DESIGNED FOR EFFICIENT WATER USAGE INCLUDING: USE OF DRIP IRRIGATION FOR SHRUBS AND PERENNIALS, IRRIGATION SYSTEM WITH HEAD-TO-HEAD COVERAGE, A CENTRAL SHUT-OFF VALVE, AND A RAIN SENSOR TO SHUT OFF IRRIGATION DURING RAIN EVENTS.

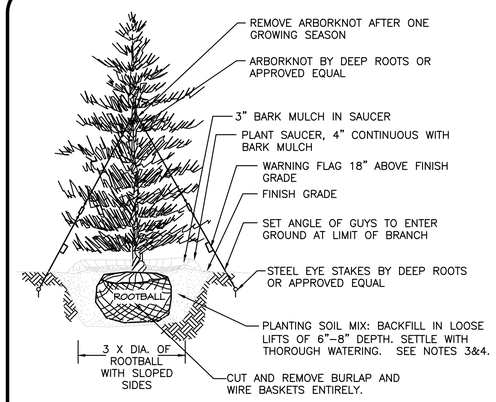


TEXTURE CLASS	% OF TOTAL WEIGHT
SAND	45% – 65%
SILT	15% – 35%
CLAY	5% – 20%

SIEVE	% PASSING
3/8"	100
NO. 4	85–100
NO. 40	60–85
NO. 100	38–60
NO. 200	10–35
20 um	LESS THAN 5%

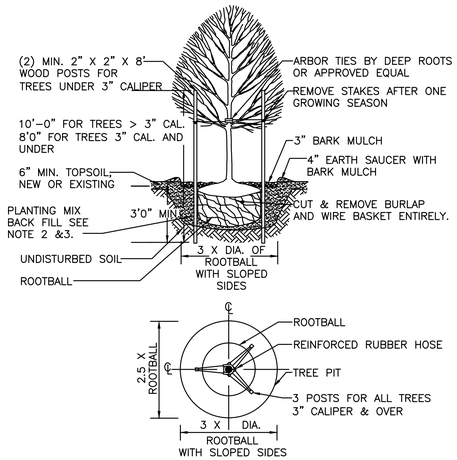
NOTES:
1. TOP OF LOAM (TOPSOIL) IS FINISH GRADE.
2. ALL TOPSOIL (BOTH ONSITE AND OFFSITE SOURCES) SHALL BE COMPOSED OF A NATURAL, FERTILE, FRIABLE SOIL TYPICAL OF CULTIVATED TOPSOILS OF THE LOCALITY. OFFSITE SOIL SHALL BE SUITABLE FOR THE GERMINATION OF SEEDS AND SUPPORT OF VEGETATIVE GROWTH, WITH ADDITIVES, IF REQUIRED, TO ACHIEVE PARTICLE DISTRIBUTION AND ORGANIC CONTENT BELOW. TOPSOIL SHALL BE TAKEN FROM A WELL-DRAINED, ARIABLE SITE, FREE OF SUBSOIL, LARGE STONES, EARTH CLODS, STICKS, STUMPS, CLAY LUMPS, ROOTS, OTHER OBJECTIONABLE, EXTRANEOUS MATTER OR DEBRIS NOR CONTAIN TOXIC SUBSTANCES.
3. THE CONTRACTOR SHALL PROVIDE THE OWNER / LANDSCAPE ARCHITECT WITH TOPSOIL TEST RESULTS (RECOMMEND UMASS AMHERST SOIL TESTING LAB) FOR APPROVAL PRIOR TO OBTAINING AND PLACING THE SOIL. IF ANY TOPSOIL IS PURCHASED OR PLACED PRIOR TO APPROVAL BY OWNER / LANDSCAPE ARCHITECT, IT IS AT CONTRACTORS RISK, AND IT CAN BE REMOVED AT NO ADDITIONAL COST TO THE OWNER. IF THE PLANTING SOIL (BOTH ONSITE AND OFFSITE SOURCES) DOES NOT FALL WITHIN THE REQUIRED SIEVE ANALYSIS, TEXTURAL CLASS, ORGANIC CONTENT, OR PH RANGE, IT SHALL BE ADJUSTED TO MEET THE SPECIFICATIONS THROUGH THE ADDITION OF SAND, COMPOST, LIMESTONE, OR ALUMINUM SULFATE TO BRING IT WITHIN THE SPECIFIED LIMITS AT NO ADDITIONAL COST TO THE OWNER.
4. TOPSOIL SHALL HAVE A PH VALUE BETWEEN 5.5 AND 6.5. TOPSOIL SHALL CONTAIN BETWEEN 4% AND 8% ORGANIC MATTER OF TOTAL DRY WEIGHT AND SHALL CONFORM TO THE FOLLOWING GRADATION AND TEXTURE CLASS ABOVE.

TOPSOIL FOR LAWN, TREES, SHRUBS, & PERENNIALS (2)
NOT TO SCALE



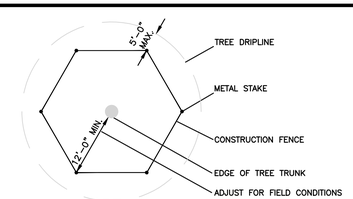
NOTES
1. TREES SHALL BEAR SAME RELATIONSHIP TO FINISH GRADE AS IT BORE TO NURSERY OR FIELD GRADE. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL TOP OF ROOTBALL AREA.
2. INSTALL THREE GUYS PER TREE; EQUALLY SPACED AROUND BALL.
3. ATTACH GUYS AT 2/3 HEIGHT OF TREE.
4. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
5. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.

EVERGREEN TREE DETAIL (1)
NOT TO SCALE

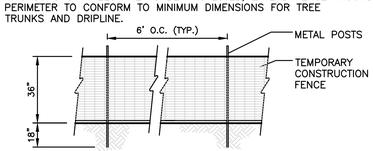


NOTES:
1. ALL TREES SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL ROOTBALL AREA.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.

DECIDUOUS TREE PLANTING DETAIL (3)
NOT TO SCALE

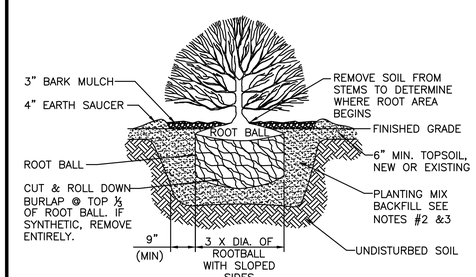


NOTE:
1. CONSTRUCTION FENCE TO BE "VISUAL BARRIER FENCE" AS MANUFACTURED BY EXXON CHEMICAL COMPANY ATLANTA, GA; "KONTROL SAFETY FENCE" AS MANUFACTURED BY MIRAFI, CHARLOTTE, N.C. OR APPROVED EQUAL.
2. IF GROUPS OF TREES ARE TO BE PROTECTED, EXTEND FENCE AROUND PERIMETER TO CONFORM TO MINIMUM DIMENSIONS FOR TREE TRUNKS AND DRIPLINE.



TEMP. CONST. FENCE / TREE PROTECTION (4)
NOT TO SCALE

NOTES:
1. ALL SHRUBS SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. SET SHRUB 1"-2" ABOVE FINISH GRADE.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.
4. SHRUB BEDS TO HAVE 24" MIN. OF CONTINUOUS PLANTING SOIL.



SHRUB PLANTING DETAIL (5)
NOT TO SCALE

MASSACHUSETTS BETHANY C. DERMODY REGISTERED LANDSCAPE ARCHITECT No. 4071 5.25.21

REGISTERED LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

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PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	NTS	DWG. NAME:	C2729-02
DESIGNED BY:	BCD	CHECKED BY:	BDJ

PREPARED BY:

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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE: LANDSCAPE DETAILS

SHEET No. L-501

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Issued: March 10, 2021
Revised: May 25, 2021

Jennifer Raitt
Director of Planning & Community Development
730 Massachusetts Ave
Arlington, MA 02476

RE: Mixed-Use Redevelopment
Drainage Summary Letter
190 & 192-200 Massachusetts Ave
Arlington, MA 02476

Dear Ms. Raitt,

On behalf of our Client, 192-200 Massachusetts Ave, LLC, Allen & Major Associates (A&M) is pleased to provide this letter in support of the Special Permit application for the Mixed-Use Redevelopment project at 190 & 192-200 Massachusetts Ave. This letter will summarize the changes to the stormwater management system which are proposed as part of the redevelopment efforts.

Existing Conditions

The site is located on the corner of Lake Street and Massachusetts Avenue and Chandler Street and Massachusetts Avenue. There is an existing curb cut to the parcel located off of Chandler Street. The project comprised of two property's, identified on the City tax Map 6, Block 3, Lots 1A and 1B. Both lots are predominantly covered by an existing brick building. Elevations onsite range from elevation 29 to elevation 24. Elevation 24 is the low point on-site located at the existing curb cut along Chandler Street, and elevation 29 runs through the sidewalk along Mass Ave. The majority of the stormwater from the site discharges through roof drain connections to the municipal system. A review of the NRCS soil report for Middlesex County indicates that the soil onsite is considered Merrimac-Urban Land which has a Hydrologic Soil Group rating of an "A". A copy of the Existing Watershed Plan is included herewith.

Proposed Conditions

The project, proposes to demolish a portion of the existing structure to construct a 5-story, 9,740 square foot Mixed-Use building with apartment and retail uses. There are 14 parking stalls proposed on the first level. The stormwater management system will be improved with a new drainage pipe connection. The quantity of stormwater runoff will be reduced with the installation of landscaped areas on-site. The proposed work with result in approximately 1,034 square feet of impervious material being replaced with landscaped areas.

Runoff flows were estimated for both pre and post development conditions using HydroCAD 10.00 software, at a specific "Study Point" (SP-1). Study Point 1 is the flows that will enter the municipal drainage system. The table below shows that the project causes a reduction in the peak rate of runoff and volume of stormwater leaving the site at the Study Point. Copies of the HydroCAD worksheets and Watershed Plans are included herewith.

STUDY POINT #1 (flow to municipal system)			
	2-Year	10-Year	100-Year
Existing Flow (CFS)	0.83	1.27	2.31
Proposed Flow (CFS)	0.74	1.20	2.26
Decrease (CFS)	**0.09**	**0.07**	**0.05**
Existing Volume (CF)	2,781	4,327	8,025
Proposed Volume (CF)	2,296	3,804	7,466
Decrease (CF)	**485**	**523**	**559**

The surface water drainage requirements of the Town of Arlington Zoning Bylaw Environmental Design Review Standards have been reviewed and met with the proposed design. The proposed project will introduce landscaped areas to the site to reduce the impervious area. The Town of Arlington, Article 15 Stormwater Mitigation, shall not apply as the proposed development will introduce a reduction in impervious area. However, with the proposed landscaped areas the project will reduce the runoff rates for all design storms, and comply with this bylaw.

Summary

As shown in the table above, the proposed development will have a positive impact on the stormwater management system by reducing the rate and volume of stormwater runoff from the site.

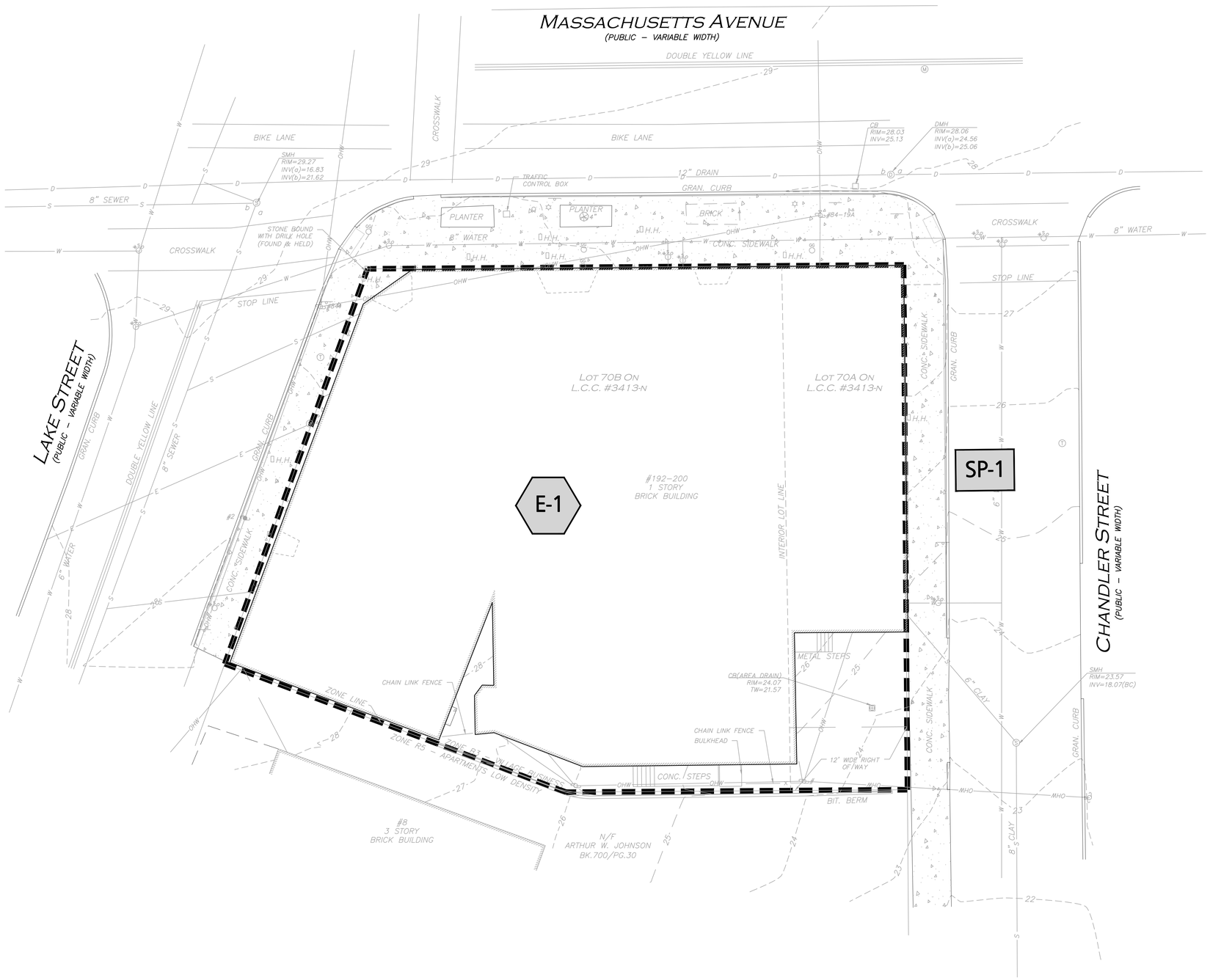
Very truly yours,

ALLEN & MAJOR ASSOCIATES, INC.

Aaron Mackey, PE
Project Engineer

Attachments:

1. Existing Watershed Plan
2. Proposed Watershed Plan
3. Pre development HydroCAD Calculations
4. Post development HydroCAD Calculations
5. Extreme Precipitation Tables
6. NRCS Soil Report



LEGEND

EXISTING WATERSHED	
SUBCATCHMENT BOUNDARY	
SUBCATCHMENT LABEL	E-1

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

REV	DATE	DESCRIPTION
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT\OWNER:

192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:

190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	1" = 10'	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
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WOBURN MA 01801
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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE: EXISTING WATERSHED PLAN

SHEET No. EWP

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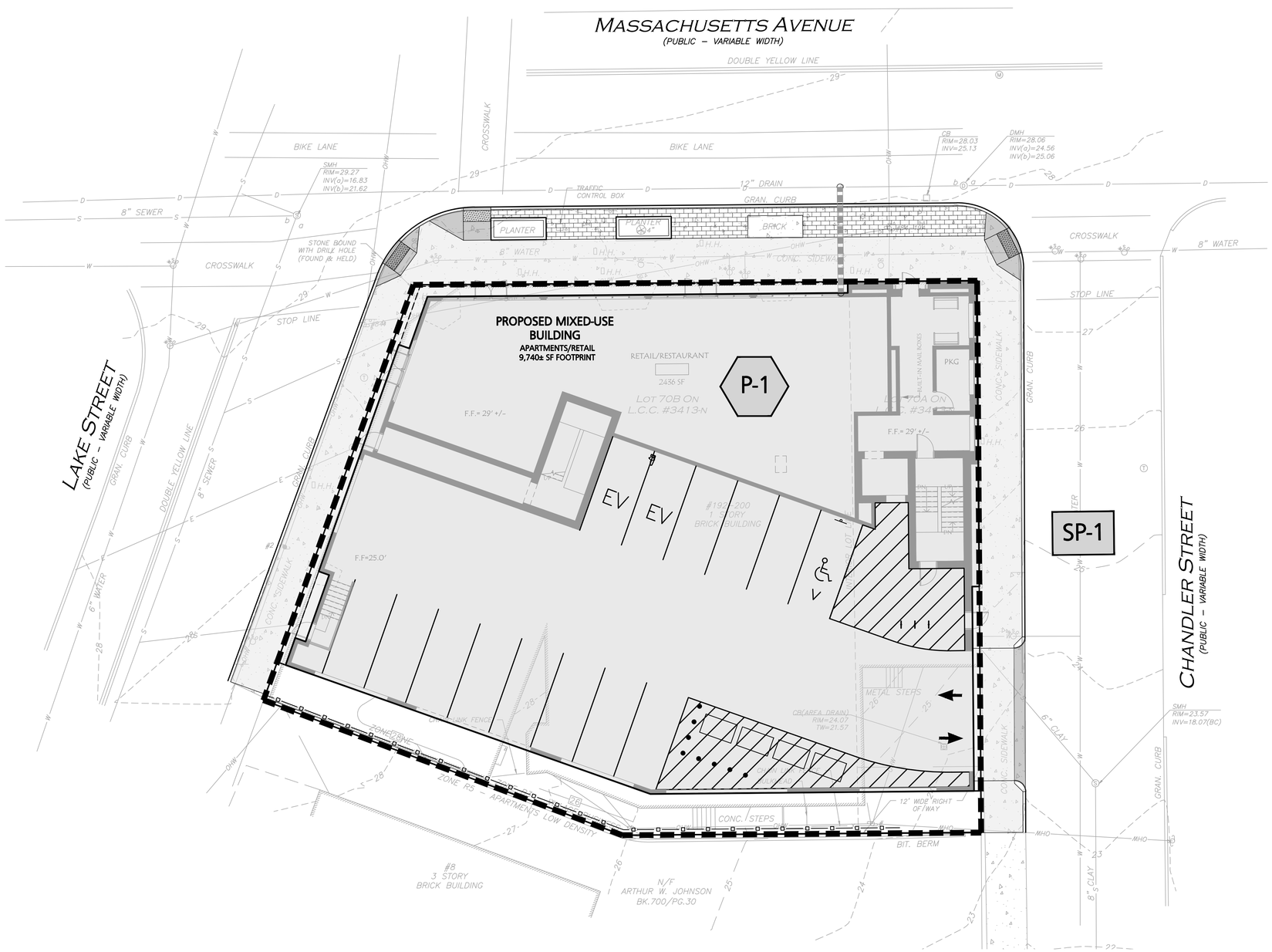

LEGEND

EXISTING WATERSHED	
PROPOSED WATERSHED	
SUBCATCHMENT LABEL	P-1
SUBCATCHMENT BOUNDARY	

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

REV	DATE	DESCRIPTION
2	04/23/2021	REVISED FOR ARB REVIEW
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT\OWNER:

192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:

190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	1" = 10'	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

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DRAWING TITLE: PROPOSED WATERSHED PLAN

SHEET No. PWP

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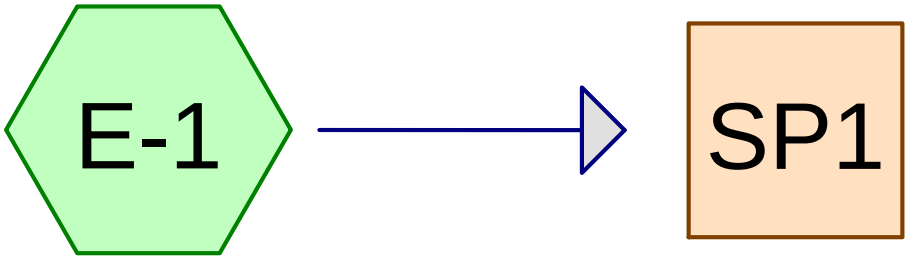
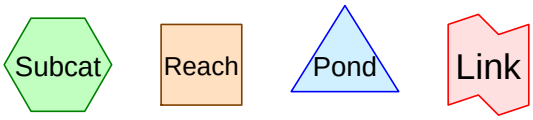


Subcat E-1 Study Point 1



Routing Diagram for 2729-02_Existing-Conditions
Prepared by Allen & Major Associates Inc. , Printed 4/23/2021
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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
1,238	98	Paved parking, HSG A (E-1)
9,896	98	Roofs, HSG A (E-1)
11,134	**98**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
11,134	HSG A	E-1
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
11,134		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subcatchment Numbers
1,238	0	0	0	0	1,238	Paved parking	E-1
9,896	0	0	0	0	9,896	Roofs	E-1
11,134	**0**	**0**	**0**	**0**	**11,134**	**TOTAL AREA**	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1 Runoff Area=11,134 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.83 cfs 2,781 cf

Reach SP1: Study Point 1 Inflow=0.83 cfs 2,781 cf
Outflow=0.83 cfs 2,781 cf

Total Runoff Area = 11,134 sf Runoff Volume = 2,781 cf Average Runoff Depth = 3.00"
0.00% Pervious = 0 sf 100.00% Impervious = 11,134 sf

Summary for Subcatchment E-1: Subcat E-1

Runoff = 0.83 cfs @ 12.07 hrs, Volume= 2,781 cf, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
1,238	98	Paved parking, HSG A
9,896	98	Roofs, HSG A
11,134	98	Weighted Average
11,134		100.00% Impervious Area

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

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event
Inflow = 0.83 cfs @ 12.07 hrs, Volume= 2,781 cf
Outflow = 0.83 cfs @ 12.07 hrs, Volume= 2,781 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1 Runoff Area=11,134 sf 100.00% Impervious Runoff Depth=4.66"
Tc=5.0 min CN=98 Runoff=1.27 cfs 4,327 cf

Reach SP1: Study Point 1 Inflow=1.27 cfs 4,327 cf
Outflow=1.27 cfs 4,327 cf

Total Runoff Area = 11,134 sf Runoff Volume = 4,327 cf Average Runoff Depth = 4.66"
0.00% Pervious = 0 sf 100.00% Impervious = 11,134 sf

Summary for Subcatchment E-1: Subcat E-1

Runoff = 1.27 cfs @ 12.07 hrs, Volume= 4,327 cf, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.90"

Area (sf)	CN	Description
1,238	98	Paved parking, HSG A
9,896	98	Roofs, HSG A
11,134	98	Weighted Average
11,134		100.00% Impervious Area

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

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf,100.00% Impervious, Inflow Depth = 4.66" for 10-Year event
Inflow = 1.27 cfs @ 12.07 hrs, Volume= 4,327 cf
Outflow = 1.27 cfs @ 12.07 hrs, Volume= 4,327 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1 Runoff Area=11,134 sf 100.00% Impervious Runoff Depth=8.65"
Tc=5.0 min CN=98 Runoff=2.31 cfs 8,025 cf

Reach SP1: Study Point 1 Inflow=2.31 cfs 8,025 cf
Outflow=2.31 cfs 8,025 cf

Total Runoff Area = 11,134 sf Runoff Volume = 8,025 cf Average Runoff Depth = 8.65"
0.00% Pervious = 0 sf 100.00% Impervious = 11,134 sf

Summary for Subcatchment E-1: Subcat E-1

Runoff = 2.31 cfs @ 12.07 hrs, Volume= 8,025 cf, Depth= 8.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.89"

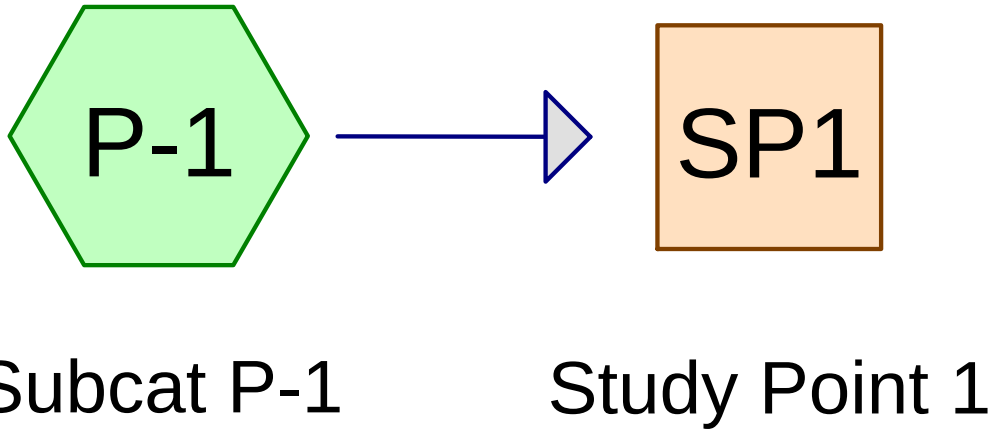
Area (sf)	CN	Description
1,238	98	Paved parking, HSG A
9,896	98	Roofs, HSG A
11,134	98	Weighted Average
11,134		100.00% Impervious Area

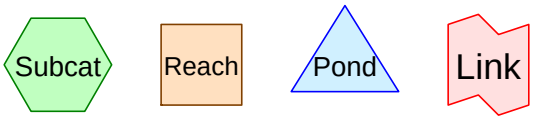
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Assumed**

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf,100.00% Impervious, Inflow Depth = 8.65" for 100-Year event
Inflow = 2.31 cfs @ 12.07 hrs, Volume= 8,025 cf
Outflow = 2.31 cfs @ 12.07 hrs, Volume= 8,025 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3





Routing Diagram for 2729-02_Proposed-Conditions
Prepared by Allen & Major Associates Inc. , Printed 4/23/2021
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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
1,034	39	>75% Grass cover, Good, HSG A (P-1)
335	98	Paved parking, HSG A (P-1)
9,764	98	Roofs, HSG A (P-1)
11,134	**93**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
11,134	HSG A	P-1
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
11,134		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subcatchment Numbers
1,034	0	0	0	0	1,034	>75% Grass cover, Good	P-1
335	0	0	0	0	335	Paved parking	P-1
9,764	0	0	0	0	9,764	Roofs	P-1
11,134	**0**	**0**	**0**	**0**	**11,134**	**TOTAL AREA**	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcat P-1 Runoff Area=11,134 sf 90.71% Impervious Runoff Depth=2.47"
Tc=5.0 min CN=93 Runoff=0.74 cfs 2,296 cf

Reach SP1: Study Point 1 Inflow=0.74 cfs 2,296 cf
Outflow=0.74 cfs 2,296 cf

Total Runoff Area = 11,134 sf Runoff Volume = 2,296 cf Average Runoff Depth = 2.47"
9.29% Pervious = 1,034 sf 90.71% Impervious = 10,100 sf

Summary for Subcatchment P-1: Subcat P-1

Runoff = 0.74 cfs @ 12.07 hrs, Volume= 2,296 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
9,764	98	Roofs, HSG A
1,034	39	>75% Grass cover, Good, HSG A
335	98	Paved parking, HSG A
11,134	93	Weighted Average
1,034		9.29% Pervious Area
10,100		90.71% Impervious Area

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

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf, 90.71% Impervious, Inflow Depth = 2.47" for 2-Year event
Inflow = 0.74 cfs @ 12.07 hrs, Volume= 2,296 cf
Outflow = 0.74 cfs @ 12.07 hrs, Volume= 2,296 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcat P-1 Runoff Area=11,134 sf 90.71% Impervious Runoff Depth=4.10"
Tc=5.0 min CN=93 Runoff=1.20 cfs 3,804 cf

Reach SP1: Study Point 1 Inflow=1.20 cfs 3,804 cf
Outflow=1.20 cfs 3,804 cf

Total Runoff Area = 11,134 sf Runoff Volume = 3,804 cf Average Runoff Depth = 4.10"
9.29% Pervious = 1,034 sf 90.71% Impervious = 10,100 sf

Summary for Subcatchment P-1: Subcat P-1

Runoff = 1.20 cfs @ 12.07 hrs, Volume= 3,804 cf, Depth= 4.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.90"

Area (sf)	CN	Description
9,764	98	Roofs, HSG A
1,034	39	>75% Grass cover, Good, HSG A
335	98	Paved parking, HSG A
11,134	93	Weighted Average
1,034		9.29% Pervious Area
10,100		90.71% Impervious Area

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

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf, 90.71% Impervious, Inflow Depth = 4.10" for 10-Year event
Inflow = 1.20 cfs @ 12.07 hrs, Volume= 3,804 cf
Outflow = 1.20 cfs @ 12.07 hrs, Volume= 3,804 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcat P-1 Runoff Area=11,134 sf 90.71% Impervious Runoff Depth=8.05"
Tc=5.0 min CN=93 Runoff=2.26 cfs 7,466 cf

Reach SP1: Study Point 1 Inflow=2.26 cfs 7,466 cf
Outflow=2.26 cfs 7,466 cf

Total Runoff Area = 11,134 sf Runoff Volume = 7,466 cf Average Runoff Depth = 8.05"
9.29% Pervious = 1,034 sf 90.71% Impervious = 10,100 sf

Summary for Subcatchment P-1: Subcat P-1

Runoff = 2.26 cfs @ 12.07 hrs, Volume= 7,466 cf, Depth= 8.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.89"

Area (sf)	CN	Description
9,764	98	Roofs, HSG A
1,034	39	>75% Grass cover, Good, HSG A
335	98	Paved parking, HSG A
11,134	93	Weighted Average
1,034		9.29% Pervious Area
10,100		90.71% Impervious Area

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

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf, 90.71% Impervious, Inflow Depth = 8.05" for 100-Year event
Inflow = 2.26 cfs @ 12.07 hrs, Volume= 7,466 cf
Outflow = 2.26 cfs @ 12.07 hrs, Volume= 7,466 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	Massachusetts
Location	
Longitude	71.142 degrees West
Latitude	42.405 degrees North
Elevation	0 feet
Date/Time	Fri, 28 Aug 2020 14:10:00 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.70	0.87	1.10	**1yr**	0.75	1.04	1.28	1.63	2.09	2.69	2.94	**1yr**	2.38	2.83	3.29	3.98	4.65	**1yr**
2yr	0.35	0.54	0.67	0.88	1.11	1.40	**2yr**	0.96	1.28	1.62	2.04	2.57	3.23	3.59	**2yr**	2.86	3.45	3.95	4.70	5.35	**2yr**
5yr	0.42	0.65	0.81	1.09	1.39	1.77	**5yr**	1.20	1.61	2.06	2.60	3.26	4.09	4.56	**5yr**	3.62	4.38	5.00	5.97	6.69	**5yr**
10yr	0.47	0.74	0.93	1.27	1.65	2.12	**10yr**	1.42	1.91	2.47	3.12	3.92	4.90	5.47	**10yr**	4.33	5.26	5.99	7.15	7.92	**10yr**
25yr	0.56	0.89	1.13	1.56	2.06	2.67	**25yr**	1.78	2.40	3.13	3.96	4.98	6.20	6.96	**25yr**	5.49	6.69	7.59	9.10	9.91	**25yr**
50yr	0.63	1.01	1.30	1.82	2.45	3.21	**50yr**	2.12	2.86	3.77	4.78	5.98	7.43	8.36	**50yr**	6.57	8.03	9.08	10.92	11.75	**50yr**
100yr	0.73	1.18	1.52	2.14	2.92	3.84	**100yr**	2.52	3.40	4.52	5.73	7.17	8.89	10.04	**100yr**	7.87	9.65	10.88	13.10	13.94	**100yr**
200yr	0.83	1.36	1.76	2.52	3.47	4.60	**200yr**	2.99	4.05	5.43	6.89	8.61	10.65	12.07	**200yr**	9.43	11.60	13.03	15.73	16.54	**200yr**
500yr	1.01	1.65	2.16	3.13	4.37	5.83	**500yr**	3.77	5.11	6.90	8.77	10.97	13.54	15.40	**500yr**	11.98	14.81	16.55	20.05	20.75	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.25	0.38	0.46	0.62	0.76	0.85	**1yr**	0.66	0.83	1.15	1.44	1.78	2.44	2.50	**1yr**	2.16	2.41	2.93	3.53	4.05	**1yr**
2yr	0.33	0.51	0.63	0.85	1.05	1.26	**2yr**	0.91	1.23	1.45	1.91	2.48	3.13	3.47	**2yr**	2.77	3.33	3.82	4.53	5.18	**2yr**
5yr	0.39	0.60	0.75	1.02	1.30	1.51	**5yr**	1.12	1.47	1.73	2.24	2.89	3.77	4.18	**5yr**	3.34	4.02	4.59	5.47	6.17	**5yr**
10yr	0.44	0.67	0.83	1.16	1.50	1.73	**10yr**	1.29	1.69	1.95	2.53	3.24	4.35	4.83	**10yr**	3.85	4.65	5.27	6.29	7.01	**10yr**

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
25yr	0.50	0.77	0.95	1.36	1.79	2.05	**25yr**	1.54	2.00	2.31	2.96	3.78	5.23	5.82	**25yr**	4.63	5.60	6.31	7.52	8.29	**25yr**
50yr	0.56	0.85	1.06	1.52	2.05	2.35	**50yr**	1.77	2.30	2.61	3.34	4.24	5.99	6.70	**50yr**	5.30	6.44	7.22	8.60	9.39	**50yr**
100yr	0.63	0.95	1.18	1.71	2.35	2.68	**100yr**	2.03	2.62	2.96	3.62	4.77	6.89	7.70	**100yr**	6.10	7.41	8.27	9.79	10.65	**100yr**
200yr	0.70	1.06	1.34	1.94	2.71	3.06	**200yr**	2.34	2.99	3.36	4.05	5.37	7.91	8.86	**200yr**	7.00	8.52	9.46	11.12	12.03	**200yr**
500yr	0.82	1.23	1.58	2.29	3.26	3.65	**500yr**	2.81	3.57	3.97	4.70	6.29	9.50	10.64	**500yr**	8.41	10.23	11.30	13.12	14.12	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.31	0.48	0.58	0.79	0.97	1.13	**1yr**	0.83	1.11	1.32	1.77	2.25	2.86	3.17	**1yr**	2.53	3.05	3.51	4.29	5.03	**1yr**
2yr	0.36	0.56	0.69	0.94	1.15	1.36	**2yr**	1.00	1.33	1.57	2.08	2.68	3.35	3.74	**2yr**	2.97	3.59	4.11	4.89	5.55	**2yr**
5yr	0.45	0.70	0.86	1.19	1.51	1.79	**5yr**	1.30	1.75	2.05	2.66	3.39	4.44	5.00	**5yr**	3.93	4.81	5.43	6.48	7.21	**5yr**
10yr	0.55	0.84	1.05	1.46	1.89	2.20	**10yr**	1.63	2.15	2.55	3.22	4.07	5.51	6.25	**10yr**	4.88	6.01	6.72	8.04	8.83	**10yr**
25yr	0.71	1.08	1.35	1.92	2.53	2.90	**25yr**	2.19	2.83	3.39	4.16	5.17	7.32	8.42	**25yr**	6.48	8.09	8.92	10.74	11.56	**25yr**
50yr	0.86	1.31	1.64	2.35	3.17	3.59	**50yr**	2.73	3.51	4.21	5.05	6.22	9.08	10.54	**50yr**	8.04	10.14	11.04	13.40	14.18	**50yr**
100yr	1.06	1.60	2.00	2.89	3.96	4.42	**100yr**	3.42	4.32	5.22	6.37	7.47	11.28	13.22	**100yr**	9.98	12.71	13.68	16.75	17.43	**100yr**
200yr	1.29	1.94	2.45	3.55	4.95	5.46	**200yr**	4.27	5.34	6.49	7.78	8.96	14.02	16.60	**200yr**	12.41	15.96	16.97	20.95	21.46	**200yr**
500yr	1.68	2.50	3.21	4.67	6.63	7.20	**500yr**	5.72	7.04	8.66	10.14	11.41	18.71	22.44	**500yr**	16.56	21.58	22.57	28.20	28.29	**500yr**

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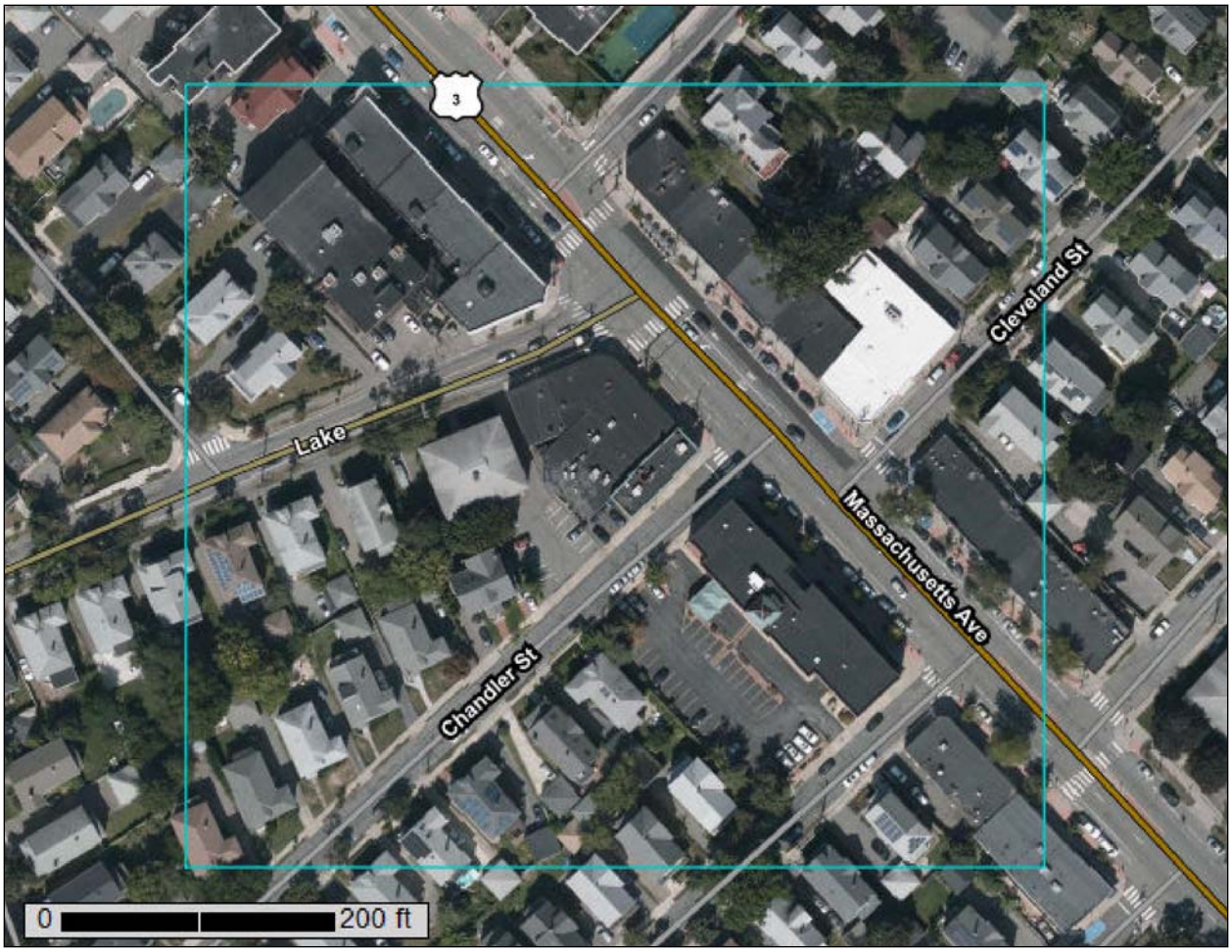
United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Middlesex County, Massachusetts



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,480 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

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 20, Jun 9, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 11, 2019—Oct 5, 2019

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	6.6	79.8%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	1.7	20.2%
Totals for Area of Interest		**8.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Middlesex County, Massachusetts

602—Urban land

Map Unit Setting

National map unit symbol: 9950
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Excavated and filled land

Minor Components

Rock outcrop

Percent of map unit: 5 percent
Landform: Ledges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Head slope
Down-slope shape: Concave
Across-slope shape: Concave

Udorthents, wet substratum

Percent of map unit: 5 percent
Hydric soil rating: No

Udorthents, loamy

Percent of map unit: 5 percent
Hydric soil rating: No

626B—Merrimac-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyr9
Elevation: 0 to 820 feet
Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Merrimac and similar soils: 45 percent
Urban land: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Merrimac

Setting

Landform: Eskers, moraines, outwash terraces, outwash plains, kames
Landform position (two-dimensional): Backslope, footslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest, riser, tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits derived from granite, schist, and gneiss over sandy and gravelly glaciofluvial deposits derived from granite, schist, and gneiss

Typical profile

Ap - 0 to 10 inches: fine sandy loam
Bw1 - 10 to 22 inches: fine sandy loam
Bw2 - 22 to 26 inches: stratified gravel to gravelly loamy sand
2C - 26 to 65 inches: stratified gravel to very gravelly sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline (0.0 to 1.4 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Description of Urban Land

Typical profile

M - 0 to 10 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water capacity: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Windsor

Percent of map unit: 5 percent
Landform: Dunes, outwash terraces, deltas, outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent
Landform: Outwash plains, terraces, deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Hinckley

Percent of map unit: 5 percent
Landform: Eskers, kames, deltas, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Saturated Hydraulic Conductivity (Ksat)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Custom Soil Resource Report
Map—Saturated Hydraulic Conductivity (Ksat)

Map Scale: 1:1,480 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

= 100.0000

Not rated or not available

Soil Rating Lines

= 100.0000

Not rated or not available

Soil Rating Points

= 100.0000

Not rated or not available

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 20, Jun 9, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 11, 2019—Oct 5, 2019

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.

Table—Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
602	Urban land		6.6	79.8%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	100.0000	1.7	20.2%
Totals for Area of Interest			**8.3**	**100.0%**

Rating Options—Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 12

Bottom Depth: 120

Units of Measure: Inches

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group

Map Scale: 1:1,480 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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 20, Jun 9, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 11, 2019—Oct 5, 2019

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.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
602	Urban land		6.6	79.8%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	A	1.7	20.2%
Totals for Area of Interest			**8.3**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

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TOWN OF ARLINGTON
REDEVELOPMENT BOARD
Application for Special Permit In Accordance with Environmental Design Review Procedures (Section 3.4 of the Zoning Bylaw)

Docket No. _____

1. Property Address 190 & 192-200 Massachusetts Ave
Name of Record Owner(s) 190-200 Massachusetts Ave, LLC Phone 781-654-6306
Address of Owner 455 Massachusetts Ave , Ste 1 , Arlington, MA 02474
Street City, State, Zip

2. Name of Applicant(s) (if different than above) Same as above
Address _____ Phone _____
Status Relative to Property (occupant, purchaser, etc.) _____

3. Location of Property Map 6, Block 3, Lots 1A and 1B
Assessor's Block Plan, Block, Lot No.

4. Deed recorded in the Registry of deeds, Book _____, Page _____;
-or- registered in Land Registration Office, Cert. No. 3413N, in Book 1362 1376, Page 16 27.

5. Present Use of Property (include # of dwelling units, if any) Retail, Service, Restaurant

6. Proposed Use of Property (include # of dwelling units, if any) Mixed-Use
24 Apartment Units & Retail or Restaurant

7. Permit applied for in accordance with the following Zoning Bylaw section(s)

section(s)	title(s)
3.4	Environmental Design Review
5.5.2	Dimensional and Density Regulations
SP	(Mixed-Use <=20,000SF)

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.

See Attached

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

The applicant states that 192-200 Massachusetts Ave, LLC is the owner -or- occupant -or- purchaser under agreement of the property in Arlington located at 190 & 192-200 Massachusetts Ave 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.

_____ _____ _____
Signature of Applicant(s)

_____ _____
Address 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, for the full list of required submittals.

X Dimensional and Parking Information Form (see attached)

X Site plan of proposal

N/A Model, if required

X Drawing of existing conditions

X Drawing of proposed structure

X Proposed landscaping. May be incorporated into site plan

X Photographs

X Impact statement

N/A Application and plans for sign permits

X 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: _____

TOWN OF ARLINGTON
REDEVELOPMENT BOARD
Petition for Special Permit under Environmental Design Review (see Section 3.4 of the Arlington Zoning Bylaw for Applicability)

For projects subject to Environmental Design Review, (see Section 3.4), please submit a statement that completely describes your proposal, and addresses each of the following standards.

1. Preservation of Landscape. The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soil removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas.

2. Relation of Buildings to Environment. Proposed development shall be related harmoniously to the terrain and to the use, scale, and architecture of existing buildings in the vicinity that have functional or visual relationship to the proposed buildings. The Arlington Redevelopment Board may require a modification in massing to reduce the effect of shadows on abutting property in an R0, R1 or R2 district or on public open space.

3. Open Space. All open space (landscaped and usable) shall be so designed as to add to the visual amenities of the vicinity by maximizing its visibility for persons passing the site or overlooking it from nearby properties. The location and configuration of usable open space shall be so designed as to encourage social interaction, maximize its utility, and facilitate maintenance.

4. Circulation. With respect to vehicular, pedestrian and bicycle circulation, including entrances, ramps, walkways, drives, and parking, special attention shall be given to location and number of access points to the public streets (especially in relation to existing traffic controls and mass transit facilities), width of interior drives and access points, general interior circulation, separation of pedestrian and vehicular traffic, access to community facilities, and arrangement of vehicle parking and bicycle parking areas, including bicycle parking spaces required by Section 8.13 that are safe and convenient and, insofar as practicable, do not detract from the use and enjoyment of proposed buildings and structures and the neighboring properties.

5. Surface Water Drainage. Special attention shall be given to proper site surface drainage so that removal of surface waters will not adversely affect neighboring properties or the public storm drainage system. Available Best Management Practices for the site should be employed, and include site planning to minimize impervious surface and reduce clearing and re-grading. Best Management Practices may include erosion control and storm water treatment by means of swales, filters, plantings, roof gardens, native vegetation, and leaching catch basins. Storm water should be treated at least minimally on the development site; that which cannot be handled on site shall be removed from all roofs, canopies, paved and pooling areas and carried away in an underground drainage system. Surface water in all paved areas shall be collected at intervals so that it will not obstruct the flow of vehicular or pedestrian traffic, and will not create puddles in the paved areas.

   In accordance with Section 3.3.4, the Board may require from any applicant, after consultation with the Director of Public Works, security satisfactory to the Board to insure the maintenance of all storm water facilities such as catch basins, leaching catch basins, detention basins, swales, etc. within the site. The Board may use funds provided by such security to conduct maintenance that the applicant fails to do. The Board may adjust in its sole discretion the amount and type of financial security such that it is satisfied that the amount is sufficient to provide for the future maintenance needs.

6. Utility Service. Electric, telephone, cable TV and other such lines and equipment shall be underground. The proposed method of sanitary sewage disposal and solid waste disposal from all buildings shall be indicated.

7. Advertising Features. The size, location, design, color, texture, lighting and materials of all permanent signs and outdoor advertising structures or features shall not detract from the use and enjoyment of proposed buildings and structures and the surrounding properties. Advertising features are subject to the provisions of Section 6.2 of the Zoning Bylaw.

8. Special Features. Exposed storage areas, exposed machinery installations, service areas, truck loading areas, utility buildings and structures, and similar accessory areas and structures shall be subject to such setbacks, screen plantings or other screening methods as shall reasonably be required to prevent their being incongruous with the existing or contemplated environment and the surrounding properties.

9. Safety. With respect to personal safety, all open and enclosed spaces shall be designed to facilitate building evacuation and maximize accessibility by fire, police, and other emergency personnel and equipment. Insofar as practicable, all exterior spaces and interior public and semi-public spaces shall be so designed as to minimize the fear and probability of personal harm or injury by increasing the potential surveillance by neighboring residents and passersby of any accident or attempted criminal act.

10. Heritage. With respect to Arlington's heritage, removal or disruption of historic, traditional or significant uses, structures, or architectural elements shall be minimized insofar as practicable, whether these exist on the site or on adjacent properties.

11. Microclimate. With respect to the localized climatic characteristics of a given area, any development which proposes new structures, new hard-surface ground coverage, or the installation of machinery which emits heat, vapor, or fumes, shall endeavor to minimize, insofar as practicable, any adverse impact on light, air, and water resources, or on noise and temperature levels of the immediate environment.

12. Sustainable Building and Site Design. Projects are encouraged to incorporate best practices related to sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Applicants must submit a current Green Building Council Leadership in Energy and Environmental Design (LEED) checklist, appropriate to the type of development, annotated with narrative description that indicates how the LEED performance objectives will be incorporated into the project. [LEED checklists can be found at http://www.usgbc.org/DisplayPage.aspx?CMSPageID=220b]

In addition, projects subject to Environmental Design Review must address and meet the following Special Permit Criteria (see Section 3.3.3 of the Zoning Bylaw):

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

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

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

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

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

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.

TOWN OF ARLINGTON
Dimensional and Parking Information
for Application to
The Arlington Redevelopment Board

Docket No. _____

Property Location 190 & 192-200 Massachusetts Ave

Zoning District B3

Owner: 192-200 Massachusetts Ave, LLC

Address: 455 Massachusetts Ave, Arlington, MA

Present Use/Occupancy: No. of Dwelling Units:
Retail, Service, Restaurant

Uses and their gross square feet:
1-Story 9,916 GSF

Proposed Use/Occupancy: No. of Dwelling Units:
Mixed-Use, 24 Apartment Units & Retail/Restaurant

Uses and their gross square feet:
4-Story Mixed-Use, 35,759 GSF

	Present Conditions	Proposed Conditions	Min. or Max. Required by Zoning for Proposed Use
Lot Size	11,134 SF	11,134 SF	min. ----
Frontage	102.1 FT	102.1 FT	min. 50 FT
Floor Area Ratio	0.9	3.2	max. 1.5
Lot Coverage (%), where applicable	N/A	N/A	max. ----
Lot Area per Dwelling Unit (square feet)	N/A	464 SF	min. ----
Front Yard Depth (feet)	0 FT	0 FT	min. 0 FT
Side Yard Width (feet) right side	0.6 FT	7.5 FT	min. 0 FT
left side	-----	-----	min. -----
Rear Yard Depth (feet)	-----	-----	min. (H+L)/6
Height	----	-----	min. -----
Stories	1-STORY	4-STORY	stories 5-STORY
Feet	20 FT +/-	<50 FT	feet 60 FT
Open Space (% of G.F.A.)	-----	-----	min. -----
Landscaped (square feet)	0.9%	6.6 %	(s.f.) 10% 1,867 SF
Usable (square feet)	0 %	11.5 %	(s.f.) 20% 3,734 SF
Parking Spaces (No.)	None	14	min. 29.4
Parking Area Setbacks (feet), where applicable	0 FT	N/A	min. N/A
Loading Spaces (No.)	N/A	N/A	min. N/A
Type of Construction	NEW CONSTRUCTION		
Distance to Nearest Building	12.0 FT	19.2 FT	min.

97 SF/11,134 SF (lot area)

1,232 SF/18,670 SF (Res. Floor Area)

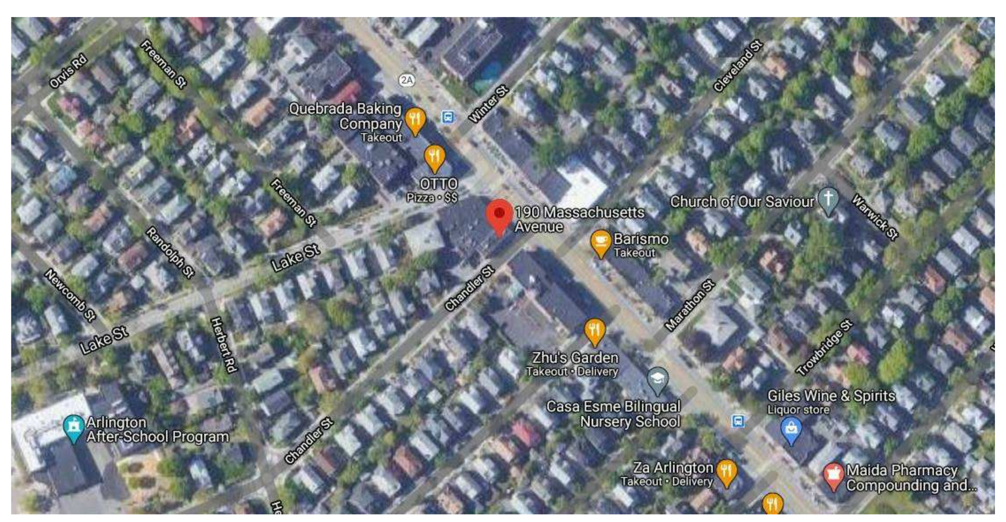
18,670 SF (Res. Floor Area) X 0.10 = 1,867 SF

18,670 SF (Res. Floor Area) X 0.20 = 3,734 SF

2,140 (deck space)/ 18,670 SF (Res. Floor Area)

PERSPECTIVE VIEW:

AERIAL SITE PLAN:



N

DRAWING LIST

		REVISION DATE
ARCHITECTURAL		
A1.00	OVERALL PLAN - BASEMENT	
A1.01	OVERALL PLAN - FIRST FLOOR	
A1.02	OVERALL PLAN - SECOND FLOOR	
A1.03	OVERALL PLAN - THIRD FLOOR	
A1.04	OVERALL PLAN - FOURTH FLOOR	
A1.06	OVERALL PLAN - ROOF	
A2.01	BUILDING ELEVATIONS	
A9.01	STREET ELEVATIONS	
A9.02	BANK CORNER RENDER	
A9.03	COMMERCIAL CORNER RENDER	
A9.04	ROOF DECK RENDER	
A9.05	SOLAR STUDIES	
A9.06	SOLAR STUDIES	

ARB PACKAGE

MAY 18, 2021

MARKET SQUARE ARCHITECTS

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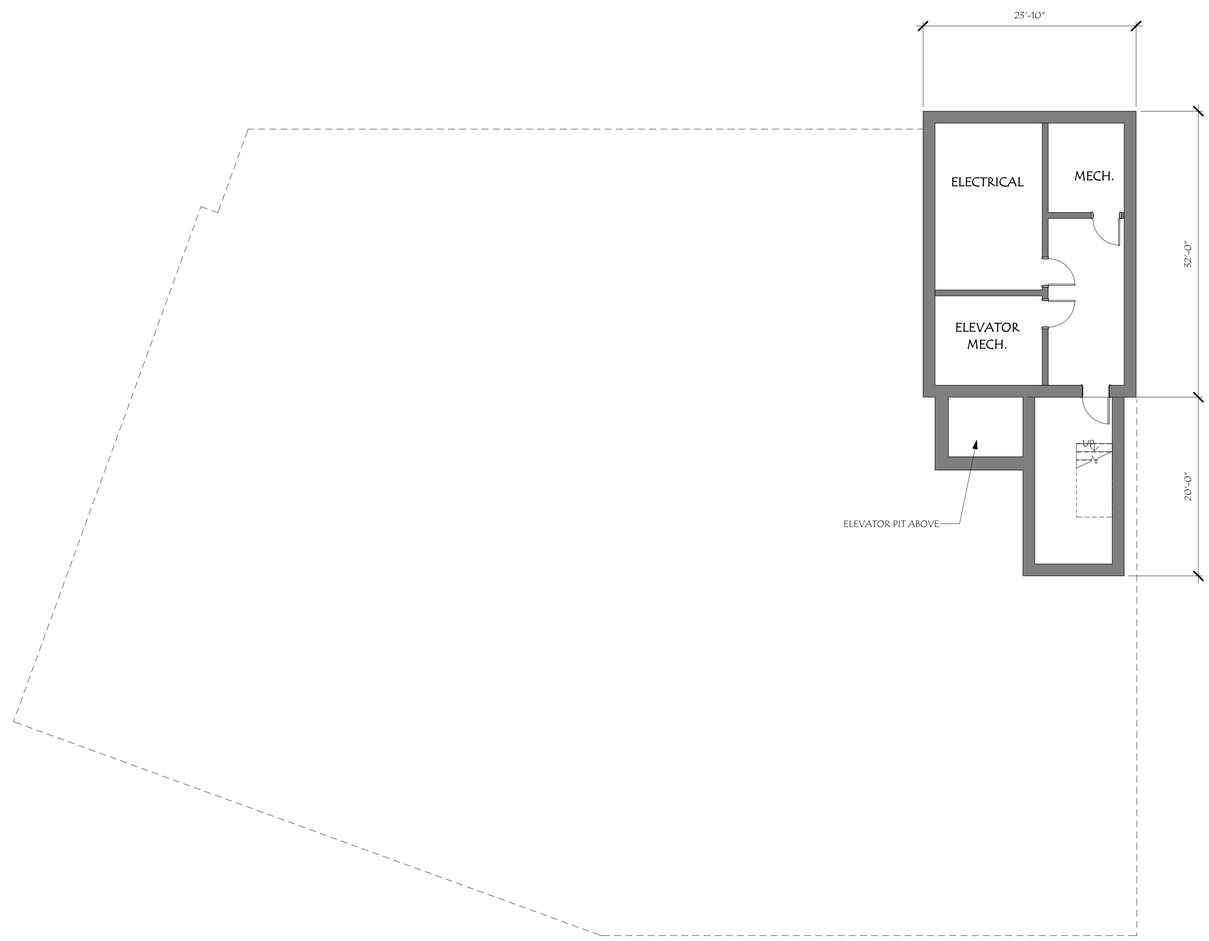
5/18/2021 5:38:58 PM

200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
ARLINGTON, MA



1 OVERALL PLAN - BASEMENT
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
1104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-431-0202

NOT FOR CONSTRUCTION

200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 1/8" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 05/18/21

Title: OVERALL PLAN - BASEMENT

A1.00

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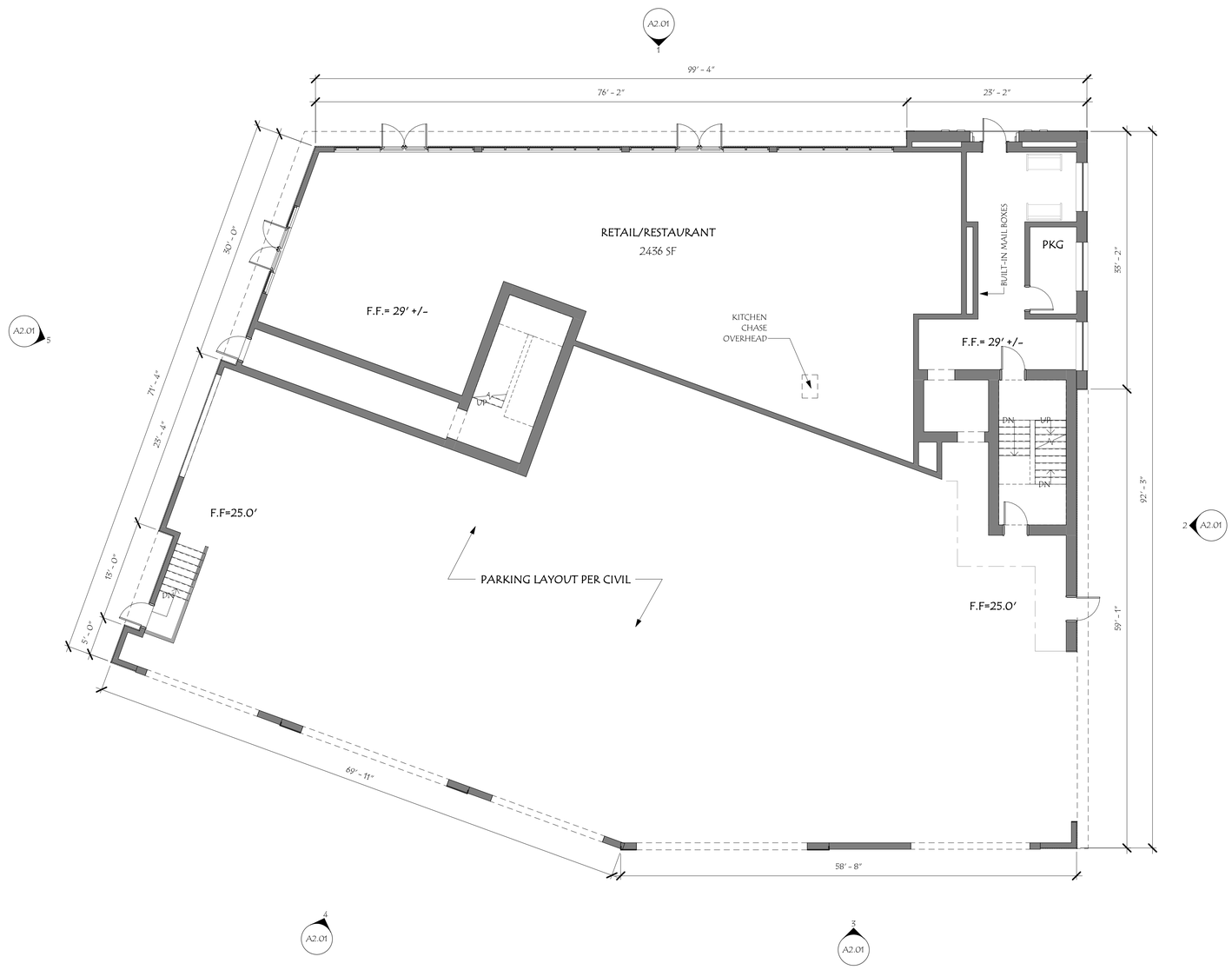

1 OVERALL PLAN - 1ST FLOOR
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
1104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-501.0202

NOT FOR CONSTRUCTION

200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 1/8" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 05/18/21

Title: OVERALL PLAN - FIRST FLOOR

A1.01

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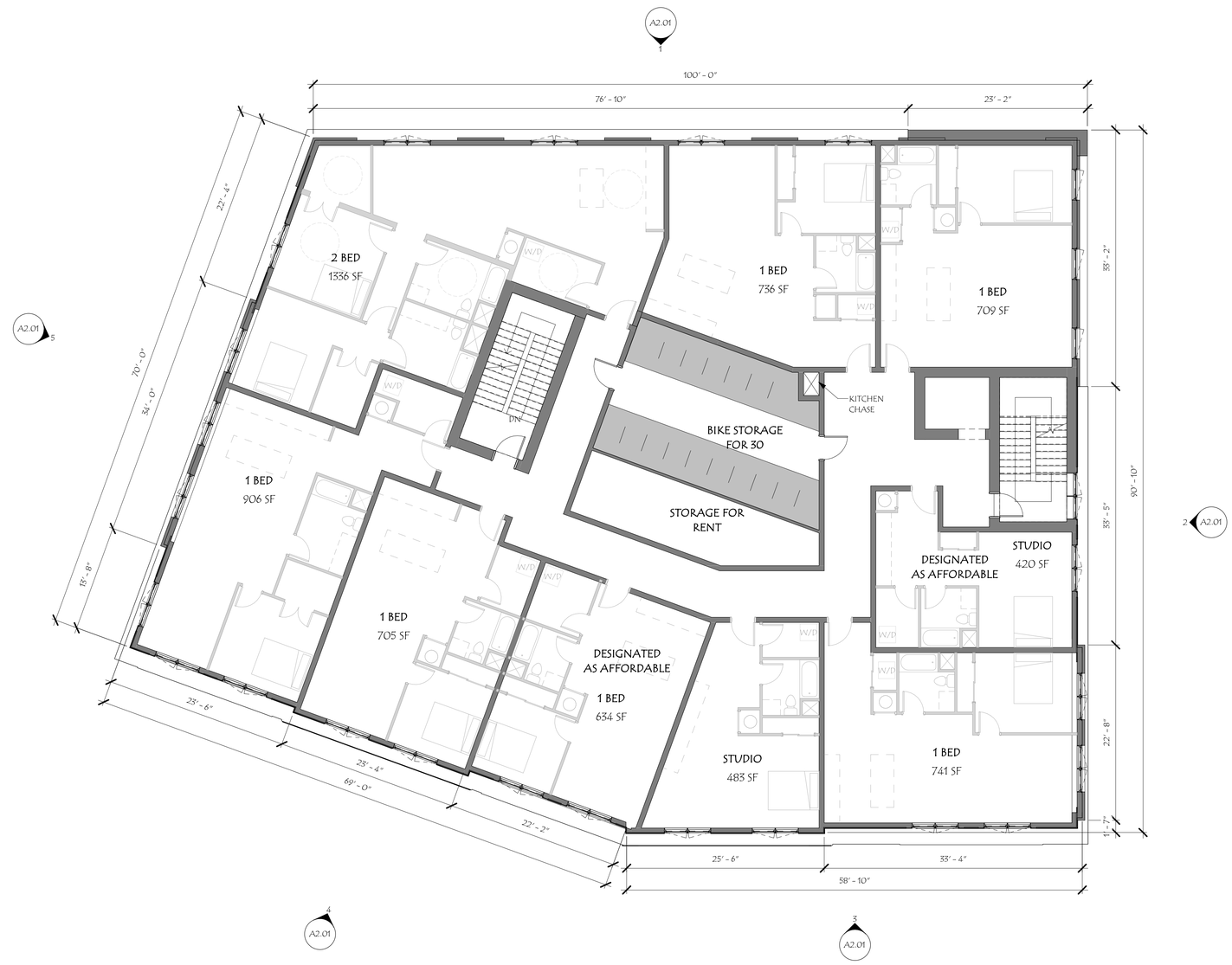
UNIT MATRIX:

	#	%
SECOND FLOOR:		
STUDIO	2 UNIT	22%
1 BED	6 UNITS	66%
2 BED	1 UNIT	11%
TOTAL:		
STUDIO	5 UNITS	21%
1 BED	16 UNITS	66%
2 BED	3 UNITS	13%
TOTAL	24 UNITS	

NOTE:
PRELIMINARY UNIT INTERNAL LAYOUT SHOWN, FINAL LAYOUT MAY VARY



1 OVERALL PLAN - 2ND FLOOR
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-501.0202

NOT FOR CONSTRUCTION

200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 1/8" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 05/18/21

Title: OVERALL PLAN - SECOND FLOOR

A1.02

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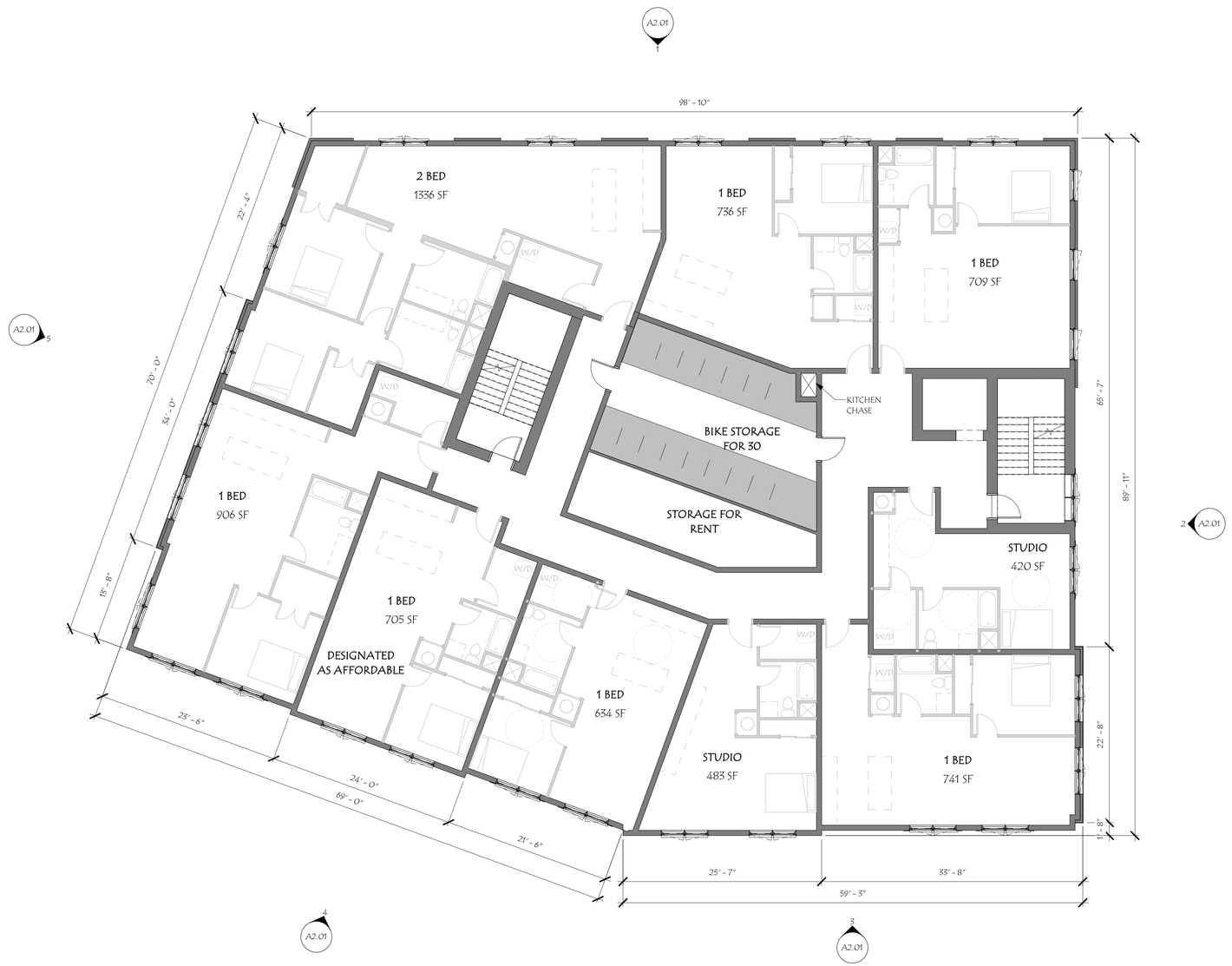
UNIT MATRIX:

	#	%
THIRD FLOOR:		
STUDIO	2 UNIT	22%
1 BED	6 UNITS	66%
2 BED	1 UNIT	11%
TOTAL:		
STUDIO	5 UNITS	21%
1 BED	16 UNITS	66%
2 BED	3 UNITS	13%
TOTAL	24 UNITS	

NOTE:
PRELIMINARY UNIT INTERNAL LAYOUT SHOWN, FINAL LAYOUT MAY VARY



1 OVERALL PLAN - 3RD FLOOR
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
104 Congress St., STE 203
Portsmouth, NH 03801
PH: 603-501-0202

NOT FOR CONSTRUCTION

200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 1/8" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 05/18/21

Title: OVERALL PLAN - THIRD FLOOR

A1.03

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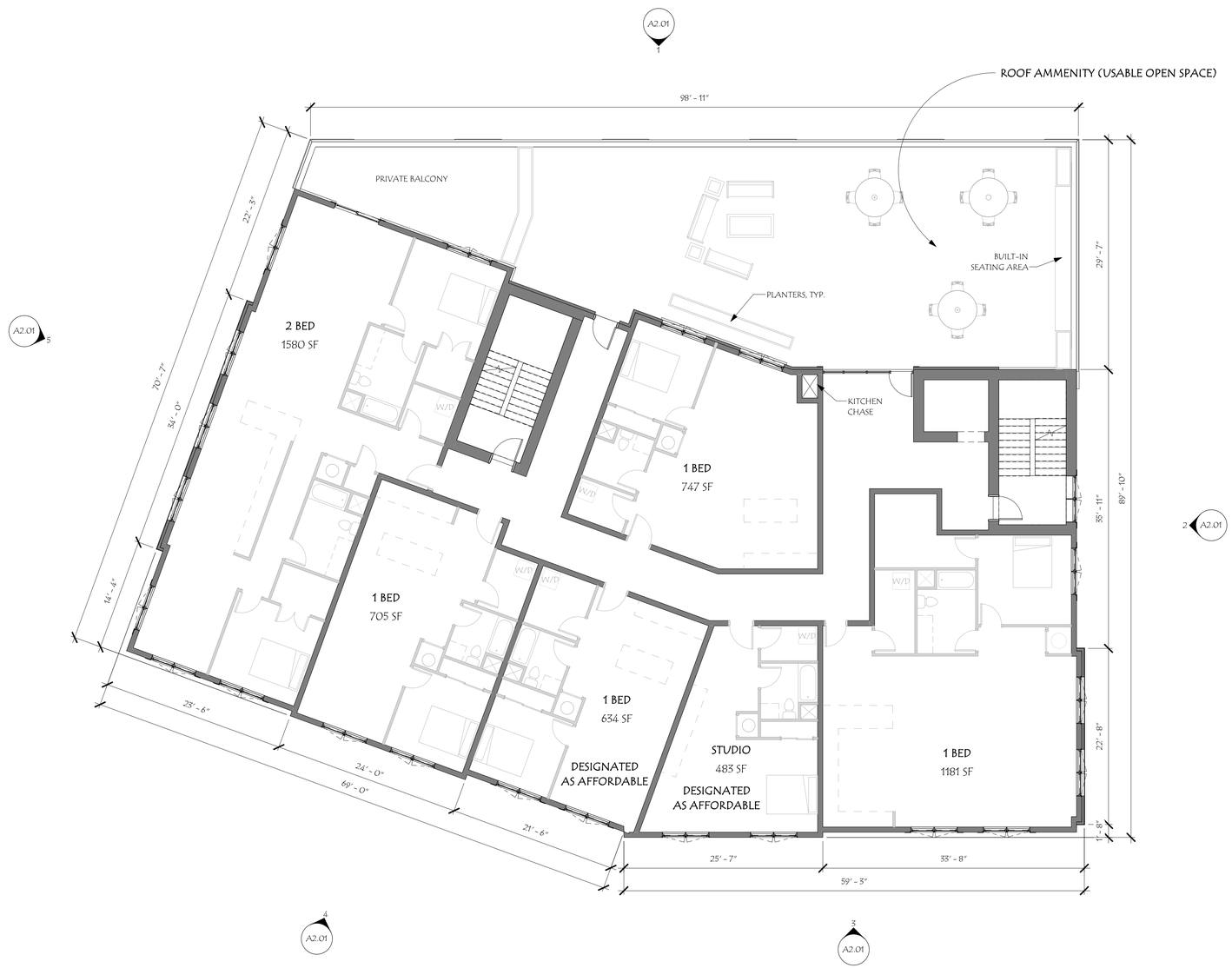
5/18/2021 5:38:59 PM

UNIT MATRIX:

	#	%
FOURTH FLOOR:		
STUDIO	1 UNIT	17%
1 BED	4 UNITS	66%
2 BED	1 UNIT	17%
TOTAL:		
STUDIO	5 UNITS	21%
1 BED	16 UNITS	66%
2 BED	3 UNITS	13%
TOTAL	24 UNITS	

NOTE:
PRELIMINARY UNIT INTERNAL LAYOUT SHOWN, FINAL LAYOUT MAY VARY



1 OVERALL PLAN - 4TH FLOOR
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-501-0202

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200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 1/8" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 05/18/21

Title: OVERALL PLAN - FOURTH FLOOR

A1.04

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1 OVERALL PLAN - ROOF
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
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Portsmouth, NH 03801
PH: 603-501-0202

NOT FOR CONSTRUCTION

200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:		
#	Description	Date

Scale:	1/8" = 1'-0"
Drawn By:	PPS
Checked By:	ALW
Project No.:	2020051
Date:	05/18/21

Title: OVERALL PLAN - ROOF

A1.06

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MATERIAL NOTES:

- BRICK BASE TO MATCH EXISTING BRICK BANK.
- PAINTED FIBER CEMENT PANEL OR CLAPBORD, TYP. UPPER STORIES.
- CORNICE/TRIM TO BE FIBER CEMENT OR AZEK WITH METAL FLASHING PAINTED TO MATCH.

5 ELEVATION - 5
3/32" = 1'-0"

4 ELEVATION - 4
3/32" = 1'-0"

3 ELEVATION - 3
3/32" = 1'-0"

2 ELEVATION - 2
3/32" = 1'-0"

1 ELEVATION - 1
3/32" = 1'-0"

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Portsmouth, NH 03801
PH: 603-501-0202

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200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 3/32" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 05/18/21

Title: BUILDING ELEVATIONS

A2.01

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NOTE:
CONTEXT BUILDING HEIGHTS AND ELEVATIONS APPROXIMATED.

3 CHANDLER STREET ELEVATION
1" = 20'-0"

2 LAKE STREET ELEVATION
1" = 20'-0"

1 MASS AVE STREET ELEVATION
1" = 20'-0"

MARKET SQUARE ARCHITECTS
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Portsmouth, NH 03801
PH: 603-431-0202

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200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 1" = 20'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 05/18/21

Title: STREET ELEVATIONS

A9.01

2020 Market Square Architects 5/18/2021 5:39:17 PM

Title: BANK CORNER RENDER	Scale:	Revisions: # Description Date	200 MASS AVE MIXED USE
A9.02	Drawn By: PPS Checked By: ALW Project No.: 2020051 Date: 05/18/21		190-200 MASSACHUSETTS AVE ARLINGTON, MA

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PH: 603-524.0202

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200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale:
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 05/18/21

Title: COMMERCIAL CORNER RENDER

A9.03

2020 Market Square Architects 5/18/2021 5:39:18 PM

Title:	Scale:	Revisions:		
ROOF DECK RENDER	Drawn By: PPS	# Description	Date	
	Checked By: ALW			
A9.04	Project No.: 2020051			
	Date: 05/18/21			

200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
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101 of 321

NOTE:
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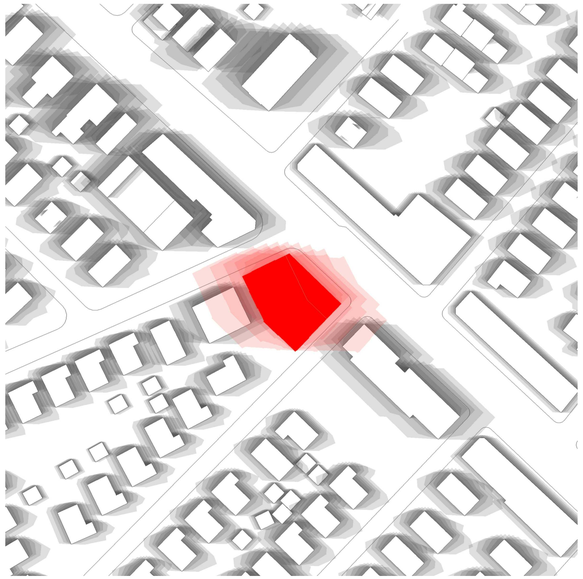

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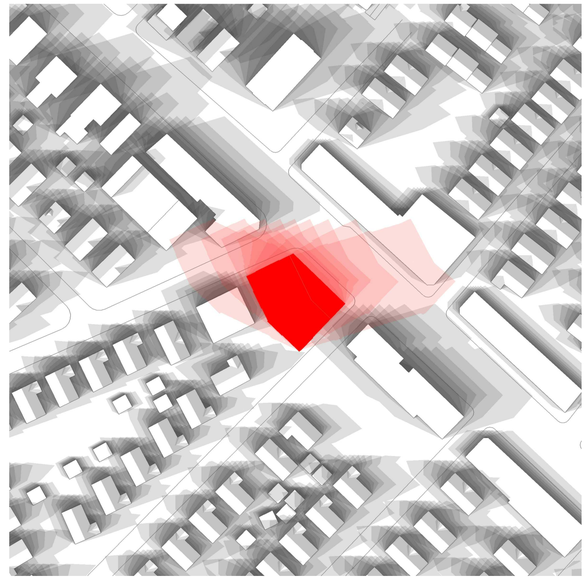

SPRING/FALL
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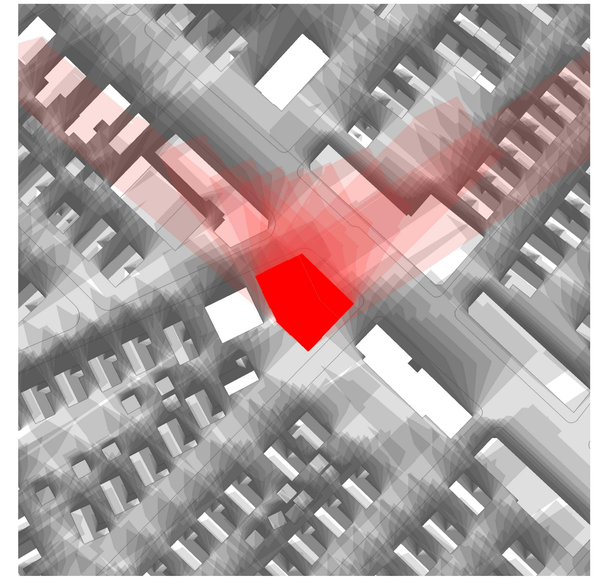

WINTER
8:00AM - 4:00PM UTC-5

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200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale:
Drawn By: PPS
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Project No.: 2020051
Date: 05/10/21

Title: SOLAR STUDIES

A9.05

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200 MASS AVE MIXED USE

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale:
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 05/10/21

Title: SOLAR STUDIES

A9.06

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Changes to Civil Plans;

1. Garage drive aisle reduced from 24 to 22 ft. Relief requested from ARB for reduction. Allowed for an increase in commercial space to 2,436 sf.
2. Parking space dimensions reduced to be 8 ft wide by 18 ft long. Relief requested from ARB for reduction. Figure Provided for turning movements.
3. Stairs and sidewalk connection along south western property line removed. Landscaped open space increased to 6.6% of residential floor area, and 11.1% of lot area. This change now has the proposed project result in approximately 1,034 square feet of impervious material being replaced with landscaped areas.
4. An additional EV space has been added.
5. Short term bike spaces have been relocated into the garage area.
6. FAR reduced to 3.2, deck space not included per definition 5.3.22

NOTES

1. WRITTEN DIMENSIONS ON THIS PLAN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND/OR SPECIFICATIONS OR CONDITIONS, THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR. ALL SITE ITEMS SHALL BE LAID OUT AND AS BUILT BY A LICENSED LAND SURVEYOR.

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GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

PROGRESS PRINT ISSUED FOR REVIEW
MAY 25, 2021

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	05/25/2021	REVISED FOR ARB REVIEW
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT\OWNER:
192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	1" = 10'	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY, SUITE 5
WOBURN MA 01801
TEL: (781) 935-6889
FAX: (781) 935-2896
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DRAWING TITLE:
GARAGE TURNING PLAN

SHEET No.
FIG-1

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MUNICIPAL PARKING SUMMARY

LOCATION	APPROX. NUMBER OF SPACES
RUSSELL COMMON MUNICIPAL LOT	220
MASSACHUSETTS AVENUE	120

LEGEND

PROPERTY LINE
STREET PARKING
RUSSELL COMMON LOT

NOTES

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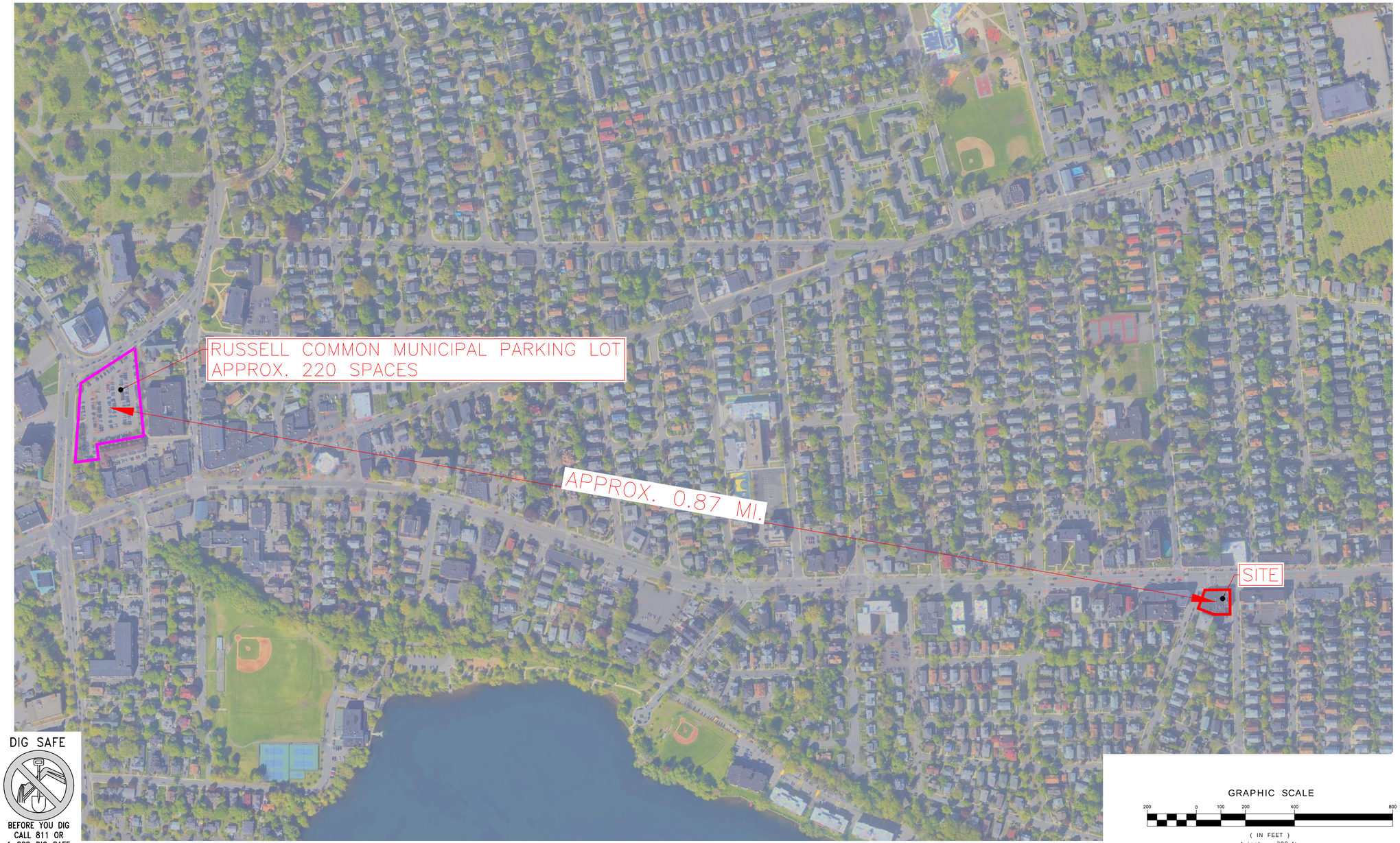

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GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

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PROFESSIONAL ENGINEER FOR
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455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:

190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	1" = 200'	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

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environmental consulting ◆ landscape architecture
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DRAWING TITLE:

MUNICIPAL PARKING FIGURE

SHEET No.

FIG-2

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R:\PROJECTS\2729-02\CIVIL\DRAWINGS\CURRENT\C-2729-02_PARKING FIGURE.DWG

MUNICIPAL PARKING SUMMARY

LOCATION	APPROX. NUMBER OF SPACES
RUSSELL COMMON MUNICIPAL LOT	220
MASSACHUSETTS AVENUE	120

LEGEND

- PROPERTY LINE
- STREET PARKING
- RUSSELL COMMON LOT

NOTES

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150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

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MAY 25, 2021

PROFESSIONAL ENGINEER FOR
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PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	1" = 150'	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:
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DRAWING TITLE:
MASSACHUSETTS AVENUE
PARKING FIGURE

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SHEET No.
FIG-3

From: "Robert Annese" <law@robertannese.com>
To: "Jennifer Raitt" <JRaitt@town.arlington.ma.us>
Cc: <john@summit-res.net>, <cynthia@pasciutoproperties.com>
Date: 04/26/2021 03:32 PM
Subject: 190-200 Massachusetts Avenue, Arlington, MA

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Hi Jenny:

The Applicant is requesting a continuance of the hearing scheduled for Monday, May 3rd to the next available hearing date because of changes with respect to its plans in order to expand the commercial space in the building which in turn will require other changes to the plans.

Would you please let my office know the if the request will be granted by the Members of the ARB.

Thank you.

Bob

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1171 Massachusetts Avenue
Arlington, MA 02476
Telephone: 781-646-4911
Facsimile: 781-646-4910
law@robertannese.com

Search Analytics

INVENTORY SF	UNDER CONSTRUCTION SF	12 MO NET ABSORPTION SF	VACANCY RATE	MARKET RENT/SF	MARKET SALE PRICE/SF	MARKET CAP RATE
89.4K +0%	0 -	(7.7K) -15,120.0%	17.3% +8.7%	$30.61 -3.3%	$319 -2.3%	5.6% +0%
Prior Period 89.4K	Prior Period 0	Prior Period 51	Prior Period 8.6%	Prior Period $31.66	Prior Period $326	Prior Period 5.6%

Key Metrics

Availability	
Vacant SF	15.5K ↑
Sublet SF	658 ↓
Availability Rate	24.9% ↑
Available SF	22.2K ↑
Available Asking Rent/SF	$31.09 ↑
Occupancy Rate	82.7% ↓
Percent Leased Rate	83.4% ↓

Inventory	
Existing Buildings	10 ↓
Under Construction Avg SF	-
12 Mo Demolished SF	0 ↓
12 Mo Occupancy % at Delivery	-
12 Mo Construction Starts SF	0 ↓
12 Mo Delivered SF	0 ↓
12 Mo Avg Delivered SF	-

Sales Past Year	
Asking Price Per SF	-
Sale to Asking Price Differential	-
Sales Volume	$0 ↓
Properties Sold	1 ↑
Months to Sale	-
For Sale Listings	-
Total For Sale SF	-

Demand	
12 Mo Net Absorp % of Inventory	-8.6% ↓
12 Mo Leased SF	7.3K ↑
Months on Market	8.8 ↑
Months to Lease	-
Months Vacant	-
24 Mo Lease Renewal Rate	31.9%
Population Growth 5 Yrs	2.3%

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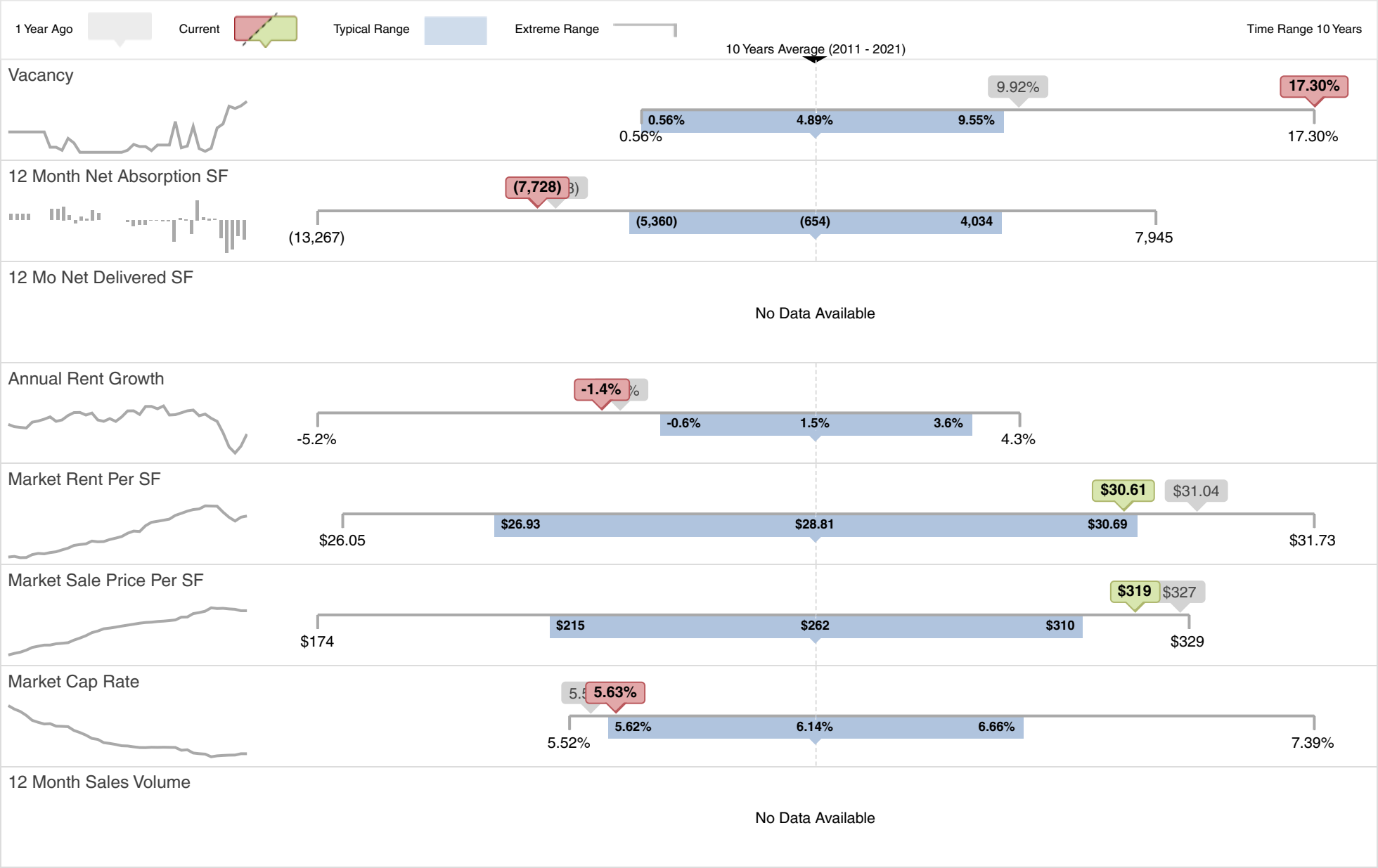
Key Performance Indicators



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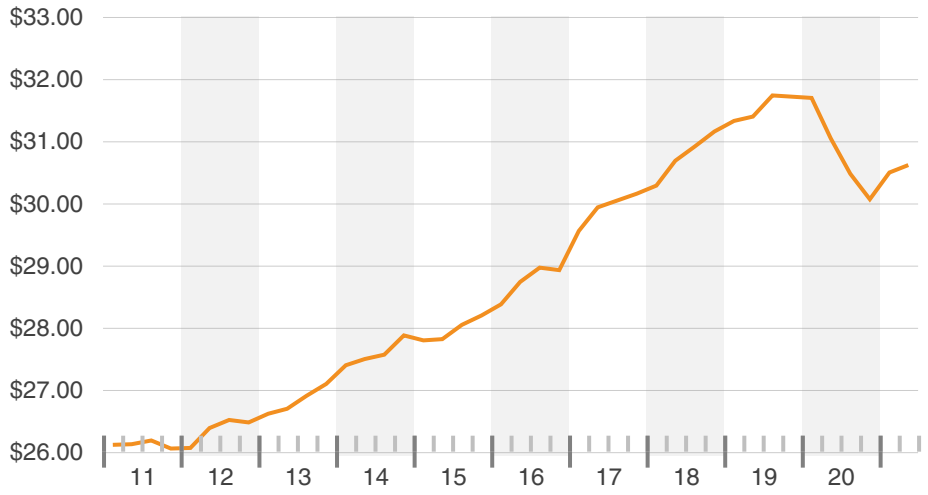
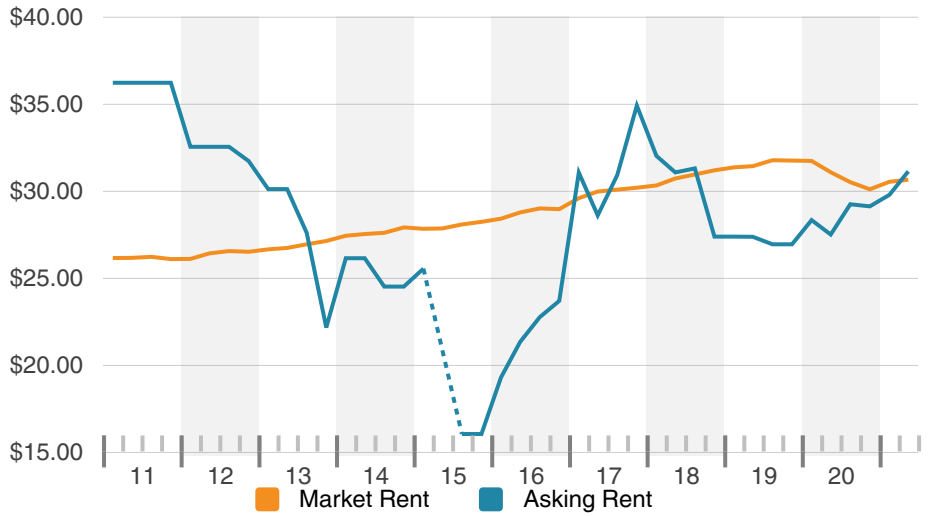
Market Rent Per SF

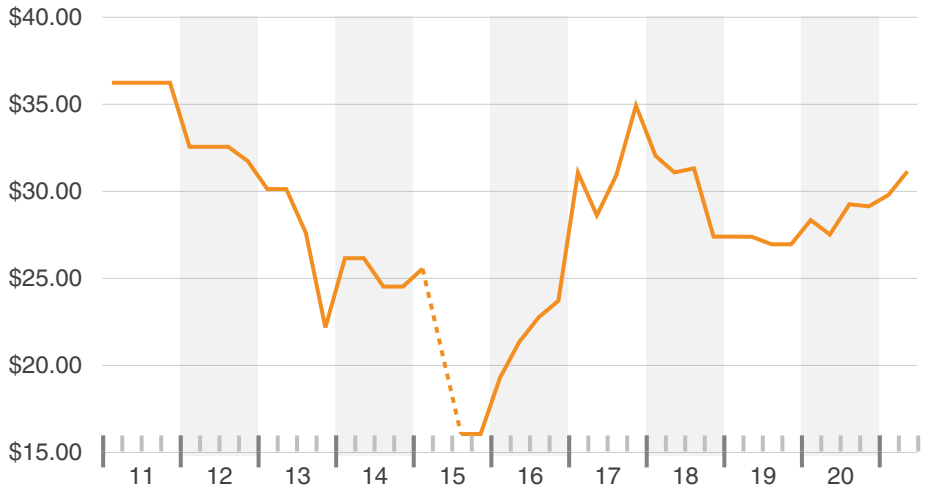


Market Rent Growth (YOY)

Market Rent & Asking Rent Per SF



Asking Rent Per SF



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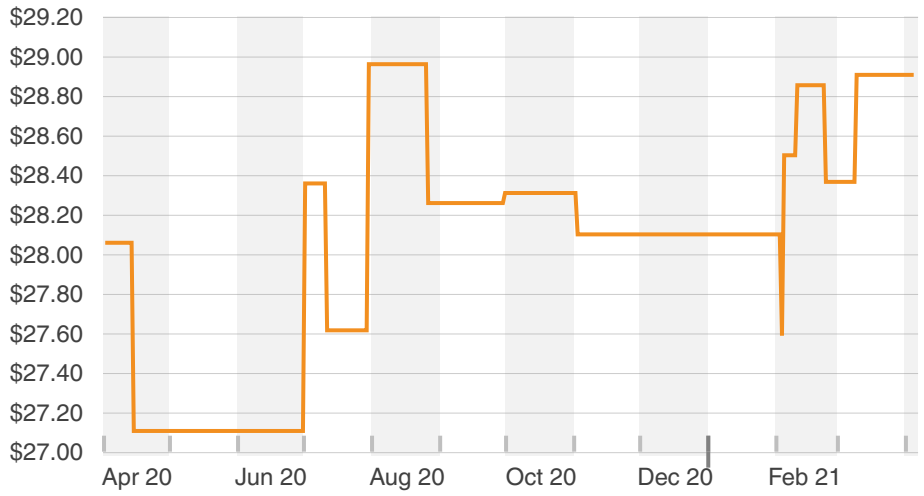
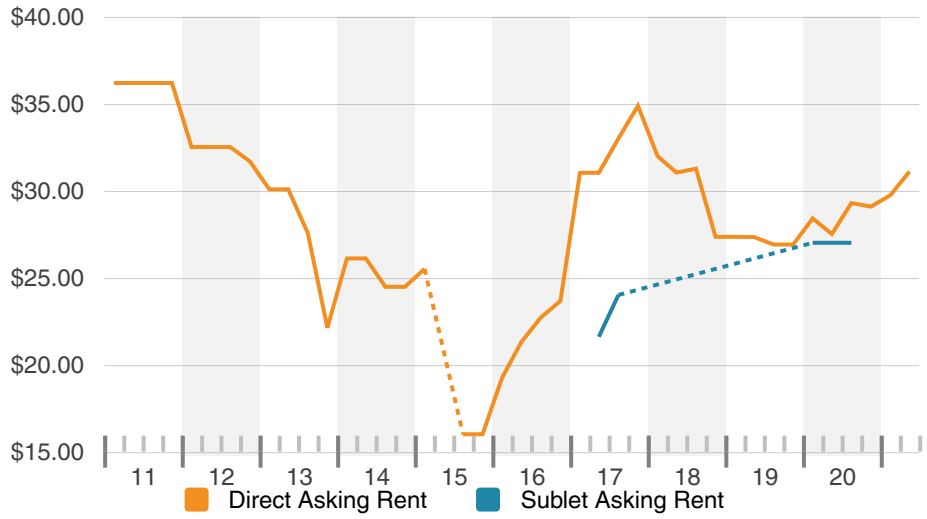
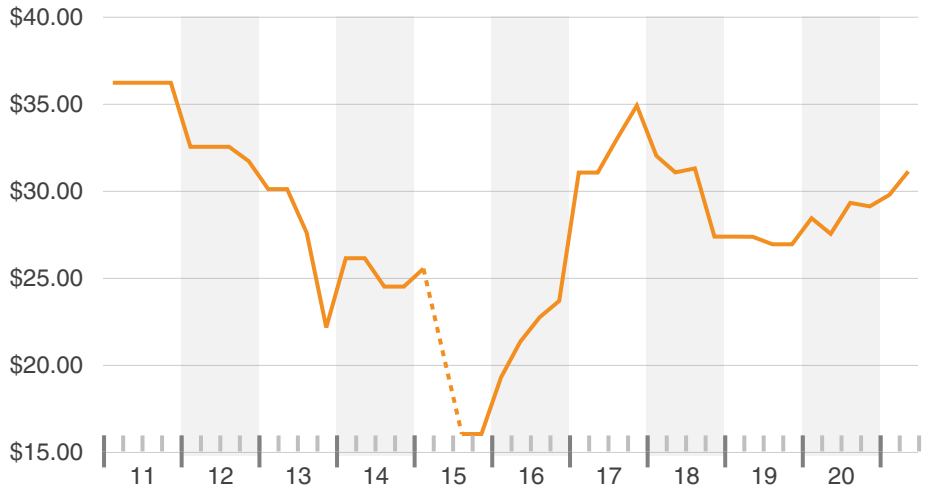
Daily Asking Rent Per SF



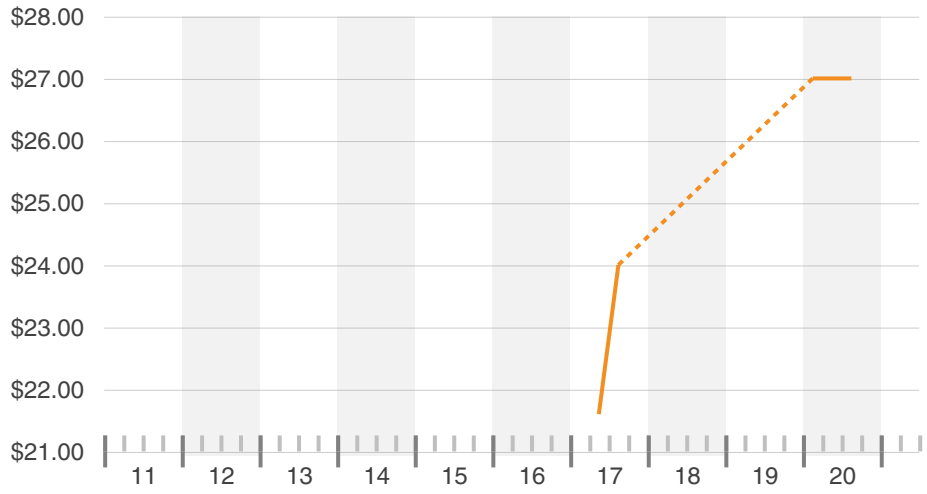
Direct & Sublet Rent Per SF



Direct Rent Per SF



Sublet Rent Per SF



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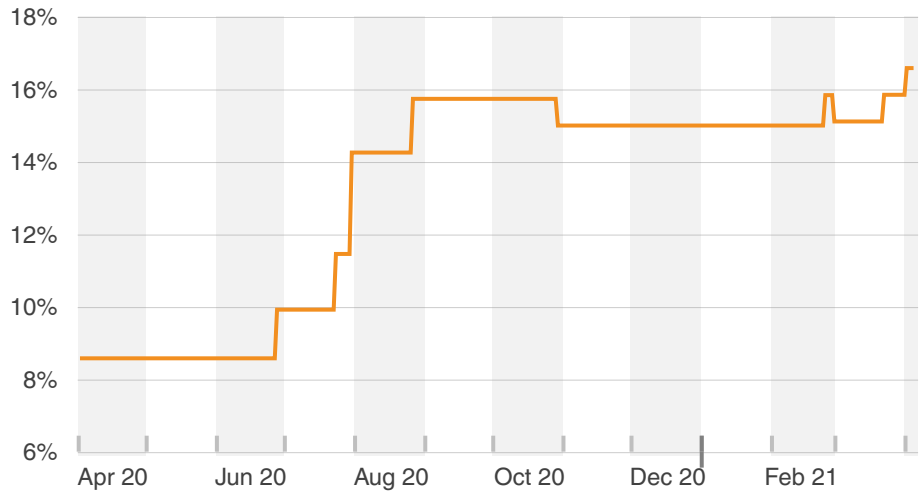
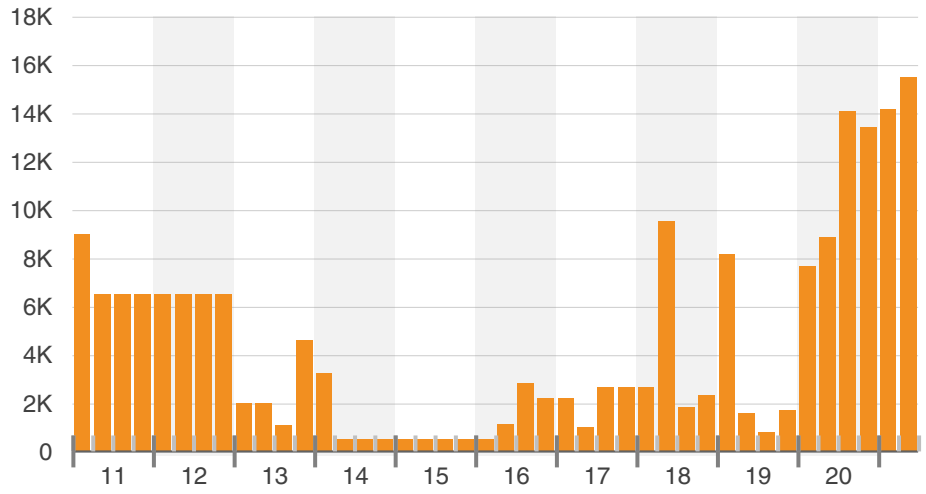
Search Analytics

Daily Vacancy Rate

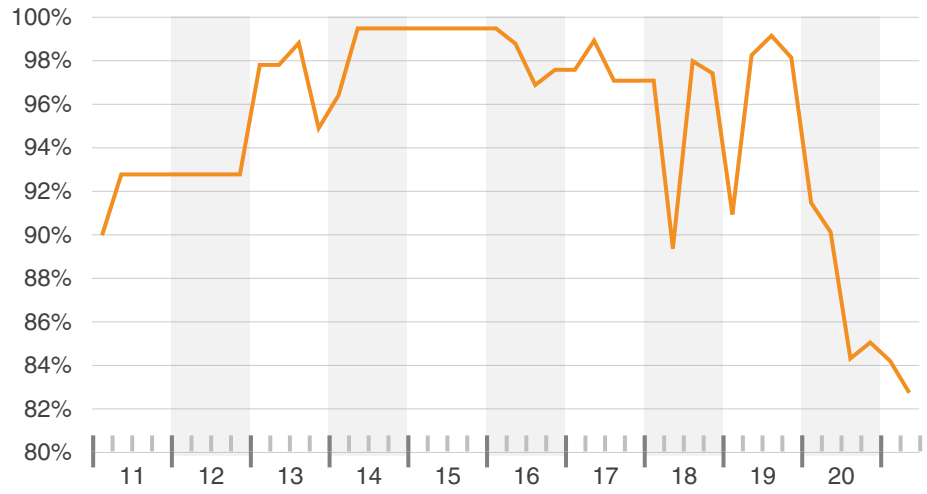


Vacancy Rate

Vacant SF



Occupancy Rate



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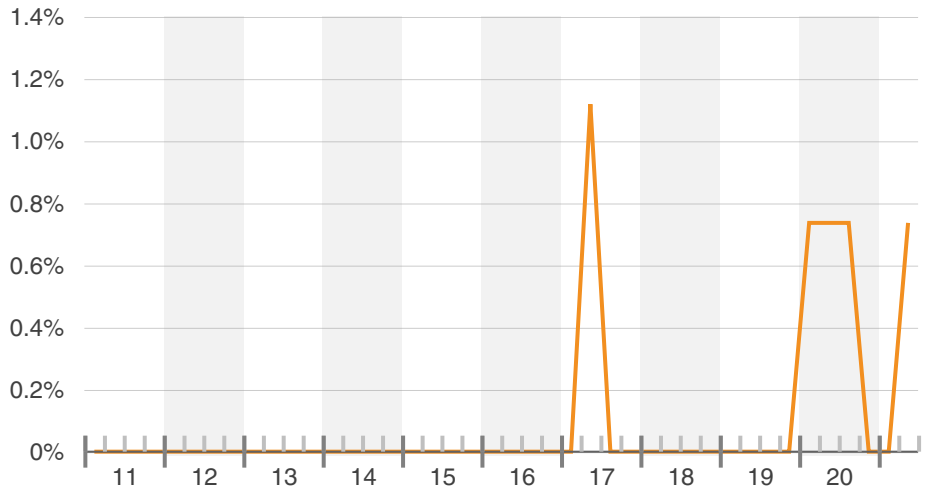
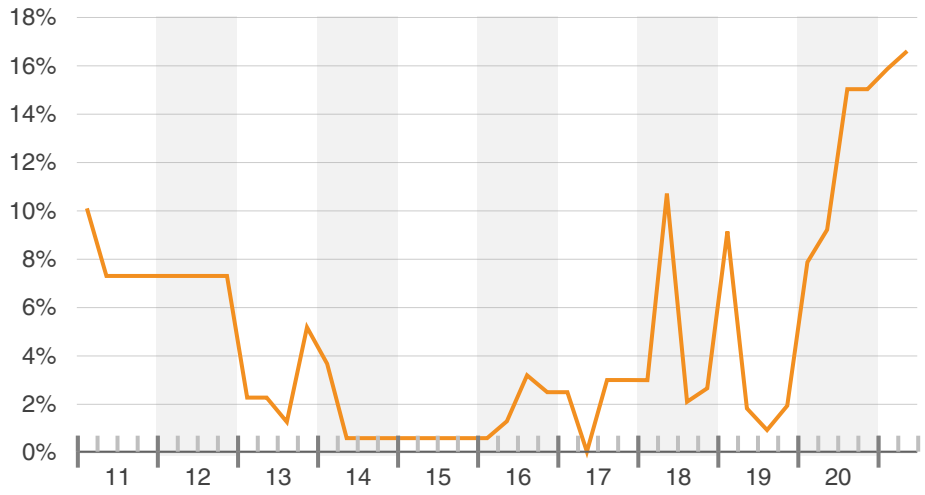
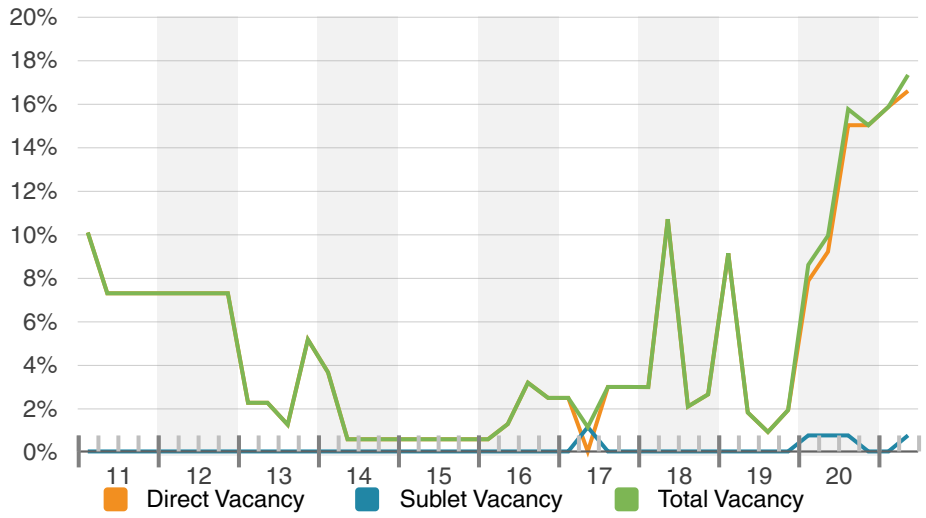
Sublet Vacancy Rate



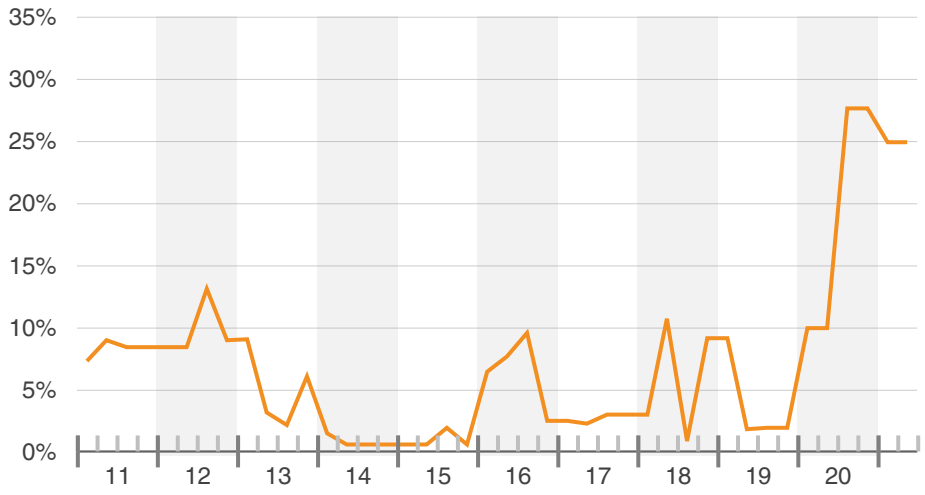
Direct Vacancy Rate



Direct, Sublet & Total Vacancy Rate



Availability Rate



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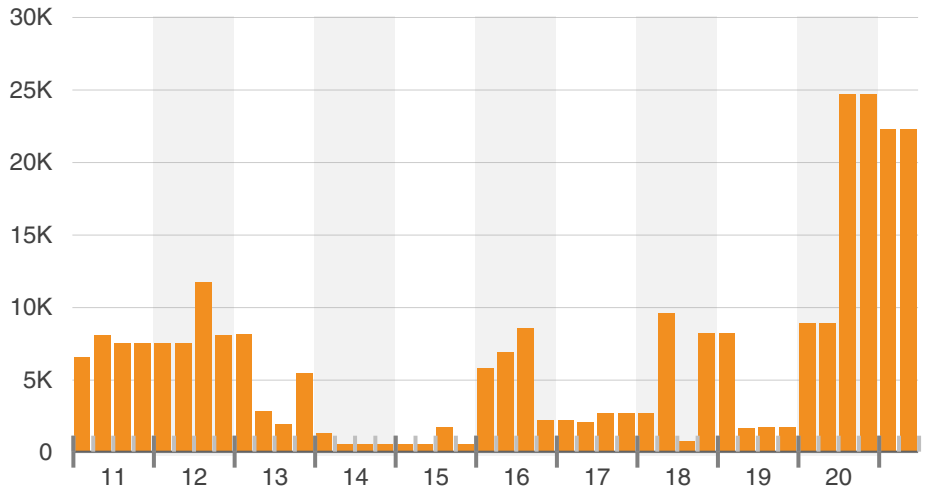
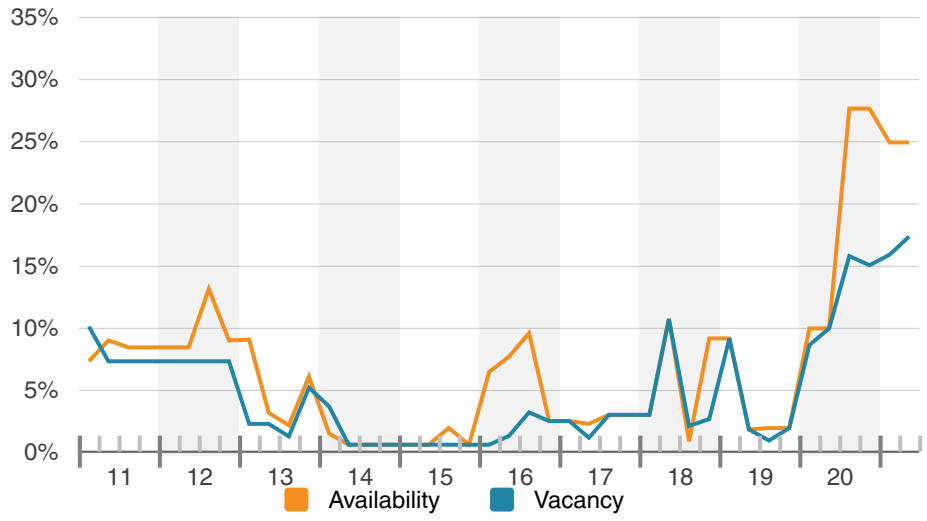
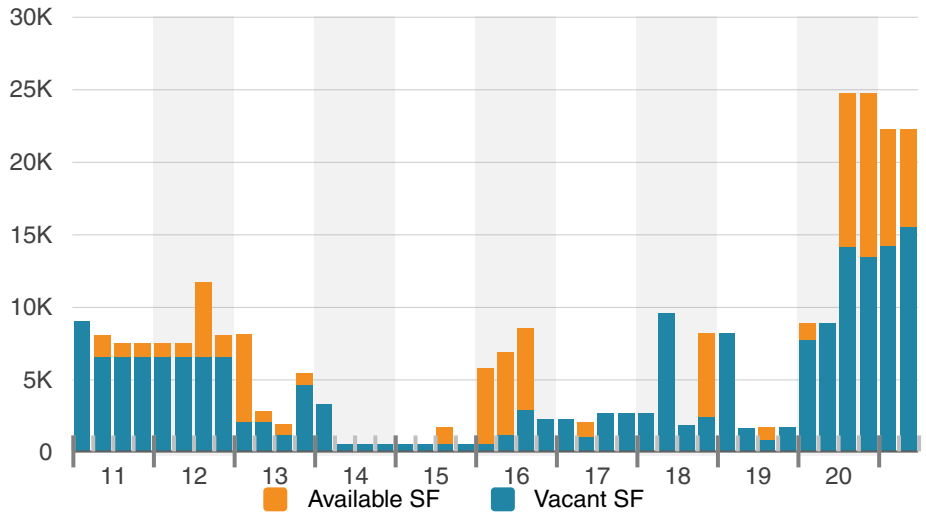
Available SF



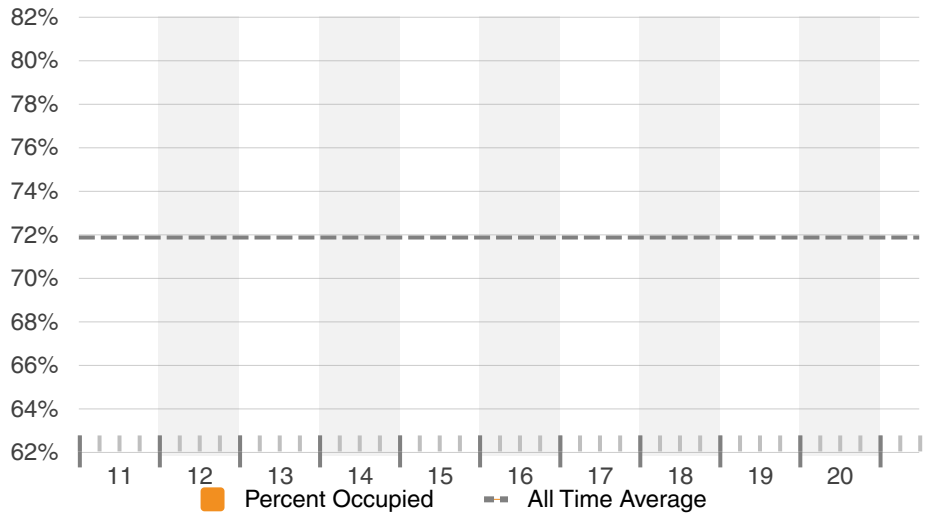
Availability & Vacancy Rate



Available & Vacant SF



Occupancy At Delivery



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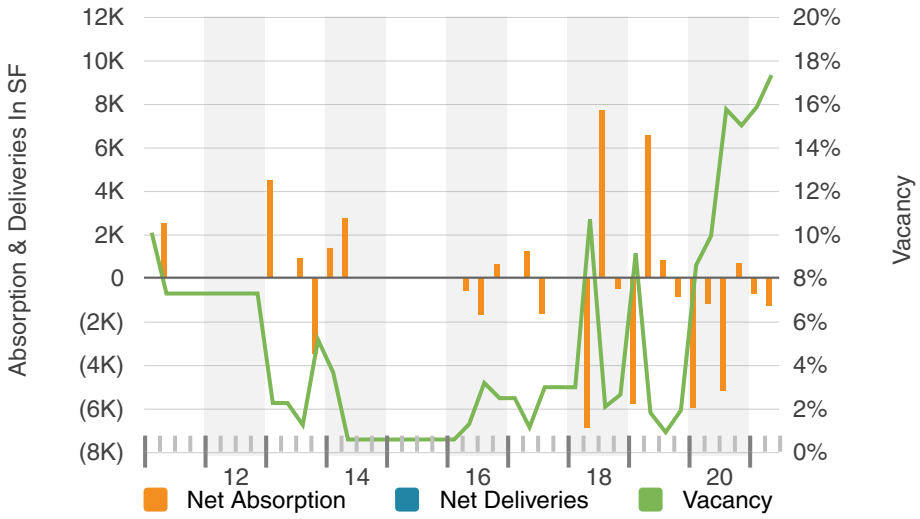
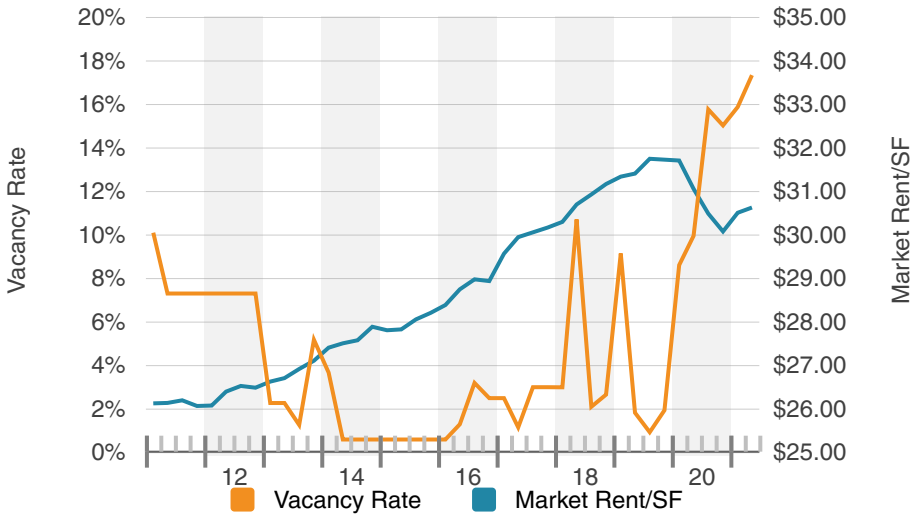
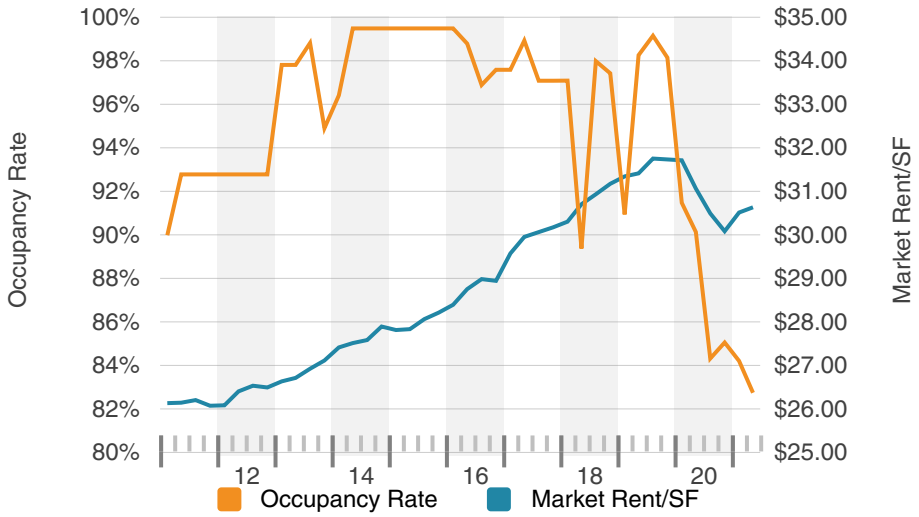
Net Absorption, Net Deliveries & Vacancy



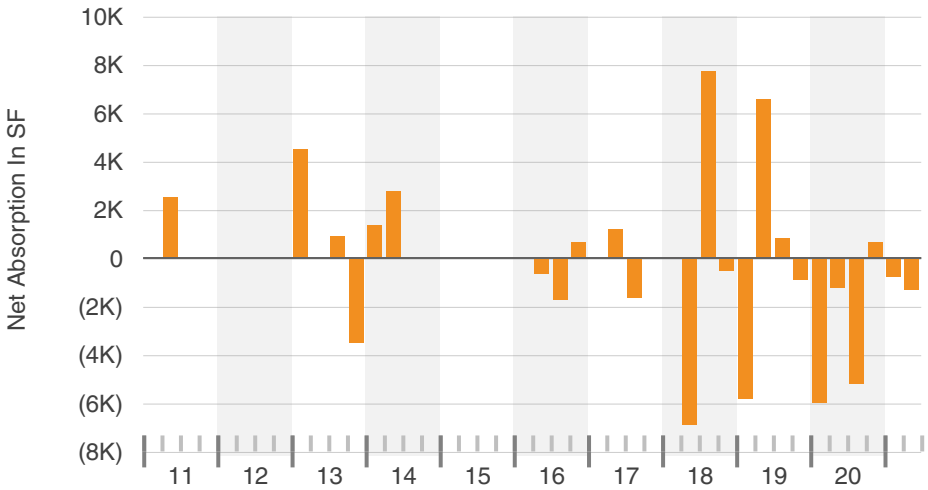
Vacancy & Market Rent Per SF



Occupancy & Market Rent Per SF



Net Absorption



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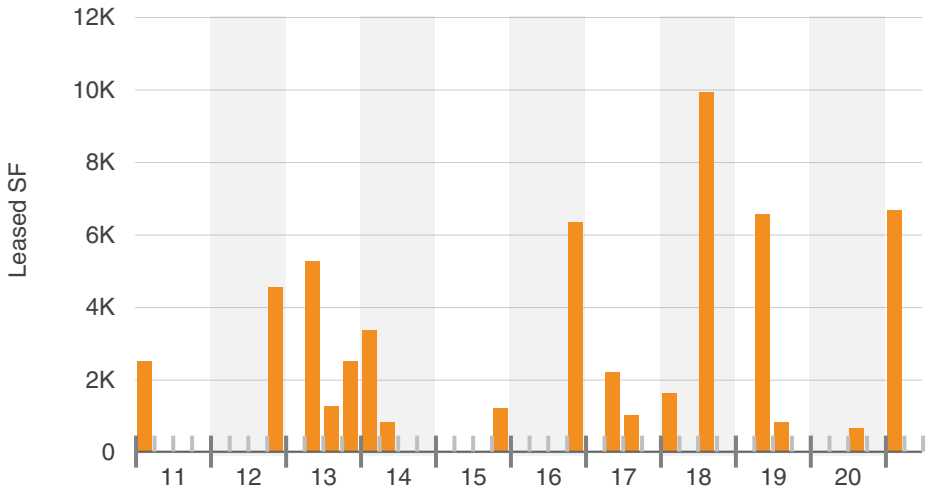
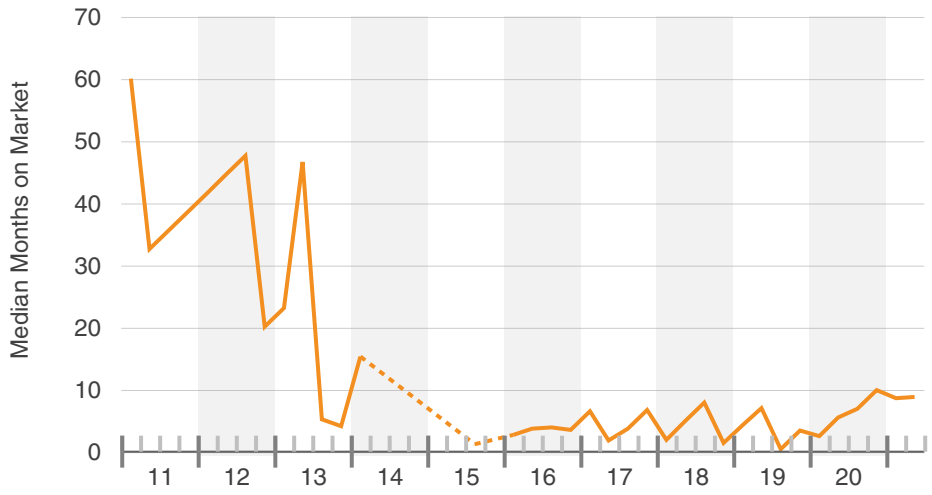
Search Analytics

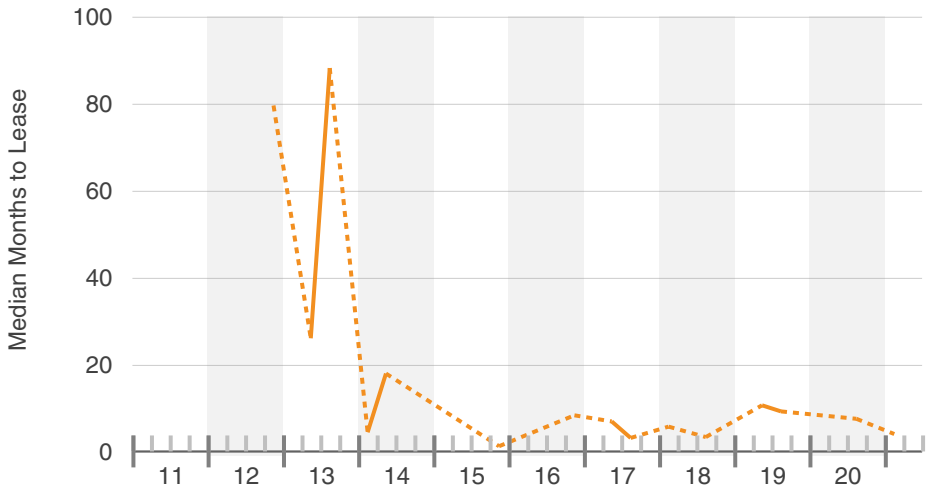
Leasing Activity



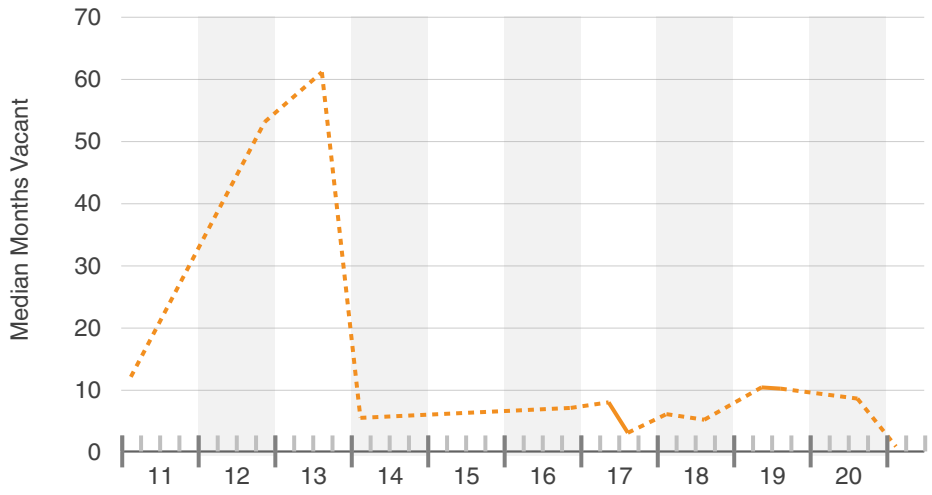
Months On Market



Months To Lease



Months Vacant



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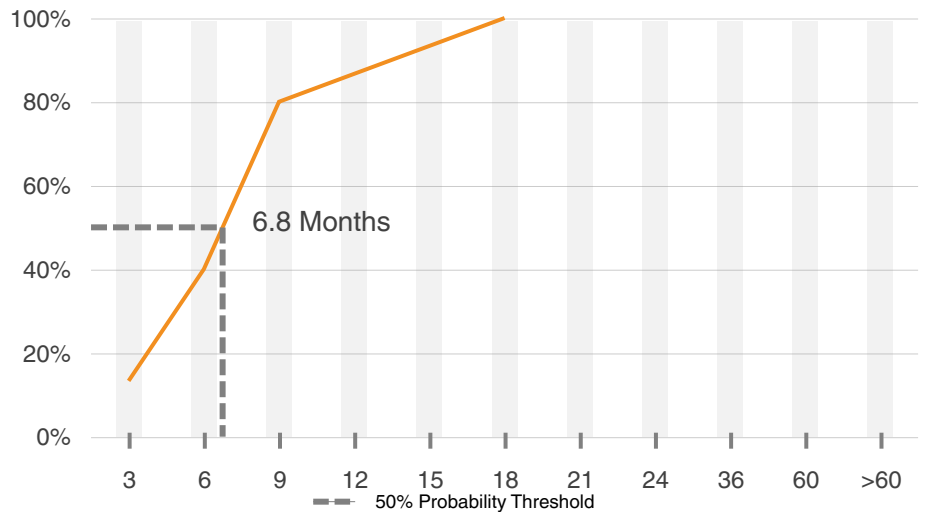
Probability Of Leasing In Months



Construction Starts

No Data Available

No data available for the past 10 years

Under Construction

No Data Available

No data available for the past 10 years

Deliveries & Demolitions

No Data Available

No data available for the past 10 years

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Search Analytics

Deliveries

No Data Available

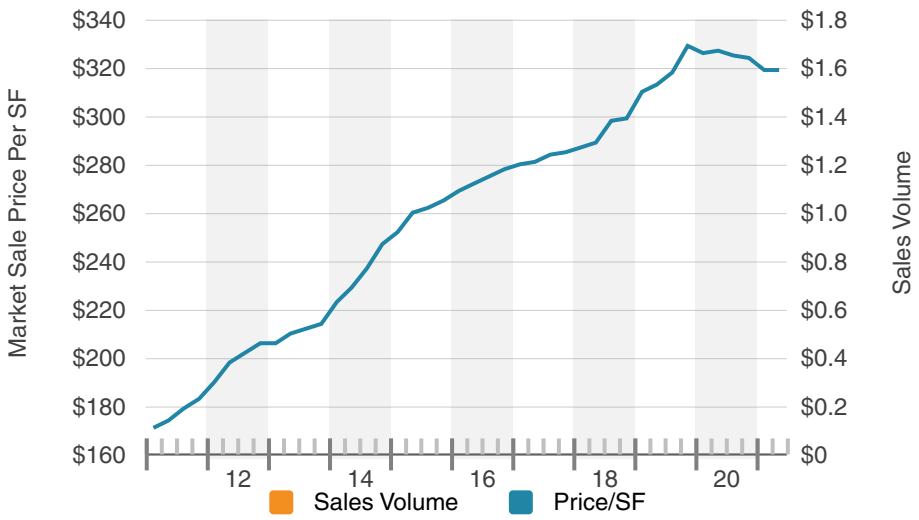
No data available for the past 10 years

Demolitions

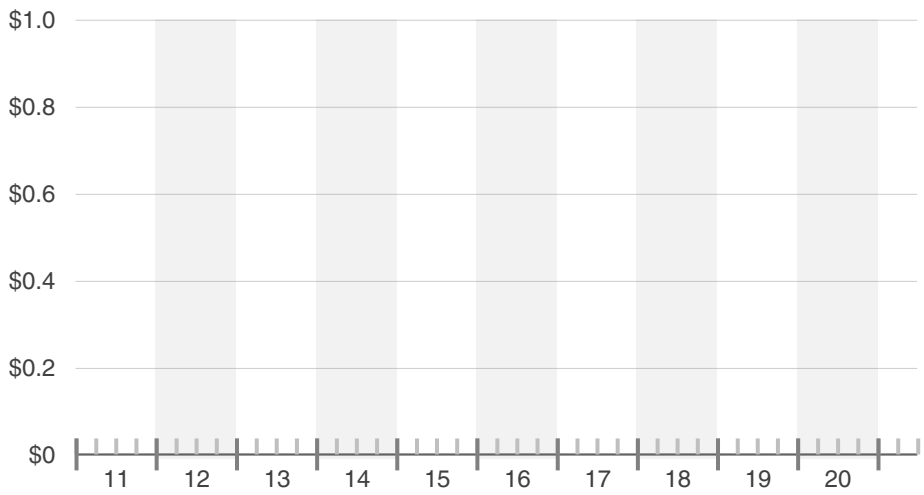
No Data Available

No data available for the past 10 years

Sales Volume & Market Sale Price Per SF



Sales Volume



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Search Analytics

Sales Volume By Transaction Type

No Data Available

No data available for the past 10 years

Sale Price Per SF

No Data Available

No data available for the past 10 years

Sale Price Per SF By Transaction Type

No Data Available

No data available for the past 10 years

Sale Price Per SF By Location Type

No Data Available

No data available for the past 10 years

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Cap Rate

No Data Available

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Cap Rate By Transaction Type

No Data Available

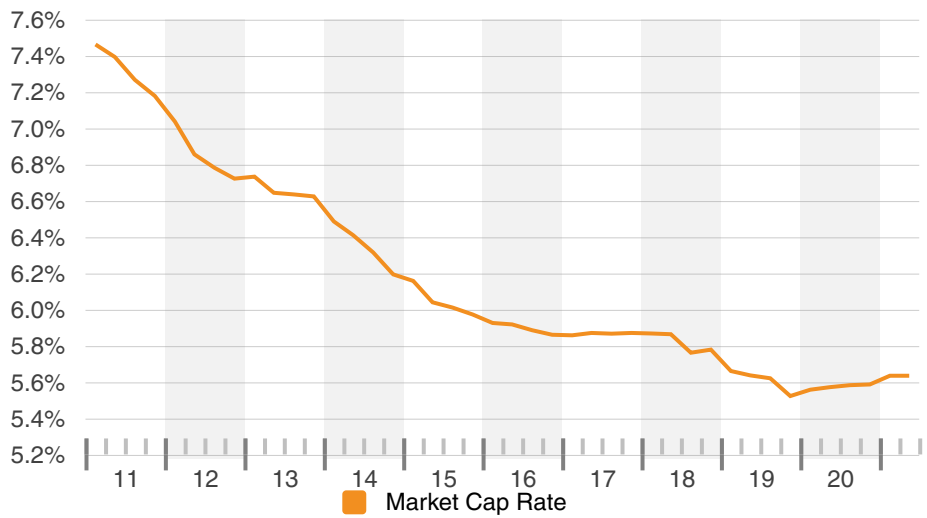
No data available for the past 10 years

Cap Rate By Location Type

No Data Available

No data available for the past 10 years

Market Cap Rate & Transaction Cap Rate



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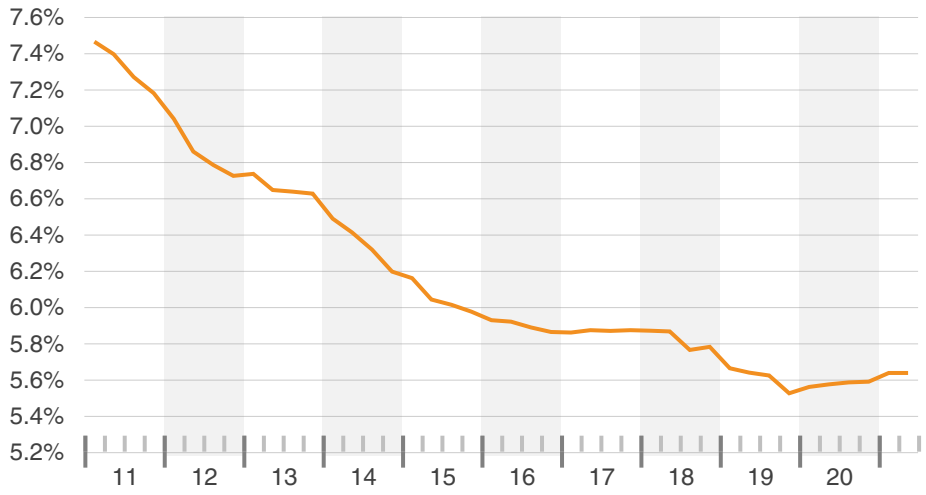
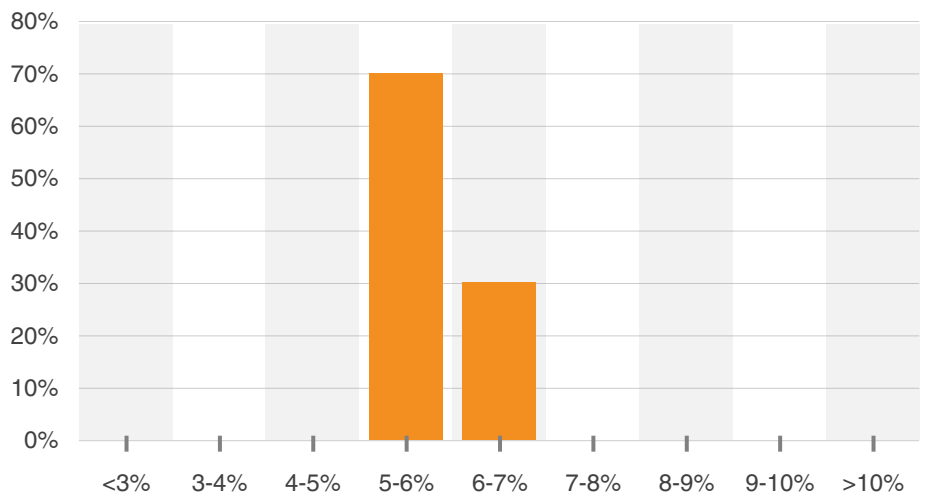
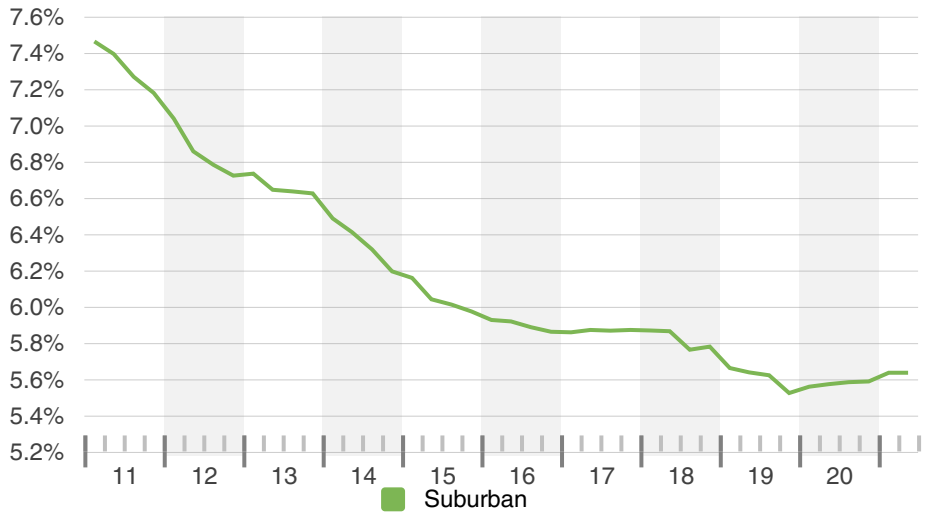
Market Cap Rate



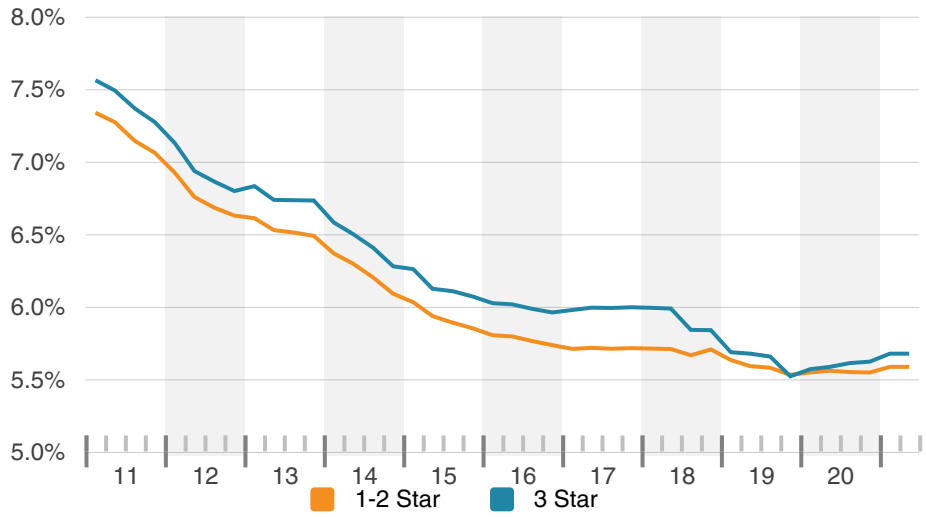
Market Cap Rate Distribution



Market Cap Rate By Location Type



Market Cap Rate By Star Rating



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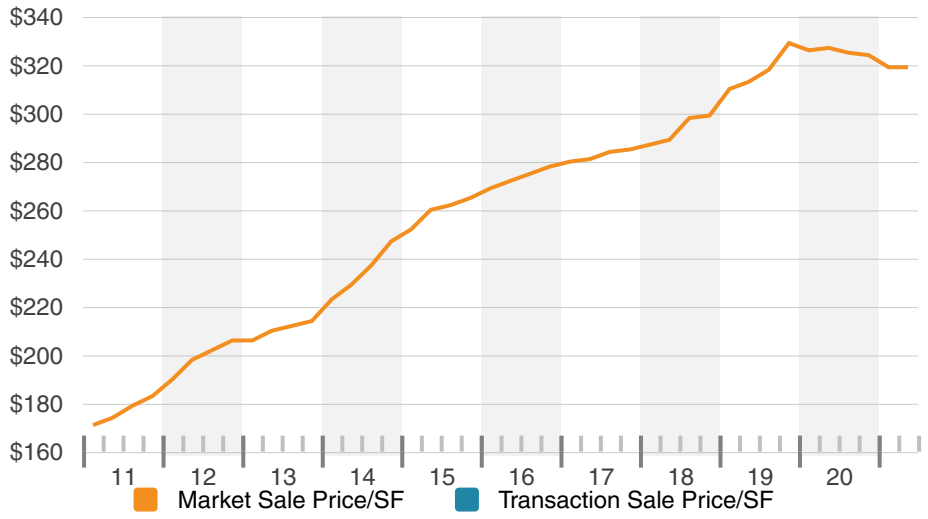
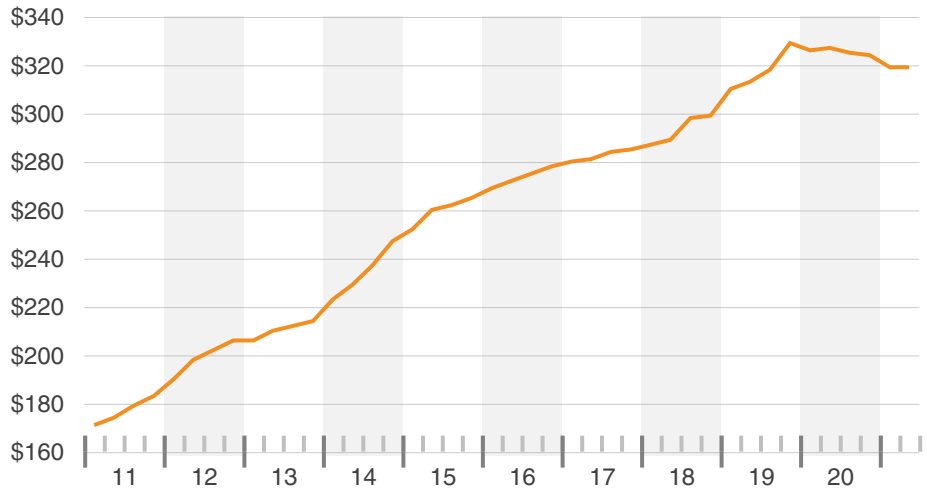
Market Sale Price & Transaction Sale Price Per SF



Market Sale Price Per SF



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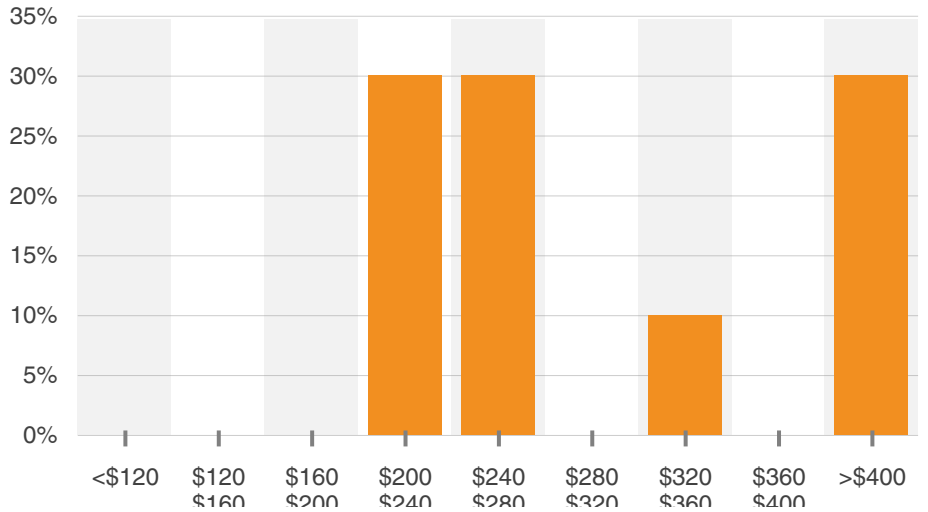
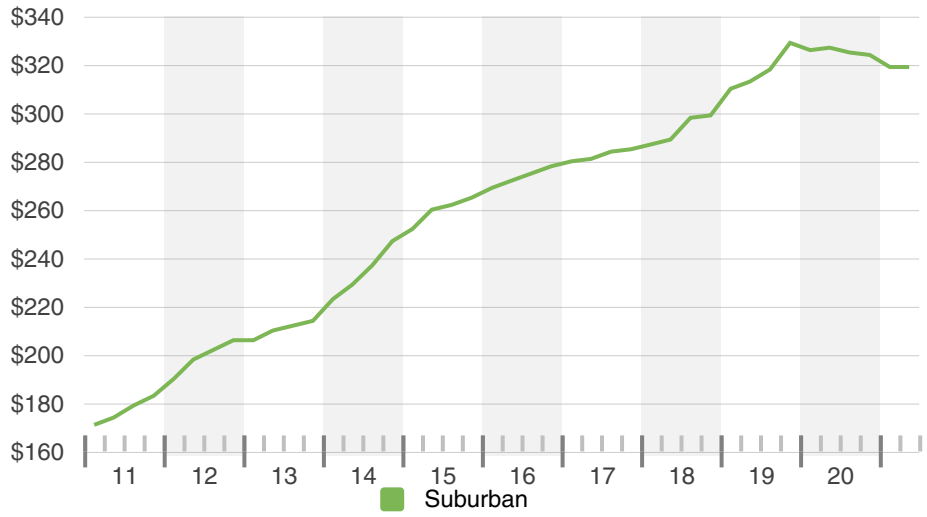


Market Sale Price Per SF By Location Type



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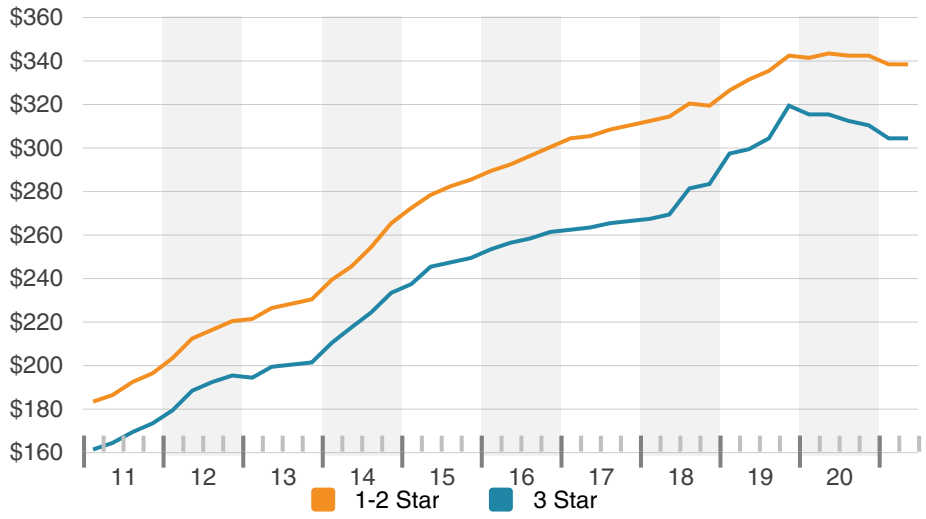
Search Analytics

Market Sale Price Per SF By Star Rating



Sale To Asking Price Differential

No Data Available

No data available for the past 10 years

Probability Of Selling In Months

No Data Available

No data available for the current selection

50% Probability Threshold

For Sale Total Listings

No Data Available

No data available for the past 10 years

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Search Analytics

For Sale Total SF

No Data Available

No data available for the past 10 years

For Sale Asking Price Per SF

No Data Available

No data available for the past 10 years

Top Buyers

No Data Available

No data available for the current selection

Top Sellers

No Data Available

No data available for the current selection

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Search Analytics

Top Buyer Brokers

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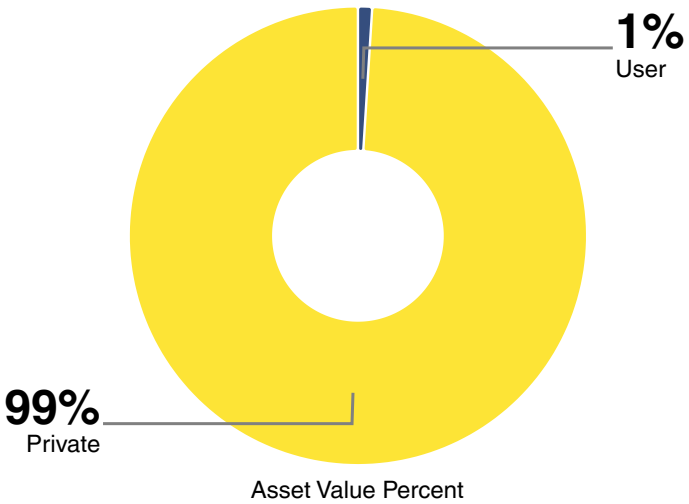
No data available for the current selection

Top Seller Brokers

No Data Available

No data available for the current selection

Asset Value By Owner Type



Sales By Buyer Type

No Data Available

No data available for the current selection

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Search Analytics

Sales By Seller Type

No Data Available

No data available for the current selection

Sales Volume By Buyer Type

No Data Available

No data available for the past 10 years

Sales Volume By Seller Type

No Data Available

No data available for the past 10 years

Net Buying & Selling By Owner Type

No Data Available

No data available for the past 10 years

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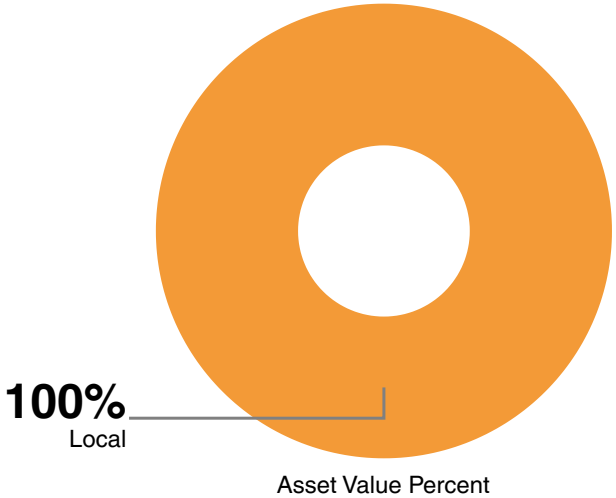
Search Analytics

Asset Value By Owner Origin



Sales Volume By Buyer Origin

No Data Available

No data available for the current selection

Sales Volume By Seller Origin

No Data Available

No data available for the current selection

Average Price Per SF By Buyer Origin

No Data Available

No data available for the past 10 years

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Search Analytics

Average Cap Rate By Buyer Origin

No Data Available

No data available for the past 10 years

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Report Criteria

- 11 Properties / 16 Spaces
- City: Arlington, MA
- Listing Type: For Lease
- Space Use: Retail

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Town of Arlington, Massachusetts

Department of Planning & Community Development

730 Massachusetts Avenue, Arlington, Massachusetts 02476

Public Hearing Memorandum

The purpose of this memorandum is to provide the Arlington Redevelopment Board and public with technical information and a planning analysis to assist with the regulatory decision-making process.

To: Arlington Redevelopment Board

From: Jennifer Raitt, Secretary Ex Officio

Subject: Environmental Design Review, 190 & 192-200 Massachusetts Avenue, Arlington, MA, Docket #3650

Date: March 31, 2021

I. Docket Summary

This is an application by 190-200 Massachusetts Ave, LLC, 455 Massachusetts Avenue, Suite 1, Arlington, MA, to open Special Permit Docket #3650 for the construction of a mixed-use building containing retail and 37 residential units, including 8 affordable units, at 190 & 192-200 Massachusetts Avenue, Arlington, MA in the B3 Village Business District. The opening of the hearing is to allow the Board to review and approve the development under Section 3.4, Environmental Design Review Special Permit of the Arlington Zoning Bylaw.

The proposed building is a five-story mixed-use structure. The 37 residential units are a mix of studios, one-bedrooms, and two-bedrooms. Eight affordable units, or 21% of the total units, are provided. The single commercial space is proposed to be 2,084 square feet. Parking is provided onsite in a garage with 15 parking spaces.

Materials submitted for consideration of this application:

- Application for EDR Special Permit, including an Environmental Impact Statement;
- Site Development Plan Set, prepared by Allen & Major Associates, Inc, dated March 10, 2021;

- Architectural Drawing Set, including floor plans, elevations, renderings and a solar studies, prepared by Market Square Architects, dated March 1, 2021;
- Updated Solar Study, prepared by Market Square Architects, dated March 18, 2021;
- Reduced Height Buffer Area Narrative, prepared by Market Square Architects;
- Figure 1, Reduced Height Buffer Area, prepared by Allen & Major Associates, dated October 28, 2020;
- Drainage Summary Letter, prepared by Allen & Major Associates, dated March 10, 2021;
- Traffic Impact Statement Memorandum, prepared by MDM Transportation Consultants, Inc, dated December 21, 2020; and
- LEED Checklist.

II. Application of Special Permit Criteria (Arlington Zoning Bylaw, Section 3.3)

1. Section 3.3.3.A.

The use requested is listed as a Special Permit in the use regulations for the applicable district or is so designated elsewhere in this Bylaw.

Mixed-use is allowed by Special Permit in the B3 Village Business District. The Zoning Bylaw, in Section 5.5.1.D, indicates that the district's predominant uses include retail, service, and office establishments catering to both convenience and comparison-good shoppers and oriented to pedestrian traffic. Mixed-use buildings are allowed and encouraged, including in the principal business area at Lake Street and Massachusetts Avenue. Mixed-use is a combination of two or more distinct land uses, such as those proposed by this applicant, and the definition encourages such uses to be in a single, multi-story structure, such as that proposed by the applicant.

The Capitol Square area, at the intersection of Lake Street and Massachusetts Avenue, is the major shopping district in East Arlington. The B3 District stretches from Melrose Street and Marathon Street to just beyond Winter Street. To the west are single-story and three-story buildings in the B3 District; to the east are single-story buildings. Immediately adjacent to the B3 district are two high-density residential districts (R5 to the south and west and R6 to the north), including a six-story, 47-unit building and a five-story, 22-unit building. Beyond the parcels fronting on Massachusetts Avenue is the R2 district where the traditional two-family residential streetscape of East Arlington is dominant.

The Board can find that this condition is met.

2. **<u>Section 3.3.3.B.</u>**
The requested use is essential or desirable to the public convenience or welfare.

The requested use is essential and desirable. The second key finding in the Master Plan notes that "*Massachusetts Avenue has the capacity for growth. It can support mixed-use development commensurate with its function as Arlington's primary commercial corridor. Massachusetts Avenue is accessible to neighborhoods throughout the town; it has frequent bus service, bicycle routes, and good walkability. Increased density through greater building heights and massing would benefit the corridor from an urban design perspective and benefit the town from a fiscal perspective*."(p.8)

This proposal will bring thirty-seven (37) new two-bedroom, one-bedroom, and studio residential units, of which eight[1] will be affordable to households earning at or below 70% of the area median income, and one commercial space. The Town has clearly established affordable housing priorities described in its Housing Production Plan (adopted by the Select Board and Redevelopment Board and approved by the State in 2016). New housing opportunities, including market-rate and affordable homes, are needed in the community; this project helps address that demand.

While the addition of residential units is desired, there is a net loss of 9,300 square feet of commercial space. The loss is due to the need to also provide parking on the site. A 2,084 square foot commercial space (noted as retail/restaurant on the architectural plans) would remain following the redevelopment of the site. Although several commercial spaces in the existing building are vacant due to the pandemic or other business reasons,[2] the loss of an entire block of commercial storefronts is difficult to balance with the applicant's proposal to consolidate the commercial storefront to one space and to provide parking.

It should be noted that an apartment building is allowed by special permit in the B3 District, so providing any commercial space within the building remains a desirable condition. The Board can find that this condition is met.

3. **<u>Section 3.3.3.C.</u>**
The requested use will not create undue traffic congestion or unduly impair pedestrian safety.

As discussed in more detail under the EDR Circulation criteria, while the Traffic Impact Analysis shows a net reduction in trips to the site, that may be the result of the loss of a substantial amount of commercial space in the building. The Traffic Impact Analysis is missing key details about how new trips will access the site to fully assess traffic congestion around the site.

[1] Eight units exceeds the requirement of Section 8.2.
[2] The Town tracks commercial and industrial property vacancies. This property owner has more commercial vacancies in Arlington than any other commercial property owner in Arlington.

It is not expected that the proposed project will unduly impair pedestrian safety.

4. **<u>Section 3.3.3.D.</u>**
The requested use will not overload any public water, drainage or sewer system or any other municipal system 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.

A Drainage Summary letter indicates that standards have been met with the proposed stormwater design, which includes a new connection that collects stormwater from the roof and directs into the drainage system in the street. In addition, a very modest amount of landscaped areas will be added to the site resulting in a reduction of impervious area and quantity of stormwater flowing from the site. The proposed project will improve, not overload, public utilities. The Board can find that this condition is met.

5. **<u>Section 3.3.3.E.</u>**
Any special regulations for the use as may be provided in the Bylaw are fulfilled.

As a condition of any decision for the proposed mixed-use building, the Applicant will need to fulfill the requirements of Section 8.2 which outline the affordable housing requirements. A building with thirty-seven (37) units requires six affordable units that are representative of the mix of units in the building available to eligible households making up to 70% of the area median income. In excess of the requirement, applicant materials indicate that eight units would be designated as affordable and are equitably dispersed throughout the proposed building. There are no other special regulations for the use that must be fulfilled. The Board can find that this condition is met.

6. **<u>Section 3.3.3.F.</u>**
The requested use will not impair the integrity or character of the district or adjoining districts, nor be detrimental to the health or welfare.

The proposed building departs from the commercial block architecture exhibited most prominently in the structure containing the Capitol Theatre. Neither the former bank building, which was adaptively reused for restaurants for decades, nor the rest of this commercial block are not listed on the Arlington Historical Commission's Inventory. The Historic Preservation Survey Master Plan recommended including this block on a Capitol Square area form. The prominent bank entry of the bank building is proposed to be retained and gives the ground floor its brick aesthetic consistent with the Capitol Square business district. The upper floor façade is a mix of white and grey fiber cement panels. Attention should be given to better blending the bank entry into the second story through potentially the color choice of the cement panels or other building façade materials which better align with masonry on the first floor.

Further, the Applicant should clarify whether the screened views into the parking garage on Lake Street are necessary for ventilation of the garage. In general, this style is unfriendly to pedestrians and does not create an inviting streetscape. If the screened openings are not necessary for ventilation, or even if they are, the applicant should consider a different treatment that is more supportive of the pedestrian experience.

The building also includes differentiation of the upper story and variation in the façade with a common roof deck overlooking Massachusetts Avenue, which is encouraged in the Arlington Design Standards.

Bicycle parking is available throughout the building and vehicular parking is located on the ground floor of the building. Signage and wayfinding placeholders are shown on the plans, but the Applicant should provide details regarding dimensions and materials.

The Applicant is proposing a floor area ratio (FAR) of 4.1. The existing building's FAR is 0.9. The Zoning Bylaw allows a maximum FAR of 1.5 for a mixed-use building on a lot less than 20,000 square feet in this zoning district. The Capitol Theatre building at 202-218 Massachusetts Avenue, developed in the 1920s, exceeds the FAR of 1.5 at 2.6.[3] If the Applicant is limited to the FAR of 1.5, the resulting building could have a maximum floor area of 16,701 square feet. This might be a single-story building with a partial second story covering the full lot, or a three-story building covering half the lot. The maximum FAR of 1.5 is at odds with the maximum story and height allowed in the Zoning Bylaw of up to 5 stories and 60 feet respectively.

Regarding the maximum number of stories, the Applicant seeks relief from the Reduced Height Buffer area of Section 5.3.19 to allow the maximum 5 stories and 60 feet. The Applicant states that that since the lower density R2 district is not immediately adjacent to the property, the affect of the greater height is limited. A shadow study has been provided which indicates that only in the winter months will shadows from the building extend across Massachusetts Avenue to the R2 district on Cleveland Street.

The proposed mixed-use building is in keeping with adjacent land uses, particularly along Massachusetts Avenue. While it is desired to maintain or increase the amount of commercial space, new residential units will not impair the integrity or character of the district or the adjoining districts and it will not be detrimental to health or welfare. While the proposed structure building design is generally consistent with the Design Standards for the Town of Arlington, it is lacking active ground floor uses which are encouraged along Massachusetts Avenue per the Design Standards.

[3] In fact, because the lot at 202-218 Massachusetts Avenue is more than 20,000 square feet, the FAR for a mixed-use building is 1.4 per the Zoning Bylaw.

7. **Section 3.3.3.G.**
The requested use will not, by its addition to a neighborhood, cause an excess of the use that could be detrimental to the character of said neighborhood.

The use will not be in excess or detrimental to the character of the neighborhood. The Board can find this condition is met.

III. Environmental Design Review Standards (Arlington Zoning Bylaw, Section 3.4)

1. **EDR-1 Preservation of Landscape**
The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soil removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas.

The existing property is entirely impervious and there is no natural landscape to preserve with the building fully saturating the building lot. As part of the project, approximately 1,125 square feet of impervious material will be replaced with grassed areas and arborvitae along the rear property line. Along the street, perennial plantings and shrubs will be planted. The new landscaping will provide a buffer from the property at 8 Lake Street, which includes a rear parking lot and rive aisle. The Board can find that this condition is met.

2. **EDR-2 Relation of the Building to the Environment**
Proposed development shall be related harmoniously to the terrain and to the use, scale, and architecture of the existing buildings in the vicinity that have functional or visible relationship to the proposed buildings. The Arlington Redevelopment Board may require a modification in massing so as to reduce the effect of shadows on the abutting property in an R0, R1 or R2 district or on public open space.

There are a range of architectural styles in the vicinity. The proposed development is in the B3 Village Business District which is the dominant zoning district in Capitol Square. Building heights in the vicinity range from single-story to six-story. As the Town's Design Standards indicate, greater height in certain locations can be beneficial. The proposed building step-back helps to diminish the impact of overall building height. While the ground floor storefront has a compatible aesthetic for the business district, it does not relate well to the upper floors. More could be done to improve the human scale at the ground floor. An overall improved building façade treatment that relates to the building's prominent location and an active street level use would improve the relationship of the building to the environment.

3. **EDR-3 Open Space**
All open space (landscaped and usable) shall be so designed as to add to the visual amenities of the vicinity by maximizing its visibility for persons passing by the site or overlooking it from nearby properties. The location and configuration of usable open

space shall be so designed as to encourage social interaction, maximize its utility and facilitate maintenance.

As noted above, the proposed project will add areas of landscaping to an existing impervious site. The proposal includes approximately 1,125 square feet of landscaped open space along the rear of the building, which also provides a buffer with the adjacent building at 8 Lake Street. This is about half of the 10% landscaped open space requirement. The usable open space is located on the roof deck and is approximately 2,140 square feet. This is only 9% of the usable open space requirement and does not meet all the requirements for usable open space.

Additionally, the setback for the proposed building is on a corner lot meaning that the setback should be the same as an adjacent lot. On the Lake Street and Chandler Street frontage, the adjoining lot is an apartment building in the R5 Zoning District which would be approximately 16.5 ft. (10 ft + (65 ft/10 ft)). The Board can adjust this requirement per Section 5.3.16.

Lastly, a 15-foot buffer is required along the parking lot adjacent to the R5 lot to the rear of the building. This proposed buffer would be planted and a vinyl fence will be installed allowing the buffer to be reduced to 7.5 feet, which is seen on the plans.

4. **<u>EDR-4 Circulation</u>**
With respect to vehicular and pedestrian and bicycle circulation, including entrances, ramps, walkways, drives, and parking, special attention shall be given to location and number of access points to the public streets (especially in relation to existing traffic controls and mass transit facilities), width of interior drives and access points, general interior circulation, separation of pedestrian and vehicular traffic, access to community facilities, and arrangement of vehicle parking and bicycle parking areas, including bicycle parking spaces required by Section 6.1.12 that are safe and convenient and, insofar as practicable, do not detract from the use and enjoyment of proposed buildings and structures and the neighboring properties.

The proposed project includes 15 spaces for vehicles located in the ground floor garage, including one HP vehicle space and an EV charger space. Short-term and long-term bicycle parking is provided. Improved sidewalks, curb cuts, and curb treatments are also proposed. Any such proposed improvements in the public right-of-way will require additional review and approval by the Engineering Division.

The parking requirement is for mixed-use which calculates the parking required for each individual use; the parking required for the residential use totals 45 parking spaces, and while the commercial space would typically require seven parking spaces, the first 3,000 square feet of non-residential space in mixed-use buildings is exempt from the parking requirements per Section 6.1.10.C. The applicant is requesting a reduction in the number of parking spaces provided to 15 spaces per Section 6.1.5 of the Zoning Bylaw. If the parking requirement is further reduced to eliminate four more parking spaces, the retail/restaurant space could increase.

Regarding meeting the long-term bicycle parking requirements, 60 spaces are provided, which exceeds the requirement by three spaces. While it is appreciated that the long-term bicycle storage is provided on the residential floors, it is not provided on all residential floors and there is not any indication that the required long-term bicycle parking for the retail/restaurant space is provided. Additionally, the applicant should clarify the size of the elevator and whether a bicycle could fit in the elevator without having to lift the bike. If the elevator is too small and people to use the stairs with their bikes, that will make the bike parking unusable for most people. The required short-term bicycle parking is provided near the entrance to the garage and residential lobby. This is not an ideal location for short-term parking for visitors to the retail/restaurant space. While the space along Massachusetts Avenue is limited, effort should be made to identify a location for short-term bicycle parking.

Vehicle Parking Requirements*			
Number of Bedrooms/ Apartment Use	**Number of Units**	**Zoning Requirement**	**Total Parking Required**
2-bedroom	4	2	8
1-bedroom	23	1.15	27
Studio	10	1	10
		Total Required Vehicle Parking	**45**
		Total Proposed Vehicle Parking after Section 6.1.5 Reduction	**15**
* First 3,000sf of non-residential space in mixed-use buildings is exempt.			

Bicycle Parking Requirements		
Use	**Short-Term Parking**	**Long-Term Parking**
Residential	4 spaces	56 spaces
Retail	1 space	1 space
Total Required Bicycle Parking	**5**	**57**
Total Proposed Bicycle Parking	8	**60**

The TDM measures that are proposed include unbundling parking (although clarification on how the parking spaces will be assigned is necessary), providing bicycle parking exceeding the requirement, improving walking conditions by reconstructing the sidewalk, providing an EV charging space, and including a car-sharing parking space. The applicant should provide an update on whether a car sharing company is interested in having a garage space. Comments regarding the bicycle parking are provided above. The suggestion to reconstruct the sidewalks and ramps on Lake Street and Massachusetts Avenue seems unnecessary as the area was reconstructed as part of the Massachusetts Avenue reconstruction. The sidewalk on Chandler Street should be reconstructed. Additionally, the bench proposed for replacement is new and may not need to be replaced. The inclusion of planters is a nice addition, but additional

consideration needs to be given to the human scale elements of the ground floor space.

The proposed project is highly accessible by transit, bike, and walking, and since there is a significant reduction in commercial space, it is likely that the aggregate number of trips to this location will be reduced as the Traffic Impact Analysis claims. However, in the Capitol Square business district there is no existing on-site public parking for these buildings, and it assumed that the provided parking would be for residential tenants not for patrons of the commercial space. Currently, it is likely that most trips to this location are parking on-street on Massachusetts Avenue, Chandler Street, or another public street. As such, the actual impact of the current trips is dispersed across Massachusetts Ave and other streets.

Since a parking lot will be introduced to the site, many of the remaining trips estimated will directly come on-site to park. The Traffic Impact Analysis does not provide any traffic count data, but it is likely that more trips will happen via Chandler Street since that is how the parking lot will be accessed. While the total number of new trips on Chandler Street may not be very large in real terms, it may be perceived to be many in comparison to the existing traffic. Without any traffic data for Chandler Street, it is difficult to discern the impact.

The parking garage does provide the 24-foot aisle necessary for two-way traffic. One-way traffic through the property would be ideal, but an ingress or an egress on Lake Street is extremely close to the Lake Street and Massachusetts Avenue intersection where it might cause congestion and crashes at any already busy intersection. The Traffic Impact Analysis also fails to address the various ways to access Chandler Street. Due to the network of one-way streets and various turn restrictions, the only way to access the parking lot from Lake Street is from Brooks Avenue. There are a few options from Massachusetts Avenue, but each requires making a circuitous route driving down to Herbert Road and back up Chandler Street. It may be appropriate for the ARB to request a trip distribution analysis to assess how people will access this site. The Applicant may also want to report on how communication with the adjacent property owner to gain access rights to use the alleyway between the project site and 8 Lake Street.

Overall, the ARB may want more detailed information regarding circulation around the site to adequately assess the proposal.

5. <u>EDR-5 Surface Water Drainage</u>
Special attention shall be given to proper site surface drainage so that removal of surface waters will not adversely affect neighboring properties or the public storm drainage system. Available Best Management Practices for the site should be employed, and include site planning to minimize impervious surface and reduce clearing and re-grading. Best Management Practices may include erosion control and stormwater treatment by means of swales, filters, plantings, roof gardens,

native vegetation, and leaching catch basins. Stormwater should be treated at least minimally on the development site; that which cannot be handled on site shall be removed from all roofs, canopies, paved and pooling areas and carried away in an underground drainage system. Surface water in all paved areas shall be collected in intervals so that it will not obstruct the flow of vehicular or pedestrian traffic and will not create puddles in the paved areas. In accordance with Section 3.3.4., the Board may require from any Applicant, after consultation with the Director of Public Works, security satisfactory to the Board to ensure the maintenance of all stormwater facilities such as catch basins, leaching catch basins, detention basins, swales, etc. within the site. The Board may use funds provided by such security to conduct maintenance that the Applicant fails to do. The Board may adjust in its sole discretion the amount and type of financial security such that it is satisfied that the amount is sufficient to provide for any future maintenance needs.

The application materials, drainage summary letter, and site development plan show a new connection to carry roof runoff to the drainage system in the street. This is an improvement over the existing conditions. The proposed design complies with the Town's current stormwater bylaw. Final design materials must be submitted for review and approval by the Town Engineer.

6. **<u>EDR-6 Utilities Service</u>**
   Electric, telephone, cable TV, and other such lines of equipment shall be underground. The proposed method of sanitary sewage disposal and solid waste disposal from all buildings shall be indicated.

   All new utility service will be underground. The Board can find that this condition is met.

7. **<u>EDR-7 Advertising Features</u>**
   The size, location, design, color, texture, lighting and materials of all permanent signs and outdoor advertising structures or features shall not detract from the use and enjoyment of proposed buildings and structures and the surrounding properties.

   The application materials show representative signs on the commercial storefront. The applicant should submit specifications of this signage for the Board to assess. Additionally, lighting and any other potential outdoor features relative to the building should be provided.

8. **<u>EDR-8 Special Features</u>**
   Exposed storage areas, exposed machinery installations, service areas, truck loading areas, utility buildings and structures, and similar accessory areas and structures shall be subject to such setbacks, screen plantings or other screening methods as shall reasonably be required to prevent their being incongruous with the existing or contemplated environment and the surrounding properties.

The roofing plan provided indicates that roof structures are appropriately set back and that a parapet and additional screening will provide screening of said structures. The site plan shows an enclosed dumpster and recycling area located in the garage parking. The existing businesses currently utilize on-street parking for truck loading and unloading and for service deliveries. The Board can find that this condition is met.

9. **EDR-9 Safety**

With respect to personal safety, all open and enclosed spaces shall be designed to facilitate building evacuation and maximize accessibility by fire, police and other emergency personnel and equipment. Insofar as practicable, all exterior spaces and interior public and semi-public spaces shall be so designed to minimize the fear and probability of personal harm or injury by increasing the potential surveillance by neighboring residents and passersby of any accident or attempted criminal act.

The proposed building has been designed to meet all relevant health and safety codes. A lighting plan was not provided as part of the plan set. These details are needed to assess safety criteria.

10. **EDR-10 Heritage**

With respect to Arlington's heritage, removal or disruption of historic, traditional or significant uses, structures or architectural elements shall be minimized insofar as practical whether these exist on the site or on adjacent properties.

The existing structure is not listed on the *Inventory of Historically or Architecturally Significant Properties in the Town of Arlington* nor is it under the jurisdiction of the Arlington Historical Commission. As such, the site contains no historic, traditional, or significant uses, structures, or architectural elements. The Board can find this condition is met.

11. **EDR-11 Microclimate**

With respect to the localized climatic characteristics of a given area, any development which proposes new structures, new hard surface, ground coverage or the installation of machinery which emits heat, vapor or fumes shall endeavor to minimize insofar as practicable, any adverse impacts on light, air and water resources or on noise and temperature levels of the immediate environment.

Based upon materials provided in the application, there will be no adverse impacts on air and water resources or on temperature levels of the immediate environment. While the owner states that they do not contemplate installation of machinery that emits heat, vapors, or fumes in connection with the proposed building, additional plan details are needed regarding lighting and emissions from machinery located on the roof to determine any impacts on the immediate environment. Mechanical specifications for the HVAC equipment should also be provided.

12. <u>EDR-12 Sustainable Building and Site Design</u>

Projects are encouraged to incorporate best practices related to sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Applicants must submit a current Green Building Council Leadership in Energy and Environmental Design (LEED) checklist, appropriate to the type of development, annotated with narrative description that indicates how the LEED performance objectives will be incorporated into the project.

The proposed building generates a LEED score that demonstrates the building could be LEED certified. We recommend that the proposed building aim to achieve higher LEED performance standards where possible, particularly in energy and atmosphere category. The Board can find that this condition is met.

IV. Findings

The following findings are for the Board's consideration:

1. The ARB finds that the project is consistent with Environmental Design Review per Section 3.4 of the Zoning Bylaw.
2. The ARB finds that the setbacks on Lake Street and Chandler Street are appropriate per Section 5.3.16.
3. The ARB finds that the five-story building will not adversely affect the adjacent R2 zoning districts per Section 5.3.19.
4. The ARB finds that the parking reduction and TDM measures justify the parking reduction per Section 6.1.5.

V. Conditions

A. General

1. The final design, sign, exterior material, landscaping, and lighting plans shall be subject to the approval of the Arlington Redevelopment Board or administratively approved by the Department of Planning and Community Development. Any substantial or material deviation during construction from the approved plans and specifications is subject to the written approval of the Arlington Redevelopment Board.

2. Any substantial or material deviation during construction from the approved plans and specifications is subject to the written approval of the Arlington Redevelopment Board.

3. The Board maintains continuing jurisdiction over this permit and may, after a duly advertised public hearing, attach other conditions or modify these conditions as it deems appropriate in order to protect the public interest and welfare.

4. Snow removal from all parts of the site, as well as from any abutting public sidewalks, shall be the responsibility of the owner and shall be accomplished in accordance with Town Bylaws.

5. Trash shall be picked up only on Monday through Friday between the hours of 7:00 am and 6:00 pm. All exterior trash and storage areas on the property, if any, shall be properly screened and maintained in accordance with Article 30 of Town Bylaws.

6. The Applicant shall provide a statement from the Town Engineer that all proposed utility services have adequate capacity to serve the development. The applicant shall provide evidence that a final plan for drainage and surface water removal has been reviewed and approved by the Town Engineer.

7. Upon installation of landscaping materials and other site improvements, the Applicant shall remain responsible for such materials and improvement and shall replace and repair as necessary to remain in compliance with the approved site plan.

8. All utilities serving or traversing the site (including electric, telephone, cable, and other such lines and equipment) shall be underground.

9. Upon the issuance of the building permit the Applicant shall file with the Building Inspector and the Department of Community Safety the names and telephone numbers of contact personnel who may be reached 24 hours each day during the construction period.

10. Building signage will be filed with and reviewed and approved by the Department of Planning and Community Development and Inspectional Services.

B. Special Conditions

1. The owner will work with the Department of Planning and Community Development to comply with all requirements of Section 8.2, Affordable Housing Requirements.

2. The affordable units must be equitably dispersed throughout the building and shall be comparable to market-rate units in terms of location, quality and character, room size, number of rooms, number of bedrooms, and external appearance.

3. An Affordable Housing Deed Restriction shall be executed with the Town prior to issuance of an Occupancy Permit for the eight affordable units.

4. No condominium conversion of said affordable rental units shall be permitted without the express permission of this Board. In the case of a proposed condominium conversion, Applicant shall work with the Department of Planning and Community Development to ensure that the units continue to meet the requirements of Section 8.2.

TOWN OF ARLINGTON
REDEVELOPMENT BOARD
Application for Special Permit In Accordance with Environmental Design Review Procedures (Section 3.4 of the Zoning Bylaw)

Docket No. _____

1. Property Address 190 & 192-200 Massachusetts Ave
   Name of Record Owner(s) 190-200 Massachusetts Ave, LLC Phone 781-654-6306
   Address of Owner 455 Massachusetts Ave , Ste 1 , Arlington, MA 02474
   Street City, State, Zip

2. Name of Applicant(s) (if different than above) Same as above
   Address _____ Phone _____
   Status Relative to Property (occupant, purchaser, etc.) _____

3. Location of Property Map 6, Block 3, Lots 1A and 1B
   Assessor's Block Plan, Block, Lot No.

4. Deed recorded in the Registry of deeds, Book _____, Page _____;
   -or- registered in Land Registration Office, Cert. No. 3413N, in Book 1362 1376, Page 16 27.

5. Present Use of Property (include # of dwelling units, if any) Retail, Service, Restaurant

6. Proposed Use of Property (include # of dwelling units, if any) Mixed-Use
   37 Apartment Units & Retail

7. Permit applied for in accordance with the following Zoning Bylaw section(s)

section(s)	title(s)
3.4	Environmental Design Review
5.5.2	Dimensional and Density Regulations
SP	(Mixed-Use <=20,000SF)

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.

   See Attached

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

The applicant states that 192-200 Massachusetts Ave, LLC is the owner -or- occupant -or- purchaser under agreement of the property in Arlington located at 190 & 192-200 Massachusetts Ave 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.

_____ _____ _____
Signature of Applicant(s)

_____ _____
Address 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, for the full list of required submittals.

__X__ Dimensional and Parking Information Form (see attached)

__X__ Site plan of proposal

__N/A__ Model, if required

__X__ Drawing of existing conditions

__X__ Drawing of proposed structure

__X__ Proposed landscaping. May be incorporated into site plan

__X__ Photographs

__X__ Impact statement

__N/A__ Application and plans for sign permits

__X__ 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: _____

TOWN OF ARLINGTON
REDEVELOPMENT BOARD
Petition for Special Permit under Environmental Design Review (see Section 3.4 of the Arlington Zoning Bylaw for Applicability)

For projects subject to Environmental Design Review, (see Section 3.4), please submit a statement that completely describes your proposal, and addresses each of the following standards.

1. Preservation of Landscape. The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soil removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas.

2. Relation of Buildings to Environment. Proposed development shall be related harmoniously to the terrain and to the use, scale, and architecture of existing buildings in the vicinity that have functional or visual relationship to the proposed buildings. The Arlington Redevelopment Board may require a modification in massing to reduce the effect of shadows on abutting property in an R0, R1 or R2 district or on public open space.

3. Open Space. All open space (landscaped and usable) shall be so designed as to add to the visual amenities of the vicinity by maximizing its visibility for persons passing the site or overlooking it from nearby properties. The location and configuration of usable open space shall be so designed as to encourage social interaction, maximize its utility, and facilitate maintenance.

4. Circulation. With respect to vehicular, pedestrian and bicycle circulation, including entrances, ramps, walkways, drives, and parking, special attention shall be given to location and number of access points to the public streets (especially in relation to existing traffic controls and mass transit facilities), width of interior drives and access points, general interior circulation, separation of pedestrian and vehicular traffic, access to community facilities, and arrangement of vehicle parking and bicycle parking areas, including bicycle parking spaces required by Section 8.13 that are safe and convenient and, insofar as practicable, do not detract from the use and enjoyment of proposed buildings and structures and the neighboring properties.

5. Surface Water Drainage. Special attention shall be given to proper site surface drainage so that removal of surface waters will not adversely affect neighboring properties or the public storm drainage system. Available Best Management Practices for the site should be employed, and include site planning to minimize impervious surface and reduce clearing and re-grading. Best Management Practices may include erosion control and storm water treatment by means of swales, filters, plantings, roof gardens, native vegetation, and leaching catch basins. Storm water should be treated at least minimally on the development site; that which cannot be handled on site shall be removed from all roofs, canopies, paved and pooling areas and carried away in an underground drainage system. Surface water in all paved areas shall be collected at intervals so that it will not obstruct the flow of vehicular or pedestrian traffic, and will not create puddles in the paved areas.

   In accordance with Section 3.3.4, the Board may require from any applicant, after consultation with the Director of Public Works, security satisfactory to the Board to insure the maintenance of all storm water facilities such as catch basins, leaching catch basins, detention basins, swales, etc. within the site. The Board may use funds provided by such security to conduct maintenance that the applicant fails to do. The Board may adjust in its sole discretion the amount and type of financial security such that it is satisfied that the amount is sufficient to provide for the future maintenance needs.

6. Utility Service. Electric, telephone, cable TV and other such lines and equipment shall be underground. The proposed method of sanitary sewage disposal and solid waste disposal from all buildings shall be indicated.

7. Advertising Features. The size, location, design, color, texture, lighting and materials of all permanent signs and outdoor advertising structures or features shall not detract from the use and enjoyment of proposed buildings and structures and the surrounding properties. Advertising features are subject to the provisions of Section 6.2 of the Zoning Bylaw.

8. Special Features. Exposed storage areas, exposed machinery installations, service areas, truck loading areas, utility buildings and structures, and similar accessory areas and structures shall be subject to such setbacks, screen plantings or other screening methods as shall reasonably be required to prevent their being incongruous with the existing or contemplated environment and the surrounding properties.

9. Safety. With respect to personal safety, all open and enclosed spaces shall be designed to facilitate building evacuation and maximize accessibility by fire, police, and other emergency personnel and equipment. Insofar as practicable, all exterior spaces and interior public and semi-public spaces shall be so designed as to minimize the fear and probability of personal harm or injury by increasing the potential surveillance by neighboring residents and passersby of any accident or attempted criminal act.

10. Heritage. With respect to Arlington's heritage, removal or disruption of historic, traditional or significant uses, structures, or architectural elements shall be minimized insofar as practicable, whether these exist on the site or on adjacent properties.

11. Microclimate. With respect to the localized climatic characteristics of a given area, any development which proposes new structures, new hard-surface ground coverage, or the installation of machinery which emits heat, vapor, or fumes, shall endeavor to minimize, insofar as practicable, any adverse impact on light, air, and water resources, or on noise and temperature levels of the immediate environment.

12. Sustainable Building and Site Design. Projects are encouraged to incorporate best practices related to sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Applicants must submit a current Green Building Council Leadership in Energy and Environmental Design (LEED) checklist, appropriate to the type of development, annotated with narrative description that indicates how the LEED performance objectives will be incorporated into the project. [LEED checklists can be found at http://www.usgbc.org/DisplayPage.aspx?CMSPageID=220b]

In addition, projects subject to Environmental Design Review must address and meet the following Special Permit Criteria (see Section 3.3.3 of the Zoning Bylaw):

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

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

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

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

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

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.

TOWN OF ARLINGTON
Dimensional and Parking Information
for Application to
The Arlington Redevelopment Board

Docket No. _____

Property Location 190 & 192-200 Massachusetts Ave

Zoning District B3

Owner: 192-200 Massachusetts Ave, LLC

Address: 455 Massachusetts Ave, Arlington, MA

Present Use/Occupancy: No. of Dwelling Units:
Retail, Service, Restaurant

Uses and their gross square feet:
1-Story 9,916 SF

Proposed Use/Occupancy: No. of Dwelling Units:
Mixed-Use, 37 Apartment Units & Retail

Uses and their gross square feet:
5-Story Mixed-Use

	Present Conditions	Proposed Conditions	Min. or Max. Required by Zoning for Proposed Use
Lot Size	11,134 SF	11,134 SF	min. ----
Frontage	102.1 FT	102.1 FT	min. 50 FT
Floor Area Ratio	0.9	4.1	max. 1.5
Lot Coverage (%), where applicable	N/A	N/A	max. ----
Lot Area per Dwelling Unit (square feet)	N/A	301 SF	min. ----
Front Yard Depth (feet)	0 FT	0 FT	min. 0 FT
Side Yard Width (feet) right side	0.6 FT	7.5 FT	min. 0 FT
left side	-----	-----	min. -----
Rear Yard Depth (feet)	-----	-----	min. (H+L)/6
Height	----	-----	min. -----
Stories	1-STORY	5-STORY	stories 5-STORY
Feet	20 FT +/-	<60 FT	feet 60 FT
Open Space (% of G.F.A.)	-----	-----	min. -----
Landscaped (square feet)	0.9%	4.8 %	(s.f.) 10% 2,360 SF
Usable (square feet)	0 %	9.0 %	(s.f.) 20% 4,720 SF
Parking Spaces (No.)	None	15	min. 45
Parking Area Setbacks (feet), where applicable	0 FT	N/A	min. N/A
Loading Spaces (No.)	N/A	N/A	min. N/A
Type of Construction	NEW CONSTRUCTION		
Distance to Nearest Building	12.0 FT	19.2 FT	min.

97 SF/11,134 SF (lot area)

1,125SF/23,600SF (Res. Floor Area)

23,600SF (Res. Floor Area) X 0.10 = 2,360 SF

23,600SF (Res. Floor Area) X 0.20 = 4,720SF

2,140 (deck space)/ 23,600SF (Res. Floor Area)

TOWN OF ARLINGTON
REDEVELOPMENT BOARD

Petition for Special Permit under Environmental Design Review (see Section 3.4 of the Arlington Zoning Bylaw for Applicability)

For projects subject to Environmental Design Review, (see section 3.4), please submit a statement that completely describes your proposal, and addresses each of the following standards.

1. **Preservation of Landscape**. The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soil removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas.

   There will be landscaped areas on site as provided with respect to Applicant's plans.

2. **Relation of Buildings to Environment**. Proposed development shall be related harmoniously to the terrain and to the use, scale, and architecture of existing buildings in the vicinity that have functional or visual relationship to the proposed buildings. The Arlington Redevelopment Board may require a modification in massing so as to reduce the effect of shadows on abutting property in an RU, RI or R2 district or on public open space.

   The proposed building would be related harmoniously to the terrain and to the use, scale, and architecture of the existing buildings in the vicinity that have functional or visual relationship to the proposed buildings as can seen from the Applicant's plans along with the statements contained in the Environmental Impact Statement.

3. **Open Space**. All open space (landscaped and usable) shall be so designed as to add to the visual amenities of the vicinity by maximizing its visibility for persons passing the site or overlooking it from nearby properties. The location and configuration of usable open space shall be so designed as to encourage social interaction, maximize its utility, and facilitate maintenance.

   There is essentially no open space at the site and the Applicant's plans would create some open space as set forth within the substance of the Environmental Impact Statement.

4. **Circulation**. With respect to vehicular, pedestrian and bicycle circulation, including entrances, ramps, walkways, drives, and parking, special attention shall be given to location and number of access points to the public streets (especially in relation to existing traffic controls and mass transit facilities), width of interior drives and access points, general interior circulation, separation of pedestrian and vehicular traffic, access to community facilities, and arrangement of vehicle parking and bicycle parking areas, including bicycle parking spaces required by Section 8.13 that are safe and convenient and, insofar as practicable, do not detract from the use and enjoyment of proposed buildings and structures and the neighboring properties.

   The circulation is as shown on the Applicant's plans along with the bicycle parking areas and the vehicular parking spaces.

   The parking areas are also shown on the plans and are mentioned in the Environmental Impact Statement. The Applicant proposes fifteen (15) parking spaces and also proposes an electric charging station, potential parking for a Zipcar vehicle which would benefit not only residents within the building but other residents in the Town who would want to use a Zipcar or a similar type of vehicle and bicycle parking both covered and uncovered as shown on the Applicant's plans.

5. **Surface Water Drainage**. Special attention shall be given to proper site surface drainage so that removal of surface waters will not adversely affect neighboring properties or the public storm drainage system. Available Best Management Practices for the site should be employed and include site planning to minimize impervious surface and reduce clearing and re-grading. Best Management Practices may include erosion control and storm water treatment by means of swales, filters, plantings, roof gardens, native vegetation, and leaching catch basins. Storm water should be treated at least minimally on the development site; that which cannot be handled on site shall be removed from all roofs, canopies, paved and pooling areas and carried away in an underground drainage system. Surface water in all paved areas shall be collected at intervals so that it will not obstruct the flow of vehicular or pedestrian traffic and will not create puddles in the paved areas.

   In accordance with Section 3.3.4, the Board may require from any applicant, after consultation with the Director of Public Works, security satisfactory to the Board to insure the maintenance of all storm water facilities such as catch basins, leaching catch basins, detention basins, swales, etc. within the site. The Board may use funds provided by such security to conduct maintenance that the applicant fails to do. The Board may adjust in its sole discretion the amount and type of financial security such that it is satisfied that the amount is sufficient to provide for the future maintenance needs.

   The Applicant's engineer and architect have provided information with respect to service water drainage in the report of Allen & Major Associates, Inc. which is part of the plans being submitted to the ARB.

   Allen & Major Associates, Inc. reports indicates as follows:

   > **"The project proposes to demolish a portion of the existing structure to construct a five story 9,764 square foot mixed-use building with apartment and retail uses.**
   >
   > **There are fifteen (15) parking spaces on the first level.**
   >
   > **The storm water management system will be improved with a new drainage pipe connected. The quantity of storm water runoff will be reduced with the installation of landscaped areas on site.**
   >
   > **The proposed work will result in approximately 701 feet of impervious material being replaced with landscaped areas."**

   The balance of the Allen & Major Associates, Inc. report spells out the details with respect the Applicant's proposal regarding surface water drainage.

6. **Utility Service**. Electric, telephone, cable TV and other such lines and equipment shall be underground. The proposed method of sanitary sewage disposal and solid waste disposal from all buildings shall be indicated.

   All utility service, electric, telephone, cable TV and other such lines and equipment will be underground, and the proposed method of sanitary sewage disposal and solid waste disposal are as indicated within the substance of the Applicant's plan.

7. **Advertising Features**. The size, location, design, color, texture, lighting and materials of all permanent signs and outdoor advertising structures or features shall not detract from the use and enjoyment of proposed buildings and structures and the surrounding properties. Advertising features are subject to the provisions of Section 6.2 of the Zoning Bylaw.

   There are currently no plans for advertising features and once a determination has been made with respect to advertising it is expected any such issues could be handled administratively

through the Planning Department.

8. **Special Features**. Exposed storage areas, exposed machinery installations, service areas, truck loading areas, utility buildings and structures, and similar accessory areas and structures shall be subject to such setbacks, screen plantings or other screening methods as shall reasonably be required to prevent their being incongruous with the existing or contemplated environment and the surrounding properties.

   All such areas are buffered and screened as shown on the Applicant's plans.

9. **Safety**. With respect to personal safety, all open and enclosed spaces shall be designed to facilitate building evacuation and maximize accessibility by fire, police, and other emergency personnel and equipment. Insofar as practicable, all exterior spaces and interior public and semi-public spaces shall be so designed as to minimize the fear and probability of personal harm or injury by increasing the potential surveillance by neighboring residents and passersby of any accident or attempted criminal act.

   All open and enclosed spaces will be designated to facilitate building evacuation and maximize accessibility by fire, police and other emergency personnel and equipment as required.

10. **Heritage**. With respect to Arlington's heritage, removal, or disruption of historic, traditional, or significant uses, structures, or architectural elements shall be minimized insofar as practicable, whether these exist on the site or on adjacent properties.

    There will be no removal of historical, traditional, or significant uses, structures, or architectural elements or in any case, if there is any impact on any such matters efforts shall be made to minimize as so far as practicable any effect on those matters, whether on site or on adjacent properties.

11. **Microclimate**. With respect to the localized climatic characteristics of a given area, any development which proposes new structures, new hard-surface ground coverage, or the installation of machinery which emits heat, vapor, or fumes, shall endeavor to minimize, insofar as practicable, any adverse impact on light, air, and water resources, or on noise and temperature levels of the immediate environment.

    The Applicant does not anticipate installation of machinery which will emit unreasonable heat, vapor or fumes or have any adverse impact on light, air, and water resources, or on noise and temperature levels of the immediate environment.

12. **Sustainable Building and Site Design**. Projects are encouraged to incorporate best practices related to sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Applicants must submit a current Green Building Council Leadership in Energy and Environmental Design (LEED) checklist, appropriate to the type of development, annotated with narrative description that indicates how the LEED performance objectives will be incorporated into the project.
    [LEED checklists can be found at http://www.usgbc.org/DisplayPage.aspx?CMSPageID=220b]

    The Applicant has submitted a LEED checklist in connection with this matter.

In addition, projects subject to Environmental Design Review must address and meet the following Special Permit Criteria (see Section 3.3.3 of the Zoning Bylaw)

1. The use requested is listed in the Table of Use Regulations as a special permit in the district for which application is made or is so designated elsewhere in this Bylaw.

The use is listed as a Special Permit in the Use Regulations in the B3 District.

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

   The requested use is essential or desirable to the public convenience or welfare because the use would provide additional residential apartments in the Town which objectives are encouraged by the substance of the master plan and will also provide retail and/or restaurant space on the first level of the building which comports with the intent of the mixed-use portion of the Bylaw.

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

   It is not anticipated that there will be undue traffic congestion, or an impairment of pedestrian safety with respect to the proposal as indicated in the MDM Transportation Report.

4. The requested use will not overload any public water, drainage or sewer system or any other municipal system 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 Applicant is providing 15 parking spaces and intends to contact a Zipcar type company for the purpose of determining whether a Zipcar vehicle could be located at the property which would benefit both residents of the building and other residents in the Town who would care to use a Zipcar type vehicle. There is also ample bicycle parking, both covered and uncovered. provided in the proposal for those individuals who do not own a car and those individuals would have nearby access to the bicycle path and would also have direct access to the MBTA and as is mentioned in the Environmental Impact Statement, many individuals now use Uber or Lyft for the purpose of satisfying their transportation needs.

5. Any special regulations for the use, set forth in Article 11, are fulfilled.

   Any special regulations for the use, set forth in Article 11, are 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 substance of the Applicant's plans indicate that there will be no impairment of the integrity or character of the district or adjoining districts, nor be detrimental to the health, morals, or welfare

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

   The requested use as mentioned in item No. 7 will not by its addition to the neighborhood in which the property is located cause an excess of that particular use that could be detrimental to the character of the neighborhood but rather will compliment other uses in the neighborhood and, as mentioned previously, provide additional residential apartment units and a retail and/or restaurant use, all of which will be in line with other uses in the neighborhood of the property.

190 & 192-200 Massachusetts Avenue

Arlington, MA

Environmental Impact Statement

The property located at 190 & 192-200 Massachusetts Avenue real estate is located in a B3 zone as defined with the Zoning Bylaw for the Town.

The Districts and Purposes provisions of the Zoning Bylaw in Section 5.5.1 further subsection D, provide the following with respect to a B3 zoning district:

> "B3: Village Business District. The Village Business District's predominant uses include retail, service, and office establishments catering to both convenience and comparison-goods shoppers and oriented to pedestrian traffic. Mixed-use structures are allowed and encouraged in this district. The three locations include portions of the principal business areas of Arlington: Lake Street, Arlington Center, and Arlington Heights. Businesses which consume large amounts of land and activities which interrupt pedestrian circulation and shopping patterns or otherwise interfere with the intent of this bylaw are discouraged."

A mixed-use development is allowed in a B3 zone as contained in the 5-26 District & Uses section of the Zoning Bylaw.

The minimum lot frontage required is 50 feet, the front yard requirement is 0 and the side yard requirement is also 0.

The rear yard requirement is (H+L) 6. The landscaped open space and useable open space requirements are contained in Section 5-28 with a requirement of 10% for landscaped open space and Section 5.3.21 would be applicable with respect to a determination with regard to useable open space. *See* Dimensional form submitted by the Applicant in connection with its plan.

An apartment building is allowed in a B3 zoning district in accordance with Section 5-28 of the Zoning Bylaw.

Five (5) stories are allowed in the B3 zone in accordance with Section 5-29 and the Applicant's Dimensional form indicates that the height would be five (5) stories. There is also a limit of 60 feet in height for an apartment building in a B3 zone and the Applicant's plans will comply with that requirement.

The maximum floor area ratio or FAR is 1.50 in the B3 zone and the Applicant's plans do request an increase in the FAR premised upon the fact that the mixed-use bylaw does apply to its development proposal.

The Applicant's plans propose a combination of units with respect to its development i.e., retail/commercial as well as thirty-seven (37) residential apartment units.

Commercial/restaurant/retail space would be provided for on the first floor facing Massachusetts Avenue with podium parking in the back of the building consisting of fifteen (15) parking spaces.

Access to the site will be by way of a full access/egress driveway along Chandler Street as shown on the Allen & Major Associates, Inc. site layout.

Chandler Street is one way street in a northerly direction with traffic traversing Chandler Street heading up Chandler Street towards Massachusetts Avenue with access to Chandler Street being available off of Lake Street and the Brooks Ave intersection as well as Egerton Road.

The Applicant intends to have its traffic consultant participate in the Zoom Hearing for the purpose of providing information with respect to existing and proposed traffic conditions relating to Chandler Street as well as Massachusetts Avenue with respect to the volume of traffic coming from Chandler Street on to Massachusetts Avenue and the effect of the development on the traffic.

The apartment mix would consist of ten studios, twenty-three one-bedroom units and four two-bedroom units.

There would be an outdoor roof deck on the fourth story of the building to provide an amenity for the residential tenants.

The current building essentially has no open space, and the Applicant has attempted to create open space with respect to its plans and the roof deck would be an area that would provide useable open space.

The building is surrounded by three (3) streets and an alleyway and the building footprint takes up nearly the entire parcel with the result that there would be no extra space for other outdoor amenities.

Eight (8) of the residential units will be designated as affordable and the unit mix for those units includes: (1) two-bedroom unit, 4 (1) one-bedroom units and 3 studio units.

The Applicant's plans provide for short-term bicycle parking as well as indoor long-term secure bicycle parking.

There will be an electric charging station at the property and approaches will be made to a "Zipcar" company or a Zipcar like company to have a Zipcar or similar type car located at the property as the Applicant feels this would be an amenity for the building as well as other residents in the neighborhood of the property who would like to have use of a Zipcar type vehicle.

As can be seen from the Applicant's Dimensional form fifteen (15) parking spaces are being proposed and the Zoning Bylaw would require forty-five (45) parking spaces.

The Applicant's plans do not contemplate a satisfaction of the parking requirement contained in the Bylaw but would instead propose that the Zipcar approach, bicycle parking and the electric charging station to be provided at the property could be used for the purpose of gaining a reduction in the parking requirement as set forth within the provisions of Section 6.1.5, further subsection C of the Zoning Bylaw.

It is clear that many individuals now use Uber and Lyft for transportation purposes with the result that the Applicant suggests that the parking requirement can be modified because some individuals may not even own a motor vehicle while residing in the building and particularly so in light of the fact that the property is in close proximity to MBTA access areas.

In addition, it is equally clear that most of the restaurants and other uses in the area also do not satisfy the parking requirements contained in the Zoning Bylaw.

It would be impossible for most of the uses in the neighborhood of the property to satisfy the parking requirements as there is no land available for that purpose.

The Applicant has, through its architect, Market Square Architects PLLC, conducted solar studies as well as massing studies with respect to the property and the effect of the proposed construction on surrounding properties and buildings as can be seen from the Market Square Architects PLLC's solar comments. The proposed structure would only cast shadows on existing structures in the R2 zone during the evenings of winter months when long shadows are already cast by existing
structures and foliage.

However, the Applicant will supplement the shadow study provided by spreading the study out over different times of the day and a representative of Market Square Architect PLLC will discuss how the shadow study was prepared and how the proposed development will not adversely impact neighborhood properties.

The studies indicate that properties on Cleveland Street are located farther from the boundary which triggers the height buffer contained in
the Zoning Bylaw as shown on the Allen & Major Associates, Inc. diagram on FIG-01 with the result that no existing structure in an R2 zone is close enough to be impacted by a shadow emanating from the proposed building.

The massing study indicates that the proposed building exaggerates the upper story setback, minimizing the impact of the taller structure and creating a pedestrian friendly streetscape along Massachusetts Avenue which harmonizes with the massing of the adjacent existing structures i.e., Capital Theater, 2054 Massachusetts Avenue, and the Leader Bank Corporate Offices at 180 Massachusetts Avenue.

The massing study also concludes that utilizing the taller maximum height allowed would have a minimal impact on the nearby R2 lots.

All utilities will be located underground.

The storm water management report of Allen & Major Associates, Inc. suggests that the quantity of storm water runoff will be reduced with the installation of landscaped areas on site and that the steps taken to create the landscaped area will result in approximately 725 of impervious material being replaced with landscaped areas.

The table contained in the October 23, 2020 Allen & Major Associates, Inc. report identified as study point 1 i.e., flow to municipal system indicates that Article 15 of the Town Stormwater Mitigation Bylaw will not apply as the proposed development will introduce a reduction in impervious area. The report further indicates that the proposed landscaped areas for the project will reduce the runoff rates for all design storms by reducing the rate and volume of stormwater runoff from the site with the result that there will be a positive impact on the stormwater management system.

It is the position of the Applicant that the proposed building will not result in an increase in vehicular activity compared to the existing historic uses at the site.

The Transportation Management Report of MDM Transportation Consultants, Inc. dated September 21, 2020 indicates that implementation of access improvements, proposed pedestrian improvements, and a TDM will establish a framework for minimizing site traffic impacts and encourage non-motorized travel modes and pedestrian accommodations and will be compatible with the other projects in the area.

The Applicant has submitted a Traffic Study by MDM Transportation Consultants, Inc. dated December 21, 2020 which provides in part as follows:

- "Safety Characteristics. A review of the crash data indicated that no immediate safety countermeasures are warranted based on the crash history at the study intersections. Likewise, available sight lines at the site driveway intersection with Chandler Street will exceed the sight line requirements published by AASHTO."
- "Public Transportation. The project is in close proximity to an extensive sidewalk system, three nearby multi-use paths (Minuteman Bikeway, Alewife Greenway Bike Path, and Alewife Linear Path), adjacent MBTA bus routes, and the nearby redline subway connections. A review of Census data for Arlington indicates alternative transportation (transit, walk, and bike) are available for use of 50% of the residents of the immediate study area (Census tract 3561)."
- "Reduced Trip Generation. Based on ITE methodology the proposed mixed-

use development is estimated to reduce peak hour trips by up to 25 vehicle trips and approximately 228 fewer vehicle trips on a weekday relative to existing/historic site uses."

- "Qualitative Impact Assessment. the incremental traffic associated with the proposed development will result in a reduction in vehicular activity compared to the existing/historic uses; consequently, no material impact in operating conditions at the study intersections and area roadways is projected as a result of the redevelopment."

The report is based upon the Applicant retaining approximately 1,735 + square feet of commercial space and construction of 37 residential apartments with access to the site by way of a full access/egress driveway along Chandler Street with off street parking for 15 vehicles.

While the traffic report discusses MTBA Route 79 which previously provided service between Arlington Heights and the Alewife Station *via* Massachusetts Avenue and Alewife Brook Parkway, that service has been suspended but the inclusion of information with respect to Route 79 does not change the conclusions of MDM with respect to its traffic report.

The Conclusion of MDM in the traffic study is as follows:

"In summary, access improvements, pedestrian/bicycle improvements, and TDM programs are outlined under *Recommendations and Conclusions.* These improvements will establish a framework of minimizing Site traffic impacts and encourage non-motorized travel modes and pedestrian accommodation that is compatible with other projects in the area."

Bicycle travel will be encouraged with the Applicant's proposal and there will be secure, and weather protected indoor bicycle racks within the site containing 60 total spaces to facilitate this mode of transportation to and from the site by residents and building tenants and there will be additional short-term bicycle racks consisting of eight exterior spaces adjacent to the building as well.

A LEEDS project checklist has also been provided to the ARB in this filing.

In summary, the proposed building is in harmony with other structures in the neighborhood of the property and will not have an adverse impact on nearby

properties with respect to shadow effects and massing and, on the other hand, will provide needed residential apartment units in the Town, while also providing for restaurant/retail space at the first level of the building which conforms to the intent of the mixed-use portion of the Zoning Bylaw.

The Applicant and its representatives understand that their proposal will represent a change to the neighborhood in which the property is located and, to that extent, creating a development plan for the site is challenging.

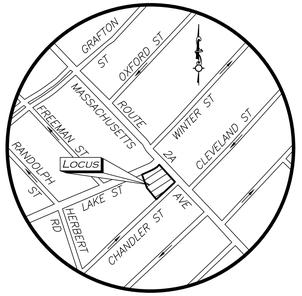
The plans submitted are a proposal to the Members of the Arlington Redevelopment Board and the Applicant fully expects comments from the Members with respect to the design aspects of the project and indeed invites those comments with a view toward coming up with a development that makes sense not only for the Town but also for the property owner who of course will be spending the money to develop the site.

The Applicant has also reached out to abutters and neighbors to the property for the purpose of alerting them to the development plans and invites comments from those individuals and entities as well.

SITE DEVELOPMENT PLAN SET

190 & 192-200 MASSACHUSETTS AVE

ARLINGTON, MA 02476

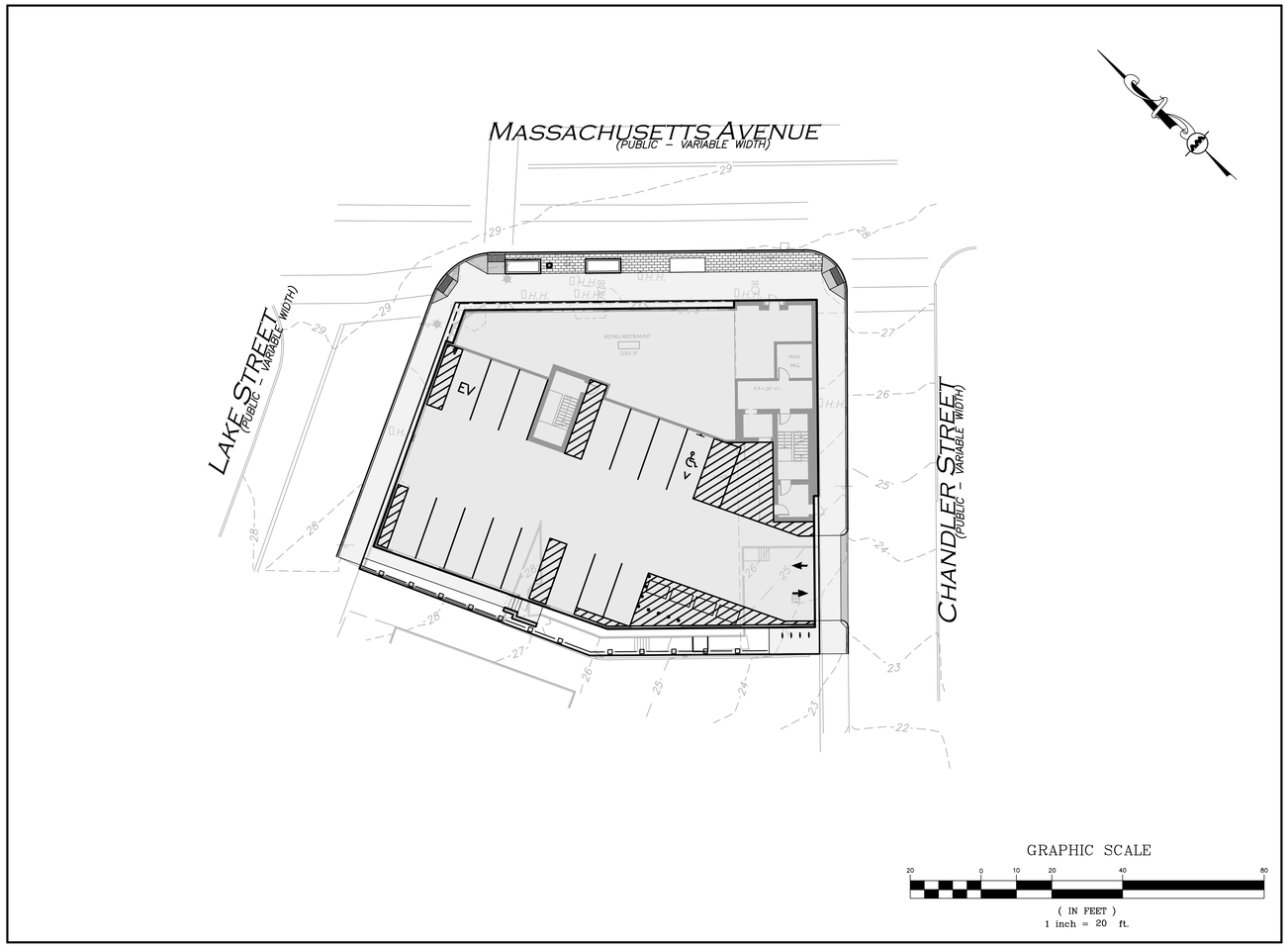


LOCUS MAP
NOT TO SCALE

APPLICANT:
192-200 MASSACHUSETTS AVE, LLC
452 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

ARCHITECT:
MARKET SQUARE ARCHITECTS
104 CONGRESS STREET, STE 203
PORTSMOUTH, NH 03801
(603) 501-0202

CIVIL ENGINEER, LANDSCAPE ARCHITECT & LAND SURVEYOR:
ALLEN & MAJOR ASSOCIATES, INC.
100 COMMERCE WAY, SUITE 5
WOBURN, MA 01801
(781) 985-6889



LIST OF DRAWINGS

DRAWING TITLE	SHEET	ISSUED	REVISED
EXISTING CONDITIONS	V-101	10/23/2020	-
SITE PREPARATION PLAN	C-101	03/10/2021	-
LAYOUT & MATERIALS PLAN	C-102	03/10/2021	-
GRADING & DRAINAGE PLAN	C-103	03/10/2021	-
UTILITIES PLAN	C-104	03/10/2021	-
DETAILS	C-501	03/10/2021	-
DETAILS	C-502	03/10/2021	-
DETAILS	C-503	03/10/2021	-
LANDSCAPE PLAN	L-101	03/10/2021	-
LANDSCAPE DETAILS	L-501	03/10/2021	-

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49212
REGISTERED PROFESSIONAL ENGINEER

03·10·21

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
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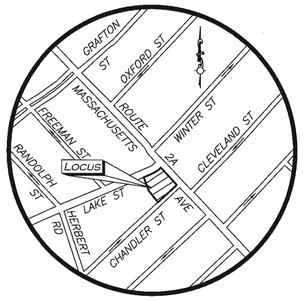
FAX: (781) 935-2896

WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

ISSUED FOR ARB REVIEW: MARCH 10, 2021

R:\PROJECTS\2729-02\CIVIL\DRAWINGS\CURRENT\C-2729-02_COVER.DWG

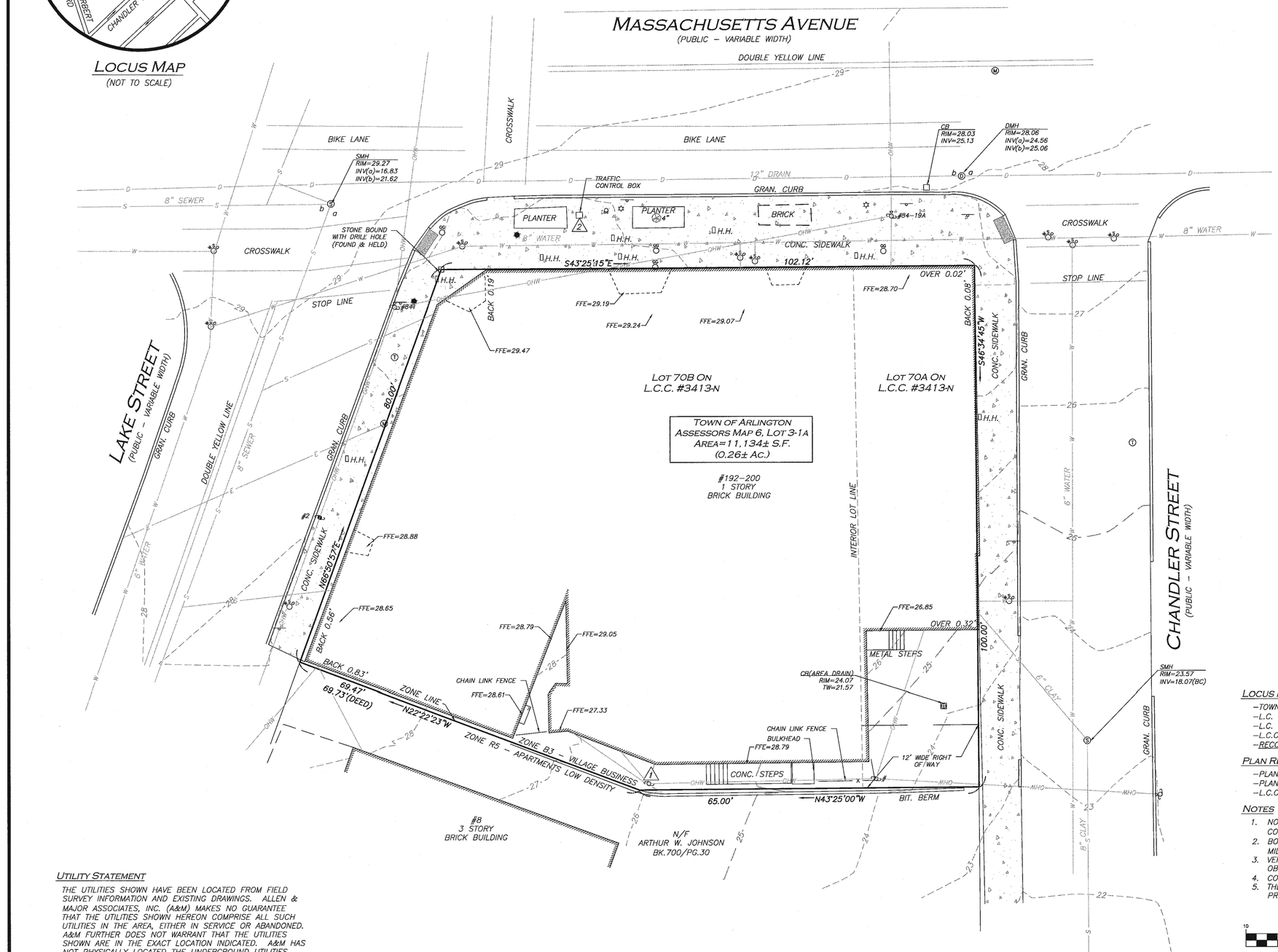


Locus Map

(NOT TO SCALE)

Benchmark Summary

TBM #	Description	Elev.
1	COTTON GIN SPINDLE SET IN UTILITY POLE	26.96
2	CHISEL SQUARE ON CONCRETE BASE	29.24



LEGEND

STONE BOUND (SB)	
DRAIN MANHOLE (DMH)	D
SEWER MANHOLE (SMH)	S
MISC. MANHOLE (MH)	M
TELEPHONE MANHOLE (TMH)	T
ROUND CATCH BASIN (RCB)	
UTILITY POLE	
UTILITY POLE W/LIGHT	
UTILITY POLE W/RISER	
WATER GATE	
GAS GATE	
HAND HOLE	H.H.
TRAFFIC SIGNAL	
LIGHT	
TREE	
SIGN	
CONCRETE	
BUILDING	
BUILDING OVERHANG	
PROPERTY LINE	
CURB	
CHAIN LINK FENCE	x
WATER LINE	W
SEWER LINE	S
DRAIN LINE	D
GAS LINE	G
ELECTRIC LINE	E
TELEPHONE LINE	T
OVERHEAD WIRES	OHW
FINISHED FLOOR ELEVATION	FFE
BITUMINOUS	BIT.
CONCRETE	CONC.
GRANITE	GRAN.
BOTTOM CENTER	(BC)
REINFORCED CONCRETE PIPE	RCP
POLYVINYL CHLORIDE PIPE	PVC
NOW OR FORMERLY	N/F
BOOK	BK.
PAGE	PG.
LAND COURT	L.C.
LAND COURT CASE	L.C.C.

Locus References

- TOWN OF ARLINGTON ASSESSORS MAP 6, LOT 3–1A
- L.C. BOOK 1362, PAGE 16
- L.C. BOOK 1376, PAGE 27
- L.C.C. NO. 3413N
- RECORD OWNER: FRAMINA LLC.

Plan References

- PLAN 542 OF 1986
- PLAN 320 OF 2012
- L.C.C. NO. 3413

Notes

1. NORTH ARROW IS BASED ON MASSACHUSETTS GRID COORDINATE SYSTEM (MAINLAND ZONE) (NAD 83).
2. BOOK/PAGE AND PLAN REFERENCES ARE TAKEN FROM MIDDLESEX (SOUTH) REGISTRY OF DEEDS IN CAMBRIDGE, MA.
3. VERTICAL DATUM IS NAVD 88 ESTABLISHED USING RTK GPS OBSERVATION.
4. CONTOUR INTERVAL IS ONE FOOT (1').
5. THERE ARE NO STRIPED PARKING STALLS ON THE SUBJECT PREMISES.

Utility Statement

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. ALLEN & MAJOR ASSOCIATES, INC. (A&M) MAKES NO GUARANTEE THAT THE UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. A&M FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. A&M HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

N:\PROJECTS\2729-02\SURVEY\DRAWINGS\CURRENT\S-2729-02-EC.DWG

WE HEREBY CERTIFY THAT THIS PLAN IS THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED ON AUGUST 4, 2020.

Oct 23, 2020

PROFESSIONAL LAND SURVEYOR FOR ALLEN & MAJOR ASSOCIATES, INC.

COMMONWEALTH OF MASSACHUSETTS
NORMAN I. LIPSITZ
NO. 28446
PROFESSIONAL LAND SURVEYOR

10/23/20

REV	DATE	DESCRIPTION

APPLICANT\OWNER:
192-200 MASSACHUSETTS AVE LLC
455 MASSACHUSETTS AVENUE
SUITE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVENUE
ARLINGTON, MA

PROJECT NO.	2729-02	DATE:	10/22/20
SCALE:	1" = 10'	DWG. NAME:	S-2729-02-EC
DRAFTED BY:	AJR	CHECKED BY:	NIL

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
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DRAWING TITLE: EXISTING CONDITIONS

SHEET No. V-101

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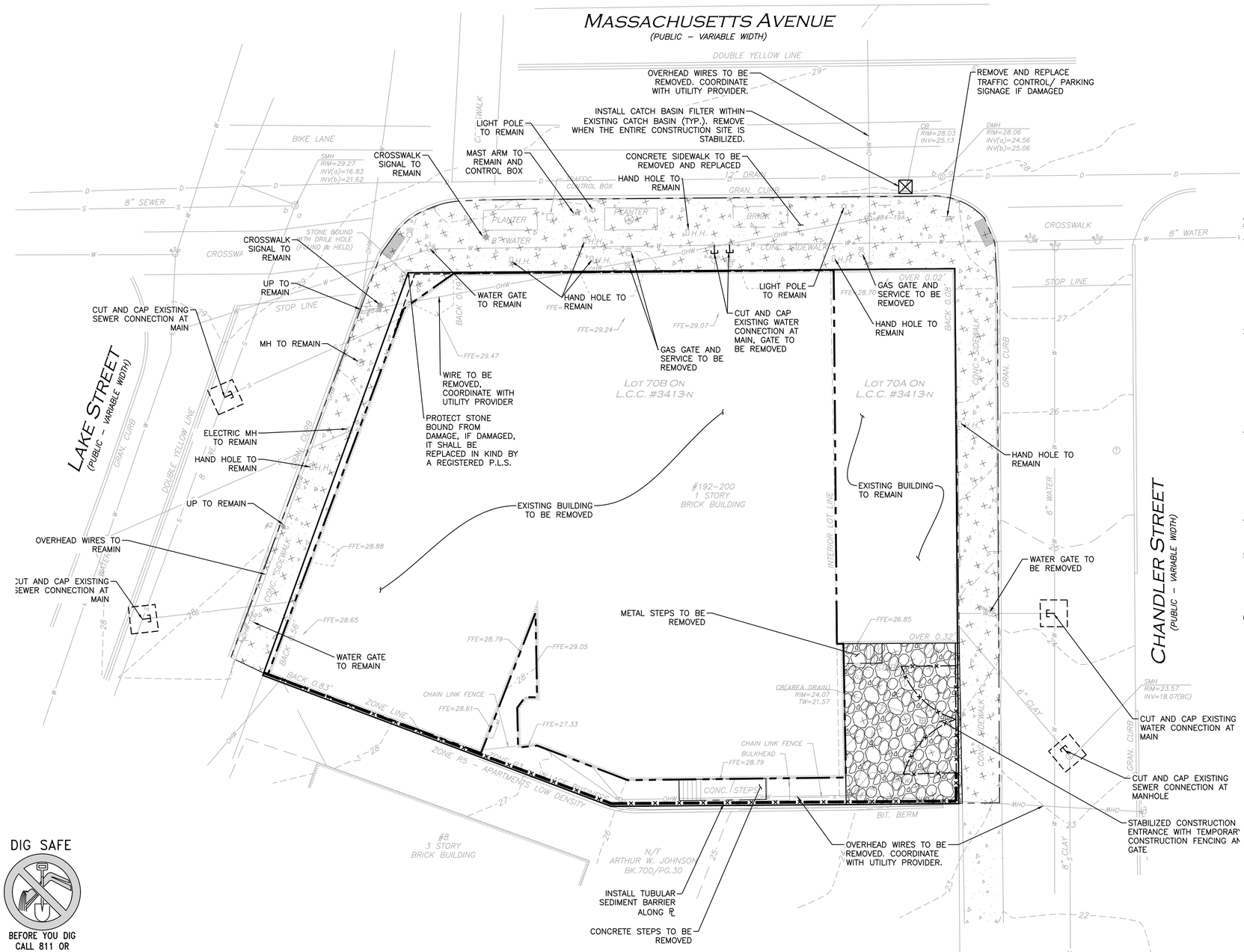

LEGEND

TUBULAR BARRIER	
CATCH BASIN FILTER	
STABILIZED ENTRANCE	
STOCKPILE/STAGING AREA	
LIMIT OF DISTURBANCE	
LIMIT OF 'CLEAR AND GRUB'	
BUILDING TO BE REMOVED	
PAVEMENT TO BE REMOVED	
UTILITY CUT AND CAP	E
TEMPORARY FENCE	

SITE PREPARATION NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.

2. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

3. ALTHOUGH CERTAIN ITEMS HAVE BEEN NOTED ON THIS DRAWING FOR DEMOLITION, NO ATTEMPT HAS BEEN MADE TO DELINEATE EACH AND EVERY ITEM THAT REQUIRES DEMOLITION FOR THE COMPLETION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL NECESSARY DEMOLITION WORK TO COMPLETE THE PROJECT. ALLEN & MAJOR ASSOCIATES, INC. IS NOT RESPONSIBLE FOR SITE DEMOLITION ITEMS NOT SHOWN ON THE SURVEY, OR SPECIFICALLY NOTED. THE DEMOLITION NOTES AND ARROWS ON THIS PLAN ARE TYPICAL AND DO NOT REFLECT QUANTITY.

4. EXISTING WATER AND SEWER CONNECTIONS SHALL BE CUT AND CAPPED IN ACCORDANCE WITH THE TOWN OF ARLINGTON REQUIREMENTS.

5. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.

6. ALL INSTALLED CATCH BASINS AND AREA DRAINS SHALL HAVE A FILTER INSTALLED IMMEDIATELY, AND THE FILTER SHALL BE REMOVED WHEN THE ENTIRE SITE IS STABILIZED.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

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1-888-344-7233

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49212
REGISTERED PROFESSIONAL ENGINEER

03·10·21

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT\OWNER:
192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	1" = 10'	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

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DRAWING TITLE: SITE PREPARATION PLAN

SHEET No. C-101

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PARKING SUMMARY TABLE

USE	CALCULATION	MIN. REQUIRED	TOTAL PROPOSED
APARTMENT BUILDING	1 SPACES PER EFFICIENCY UNIT	10	5
	1 X 10 = 10 REQUIRED		
	1.15 SPACES PER 1 BED UNIT	27	7
	23 X 1.15 = 27 REQUIRED		
	1.5 SPACES PER 2 BED UNIT	8	3
	4 X 2 = 8 REQUIRED		
GENERAL RETAIL	1 PER 300 SF	N/A	N/A
	2,084 SF (UNDER 3,000 SF PARKING N/A)		
		45	15 *

ADA SPACES REQUIRED:
(15–25) TOTAL PARKING SPACES PROVIDED, 1 SHALL BE THE MINIMUM ADA PARKING PROVIDED, 1 SPACES BEING VAN ACCESSIBLE.

PROVIDED 1 SPACES, 1 BEING VAN ACCESSIBLE.

PARKING TABLE NOTES:
1. SECTION 6.1.10, C. FOR A MIXED–USE DEVELOPMENT THE FIRST 3,000 SF OF NON–RESIDENTIAL SPACE IS EXEMPT FROM THE PARKING REQUIREMENTS OF THIS SECTION 6.1.
2. SECTION 6.1.11, STANDARD PARKING STALLS SHALL BE 8.5'X18', AND DRIVE AISLE WIDTH SHALL BE 24' FOR TWO–WAY TRAFFIC.

* RELIEF REQUESTED FROM THE ARB FOR THE REQUIRED NUMBER OF PARKING STALLS.

BICYCLE PARKING SUMMARY TABLE

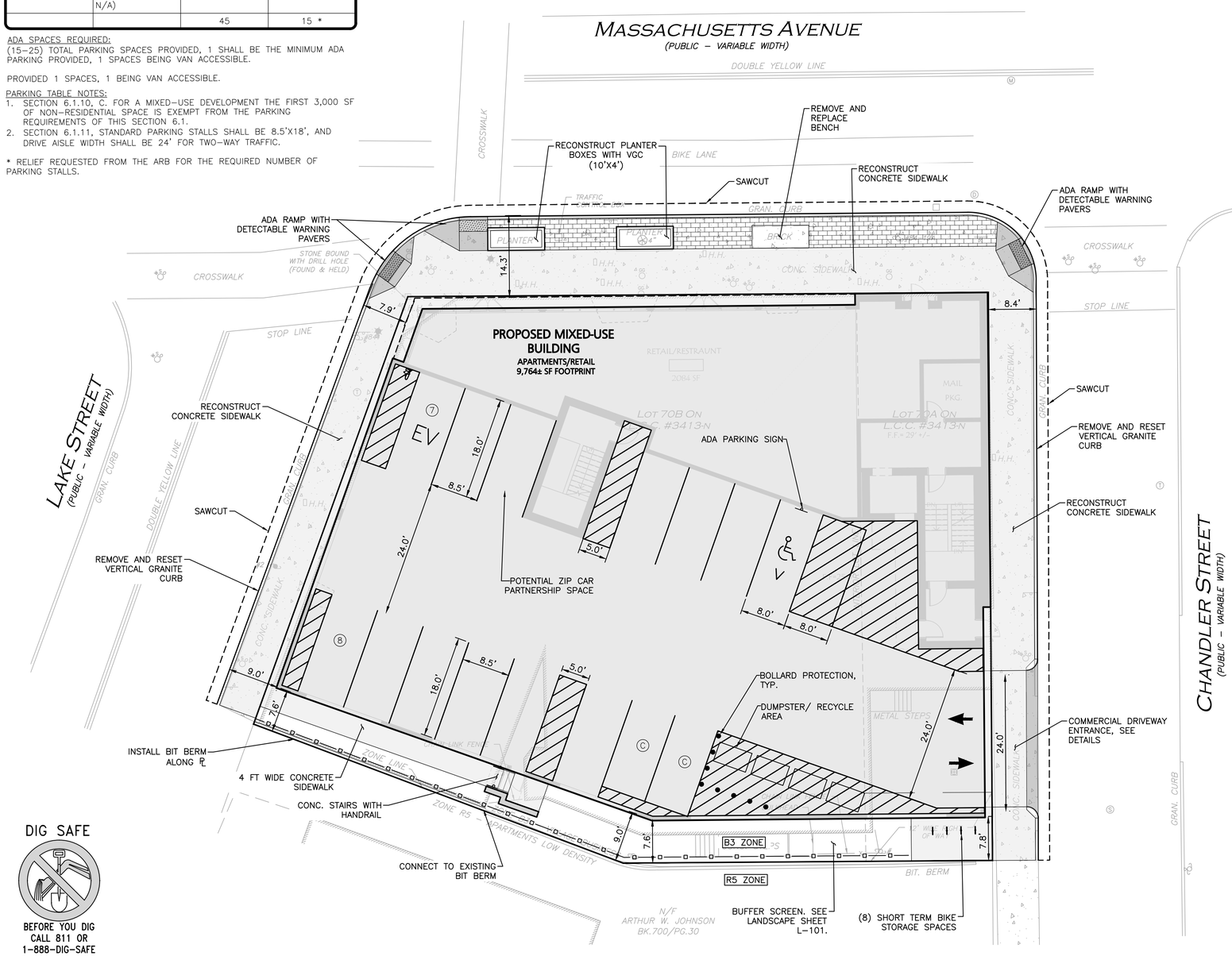
SHORT TERM BICYCLE PARKING (EXTERIOR)

USE	CALCULATION	MIN. REQUIRED	TOTAL PROPOSED
APARTMENT BUILDING	0.1 PER UNIT	4	5
	37 X 0.1 = 3.7 REQUIRED		
RETAIL SERVICE	0.6 PER 1,000 SF	1	3
	1.7 X 0.6 = 1.02 REQUIRED		
	TOTAL	5	8

LONG TERM BICYCLE PARKING (INTERIOR)

USE	CALCULATION	MIN. REQUIRED	TOTAL PROPOSED
APARTMENT BUILDING	1.5 PER UNIT	56	59
	37 X 1.5 = 55.5 REQUIRED		
RETAIL SERVICE	0.1 PER 1,000 SF	1	1
	2 X 0.1 = 0.2 REQUIRED		
	TOTAL	57	60

BICYCLE PARKING TABLE NOTES:
1. REQUIRED NUMBER OF SPACES ARE FROM BICYCLE PARKING GUIDELINES, APPENDIX A BIKE PARKING BY–LAW.



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ZONING SUMMARY TABLE
B3-VILLAGE BUSINESS (MIXED-USE <=20,000SF)

ITEM	REQUIRED/ ALLOWED	EXISTING	PROPOSED
MINIMUM LOT AREA	N/A	11,134± SF	11,134± SF
MINIMUM LOT AREA PER UNIT	N/A	N/A	301± SF
MINIMUM FRONTAGE	50 FT	102.1± FT MASS AVE	102.1± FT MASS AVE
MINIMUM FRONT YARD SETBACK	0 FT	0 FT	0 FT
MINIMUM SIDE YARD SETBACK	0 FT	0.6 FT	7.5 FT
MINIMUM REAR YARD SETBACK	(H+L)/6	NO REAR	NO REAR
SCREENING BUFFER	7.5 FT (3)	0.6 FT	7.5 (3)
LANDSCAPED OPEN SPACE	10% (2)	0.9%	4.8%*
USABLE OPEN SPACE	20% (2)	0%	9.0%*
MAXIMUM HEIGHT	60 FT	20± FT	<60
MAXIMUM HEIGHT STORIES	5	1	5(1)
FLOOR AREA RATIO	1.50	0.89	4.1*

ZONING TABLE NOTES:
1. SECTION 5.3.17, FOR BUILDING MORE THAN 3 STORIES IN HEIGHT, AN ADDITIONAL 7.5 FT STEP–BACK SHALL BE PROVIDED BEGINNING AT THE THIRD STORY LEVEL OR 30 FT ABOVE GRADE, WHICHEVER IS LESS. THE UPPER STORY STEP–BACK SHALL BE PROVIDED ALONG ALL BUILDING ELEVATIONS WITH STREET FRONTAGE.
2. SECTION 5.3.21. SUPPLEMENTAL REQUIREMENTS IN THE BUSINESS AND INDUSTRIAL DISTRICTS, D. FOR MIXED USES AND ANY PERMITTED RESIDENTIAL USE NOT SPECIFICALLY IDENTIFIED IN THE TABLES IN SECTION 5.5.2, THE MINIMUM OPEN SPACE REQUIREMENTS (COMPUTED FROM THE RESIDENTIAL FLOOR AREA ONLY) SHALL BE 10% LANDSCAPED AND 20% USABLE IN THE B1, B2, B2A, B3, AND B4 DISTRICTS, AND 15 PERCENT USABLE IN THE B5 DISTRICT.
3. SECTION 5.3.21. SUPPLEMENTAL REQUIREMENTS IN THE BUSINESS AND INDUSTRIAL DISTRICTS, B3 ABUTTING R5 15 FT MINIMUM BUFFER. A SOLID WALL OR WOODEN FENCE MAY BE SUBSTITUTED FOR ON–HALF THE WIDTH OF THE LANDSCAPED BUFFER.
4. SECTION 5.3.19, REDUCED HEIGHT BUFFER. RELIEF REQUESTED FROM THE ARB TO PERMIT THE HIGHER PERMITTED HEIGHT OF 60 FT AND 5 STORIES.

LEGEND

- PROP. PROPERTY LINE
- SIGN
- BOLLARD
- BUILDING
- BUILDING ARCHITECTURE
- BUILDING INTERIOR WALLS
- CURB
- PARKING STRIPING
- ROADWAY STRIPING
- SIDEWALK
- ADA ACCESSIBLE RAMP
- ADA DET. WARNING SURFACE
- SNOW STORAGE
- SAW–CUT LINE
- PARKING COUNT (10)
- VINYL FENCE

NOTES
1. WRITTEN DIMENSIONS ON THIS PLAN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND/OR SPECIFICATIONS OR CONDITIONS, THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR. ALL SITE ITEMS SHALL BE LAID OUT AND AS BUILT BY A LICENSED LAND SURVEYOR.
2. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.

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(IN FEET)
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DRAWING TITLE: LAYOUT & MATERIALS PLAN

SHEET No. C-102

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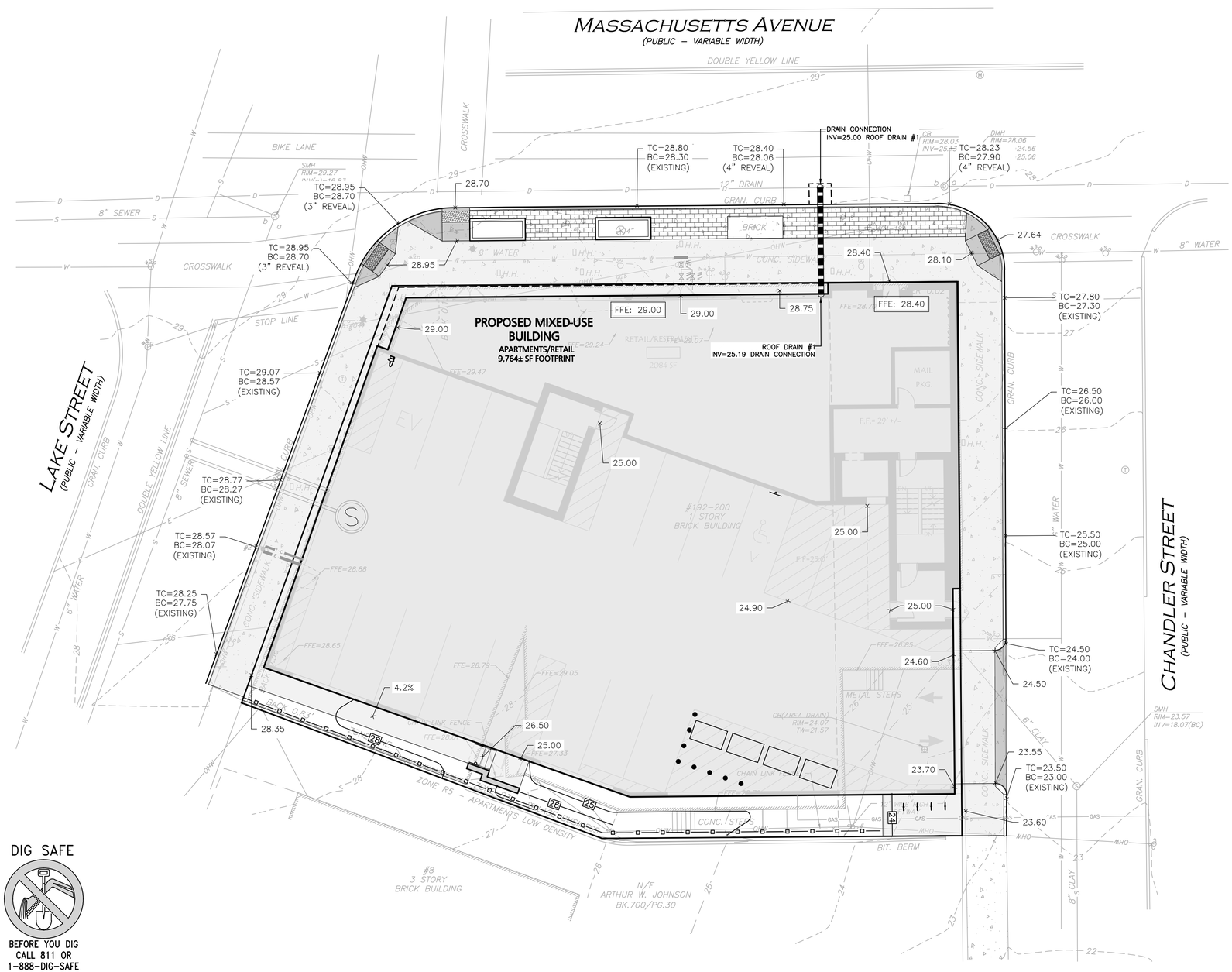

LEGEND

DRAIN MANHOLE	
CATCH BASIN	
DRAIN LINE	
10' CONTOUR	100
2' CONTOUR	102
SPOT GRADE	79.50

PLAN NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR IT'S REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING STRUCTURES INCLUDING REMOVAL OF ANY EXISTING UTILITIES SERVING THE STRUCTURE. UTILITY CONNECTIONS SHOULD BE COORDINATED WITH THE MEP PRIOR TO CONSTRUCTION.
3. EXISTING DRAINAGE STRUCTURES TO REMAIN ARE TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
4. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
5. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ENSURE A SMOOTH FIT AND CONTINUOUS GRADE.
6. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
7. THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT FOR THE FINAL LOCATIONS OF PROPOSED ROOF DRAINS. LOCATIONS ARE SHOWN HEREON FOR COORDINATION PURPOSES ONLY.
8. WRITTEN DIMENSIONS ON THIS PLAN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND/OR SPECIFICATIONS OR CONDITIONS, THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR.
9. ANY DAMAGE TO PRIVATE OR PUBLIC PROPERTIES DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AND RESTORED BY THE CONTRACTOR AT THEIR OWN EXPENSE.
10. ALL PROPERTY MARKERS AND STREET LINE MONUMENTS SHALL BE PROPERLY PROTECTED DURING CONSTRUCTION. ANY DAMAGE TO THESE ITEMS SHALL BE REPAIRED AND RESTORED BY A LAND SURVEYOR LICENSED IN THE COMMONWEALTH OF MASSACHUSETTS AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ADDITIONAL BENCHMARK INFORMATION IF REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING BENCHMARKS. IF IT IS NECESSARY TO RELOCATE A BENCHMARK, IT SHALL BE RELOCATED BY A MASSACHUSETTS LAND SURVEYOR AND DONE SO AT THE CONTRACTOR'S EXPENSE.
12. ALL PERMITS AND APPROVALS NECESSARY FROM AGENCIES GOVERNING THE WORK SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORK.
13. CONSTRUCTION DURING WET WEATHER OR WINTER CONDITIONS IS TO BE ANTICIPATED AND PROVISIONS TO ADEQUATELY ADDRESS THESE CONDITIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS INCLUDING THE TOWN OF ARLINGTON, MADOT, MADEP, MWRA, MUTCD, AND AASHTO.
15. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY ALLEN & MAJOR ASSOCIATES DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK, OR THE OWNER'S EMPLOYEES, CUSTOMERS, OR THE GENERAL PUBLIC. THE SEAL OF THE ENGINEER AS INCLUDED IN THE PLAN SET DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PROVIDE THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), STATE, AND LOCAL REGULATIONS.
16. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.

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DRAWING TITLE:

GRADING & DRAINAGE PLAN

SHEET No.

C-103

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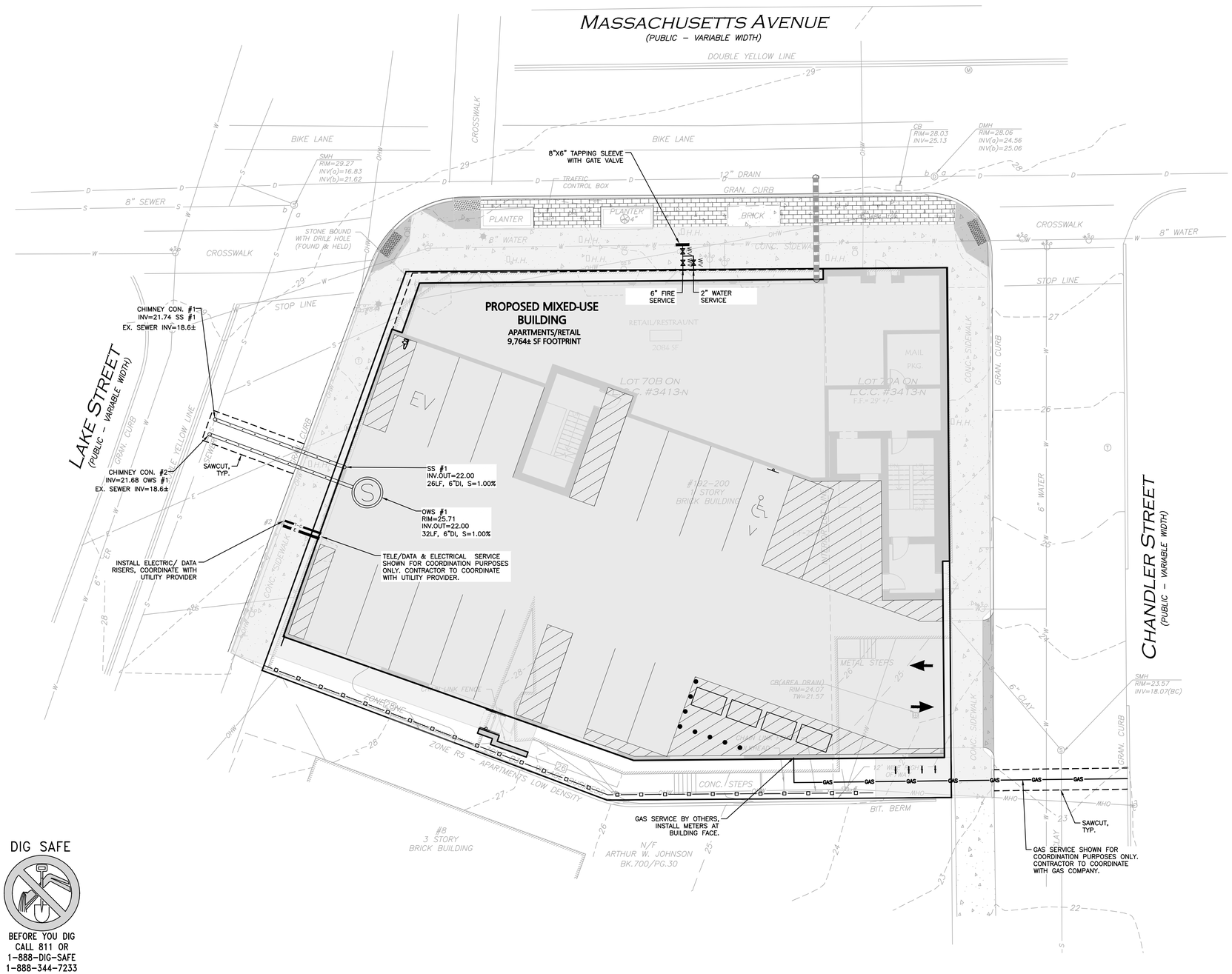

LEGEND

SEWER MANHOLE	S
SEWER CLEANOUT	C
SEWER VENT	V
SEWER LINE	
WATER LINE	W
WATER (FIRE SERVICE)	W-F
WATER (DOMESTIC SERVICE)	W-D
WATER VALVE	WV
GAS LINE	GAS
GAS VALVE	GV
ELECTRICAL CONDUIT	E E
TELE/CABLE CONDUIT	T-C T-C

UTILITY NOTES:

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2. A MINIMUM OF 18" VERTICAL CLEARANCE SHALL BE MAINTAINED WHERE WATER SERVICES CROSS STORM DRAIN AND SEWER LINES. WATER SERVICES SHALL BE ENCASED IN CONCRETE REGARDLESS OF CLEARANCE WHEN PASSING BELOW STORM DRAIN AND SEWER LINES. ENCASEMENT SHALL EXTEND ALONG WATER SERVICE A MINIMUM DISTANCE OF EIGHT FEET CENTERED ON THE CROSSING POINT OF THE OTHER PIPE AS MEASURED NORMALLY FROM ALL POINTS ALONG THE PIPE.

3. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

4. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

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DRAWING TITLE: UTILITIES PLAN

SHEET No. C-104

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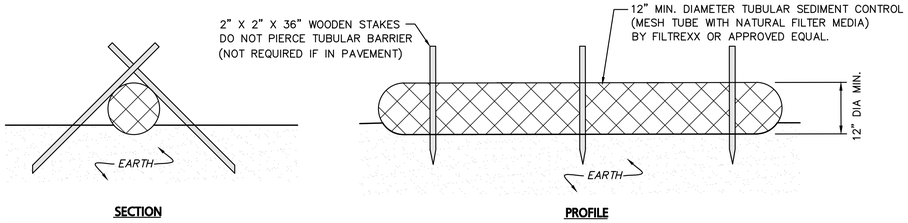
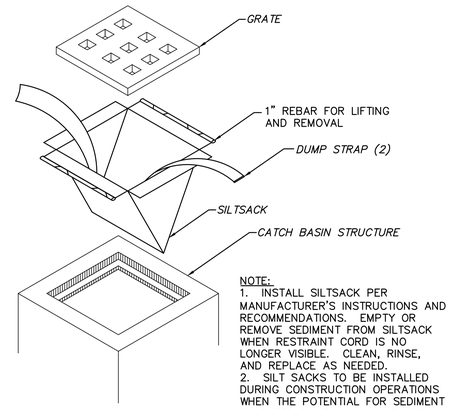


NOTES:

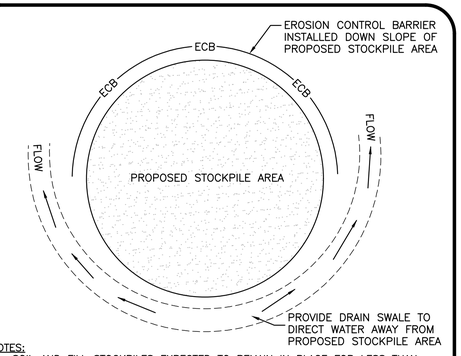
1. ALL MATERIALS TO MEET MANUFACTURERS SPECIFICATIONS.
2. INSTALL WOODEN STAKES IN A CRISS-CROSS PATTERN EVERY 8' ON CENTER.
2. OVERLAP TUBULAR BARRIER SEGMENTS A MINIMUM OF 12".
3. THE CONTRACTOR SHALL MAINTAIN THE TUBULAR BARRIERS IN A FUNCTIONAL CONDITION AT ALL TIMES. THE CONTROLS SHALL BE ROUTINELY INSPECTED BY THE CONTRACTOR.
4. WHERE THE TUBULAR BARRIERS REQUIRE REPAIR OR SEDIMENT REMOVAL, IT WILL BE COMPLETED BY THE CONTRACTOR AT NO ADDITIONAL COST.
5. AT A MINIMUM, THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE WHEN THEY REACH 1/3 THE EXPOSED HEIGHT OF THE BARRIER.

TUBULAR SEDIMENT BARRIER (1)
NOT TO SCALE



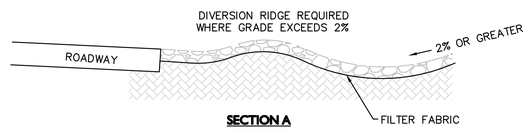
NOTE:
1. INSTALL SILTSACK PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. EMPTY OR REMOVE SEDIMENT FROM SILTSACK WHEN RESTRAINT CORD IS NO LONGER VISIBLE. CLEAN, RINSE, AND REPLACE AS NEEDED.
2. SILT SACKS TO BE INSTALLED DURING CONSTRUCTION OPERATIONS WHEN THE POTENTIAL FOR SEDIMENT TO ENTER EXISTING & PROPOSED BASINS EXISTS.

SILTSACK INLET DETAIL (2)
NOT TO SCALE

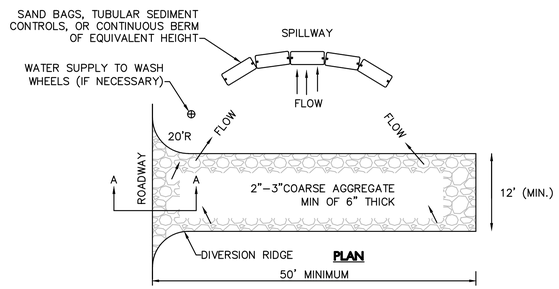


NOTES:
1. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH STRAW AND MULCH (AT 100LBS/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
2. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDED WITH WINTER RYE (FOR FALL SEEDING AT 1LB/1,000 SF) OR OATS (FOR SUMMER SEEDING AT 2LB/1,000 SF) AND THEN COVERED WITH STRAW MULCH (AT 100LB/1,000 SF) OR AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

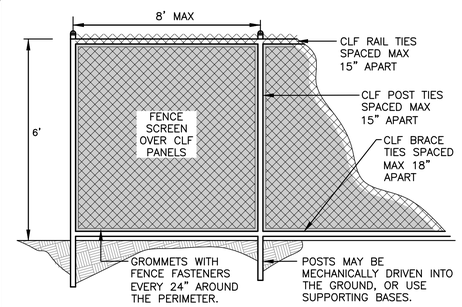
STOCKPILE PROTECTION DETAIL (3)
NOT TO SCALE



NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTERING THE PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. USE SANDBAGS, TUBULAR SEDIMENT CONTROLS, OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED.

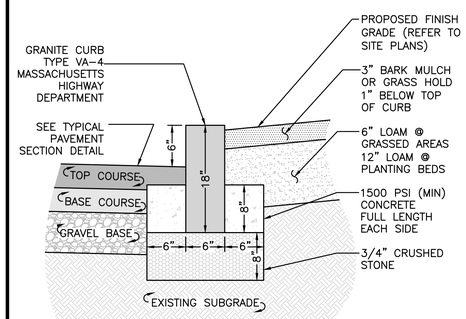


TEMPORARY CONSTRUCTION ENTRANCE/EXIT (4)
NOT TO SCALE

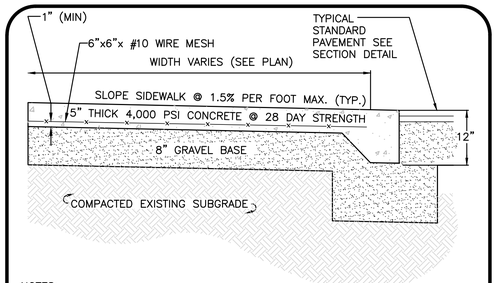


NOTES:
1. SCREEN MATERIAL SHALL BE MADE FROM KNITTED HIGH DENSITY POLYETHYLENE WITH UV ADDITIVES.
2. SCREEN FILAMENT STRENGTH SHALL BE A MINIMUM OF 50LBS/FT.
3. SCREEN MATERIAL BREAK STRENGTH SHALL BE A MINIMUM OF 500 LBS/FT.
4. SCREEN SHADE / WIND BLOCKAGE SHALL BE A MINIMUM OF 85%.
5. SCREEN COLOR SHALL BE GREEN OR BLACK.

TEMPORARY CONSTRUCTION FENCE w/ SCREEN (5)
NOT TO SCALE

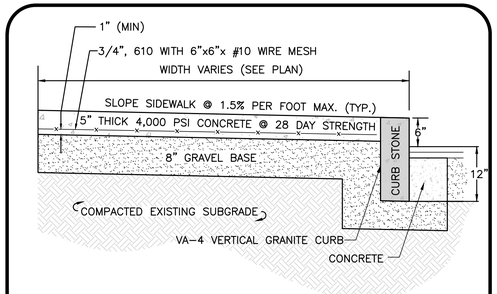


VERTICAL GRANITE CURB (6)
NOT TO SCALE



NOTES:
1. SIDEWALK TO HAVE TOOLED JOINTS IN A 5' x 5' (TYP.) GRID WITH EXPANSION JOINTS 15' ON CENTER WITH PREMOLDED FILLER.
2. SEE PLAN FOR ELEVATIONS
3. SIDEWALK CROSS SLOPE TO BE 1.5% MAX & SIDEWALK LONGITUDINAL RUNNING SLOPE TO BE 4.5% MAX, TYP.
4. APPLY BRUSH MARKS PERPENDICULAR TO TRAVEL PATH.

CONCRETE SIDEWALK (7)
NOT TO SCALE

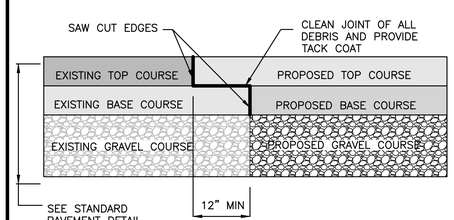


NOTES:
1. SIDEWALK TO HAVE TOOLED JOINTS IN A 5' x 5' (TYP.) GRID WITH EXPANSION JOINTS 15' ON CENTER AND PREMOLDED FILLER.
2. SEE PLAN VIEW FOR ELEVATIONS AT CURB
3. SIDEWALK CROSS SLOPE TO BE 1.5% MAX & SIDEWALK LONGITUDINAL RUNNING SLOPE TO BE 4.5% MAX, TYP.

CONCRETE SIDEWALK WITH VGC CURBSTONE (8)
NOT TO SCALE

NOT USED (9)
NOT TO SCALE

NOTE:
TACK COAT – PROVIDE EMULSIFIED ASPHALT WHICH CONFORMS TO THE REQUIREMENTS OF THE STATE SPECIFICATIONS, DILUTED WITH ONE PART WATER TO ONE ONE PART ASPHALT FOLLOWING AASHTO M140/ASTM D997, OR AASHTO M208/ASTM D2397, SS-1H, CSS-1, OR CSS-1H.



PAVEMENT KEY CUT DETAIL (10)
NOT TO SCALE

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49212
REGISTERED PROFESSIONAL ENGINEER
03·10·21

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT\OWNER:
192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	AS SHOWN	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

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environmental consulting ◆ landscape architecture
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DRAWING TITLE: DETAILS

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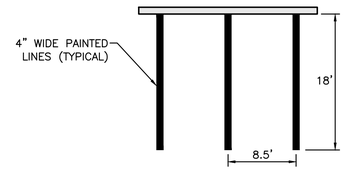
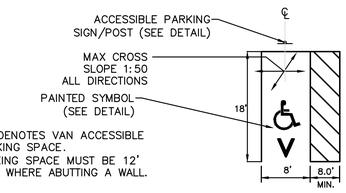
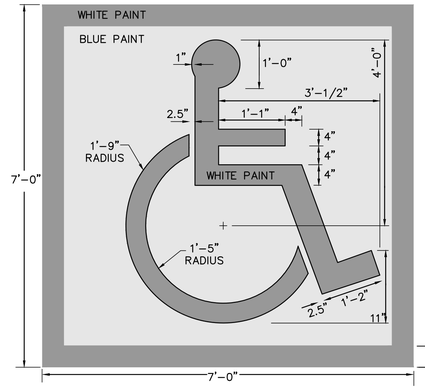


STANDARD STALL



NOTE:
1. "V" DENOTES VAN ACCESSIBLE PARKING SPACE.
2. PARKING SPACE MUST BE 12' WIDE WHERE ABUTTING A WALL.

ADA AND STANDARD PARKING STRIPING (1)
NOT TO SCALE



SYMBOL TO BE CENTERED ON WIDTH OF PARKING STALL. SYMBOL IS REQUIRED TO CONTRAST WITH BACKGROUND. USE WHITE ON BLUE (COLOR #105090 IN FEDERAL STANDARD 5952) DOUBLE COAT.

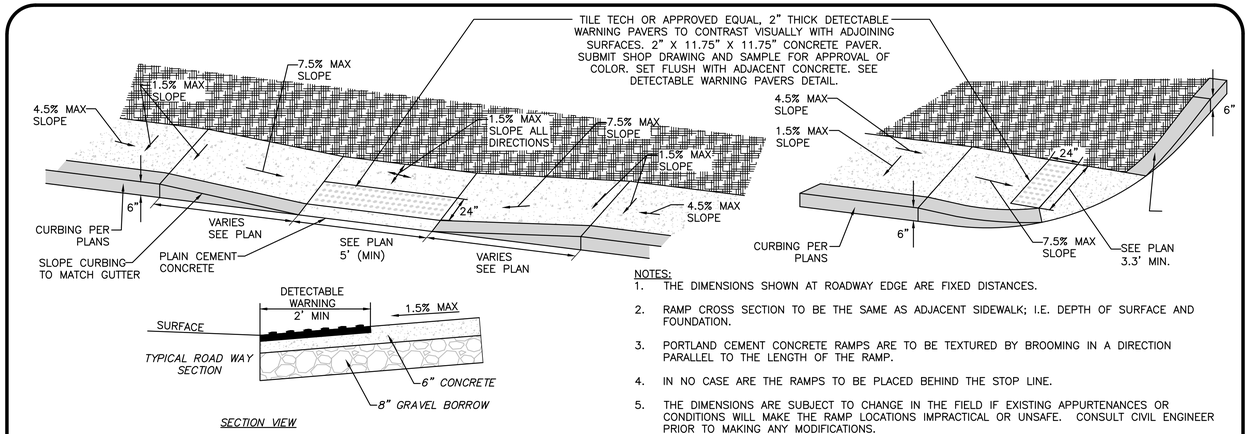
ACCESSIBLE PARKING STALL PAVEMENT MARKING (2)
NOT TO SCALE

NOT USED (3)
NOT TO SCALE

DESC.	SIGN	SIZE	MOUNTING HEIGHT	DESCRIPTION	REFLEC-TORIZED
R7-8M (MODIFIED)	HANDICAPPED PARKING SPECIAL PLATE REQUIRED UNAUTHORIZED VEHICLES MAY BE TOWED AT THE OWNERS EXPENSE VAN ACCESSIBLE	12" x 26"	7' - 0"	WHITE TEXT ON BLUE FIELD WITH WHITE BORDER	YES

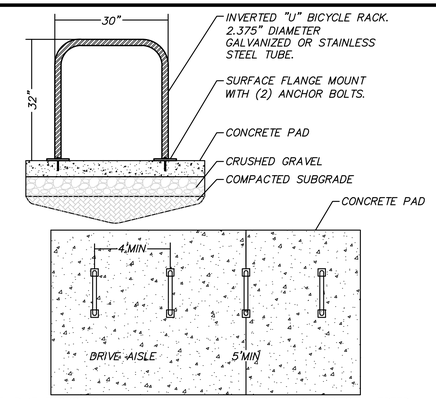
1. TRAFFIC AND SAFETY SIGNAGE SHALL COMPLY WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) STANDARDS.
2. MOUNTING HEIGHT IS DEFINED AS THE DISTANCE FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE PAVEMENT.

SIGN TABLE (4)
NOT TO SCALE



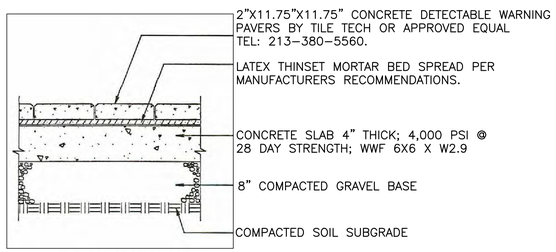
NOTES:
1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE THE SAME AS ADJACENT SIDEWALK; I.E. DEPTH OF SURFACE AND FOUNDATION.
3. PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
4. IN NO CASE ARE THE RAMPS TO BE PLACED BEHIND THE STOP LINE.
5. THE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE. CONSULT CIVIL ENGINEER PRIOR TO MAKING ANY MODIFICATIONS.

HANDICAP CURB CUT & CURB TRANSITION (5)
NOT TO SCALE

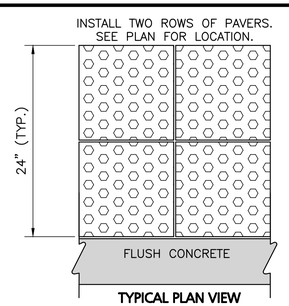


NOTE: BIKE RACKS TO BE FROM PARK A BIKE: MODEL 200 SERIES-INVERTED U BIKE RACKS HR202 30"X2.38"X32" SURFACE MOUNTED. SURFACE MOUNT PER MANUFACTURER'S RECOMMENDATIONS. FINISH SELECTED BY OWNER. PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO ORDERING.

BICYCLE RACK DETAIL (6)
NOT TO SCALE



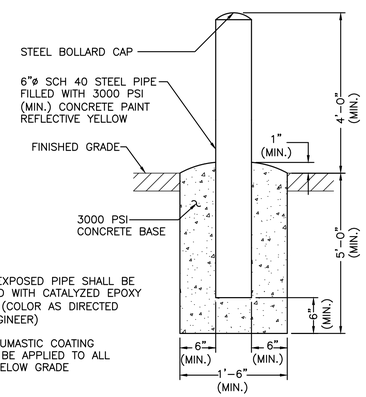
TYPICAL SECTION VIEW



TYPICAL PLAN VIEW

NOTES:
1. CONCRETE SLAB SHALL BE SLOPED 1.5% CROSS PITCH MAX TO PROVIDE COMPLETE SURFACE DRAINAGE. SEE GRADING PLAN & HANDICAP CURB CUT / CURB TRANSITION DETAIL.
2. SLAB TO HAVE STEEL TROWEL AND FINE BROOM FINISH. DO NOT USE CURING COMPOUNDS. CONTRACTOR TO ADD EXPANSION JOINTS AND PREMOLDED FILLER AT EDGE OF TILES AND ADJACENT MATERIAL.
3. SET TILES FLUSH WITH ADJACENT MATERIALS.
4. SUBMIT SHOP DRAWINGS OF TILES AND SAMPLE FOR APPROVAL OF COLOR TO OWNER / ARCH.
5. INSTALL DETECTABLE WARNING PAVERS PER MANUFACTURER'S RECOMMENDATIONS.

TACTILE WARNING PAVERS (7)
NOT TO SCALE



NOTES:
-ALL EXPOSED PIPE SHALL BE PAINTED WITH CATALYZED EPOXY PAINT. (COLOR AS DIRECTED BY ENGINEER)

-A BITUMASTIC COATING SHALL BE APPLIED TO ALL PIPE BELOW GRADE

FIXED PIPE BOLLARD DETAIL (8)
NOT TO SCALE

NOT USED (9)
NOT TO SCALE

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49212
REGISTERED PROFESSIONAL ENGINEER
03·10·21

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
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192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	AS SHOWN	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:
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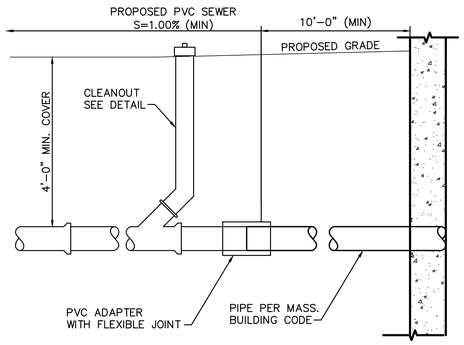
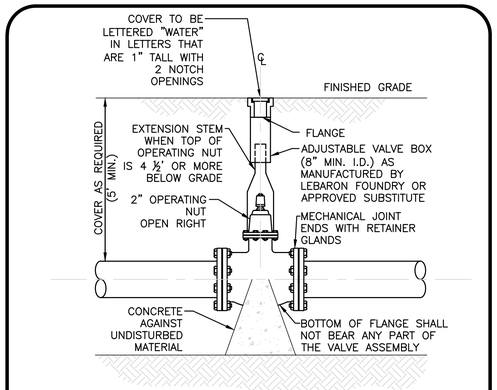


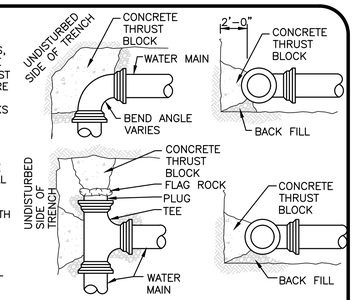
BUILDING SEWER SERVICE (1)
NOT TO SCALE



NOTES:
1.) CONTRACTOR MAY USE ANCHOR TEES AT HIS OPTION.
2.) HYDRANTS AND VALVES SHALL BE RIGHT TURN OPEN (OPEN RIGHT).

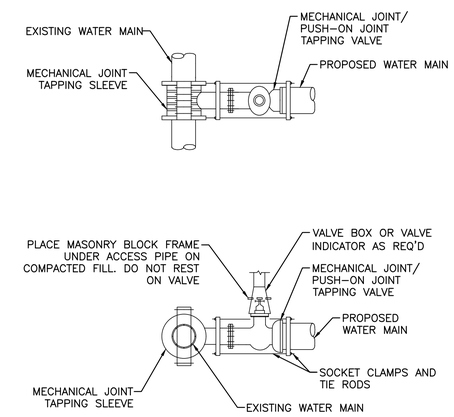
GATE VALVE (2)
NOT TO SCALE

NOTES:
1. ALL WATER MAIN FITTINGS, BENDS, TEES, PLUGS ETC. SHALL BE RESTRAINED W/ THRUST BLOCKS EXCEPT WHERE NOTED.
2. ALL THRUST BLOCKS & COLLARS SHALL BE INSTALLED SO THAT THEY BEAR AGAINST UNDISTURBED EARTH.
3. SIZE OF CONCRETE THRUST BLOCKS SHALL BE AS NOTED BELOW.
4. MINIMUM COMPRESSIVE STRENGTH OF THRUST BLOCK CONCRETE SHALL BE 3,000 P.S.I.
5. KEEP CONCRETE CLEAR OF MECHANICAL JOINTS.
6. THE BELOW PREDICATED ON A WATER PRESSURE OF 225 PSI AND A SOIL RESISTANCE OF 2000 PSF (TILL). FOR OTHER SOILS THE VALUES IN THE ABOVE TABLE SHALL BE MULTIPLIED BY:

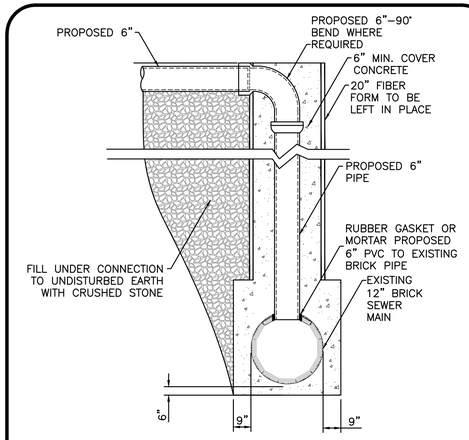


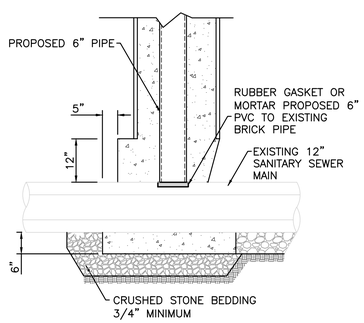
MINIMUM THRUST BLOCK BEARING AREAS				
PIPE ø	90° BEND (SQ. FT.)	45° BEND (SQ. FT.)	22.5° BEND (SQ. FT.)	TEES, PLUGS, CAPS & HYD. (SQ.FT.)
6"	5	3	3	4
8"	9	6	3	9
10"	13	7	4	12
12"	20	10	5	16

THRUST BLOCK DETAILS (3)
NOT TO SCALE



TAPPING SLEEVE AND VALVE (4)
NOT TO SCALE

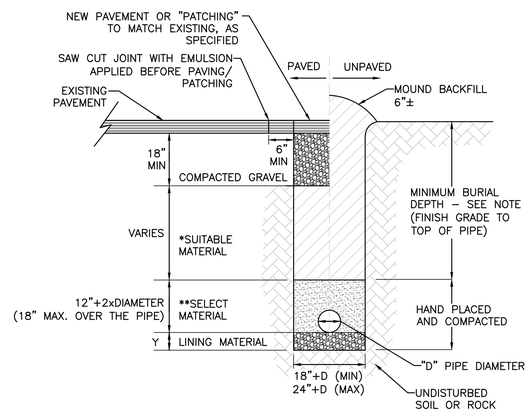




SANITARY SEWER CHIMNEY CONNECTION DETAIL (5)
NOT TO SCALE

NOTES:

1. MINIMUM BURIAL DEPTH (FINISH GRADE TO TOP OF PIPE)
   GRAVITY PIPE – SEE PLAN OR PROFILE
   PRESSURE PIPE UNDER PAVING – 4'
   PRESSURE PIPE BENEATH UNPAVED – 3'
2. WHERE BACKFILL IS DESIGNATED AS COMPACTED, THIS MEANS 90 TO 95% STANDARD PROCTOR. AASHTO T-99. ALL FILL PLACED BELOW PIPES AND STRUCTURES MUST MEET THIS REQUIREMENT.
3. FOR ALL TRENCHES WITH A GRADE GREATER THAN 4% AND/OR WHERE GROUNDWATER IS APPARENT, INSTALL CLAY DAMS AROUND THE PIPE AT 100' INTERVALS.



TRENCH DETAIL (6)
NOT TO SCALE

CONDITION & PIPE	**SELECT MATERIAL	LINING MATERIAL	Y-DIMENSION
DUCTILE IRON "ORDINARY SOIL"	TYPE I, II, OR III	SAND OR TYPE III	3"
RCP "ORDINARY SOIL"	TYPE II OR III	SAND OR TYPE III	3"
ALL PIPE OVER BEDROCK OR LEDGE	TYPE II OR III	SAND OR TYPE III	8"
DUCTILE IRON IN CLAY OR MUCK	TYPE II OR III	SAND	4"
RCP IN CLAY	TYPE II OR III	SAND	8"
ALL PLASTICS	TYPE III	SAND OR TYPE III	6"

* SUITABLE MATERIAL SHALL CONTAIN NO STONE GREATER THAN 4" IN DIAMETER, NO FROZEN LUMPS, AND ONLY MINOR AMOUNTS OF CLAY OR ORGANIC MATERIAL. ALL MATERIAL TO BE PLACED IN MAX 12" LIFTS AND COMPACTED BEFORE PLACING NEXT LIFT.

**TYPE I MATERIAL SHALL BE EITHER GRAVEL OR EXCAVATED MATERIAL CONTAINING NO STONES GREATER THAN 1.5" DIAMETER, NO FROZEN LUMPS, CLAY OR ORGANIC MATERIAL.

**TYPE II MATERIAL SHALL BE CLEAN, HARD, CRUSHED OR NATURAL STONE WITH A GRADATION BY WEIGHT OF 100% PASSING A 1.5" SQUARE OPENING, NOT MORE THAN 25% PASSING A ¾" OPENING, AND NOT MORE THAN 5% PASSING A ¼" SQUARE OPENING.

**TYPE III MATERIAL SHALL BE CLEAN, HARD, CRUSHED STONE FREE FROM COATINGS AND THOROUGHLY WASHED WITH A GRADATION BY WEIGHT OF 100% PASSING A 1" SQUARE OPENING, AND 0 TO 5% PASSING A ¼" SQUARE OPENING.

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49212
REGISTERED PROFESSIONAL ENGINEER
03·10·21

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT\OWNER:
192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	AS SHOWN	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY, SUITE 5
WOBURN MA 01801
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SHEET No. C-503

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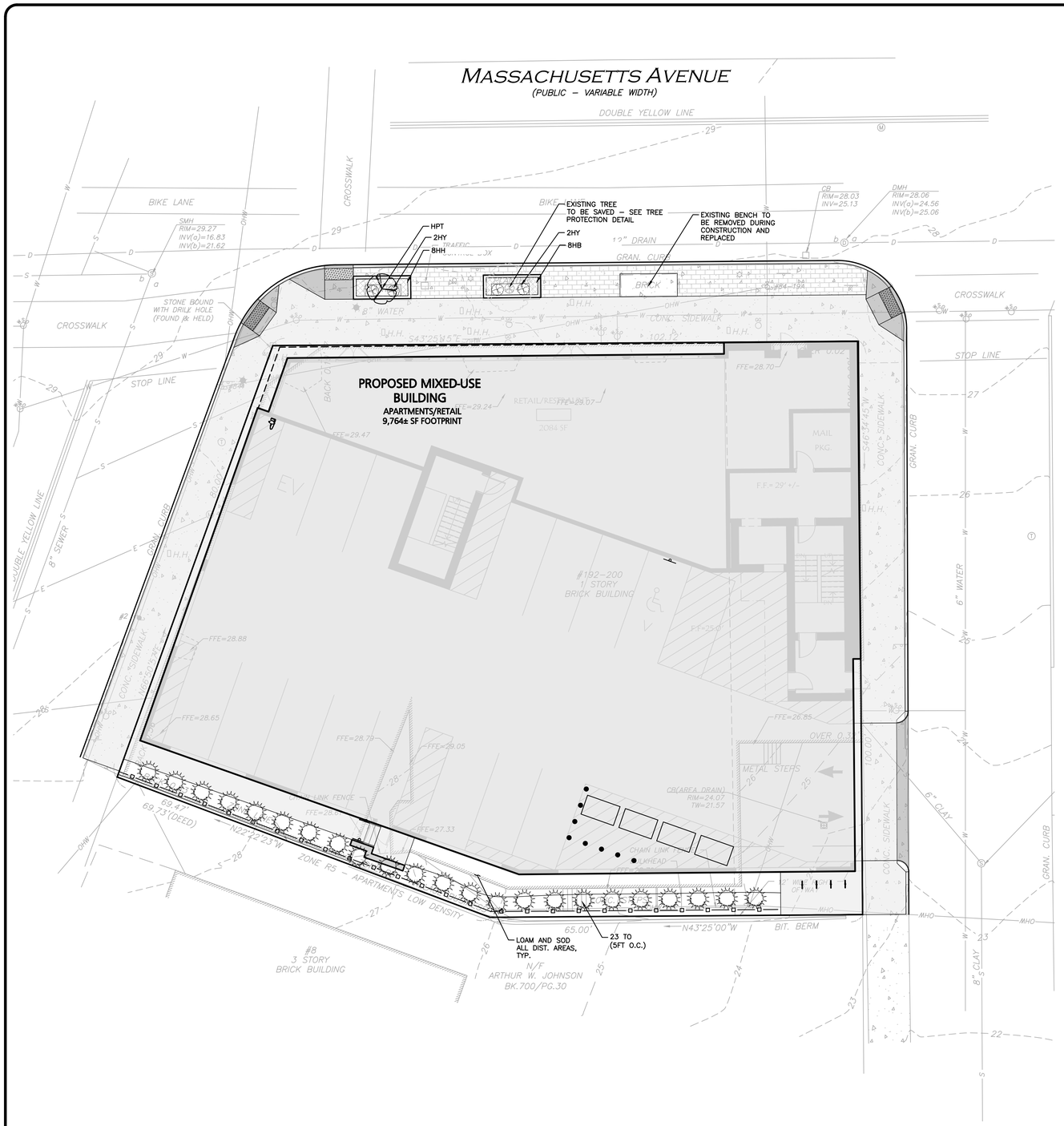

LEGEND

- DECIDUOUS TREE
- EVERGREEN TREE
- FLOWERING TREE
- SHRUBS
- MULCH BED
- PERENNIALS/GROUNDCOVER

PLANTING SCHEDULE-TREES, SHRUBS, GROUNDCOVERS & PERENNIALS

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	MIN. SIZE	SPACING	COMMENTS
EVERGREEN TREES						
TO	26	THUJA O. 'WINTERGREEN'	WINTERGREEN ARBORVITAE	6–7' HT	AS SHOWN	B&B
TREES/SHRUBS						
HPT	1	HYDRANGEA PANICULATA 'LIMELIGHT' TREE FORM	TREE FORM LIMELIGHT HYDRANGEA	5–6' HT. TREEFORM	AS SHOWN	B&B
HY	4	HYDRANGEA ARBORESCENS "INVINCEBELLE WEE WHITE"	INVINCIBELLE WEE WHITE HYDRANGEA	#3	AS SHOWN	POT
PERENNIALS						
HH	8	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILLY	#1	24" O.C	STAGGERED
HB	8	HOSTA 'HADSPEN BLUE'	HADSPEN BLUE HOSTA	#1	24" O.C	STAGGERED

NOTES:

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2. ALL LANDSCAPED AREAS WITH SHRUBS, TREES, AND PERENNIALS TO HAVE 18" MINIMUM DEPTH OF TOPSOIL. EIGHTEEN INCHES OF TOPSOIL AROUND TREES AND SHRUBS DOES NOT INCLUDE AMENDED PLANTING SOIL WITHIN TREE / SHRUB PIT FOR FULL DEPTH OF ROOTBALLS. SEE PLANTING DETAILS FOR PLANTING DEPTH AT SHRUBS AND TREES. ALL AREAS OF LOAM AND SEED OR LOAM & SOD TO HAVE 6" MINIMUM DEPTH OF TOPSOIL. TOPSOIL TO BE TESTED BY CONTRACTOR, AND APPROVED BY A&M PRIOR TO PURCHASE AND OR PLACEMENT. GENERAL CONTRACTOR, DEMOLITION CONTRACTOR, AND LANDSCAPE CONTRACTOR TO COORDINATE PROPER DEPTH OF EXISTING MATERIAL REMOVAL ACROSS SITE SO THAT 18" MINIMUM AND 6" MINIMUM DEPTHS OF PROPOSED TOPSOIL NOTED ABOVE ARE MET AT NO ADDITIONAL COST TO OWNER. SEE TOPSOIL DETAIL.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

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1-888-344-7233

MASSACHUSETTS REGISTERED LANDSCAPE ARCHITECT BETHANY C. DERMODY No. 4071 3-10-21

REGISTERED LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT\OWNER:
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455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	1" = 10'	DWG. NAME:	C2729-02
DESIGNED BY:	BCD	CHECKED BY:	BDJ

PREPARED BY:

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environmental consulting ◆ landscape architecture
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DRAWING TITLE: LANDSCAPE PLAN

SHEET No. L-101

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LOAM AND SODDING NOTES

CONTRACTOR SHALL SOD AREAS NOTED ON THE PLANS.

SOD IS TO BE A BLEND OF FOUR TO FIVE CURRENT AND IMPROVED HYBRID BLUEGRASS AND FESCUE MIXES APPROPRIATE FOR BOTH SEMI-SHADED AND AREAS OF SUN.

HYBRIDS MAY INCLUDE: BLACKSTONE KENTUCKY BLUEGRASS, AWARD KENTUCKY BLUEGRASS, CHALLENGER KENTUCKY BLUEGRASS, BLACKBURG II KENTUCKY BLUEGRASS OR COMPARABLE AND EQUAL BLUEGRASS HYBRIDS.

1. SOD SHALL BE HIGH QUALITY, NURSERY GROWN ON CULTIVATED MINERAL AGRICULTURAL SOILS. SOD SHALL BE MOIST, AND MACHINE CUT AT A UNIFORM SOIL THICKNESS OF AT LEAST ⅝" AT TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL INCLUDE TOP GROWTH AND THATCH. SOD SHALL BE FREE OF DISEASES, WEEDS, BARE SPOTS, OR INSECTS.

2. SODDING TO BE COMPLETED "IN SEASON" BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 1, EXCEPT FOR RE-SODDING OF BARE SPOTS. IF UNABLE TO SOD WITHIN THESE TIMEFRAMES, CONTRACTOR TO INSTALL EROSION CONTROL MATS ON ALL SLOPES 3:1 AND OVER, HYDROSEED ALL EXPOSED AREAS, ADD SOIL STABILIZER "FLUX TERRA HP-FGM SOIL STABILIZER" AS MANUFACTURED BY "PROFILE" TO HYDROSEED (AT RATE OF 3,000 LBS PER ACRE), AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR TO COMPLETE ALL ABOVE "OUT OF SEASON" REQUIREMENTS AND THEN ALSO BE RESPONSIBLE FOR RE-GRADING AND RE-SODDING ALL DISTURBED, ERODED, OR BARE SPOTS WITHIN NEXT CLOSEST PLANTING SEASON IN FALL OR SPRING AT NO ADDITIONAL COST TO OWNER. CONTRACTOR RESPONSIBLE FOR ALL MAINTENANCE UNTIL FINAL ACCEPTANCE OF LAWN AREAS INCLUDING: WATERING, ADDING FERTILIZERS AND LIME AND MOWING AT NO ADDITIONAL COST TO OWNER.

3. COMMERCIAL FERTILIZER SHALL BE APPLIED AT THE RATE OF 25 POUNDS PER 1000 SQ. FT. OR AS RECOMMENDED BY THE TESTING AGENCY. LIME TO BE SPREAD AT THE RATE OF 100 POUNDS PER 1000 SQ. FT OR AS RECOMMENDED BY THE TESTING AGENCY. COMMERCIAL FERTILIZER SHALL BE A COMPLETE FERTILIZER CONTAINING AT LEAST 50% OF THE NITROGEN OF WHICH IS DERIVED FROM NATURAL ORGANIZE SOURCES OF UREAFORM. IT SHALL CONTAIN THE FOLLOWING PERCENTAGES BY WEIGHT: NITROGEN (N) 10%, PHOSPHORUS (P) 6%, POTASH (K) 4%. LIME SHALL BE AN APPROVED AGRICULTURAL LIMESTONE CONTAINING NOT LESS THAN 85% OF TOTAL CARBONATES. LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT 50% WILL PASS A 100 MESH SIEVE AND 90% WILL PASS THROUGH A 20 MESH SIEVE.

4. CONTRACTOR RESPONSIBLE FOR WATERING, MOWING, AND RE-SODDING OF LAWN BARE SPOTS UNTIL A UNIFORM, HEALTHY STAND OF GRASS IS ESTABLISHED AND ACCEPTED.

LANDSCAPE NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF ARLINGTON, MA.
2. PLANTING PLAN IS DIAGRAMMATIC IN NATURE. FINAL PLACEMENT OF PLANTS TO BE APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES, ANY PERMITTING AGENCIES, AND "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS IN ADVANCE OF ANY WORK THAT WILL REQUIRE EXCAVATION. CONTRACTOR SHALL NOTIFY THE OWNERS REPRESENTATIVE OF NAY CONFLICTS IN WRITING.
4. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA, ANY TREES NOTED AS "SEAL OR SELECTED SPECIMEN" SHALL BE TAGGED AND SEALED BY THE LANDSCAPE ARCHITECT.
5. ALL TREES SHALL BE BALLED AND BURLAPPED (B&B) UNLESS OTHERWISE NOTED OR APPROVED BY THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
6. CONTRACTOR SHALL VERIFY QUANTITIES SHOWN ON PLANT LIST. QUANTITIES SHOWN ON PLANS SHALL GOVERN OVER PLANT LIST.
7. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
8. ALL PLANT MATERIALS INSTALLED SHALL MEET THE GUIDELINES ESTABLISHED BY THE STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
9. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE.

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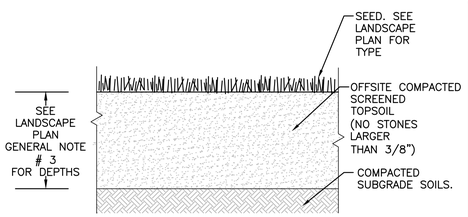
LANDSCAPE NOTES CONT.

10. ALL DISTURBED AREAS NOT OTHERWISE NOTED SHALL RECEIVE 6" OF SUITABLE LOAM & SEED LAWNS WITH 3:1 OR GREATER SLOPES SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET.
11. ANY FALL TRANSPLANTING HAZARD PLANTS SHALL BE DUG IN THE SPRING AND STORED FOR FALL PLANTING.
12. TREES SHALL HAVE A MINIMUM CALIPER AS INDICATED ON THE PLANTING SCHEDULE TAKEN ONE FOOT ABOVE THE ROOT CROWN.
13. ALL PLANT BEDS AND TREE SAUCERS TO RECEIVE 3" OF PINE BARK MULCH. GROUND COVER AREAS SHALL RECEIVE 1" OF PINE BARK MULCH
14. ALL DECIDUOUS TREES ADJACENT TO WALKWAYS AND ROADWAYS SHALL HAVE A BRANCHING PATTERN TO ALLOW FOR A MINIMUM OF 7' OF CLEARANCE BETWEEN THE GROUND AND THE LOWEST BRANCH.
15. ALL TREE STAKES SHALL BE STAINED DARK BROWN.
16. CONTRACTOR RESPONSIBLE FOR WATERING, AND RESEEDING OF BARE SPOTS UNTIL A UNIFORM STAND OF VEGETATION IS ESTABLISHED AND ACCEPTED.
17. ALL PARKING ISLANDS PLANTED WITH SHRUBS SHALL HAVE 24" OF TOP SOIL. FINISH GRADE SHALL BE EQUAL TO THE TOP OF CURB.
18. SOIL SAMPLES, TESTS, AND SHOP DRAWINGS SHALL BE PROVIDED TO THE LANDSCAPE ARCHITECT OR THE OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
19. AN MINIMUM 18" WIDE BARRIER OF 1" GRAY OR TAN PEASTONE SHALL BE INSTALLED IN ALL PLANT BEDS WHICH ABUT THE BUILDINGS. NO MULCH IS ALLOWED WITHIN 18" OF ALL BUILDINGS PER THE LATEST EXECUTIVE OFFICE OF PUBLIC SAFETY AND SECURITY DEPARTMENT OF FIRE SERVICES REGULATION (527 CMR 17.00). INSTALL 6" DEEP OF PEASTONE WITH MIRAFI WEED FABRIC BENEATH AND STEEL EDGING BETWEEN THE PEASTONE AND ADJACENT MULCH BED.
20. ALL PROPOSED LANDSCAPE AREAS INCLUDING MOWED LAWNS, TREES, SHRUB BEDS, AND PERENNIALS SHALL BE PROVIDED WITH WATER EFFICIENT UNDERGROUND IRRIGATION. DESIGN AND INSTALLATION OF IRRIGATION SYSTEM TO BE PERFORMED BY AN APPROVED IRRIGATION DESIGN BUILD CONTRACTOR OR BY AN APPROVED EQUAL, TO BE DETERMINED BY THE OWNERS REPRESENTATIVE AND LANDSCAPE ARCHITECT. IRRIGATION SYSTEM IS TO BE DESIGNED FOR EFFICIENT WATER USAGE INCLUDING: USE OF DRIP IRRIGATION FOR SHRUBS AND PERENNIALS, IRRIGATION SYSTEM WITH HEAD-TO-HEAD COVERAGE, A CENTRAL SHUT-OFF VALVE, AND A RAIN SENSOR TO SHUT OFF IRRIGATION DURING RAIN EVENTS.

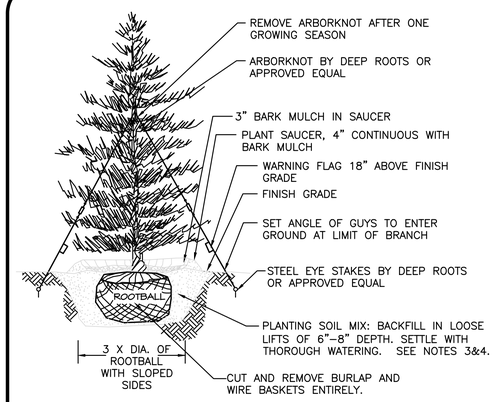


TEXTURE CLASS	% OF TOTAL WEIGHT
SAND	45% – 65%
SILT	15% – 35%
CLAY	5% – 20%

SIEVE	% PASSING
3/8"	100
NO. 4	85–100
NO. 40	60–85
NO. 100	38–60
NO. 200	10–35
20 um	LESS THAN 5%

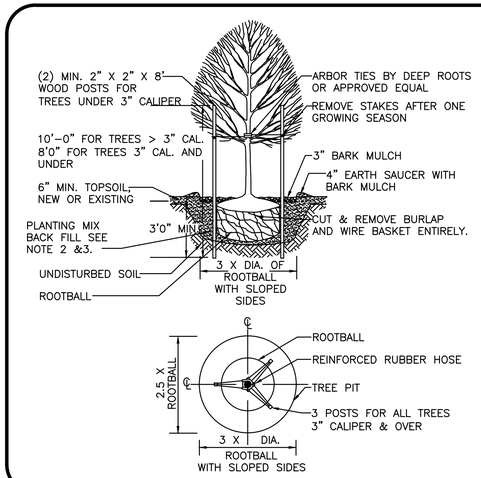
NOTES:
1. TOP OF LOAM (TOPSOIL) IS FINISH GRADE.
2. ALL TOPSOIL (BOTH ONSITE AND OFFSITE SOURCES) SHALL BE COMPOSED OF A NATURAL, FERTILE, FRIABLE SOIL TYPICAL OF CULTIVATED TOPSOILS OF THE LOCALITY. OFFSITE SOIL SHALL BE SUITABLE FOR THE GERMINATION OF SEEDS AND SUPPORT OF VEGETATIVE GROWTH, WITH ADDITIVES, IF REQUIRED, TO ACHIEVE PARTICLE DISTRIBUTION AND ORGANIC CONTENT BELOW. TOPSOIL SHALL BE TAKEN FROM A WELL-DRAINED, ARIABLE SITE, FREE OF SUBSOIL, LARGE STONES, EARTH CLODS, STICKS, STUMPS, CLAY LUMPS, ROOTS, OTHER OBJECTIONABLE, EXTRANEOUS MATTER OR DEBRIS NOR CONTAIN TOXIC SUBSTANCES.
3. THE CONTRACTOR SHALL PROVIDE THE OWNER / LANDSCAPE ARCHITECT WITH TOPSOIL TEST RESULTS (RECOMMEND UMASS AMHERST SOIL TESTING LAB) FOR APPROVAL PRIOR TO OBTAINING AND PLACING THE SOIL. IF ANY TOPSOIL IS PURCHASED OR PLACED PRIOR TO APPROVAL BY OWNER / LANDSCAPE ARCHITECT, IT IS AT CONTRACTORS RISK, AND IT CAN BE REMOVED AT NO ADDITIONAL COST TO THE OWNER. IF THE PLANTING SOIL (BOTH ONSITE AND OFFSITE SOURCES) DOES NOT FALL WITHIN THE REQUIRED SIEVE ANALYSIS, TEXTURAL CLASS, ORGANIC CONTENT, OR PH RANGE, IT SHALL BE ADJUSTED TO MEET THE SPECIFICATIONS THROUGH THE ADDITION OF SAND, COMPOST, LIMESTONE, OR ALUMINUM SULFATE TO BRING IT WITHIN THE SPECIFIED LIMITS AT NO ADDITIONAL COST TO THE OWNER.
4. TOPSOIL SHALL HAVE A PH VALUE BETWEEN 5.5 AND 6.5. TOPSOIL SHALL CONTAIN BETWEEN 4% AND 8% ORGANIC MATTER OF TOTAL DRY WEIGHT AND SHALL CONFORM TO THE FOLLOWING GRADATION AND TEXTURE CLASS ABOVE.

TOPSOIL FOR LAWN, TREES, SHRUBS, & PERENNIALS (2)
NOT TO SCALE



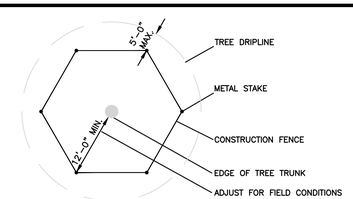
NOTES
1. TREES SHALL BEAR SAME RELATIONSHIP TO FINISH GRADE AS IT BORE TO NURSERY OR FIELD GRADE. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL TOP OF ROOTBALL AREA.
2. INSTALL THREE GUYS PER TREE; EQUALLY SPACED AROUND BALL.
3. ATTACH GUYS AT 2/3 HEIGHT OF TREE.
4. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
5. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.

EVERGREEN TREE DETAIL (1)
NOT TO SCALE

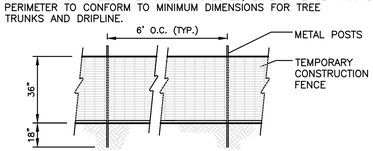


NOTES:
1. ALL TREES SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL ROOTBALL AREA.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.

DECIDUOUS TREE PLANTING DETAIL (3)
NOT TO SCALE

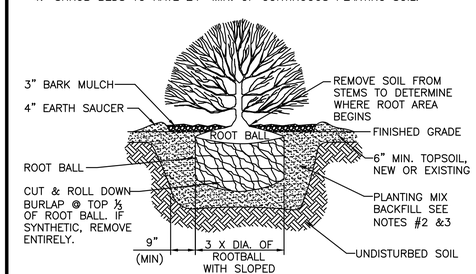


NOTE:
1. CONSTRUCTION FENCE TO BE "VISUAL BARRIER FENCE" AS MANUFACTURED BY EXXON CHEMICAL COMPANY ATLANTA, GA; "KONTROL SAFETY FENCE" AS MANUFACTURED BY MIRAFI, CHARLOTTE, N.C. OR APPROVED EQUAL.
2. IF GROUPS OF TREES ARE TO BE PROTECTED, EXTEND FENCE AROUND PERIMETER TO CONFORM TO MINIMUM DIMENSIONS FOR TREE TRUNKS AND DRIPLINE.



TEMP. CONST. FENCE / TREE PROTECTION (4)
NOT TO SCALE

NOTES:
1. ALL SHRUBS SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. SET SHRUB 1"-2" ABOVE FINISH GRADE.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.
4. SHRUB BEDS TO HAVE 24" MIN. OF CONTINUOUS PLANTING SOIL.



SHRUB PLANTING DETAIL (5)
NOT TO SCALE

MASSACHUSETTS BETHANY C. DERMODY REGISTERED LANDSCAPE ARCHITECT No. 4071
3-10-21

REGISTERED LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

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PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	NTS	DWG. NAME:	C2729-02
DESIGNED BY:	BCD	CHECKED BY:	BDJ

PREPARED BY:

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DRAWING TITLE: LANDSCAPE DETAILS

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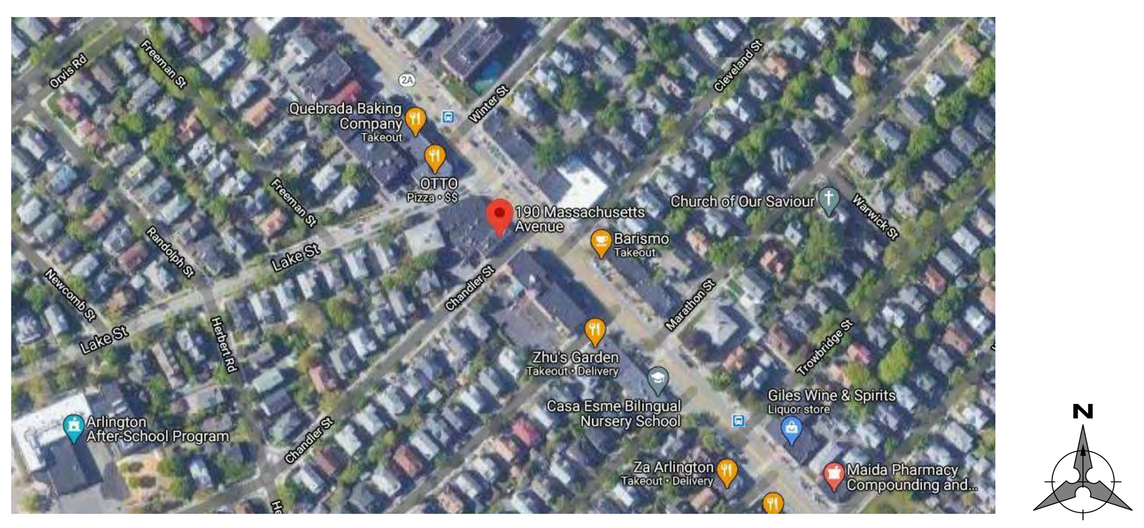
R:\PROJECTS\2729-02\CIVIL\DRAWINGS\CURRENT\C-2729-02_LANDSCAPING.DWG

PERSPECTIVE VIEW:

AERIAL SITE PLAN:



ARB PACKAGE

MARCH 1, 2021

DRAWING LIST

		REVISION DATE
ARCHITECTURAL		
A1.00	OVERALL PLAN - BASEMENT	
A1.01	OVERALL PLAN - FIRST FLOOR	
A1.02	OVERALL PLAN - SECOND FLOOR	
A1.03	OVERALL PLAN - THIRD FLOOR	
A1.04	OVERALL PLAN - FOURTH FLOOR	
A1.05	OVERALL PLAN - FIFTH FLOOR	
A1.06	OVERALL PLAN - ROOF	
A2.01	BUILDING ELEVATIONS	
A9.01	STREET ELEVATIONS	
A9.02	BANK CORNER RENDER	
A9.03	COMMERCIAL CORNER RENDER	
A9.04	ROOF DECK RENDER	
A9.05	SOLAR STUDIES	

MARKET SQUARE ARCHITECTS

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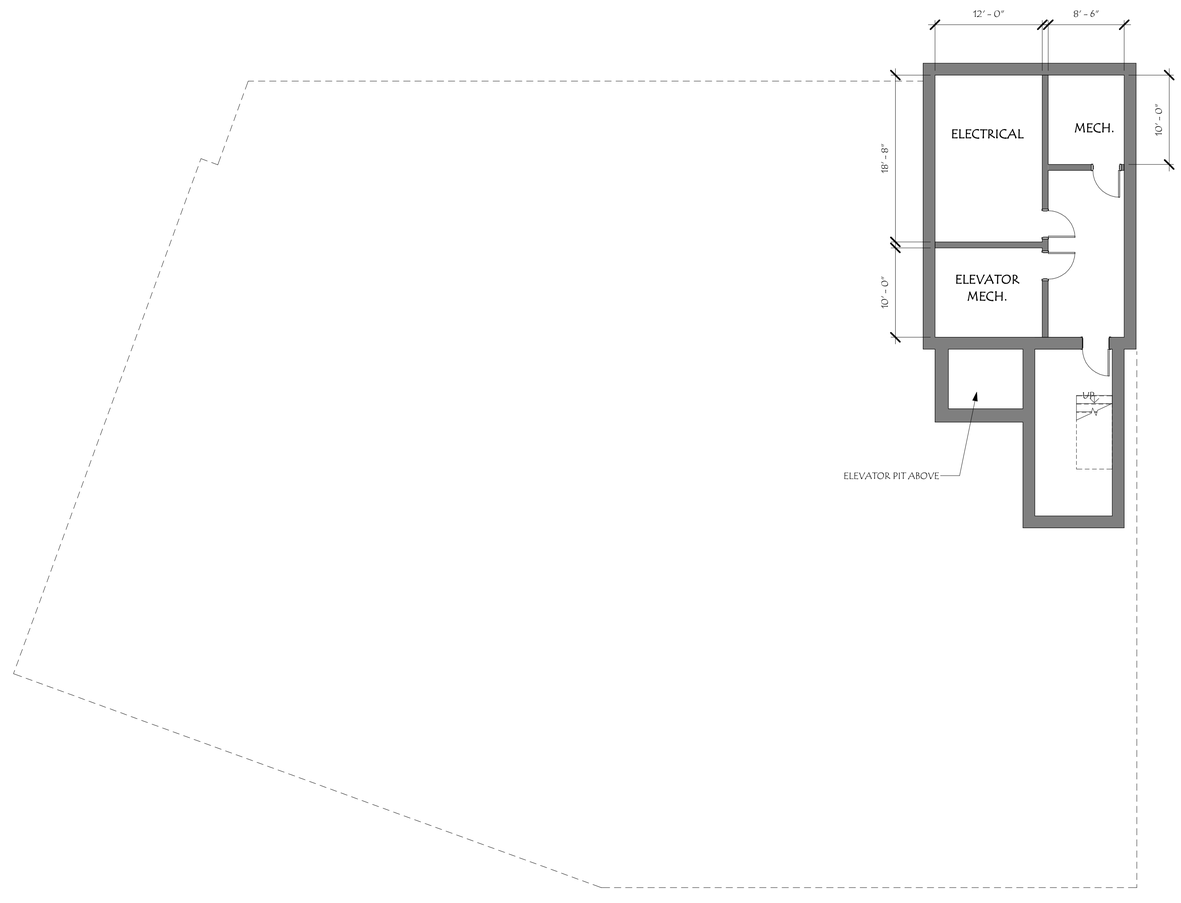
3/10/2021 1:19:49 PM

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA



1 OVERALL PLAN - BASEMENT
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
1104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-431-0202

NOT FOR CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

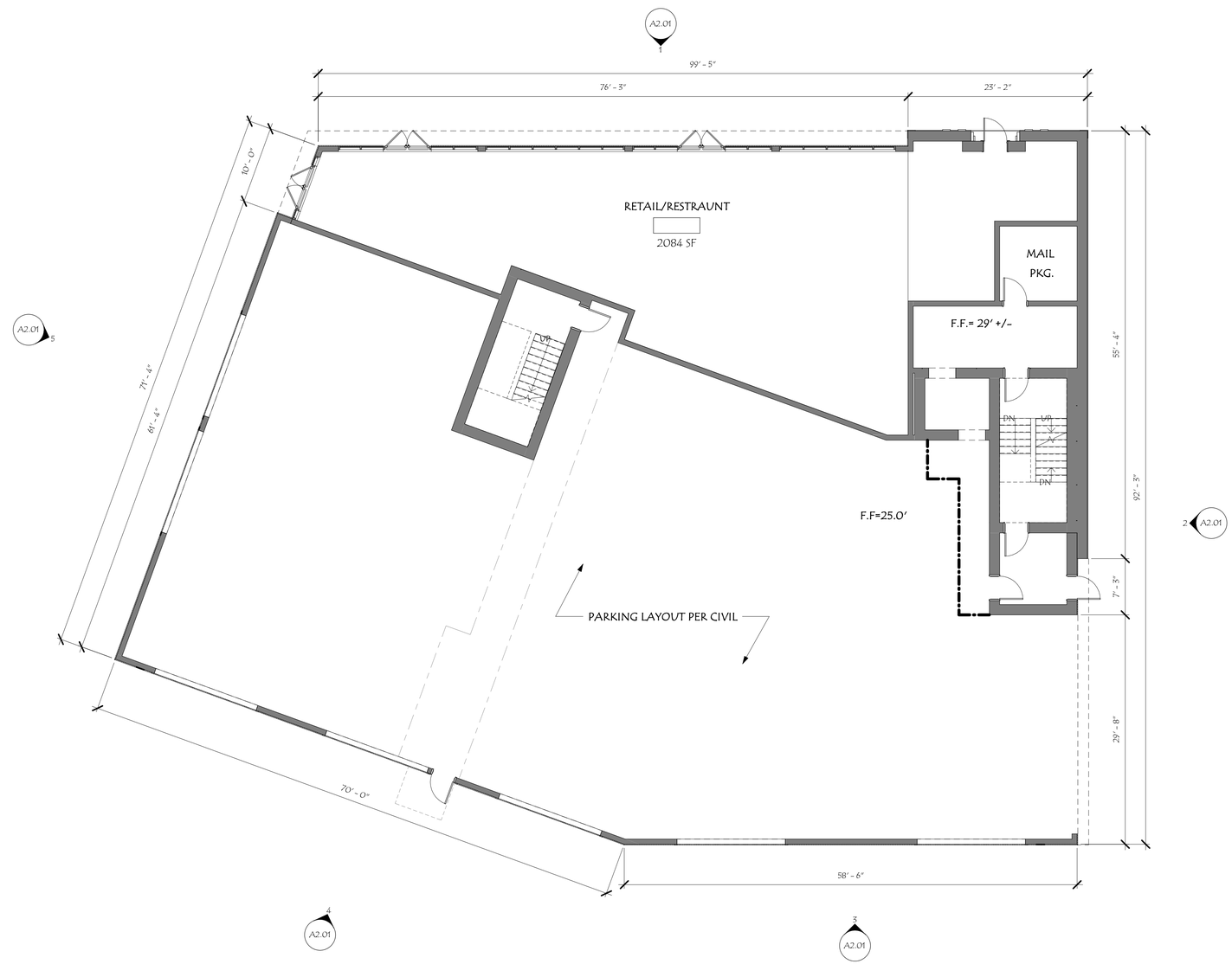
#	Description	Date

Scale: 1/8" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 03/01/21

Title: OVERALL PLAN - BASEMENT

A1.00

2020 Market Square Architects 3/10/2021 1:19:49 PM



1 OVERALL PLAN - 1ST FLOOR
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
1104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-431-0202

NOT FOR CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 1/8" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 03/01/21

Title: OVERALL PLAN - FIRST FLOOR

A1.01

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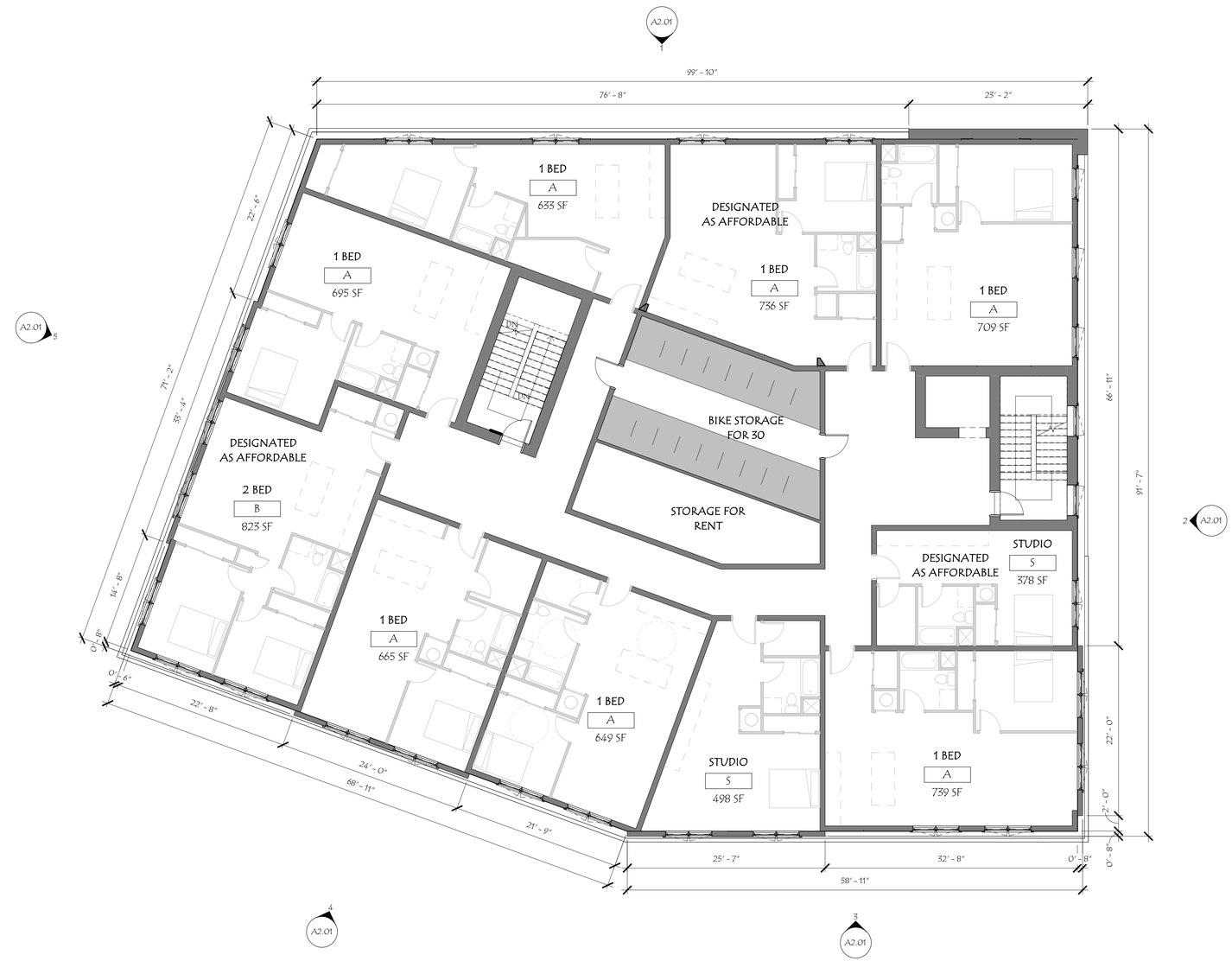
3/10/2021 1:39:49 PM

UNIT MATRIX:

	#	%
SECOND FLOOR:		
STUDIO	2 UNIT	20%
1 BED	7 UNITS	70%
2 BED	1 UNIT	10%
TOTAL:		
STUDIO	10 UNITS	27%
1 BED	23 UNITS	62%
2 BED	4 UNITS	11%
TOTAL	37 UNITS	

NOTE:
PRELIMINARY UNIT INTERNAL LAYOUT SHOWN, FINAL LAYOUT MAY VARY



1 OVERALL PLAN - 2ND FLOOR
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
1104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-501-0202

NOT FOR CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 1/8" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 03/01/21

Title: OVERALL PLAN - SECOND FLOOR

A1.02

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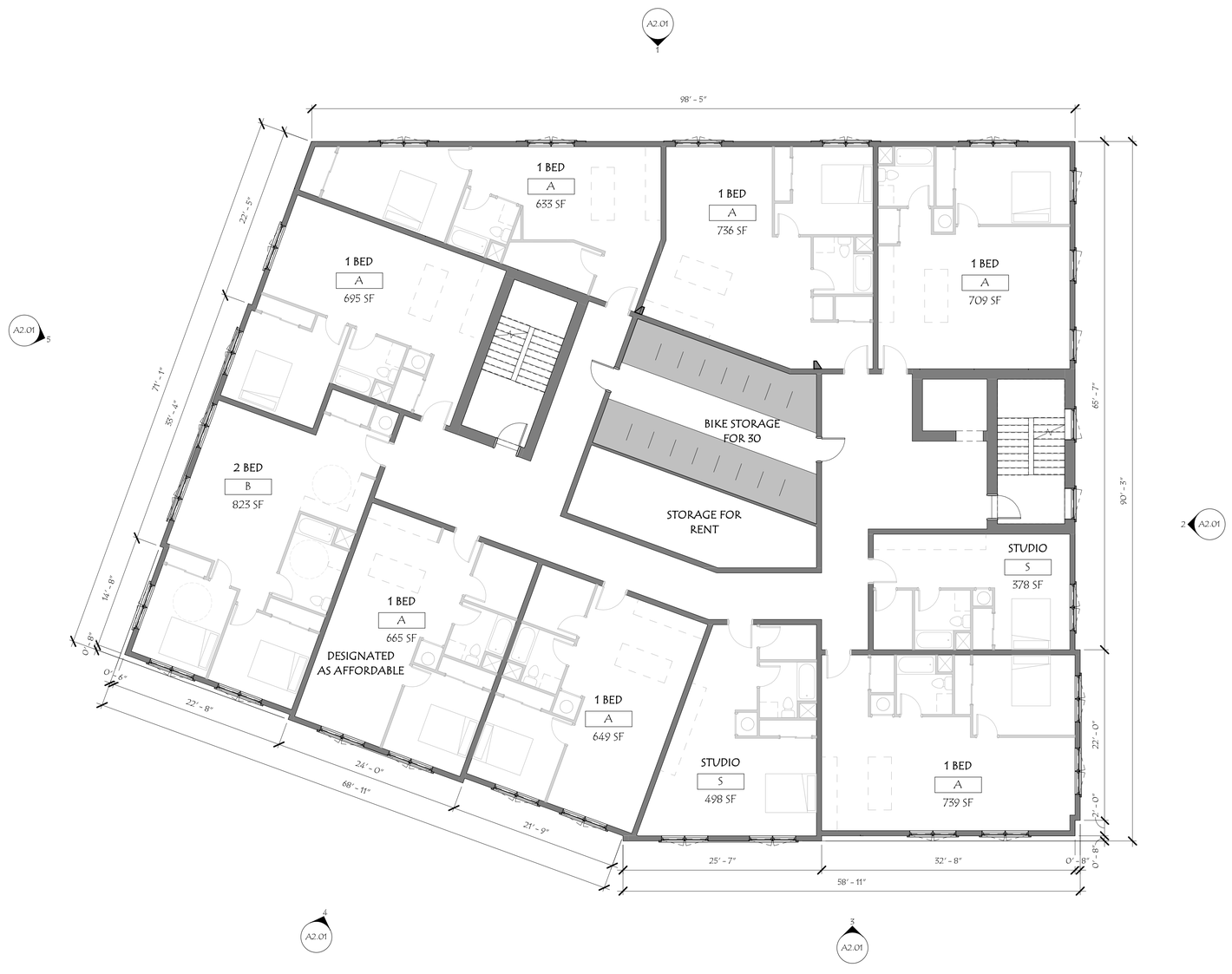
UNIT MATRIX:

	#	%
THIRD FLOOR:		
STUDIO	2 UNIT	20%
1 BED	7 UNITS	70%
2 BED	1 UNIT	10%
TOTAL:		
STUDIO	10 UNITS	27%
1 BED	23 UNITS	62%
2 BED	4 UNITS	11%
TOTAL	37 UNITS	

NOTE:
PRELIMINARY UNIT INTERNAL LAYOUT SHOWN, FINAL LAYOUT MAY VARY



1 OVERALL PLAN - 3RD FLOOR
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-431-0202

NOT FOR CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 1/8" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 03/01/21

Title: OVERALL PLAN - THIRD FLOOR

A1.03

© 2020 Market Square Architects 3/10/2021 1:39:50 PM

UNIT MATRIX:

	#	%
FOURTH FLOOR:		
STUDIO	2 UNIT	25%
1 BED	5 UNITS	63%
2 BED	1 UNIT	12%
TOTAL:		
STUDIO	10 UNITS	27%
1 BED	23 UNITS	62%
2 BED	4 UNITS	11%
TOTAL	37 UNITS	

NOTE:
PRELIMINARY UNIT INTERNAL LAYOUT SHOWN, FINAL LAYOUT MAY VARY

1 OVERALL PLAN - 4TH FLOOR
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-431-0202

NOT FOR CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 1/8" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 03/01/21

Title: OVERALL PLAN - FOURTH FLOOR

A1.04

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3/10/2021 1:19:30 PM

UNIT MATRIX:

	#	%
FIFTH FLOOR:		
STUDIO	4 UNIT	44%
1 BED	4 UNITS	44%
2 BED	1 UNIT	11%
TOTAL:		
STUDIO	10 UNITS	27%
1 BED	23 UNITS	62%
2 BED	4 UNITS	11%
TOTAL	37 UNITS	

NOTE:
PRELIMINARY UNIT INTERNAL LAYOUT SHOWN, FINAL LAYOUT MAY VARY

1 OVERALL PLAN - 5TH FLOOR
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-501-0202

NOT FOR CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 1/8" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 03/01/21

Title: OVERALL PLAN - FIFTH FLOOR

A1.05

2020 Market Square Architects

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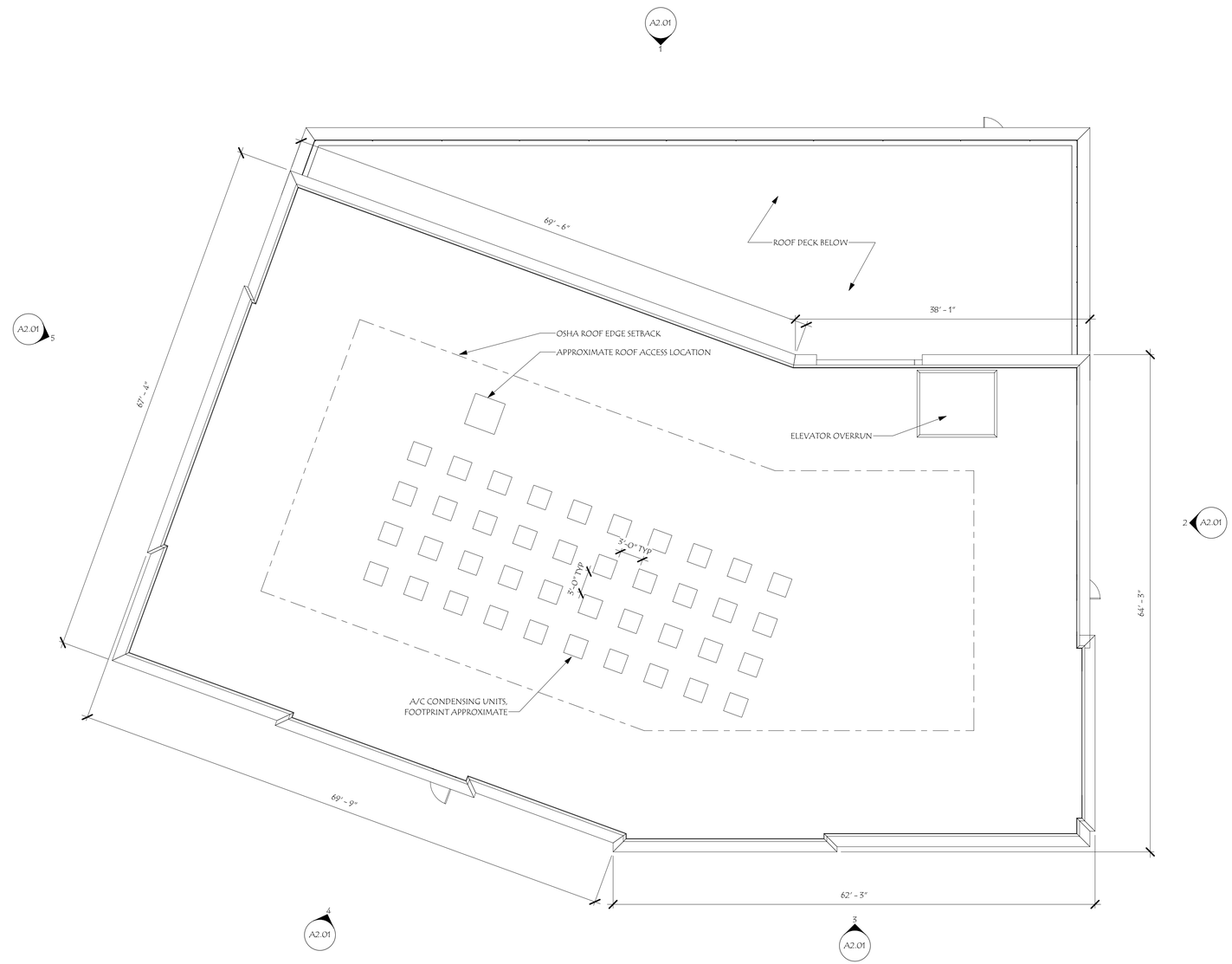

1 OVERALL PLAN - ROOF
1/8" = 1'-0"

MARKET SQUARE ARCHITECTS
1104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-501.0202

NOT FOR CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale:	1/8" = 1'-0"
Drawn By:	PPS
Checked By:	ALW
Project No.:	2020051
Date:	05/01/21

Title: OVERALL PLAN - ROOF

A1.06

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MATERIAL NOTES:

- BRICK BASE TO MATCH EXISTING BRICK BANK.
- PAINTED FIBER CEMENT PANEL, TYP. UPPER STORIES.
- CORNICE/TRIM TO BE FIBER CEMENT OR AZEK WITH METAL FLASHING PAINTED TO MATCH.

5 ELEVATION - 5
3/32" = 1'-0"

4 ELEVATION - 4
3/32" = 1'-0"

3 ELEVATION - 3
3/32" = 1'-0"

2 ELEVATION - 2
3/32" = 1'-0"

1 ELEVATION - 1
3/32" = 1'-0"

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-501-0202

NOT FOR CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 3/32" = 1'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 05/01/21

Title: BUILDING ELEVATIONS

A2.01

2020 Market Square Architects
3/10/2021 1:19:56 PM

NOTE:
CONTEXT BUILDING HEIGHTS AND ELEVATIONS APPROXIMATED.

3 CHANDLER STREET ELEVATION
1" = 20'-0"

2 LAKE STREET ELEVATION
1" = 20'-0"

1 MASS AVE STREET ELEVATION
1" = 20'-0"

MARKET SQUARE ARCHITECTS
1104 Congress St., STE 205
Portland, ME 04102-3001
PH: 603-524-0202

NOT FOR CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale: 1" = 20'-0"
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 03/01/21

Title: STREET ELEVATIONS

A9.01

2020 Market Square Architects 3/10/2021 1:20:03 PM

Title:	Scale:	Revisions:			
BANK CORNER RENDER	Drawn By: PPS	#	Description	Date	200 MASS AVE MULTI
	Checked By: ALW				190-200 MASSACHUSETTS AVE ARLINGTON, MA
A9.02	Project No.: 2020051				NOT FOR CONSTRUCTION
	Date: 03/01/21				MARKET SQUARE ARCHITECTS 104 Congress St., STE 203 Portsmouth, NH 03801 PH: 603.501.0202

* 2020 Market Square Architects 3/10/2021 1:20:04 PM

184-67-321

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-501-0202

NOT FOR CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale:
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 03/01/21

Title: COMMERCIAL CORNER RENDER

A9.03

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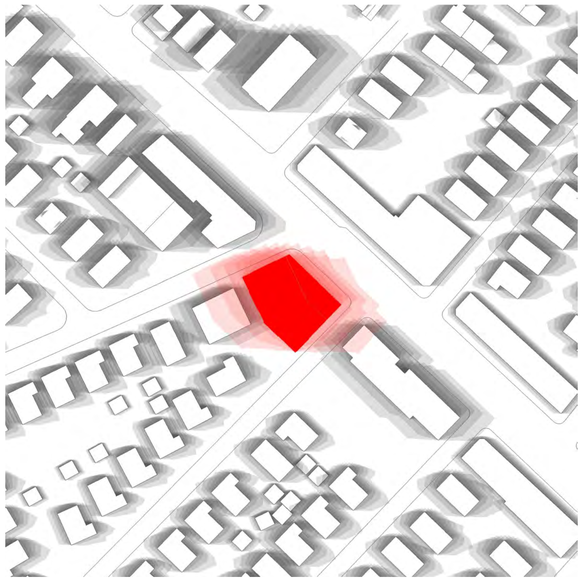
Title:	Scale:	Revisions:		
ROOF DECK RENDER	Drawn By: PPS	# Description	Date	200 MASS AVE MULTI
	Checked By: ALW			190-200 MASSACHUSETTS AVE ARLINGTON, MA
A9.04	Project No.: 2020051			NOT FOR CONSTRUCTION
	Date: 03/01/21			

MARKET SQUARE ARCHITECTS
104 Congress St., STE 203
Portsmouth, NH 03801
PH: 603.501.0202

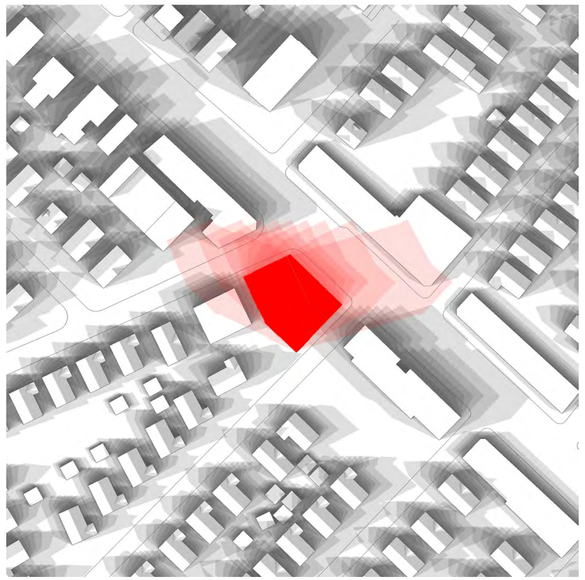
* 2020 Market Square Architects 3/10/2021 1:20:04 PM

186-6.321

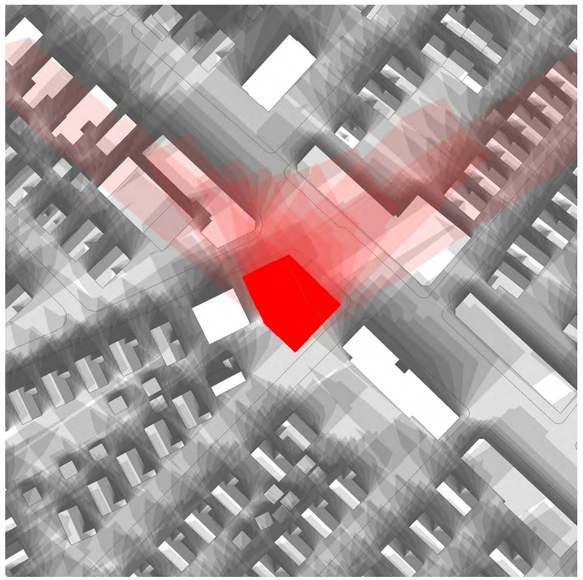
NOTE:
THE BUILDING AND LANDSCAPE SHADOWS ILLUSTRATED IN THE RENDERINGS BELOW ARE DIGITALLY GENERATED AND THEORETICAL REPRESENTATIONS OF THOSE SHADOWS CAST AT A SPECIFIC MOMENT IN TIME ON A SPECIFIC DAY. WHILE ACCURATE TO THE INPUT CALENDAR AND SUN LOCATION DATA, THE ACTUAL PERCEPTION OF SHADOWS INCLUDING THEIR SIZE, SHAPE AND INTENSITY OR DARKNESS, MAY BE SUBJECTIVE AND VARIABLE TO THE SPECIFIC OBSERVER. AS SUCH, THIS INFORMATION SHOULD BE UTILIZED AS GENERAL COMMENTARY, AND CAUSE FOR FURTHER DISCUSSION OR STUDY AS NEEDED.



SUMMER
8:00AM - 4:00PM UTC-5



SPRING/FALL
8:00AM - 4:00PM UTC-5



WINTER
8:00AM - 4:00PM UTC-5

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-501.0202

NOT FOR CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale:
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 03/01/21

Title: SOLAR STUDIES

A9.05

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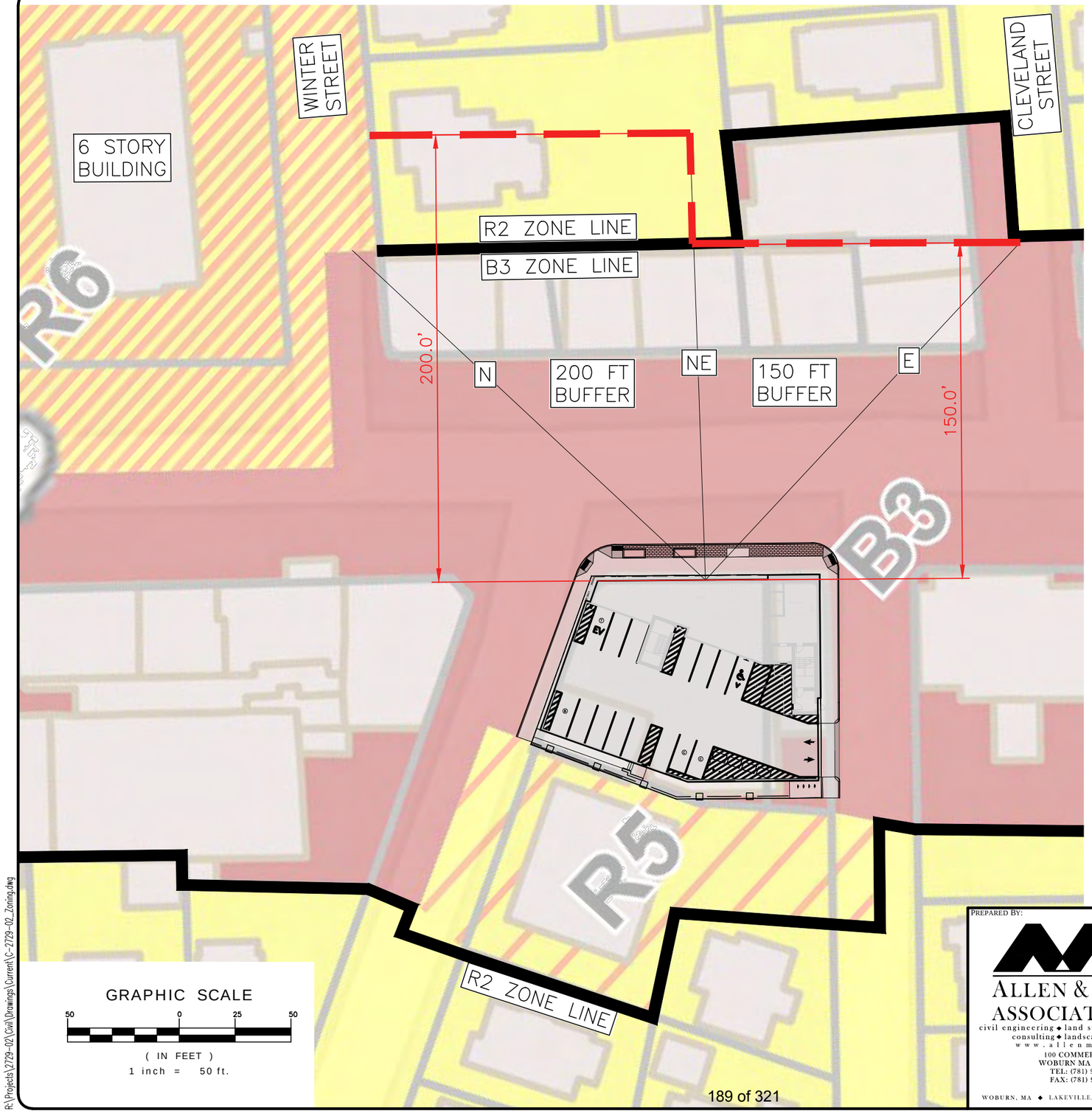
Market Square Architects investigated the impact of the greater maximum height limit as proposed through two methods.

Solar studies were conducted on the Solstices and the Equinoxes, from 8:00AM to 4:00 PM UTC-5; topography and existing structures were included in the model, and conclusions were drawn by extrapolating this data. These studies demonstrate that the proposed structure will only cast shadows on existing structures in a R2 zone during the evenings of winter months, when long shadows are already cast by existing structures and foliage. Furthermore, the specific properties of these existing structures (Cleveland St.) are farther than the boundary which triggers the height buffer (see FIG-01, Allen & Major Associates), such that no existing structure in an R2 zone close enough to trigger the height buffer is anticipated to be impacted by a shadow.

Massing studies were conducted to understand the context of the neighborhood. While the existing use of this specific site is shorter than proposed, the existing use of the surrounding context and neighborhood precedents a building of this proposed massing. An existing 5 story structure (215 Massachusetts Ave) stands on a lot roughly two hundred feet diagonally from the proposed construction. Observing the surrounding context, the proposed building exaggerates the required upper story stepback, minimizing the impact of the taller structure and creating a pedestrian friendly streetscape along Mass Ave which harmonizes with the massing of the adjacent existing structures (Capitol Theater, 204 Massachusetts Ave, and Leader Bank Corporate Offices, 180 Massachusetts Ave). The building does not immediately abut a R2 zoned property, therefor we believe an adequate buffer remains between the proposed construction and existing R2 lots.

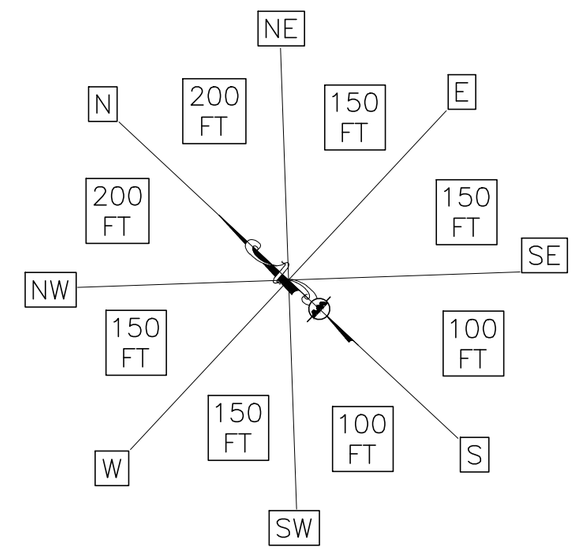
Conclusively, we believe that utilizing the taller maximum height allowed would have minimal impact on the nearby R2 lots.



5.3.19. **Reduced Height Buffer Area**

A. When two different maximum height limits are specified for the same zoning district in any Table of Dimensional and Density Regulations in this Section 5, the lower limit shall apply to any lot or part of a lot located in a height buffer area unless it is determined as a specific finding of a special permit that the properties in the adjacent R0, R1, R2, or OS district would not be adversely affected due to existing use or topographic condition. A height buffer area is defined as a lot or part of a lot which is located at a lesser distance from any land, not within a public way, in an R0, R1, R2 or OS district than the following:

Land in R0, R1, R2, OS is located	Lower height shall apply
Between northwest and northeast	Within 200 feet
Easterly, between northeast and southeast, or westerly between northwest and southwest	Within 150 feet
Southerly, between southeast and southwest	Within 100 feet



PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying environmental consulting ◆ landscape architecture
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WOBURN MA 01888-0118
TEL: (781) 935-6889
FAX: (781) 935-2896
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

PROJECT: 190 & 192-200 MASSACHUSETTS AVE

NORTHERN REDUCED HEIGHT BUFFER

PROJECT NO.	2729-02	DATE:	10/28/2020
SCALE:	1"=50'	SHEET REF:	-
DESIGNED BY:	ARM	CHECKED BY:	-

APPLICANT/OWNER: 192-200 MASSACHUSETTS AVE, LLC

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FIGURE No. FIG-01

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LEED v4 for Building Design and Construction: Homes and Multifamily Lowrise

Project Checklist

Project Name: 190-200 Massachusetts Ave, Arlington, MA 02476
Date: 12/18/2020

Y	?	N			
Y			Credit	Integrative Process	2
9	**6**	**0**		**Location and Transportation**	**15**
Y			Prereq	Floodplain Avoidance	Required
				PERFORMANCE PATH	
			Credit	LEED for Neighborhood Development Location	15
				PRESCRIPTIVE PATH	
4	4		Credit	Site Selection	8
3			Credit	Compact Development	3
	2		Credit	Community Resources	2
2			Credit	Access to Transit	2
2	**2**	**3**		**Sustainable Sites**	**7**
Y			Prereq	Construction Activity Pollution Prevention	Required
Y			Prereq	No Invasive Plants	Required
	1	1	Credit	Heat Island Reduction	2
	1	2	Credit	Rainwater Management	3
2			Credit	Non-Toxic Pest Control	2
4	**4**	**2**		**Water Efficiency**	**12**
Y			Prereq	Water Metering	Required
				PERFORMANCE PATH	
			Credit	Total Water Use	12
				PRESCRIPTIVE PATH	
4		2	Credit	Indoor Water Use	6
	4		Credit	Outdoor Water Use	4
10	**21**	**6**		**Energy and Atmosphere**	**38**
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Energy Metering	Required
Y			Prereq	Education of the Homeowner, Tenant or Building Manager	Required
				PERFORMANCE PATH	
			Credit	Annual Energy Use	29
				BOTH PATHS	
2	3		Credit	Efficient Hot Water Distribution System	5
	1	1	Credit	Advanced Utility Tracking	2
1			Credit	Active Solar Ready Design	1
	1		Credit	HVAC Start-Up Credentialing	1
				PRESCRIPTIVE PATH	
Y			Prereq	Home Size	Required
	1	2	Credit	Building Orientation for Passive Solar	3
	2		Credit	Air Infiltration	2
	2		Credit	Envelope Insulation	2
3			Credit	Windows	3
	2	2	Credit	Space Heating & Cooling Equipment	4
				EA PRESCRIPTIVE PATH (continued)	
	3		Credit	Heating & Cooling Distribution Systems	3
	2	1	Credit	Efficient Domestic Hot Water Equipment	3
2			Credit	Lighting	2
2			Credit	High Efficiency Appliances	2
	4		Credit	Renewable Energy	4
5	**4**	**1**		**Materials and Resources**	**10**
Y			Prereq	Certified Tropical Wood	Required
Y			Prereq	Durability Management	Required
	1		Credit	Durability Management Verification	1
2	2		Credit	Environmentally Preferable Products	4
3			Credit	Construction Waste Management	3
	1	1	Credit	Material Efficient Framing	2
9	**5**	**2**		**Indoor Environmental Quality**	**16**
Y			Prereq	Ventilation	Required
Y			Prereq	Combustion Venting	Required
Y			Prereq	Garage Pollutant Protection	Required
Y			Prereq	Radon-Resistant Construction	Required
Y			Prereq	Air FIltering	Required
Y			Prereq	Environmental Tobacco Smoke	Required
Y			Prereq	Compartmentalization	Required
2	1		Credit	Enhanced Ventilation	3
2			Credit	Contaminant Control	2
	3		Credit	Balancing of Heating and Cooling Distribution Systems	3
	1		Credit	Enhanced Compartmentalization	1
2			Credit	Enhanced Combustion Venting	2
		2	Credit	Enhanced Garage Pollutant Protection	2
3			Credit	Low Emitting Products	3
1	**0**	**5**		**Innovation**	**6**
Y			Prereq	Preliminary Rating	Required
		5	Credit	Innovation	5
1			Credit	LEED AP Homes	1
0	**0**	**4**		**Regional Priority**	**4**
		1	Credit	Regional Priority: Specific Credit	1
		1	Credit	Regional Priority: Specific Credit	1
		1	Credit	Regional Priority: Specific Credit	1
		1	Credit	Regional Priority: Specific Credit	1
40	**42**	**23**		**TOTALS**	Possible Points: **110**

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

PRINCIPALS
Robert J. Michaud, P.E.
Daniel J. Mills, P.E., PTOE

MEMORANDUM

DATE: December 21, 2020

TO: Frank Pasciuto
Member Manager
192 Massachusetts Ave LLC
Framina LLC
455 Massachusetts Avenue, Ste 1
Arlington, MA 02474

FROM: Robert J. Michaud, P.E. – Managing Principal
Daniel A. Dumais, P.E. – Senior Project Manager

RE: **Proposed Mixed-Use Development**
190-200 Massachusetts Avenue, Arlington, Massachusetts

MDM Transportation Consultants, Inc. (MDM) has conducted this traffic impact statement (TIS) for a proposed mixed-use development to be located at 190-200 Massachusetts Avenue in Arlington, Massachusetts. The location of the site relative to the adjacent roadway network is shown in **Figure 1.** This TIS provides a summary of the baseline traffic characteristics of the Site and adjacent roadways/ intersections, evaluates existing and projected site trip generation, quantifies incremental traffic impacts of the Site development on area roadways, and evaluates safety-related conditions at key study locations that provide access to the Site.

Key findings of the assessment are as follows:

- *Safety Characteristics*. A review of the crash data indicated that no immediate safety countermeasures are warranted based on the crash history at the study intersections. Likewise, available sight lines at the site driveway intersection with Chandler Street will exceed the sight line requirements published by AASHTO.

- *Public Transportation*. The project is in close proximity to an extensive sidewalk system, three nearby multi-use paths (Minuteman Bikeway, Alewife Greenway Bike Path, and Alewife Linear Path), adjacent MBTA bus routes, and the nearby redline subway connections. A review of Census data for Arlington indicates alternative transportation (transit, walk, and bike) use of 50% for residents of the immediate study area (Census tract 3561).

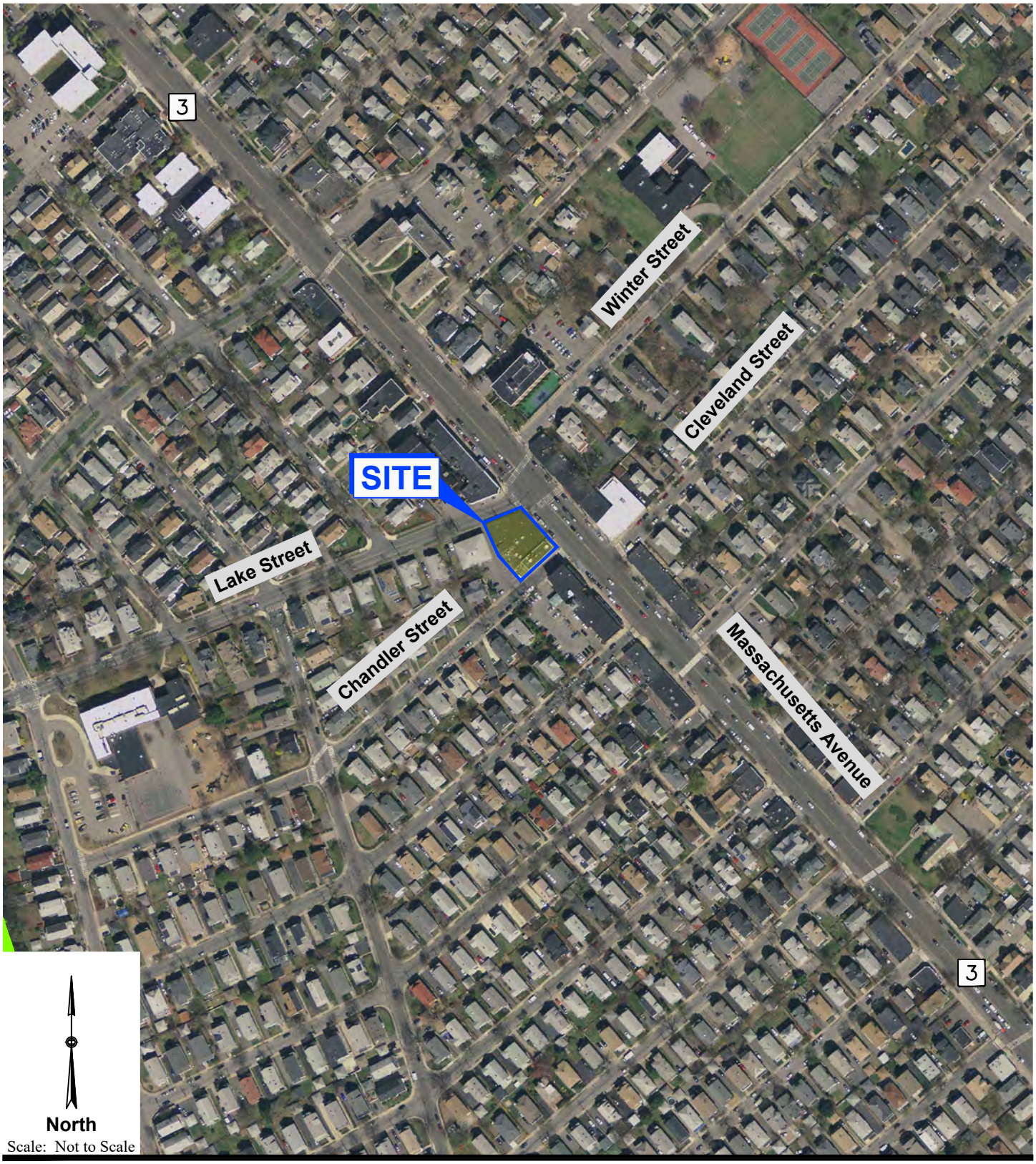

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Figure 1

Site Location

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- *Reduced Trip Generation.* Based on ITE methodology the proposed mixed-use development is estimated to reduce peak hour trips by up to 25 vehicle trips and approximately 228 *fewer* vehicle trips on a weekday relative to existing/historic site uses.

- *Qualitative Impact Assessment.* the incremental traffic associated with the proposed development will result in a reduction in vehicular activity compared to the existing/historic uses; consequently, no material impact in operating conditions at the study intersections and area roadways is projected as a result of the redevelopment.

In summary, access improvements, pedestrian/bicycle improvements, and TDM program are outlined under *Recommendations and Conclusions.* These improvements will establish a framework of minimizing Site traffic impacts and encourage non-motorized travel modes and pedestrian accommodation that is compatible with other projects in the area.

PROJECT DESCRIPTION

The Site consists of approximately 0.26± acres of land located along the western side of Massachusetts Avenue between Lake Street and Chandler Street. The existing Site includes 10,500± sf of commercial/retail buildings with a curb cut along Chandler Street providing 2 off-street parking spaces. The development program envisions retaining approximately 1,735 sf of commercial space and constructing 37 residential apartments. Accordingly, net new trip activity for the site will be limited to the proposed 37 residential units after further offset by the reduction in commercial tenants in the current buildings. Access to the Site will be via a full access/egress driveway along Chandler Street with off-street parking for 15 vehicles. The preliminary site layout prepared by Allen & Major Associates; Inc. is presented in **Figure 2**.

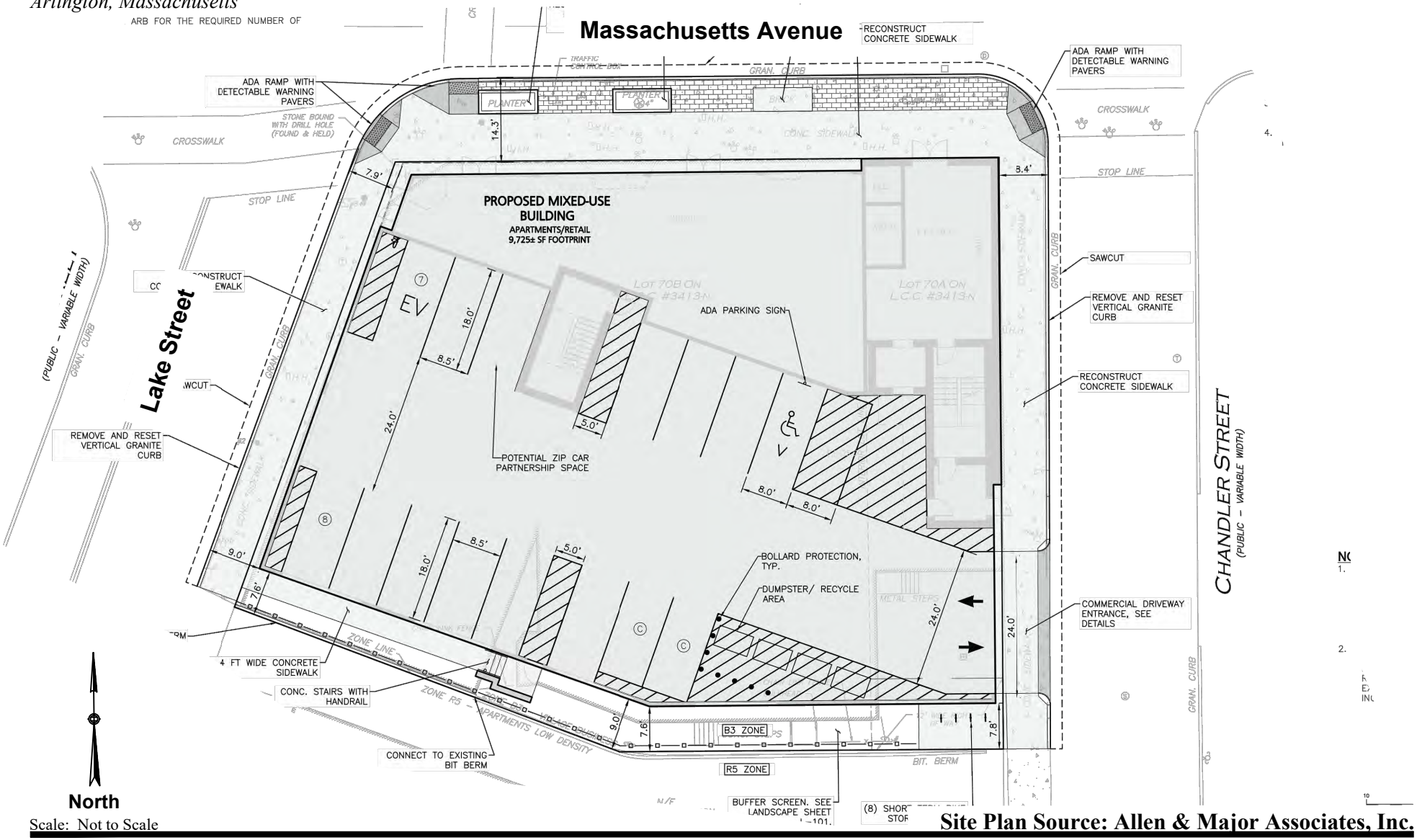
STUDY AREA

The following intersections will comprise the proposed study area:

- Massachusetts Avenue at Lake Street/Winter Street (Signal)
- Massachusetts Avenue at Chandler Street
- Chandler Street at Site Driveway

BASELINE TRAFFIC & SAFETY CHARATERISTICS

An overview of roadway classification and geometric characteristics is provided below for the adjacent study roadway.



Scale: Not to Scale

Site Plan Source: Allen & Major Associates, Inc.

Figure 2

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Preliminary Site Plan

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Roadways

Massachusetts Avenue (Route 3)

Adjacent to the Site, Massachusetts Avenue is a southeast-northwest roadway under local (town) jurisdiction and is classified by the Massachusetts Department of Transportation (MassDOT) as an Urban Principal Arterial roadway. The roadway provides a connection to Arlington Center in the west and connects to Alewife Brook Parkway and Cambridge to the east. Massachusetts Avenue provides three travel lanes in the site area, one westbound and two eastbound, separated by a double yellow centerline. Additional turn lanes are provided at its major intersections. Sidewalks and on-street parking are provided along both the northern and southern side of the roadway, and bike lanes are provided in both directions. Land use along Massachusetts Avenue in the immediate study area includes a mix of commercial and residential uses.

Lake Street

Lake Street is a two-lane, east-west roadway under local (town) jurisdiction and is classified by the Massachusetts Department of Transportation (MassDOT) as an Urban Minor Arterial roadway. The roadway provides a connection to Route 2 in the west and connects to Massachusetts Avenue to the east. Lake Street provides two travel lanes, one in each direction, separated by a double yellow centerline. Sidewalks are provided along both the northern and southern side of the roadway, and no on-street parking is allowed. Land use along Lake Street in the immediate study area includes a mix of uses including the commercial and residential uses, Hardy Elementary School, and access to the Minuteman Commuter Bikeway.

Chandler Street

Adjacent to the Site, Chandler Street is a one-lane, northbound roadway under local (town) jurisdiction and is classified by the Massachusetts Department of Transportation (MassDOT) as a local roadway. Chandler Street is approximately 24 feet wide and allows on-street parking along the eastern side of the roadway. Sidewalks are provided along both the eastern and western side of the roadway. Land use along Chandler Street in the immediate study area includes a mix of commercial and residential uses.

Intersection Crash History

In order to identify crash trends and safety characteristics for study area intersections, crash data were obtained from MassDOT for the Town of Arlington for the five-year period covering 2015 – 2019 (the most recent full year or data available from MassDOT). A summary of the crash data with crash rates for the study intersections with reported crashes is provided in **Table 1** with detailed data provided in the **Attachments.** A review of Highway Safety Improvement Project (HSIP) locations was also conducted.

TABLE 1
INTERSECTION CRASH SUMMARY
2015 THROUGH 2019[1]

Data Category	STUDY LOCATION		
	Massachusetts Ave at Lake Street/ Winter Street	Massachusetts Ave at Chandler Street	Chandler Street at Site Driveway/ 180 Mass Ave
Traffic Control	Signalized	Unsignalized	Unsignalized
Year:			
2015	9	2	0
2016	2	0	1
2017	5	1	0
2018	2	1	0
2019	3	0	0
Total	**21**	**4**	**1**
Type:			
Angle	3	3	1
Rear-End	6	1	0
Head-On	0	0	0
Sideswipe	10	0	0
Single Vehicle	1	0	0
Other/Unknown	1	0	0
Severity:			
P. Damage Only	20	4	1
Personal Injury	1	0	0
Fatality	0	0	0
Not Reported	0	0	0
Conditions:			
Dry	19	1	1
Wet	2	2	0
Snow	0	0	0
Not Reported/Other	0	1	0
Time:			
7:00 to 9:00 AM	2	0	0
4:00 to 6:00 PM	3	1	0
Rest of Day	16	3	1

[1]Source: MassDOT Crash Database
[2]Crashes per million entering vehicles

As summarized in **Table 1**:

- *Massachusetts Avenue at Lake Street:* A total of twenty-one (21) crashes were reported near the signalized intersection of Lake Street with Massachusetts Avenue resulting in approximately 4 crashes per year. The reported crashes included three (3) angle type collisions, six (6) rear-end type collisions, and ten (10) sideswipe-type collisions. Seventy-six percent (76%) of the crashes resulted in property-damage only, generally indicative of low-speed crashes. No fatalities or pedestrian-related incidents were reported during the study period. There was one collision that involved a bicycle and an eastbound vehicle in 2018 during the weekday evening peak hour that resulted in property damage only with the driver listed as disregarding the signal and roadway markings.

- *Massachusetts Avenue at Chandler Street:* A total of four (4) crashes were reported near the unsignalized intersection of Chandler Street with Massachusetts Avenue resulting in approximately 1 crash per year. The reported crashes included three (3) angle type collisions and one (1) rear-end type collisions. No fatalities or pedestrian-related incidents were reported during the study period.

- *Chandler Street at Site Driveway:* One (1) crash was reported at the unsignalized intersection of 180 Massachusetts Avenue (Bank) rear parking lot with Chandler Street. The reported crash was an angle-type collision that resulted in property damage only. No fatalities or pedestrian-related incidents were reported during the study period.

MDM notes that the safety review indicates that Massachusetts Avenue is listed as a HSIP bicycle cluster between Tufts Street in Arlington and Magoun Street in Cambridge. However, after an extensive review of crash records at the study intersections and with the limited number of pedestrian/bicycle related crashes as described above, no additional safety countermeasures are warranted.

Sight Line Evaluation

An evaluation of sight lines was conducted at the proposed site driveway location to ensure that minimum recommended sight lines are available to safely exit onto Chandler Street. The evaluation documents existing sight lines for vehicles as they relate to Chandler Street with comparison to recommended guidelines for the regulatory speed limit.

The American Association of State Highway and Transportation Officials' (AASHTO) standards[1] reference two types of sight distance which are relevant at the site driveway intersection on Chandler Street: stopping sight distance (SSD) and intersection sight distance (ISD). Sight lines for critical vehicle movements at the proposed site driveway intersection with Chandler Street were compared to minimum SSD and ISD for the regulatory speed limit in the Site vicinity.

Stopping Sight Distance

Sight distance is the length of roadway visible to the motorist to a fixed object. The minimum sight distance available on a roadway should be sufficiently long enough to enable a below-average operator, traveling at or near a regulatory speed limit, to stop safely before reaching a stationary object in its path, in this case, a vehicle exiting the site driveway onto Chandler Street. The SSD criteria are defined by AASHTO based on design and operating speeds, anticipated driver behavior and vehicle performance, as well as physical roadway conditions. SSD includes the length of roadway traveled during the perception and reaction time of a driver to an object, and the distance traveled during brake application on wet level pavement. Adjustment factors are applied to account for roadway grades where applicable.

SSD was estimated in the field using AASHTO standards for driver's eye (3.5 feet) and object height equivalent to the taillight height of a passenger car (2.0 feet) for the eastbound Chandler Street approaches to the proposed site driveway. **Table 2** presents a summary of the available SSD for the Chandler Street approach to the site driveway and AASHTO's recommended SSD for the regulatory travel speed.

[1] *A policy on Geometric Design of Highways and Streets*, American Association of State Highway and Transportation Officials (AASHTO), 2018.

TABLE 2
STOPPING SIGHT DISTANCE SUMMARY
CHANDLER STREET APPROACH TO SITE DRIVEWAY

Approach/ Travel Direction	Available SSD	AASHTO Recommended[1] Regulatory Speed Limit[2]	AASHTO Recommended[1] Criteria Satisfied
Northbound	>400 Feet	155 Feet	Yes

[1]Recommended sight distance based on AASHTO, A Policy on Geometric Design of Highways and Streets. Based on driver height of eye of 3.5 feet to object height of 2.0 feet and adjustments for roadway grade.
[2]Prima-Facie Speed Limit is 25 mph.

As summarized in **Table 2** analysis results indicate that the available sight lines will exceed AASHTO's recommended SSD criteria for the proposed site driveway based on the regulatory speeds along Chandler Street.

Intersection Sight Distance

Clear sight lines provide sufficient sight distance for a stopped driver on a minor-road approach to depart from the intersection and enter or cross the major road. As stated under AASHTO's Intersection Sight Distance (ISD) considerations, "…*If the available sight distance for an entering …vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to avoid collisions…To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road*." AASHTO's ISD criteria are defined into several "cases". For the proposed unsignalized site driveway location, which is proposed to be under "STOP" control with left egress movements, the ISD in question relates to the ability to turn left from the proposed driveway at its intersection with Chandler Street.

Available ISD was estimated in the field using AASHTO standards for driver's eye (3.5 feet), object height (3.5 feet) and decision point (between 8 from the edge of the travel way) for the eastbound direction along Chandler Street. **Table 3** presents a summary of the available ISD for the departure from the proposed site driveway and AASHTO's minimum and ideal ISD recommendations.

TABLE 3
INTERSECTION SIGHT DISTANCE SUMMARY
SITE DRIVEWAY DEPARTURE TO CHANDLER STREET

View Direction	Available ISD	AASHTO Minimum[1] Regulatory Speed Limit[2]	AASHTO Ideal[2] Regulatory Speed Limit[2]
Looking South	>400 Feet	155 Feet	280 Feet

[1]Recommended sight distance based on AASHTO, A Policy on Geometric Design of Highways and Streets. Based on driver height of eye of 3.5 feet and an object height of 3.5 feet. Minimum value as noted represents SSD per AASHTO guidance. Adjustments for driveway grade have been made as needed.
[2] Prima-Facie Speed Limit is 25 mph.

The results of the ISD analysis presented in **Table 3** indicate that the available sight lines looking west from the site driveway onto Chandler Street will exceed the recommended sight line criteria from AASHTO. MDM recommends that any new plantings (shrubs, bushes) or physical landscape features to be located within driveway sight lines should also be maintained at a height of 2 feet or less above the adjacent existing roadway grade to ensure unobstructed lines of sight.

As a further safety feature, it is recommended that the Proponent install an audible and visual warning device at the garage exit to alert pedestrians of pending motorists exiting the driveway.

Alternative Transportation Facilities

The existing pedestrian and transit facilities within the study area are shown graphically in **Figure 3**. The project is in close proximity to an extensive sidewalk system, nearby multi-use paths, adjacent MBTA bus routes, and nearby redline subway stations. The Massachusetts Bay Transit Authority (MBTA) operates the following bus routes in the study area and could be used as an alternative mode of travel to/from the site. A review of census data for Arlington indicates alternative transportation (transit, walk, and bike) use of 50% for residents of the immediate study area (Census tract 3561). Specific route and schedule information and Census data is provided in the **Attachments**.

- *MBTA Subway Service:* The redline subway runs from Alewife Station to South Station with another stop at Harvard Square. Both Alewife and Harvard stops are accessible from the Site via nearby MBTA Bus Routes. Service generally runs 5:00 am to 1:00 am on both weekdays and weekends with headways of approximately 9 minutes on peak times and 15-25 minutes during off-peak times.

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Figure 3

Alternative Transportation Facilities

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- *Route 77:* This route provides service between Arlington Heights and Harvard Square via Massachusetts Avenue (Route 3). Service is provided along Massachusetts Avenue with a bus stop located less than ¼ mile from Site near the intersection of Massachusetts Avenue and Lake Street. Several connections to other bus routes in the service area are available as is a direct connection to the Redline T service. Service is generally provided seven (7) days a week and operates between 5:00 am and 1:30 am on weekdays, between 5:00 am and 1:30 am on Saturdays and between 6:00 am and 1:30 am on Sundays.

- *Route 79:* This route provides service between Arlington Heights and Alewife Station via Massachusetts Avenue (Route 3) and Alewife Brook Parkway. Service is provided along Massachusetts Avenue with a bus stop located less than ¼ mile from Site near the intersection of Massachusetts Avenue and Lake Street. Several connections to other bus routes in the service area are available as is a direct connection to the Redline T service. Service is generally provided five (5) days a week and operates between 7:00 am and 7:30 pm on weekdays with no service on weekends.

- *Route 350:* This route provides service between North Burlington and Alewife Station via Cambridge Street (Route 3A), Massachusetts Avenue (Route 3), and Alewife Brook Parkway. Service is provided along Massachusetts Avenue with a bus stop located less than ¼ mile from Site near the intersection of Massachusetts Avenue and Lake Street. Several connections to other bus routes in the service area are available as is a direct connection to the Redline T service. Service is generally provided seven (7) days a week and operates between 6:00 am and 11:00 pm on weekdays, between 6:30 am and 10:00 pm on Saturdays and between 7:00 am and 7:30 pm on Sundays.

- *Minuteman Bikeway:* This bikeway is a 10-mile trail connecting Bedford, Lexington, Arlington, and Cambridge. Access to the Bikeway from the Site can be made at its crossing of Lake Street located approximately ¼ mile away. The Bikeway provides a direct connection to the Alewife MBTA Station as well as other bike/pedestrian trails in the area including the nearby Alewife Greenway Bike Path and Alewife Linear Path.

- *Alewife Greenway Bike Path:* This bikeway is approximately a 2-mile trail connecting Cambridge an eastern Arlington. Access to the Bikeway from the Site can be made via a connection to the Minuteman Bikeway near Magnolia Park. The Bike Path follows along Alewife Brook Parkway and provides a direct connection from the Alewife MBTA Station to Mystic Valley Parkway in Arlington as well as local commercial and recreational spaces such as Dilboy Fields, Pool and Tennis Courts.

- *Alewife Linear Path:* This bikeway is a 2-mile trail connecting Cambridge and Somerville. Access to the Bikeway from the Site can be made via a connection to the Minuteman Bikeway near Alewife Station. The Bikeway provides a direct connection from the Alewife MBTA Station to Davis Square in Somerville.

TRIP GENERATION

The trip generation estimates for the proposed redevelopment of the Site are provided for the weekday morning and weekday evening periods, which correspond to the critical analysis periods for the proposed use and adjacent street traffic flow. The methodology utilized to estimate the future trip-generation characteristics of the proposed development are summarized below. In accordance with EEA/MassDOT guidelines, the traffic generated by the proposed mixed-use development was estimated using trip rates published in ITE's *Trip Generation* for the Land Use Code (LUC) based on trip rates for Multifamily Housing (Mid-Rise) (LUC 221) and Shopping Center (LUC 820) for the commercial space. Census data for the immediate area indicates a transit use mode share of approximately 50% for residential uses. Therefore, trips associated with the residential use have been adjusted to reflect the census tract data. Projected site trip generation for the proposed development is summarized in **Table 2**. Trip generation calculations are provided in the **Attachments**.

TABLE 2
TRIP-GENERATION SUMMARY

Period	Residential[1]	Retail Use[2]	Total Trips
Weekday Morning Peak-Hour:			
Enter	2	1	**3**
Exit	5	1	**6**
Total	7	2	**9**
Weekday Evening Peak-Hour:			
Enter	5	3	**8**
Exit	3	4	**7**
Total	8	7	**15**
Daily	102	66	**168**

[1]Based on ITE LUC 221 (Multifamily Housing (Mid-Rise)) applied to 37 Units adjusted to reflect 50% non-auto mode share per US Census tract data.
[2]Based on ITE LUC 820 (Shopping Center) applied to 1,735 sf.

As summarized in **Table 2**, the proposed mixed-use development is estimated to generate approximately 9 vehicle trips during the weekday morning peak hour (3 entering and 6 exiting) and 15 vehicle trips during the weekday evening peak hour (8 entering and 7 exiting). On a daily basis, the development is estimated to generate approximately 168 vehicle trips on a weekday.

Table 3 summarizes the trip generation comparison for the project with respect to total new trips when adjusted for credit of existing/historic Site uses.

TABLE 3
TRIP-GENERATION COMPARISON

Period	Existing Uses[1]	Proposed Use[2]	Net New Trips
Weekday Morning Peak-Hour:			
Enter	6	**3**	**-3**
Exit	4	**6**	**+2**
Total	10	**9**	**-1**
Weekday Evening Peak-Hour:			
Enter	19	**8**	**-11**
Exit	21	**7**	**-14**
Total	40	**15**	**-25**
Daily	396	**168**	**-228**

[1] Based on ITE LUC 820 (Shopping Center) applied to 10,500 sf.
[2]Based on ITE LUC 221 (Multifamily Housing (Mid-Rise)) applied to 37 Units adjusted to reflect 50% non-auto mode share per US Census tract data and ITE LUC 820 (Shopping Center) applied to 1,735 sf.

As summarized in **Table 3**, the proposed mixed-use development is estimated to generate a net reduction in vehicle trips relative to existing/historic uses at the site. Specifically, the project will generate approximately 1 *fewer* vehicle trip (3 fewer entering and 2 more exiting) during the weekday morning peak hour and 25 *fewer* vehicle trips (11 fewer entering and 14 fewer exiting) during the weekday evening peak hour. On a daily basis, the development is estimated to generate approximately 228 *fewer* vehicle trips on a weekday. Trip generation calculations are provided in the **Attachments**.

QUALITATIVE IMACT ASSESSMENT

This section provides a quantitative statement of impact and describes the changes in trip generation associated with the development relative to Baseline conditions. Based on ITE trip generation methodology, the project will result in a no material change in traffic during the weekday morning peak hour and a modest decrease of approximately 25 vehicular trips (60% decrease) during the weekday evening peak hour. Relative traffic increases for the proposed project represents an inconsequential change in area roadway volumes - a level of change that falls well within normal day-to-day fluctuations in traffic traveling along Massachusetts Avenue and entering and exiting the study intersections. Consequently, no material impact in operating conditions at the study intersections and area roadways is projected as a result of the project.

RECOMMENDATIONS AND CONCLUSIONS

In summary, the proposed mixed-use development is estimated to result in a net reduction in trips compared to the existing commercial use of the property. However, several mitigation actions are identified to support the project to ensure that site access meets applicable safety criteria, to enhance neighborhood walking/bicycling and to reduce dependency on single-occupant auto use. These include (a) access-related improvements, (b) pedestrian and bicycle accommodations, and (c) Transportation Demand Management (TDM) elements as summarized below.

Access/Egress Improvements

- *Signs and Pavement Markings.* A STOP sign (R1-1) and STOP line pavement marking should be installed on the driveway approach to Chandler Street. "Left Turn Only" arrow and pavement marking should also be installed on the driveway approach to enhance the one-way restriction along Chandler Street. The sign and pavement markings shall conform to Manual on Uniform Traffic Control Devices (MUTCD) standards.

- *Audible Warning Device.* As a further safety feature, the Proponent should install an audible and visual warning device at the garage exit to alert pedestrians of pending motorists exiting the driveway.

- *Maintain Clear Driveway Sight Lines.* New plantings (shrubs, bushes) and structures (walls, fences, etc.) should be designed and maintained at a height of 2 feet or less above the finished driveway elevation within the sight triangle areas to provide unobstructed visibility to oncoming vehicles.

Pedestrian and Bicycle Accommodations

- *Pedestrian Accommodation.* The design incorporates sidewalks that connect the proposed building entrances with the parking areas and to the existing sidewalk along Massachusetts Avenue, Chandler Street, and Lake Street. The sidewalk along the property frontage will also be reconstructed to enhance the pedestrian environment along the property.

- *Bicycle Amenities*. The Proponent will incorporate secure and weather-protected indoor bicycle racks within the site (60 total spaces) to encourage and facilitate this mode of transportation to/from the Site by residents and building tenants. Additional short-term bike racks (8 exterior spaces) will also be provided near the building.

Transportation Demand Management (TDM)

A preliminary list of potential TDM program elements may include the following, subject to refinement of the development program and further evaluation by the Proponent:

- *Unbundled Parking.* The Proponent will consider unbundling residential parking to provide an option for residents to rent fewer or no parking spaces with their unit.

- *Bicycle Facilities and Promotion*. The Proponent will provide bicycle parking in excess of the zoning ordinance requirements to including weather protected racks for residents and supplemental racks for visitors and employees proximate to the building entrance. Specifically, this includes weather-protected bicycle storage within the site (60 spaces total within the property) plus 8 supplemental short-term exterior bike spaces.

- *Improve Walking Conditions*. The sidewalk along the property frontage will be reconstructed to enhance pedestrian accommodation to and along the property. The Proponent proposed to replace the bench within the sidewalk area fronting the property to accommodate pedestrians that are waiting for public transportation along Massachusetts Avenue. The Proponent will reconstruct the sidewalk and ramp system adjacent to the Site and provide enhanced planter boxes.

- *Electric Vehicle Parking Space*. Proponent will provide one (1) charging station for electric vehicles in the parking garage.

- *Car-Sharing Service Parking Space*. Proponent will consider the inclusion of one (1) parking space dedicated to a car-sharing service, such as ZipCar or other equivalent service.

CONCLUSIONS

In summary, MDM finds that the incremental traffic associated with the proposed development will result in a net reduction in vehicular activity compared to the existing/historic uses. Consequently, no material impact in operating conditions at the study intersections and area roadways is projected as a result of the redevelopment. Implementation of access improvements, proposed pedestrian improvements, and a TDM program will establish a framework of minimizing Site traffic impacts and will encourage non-motorized travel modes and pedestrian accommodation that is compatible with other projects in the area.

ATTACHMENTS

- Crash Data
- Sight Line Calculations
- Public Transportation Information
- Trip Generation
- Census Information

- Crash Data

Mass Ave at Lake Street

Crash Num	City Town Name	Crash Date	Crash Severity	Crash Time	Number of Vehicles	First Harmful Event	Manner of Collision	Non-Motorist Type (/	Road Surface (	X	Y
3993282	ARLINGTON	01/11/2015	Property damage o	2:29 PM	2	Collision with motor vehicle in traffic	Angle		Dry	229447.7	906201.7
4034761	ARLINGTON	04/15/2015	Property damage o	3:44 PM	2	Collision with motor vehicle in traffic	Sideswipe, same direction		Dry	229448.7	906200.6
4036637	ARLINGTON	04/29/2015	Not Reported	8:29 AM	2	Collision with motor vehicle in traffic	Sideswipe, same direction		Dry	229439.6	906210.5
4039082	ARLINGTON	05/01/2015	Property damage o	5:54 AM	2	Collision with motor vehicle in traffic	Rear-end		Dry	229448.7	906200.6
4045800	ARLINGTON	05/24/2015	Property damage o	10:02 PM	2	Collision with motor vehicle in traffic	Rear-end		Dry	229448.7	906200.6
4050184	ARLINGTON	06/05/2015	Not Reported	2:28 PM	2	Collision with motor vehicle in traffic	Rear-end		Dry	229448.7	906200.6
4071582	ARLINGTON	08/07/2015	Non-fatal injury	4:56 PM	2	Collision with motor vehicle in traffic	Sideswipe, opposite direction		Dry	229448.7	906200.6
4115437	ARLINGTON	11/19/2015	Not Reported	3:35 PM	2	Collision with motor vehicle in traffic	Angle		Dry	229448.7	906200.6
4122759	ARLINGTON	12/10/2015	Not Reported	6:27 AM	2	Collision with motor vehicle in traffic	Sideswipe, same direction		Dry	229448.7	906200.6
4137503	ARLINGTON	01/17/2016	Property damage o	2:51 PM	2	Collision with motor vehicle in traffic	Rear-end		Dry	229448.7	906200.6
4247681	ARLINGTON	09/13/2016	Property damage o	12:09 PM	1	Collision with utility pole	Single vehicle crash		Dry	229448.7	906200.6
4372115	ARLINGTON	06/03/2017	Property damage o	1:12 PM	1	Collision with motor vehicle in traffic	Sideswipe, same direction		Dry	229456.9	906192.4
4388089	ARLINGTON	07/08/2017	Property damage o	12:11 PM	2	Collision with motor vehicle in traffic	Sideswipe, same direction		Dry	229439.6	906210.5
4447110	ARLINGTON	10/26/2017	Property damage o	9:42 AM	2	Collision with parked motor vehicle	Sideswipe, same direction		Wet	229439.6	906210.5
4492857	ARLINGTON	11/27/2017	Property damage o	12:07 PM	2	Collision with motor vehicle in traffic	Sideswipe, same direction		Dry	229448.7	906200.6
4517088	ARLINGTON	03/20/2018	Property damage o	5:01 PM	1	Collision with pedalcycle (bicycle, tricycle, unicycle, pedal car)	Unknown	P3: Cyclist	Dry	229448.7	906200.6
4596395	ARLINGTON	06/03/2017	Property damage o	1:12 PM	2	Collision with motor vehicle in traffic	Sideswipe, same direction		Dry	229448.3	906201.1
4618623	ARLINGTON	11/06/2018	Property damage o	7:03 PM	2	Collision with motor vehicle in traffic	Rear-to-rear		Wet	229441.5	906208.5
4774799	ARLINGTON	11/14/2019	Property damage o	8:07 AM	3	Collision with motor vehicle in traffic	Rear-end		Dry	229441.5	906208.5
4776600	ARLINGTON	11/15/2019	Property damage o	5:33 PM	2	Collision with motor vehicle in traffic	Angle		Dry	229448.7	906200.6
4783683	ARLINGTON	11/25/2019	Property damage o	1:13 PM	2	Collision with motor vehicle in traffic	Sideswipe, same direction		Dry	229448.7	906200.6

Mass Ave at Chandler Street

Crash Num	City Town Name	Crash Date	Crash Severity	Crash Time	Number of Vehicles	First Harmful Event	Manner of Collision	Non-Motorist Type (/	Road Surface (	X	Y
4070001	ARLINGTON	07/31/2015	Not Reported	12:28 PM	2	Collision with parked motor vehicle	Rear-end		Dry	229479.5	906169.7
4088269	ARLINGTON	09/17/2015	Not Reported	10:55 PM	1	Collision with motor vehicle in traffic	Angle		Not reported	229479.5	906169.7
4355229	ARLINGTON	04/21/2017	Property damage o	4:43 PM	2	Collision with motor vehicle in traffic	Angle		Wet	229479.5	906169.7
4593671	ARLINGTON	09/12/2018	Property damage o	1:02 PM	3	Collision with motor vehicle in traffic	Angle		Wet	229479.5	906169.7

Chandler Street at Site Driveway

Crash Num	City Town Name	Crash Date	Crash Severity	Crash Time	Number of Vehicles	First Harmful Event	Manner of Collision	Non-Motorist Type (/	Road Surface (	X	Y
4157362	ARLINGTON	02/26/2016	Property damage o	3:15 PM	2	Collision with motor vehicle in traffic	Angle		Dry	229449.8	906143.2

- Sight Line Calculations

Stopping Sight Distance - Regulatory Speed

Chandler Street approaches to Site Driveway

		SPEED (MPH)	BRAKE REACTION DISTANCE (FT)	BRAKING DISTANCE (FT)	CALCULATED STOPPING SIGHT DISTANCE (FT)
Direction 1	NB	25	91.875	59.9	151.8

INPUTS	Direction 1
Travel Direction	NB
Speed	25
Grade	0
t	2.5
a	11.2

Stopping Sight Distance (SSD) - Source: AASHTO

SSD = Reaction Distance + Brake Distance

Reaction Distance = 1.47 x t x V

Brake Distance = V^2 / (30 x ((a/32.2)+G))

Where:
t = reaction time (sec)
V = travel speed (mph)
G= roadway grade
a - deceleration rate (ft/sec^2)

Intersection Sight Distance Calculations

Source: *A Policy on Geometric Design of Highways and Street, 7th Edition;* AASHTO; 2018.

ISD = 1.47 * V * t

V = speed
t = time gap

t = 7.5 s for a passenger car for Left Turn from a Stop
t = 6.5 s for a passenger car for Right Turn from a Stop

Chandler Street

ISD = 1.47 * 25 * 7.5 = 276 ft **SAY 280 ft**
(left-turn from a stop)

□ Public Transportation Information

Fares

PRICE PER TRIP	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	$1.70	$1.70	$2.40	$2.40
CharlieTicket	$2.00	$2.00	$2.90	$4.90***
Cash-on-Board	$2.00	$4.00	$2.90	$4.90***
Student/Youth*	$0.85	$0.85	$1.10	$1.10
Senior/TAP**	$0.85	$0.85	$1.10	$1.10
UNLIMITED TRIP PASSES				
1-Day	$12.75	$12.75	$12.75	$12.75
7-Day	$22.50	$22.50	$22.50	$22.50
Monthly	$55.00	$55.00	$90.00	$90.00
Senior/TAP Monthly $30.00/month for unlimited travel on Local Bus and Rapid Transit				

VALID PASSES: LinkPass ($84.50/mo.); Student /Youth LinkPass* ($30/mo.); Senior/TAP LinkPass* ($30/mo.); and express bus, commuter rail, and boat passes.

FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind Access CharlieCard holders ride free: if using a guide, the guide rides free

- * Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available to students through participating middle schools and high schools. Youth CharlieCards are available through community partners in the Boston metro area. Visit www.mbta.com/youthpass for details.
- ** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

*** For Silver Line SL4 or SL5 pay $2.75. Also see "transfers."

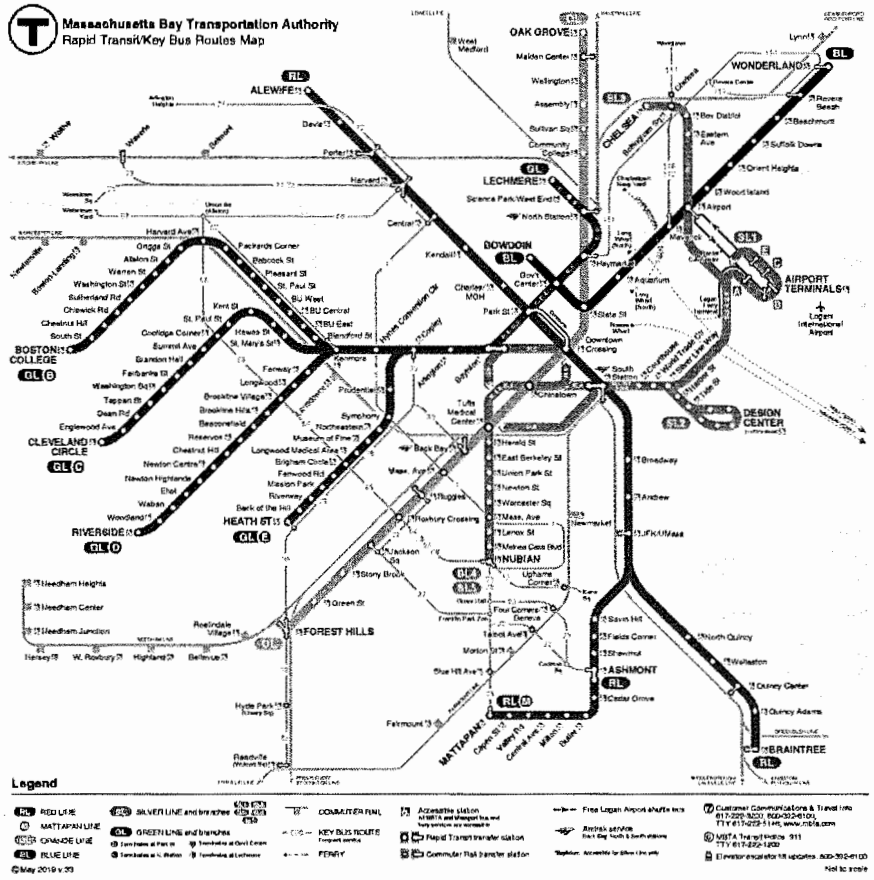
TRANSFERS

If paying with a CharlieTicket or CharlieCard, discounted transfers that are available are automatic — just use the same ticket or card throughout your trip. If paying with cash onboard a vehicle, free transfers are only allowed between rapid transit lines and inside paid platform areas at gated stations.

SCHEDULES

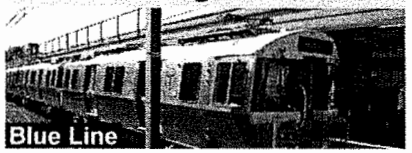
Schedules are available at the following stations: Park Street, Airport, Malden, Harvard, Haymarket (Green Line Level), Back Bay and Downtown Crossing (Orange Line Level) or see station personnel. Schedules also available at the Transportation Building (10 Park Plaza), 45 High St, and online at mbta.com.

For real-time subway and bus tracking, download the Transit app on any smartphone.



Rapid Transit

Effective August 30, 2020



Massachusetts Bay Transportation Authority massDOT

Information 617-222-3200 • 1-800-392-6100
(TTY) 617-222-5146 • www.mbta.com

Rapid Transit Line	Weekday				Saturday			Sunday		
	First Trip	Peak	Off Peak	Last Trip	First Trip	Arriving Every	Last Trip	First Trip	Arriving Every	Last Trip
Red Line										
Alewife Braintree	5:24 AM 5:08 AM	9 mins	12-16 mins	12:20 AM 12:17 AM	5:24 AM 5:09 AM	12-16 mins	12:20 AM 12:17 AM	6:08AM 6:00AM	12-16 mins	12:20 AM 12:17 AM
Alewife Ashmont	5:16 AM 5:16 AM	9 mins	12-16 mins	w 12:27 AM w 12:30 AM	5:16 AM 5:16 AM	12-16 mins	w 12:27 AM w 12:30 AM	6:00AM 6:00AM	12-16 mins	w 12:27 AM w 12:30 AM
"M" Ashmont Mattapan	5:17 AM 5:05 AM	5 mins	8-12 Day 26 Late	w 1:05 AM 12:53 AM	5:15 AM 5:05 AM	8-12 Day 26 Early/Late	w 1:05 AM 12:53 AM	6:03AM 5:51AM	8-12 Day 26 Early/Late	w 1:05 AM 12:53 AM
Blue Line										
Wonderland Orient Heights Bowdoin	5:13 AM 5:14 AM 5:30 AM	5 mins	9-13 mins	12:28 AM 12:33 AM w 1:00 AM	5:25 AM 5:13 AM 5:29 AM	9-13 mins	12:28 AM 12:33 AM w 1:00 AM	5:58AM 6:03AM 6:21AM	9-13 mins	12:28 AM 12:33 AM w 1:00 AM
Orange Line										
Oak Grove Forest Hills	5:16 AM 5:16 AM	6 mins	9-11 mins	w 12:30 AM w 12:28 AM	5:16 AM 5:16 AM	9-11 mins	w 12:30 AM w 12:28 AM	6:00AM 6:00AM	9-11 mins	w 12:30 AM w 12:28 AM
Green Line*										
B Boston College Park Street	5:01 AM 5:45 AM	5-6 mins	7-9 mins	12:10 AM w 12:52 AM	4:45 AM [2] 5:40 AM	7-8 mins	12:09 AM w 12:52 AM	5:20AM [2] 6:12AM	9 mins	12:10 AM w 12:52 AM
C Cleveland Circle North Station	4:57 AM [1] 5:48 AM	6-8 mins	9-11 mins	12:07 AM w 12:46 AM	4:50 AM [2] 5:30 AM	9-10 mins	12:10 AM w 12:46 AM	5:30AM [2] 6:06AM	10 mins	12:10 AM w 12:46 AM
D Riverside Government Ctr.	4:56 AM 5:45 AM	6 mins	8-11 mins	12:05 AM w 12:49 AM	4:55 AM 5:38 AM	8-9 mins	12:02 AM w 12:49 AM	5:25AM 6:10AM	11-12 mins	12:05 AM w 12:49 AM
E Lechmere* Heath Street	5:00 AM [4] 5:45 AM	6-7 mins	8-10 mins	12:30 AM 12:47 AM [3]	5:01 AM 5:39 AM	10 mins	12:30 AM 12:47 AM [3]	5:35AM 6:15AM	12 mins	12:30 AM 12:47 AM [3]
Silver Line										
SL1 Logan Airport South Station	5:38 AM 5:40 AM	7-12 mins	10-12 mins	f 1:03 AM w 1:02 AM	5:48 AM 5:45 AM	10-12 mins	1:15 AM w 12:59 AM	5:50AM 6:12AM	10-12 mins	f 1:12 AM w 1:00 AM
SL2 Design Center South Station	6:07 AM 5:44 AM	6 mins	14-16 mins	12:37 AM 12:50 AM	6:03 AM 5:47 AM	14-16 mins	12:35 AM 12:45 AM	6:51AM 6:35AM	14-16 mins	12:51 AM 12:36 AM
SL3 Chelsea Station South Station	4:55 AM 4:20 AM	6-11 mins	8-13 mins	f 1:05 AM w 12:35 AM	5:30 AM 4:56 AM	8-13 mins	1:22 AM w 12:55 AM	6:26AM 5:53AM	8-13 mins	f 1:25 AM w 12:55 AM
SL4 Nubian Station South Station	5:20 AM 5:38 AM	6-11 mins	6-11 mins	12:20 AM 12:37 AM	5:23 AM 5:40 AM	13-20 mins	12:20 AM 12:40 AM	6:02AM 6:20AM	13-20 mins	12:20 AM 12:40 AM
SL5 Nubian Station Downtown Xing	5:15 AM 5:32 AM	11-14 mins	13-20 mins	12:51 AM w 1:07 AM	5:19 AM 5:34 AM	6-11 mins	12:43 AM w 1:00 AM	6:00AM 6:16AM	6-11 mins	12:25 AM w 12:47 AM

Peak Service:
Weekdays 7 AM - 9 AM, 4 PM - 6:30 PM

Green Line Notes:

New and ongoing infrastucture projects may result in diversions on some branches at various times.

See GL service changes at mbta.com/GLwork

View service alerts at mbta.com/alerts

* E trains start/end at North Station for Green Line Extension work – shuttles provided between North Station and Lechmere.

More: mbta.com/GLEwork

1 - The first two C train AM northbound trips run through to Lechmere Station on weekdays.

2 - The first B and second C train AM northbound trips run through to Lechmere Station on weekends.

3 - On weekdays the 12:27 AM trip (weekends the 12:32 AM trip) from Heath St is the last connecting train to other lines downtown. The 12:37AM and 12:47AM trips (weekends the 12:47AM trip) from Heath St. runs in service to Lechmere with no guaranteed connections.

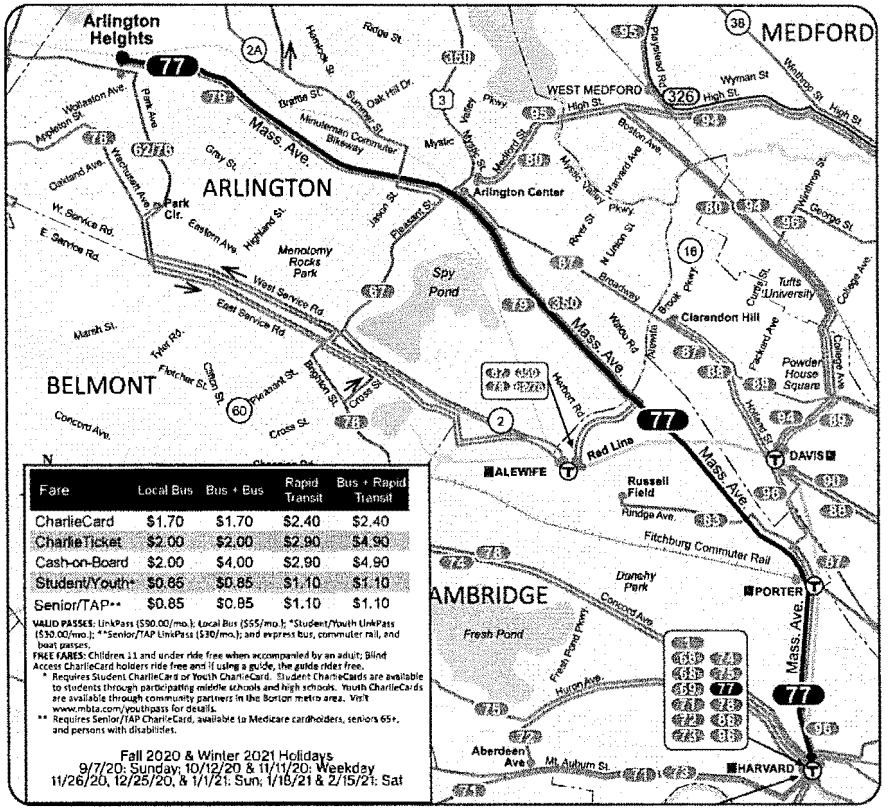
4 - Early morning service from Lechmere to Riverside departs Lechmere at 5:00 AM.

f - After exiting Ted Williams Tunnel bus will only service World Trade Center and South Station stops.

w - Last trips wait at some stations, primarily in the Downtown area, for connecting service. Departure times are approximate.

Fall 2020 & Winter 2021 Holidays
9/7/20: Sunday; 10/12/20 & 11/11/20: Weekday
11/26/20, 12/25/20, & 1/1/21: Sun; 1/18/21 & 2/15/21: Sat

Route 77 Arlington Heights - Harvard Station



Fare	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	$1.70	$1.70	$2.40	$2.40
CharlieTicket	$2.00	$2.00	$2.90	$4.90
Cash-on-Board	$2.00	$4.00	$2.90	$4.90
Student/Youth*	$0.85	$0.85	$1.10	$1.10
Senior/TAP**	$0.85	$0.85	$1.10	$1.10

VALID PASSES: LinkPass ($90.00/mo.); Local Bus ($55/mo.); *Student/Youth LinkPass ($30.00/mo.); **Senior/TAP LinkPass ($30/mo.); and express bus, commuter rail, and boat passes.

FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind Access CharlieCard holders ride free and if using a guide, the guide rider free.

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** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

Fall 2020 & Winter 2021 Holidays
9/7/20: Sunday; 10/12/20 & 11/11/20: Weekday
11/26/20, 12/25/20, & 1/1/21: Sun; 1/18/21 & 2/15/21: Sat

77 Weekday

Inbound

Leave Arlington Heights	Arrive Arlington Center	Lv/Arrive North Camb.	Arrive Harvard Square
4:48A	4:54A	5:01A	5:12A
5:00	5:06	5:13	5:24
5:12	5:18	5:25	5:36
5:23	5:29	5:36	5:47
5:34	5:40	5:47	5:58
Every	*10 Mins.*	*or*	*Less*
10:15	10:23	10:34	10:51
10:25	10:33	10:44	11:01
10:34	10:42	10:53	11:10
10:43	10:51	11:02	11:19
10:52	11:00	11:11	11:28
11:01	11:09	11:20	11:37
11:11	11:19	11:30	11:47
11:20	11:28	11:39	11:56
11:29	11:37	11:48	12:06P
11:38	11:46	11:57	12:15
11:47	11:56	12:07P	12:25
11:56	12:05P	12:16	12:34
12:05P	12:14	12:25	12:43
12:14	12:23	12:34	12:52
Every	*11 Mins.*	*or*	*Less*
4:01	4:10	4:22	4:38
4:11	4:20	4:32	4:49
4:21	4:30	4:42	5:01
4:31	4:40	4:53	5:12
4:41	4:50	5:04	5:23
4:51	5:00	5:14	5:33
5:01	5:10	5:24	5:43
5:11	5:20	5:34	5:53
5:21	5:30	5:44	6:03
5:31	5:40	5:54	6:13
5:41	5:50	6:04	6:23
5:50	5:59	6:13	6:32
6:00	6:09	6:23	6:42
6:10	6:19	6:33	6:52
Every	*10 Minutes*		*Until*
8:50	8:56	9:05	9:20
9:00	9:06	9:15	9:30
9:10	9:16	9:25	9:40
9:21	9:27	9:36	9:51
9:32	9:38	9:47	10:02
9:43	9:49	9:58	10:13
9:54	10:00	10:09	10:24
10:05	10:11	10:20	10:34
10:16	10:22	10:30	10:43
10:27	10:33	10:40	10:53
10:38	10:43	10:50	11:03
10:50	10:55	11:02	11:15
11:02	11:07	11:14	11:27
11:14	11:19	11:26	11:39
11:26	11:31	11:38	11:51
11:38	11:43	11:50	12:03A
11:50	11:55	12:02A	12:15
12:02A	12:07A	12:14	12:27
12:17	12:22	12:29	12:42
12:32	12:37	12:44	12:57

Outbound

Leave Harvard Station	Arrive North Camb.	Arrive Arlington Center	Arrive Arlington Heights
5:11A	5:19A	5:24A	5:29A
5:21	5:29	5:34	5:39
5:32	5:40	5:45	5:50
5:43	5:51	5:56	6:01
5:54	6:02	6:08	6:13
6:05	6:15	6:21	6:26
6:18	6:28	6:34	6:39
6:31	6:41	6:47	6:52
6:42	6:52	6:58	7:08
6:51	7:02	7:12	7:23
7:00	7:12	7:22	7:33
7:09	7:21	7:31	7:42
Every	*10 Mins.*	*or*	*Less*
11:19	11:30	11:38	11:47
11:28	11:39	11:47	11:56
11:37	11:48	11:56	12:06P
11:46	11:57	12:05P	12:15
11:55	12:08P	12:17	12:27
12:05P	12:17	12:26	12:36
Every	*10 Mins.*	*or*	*Less*
4:14	4:30	4:46	4:58
4:24	4:43	4:59	5:11
4:34	4:53	5:09	5:21
4:44	5:03	5:19	5:31
4:54	5:13	5:29	5:41
5:04	5:23	5:39	5:51
5:14	5:33	5:49	6:01
5:24	5:43	5:59	6:11
5:34	5:53	6:09	6:21
5:44	6:03	6:19	6:30
5:54	6:13	6:29	6:36
6:04	6:23	6:37	6:44
6:14	6:31	6:42	6:49
6:23	6:36	6:47	6:54
6:32	6:44	6:55	7:02
6:41	6:53	7:04	7:11
6:50	7:02	7:13	7:20
6:59	7:11	7:22	7:29
7:08	7:20	7:31	7:38
7:17	7:29	7:40	7:47
7:26	7:38	7:49	7:56
7:35	7:47	7:58	8:05
Every	*11 Mins.*	*or*	*Less*
10:38	10:49	10:56	11:03
10:50	11:01	11:08	11:15
11:02	11:13	11:18	11:23
11:13	11:23	11:28	11:33
11:24	11:34	11:39	11:44
11:35	11:45	11:50	11:55
11:46	11:56	12:01A	12:06A
11:57	12:07A	12:12	12:17
12:08A	12:18	12:23	12:28
12:19	12:29	12:34	12:39
12:30	12:40	12:45	12:50
12:45	12:55	1:00	1:05
w 1:05	1:15	1:20	1:25

77 Saturday

Inbound

Leave Arlington Heights	Arrive Arlington Center	Lv/Arrive North Camb.	Arrive Harvard Square
4:48A	4:52A	4:59A	5:09A
5:03	5:07	5:14	5:24
5:18	5:22	5:29	5:39
5:33	5:37	5:44	5:54
5:48	5:52	5:59	6:10
6:03	6:09	6:16	6:27
6:18	6:24	6:31	6:42
Every	*14 Mins.*	*Until*	
7:15	7:22	7:31	7:45
7:31	7:38	7:47	8:01
7:47	7:54	8:03	8:17
8:02	8:09	8:18	8:32
8:17	8:24	8:33	8:47
8:32	8:39	8:48	9:02
8:45	8:52	9:01	9:15
8:57	9:04	9:13	9:27
9:09	9:16	9:25	9:39
9:21	9:28	9:37	9:51
9:33	9:40	9:49	10:03
9:45	9:52	10:01	10:15
9:56	10:03	10:12	10:26
10:07	10:14	10:23	10:38
10:18	10:25	10:35	10:52
10:29	10:37	10:48	11:05
10:40	10:48	10:59	11:16
10:51	10:59	11:10	11:27
11:02	11:10	11:21	11:38
Every	*11 Mins.*	*Until*	
11:56	12:04P	12:15P	12:32P
12:06P	12:14	12:25	12:42
Every	*12 Mins.*	*or*	*Less*
6:34	6:41	6:51	7:09
6:47	6:54	7:04	7:21
7:00	7:06	7:16	7:33
7:15	7:21	7:31	7:48
7:30	7:36	7:46	8:03
7:45	7:51	8:01	8:17
8:00	8:05	8:14	8:30
8:15	8:20	8:29	8:45
8:30	8:35	8:44	9:00
8:45	8:50	8:59	9:15
9:00	9:05	9:14	9:30
9:15	9:20	9:29	9:45
9:31	9:36	9:45	10:01
9:48	9:53	10:02	10:18
10:05	10:10	10:19	10:35
10:22	10:27	10:35	10:51
10:39	10:44	10:52	11:08
Every	*17 Mins.*	*or*	*Less*
12:00M	12:04A	12:11A	12:25A
12:15	12:19	12:26	12:40
12:30	12:34	12:41	12:55

Outbound

Leave Harvard Station	Arrive North Camb.	Arrive Arlington Center	Arrive Arlington Heights
5:18A	5:27A	5:32A	5:38A
5:33	5:42	5:47	5:53
5:48	5:57	6:02	6:08
6:03	6:12	6:17	6:23
Every	*15 Minutes*		*Until*
7:33	7:43	7:50	7:58
7:48	7:58	8:05	8:13
8:01	8:11	8:18	8:26
8:14	8:24	8:31	8:39
8:28	8:38	8:45	8:53
Every	*14 Mins.*	*Until*	
9:37	9:48	9:56	10:04
9:50	10:01	10:09	10:17
10:03	10:14	10:22	10:30
10:15	10:26	10:34	10:42
10:26	10:38	10:46	10:54
10:37	10:49	10:57	11:05
10:49	11:01	11:09	11:17
11:00	11:12	11:20	11:28
11:12	11:24	11:33	11:42
11:24	11:36	11:45	11:54
11:35	11:47	11:56	12:05P
11:47	11:59	12:08P	12:17
11:58	12:10P	12:19	12:28
12:09P	12:21	12:30	12:39
Every	*12 Mins.*	*or*	*Less*
6:55	7:07	7:15	7:23
7:07	7:19	7:27	7:35
7:19	7:31	7:39	7:47
7:31	7:43	7:51	7:59
7:44	7:56	8:04	8:12
7:57	8:09	8:17	8:25
8:10	8:22	8:30	8:37
8:25	8:36	8:43	8:50
8:40	8:51	8:58	9:05
8:55	9:06	9:13	9:20
9:10	9:21	9:28	9:35
9:25	9:36	9:43	9:50
9:40	9:51	9:58	10:05
9:55	10:06	10:13	10:20
10:10	10:21	10:28	10:35
10:26	10:37	10:44	10:51
10:42	10:53	11:00	11:07
10:58	11:09	11:16	11:23
11:14	11:25	11:32	11:38
11:30	11:40	11:47	11:53
11:46	11:56	12:03A	12:09A
12:02A	12:12A	12:19	12:25
12:18	12:28	12:35	12:41
12:35	12:45	12:52	12:58
12:50	1:00	1:05	1:11
w 1:05	1:15	1:20	1:26

w - Waits for last train to arrive at Harvard Station.

All buses are accessible to persons with disabilities

77 Sunday

Inbound

Leave Arlington Heights	Arrive Arlington Center	Arrive Harvard Square
6:00A	6:04A	6:22A
6:20	6:24	6:42
6:40	6:44	7:03
7:00	7:04	7:23
7:20	7:24	7:43
7:40	7:44	8:03
7:55	7:59	8:20
8:10	8:14	8:38
8:25	8:29	8:54
8:40	8:45	9:10
8:57	9:02	9:27
9:14	9:19	9:44
9:30	9:35	10:00
Every	*17 Mins.*	*or Less*
11:49	11:55	12:25P
12:05P	12:11P	12:41
Every	*17 Mins.*	*or Less*
6:20	6:25	6:49
6:34	6:38	7:02
6:47	6:51	7:15
7:01	7:05	7:29
7:16	7:20	7:44
7:32	7:36	8:00
7:48	7:52	8:16
8:05	8:09	8:32
8:22	8:26	8:50
8:39	8:43	9:06
8:55	8:59	9:22
9:12	9:16	9:39
9:28	9:32	9:55
9:44	9:48	10:11
10:00	10:04	10:27
10:15	10:19	10:41
10:32	10:35	10:55
10:48	10:51	11:11
11:04	11:07	11:27
11:17	11:20	11:40
11:35	11:38	11:58
11:55	11:58	12:18A
12:15A	12:18A	12:38
12:35	12:38	12:58

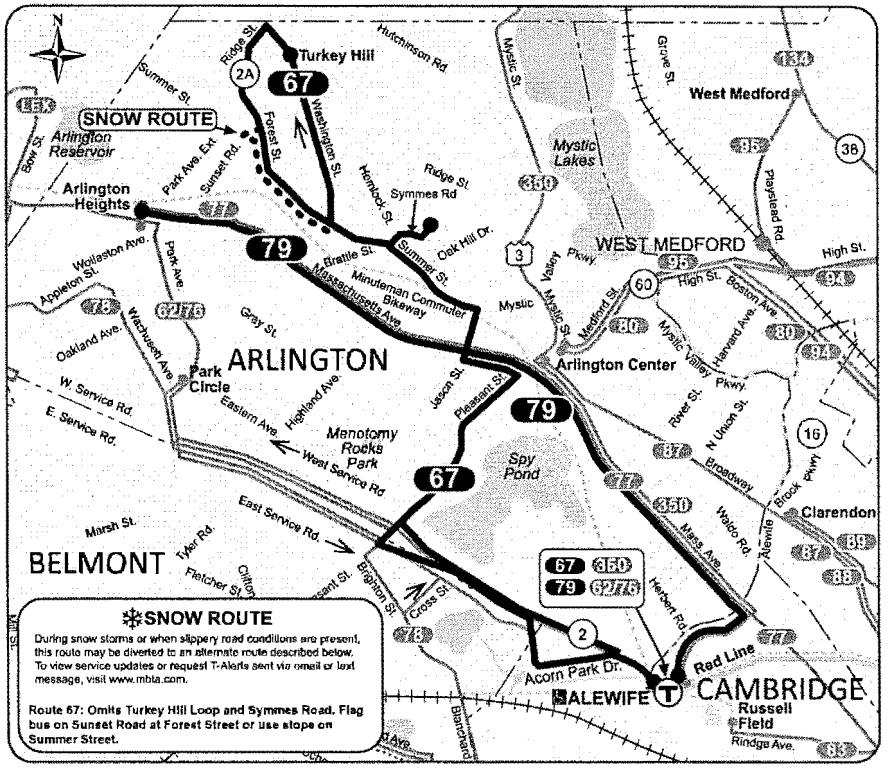
Outbound

Leave Harvard Station	Arrive Arlington Center	Arrive Arlington Heights
6:25A	6:39A	6:45A
6:44	6:58	7:04
7:04	7:18	7:24
7:24	7:38	7:44
7:44	7:58	8:05
8:04	8:23	8:30
8:24	8:43	8:50
8:44	9:03	9:11
9:04	9:24	9:32
9:24	9:44	9:52
9:44	10:04	10:12
10:04	10:24	10:32
Every	*15 Mins.*	*or Less*
11:46	12:08P	12:17P
12:01P	12:23P	12:32P
Every	*15 Mins.*	*or Less*
7:08	7:28	7:36
7:21	7:41	7:49
7:36	7:56	8:04
7:51	8:11	8:19
8:07	8:27	8:35
8:23	8:43	8:51
8:38	8:58	9:06
8:54	9:14	9:22
9:10	9:30	9:37
9:25	9:42	9:49
9:40	9:57	10:04
9:54	10:11	10:18
10:09	10:26	10:33
10:22	10:39	10:46
10:36	10:53	11:00
10:49	11:06	11:13
11:02	11:19	11:26
11:15	11:32	11:37
11:30	11:45	11:50
11:45	12:00M	12:05A
12:00M	12:15A	12:20
12:10A	12:25	12:30
12:25	12:40	12:45
12:45	1:00	1:05
w 1:05	1:20	1:25

Harvard Busway construction note:
Route 77 won't serve Harvard Busway during this time. Inbound service will not serve Harvard Station Busway during this time. Passengers wishing to access Harvard Station are advised to disembark at the temporary bus stop located on Brattle St @ Palmer St. Outbound service is unaffected, and will continue to board passengers in the Harvard Station Busway.

Fares and holidays on map side.

Route 67 Turkey Hill - Alewife Station
Route 79 Arlington Heights - Alewife Station



Schedule Change

67 Weekday

Inbound			Outbound		
Leave Turkey Hill	Arrive Arlington Center	Arrive Alewife Station	Leave Alewife Station	Arrive Arlington Center	Arrive Turkey Hill
6:18A	6:23A	6:32A	5:53A	6:00A	6:15A
6:52	6:57	7:07	6:26	6:33	6:48
7:22	7:29	7:43	6:59	7:06	7:21
7:49	7:56	8:10	7:24	7:31	7:47
8:17	8:24	8:39	7:53	8:00	8:16
8:45	8:50	9:03	8:23	8:30	8:44
9:12	9:17	9:27	8:49	8:56	9:10
10:02	10:07	10:17	9:39	9:46	10:00
10:52	10:57	11:07	10:29	10:36	10:50
11:42	11:47	11:56	11:19	11:26	11:40
12:32P	12:37P	12:46P	12:09P	12:16P	12:30P
1:22	1:27	1:36	12:59	1:06	1:20
2:12	2:17	2:26	1:48	1:55	2:10
3:02	3:07	3:16	2:38	2:47	3:02
3:52	3:57	4:06	3:27	3:36	3:51
4:42	4:47	4:56	4:17	4:26	4:41
5:10	5:16	5:26	4:44	4:55	5:10
5:37	5:43	5:53	5:11	5:22	5:37
6:05	6:11	6:21	5:38	5:49	6:04
6:32	6:36	6:45	6:05	6:16	6:31
6:57	7:01	7:10	6:33	6:41	6:56
7:37	7:41	7:49	7:15	7:23	7:37
8:20	8:24	8:32	7:58	8:05	8:18

Service Note: Route 67 Serves Symmes Road OUTBOUND ONLY.

Route 67
Turkey Hill-Alewife Station

79 Weekday

Inbound			Outbound		
Leave Arlington Heights	Arrive Arlington Center	Arrive Alewife Station	Leave Alewife Station	Arrive Arlington Center	Arrive Arlington Heights
6:35A	6:41A	6:55A	7:02A	7:09A	7:19A
7:00	7:06	7:20	7:30	7:38	7:52
7:30	7:39	7:59	8:10	8:16	8:26
8:00	8:06	8:24	8:35	8:41	8:51
8:30	8:36	8:54	9:30	9:36	9:46
9:00	9:05	9:20			
9:50	9:55	10:06	2:00P	2:06P	2:16P
			2:45	2:52	3:05
2:20P	2:26P	2:39P	3:10	3:17	3:28
s 3:05	3:11	3:25	3:30	3:37	3:48
s 3:15	3:21	3:34	3:50	3:57	4:09
3:20	3:26	3:39	4:10	4:22	4:34
s 3:25	3:30	3:41	4:30	4:42	4:54
3:40	3:46	3:59	4:50	5:02	5:14
4:00	4:06	4:19	5:10	5:24	5:36
4:20	4:26	4:39	5:30	5:44	5:56
4:40	4:46	4:59	5:50	6:03	6:14
5:00	5:06	5:20	6:15	6:27	6:38
5:20	5:26	5:40	6:35	6:47	6:58
5:45	5:51	6:05	7:05	7:13	7:24
6:05	6:11	6:25			
6:45	6:51	7:02			

s - Leaves from Massachusetts Avenue at Appleton Street and does NOT run during school vacation

Route 79
Arlington Heights-Alewife Station

No service on weekends.

All buses are accessible to persons with disabilities

Fare	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	$1.70	$1.70	$2.40	$2.40
CharlieTicket	$2.00	$2.00	$2.90	$4.90
Cash-on-Board	$2.00	$4.00	$2.90	$4.90
Student/Youth*	$0.85	$0.85	$1.10	$1.10
Senior/TAP**	$0.85	$0.85	$1.10	$1.10

VALID PASSES: LinkPass ($90.00/mo.); Local Bus ($55/mo.); *Student/Youth LinkPass ($30.00/mo.); **Senior/TAP LinkPass ($30/mo.); and express bus, commuter rail, and boat passes.

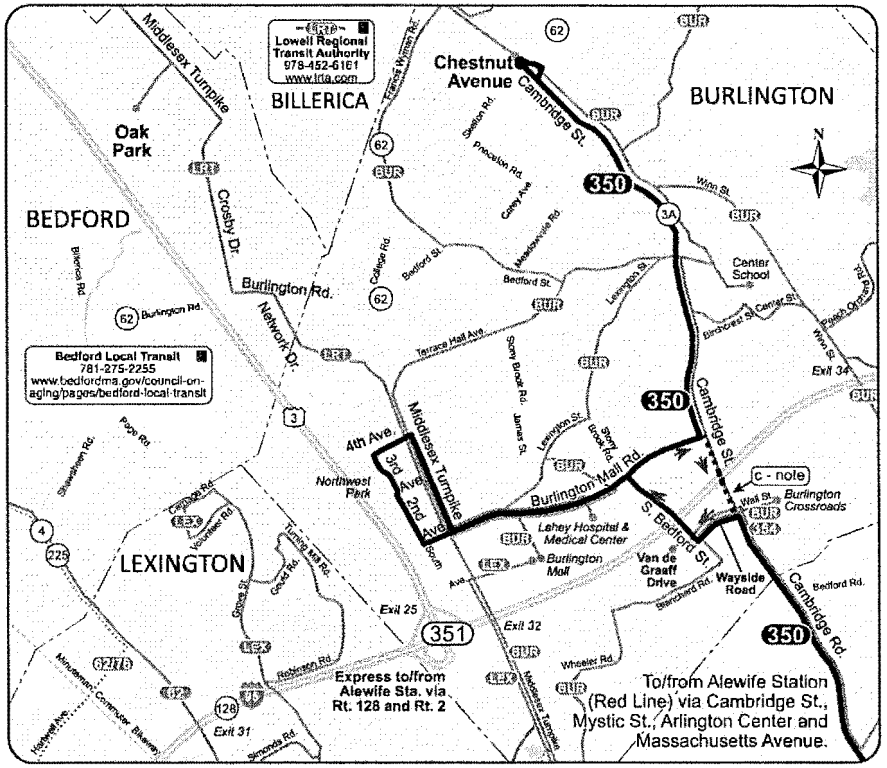
FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.

* Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available to students through participating middle schools and high schools. Youth CharlieCards are available through community partners in the Boston metro area. Visit www.mbta.com/youthpass for details.

** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

Fall 2020 & Winter 2021 Holidays
9/7/20: Sunday; 10/12/20 & 11/11/20: Weekday
11/26/20, 12/25/20, & 1/1/21: Sun; 1/18/21 & 2/15/21: Sat

Route 350 North Burlington - Alewife Station
Route 351 Bedford Woods Dr - Alewife Station



Service/Schedule Change

350 & 351 Weekday

Inbound

Leave Chestnut & Cambridge	Arrive Burlington Mall Road	Arrive Woburn/ Burl. Line	Arrive Arlington Center	Arrive Alewife Station
6:00A	.....	6:05A	6:19A	6:31A
.....	.....	.....	6:23	6:32
6:20	.....	6:25	6:42	7:02
6:38	.....	6:45	7:04	7:24
6:53	.....	7:00	7:19	7:41
7:15	.....	7:22	7:41	8:03
7:35	.....	7:44	8:03	8:25
7:55	.....	8:04	8:23	8:45
8:20	8:35A	8:42	9:03	9:13
8:40	8:55	9:02	9:19	9:29
9:00	9:14	9:21	9:38	9:48
9:20	9:34	9:41	9:58	10:09
10:00	10:14	10:21	10:38	10:49
10:40	10:54	11:01	11:18	11:29
11:20	11:34	11:41	11:58	12:09P
12:00N	12:14P	12:21P	12:38P	12:49
12:40	12:54	1:02	1:19	1:30
1:20	1:34	1:42	1:59	2:10
2:00	2:14	2:22	2:39	2:50
2:40	2:54	3:03	3:21	3:32
3:25	3:40	3:50	4:08	4:19
3:45	4:00	4:10	4:28	4:39
4:10	4:25	4:35	4:53	5:07
4:30	4:45	4:55	5:16	5:32
4:45	5:00	5:10	5:32	5:48
5:10	5:25	5:35	5:57	6:10
5:35	5:50	6:00	6:21	6:34
5:55	6:10	6:18	6:37	6:50
6:15	6:30	6:37	6:52	7:05
6:35	6:49	6:56	7:11	7:24
6:55	7:09	7:16	7:31	7:41
7:45	7:59	8:05	8:18	8:28
8:35	8:49	8:55	9:08	9:18
9:30	9:44	9:50	10:03	10:13
10:25	10:39	10:45	10:58	11:08

Outbound

Leave Alewife Station	Arrive Arlington Center	Arrive Woburn/ Burl. Line	Arrive Burlington Mall Road	Arrive Chestnut & Cambridge
b 5:53	6:00	.....	.....	.....
b 6:16	6:22	6:39	6:50	7:08
b 6:36	6:42	6:59	7:09	7:25
b 6:56	7:02	7:17	7:27	7:43
7:16	7:22	7:37	7:47	8:03
7:36	7:43	8:02	8:11	8:31
7:56	8:03	8:22	8:31	8:51
8:16	8:23	8:42	8:51	9:11
8:56	9:03	9:22	9:31	9:49
9:36	9:42	9:59	10:08	10:26
10:16	10:22	10:39	10:48	11:06
10:56	11:02	11:19	11:28	11:46
11:36	11:42	11:59	12:08P	12:26P
12:16P	12:22P	12:39P	12:48	1:06
12:56	1:02	1:19	1:28	1:46
1:36	1:42	1:59	2:07	2:24
2:16	2:26	2:45	2:53	3:12
2:41	2:51	3:09	3:18	3:37
3:05	3:13	3:31	3:40	3:59
3:30	3:38	3:56	4:05	4:27
3:55	4:03	4:22	4:31	4:53
4:25	4:35	4:54	5:03	5:25
4:55	5:08	5:28	.....	5:43
5:20	5:33	5:53	.....	6:08
5:40	5:53	6:13	.....	6:28
6:00	6:13	6:33	.....	6:48
6:20	6:33	6:53	.....	7:08
6:42	6:51	7:06	7:15	7:37
7:05	7:14	7:29	7:38	8:00
7:35	7:44	7:59	8:07	8:23
8:31	8:39	8:54	9:02	9:17
9:25	9:33	9:48	9:56	10:11
10:20	10:32	10:50	.....	11:05

Route 351 indicated by shaded areas

ROUTE 350 FARES

Fare	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	$1.70	$1.70	$2.40	$2.40
CharlieTicket	$2.00	$2.00	$2.90	$4.90
Cash-on-Board	$2.00	$4.00	$2.90	$4.90
Student/Youth*	$0.85	$0.85	$1.10	$1.10
Senior/TAP**	$0.85	$0.85	$1.10	$1.10

VALID PASSES: LinkPass ($90.00/mo.); Local Bus ($55/mo.); *Student/Youth LinkPass ($30.00/mo.); **Senior/TAP LinkPass ($30/mo.); and express bus, commuter rail, and boat passes.
FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.

* Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available to students through participating middle schools and high schools. Youth CharlieCards are available through community partners in the Boston metro area. Visit www.mbta.com/youthpass for details.

** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

ROUTE 351 FARES

Fare	Local Bus	Inner Express	Inner Express + Local Bus	Inner Express + Subway
CharlieCard	$1.70	$4.25	$4.25	$4.25
CharlieTicket	$2.00	$5.25	$7.25	$8.15
Cash-on-Board	$2.00	$5.25	$7.25	$8.15
Student/Youth*	$0.85	$2.10	$2.10	$2.10
Senior/TAP**	$0.85	$2.10	$2.10	$2.10

VALID PASSES on 441/442: LinkPass ($90.00/mo.); Local Bus ($55/mo.); *Student/Youth LinkPass ($30.00/mo.); **Senior/TAP LinkPass ($30/mo.); and express bus, commuter rail, and boat passes.
VALID PASSES on 446/449: Inner Express Bus ($136.00/mo.); Outer Express Bus ($168/mo.), commuter rail zone 1 or higher, and boat passes.
FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.

* Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available to students through participating middle schools and high schools. Youth CharlieCards are available through community partners in the Boston metro area. Visit www.mbta.com/youthpass for details.

350 Saturday

Inbound

Leave Chestnut & Cambridge	Arrive Burlington Mall Road	Arrive Alewife Station
7:10A	.....	7:38A
7:50	.....	8:18
8:30	8:45A	9:14
9:30	9:45	10:17
10:30	10:46	11:19
11:30	11:46	12:21P
12:30P	12:46P	1:25
1:30	1:46	2:25
2:30	2:46	3:21
3:30	3:46	4:21
4:30	4:46	5:20
5:30	5:46	6:17
6:25	6:41	7:10
7:20	7:35	8:04
8:10	8:25	8:54
9:00	9:15	9:44
9:50	10:05	10:34

Outbound

Leave Alewife Station	Arrive Burlington Mall Road	Arrive Chestnut & Cambridge
6:25A	6:51A	7:05A
7:05	7:31	7:45
7:45	8:11	8:25
8:30	8:59	9:18
9:30	10:01	10:22
10:30	11:01	11:22
11:30	12:01P	12:21P
12:30P	1:02	1:22
1:30	2:02	2:22
2:30	3:02	3:22
3:30	4:01	4:19
4:30	4:58	5:16
5:30	5:55	6:13
6:25	6:50	7:08
7:15	7:40	7:58
8:10	8:33	8:52
9:00	9:23	9:42
9:50	.....	10:20
10:40	.....	11:10

350 Sunday

Inbound

Leave Chestnut & Cambridge	Arrive Burlington Mall Road	Arrive Alewife Station
7:55A	.....	8:24A
9:20	.....	9:52
10:50	.....	11:22
12:20P	12:34P	1:06P
1:15	1:29	2:00
2:10	2:24	2:56
3:05	3:19	3:53
4:00	4:14	4:50
4:55	5:09	5:42
5:50	6:04	6:37
6:50	7:04	7:35

Outbound

Leave Alewife Station	Arrive Burlington Mall Road	Arrive Chestnut & Cambridge
7:05A	7:31A	7:49A
8:30	8:57	9:16
9:55	10:24	10:43
11:25	11:54	12:13P
12:20P	12:49P	1:08
1:15	1:45	2:04
2:10	2:38	2:57
3:05	3:33	3:52
4:00	4:28	4:47
4:55	5:23	5:42
5:50	6:18	6:37
6:50	.....	7:26

Fall 2020 & Winter 2021 Holidays
9/7/20; Sunday; 10/12/20 & 11/11/20: Weekday
11/26/20, 12/25/20, & 1/1/21: Sun; 1/18/21 & 2/15/21: Sat

NOTE:
Route 351 Alewife service operates via Berth 8

Route 351 may be limited or suspended. Visit mbta.com for latest updates.

All buses are accessible to persons with disabilities

b - Omits Northwest Park

Route 350
North Burlington-Alewife Station

Route 351
Bedford Woods Dr - Alewife Station

- Trip Generation

Institute of Transportation Engineers (ITE) 10th Edition
Land Use Code (LUC) 820 - Shopping Center

Average Vehicle Trips Ends vs: 1,000 Sq. Feet Gross Leasable Area
Independent Variable (X): 1.735

AVERAGE WEEKDAY DAILY

T = 37.75*(X)
T = 37.75* 1.74
T = 65.50
T = 66 vehicle trips
with 50% (33 vpd) entering and 50% (33 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.94 * (X)
T = 0.94 * 1.74
T = 1.63
T = 2 vehicle trips
with 62% (1 vph) entering and 38% (1 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 3.81 *(X)
T = 3.81* 1.74
T = 6.61
T = 7 vehicle trips
with 48% (3 vph) entering and 52% (4 vph) exiting.

SATURDAY DAILY

T = 46.12 *(X)
T = 46.12* 1.74
T = 80.02
T = 80 vehicle trips
with 50% (40 vpd) entering and 50% (40 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 4.50 *(X)
T = 4.50* 1.74
T = 7.81
T = 8 vehicle trips
with 52% (4 vph) entering and 48% (4 vph) exiting.

Summary

Pass-By:	0.34	Weekday
Pass-By:	0.26	Saturday

	Total	Pass-By	Net New
AM			
In	1	0	**1**
Out	1	0	**1**
Total	2	0	**2**
PM			
In	3	1	**2**
Out	4	1	**3**
Total	7	2	**5**
Sat			
In	4	1	**3**
Out	4	1	**3**
Total	8	2	**6**
Daily			
In	33	11	**22**
Out	33	11	**22**
Total	66	22	**44**
Sat Daily			
In	40	10	**30**
Out	40	10	**30**
Total	80	20	**60**

Institute of Transportation Engineers (ITE) 10th Edition
Land Use Code (LUC) 221 - Multifamily Housing (Mid-Rise)

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 37

AVERAGE WEEKDAY DAILY

T = 5.44 * X
T = 5.44 * 37
T = 201.28
T = 202 vehicle trips
with 50% (**101** vpd) entering and 50% (**101** vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.36 * X
T = 0.36 * 37
T = 13.32
T = 13 vehicle trips
with 26% (**3** vph) entering and 74% (**10** vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.44 * X
T = 0.44 * 37
T = 16.28
T = 16 vehicle trips
with 61% (**10** vph) entering and 39% (**6** vph) exiting.

SATURDAY DAILY

T = 4.91 * X
T = 4.91 * 37
T = 181.67
T = 182 vehicle trips
with 50% (**91** vpd) entering and 50% (**91** vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 0.44 * X
T = 0.44 * 37
T = 16.28
T = 16 vehicle trips
with 49% (**8** vph) entering and 51% (**8** vph) exiting.

Institute of Transportation Engineers (ITE) 10th Edition
Land Use Code (LUC) 820 - Shopping Center

Average Vehicle Trips Ends vs: 1,000 Sq. Feet Gross Leasable Area
Independent Variable (X): 10.500

AVERAGE WEEKDAY DAILY

T = 37.75*(X)
T = 37.75* 10.50
T = 396.38
T = 396 vehicle trips
with 50% (198 vpd) entering and 50% (198 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.94 * (X)
T = 0.94 * 10.50
T = 9.87
T = 10 vehicle trips
with 62% (6 vph) entering and 38% (4 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 3.81 *(X)
T = 3.81* 10.50
T = 40.01
T = 40 vehicle trips
with 48% (19 vph) entering and 52% (21 vph) exiting.

SATURDAY DAILY

T = 46.12 *(X)
T = 46.12* 10.50
T = 484.26
T = 484 vehicle trips
with 50% (242 vpd) entering and 50% (242 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 4.50 *(X)
T = 4.50* 10.50
T = 47.25
T = 47 vehicle trips
with 52% (24 vph) entering and 48% (23 vph) exiting.

Summary

Pass-By:	0.34	Weekday
Pass-By:	0.26	Saturday

	Total	Pass-By	Net New
AM			
In	6	2	**4**
Out	4	2	**2**
Total	10	4	**6**
PM			
In	19	7	**12**
Out	21	7	**14**
Total	40	14	**26**
Sat			
In	24	6	**18**
Out	23	6	**17**
Total	47	12	**35**
Daily			
In	198	67	**131**
Out	198	67	**131**
Total	396	134	**262**
Sat Daily			
In	242	63	**179**
Out	242	63	**179**
Total	484	126	**358**

- Census Information

MEANS OF TRANSPORTATION TO WORK BY VEHICLES AVAILABLE

United States Census Bureau

Note: This is a modified view of the original table produced by the U.S. Census Bureau. This download or printed version may have missing information from the original table.

	Census Tract 3561, Middlesex County, Massachusetts	
Label	**Estimate**	**Margin of Error**
Total:	2,051	±155
No vehicle available	153	±92
1 vehicle available	947	±183
2 vehicles available	760	±179
3 or more vehicles available	191	±130
Car, truck, or van - drove alone:	880	±171
No vehicle available	0	±12
1 vehicle available	268	±84
2 vehicles available	478	±145
3 or more vehicles available	134	±88
Car, truck, or van - carpooled:	237	±96
No vehicle available	30	±49
1 vehicle available	110	±57
2 vehicles available	53	±59
3 or more vehicles available	44	±50
Public transportation (excluding taxicab):	649	±144
No vehicle available	89	±66
1 vehicle available	385	±130
2 vehicles available	175	±83
3 or more vehicles available	0	±12
Walked:	0	±12
No vehicle available	0	±12
1 vehicle available	0	±12
2 vehicles available	0	±12
3 or more vehicles available	0	±12
Taxicab, motorcycle, bicycle, or other means:	152	±65
No vehicle available	26	±31

Table Notes

MEANS OF TRANSPORTATION TO WORK BY VEHICLES AVAILABLE

Survey/Program:
American Community Survey
Universe:
Workers 16 years and over in households
Year:
2018
Estimates:
5-Year
Table ID:
B08141

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.

Workers include members of the Armed Forces and civilians who were at work last week.

While the 2014-2018 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Explanation of Symbols:

An "**" entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
An "-" entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution, or the margin of error associated with a median was larger than the median itself.
An "-" following a median estimate means the median falls in the lowest interval of an open-ended distribution.
An "+" following a median estimate means the median falls in the upper interval of an open-ended distribution.
An "***" entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
An "*****" entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.

March 10, 2021

Jennifer Raitt
Director of Planning & Community
Development
730 Massachusetts Ave
Arlington, MA 02476

RE: Mixed-Use Redevelopment
Drainage Summary Letter
190 & 192-200 Massachusetts Ave
Arlington, MA 02476

Dear Ms. Raitt,

On behalf of our Client, 192-200 Massachusetts Ave, LLC, Allen & Major Associates (A&M) is pleased to provide this letter in support of the Special Permit application for the Mixed-Use Redevelopment project at 190 & 192-200 Massachusetts Ave. This letter will summarize the changes to the stormwater management system which are proposed as part of the redevelopment efforts.

Existing Conditions

The site is located on the corner of Lake Street and Massachusetts Avenue and Chandler Street and Massachusetts Avenue. There is an existing curb cut to the parcel located off of Chandler Street. The project comprised of two property's, identified on the City tax Map 6, Block 3, Lots 1A and 1B. Both lots are predominantly covered by an existing brick building. Elevations onsite range from elevation 29 to elevation 24. Elevation 24 is the low point on-site located at the existing curb cut along Chandler Street, and elevation 29 runs through the sidewalk along Mass Ave. The majority of the stormwater from the site discharges through roof drain connections to the municipal system. A review of the NRCS soil report for Middlesex County indicates that the soil onsite is considered Merrimac-Urban Land which has a Hydrologic Soil Group rating of an "A". A copy of the Existing Watershed Plan is included herewith.

Proposed Conditions

The project, proposes to demolish a portion of the existing structure to construct a 5-story, 9,764 square foot Mixed-Use building with apartment and retail uses. There are 15 parking stalls proposed on the first level. The stormwater management system will be improved with a new drainage pipe connection. The quantity of stormwater runoff will be reduced with the installation of landscaped areas on-site. The proposed work with result in approximately 701 square feet of impervious material being replaced with landscaped areas.

Runoff flows were estimated for both pre and post development conditions using HydroCAD 10.00 software, at a specific "Study Point" (SP-1). Study Point 1 is the flows that will enter the municipal drainage system. The table below shows that the project causes a reduction in the peak rate of runoff and volume of stormwater leaving the site at the Study Point. Copies of the HydroCAD worksheets and Watershed Plans are included herewith.

STUDY POINT #1 (flow to municipal system)			
	2-Year	10-Year	100-Year
Existing Flow (CFS)	0.83	1.27	2.31
Proposed Flow (CFS)	0.76	1.22	2.28
Decrease (CFS)	**0.07**	**0.05**	**0.03**
Existing Volume (CF)	2,781	4,327	8,025
Proposed Volume (CF)	2,387	3,906	7,578
Decrease (CF)	**394**	**421**	**447**

The surface water drainage requirements of the Town of Arlington Zoning Bylaw Environmental Design Review Standards have been reviewed and met with the proposed design. The proposed project will introduce landscaped areas to the site to reduce the impervious area. The Town of Arlington, Article 15 Stormwater Mitigation, shall not apply as the proposed development will introduce a reduction in impervious area. However, with the proposed landscaped areas the project will reduce the runoff rates for all design storms, and comply with this bylaw.

Summary

As shown in the table above, the proposed development will have a positive impact on the stormwater management system by reducing the rate and volume of stormwater runoff from the site.

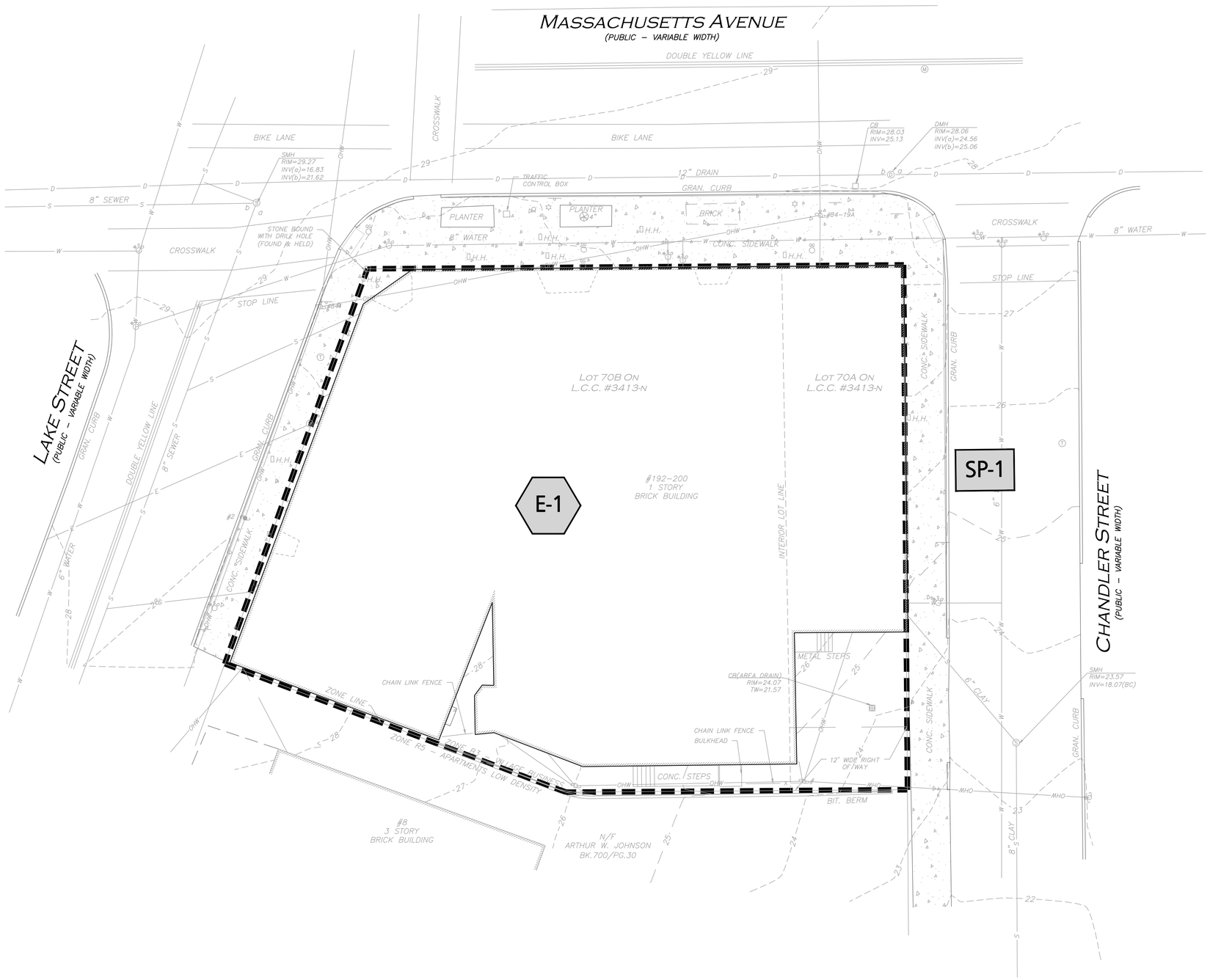
Very truly yours,

ALLEN & MAJOR ASSOCIATES, INC.

Aaron Mackey, PE
Project Engineer

Attachments:

1. Existing Watershed Plan
2. Proposed Watershed Plan
3. Pre development HydroCAD Calculations
4. Post development HydroCAD Calculations
5. Extreme Precipitation Tables
6. NRCS Soil Report



LEGEND

EXISTING WATERSHED	
SUBCATCHMENT BOUNDARY	
SUBCATCHMENT LABEL	E-1

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

REV	DATE	DESCRIPTION
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT\OWNER:

192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:

190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	1" = 10'	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
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WOBURN MA 01801
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DRAWING TITLE:

EXISTING WATERSHED PLAN

SHEET No.

EWP

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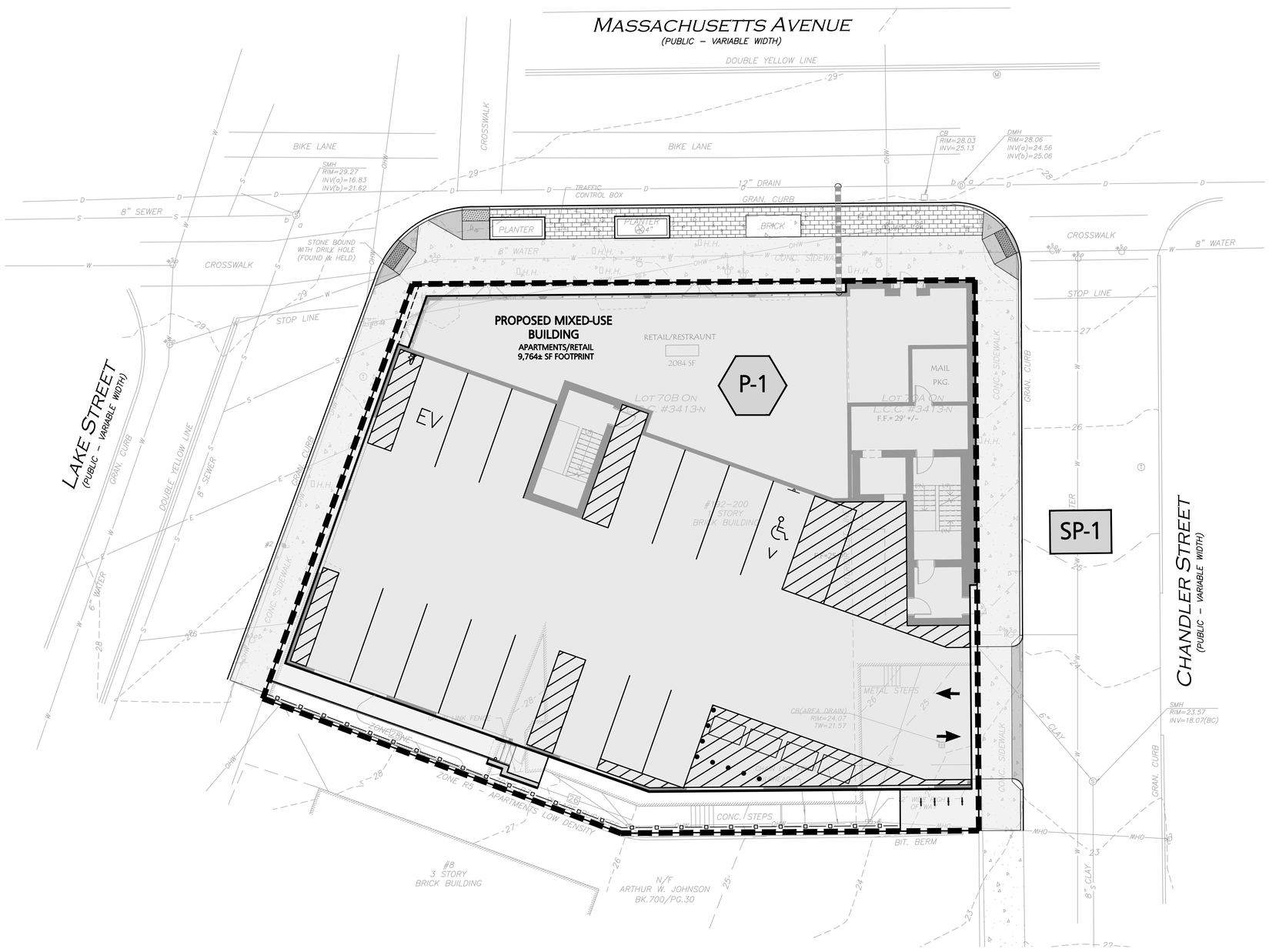

LEGEND

EXISTING WATERSHED	
PROPOSED WATERSHED	
SUBCATCHMENT LABEL	P-1
SUBCATCHMENT BOUNDARY	

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

REV	DATE	DESCRIPTION
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT\OWNER:

192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:

190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	1" = 10'	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY, SUITE 5
WOBURN MA 01801
TEL: (781) 935-6889
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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE: PROPOSED WATERSHED PLAN

SHEET No. PWP

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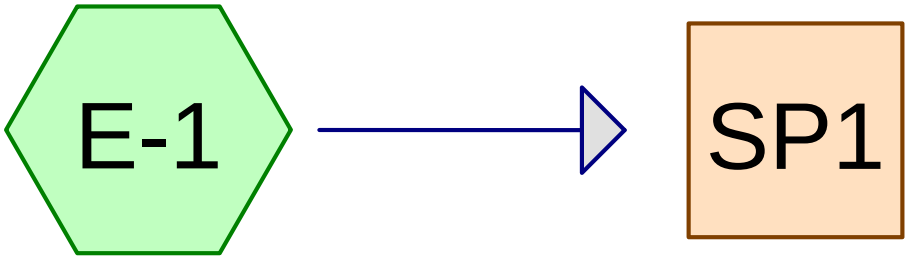
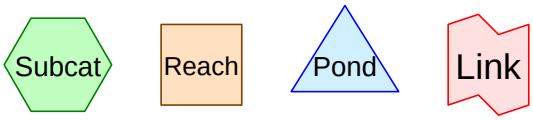


Subcat E-1 Study Point 1



Routing Diagram for 2729-02_Existing-Conditions
Prepared by Allen & Major Associates Inc. , Printed 10/23/2020
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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
1,238	98	Paved parking, HSG A (E-1)
9,896	98	Roofs, HSG A (E-1)
11,134	**98**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
11,134	HSG A	E-1
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
11,134		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subcatchment Numbers
1,238	0	0	0	0	1,238	Paved parking	E-1
9,896	0	0	0	0	9,896	Roofs	E-1
11,134	**0**	**0**	**0**	**0**	**11,134**	**TOTAL AREA**	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1 Runoff Area=11,134 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.83 cfs 2,781 cf

Reach SP1: Study Point 1 Inflow=0.83 cfs 2,781 cf
Outflow=0.83 cfs 2,781 cf

Total Runoff Area = 11,134 sf Runoff Volume = 2,781 cf Average Runoff Depth = 3.00"
0.00% Pervious = 0 sf 100.00% Impervious = 11,134 sf

Summary for Subcatchment E-1: Subcat E-1

Runoff = 0.83 cfs @ 12.07 hrs, Volume= 2,781 cf, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
1,238	98	Paved parking, HSG A
9,896	98	Roofs, HSG A
11,134	98	Weighted Average
11,134		100.00% Impervious Area

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

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event
Inflow = 0.83 cfs @ 12.07 hrs, Volume= 2,781 cf
Outflow = 0.83 cfs @ 12.07 hrs, Volume= 2,781 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1 Runoff Area=11,134 sf 100.00% Impervious Runoff Depth=4.66"
Tc=5.0 min CN=98 Runoff=1.27 cfs 4,327 cf

Reach SP1: Study Point 1 Inflow=1.27 cfs 4,327 cf
Outflow=1.27 cfs 4,327 cf

Total Runoff Area = 11,134 sf Runoff Volume = 4,327 cf Average Runoff Depth = 4.66"
0.00% Pervious = 0 sf 100.00% Impervious = 11,134 sf

Summary for Subcatchment E-1: Subcat E-1

Runoff = 1.27 cfs @ 12.07 hrs, Volume= 4,327 cf, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.90"

Area (sf)	CN	Description
1,238	98	Paved parking, HSG A
9,896	98	Roofs, HSG A
11,134	98	Weighted Average
11,134		100.00% Impervious Area

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

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf,100.00% Impervious, Inflow Depth = 4.66" for 10-Year event
Inflow = 1.27 cfs @ 12.07 hrs, Volume= 4,327 cf
Outflow = 1.27 cfs @ 12.07 hrs, Volume= 4,327 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1 Runoff Area=11,134 sf 100.00% Impervious Runoff Depth=8.65"
Tc=5.0 min CN=98 Runoff=2.31 cfs 8,025 cf

Reach SP1: Study Point 1 Inflow=2.31 cfs 8,025 cf
Outflow=2.31 cfs 8,025 cf

Total Runoff Area = 11,134 sf Runoff Volume = 8,025 cf Average Runoff Depth = 8.65"
0.00% Pervious = 0 sf 100.00% Impervious = 11,134 sf

Summary for Subcatchment E-1: Subcat E-1

Runoff = 2.31 cfs @ 12.07 hrs, Volume= 8,025 cf, Depth= 8.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.89"

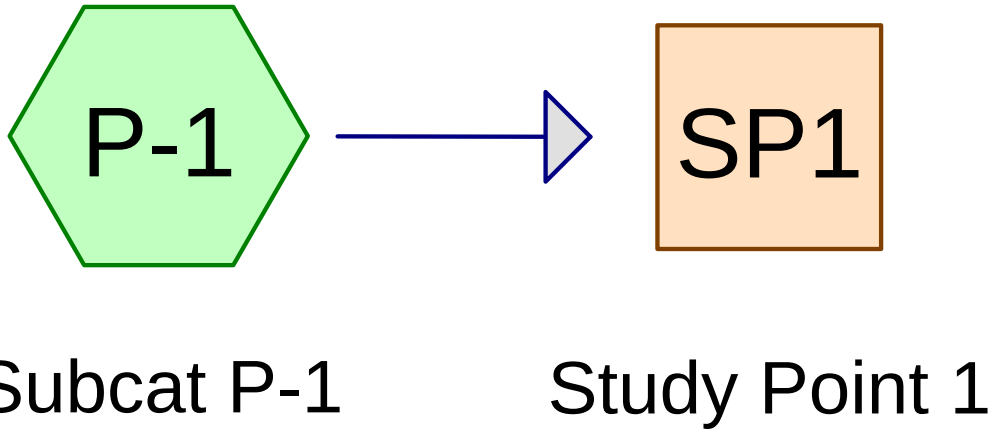
Area (sf)	CN	Description
1,238	98	Paved parking, HSG A
9,896	98	Roofs, HSG A
11,134	98	Weighted Average
11,134		100.00% Impervious Area

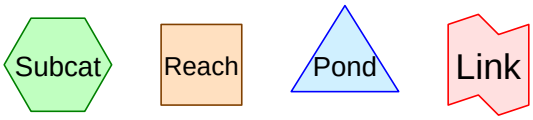
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Assumed**

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf,100.00% Impervious, Inflow Depth = 8.65" for 100-Year event
Inflow = 2.31 cfs @ 12.07 hrs, Volume= 8,025 cf
Outflow = 2.31 cfs @ 12.07 hrs, Volume= 8,025 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3





Routing Diagram for 2729-02_Proposed-Conditions
Prepared by Allen & Major Associates Inc. , Printed 3/10/2021
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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
701	39	>75% Grass cover, Good, HSG A (P-1)
669	98	Paved parking, HSG A (P-1)
9,764	98	Roofs, HSG A (P-1)
11,134	**94**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
11,134	HSG A	P-1
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
11,134		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subcatchment Numbers
701	0	0	0	0	701	>75% Grass cover, Good	P-1
669	0	0	0	0	669	Paved parking	P-1
9,764	0	0	0	0	9,764	Roofs	P-1
11,134	**0**	**0**	**0**	**0**	**11,134**	**TOTAL AREA**	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcat P-1 Runoff Area=11,134 sf 93.71% Impervious Runoff Depth=2.57"
Tc=5.0 min CN=94 Runoff=0.76 cfs 2,387 cf

Reach SP1: Study Point 1 Inflow=0.76 cfs 2,387 cf
Outflow=0.76 cfs 2,387 cf

Total Runoff Area = 11,134 sf Runoff Volume = 2,387 cf Average Runoff Depth = 2.57"
6.29% Pervious = 701 sf 93.71% Impervious = 10,433 sf

Summary for Subcatchment P-1: Subcat P-1

Runoff = 0.76 cfs @ 12.07 hrs, Volume= 2,387 cf, Depth= 2.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
9,764	98	Roofs, HSG A
701	39	>75% Grass cover, Good, HSG A
669	98	Paved parking, HSG A
11,134	94	Weighted Average
701		6.29% Pervious Area
10,433		93.71% Impervious Area

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

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf, 93.71% Impervious, Inflow Depth = 2.57" for 2-Year event
Inflow = 0.76 cfs @ 12.07 hrs, Volume= 2,387 cf
Outflow = 0.76 cfs @ 12.07 hrs, Volume= 2,387 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcat P-1 Runoff Area=11,134 sf 93.71% Impervious Runoff Depth=4.21"
Tc=5.0 min CN=94 Runoff=1.22 cfs 3,906 cf

Reach SP1: Study Point 1 Inflow=1.22 cfs 3,906 cf
Outflow=1.22 cfs 3,906 cf

Total Runoff Area = 11,134 sf Runoff Volume = 3,906 cf Average Runoff Depth = 4.21"
6.29% Pervious = 701 sf 93.71% Impervious = 10,433 sf

Summary for Subcatchment P-1: Subcat P-1

Runoff = 1.22 cfs @ 12.07 hrs, Volume= 3,906 cf, Depth= 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.90"

Area (sf)	CN	Description
9,764	98	Roofs, HSG A
701	39	>75% Grass cover, Good, HSG A
669	98	Paved parking, HSG A
11,134	94	Weighted Average
701		6.29% Pervious Area
10,433		93.71% Impervious Area

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

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf, 93.71% Impervious, Inflow Depth = 4.21" for 10-Year event
Inflow = 1.22 cfs @ 12.07 hrs, Volume= 3,906 cf
Outflow = 1.22 cfs @ 12.07 hrs, Volume= 3,906 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcat P-1 Runoff Area=11,134 sf 93.71% Impervious Runoff Depth=8.17"
Tc=5.0 min CN=94 Runoff=2.28 cfs 7,578 cf

Reach SP1: Study Point 1 Inflow=2.28 cfs 7,578 cf
Outflow=2.28 cfs 7,578 cf

Total Runoff Area = 11,134 sf Runoff Volume = 7,578 cf Average Runoff Depth = 8.17"
6.29% Pervious = 701 sf 93.71% Impervious = 10,433 sf

Summary for Subcatchment P-1: Subcat P-1

Runoff = 2.28 cfs @ 12.07 hrs, Volume= 7,578 cf, Depth= 8.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.89"

Area (sf)	CN	Description
9,764	98	Roofs, HSG A
701	39	>75% Grass cover, Good, HSG A
669	98	Paved parking, HSG A
11,134	94	Weighted Average
701		6.29% Pervious Area
10,433		93.71% Impervious Area

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

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf, 93.71% Impervious, Inflow Depth = 8.17" for 100-Year event
Inflow = 2.28 cfs @ 12.07 hrs, Volume= 7,578 cf
Outflow = 2.28 cfs @ 12.07 hrs, Volume= 7,578 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	Massachusetts
Location	
Longitude	71.142 degrees West
Latitude	42.405 degrees North
Elevation	0 feet
Date/Time	Fri, 28 Aug 2020 14:10:00 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.70	0.87	1.10	**1yr**	0.75	1.04	1.28	1.63	2.09	2.69	2.94	**1yr**	2.38	2.83	3.29	3.98	4.65	**1yr**
2yr	0.35	0.54	0.67	0.88	1.11	1.40	**2yr**	0.96	1.28	1.62	2.04	2.57	3.23	3.59	**2yr**	2.86	3.45	3.95	4.70	5.35	**2yr**
5yr	0.42	0.65	0.81	1.09	1.39	1.77	**5yr**	1.20	1.61	2.06	2.60	3.26	4.09	4.56	**5yr**	3.62	4.38	5.00	5.97	6.69	**5yr**
10yr	0.47	0.74	0.93	1.27	1.65	2.12	**10yr**	1.42	1.91	2.47	3.12	3.92	4.90	5.47	**10yr**	4.33	5.26	5.99	7.15	7.92	**10yr**
25yr	0.56	0.89	1.13	1.56	2.06	2.67	**25yr**	1.78	2.40	3.13	3.96	4.98	6.20	6.96	**25yr**	5.49	6.69	7.59	9.10	9.91	**25yr**
50yr	0.63	1.01	1.30	1.82	2.45	3.21	**50yr**	2.12	2.86	3.77	4.78	5.98	7.43	8.36	**50yr**	6.57	8.03	9.08	10.92	11.75	**50yr**
100yr	0.73	1.18	1.52	2.14	2.92	3.84	**100yr**	2.52	3.40	4.52	5.73	7.17	8.89	10.04	**100yr**	7.87	9.65	10.88	13.10	13.94	**100yr**
200yr	0.83	1.36	1.76	2.52	3.47	4.60	**200yr**	2.99	4.05	5.43	6.89	8.61	10.65	12.07	**200yr**	9.43	11.60	13.03	15.73	16.54	**200yr**
500yr	1.01	1.65	2.16	3.13	4.37	5.83	**500yr**	3.77	5.11	6.90	8.77	10.97	13.54	15.40	**500yr**	11.98	14.81	16.55	20.05	20.75	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.25	0.38	0.46	0.62	0.76	0.85	**1yr**	0.66	0.83	1.15	1.44	1.78	2.44	2.50	**1yr**	2.16	2.41	2.93	3.53	4.05	**1yr**
2yr	0.33	0.51	0.63	0.85	1.05	1.26	**2yr**	0.91	1.23	1.45	1.91	2.48	3.13	3.47	**2yr**	2.77	3.33	3.82	4.53	5.18	**2yr**
5yr	0.39	0.60	0.75	1.02	1.30	1.51	**5yr**	1.12	1.47	1.73	2.24	2.89	3.77	4.18	**5yr**	3.34	4.02	4.59	5.47	6.17	**5yr**
10yr	0.44	0.67	0.83	1.16	1.50	1.73	**10yr**	1.29	1.69	1.95	2.53	3.24	4.35	4.83	**10yr**	3.85	4.65	5.27	6.29	7.01	**10yr**

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
25yr	0.50	0.77	0.95	1.36	1.79	2.05	**25yr**	1.54	2.00	2.31	2.96	3.78	5.23	5.82	**25yr**	4.63	5.60	6.31	7.52	8.29	**25yr**
50yr	0.56	0.85	1.06	1.52	2.05	2.35	**50yr**	1.77	2.30	2.61	3.34	4.24	5.99	6.70	**50yr**	5.30	6.44	7.22	8.60	9.39	**50yr**
100yr	0.63	0.95	1.18	1.71	2.35	2.68	**100yr**	2.03	2.62	2.96	3.62	4.77	6.89	7.70	**100yr**	6.10	7.41	8.27	9.79	10.65	**100yr**
200yr	0.70	1.06	1.34	1.94	2.71	3.06	**200yr**	2.34	2.99	3.36	4.05	5.37	7.91	8.86	**200yr**	7.00	8.52	9.46	11.12	12.03	**200yr**
500yr	0.82	1.23	1.58	2.29	3.26	3.65	**500yr**	2.81	3.57	3.97	4.70	6.29	9.50	10.64	**500yr**	8.41	10.23	11.30	13.12	14.12	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.31	0.48	0.58	0.79	0.97	1.13	**1yr**	0.83	1.11	1.32	1.77	2.25	2.86	3.17	**1yr**	2.53	3.05	3.51	4.29	5.03	**1yr**
2yr	0.36	0.56	0.69	0.94	1.15	1.36	**2yr**	1.00	1.33	1.57	2.08	2.68	3.35	3.74	**2yr**	2.97	3.59	4.11	4.89	5.55	**2yr**
5yr	0.45	0.70	0.86	1.19	1.51	1.79	**5yr**	1.30	1.75	2.05	2.66	3.39	4.44	5.00	**5yr**	3.93	4.81	5.43	6.48	7.21	**5yr**
10yr	0.55	0.84	1.05	1.46	1.89	2.20	**10yr**	1.63	2.15	2.55	3.22	4.07	5.51	6.25	**10yr**	4.88	6.01	6.72	8.04	8.83	**10yr**
25yr	0.71	1.08	1.35	1.92	2.53	2.90	**25yr**	2.19	2.83	3.39	4.16	5.17	7.32	8.42	**25yr**	6.48	8.09	8.92	10.74	11.56	**25yr**
50yr	0.86	1.31	1.64	2.35	3.17	3.59	**50yr**	2.73	3.51	4.21	5.05	6.22	9.08	10.54	**50yr**	8.04	10.14	11.04	13.40	14.18	**50yr**
100yr	1.06	1.60	2.00	2.89	3.96	4.42	**100yr**	3.42	4.32	5.22	6.37	7.47	11.28	13.22	**100yr**	9.98	12.71	13.68	16.75	17.43	**100yr**
200yr	1.29	1.94	2.45	3.55	4.95	5.46	**200yr**	4.27	5.34	6.49	7.78	8.96	14.02	16.60	**200yr**	12.41	15.96	16.97	20.95	21.46	**200yr**
500yr	1.68	2.50	3.21	4.67	6.63	7.20	**500yr**	5.72	7.04	8.66	10.14	11.41	18.71	22.44	**500yr**	16.56	21.58	22.57	28.20	28.29	**500yr**

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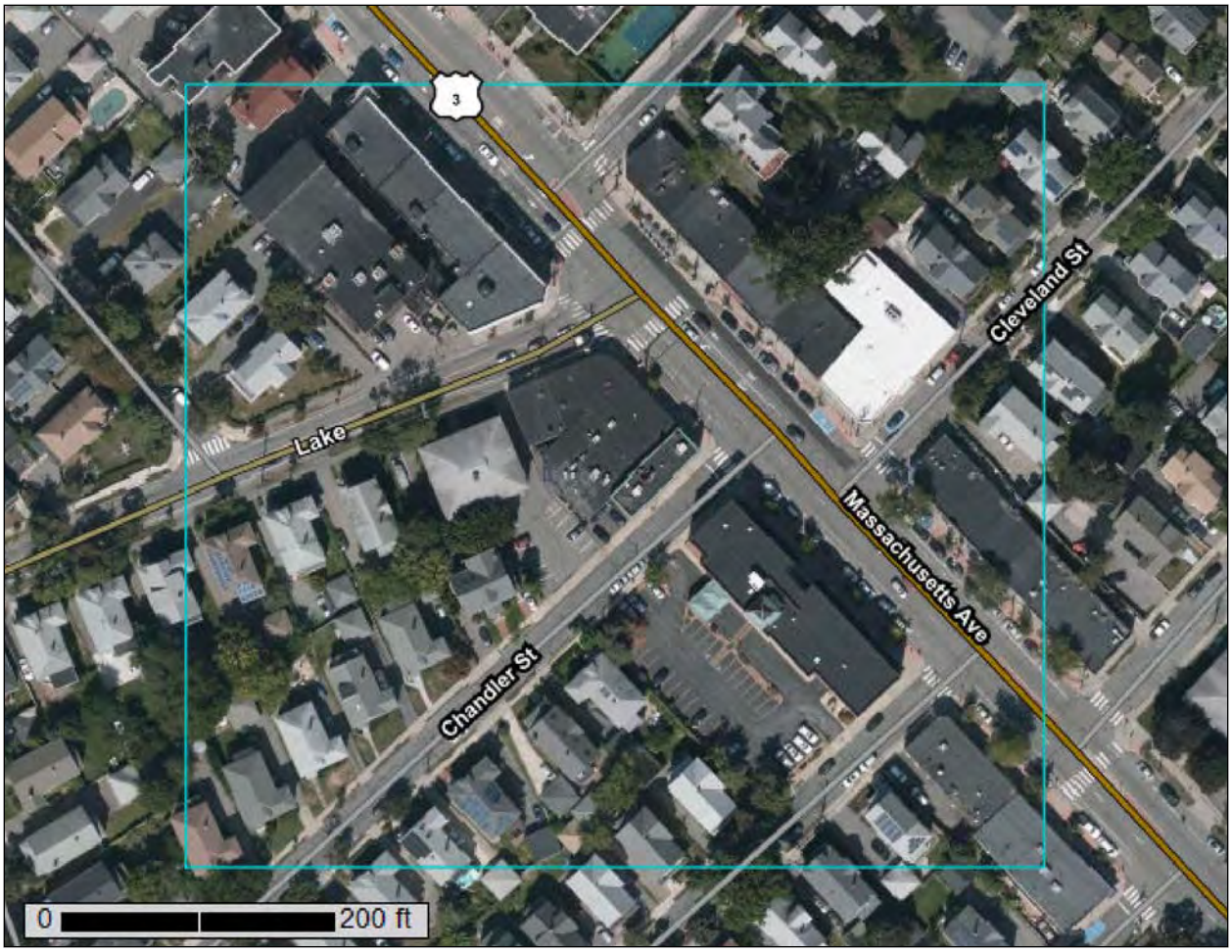
United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Middlesex County, Massachusetts



August 28, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

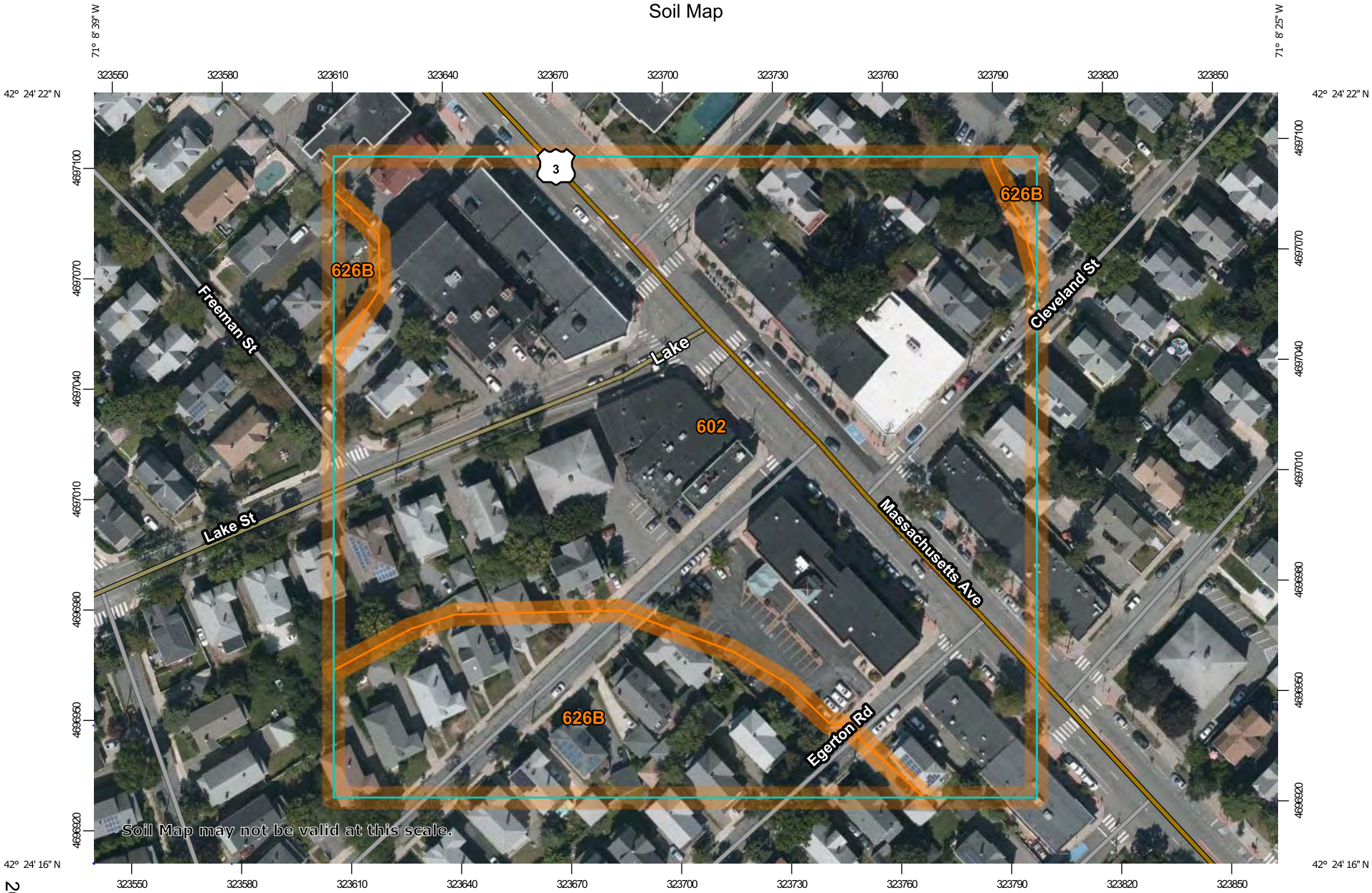
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:1,480 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

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 20, Jun 9, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 11, 2019—Oct 5, 2019

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	6.6	79.8%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	1.7	20.2%
Totals for Area of Interest		**8.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Middlesex County, Massachusetts

602—Urban land

Map Unit Setting

National map unit symbol: 9950
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Excavated and filled land

Minor Components

Rock outcrop

Percent of map unit: 5 percent
Landform: Ledges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Head slope
Down-slope shape: Concave
Across-slope shape: Concave

Udorthents, wet substratum

Percent of map unit: 5 percent
Hydric soil rating: No

Udorthents, loamy

Percent of map unit: 5 percent
Hydric soil rating: No

626B—Merrimac-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyr9
Elevation: 0 to 820 feet
Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Merrimac and similar soils: 45 percent
Urban land: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Merrimac

Setting

Landform: Eskers, moraines, outwash terraces, outwash plains, kames
Landform position (two-dimensional): Backslope, footslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest, riser, tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits derived from granite, schist, and gneiss over sandy and gravelly glaciofluvial deposits derived from granite, schist, and gneiss

Typical profile

Ap - 0 to 10 inches: fine sandy loam
Bw1 - 10 to 22 inches: fine sandy loam
Bw2 - 22 to 26 inches: stratified gravel to gravelly loamy sand
2C - 26 to 65 inches: stratified gravel to very gravelly sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline (0.0 to 1.4 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Description of Urban Land

Typical profile

M - 0 to 10 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water capacity: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Windsor

Percent of map unit: 5 percent
Landform: Dunes, outwash terraces, deltas, outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent
Landform: Outwash plains, terraces, deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Hinckley

Percent of map unit: 5 percent
Landform: Eskers, kames, deltas, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

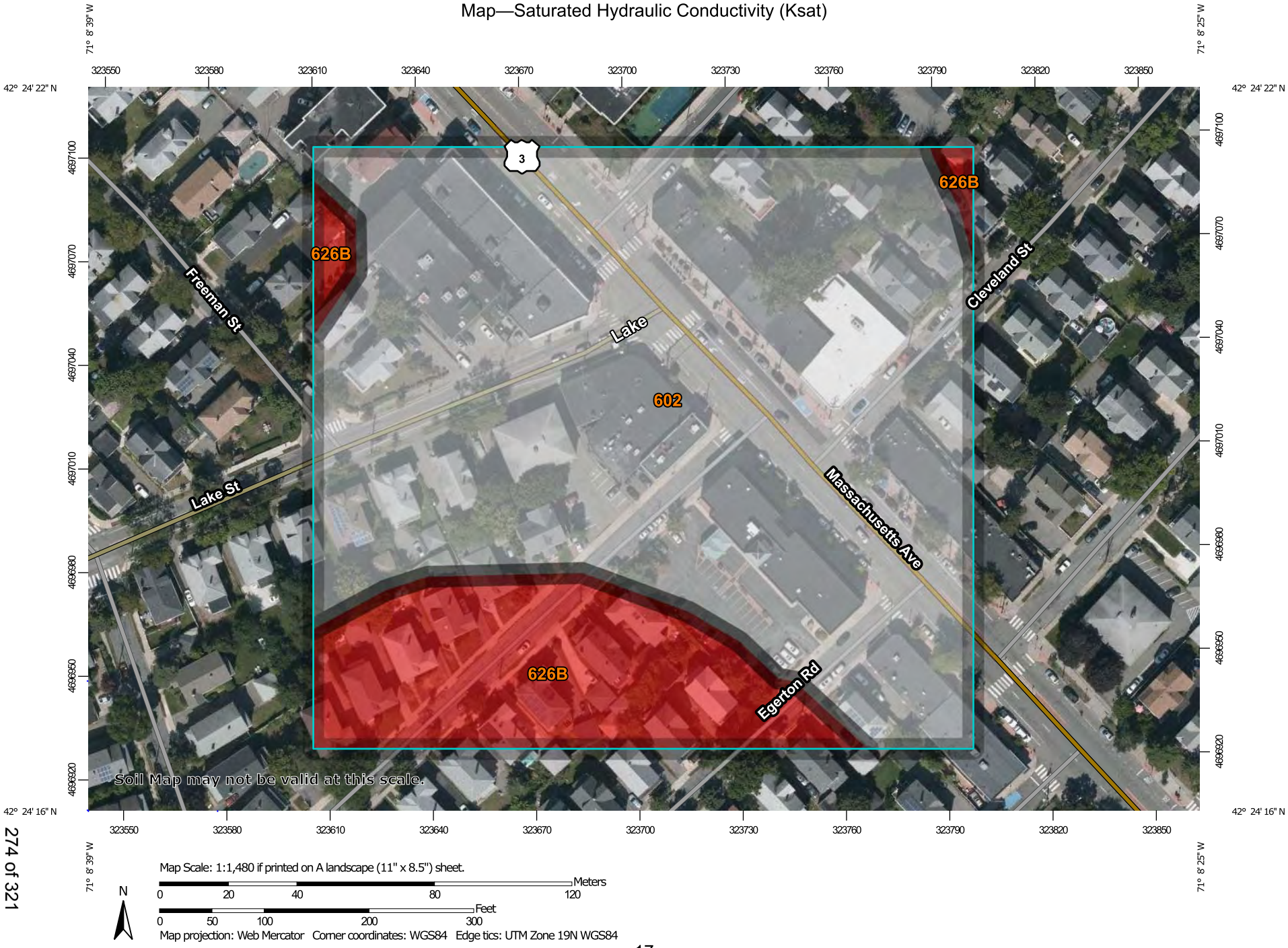
Saturated Hydraulic Conductivity (Ksat)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Map—Saturated Hydraulic Conductivity (Ksat)



Map Scale: 1:1,480 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

= 100.0000

Not rated or not available

Soil Rating Lines

= 100.0000

Not rated or not available

Soil Rating Points

= 100.0000

Not rated or not available

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 20, Jun 9, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 11, 2019—Oct 5, 2019

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.

Table—Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
602	Urban land		6.6	79.8%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	100.0000	1.7	20.2%
Totals for Area of Interest			**8.3**	**100.0%**

Rating Options—Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 12

Bottom Depth: 120

Units of Measure: Inches

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Map—Hydrologic Soil Group

Map Scale: 1:1,480 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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.

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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.

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Survey Area Data: Version 20, Jun 9, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 11, 2019—Oct 5, 2019

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.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
602	Urban land		6.6	79.8%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	A	1.7	20.2%
Totals for Area of Interest			**8.3**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

References

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NOTE:
THE BUILDING AND LANDSCAPE SHADOWS ILLUSTRATED IN THE RENDERINGS BELOW ARE DIGITALLY GENERATED AND THEORETICAL REPRESENTATIONS OF THOSE SHADOWS CAST AT A SPECIFIC MOMENT IN TIME ON A SPECIFIC DAY. WHILE ACCURATE TO THE INPUT CALENDAR AND SUN LOCATION DATA, THE ACTUAL PERCEPTION OF SHADOWS INCLUDING THEIR SIZE, SHAPE AND INTENSITY OR DARKNESS, MAY BE SUBJECTIVE AND VARIABLE TO THE SPECIFIC OBSERVER. AS SUCH, THIS INFORMATION SHOULD BE UTILIZED AS GENERAL COMMENTARY, AND CAUSE FOR FURTHER DISCUSSION OR STUDY AS NEEDED.

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603-501-0202

NOT FOR CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:

#	Description	Date

Scale:
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 03/18/21

Title: SOLAR STUDIES

A9.06

© 2020 Market Square Architects 3/18/2021 5:09:28 PM

Town of Arlington, Massachusetts

Committee Appointment

Summary:

8:00 p.m. Jagat Adhiya, Envision Arlington Standing Committee

Board will vote to approve appointment by the Director of Planning and Community Development for a three-year term

ATTACHMENTS:

	Type	File Name	Description
	Reference Material	Agenda_Item_2A_-_2021_EA_SC_role_Jagat_Adhiya.pdf	2021 EA SC role Jagat Adhiya
	Reference Material	Agenda_Item_2B_-_Jagat_Adhiya_CV_EA_Apr2021.pdf	Jagat Adhiya CV EA Apr. 2021

Jagat Adhiya

53 Winter Street, #2, Arlington, MA 02474 | 201 779 9983 | jagat.adhiya@gmail.com

26 April 2021

Jennifer Raitt

Director of Planning and Community Development

Town of Arlington, MA

Subject: Volunteer Position on the Envision Arlington Standing Committee

Jenny:

It was a pleasure to speak with you on Friday about the opportunity to serve on Envision Arlington's Standing Committee, as well as the idea of a committee liaison role to partner with the Arlington's Master Plan Implementation Committee.

I request your nomination for a volunteer position on the Envision Arlington Standing Committee.

Having lived in Arlington for 17 years, I have followed with interest the Vision 2020 initiative and the ongoing implementation of the Master Plan. The town survey administered by Envision Arlington is a wonderful tool for bringing together diverse views on key issues, new ideas and to help inform town residents about our local government. I would like to actively support the ongoing community engagement our town.

Based on stakeholder discussions and observing the recent Standing Committee meeting, I feel that there is an opportunity, and desire, for better coordination of efforts among the committee and various task groups. I believe that I could collaborate effectively with the Envision Arlington committee members, and key stakeholders, to shape Envision Arlington's future approach. My professional role involves leading strategic digital transformation and enabling greater R&D scientist engagement at a global biotech company. I partner with senior business executives and functional managers to define an aligned strategy and am accountable for leading implementation of the prioritized portfolio of projects.

I hope that you will consider me a good fit for the Standing Committee position. I look forward to hearing from you.

Sincerely,

Jagat Adhiya

JAGAT ADHIYA

Jagat.adhiya@gmail.com | 201 779 9983

SUMMARY

- Global healthcare IT leader with experience in driving strategic digital transformation and innovation programs for R&D.
- Member of IT Healthcare leadership team of EMD (Merck KGaA, Darmstadt, Germany), with dual reporting to IT Healthcare CIO and Head of R&D Informatics. Based at EMD's Boston (USA) area R&D innovation center in Billerica, MA.
- Providing thought leadership and scientist engagement regarding new capabilities for enabling leading edge R&D.
- IT Business Partner to R&D senior executives and their global teams. Leading the definition and implementation of strategic IT platforms and analytics environment. Managing the prioritization and delivery of an aligned IT digital portfolio to meet strategic R&D priorities. Strong track record of achievement, cross-functional collaboration, and successful portfolio execution.
- Global IT programs management leadership experience with 15+ years driving successful software projects, including systems for big data analysis, R&D portfolio and pipeline management, quality management, and lab data management.

PROFESSIONAL EXPERIENCE

Merck KGaA, Darmstadt, Germany (based at EMD Serono R&D Institute in Billerica, MA)

Director/Member of R&D Informatics Leadership Team for Biopharma *2016 – current*

- R&D Informatics accountable for delivering the digital platforms and analytics portfolio and services for R&D functions
- Partnered with the R&D leadership on defining a multi-year, multimillion dollar technology strategy and digital initiatives roadmap enabling key priorities such as Precision Medicine and Paperless Labs.
- Successfully aligned and managed the R&eD IT projects portfolio year after year to deliver fit-for-purpose software solutions per approved budget and schedule.

Associate Director/IT Business Partner for Life Science R&D *2011 – 2016*

- Developed business cases, briefed executive sponsors, managed budget forecast, recruited and aligned internal and external resources, led vendor contract negotiations, overall projects planning and execution, steering/sponsor updates, and liaised with stakeholders in regulatory/compliance and IT enterprise architecture.
- Enabled Life Science to manage anticipated ~3x YoY increase in new biologics product launches by deploying modern Planisware-based new product launch management system that dramatically improved coordination across global sites.

Waters Corporation, Milford MA

Senior Project Manager/Senior Engineer *2006 – 2011*

Knowledge Management Project Manager / Software Support Engineer 2002 –2006

- Worked with Head of Global Operations & Services and his management team to develop and launch new, software products and lab productivity-optimization consulting services targeted at FDA-regulated labs in major global pharmaceutical companies. Responsible for project deliverables and program outcomes contributing to highest revenue growth area for Services business.
- Managed customer issue escalations and resolved issues efficiently to minimize downtime at R&D or QC labs resulting in higher levels of customer satisfaction and retention.
- Developed and conducted customer training programs for internal and external customers. These programs resulted in several new software sales, dramatically accelerated customer success, as well as reduced the number of user support issues reported.
- Managed business needs analysis, build/buy assessments, design, development, and deployment of projects involving development of custom software applications, interactive web-based content and related user training to drive adoption of new tools. Hired and managed temporary staff to support projects. Produced a weekly blog, with 600+ internal subscribers, featuring articles, webcasts and podcasts.

IT Consultant 2001 – 2002

- Worked as lead data specialist on consulting projects for Fortune 500 customers, such as Tyco and Merrill Lynch.
- Developed data warehouse and custom applications to enhance enterprise data management, data analysis and reporting in order to improve global spend visibility. Identified potential savings of $500M+ for a corresponding addressable spend of $2B+.

EDUCATION

Master of Science, Massachusetts Institute of Technology, Cambridge, MA
Master of Science, The Ohio State University, Columbus, OH
Bachelor of Science, St. Xavier's College, Mumbai University, India

Town of Arlington, Massachusetts

ARB Meeting Schedule July through December 2021

Summary:

8:30 p.m. Board will confirm meeting schedule.

ATTACHMENTS:

	Type	File Name	Description
	Reference Material	Agenda_Item_4_-_2021_Meeting_Schedule_July_through_December.pdf	2021 Meeting Schedule July through December

ARLINGTON REDEVELOPMENT BOARD

TOWN HALL ARLINGTON, MASSACHUSETTS 02476

TELEPHONE 781-316-3090

2021 Meeting Schedule

In general, the ARB meets on the 1st and 3rd Monday of the month, in the Town Hall Annex, 2nd floor conference room, at 7:30 pm. Monday holidays or other events may cause a change in the schedule. If there are no pressing agenda items meetings may be cancelled.

July 12, 2021
July 26, 2021
August 9, 2021
August 23, 2021
September 13, 2021
September 27, 2021
October 4, 2021
October 18, 2021
November 1, 2021
November 15, 2021
December 6, 2021
December 20, 2021

(approved June __ 2021)

Town of Arlington, Massachusetts

Meeting Minutes (for 4/8/21, 4/26/21, 5/3/21, and 5/17/21)

Summary:

8:35 p.m. Board will review and approve meeting minutes

ATTACHMENTS:

	Type	File Name	Description
	Reference Material	Agenda_Item_5A_-_04082021_Draft_ARB_Minutes.pdf	04082021 Draft ARB Minutes
	Reference Material	Agenda_Item_5A_-_04262021_Draft_ARB_Minutes.pdf	04262021 Draft ARB Minutes
	Reference Material	Agenda_Item_5A_-_05032021_Draft_ARB_Minutes.pdf	05032021 Draft ARB Minutes
	Reference Material	Agenda_Item_5A_-_05172021_Draft_ARB_Minutes.pdf	05172021 Draft ARB Minutes

Arlington Redevelopment Board
Thursday, April 8, 2021, 7:00 PM
Meeting Conducted Remotely via Zoom
Meeting Minutes

This meeting was recorded by ACMi.
PRESENT: Rachel Zsembery (Chair), Eugene Benson, Kin Lau, David Watson
ABSENT: Melisa Tintocalis
STAFF: Jennifer Raitt, Director of Planning and Community Development, Erin Zwirko, Assistant Director, and Kelly Lynema, Senior Planner

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The Chair called the meeting to order and notified all attending that the meeting is being recorded by ACMi.

The Chair explained that this meeting is being held remotely in accordance with the Governor's March 12, 2020 order suspending certain provisions of the Open Meeting Law G.L. c. 30A, Section 20. This order from Governor Baker allows for meetings to be held remotely during this time to avoid public gatherings.

The Chair introduced the first agenda item, Continued Public Hearings. The first continued hearing is for Docket #3647, 10 Sunnyside Avenue. The Chair explained that the applicant has requested a continuance.

Mr. Benson moved to continue this hearing to 7:00 p.m. on May 17, 2021, Mr. Lau seconded, approved 4-0-0.

The Chair introduced the second continued hearing for Docket #3646, 1420 Massachusetts Avenue. The Chair asked the applicant's team to discuss the changes made since the last hearing. Tom Godfrey from Bierbrier Development Inc. reviewed the design changes. Doug Grunert from BKA Architects reviewed the plans with the architectural updates that have been made since the last hearing. Mr. Grunert said he worked to make the building look more urban as the Board requested. The Chair asked about cornice details on the roof line and the plans for signage placement. Mr. Lau said this plan is closer to what the Board was thinking of and suggested changes to the center windows. Mr. Benson asked about the signage and where the utilities will be on the roof. Mr. Benson also asked about the possibility for solar on the roof or at least 50% of the roof be solar ready. The Chair opened the floor to public comment.

Steve Moore Piedmont Street said he is a member of the tree committee said that the Tree Committee encourages the planning of large shade trees on this site. Mr. Moore said that there has been a large decline of large Norway maples in this area of Mass. Ave. Mr. Godfrey said he contacted the Tree Warden to assist with plans for tree plantings and reviewed the landscape plan Randy Miron from Bohler said that there is an updated landscaping plan. Mr. Lau asked about the signage plan. Ms. Raitt asked that the final sign application be submitted to the department for final approval.

The Chair reviewed the items that the Board would like addressed:

- Signage Plan submitted to the Department for final review and approval
- Update the materials used for the elevations to substitute PVC with EFIS
- The Board is selecting plan option 2 instead of option 1
- Extend the cornice to the end of the first building bay
- Work with the DPW to finalize the drainage plans
- Have at least 50% of the roof be solar ready
- Move the brick pilaster in the center window

Mr. Benson moved to approve this application with the special conditions and revisions as outlined, Mr. Lau seconded, approved 4-0-0.

The Chair introduced the second agenda item, Finalize Report to Town Meeting. Ms. Raitt and Ms. Zwirko reviewed the most updated draft version of the report to Town Meeting for the Board. Mr. Watson suggested updating the discussion portion for Article 46 to explain that the Board does not feel that this Article will help to create additional affordable housing in Arlington.

Mr. Benson moved to approve the report, as amended this evening, to be submitted to Town Meeting, Mr. Watson seconded, approved 4-0-0.

The Chair introduced the third agenda item, Meeting Minutes (3/15/21).
Mr. Benson moved to approve the Meeting Minutes for 3/15/21 as amended, Mr. Watson seconded, approved 4-0-0.

The Chair introduced the fourth agenda item, Open Forum and opened the floor to public comment. As there were no members of the public in queue to speak the Chair closed the Open Forum portion of the meeting.

Mr. Watson moved to adjourn, Mr. Lau seconded, approved 4-0-0.
Meeting adjourned.

DRAFT

Arlington Redevelopment Board
Monday, April 26, 2021, 7:00 PM
Meeting Conducted Remotely via Zoom
Meeting Minutes

This meeting was recorded by ACMi.
PRESENT: Rachel Zsembery (Chair), Eugene Benson, Kin Lau, Melisa Tintocalis
STAFF: Jennifer Raitt, Director of Planning and Community Development, and Kelly Lynema, Senior Planner

The Chair called the meeting to order and notified all attending that the meeting is being recorded by ACMi.

The Chair explained that this meeting is being held remotely in accordance with the Governor's March 12, 2020 order suspending certain provisions of the Open Meeting Law G.L. c. 30A, Section 20. This order from Governor Baker allows for meetings to be held remotely during this time to avoid public gatherings.

The Chair notified the Board that notice was received from the applicant for the May 3, 2021 meeting has asked for a continuation for 190-192-200 Mass. Ave. Ms. Raitt said that will be reviewed on May 3, 2021.

The Chair introduced the first agenda item, Public Hearing for Docket #3654, 1050 Massachusetts Avenue. Paul Piatelli Jr., who is the applicant for Del's Lemonade, reviewed the changes to the front layout of the existing windows to make the location take out only. Paul Piatelli Sr. said that the windows will look nice and people will be drawn to the neighborhood. Mr. Piatelli Sr. said that they are looking to expand and thought that Arlington would be a great spot. Mr. Lau said he does not feel that the vinyl windows match the character of the neighborhood and the signage does not meet Arlington's signage standards. Mr. Benson said he agrees with Mr. Lau. Mr. Benson asked Ms. Raitt about signage that would meet the sign bylaw requirements in the area. Mr. Benson also asked about bicycle parking, if an approved bike rack could be added in the area. Ms. Tintocalis said she sees how this take-out business could activate this area of the street and asked the applicants to improve the design for the store front. Mr. Piatelli Sr. said he would like to work with the ARB to help to hopefully get the building permits soon since their season is so short, the store will close during the winter. The Chair gave the applicants suggestions to improve the store façade and signage. The Chair opened the floor to public comment.

Don Seltzer asked if the Town provides bench seating by businesses like this. Ms. Raitt said the Department of Public Works could be consulted regarding benches. Ms. Raitt said that that is a good point since there is no seating in this area. Mr. Seltzer asked if awnings are allowed. Ms. Raitt said that awnings used to be at this property and an awning for this site would have to be approved by this Board.

As there were no other members of the public in queue to comment the Chair closed the floor to public comment.
The Chair asked the Board if they are comfortable voting this evening or if they would like the applicant to come back for an additional hearing. Mr. Lau said he would vote this evening but would like to encourage the applicant to stay open during the winter. Mr. Benson asked Ms. Raitt if the Department had enough direction from the Board to proceed with administrative approval.

Ms. Raitt summarized the Board's concerns including:

- Ensure transparency of the windows
- Amend windows to double hung aluminum commercial style windows
- Remove the text from the transoms above the windows
- Remove the web address from the bottom of the operable windows
- Move the logos from the lower portion of the door to the menu board

- Shrink the menu board or hang the menu behind the window or use an a-frame style board. Ms. Raitt suggested the option of using a QR code for the menu and payment for a touchless experience
- Incorporate seating possibilities, whether café style or benches
- Maintain business hours throughout the seasons
- Provide plan for waste management, including trash barrels

Mr. Benson said he feels that the Department has enough information to move forward. Ms. Tintocalis said that design needs to be improved so that the storefront is welcoming and suggested the possibility working with the property owner for enhancements to the sidewalk. Mr. Lau motioned to approve this docket with the conditions as previously stated, Mr. Benson seconded, approved 4-0-0.

The Chair introduced the second agenda item, Article 35 Substitute Motion. Ms. Raitt introduced Kristin Anderson who submitted the Substitute Motion for Article 35. Ms. Anderson said she runs a business in the Gold's Gym lot of the Industrial District and is not pleased with the proposal for work/live space for artists in Industrial Districts. Ms. Anderson said that only 1% of property in town is industrial and if residential use is allowed those businesses will have to compete with the price of residential units. Ms. Anderson said that she supports the arts and artists but feels that Article 35 as proposed will drive away business and will not help artists. Ms. Anderson supports long-term commercial leases in the Greater Boston area. Mr. Benson said he thinks that the ARB's proposal is a good proposal and Mr. Benson said he has seen this work well in Boston. Mr. Benson would like Arlington's Industrial Zone be a 21st century zone. Mr. Lau mentioned the artists' loft in Somerville, the Brickbottom building. Ms. Anderson said that artists created that space but with commercial developers there is no mechanism in place to protect the interest of the artists to make units affordable. Mr. Benson said that the ARB's proposal allows for a nonprofit developer, but Ms. Anderson's proposal does not, so there would be no opportunity. Ms. Tintocalis understands the intention to allow some residential and mixed-use for artists. Ms. Tintocalis asked Ms. Raitt if the market forces are too strong to create affordable spaces for artists. Ms. Raitt said it has been an important focus of the Commission for Arts and Culture, specifically plans to create more artists space and studios.

The Chair introduced the third agenda item, Meeting Minutes (3/29/21).
Mr. Benson moved to approve the 3/29/21 Meeting Minutes as amended, Mr. Lau seconded, approved 4-0.

Mr. Benson moved to adjourn to Town Meeting, Ms. Tintocalis seconded, approved 5-0.

Meeting adjourned.

DRAFT

Arlington Redevelopment Board
Monday, May 3, 2021, 7:00 PM
Meeting Conducted Remotely via Zoom
Meeting Minutes

This meeting was recorded by ACMi.
PRESENT: Rachel Zsembery (Chair), Eugene Benson, Kin Lau, Melisa Tintocalis
STAFF: Jennifer Raitt, Director of Planning and Community Development and Kelly Lynema, Senior Planner

The Chair called the meeting to order and notified all attending that the meeting is being recorded by ACMi.

The Chair explained that this meeting is being held remotely in accordance with the Governor's March 12, 2020 order suspending certain provisions of the Open Meeting Law G.L. c. 30A, Section 20. This order from Governor Baker allows for meetings to be held remotely during this time to avoid public gatherings.

The Chair introduced the first agenda item, Continued Public Hearing Docket #3650 190 & 192-200 Massachusetts Avenue. The Chair said that the applicant requested a continuance to June 7, 2021.

The Chair opened the floor to public comment. As there were no members of the public in queue to speak the Chair closed the floor to public comment.

Mr. Lau moved to approve the continuation for Docket #3650 until June 7, 2021, Mr. Benson seconded, approved 4-0-0.

The Chair noted that the applicant for 10 Sunnyside has submitted a request to withdraw their application. The Chair noted the email from the applicant as correspondence received and said that the Board will address the withdrawal during the meeting on May 17, 2021.

The Chair introduced the second agenda item, Updates to Housing Production Plan and Open Space and Recreation Plan. Ms. Raitt reviewed the Open Space Recreation Plan which will be updated with the Arlington Open Space Committee. Ms. Raitt said that Wendy Richter is the ARB's designate to the Open Space Committee and Ms. Raitt suggested inviting Ms. Richter in the future to provide an update. Ms. Raitt said that the first public forum will be held on June 10, 2021 and any upcoming engagement opportunities and documents will be posted by the Open Space Committee. Ms. Tintocalis asked if this group would look at underutilized spaces like parklet or alleyway open space. Ms. Raitt said that the Open Space Committee usually focuses on larger open parcels of land. Ms. Tintocalis said that smaller parklets in business districts may be activated as recreation areas and that space may attract more foot traffic. Mr. Lau asked about a wetland purchase the Town made years ago. Ms. Raitt said that land, Arlington Great Meadows, is preserved and protected and is talked about in the current plan. Ms. Raitt said that Arlington, Lexington, and their respective Conservation Commissions are working together to preserve that space. Mr. Lau said that the Town should encourage residents to use that that space for recreational activities.

The Chair moved to the overview of the Housing Production Plan. Ms. Raitt said that the Housing Implementation Plan Committee is aiming for a community meeting in June, possibly June 2, 2021, depending when Town Meeting wraps up. Ms. Raitt said the Housing Implementation Plan Committee will develop the needs assessment to begin to develop goals for the plan. Ms. Raitt said that the community meeting will also include a discussion regarding impediments to housing production. Ms. Raitt said that presentation of the draft implementation plan to the Select Board and the Board is projected to take place in late October. Mr. Benson asked how the Board can take the plan expected in late October and to then have recommendations prepared for Spring Town Meeting. Ms. Raitt said that there should be time in the fall to develop future

Warrant Articles, which would need to be filed in late January 2022. The Chair said it would be helpful to plan this summer to discuss what the process would be and prepare the Board's fall calendar. Ms. Tintocalis said that as strategies are being developed it is helpful to know which work together best. Ms. Raitt notified the Board that Kelly Lynema will be working on a contact list for the Board. Ms. Raitt said that the Community Conversation Series will continue, picking up next month to discuss Fair Housing with a panel discussion in mid-July.

The Chair opened the floor to members of the public.
Jennifer Susse said it is important to start these conversations. Ms. Susse said she is concerned about holding a public outreach meeting in August instead of after Labor Day. Ms. Susse suggested involving Envision Arlington with public outreach/community meetings. Ms. Susse said that she feels that people do not understand how zoning is not working for us. Ms. Susse said that there needs to be a push for education so residents are aware of what is not working for us. Ms. Susse suggested a feedback meeting to hear from the community and to allow residents to express their opinions. Ms. Raitt said that the meeting date concern is a valid concern; Ms. Raitt said that she will explore possible dates with the consultant and will hopefully know if meetings will still be over Zoom or be allowed in person. Ms. Raitt said that Envision Arlington could be involved with the public outreach meetings. Ms. Raitt said she will work with other people to create a less structured educational meetings/opportunities.

Barbara Thornton said that she thinks the Broadway Corridor in East Arlington study competition can be used as a tool to get more involvement from town residents. Ms. Raitt said that Article 81, Broadway Corridor project blends with the MBTA Communities requirement.

With no other members of the public in queue to speak the Chair closed the floor to public comment.

Mr. Lau moved to adjourn to Town Meeting, Ms. Tintocalis seconded, approved 4-0-0.
Meeting adjourned.

DRAFT

Arlington Redevelopment Board
Monday, May 17, 2021, 7:00 PM
Meeting Conducted Remotely via Zoom
Meeting Minutes

This meeting was recorded by ACMi.
PRESENT: Rachel Zsembery (Chair), Eugene Benson, Kin Lau, Melisa Tintocalis, David Watson
STAFF: Jennifer Raitt, Director of Planning and Community Development and Kelly Lynema, Senior Planner

The Chair called the meeting to order and notified all attending that the meeting is being recorded by ACMi.

The Chair explained that this meeting is being held remotely in accordance with the Governor's March 12, 2020 order suspending certain provisions of the Open Meeting Law G.L. c. 30A, Section 20. This order from Governor Baker allows for meetings to be held remotely during this time to avoid public gatherings.

The Chair introduced the first agenda item, Continued Public Hearing for Docket #3647, 10 Sunnyside Avenue.
The Chair opened the floor to Public Comment. With no members of the Public in queue to comment the Chair closed the floor to public comment.
Mr. Lau moved to accept the letter of withdrawal from the applicant for Docket #3647, 10 Sunnyside Ave., Ms. Tintocalis seconded, approved 4-0-0.

The Chair introduced the second agenda item, Annual Town Meeting updates. The Chair gave an overview of the Warrant Articles that have been discussed so far during Town Meeting.

The Chair introduced the third agenda item, Discuss Article 43 Substitute Motions and Amendment. The Chair asked the Board if they have any questions regarding amendment 43 or the Substitute Motion. Mr. Lau said that he does not feel any changes need to be made at this time and supports the amendment as is. Mr. Benson said he agrees with Mr. Lau, that the Board should continue to support the amendment as written. Ms. Tintocalis said that she would also like to stay with the Board's original position for Article 43. The Chair said she also agrees to support Article 43 as originally submitted. Mr. Benson said that that Article 43 is much more appropriate for Arlington than the ADU article that was submitted in 2019. The Chair opened the floor to public comment.

Don Seltzer said he wanted to remind the Board of some of the Board's opinions when discussing ADUs, including being applied to existing structures and required owner occupancy. Mr. Seltzer said it is easier to loosen restrictions than to tighten restrictions if ADUs are not working.

Jennifer Susse said she is glad the Board rejected the amendment which she thinks would lead to fewer ADUs. Ms. Susse said that the proposal is a modest well thought out proposal.

Lori Lahey asked the Board if the public was included when crafting article 43. The Chair confirmed that there was a lot of public engagement that assisted with crafting this article. Ms. Raitt gave an overview of the forums and public outreach and engagement held to talk about accessory dwelling units. Ms. Raitt said that Ms. Thornton also had her own public outreach regarding this article. Ms. Lahey said that she is concerned about East Arlington and that East Arlington residents did not have enough input regarding this article.

Allan Tosti said he supports what Mr. Seltzer said, Mr. Tosti would like to start with a modest proposal. Mr. Tosti said that he feels that this is a radical proposal, and that Arlington is already overcrowded. Mr. Tosti said he feels this will be devastating to East Arlington.

Barbara Thornton said that she is a fan of governance and citizen participation. Ms. Thornton said she does not feel East Arlington will be hurt by ADUs but will be hurt by not qualifying for zoning for ADUs.

Steve Revilak said he wanted to touch on the iterative process to create this article. Mr. Revilak said the first meeting regarding this ADU article was held on 1/27/2020, on 10/26/2020 a hearing for Special Town Meeting was held on 1/4/2021 another hearing was held, and the hearing for this Town Meeting was held on 3/15/21. Mr. Revilak said that the ADU article is popular in his neighborhood.

Chris Loreti asked the Board how many other communities allow more than one ADU per lot. Mr. Tedesco said he would have to double check the 37 municipalities that allow ADUs for that information. Ms. Thornton said that when preparing the article Ms. Thornton used zoning and special requirements as a framework. Mr. Loreti asked how many communities allow ADUs and accessory structures to be built on the property line with just a special permit. Mr. Loreti also asked how many communities that have similar language in the bylaw to make it difficult for the ZBA to turn down a special permit.

Kristin Anderson said that one of her constituents asked her to vote against this article because of their concern for open space. Ms. Anderson said she would like to vote for this article but is also concerned about rolling back restrictions if necessary.

Wynelle Evans said that she supports ADUs and the amount of work that went into drafting this article. Ms. Evans said that the importance of soliciting input from abutters and close neighbors was not considered and should have been addressed by the Residential Study Group. Ms. Evans said that the submitted amendments speak to the awareness on the part of residents that their needs have not been considered. Ms. Evans said that defining a short-term rental is an undue burden on Inspectional Services.

Karen Kelleher said that there have been small homes in her neighborhood that have been demolished to build larger homes. Ms. Kelleher said that the demolitions created more density but does not feel that the character of the neighborhood has changed. Ms. Kelleher said she wishes that some of the new units were more affordable.

Patrick Hanlon questioned if a 2/3 vote for a change is necessary, Mr. Hanlon said that the Housing Choice Statute just says that a simple majority is needed. Mr. Hanlon said that granting the principal dwelling an ADU that would require a special permit.

Phil Tedesco addressed the questions from members of the public regarding the ADU article. The Chair closed the floor to public comment and said at Town Meeting the Board will continue to support Article 43 as submitted.

The Chair introduced the fourth agenda item, Meeting Minutes (4/5/21).
Mr. Benson moved to accept the meeting minutes for 4/5/21 as amended, Mr. Lau seconded, approved 4-0-0.

Mr. Lau moved to adjourn to Town Meeting, Mr. Benson seconded, approved 4-0-0. Meeting adjourned.

DRAFT

Town of Arlington, Massachusetts

Correspondence received

Summary:
Correspondence received from:
D. Seltzer 06-04-21 and 06-06-21
L. Curtis 06-06-21
C. Pedersen 06-07-21
E. Maynard 06-07-21
R. Freeman 06-07-21
R. Roth 06-07-21
K. Doherty 06-07-21
A. Shrestha 06-07-21

ATTACHMENTS:

	Type	File Name	Description
	Reference Material	Correspondence_from_D._Seltzer_received_06-04-21.pdf	Correspondence from D. Seltzer received 06-04-21
	Reference Material	Correspondence_from_D._Seltzer_received_06-06-21.pdf	Correspondence from D. Seltzer received 06-06-21
	Reference Material	Correspondence_from_L._Curtis_received_06-06-21.pdf	Correspondence from L. Curtis received 06-06-21
	Reference Material	Correspondence_from_C._Pedersen_received_06-07-21.pdf	Correspondence from C. Pederson received 06-07-21
	Reference Material	Correspondence_from_E._Maynard_received_06-07-21.pdf	Correspondence from E. Maynard received 06-07-21
	Reference Material	Correspondence_from_R._Freeman_received_06-07-21.pdf	Correspondence from R. Freeman received 06-07-21
	Reference Material	Correspondence_from_R._Roth_received_06-07-21.pdf	Correspondence from R. Roth received 06-07-21
	Reference Material	Correspondence_from_K._Doherty_received_06-07-21.pdf	Correspondence from K. Doherty received 06-07-21
	Reference Material	Correspondence_from_A._Shrestha_received_06-07-21.pdf	Correspondence from A. Shrestha received 06-07-21

From: Don Seltzer <timoneer@gmail.com>
Date: June 4, 2021 at 10:46:26 AM EDT
To: Jenny Raitt <JRaitt@town.arlington.ma.us>
Subject: Visual for Docket 3650 - 190 Mass Ave

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Jenny,

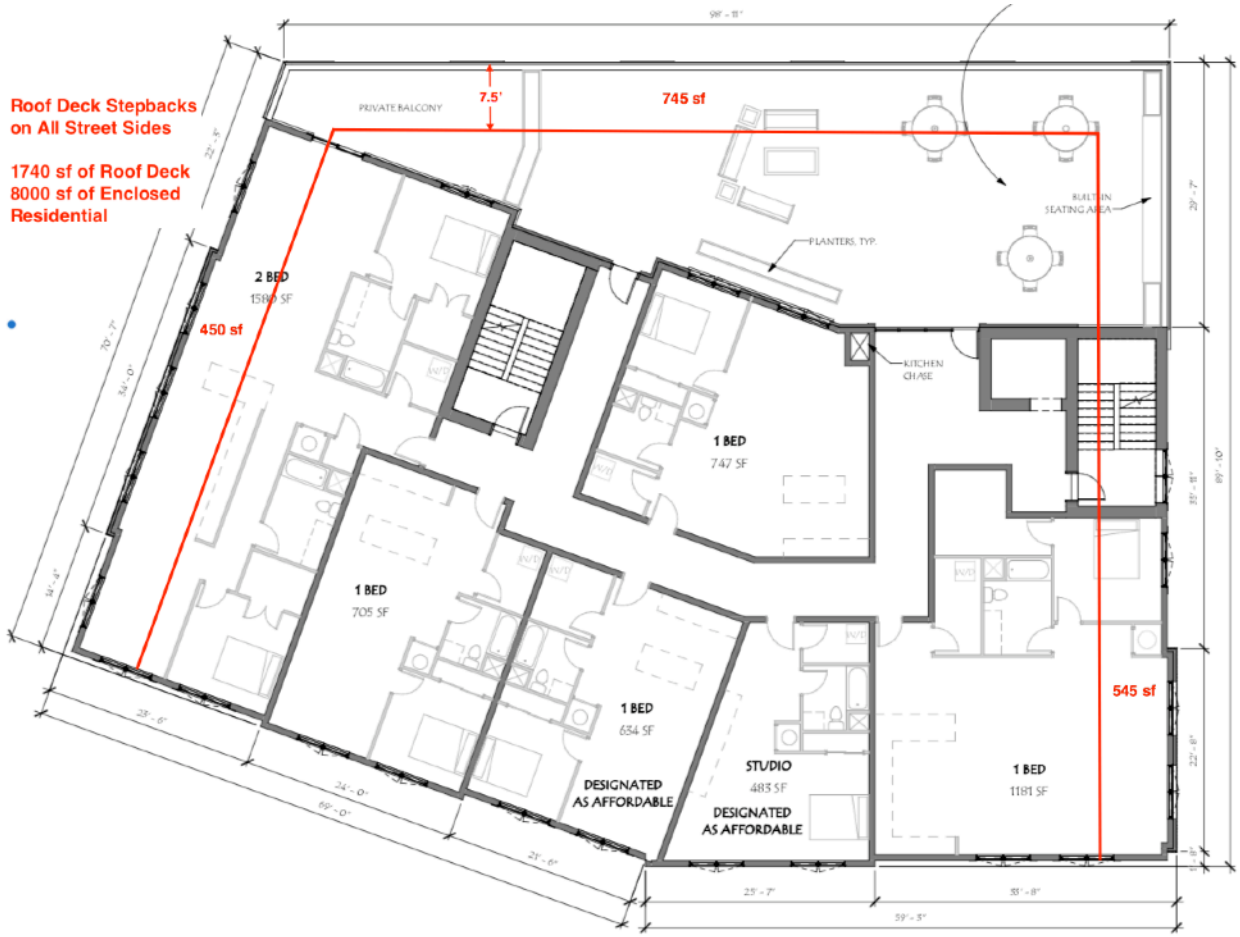
Attached is a PDF file that I would like to be shown during Monday's hearing for Docket 3650.

Thank you.

Don

What is Wrong with this Picture?

What If 7.5 foot Stepbacks were Provided on Each Street Side?



Complies with 5.3.17 - The upper story step-back shall be provided along all building elevations with street frontage, excluding alleys.

From: Don Seltzer <timoneer@gmail.com>
Date: June 6, 2021 at 1:45:59 PM EDT
To: Rachel Zsembery <RZsembery@town.arlington.ma.us>, klau@town.arlington.ma.us, Eugene Benson <EBenson@town.arlington.ma.us>, mtintocalis@town.arlington.ma.us
Cc: Jenny Raitt <JRaitt@town.arlington.ma.us>
Subject: Docket 3560 - Comments on latest submission

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To: Arlington Redevelopment Board

Attached is a listing of the more significant zoning bylaw 'waivers' or 'variances' that are being asked of the Board in this latest submission. I have included the references to the relevant sections of the Zoning Bylaw for your convenience.

A few additional comments -
The applicant is promising five affordable units, one more than the four that is required by the Inclusionary bylaw for a 26 unit apartment building. This additional unit is a small 420 sf studio apartment. Under HUD guidelines for affordability, it can be rented for about $1250 - $1400 per month. This is not far from the current market rate rentals for such an apartment in Arlington.

At the previous hearing, a reference was made to the proposed FAR being comparable to that of the adjacent Capitol Theater block. This is not an accurate comparison. The FAR for the Capitol theater was mistakenly stated as 2.6. The actual figure is 1.66. Furthermore, 45% of the total floor area is for affordable housing, and in this situation the Board is granted the authority to grant an exception for this floor area.

As always, I would be glad to answer any of your questions on these points,

Don Seltzer
Irving St

Comments on Proposed Plans for 190 Mass Ave - 6 June 2021

The latest proposal for Docket 3650 is for a four story mixed use building, principal use residential. As submitted, it would require the Board to waive the following sections of the Zoning Bylaw.

- Upper Story Setbacks are required on all building elevations with street frontage. This includes Mass Ave, Lake St, and Chandler St

5.3.17. Upper-Story Building Step Backs

For buildings more than three stories in height, an additional 7.5-foot step-back (upper story building setback) shall be provided beginning at the third story level or 30 feet above grade, whichever is less. The upper story step-back shall be provided along all building elevations with street frontage, excluding alleys.

- Allowable Floor Area Ratio is 1.5. Applicant is asking for more than double the maximum. The Board can only grant additional floor area for lots greater than 20,000 sf.

5.3.6. Exceptions to Maximum Floor Area Ratio Regulations (Bonus Provisions)

- *The Board of Appeals or the Arlington Redevelopment Board, as applicable, may grant a special permit subject to the standards in Section 3.3 or 3.4, as appropriate, to allow a maximum gross floor area higher than is permitted in the district, subject to the procedures, limitations, and conditions specified below, for a lot (or part of a lot) which meets the following basic requirements:*

- *(2) The lot (or part of a lot) is not less than 20,000 square feet when the principal use is residential. When the principal use is non-residential, no minimum lot size is required provided all other provisions of this Section 5.3.6 are satisfied.*

If the applicant had been seeking to build mixed use where the principal use was commercial or retail, and residential was an accessory use, than the Board would have the authority to grant some relief to FAR.

- Rear Yard Depth is based upon building length and height. For B3 district, a yard setback of (H+L)/6 is required, approximately 30 feet in this instance.

5.5.2 A. Tables of Dimensional and Density Regulations

Note that the applicant has mistakenly listed this as a side yard. This is covered in Section 2 Definitions, for Lot Lines, Rear.

- Corner Lot Minimum Street Yards on Lake and Chandler St are the same as required front yard depths for the adjoining R2 lots - 20 feet

5.3.8 Corner Lots and Through Lots

A corner lot shall have minimum street yards with depths which shall be the same as the required front yard depths for the adjoining lots.

- Usable Open Space is required to be 20% of the residential floor area. The latest plan submission shows zero Usable Open Space. It incorrectly claims about 2000 sf of fourth floor roof deck as qualifying. It also miscalculates the total residential floor area.

5.3.21

- *For mixed uses and any permitted residential use not specifically identified in the tables in Section 5.5.2, the minimum open space requirements (computed from the residential floor area only) shall be 10% landscaped and 20% usable in the B1, B2, B2A, B3, and B4 districts, and 15 percent usable in the B5 district.*

5.3.18. Balconies and Roof as Portion of Usable Open Space

The Board of Appeals or Arlington Redevelopment Board, as applicable, may grant a special permit that private balconies with a least dimension of six feet and open space ***on a roof not more than 10 feet above the level of the lowest story used for dwelling purposes*** *may be counted up to 50% of the usable open space requirement.*

The applicant continues to submit misrepresentative perspective views that are so distorted with respect to the surrounding neighborhood that they make the proposed 50’ tall building appear to be no taller than the adjacent 30’ high utility poles.

The number of major ‘waivers’ from our bylaws that would be needed to build the proposed structure are not surprising. It is obvious that one cannot build a building of that scale on a small 11,000 sf lot. And it should be equally clear that one cannot build a four story building on any size lot if the footprint of the building is nearly the size of the lot itself.

Don Seltzer

From: Lara Curtis <lara.curtis@gmail.com>
Date: June 6, 2021 at 9:39:39 PM EDT
To: JRaitt@town.arlington.ma.us
Cc: terryhayes@gmail.com
Subject: Comments on 190-200 Mass Ave

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Hi Jenny,

Attached please find comments for the ARB for the 190-200 Mass Avenue hearing Monday night. Please forward this to the Board members.

Thanks,

Lara Curtis Hayes
617-256-6600

June 6, 2021

Arlington Redevelopment Board
730 Mass Avenue Annex
Arlington, MA 02476

Attention: Jennifer Raitt, Director of Planning & Community Development

In anticipation of the upcoming continued hearing for the proposed development at 190-200 Mass Ave., we'd like to offer comments based on the most recently submitted plans. While we are glad to see that some changes have been made since the April hearing, the proposal continues to be too large for the property and is missing some basic planning features that could limit its impact on the neighborhood. We appreciate the continued opportunity to submit comments for this Board's consideration.

While we acknowledge the proposal has been reduced from five stories to

four, the project is still way too large for the site. The proposed FAR of 3.2 is more than double what is allowed by zoning, and as such, it looks massive.

The site is surrounded by three busy streets in an active walkable neighborhood, and the new building should improve, not spoil, this experience. The upper story should be set back not only from the Mass Ave. facade but also the Lake Street facade -- the narrow sidewalk on Lake Street does not benefit from a four-story wall with no setback along its length. The garage's vehicular entrance along Chandler Street continues to be flush with the sidewalk, a clear pedestrian safety issue. The entrances to the commercial unit do not appear to be recessed, and I was disappointed to see the garage's ventilation opening continues to maintain its prominence along the Lake Street facade. With these conditions, the project would be a detriment to the pedestrian experience in Capitol Square.

If the project's square footage were to be reduced to be closer to compliance with the allowed FAR, then there would be room onsite to address key neighborhood concerns. The garage entrance along Chandler Street could be recessed to not only improve pedestrian safety and visibility, but also spare the residents from auditory and visual safety signals. There would also be the potential for a better parking and loading design to address concerns about Uber/Lyft pickups, moving vans, trash service and commercial loading. The design for a new building should incorporate a plan for these basic building needs rather than foist these issues onto the neighborhood to deal with at a later date.

The overall building facade treatment is an improvement from the previous design, incorporating more brick and boosting the cohesiveness between the first and upper floors. Ideally, the windows along the commercial storefront can open, similar to the Town Tavern space across Mass Ave. We would encourage the developer to consider incorporating an outdoor seating area; reducing the building size might allow for such an opportunity.

This development's design still does not comply with the standards under Section 3.4, and continues to need work. As proposed, it would result in a substantial adverse impact upon the character of the Capitol Square neighborhood, and upon the living conditions of the residents living in proximity to it. A special permit under this section should not be issued until the building is reduced in size; pedestrian safety and the pedestrian experience is given more consideration; and the impact on Chandler Street residents is lessened.

Sincerely,

Lara Curtis Hayes and Terrence Hayes
5 Cleveland Street, Arlington, MA

From: Catherine Pedersen <cathy.pedersen@gmail.com>
Date: June 7, 2021 at 1:52:11 AM EDT
To: JRaitt@town.arlington.ma.us
Subject: Concerns regarding the proposed garage/apartment building between Lake Street and Chandler Street

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Date: June 7, 2021
From: Cathy Pedersen, 31 Chandler Street, cathy.pedersen@gmail.com
To: Jennifer Raitt, Director of Planning and Community Development
Re: Proposed garage and apartment building development at the top of our street (Mass Ave block between Lake Street and Chandler Street)

I only recently learned about the development at the top of our street, because concerned neighbors left a letter like this in my mailbox.

As a result, I was able to attend last Wednesday's Arlington Redevelopment Board (ARB) hearing and begin learning about the proposed development of a parking garage and apartment building between Lake Street and Chandler Street. Only 21 people attended Wednesday night's meeting. I am concerned that not enough people may be aware of the potential impact of this development on our community.

There are many matters about this proposal that I'm trying to understand as quickly as possible:

- WHY WERE WE NOT INFORMED?: Most of us only learned about this development, as a result of neighbors giving us information.
    - Why wasn't everyone impacted by this development informed of these ARB meetings?
- QUESTIONABLE MAINTENANCE: Why would a special permit be given for a 4-floor building, when this site wasn't properly maintained as a 1-floor building?
    - What is the long-term maintenance plan for the proposed 4-story garage/apartment building? There will be no condo fees, so how can we be assured that the building will be maintained properly?
- CHANGE IN EAST ARLINGTON CHARACTER: There is only 1 business now being proposed for a block of prime East Arlington real estate, down from 6 businesses.
    - Capitol Square is supposed to be a business zone. What happened to that commitment to our small business community? The pandemic wiped out a lot of small businesses. They are only now getting back on their feet. Isn't this too early to be giving up on small business owners in our town?
- PARKING: The developer plans to provide parking for 14 of 24 tenants.
    - Here's a radical thought that could also be a reasonable compromise: since this proposed development site has a bus stop right in front of the building and Alewife within walking distance, why not consider the possibility of no garage and a first floor dedicated to businesses as before? Tenants who rent units on the upper floors would

not be allowed to own cars. Full stop. In this way, we wouldn't be talking about parking or a dramatic change in the character of our East Arlington business community. There would be no lack of safety, or loud beeping or flashing lights for the abutters to this project. If we have to bend rules, they would be bent to ensure no more cars at the top of the street.
    - What assurance do we have that Chandler Street will not have 2-hour parking imposed? Or worse yet, have parking added to both sides of the street? Can we get some assurance that this will never happen?
- TRAFFIC: This corner is extremely congested. It's very difficult to make a left-hand turn onto Mass Ave from Chandler Street. Often cars are waiting for some time at the top of the street, trying to make this turn. Tenants coming in and out of this parking garage at the top of Chandler Street are going to add significantly to this congestion.
    - Also, we already have a problem with people driving the wrong way down Chandler Street. It's possible that having a building at the top of the street with more daily activity is going to lead to more wrong-way driving, which could endanger the children who frequent this street on the way to or from school.
    - We've had people hit by cars just blocks from this site. It seems like we are creating the potential for some more serious accidents on our block now.
    - Can we get assurance that any traffic plan is realistic and not from the Pandemic timeframe?
    - It seems like we may end up sandwiched now between 2 projects that will add a significant amount of obstruction to our commutes -- the Mugar development's traffic will block our access to Route 2, and this development at the top of the street will block our access to Mass Ave.
- DELIVERY VEHICLE OBSTRUCTION: A garage/apartment building on a busy, congested corner is going to result in a great deal of obstruction to those of us trying to exit our 1-way street. We are going to have continual deliveries for 25 units now.
    - Will there be outdoor designated parking for deliveries, so that these vehicles don't block our access to Mass Ave?
        - With mostly small apartments (instead of condos), there will be a great deal of turnover -- resulting in many more moving trucks potentially blocking our access to Mass Ave. Will there be a spot to regularly accommodate at least one large moving truck?
        - Will there be a loading zone for movers that won't block the sidewalk?
        - Along with moving trucks, there is going to be much more activity from package delivery trucks/cars, along with Ubers. There should be designated outdoor spots for these vehicles as well.
- TRASH: How can such a small space accommodate so much trash?
    - We haven't yet seen a view of the back of the building. Is that because of the need for sizeable dumpsters?
    - Where will all of the trash go for 24 apartments and 1 business? How many dumpsters will there be behind the building? How large will they be?
    - Would it be possible to remove the eyesore of dumpsters and instead have the trash receptacles located inside the building?
    - Some of us walk up and down Chandler Street, continually cleaning up the neighborhood of trash. What assurances will we have that this site's trash will be

secured?
    - Where will the trash pickup take place? Will the amount of trash generated cause the garbage trucks to have to sit at the top of the street for an extended period each week to collect all of this trash?
- BUILDING DESIGN: The building is too big for the site. All of the bending of bylaw rules made to accommodate this design are indicative of this.
    - This isn't just an apartment building. It is also a parking garage. This is what we will have now instead of a variety of small businesses lending charm and character to our neighborhood. This parking garage will be on a busy corner. Who thinks it's a good idea to have a parking garage on a busy corner?
    - Are we considering the future of East Arlington or Arlington generally? What is the vision for Arlington going forward? Parking garages on busy corners?
    - There are many zoning rules that aren't being followed in this design. For example, there isn't enough open space for tenants of the building, as required by the town's zoning guidelines. The rule is being bent for this project. Why are any rules being bent? Is it typical to bend rules like this?
    - Is it typical to have such a large apartment building so close to the sidewalk?
    - What other rules are being bent? Can we have a clear list provided for our review?
    - How can you assure us that activity on the 4th level will not result in objects falling down on people walking on the sidewalk below?
- "MIXED USE"?: Is the design truly "mixed use" when only a single business is (possibly) being retained?
    - It's not even clear if the Little Q Hot Pot restaurant is going to be able to stay. What assurance do we have that that space is going to even be retained for a restaurant?
    - What is the actual definition of "mixed use", so that we can review this?
- NOISY and BRIGHT: There is concern from the abutters that a parking garage is going to be continually noisy for them, with non-stop flashing lights and beeping.
    - In addition, what are the construction plans? What guarantees do we all have of the impact of construction in such a tight space? Where will the equipment be kept and used? Is it going to block traffic? How long will this construction take?
    - Where will A/C units for 25 units be located? How noisy will they be?
    - Where is the venting going to be located? Will this impact people walking on the sidewalk below?

From: Elaine Maynard <emaynard_2000@yahoo.com>
To: "jraitt@town.arlington.ma.us" <jraitt@town.arlington.ma.us>
Date: Mon, 7 Jun 2021 16:03:27 +0000 (UTC)
Subject: Concerns from 13 Chandler Street re 190-200 Mass Street Proposed 4 Story Building

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Dear Jennifer,
I live at **13 Chandler Street**. My home is directly behind the proposed 4-story apartment building at 190-200 Mass Ave.
I am deeply concerned about the impact that this proposed project will have on the quality of my life and quality of life for the Chandler Street community. This email is a follow up to my voicemail from last week.
To start, I am struck by the fact that the majority of discussion around this project appears to be centered on Lake Street and Mass Ave. However, little has been said to address how the project will impact the residents (many long time) of Chandler Street as well as other communities in close proximity to this project. In fact, Chandler Street resident are likely to be among the most negatively impact by the proposed project. **I, as the most direct abutter, will be even more negatively impacted.**
I attended the abutters meeting last Wednesday evening. Several issues that were brought up in the April meeting remained unaddressed and/or forgotten:
1. At this meeting, **no rendering of the rear side of the building** was presented. However, at the April meeting, numerous concerns were raised regarding the proposed esthetic of the rear and what abutters of the building will have to look at day in and day out. When I asked about this, I was told that a rear rendering was “too difficult to create” - yet this view was available during the April meeting. John Murphy indicated to me that he would get a view of the rear in time for tonight’s meeting and reach out to you to include it in the pack. I trust that this will be presented tonight – however, this is an open and critical item at present.

2. To the best of my knowledge, **the traffic study** presented during this meeting was the same one referenced during the April meeting. A major documented concern back in April was that the study did not include Chandler Street, yet residential Chandler Street will bear considerable traffic impact as a result of this project.
The addition of 14 parking space with entry and exist on Chandler Street, in addition to Uber and Lyft serving the proposed building will like bring additional traffic concerns to an already congested and taxed area. Chandler Street is also the main thoroughfare for children walking to the Hardy School bringing additional safety concerns. The request for a study to include Chandler Street is also an open and critical item

I also have several additional macro concerns regarding this project:

- **Appropriateness of Building Esthetic to both Capitol Square and Abutting Residential Neighborhoods**. I certainly did not sign up to live adjacent to a 4-story building with a parking entrance/exit off of Chandler Street, nor do I think the current proposed structure is in line with the overall “look and feel” of Capitol Square. I would ask that the Town pay particular attention to the details surrounding this.

- **Town of Arlington Vision for Capitol Square**. The removal of commercial space in favor of residential space is a major shift in thinking about what Capitol Square is and isn’t. Capitol Square is currently considered a business zone**.** What is Town’s vision and future expectation of the area? Approval of this project as it stands significantly changes the character of the Square and has the potential to set a difficult precedence for the future.

- **Parking is inadequate for the size of the building**. Chandler Street residents are already negatively impacted by significant street parking from individuals visiting area businesses. I would expect this situation to get worse, not better, with the proposed new structure.

- **Noise, Lights etc.** - As my home is directly behind this building, I am concerned by about the overall level of noise from both the volume of additional people in the area (including use of the open space deck) as well as garage entry and exist beeping noise, and lighting that may affect the quality of my life at home. I will also be severely impacted during any construction phase of this proposed project.

- **Questionable maintenance of the existing structures at 190-200 Mass Ave**. These buildings have been in disrepair for years and were poorly maintained even when fully occupied by commercial residents. Why would a special permit be given for a 4-floor building, when this site wasn't properly maintained as a 1-floor building?

- **Community dissatisfaction with previous projects by this developer**. In general, I think it is reasonable to say that the Arlington community has been less than happy with the work (impact, aesthetic) of recently completed work near the Stop and Shop. Without rigorous oversight, there is risk that this project takes a similar trajectory.

These hearing are happening because the footprint of the proposed building is too large for the space and existing zoning requirements cannot be met in any reasonable manner. As a resident of 13 Chandler Street, I am among those most severely impacted by the proposed project as are my neighbors in abutting areas. I understand that something needs to be done with the existing space – however, the current plan is unacceptable to me. Moreover, basic asks from previous meetings are still open items at this time, in addition to overall macro concerns.
Thank you for your time.

Regards,
Elaine Maynard

From: Rhona Freeman <rhona.cembalo@gmail.com>
To: jraitt@town.arlington.ma.us
Date: Mon, 7 Jun 2021 13:23:32 -0400
Subject: Proposed building plan between Lake and Chandler on Mass. Ave

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To Jennifer Raitt:

As a resident of Chandler Street (#23) in East Arlington, I am deeply concerned about the 4-story apartment building plans proposed for the Mass. Ave. block between Lake and Chandler Streets. I wish to express a few concerns to you in this email, as succinctly as I can.

1) The Capitol Square area and its attendant residential neighborhood will most certainly change quite radically from what is a thriving, esthetically pleasing district to something which potentially upends the way of life in our neighborhood. Cutting back on commercial spaces – a boon to our community, and which we all enjoy -- presents a loss and significant departure from the vibrancy of our current living environment. I chose to live in Capitol Square for its wonderful commercial amenities and quiet style.

2) The traffic impact to Chandler (and Egerton) Streets is extremely troubling. The increased flow of cars and deliveries on Chandler Street, what with parking garage entry and exit (and perhaps a loading dock) directly onto our street, presents a host of problems for residents in terms of increased levels of noise (noise pollution), upheaval of childrens' / parents' and older people's walking activities (bicycling as well). This is not inconsequential! I urge the Town and the proposers to take into consideration the impact they will have on a peaceful residential street and most certainly on the people who live here. East Arlington residents' lives do not need any more turmoil, uncertainty, and unanswered questions.

3) Additionally, the construction phase of this proposed change to our neighborhood will affect our daily living and ***that*** in itself is a hardship, however long it lasts. Moreover, many people will still be working from home, perhaps indefinitely; their working environments will be affected and perhaps suffer. And regarding the measured area of the proposed space: it is small for such a tall, and seemingly overzealous, order. The developers ***must*** submit plans for a smaller footprint, if it is to go through at all. I urge them to listen and respond thoroughly to the legitimate and serious concerns put forth by the people who abut this project. I suspect that the affected residential neighborhood is more extensive than the developers realize. Many troublesome issues, as mentioned above, remain open, unaddressed and unresolved.

Thanks for your consideration in this matter!

Rhona Freeman

From: rachel roth <rachel.roth@earthlink.net>
Date: June 7, 2021 at 2:10:31 PM EDT
To: JRaitt@town.arlington.ma.us
Cc: rzsembery@town.arlington.ma.us, mtintocalis@town.arlington.ma.us, klau@town.arlington.ma.us, ebenson@town.arlington.ma.us
Subject: Comments on docket number 3650

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Dear Ms. Raitt and ARB Members,

Please find attached our comments for this evening's meeting.

Please let me know if you have any trouble opening th edocument.

Thank you for your attention to this important matter.

Sincerely,

Rachel Roth

June 7, 2021

Redevelopment Board (ARB)
Arlington MA

Dear Chairperson Zsembery and Members of the Board,

We have lived on Chandler St. since summer 2008. We are writing to express our serious concern that the proposed development of 190-192 Massachusetts Avenue (project docket # 3650) is **too big for the site and will negatively affect abutters and the neighborhood**.

Our concerns are threefold: the potential disturbance from noise, light, and increased deliveries and traffic that will diminish our enjoyment of our home; the loss of retail space that contributes to the vitality of the Capitol Square neighborhood; and the precedent it would set if the Town grants numerous zoning variances to such an unsuitable project.

We would also like to say at the outset that we were taken aback when, at the April 5 meeting, the building owner's lawyer said they could "go 40B" to bypass the ARB altogether if they don't get what they want. This statement does not show respect for the Town, its residents, or affordable housing.

As close abutters, here are some of our top concerns:

Garage We are very concerned that at the April meeting the developer said the garage would emit sounds and flash lights any time a driver is about to exit onto Chandler St. Our home is very close to the garage opening and these noises and lights would be a disturbance, especially at night. This type of garage is not appropriate for a residential street.

Trash and Recycling Removal We are concerned about how frequently trash and recycling service will be needed and how the trash and recycling collectors will access the bins in the garage. We would like assurances from the owner of the building that should any development go forward, no collection will take place before 7:00 a.m. or after 10:00 p.m.

Deliveries Because the bus stop is now in front of the building (having been moved over from in front of the movie theater), all deliveries are likely to take place on Chandler St., adding to the disruption and congestion on the street.

Lighting We have not heard anything yet about exterior and interior lighting schemes on, and from, the building that could affect nearby homes. We would like the developer to provide this information.

Parking and Traffic As everyone knows, overnight parking on the street is not allowed and competition for parking spots during the day is fierce. Before the pandemic, Chandler St. was filled with cars by 8:00, if not 7:00, in the morning.

If more tenants own cars than there are spaces, where will they park? Where will people coming to visit park their cars? Has the developer offered any basis for the assumption that most tenants will use bicycles instead of cars? Did the traffic study include traffic on Chandler and Egerton, and when was it conducted?

Loss of Small Business Although the proposed development is billed as mixed use, it will have only one retail tenant, a restaurant, resulting in the loss of five businesses.

Zoning Waivers The owner is requesting that the Town waive several zoning requirements. We believe this board should carefully consider whether the proposed development contributes sufficient value to the community to merit special treatment in the form of these exemptions, which include short-changing tenants on usable open space and short-changing the neighborhood on landscaped open space around the building, as well as a markedly higher floor area ratio than the Town permits.

Along these lines, we would like clarification on whether the building should have step-backs on Chandler St. and Lake St. as well as Mass. Ave., and what the building will look like from Chandler St. and from the rear.

We encourage the Town to ensure that *all* residents of affected streets are notified of development proposals and ARB meetings going forward.

We have lived in multi-family dwellings most of our lives and have rented for much of our lives. We support multi-family housing, rental housing, affordable housing, and mixed-use development. Living near Mass. Ave., we of course expect some level of bustle and street noise. However, we believe this proposed development is inappropriate atop a residential street and also atop the existing structure and site.

Sincerely,

P. Ferguson
R. Roth
Chandler St.
Arlington 02474

Cc: Jennifer Raitt, Director, Planning & Community Development

From: Kellie Doherty <kmd19@verizon.net>
To: jraitt@town.arlington.ma.us
Date: Mon, 7 Jun 2021 15:11:22 -0400
Subject: 190-200 Mass Ave proposed 4-story rental with single take-out/sit-down restaurant (commercial space)

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Jennifer:

I spoke with you a few weeks ago prior to the first meeting held for this project, which I learned of via the Town website's email update and via a neighbor…no notice from the developer was initially provided. The developer's attorney did send a notice of the informational meeting they held via zoom last week. Although they have reduced the unit count from 42 units to 24 units, I remain concerned for the following reasons:

1) MAINTENANCE : The building that is there now has never been adequately maintained so I am concerned that we will simply be transitioning from 1-story of "needs refurbishment" to 4-stories of "will need refurbishment". Is there any way to have a set-aside fund for developers receiving variances or special permits to ensure that owners are prevented from neglecting these properties in future after they are allowed to enlarge them? If not my concern is warranted. Condo's rather than apartments at least have the mandated condo association and fees to support maintenance, so frankly that would be much preferred (outright sale to longer term owners likely to move less, etc). Many Fire Dept visits to that location over multiple tenants have occurred in the past due to fire alarms & flashing lights going off for extended periods of time…I've heard a variety of reasons for those alarms (most associated with the heating system) but I defer to the Fire Dept for the actual facts of the matter. My suspicion is that it is maintenance related since it was not unique to one tenant.

2) TRAFFIC & PARKING : The traffic numbers shown at the informational meeting last week only addressed a few "reductions" in traffic counts projected as a result of tenants leaving (or being forced/priced out in recent years as has been voiced by others). Though closing businesses does reduce traffic, the overall traffic condition on Chandler St. and this project's overall impact on residents and school children commuting to the Hardy School have not been addressed. No Average Daily Traffic (ADT) data or citations were provided, nor was there any indication of what escalation rates or assumptions are being evaluated. As you know, there are a number of projects being evaluated in the Lake St area currently, some of these with a lot of projected traffic so it is important to understand the assumptions being made for this and other traffic analyses. Also important that the study specifically evaluates traffic on Chandler Street AND that some acknowledgement of cumulative impacts is evaluated. If there are 500 traffic trips in the region simply awaiting Town permit approvals for multiple other projects it would seem to be reasonable to make an assumption that some of the pending projects will be approved. It would be reasonable to include an incremental analysis based on at least a portion of the various project projections for traffic impacts in 2022/2023 construction timeframes and beyond, relative to both temporary construction and permanent traffic impacts. I would also like to better understand the 10-12 month construction schedule, which though temporary could have a major impact in 2022 to this street/neighborhood and parking conditions on and near Chandler St. in particular. Is there a designated parking area for construction workers? Where will deliveries be dropped? Will there be a designated equipment laydown area? What hours will be worked and will weekends be utilized?

3) SIZE & SCALE & APPEARANCE : Based on the last information meeting, the reduced unit count is helpful and the facade appears to contain more brick elements, though it remains unclear if it is brick of a brick veneer …..so more information about that would be appreciated. All renderings shown were from Mass Ave so views and renderings from the rear and some from Chandler Street are needed in order to understand what type of facade is being proposed. Four (4) stories is still a massive development in that location, particularly with the parking issues currently challenging the area. By way of example, my driveway has been blocked twice even during the lower-traffic & parking periods of Covid-19. At a minimum developers (particularly those receiving concessions from the Town) need to fund a tow-hotline

for residents who get blocked-in, since it is a challenge for the Police Dept to be addressing these non-emergency, but highly problematic parking violations.

4) NUISANCE : I would still like details about the safety mechanisms (sirens and lighting) associated with the entrance and exit for the parking garage. Information on exterior lighting is also needed and has not yet been presented. The details and quantification of trash & recycling and loading/unloading are also needed.

5) VIBRANCY & QUALITY OF NEIGHBORHOOD: Capital Square is one of the Village Business Districts for Arlington and it is a gathering place with the Theatre and area restaurants & shops. The business environment was and continues to be a draw for many local residents and although one would think "businesses exacerbate parking issues" it depends very much on the neighborhood and many of the people frequenting these local businesses are nearby residents, so they walk. I recognize that a thriving and healthy business district is going to have some associated traffic but it at least brings benefits to the neighbors who frequent those businesses and not simply more traffic and parking headaches without benefit. Sadly, apartment complexes tend to bring headaches to the neighbors and provide little neighborhood benefit, especially given an overall reduction in the business square footage being proposed. I and my neighbors in discussions about this project have all expressed pangs at the loss of the vibrant local flair that the Capital Square District has been known for.

As a long-time resident (since the early 90's) I respectfully request that Arlington not simply be defined and treated as a bedroom community for Boston commuters, but instead as the thriving, unique Town that it has always been….. and with careful planning always will be.

Regards,
Kellie Doherty
Abutter- 12 Chandler St

From: Anil Shrestha <anil.shrestha@gmail.com>
Date: June 7, 2021 at 3:37:05 PM EDT
To: JRaitt@town.arlington.ma.us
Subject: Docket #3650 190 & 192-200 Massachusetts Avenue

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Dear Ms. Raitt,

I am writing in regards to the new building proposal at 190 and 192-200 Mass Ave. that the impact it will have in the East Arlington area. We will live in Chandler Street with two school going kids. We moved to this area 14 years back due to the charm that is East Arlington.

I have listed below some of the concerns that I have with this four storey building -
mostly apartment units that are being planned.

The whole Capitol Square has a unique character of its own with small businesses that are within walking distance. The retailers in this unit like the Hot Pot, Mass Hole donuts, the grocery store in the corner provided a unique charm to the area. The new plan has space for only one retailer which is a shame. The Capitol Square is designated as "Village business zone" and this will be a huge loss of retail space in town.

I also have concerns about the parking area. Chandler street is a quiet one way street. I have concerns that this new development with limited parking space will make the street very busy and dangerous for the kids and adults alike. The constant beeping and the flashing light for the cars moving out of the garage will be very impactful to all the neighbors.

I would like to request you to review this proposal as not just a business opportunity but how we can make sure that it retains the character and soul of East Arlington.

Thanks,
Anil Shrestha