THE WINSOR SCHOOL

RACHEL FRIIS STETTLER
Director and O'Donnell Family Chair

June 27, 2011

Mr. Peter Meade
Director
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

Dear Director Meade:

We are writing in reference to the proposed Winsor School Campus Projects (the "Proposed Projects"), which were the subject of an Expanded Project Notification Form and Planned Development Area Development Plan submission to the BRA, each dated March 11, 2011. The Proposed Projects to be constructed on Winsor's 7.4-acre campus in the Longwood Medical and Academic Area (LMA) will anchor the Winsor School at its LMA location for generations to come.

As you may know, Winsor has been located in the LMA since 1910 and has undertaken very little development on its campus since the original school buildings were built in 1909-1910. Despite Winsor's campus comprising nearly 4.0% of the total land area in the LMA, the campus includes only 127,500± square feet of building area, or approximately 0.7% of the 18.5 million square feet of the development that has taken place around the Winsor campus since the school located there a century ago.

Winsor is grateful for the thorough and constructive public review process for the Proposed Projects currently being administered by the BRA. To date, Winsor has participated in nearly a dozen public meetings and numerous private meetings related to the Proposed Projects. The public meetings included IAG meetings on March 23rd and April 12th, an advertised BRA community meeting on March 28th, the BRA Scoping Session on March 28th, a MEPA public meeting on April 8th, presentations to the Boston Civic Design Commission or a subcommittee thereof on April 5th, April 26th, May 24th, and June 21st, and a hearing before the Boston Landmarks Commission on April 12th. In addition, Winsor has held numerous private meetings with community groups and LMA stakeholders (including numerous LMA institutional community meetings convened by MASCO); these have included many productive working sessions with our neighbors at MASCO and Temple Israel. A comprehensive list of meetings held on the Proposed Projects thus far is attached as Section 1 of this submission.

Through the course of these many public and private meetings, Winsor and its development team heard a number of common themes emerge, which we understood were of concern to our neighbors and the surrounding community. As a result of this

Pilgrim Road, Boston, Massachusetts 02215
617 735 9505 FAX 617 912 1389
www.winsor.edu

constructive community feedback, as well as feedback from staff of the BRA and other city agencies, we have made a number of changes to the Proposed Projects in an effort to address key community concerns. We believe these community-requested changes represent significant improvements to the Proposed Projects, and we are grateful for these suggestions. A partial listing of the changes made to the Proposed Projects is as follows:

- Reduced parking ratio of Longwood Avenue Project and the entire Winsor campus to 0.75 spaces per 1,000 square feet of gross floor area, consistent with the LMA Interim Guidelines;

- Major changes to the Longwood Avenue Project's loading and service dock configuration at the request of MASCO and Temple Israel; these changes will eliminate impacts of the loading and service activities associated with the Longwood Avenue Project, to the so-called shared driveway (owned jointly by Temple Israel and Winsor) off of Longwood Avenue;

- Realignment of the Longwood Avenue Project's garage access, so that it is directly across from the MASCO garage entrance/egress on the shared driveway;

- Provisions for new dedicated MASCO loading and service vehicle parking alongside the shared driveway during the existence of the interim parking lot at Longwood/Brookline Avenues;

- Acceleration of the construction schedule for curb radius improvements at the corner of Longwood Avenue and the shared driveway to occur as part of the interim condition rather than the full-build condition. This accelerated mitigation measure will improve turning movements from Longwood Avenue northbound into the shared driveway, and will directly benefit MASCO garage patrons and users of the LMA Child Care Center at the MASCO building;

- Addition of landscaped areas to the proposed interim parking area design to maintain the existing mature trees along Longwood Avenue and dramatically enhance the Longwood Avenue streetscape in the near-term, even before the proposed Longwood Avenue Project is completed;

- Addition of an environmentally friendly bioswale stormwater management system in the interim parking lot to significantly reduce stormwater discharge into the BWSC sewer system and add green landscaped areas to the design;

- A 9% reduction in the number of spaces in the interim parking lot from 112 to 99 and corresponding increase in the amount of greenspace and vegetated buffer.

- Addition of more retail frontage along the ground floor of the proposed Longwood Avenue Project, as well as a recessed area that could accommodate a sidewalk café;

- Significant improvements to the quality and safety of the public realm along the pedestrian pathway linking the Riverway and Brookline Avenue (adjacent to the Simmons Athletic Center and the proposed Winsor Center for Performing Arts and Wellness);

- Commitment to fund the signalization of the Longwood Avenue/Pilgrim Road/shared driveway intersection in connection with the Longwood Avenue Project's completion, if warranted, in order to improve traffic conditions on Longwood Avenue;

- Extension of the public comment period on the PNF from 30 days to 135 days; and

- Extension of the public comment period on the Planned Development Area Plan from 45 days to 135 days.

Although Winsor is a small non-profit organization that nevertheless provides over $1,500,000 in scholarship funds to City of Boston students every year, as part of this review process, we have committed the very substantial financial and staff resources necessary to analyze and respond comprehensively to the concerns and comments of our institutional neighbors in a good faith effort to build true consensus around our long-range development plans. Additional detail related to the changes we made to our campus plan and the Proposed Projects, as well as numerous other studies and analyses conducted at the request of our neighbors (and at substantial cost to Winsor), is included in the enclosed Supplemental Information Submission.

It should be noted that although the BRA's Interim Guidelines for the Longwood Medical Area contemplate the build-out of the Winsor campus with several million square feet of new development, the Winsor School's long-range plan for its campus proposes only approximately 443,000 square feet of new development, only a fraction of what is contemplated by the BRA in its planning study for the area. As a result, Winsor's long-term commitment to remaining anchored in the Longwood Medical and Academic Area represents a much less impactful use of the Winsor campus land than would result if Winsor were unable to create the facilities it needs to continue its mission in the LMA and were forced to sell its campus for development.

While we recognize that enforcement of private agreements is not within the BRA's purview, we did want to note that the Proposed Projects comply with the 1988 abutters agreement negotiated by Winsor, Temple Israel, and MASCO related to future development on the Longwood Avenue portion of Winsor's campus and Winsor's use of the shared driveway (much of which Winsor sold to Temple Israel in 1989 at the

Temple's request, to provide access to the 750-space MASCO garage). In that agreement, MASCO and Temple Israel agreed that Winsor would have the right to use the shared TI/Winsor driveway to access parking for up to 375 vehicles on the Winsor campus; in fact, Winsor proposes to use the shared driveway to access only 225 vehicles that will be located in the garage underneath the proposed Longwood Avenue Project.

We are hopeful that the above-referenced changes to the Proposed Projects have addressed many of the community's concerns about Winsor's long-term commitment to the LMA and to the city of Boston. Winsor is committed to continuing to work with the surrounding community both before and after our requested BRA Board and Boston Zoning Commission approvals, to ensure that the school's next century in the LMA continues its harmonious and collegial relationship with our longtime neighbors.

We hope the BRA will acknowledge these very significant changes to the Proposed Projects, along with the numerous additional studies and analyses conducted and attached hereto, as evidence of Winsor's commitment to rigorous analysis of the potential impacts of the Proposed Projects, as well as the school's commitment to working collaboratively and cooperatively with its neighbors and other LMA stakeholders as it looks forward to the next hundred years of the school's tenure in the city of Boston.

Yours very truly,

Rachel Friis Stettler
Director

RFS/mm

cc: Mr. William Onuoha, MONS
Mr. John Fitzgerald, BRA
City Councilor Michael P. Ross
Mr. Yanni Tsipis, Colliers International
Rebecca A. Lee, Esq., Edwards Angell Palmer & Dodge LLP

SUPPLEMENTAL INFORMATION SUBMISSION

TABLE OF CONTENTS

8. Campus Planning Alternatives Analyses
    a. Introduction and Background – Alternative Campus Plan Proposed by Temple Israel
    b. Original Campus Plan
    c. Campus Plan Alternative Study
    d. Alternative Study – Longwood Avenue Sidewalk Residual Study
    e. Alternative Study – NCAA Field Diagram
    f. Relationship to LMA Interim Guidelines

9. Additional Environmental Analyses
    a. Stormwater Management Analysis and Mitigation Commitments
    b. Stormwater Management Plan Showing Groundwater Recharge System Locations
    c. Summary of Geotechnical Borings & Sieve Analysis
    d. Additional Noise Analyses requested by MASCO
    e. Additional Air Quality Analyses requested by MASCO

1. Partial List of Meetings to Date with Project Stakeholders

January 2011

- Meeting with Temple Israel
- Meeting with MASCO
- Meeting with BIDMC
- Meeting with Emmanuel College
- Meeting with Simmons College
- Meeting with Wheelock College

February 2011

- Boston Groundwater Trust Briefing
- Meeting with the Druker Company

March 2011

- Follow-up meeting with MASCO and Temple Israel
- Second follow-up meeting with MASCO and Temple Israel
- Meeting with the LMA institutional community convened by MASCO
- Meeting with National Development
- Meeting with the Fenway CDC
- Meeting with the Fenway Civic Association
- Meeting with the project IAG
- Meeting with Children's Hospital
- BRA Community Meeting
- BRA Scoping Session

April 2011

- Meeting with Dana-Farber Cancer Institute
- Follow-up meeting with BIDMC
- Third follow-up meeting with MASCO and Temple Israel
- Second meeting with the project IAG
- MEPA public meeting
- Presentation to the Boston Civic Design Commission
- Meeting with the BCDC Design Sub-Committee
- Hearing before the Boston Landmarks Commission
- BTD Scoping Session

May 2011

- Second meeting with the BCDC Design Sub-Committee
- Second meeting with the LMA institutional community
- Third meeting with the LMA institutional community
- Fourth meeting with the LMA institutional community
- Meeting with Simmons College

June 2011

- Fifth meeting with the LMA institutional community
- Sixth meeting with the LMA institutional community
- Seventh meeting with the LMA institutional community
- Third meeting with the BCDC Design Committee
- Second meeting with the Fenway CDC
- Presentation to the LMA Forum

2.a. Original PNF and Revised Parking Program Tables

The original proposal included 346 spaces in the Longwood Avenue Project garage. The Proponent has reduced this number of spaces to 225, or 0.75 spaces per 1,000 square feet of space in the Longwood Avenue project.

The original proposal included 112 spaces in the interim surface parking lot at the corner of Longwood and Brookline Avenues. The Proponent has reduced this interim number of spaces to 99, or 0.66 spaces per 1,000 square feet of Winsor School campus buildings.

The final parking ratio for the Winsor School buildings remains unchanged at 0.75 spaces per 1,000 square feet of Winsor School campus buildings.

The additional parking spaces being proposed for the interim and final conditions on the Winsor School campus equate to an incremental added parking ratio of just 0.25 spaces per 1,000 new square feet in the interim condition and 0.64 spaces per 1,000 square feet in the final build condition, an indication of the Winsor School's commitment to sustainable commuting practices even as their campus continues to grow.

Component	Existing Spaces	Interim Spaces	Final Spaces
Existing front lot/areas	43	43	43
Existing surface lot	72 (striped)	-	-
Interim surface lot	-	99	-
Playing Field Garage	-	-	148
Longwood Ave Project	-	-	225
Total Spaces	**115**	**142**	**416**

Component	Existing Ratio	Interim Ratio	Final Ratio
Winsor Only	0.90	0.64	0.75
Winsor Academic Buildings Increment (vs. existing)	-	0.25	0.53
Longwood Ave Project Only	-	-	0.75
Total Campus	**0.90**	**0.66**	**0.75**

3. Interim Parking Lot Design Updates

a. **Original Site Plans**

b. **Revised Site and Landscape Plan (WRA)**

c. **Revised Site Drainage/Bioswale Plan (Nitsch)**

d. **Shared Driveway Improvements Diagram**

e. **Incremental Traffic Diagrams – Interim Condition**

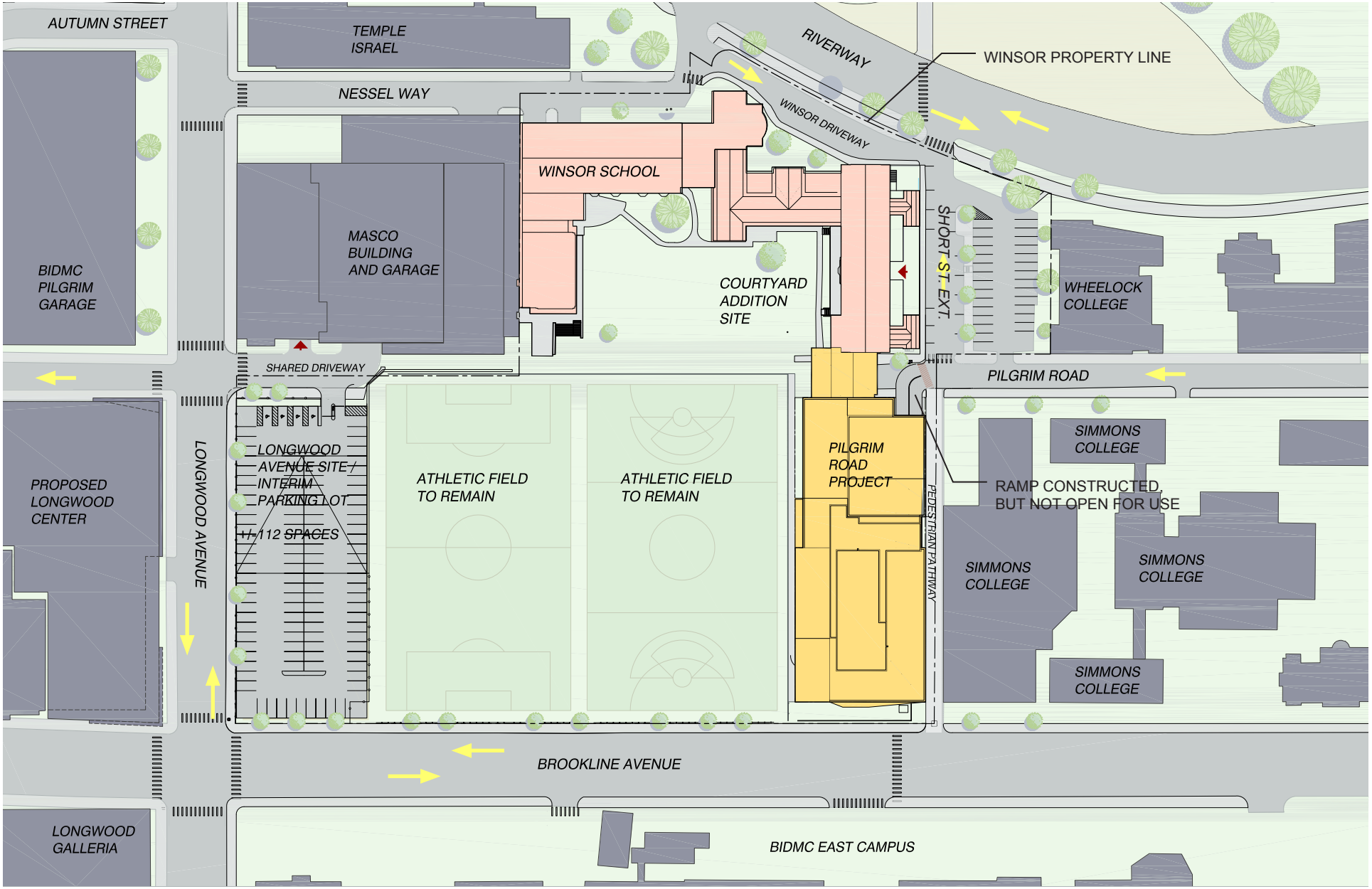

AUTUMN STREET
TEMPLE ISRAEL
NESSEL WAY
RIVERWAY
WINSOR PROPERTY LINE
WINSOR DRIVEWAY
WINSOR SCHOOL
BIDMC PILGRIM GARAGE
MASCO BUILDING AND GARAGE
COURTYARD ADDITION SITE
SHORT ST. EXT.
WHEELOCK COLLEGE
SHARED DRIVEWAY
PILGRIM ROAD
SIMMONS COLLEGE
PROPOSED LONGWOOD CENTER
LONGWOOD AVENUE
LONGWOOD AVENUE SITE / INTERIM PARKING LOT
+/- 112 SPACES
ATHLETIC FIELD TO REMAIN
ATHLETIC FIELD TO REMAIN
PILGRIM ROAD PROJECT
PEDESTRIAN PATHWAY
RAMP CONSTRUCTED, BUT NOT OPEN FOR USE
SIMMONS COLLEGE
SIMMONS COLLEGE
SIMMONS COLLEGE
BROOKLINE AVENUE
LONGWOOD GALLERIA
BIDMC EAST CAMPUS

Figure 3-A.1

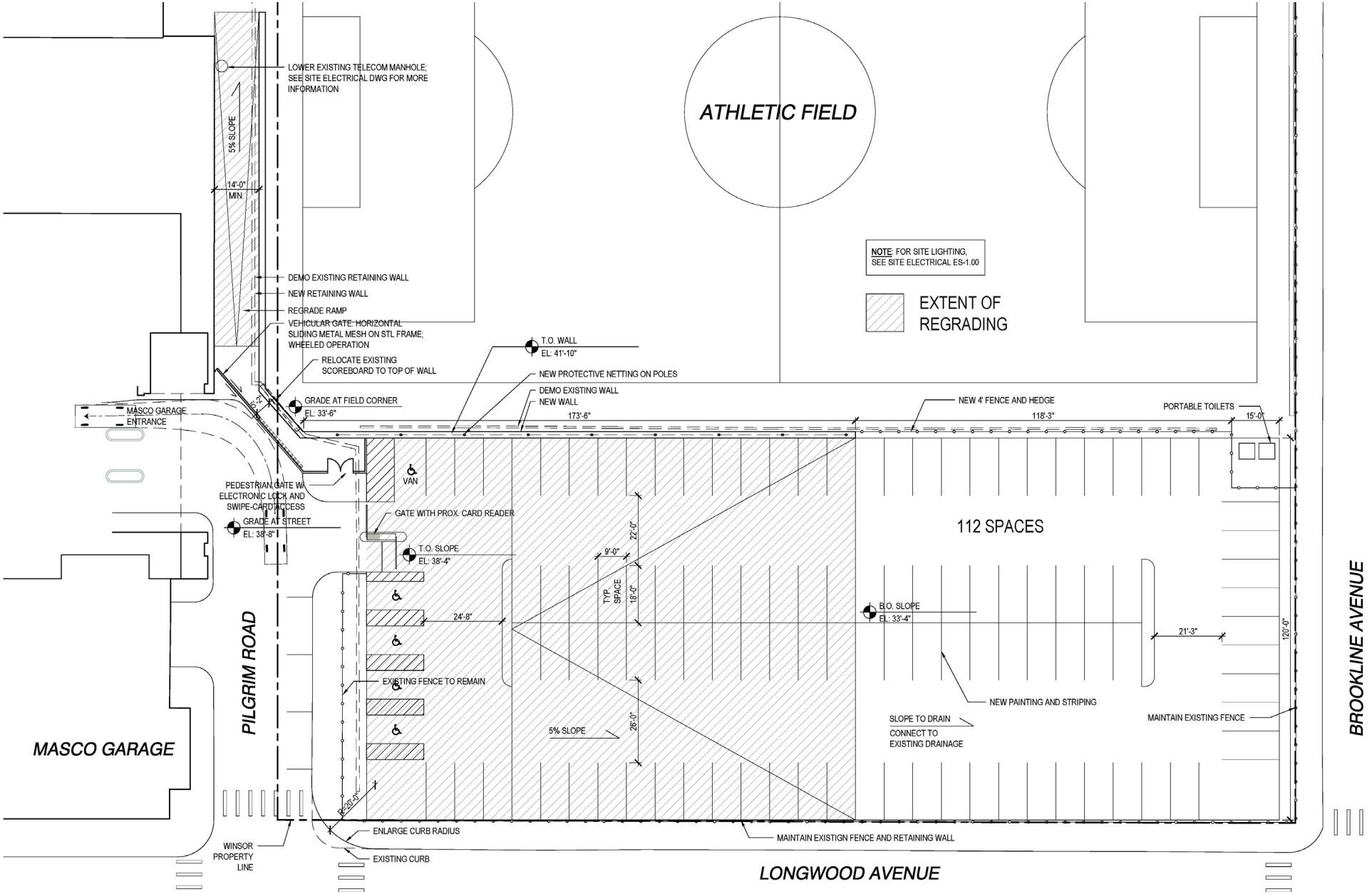

ATHLETIC FIELD
LOWER EXISTING TELECOM MANHOLE; SEE SITE ELECTRICAL DWG FOR MORE INFORMATION
5% SLOPE
14'-0" MIN.
DEMO EXISTING RETAINING WALL
NEW RETAINING WALL
REGRADE RAMP
VEHICULAR GATE: HORIZONTAL SLIDING METAL MESH ON STL FRAME; WHEELED OPERATION
RELOCATE EXISTING SCOREBOARD TO TOP OF WALL
T.O. WALL EL: 41'-10"
NEW PROTECTIVE NETTING ON POLES
DEMO EXISTING WALL
NEW WALL
173'-6"
GRADE AT FIELD CORNER EL: 33'-6"
NOTE: FOR SITE LIGHTING, SEE SITE ELECTRICAL ES-1.00
EXTENT OF REGRADING
NEW 4' FENCE AND HEDGE
118'-3"
PORTABLE TOILETS
15'-0"
MASCO GARAGE ENTRANCE
PEDESTRIAN GATE W/ ELECTRONIC LOCK AND SWIPE-CARD ACCESS
GRADE AT STREET EL: 38'-8"
VAN
GATE WITH PROX. CARD READER
T.O. SLOPE EL: 38'-4"
112 SPACES
22'-0"
9'-0"
TYP. SPACE
18'-0"
B.O. SLOPE EL: 33'-4"
24'-8"
21'-3"
120'-0"
EXISTING FENCE TO REMAIN
NEW PAINTING AND STRIPING
SLOPE TO DRAIN
CONNECT TO EXISTING DRAINAGE
MAINTAIN EXISTING FENCE
5% SLOPE
26'-0"
MASCO GARAGE
PILGRIM ROAD
BROOKLINE AVENUE
R=20'-0"
ENLARGE CURB RADIUS
EXISTING CURB
WINSOR PROPERTY LINE
MAINTAIN EXISTIGN FENCE AND RETAINING WALL
LONGWOOD AVENUE

Figure 3-A.2

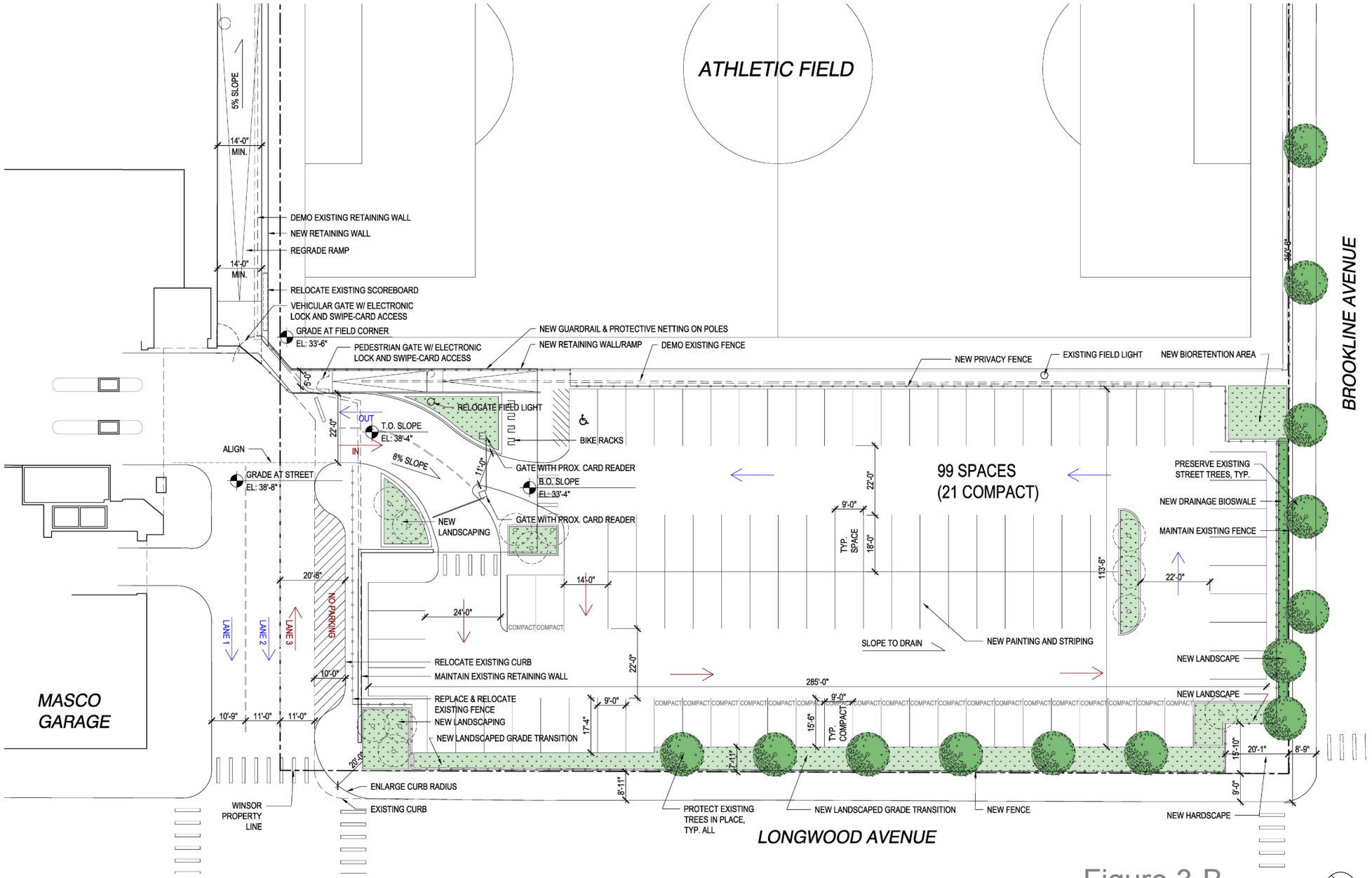

ATHLETIC FIELD
BROOKLINE AVENUE
LONGWOOD AVENUE
MASCO GARAGE
WINSOR PROPERTY LINE
5% SLOPE
14'-0" MIN.
DEMO EXISTING RETAINING WALL
NEW RETAINING WALL
REGRADE RAMP
RELOCATE EXISTING SCOREBOARD
VEHICULAR GATE W/ ELECTRONIC LOCK AND SWIPE-CARD ACCESS
GRADE AT FIELD CORNER
EL: 33'-6"
PEDESTRIAN GATE W/ ELECTRONIC LOCK AND SWIPE-CARD ACCESS
NEW GUARDRAIL & PROTECTIVE NETTING ON POLES
NEW RETAINING WALL/RAMP
DEMO EXISTING FENCE
NEW PRIVACY FENCE
EXISTING FIELD LIGHT
NEW BIORETENTION AREA
RELOCATE FIELD LIGHT
OUT
IN
T.O. SLOPE
EL: 38'-4"
8% SLOPE
ALIGN
GRADE AT STREET
EL: 38'-8"
BIKE RACKS
GATE WITH PROX. CARD READER
B.O. SLOPE
EL: 33'-4"
NEW LANDSCAPING
99 SPACES
(21 COMPACT)
PRESERVE EXISTING STREET TREES, TYP.
NEW DRAINAGE BIOSWALE
MAINTAIN EXISTING FENCE
TYP. SPACE
SLOPE TO DRAIN
NEW PAINTING AND STRIPING
NEW LANDSCAPE
LANE 1
LANE 2
LANE 3
NO PARKING
RELOCATE EXISTING CURB
MAINTAIN EXISTING RETAINING WALL
REPLACE & RELOCATE EXISTING FENCE
NEW LANDSCAPED GRADE TRANSITION
ENLARGE CURB RADIUS
EXISTING CURB
PROTECT EXISTING TREES IN PLACE, TYP. ALL
NEW FENCE
NEW HARDSCAPE
TYP. COMPACT

Figure 3-B

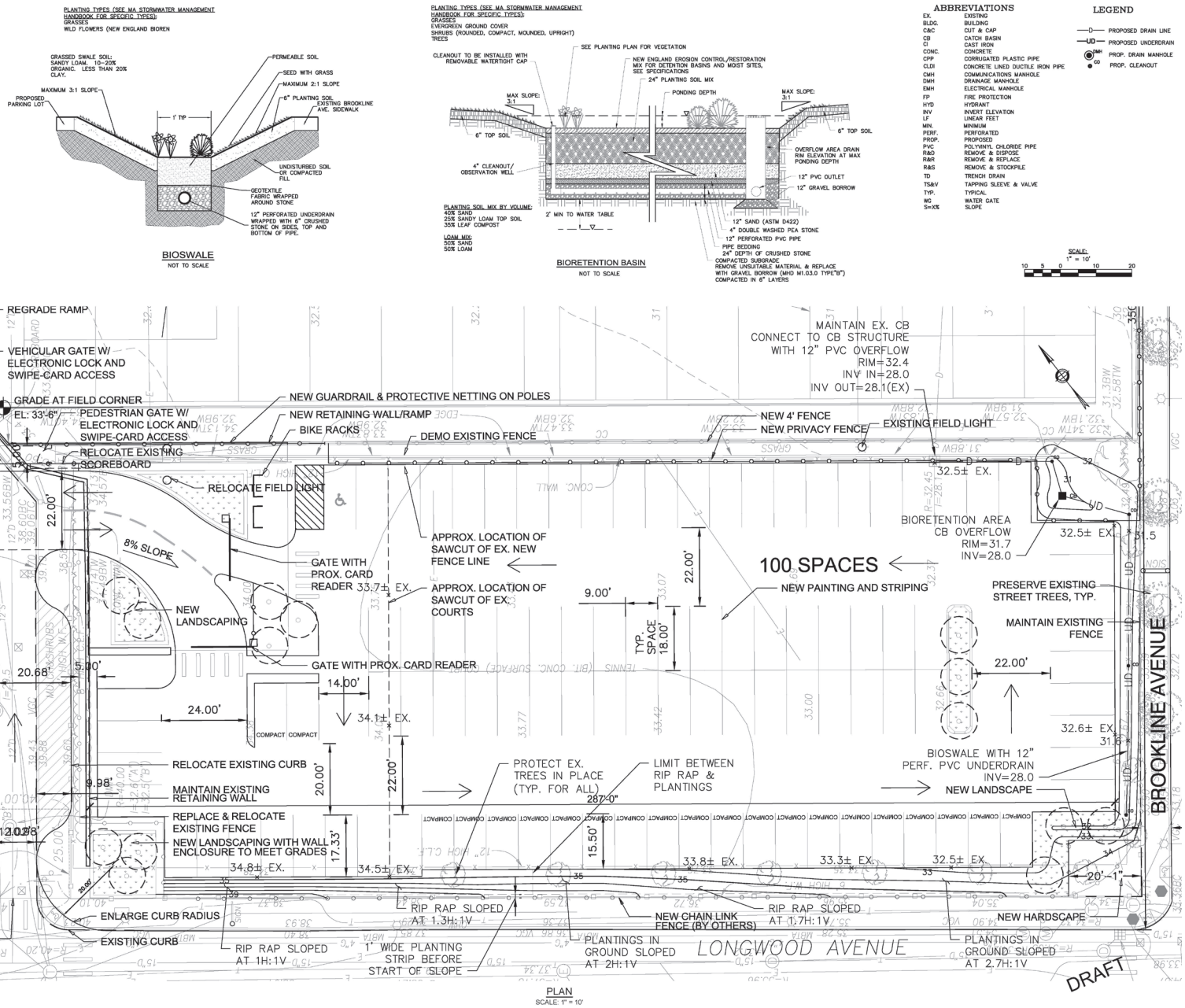

BIOSWALE
NOT TO SCALE
BIORETENTION BASIN
NOT TO SCALE
ABBREVIATIONS
LEGEND
PROPOSED DRAIN LINE
PROPOSED UNDERDRAIN
PROP. DRAIN MANHOLE
PROP. CLEANOUT
REGRADE RAMP
VEHICULAR GATE W/ ELECTRONIC LOCK AND SWIPE-CARD ACCESS
GRADE AT FIELD CORNER
EL: 33'-6"
PEDESTRIAN GATE W/ ELECTRONIC LOCK AND SWIPE-CARD ACCESS
RELOCATE EXISTING SCOREBOARD
NEW GUARDRAIL & PROTECTIVE NETTING ON POLES
NEW RETAINING WALL/RAMP
BIKE RACKS
DEMO EXISTING FENCE
NEW 4' FENCE
NEW PRIVACY FENCE
EXISTING FIELD LIGHT
RELOCATE FIELD LIGHT
MAINTAIN EX. CB
CONNECT TO CB STRUCTURE
WITH 12" PVC OVERFLOW
RIM=32.4
INV IN=28.0
INV OUT=28.1(EX)
BIORETENTION AREA
CB OVERFLOW
RIM=31.7
INV=28.0
ALIGN
8% SLOPE
APPROX. LOCATION OF SAWCUT OF EX. NEW FENCE LINE
APPROX. LOCATION OF SAWCUT OF EX. COURTS
GATE WITH PROX. CARD READER
100 SPACES
NEW PAINTING AND STRIPING
PRESERVE EXISTING STREET TREES, TYP.
MAINTAIN EXISTING FENCE
NEW LANDSCAPING
GATE WITH PROX. CARD READER
RELOCATE EXISTING CURB
MAINTAIN EXISTING RETAINING WALL
REPLACE & RELOCATE EXISTING FENCE
NEW LANDSCAPING WITH WALL ENCLOSURE TO MEET GRADES
PROTECT EX. TREES IN PLACE (TYP. FOR ALL)
LIMIT BETWEEN RIP RAP & PLANTINGS
BIOSWALE WITH 12" PERF. PVC UNDERDRAIN
INV=28.0
NEW LANDSCAPE
ENLARGE CURB RADIUS
EXISTING CURB
WINSOR PROPERTY LINE
RIP RAP SLOPED AT 1H:1V
1' WIDE PLANTING STRIP BEFORE START OF SLOPE
RIP RAP SLOPED AT 1.3H:1V
PLANTINGS IN GROUND SLOPED AT 2H:1V
NEW CHAIN LINK FENCE (BY OTHERS)
RIP RAP SLOPED AT 1.7H:1V
PLANTINGS IN GROUND SLOPED AT 2.7H:1V
NEW HARDSCAPE
LONGWOOD AVENUE
BROOKLINE AVENUE
DRAFT
PLAN
SCALE: 1" = 10'

Figure 3-C

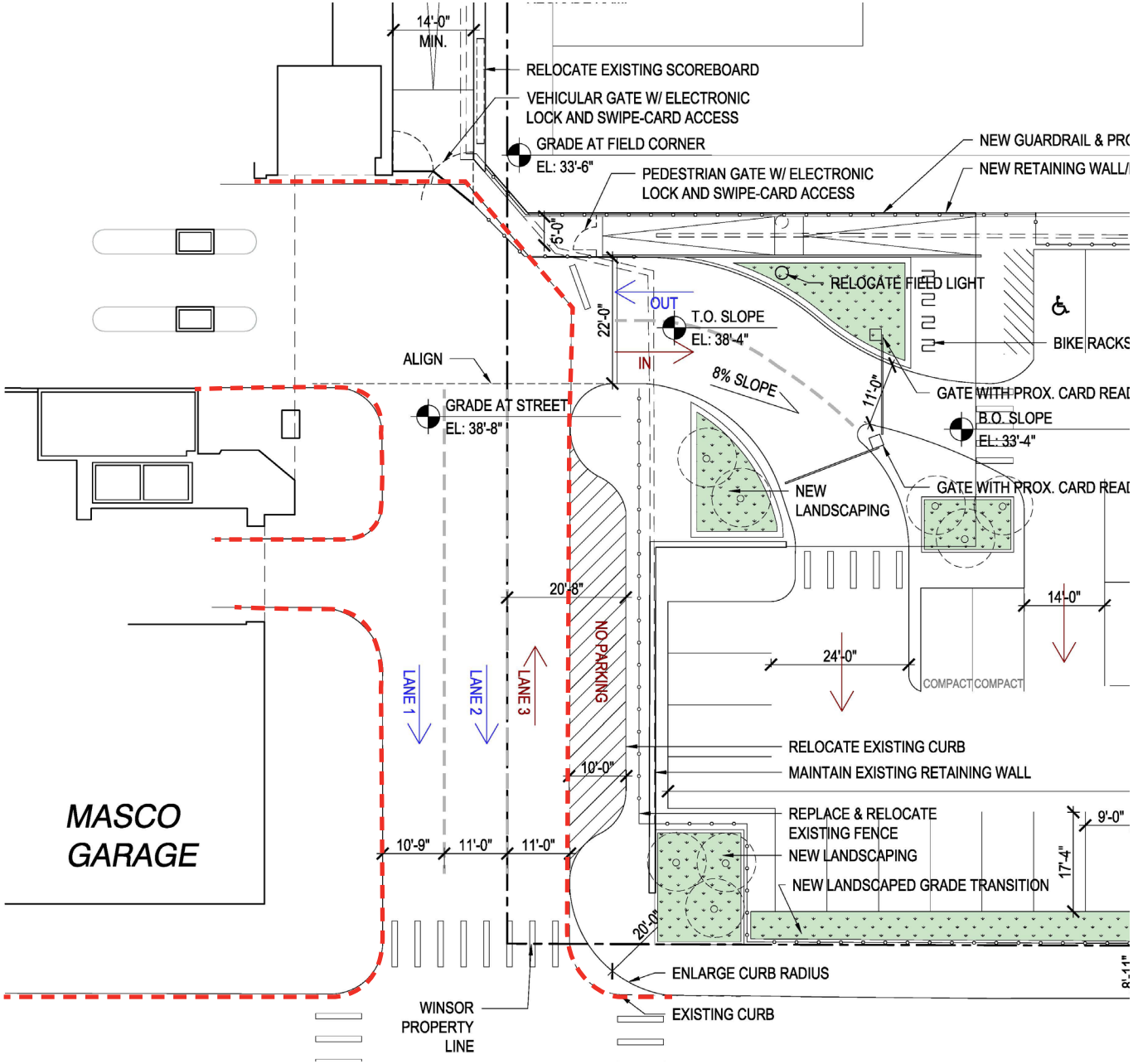
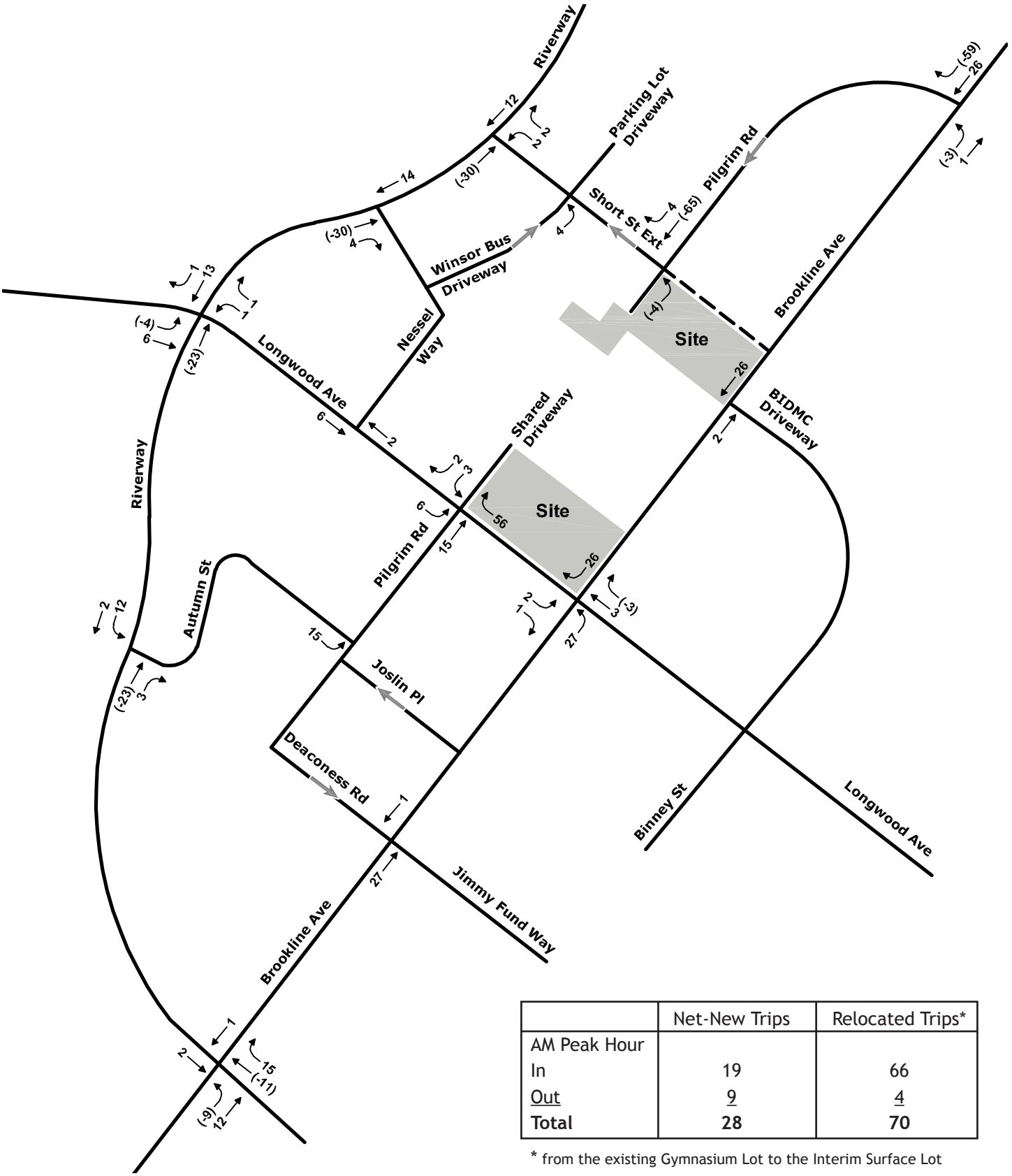

14'-0" MIN.
RELOCATE EXISTING SCOREBOARD
VEHICULAR GATE W/ ELECTRONIC LOCK AND SWIPE-CARD ACCESS
GRADE AT FIELD CORNER
EL: 33'-6"
PEDESTRIAN GATE W/ ELECTRONIC LOCK AND SWIPE-CARD ACCESS
NEW GUARDRAIL & PRC
NEW RETAINING WALL/
5'-0"
RELOCATE FIELD LIGHT
OUT
T.O. SLOPE
EL: 38'-4"
22'-0"
IN
BIKE RACKS
ALIGN
8% SLOPE
11'-0"
GATE WITH PROX. CARD READ
GRADE AT STREET
EL: 38'-8"
B.O. SLOPE
EL: 33'-4"
NEW LANDSCAPING
GATE WITH PROX. CARD READ
20'-8"
14'-0"
24'-0"
COMPACT
COMPACT
NO PARKING
LANE 1
LANE 2
LANE 3
RELOCATE EXISTING CURB
10'-0"
MAINTAIN EXISTING RETAINING WALL
MASCO GARAGE
REPLACE & RELOCATE EXISTING FENCE
9'-0"
10'-9"
11'-0"
11'-0"
NEW LANDSCAPING
17'-4"
NEW LANDSCAPED GRADE TRANSITION
20'-0"
ENLARGE CURB RADIUS
WINSOR PROPERTY LINE
EXISTING CURB
Line of Existing Curb

Figure 3-D

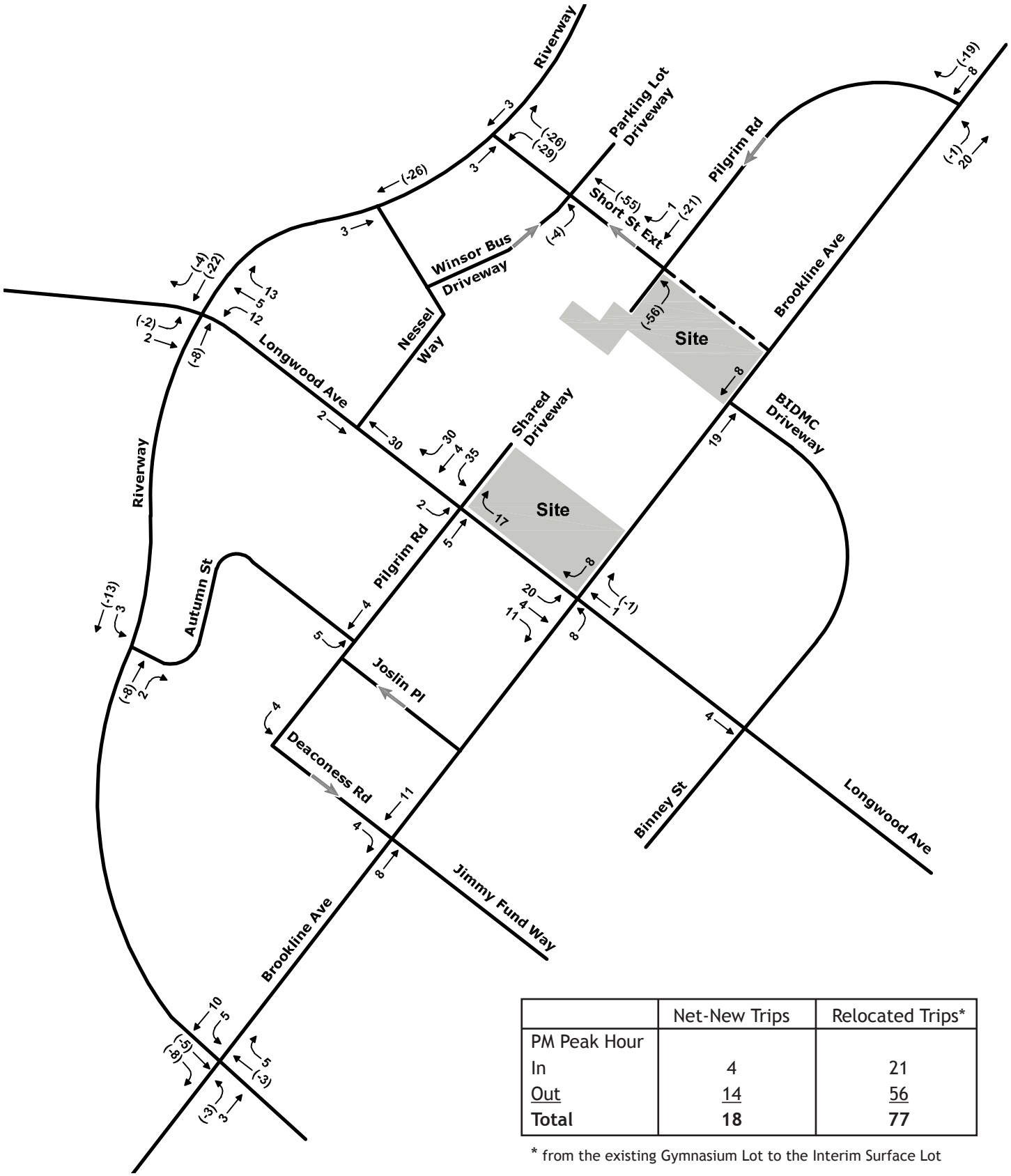


	Net-New Trips	Relocated Trips*
AM Peak Hour		
In	19	66
Out	9	4
Total	**28**	**70**

* from the existing Gymnasium Lot to the Interim Surface Lot

Not to Scale

Figure 3-E.1



	Net-New Trips	Relocated Trips*
PM Peak Hour		
In	4	21
Out	14	56
Total	**18**	**77**

* from the existing Gymnasium Lot to the Interim Surface Lot

Not to Scale

Figure 3-E.2

4. Centers for Performing Arts & Wellness (CPAW) Design Updates

a. **Original and Revised Brookline Avenue Elevations**

b. **Original and Revised Pedestrian Path Elevations**

c. **Updated Landscaping Plans**

d. **Pedestrian Path Renderings**

e. **Vehicular Circulation Plans**

South Elevation (Original)

South Elevation (Revised)

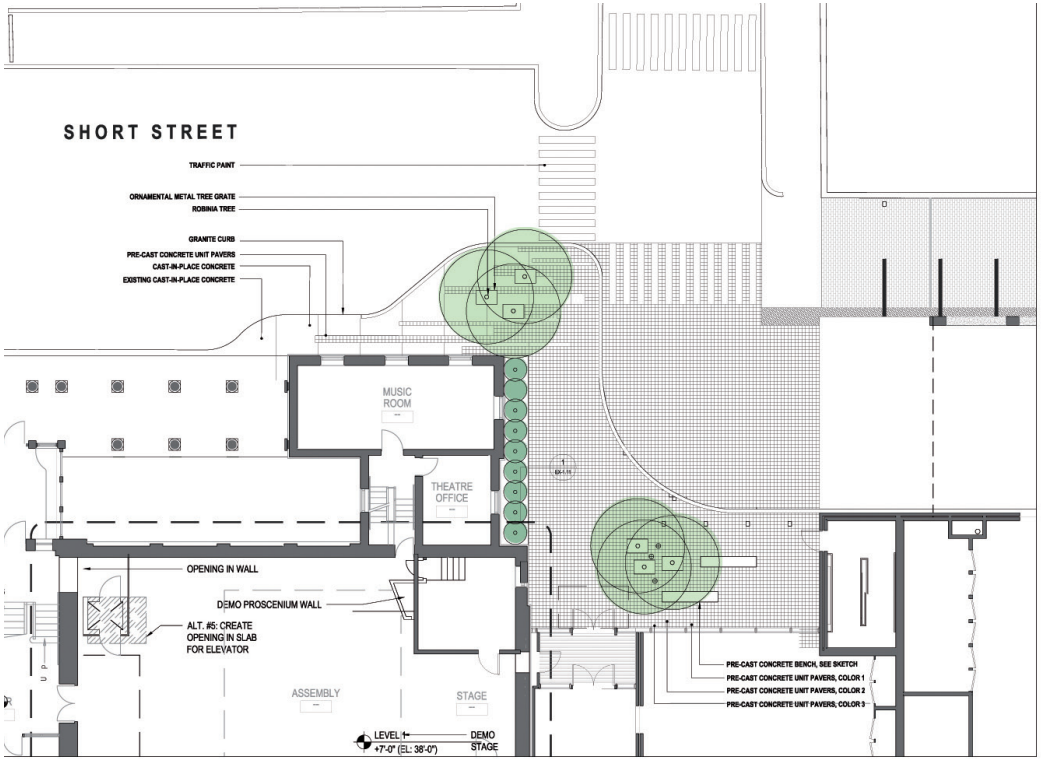
Figure 4-A

South Elevation (Original)

South Elevation (Revised)

Figure 4-B

Figure 4-D.1



1 DETAILED PLAN - SHORT STREET + PILGRIM ROAD
1/8" = 1'-0"

LEGEND

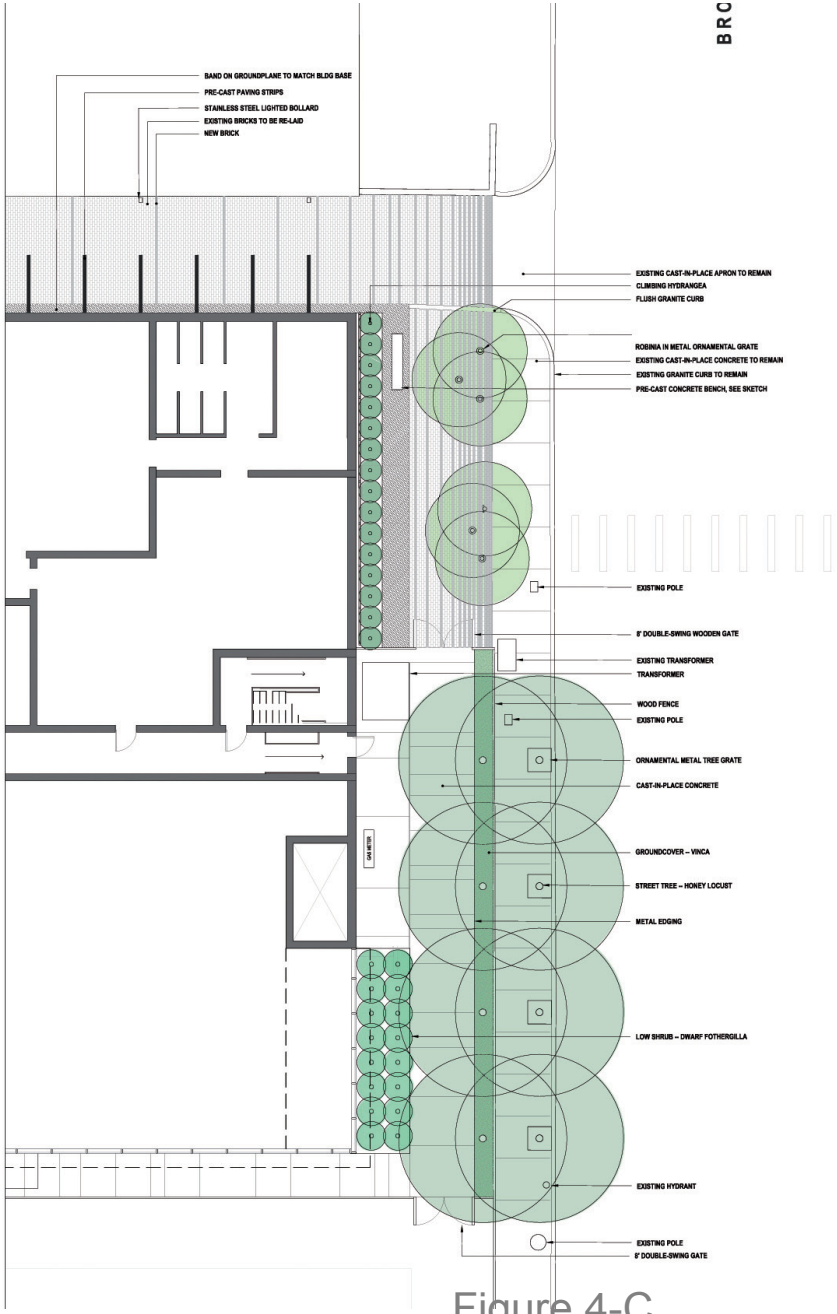
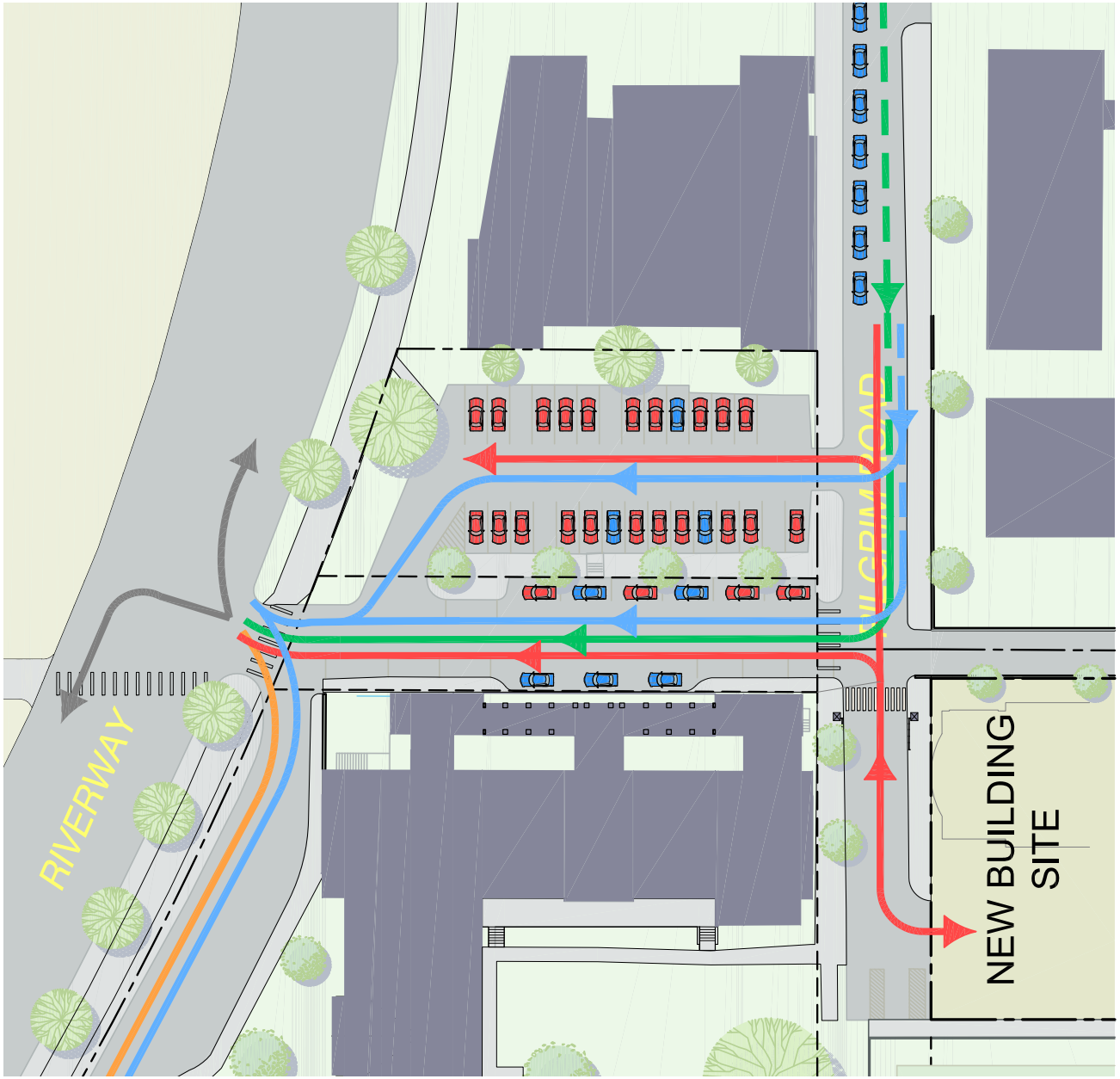
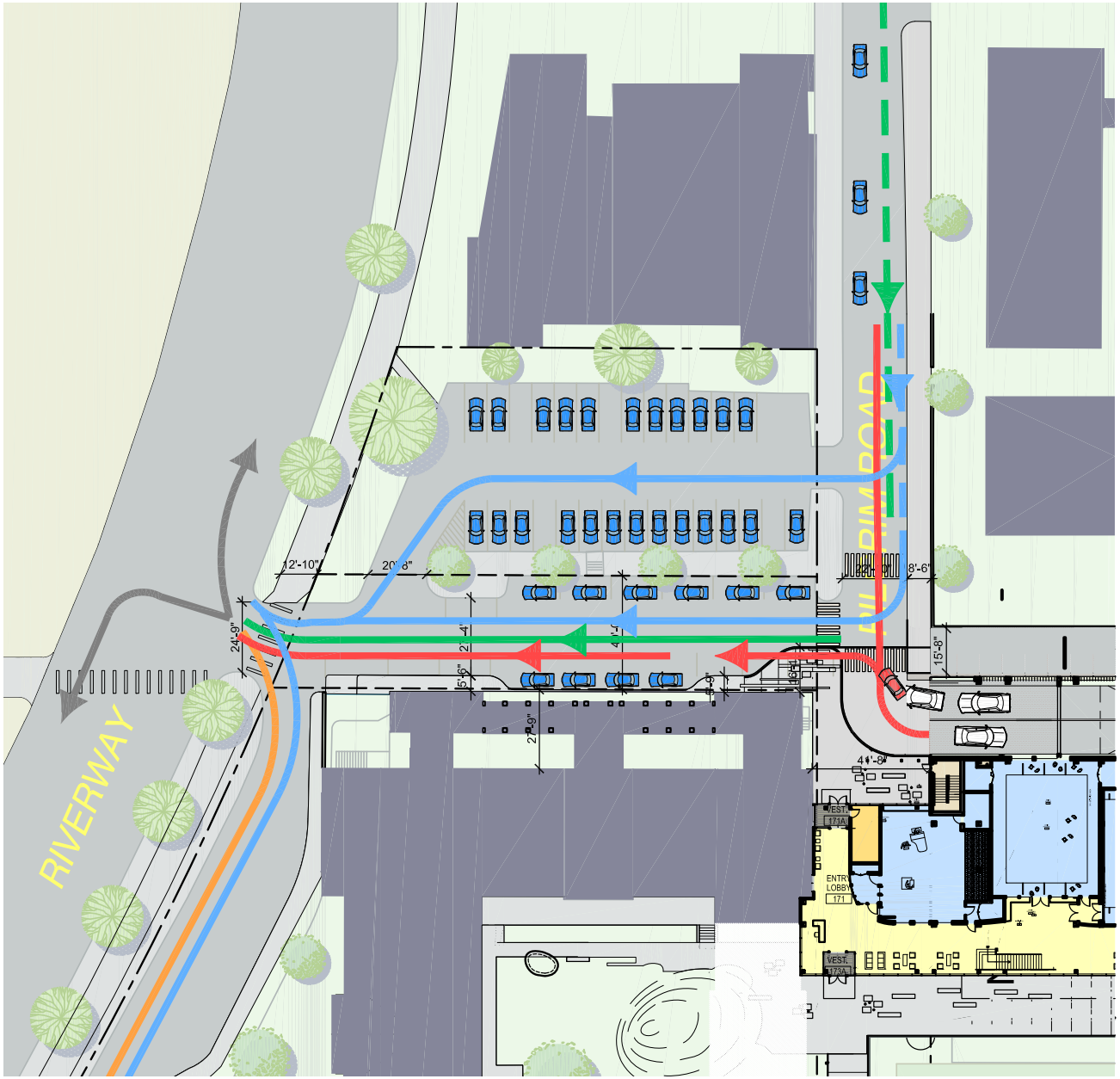


Figure 4-C



Public Traffic
Winsor Parking
Winsor Guest/Drop Off Parking
Winsor Bus

Figure 4-E.1



Winsor Drop-off
Winsor Parking
Winsor Drop Off / Guest Parking
Winsor Bus

Figure 4-E.2

5. Longwood Avenue Project Design Updates

a. **Original (PNF) and Revised Ground Floor Plans – Longwood Avenue Project**

b. **Original (PNF) and revised B-1 level Plans – Longwood Avenue Project**

c. **Groundplane Diagrams – Longwood Avenue Project vs. Longwood Center**

d. **Proposed Street-Level Rendering**

e. **Sidewalk Width Study**

f. **Truck Turning Diagrams**

g. **Foundation Non-Interference with Urban Ring Diagram**

h. **Incremental Trip Generation Diagram – Full-Build Condition**

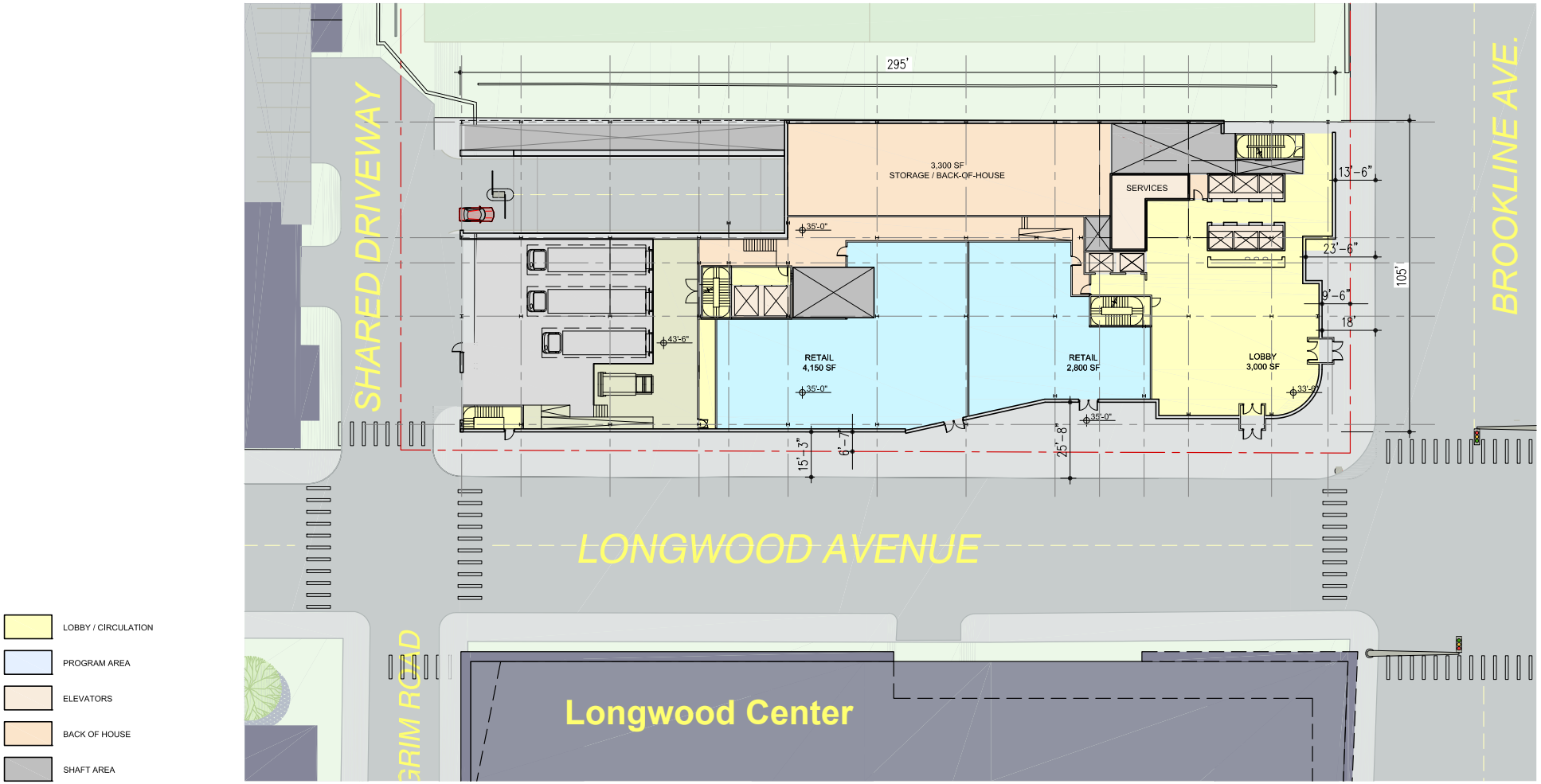

LOBBY / CIRCULATION
PROGRAM AREA
ELEVATORS
BACK OF HOUSE
SHAFT AREA
SHARED DRIVEWAY
295'
3,300 SF
STORAGE / BACK-OF-HOUSE
SERVICES
RETAIL
4,150 SF
RETAIL
2,800 SF
LOBBY
3,000 SF
35'-0"
43'-6"
33'-6"
13'-6"
23'-6"
9'-6"
18'
105'
15'-3"
6'-7"
25'-8"
BROOKLINE AVE.
LONGWOOD AVENUE
GRIM ROAD
Longwood Center

Figure 5-A.1

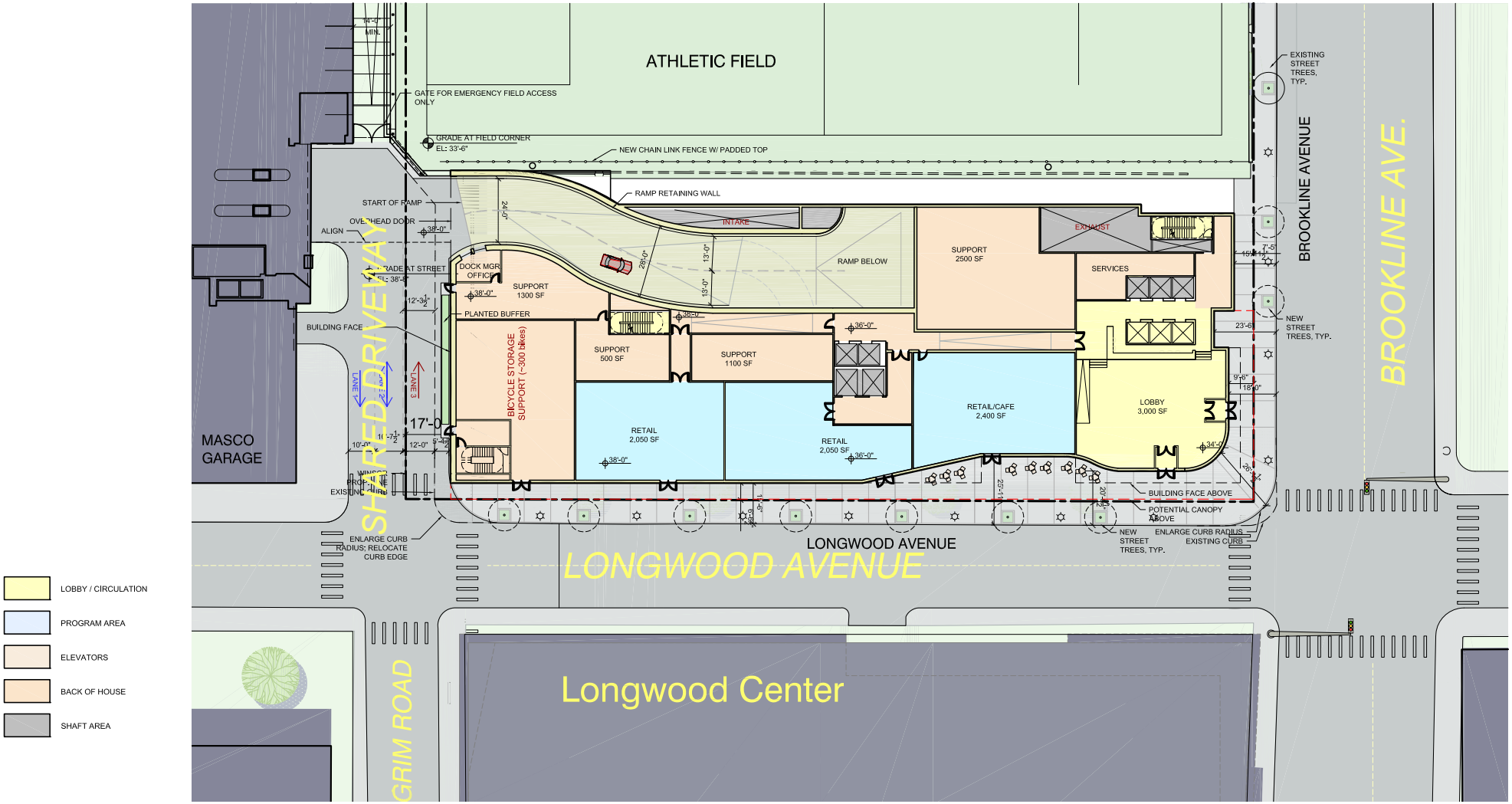

ATHLETIC FIELD
GATE FOR EMERGENCY FIELD ACCESS ONLY
GRADE AT FIELD CORNER EL: 33'-6"
NEW CHAIN LINK FENCE W/ PADDED TOP
RAMP RETAINING WALL
START OF RAMP
OVERHEAD DOOR
ALIGN
DOCK MGR OFFICE
SUPPORT 1300 SF
PLANTED BUFFER
BUILDING FACE
BICYCLE STORAGE SUPPORT (~300 bikes)
SUPPORT 500 SF
SUPPORT 1100 SF
RAMP BELOW
INTAKE
EXHAUST
SUPPORT 2500 SF
SERVICES
RETAIL 2,050 SF
RETAIL 2,050 SF
RETAIL/CAFE 2,400 SF
LOBBY 3,000 SF
BUILDING FACE ABOVE
POTENTIAL CANOPY ABOVE
NEW STREET TREES, TYP.
ENLARGE CURB RADIUS EXISTING CURB
ENLARGE CURB RADIUS; RELOCATE CURB EDGE
EXISTING STREET TREES, TYP.
NEW STREET TREES, TYP.
MASCO GARAGE
SHARED DRIVEWAY
BROOKLINE AVENUE
BROOKLINE AVE.
LONGWOOD AVENUE
LONGWOOD AVENUE
GRIM ROAD
Longwood Center
LOBBY / CIRCULATION
PROGRAM AREA
ELEVATORS
BACK OF HOUSE
SHAFT AREA

Figure 5-A.2

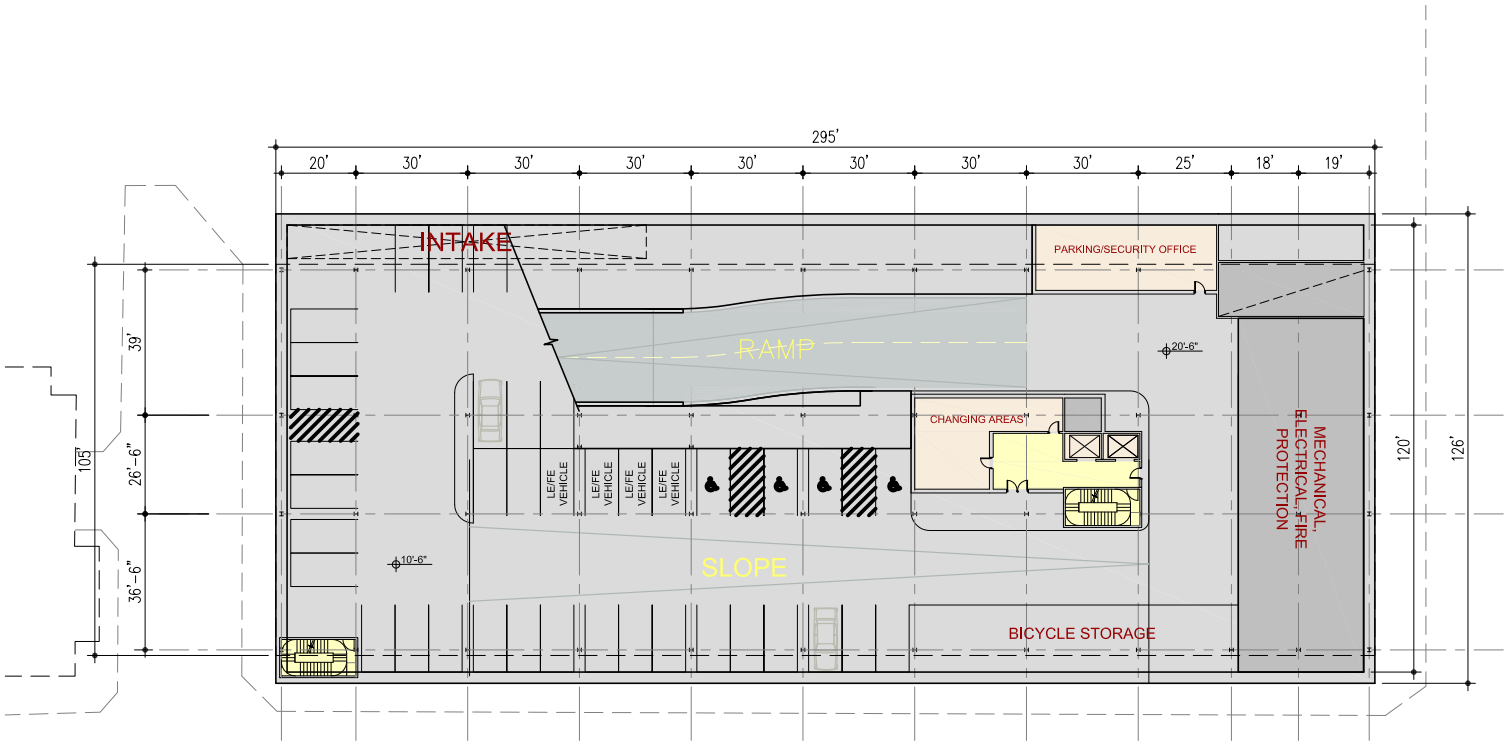

295'
20'
30'
30'
30'
30'
30'
30'
30'
25'
18'
19'
INTAKE
PARKING/SECURITY OFFICE
RAMP
20'-6"
CHANGING AREAS
MECHANICAL, ELECTRICAL, FIRE PROTECTION
LE/FE VEHICLE
LE/FE VEHICLE
LE/FE VEHICLE
LE/FE VEHICLE
10'-6"
SLOPE
BICYCLE STORAGE
105'
39'
26'-6"
36'-6"
120'
126'

Figure 5-B.1

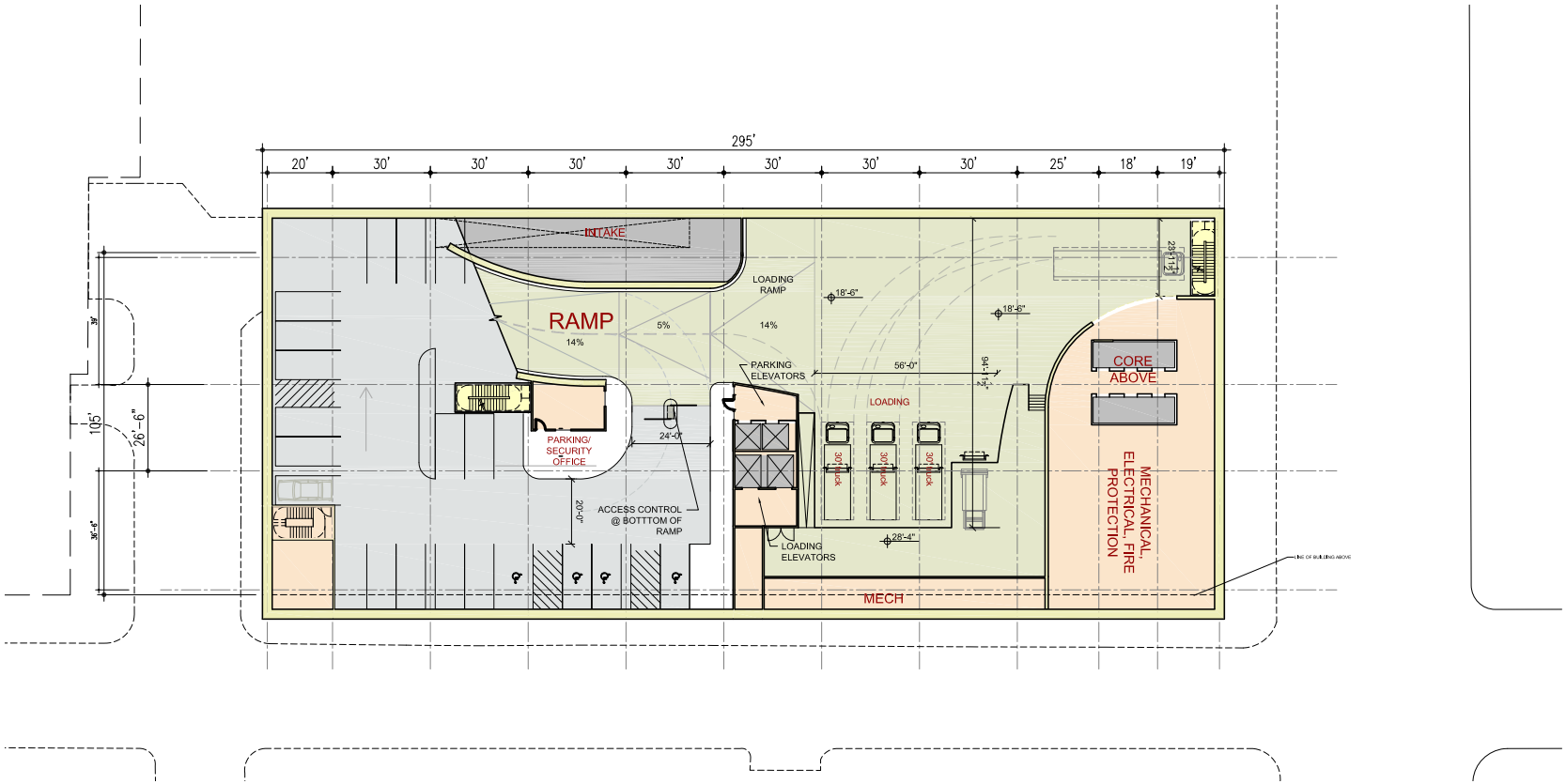

295'
20'
30'
30'
30'
30'
30'
30'
30'
25'
18'
19'
INTAKE
RAMP
14%
5%
14%
LOADING RAMP
18'-6"
18'-6"
PARKING ELEVATORS
56'-0"
CORE ABOVE
LOADING
PARKING/ SECURITY OFFICE
24'-0"
ACCESS CONTROL @ BOTTTOM OF RAMP
20'-0"
LOADING ELEVATORS
28'-4"
MECHANICAL, ELECTRICAL, FIRE PROTECTION
MECH
105'
26'-6"
36'-4"

Figure 5-B.2

LONGWOOD AVENUE PROJECT: BUILDING MASSING ABOVE GRADE

Figure 5-C.1

LONGWOOD AVENUE PROJECT: GROUND FLOOR SETBACKS

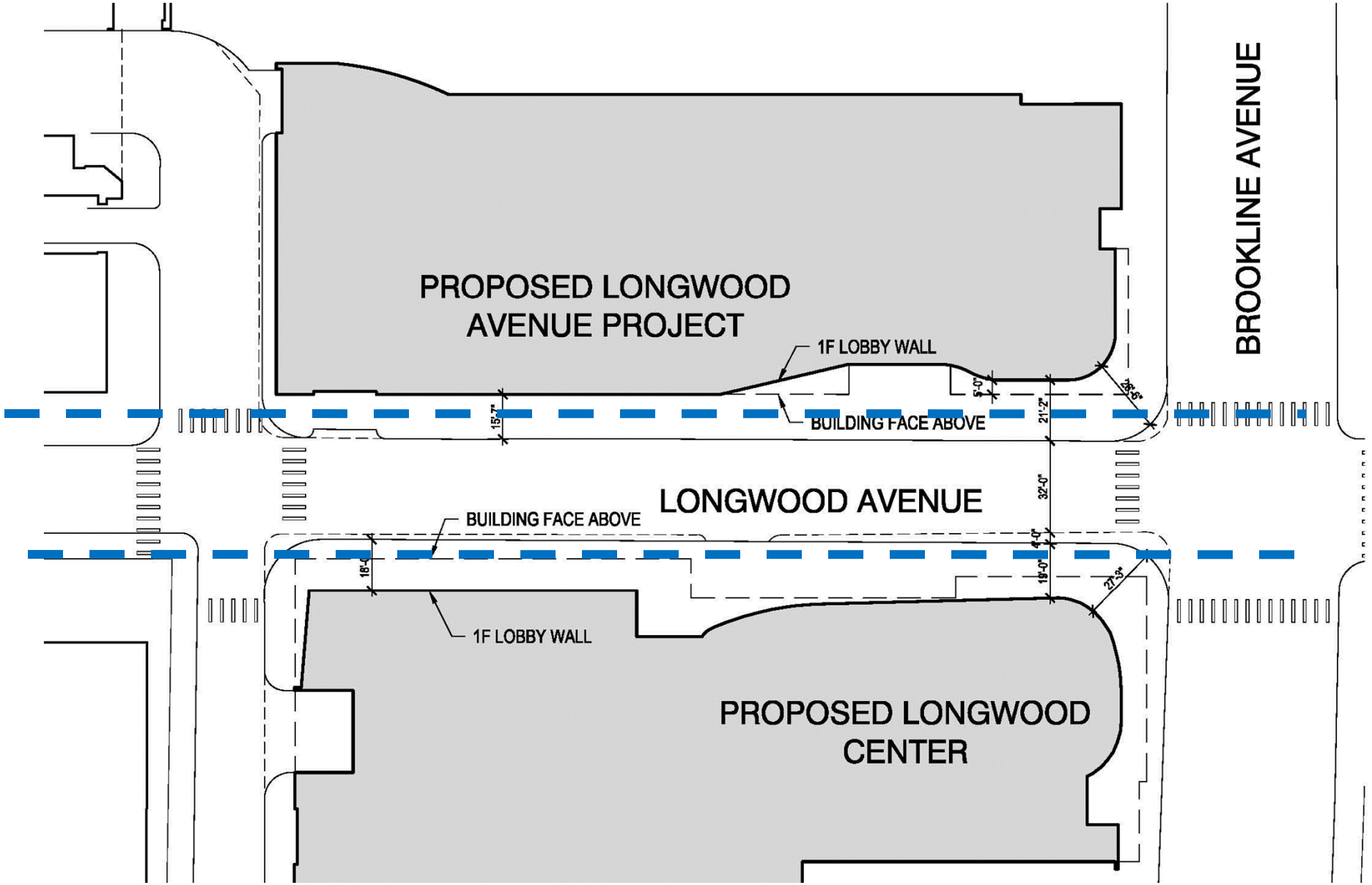


Figure 5-C.2

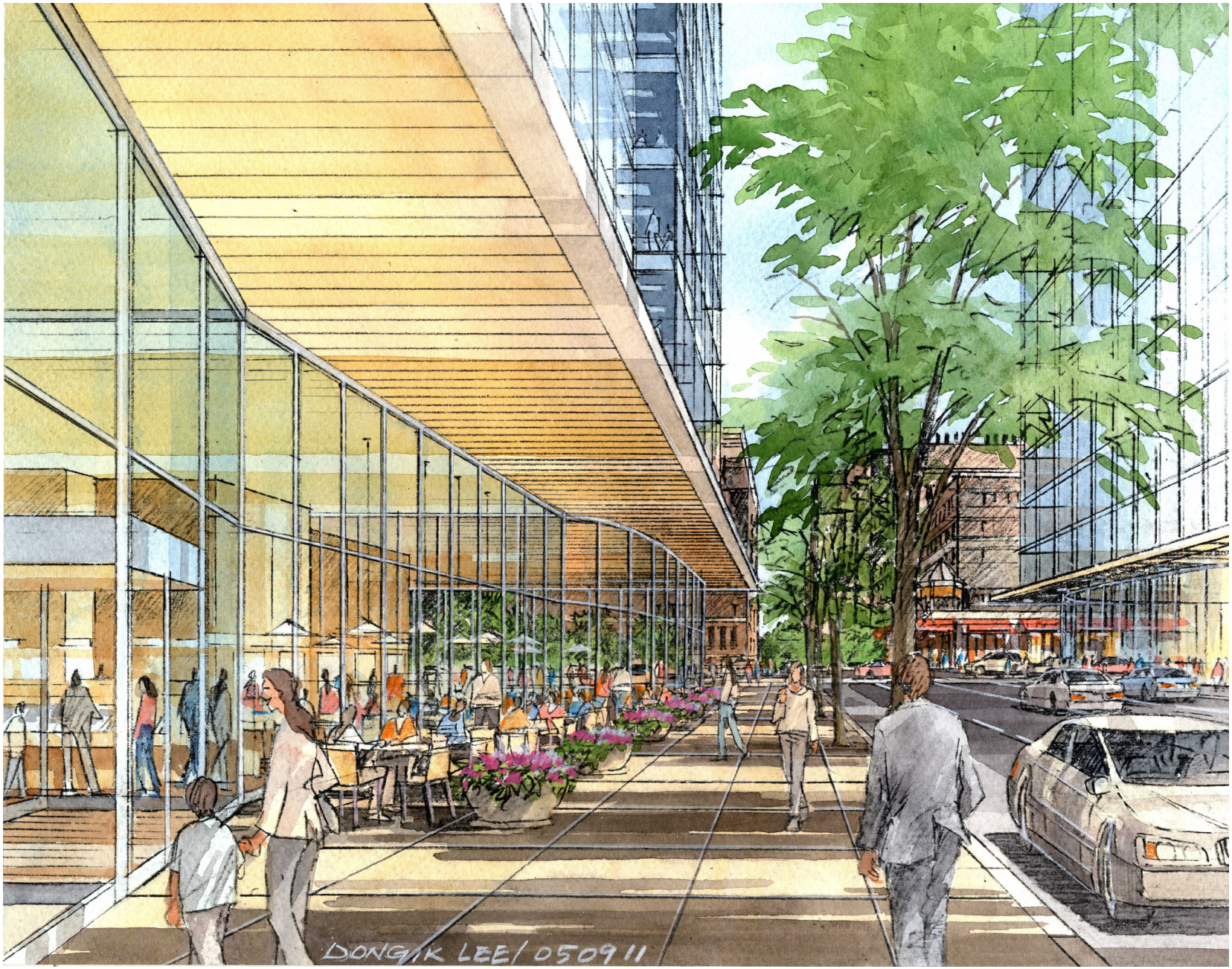


Figure 5-D

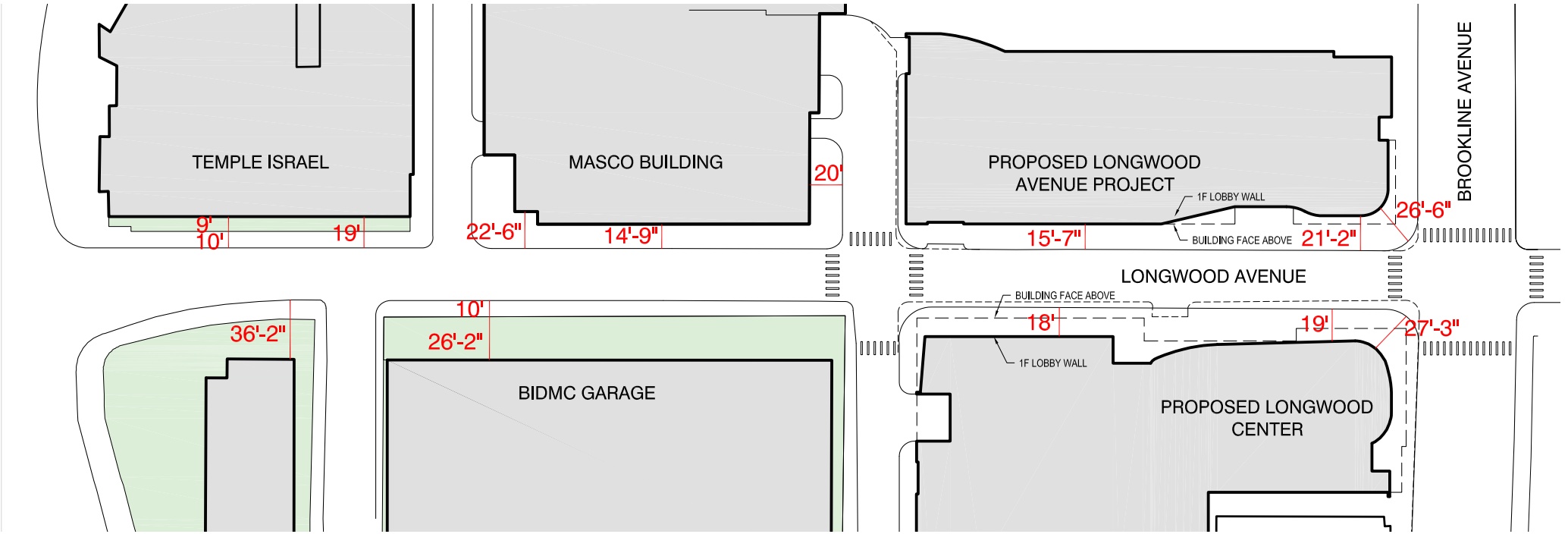

TEMPLE ISRAEL
9'
10'
19'
MASCO BUILDING
20'
22'-6"
14'-9"
PROPOSED LONGWOOD
AVENUE PROJECT
1F LOBBY WALL
26'-6"
BUILDING FACE ABOVE
15'-7"
21'-2"
BROOKLINE AVENUE
LONGWOOD AVENUE
BUILDING FACE ABOVE
18'
19'
27'-3"
1F LOBBY WALL
PROPOSED LONGWOOD
CENTER
36'-2"
10'
26'-2"
BIDMC GARAGE

Figure 5-E

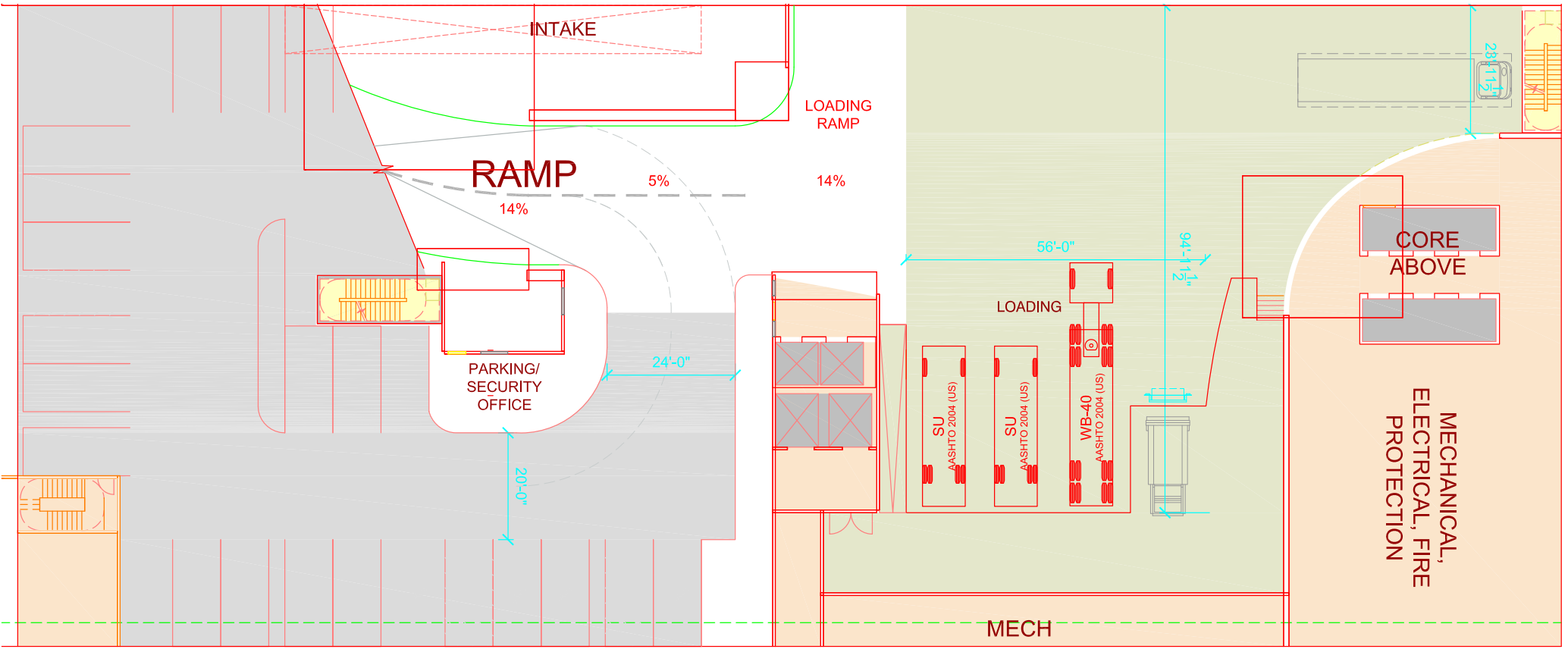

INTAKE
LOADING RAMP
RAMP
5%
14%
14%
PARKING/ SECURITY OFFICE
24'-0"
20'-0"
56'-0"
94'-11 1/2"
LOADING
SU AASHTO 2004 (US)
SU AASHTO 2004 (US)
WB-40 AASHTO 2004 (US)
CORE ABOVE
MECHANICAL, ELECTRICAL, FIRE PROTECTION
MECH

Figure 5-F.1

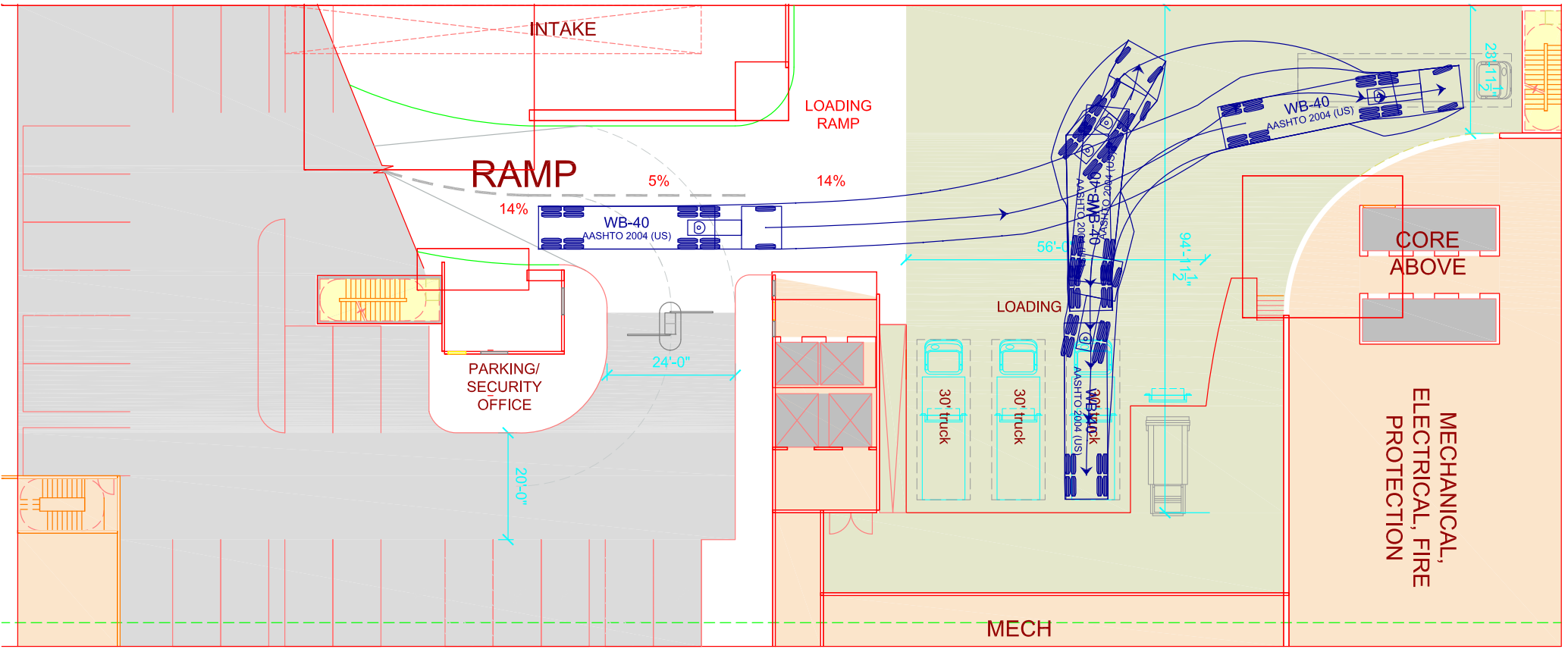

INTAKE
LOADING RAMP
RAMP
5%
14%
14%
WB-40
AASHTO 2004 (US)
PARKING/ SECURITY OFFICE
24'-0"
20'-0"
56'-0"
94'-11 1/2"
LOADING
30' truck
30' truck
30' truck
WB-40
AASHTO 2004 (US)
WB-40
AASHTO 2004 (US)
23'-11 1/2"
CORE ABOVE
MECHANICAL, ELECTRICAL, FIRE PROTECTION
MECH

Figure 5-F.2

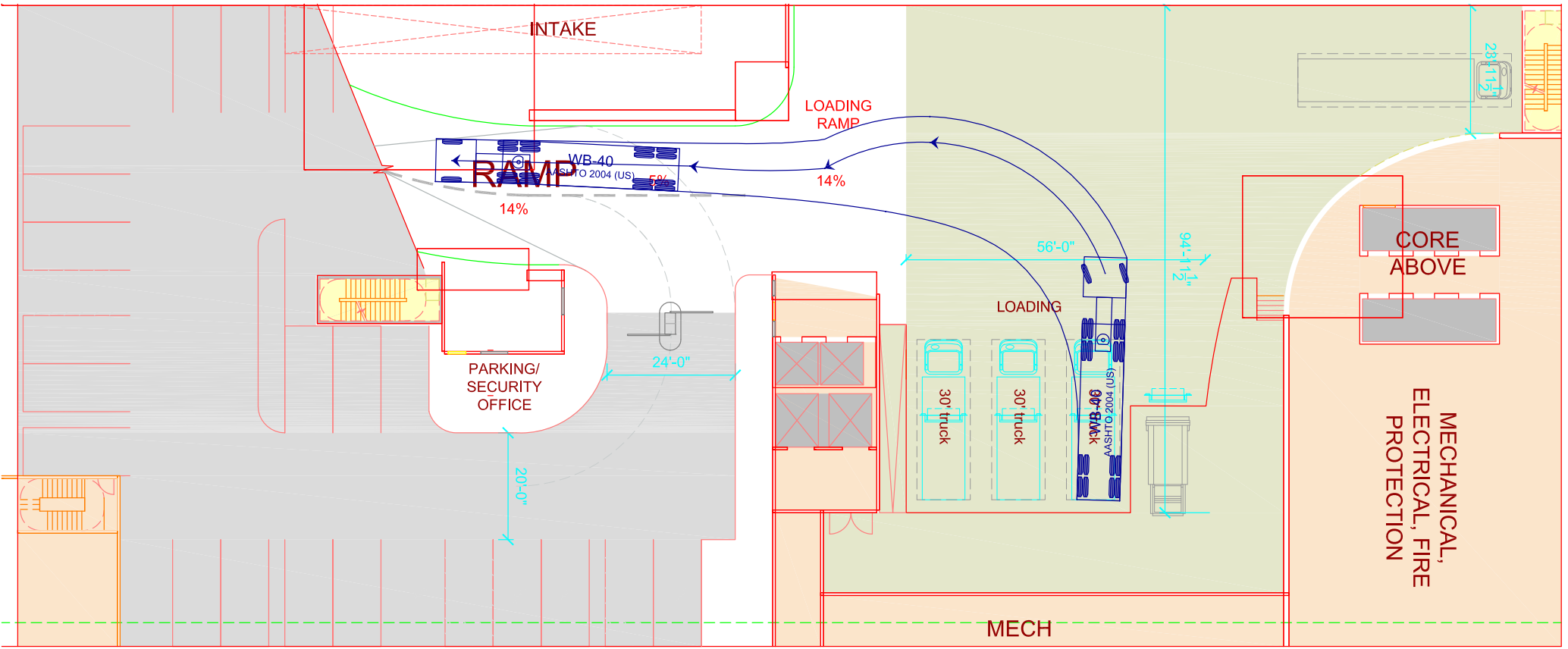

INTAKE
LOADING RAMP
RAMP
WB-40
AASHTO 2004 (US)
5%
14%
14%
56'-0"
94'-11 1/2"
23'-11 1/2"
CORE ABOVE
LOADING
PARKING/ SECURITY OFFICE
24'-0"
20'-0"
30' truck
30' truck
WB-40
AASHTO 2004 (US)
MECHANICAL, ELECTRICAL, FIRE PROTECTION
MECH

Figure 5-F.3

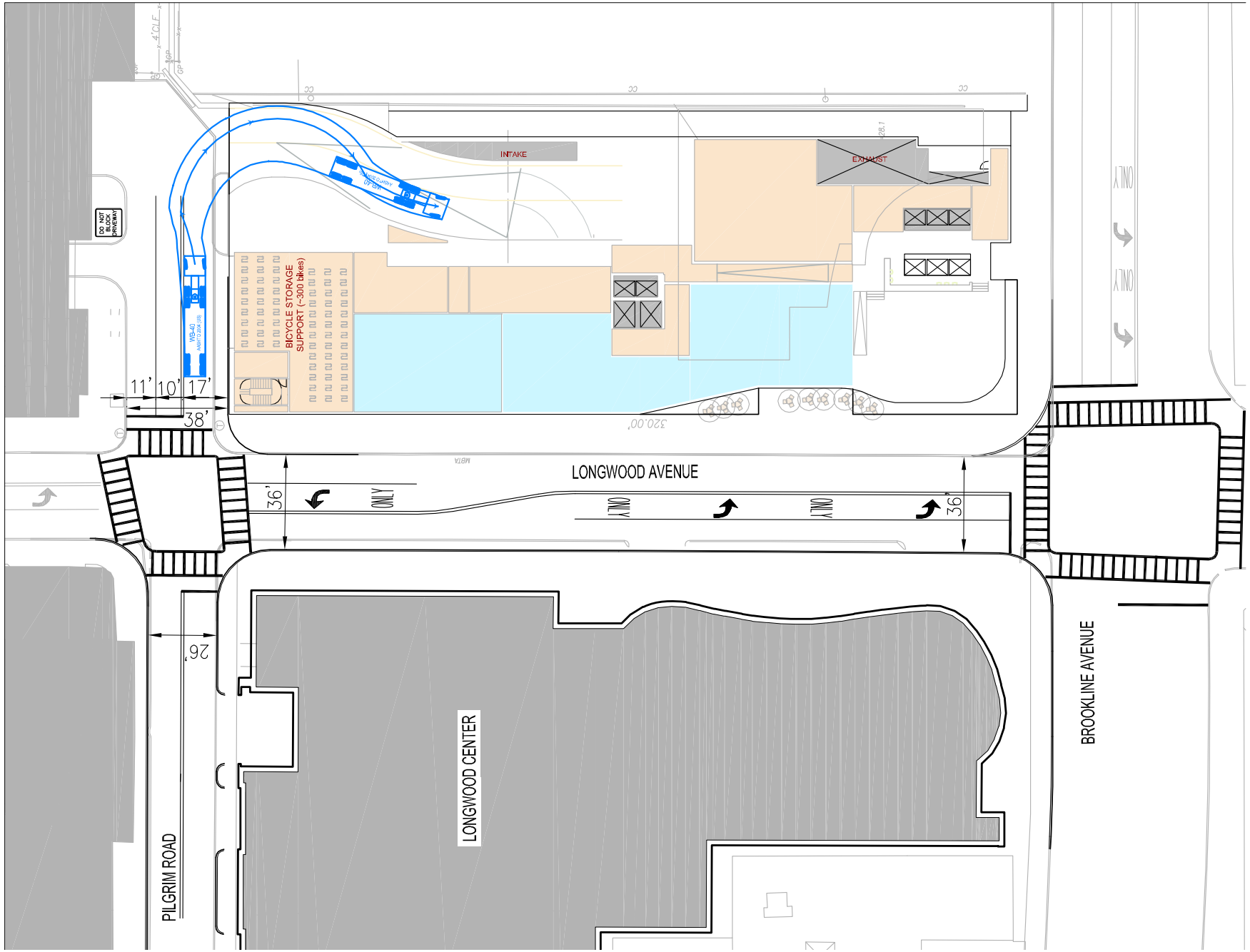

INTAKE
EXHAUST
BICYCLE STORAGE
SUPPORT (~300 bikes)
DO NOT BLOCK DRIVEWAY
11'
10'
17'
38'
36'
ONLY
LONGWOOD AVENUE
ONLY
ONLY
36'
26'
PILGRIM ROAD
LONGWOOD CENTER
BROOKLINE AVENUE

Figure 5-F.4

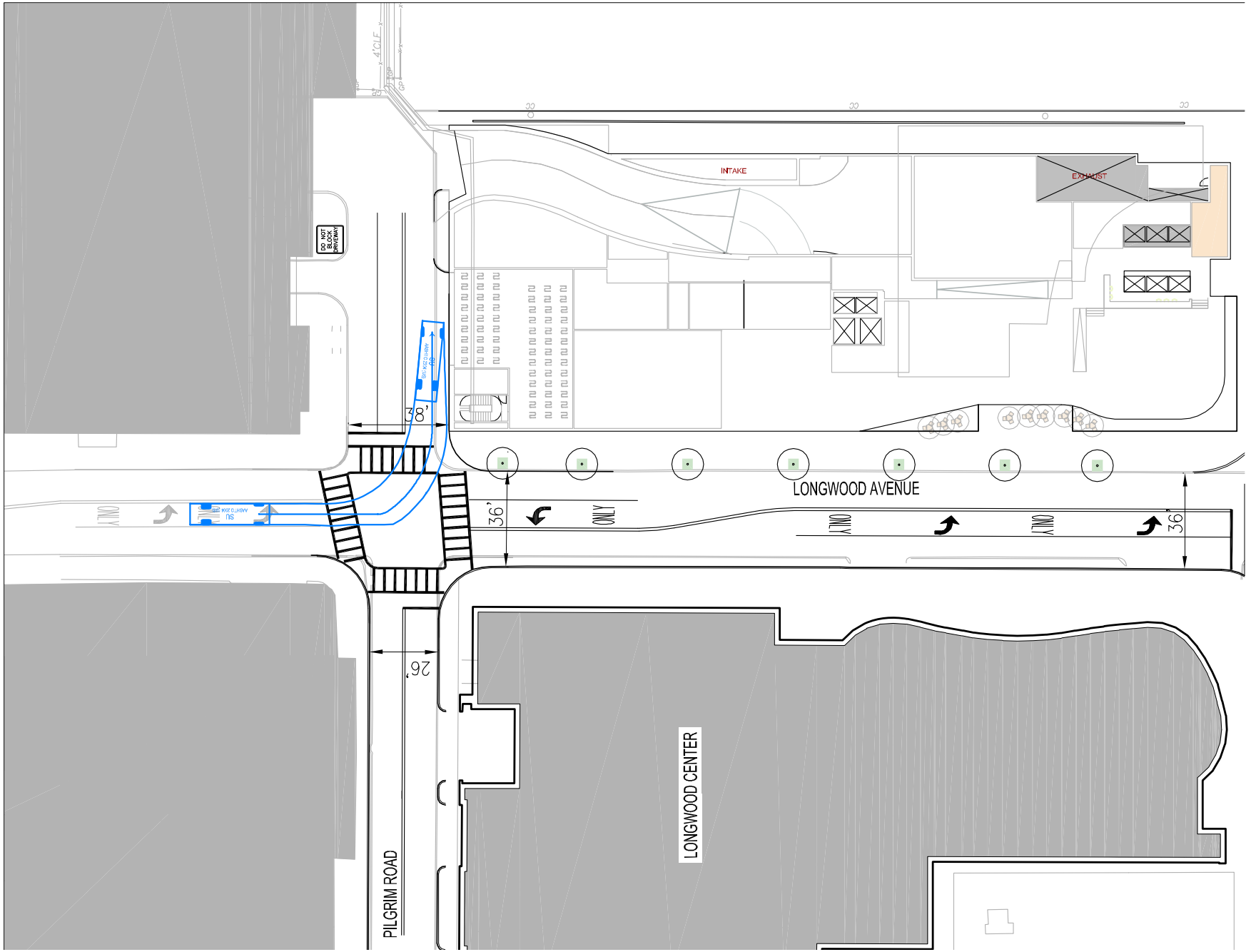

INTAKE
EXHAUST
DO NOT BLOCK DRIVEWAY
28'
36'
ONLY
ONLY
LONGWOOD AVENUE
ONLY
ONLY
36'
26'
PILGRIM ROAD
LONGWOOD CENTER

Figure 5-F.5

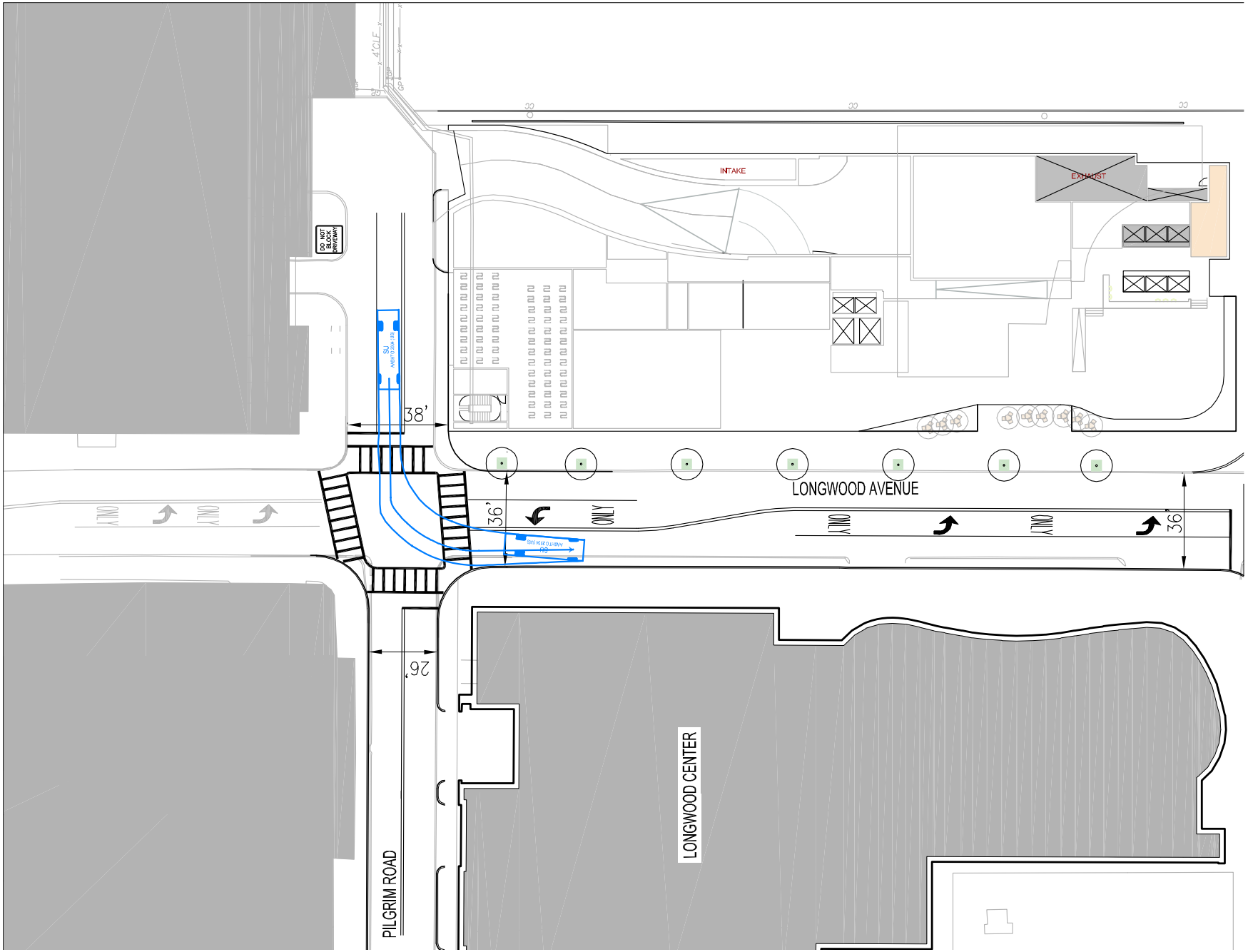

INTAKE
EXHAUST
DO NOT BLOCK INTERSECTION
38'
36'
ONLY
LONGWOOD AVENUE
ONLY
ONLY
ONLY
36'
26'
PILGRIM ROAD
LONGWOOD CENTER

Figure 5-F.6

MASCO Urban Ring Scenario – Right of Way Preservation Diagram

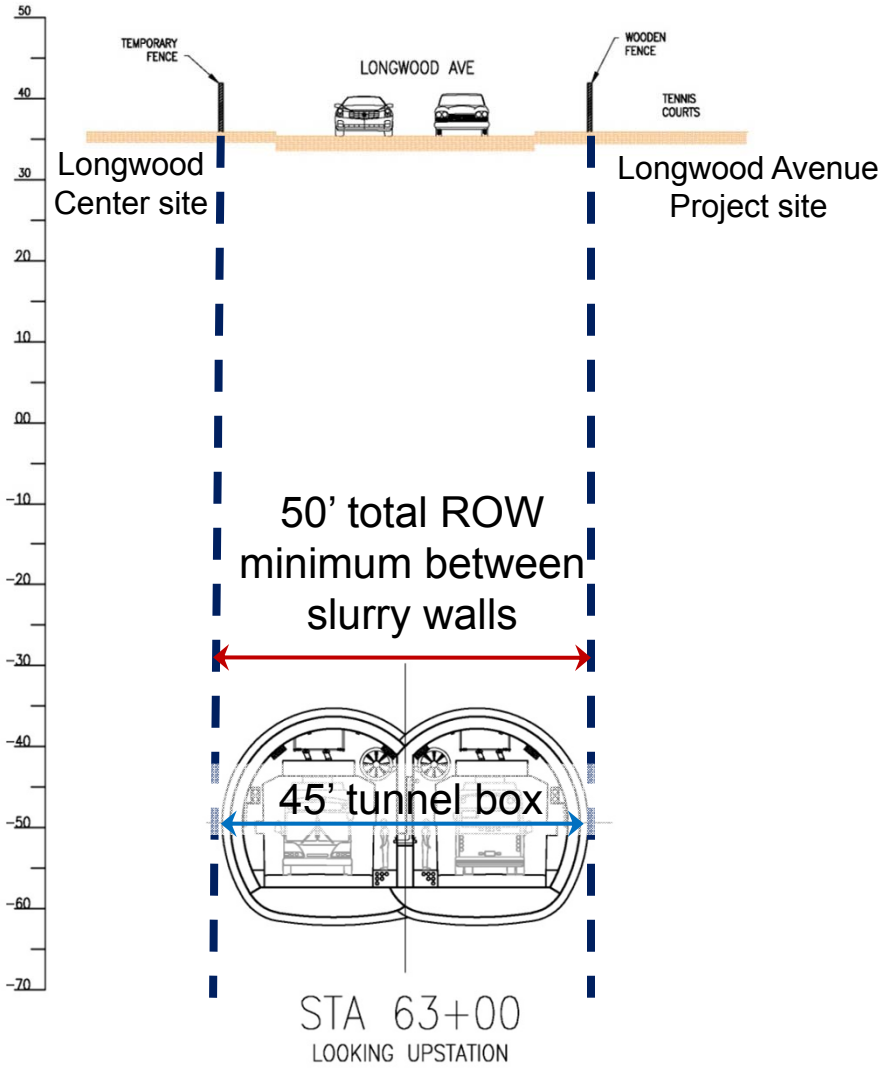
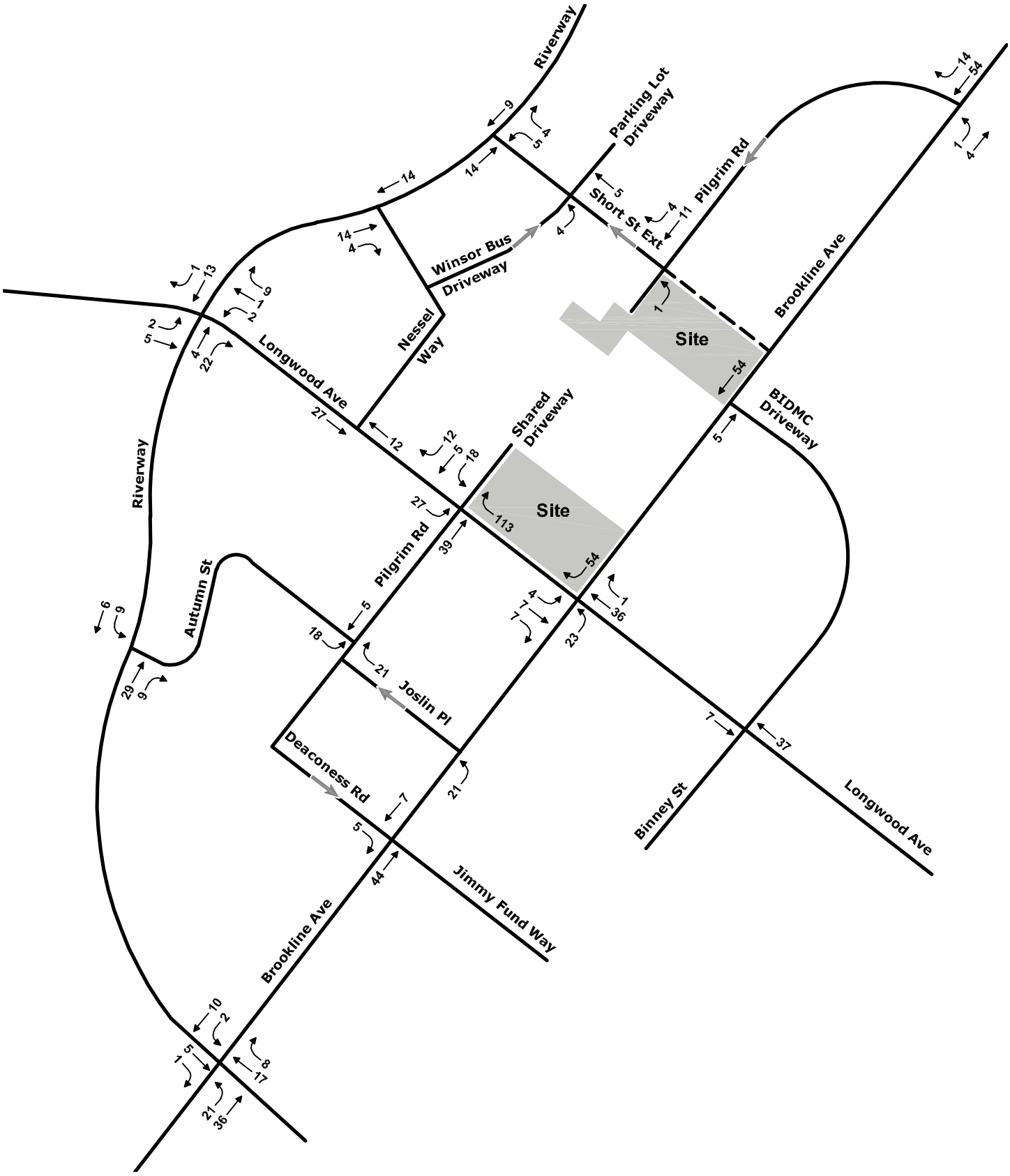


Figure 5-G



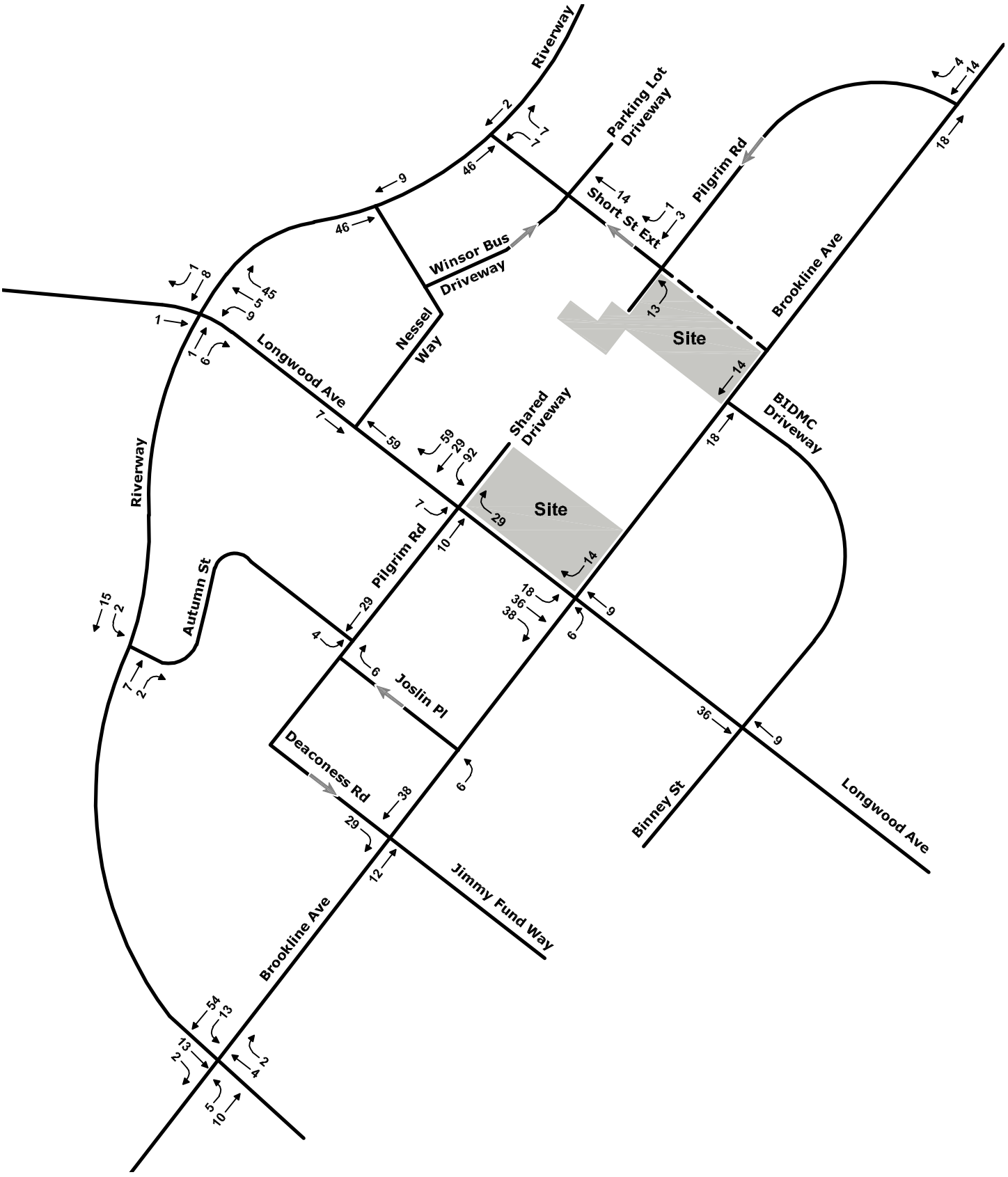
Not to Scale

Figure 5-H.1

The Winsor School

2020 Full Build Condition
Project Generated Trips
7:30 - 8:30 AM

VHB Vanasse Hangen Brustlin, Inc.



Not to Scale

Figure 5-H.2

The Winsor School

2020 Full Build Condition
Project Generated Trips
5:00 - 6:00 PM

Vanasse Hangen Brustlin, Inc.

6. Transportation Analyses

a. **Additional Data Request from MASCO**

b. **Additional Data Collected**

c. **Peak Period Analysis**

d. **Queuing Analysis**

e. **Signal Warrant Analysis**

f. **Comprehensive Longwood Avenue Improvement Program**

TETRA TECH

MEMORANDUM

To: Sarah Hamilton, MASCO

Fr: Rick Bryant, Tetra Tech

Re: **The Winsor School Campus Projects**
Traffic Data Needs

Dt: April 21, 2011

The traffic study prepared by VHB and included in the City and State permitting applications provides an assessment of commuter peak hour traffic conditions in the site environs. The study fails to consider extended peak period conditions that are of concern to MASCO and the Temple Israel. Also, the analyses results do not provide an accurate account of vehicle queuing conditions on the roadway system. Consequently, additional traffic data should be collected during the academic year when area colleges are in session to provide a more complete baseline condition for the traffic analysis. New data collection can be limited to the areas that are likely to experience significant traffic impacts due to the proposed development. The suggested data collection program is as follows:

Turning Movement, Vehicle Classification, Pedestrian and Bike Counts

Locations: Longwood Avenue and Riverway

Longwood Avenue and Nessel Way

Longwood Avenue and Shared Driveway (include peds crossing on the diagonal)

Shared Driveway and Drop-off Loop

Longwood Avenue and Brookline Avenue

Time Periods: A Tuesday and a Thursday, 6:30 AM to 9:30 AM and 2:30 PM to 6:30 PM

A Friday, 2:30 PM to 6:30 PM

Vehicle Queuing

Locations: Longwood Avenue and Riverway-Longwood Avenue Northbound

Longwood Avenue and Shared Driveway-Shared Driveway Westbound and Longwood Avenue Southbound

Shared Driveway and Drop-off Loop-Shared Driveway Eastbound

Longwood Avenue and Brookline Avenue-Longwood Avenue Southbound

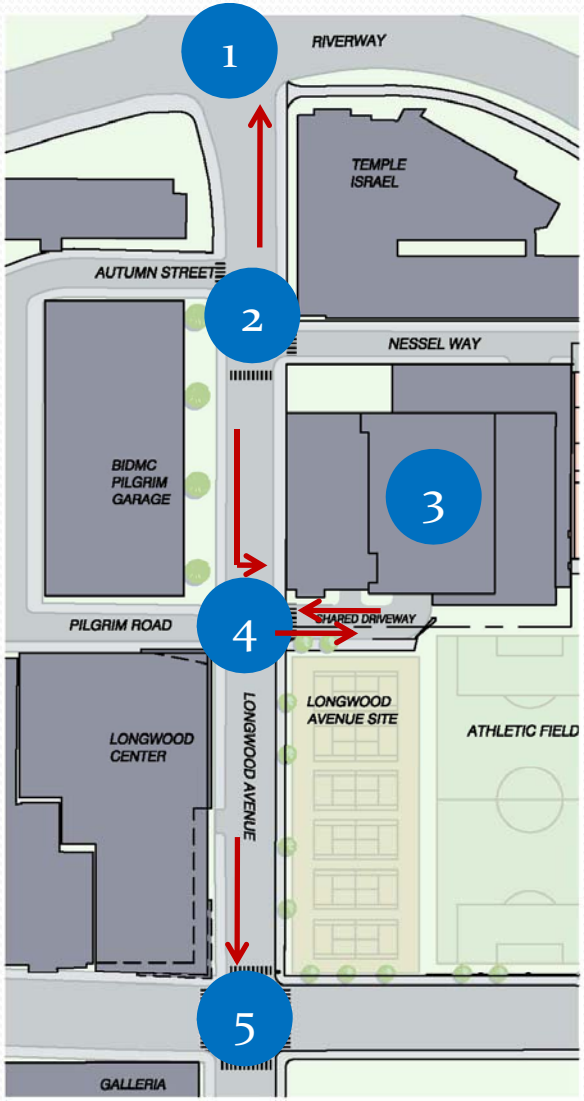
Time Periods: Same as above

Engineering and Architecture Services
One Grant Street
Framingham, MA 01701
Tel 508.903.2000 Fax 508.903.2001

Supplemental Data Collection Locations

Intersections Studied

1. Riverway at Longwood Ave
2. Nessel Way at Longwood Ave
3. Nessel Way at MASCO Building Drop-off Loop
4. Pilgrim Rd/Shared Driveway at Longwood Ave
5. Brookline Ave at Longwood Ave



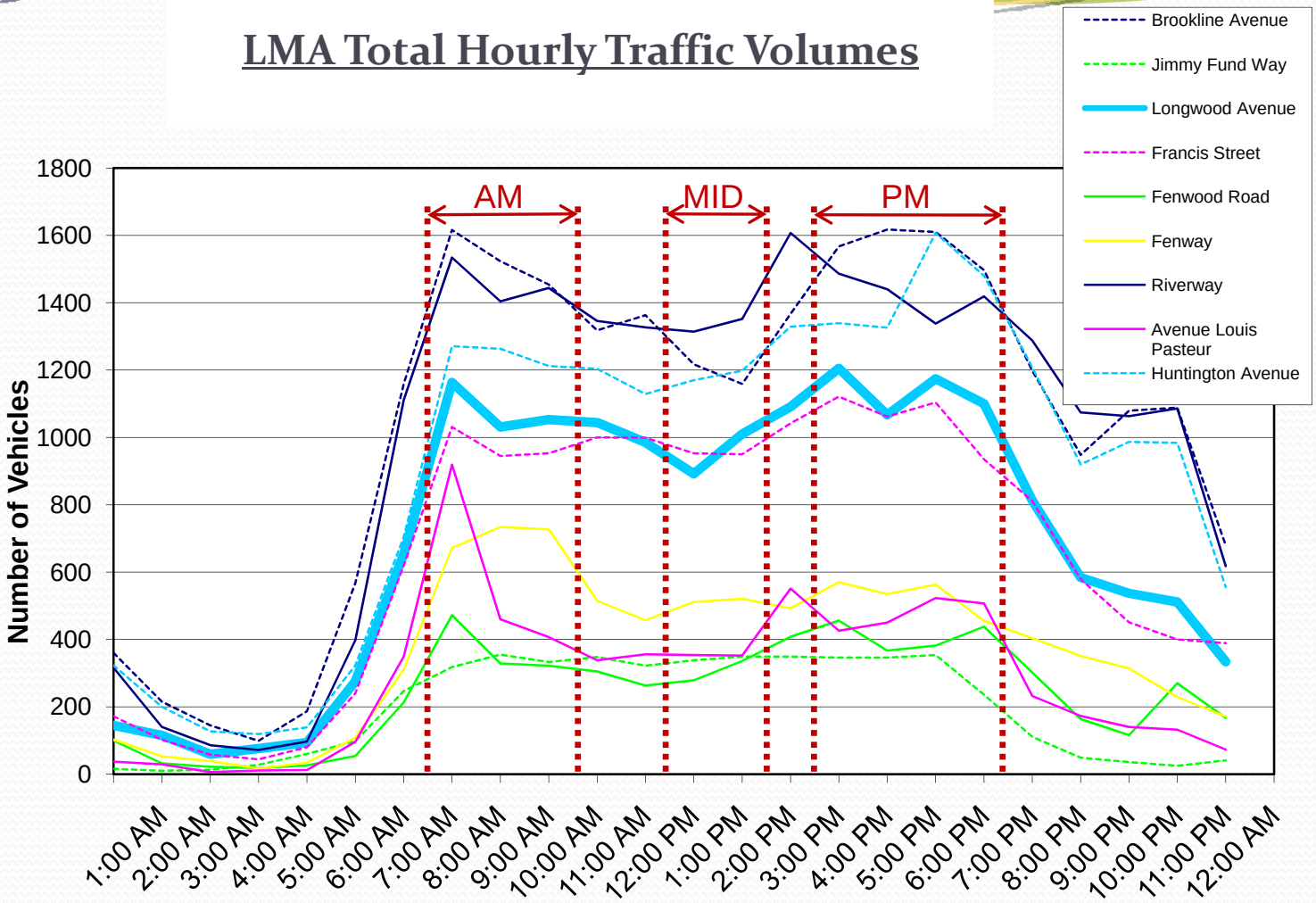
Approach Queues Studied

1. Longwood Ave NB to Riverway
2. Longwood Ave SB Left at Shared Driveway
3. Shared Driveway WB
4. Shared Driveway EB due to Drop-off Loop
5. Longwood Ave SB to Brookline Ave

Supplemental Data Collection

- Tuesday, April 26, 2011
  - 6:30 – 9:30 AM Traffic Counts / Queue Observations
  - 2:30 – 6:30 PM Traffic Counts / Queue Observations
- Thursday, April 28, 2011
  - 2:30 – 6:30 PM Traffic Counts / Queue Observations
- Friday, April 29, 2011
  - 11:30 AM – 1:30 PM Traffic Counts
  - 2:30 – 6:30 PM Traffic Counts / Queue Observations
  - Traffic Counts for Shared Driveway / Nessel Way Only

LMA Total Hourly Traffic Volumes



- April 2011 - Morning Counts: 6:30 – 9:30AM
- April 2011 - Midday Counts: 11:30 AM – 1:30 PM
- April 2011 - Evening Counts: 2:30 – 6:30PM

Traffic Volume Comparison

Tuesday Morning Peak Hour

Intersection	Intersection Peak Hour	April Count Volumes	Traffic Study Volumes*	Volume Comparison
Longwood @ Riverway	7:15 – 8:15 AM	2,924	2,996	2.5%
Longwood @ Nessel	7:30 – 8:30 AM	783	724	(- 7.5%)
Longwood @ Driveway	7:30 – 8:30 AM	873	906	3.8%
Nessel @ Drop-off Loop	7:30 – 8:30 AM	44	NA	NA
Longwood @ Brookline	7:15 – 8:15 AM	2,476	2,621	5.8%

*Traffic Study Peak Hour: 7:30 – 8:30 AM

Traffic Volume Comparison

Thursday Evening Peak Hour

Intersection	Intersection Peak Hour	April Count Volumes	Traffic Study Volumes*	Volume Comparison
Longwood @ Riverway	3:15 – 4:15 PM	3,153	3,172	0.6%
Longwood @ Nessel	4:45 – 5:45 PM	645	646	0.2%
Longwood @ Driveway	5:00 – 6:00 PM	810	763	(-5.8%)
Nessel @ Drop-off Loop	5:15 – 6:15 PM	58	NA	NA
Longwood @ Brookline	2:30 – 3:30 PM	2,356	2,585	9.7%

*Traffic Study Peak Hour: 5:00 – 6:00 PM

Traffic Volume Comparison

Friday Evening Peak Hour

Intersection	Intersection Peak Hour	April Count Volumes	Traffic Study Volumes*	Volume Comparison
Longwood @ Nessel	4:45 – 5:45 PM	659	646	(-2.0%)
Longwood @ Driveway	5:00 – 6:00 PM	803	763	(-5.0%)

*Traffic Study Peak Hour: 5:00 – 6:00 PM

Interim Parking Lot

Trip Generation

	Morning Peak			Evening Peak		
	In	Out	Total	In	Out	Total
Total Academic Projects	**19**	**9**	**28**	**4**	**14**	**18**
New Interim Lot Trips	11	1	12	3	13	16
Relocated Trips	66	4	70	21	56	77
Total Interim Lot Trips	**77**	**5**	**82**	**24**	**69**	**93**

Longwood Avenue Traffic Volume

Morning Peak Period

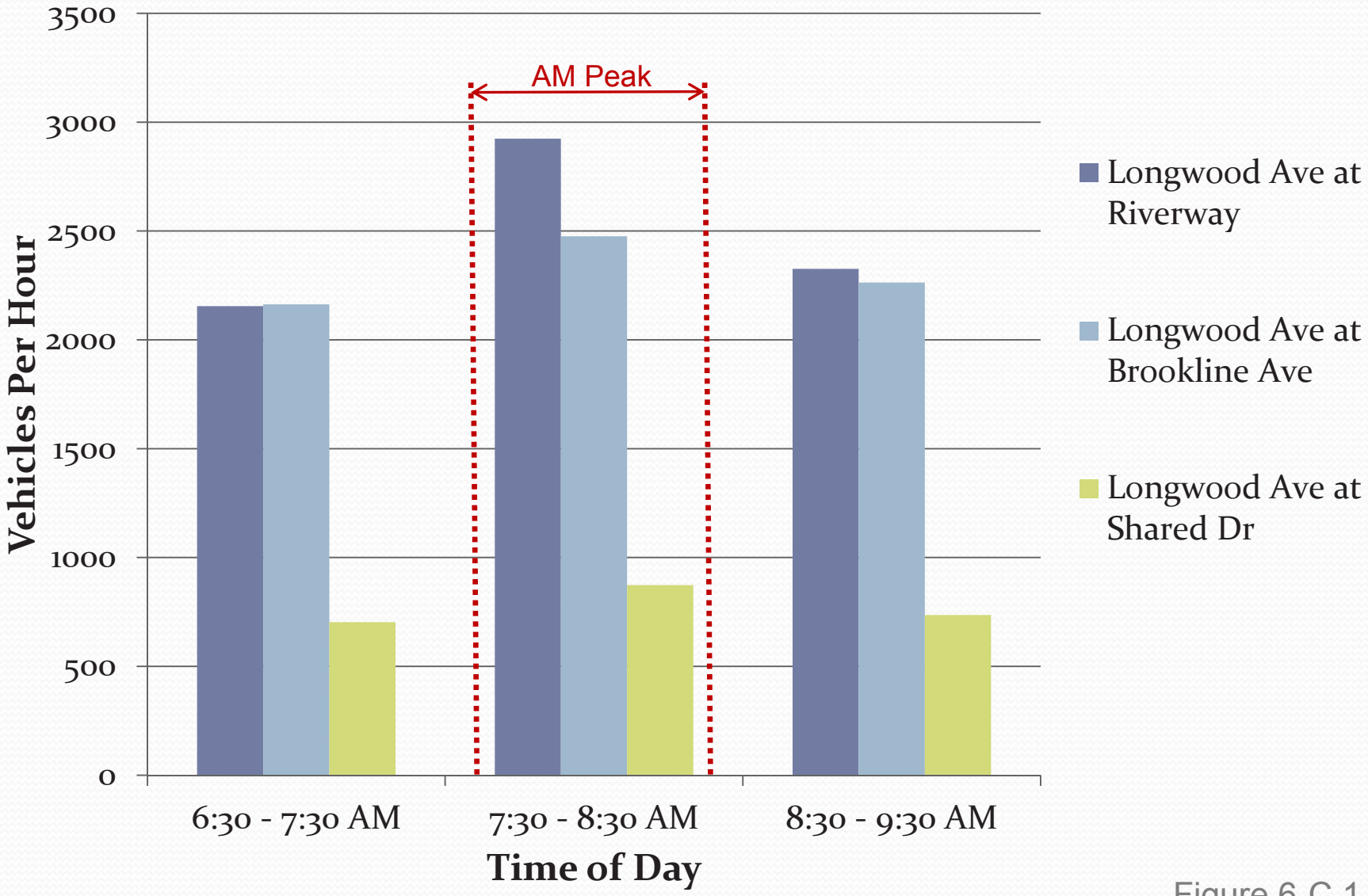


Figure 6-C.1

Longwood Corridor Traffic Volumes

Evening Peak Period

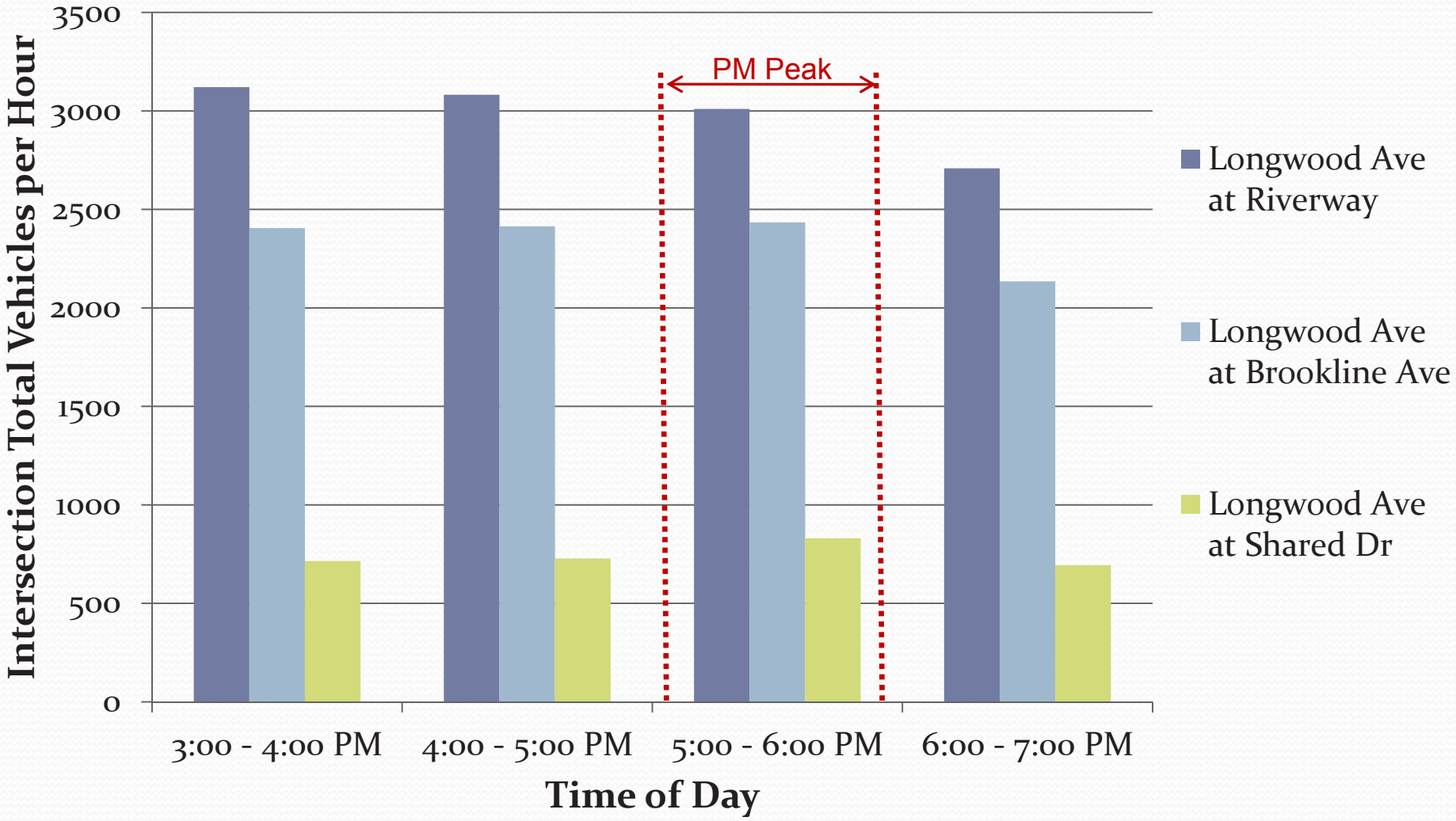


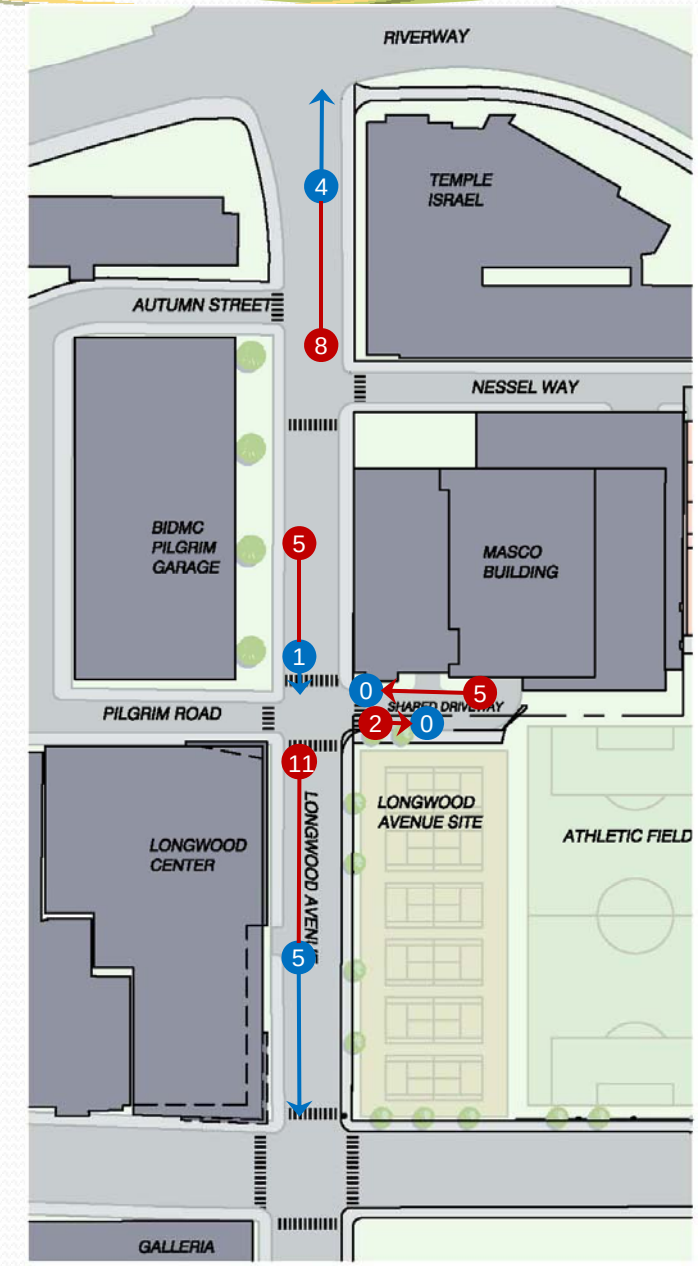
Figure 6-C.2

Queue Observations

Tuesday Morning

- Longwood at Riverway NB
  - Avg - 4
  - Max – 8
- Longwood at Driveway SBL
  - Avg - 1
  - Max – 5 (10 min / 6%)
- Shared Driveway WB
  - Avg - 0
  - Max – 5 (2 min / 1%)
- Shared Driveway EB
  - Avg – 0
  - Max – 2 (1 min / <1%)
- Longwood at Brookline SBT
  - Avg - 5
  - Max – 11

Note: Queues from each intersection's peak hour represented in number of vehicles

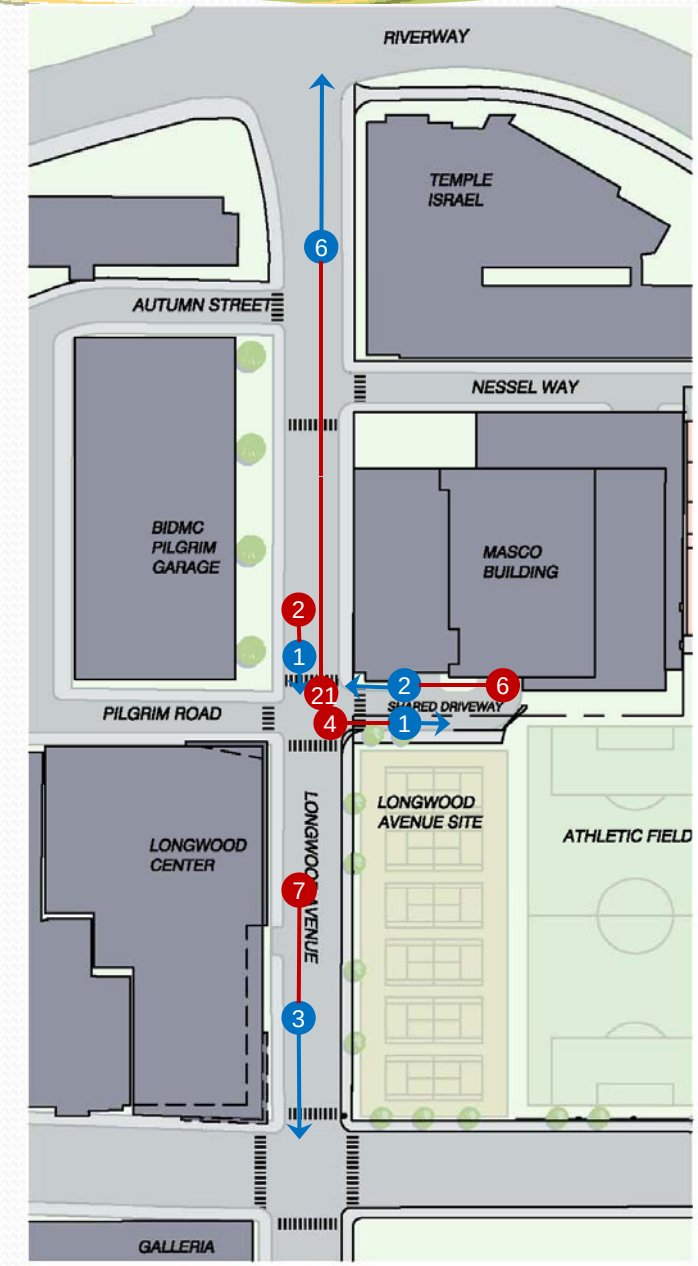


Queue Observations

Thursday Evening

- Longwood at Riverway NB
  - Avg– 6
  - Max– 21
- Longwood at Driveway SBL
  - Avg – 1
  - Max – 2 (2 min / <1%)
- Shared Driveway WB
  - Avg – 2
  - Max – 6 (2 min / <1%)
- Shared Driveway EB
  - Avg – 1
  - Max – 4* (2 min / <1%)
- Longwood at Brookline SBT
  - Avg – 3
  - Max – 7

*Queue caused by vehicles standing in drop-off aisle.

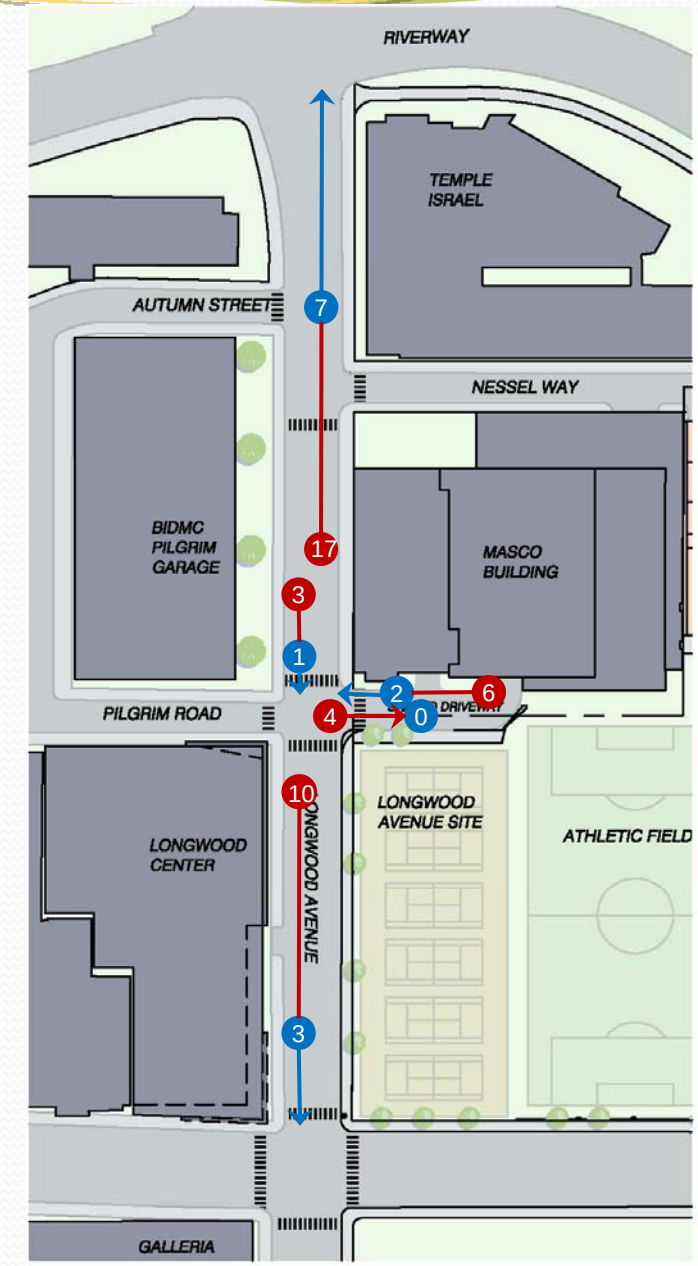


Queue Observations

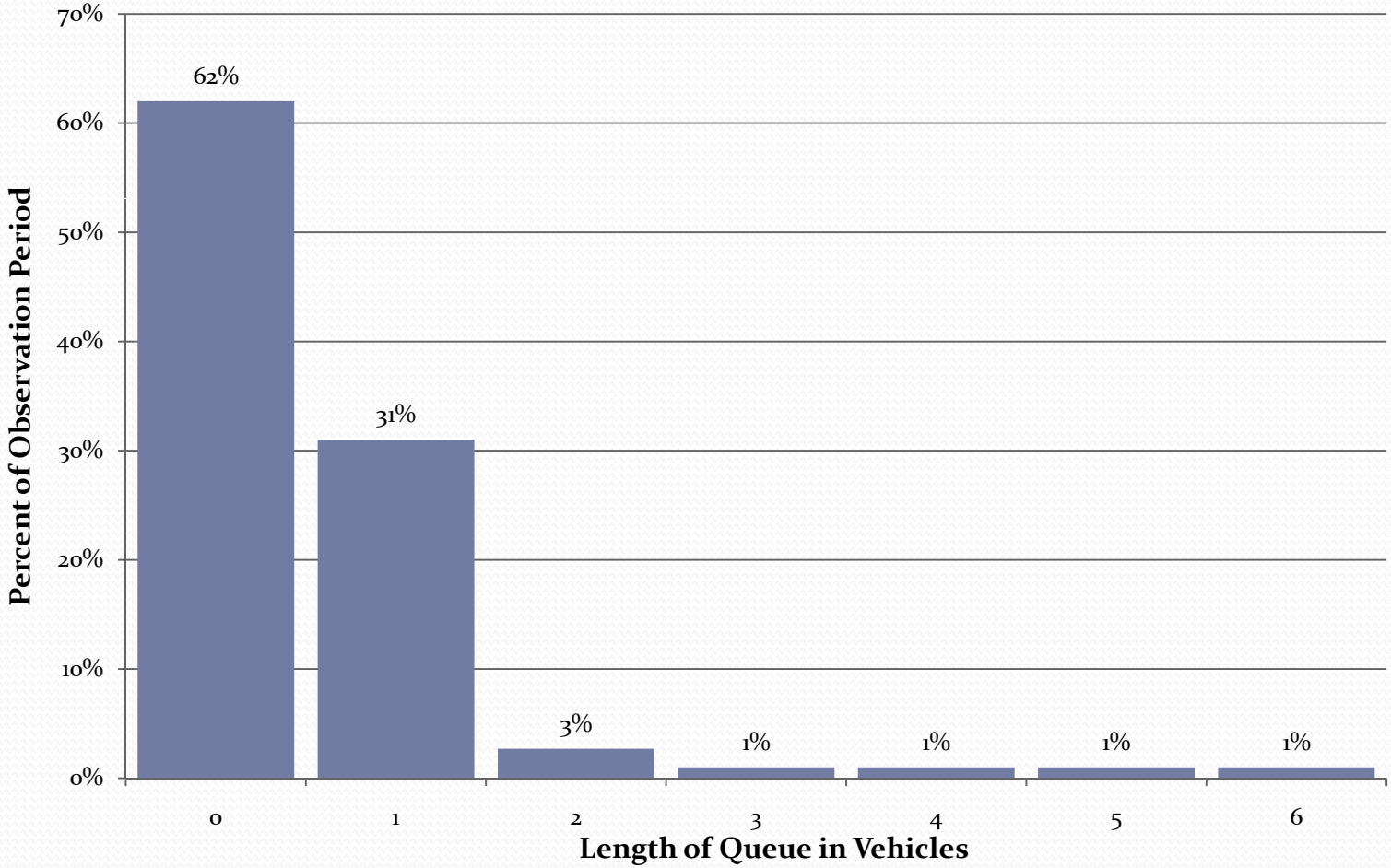
Friday Evening

- Longwood at Riverway NB
  - Avg - 7
  - Max – 17*
- Longwood at Driveway SBL
  - Avg - 1
  - Max – 3 (2 min / <1%)
- Shared Driveway WB
  - Avg - 2
  - Max – 6 (2 min / <1%)
- Shared Driveway EB
  - Avg - 0
  - Max – 4 (2 min / <1%)
- Longwood at Brookline SBT
  - Avg - 3
  - Max – 10*

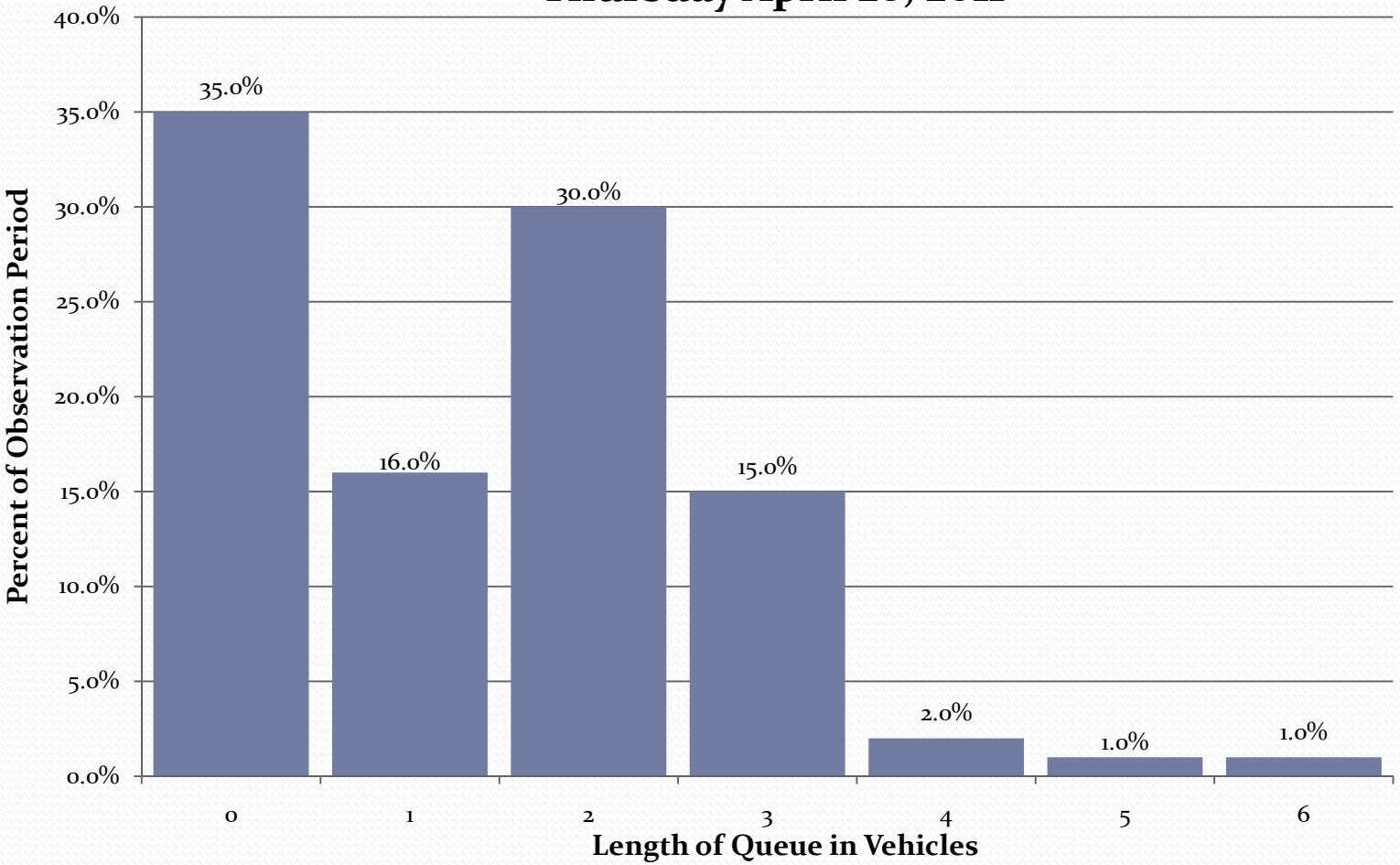
* These max queues occurred after 6:00 PM. Likely due to Red Sox Game.



Shared Driveway WB at Longwood Avenue
Queue Observations - % of Time
Morning Peak Hour 6:30 AM - 9:30 AM
Tuesday April 26, 2011



Shared Driveway WB at Longwood Avenue
Queue Observations - % of Time
Evening Peak Hour 2:30 PM - 6:30 PM
Thursday April 28, 2011



Avg. Queues
AM Peak

- Longwood at Riverway NB
  - Observed - 4
  - Future - 5
- Longwood at Driveway SBL
  - Observed - 1
  - Future – 2
- Longwood at Brookline SBT
  - Observed - 5
  - Future – 6

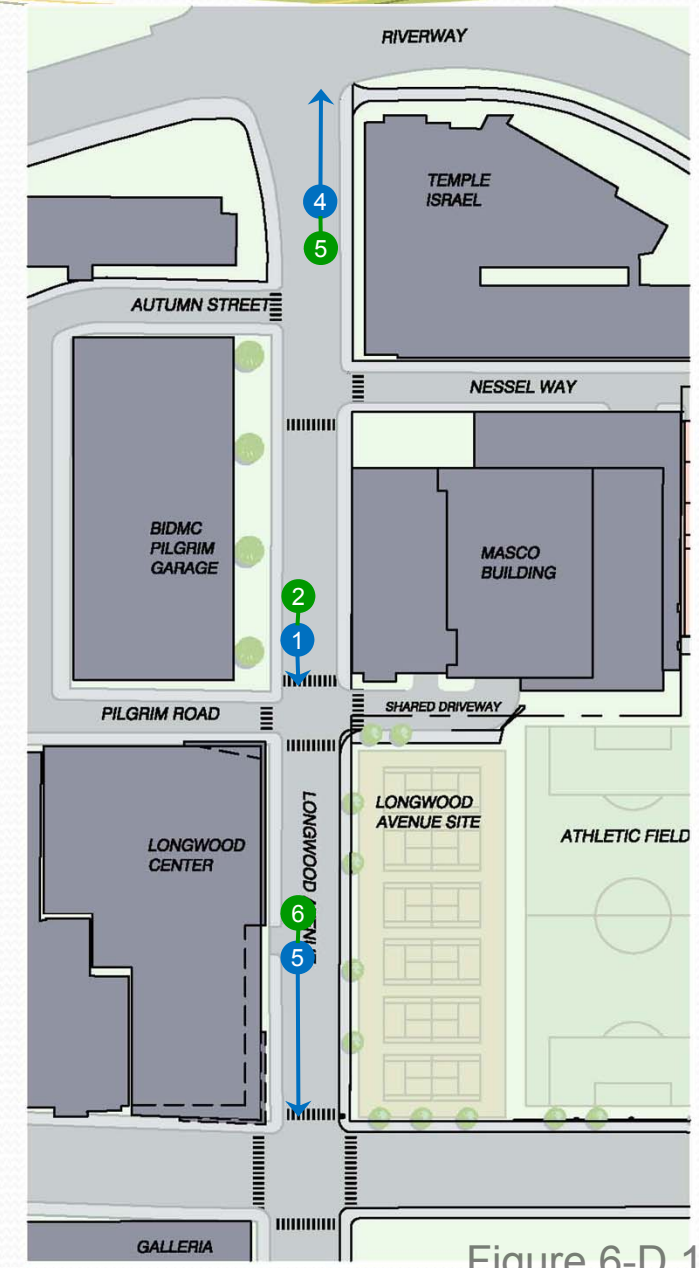


Figure 6-D.1

Note: Queues from each intersection's peak hour represented in number of vehicles based on Observed Queues & ITE Generated Trips

Avg. Queues
PM Peak

- Longwood at Riverway NB
  - Observed– 6
  - Future – 7
- Longwood at Driveway SBL
  - Observed – 1
  - Future – 2
- Longwood at Brookline SBT
  - Observed – 3
  - Future – 4

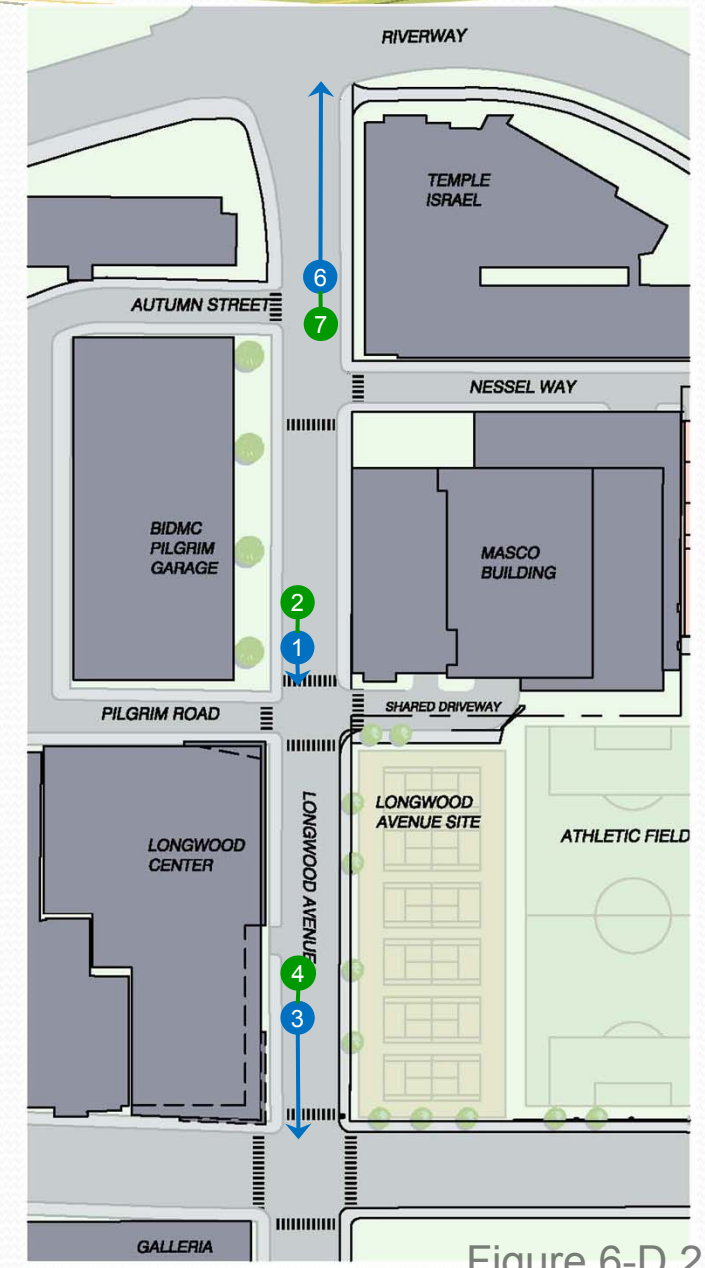


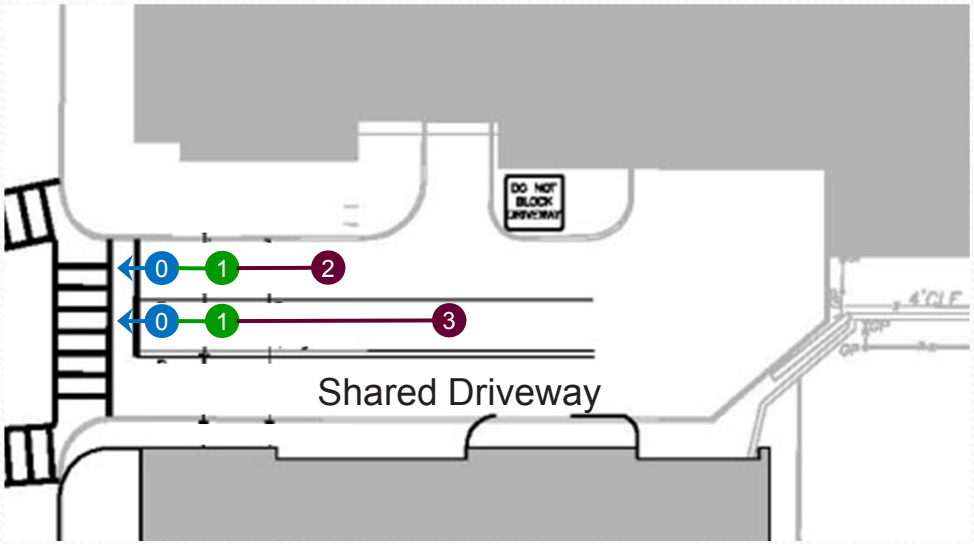
Figure 6-D.2

Note: Queues from each intersection's peak hour represented in number of vehicles based on Observed Queues & ITE Generated Trips

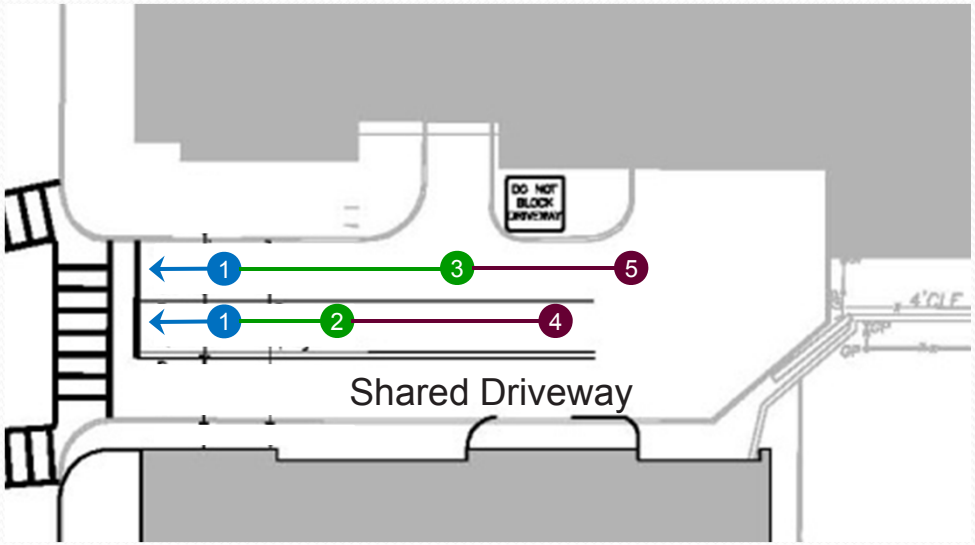
Shared Driveway

Queues

- AM Peak Hour
  - Observed Avg– 0
  - Future Avg – 2
  - Future Max - 5



- PM Peak Hour
  - Observed Avg – 2
  - Future Avg – 5
  - Future Max - 9



Note: Queues from each intersection's peak hour represented in number of vehicles based on Observed Queues & ITE Generated Trips

Figure 6-D.3

MUTCD Traffic Signal Warrants (ITE Rates)

Signal Warrants	Longwood Center (2008)	Winsor/Longwood Ave Project (2020)
Warrant 1, Eight-Hour Vehicular Volume	No	No
Warrant 2, Four-Hour Vehicular Volume	No	Yes
Warrant 3, Peak Hour	No	Yes
Warrant 4, Pedestrian Volume	Yes	Yes
Warrant 5, School Crossing	No	No
Warrant 6, Coordinated Signal System	No	No
Warrant 7, Crash Experience	No	No
Warrant 8, Roadway Network	No	No
Warrant 9, Intersection Near a Grade Crossing	No	No

Figure 6-E.2

Traffic Signal Warrant Analysis

Benefits

- Provides protected movements for minor street approaches
- Improves management of pedestrian movements

Challenges

- Future signal implementation will require careful design considerations
  - Concurrent pedestrian accommodations
  - Appropriate minor street green time allocation

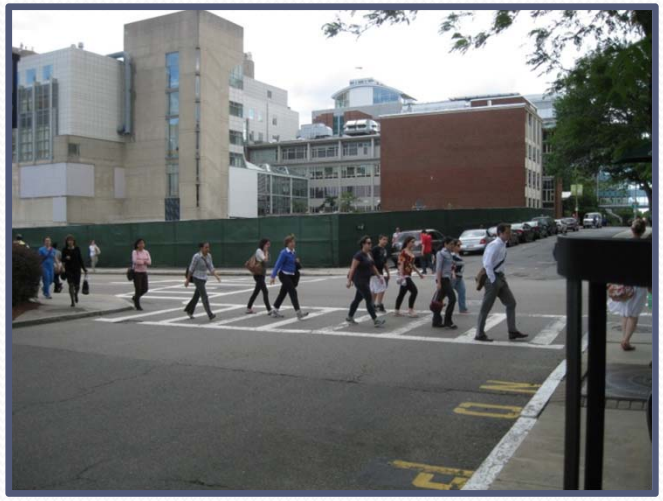
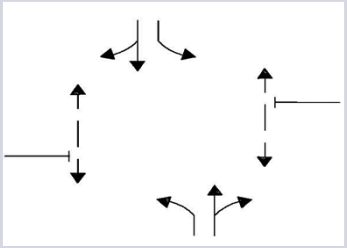
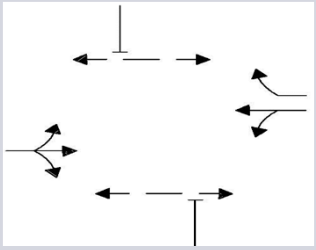


Figure 6-E.3

Traffic Signal Operations

Approach	Longwood Ave	Pilgrim Rd/Shared Dr*
Phasing		
Morning Peak (100s)	79 - 85 sec	15 - 21 sec
Evening Peak (100s)	68 – 85 sec	15 - 32 sec

*Pilgrim Road/Shared Dr approach set to minimum recall during off-peak hours.
**Study value of short lead phase during design process

	Intersection Level Of Service (LOS)	
	Future Unsignalized	Future Signalized
AM Peak	F	A
PM Peak	F	C

Figure 6-E.4

Longwood Avenue
Corridor Improvements

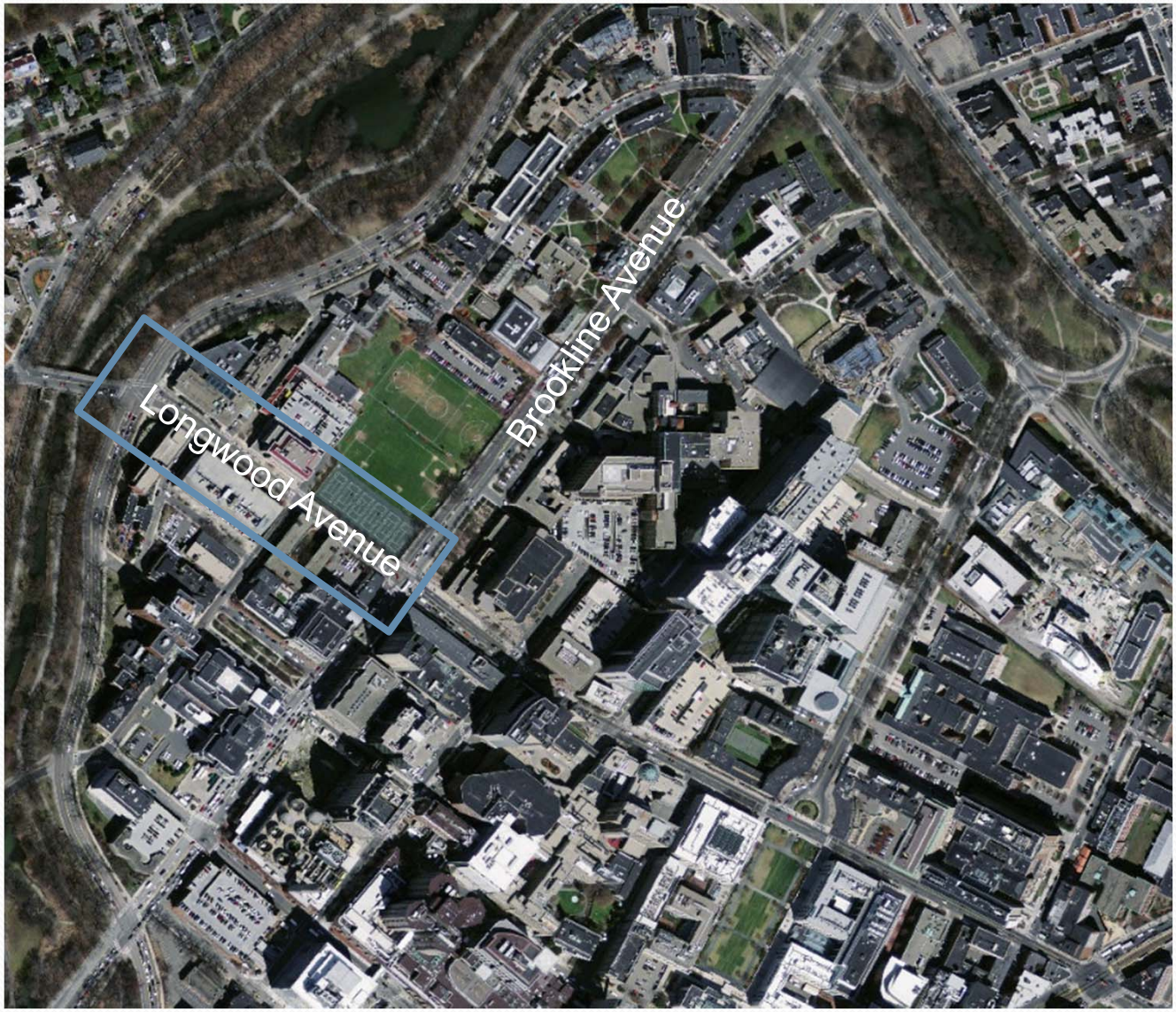


Figure 6-F.1

Longwood Center Project
Improvements

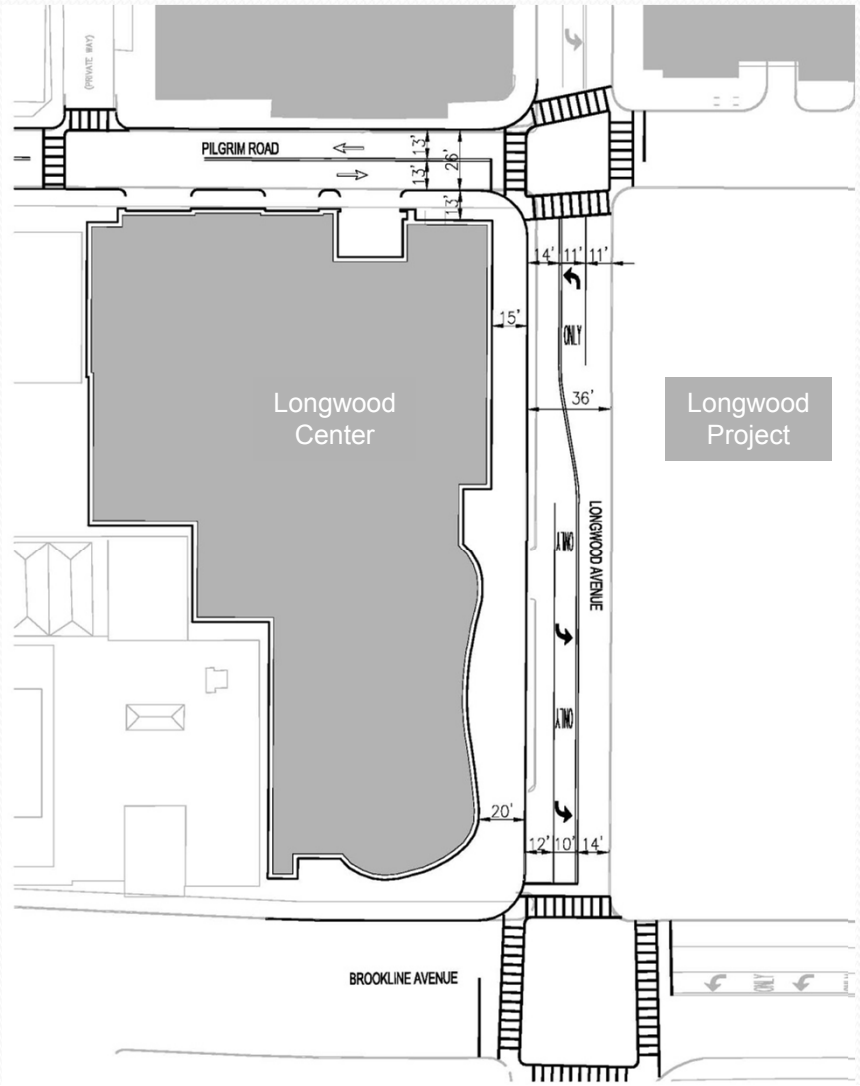
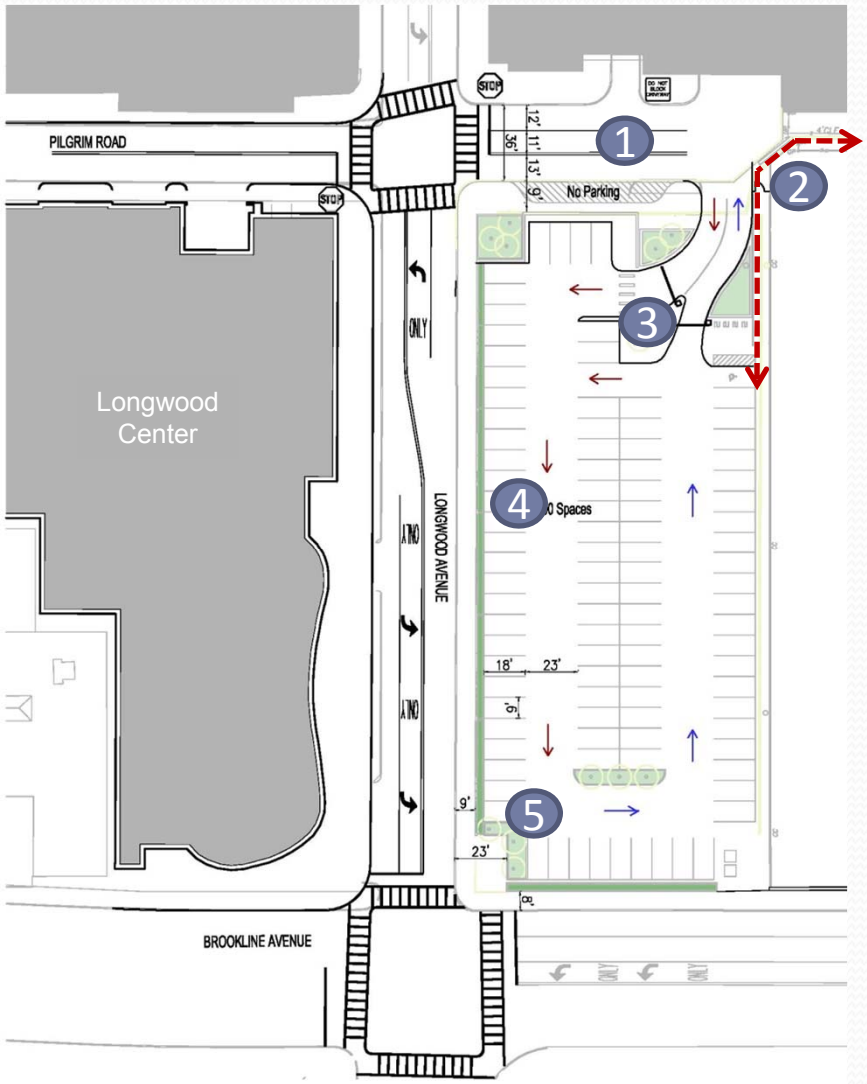


Figure 6-F.2

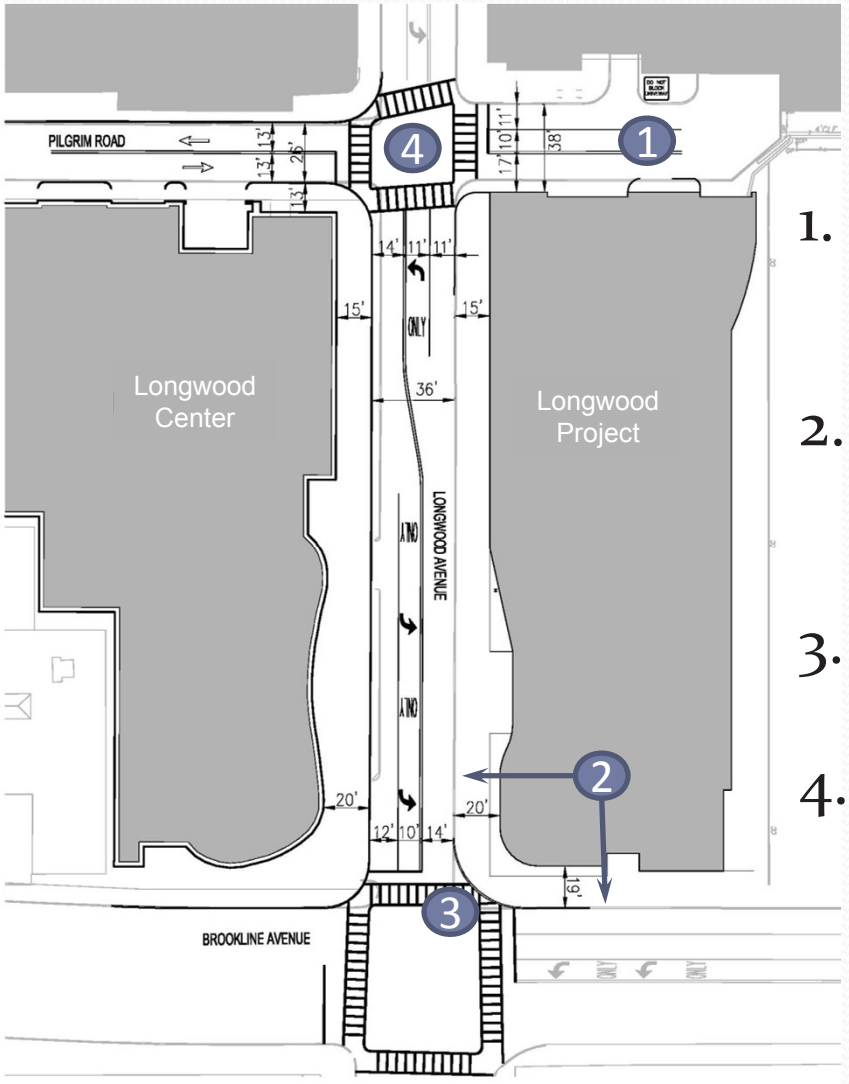
Winsor Campus Projects:
Interim Condition



1. Widening of Shared Driveway (33' to 36' Wide with Inbound = 13')
2. Internal Sidewalk
3. Access Equipment Configured to Minimize Queues
4. Green Buffer Incorporated Into Plan
5. Improved Staging Area for Pedestrians

Figure 6-F.3

Winsor School Projects:
Longwood Ave Project Improvements



1. Widening of Shared Driveway (33' to 38' Wide with Inbound = 17')
2. Widening Longwood Ave and Brookline Ave sidewalks
3. Improved curb radius
4. Perform warrant analysis with actual future volumes

Figure 6-F.4

Winsor School Projects:
Longwood Ave Project Improvements

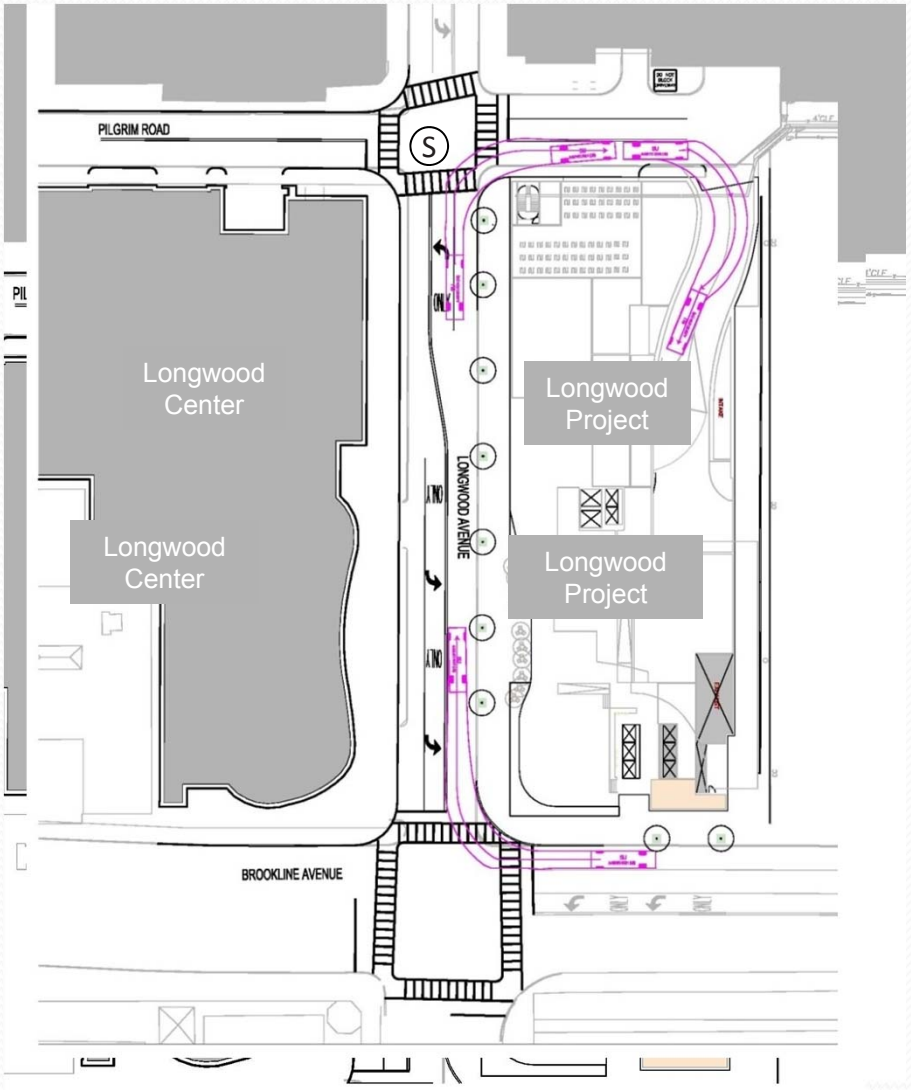


Figure 6-F.5

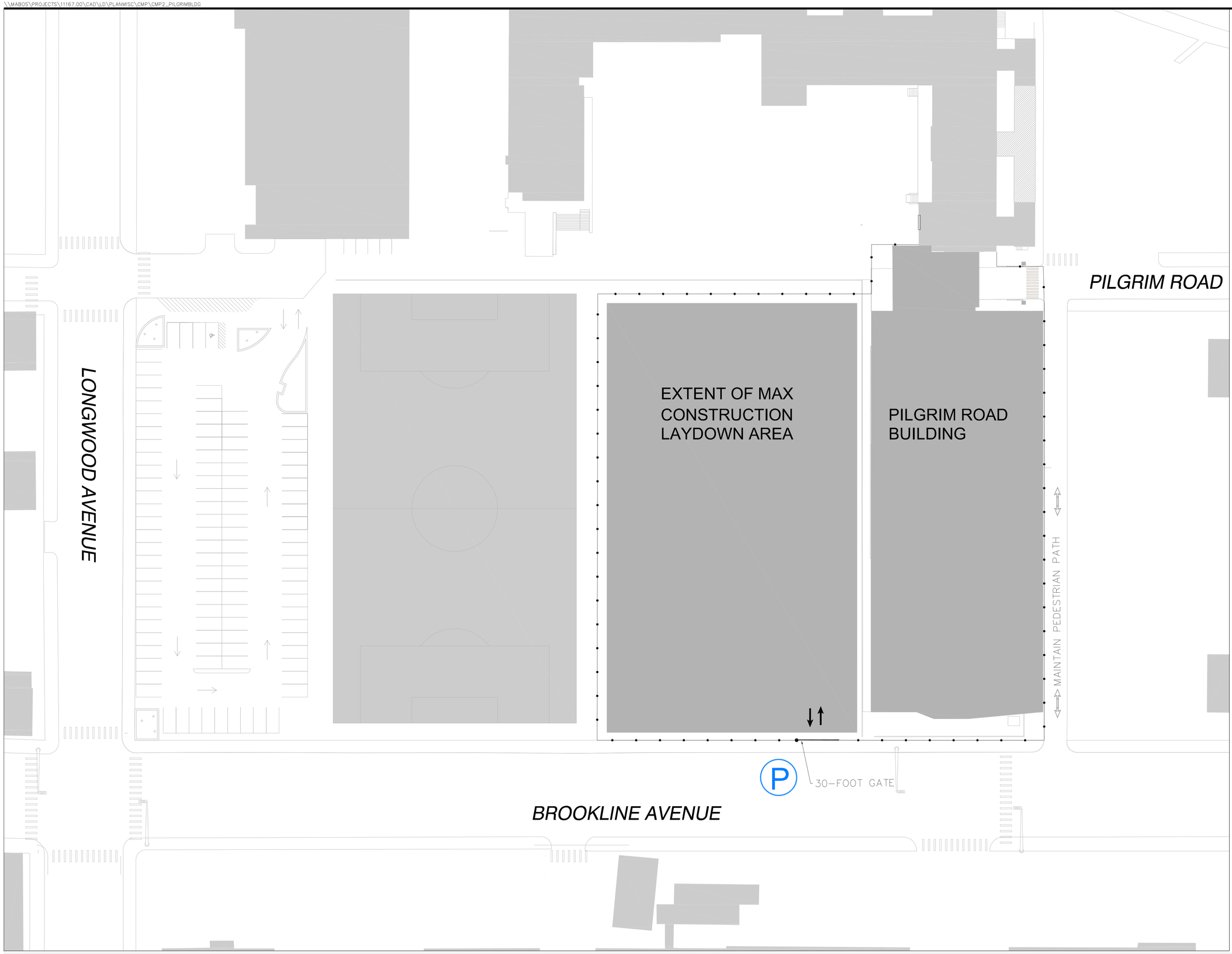
7. Construction Mitigation Commitments

a. **Construction Staging/Laydown Area Diagram – CPAW**

b. **Construction Staging/Laydown Area Diagram – Longwood Avenue Project**

c. **Construction Staging/Laydown Area Diagram – Courtyard Addition**

d. **Construction-period TDM Commitments**



VHB
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
99 High Street
Boston, Massachusetts 02110
617.728.7777 • FAX 617.728.7782

P POLICE DETAIL

No.	Revision	Date	Appvd.

Designed by | Drawn by | Checked by

CAD checked by | Approved by

Scale | Date May 2011

Project Title

Winsor School
CMP - Phase 2
Pilgrim Road Building

Boston, Massachusetts

Issued for

Not Approved for Construction

Drawing Title

Drawing Number

Sheet of

Project Number
11167.00

LONGWOOD AVENUE

LONGWOOD AVE
BUILDING

CONSTRUCTION
LAYDOWN AREA

WB-50
STEEL DELIVERY

WB-50
AASHTO 2004 (US)

P

30-FOOT GATE

WB-50
AASHTO 2004 (US)

BROOKLINE AVENUE

VHB
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
99 High Street
Boston, Massachusetts 02110
617.728.7777 • FAX 617.728.7782

P POLICE DETAIL

No.	Revision	Date	Appvd.

Designed by | Drawn by | Checked by

CAD checked by | Approved by

Scale | Date May 2011

Project Title

Winsor School
CMP - Phase 3
Longwood Avenue Building

Boston, Massachusetts

Issued for

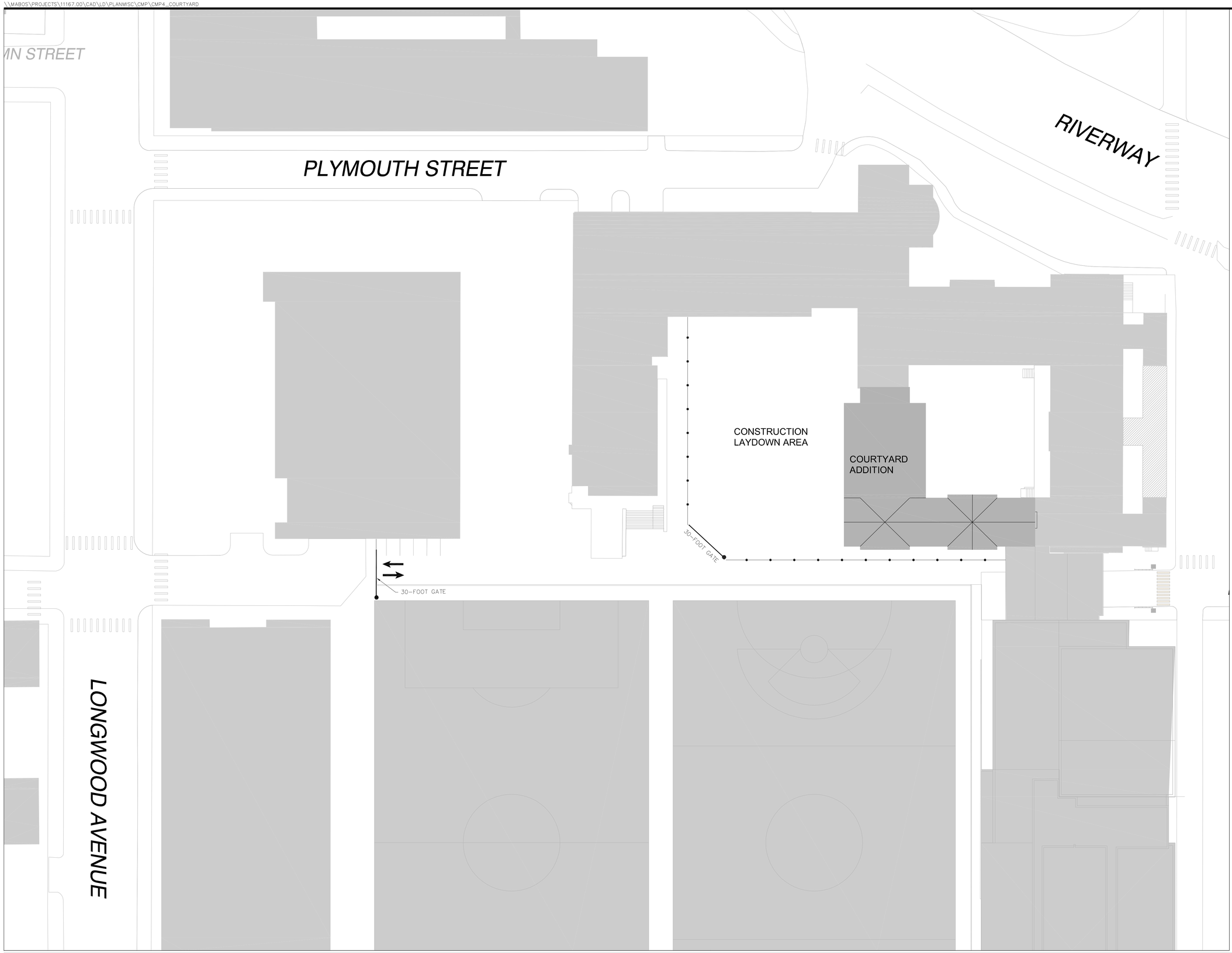
Not Approved for Construction

Drawing Title

Drawing Number

Sheet of

Project Number
11167.00



VHB
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
99 High Street
Boston, Massachusetts 02110
617.728.7777 • FAX 617.728.7782

P POLICE DETAIL

No.	Revision	Date	Appvd.

Designed by | Drawn by | Checked by

CAD checked by | Approved by

Scale | Date May 2011

Project Title

Winsor School
CMP - Phase 4
Courtyard Addition Project

Boston, Massachusetts

Issued for

Not Approved for Construction

Drawing Title

Drawing Number

Sheet of

Project Number
11167.00

Construction Period Mitigation Measures

- Active participation in LMA construction coordination
- Rodent Control per MA Sanitary Code
- Proactive treatment of organic materials/odors with environmentally sensitive products
- Open trench side slopes covered to encapsulate odors
- ULSD Fuel for all off-road diesel equipment
- Idling limited to 5 minutes max
- Proactive wheel washing, site vacuuming, and street sweeping

8. Campus Planning Alternatives Analyses

a. **Introduction and Background – Alternative Campus Plan Proposed by Temple Israel**

b. **Original Campus Plan**

c. **Campus Plan Alternative Study**

d. **Alternative Study – Longwood Avenue Sidewalk Residual Study**

e. **Alternative Study – NCAA Field Diagram**

8.a. Alternative Campus Plan Proposed by Temple Israel

Introduction and Background:

Temple Israel requested that the Winsor School examine an alternative campus planning approach that would re-orient the proposed Longwood Avenue Project so that it would have Brookline Avenue vehicular access/egress (see Figure 8c). This design scenario will hereinafter be referred to as the "Rotated Alternative."

Winsor undertook a detailed study of the Rotated Alternative in response to Temple Israel's request. This analysis was presented to a MASCO-convened meeting of the LMA institutional community on May 12th. The materials presented at that meeting, along with supplemental materials prepared in response to questions received at that meeting, are included in the following section.

Central to this analysis is Winsor's requirement, for academic programming and market competitiveness reasons, that two regulation-sized playing fields remain a central and mission-critical part of Winsor's LMA campus.

Based on Winsor's analysis of the Rotated Alternative campus planning scenario and discussion with numerous stakeholders in the LMA (as well as with City officials) Winsor has concluded that this alternative is not feasible, would fail to achieve the fullest urban design and public realm potential of the very important corner of Brookline Avenue and Longwood Avenue, and would implicate serious traffic and traffic safety concerns.

Result of Analysis Conducted:

In summary, the reasons that the Rotated Alternative is infeasible and/or undesirable to construct are as follows:

- The rotated existing Winsor playing field would not fit within the boundaries of the Winsor campus and would significantly encroach into the Longwood Avenue sidewalk. If field geometry is to be preserved (a key programmatic requirement of the Winsor School), a large retaining wall would have to be constructed within the existing Longwood Avenue sidewalk and only about 3'-8" of Longwood Avenue sidewalk would remain for public use (*i.e.*, a legally insufficient sidewalk), compared with 16' (minimum – up to 26') proposed by Winsor as part of the Longwood Avenue Project. A detail of this sidewalk encroachment illustrating the very narrow sidewalk section that would remain is illustrated in Figure 8d.

- The rotated Longwood Avenue Project would be too dimensionally constrained between the back of the Brookline Avenue sidewalk and the edge of the rotated Winsor playing field. This constraint would forever preclude the ability to widen the Brookline Avenue sidewalk – which the Longwood

Avenue Project as proposed by Winsor would do for its entire frontage along Brookline Avenue (from approximately 8' to approximately 16' at the Longwood/Brookline Avenues intersection). This lack of ability to set the rotated building back from the existing sidewalk would present a significant detriment to the public realm at this critical corner, which experiences heavy pedestrian traffic.

- This approach would preclude the ability to create an active, inviting, retail-faced street wall along Longwood Avenue, the most important pedestrian route in the LMA. The "gap-tooth" that would be left in the street wall between the existing MASCO building and the rotated Longwood Avenue Project would significantly detract from the pedestrian environment, especially when the major grade change between the back of sidewalk and the surface of the rotated playing field (up to eight feet) is taken into account.

- This approach would require the creation of new vehicular access off of Brookline Avenue close to the corner of Longwood Avenue, for both passenger cars and trucks. The concept of a new curb cut into Brookline Avenue westbound so close to the busiest corner in the LMA has already been objected to by the City's Transportation Department on a conceptual basis, for pedestrian safety and traffic flow reasons, in part because the shared driveway already exists and was contemplated in the 1988 agreement among Winsor, MASCO, and Temple Israel to provide access to the Longwood Avenue Project site. In the absence of a Brookline Avenue curb cut, the rotated Longwood Avenue Project would not be viable.

- The Rotated Alternative would forever preclude the ability to create an NCAA regulation-sized playing field on a combination of the existing Winsor playing fields. This possibility (illustrated in Figure 8.e) has been requested by several higher education institutions that already use Winsor's playing fields for practice, since they cannot play official games on the fields until they conform to NCAA dimensional standards. Winsor has invested in certain infrastructure required to lay out this NCAA-sized field, and has been in discussions with several nearby institutions about implementing this layout for use by Winsor's neighbors. The Rotated Alternative would forever eliminate the possibility of creating this scarce recreational resource in the LMA – one of the City of Boston's densest areas.

- The Rotated Alternative would block views of the Winsor fields and other green open space from the clinical floors of the Beth Israel Deaconess Medical Center Shapiro Building. Both employees and volunteers at BIDMC have remarked to Winsor how important the view of the Winsor fields and of the Emerald Necklace beyond is to the patient experience in these clinical areas.

- The Rotated Alternative would cast more shadows on the MASCO Building and on the landscaped plaza in front of the BIDMC Shapiro Building than the Winsor-proposed layout, which presents the Longwood Avenue Project's narrowest façade towards its neighbors at MASCO and BIDMC.

Because the Rotated Alternative is neither physically feasible for Winsor nor in the best interests of the LMA public realm Winsor does not consider this a potentially viable development scenario. Temple Israel acknowledged at our June 6th meeting with the LMA institutional community that they were satisfied that the Rotated Alternative was not viable and deserved no further study or consideration.

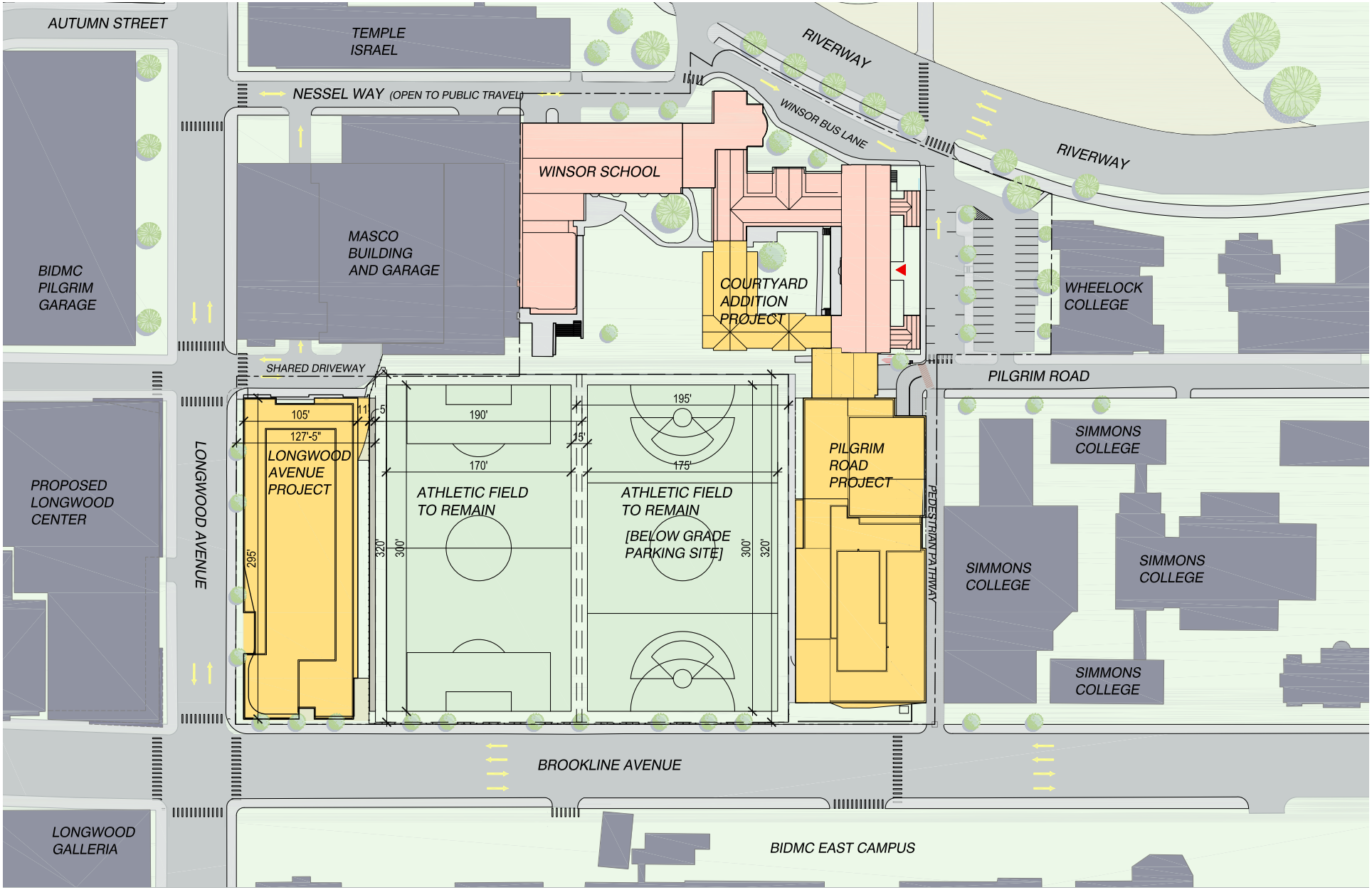

AUTUMN STREET
TEMPLE ISRAEL
RIVERWAY
NESSEL WAY (OPEN TO PUBLIC TRAVEL)
WINSOR BUS LANE
RIVERWAY
WINSOR SCHOOL
BIDMC PILGRIM GARAGE
MASCO BUILDING AND GARAGE
COURTYARD ADDITION PROJECT
WHEELOCK COLLEGE
SHARED DRIVEWAY
PILGRIM ROAD
105'
11'
5'
127'-5"
LONGWOOD AVENUE PROJECT
190'
170'
ATHLETIC FIELD TO REMAIN
195'
15'
175'
ATHLETIC FIELD TO REMAIN
[BELOW GRADE PARKING SITE]
PILGRIM ROAD PROJECT
PEDESTRIAN PATHWAY
SIMMONS COLLEGE
SIMMONS COLLEGE
SIMMONS COLLEGE
SIMMONS COLLEGE
PROPOSED LONGWOOD CENTER
LONGWOOD AVENUE
295'
320'
300'
300'
320'
BROOKLINE AVENUE
LONGWOOD GALLERIA
BIDMC EAST CAMPUS

Figure 8-B

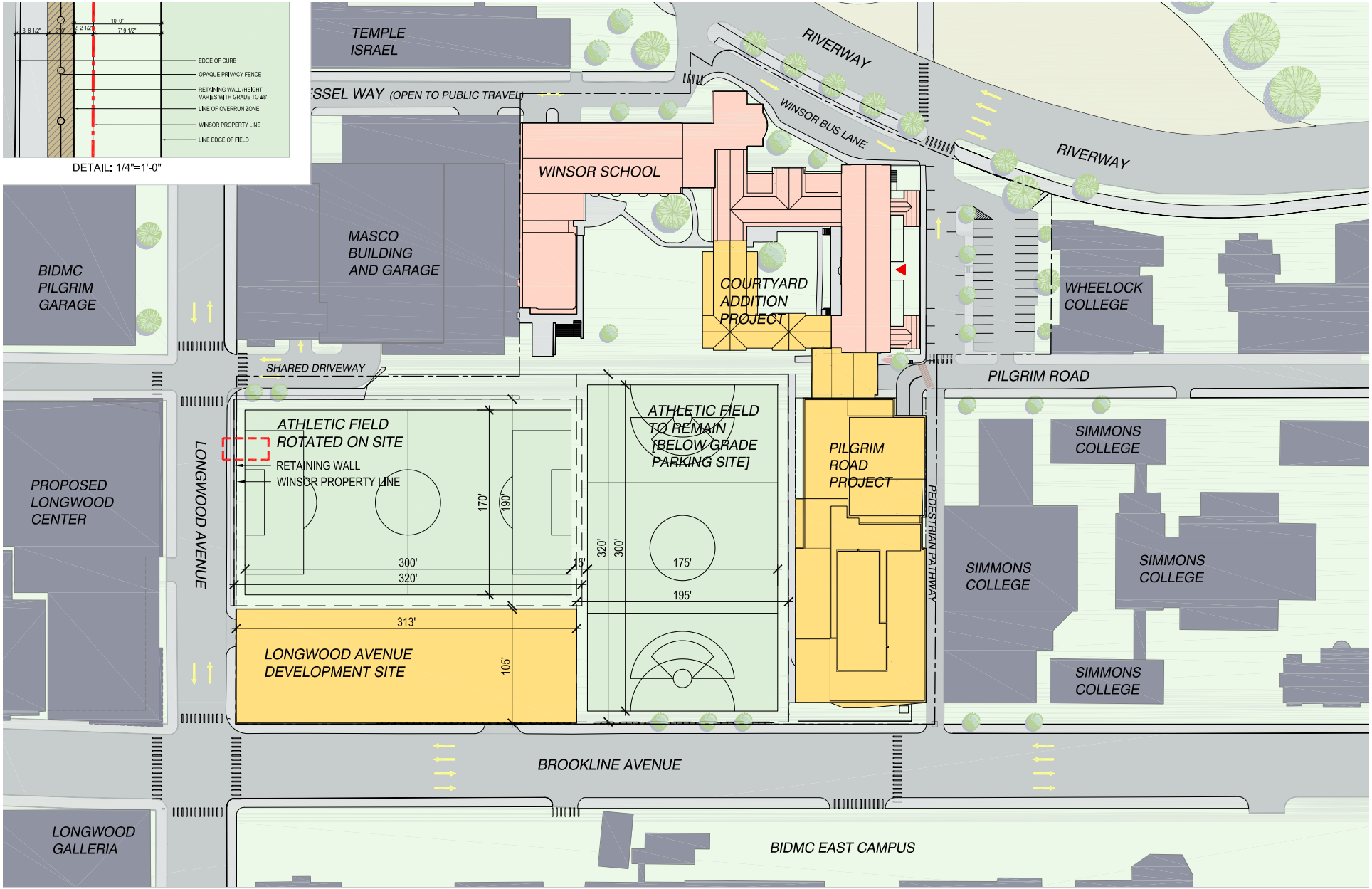
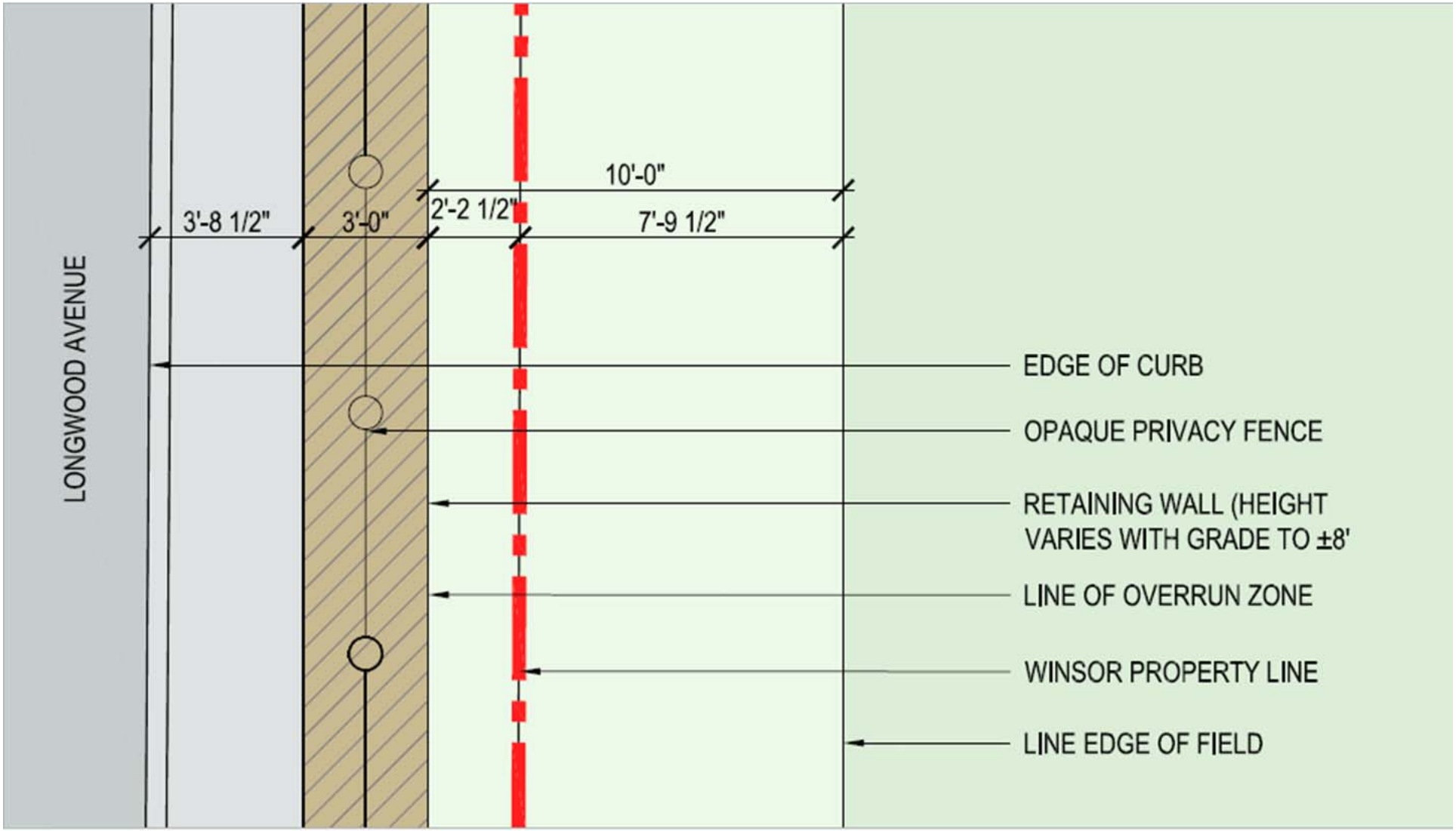
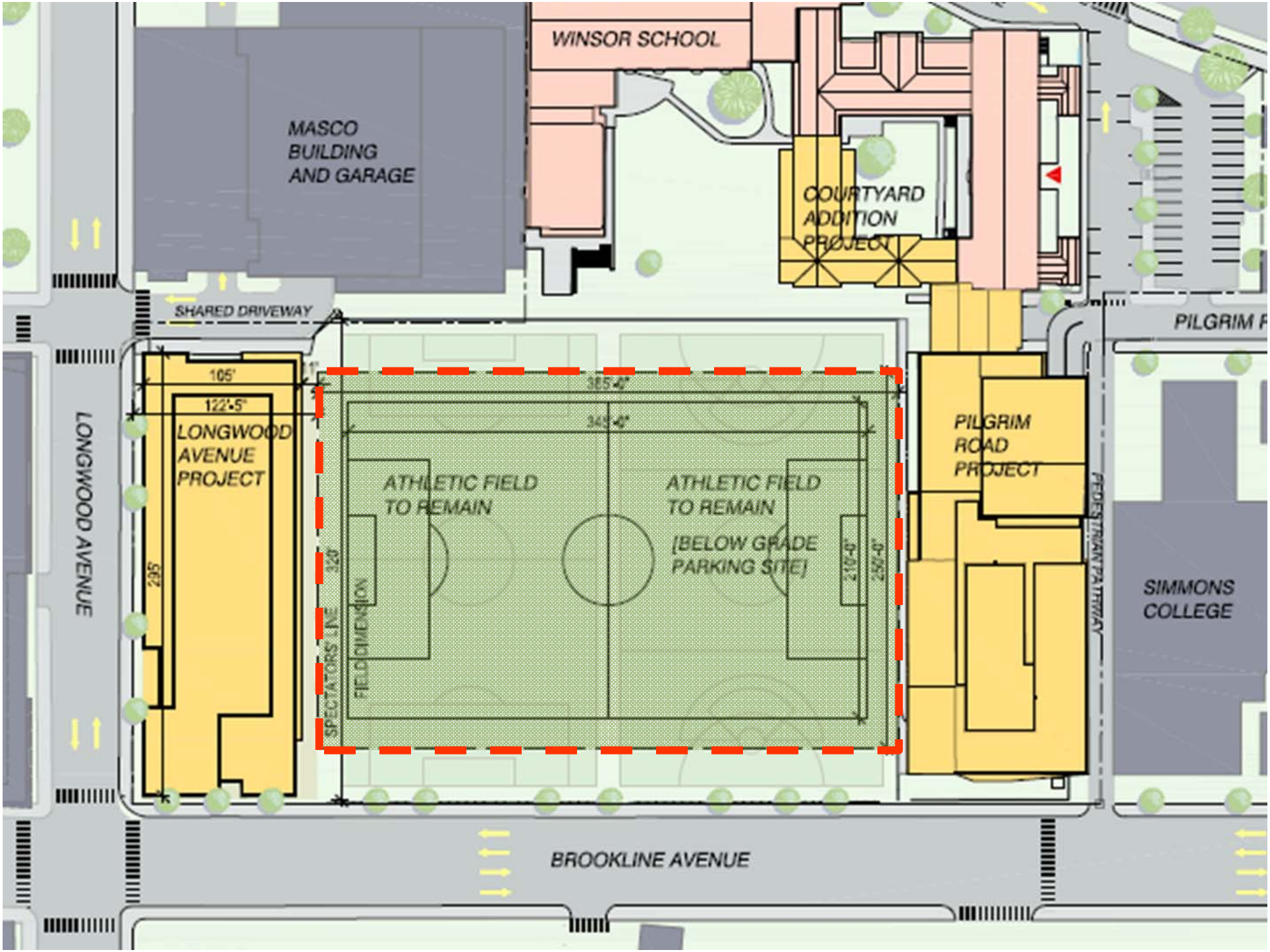

DETAIL: 1/4"=1'-0"
EDGE OF CURB
OPAQUE PRIVACY FENCE
RETAINING WALL (HEIGHT VARIES WITH GRADE TO ±8'
LINE OF OVERRUN ZONE
WINSOR PROPERTY LINE
LINE EDGE OF FIELD
TEMPLE ISRAEL
RIVERWAY
WINSOR BUS LANE
RIVERWAY
WINSOR SCHOOL
BIDMC PILGRIM GARAGE
MASCO BUILDING AND GARAGE
COURTYARD ADDITION PROJECT
WHEELOCK COLLEGE
SHARED DRIVEWAY
PILGRIM ROAD
ATHLETIC FIELD ROTATED ON SITE
RETAINING WALL
WINSOR PROPERTY LINE
ATHLETIC FIELD TO REMAIN [BELOW GRADE PARKING SITE]
PILGRIM ROAD PROJECT
SIMMONS COLLEGE
PROPOSED LONGWOOD CENTER
LONGWOOD AVENUE
PEDESTRIAN PATHWAY
SIMMONS COLLEGE
SIMMONS COLLEGE
SIMMONS COLLEGE
LONGWOOD AVENUE DEVELOPMENT SITE
BROOKLINE AVENUE
LONGWOOD GALLERIA
BIDMC EAST CAMPUS

Figure 8-C


LONGWOOD AVENUE
3'-8 1/2"
3'-0"
2'-2 1/2"
10'-0"
7'-9 1/2"
EDGE OF CURB
OPAQUE PRIVACY FENCE
RETAINING WALL (HEIGHT VARIES WITH GRADE TO ±8'
LINE OF OVERRUN ZONE
WINSOR PROPERTY LINE
LINE EDGE OF FIELD

DETAIL: 1/4"=1'-0"


WINSOR SCHOOL
MASCO
BUILDING
AND GARAGE
COURTYARD
ADDITION
PROJECT
SHARED DRIVEWAY
PILGRIM R
105'
122'-5"
LONGWOOD
AVENUE
PROJECT
235'
LONGWOOD AVENUE
365'-4"
345'-4"
ATHLETIC FIELD
TO REMAIN
ATHLETIC FIELD
TO REMAIN
(BELOW GRADE
PARKING SITE)
FIELD DIMENSION
120'
SPECTATORS' LINE
210'-0"
250'-0"
PILGRIM
ROAD
PROJECT
PEDESTRIAN PATHWAY
SIMMONS
COLLEGE
BROOKLINE AVENUE

9. Environmental Analyses

a. **Stormwater Management Analysis & Mitigation Commitments**

b. **Stormwater Management Plan Showing Groundwater Recharge System Locations**

c. **Summary of Geotechnical Borings & Sieve Analysis**

d. **Additional Noise Analyses requested by MASCO**

e. **Additional Air Quality Analyses requested by MASCO**

9.a. Stormwater Management Analysis & Mitigation Commitments

Introduction and Background:

During the public review process for the Proposed Projects, MASCO raised questions about the Proposed Projects' potential impacts on the stormwater management system in the LMA, based upon historical flooding concerns throughout the LMA.

The Proposed Projects' construction will result in a significant reduction in stormwater runoff flowing from the Winsor campus into the BWSC's stormwater sewer system in the area. As a result, it is anticipated that the Proposed Project will in fact reduce demands on the existing stormwater infrastructure in the LMA and will therefore help to reduce the likelihood of future flooding events.

The Proposed Project site (*i.e.*, the Winsor campus) is located in the Groundwater Conservation Overlay District (GCOD) established by Article 32 of the Boston Zoning Code, and each of the Proposed Projects is therefore subject to the applicable performance standards of Article 32. Each Proposed Project will be required to contain an appropriately sized groundwater recharge system. In total, the Proposed Projects will be required to create approximately 104,000 gallons of groundwater recharge capacity within the Winsor campus, which will comprise either underground recharge galleries or vertical recharge wells. This groundwater recharge infrastructure will capture the first inch of rainfall falling on each of the Proposed Project sites and recharge it into the naturally occurring ambient water table instead of discharging this rainfall directly into the BWSC storm sewer system.

A breakdown of the phasing of the Proposed Projects and the groundwater recharge requirements for each phase is included in the following table:

Winsor Development Phase	Total Impervious area (sf)	1" Runoff Storage (ft)	Total Storage required (cf)
Phase 1A Building	46,417	0.083	3,853
Phase 2 Garage	62,725	0.083	5,206
Longwood Parcel	44,665	0.083	3,707
Courtyard Addition	13,680	0.083	1,135

Because the ambient water table in the LMA occurs at approximately elevation 10+/- BCB (approximately 20 feet below the average surface grade of the Winsor campus), there is comparatively little concern about flooding and/or infiltration caused by this recharge because most of the area's basements and sewer lines are laid above the groundwater table. For example, the basement of the MASCO garage extends two levels below an average surface grade of approximately 38+/- BCB (Boston City Base), to an elevation of approximately 15+/- BCB. As a result, the lowest level of the MASCO garage basement still rests approximately 5 feet above the groundwater table. In addition,

based on our review of the foundation plans for the MASCO garage and the MASCO building's geotechnical engineering report, it appears that the MASCO garage was constructed to include an underdrain system designed to protect the basement slab from groundwater infiltration.

Winsor conducted a thorough geotechnical analysis of the Proposed Project sites in order to evaluate subsurface conditions and assess the drainage characteristics of the soil matrix underlying the Proposed Project sites. This analysis, prepared by McPhail Associates, found that the Proposed Project sites are underlain by fine to coarse glacial outwash materials, consisting primarily of sand and fine gravel. These materials have good drainage characteristics, and are well-suited to accept the proposed volume of groundwater recharge in the area. A summary of this geotechnical analysis is included as Figure 9b. A plan of the proposed Groundwater Recharge system locations is included in this submission on the following page.

Conclusion:

The Proposed Project will result in an improvement over existing conditions with respect to stormwater management. During peak flow periods, the Proposed Projects will divert up to 104,000 gallons of stormwater runoff away from the BWSC storm sewer system in the LMA, a marked improvement over existing conditions and a net reduction in the demands placed on the existing BWSC storm sewer system in the LMA. Furthermore, the Proposed Projects' recharge systems are not anticipated to have any negative impact on existing basements or utility lines in the LMA.

6/9/2011 4:46 PM

RECHARGE TRENCH: PERFORATED PIPE SURROUNDED BY CRUSHED STONE AND FILTER FABRIC TO RECHARGE STORMWATER RUNOFF INTO GROUND

1" DEPTH OF ROOF RUNOFF TO BE COLLECTED IN 4" DEPTH OF STONE ON TOP OF GARAGE ROOF

UNDERGROUND GARAGE ROOF SLOPED AT 1/2% TOWARD RECHARGE TRENCH

GARAGE-UNDERGROUND TRENCH RECHARGE DETAIL

1" DEPTH OF ROOF RUNOFF TO BE COLLECTED AND ROUTED TO AN UNDERGROUND RECHARGE SYSTEM IN THE SCHOOL COURTYARD

OVERFLOW FROM THE UNDERGROUND RECHARGE SYSTEM GOES INTO THE BWSC SYSTEM RUNNING THROUGH THE SITE

EXISTING WINSOR SCHOOL

EXISTING PARKING GARAGE

WINSOR SCHOOL COURTYARD ADDITION

EXISTING UNDERGROUND RECHARGE SYSTEM

OVERFLOW FROM PARKING RECHARGE TRENCH PIPED TO THE BWSC SYSTEM RUNNING THROUGH THE SITE (WHERE STORMWATER FROM EX. FIELD IS ROUTED)

SPORTS PLAYING FIELD TO REMAIN

LINE INDICATING APPROXIMATELY 200' FROM THE EXISTING PARKING GARAGE

FUTURE LONGWOOD AVENUE BUILDING

UNDERGROUND PARKING GARAGE PHASE 2

WINSOR SCHOOL EXPANSION PHASE 1A

SHORT STREET EXTENSION

40' WIDE - PRIVATE

PILGRIM ROAD

40' WIDE - PUBLIC

SHORT STREET

30' WIDE - PRIVATE

LONGWOOD AVENUE

50' WIDE - PUBLIC

STORMWATER TANK TO OVERFLOW INTO RECHARGE WELL ALONG PLAYING FIELD

OVERFLOW FROM RECHARGE WELLS/TANK TO BWSC SYSTEM IN LONGWOOD AVENUE

1" DEPTH OF ROOF RUNOFF TO BE COLLECTED IN A STORAGE TANK INSIDE THE BUILDING

STORMWATER TANK TO OVERFLOW INTO RECHARGE WELLS ALONG PLAYING FIELD

1" DEPTH OF STORMWATER RUNOFF TO BE COLLECTED UNDERGROUND ON TOP OF THE UNDERGROUND GARAGE ROOF. RUNOFF WILL BE ROUTED TO AN UNDERGROUND RECHARGE TRENCH NEAR PLAYING FIELD. SEE DETAIL THIS SHEET.

1" DEPTH OF ROOF RUNOFF TO BE COLLECTED IN A STORAGE TANK INSIDE THE BUILDING

STORMWATER TANK TO OVERFLOW INTO UNDERGROUND RECHARGE TRENCH NEAR BROOKLINE AVENUE. OVERFLOW FROM TRENCH TO BWSC SYSTEM IN BROOKLINE AVENUE

GROUNDWATER RECHARGE TANK=5,206 CUBIC FEET

GROUNDWATER RECHARGE TANK=3,853 CUBIC FEET

BROOKLINE AVENUE

75' WIDE - PUBLIC

Nitsch Engineering

www.nitscheng.com

186 Lincoln Street, Suite 200

Boston, MA 02111-2403

T: (617) 338-0063

F: (617) 338-6472

- Civil Engineering
- Land Surveying
- Transportation Engineering
- Planning
- GIS Services

RECHARGE OPTIONS BY PHASE

WINSOR SCHOOL

FENWAY, BOSTON, MA

PREPARED FOR:

WILLIAM RAWN ASSOC.

BOSTON, MA

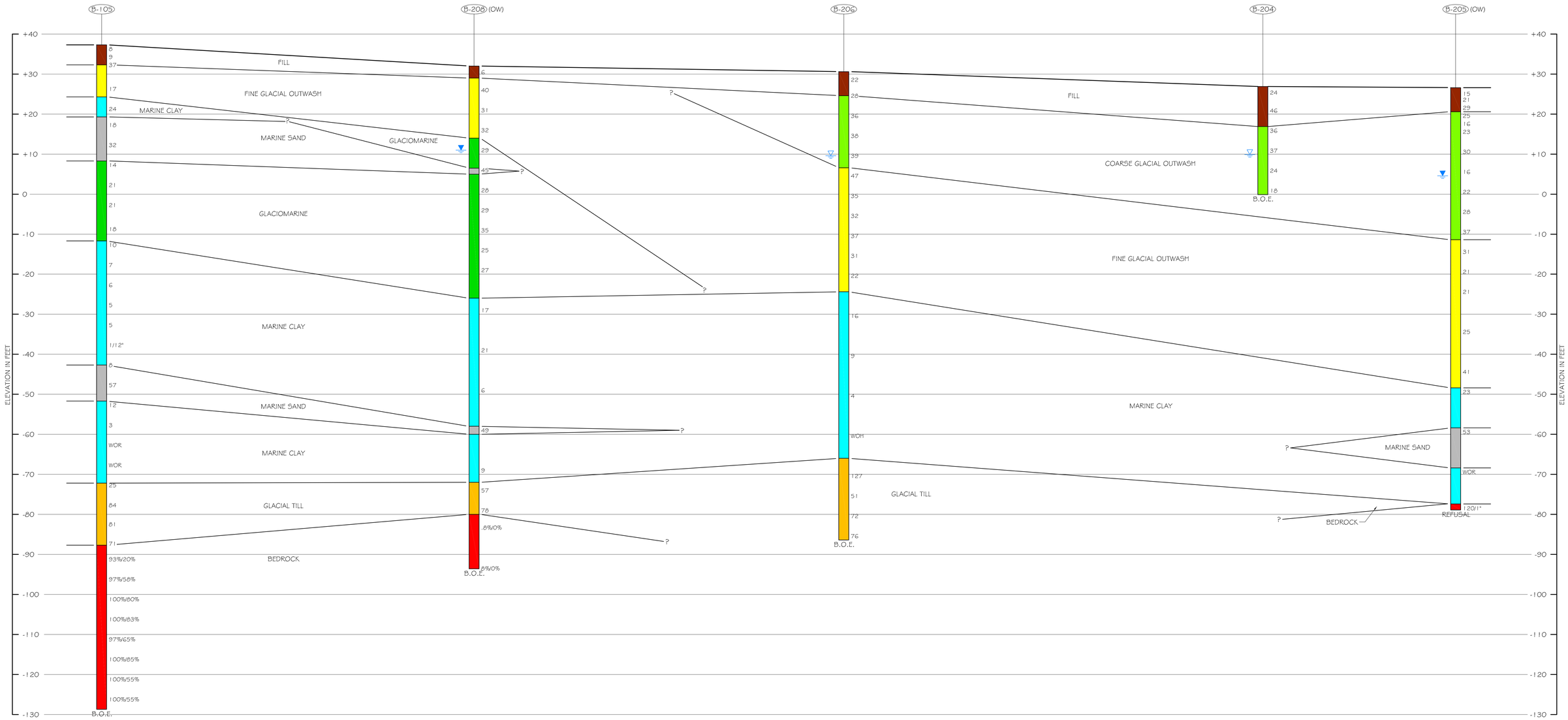
PROJECT #	7902
FILE:	7902RechargeByPhase
SCALE:	NOT TO SCALE
DATE:	06/08/2011
PROJECT MGR:	JMS
SURVEYOR:	FELDMAN
DRAFTED BY:	DMK
CHECKED BY:	JMS

SHEET:

RECHARGE

1 OF 1 REV.

o:\7902 winsorsch\civil\cad\working\7902rechargebyphase.dwg



SECTION B-B
HOR: 1" = 20'
VER: 1" = 10'

LEGEND

- (B-2) – BOREHOLE NUMBER
- ▽ – INDICATES GROUNDWATER LEVEL OBSERVED IN OPEN BOREHOLE UPON COMPLETION
- ▼ – INDICATES GROUNDWATER LEVEL OBSERVED IN GROUNDWATER OBSERVATION WELL
- 5i – STANDARD PENETRATION RESISTANCE OR N-VALUE, BLOWS PER FOOT. (1-3/8" I.D. SPLIT SPOON, 140LB. HAMMER, 30" DROP)
- 63%/23% – ROCK CORE RUN, INDICATING PERCENT RECOVERY AND ROCK QUALITY DESIGNATION (RQD)
- B.O.E. – BOTTOM OF EXPLORATION
- REFUSAL – INDICATES AUGER AND/OR SPLIT-SPOON REFUSAL
- (OW) – INDICATES OBSERVATION WELL INSTALLED WITHIN COMPLETED BOREHOLE

SUBSURFACE UNIT	GRAPHIC SYMBOL	GENERAL DESCRIPTION
FILL		LOOSE TO COMPACT, BROWN TO DARK BROWN SILTY SAND, TRACE TO SOME GRAVEL, TRACE BRICK AND ORGANICS
COARSE GLACIAL OUTWASH		COMPACT TO DENSE, BROWN COARSE SAND, SOME SILT, TRACE TO SOME GRAVEL
FINE GLACIAL OUTWASH		COMPACT TO DENSE, BROWN TO BLUE-GRAY MEDIUM TO FINE SAND, SOME SILT
MARINE CLAY		STIFF TO SOFT, BLUE-GRAY SILTY CLAY WITH INTERBEDDED MEDIUM TO FINE SAND LAYERS
MARINE SAND		COMPACT TO VERY DENSE, BLUE-GRAY SILTY FINE SAND
GLACIOMARINE		COMPACT TO DENSE, BLUE-GRAY SILT AND GRAVEL, SOME SAND
GLACIAL TILL		DENSE TO VERY DENSE, BLUE-GRAY GRAVELLY SILT, SOME SAND
BEDROCK		MODERATELY TO SEVERELY WEATHERED AND FRACTURED BLUE-GRAY ARGILLITE

NOTES:

1. REFER TO FIGURE 2 FOR LOCATION AND ORIENTATION OF SUBSURFACE SECTIONS.
2. STRATIFICATION LINES BETWEEN EXPLORATIONS ARE BASED ON LINEAR INTERPOLATION OF DATA FROM THE EXPLORATIONS AND MAY NOT NECESSARILY REPRESENT ACTUAL SUBSURFACE CONDITIONS.

McPHAIL ASSOCIATES, INC.
Geotechnical Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)

WINSOR SCHOOL MASTER PLAN
BOSTON MASSACHUSETTS
GENERALIZED SUBSURFACE SECTION B-B
FOR
WINSOR SCHOOL
BY
McPHAIL ASSOCIATES, INC.
CONSULTING GEOTECHNICAL ENGINEERS

Date: JANUARY 2010	Dwn: M.B.S.	Chkd: T.J.F.	Scale: AS NOTED
Project No: 4981			FIGURE 6

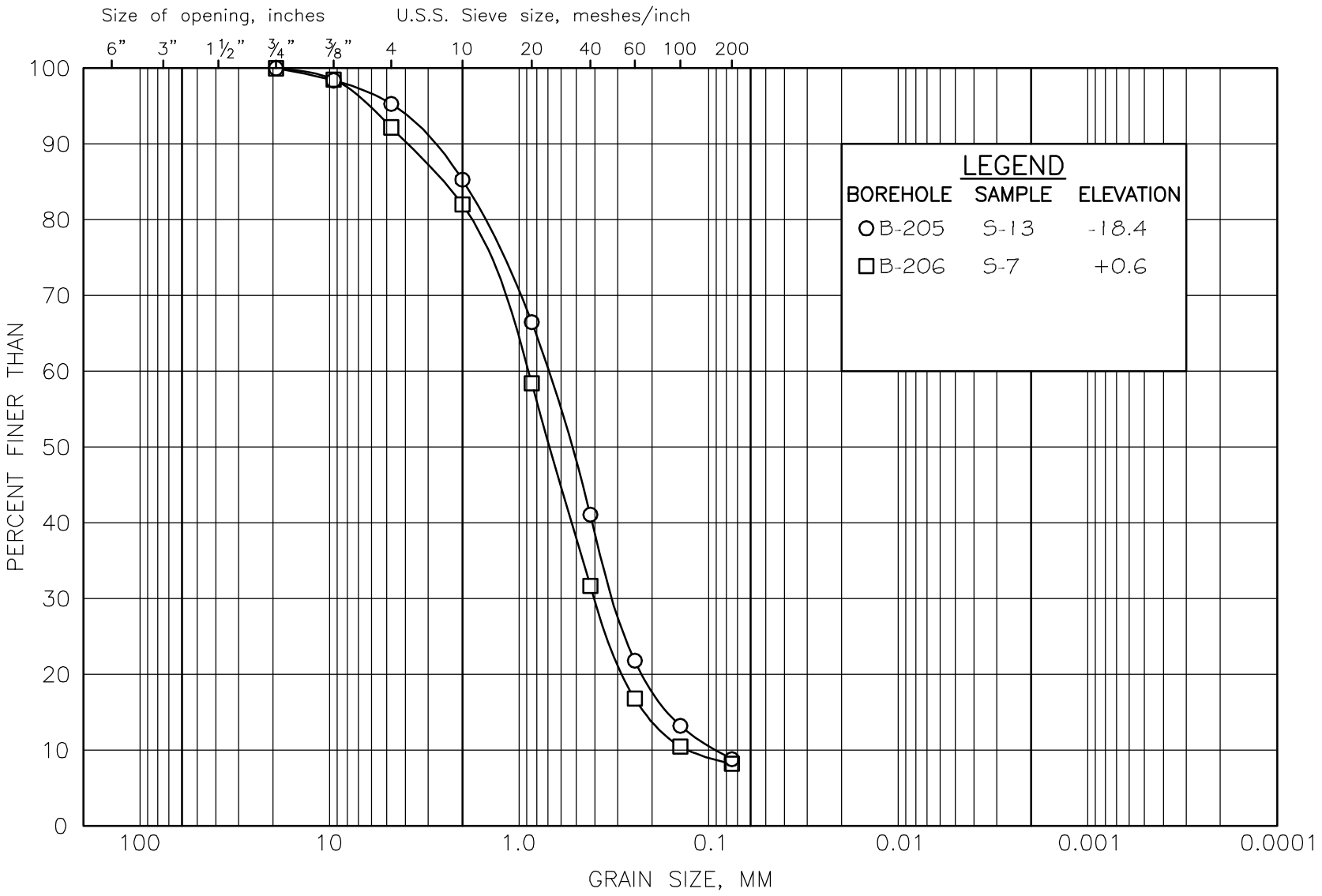
FILE NAME: 4981-FIG_Section

FILE NAME: 4981-F08_Sieve

PROJECT No. 4981

McPHAIL ASSOCIATES, INC.

M.I.T. GRAIN SIZE SCALE



COBBLE SIZE	GRAVEL SIZE			SAND SIZE			FINE GRAINED	
	COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	SILT SIZE	CLAY SIZE

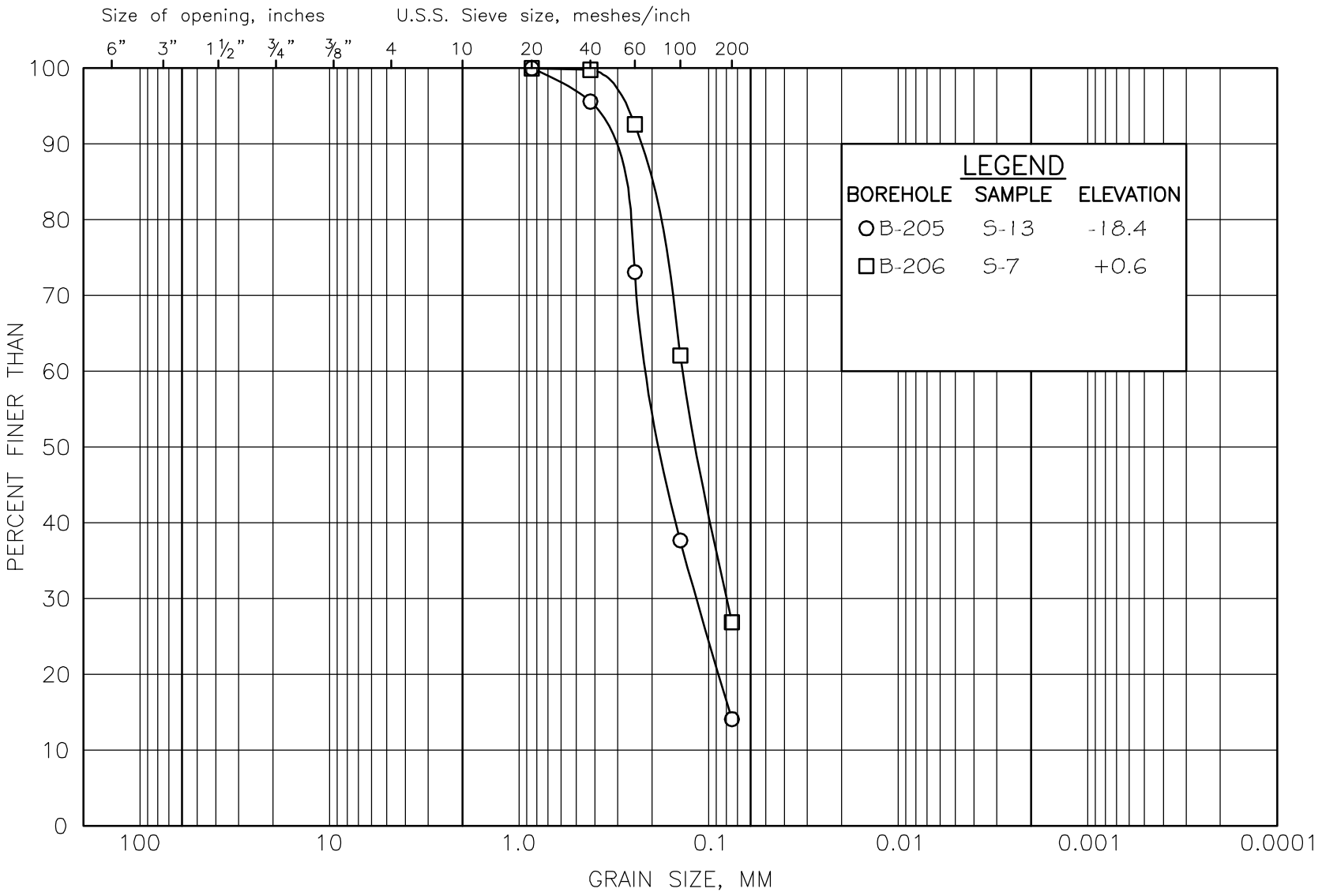
GRAIN SIZE DISTRIBUTION
COARSE GLACIAL OUTWASH

FIGURE 8

FILE NAME: 4981-F09_Sieve

PROJECT No. 4981

M.I.T. GRAIN SIZE SCALE



COBBLE SIZE	GRAVEL SIZE			SAND SIZE			FINE GRAINED	
	COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	SILT SIZE	CLAY SIZE

McPHAIL ASSOCIATES, INC.

GRAIN SIZE DISTRIBUTION
FINE GLACIAL OUTWASH

FIGURE 9

New Receptor requested by MASCO

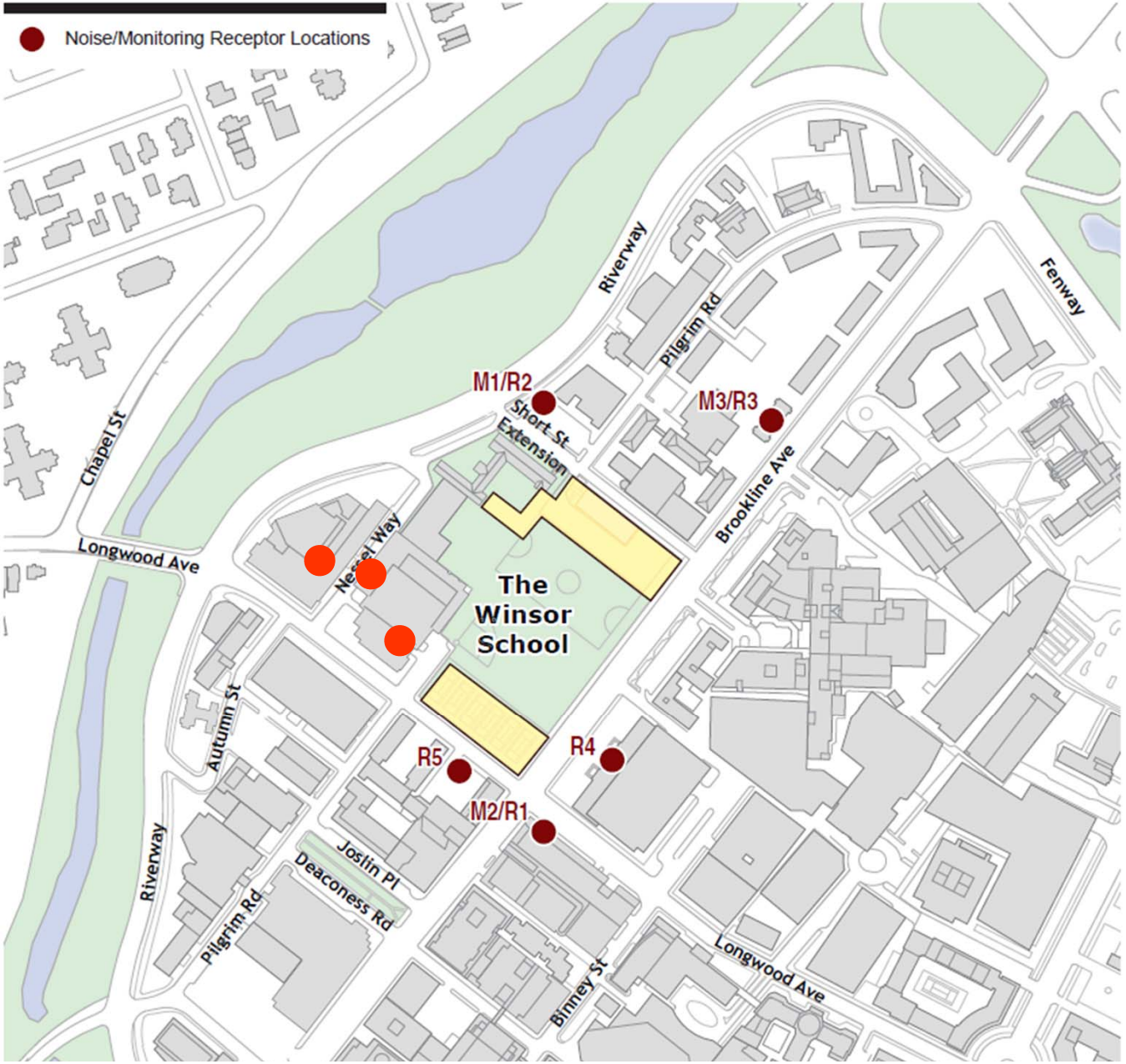


Figure 9-D.1

Additional Noise Modeling Results Table

Receptor Location*	Existing Sound Levels (Nighttime)	Project-Generated Sound Levels		Combined Outdoor Sound Levels	City of Boston Noise Criteria (Daytime)	City of Boston Noise Criteria (Nighttime)
		Indoor	Outdoor			
R1 – Longwood Galleria Apartments	60	38	48	60*	60	50
R2 – Wheelock College Residence Hall	44	34	44	47	60	50
R3 – Simmons College Residence Campus	59	29	39	59*	60	50
R4 – Beth Israel Deaconess Medical Center – East Campus**	60	26	36	60*	60	50
R5– Longwood Center**	60	35	45	60*	60	50
R6- MASCO Building***	44	37	47	49	65****	65****
R7- Longwood Medical Area Child Care Center	44	35	45	48	60	50
R8- Temple Israel Longwood	44	34	44	47	60	50

Source: Vanasse Hangen Brustlin, Inc.

* The Project will not exceed the nighttime criteria because the Project generated sound levels are, at least, 10 dB(A) lower than the nighttime criteria. Therefore, the Project will not increase the nighttime sound levels. Existing sound levels will not change.

** Receptor locations were located at heights corresponding to the Project's mechanical equipment.

*** MASCO Building windows do not open.

**** Business Criterion.

Conclusion: The Project will not exceed any daytime criteria because the Project generated sound levels are, at least, 10 dB(A) lower than the daytime criteria. Therefore, the Project will not increase the daytime sound levels above the daytime criteria.

Figure 9-D.2

New Receptor requested by MASCO

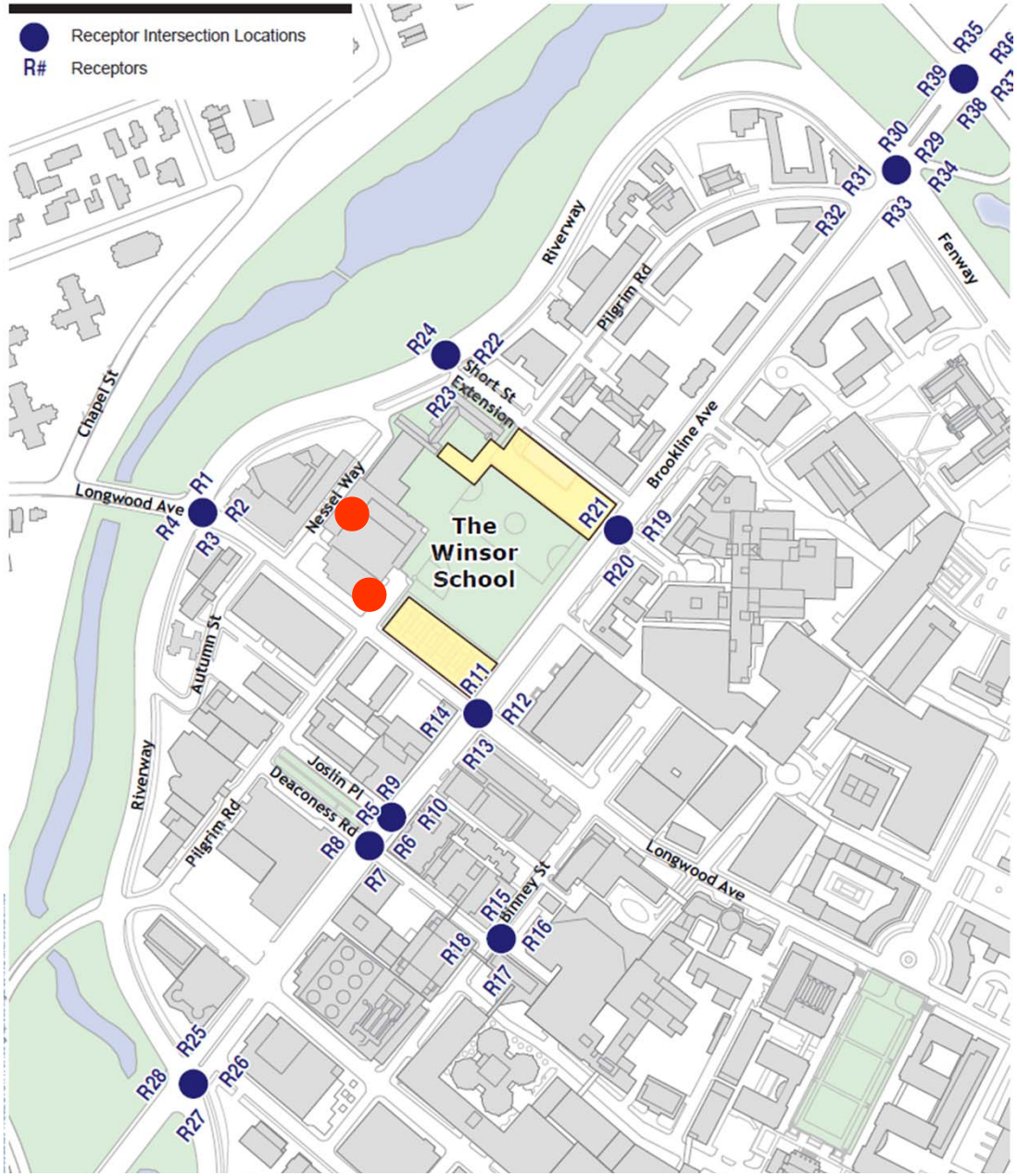


Figure 9-E.1

Additional Air Quality Study Requested by MASCO

MASCO Standard: 17.5ppm (1-hr) & 4.5ppm (8-hr)

Carbon Monoxide (CO) 1-Hour Results (ppm)

Standard: 35ppm (40 mg/m^3)

Location	2010 Existing	2015 No Build	2015 Build	2020 No Build	2020 Build
Brugger's Bagel Outdoor Seating Area (MASCO Building)	3.6	3.6	3.6	3.6	3.6
MASCO Daycare Outdoor Center	3.7	3.7	3.7	3.7	3.7

Carbon Monoxide (CO) 8-Hour Results (ppm)

Standard: 9ppm (10 mg/m^3)

Location	2010 Existing	2015 No Build	2015 Build	2020 No Build	2020 Build
Brugger's Bagel Outdoor Seating Area (MASCO Building)	2.5	2.4	2.5	2.4	2.5
MASCO Daycare Outdoor Center	2.6	2.6	2.6	2.6	2.6

Figure 9-E.2